

20 Rotherfield Avenue
Wokingham
Berkshire
RG41 2EX

Bat Emergence Survey

Report ref.: R2550_BES_b

Report Quality Control Information	
Author	Conor Watson ACIEEM
Reviewer	Sarah Foot MCIEEM

July 2024



1 Diesel House, Honey Hill, Wokingham, Berkshire RG40 3BL
Telephone: 0118 3271810 Mobile: 07979 403099 E-mail: info@wenman-ecology.co.uk
www.wenman-ecology.co.uk

John Wenman Ecological Consultancy LLP is a limited liability partnership registered in England and Wales with registered number OC339057.
Registered office: 100 New Wokingham Road, Crowthorne, Berkshire RG45 6JP where you may look at a list of members' names.

CONTENTS PAGE

1	EXECUTIVE SUMMARY	3
2	INTRODUCTION.....	4
2.1	Project Background.....	4
2.2	Site Location and Context.....	4
2.3	Report Objectives	4
3	LEGISLATIVE AND POLICY BACKGROUND	6
3.1	Relevant Legislation.....	6
3.2	Planning Policy	6
3.3	Mitigation Licensing	7
4	SURVEY METHODOLOGY	8
4.1	Emergence Survey	8
4.2	Survey Limitations and Report Validity	8
5	SURVEY RESULTS	9
5.1	Overview.....	9
5.2	Emergence Surveys.....	9
6	DISCUSSION	13
6.1	Assessment of Roost Status.....	13
6.2	Impact Assessment and Recommendations.....	13
7	REFERENCES.....	15
	APPENDIX 1 – DARKEST POINT OF SURVEY FOR NIGHT VISION AIDS	16
	APPENDIX 2 – BAT EMERGENCE SURVEY RAW DATA TABLES.....	17
	APPENDIX 3 – PROPOSED BAT ROOST PROVISION.....	27

1 EXECUTIVE SUMMARY

- 1.1.1** John Wenman Ecological Consultancy LLP was instructed by Alex Smith to undertake a Bat Emergence Survey at 20 Rotherfield Avenue in Wokingham, Berkshire. The survey was commissioned to accompany a householder application to be submitted to Wokingham Borough Council seeking consent for the proposed erection of a two storey side extension, the enlargement of front and rear dormers and erection of a single storey rear extension following the demolition of the existing rear extension and side lean-to..
- 1.1.2** The Bat Emergence Survey follows a Preliminary Roost Assessment for bats (PRA) conducted by John Wenman Ecological Consultancy in August 2023. The PRA found an accumulation of approximately 200 small bat droppings, resembling those typically deposited by pipistrelle species, at the base of the western gable wall inside the roof void. In line with best practice guidance (Collins 2023), three dusk emergence surveys were carried out on the 2nd May, 28th May and 20th June 2024.
- 1.1.3** No bats were observed emerging from the property. Although common pipistrelle and soprano pipistrelle were recorded at typical emergence periods during each of the surveys, none were observed emerging from the pipistrelle roost location in the western gable end. Therefore, this survey data provides a sufficient level of confidence that the bat roost identified during the PRA is historic and that roosting bats are likely to be currently absent from the property.
- 1.1.4** A precautionary method of working is recommended to ensure that the development proposals do not ‘deliberately’ or ‘intentionally/recklessly’ disturb, injure or kill any bats if occupying the historic roost at the time of the works. If the precautionary mitigation measures detailed in **Section 6.2** are adhered to, the development proposals are considered highly unlikely to contravene legislation protecting bats and as such, a European Protected Species (EPS) mitigation licence would not be required to allow the works to proceed lawfully.
- 1.1.5** In order to prevent the loss of potential roosting opportunities within the property and maintain ecological functionality, a Schwegler 1FR Bat Tube (or an approved functional equivalent) will be incorporated into the proposed gable end of the new extension (see **Appendix 3**).
- 1.1.6** This report contains information regarding a mobile species so it will likely be valid for up to 12 months only (CIEEM 2019b).

2 INTRODUCTION

2.1 Project Background

2.1.1 John Wenman Ecological Consultancy LLP was instructed by Alex Smith to undertake a Bat Emergence Survey at 20 Rotherfield Avenue in Wokingham, Berkshire. The survey was commissioned to accompany a householder application to be submitted to Wokingham Borough Council seeking consent for the proposed erection of a two storey side extension, the enlargement of front and rear dormers and erection of a single storey rear extension following the demolition of the existing rear extension and side lean-to.

2.1.2 The Bat Emergence Survey follows a Preliminary Roost Assessment for bats (PRA) conducted by John Wenman Ecological Consultancy in August 2023 (Report ref.: R3542/a). The PRA found an accumulation of approximately 200 small bat droppings, resembling those typically deposited by pipistrelle species (*Pipistrellus* spp.), at the base of the western gable wall inside the roof void, suggesting that the property is likely used as a summer day roost by individual or small numbers of pipistrelle bats (*Pipistrellus* sp.). It was noted that the distribution of the bat droppings indicates that the roost location is behind hanging tiles at the apex of the western gable end. In line with best practice guidance (Collins 2023), a minimum of three dusk emergence surveys were recommended.

2.2 Site Location and Context

2.2.1 The property is a detached chalet bungalow situated at the western end of Rotherfield Avenue in Wokingham, Berkshire (OS grid ref.: SU 79931 69354).

2.2.2 The chalet bungalow is in a suburban setting set off of the Reading Road (A329). The Emm Brook and deciduous woodland are adjacent to the west of the property and ancient semi-natural woodland is present approximately 450m to the east at Holt Copse & Joel Park Local Nature Reserve (LNR).

2.3 Report Objectives

2.3.1 The aim of the bat emergence survey is to determine the presence or likely absence of roosting bats and to characterise the bat roost(/s) in cases where presence is confirmed. The emergence survey findings inform an impact assessment and mitigation strategy for the development proposals and ascertain whether a European Protected Species (EPS) mitigation licence would be required to allow the works to

proceed lawfully.

3 LEGISLATIVE AND POLICY BACKGROUND

3.1 Relevant Legislation

3.1.1 In England and Wales, all bat species found in the wild are fully protected under the Wildlife & Countryside Act 1981 (as amended) (WCA) and Conservation of Habitats and Species Regulations 2017 (as amended); the regulations are commonly referred to as the Habitat Regulations and hereafter referred to as such. The Habitat Regulations refer to European Protected Species (EPS) and all species of bats in the United Kingdom (UK) are EPS. Although the UK left the European Union on the 31st January 2020 and is therefore no longer tied to European legislation, the Habitat Regulations have been retained in their current format.

