Bat Survey Report for
Mount Farm workshop and stables,
Junction Road, Churchill,
Chipping Norton, OX7 6NP

Cotswold Wildlife Surveys

13th January, 30th April and 14th & 28th May 2021

QUALITY CONTROL

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The information in this report has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. The conclusions and recommendations expressed are reasoned judgements based on the evidence.

Every reasonable attempt has been made to comply with BS42020:2013 *Biodiversity – Code of practice for planning and development*, *CIEEM Guidelines for Ecological Report Writing* (CIEEM, 2017) and Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition, Collins, 2016). If there has been deviation from recognised practice, justification/explanation has been given.

CONTENTS

SUMMARY

At Mount Farm on Junction Road in Churchill, Chipping Norton, planning permission is being sought to re-develop the workshop and stable block.

As this could impact on features typically used by bats as roosting places, a diurnal inspection was undertaken on 13th January 2021 to assess the buildings for signs of bat occupation.

All the external and internal structures, especially those associated with the roofs and walls of the buildings were examined.

On the floor of the roof void over the stable block, c100 Lesser Horseshoe Bat *Rhinolophus hipposideros* droppings were found, with the species identity confirmed by DNA analysis. No roosting or hibernating bats were present.

The suitability for roosting pipistrelles *Pipistrellus sp* was considered to be negligible to low, as a small number of lifted roof tiles were observed.

Since evidence of bats was found, three nocturnal emergence surveys were carried out on the evenings of 30th April and 14th and 28th May 2021. The surveys began 15 minutes before sunset and continued for up to one and three quarter hours after sunset.

During the first emergence survey, a single Common Pipistrelle *Pipistrellus pipistrellus*, and a single Whiskered/Brandt's Bat *Myotis mystacinus/M. brandtii* flew past.

The second emergence survey saw the same result as the first, although the Whiskered/Brandt's Bat was noted foraging in the neighbouring garden for a while.

The third emergence survey revealed more Common Pipistrelle and Whiskered/Brandt's Bat activity throughout the visit, as well as fly pasts from a Soprano Pipistrelle *Pipistrellus pygmaeus*, a Lesser Horseshoe Bat and a Noctule Bat *Nyctalus noctula*.

A pre-survey inspection of the buildings was carried out on each visit, all three revealing no roosting bats, or any new evidence to suggest that bats have been using the buildings recently.

Taking all the visits into account, the status of bats is considered thus:

- Lesser Horseshoe Bat – day or transitory roost in the stables used occasionally by a single bat.

Since the roost will be lost with the re-development of the stable block, suitable mitigation is required, along with a development licence from Natural England.

As such a new bat loft will be created, this measuring approximately 16 m³ in volume.

Other measures will include a 'toolbox talk' by a licensed ecologist to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the roof void by the ecologist, and supervision of any destructive and/or exclusion works by the ecologist.

It should be noted that there will be no timing constraints, and an ecologist will be present at all key stages to ensure the replacement roosting provision is correctly installed.

*

Barn Swallow *Hirundo rustica* and Blackbird *Turdus merula* nests were found in the stable block.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the buildings affected will be undertaken prior to clearance. Work will not be carried out in close proximity to any in-use nest, and a minimum buffer of 5.0 metres will be established, although this could be more depending on the sensitivity of the species. Any in-use nest will be allowed to fledge before it is disturbed.

1. INTRODUCTION

In mid-January 2021, Cotswold Wildlife Surveys was instructed by Tom Heywood-Lonsdale, to undertake a bat survey of the workshop and stables at Mount Farm on Junction Road in Churchill, Chipping Norton. On 13th January 2021, a visit was made to the property to carry out a diurnal inspection of the buildings to check for signs of bat occupation.

Subsequently, three nocturnal emergence surveys were carried out on 30th April, and 14th and 28th May 2021.

The results of the surveys are contained in this report.

In England, Scotland and Wales, all bat species are fully protected under the Wildlife and Countryside Act 1981 (WCA) (as amended), through inclusion in Schedule 5. In England and Wales this Act has been amended by the Countryside and Rights of Way Act 2000 (CRoW), which adds an extra offence, makes species offences arrestable, increases the time limits for some prosecutions, and increases penalties.

