Bat Survey Report for Barn at Barn Cottage, The Green, Bledington, Chipping Norton, OX7 6XQ





Cotswold Wildlife Surveys

 $28^{\rm th}$ April, $27^{\rm th}$ June and $11^{\rm th}$ & $25^{\rm th}$ July 2022

Date	Version	Name
28.04.22	Daytime inspection	Neil Musgrave – BEng (Hons) Associate
27.06.22 11.07.22 25.07.22	Nocturnal surveys	Neil Musgrave – BEng (Hons) Associate + assistant
21.08.22	Report prepared	Neil Musgrave – BEng (Hons) Associate
27.08.22	Checked	Caroline Warren – BSc (Hons) Director
28.08.22	Reviewed and issued	Andy Warren – BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA Director

QUALITY CONTROL

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.

Page No.

CONTENTS

SUMMARY4	
1. INTRODUCTION	
2. METHODOLOGY7	
3. RESULTS	
3.1 Desk Study9	
3.2 Location	
3.3 Site Description	
3.4 Buildings Survey	
3.4.1 Bats	
3.4.2 First Emergence Survey	
3.4.3 Second Emergence Survey	
3.4.4 Third Emergence Survey	
3.4.5 Other species	
4. CONCLUSIONS AND RECOMMENDATIONS19	
5. REFERENCES	
APPENDICES21	
Appendix 1: Location plan	
Appendix 2: Site layout	
Appendix 3: Locations of bat droppings and bat at roost	

SUMMARY

At Barn Cottage on The Green in Bledington, Chipping Norton, planning permission is being sought to convert an existing barn into a dwelling.

As this could impact on features typically used by bats as roosting places, a diurnal inspection was undertaken on 28th April 2022 to assess the building for signs of bat occupation.

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

A Brown Long-eared Bat *Plecotus auritus* was found at roost with c10 Brown Long-eared Bat droppings directly underneath.

The suitability for roosting pipistrelles *Pipistrellus sp* was considered low, as a small number of suitable crevices and gaps were noted.

As evidence of bats was found, to characterise the roost and determine the presence or absence of other species, three nocturnal surveys were undertaken, these on the evenings of 27th June and 11th and 25th July 2022.

During the first emergence survey, no bats emerged from the barn, whilst small numbers of Common Pipistrelles *Pipistrellus pipistrellus* flew round the front garden, with a Noctule *Nyctalus noctula* passing over the site. The Brown Long-eared Bat was not present.

During the second emergence survey Common Pipistrelles again flew around and over the site, with Noctules flying over the site. No bats emerged from the barn, and the Brown Long-eared Bat was not present.

The third emergence survey recorded a Brown Long-ed Bat at roost inside the barn before the survey began. Common Pipistrelle and Noctules flew around and over the site. The Brown Long-eared Bat emerged through the open window in the southwest gable.

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

□ Brown Long-eared Bat – day roost used occasionally by a single animal.

Since the proposed works will cause the loss of the bat roost, a licence from Natural England will be required.

Given the low status of the roost, the site is eligible for registration under Natural England's Bat Mitigation Class Licence (BMCL) scheme.

Mitigation measures will include a 'toolbox talk' by a Registered Consultant (RC) to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the roof void by the RC, and supervision of any destructive roof works by the RC, the latter undertaken by hand.

To provide an alternative roost site, a Large, Multi-Chambered Bat Box will be installed on a tree in the garden in which to relocate a bat if one is discovered before or during works. The box will be retained in position for a minimum of five years.

It should be noted that under BMCL 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.

*

No birds' nests were observed either in or on the barn, however the building was considered potentially suitable for nesting birds.

As such, at the same time as the pre-works inspection for bats, a check for active bird nests will be undertaken.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect the buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the building 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 late April 2022, Cotswold Wildlife Surveys was instructed by Tyack Architects, on behalf of their client Mrs P Menzel, to undertake a bat survey of a barn at Barn Cottage on The Green in Bledington, Chipping Norton. On 28th April 2022, a visit was made to the property to carry out a diurnal inspection of the building to check for signs of bat occupation.