3.1.2 The legal framework underpinned by the WCA and Habitat Regulations makes these specific actions an offence as follows:

- Deliberately kill, injure, capture or take a wild bat;
- Deliberately, intentionally or recklessly disturb bats; in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or to significantly affect local distribution or abundance;
- Damage or destroy a place used by a bat for breeding or resting; and
- Intentionally or recklessly obstruct access to any place used by a bat for shelter or protection.

3.2 Planning Policy

3.2.1 The biodiversity duty imposed through the Environment Act 2021 states that Local Planning Authorities (LPAs) must consider what action they can take to conserve and enhance biodiversity in England. Government planning policy, such as the ODPM Circular 06/2005, requires LPAs to account for the conservation of protected species when considering and determining planning applications.

3.2.2 The ODPM Circular 06/2005 states that *‘the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.’* This policy means that in instances where there is a reasonable likelihood of bats being present and affected by a development, surveys must be undertaken to inform a mitigation strategy to be agreed prior to granting planning permission.

3.3 Mitigation Licensing

3.3.1 The government's statutory nature conservation body, Natural England, is responsible for issuing European Protected Species (EPS) mitigation licences that would permit activities that would otherwise lead to an infringement of the Habitat Regulations. An EPS mitigation licence can be issued if the following three tests derived from Regulation 55 have been satisfied:

- (2)(e) – the derogation is for the purposes of *'preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.'*
- (9)(a) – there is *'no satisfactory alternative'* to the derogation; and
- (9)(b) – *'the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.'*

3.3.2 LPAs have a statutory duty under Regulation 7(3)(e) of the Habitat Regulations to consider and determine whether these three tests are likely to be satisfied by planning proposals affecting EPS before granting planning permission. If an EPS mitigation licence is necessary, a licence can be sought once all the necessary planning consents have been granted. Natural England aims to issue a decision on licence applications within 30 working days of submission.

3.3.3 The Bat Mitigation Class Licence (BMCL) scheme allows ecologists to apply to become Registered Consultants to use this licence for low conservation status roosts, i.e. roosts comprising small numbers of seven commonly occurring species. A site registration form must be completed as a condition of the licence and submitted to Natural England at least three weeks before the licensable activities are due to start; Natural England aims to register sites within two weeks of submission.

3.3.4 Baseline survey information supporting EPS mitigation licence applications or BMCL site registrations must be up-to-date and have been completed within the current or most recent optimal season. A suitably experienced ecologist will be required to undertake a site walkover/check within three months prior to application/registration submission to confirm that conditions have not changed since the most recent survey.

4 SURVEY METHODOLOGY

4.1 Emergence Survey

4.1.1 In accordance with best practice guidance (Collins 2023), three dusk emergence surveys were conducted for the property on the 2nd and 28th May and 20th June 2024 by experienced bat surveyors Vicky Potts MCIEEM (CL18 2016-27162-CLS-CLS), Conor Watson ACIEEM (CL18 2024-11877-CL18-BAT), Beth England and Jake Morgan (a qualifying member of CIEEM). Two surveyors were positioned either side of the property during each survey – refer to emergence survey plan in **Section 5** below.

4.1.2 The equipment used during the survey included full-spectrum sampling bat detectors (Batlogger M & Batlogger M2 and Echo Meter Touch 2 Pro) and infrared/thermal imaging night vision aids (Nightfox Whisker binoculars, Sionyx Aurora Pro camera with infrared torch and Pulsar Helion XP28 thermal imaging monocular). A still shot of the darkest point of the survey has been included for all night vision aids in **Appendix 1**.

4.1.3 Each emergence survey started 15 minutes before sunset and continued for 1 hour and 30 minutes after sunset. Within a five-day period after the survey, the bat call recordings were processed and analysed using the BatExplorer computer software package and the night vision video footage was reviewed in VLC media player.

4.2 Survey Limitations and Report Validity

4.2.1 There were no significant constraints to the bat emergence surveys, which were undertaken during the optimal survey season, i.e. May to August, in conditions suitable for bat activity, i.e. dry and calm with air temperatures 10°C or above at sunset (Collins 2023).

4.2.2 This report contains information regarding a mobile species so it will likely be valid for up to 12 months only (CIEEM 2019b).

5 SURVEY RESULTS

5.1 Overview

- 5.1.1 The bat emergence survey findings are described below, summarised in **Tables 1-6** and illustrated in the survey plan below; the raw detector data is supplied in **Appendix 2**.

5.2 Emergence Surveys

2nd May 2024

- 5.2.1 No bats were observed emerging from the property during the emergence survey.

Table 1. Weather conditions and survey timings

Weather	Wind (BF0-12)	Cloud cover (oktas)	Rain	Temperature (°C)	
	0	8/8	None	Start	Finish
Start	20:14	Sunset	20:29	Finish	21:59

Table 2a. Surveyor recordings at location 1

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Noctule	7	0	20:36 (7)
Common pipistrelle	106	0	20:37 (8)
Soprano pipistrelle	10	0	20:37 (8)
Pipistrelle social call	2	N/A	20:58 (29)

Table 2b. Surveyor recordings at location 2

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Noctule	12	0	20:36 (7)
Common pipistrelle	14	0	20:42 (13)

*recordings are the number of times that the detector was triggered when bat calls were detected.

†confirmed by direct observation and/or night vision aid.

- 5.2.2 Common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) were recorded eight minutes after sunset which indicates that they emerged from roosts nearby and were then commuting/foraging along the Emm Brook. There was intermittent pipistrelle activity at surveyor location 1, adjacent to the Emm Brook throughout the survey. An unseen noctule (*Nyctalus noctula*) was the first bat recorded during the survey, seven minutes after sunset, indicating that it is roosting locally.

28th May 2024

- 5.2.3 No bats were observed emerging from the property during the emergence survey.

Table 3. Weather conditions and survey timings

Weather	Wind (BF0-12)	Cloud cover (oktas)	Rain	Temperature (°C)	
	Start	Finish			
	3	8/8	Very light	15	14
Start	20:51	Sunset	21:06	Finish	22:36

Table 4a. Surveyor recordings at location 3

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Common pipistrelle	17	0	21:16 (10)
Soprano pipistrelle	1	0	21:23 (17)
Noctule	2	0	21:59 (53)

Table 4b. Surveyor recordings at location 4

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Soprano pipistrelle	4	0	21:32 (26)
Common pipistrelle	3	0	21:35 (29)
Noctule	1	0	21:59 (53)

*recordings are the number of times that the detector was triggered when bat calls were detected.

†confirmed by direct observation and/or night vision aid.