All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations 1994, (or Northern Ireland 1995) (the Habitats Regulations), which defines 'European protected species of animals'.

The above legislation can be summarised thus (Mitchell-Jones and McLeish, 2004):

- *Intentionally or deliberately kill, injure or capture (or take) bats*
- *Deliberately disturb bats (whether in a roost or not)*
- *Recklessly disturb roosting bats or obstruct access to their roosts*
- *Damage or destroy roosts*
- *Possess or transport a bat or any part of a part of a bat, unless acquired legally*
- *Sell (or offer for sale) or exchange bats, or parts of bats*

The word 'roost' is not used in the legislation but is used here for simplicity. The actual wording is 'any structure or place which any wild animal…uses for shelter or protection' (WCA), or 'breeding site or resting place' (Habitats Regulations).

As bats generally have both a winter and a summer roost, the legislation is clear that all roosts are protected whether bats are in residence at the time or not.

2. METHODOLOGY

In order to fully assess bat occupation of a particular site, the Bat Conservation Trust (2016) recommends that information gathered from a desk study of known bat records, and a daytime site walkover, is used to inform the type and extent of future bat survey work, potentially including nocturnal surveys.

The diurnal walkover provides an opportunity to check for signs of occupancy, such as droppings, scratch marks, feeding remains, carcasses, or even animals in residence, whilst nocturnal surveys (if required) allow numbers and species of bats to be confirmed. The latter are also used to determine the presence or absence of bats, where signs of bat activity are indeterminate or absent, but suitability of roosting is considered to be medium to high.

Roosting places vary depending on the species. Pipistrelles usually inhabit narrow cracks or cavities around the outside of buildings, but they will roost in similar niches inside larger barns. Typical sites include soffit spaces, gaps behind fascia boards and end rafters, crevices around the ends of projecting purlins, under warped or lifted roof and ridge tiles, or in gaps in stone and brickwork where mortar has dropped out.

Larger species such as Brown Long-eared Bats *Plecotus auritus*, Myotis bats (Natterer's *Myotis nattereri* and Whiskered/Brandt's), and Lesser Horseshoe Bats, like to roost in the roof voids of buildings, and can often be found hanging singly or in small groups from ridge boards or roof timbers, especially where they butt up against gable walls or chimney breasts. They especially favour older structures with timber frames. Here they squeeze into tight crevices making them difficult to observe.

Diurnal walkovers can be carried out at any time of the year, but nocturnal surveys should only be undertaken when bats are out of hibernation and in their summer roosts. The recommended period is from May to September inclusive, with May to August optimum and September sub-optimum. The season can be extended into October, although particularly cold weather will render this inadvisable. Indeed, the air temperature at the start of each survey must be at least 10°C or above.

Visits will be a minimum of two weeks apart, and the number of surveys is dependent on the evidence found or the suitability of the site to bats.

Where bats are found, or there is evidence of bat occupation or activity, i.e. that bat use is confirmed, the number and timing of visits will be decided by the ecologist and will be appropriate for the type of roost. In general, at least two nocturnal surveys will be carried out, both of which can be emergence surveys, or one emergence and one dawn re-entry.

Where there is no evidence of bat presence, and no suitability for roosting, no nocturnal surveys will be needed.

For a site with no evidence but low suitability, just one nocturnal emergence survey is required, this to be in the optimum period.

For medium suitability a minimum of two visits are needed, of which one must be in the optimum period, and one must be a dawn re-entry survey. With high suitability, three visits will be necessary, of which two must be in the optimum period. At least one of these must be a dawn re-entry survey, with the third visit either an emergence or a dawn re-entry.

For sites < 5 ha in size, and/or regularly shaped structures, at least two surveyors must be present, with more surveyors at larger sites and more complex buildings, e.g. those with multiple elevations and/or roof structures.

On 13th January 2021 a thorough inspection of the workshop and stables was made by Neil Musgrave (Natural England bat licence No. 2020-44602-CLS-CLS), including the exterior and interior walls, roof coverings, roof void, eaves, gables, window casements and door frames.

8x42 binoculars and a Fenix TK75 torch were used for the inaccessible/unreachable areas. On this occasion an endoscope was not used, as there were no crevices and cavities that could not be inspected with a torch or by use of binoculars from a ladder.