As evidence of bats was found, to characterise the roost and determine the presence or absence of other species, three nocturnal surveys were undertaken, these on the evenings of 27th June and 11th and 25th July 2022.

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) and the Natural Environment and Rural Communities Act 2006 (NERC), which add 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 (the Habitats Regulations), which defines 'European protected species of animals'. In England this is the Conservation of Habitats and Species Regulations 2010, in Scotland the Habitat Regulations 1994 (as amended), and in Northern Ireland the Conservation Regulations 1995.

All bats are also protected under the Bern Convention Appendix II, the Bonn Convention Appendix II, and the Wild Mammals (Protection) Act 1996.

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
- Descess 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, Myotis bats (Natterer's *Myotis nattereri* and Whiskered/Brandt's *M. mystacinus/M. brandtii*), and Lesser Horseshoe Bats *Rhinolophus hipposideros*, 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 these 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 28th April 2022 a thorough inspection of the barn was made by Neil Musgrave (Natural England bat licence No. 2020-44602-CLS-CLS), including the exterior and interior walls, roof covering, 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.

On the evenings of 27th June and 11th and 25th July 2022, nocturnal surveys were undertaken by Neil Musgrave and assistant, to confirm the type of roost in the barn and the number of bats using it, and to determine if any other bat species are roosting within the building.

The emergence surveys began 15 minutes before and continued for one and half hours after sunset.

The surveys were aided by electronic Echo Meter Touch bat detectors and iPads.

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, the likely low impact on bats, 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 Barn Cottage the following development licences for bats were issued by Natural England:

- □ 2010 3.00 km west for Brown Long-eared Bat;
- 2013 1.25 km southeast for Brown Long-eared Bat, Natterer's Bat and Soprano Pipistrelle *Pipistrellus pygmaeus;*
- 2013 3.00 north for Brown Long-eared Bat, Common Pipistrelle, Lesser Horseshoe Bat and Natterer's Bat;
- □ 2018 1.25 km northeast for Brown Long-eared Bat and Soprano Pipistrelle;
- 2018 3.00 north for Brown Long-eared Bat, Common Pipistrelle and Whiskered Bat;
- □ 2018 3.00 km north for Bechstein's Bat *Myotis bechsteinii*, Daubenton's Bat *M. daubentonii*, Natterer's Bat and Soprano Pipistrelle;
- □ 2020 3.00 km north for Barbastelle *Barbastella barbastellus*, Brown Longeared Bat, Common Pipistrelle, Soprano Pipistrelle and Whiskered Bat.

3.2 Location

Bledington is a village located approximately 5.75 km southeast of Stow-on-the-Wold. The Green lies to the northwest of the village with Barn Cottage set 25 m off the road and 40 m southwest of the junction Chapel Street and Main Street on the south side of Chapel Street. The barn is situated to the south of the cottage. The Ordnance Survey Grid Reference of the barn is SP 24487 22778 (Appendix 1).

3.3 Site Description

The survey site comprised a large detached pitched roofed barn (Fig. 1).



Fig. 1 West facing aspect of the barn

To the west of the barn was the garden of Barn Cottage which was laid to lawn with a gravel drive (Figs. 2 and 3).



Figs. 2 & 3 Garden of Barn Cottage

The rear of the barn opened onto the rear garden of another dwelling, this garden comprised lawn, mixed vegetation and mature trees (Fig. 4).



Fig. 4 View looking east from the rear of the barn

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

3.4 Buildings Survey

The daytime inspection was carried out on 28th April 2022 commencing at 13:30. The weather conditions during the time of the survey were recorded and are presented in Table 1 below.

Parameter	Value
Temperature (°C)	14.0
Cloud cover (%)	75
Precipitation	None
Wind speed (Beaufort scale)	2NW

Table 1 Weather conditions during the diurnal survey

3.4.1 Bats

The ridge was intact and sealed and all the roof tiles were tightly overlapping (Figs. 5-8).



