

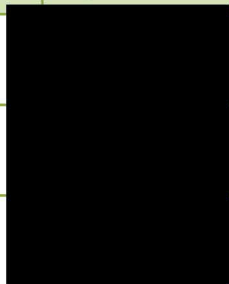


smart
ecology



Client	Tracey Yeo
Reference	2021- 127
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Date	05/ 07/ 2023

Quality Assurance

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Document History

Version	Date	Revision
1	05/07/2023	Issued to the client.

Disclaimer

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The summary of wildlife legislation provided is for general guidance only and does not in any way provide legal opinion or a definitive statement of the law. For detailed information, the legislation itself should be reviewed and a legal professional consulted.

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The evidence in this document is based upon the field survey(s) detailed. Due to the changing nature of ecology the list of species present cannot be considered comprehensive and Smart Ecology cannot guarantee that other protected/notable species and habitats are not present.

The ecology of a site is constantly changing and therefore the information provided in this document is only relevant at the time of survey. If it has been over 12 months since this survey was undertaken advice should be sought on whether an updated survey is necessary.

The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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<p>Purpose of Report</p>	<p>Smart Ecology was commissioned by Tracey Yeo to undertake a bat emergence survey of the Moat House, High Street, St Briavels, Lydney, Gloucestershire, GL15 6TA. This was to inform an application for listed building consent for various works affecting the roof, rainwater goods, and fascias.</p>
<p>Methodology</p>	<p>One dusk emergence survey was carried out to further characterise common pipistrelle roosts which were found during previous survey in 2022. Surveys were carried out with reference to good practice guidelines.</p>
<p>Survey Results</p>	<p>No bats emerged during the survey. The previous survey in 2022 identified presence of one common pipistrelle day roost used by low numbers of bats (peak count: 2) located behind the fascia/at wall top on the eastern elevation of the single storey rear extension, and one common pipistrelle day roost used by low number of bats (peak count: 1) located under roof slates on the north facing roof slope.</p>
<p>Impact Assessment</p>	<p>The proposed replacement/repair of the fascias on the eastern elevation could damage, destroy, or obstruct access to a common pipistrelle day roost used by bats, and the replacement of damaged roof slates could damage, destroy or obstruct access to a common pipistrelle day roost used by one bat. Common pipistrelle is a common species in England and the roost is of low conservation significance.</p>
<p>Required Actions</p>	<p>A European Protected Species (EPS) mitigation licence must be obtained from Natural England to permit the proposed works to this building to proceed. The licence can only be applied for after listed building consent has been granted and any relevant ecological conditions discharged. The EPS mitigation licence must include full details of mitigation measures and must be prepared by a bat licence holder/ ecologist.</p> <p>The risk of killing/injuring bats and loss of the roosts will be mitigated by:</p> <ul style="list-style-type: none"> Pre-works inspection of the building and soft-strip of features where roosting bats could be present, and the use of one-way excluders where necessary. Ecological supervision of soft-strip. Provision of compensatory roosts.



	Non-Technical Summary	ii
1	Introduction	1
1.1	Background.....	1
1.2	Aims.....	1
2	Methodology	2
2.1	Personnel.....	2
2.2	Emergence Surveys.....	2
2.3	Limitations.....	3
3	Results	4
3.1	Dusk Emergence Survey (24/05/2023).....	4
4	Evaluation	5
4.1	Legislation and Planning Policy.....	5
4.2	Roost Characterisation.....	6
4.3	Impact Assessment.....	7
5	Mitigation & Enhancements	8
5.1	Mitigation.....	8
5.2	Enhancements.....	10
6	References	11
7	Figures	12
	Figure 1– Location Map.....	12
	Figure 2 – Surveyor Positions Plan.....	12
	Appendix - Sonogram Parameters	13