A sample of droppings was sent to SureScreen Scientific for DNA analysis.

On the evenings of 30th April, and 14 and 28th May 2021, nocturnal emergence surveys of the buildings were undertaken by Andy Warren (Natural England bat licence No. 2015-16489-CLS-CLS) and James Warren, to determine the presence or absence of roosting bats.

The surveys began 15 minutes before sunset and continued for up to one and three quarter hours after sunset.

The surveys were aided by the use of electronic Echo Meter Touch and BatBox Duet bat detectors and i-pads. This facilitates the detection of bats, and computer analysis of recordings aids in the identification of individual species, in particular those which might be utilising different frequencies simultaneously.

The results of the inspection and nocturnal surveys are detailed in Section 3.

3. RESULTS

3.1 Desk Study

In view of the proposed works and in line with current guidance on accessing and using biodiversity data (CIEEM, 2016), a detailed background data search was not carried out in this case.

However, within 3.0 km of Mount Farm, the following European Protected Species licences for bats were issued by Natural England:

- 2013 2.75 km southwest for Brown Long-eared Bat, Natterer's Bat and Soprano Pipistrelle*;*
- 2014 2.75 km north-northwest for Lesser Horseshoe;
- 2015 2.00 km northeast for Brown Long-eared Bat, Common Pipistrelle, Soprano Pipistrelle and Whiskered Bat;
- 2015 2.75 km northwest for Brown Long-eared Bat, Common Pipistrelle and Lesser Horseshoe;
- 2017 1.00 km south-southeast for Lesser Horseshoe.

3.2 Location

Churchill is a village located approximately 4.0 km southwest of Chipping Norton. Mount Farm lies to the southwest of the village, 250 m from the junction of Church Road, Junction Road and Sarsden Road on the northwest side of Junction Road. The Ordnance Survey Grid Reference of the centre of the site is SP 28113 23860 (Appendix 1).

3.3 Site Description

The survey site comprised a pitched roofed workshop with an extended gable, and a pitched roofed stable block (Figs. 1 and 2).

Figs. 1 & 2 Workshop (L) and stable block (R)

To the front of the workshop and stable block was a gravel drive and garden, with dwellings, open fields and mature trees beyond (Fig. 3). To the rear of the workshop and stable block were other adjoining buildings, with mature trees and open fields beyond (Fig. 4).


Figs. 3 & 4 Views to the front (L) and rear (R)

The layout of the site is shown in the aerial photograph in Appendix 2.

3.4 Buildings Survey

3.4.1 Bats

The daytime inspection was carried out on 13th January 2021 commencing at 10:00. The weather conditions during the time of the survey were recorded and are presented in Table 1 below.

Parameter	Value
Temperature (ºC)	4.5
Cloud cover (%)	100
Precipitation	None / Drizzle
Wind speed (Beaufort scale)	0

Table 1 Weather conditions during the diurnal survey

Stable block

The ridge was intact and sealed, whilst all the roof tiles were tightly overlapping, with just a small number of broken, dislodged and missing tiles observed (Figs. 5-7).


Figs. 5 & 6 Ridges and roof tiles to the front

The eaves were finished with the roof ends generally tightly fitting against the wall plates, although a small number of gaps were noted (Fig. 8).


Figs. 7 & 8 Ridges and roof tiles to the front (L) and eaves (R)

The stone walls were sound throughout, whilst the door frames were tightly fitting with no crevices or gaps around the doors observed. The building was open-fronted.

No signs of bat activity were found around the outside of the stable block.

Internally the building had a passageway at the east end to allow access to the buildings to the rear. This also allowed free access to the void above the stables.

The ground floor stables were open to the hardboard lined ceiling (Figs. 9 and 10), with the west gable open to the roof and lined with tarred felt, this cobwebbed at the gables and along the ridge (Fig. 11).


