REPORT ON A SECOND BAT AND BARN OWL SURVEY AT WALKERS BARN, MILES KNOLL, NR WATERHOUSES, STAFFORDSHIRE

December 2013

Ecotrack Limited, 10 Carlton Road, Witton Park, Northwich, Cheshire, CW9 5PR
Tel/Fax: 01606 41581 Mobile: 07946 873 865
Email: mikefreeman@ecotrack.wanadoo.co.uk

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1.0 INTRODUCTION

1.1 A bat and barn owl survey was conducted in May 2009 at a field barn called Walker's Barn, Miles Knoll, Nr Waterhouses, Staffordshire.

1.2 Plans are proposed to convert the barn into a holiday let.

1.3 During the May 2009 survey no evidence was found either during the daytime or evening survey to suggest that bats or barn owls used, or had ever used, the barn for roosting or nesting purposes respectively.

1.4 However, no development of the barn has taken place over the last 3½ years and the bat and owl survey previously undertaken is considered out of date.

1.5 In view of this an updated survey was requested to check for any changes in status of the site regarding these two protected species.

1.6 This report details the findings of a survey carried out in December 2012.

Site Description

1.7 The barn lies close to the A523 Leek to Ashbourne Road at the grid reference SK 10460 48810.

1.8 The site is a stone built two-storey field barn with a tile roof.

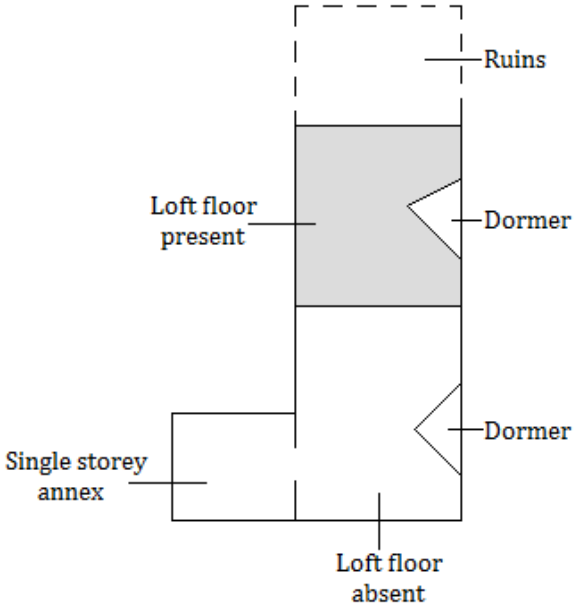
1.9 The roof has two dormers which were put in place about 13 years ago when the barn was re-roofed.

1.10 The two-storey area has its roof lined with breathable roofing felt, but the small single storey area at the rear as no roof lining.

1.11 Internally the barn is divided into two by a stone wall but with access between the two via a void at loft height.

1.12 One half of the roof has the remains of a concrete covered loft floor. The other half has the loft floor missing and is open to the roof.

1.13 There is a 'ruined' section attached at the side of the barn that has no roof and only remnants of walls.



Simplified diagram of field barn

1.14 Most of the windows are ‘boarded’ over with corrugated metal sheets. There is no glass in the windows.


1.15 There are two doorways at ground level but no actual doors fitted.

1.16 The gables of the roof have parapets and there are some tiles missing on one area of the roof.


1.17 The ridges appear to have few gaps when viewed from below.

1.18 Internally, there are some breeze-block repairs to the internal side of the solid stone gable walls and dormers.

1.19 The ‘dormer’ areas and roof generally have relatively new timbers (13 years old) and there are no cavities, shrunken mortise joints, slots, peg holes etc in the internal roof timber work.

1.20 There are gaps, however, in all the lintels including the newer ones above the ‘dormers’, windows, doorways etc.


1.21 The old solid stone internal walls have an abundance of deep cracks and crevices.


Surrounding Habitat

1.22 The barn lies around 900ft above sea level.

1.23 The building stands alone in a field surrounded by high pasture used for stock grazing. There are few hedgerows and dry stone walls and wire fences mark field boundaries in the main.



1.24 The site has a very open aspect taking the full brunt of any wind and rain as it stands unsheltered high on a hill. It is considered sub optimal habitat for bats. There is an adjacent metal clad barn in a poor state of repair.



Aims of the survey

1.25 To ascertain if bats or barn owls have used the site since the last survey (May 2009) for roosting or nesting purposes respectively.