- 1.11 Smart Ecology was commissioned by Tracey Yeo to undertake a bat emergence survey of the Moat House, High Street, St Briavels, Lydney, Gloucestershire, GL15 6TA (central grid reference SO 5590 0450). See Figure 1, Section 7 for a site location map.
- 1.12 This was to inform an application for Listed Building Consent to the Forest of Dean District Council for works including:
- Repointing of the chimney.
 - Re-pointing of stonework.
 - Replacement of damaged slate roof tiles where necessary.
 - Replacement of composite roof slates with slate roof tiles.
 - Replacement/repair of fascias and rainwater goods.
- 1.13 A Preliminary Roost Assessment undertaken in December 2021 to inform a planning application for the erection of a single-storey rear extension (planning reference: P1003/21/FUL) assessed that the building had low suitability for roosting bats during the active and hibernation periods (Smart Ecology, 2022a).
- 1.14 The recommended emergence survey was undertaken in August 2022 (Smart Ecology, 2022b) and found the following roosts present:
- Common pipistrelle day roost used by low numbers of bats (peak count: 2) located behind the fascia/wall top on the eastern elevation of the single storey rear extension.
 - Common pipistrelle day roost used by low numbers of bats (peak count: 1) located under roof slates on the north facing roof slope.
- 1.15 As bats were found to be present it was recommended that at least one further survey was undertaken to characterise the roosts to inform the listed building consent.
- 1.16 This report has been prepared by Rachel Barber, director ecologist at Smart Ecology and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), with reference to the Bat Conservation Trusts (BCT) good practice guidelines (Collins, 2016) and BS42020 Biodiversity – a code of practice for planning and development (BSI, 2013).



- 1.2.1 The purpose of the surveys and report was to:
- Identify if bats were roosting within the building.
 - Identify the numbers and species of any bats present and characterise roosts.
 - Assess the impact of the proposed works on bats.
 - Provide details of any necessary mitigation and licensing requirements.
 - Provide details of opportunities for biodiversity enhancements.



2.1.1 The survey was led by Rachel Barber, with assistance from Connie Fuller and Francesca McConnell. See Table 2- 1 for details of the surveyor's experience and qualifications.

Table 2- 1: Surveyor information

Surveyor	Natural England Bat Survey Licences	Qualifications/ Experience
Rachel Barber BSc, MSc, MCIEEM	Level 2 (2016- 251 76)	Eleven years' experience in ecological consultancy. MSc Ecology and Management of the Natural Environment (University of Bristol - Distinction). MSc Environmental Monitoring, Modelling and Management (Kings College, London - Distinction). BSc Geography (University of Southampton – 2:1).
Connie Fuller BSc, MSc	-	MSc Water in a Changing World (Cardiff University). BSc Environmental Geography (Cardiff University). Bat surveyor trained by Smart Ecology.
Francesca McConnell	-	Studying BSc Ecology and Environmental Science (University of Gloucester). Bat surveyor trained by Smart Ecology.

2.2.1 One dusk emergence survey was carried out. The survey was carried out with reference to good practice guidelines (Collins, 2016).

2.2.2 The survey commenced 15 minutes before sunset and continued for 1.5 hours after sunset. The survey date, timings, and weather conditions are provided in Table 2- 2.

Table 2- 2: Survey date, timings, and weather conditions

Date	Sunset Time	Start Time	Finish Time	Weather Conditions	
				Start	Finish
24/05/2023	21:09	20:54	22:39	Tem p: 13.7°C Cloud Cover: 5% Beaufort scale: 1 Rain: None Hum idity: 70%	Tem p: 12.3°C Cloud Cover: 5% Beaufort scale: 1 Rain: None Humidity: 74%



- 2.2.3 Surveyors were positioned to ensure that all potential access points and roost features were viewed; see Figure 2, Section 8 for a plan showing surveyor positions.
- 2.2.4 Bat activity was recorded using EM Touch 2 PRO detectors connected to Android tablets. Information recorded during the survey included points of emergence (if any), species, number of bats, flight direction and behaviour (e.g. commuting, foraging). A bat pass was defined as a series of calls separated by more than one second from another call or series of calls.
- 2.2.5 Sonogram recordings were analysed using Kaleidoscope software to confirm species against reference measurements. The parameters used for analysis of calls are provided in the Appendix. Where possible bats were identified to species level. Bats within the genus *Myotis* are grouped together as it is difficult to accurately identify these bats to species level due to the overlap in call characteristics (Collins, 2016). In some habitats, particularly cluttered environments, the calls of common and soprano pipistrelle overlap and in this instance bats are recorded as *Pipistrellus* species, referring to common or soprano pipistrelle only. Additionally, the call characteristics of large bat species (noctule, Leisler's bat, and serotine) sometimes overlap, and where identification was unclear these are grouped. Any unclear sonograms are recorded as unknown bat species.