Figs. 9 & 10 Hardboard lined ceiling of the stables

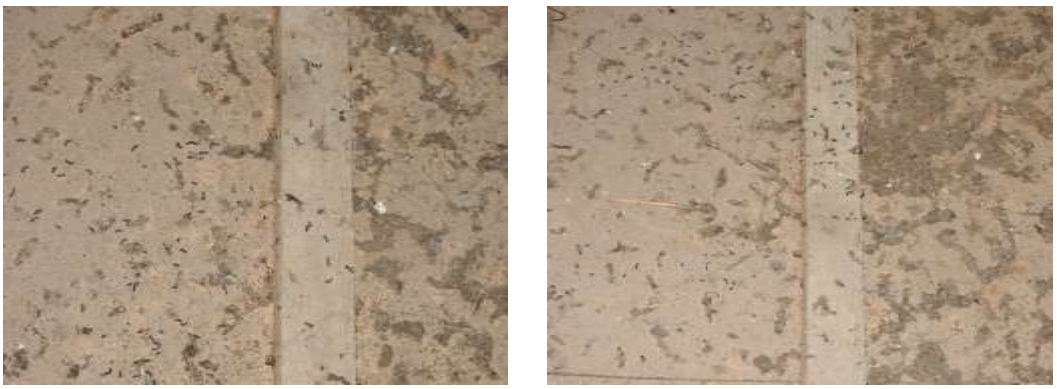
Fig. 11 Cobwebbed gable and ridge

The roof void above the stables was approximately 2.0 m high, 12 m long and the full width of the building. It was lined with tarred felt in good condition with no holes or tears, whilst the ridge and gable end were cobwebbed (Figs. 12 and 13).

Figs. 12 & 13 Cobwebbed gable and ridge

On the floor of the void close to the west gable, c100 scattered Lesser Horseshoe Bat droppings were found, the species identity confirmed by DNA analysis (Figs. 14 and 15).

No roosting or hibernating bat was present.



Figs. 14 & 15 Lesser Horseshoe Bat droppings

Light penetrated the roof void through the open end to the east, but only partially, and much of the void was in darkness.

The location of the bat droppings is shown in Appendix 3

Workshop

The ridge was intact and sealed, whilst all the roof tiles were tightly overlapping, with only a small number of broken, dislodged and missing tiles observed (Figs. 16 and 17).

The eaves were finished with the roof verge tightly fitting against the wall plate (Figs. 18 and 19).


Figs. 16 & 17 Ridges and roof tiles to the front


Figs. 18 & 19 Sealed eaves

The stone and block walls were sound throughout, whilst the window casements and door frames were tightly fitting with no crevices or gaps. No signs of bat activity were found around the outside of the workshop.

Internally the workshop was open to the tarred felt lined roof, some of which had additional hardboard lining, and one section opposite the extended gable had mortar lining. The ridge, plumb cut and gable ends were all cobwebbed (Figs. 20-24).


Figs. 20 & 21 Cobwebbed ridge and gable end

Figs. 22 & 23 Sections of roof with hardboard and mortar lining

Fig. 24 Cobwebbed extended gable

Light penetrated the workshop through the windows and vertical slot in the extended gable wall.

No evidence of bat occupation was discovered inside the workshop.

3.4.2 Other species

Barn Swallow and Blackbird nests were found in the stable block (Figs. 25-27).

Figs. 25 & 26 Barn Swallow nests

Fig. 27 Blackbird nest

3.5 Emergence Surveys

3.5.1 1st Emergence Survey

The first emergence survey was carried out on 30th April 2021, commencing at 20:05 and finishing at 21:45. The weather conditions during the time of the survey were recorded and are presented in Table 2.

Parameter	Value
Temperature (ºC)	10.0 start, 8.5 finish
Cloud cover (%)	80
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	20:29

Table 2 Weather conditions during the 1st emergence survey

A pre-survey inspection of the buildings was carried out, this revealing no roosting bats, or any new evidence to suggest that bats have been using the buildings recently.

