

BAT SURVEY 2020
BARNS AT HOME FARMHOUSE
BAGENDON, GLOUCESTERSHIRE

CTM WILDLIFE

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CTM WILDLIFE**BAT SURVEY 2020****BARNS AT HOME FARMHOUSE
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<u>Version</u>	<u>Purpose</u>	<u>Date</u>
V1.0	Conversion of barns for residential use	6 th December 2020
V2.0	Typographic corrections	11 th December 2020

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This report assesses the ecological impact of the proposal based on wildlife legislation and planning policy. It is an independent assessment and not a statement of support or otherwise to the proposal for the site.

Disclaimer: While all reasonable effort has been made to ensure that the following information is correct and up to date it should not be relied upon as a definitive guide to wildlife and wildlife law. The exact requirements and habits of wildlife can vary and not be fully understood. Surveys and assessments can be restricted snap shots in time and space. Any conclusions and recommendations are made here in good faith. Also, the implementation of law can vary. Those needing to limit impacts and their risk should consult the original legislation and/or a lawyer conversant with wildlife law.

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BAT SURVEY 2020

BARNs AT HOME FARMHOUSE BAGENDON, GLOUCESTERSHIRE

EXECUTIVE SUMMARY

A daytime and three night-time bat surveys were undertaken at the barns in August and September 2020.

High barn

- Common pipistrelle ‘day roost’ (droppings only)
- Whiskered bat ‘day roost’ (2 bats).

Low barn

- Brandt’s bat ‘day roost’ (1 bat)
- Long-eared bat ‘day roost’ (2 bats) (almost certainly brown long-eared bats).

These are non-breeding roosts and the bats roost inside the barns.

Bats and their roosts are protected by law and are a material consideration for the conversion of the barns for residential use.

Guidance on measures to avoid harm to bats and to recreate roosting places for them during the conversion of the barns is given in Section 5.3 of this report.

The work will need to be carried out under the auspices of a bat mitigation licence(s) issued by Natural England. Guidance is given in Section 5.4

1. INTRODUCTION

Home Farmhouse is in the small rural Cotswolds village of Bagendon. The surveyed barns are two stone buildings in a yard next to some paddocks.

It is understood that the owner plans to complete an earlier planning permission to convert the barns for residential use.

The client requested this bat survey in order to inform the conversion due to the potential presence of bats.

2. OBJECTIVES/SCOPE

- *To assess the status of bats at the buildings*
- *To determine any implications to the proposed work.*

Figure 1. Location – grid reference SP 0070 0671



3. METHODOLOGY

3.1 Personnel

The survey was carried out by Colin Menendez BSc (Hons) MCIEEM CEnv, who has 30+ years' experience as a professional ecologist, 20+ years' experience carrying out development-related bat surveys, his Natural England survey licences include a Class 2 licence for bats and he is a Registered Consultant with a Bat Low Impact Class Licence & Bats in Churches Class Licence. He also holds a licence to survey barn owls.

3.2 Historical information

A daytime survey of the barns was undertaken by Richard Tofts Ecology in 2003. Full day and night-time surveys were undertaken nearby at Home Farmhouse by CTM Wildlife in 2015 and 2017. The Government's MAGIC website has been checked for additional information.

3.3 Day survey

A standard day-time survey was undertaken on 23rd August 2020. This was a systematic search, inside and outside the barns, for bats, potential roosts and for signs of bats, such as the presence of bat droppings, urine drops and feeding remains, and staining and droppings at any crevices. Equipment: high-powered torch, ladder and close-focusing binoculars. Conditions: dry, patchy cloud, light breeze and warm 17°C. The barns were checked for fresh droppings before each night survey.

3.4 Night surveys

Survey 1 – a standard dusk emergence survey following the daytime search on 23rd August 2020. The surveyor was positioned in the yard overlooking and into both outbuildings. Equipment: BatBox Duet bat detector, and Anabat SD1 and Anabat Express x2 recorders with one set in each outbuilding and one outside. Conditions: dry, patchy cloud, light breeze and warm – mild 17 – 14°C.