- 2.3.1 There were no limitations to the survey, with all potential access points and roost features watched. Bat foraging and commuting activity was recorded during the surveys which showed that bats were active at the time of the surveys.





3.1.1 No bats emerged from the building.

3.1.2 Refer to Table 3-1 for a summary of bat foraging and commuting activity recorded during the survey.

Table 3-1: Bat foraging and commuting activity summary

Species	Time of Earliest Pass	Minutes After Sunset	Average Emergence Time and Range ¹	General Observations
Common pipistrelle	21:31	22	24.8 minutes after sunset (average). 6.9 – 42.7 minutes after sunset (range).	Many ² passes were recorded during the survey, both heard and seen and heard but not seen. Some passes recorded within the known emergence time for this species, possibly indicative of the presence of a nearby roost.
Lesser horseshoe bat	22:21	72	21– 37 minutes after sunset (average). 14 – 58 minutes after sunset (range).	One pass was heard but not seen. The timing was outside of the known emergence time for the species.
Noctule	21:43	34	0.2 minutes before sunset – 7 minutes after sunset (average). 16 minutes before sunset – 31 minutes after sunset (range).	Many ² passes heard but not seen during the survey. Earliest pass within the known emergence time for this species, possibly indicative of the presence of a nearby roost.

¹Emergence time range based on data summarised in Andrews Ecology (2017).

²Few passes < 3, several passes 3- 10, many passes 10+.





4.1.1 All bat species and their roosts are protected by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended); see Table 4-1.

Table 4-1: Legal implications of legislation with regard to bats

Legislation	Legal Implications
Conservation of Habitats and Species Regulations 2017 (as amended)	It is illegal to: Deliberately capture, injure or kill bats. Deliberately disturb ¹ bats. Damage or destroy a breeding site or resting place ² .
Wildlife and Countryside Act 1981 (as amended) – sub- sections 9(4) b and c and 9(5) only	It is illegal to: Intentionally or recklessly disturb bats while they are occupying a structure or place of shelter or protection ² . Intentionally or recklessly obstruct access to a structure or place of shelter or protection ² .

¹ Disturbance under the Conservation of Habitats and Species Regulations 2017 (as amended) is defined as impairing the ability of an animal to survive, breed, reproduce, rear or nurture their young, hibernate or migrate, or to significantly affect the local distribution or abundance of the species.

² Bat roosts are any structure or place used for breeding, shelter or protection and are protected even when bats are not present.

4.1.2 A EPS licence is required if works affect bats or their roosts. EPS licences are issued by Natural England only after the following three tests have been satisfied:

The proposed works must be for the purpose of preserving public health or safety or other imperative reasons of overriding public interest.

There is no satisfactory alternative to the proposed works.

The proposed works will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

4.1.3 Additionally, barbastelle, Bechstein's bat, brown long-eared, greater horseshoe, lesser horseshoe, noctule, and soprano pipistrelle bats are designated as species of principal importance (priority species) under the Natural Environment and Rural Communities Act 2006. Section 40 of this Act places a duty on local planning authorities to '*have regard*' to conserving these species when determining planning applications.

4.1.4 Paragraph 174 of the National Planning Policy Framework (NPPF) 2021 states that planning decisions should protect sites of biodiversity value, minimise biodiversity impacts, contribute to net biodiversity gains. Paragraph 180 states that planning permission should be refused if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for. The NPPF also emphasises the need to protect priority species.





4.2.1 The survey in 2022 identified the following roosts present within the building:

One common pipistrelle day (non- maternity) roost used by low numbers of bats (peak count: 2) behind the fascia/at wall top on the eastern elevation of the rear single storey extension, see Figure 4- 1 for location.