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



Figs. 7 & 8 Ridge and roof tiles to the east

Both gables were finished with the roof verges cement sealed to the gable wall plates, the northeast gable was covered with vegetation (Fig. 9). The southwest gable had a partially boarded window with a fruit tree growing close by (Fig. 10).



Figs. 9 & 10 Northeast gable (L) and southwest gable (R)

The eaves were finished with the roof ends tightly fitting against the wall plates.

The southeast facing eaves also had chicken wire netting installed for the length of the barn (Figs. 11 and 12).



Figs. 11 & 12 Sealed eaves to the west (L) and east (R)

The stone 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 barn.

Internally the barn was open to the torched roof. The ridge was lightly cobwebbed all over, although some sections of the ridge were cobweb-free (Fig. 13 and 14).



Figs. 13 & 14 Cobwebbed ridge and gable end

In one section of cobweb-free ridge, a Brown Long-eared Bat was observed at roost, with c10 Brown Long-eared Bat droppings underneath (Fig. 15). The partially boarded window in the southwest gable wall had a suitable gap at its base for bat access (Fig. 16).



Figs. 15 & 16 Brown Long-eared Bat at roost (L) and gap at base of southwest gable window (R)

Light penetrated the interior of barn through the windows in the west facing doors.

The location of the droppings and roosting bat are shown in Appendix 3.

3.4.2 First Emergence Survey

The first emergence survey was carried out on 27th June 2022, commencing at 21:15 and finishing at 23:00. The weather conditions during the time of the survey were recorded and are presented in Table 2.

Parameter	Value
Temperature (°C)	14.0 start; 14.0 finish
Cloud cover (%)	75
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:30

Table 2 Weather conditions during the first emergence survey

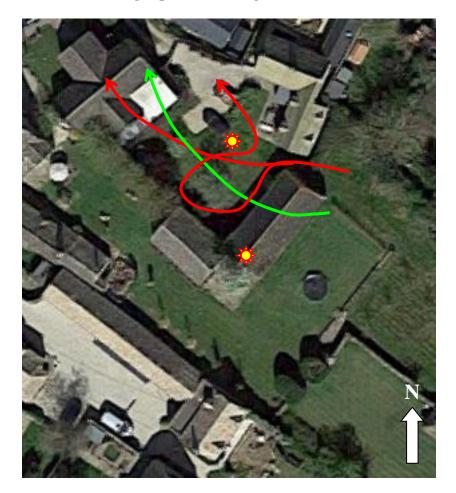
No access was possible to the rear of the barn, so the second surveyor stood inside the building against the southwest gable wall.

No roosting bats were found inside the barn, but small numbers of Common Pipistrelles flew round the front garden, with a Noctule Bat passing over the site.

The times of bat observations and detections are shown below.

Time	Observation
21:50-22:01	Common Pipistrelle foraging round the front garden
22:04	Common Pipistrelle flew over the front garden
22:13	Common Pipistrelle foraging over the front garden
22:15	Noctule flew overhead
22:24-22:32	Common Pipistrelle flew over the front garden
23:00	No further observations or detections and the survey ended

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



Plan 1 Bat flight paths at emergence on 27th June 2022

Common Pipistrelle Bats

≻

Noctule Bat

Positions of observers 🔆

3.4.3 Second Emergence Survey

The second emergence survey was carried out on 11th July 2021, commencing at 21:10 and finishing 22:55. The weather conditions during the time of the survey were recorded and are presented in Table 3.

Parameter	Value
Temperature (°C)	23.0 start; 22.0 finish
Cloud cover (%)	80
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:23

Table 3 Weather conditions during the second emergence survey

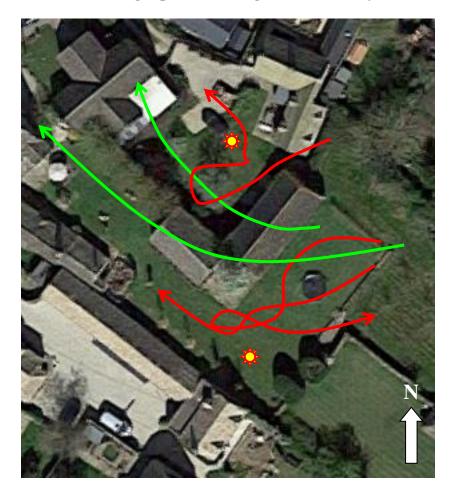
Access to the rear of the barn was allowed, so the second surveyor covered the opposite side of the building. Small numbers of Common Pipistrelles flew around and over the site, with Noctules passing over the site.

