Nocturnal Bat Survey Report for Stable block, Fosse Barn, North Wraxall, Chippenham, SN14 7PQ

NKM Associates

21st June and 7th July 2023

QUALITY CONTROL

Date	Version	Name
21.6.23 7.7.23	Nocturnal surveys	Neil Musgrave – BEng (Hons)
10.7.23	Report prepared	Neil Musgrave – BEng (Hons)
10.7.23	Checked	Clare Charlton - BA(Hons) PG Cert
11.7.23	Reviewed and issued	Neil Musgrave – BEng (Hons)

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

Page No.

SUMMARY 4

1. INTRODUCTION 5

2. METHODOLOGY 6

3. RESULTS 8

3.1 Emergence Survey 8

3.2 Dawn return Survey 10

4. CONCLUSIONS AND RECOMMENDATIONS 12

5. REFERENCES 13

SUMMARY

At Fosse Barn, North Wraxall, Chippenham, planning permission is being sought to convert the stable block.

An initial daytime bat inspection of the stable block was undertaken by Acer Ecology on 3rd February 2023. The stable block was considered to have moderate suitability for roosting bats and as such further surveys where required.

In June 2023 NKM Associates were instructed to undertake nocturnal surveys.

Two nocturnal surveys were undertaken, on the evening of 21st June and the morning of 7th July 2023 to confirm absence or presence of bats using the stable block and if using what species and in what numbers.

During both surveys Common Pipistrelles *Pipistrellus pipistrellus,* Noctule *Nyctalus noctula* and Serotine *Eptesicus serotinus* bats were recorded flying round and over the stable block but no bats emerged from or went to roost in the stable block.

At the time of the daytime and nocturnal surveys the stable block was not considered to be a bat roost or hibernation site and as such no further surveys or mitigation is required.

1. INTRODUCTION

At Fosse Barn, North Wraxall, Chippenham, planning permission is being sought to convert the stable block.

An initial daytime bat inspection of the stable block was undertaken by Acer Ecology on 3rd February 2023. The stable block was considered to have moderate suitability for roosting bats and as such further surveys where required.

In June 2023 NKM Associates were instructed to undertake nocturnal surveys.

Two nocturnal surveys were undertaken on the evening of 21st June and the morning of 7th July 2023 to confirm absence or presence of bats using the stable block and if using what species and in what numbers.

The results of the nocturnal 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*
- *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

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 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 *M. mystacinus/M. brandti*), 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.

Nocturnal surveys 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 the 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 the evening of 21st June and the morning of 7th July 2023 nocturnal surveys were undertaken by Neil Musgrave (Natural England bat licence No. 2020-44602-CLS-CLS) and assistant to determine the presence or absence of roosting bats.

The emergence surveys began 15 minutes before and continued for up to one- and three-quarter hours after sunset and the dawn return started one- and three-quarter hours before sunrise and finished when fully light.

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

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

3. RESULTS

3.1 Emergence Survey

The emergence survey was carried out on 21st June 2023, commencing at 21:15 and finishing at 23:15. The weather conditions during the time of the survey were recorded and are presented in Table 1.

Parameter	Value
Temperature (ºC)	17.0 start; 17.0 finish
Cloud cover (%)	20
Precipitation	None
Wind speed (Beaufort scale)	0
Sunset	21:30

