



Barn at Shornhill Farm, Withington, GL54 4BJ

Dusk Emergence Survey for Bats



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The results of the survey and assessment work undertaken by All Ecology are representative at the time of surveying.

Every endeavour has been made to identify the presence of protected species on site, where this falls within the agreed scope of works.

The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on-site.

All Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

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Reference to sections or particular paragraphs of this document taken out of context may lead to misrepresentation.

Summary

In May 2022, All Ecology Ltd was commissioned to undertake a dusk emergence survey of two connected barn buildings with attached lean-tos at Shornhill Farm, Withington, GL54 4BJ. The buildings are surrounded by areas of bare ground, grass, scrub and hard standing and the site is bound by fencing, hedges and overhanging trees. The local area consists of woodland, arable and grassland fields.

The proposals for the site are to convert the barns to a dwelling with the immediate surrounding areas to be re-landscaped to new garden.

A previous inspection survey of the building found it offered potential roosting features of low potential that could not be fully inspected. A dusk emergence survey was required to give confidence in a negative result.

The dusk emergence survey did not record any emerging bats and it is concluded that they are absent from the building.

Suggestions for enhancements are given.

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1.0 Introduction

Background

- 1.1 In May 2022, All Ecology Ltd was commissioned to undertake a dusk emergence survey of two connected barn buildings with attached lean-tos at Shornhill Farm, Withington, GL54 4BJ. The buildings are surrounded by areas of bare ground, grass, scrub and hard standing and the site is bound by fencing, hedges and overhanging trees. The local area consists of woodland, arable and grassland fields.
- 1.2 The proposals for the site are to convert the barns to a dwelling with the immediate surrounding areas to be re-landscaped to new garden.
- 1.3 A previous inspection survey of the buildings was carried out by All Ecology in March 2022. This found a small gap behind the timber fascia boards of Section A which led to a small wall cavity between the exterior concrete block walls and interior walls that could be used by crevice-dwelling species. Sections B and D had gaps along the bottom of the corrugated roofing which provide potential access to the roof voids of Section B and the small void between the corrugated roof and timber sarking boards of Section D. Although this roofing material is not optimal for roosting bats, the roof voids of Section B may be utilised by roosting bats. The building was deemed to have **low potential for roosting bats**.
- 1.4 In accordance with Bat Conservation Trust Good Practice Guidelines (2016), buildings with low potential for roosting bats should be subject to a dusk emergence survey between May – September inclusive to determine the presence or likely absence of roosting bats.

Objectives and Aim

- 1.5 The main objectives and aim of the survey were to establish the following:
 - Presence/absence of bat roosts.
 - Status of roosts if present.
 - Whether a European Protected Species (EPS) licence is required to ensure legal compliance.
 - Which type of mitigation measures would need to be employed.

Site Location & Aerial Photograph



Figure 1: Site location plan.

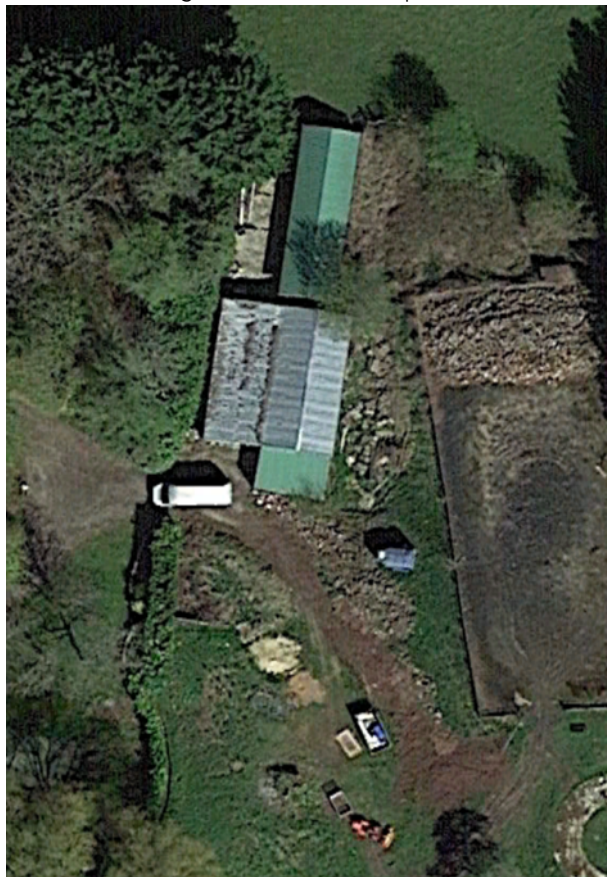


Figure 2: Aerial view of the site.