- 5.2.4** Common pipistrelle (*P. pipistrellus*) and soprano pipistrelle (*P. pygmaeus*) were recorded 10 minutes and 17 minutes after sunset, respectively, which indicates that they emerged from roosts nearby and were then commuting/foraging along the Emm Brook. The general level of bat activity was low. Both surveyors recorded an unseen noctule (*N. noctula*) at 21:59, 53 minutes after sunset.

20th June 2024

- 5.2.5** No bats were observed emerging from the property during the emergence survey.

Table 5. Weather conditions and survey timings

Weather	Wind (BF0-12)	Cloud cover (oktas)	Rain	Temperature (°C)	
	Start	Finish			
	1	1/8	None	21	19
Start	21:08	Sunset	21:23	Finish	22:53

Table 6a. Surveyor recordings at location 3

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Noctule	19	0	21:18 (-5)
Common pipistrelle	55	0	21:30 (7)

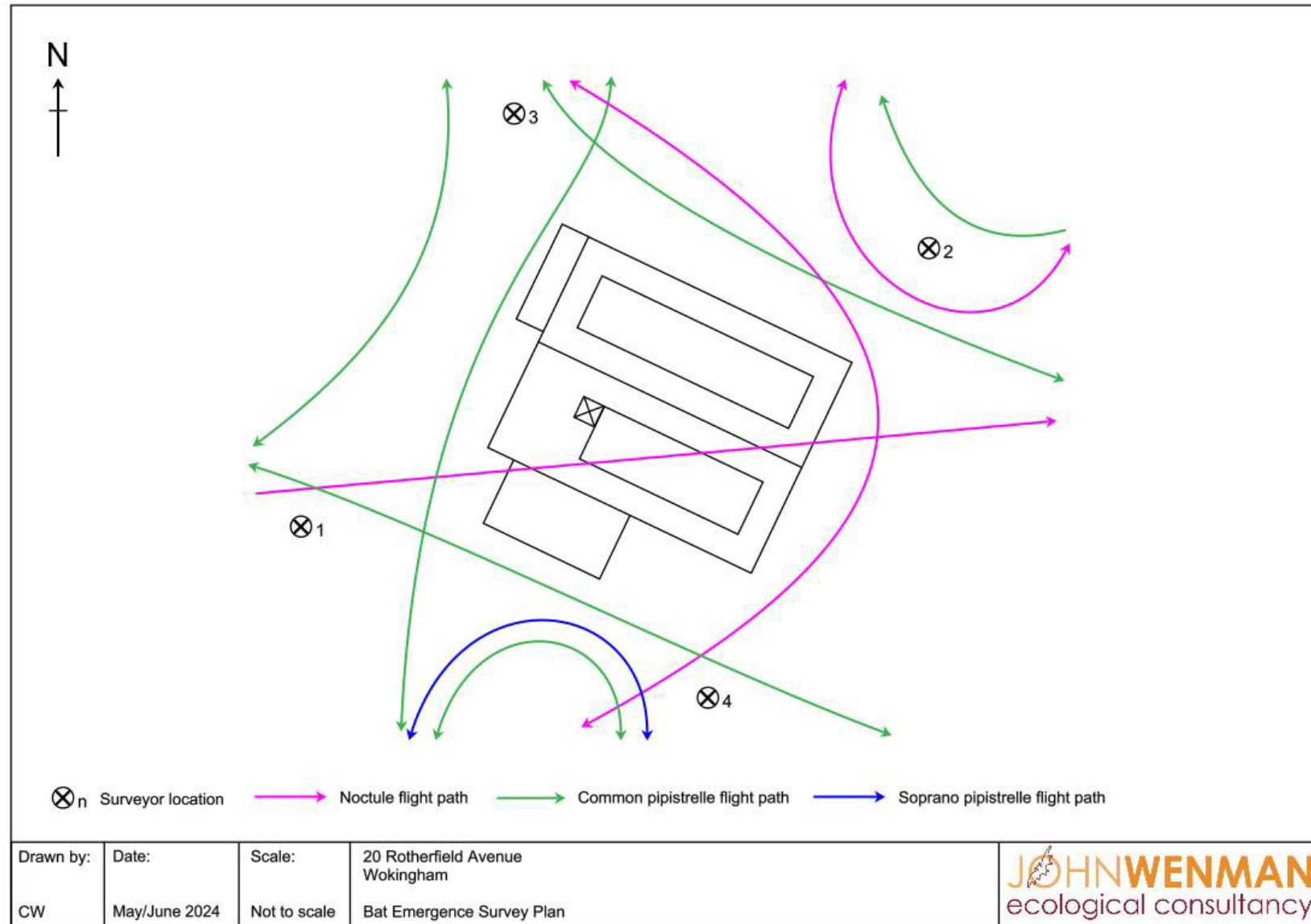
Table 6b. Surveyor recordings at location 4

Species	Recordings*	Emergences†	Time of first call (minutes after sunset)
Noctule	14	0	21:22 (-1)
Common pipistrelle	65	0	21:43 (20)
Soprano pipistrelle	100	0	21:49 (26)

*recordings are the number of times that the detector was triggered when bat calls were detected.

†confirmed by direct observation and/or night vision aid.

- 5.2.6** Common pipistrelle (*P. pipistrellus*) was recorded only 7 minutes after sunset, which indicates that a bat emerged from a nearby roost and was then commuting/foraging along the Emm Brook. A noctule (*N. noctula*) was the first bat recorded, 5 minutes before sunset, as it was observed commuting/foraging high above the property – it is considered likely to be roosting locally. There was consistent pipistrelle activity throughout the survey but soprano pipistrelle (*P. pygmaeus*) was only recorded at surveyor location 4.



6 DISCUSSION

6.1 Assessment of Roost Status

6.1.1 No bats were observed emerging from the property during three emergence surveys spanning May to June. Although common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) were recorded at typical emergence periods during each of the surveys, none were observed emerging from the pipistrelle (*Pipistrellus* sp.) roost location in the western gable end. Therefore, this survey data provides a sufficient level of confidence that the bat roost identified in August 2023 during the Preliminary Roost Assessment (PRA) is historic and that roosting bats are likely to be currently absent from the property.

6.2 Impact Assessment and Recommendations

6.2.1 The survey result demonstrates that the development proposals, which involve the erection of a two storey side extension, the enlargement of front and rear dormers and the erection of a single storey rear extension, are unlikely to result in the damage and/or destruction of a bat roost or cause disturbance, injury and/or death of bats. However, bats are a highly mobile animal so there is a low risk that the historic roost could be inhabited in the near future.