Survey 2 – a standard dusk emergence survey on 26th August 2020. The surveyor was positioned to view both outbuildings from another viewpoint on the edge of the yard. Equipment: BatBox Duet and BatBox IIID (set at 108 KHz) bat detectors, and Anabat SD1 and Anabat Express x2 recorders with one set in each building and one outside. Conditions: dry, patchy cloud and warm 17 - 15°C.

Survey 3 – a standard dusk emergence survey on 9th September 2020. The surveyor was positioned back in the yard. Equipment: BatBox Duet bat detector, and Anabat SD1 and Anabat Express x2 recorders with one in each building and one outside. Conditions: dry, clear sky, calm and warm - mild 16 – 14°C.

3.5 Constraints

The inspection of structures as bat roosts can be problematic. Roosting places can be unseen and bats can roost in crevices *etc.* with no or few outward signs of their presence. There are inherent constraints in night-time bat surveys due to the varied behaviour of bats between roosts and nights, and the difficulties in locating the source of bats in flight in the dark.

The surveys were in the later part of the summer, with three surveys somewhat close together, but within the good practice guidelines of two before the end of September. However, it is a relatively small site with views into the open and little used buildings, and the experienced licensed ecologist is familiar with the location and its bats, having previously surveyed Home Farmhouse and other nearby properties, and there was a prior survey at the barns in 2003 that more-or-less concurs with the current findings. The surveyor is satisfied that an accurate survey and assessment was able to be undertaken.

4. RESULTS

4.1 Historic information

The survey of the barns in 2003 concluded that there was limited potential for bat roosts and that a few individual long-eared bat droppings found inside were from casual bat access.

The surveys of Home Farmhouse in 2015 and 2017 identified small numbers of the following non-breeding bats roosting: brown long-eared bat, common pipistrelle, soprano pipistrelle and lesser horseshoe bat (a night roost). This is at the top of a banked paddock 70 m from the barns.

There is one EPS bat mitigation licence shown on magic.gov.uk within 2 km, which relates to works to Home Farmhouse in 2016 and the above species (except the horseshoe bat roost that was not affected). The client has reported that bats continue to use the farmhouse.