2.0 Legislation and Status

Bats

- 2.1 All species of bat are listed on Schedule 5 of The Wildlife and Countryside Act (1981) and as such receive protection under Section 9 of this Act. This has been amended several times, most recently by the Countryside and Rights of Way Act 2000, which added 'or recklessly' to Section 9(4) (a) and (b). In summary, it is a criminal offence to:
- Intentionally kill, injure or take a wild bat.
 - Be in possession of, or control, any live or dead wild bat or part of, or anything derived from a wild bat.
 - Intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection.
 - Intentionally or recklessly disturb any wild bat whilst it is occupying a structure or place that it uses for shelter or protection.
 - Transport for sale or exchange, or offer for sale or exchange, a live or dead bat or any part of a bat.
- 2.2 The Conservation of Habitats and Species Regulations 2010, consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is an offence to possess, sell or offer or transport for sale any European species of bat or any part derived from such a species. These Regulations also remove the 'incidental result defence'. In other words, it is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity. Natural England can grant European Protected Species (EPS) licenses in respect of development to permit activities that would otherwise be unlawful.
- 2.3 Under Section 40 of the Natural Environment and Rural Communities Act (2006) public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List, all of which make up the UK BAP Priority Species. This list forms the basis of the UK Biodiversity Framework, and in England, Biodiversity 2020: A strategy for England's wildlife and ecosystem services (Defra, 2011). Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority when applying the requirements of the National Planning Policy Framework (NPPF) to maintain, restore and enhance species and habitats.
- 2.4 Seven bat species are NERC Priority Species (JNCC, 2007). These are:
- Barbastelle *Barbastella barbastellus*
 - Bechstein's *Myotis bechsteinii*
 - Noctule *Nyctalus noctula*

- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Brown Long-eared *Plecotus auritus*
- Greater Horseshoe *Rhinolophus ferrumequinum*
- Lesser Horseshoe *Rhinolophus hipposideros*

2.5 Greater Horseshoe, Lesser Horseshoe, Barbastelle and Bechstein's, are afforded greater protection under European legislation, being listed under Annex II of the EC Habitats Directive which lists species whose conservation requires the designation of Special Areas of Conservation (SACs).

3.0 Methodology

Personnel

- 3.1 The survey was carried out by Laura Cuming BSc Hons MCIEEM, an ecologist with over seven years' experience working as a consultant who holds a Class 2 Bat Licence (all species, all counties, Class Licence Registration No. 2017-32855-CLS-CLS). The work was overseen by James Godbeer BSc Hons MCIEEM, an ecologist with over 15 years' experience working as a consultant. James has extensive experience of managing environmental contracts, and particular experience in surveying, assessment and mitigation for rare and protected species. He has considerable knowledge of the development and planning process including Ecological Impact Assessments, sustainable ecological design and he has completed ecology chapters of Environmental Statements. James holds a number of protected species licences including bats (all species, all counties, Class Licence Registration No. 2015-12313-CLS-CLS), and Great Crested Newts (Class Licence Registration No. 2019-44282-CLS-CLS). He has successfully obtained European Protected Species mitigation licences for a number of bat species including Lesser Horseshoe, Greater Horseshoe, Serotine, Brown Long-eared, Common Pipistrelle and Natterer's bats, for a number of roost types including maternity and hibernation sites.

Dusk Emergence Survey

- 3.2 The building was subject to a dusk emergence survey on the 25th May 2022. In order to adequately cover the building, two surveyor positions were used.
- 3.3 In accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd Ed (Collins, 2016), dusk surveys should begin 15 minutes before sunrise and continue for 1.5 – 2 hours after sunset with the survey start time adjusted on subsequent surveys or a repeat of the survey should bats already be in flight at 15 minutes before sunset. The dusk survey therefore began 30 minutes before sunset to avoid the risk of having to repeat the survey as species such as pipistrelles will often emerge well before sunset.

