CGO Ecology Ltd 27a Ridgefield Gardens Christchurch Dorset BH23 4QG UK

Bat activity surveys for new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire

CGO Ecology Ltd

Christchurch

22nd November 2021

Authors:
Ellen Marshall, Head of Ecology, Brindle & Green Ltd
Dr Chris Gleed-Owen MCIEEM, Director & Principal Ecologist

Volume code: GTX0000 Project wide

Project: Gartree 2

Document number: 661277-0000-CGO-GTX0000-XX-RP-X-0011

Issue number: P01

Suitability code: S3 Suitable for Review & Comment

Date of issue: 22/11/2021

Classification: Official

For client:
Mace Ltd
155 Moorgate
London
EC2M 6XB

(+44) 01202 798126
enquiries@cgoecology.com
www.cgoecology.com

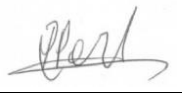
Project: MoJ NPP Gartree 2

Deliverable: Bat activity surveys

Our reference: RAVN BAS

Version: 1

Date: 22nd November 2021

Corresponding author:	Dr Chris Gleed-Owen BSc (Hons) PhD MCIEEM	
Checked by:	Rebecca Perl BA MA	
Approved by:	Dr Chris Gleed-Owen BSc (Hons) PhD MCIEEM	

Issued to: Mace Ltd. Anticipated circulation includes Mace internal use, Ministry of Justice, other appointed consultancies, Harborough District Council, Natural England, and other relevant stakeholders.

Version control:

Version	Date	Summary of changes
1	16/11/2021	Lead-authored by EM, co-authored/edited by CGO

Non-technical summary

Introduction

CGO Ecology Ltd was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a series of bat activity surveys on land adjacent to HMP Gartree, Market Harborough, Leicestershire. The Ministry of Justice proposes a development as part of its New Prisons Programme on land used to graze sheep, centred on (SP 7052 8873). The Local Planning Authority (LPA) is Harborough District Council.

Methodology

Brindle & Green Ltd (B&G) undertook monthly transect and static detector surveys from April to October 2021, following standard guidance, as subconsultants for CGO Ecology Ltd. The surveys were led by Ellen Marshall (CL17-licensed), with other suitably-experienced ecologists with electronic detectors. One dusk transect was conducted per month, with paired surveyors encompassing the whole site. In addition, one dawn transect was conducted in June. Five static detectors were deployed for five days per month. Calls were analysed using software and expert interpretation.

Results

At least seven bat species were recorded on site: common pipistrelle, soprano pipistrelle, at least one *Myotis* species, noctule, Leisler's bat, serotine, and brown long-eared bat.

Four species were recorded during transect surveys: common pipistrelle, soprano pipistrelle, *Myotis* and noctule were identified. Only common pipistrelle was observed foraging, with all other species considered likely to be commuting. Common pipistrelle foraging was concentrated over well-vegetated areas and tree-lines.

Static detectors recorded all seven species: common pipistrelle, soprano pipistrelle, *Myotis* species, noctule, Leisler's bat, serotine, and brown long-eared bat. Of these, common pipistrelle was the most-commonly recorded species at all five locations. *Myotis* species were frequently recorded at location 5, which also supported the highest diversity of species. Levels of activity and species diversity at locations 2, 4 and 5 reflect the importance of tree-lines and woodland edges for bat commuting and foraging activity.

Conclusions, mitigation, enhancement recommendations

The proposals will result in the loss of several areas of vegetation and tree-lines considered important to foraging and commuting bats, especially within the central-southern part of the site. Indirect impacts are also expected on boundaries, due to increased artificial lighting. Impacts are expected to result in a significant negative impact on foraging and commuting bats.

Significant hedgerow and woodland planting will be necessary to compensate the loss of bat habitat features. Planting must be suitable native species, with sufficient length and area of trees, hedgerow, and other suitable vegetation. Retained hedgerows and tree-lines must be protected and enhanced where possible. A sensitive lighting scheme must be devised to minimise light-spill onto retained and created habitats. These measures are expected to fully compensate the losses. As an enhancement, to provide roosting habitat that is currently lacking, 20 batboxes will be installed on suitable retained trees around the site. The details must be set out in a Landscape and Ecological Management Plan.

