

**BAT SURVEYS AT
GWERN-Y-TO, SHOCKLACH LANE,
WORTHENBURY, WREXHAM
2018**



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1.0 INTRODUCTION

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2018 by RADM, via Pegasus Group, to undertake bat surveys of two buildings at Gwern-y-to, Worthenbury, Wrexham. The site is the subject of a full planning application with Wrexham Council for the demolition of the existing house and shippon, the erection of a new dwelling and the refurbishment of the existing barn building (planning reference: P/2018/0367). This is a resubmission of planning permission P/2015/0434. As part of the original planning submission, bat surveys were undertaken by Rachel Hacking Ecology in 2014. These are now classed as out of date, and therefore new bat surveys are required for the current planning application.
- 1.2 Gwern-y-to is located off Shocklach Lane, between Worthenbury, Wrexham and Shocklach, Cheshire (O.S. grid reference: SJ430469). The site comprises of a detached two-storey farmhouse, a two-storey barn and a dilapidated (roofless) shippon. The land around the buildings comprises overgrown ruderal vegetation, including patches of dense scrub. Since 2014, the buildings have become more dilapidated, with missing roof tiles.
- 1.3 All bat species are European Protected Species under the Conservation of Habitats and Species Regulations 2017. They are also fully protected under the Wildlife and Countryside Act 1981 (as amended) and included on the Countryside and Rights of Way Act 2000 and the Environment (Wales) Act 2016. It is illegal to disturb or damage a bat roost.
- 1.4 The presence of a protected species is a material consideration when a planning authority is considering a development proposal, therefore a daytime bat survey is required to determine whether bats are present in the buildings and/or assess the potential for bats to be present.

2.0 METHODOLOGY

- 2.1 A daytime bat survey was undertaken to update the 2014 findings and search for, and to assess the potential for, a bat roost to be present within the buildings at Gwern-y-to.
- 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.
- 2.3 The buildings were also searched internally for evidence of a bat roost, which included looking for the following signs:
 - live or dead bats
 - bat droppings
 - bat entry/exit points
 - bat urine staining
 - grease marks on any timbers
 - feeding remains such as insect wings
 - areas clear of cobwebs.
- 2.4 A pair of close-focussing binoculars, a high-powered torch and an endoscope were used (where required) to search for evidence of bats externally and internally.
- 2.5 Two dusk emergence surveys and one dawn re-entry survey were conducted at Gwern-y-to, in accordance with the Bat Conservation Trusts 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' 2016 (3rd Edition).
- 2.6 Three surveyors and infra-red cameras monitored both the barn and the farmhouse (three surveyors and an infra-red camera per building), to ensure full coverage of the buildings for any emerging bats. The emergence surveys began 15 minutes before sunset and continued for 90 minutes after sunset. The re-entry survey began 90 minutes before sunrise and continued for 15 minutes after sunrise. The surveyors used Anabat Walkabout & Echometer Touch Pro bat detectors to record the echolocations of emerging and foraging bats.

Timings and Personnel

- 2.7 The dusk emergence surveys were undertaken on 14th May 2018 and 29th May 2018. The dawn re-entry survey took place on 12th June 2018. May and June are optimal months to undertake bat emergence and re-entry surveys. The surveys were undertaken in optimum weather conditions.
- 2.8 The surveys were undertaken by Andy Harmer, Joel Hacking, Sam Harmer, James Nolan, Millie Cash and Rachel Hacking. Joel holds a Natural Resources Wales Survey Licence for bats (Licence Reference: 77533:OTH:CSAB:2017). All of the surveyors are fully trained in bat

surveys, bat detector use and are experienced with emergence and re-entry surveys.

Constraints

- 2.9 Daytime bat assessments can be carried out at any time of year. The bat activity surveys were undertaken at the optimum time of year. The first floor of the barn was inaccessible during the daytime bat survey but a drone was flown through the open windows to gather images. There were no other constraints to the surveys.

3.0 RESULTS

DAYTIME BAT SURVEY

- 3.1 Gwern-y-to consists of two buildings; a disused farmhouse (dwelling) and a barn, plus a dilapidated shippon. All of the buildings are constructed of brick with pitched slate tile roofs. The 2018 findings are similar to the 2014 findings, although all of the structures are in worse condition in 2018.