One common pipistrelle day (non- maternity) roost used by low numbers of bats (peak count: 1) under roof slates on the north facing roof slope, see Figure 4- 2 for location.



Figure 4- 1: Common pipistrelle emergence location (red box)



Figure 4- 2: Common pipistrelle emergence location (red box)





- 4.3.1 The proposed replacement/repair of the fascias on the eastern elevation could damage, destroy, or obstruct access to a common pipistrelle day roost used by two bats.
- 4.3.2 The replacement of damaged slates on the roof could damage, destroy, or obstruct access to a common pipistrelle day roost used by one bat.
- 4.3.3 Common pipistrelle is a common species in England (Wray et al., 2010) and the roosts are of low conservation significance i.e. small numbers of common species - not a maternity site (Mitchell-Jones, 2004).





- 5.1.1 A EPS mitigation licence must be obtained from Natural England to permit the proposed works affecting the confirmed roosts to proceed. This should be made a condition of any consent. No works that would impact upon bats accessing and using the roosts can proceed until a EPS licence has been obtained. The licence can only be applied for after listed building consent has been granted and any relevant ecological conditions have been discharged. The licence would require detailed information on mitigation measures and must be prepared by a licensed bat ecologist. Natural England typically take up to 30 working days to process licence applications. **Please note** licence applications must use bat survey data from the most recent survey season, therefore an application would need to be submitted before the end of April 2024 to ensure that updated surveys are not required.
- 5.1.2 A summary of the mitigation measures which would need to be included within the E mitigation licence application are provided in this section of the report. This mitigation would ensure that bats are protected and the favourable conservation status of the bat population is maintained.

Timing

- 5.1.3 As common pipistrelle bats can hibernate in exposed locations it is recommended that works to the roost sites are not undertaken during the winter months (November to February).

Installation of Bat Box

- 5.1.4 One improved crevice bat box will be installed on a tree or the exterior of the building on the site before works begin. The location will be advised by the named ecologist or accredited agent. The bat box will be used to relocate any bats found during pre-works inspection and soft-strip, and will be retained in the long-term to provide a biodiversity enhancement. The bat box will be installed at least 3 m above ground level and facing either south, south-east or south-west so that it is exposed to sun for part of the day.

Toolbox Talk

- 5.1.5 The named ecologist or accredited agent will give a Toolbox Talk to contractors before works commence to make contractors aware of the presence of bat roosts in the building, the legal protection afforded to bats, the careful working practices required, and what to do in the event that a bat is found.

Pre-Works Inspection

- 5.1.6 The building will be inspected by the named ecologist or accredited agent immediately prior to works commencing. If a bat is found and can be safely captured by hand it will be captured, placed in a muslin bag, and transferred to the pre-installed bat box.



- 5.1.7 If a bat is seen but cannot be safely captured, then a soft-strip approach will be implemented to dismantle the feature used for roosting. If soft-strip is not suitable/possible then the ecologist will place a standard one-way exclusion device over the entrance (see below).

Exclusion of Bats

- 5.1.8 If bats are found during the pre-works inspection in a crevice or cavity which cannot be safely dismantled using the soft-strip approach, or the absence of bats from any crevices or cavities cannot be conclusively determined, then the ecologist will install a standard one-way excluder. These excluders will be left in place for at least five nights of relatively warm and dry weather (not during periods of heavy rain/wind or if $<8^{\circ}\text{C}$) and then removed. The crevices or cavities will then be re-inspected by the ecologist and if bats are absent, the crevice/cavity will be dismantled using a soft-strip approach (see below). If bats are still present then the excluders will be left in place for a further three nights.

Ecological Supervision of Soft-Strip

- 5.1.9 All areas with potential for bats to be present (e.g. under roof tiles, behind fascias) will be carefully dismantled by contractors by hand under the supervision of the named ecologist or accredited agent. All material will be lifted vertically away, without using a sliding motion, and checked for the presence of bats. Any bats present will be captured by hand or hand-held net by the ecologist, placed in a muslin bag and relocated to the pre-installed bat box. All contractors will wear gloves when carrying out the soft - demolition.