1.26 To recommend any further actions necessary as a result of the survey findings.

Surveyor details

1.27 The survey was conducted by Mike Freeman. He is a professional wildlife consultant specialising in bats, badgers and birds. He has been a licensed bat worker since 1984 and a licensed bat worker trainer since 1989 (Licence

No. 20114812). He has been chairman of the Cheshire Bat Group since its formation in 1986 and is a voluntary Bat Warden for Natural England. He is an Associate member of the Institute of Ecology and Environmental Management (AIEEM).

2.0 LEGAL PROTECTION FOR BATS

2.1 All UK bats and their roosts are protected by law which gives strong legal protection to all bat species and their roosts. For all countries in the UK the legal protection maybe **summarised** as follows:

You will be committing a criminal offence if you:

1. Deliberately* capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost even if bats are not present at the time

**In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will most likely have).*

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Penalties on conviction – the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

NB Whilst the protection afforded to bats is virtually the same in all UK countries please refer to the specific legislation for England and Wales, Scotland and Northern Ireland for the precise wording – the above is a brief summary only.

Licensing Procedures

Licences to permit illegal activities relating to bats and their roost sites can be issued for specific purposes by the relevant licensing authorities in each country. These are sometimes called 'derogation licences' or 'European Protected Species' licences. It is an offence not to comply with the terms and conditions of a derogation licence. If you carry out work affecting bats or roosts without a licence, you will be breaking the law.

In the case of development works 3 tests must all be satisfied before the relevant licensing authority can issue a licence:

1. A licence MAY be granted *'to preserve 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'.*
2. A licence may NOT be granted UNLESS the licensing authority is satisfied *'that there is no satisfactory alternative'.*
3. A licence CANNOT BE ISSUED unless the licensing authority is satisfied that the action proposed *'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.*

2.2 The following people need to take particular note of the legislation:

- Property owners/householders who have a bat roost in their property
- Woodland owners/managers, and owners of individual trees
- Arboriculturalists and foresters
- Pest controllers
- Planning officers
- Building surveyors
- Architects
- Property developers
- Demolition companies
- Builders
- Roofers
- Ecological consultants

3.0 LEGAL PROTECTION FOR OWLS

3.1 All species of wild bird, their nests and eggs are protected under the Wildlife and Countryside Act 1981(as amended) and, amongst other things, it is an offence to, with certain exceptions, intentionally or recklessly:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

3.2 Additionally, under the provision of the Wildlife and Countryside Act 1981(as amended) the Barn Owl (*Tyto alba*) is listed in Schedule 1 – Part 1 of the Act and is protected by special penalties AT ALL TIMES. **In addition to** the protection afforded in paragraph 3.1 above it is also an offence to disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

4.0 BATS IN BUILDINGS

4.1 Buildings provide a choice of safe, dry places made from materials like timbers, bricks, stone, tiles and slates.

4.2 Buildings present a whole range of potential roost sites for bats e.g.: -
In walls:

- Behind external hanging tiles or weatherboarding
- In cavity spaces
- At top of solid walls

In eaves:

- Above soffit, or behind fascia and barge boarding

In roofs:

- In tunnel under ridge tiles
- Between underfelt and tiles or slates
- In roof space along ridge beam and at timber joints, at gable end or around chimneybreast.

4.3 The most obvious use of buildings by bats is between May and August, when the pregnant females gather in maternity roosts to give birth and raise their young.

4.4 Females and young often remain in one site all summer or move about using several roosts.

4.5 Most summer colonies will have dispersed by the autumn, though brown long-eared bats often appear early in the year (early April) and leave later (October or later). These bats occasionally use the roost throughout the entire year.

4.6 Buildings may also be used as temporary or “transitional roosts” by small numbers of adult and immature bats of both sexes, particularly in spring and autumn.

4.7 Many outbuildings are attractive to bats for temporary night-time roosts or as sheltered feeding perches. The latter are indicated by the presence of a lot of insect remains, particularly of moths or large beetles and some droppings.

4.8 Cool, undisturbed, humid places are important as hibernation sites. Most species will tuck themselves into small crevices e.g. between bricks/stonework, and can easily pass the winter there unnoticed.