Equipment

- 3.4 Surveyors were equipped with Echo Meter Touch 2 Pro bat detectors. Registrations were recorded on the devices and notes were made on species recorded, behaviour, time of registration, location and direction of flight where possible, including incidental observations from surrounding habitats. All identifications were made on site and it was not necessary to analyse audio recordings using Wildlife Acoustics' Kaleidoscope software.

Assessment

- 3.5 The surveyed building has been evaluated to assess which of the following categories it falls into, if any (Mitchell-Jones, 2004 & Collins, 2016):
- **Transitional roost** (April-September/October) - On waking from hibernation or in the period prior to hibernation, bats search for roosts in which they stay for only a few days or on some occasions several weeks. These transitional roosts can be occupied by a few individuals or occasionally small groups. The transitional roosts used prior to hibernation

are generally cool and thus may allow bats to reduce their energy requirements before going into hibernation.

- **Maternity roost** (May-August) - Breeding females gather together around the beginning of May to form nursery colonies. During this period gestation begins with births typically occurring between June and July. The females and their young remain within the maternity roost until the young are weaned and independent (late July-August). These roosts tend to break up between August and September. Adult males are rarely found within these colonies. However, the adult males of long-eared bats, Daubenton's, Natterer's, and horseshoe bats can be found roosting within maternity colonies with their numbers increasing throughout the active season.
- **Satellite roost** (May-August) - Breeding females may have alternative roost sites in close proximity to the main nursery colony. These are referred to as 'satellite roosts'. The numbers of bats using these roosts can vary greatly, from a few individuals, to small groups.
- **Mating roost** (September-November) - All British bats are polygynous i.e. males mate with several females. Mating generally takes place from late summer and can continue through the winter. A number of different mating strategies are used by bats, though males of some species establish mating roosts, whereby they defend territory and display/call to females to mate.
- **Hibernation roost** (October-March) - Depending on the weather and food availability, bats tend to move to hibernation sites from October. Hibernation roosts can vary greatly in terms of the number of individuals and the diversity of species that occupy them. However, they tend to have a constant cool temperature and high humidity, which allows the bats to use less energy regulating their temperature. Bats will wake occasionally during hibernation to drink and feed.
- **Night roost** (March-November) - Bats may use roosts other than traditional day roosting sites to rest in during the night. These roosts vary in their conservation significance. Night roosts may be used by a single individual on occasion or they could be used regularly by the whole colony. Studies have shown that night roosts may be of particular importance to some species i.e. the Lesser Horseshoe, providing key resting places within core foraging areas.
- **Day roost** (March-November) - These roosts are used during the day to rest in. Males of most British species spend the summer roosting alone or in small groups with other males in such roosts. Bats may regularly use a number of day roosts, switching between them on a daily basis, though conversely they may occupy the same roosting site for several weeks.
- **Feeding roost** (May-November) - These roosts can be occupied by a single animal or a few individuals throughout the active season. They vary in their significance as they may be used by the whole colony or just a few individuals to feed, to shelter from the weather or to rest temporarily. Feeding roosts are often used by long-eared and horseshoe species.
- **Other considerations, Swarming sites** - Swarming takes place between August and November, whereby large numbers of bats from several species gather, generally around caves and mines. They are often dominated by the *Myotis* species and appear to be

important mating sites with some bats travelling several kilometres to reach these areas. A proportion of the bats that travel to these sites will remain to hibernate.

Limitations

- 3.6 There were no limitations to carrying out the dusk emergence survey in accordance with the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd Ed (Collins, 2016).
- 3.7 The surveys only provide a 'snapshot' of the bat activity associated with the building and immediate surroundings and although the absence of a maternity roost can be determined with a high level of confidence as well as other roost types at the time of the surveys, it is possible that bats could roost at other times of the year.

4.0 Results

Dusk Emergence and Pre-dawn Re-entry Surveys

- 4.1 No bats were recorded emerging from, or entering the building during the survey.
- 4.2 Bat activity was low on site during the survey. During the dusk survey the following species were recorded foraging and or commuting over the course of the survey.

Table 1: Survey results for 25th May 2022 dusk survey.