Precautionary Working Method Statement

6.2.2 A precautionary method of working is recommended to ensure that the development proposals do not 'deliberately' or 'intentionally/recklessly' disturb, injure or kill any bats if occupying the historic roost at the time of the works. The precautionary mitigation measures to be adopted include:

- A pre-works toolbox talk delivered to the contractors by a suitably licensed ecologist detailing the location of the historic roost, legal protections, working methods (i.e. soft strip/demolition), actions to be taken if a bat is found and personal safety procedures;
- A pre-works inspection of the historic roost undertaken by a suitable licensed ecologist internally from the loft space and externally from scaffolding; and
- A soft strip approach to the removal of hanging tiles (and roof coverings) associated with the historic roost, i.e. by gloved hands and with handheld tools under the direct supervision of a suitably licensed ecologist.

6.2.3 If these precautionary mitigation measures are adhered to, the development proposals are considered highly unlikely to contravene legislation protecting bats. Therefore, a European Protected Species (EPS) mitigation licence would not be required to allow the works to proceed lawfully.

6.2.4 In the event that bats are encountered during the works, the works must stop immediately and will not continue until further written advice has been received. At this stage, an EPS mitigation licence may be required to permit the works to recommence lawfully.

Proposed Bat Roost Provision

6.2.5 In order to prevent the loss of potential roosting opportunities within the property and maintain ecological functionality, a Schwegler 1FR Bat Tube (or an approved functional equivalent) will be incorporated into the proposed gable end of the new extension corresponding to the location of the historic roost – refer to proposed bat roost provision in **Appendix 3**.

7 REFERENCES

CIEEM (2019b). *Advice Note on the Lifespan of Ecological Reports and Surveys*. CIEEM, Winchester.

Collins, J (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London.

Mathews F., Kubasiewicz L.M., Gurnell J., Harrower C.A., McDonald R.A., Shore R.F. (2018). *A Review of the Population and Conservation Status of British Mammals*. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

Mitchell-Jones, A. J. & McLeish, A. P. (2004). *Bat Workers' Manual (3rd edition)*. JNCC, Peterborough.

Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. CIEEM, Ampfield.

APPENDIX 1 – DARKEST POINT OF SURVEY FOR NIGHT VISION AIDS

2nd May 2024



Nightfox Whisker at surveyor location 1.

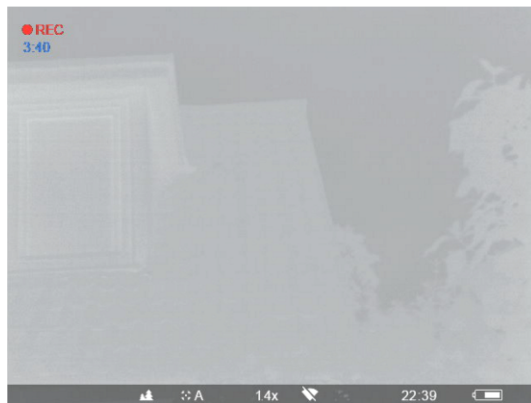


Sionyx Aurora Pro at surveyor location 2.

28th May 2024



Nightfox Whisker at surveyor location 3.



Pulsar Helion XP28 at surveyor location 4.

20th June 2024



Sionyx Aurora Pro at surveyor location 3.



Nightfox Whisker at surveyor location 4.

APPENDIX 2 – BAT EMERGENCE SURVEY RAW DATA TABLES2nd May 2024

Surveyor location 1 – Batlogger M2

Time	Species	Calls [#]
20:36:23	<i>Nyctalus noctula</i>	6
20:36:29	<i>Nyctalus noctula</i>	7
20:36:40	<i>Nyctalus noctula</i>	1
20:36:40	<i>Nyctalus noctula</i>	1
20:37:44	<i>Pipistrellus pipistrellus</i>	0
20:37:58	<i>Pipistrellus pygmaeus</i>	1
20:42:17	<i>Pipistrellus pipistrellus</i>	13
20:43:33	<i>Pipistrellus pipistrellus</i>	0
20:43:36	<i>Pipistrellus pipistrellus</i>	1
20:43:40	<i>Pipistrellus pipistrellus</i>	4
20:44:41	<i>Pipistrellus pipistrellus</i>	2
20:44:44	<i>Pipistrellus pipistrellus</i>	7
20:44:46	<i>Pipistrellus pipistrellus</i>	2
20:44:51	<i>Pipistrellus pipistrellus</i>	6
20:44:59	<i>Pipistrellus pipistrellus</i>	12
20:49:30	<i>Pipistrellus pipistrellus</i>	13
20:54:22	<i>Pipistrellus pipistrellus</i>	12
20:58:27	<i>Pipistrellus pipistrellus</i>	17
20:58:27	<i>Pipistrellus social call</i>	2
20:58:45	<i>Pipistrellus pipistrellus</i>	15
20:58:45	<i>Pipistrellus pygmaeus</i>	1
21:01:27	<i>Pipistrellus pipistrellus</i>	11
21:01:42	<i>Pipistrellus pygmaeus</i>	1
21:08:27	<i>Pipistrellus pipistrellus</i>	4
21:08:35	<i>Pipistrellus pipistrellus</i>	3
21:08:38	<i>Pipistrellus pipistrellus</i>	10
21:08:48	<i>Pipistrellus pipistrellus</i>	14
21:10:20	<i>Pipistrellus pipistrellus</i>	13
21:11:01	<i>Pipistrellus pipistrellus</i>	4
21:11:22	<i>Pipistrellus pipistrellus</i>	15
21:12:17	<i>Pipistrellus pipistrellus</i>	2
21:13:03	<i>Pipistrellus pipistrellus</i>	13
21:13:58	<i>Pipistrellus pipistrellus</i>	2
21:14:03	<i>Pipistrellus pipistrellus</i>	2
21:14:14	<i>Pipistrellus pipistrellus</i>	5
21:14:19	<i>Pipistrellus pipistrellus</i>	5
21:14:34	<i>Pipistrellus pipistrellus</i>	3
21:15:24	<i>Pipistrellus pipistrellus</i>	7
21:15:52	<i>Pipistrellus pipistrellus</i>	2
21:15:54	<i>Pipistrellus pipistrellus</i>	7
21:16:23	<i>Pipistrellus pipistrellus</i>	4