4.9 Bats are usually concealed in crevices, behind roofing felt, in cavity walls, behind soffits and barge boards, in old timber joints or under ridge tiles and are only occasionally seen out in the open in lofts. Consequently, the key identification feature is the presence of droppings. Sometimes droppings may be found on the outside of buildings e.g. on windows, walls or windowsills. On other occasion’s droppings found in loft spaces beneath ridge-boards and around chimneys or gable ends is also typical of bats. Hibernating bats leave little or no field signs.

4.10 Bats are sometimes drawn to open water tanks in lofts in search of a drink. They fall into the tank, can’t get out and eventually drown. Dead bats are often found in these ‘open’ tanks in roof spaces where bats habituate.

4.11 Another clue to the presence of bats is a characteristic odour. A polished or clean surface near a place where light enters may also indicate habitual usage by bats. Sometimes bats can be heard “chittering” but this is usually in warm summer weather or when they are about to leave the roost to forage at dusk.

4.12 The species most commonly occurring in buildings (usually modern houses in summer) are the two pipistrelle species (*Pipistrellus pipistrellus, Pipistrellus pygmaeus*). These highly gregarious small bats use buildings for breeding during the summer and, in general, the bats disperse during the autumn. They often roost behind soffits, in cavity walls or behind external cladding. In such cases droppings are often found on external surfaces below the roost entrance/exit. The most likely place to find droppings in the roof void are at the gable end wall and along the eaves. In some cases, the bats may roost beneath ridge tiles, on top of the ridge beam or under insulation close to the eaves. Pipistrelles are frequently found overwintering deep in the cracks, crevices and cavities of usually uninhabited buildings (e.g. barns) and in such cases they leave little or no field signs.

4.13 The brown long-eared bat (*Plecotus auritus*) is the second most common species in Britain but is the one most likely to be encountered in roof voids and may occasionally be seen clinging on to timbers near the apex of the roof. Like the pipistrelle, highest numbers may be seen on hot days between June and September when breeding colonies may be present. During the autumn and in cool weather, bats remain concealed in crevices or hollow walls but may appear on mild days or if disturbed. Brown long-eared bats tend to fly around in the open roof void and hang from the ridge during the night, so droppings are usually found scattered over the floor or concentrated in piles beneath favoured roosting areas, typically beneath the ridge beam. In hipped roofs, piles of droppings may also be found in the junction between two hips.

4.14 A number of other species - serotine (*Eptesicus serotinus*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) are dependent on roofs but are not found locally in the area.

4.15 Whiskered (*Myotis mystacinus*), Brandt’s (*Myotis brandtii*), Natterer’s (*Myotis nattereri)* and Daubenton’s (*Myotis daubentonii*) bats may be present in the area and may be found in roofs but they are not particularly common in such sites. Roosting position is variable but they will be found in the same sorts of places as other species.

4.16 There are six different types of bat roost (A M HUTSON 1993)

(i) Spring gathering roosts
(ii) Maternity roosts
(iii) Mating roosts
(iv) Night roosts and feeding roosts
(v) Prehibernal roosts
(vi) Hibernation roosts

Bats regularly move from site to site even within the above categories.

5.0 OWLS IN BUILDINGS

5.1 There are 5 species of owl resident in the UK. However, only the tawny owl (*Strix aluco*) barn owl (*Tyto alba*) and little owl (*Athene noctua*) use buildings for nesting.

5.2 Owls, in common with other birds of prey, gulls, crows and others, disgorge "pellets" consisting of indigestible food material like bones and fur. When dry, owl pellets are usually grey and it is characteristic that they always contain well-preserved remains of the prey's bones. Pellets are a characteristic field-sign of the presence of roosting or nesting owls and the size, shape, structure and contents of pellets are an aid in determining the species.

Barn owls

5.3 Barn owls in particular will usually use several sites in their home range with this usage falling into 3 main categories:

- roosting and breeding
- roosting only
- visiting occasionally

5.4 The main field signs to look for when searching for barn owls are:-

- Droppings - These appear as large white splashes (known as 'wash') on hard surfaces or smaller white patches on vegetation.

- Pellets - These are the remains of indigestible parts of their food that has been regurgitated. When fresh, barn owl pellets are moist, black and glossy and vary from thumb nail to whole thumb size. With age they become greyer and dry

- Feathers - The largest and most noticeable wing feathers are normally shed during May-October for females and July-November for males. Barn owl feathers are very distinctive and those from a female are generally darker and/or more heavily marked than those from a male.

5.5 Barn owls do not build nests or carry nesting materials.

6.0 METHODOLOGY

6.1 The barn was searched during daylight hours for evidence of bat and barn owl usage as detailed in Sections 4.0 and 5.0 above.