Compensatory Roost Provision

- 5.1.10 New roosts will be provided to compensate for the loss of the common pipistrelle roosts.
- 5.1.11 The roost behind the fascia on the eastern elevation of the single storey extension will be recreated behind the new fascia. Timber blocks/ wedges will be placed behind the fascia to ensure a gap of 25 mm is created behind.
- 5.1.12 The roost under roof slates will be compensated for by installation of two bat access slates to permit bats access into the area under roof slates. One access slate will be provided on the northern roof slope and one on the southern roof slope. The slate on the northern roof slope will be positioned in the location of the existing roost site. Only **Bitumen 1F felt lining** will be installed beneath slates as bats can become entangled in breathable roofing membranes. Bat access slates can be purchased (see Figure 5- 1) or alternatively gaps can be created under slates by placing a small amount of cement or mortar at the bottom of the slate to lift it by at least 25 mm.





Figure 5- 1: Habibat Bat Access Slate (www.nhbs.com)



5.2.1 In line with the NPPF, details of opportunities to provide biodiversity enhancements for bats are outlined in Table 5- 1.

Table 5- 1: Opportunities for biodiversity enhancements

Opportunity	Details
Provision of bat boxes	<p>It is recommended that additional roosting opportunities are provided for bats. This could include the installation of bat boxes on exterior walls (e.g. Beaumaris Woodstone bat box, 1FF Schwegler bat box).</p> <p>Bat boxes must be installed at least 3 m above ground level, ideally facing to south, south- west and/or south- east, located away from windows and artificial light sources, and with a clear flight path to and from the entrance.</p>



Andrews Ecology (2017). *A Review of Empirical Data in Respect of Emergence and Return Times Reported for the UK's 17 Native Bat Species.* Andrews Ecology, Bridgwater .

British Standards Institute (BSI) (2013). *BS4202 Biodiversity – A code of practice for planning and development.* BSI, London.

Collins, J. (2016). *Bat Surveys for Professional Ecologists – Good Practice Guidelines, 3rd edition.* Bat Conservation Trust, London.

Mitchell-Jones, A. J., (2004). *Bat Mitigation Guidelines.* English Nature, Peterborough.

Russ, J. (2012). *British Bat Calls: A Guide to Species Identification.* Pelagic Publishing, Exeter .

Smart Ecology (2022a). *Preliminary Bat Roost Assessment & Nesting Bird Survey Report, Moat House, High Street, St Briavels, Lydney, Gloucestershire, GL15 6TA.* Smart Ecology Ltd., Woolaston.

Smart Ecology (2022b). *Bat Survey Report, Moat House, High Street, St Briavels, Lydney, Gloucestershire, GL15 6TA.* Smart Ecology Ltd., Woolaston.

Wray, S., Wells, D., Long, E. & Mitchell-Jones, T. (2010). *Valuing bats in ecological impact assessment.* In Practice, No 70. Institute of Ecology and Environmental Management, Winchester .







Figure 1 - Location Map

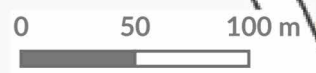
The Moat House,
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St Briavels,
Lydney,
Gloucestershire,
GL15 6TA