Species	Times	No. Passes	Comments
Common Pipistrelle	21:22 – 22:11	8	Foraging passes to the south and east of the building with three foraging passes overhead of the building.
<i>Myotis</i> sp.	21:52 – 22:04	3	One foraging pass from west to east high over the building, at tree top height. Two passes heard but not seen.
Noctule	21:41 – 22:03	2	Two foraging passes heard but not seen.

Table 2: Weather conditions and sunset/sunrise times.

Date	Temperature (°C)	Sunset/Sunrise Times	Wind	Cloud Cover (%)
25/05/22 (dusk)	12	20:55	Light	60

5.0 Evaluation

Dusk Emergence and Pre-dawn Re-entry Surveys

- 5.1 No bats were recorded emerging from, or entering, the building during the survey and it is therefore concluded that roosting bats were absent from the building at the time of the survey. The presence of a maternity roost can be ruled out with a high level of confidence and although individual bats could roost at any time, the present surveys indicate general absence.
- 5.2 The majority of the activity recorded on and around the site was that of Common Pipistrelle, with a small number of foraging passes to the south and east of the building. There were also three foraging passes high overhead of the building, which were at adjacent tree top height. Pipistrelle bats are the most common species of bat in the UK with widespread distributions, most commonly found in England and Wales; Pipistrelle bats exploit a wide range of habitats (BCT, 2010).
- 5.3 The survey also recorded three foraging passes of *Myotis* sp., two of which were not seen and the other was recorded foraging high overhead at tree top height from west to east. Distribution of *Myotis* species is variable and species dependant. Daubenton's are found throughout the UK; Natterer's are also found across the UK, except northern Scotland, wherever there is suitable woodland; Whiskered/Brandt's bats are found throughout England, Wales, southern Scotland and parts of Northern Ireland although little is known about their individual distributions; Alcatheo bats have only been identified relatively recently due to their similarity to Whiskered/Brandt's and little is known about their distribution. Bechstein's have a limited distribution, only found in southern England, Shropshire and occasionally in Wales. These species typically forage and commute throughout the following habitats during the summer months (BCT, 2010a, 2010b, 2010c, 2010d, 2010e);
- Daubenton's – Hunts close to the surface of slow-moving or calm water. Will also forage in trees or along woodland rides, especially if these are associated with water.
 - Natterer's – Hunts in tree canopies or close to foliage and by edges of water although at a higher level than Daubenton's bat.
 - Whiskered/Brandt's (Alcatheo also similar) – Whiskered bats forage in a wide range of habitats including parkland, woodlands, flowing water and suburban gardens. Brandt's bat forage more in woodlands and close to water bodies.
 - Bechstein's – Forages in areas of closed-canopy woodland close to water. It will also forage along overgrown hedgerows and tree lines.
- 5.4 Taking into account the distributions and above preferred foraging and commuting habitats, the most likely species based on the habitats present are Natterer's. There are variations in the calls of *Myotis* bats but they are often very similar and dependent on the types of habitats being used. Calls within or close to cover and other cluttered environments can be particularly difficult to differentiate; sound analysis of the calls was inconclusive. The level of activity from this species was low during the survey with one seen flying from a tree covered area to the west over to an area of woodland to the east; the other two foraging passes were not seen. The one foraging pass seen during the survey indicates the site is of low importance to this species and in any case, the surrounding trees and woodland are to be retained and not subject to lighting.

- 5.5 Two Noctule passes were recorded during the survey. Noctules tend to feed over habitats rich in invertebrate fauna such as permanent pasture, woodland edge and hedgerows. It is still a relatively widespread species in much of England, Wales and to southwest Scotland, but has become scarce in some areas of intensive agriculture (BCT, 2010f). The number of registrations of this species is not considered to be notable and although the site may be a good source of invertebrates for this species, its habit of foraging overhead means the site is likely to be of low conservation significance for this species.
- 5.6 No other bats were recorded and there was no activity associated with the building as such. There was no indication that the site or adjacent areas were important commuting routes for any nearby roosts.