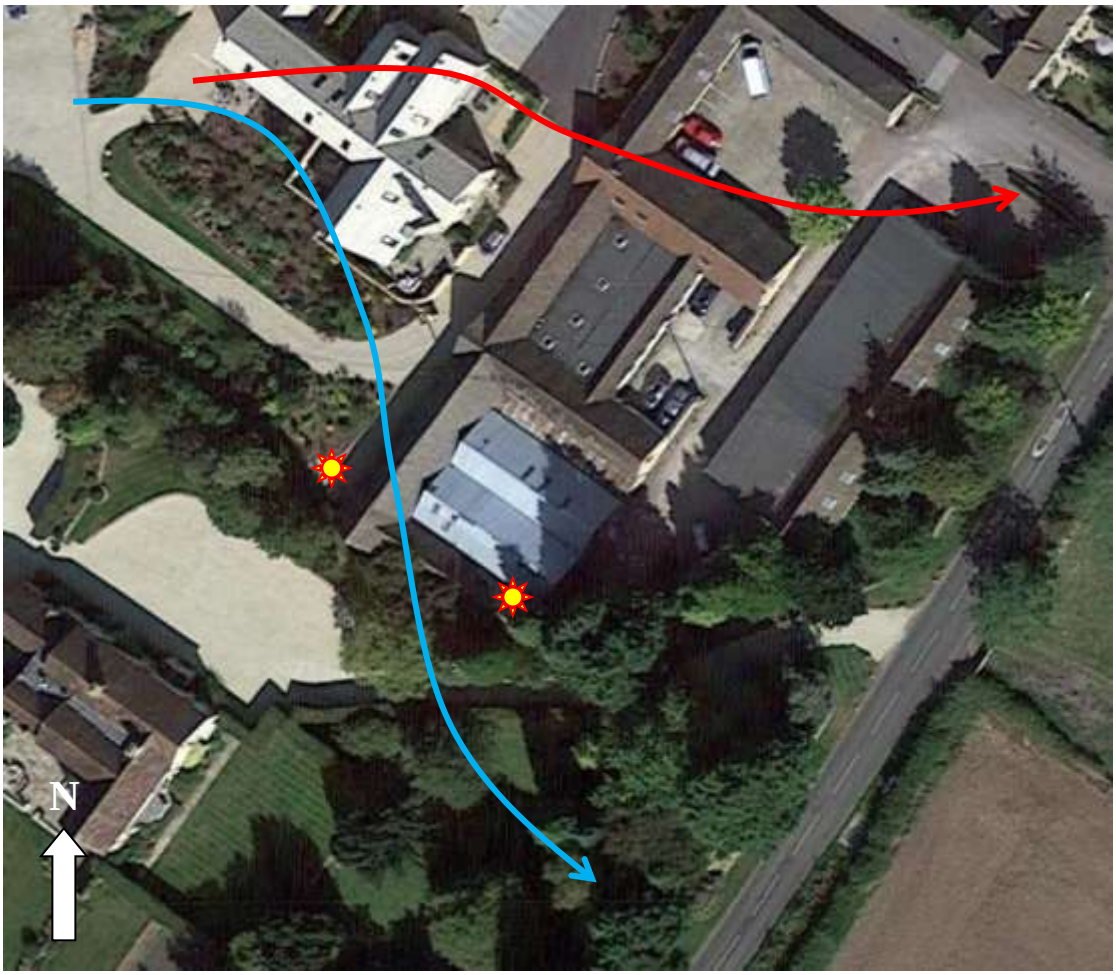
A single Common Pipistrelle and a single Whiskered/Brandt's Bat flew past, with no bats emerging from the buildings.

The times of bat observations and detections are shown below.

Time	Observation
21:05	Whiskered/Brandt's Bat flew from village, over buildings and away
21:11	Common Pipistrelle flew past in distance
21:45	No further detections were made and survey ended

The bat flight paths at 1st emergence are shown on Plan 1 overleaf.

Plan 1 Bat flight paths at emergence on 30th April 2021



Common Pipistrelle Bat

Whiskered/Brandt's Bat

Positions of observers

3.5.2 2nd Emergence Survey

The second emergence survey was carried out on 14th May 2021, commencing at 20:41 and finishing at 22:30. The weather conditions during the time of the survey were recorded and are presented in Table 3.

Parameter	Value
Temperature (ºC)	10.5 start, 9.5 finish
Cloud cover (%)	5
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	20:55

Table 3 Weather conditions during the 2nd emergence survey

A pre-survey inspection of the buildings was carried out, this revealing no roosting bats, or any new evidence to suggest that bats have been using the buildings recently.