21:18:21	<i>Pipistrellus pipistrellus</i>	3
21:18:24	<i>Pipistrellus pipistrellus</i>	6
21:18:55	<i>Pipistrellus pipistrellus</i>	1
21:18:57	<i>Pipistrellus pipistrellus</i>	2
21:19:33	<i>Pipistrellus pipistrellus</i>	2
21:19:40	<i>Pipistrellus pipistrellus</i>	1
21:20:04	<i>Pipistrellus pipistrellus</i>	4
21:20:23	<i>Pipistrellus pipistrellus</i>	3
21:20:36	<i>Pipistrellus pipistrellus</i>	1
21:20:41	<i>Pipistrellus pipistrellus</i>	4
21:21:47	<i>Pipistrellus pipistrellus</i>	10
21:22:20	<i>Nyctalus noctula</i>	10
21:22:20	<i>Pipistrellus pipistrellus</i>	1
21:22:24	<i>Nyctalus noctula</i>	5
21:22:27	<i>Pipistrellus pipistrellus</i>	4
21:22:27	<i>Nyctalus noctula</i>	1
21:22:34	<i>Pipistrellus pipistrellus</i>	2
21:22:58	<i>Pipistrellus pipistrellus</i>	6
21:23:07	<i>Pipistrellus pipistrellus</i>	5
21:23:58	<i>Pipistrellus pipistrellus</i>	5
21:26:23	<i>Pipistrellus pipistrellus</i>	5
21:26:23	<i>Pipistrellus pygmaeus</i>	1
21:26:34	<i>Pipistrellus pipistrellus</i>	1
21:26:39	<i>Pipistrellus pipistrellus</i>	8
21:26:45	<i>Pipistrellus pipistrellus</i>	3
21:27:12	<i>Pipistrellus pipistrellus</i>	3
21:27:15	<i>Pipistrellus pipistrellus</i>	4
21:27:19	<i>Pipistrellus pipistrellus</i>	2
21:27:21	<i>Pipistrellus pipistrellus</i>	5
21:27:25	<i>Pipistrellus pipistrellus</i>	11
21:27:33	<i>Pipistrellus pipistrellus</i>	9
21:27:42	<i>Pipistrellus pipistrellus</i>	7
21:27:52	<i>Pipistrellus pipistrellus</i>	12
21:28:02	<i>Pipistrellus pipistrellus</i>	7
21:28:33	<i>Pipistrellus pipistrellus</i>	4
21:28:36	<i>Pipistrellus pipistrellus</i>	3
21:29:04	<i>Pipistrellus pipistrellus</i>	3
21:29:20	<i>Pipistrellus pipistrellus</i>	3
21:29:37	<i>Pipistrellus pipistrellus</i>	4
21:31:42	<i>Pipistrellus pipistrellus</i>	3
21:31:47	<i>Pipistrellus pipistrellus</i>	2
21:32:32	<i>Pipistrellus pipistrellus</i>	3
21:33:10	<i>Pipistrellus pipistrellus</i>	3
21:33:18	<i>Pipistrellus pipistrellus</i>	11
21:35:09	<i>Pipistrellus pipistrellus</i>	1
21:36:19	<i>Pipistrellus pipistrellus</i>	2
21:38:34	<i>Pipistrellus pipistrellus</i>	3

21:38:42	<i>Pipistrellus pipistrellus</i>	3
21:38:45	<i>Pipistrellus pipistrellus</i>	3
21:41:15	<i>Pipistrellus pipistrellus</i>	3
21:43:34	<i>Pipistrellus pipistrellus</i>	1
21:44:02	<i>Pipistrellus pipistrellus</i>	10
21:44:06	<i>Pipistrellus pipistrellus</i>	7
21:47:14	<i>Pipistrellus pipistrellus</i>	6
21:47:20	<i>Pipistrellus pipistrellus</i>	3
21:47:25	<i>Pipistrellus pipistrellus</i>	5
21:47:31	<i>Pipistrellus pipistrellus</i>	0
21:48:37	<i>Pipistrellus pipistrellus</i>	3
21:49:47	<i>Pipistrellus pipistrellus</i>	0
21:50:02	<i>Pipistrellus pipistrellus</i>	3
21:53:01	<i>Pipistrellus pipistrellus</i>	3
21:54:05	<i>Pipistrellus pipistrellus</i>	0
21:54:12	<i>Pipistrellus pipistrellus</i>	2
21:54:12	<i>Pipistrellus pipistrellus</i>	1
21:55:10	<i>Pipistrellus pipistrellus</i>	2
21:55:22	<i>Pipistrellus pipistrellus</i>	1
21:55:26	<i>Pipistrellus pipistrellus</i>	2
21:55:34	<i>Pipistrellus pipistrellus</i>	4
21:56:48	<i>Pipistrellus pipistrellus</i>	1
21:56:48	<i>Pipistrellus pygmaeus</i>	1
21:56:58	<i>Pipistrellus pygmaeus</i>	14
21:56:58	<i>Pipistrellus pipistrellus</i>	7
21:57:06	<i>Pipistrellus pygmaeus</i>	22
21:57:06	<i>Pipistrellus</i> social call	1
21:57:22	<i>Pipistrellus pipistrellus</i>	3
21:57:29	<i>Pipistrellus pipistrellus</i>	1
21:57:35	<i>Pipistrellus pygmaeus</i>	3
21:57:39	<i>Pipistrellus pipistrellus</i>	2
21:58:58	<i>Pipistrellus pipistrellus</i>	4
21:59:05	<i>Pipistrellus pipistrellus</i>	3
21:59:29	<i>Pipistrellus pygmaeus</i>	4
21:59:36	<i>Pipistrellus pipistrellus</i>	2
21:59:36	<i>Pipistrellus pygmaeus</i>	2
21:59:45	<i>Pipistrellus pipistrellus</i>	6

Surveyor location 2 – Batlogger M

Time	Species	Calls [#]
20:36:38	<i>Nyctalus noctula</i>	4
20:36:18	<i>Nyctalus noctula</i>	15
20:36:44	<i>Nyctalus noctula</i>	4
20:36:47	<i>Nyctalus noctula</i>	2
20:36:49	<i>Nyctalus noctula</i>	12
20:37:00	<i>Nyctalus noctula</i>	2
20:37:03	<i>Nyctalus noctula</i>	9

20:37:11	<i>Nyctalus noctula</i>	3
20:42:20	<i>Pipistrellus pipistrellus</i>	7
20:44:54	<i>Pipistrellus pipistrellus</i>	12
20:49:33	<i>Pipistrellus pipistrellus</i>	13
20:52:23	<i>Nyctalus noctula</i>	1
20:54:25	<i>Pipistrellus pipistrellus</i>	20
20:58:32	<i>Pipistrellus pipistrellus</i>	18
20:58:48	<i>Pipistrellus pipistrellus</i>	9
21:01:30	<i>Pipistrellus pipistrellus</i>	9
21:08:49	<i>Pipistrellus pipistrellus</i>	23
21:11:23	<i>Pipistrellus pipistrellus</i>	13
21:21:49	<i>Pipistrellus pipistrellus</i>	5
21:22:21	<i>Nyctalus noctula</i>	11
21:23:40	<i>Nyctalus noctula</i>	6
21:23:48	<i>Nyctalus noctula</i>	3
21:43:53	<i>Pipistrellus pipistrellus</i>	13
21:44:00	<i>Pipistrellus pipistrellus</i>	3
21:44:02	<i>Pipistrellus pipistrellus</i>	8
21:57:05	<i>Pipistrellus pipistrellus</i>	9