6.2 Ladders, a powerful hand lamp and a fibre optic endoscope were used as aids.

7.0 TIMING OF THE SURVEY

7.1 The survey was conducted on the 4th December 2012.

7.2 The weather was frequent heavy rain/sleet showers in the morning but drier and brighter in the afternoon. The temperature on site was around 3° C.

8.0 LIMITATIONS OF THE SURVEY

8.1 This was a daytime survey only. No evening emergence and/or dawn re-entry surveys were conducted due to the time of year. In December bats are usually in hibernation made and nightly activity becomes very sporadic, unpredictable and highly weather dependent. Usually they spend the day and nights in torpor.

8.2 However, any evidence of activity in the previous months should have been apparent for both bats and barn owls if roosting had been significant. Residual evidence of previous occupation should have remained undisturbed.

8.3 Additionally, surveying in December allows a check to be made for hibernating bats. Bats, particularly pipistrelles, often hibernate in holes and gaps in the brick/stone walls of barns. When in hibernation they leave little field evidence to indicate their presence.

8.4 In this case surveys have been conducted in May (2009) and December (2012) covering both summer and winter potential roosting.

9.0 RESULTS

9.1 No evidence of bat or barn owl usage was found anywhere in the barn.

9.2 For bats, special emphasis was placed on searching cracks and holes in walls, in lintels, around window and doors, behind woodwork. These are common sites to find hibernating bats. No bats were seen in these places though the stone walls were thick and 'rubble' filled making it difficult to check all deep cavities even with an endoscope.

9.3 No evidence of barn owl usage was found in the barn and this is often much easier to locate if present.

9.4 There was evidence of significant use of the barn in summer by nesting barn swallows *(Hirundo rustica).* A number of pairs had obviously nested throughout the barn during the 2012 season and in previous years.


10.0 CONCLUSIONS

10.1 Whilst the barn does offer physical roosting sites for bats it is isolated from suitable trees, hedgerows and other linear landscapes and exposed to the weather. This makes the site less attractive to bats for significant roosting.

10.2 The lack of evidence of usage is likely to be a result of the above rather than the unfavourable structure of the building.

10.3 Barn owls have access into the building but nesting sites are limited to part of the loft floor only. However, barn owls generally breed at very low altitude in the UK and though a small proportion can be found in upland regions barn owls are more transitory here. Studies have shown that, in altitudinal terms, 150m appears to be close to the upper limit of habitat suitability in the UK. Obviously this particular site is at a height well above this (almost twice as much in fact).

11.0 IMPLICATIONS AND RECOMMENDATIONS

11.1 As no evidence of bat usage was found and the potential for bat roosting was considered low a Natural England licence is not required at the moment.

11.2 Bats often change their roost sites depending on a number of factors (e.g. weather, disturbance, parasite build up) and single or small numbers of bats can be undiscovered particularly if roosting deep in walls under ridge tiles or roof slates/tiles.

11.3 Should a roost be subsequently found then the situation will change and a licence required.

11.4 As a precaution, if roof tiles and ridges are to be removed this should be done carefully by hand always mindful that there may be a bat underneath. In the unlikely event that bats are found during building operations, work must cease immediately in that area, the bats left alone and a bat consultant contacted for advice.

11.5 Bats should not be handled if at all avoidable. If handling is the only option (unlikely) then thick leather gloves should be worn to avoid being bitten.

11.6 There are no known implications for barn owls.

Barn Swallows

11.7 Barn swallows use the building for nesting. It should be noted that the barn swallow is an Amber-listed bird species as designated in Birds of Conservation Concern 3 (2009) published jointly by the UK's leading bird conservation organisations .

11.8 Amber-listed species are those with an unfavourable conservation status in the UK and Europe, those with a population or range that has declined moderately in recent years, those with a population that has declined historically but made a substantial recovery, rare breeding birds and those with internationally important or localised populations.

11.9 The loss of breeding sites for this species are therefore of conservation concern.

11.10 Barn swallows are summer visitors (mainly April – October) to Britain.

11.11 Nesting on beams in barns is common. Egg laying is usually in early or mid May. Incubation lasts 11 – 19 days and the fledging period is 18 – 23 days. Two broods are normal, three occasionally. Young may still be in the nest in September. Where possible, building works should be arranged to avoid disturbance to swallows when nest building and rearing their young.