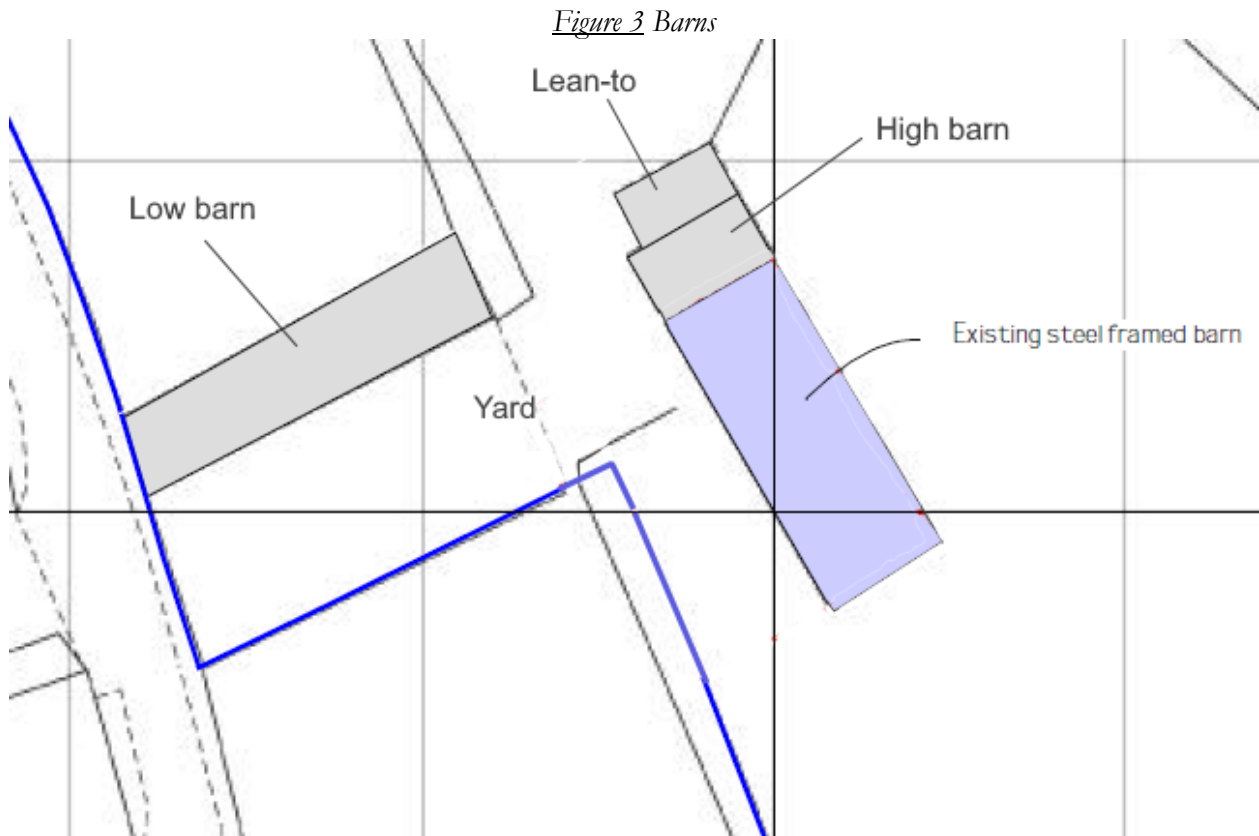
4.2 Setting

Bagendon consists of dispersed dwellings on the slopes and bottom of a small valley within the Cotswolds. The habitat is dominated by horse paddocks, parkland and a small stream along the valley bottom, and further afield arable farmland. There is woodland close-by to the south. It is an unlit village. The surveyed outbuildings are on the valley bottom next to the stream.

Figure 2 Setting



4.3 Barns – day survey



The existing steel-framed barn is not part of the scheme.

4.3.1 High barn

This is an open-fronted Cotswolds stone building that looks to have been a former cart shed with a hay loft above. The loft floor is missing and the building is now a single open space inside from floor to roof. The walls are mortared Cotswolds stone and in good condition. There is an open cart entrance, open window above and open loft door on the side. There are timber lintels above these openings. It is light and airy in the building. The roof is corrugated sheets sitting on old sawn purlins on what looks to be older original main rafters. The roof frame joints were tight. The roof is loose-fitting at the verges and eaves. To the side is an open lean-to with a corrugated sheet roof. There is an exterior light.

Potential bat roosting places are (1) gaps at the roof underside between parallel timbers along the ridge and (2) gaps at the timber lintels. It is too light and airy for daytime use by perching or free-hanging bats in the open.

There was a small aggregation of half a dozen bat droppings on items stored on the ground below the roof ridge at the rear of the barn where the parallel ridge timbers are close together forming a small cavity above. The droppings were this season's and DNA analysis identified them to be **common pipistrelle droppings**. The droppings were swept away and checked for during subsequent visits during the night-time surveys; no new droppings were found.

Photo 1 High barn



Photo 2 High barn



4.3.2 Low barn

The Low barn is built with Cotswolds stone. It consists of four parts: (1) at the north-eastern end a couple of open-fronted bays, (2) a central open-fronted bay continuous inside to the side into a room with a glazed window, (3) a stall with stable door open at the top and (4) a closed tack room with a glazed window at the other end. It is light and airy in the building. The north-eastern open-fronted part is open from the floor to the roof. The remainder has a low roof void under the ridge behind a soft board ceiling and soft boards fitted on the roof slope between main rafters. The soft board was loose and hanging in places making the spaces behind partly open and visible (and cobwebby). A doorway in the rear of central room had a fence panel fixed over it. The roof is corrugated sheets and clear plastic sheets as roof lights sitting on a timber frame with a mix of old and new sawn timbers. There are electric lights in the building. There were trees overhanging the rear of the barn.

Potential bat roosting places are not obvious, but could be (1) a few gaps at the stone walls, (2) between the roof and verge wall tops and (3) unseen places in the partly clad roof space. It is too light and airy for daytime use by perching or free-hanging bats in the open.