28th May 2024

Surveyor location 3 – Batlogger M2

Time	Species	Calls [#]
21:16:33	<i>Pipistrellus pipistrellus</i>	15
21:22:49	<i>Pipistrellus pipistrellus</i>	6
21:23:03	<i>Pipistrellus pipistrellus</i>	8
21:23:37	<i>Pipistrellus pygmaeus</i>	3
21:32:40	<i>Pipistrellus pipistrellus</i>	7
21:35:27	<i>Pipistrellus pipistrellus</i>	11
21:35:56	<i>Pipistrellus pipistrellus</i>	3
21:37:10	<i>Pipistrellus pipistrellus</i>	2
21:39:54	<i>Pipistrellus pipistrellus</i>	5
21:44:24	<i>Pipistrellus pipistrellus</i>	12
21:46:22	<i>Pipistrellus pipistrellus</i>	6
21:55:00	<i>Pipistrellus pipistrellus</i>	5
21:57:52	<i>Pipistrellus pipistrellus</i>	5
21:59:21	<i>Nyctalus noctula</i>	18
21:59:31	<i>Nyctalus noctula</i>	8
22:12:45	<i>Pipistrellus pipistrellus</i>	2
22:17:41	<i>Pipistrellus pipistrellus</i>	6
22:21:10	<i>Pipistrellus pipistrellus</i>	11
22:26:40	<i>Pipistrellus pipistrellus</i>	2
22:33:34	<i>Pipistrellus pipistrellus</i>	8

Surveyor location 4 – Echo Meter Touch 2 Pro

Time	Species
21:32:41	<i>Pipistrellus pygmaeus</i>
21:33:21	<i>Pipistrellus pygmaeus</i>

21:35:24	<i>Pipistrellus pipistrellus</i>
21:35:55	<i>Pipistrellus pipistrellus</i>
21:44:20	<i>Pipistrellus pipistrellus</i>
21:46:29	<i>Pipistrellus pygmaeus</i>
21:46:47	<i>Pipistrellus pygmaeus</i>
21:59:17	<i>Nyctalus noctula</i>

20th June 2024

Surveyor location 3 – Batlogger M

Time	Species	Calls [#]
21:18:15	<i>Nyctalus noctula</i>	1
21:20:18	<i>Nyctalus noctula</i>	12
21:22:34	<i>Nyctalus noctula</i>	3
21:23:02	<i>Nyctalus noctula</i>	8
21:23:22	<i>Nyctalus noctula</i>	1
21:29:19	<i>Nyctalus noctula</i>	12
21:29:28	<i>Nyctalus noctula</i>	8
21:29:36	<i>Nyctalus noctula</i>	20
21:29:57	<i>Nyctalus noctula</i>	2
21:30:02	<i>Nyctalus noctula</i>	4
21:30:06	<i>Nyctalus noctula</i>	2
21:30:26	<i>Pipistrellus pipistrellus</i>	18
21:30:35	<i>Pipistrellus pipistrellus</i>	7
21:30:39	<i>Pipistrellus pipistrellus</i>	13
21:32:55	<i>Nyctalus noctula</i>	6
21:37:36	<i>Pipistrellus pipistrellus</i>	24
21:37:44	<i>Nyctalus noctula</i>	1
21:38:11	<i>Pipistrellus pipistrellus</i>	17
21:41:53	<i>Pipistrellus pipistrellus</i>	0
21:41:55	<i>Pipistrellus pipistrellus</i>	0
21:42:07	<i>Pipistrellus pipistrellus</i>	2
21:42:09	<i>Pipistrellus pipistrellus</i>	19
21:42:47	<i>Nyctalus noctula</i>	8
21:43:05	<i>Pipistrellus pipistrellus</i>	12
21:47:55	<i>Pipistrellus pipistrellus</i>	17
21:48:05	<i>Pipistrellus pipistrellus</i>	48
21:49:18	<i>Pipistrellus pipistrellus</i>	25
21:49:25	<i>Pipistrellus pipistrellus</i>	6
21:49:34	<i>Pipistrellus pipistrellus</i>	6
21:49:40	<i>Pipistrellus pipistrellus</i>	38
21:49:51	<i>Pipistrellus pipistrellus</i>	25
21:50:02	<i>Pipistrellus pipistrellus</i>	67
21:50:21	<i>Pipistrellus pipistrellus</i>	11
21:50:24	<i>Pipistrellus pipistrellus</i>	70
21:50:44	<i>Pipistrellus pipistrellus</i>	22
21:51:03	<i>Pipistrellus pipistrellus</i>	63
21:51:24	<i>Pipistrellus pipistrellus</i>	9

21:51:32	<i>Pipistrellus pipistrellus</i>	16
21:52:43	<i>Pipistrellus pipistrellus</i>	71
21:55:42	<i>Pipistrellus pipistrellus</i>	16
21:56:05	<i>Pipistrellus pipistrellus</i>	13
21:56:09	<i>Pipistrellus pipistrellus</i>	12
21:56:14	<i>Pipistrellus pipistrellus</i>	2
21:56:17	<i>Pipistrellus pipistrellus</i>	22
21:57:02	<i>Pipistrellus pipistrellus</i>	35
21:57:22	<i>Pipistrellus pipistrellus</i>	27
21:57:29	<i>Pipistrellus pipistrellus</i>	93
21:57:52	<i>Pipistrellus pipistrellus</i>	19
21:58:20	<i>Pipistrellus pipistrellus</i>	28
21:59:44	<i>Pipistrellus pipistrellus</i>	1
21:59:44	<i>Pipistrellus pipistrellus</i>	1
22:00:38	<i>Pipistrellus pipistrellus</i>	21
22:01:54	<i>Pipistrellus pipistrellus</i>	49
22:02:35	<i>Pipistrellus pipistrellus</i>	20
22:02:42	<i>Pipistrellus pipistrellus</i>	72
22:03:00	<i>Pipistrellus pipistrellus</i>	75
22:03:23	<i>Pipistrellus pipistrellus</i>	29
22:03:32	<i>Pipistrellus pipistrellus</i>	41
22:03:43	<i>Pipistrellus pipistrellus</i>	11
22:03:46	<i>Pipistrellus pipistrellus</i>	14
22:03:50	<i>Pipistrellus pipistrellus</i>	60
22:04:40	<i>Pipistrellus pipistrellus</i>	12
22:05:00	<i>Nyctalus noctula</i>	3
22:05:45	<i>Pipistrellus pipistrellus</i>	3
22:17:34	<i>Pipistrellus pipistrellus</i>	4
22:21:06	<i>Pipistrellus pipistrellus</i>	57
22:21:55	<i>Nyctalus noctula</i>	8
22:22:01	<i>Nyctalus noctula</i>	7
22:30:51	<i>Pipistrellus pipistrellus</i>	4
22:30:56	<i>Pipistrellus pipistrellus</i>	3
22:32:25	<i>Nyctalus noctula</i>	1
22:32:27	<i>Nyctalus noctula</i>	18
22:44:01	<i>Pipistrellus pipistrellus</i>	1
22:44:03	<i>Pipistrellus pipistrellus</i>	3