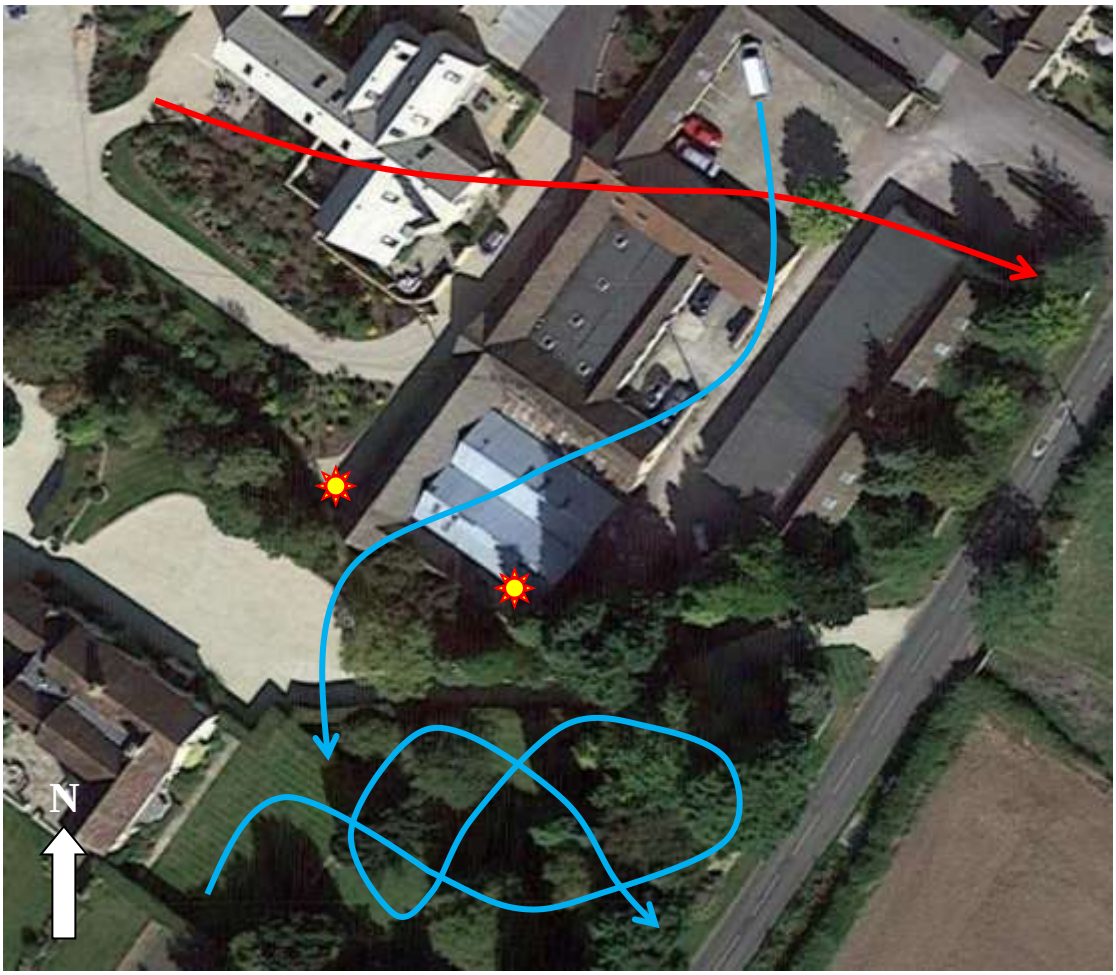
The second emergence survey had the same result as the first, although the Whiskered/Brandt's Bat spent time foraging in the neighbouring garden.

The times of bat observations and detections are shown below.

Time	Observation
21:19	Whiskered/Brandt's Bat flew past from village over buildings
21:21-21:24	Whiskered/Brandt's Bat foraging in neighbouring garden
21:58	Whiskered/Brandt's Bat in back garden briefly
21:34	Common Pipistrelle flew past
22:30	No further detections were made and survey ended

The bat flight paths at 2nd emergence are shown on Plan 2 overleaf.

Plan 2 Bat flight paths at emergence on 14th May 2021



Common Pipistrelle Bat

Whiskered/Brandt's Bat

Positions of observers

3.5.3 3rd Emergence Survey

The third emergence survey was carried out on 28th May 2021, commencing at 20:57 and finishing at 22:45. The weather conditions during the time of the survey were recorded and are presented in Table 4.