Table 1 Weather conditions during the emergence survey

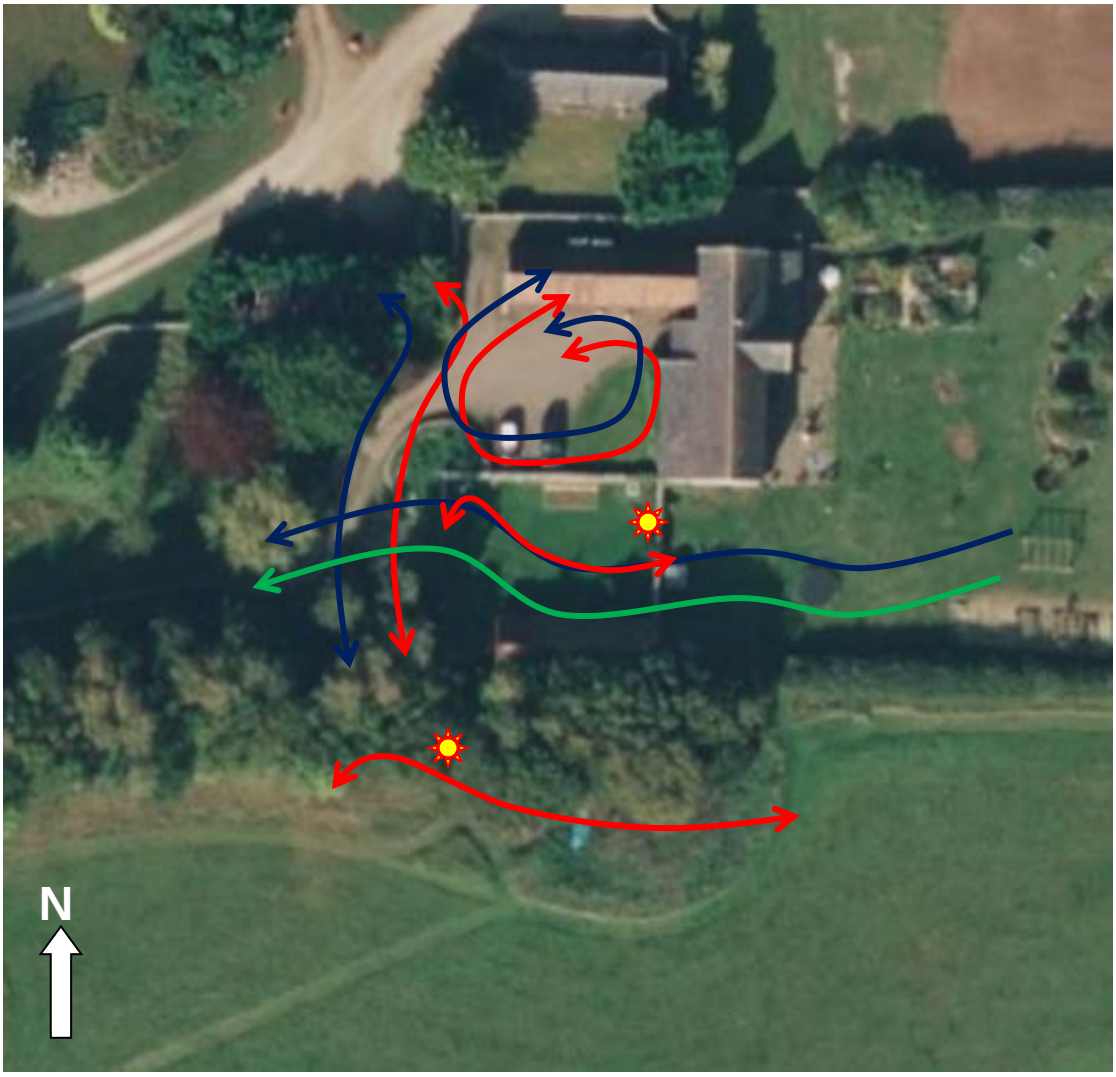
Common Pipistrelles, Noctule and Serotine bats were recorded flying round the stable block, but no bats emerged from it.

Details of the bat observations and detections are listed below.

Time	Observation
22:05	Common Pipistrelle flying to the rear of the stable block
22:06 – 22:09	Common Pipistrelle flew to the side of the stable block
22:10	Common Pipistrelle flying over the gravel yard
22:11	Serotine heard to the west of the rear of the stable block
22:16	Common Pipistrelle flying up and down the west side of the stable block and lawn
22:19	Common Pipistrelle flew to the rear of the stable block
22:21 – 22:24	Common Pipistrelle to the front of the stable block
22:30	Serotine flew over the gravel yard
22:31	Noctule heard flying overhead
22:35	Serotine flew over the stable block
22:41	Common Pipistrelle heard to the rear of the stable block
22:50	Serotine heard overhead

The bat flight paths at emergence on 21st June 2023 are shown on Plan 1 overleaf.

Plan 1 Bat flight paths at emergence on 21st June 2023



Common Pipistrelle Bats

Nocutle Bat

Serotine bat

Positions of surveyors

3.2 Dawn return Survey

The dawn return survey was conducted on the morning of 7th July 2023 commencing at 03:45 and finishing when fully light. The weather conditions during the time of the survey were recorded and are presented in Table 2 below.

Parameter	Value
Date	7th July 2023
Temperature (ºC)	13.0 start; 12.0 finish
Cloud cover (%)	>5
Precipitation	None
Wind speed (Beaufort scale)	0
Sunrise	05:00