Detached Dwelling

External Survey

- 3.2 The detached dwelling is an old farmhouse (see Photograph 1), which has been unoccupied. It is two-storey in height with a small brick-built extension to the rear (see Photograph 2). The window frames and door frames are wooden and are starting to rot. No soffits or barge boards exist on this property. The guttering is coming away from the walls in many places



Photograph 1 showing the detached dwelling



Photograph 2 showing the rear of the detached dwelling

- 3.3 The brickwork is in worse repair in 2018 than in 2014. Brick faces have crumbled and mortar is missing, particularly on the chimneys (see Photograph 3). Mortar is also missing at the roof edges.



Photograph 3 showing the gable end and chimney stack

- 3.4 The roof is in a worse state of repair than in 2014, with many missing tiles (see Photograph 4)



Photograph 4 showing the roof of the farmhouse

Internal Survey

- 3.5 The property had been stripped (e.g. ceilings removed and plaster removed in places) prior to the 2014 survey and no work has taken place to the interior since then. Interior walls remain standing. Mould and damp occur throughout. The ground floor rooms are cold and damp (see Photograph 5), with peeling wallpaper. No evidence of bat activity was found on the ground floor.



Photograph 5 showing part of the ground floor of the farmhouse

- 3.6 Extensive water damage has occurred, making the stairs and upstairs flooring unsound although access was still possible. The ceilings within the first floor have been removed, allowing the whole interior roof to be viewed (see Photograph 6). There are more missing tiles than in 2014, allowing more daylight and rainwater in.



Photograph 6 showing the roof and ceiling joists

- 3.7 The wooden beams, roof and ceiling joists are intact, with no cracks or gaps evident. They are becoming mouldy due to water ingress. Where small parts of ceiling plasterboard remain, these could be easily inspected behind (see Photograph 7).



Photograph 7 showing plasterboard and wooden beams

- 3.8 Scattered bat droppings and feeding remains (butterfly wings) were found again throughout the first floor, scattered on the floorboards (see Photograph 8). This is the same result as in 2014.



Photograph 8 showing bat droppings and feeding remains

Barn

External Survey

- 3.9 The barn is two-storey in height, of brick construction, with many repairs apparent (see Photograph 9). It has a pitched slate tile roof. The windows and doors were sealed with wooden boards (see Photograph 10) but these are no longer well-sealed. The door is permanently ajar and an upstairs window is completely open. Vegetation is now establishing across the exterior of the brickwork. Mortar is crumbling in places and the a small number of roof tiles have slipped.



Photograph 9 showing the barn



Photograph 10 showing the front of the barn

Internal Survey

- 3.10 The barn was stripped prior to the 2014 daytime bat survey, with some ceilings removed. No work has taken place since then. The ground floor has concrete floors and walls (see Photograph 11). Cattle pens are still evident. The remaining wooden ceiling beams are intact, with no cavities suitable roosting bats. A small number of bat droppings were found scattered on the floor.



Photograph 11 showing the ground floor of the barn

- 3.11 Part of the first floor of the barn was accessed by drone (see Photograph 12). Evidence of bird activity was noted (droppings) and daylight can be seen in many places, such as through slipped roof tiles and at the edges of the hay door and windows. Where access was possible, scattered bat droppings were found on the floor. This is the same result as in 2014.



Photograph 12 showing the first floor of the barn

Shippon

- 3.12 A dilapidated shippon still exists on the site. This has no roof (see Photograph 13) and is now nearly completely covered with vegetation. This was inspected and found to support no suitable roosting areas for bats.



Photograph 13 showing the dilapidated shippon

BAT EMERGENCE & RE-ENTRY SURVEYS

- 3.13 Figure 1 shows the approximate locations of the surveyors during the survey.