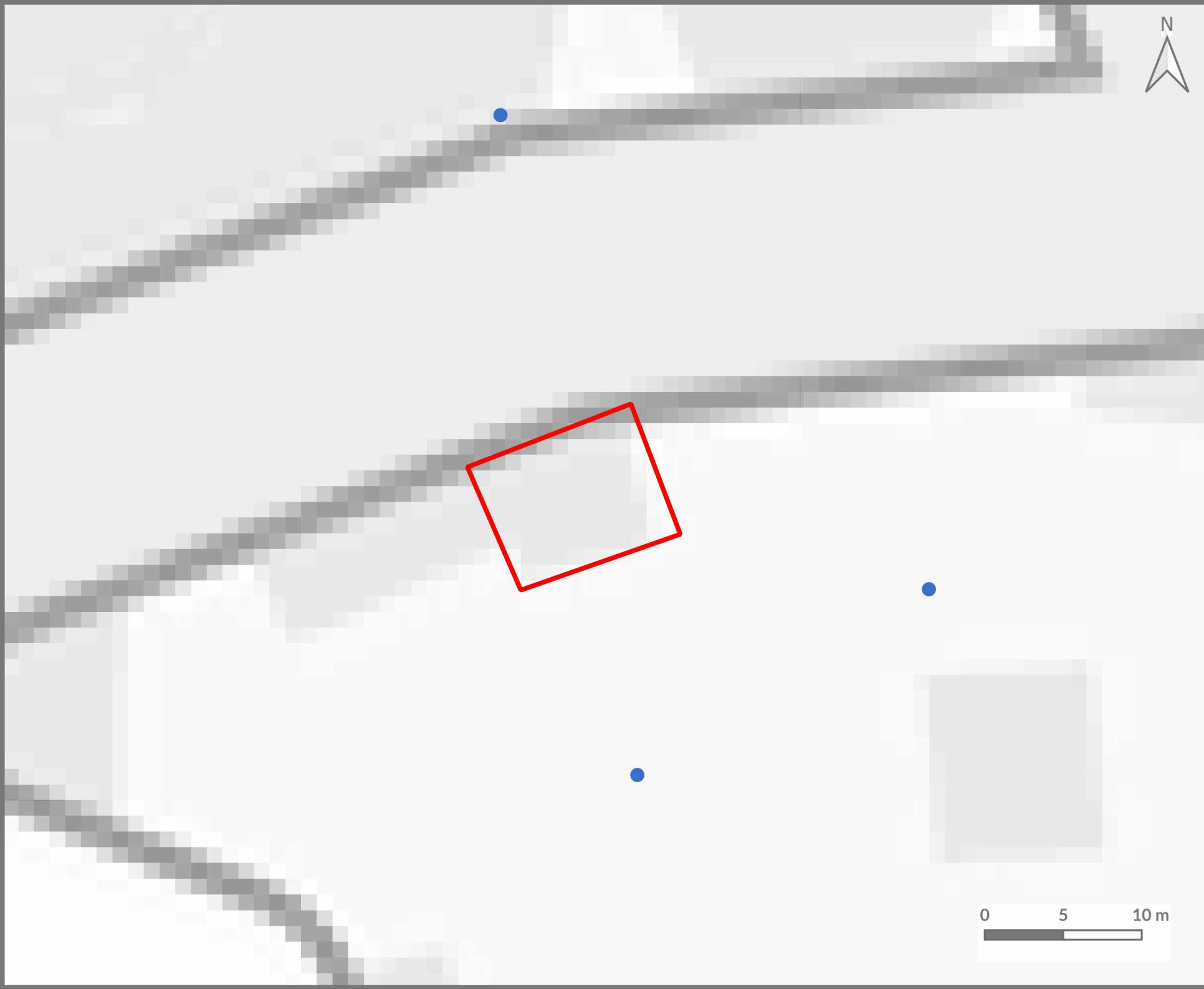
 Site Boundary

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**Figure 2 -
Surveyor Positions
Plan**

The Moat House,
High Street,
St Briavels,
Lydney,
Gloucestershire,
GL15 6TA

- Surveyors
- ▭ Surveyed Building

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Date:	29/06/2023
Drawn by:	Rachel Barber
Checked by:	Joseph Wilkie

Smart Ecology\Projects\2021\
2021-127\GIS



The peak frequency measurements used to differentiate between species are shown below. Where further analysis was required additional measurements (inter-pulse interval, call duration and minimum and maximum frequency) were also taken and compared to reference parameters cited in Russ (2012).

Species	Peak Frequency (kHz)		Notes
	Min	Max	
<i>Pipistrellus</i> species			
Common pipistrelle	≥42	<49	
Soprano pipistrelle	≥ 52	-	
Nathusius' pipistrelle	35	≤41	
Common/Soprano pipistrelle	≥49	<52	
Nathusius'/Common pipistrelle	>41	<42	
Large bat species			
Noctule	≥17	≤26	Some calls below 20 kHz
Leisler's bat	>20	≤51	All calls above 20 kHz.
Serotine	≥26	≤42	