Site Status Assessment

- 5.7 No roosts have been identified on site. It is not possible to determine the value of the site for foraging and commuting bats based on a single dusk survey. However, based on the small size and nature of the site, it is unlikely that the site is important for any particular species of bat.
- 5.8 The habitats around the building, trees to the south and woodland further to the north provide good foraging habitats where a range of bat species could utilise these habitats. These habitats are to be retained and not subject to lighting so will continue to provide the same opportunities for bats in the future.

6.0 Impacts and Recommendations

Impacts

- 6.1 The proposals for the site are to convert the barns to a dwelling with the immediate surrounding areas to be re-landscaped to new garden.
- 6.2 In the absence of mitigation, the following impacts and potential impacts with regard to bats have been identified:
- Loss of features suitable for roosting bats; no roosts have been identified during the surveys.
 - Potential for disturbing bats that could roost at other times of the year or those that could begin roosting at any time.
 - Temporary/permanent disruption of areas of bat foraging habitat on site and the immediate surroundings through changes to the building layout and a potential increase/changes in external lighting.

Further Surveys

- 6.3 No further surveys are required at this time. Sufficient surveys have been carried out to satisfy the recommended survey effort and repeat surveys would not be required unless the proposals are delayed by one year or more.

Legal Compliance

- 6.4 The Wildlife and Countryside Act 1981 as amended by The CRoW Act 2000 and The Conservation of Habitats and Species Regulations 2010 makes it illegal to recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection, whether the bat is occupying the shelter at the time or not.
- 6.5 European Protected Species (EPS) Licences to permit the above for the purposes of development must be obtained from Natural England. To gain a licence the scheme must have been issued with detailed planning permission and must not result in a loss of conservation status of the species concerned. Based on the survey evidence presented in this report it has been concluded that roosting bats are likely to be absent and an **EPS Licence will not be required** to permit the works.

Mitigation

Timing of Works

- 6.6 There are no restrictions on the timing of works with respect to bats.

Care and Vigilance During Works

- 6.7 It should be noted although there was nothing to indicate the presence of roosts on site, it is possible that crevice-dwelling bats e.g. Common Pipistrelle, could be present at other times or

could begin roosting in crevices at any time. The contractor(s) should therefore be advised to carry out all work with care and vigilance for bats.

6.8 During the conversion works the contractor should be advised to adhere to the following procedures in the unlikely event bats are found during works:

- If the roost is still in the structure and bats are not injured, stop work and contact a licensed ecologist. If help is not available, allow bats to fly out of harm's way.
- If material containing a roost has been removed, the roost is not exposed and the bats are not injured, temporarily seal and isolate the roost, stop work and seek advice from a licensed ecologist. If advice is not readily available, re-open it and allow bats to relocate of their own accord.
- If the roost has been exposed, and especially if bats have been injured, stop work, collect bats in a secure box or bag (using a glove) and contact a licensed ecologist

Habitat Creation

6.9 No roosting bats were recorded during the survey. No specific provision for roosting bats is required but the following is suggested in line with best practice and the local planning authority will usually expect to see some enhancements included. There are many ways that the buildings could be enhanced for crevice-dwelling bat species without inconveniencing prospective occupants or any significant design considerations. Bat panels such as Schwegler Bat Access Panel 1FE, or bat tubes such as the Schwegler 1FR Bat Tube can be incorporated into the building exteriors with little visual impact, or roosts such as the Schwegler Bat Shelter can be erected after building completion.

Lighting

6.10 Pipistrelles are very tolerant of increased light levels but *Myotis* sp are less tolerant of light and it is possible that other species that are more susceptible to disturbance from lighting, forage on or around the site at other times. It has been concluded that the site is unlikely to be important for bats but habitats to the east and west may be utilized by a range of bat species and nevertheless it is recommended that external lighting be kept to minimum in order to minimise disturbance of bats. Any lighting around new roost entrances, if provided, should be avoided. Where lighting is necessary for reasons of security and/or health and safety, highly directional warm white LED lighting, an example being down spots at 2.5 m high using warm white (2700 K) 8W LED lamps, 550 lumens, 35 degree beam angle, should be used. These could be individually activated by PIR sensors on a 5 minute cut off to further reduce their impacts. These will assist in lighting only the areas where lighting is required and minimising light spill either directly or through reflected light. The trees to the west of the site and woodland further east of the site must not be subject to lighting.

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8.0 Plans

Plan 1 – Survey Results