There was one bat dropping on an item stored in the open-fronted part of the barn. DNA analysis identified it to be a **Brandt's bat dropping**.

Photo 3 Low barn



Photos 4 & 5 Low barn



4.4 Night surveys

4.4.1 Survey 1 – emergence, 23rd August 2020

High barn

No bats were seen to emerge.

Low barn

Myotis – **1 Myotis bat emerged** from the open front of the barn 34 minutes after dusk. It is not certain what species of Myotis bat it was¹, but the brief recorded calls are within the parameters of a Brandt's bat (the species for which a bat dropping was found in the barn).

Other bats

Common pipistrelle – heard in the background from 11 minutes after dusk and thereafter more-or-less continuously foraging in the background.

Noctule – heard in the background from 16 minutes after dusk foraging for several minutes and heard later once more.

Serotine – a bat flew south – north over the site and trees 21 minutes after dusk.

Lesser horseshoe bat – a bat flew through the site 35 minutes after dusk.

4.4.2 Survey 2 – emergence, 26th August 2020

High barn

Myotis – **2 Myotis bats emerged** from the open window and doorway 21 and 37 minutes after dusk. The recorded calls of both bats were most characteristic of whiskered bats – too many of the calls were not characteristic of the Brandt's bat confirmed to occur in the Low barn.

Low barn

Myotis – **1 Myotis bat emerged** from the open front 35 minutes after dusk. Again, the recorded calls are within the parameters of a Brandt's bat (the species for which a bat dropping was found in the barn).

Other bats

Noctule – seen flying and feeding high overhead and over the valley side from 10 minutes after dusk for about 30 minutes.

Common pipistrelle – initially faintly heard in the background 11 minutes after dusk and then a few minutes later feeding in the background on-and-off for much of the survey.

Soprano – passes heard 14 and 34 minutes after dusk.

¹ It is very difficult to differentiate Myotis bats by calls alone.

4.4.3 Survey 3 – emergence survey, 9th September 2020

Since the last survey, a tree behind the barn had fallen on the Low barn damaging the roof.

High barn

No bats were seen to emerge.

Low barn

Long-eared bat – **2 long-eared bats** emerged from the open front 47 minutes after dusk and fed around the overhanging trees for a couple of minutes before dispersing.

Other bats

Common pipistrelle – heard in the background from 7 minutes before dusk and thereafter continued foraging including occasionally through the yard.

Noctule – 2 bats were heard and seen feeding for about 10 minutes in the background over the valley side from 2 minutes after dusk.

4.5 Other observations

Trees – no obvious potential bat-roosting places were seen in the adjacent trees.

Stream – at the time of the visit the stream was dry with wellington-deep wet silt. This reach is not suitable for white-clawed crayfish, and no sign of water voles or their burrows was found (there were bank vole-sized burrows).

Birds – a stock dove was seen in the High barn each visit. One old twig nest (pigeon?) and one old moss nest (tit?) was found in the High barn. Staining from a historic swallows nest was found in the Low barn. No evidence of use of the buildings by owls was found.

Hedgehogs – a hedgehog trundled through the yard during the first night survey and one from the Low barn during the last night survey. A hedgehog dropping was found in the High barn.

5. CONCLUSIONS

5.1 Outline project

It is understood that the owner plans to:

- *Complete an earlier planning permission to convert the outbuildings for residential use.*

5.2 Use of site by bats

High barn

- **Common pipistrelle ‘day roost’ (droppings only)**
- **Whiskered bat ‘day roost’ (2 bats).**

Low barn

- **Brandt’s bat ‘day roost’ (1)**
- **Long-eared bat ‘day roost’ (bats)** (almost certainly brown long-eared bats).

Day roosts are where individual or small numbers of bats rest during the day. Both barns are quite light and airy inside and have corrugated sheet roofs, so are not ideal for day-roosting bats, but there are nooks and crannies in the stone and timber structure. The results of the day and night surveys indicate that the barns are used by low numbers of bats to roost on an intermittent basis. This low level of use concurs with the survey in 2003 that concluded that the buildings had limited potential for bat roosts and that there was casual bat access. This is within a landscape of good foraging habitat for bats.