Surveyor location 4 – Batlogger M2

Time	Species	Calls [#]
21:22:36	<i>Nyctalus noctula</i>	7
21:23:01	<i>Nyctalus noctula</i>	4
21:29:29	<i>Nyctalus noctula</i>	12
21:29:37	<i>Nyctalus noctula</i>	4
21:42:49	<i>Nyctalus noctula</i>	7
21:42:52	<i>Nyctalus noctula</i>	7
21:42:55	<i>Nyctalus noctula</i>	5

21:42:58	<i>Nyctalus noctula</i>	3
21:43:05	<i>Pipistrellus pipistrellus</i>	3
21:43:08	<i>Pipistrellus pipistrellus</i>	2
21:48:04	<i>Pipistrellus pipistrellus</i>	8
21:48:18	<i>Pipistrellus pipistrellus</i>	2
21:48:21	<i>Pipistrellus pipistrellus</i>	3
21:48:28	<i>Pipistrellus pipistrellus</i>	7
21:48:37	<i>Pipistrellus pipistrellus</i>	1
21:48:53	<i>Pipistrellus pipistrellus</i>	4
21:49:04	<i>Pipistrellus pygmaeus</i>	3
21:49:08	<i>Pipistrellus pygmaeus</i>	21
21:49:17	<i>Pipistrellus pipistrellus</i>	5
21:49:18	<i>Pipistrellus pipistrellus</i>	2
21:49:25	<i>Pipistrellus pygmaeus</i>	6
21:49:39	<i>Pipistrellus pygmaeus</i>	9
21:49:39	<i>Pipistrellus pipistrellus</i>	1
21:49:51	<i>Pipistrellus pygmaeus</i>	8
21:49:51	<i>Pipistrellus pipistrellus</i>	6
21:49:57	<i>Pipistrellus pipistrellus</i>	8
21:50:02	<i>Pipistrellus pipistrellus</i>	3
21:50:02	<i>Pipistrellus pygmaeus</i>	1
21:50:09	<i>Pipistrellus pygmaeus</i>	5
21:50:21	<i>Pipistrellus pipistrellus</i>	2
21:50:24	<i>Pipistrellus pipistrellus</i>	4
21:50:44	<i>Pipistrellus pipistrellus</i>	2
21:50:58	<i>Pipistrellus pygmaeus</i>	9
21:50:58	<i>Pipistrellus pipistrellus</i>	3
21:51:08	<i>Pipistrellus pipistrellus</i>	6
21:51:25	<i>Pipistrellus pipistrellus</i>	18
21:51:33	<i>Pipistrellus pygmaeus</i>	2
21:51:52	<i>Pipistrellus pygmaeus</i>	3
21:51:59	<i>Pipistrellus pygmaeus</i>	5
21:52:13	<i>Pipistrellus pygmaeus</i>	4
21:52:22	<i>Pipistrellus pygmaeus</i>	4
21:52:28	<i>Pipistrellus pygmaeus</i>	1
21:52:34	<i>Pipistrellus pipistrellus</i>	17
21:52:43	<i>Pipistrellus pipistrellus</i>	3
21:52:43	<i>Pipistrellus pygmaeus</i>	3
21:52:57	<i>Pipistrellus pygmaeus</i>	2
21:53:00	<i>Pipistrellus pipistrellus</i>	11
21:53:03	<i>Pipistrellus pipistrellus</i>	12
21:53:16	<i>Pipistrellus pipistrellus</i>	1
21:53:32	<i>Pipistrellus pipistrellus</i>	2
21:53:50	<i>Pipistrellus pipistrellus</i>	3
21:54:07	<i>Pipistrellus pipistrellus</i>	5
21:54:14	<i>Pipistrellus pipistrellus</i>	5
21:54:29	<i>Pipistrellus pipistrellus</i>	1

21:54:34	<i>Pipistrellus pipistrellus</i>	1
21:55:01	<i>Pipistrellus pygmaeus</i>	1
21:55:01	<i>Pipistrellus pygmaeus</i>	1
21:55:06	<i>Pipistrellus pygmaeus</i>	5
21:55:16	<i>Pipistrellus pygmaeus</i>	9
21:55:24	<i>Pipistrellus pygmaeus</i>	11
21:55:46	<i>Pipistrellus pygmaeus</i>	2
21:55:57	<i>Pipistrellus pygmaeus</i>	5
21:56:03	<i>Pipistrellus pygmaeus</i>	4
21:56:10	<i>Pipistrellus pygmaeus</i>	5
21:56:14	<i>Pipistrellus pygmaeus</i>	3
21:56:19	<i>Pipistrellus pygmaeus</i>	7
21:56:19	<i>Pipistrellus pipistrellus</i>	1
21:56:23	<i>Pipistrellus pipistrellus</i>	3
21:57:02	<i>Pipistrellus pipistrellus</i>	8
21:57:02	<i>Pipistrellus pygmaeus</i>	5
21:57:09	<i>Pipistrellus pipistrellus</i>	3
21:57:12	<i>Pipistrellus pygmaeus</i>	4
21:57:17	<i>Pipistrellus pipistrellus</i>	3
21:57:32	<i>Pipistrellus pipistrellus</i>	3
21:57:37	<i>Pipistrellus pygmaeus</i>	2
21:57:47	<i>Pipistrellus pygmaeus</i>	3
21:57:58	<i>Pipistrellus pipistrellus</i>	15
21:58:05	<i>Pipistrellus pygmaeus</i>	8
21:58:05	<i>Pipistrellus pygmaeus</i>	1
21:58:13	<i>Pipistrellus pipistrellus</i>	4
21:58:13	<i>Pipistrellus pipistrellus</i>	1
21:58:22	<i>Pipistrellus pygmaeus</i>	14
21:58:35	<i>Pipistrellus pygmaeus</i>	4
21:58:43	<i>Pipistrellus pygmaeus</i>	2
21:59:01	<i>Pipistrellus pygmaeus</i>	4
21:59:08	<i>Pipistrellus pygmaeus</i>	4
21:59:31	<i>Pipistrellus pygmaeus</i>	4
21:59:39	<i>Pipistrellus pygmaeus</i>	4
21:59:42	<i>Pipistrellus pipistrellus</i>	15
21:59:52	<i>Pipistrellus pipistrellus</i>	2
21:59:59	<i>Pipistrellus pygmaeus</i>	2
22:00:07	<i>Pipistrellus pygmaeus</i>	3
22:00:19	<i>Pipistrellus pygmaeus</i>	1
22:00:36	<i>Pipistrellus pipistrellus</i>	5
22:00:44	<i>Pipistrellus pygmaeus</i>	3
22:01:24	<i>Pipistrellus pipistrellus</i>	8
22:01:32	<i>Pipistrellus pipistrellus</i>	6
22:01:48	<i>Pipistrellus pipistrellus</i>	13
22:02:02	<i>Pipistrellus pipistrellus</i>	18
22:03:15	<i>Pipistrellus pipistrellus</i>	1
22:03:36	<i>Pipistrellus pipistrellus</i>	1

