Herpetological Research and Consultancy

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Shelwick, Old Farm House Preliminary Ecological Survey
Autumn 2013

Barn seen from the South

Client: Mr. & Mrs. Millington

Limitations

Ecological assessments can only assess a site at a particular time. This evidence can be used to draw conclusions as to the likely presence or absence of species (animals and plants), population size, use of the site by animals; it is neither definitive nor complete.

Any survey is a snapshot in time and should not be regarded as a complete study. Seasonality and weather conditions may also affect survey results.

The preparation of mitigation strategies, consultation exercise and submission of any licence applications cannot be relied upon until approved [licensed] in writing by third parties. Allowance must be made for both programme and financial change to projects as a result of application failure, amendment or refusal.

Every effort has been taken to provide an accurate assessment of the situation pertaining to this site and information available at the time of the preparation of this report, but no liability can be assumed for omissions, or subsequent changes to design and development.

Surveys have been based on anticipated work resulting from instruction and information supplied at the time of request. Additional works should be anticipated as surveys and proposals for the site progress.

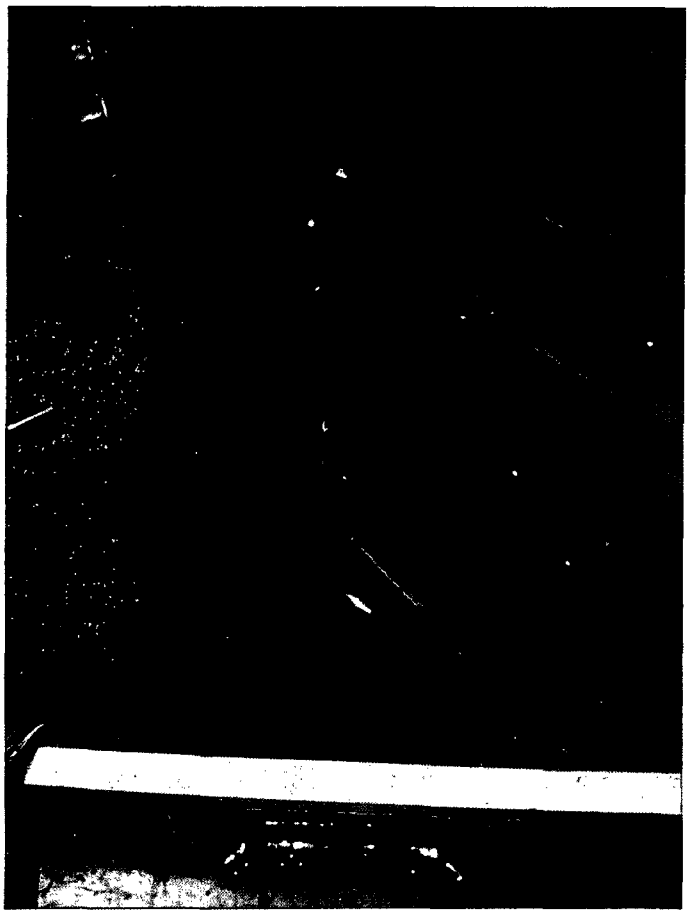
No responsibility will be accepted for any use of or reliance on the contents of this report by any third party.

No responsibility will be accepted for changes or alterations made to this report following submission to Herpetological Research and Consultancy's client Mr. & Mrs. Millington

Herpetological Research and Consultancy, its employees and associates reserve the right to report on any incidents or actions [deliberate or reckless] that result in a breach of licence conditions or are in contravention of existing wildlife legislation.

Overview:

1. The single storey timber framed barn with a clay tiled roof adjacent to Shelwick Old Farm House (centred on OS Grid Reference: SO523,431) is subject to planning consent for structural works including demolition and replacement with a dwelling (Photo 1. Internal structure of barn.). The survey site is fronted by a roadway, has an empty plot to the west, a house and gardens to the east and open pasture farmland to the north bounded by hedgerows and wire fences.