Despite thorough searches, due to a lesser horseshoe bat flying through the yard and there being a night roost of this species at Home Farm, no droppings to indicate this species roosting in the barns was found.

The tree-lined stream corridor and paddocks and parkland over the valley sides are well-used by foraging bats.

5.3 Legal considerations

All species of British bat and their roosts are protected by law (Appendix 1).

5.4 Impact on bats

The planned work will (without mitigation):

- Almost certainly destroy the bat roosting places and could harm bats.

5.5 Conservation significance

All four species of bat found to roost at the barns are relatively common and widespread species of bat in England and Gloucestershire. They are protected due to the rate of decline of populations. Day roosts used by these species, although of value in their own right, are at the lower end of conservation significance.

5.6 Proportional mitigation

Natural England's guidelines are that impacts on bats and their roosts should in the first instance be avoided if possible. The bats roost inside the barns and avoidance is not possible here for the conversion of the buildings for residential use.

Based on Natural England's guidelines, the level of proportionate mitigation here is:

- Flexibility on the provision of new roosting places
- No timing constraints for the work or post-works monitoring.

5.6.1 Timing

- **There is no restriction on the time of year of the proposed works** (subject to any restrictions imposed by Natural England as part of the licensing for the work - see below).

5.6.2 Lights

- **Limit external lighting to only that required for the safe, secure use of the site.**
- **Position and design the external lights in a manner that avoids and minimises any illumination of the adjacent habitat including the stream corridor.**

The following guidance is based on good practice for bats and external lighting:

- Direct the lighting downwards and/or into the site
- Use fittings with cowls/hoods *etc.* to stop upwards or sideways light/glare
- Use fittings that are PIR activated and set to turn-off after a maximum of three minutes inactivity where continuous lighting is not required when the site is in use
- Use LED bulbs of maximum 2,700 kelvin.

5.6.3 Avoidance of harm to bats

- **An ecologist will need to check for and if necessary rescue any bats during the works.** When the roofs, soft board panels and other features are stripped back for the works, for example. This will be a licensable activity (see below).

5.6.4 Roost provision

It is understood that the original planning permission for the conversion of the barns was approved with the building-in of Schwegler N27 Bat Brick Boxes into the gable walls of the High barn and a bat/owl loft.

The previous mitigation is still applicable for the bats currently using the two barns. Where there are several roosting species and types of roost, the provision of only boxes, particularly for long-eared bats, is usually only acceptable where this is justified on an ecological basis. Therefore, at this site, the provision of a bat loft to accommodate the long-eared bats, as well as bat bricks/tubes/boxes, is assessed to be suitable and proportionate mitigation.

The mitigation can be approached either (1) separately for each barn or (2) for both barns combined. It is understood that the owner plans to undertake the work in two phases, with Phase 1 being the Low barn and Phase 2 the High barn.

Option 1

- (1) Continue with the existing agreed mitigation (a bat loft and bat bricks in the High barn) and (2) build-in bat bricks/tubes/boxes at the Low barn. This will require phased licensing (see below).

Option 2

- (1) Build the bat loft in the Low barn to accommodate its long-eared bats and at least one bat brick/tube/box in the exterior walls and (2) build-in at least two bat bricks/tubes/boxes in the exterior walls at the High barn. There is the risk that if circumstances change in the future that a bat loft might also be required for the High barn.

The detail of the bat mitigation will need to be designed with input from the ecologist due to the exacting requirements of bats (and licensing), with the basic requirements of the bat loft being:

- A bat loft of 1.8+m height for long-eared bats and as large a volume/length as feasible.
- Flying or crawling access to the loft – flying access via a slated opening would be best here in order to allow a wide variety of bats to find and use the loft.
- The bat access in a gable end wall or the roof; or via an open wood store/boot room *etc.* at ground level with the bats able to fly in and then up into the loft.
- The bat entrance to be positioned to give open unlit flight lines for bats close to trees and shrubs
- Exposed roof timbers in the loft including a ridge board
- Bat-roosting crevices created in the bat loft
- Type 1F bitumen roofing felt with a hessian matrix (not non-bitumen coated roofing membrane or breathable roofing membrane BRM that can entangle and kill bats).
- Any timber treatment to be a type that does not harm bats. Refer to <https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments> for products suitable for use in bat roosts.