Parameter	Value
Temperature (ºC)	13.5 start, 12.5 finish
Cloud cover (%)	100
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:12

Table 4 Weather conditions during the 3rd emergence survey

A pre-survey inspection of the buildings was carried out, this again revealing no roosting bats, or any new evidence to suggest that bats have been using the buildings recently.

On this occasion there was more Common Pipistrelle and Whiskered/Brandt's Bat activity, as well as fly pasts from a Soprano Pipistrelle, a Lesser Horseshoe Bat and a Noctule Bat.

The times of bat observations and detections are shown below.

Time	Observation
21:21	Common Pipistrelle flew past
21:22-21:30	Common Pipistrelle foraging nearby
21:33	Soprano Pipistrelle flew past
21:36	Whiskered/Brandt's Bat and Lesser Horseshoe Bat flew past
21:38-21:44	Whiskered/Brandt's Bat foraging nearby
21:51	Noctule overhead
21:52	Lesser Horseshoe Bat flew past again
21:54	Common Pipistrelle flew past
22:01	Lesser Horseshoe Bat flew past
22:08	Lesser Horseshoe Bat flew past
22:45	No further detections were made and survey ended

The bat flight paths at 3rd emergence are shown on Plan 3 overleaf.

Plan 3 Bat flight paths at emergence on 28th May 2021

Common Pipistrelle Bats

Soprano Pipistrelle Bat

Whiskered/Brandt's Bat

Lesser Horseshoe Bat

Noctule Bat

Positions of observers

4. CONCLUSIONS AND RECOMMENDATIONS

Bats tend to be seasonal visitors to properties and are not usually in occupation all year round. The females normally form maternity colonies during May or June and then leave for adjacent trees and/or woodland during July or August once the young bats are able to fly and become independent. Here they will spend the winter months in hibernation before returning to the building or barn the following spring.

Male bats generally live alone and have a number of favoured roosts. During the summer they visit each of these for a few days at a time, before moving to their chosen hibernation site in mid-late October. Different species have different habits, but this seasonal movement is common to all.

Bats choose their roosts carefully. During the summer they look for sites which are warmed by the sun, and as a result are most often found on the south and western side of buildings.

Pipistrelles, our smallest and commonest bats, prefer to roost in very confined spaces around the outside of buildings, typical places being behind hanging tiles, weather boarding, soffit, barge and eave boarding, between roof felt and roof tiles or in cavity walls.

As such they can be difficult to find, so the suitability for roosting was also assessed.

This was considered to be negligible to low, as a small number of lifted roof tiles were observed.

The absence of roosting pipistrelles was confirmed by the nocturnal surveys, when no bats emerged from the buildings, although low levels of activity by small numbers of Common and Soprano Pipistrelles was noted.

Another bat frequently encountered in buildings is the Brown Long-eared Bat. This is also a common species, but unlike pipistrelles, they prefer the dry, warm space of the loft or roof void, and can often be found hanging from roof timbers, especially rafters and the ridge board next to chimney breasts.

No evidence of Brown Long-eared Bats was found in either the workshop or the stable block, and instead a scattering of c100 Lesser Horseshoe Bat droppings was found on the floor of the roof void over the stable block. The species identity was confirmed by DNA analysis.

Although no roosting or hibernating bat was present during any of the surveys, a single Lesser Horseshoe Bat was noted as it flew past the site, this evidently roosting elsewhere.

Taking all the visits into account, the status of bats is considered thus:

- Lesser Horseshoe Bat – day or transitory roost used occasionally by a single bat.

Since the roost will be lost with the re-development of the stable block, suitable mitigation is required, along with a development licence from Natural England. As such a new bat loft will be created, this measuring approximately 16 m³ in volume.

Other measures will include a 'toolbox talk' by a licensed ecologist to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the roof void by the ecologist, and supervision of any destructive and/or exclusion works by the ecologist.

It should be noted that there will be no timing constraints, and an ecologist will be present at all key stages to ensure the replacement roosting provision is correctly installed.

*

Barn Swallow and Blackbird nests were found in the stable block.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the buildings affected will be undertaken prior to clearance. Work will not be carried out in close proximity to any in-use nest, and a minimum buffer of 5.0 metres will be established, although this could be more depending on the sensitivity of the species. Any in-use nest will be allowed to fledge before it is disturbed.