2. To satisfy current wildlife legislation a preliminary ecological survey was commissioned to determine whether the barn was used by bats or any of the immediate land was subject to use by other European Protected Species (EPS).

3. Survey conducted by Nick Staples B.Sc., M.Sc., DIC, CBiol, MSB. With 15 years experience conducting presence/absence surveys for British bats, reptiles, amphibians and breeding birds. The initial walkover survey was conducted on the 12th September 2013.

Methods: Reptiles and Amphibians (Herpetofauna)

4. The gardens, mainly laid to lawn to the north of the house and comprising flowerbeds and shrub planting to the east of the house were walked and notes made of any areas that might provide suitable habitat for herpetofauna.

5. The area immediately to the north of the barn and outbuildings was rough ground with nettle growth (photo 2.), Elder and, to the western end of the barn, a small compost

area. This area provides potential foraging habitat for amphibians and foraging and resting habitat for slow-worms (*Anguis fragilis*) and possibly foraging and egg laying opportunities for Grass Snake (*Natrix natrix*) although none were seen at the time of the survey.

Photo 2. Rough vegetation to the northern side of the barn.

6. Two ponds were found within the garden, the first, a small (approx. 1m diameter), circular, slightly raised ornamental pond with dense pondweed and little open water was located toward the far end of the lawned area to the north of the site. The pond was at the base of an ornamental conifer (Photo 3.).

Photo 3. Small ornamental pond

7. The second pond was slightly larger (approximately 1.5m in diameter), and densely stocked with goldfish. This was surrounded by flowerbeds, rockery plants and shrubs. It was located to the east of the house and was densely shaded (Photo 4.). This corner of the garden appeared suitable as a terrestrial foraging area for amphibians.

Photo 4. Goldfish pond

Results: Reptiles and Amphibians (Herpetofauna)

8. No terrestrial herpetofauna were found during the survey. Surprisingly however, Common Frog tadpoles (*Rana temporaria*) were found in the small ornamental raised pond. These were at a relatively early stage of development as most were without developed limbs. The "late" season of 2013 has probably contributed to this anomaly.

9. The pond is not considered to be large enough or deep enough as a viable Great Crested Newt, *Triturus cristatus* (GCN) breeding pond and no further suitable such ponds were found in the vicinity.

10. The larger pond, stocked with many goldfish was deeper and less densely vegetated and is similarly not considered suitable as a GCN breeding pond, largely due to the high numbers of fish present.

11. The "rough" ground to the north of the barn and other outbuildings is considered as potentially suitable foraging habitat for slow-worms but the aspect (north facing) tends to suggest that the densely overgrown site to the west and immediately adjacent to the survey site would currently provide superior foraging and resting habitat for this species. The compost heap and north wall of the barn may provide suitable cover for hibernating animals however.

12. Walnut tree, standing to approximately 12m with a canopy extending to a similar diameter

Methods: Birds

13. The survey was carried out in mid September, no birds were nesting at the time but there were many opportunities on the survey site for nesting birds. The barn itself and the outbuildings showed evidence of previous nesting attempts by Barn Swallow, (*Hirundo rustica*) and, the likelihood of small passerines such as Robin (*Erithacus rubecula*), Wren (*Troglodytes troglodytes*), and Blackbird (*Turdus merula*) nesting in or on these buildings is regarded as high.

14. The mature standard Walnut tree (*Juglans regia*) immediately to the north of the barn has numerous dead branches and open cavities. This tree also has the capacity to support a number of nesting bird species during the spring and summer months (Photo 5.).

Photo 5. Walnut tree to north of barn.

Methods: Bats.

15. The site was initially visited during daylight hours and an intensive inspection of the grounds within the curtilage of the Old Farm House was made with inspections concentrated on potential habitats that may be used by EPS.

16. Close inspection was made of the out-buildings for evidence of bats and the potential for nesting bird issues during the spring and summer months. Ladders and high powered lamps were used to investigate roof coverings, and structural timbers (especially joints) from the inside. Surfaces were inspected for bat droppings and gaps and holes in the timber were inspected for grease or urine stains that are evident when bats have repeatedly used such refuges. Photo 6 shows the interior of the upper storey viewed from the eastern end.