There are a wide variety of bat bricks/tubes/boxes is available; the ecologist can advise once likely locations are known. Their key features are:

- The bat brick/box/tube to be of a design and material that is long-lasting (*i.e.* not just a timber bat box)
- Fitted in a sunny unlit position, on the buildings and/or trees; it is advised that they are built into the exterior walls for longevity and if necessary externally on walls and as a last resort on trees.
- A minimum of four boxes would be required.

5.7 Licensing

- **A licence will be required for the work.**

Licences are issued by Natural England. The licence holder is generally the site owner or developer with a named ecologist who usually prepares the licence and oversees it on behalf of the licensee due to the exacting requirements of the bats and licence.

Licenses are usually applied for after planning permission and other necessary consents have been granted and relevant conditions discharged.

Survey information usually needs to be from the current or most recent survey season.

Natural England requires *at least* 30 working days to process standard licence applications and 15 days for low impact licences. At the time of writing, this site does not qualify for a low impact licence.

In this instance, if the bat loft is to be built in Phase 2 in the High barn, either (1) planning permission will need to be in place for both barns with a single licence to cover them both or (2) if it is separate planning permissions a licence will need to be secured for Phase 1 at the Low barn, with a 'phased licence application' showing a mitigation strategy that includes Phase 2 with a bat loft in the High barn at a later date.

5.8 Other

5.8.1 Birds

It is an offence under the Wildlife and Countryside Act 1981 (as amended) to damage or destroy the nests of breeding birds.

- As a standard precaution – if possible **time the start of the works to be within September to February outside the bird nesting season. If it is in the nesting season, check for nests first** and change the work if an occupied nest is found in order to avoid it.

5.8.2 Hedgehogs

Hedgehogs are a Species of Principal Importance in England under the Natural Environment and Rural Communities (NERC) Act 2006 due to a rapid decline. Hedgehogs are not explicitly legally protected except from trapping or intentional harm or cruelty.

The main consideration is good practices to ensure that they are not harmed during the works and the continued safe dispersal and foraging of the local population of hedgehogs.

- Check for any hedgehogs during the clearance of the buildings. Avoid or take great care during November to February, and freezing conditions, when hedgehogs hibernate. During this time leave any hedgehogs found where they are and covered – they will leave on their own accord when the conditions are suitable.
- Do not leave deep holes or trenches open at night – cover or put ramps in them.
- Avoid the building of high kerbs, steps, terracing, sunken patios, gullies, and drains *etc.* that might block and trap hedgehogs.
- Leave gaps of 13+ cm at the bottom of any fences and gates and create tunnels through any garden walls; or use hedges instead. *NB:* hedgehogs are excellent swimmers so the stream will not be a barrier to them, but the yard is a pinch-point where they can cross the stream on dry land.
- Retain/create areas of deep leaf litter, dead wood, log piles and dense scrub in out of the way places in order to provide shelter for the hedgehogs.

Appendix 1.

- Brief summary of relevant legislation in the UK -

Bats

There is considerable evidence that all species of bat in Britain have declined significantly this century, particularly since the 1960s. The reasons for the decline include: loss of suitable roost sites, loss of feeding habitat, reduced availability of insect prey through pesticide use and mortality resulting from the use of highly toxic timber treatment chemicals in house roosts.

All species of British bat are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (which consolidates the European Conservation (Natural Habitats etc.) Regulations 1994). As well as giving full protection from intentional and deliberate killing, injuring, disturbing and taking of bats, the cited legislation protects bat breeding and resting places (roosts) from damage, destruction and preventing access to such places. The legislation regarding roosts applies irrespective of whether the bats are present or not. The Countryside and Rights of Way Act 2000 added the word “reckless” to existing protection against “intentional and deliberate” actions.

The law requires that reasonable effort be made to ensure that any actions, plans or projects do not detrimentally affect bats or their roosts. Proposed developments that affect bats or bat roosts may require a licence from Natural England. Allow at least 30 days for a licence application to be determined.