5. REFERENCES

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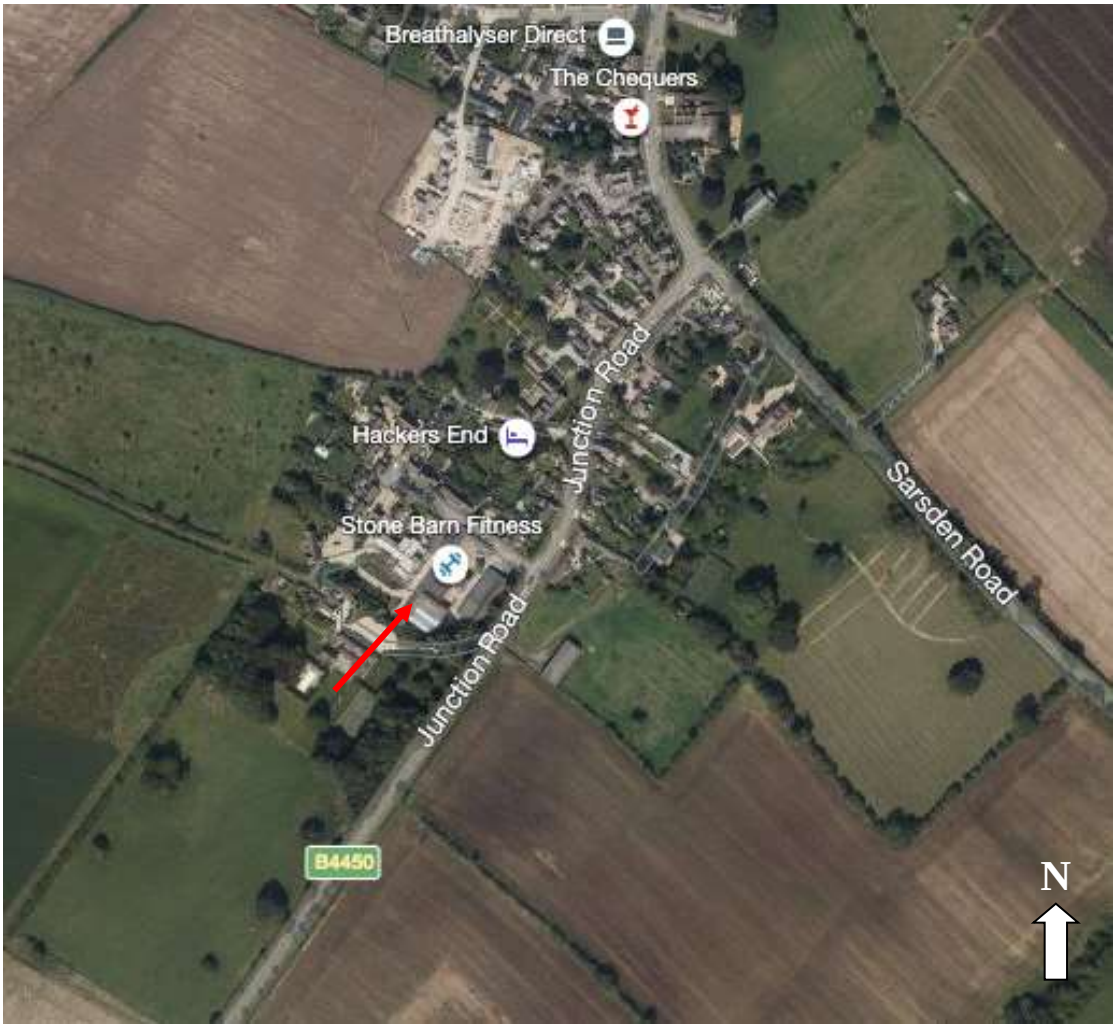
APPENDICES

Appendix 1: Location plan

Appendix 2: Site layout

Appendix 3: Location of bat droppings

Appendix 1: Location plan



Mount Farm, Junction Road, Churchill, Chipping Norton

Appendix 2: Site layout

Stables and Workshop

Appendix 3: Location of bat droppings

Lesser Horseshoe Bat droppings

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