Photo 6. Interior of upper storey

17. Further close inspection was made of the weatherboard exterior looking for gaps and staining. The ground around the building and the weatherboarding was also inspected for bat droppings.

18. Evening surveys were made so that the building could be kept under observation during dusk, when bats are likely to emerge from their daytime roost places. A bat detector (Batbox Duet), using both heterodyne and frequency division) with a Zoom H1 digital recorder connected was used to locate and record bat echolocation calls during the survey. Analysis of recordings, identifying frequency, sound characteristics and pulse rate using "Batscan" software allows bat species to be identified by their unique calls.

19. Two visits were made to the survey site during periods of dry, windless weather, allowing surveys to be made during conditions considered optimum for bat foraging . Evening visits commenced at least one hour prior to sunset and lasted until at least one hour after sunset. Morning surveys commenced at least one hour before daylight to see where bats were returning to roost.

Results:

20. Overall the building presents limited opportunities for bat use. The roof was not entirely water-tight and thus presented a variety of conditions during the seasons. Bats tend to be found in areas of constant humidity/temperature

21. The internal surveys showed no evidence of bat usage in any of the out-buildings.

Figure 1: Serotine bat echolocation call peak frequency at 29kHz

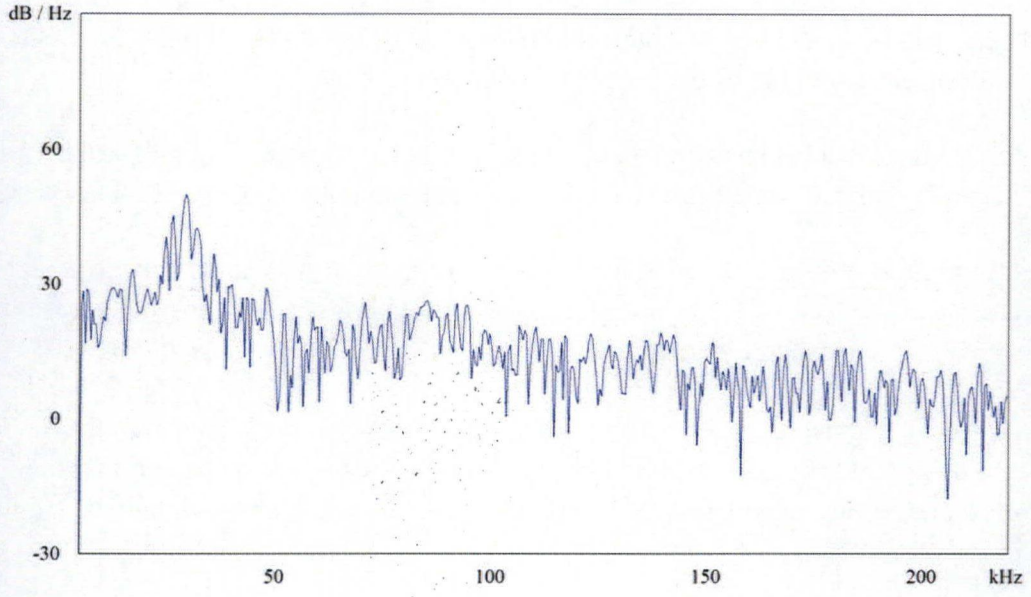
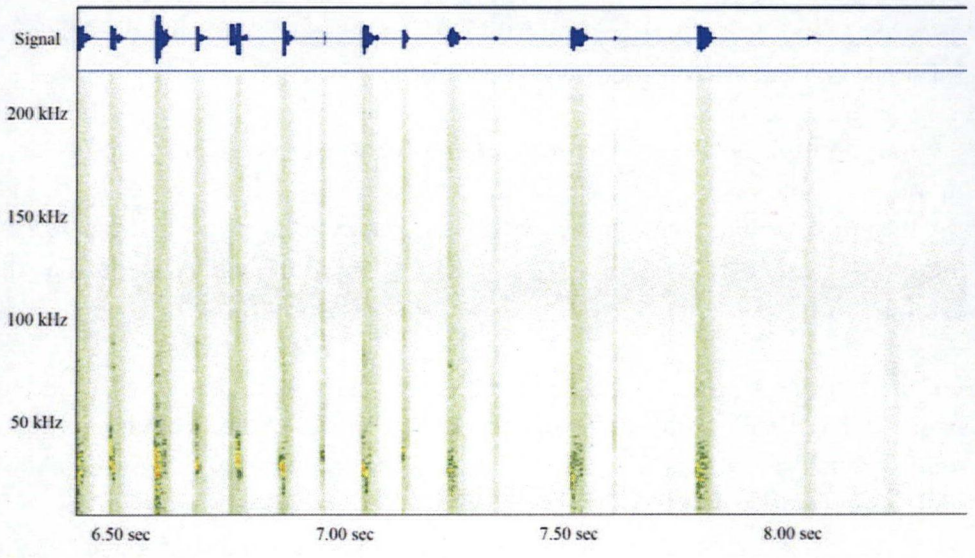