No bats emerged from the barn.

The times of bat observations and detections are shown below.

Time	Observation
21:50	Common Pipistrelle appeared in front garden
21:51	Common Pipistrelle flying round the rear of the barn
22:01-22:08	Common Pipistrelle foraging round the front garden
22:01-22:06	Common Pipistrelle foraging to the rear of the barn
22:10	Three Common Pipistrelle now foraging round the front garden
22:14	Common Pipistrelle disappeared from the rear of the barn
22:16	Two Common Pipistrelle foraging round the front garden
22:20	Noctule flew overhead
22:28	Noctule flew overhead
22:30	Common Pipistrelle flew round the front garden
22:55	No further observations or detections and the survey ended

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



Plan 2 Bat flight paths at emergence on 11th July 2022

Common Pipistrelle Bats

→

Noctule Bat -

Positions of observers 🔆

3.4.4 Third Emergence Survey

The third emergence survey was carried out on 25th July 2022, commencing at 20:55 and finishing 22:40. The weather conditions during the time of the survey were recorded and are presented in Table 4.

Parameter	Value
Temperature (°C)	15:0 start; 15.0 finish
Cloud cover (%)	100
Precipitation	None
Wind speed (Beaufort scale)	2 W
Sunset	21:08

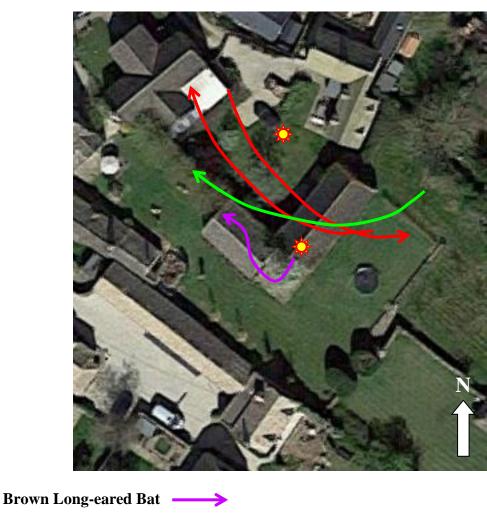
Table 4 Weather conditions during the third emergence survey

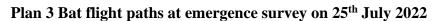
No access was possible to the rear of the barn, so the second surveyor stood inside the building against the southwest gable wall. A Brown Long-ed Bat was observed at roost inside the barn before the survey began. Common Pipistrelle and Noctules flew around and over the site. The Brown Long-eared Bat subsequently emerged through the open window in the southwest gable.

Time	Observation
21:21	Common Pipistrelle flew over the garden west to east
21:24	Common Pipistrelle appeared over the top of the barn flew over the garden then over the village hall
21:34	Common Pipistrelle appeared over the top of the barn flew over the garden then over the village hall
21:41	Common Pipistrelle appeared over the top of the barn flew over the garden then over the village hall
21:42-21:48	Common Pipistrelle foraging to the rear of the barn
21:43	Noctule flew overhead
21:46	Noctule flew overhead
21:55	Common Pipistrelle appeared from the rear of the barn and flew over the village hall
22:03	Noctule flew overhead
22:05	Brown Long-eared Bat emerged from the open barn window and flew into the barn cottage rear garden
22:12	Noctule flew overhead
22:40	No further observations or detections and the survey ended

The times of bat observations and detections are shown below.

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





Common Pipistrelle Bats -Noctule Bat -≯ Positions of observers 🔆

3.4.5 Other species

No birds' nests were observed either in or on the barn, although the building was considered potentially suitable for nesting birds.

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 low, as a small number of potentially suitable crevices and gaps were noted. However, the absence of roosting pipistrelles was confirmed by the nocturnal surveys, when no bats emerged from the barn.