Figure 1 showing the locations of surveyors (red stars) and infra-red cameras (yellow stars) during the survey. The farmhouse is the building on the left and the barn is the building on the right

- 3.14 A maximum of three Common Pipistrelle *Pipistrellus pipistrellus* bats emerged from the roof of the farmhouse. This was during the first emergence survey. A maximum of two Common Pipistrelle bats re-entered the farmhouse during the re-entry survey. One Common Pipistrelle emerged and one Common Pipistrelle re-entered the barn during the surveys. The emergence and re-entry points are shown in Figures 2 and 3).



Figure 2 showing the emergence and re-entry points at the farmhouse (red arrows). All bats emerged and re-entered the holes in the roof at the western end of the building



Figure 3 showing the emergence and re-entry points at the barn (red arrows). All bats emerged and re-entered the roof eave at the western gable end

- 3.15 Moderate-levels of bat activity were recorded on site during the survey, with Common Pipistrelle, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule *Nyctalus noctula* bats recorded and seen foraging around both the barn and farmhouse. All of the activity is detailed below.

14th May 2018

- 3.16 Table 1 details the bat activity observed on the site.

Table 1. Bat activity and timings during the survey on 14/05/18	
1.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:34
2.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:36
3.	1 x Common Pipistrelle emerged from barn at gable end at 21:40
4.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:42
5.	Foraging Common Pipistrelle, Soprano Pipistrelle and single Noctule pass from 21:25 until 22.40 (when survey ended)

- 3.17 Table 2 gives the weather conditions during the survey.

Table 2. Weather conditions during the survey 14/05/18	
Sunset:	21:02
Temperature (low):	12°C
Beaufort Scale:	0
Weather:	Dry and calm

29th May 2018

- 3.18 Table 3 details the bat activity observed on the site.

Table 3. Bat activity and timings during the survey on 29/05/18	
1.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:42
2.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:50
3.	1 x Common Pipistrelle emerged from the farmhouse from hole in the roof at 21:53
4.	Foraging Common Pipistrelle, Soprano Pipistrelle and several Noctule passes from 21:30 until 23.10 (when survey ended)

- 3.19 Table 4 gives the weather conditions during the survey.

Table 4. Weather conditions during the survey 29/05/18	
Sunset:	21:24
Temperature (low):	16°C
Beaufort Scale:	0
Weather:	Dry and calm

12th June 2018

3.20 Table 5 details the bat activity observed on the site.

Table 5. Bat activity and timings during the survey on 12/06/18	
1.	1 x Common Pipistrelle re-entered the farmhouse at hole in roof at 03:11
	1 x Common Pipistrelle re-entered the barn at gable end at 03:18
2.	1 x Common Pipistrelle re-entered the farmhouse at hole in roof at 03:32

3.21 Table 6 gives the weather conditions during the survey.

Table 6. Weather conditions during the survey 12/06/18	
Sunrise:	04:43
Temperature (low):	13°C
Beaufort Scale:	0
Weather:	Dry and calm

4.0 SUMMARY AND RECOMMENDATIONS

- 4.1 A maximum of three Common Pipistrelle bats were observed emerging from holes in the roof of the farmhouse and a maximum of one Common Pipistrelle was observed emerging and re-entering the barn at the western gable end, during the surveys in 2018. The results suggest that both the farmhouse and the barn are likely to support day roosts for small numbers of Common Pipistrelle bats. No bats were seen to emerge from, or re-enter, either building during the 2014 surveys. The buildings have since become more dilapidated with a greater number of missing/slipped roof tiles.
- 4.2 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.
- 4.3 A Mitigation Bat Licence from Natural Resources Wales will be required before any work can proceed on the farmhouse or the barn. This can only be applied for once full planning permission is granted.
- 4.4 Given the fact that a maximum of three Common Pipistrelle bats (crevice-dwelling species) were seen to emerge from the site, it is considered that appropriate habitat compensation for this would be a two bat boxes erected on the site. Therefore, the mitigation will include:
- 2 x 2F Schwegler Crevice Bat Boxes to be erected onto the converted barn exterior or suitable retained trees following completion of the works. These will be erected more than 3 metres above ground, facing south, south-west or south-east.
- 4.5 The licence will include a method statement, excluding the bats prior to work commencing on the property and using methodologies such as soft-stripping under ecological supervision. There is no restriction on the timing of the works, given that the roost is a day roost.

5.0 REFERENCES

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

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