Figure 2: Serotine Bat sonogram



32. On the same evening two Common Pipistrelles (*Pipistrellus pipistrellus*) were observed at 19:22hrs, one flying from east to west along the roadway to the south of the property and the other flying from south to north along the eastern boundary of the property at a height of approximately 5m. Echolocation calls were picked up and clear signals were received after adjustment to 45 kHz.

22. No bat droppings were found within any of the out-buildings nor were any droppings found on or at the base of the out-building walls.

23. No evidence of urine or grease staining was found on any timbers or near mortice and tenon joints or similar potential roost areas.

24. No bats, alive or dead were found in the barn or other out-buildings.

25. There was no evidence to suggest that bats used the barn as a foraging area. Such signs would usually include discarded wings of insect prey.

26. Evidence of old bird nests was also present. The nests were those of Barn Swallow *Hirundo rustica*. None of the nests were in use and all were from previous years.

27. Investigation of the outside of the barn including the timber and brickwork and the ground at the base of the building showed no signs of bat droppings or grease/urine stains at potential entrance points.

28. Domestic cats were observed within the barn climbing on the roof support timbers and using the roof plate to the north wall as a pathway. It is suspected that the presence of cats would present a very high predatory risk to roosting bats and nesting birds.

29. Two bat surveys were carried out at the property. Although late in the season, the weather was mild (16°C, dry and with little breeze. Although negative results would not provide evidence for a lack of bats under such circumstances positive records obviously prove the existence of bats flying around the survey site. The bat detector was set at an initial frequency of 50 kHz and the barn was observed from all angles to observe any bats that might leave the building.

30. On the morning of the 13th September sunrise was at 06:43hrs. The bat detector picked up no small bats but occasional loud, low frequency "slaps" were heard to the north of the barn. Recordings were made with peak frequencies between 26-29 kHz. No bats were observed entering the barn and the volume of the calls increased as the directional microphone was pointed towards the walnut tree.

31. On the evening of the 20th September sunset was at 19:13hrs.Low frequency calls were heard at 10 minutes prior to sunset from the vicinity of the walnut tree. The bat detector was set to approximately 25 kHz and recordings made of the echo-location calls (See figures 1 and 2) This tree has numerous deadwood and holes in the upper branches. Two large bats with broad wings were observed flying around the walnut tree to the north of the barn and within the garden from 19:18hrs. Flight characteristics were variable with the bats flying above the walnut tree with frequent swoops to ground level and along hedgelines at 1-3m height. They were observed to fly to the west of the site and return frequently sometimes at very low level. Analysis of the recordings made during these flights indicates the probability of these being Serotine bats, *Eptericus serotinus*. No bats were observed leaving the barn.