Table 2 Weather conditions during the dawn return survey

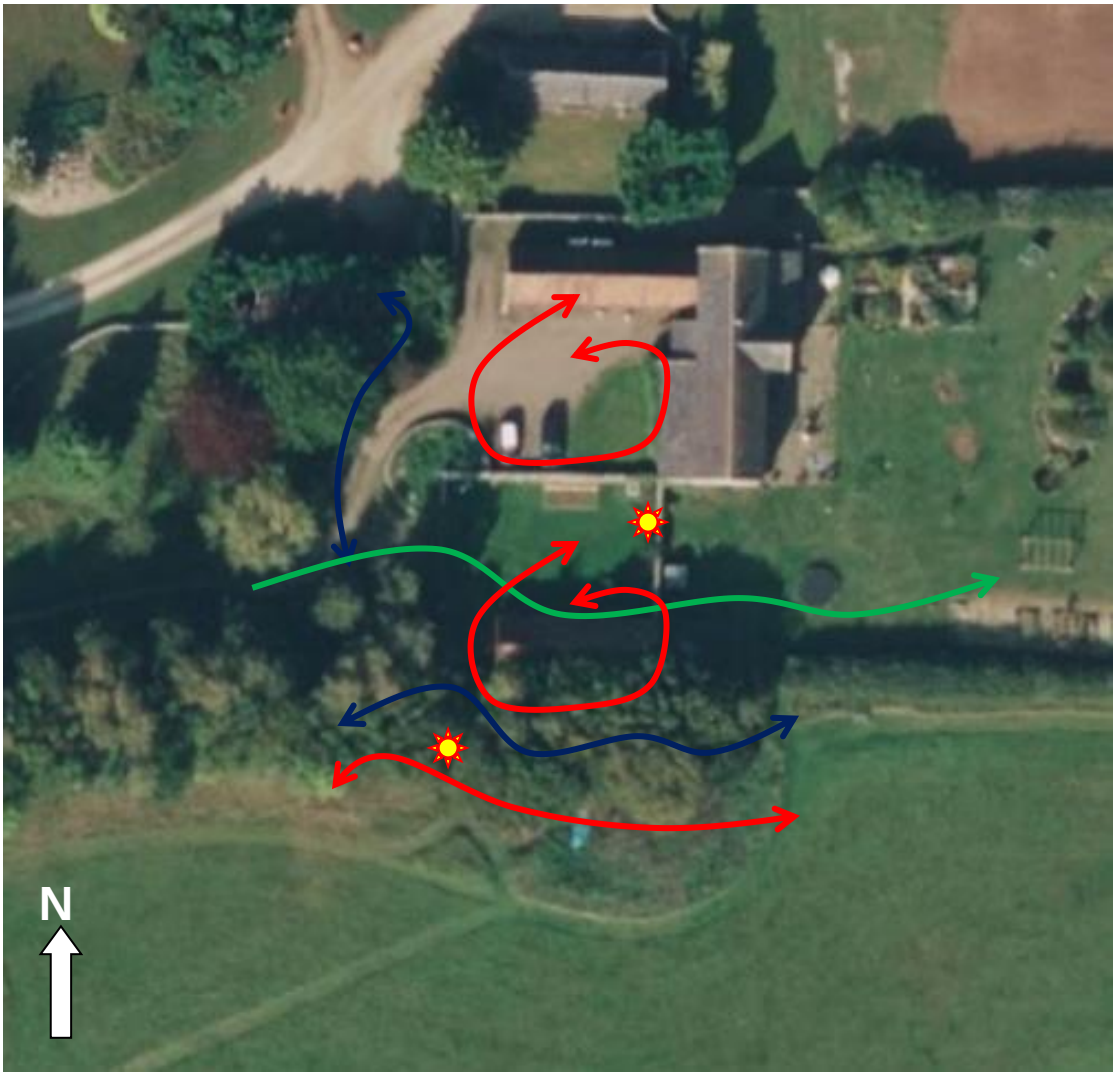
Common Pipistrelles, Noctule and Serotine bats were recorded flying round the stable block but no bats went to roost in the block.

Details of the bat observations and detections are listed below.

Time	Observation
03:25	Common Pipistrelle heard over the gravel yard
03:36	Common Pipistrelle heard to the rear of the stable block
03:50	Common Pipistrelle heard to both front and rear of the stable block
03:51 – 03:57	Serotine flew to the west of the front lawn and gravel yard
03:59 – 04:03	Common Pipistrelle flying over the gravel yard
04:04 – 04:05	Common Pipistrelle and Serotine flying to the rear of the stable block
04:15	Noctule flew overhead
04:28	Noctule flew overhead

The bat flight paths at dawn return on 7th July 2023 are shown on Plan 2 overleaf.

Plan 2 Bat flight paths at dawn return on 7th July 2023



Common Pipistrelle Bats

Nocutle Bat

Serotine bat

Positions of surveyors

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 house 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.

The absence of roosting pipistrelle bats was confirmed by the nocturnal surveys when no animals emerged or went to roost from or in the stable block.

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 Bat occupation was found in the stable block.

During both nocturnal surveys Common and Soprano Pipistrelles, Noctule and Serotine bats were recorded flying round the stable block, but no bats emerged from or went to roost in the stable block.

At the time of the daytime and nocturnal surveys the stable block was not considered a bat roost or hibernation site and as such no further surveys or mitigation is required.

5. REFERENCES

Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines. (3rd 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.

NKM Associates

Neil K Musgrave,
Woodley House, 4 Orchard Close,
Mickleton, Gloucestershire, GL55 6TA

Tel: 07732 657845

neil@nkmassociates.co.uk

Stable block, Fosse Barn North Wraxall Chippenham

Nocturnal Bat Survey Report

To: Simon Marcus

Report Number: 36023-01 NKM Assoc

Version: 01

Date: 11th July 2023