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.

A roosting Brown Long-eared Bat was found on 28th April 2022, and again on 25th July 2022, but was not recorded during the first two emergence surveys.

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

□ Brown Long-eared Bat – day roost used occasionally by a single animal.

Since the proposed works will cause the loss of the bat roost, a licence from Natural England will be required.

Given the low status of the roost, the site is eligible for registration under Natural England's Bat Mitigation Class Licence (BMCL) scheme.

Mitigation measures will include a 'toolbox talk' by a Registered Consultant (RC) to contractors about bats and what to do if one is unexpectedly encountered, a pre-works inspection of the roof void by the RC, and supervision of any destructive roof works by the RC, the latter undertaken by hand.

To provide an alternative roost site, a Large, Multi-Chambered Bat Box will be installed on a tree in the garden in which to relocate a bat if one is discovered before or during works. The box will be retained in position for a minimum of five years.

It should be noted that under BMCL 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.

*

No birds' nests were observed either in or on the barn, however the building was considered potentially suitable for nesting birds.

As such, at the same time as the pre-works inspection for bats, a check for active bird nests will be undertaken.

Since all in-use bird's nests and their contents are protected from damage or destruction, any works which affect the buildings should ideally be undertaken outside the period March to August inclusive. If this time frame cannot be avoided, a close inspection of the building 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**

Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. $(3^{rd} edn)$. Bat Conservation Trust, London.

English Nature, 2004. Bat mitigation guidelines. English Nature, Peterborough.

Mitchell-Jones A. J. & McLeish, 2004. *Bat Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

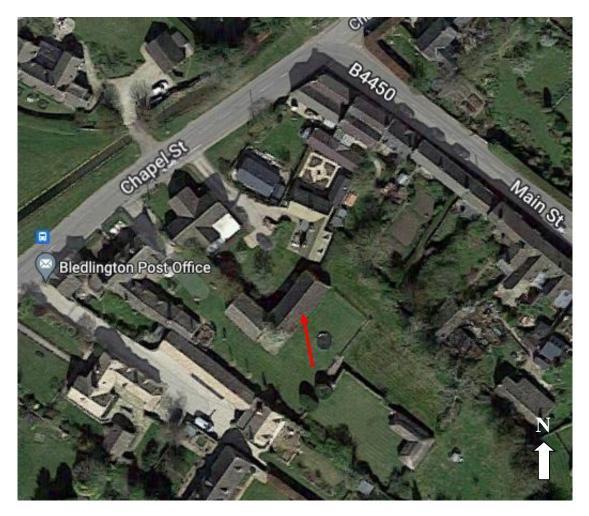
Russ, J., 1999. *The Bats of Britain and Ireland. Echolocation Calls, Sound Analysis and Species Identification.* Alana Ecology Ltd., UK.

Stebbings R.E., 1986. *Which bat is it?* The Mammal Society and The Vincent Wildlife Trust, London.

The Vincent Wildlife Trust, 2003. *The Bats of Britain and Ireland*. The Vincent Wildlife Trust, Ledbury.

APPENDICES

- Appendix 1: Location plan
- Appendix 2: Site layout
- Appendix 3: Locations of bat droppings and roosting bat



Appendix 1: Location plan

Barn at Barn Cottage, The Green, Bledington, Chipping Norton

Appendix 2: Site layout



Barn



Appendix 3: Locations of bat droppings and bat at roost

Brown Long-eared Bat droppings ★

Brown Long-eared Bat at roost 🚄

Cotswold Wildlife Surveys Limited

Company Reg. No. 6864285 (England & Wales)

Andy Warren BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA Withy Way, Charingworth, Chipping Campden, Gloucestershire, GL55 6NU

Tel: 01386 593056/07879 848449

andy@cotswoldwildlifesurveys.co.uk

Barn at Barn Cottage, The Green, Bledington, Chipping Norton - Bat Survey Report

To: Mrs P Menzel

Report Number: 4343-CWS-01

Version: 01

Date: 28th August 2022