Discussion and conclusions:

33. During the survey period no bats were seen in the barn or other outbuildings.

34. No bats were seen emerging from the barn or other outbuildings.

35. No bats were seen to return to the barn or other outbuildings.

36. There was no evidence of past bat use of the barn or other outbuildings.

37. The grounds in which the barn is situated are used by Common Pipistrelle and Serotine for foraging. Common Pipistrelle also fly across the site to access further foraging habitats outside the survey area. It is suspected that at least two Serotine bats were using cavities in the Walnut tree as a summer roost. They may not be present during the winter and may find an alternative winter roost.

38. Serotine bats are rarely found in trees, further surveys should be made to confirm presence during the spring of 2014. Serotine bats are not widely distributed in the County of Herefordshire but are known to be present.

39. The results of the survey show that, during the survey period the barn was not being used by any species of bat as either a foraging or roosting site.

Recommendations:

40. Timing of any works permitted on the barn, outbuildings or walnut tree must take account of the requirements for different species. Birds will usually nest between April and August. The results of the current survey suggest that bats are not using the barn or outbuildings and so roof removal may be a simple option in further preventing bat or bird roosting/nesting subject to permitted consents being granted if required.

41. Should there be a requirement to remove the Walnut tree it is recommended that further surveys for bats are made during spring of 2014 to confirm/deny bat presence. Specialist bat surveyors licensed to use invasive methods may be able to clarify whether the tree is currently in use as a hibernation site. Such a survey may be dependent on planning consents being in place and an agreed mitigation strategy for bats having been prepared. This may require detailed and more extensive surveys of the area.

42. Retention of the Walnut tree on site and the inclusion of "Bat tiles" or ridge tiles or block-work that allows access to attic /cavity wall areas of a new development may supply suitable habitat for any bats with hibernation requirements on the survey site. Serotine bats are not commonly found in tree roosts and provision for a suitable roost

within the non-habitable areas of a building may aid the spread of distribution of a species that is not known to be common in the area.

43. Removal of shrub and coarse "weeds" from the area immediately to the north of the barn may be advisable during winter months to make this area less favourable as a sheltering/foraging area for reptiles and amphibians. Retention of the compost heap should be left until ambient temperatures are above 12°C and then the heap should be re-located away from the development area. This will ensure that any amphibians present will have moved off to the ponds and any slow-worms will be active enough to forage and find shelter without risk of disturbance during cold weather when survival rates are low due to the lack of available invertebrate prey.

References:

Macdonald, D. & Barrett, P., **1993** Mammals of Britain and Europe 5th Edition. Collins.

Mitchell-Jones, A. J. & McLeish A. P., (editors). **2004**, Bat Workers Manual 3rd Edition. JNCC.

Addendum to Shelwick Old Farmhouse Preliminary Ecological Survey Report. November 2013.

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Mitigation for bats at the site can be managed by careful seasonal monitoring.

Further surveys during April of 2014 will identify whether the bats are still using the Walnut tree as a roost. In such circumstances, artificial bat roosts can be positioned around the property with planned bat roosts/access points incorporated into the new build.

The "best case " scenario is that no bats are found during the surveys. In which case it is advised that a suitably qualified arboreal consultant is employed to remove the tree in sections with supervision from a licensed bat ecologist.

The "worst case" scenario is that the tree is still in use by bats and may involve a more involved mitigation and compensation strategy (including prior erection of species specific bat refuges) and supervised removal of the tree subject to the granting of a Natural England, European Protected Species Licence.

Note 1. the granting of a licence is not guaranteed on development sites unless the provision of "Over-riding Public Interest" can be satisfied.

Note 2. The precise species of bat recorded on site is still being analysed by a number of highly experienced and qualified licensed bat ecologists. There are some anomalies and overlaps in the call and flight characteristics that make positive identification between suspected Serotine (not usually a tree roosting bat) and Noctule (a tree roosting bat) difficult. The species of bat present will not necessarily have any influence on the grant of a licence should one be sought.

Generally, Serotine bats can be compensated for by the inclusion of artificial roost sites within a new build.

Noctule bats may be compensated for by the provision of bat roost boxes on the exterior of a building and/or tree.