22:04:06	<i>Pipistrellus pipistrellus</i>	5
22:04:06	<i>Pipistrellus pipistrellus</i>	1
22:04:15	<i>Pipistrellus pipistrellus</i>	6
22:04:45	<i>Pipistrellus pipistrellus</i>	2
22:05:05	<i>Pipistrellus pipistrellus</i>	5
22:05:13	<i>Pipistrellus pygmaeus</i>	8
22:05:21	<i>Pipistrellus pygmaeus</i>	6
22:05:25	<i>Pipistrellus pygmaeus</i>	1
22:05:45	<i>Pipistrellus pipistrellus</i>	1
22:05:45	<i>Pipistrellus pipistrellus</i>	1
22:05:58	<i>Pipistrellus pygmaeus</i>	5
22:06:17	<i>Pipistrellus pygmaeus</i>	2
22:06:17	<i>Pipistrellus pygmaeus</i>	1
22:06:34	<i>Pipistrellus pygmaeus</i>	3
22:06:42	<i>Pipistrellus pygmaeus</i>	2
22:06:51	<i>Pipistrellus pygmaeus</i>	4
22:07:12	<i>Pipistrellus pygmaeus</i>	4
22:07:50	<i>Pipistrellus pygmaeus</i>	1
22:08:04	<i>Pipistrellus pygmaeus</i>	5
22:08:16	<i>Pipistrellus pygmaeus</i>	6
22:08:25	<i>Pipistrellus pygmaeus</i>	5
22:08:34	<i>Pipistrellus pygmaeus</i>	2
22:08:56	<i>Pipistrellus pygmaeus</i>	2
22:09:05	<i>Pipistrellus pygmaeus</i>	2
22:09:05	<i>Pipistrellus pygmaeus</i>	1
22:09:24	<i>Pipistrellus pygmaeus</i>	5
22:09:56	<i>Pipistrellus pygmaeus</i>	3
22:10:12	<i>Pipistrellus pygmaeus</i>	4
22:12:08	<i>Pipistrellus pygmaeus</i>	6
22:12:27	<i>Pipistrellus pygmaeus</i>	3
22:12:48	<i>Pipistrellus pygmaeus</i>	2
22:12:53	<i>Pipistrellus pygmaeus</i>	5
22:13:01	<i>Pipistrellus pygmaeus</i>	4
22:13:23	<i>Pipistrellus pygmaeus</i>	6
22:13:42	<i>Pipistrellus pygmaeus</i>	5
22:13:49	<i>Pipistrellus pygmaeus</i>	5
22:13:56	<i>Pipistrellus pygmaeus</i>	5
22:16:04	<i>Pipistrellus pygmaeus</i>	10
22:16:08	<i>Pipistrellus pygmaeus</i>	7
22:16:12	<i>Pipistrellus pygmaeus</i>	2
22:16:15	<i>Pipistrellus pipistrellus</i>	5
22:16:23	<i>Pipistrellus pygmaeus</i>	12
22:16:35	<i>Pipistrellus pygmaeus</i>	1
22:16:40	<i>Pipistrellus pygmaeus</i>	10
22:17:08	<i>Pipistrellus pygmaeus</i>	2
22:17:14	<i>Pipistrellus pygmaeus</i>	7
22:17:23	<i>Pipistrellus pygmaeus</i>	5

22:17:27	<i>Pipistrellus pygmaeus</i>	6
22:17:36	<i>Pipistrellus pipistrellus</i>	7
22:17:40	<i>Pipistrellus pygmaeus</i>	5
22:17:46	<i>Pipistrellus pygmaeus</i>	10
22:17:46	<i>Pipistrellus</i> social call	1
22:17:54	<i>Pipistrellus pygmaeus</i>	7
22:18:12	<i>Pipistrellus pygmaeus</i>	12
22:18:19	<i>Pipistrellus pygmaeus</i>	7
22:18:31	<i>Pipistrellus pygmaeus</i>	0
22:18:33	<i>Pipistrellus pygmaeus</i>	5
22:18:42	<i>Pipistrellus pygmaeus</i>	9
22:18:48	<i>Pipistrellus pygmaeus</i>	5
22:18:57	<i>Pipistrellus pygmaeus</i>	4
22:19:00	<i>Pipistrellus pygmaeus</i>	3
22:19:06	<i>Pipistrellus pygmaeus</i>	11
22:19:15	<i>Pipistrellus pygmaeus</i>	9
22:19:36	<i>Pipistrellus pygmaeus</i>	3
22:19:42	<i>Pipistrellus pygmaeus</i>	4
22:19:51	<i>Pipistrellus pygmaeus</i>	12
22:21:10	<i>Pipistrellus pipistrellus</i>	1
22:21:23	<i>Pipistrellus pipistrellus</i>	3
22:21:54	<i>Nyctalus noctula</i>	8
22:21:57	<i>Nyctalus noctula</i>	3
22:21:59	<i>Nyctalus noctula</i>	9
22:22:03	<i>Nyctalus noctula</i>	3
22:25:41	<i>Pipistrellus pipistrellus</i>	6
22:30:43	<i>Pipistrellus pipistrellus</i>	26
22:32:04	<i>Pipistrellus pipistrellus</i>	17
22:32:30	<i>Nyctalus noctula</i>	6
22:32:33	<i>Nyctalus noctula</i>	5
22:44:01	<i>Pipistrellus pipistrellus</i>	6
22:44:03	<i>Pipistrellus pipistrellus</i>	15

APPENDIX 3 – PROPOSED BAT ROOST PROVISION