Contents

1. Introduction

1.1. Background

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a series of bat activity surveys on land adjacent to HMP Gartree, Market Harborough, Leicestershire (Figure 1). The Ministry of Justice proposes a development as part of its New Prisons Programme on land centred on (SP 7052 8873) (Figure 2). The Local Planning Authority (LPA) is Harborough District Council.

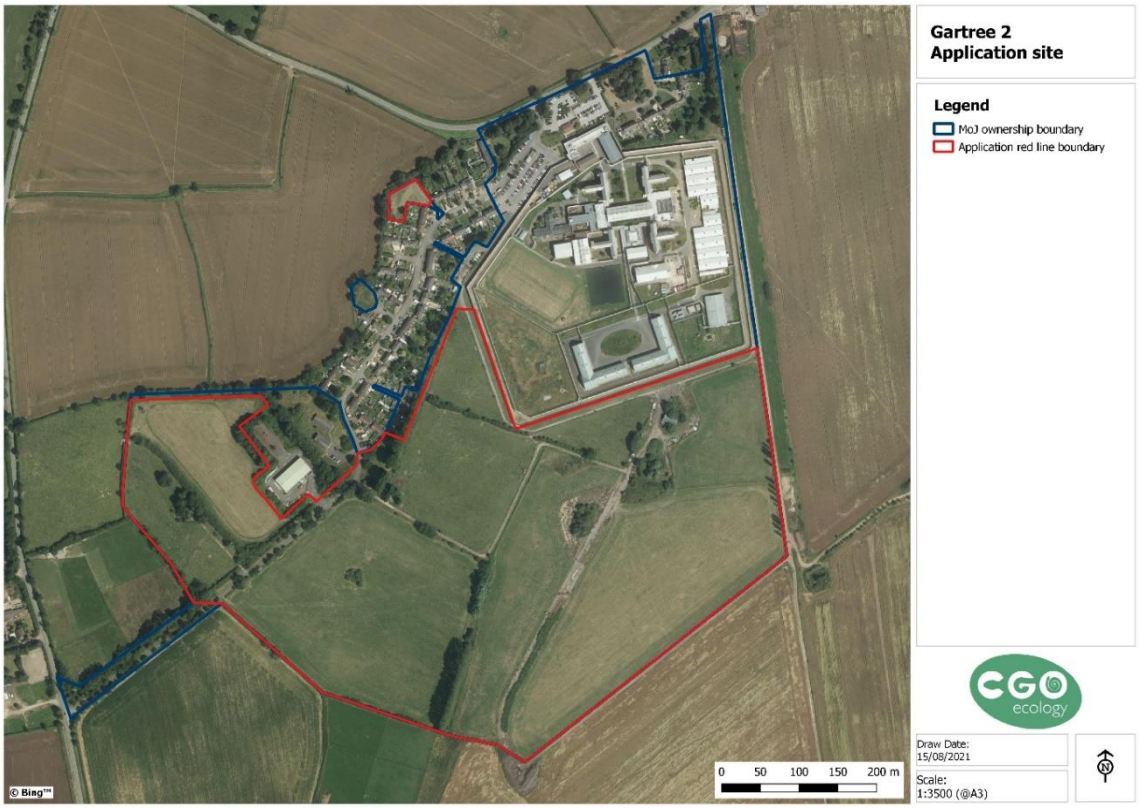


Figure 1 – Proposed development (red line), and MoJ ownership boundary (blue line).

Figure 2 – Proposed development and landscaping plan, produced by Pick Everard.

1.2. Legal protection

All UK bats and their roosts are protected by the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 (as amended). Bats may commute or forage over land, and although only their roosts are strictly protected, their foraging/commuting habitat is given *de facto* protection as a material consideration in planning.

1.3. Authors, surveyors

Lead author Ellen Marshall (Natural England level 1/CL17 bat licence) of Brindle & Green Ltd (B&G), is co-author of this report, and bat activity survey leader for Gartree 2.

Co-author is Dr Chris Gleed-Owen MCIEEM, Director and Principal Ecologist of CGO, project manager for the Gartree 2 phase 2 ecological surveys.

B&G was commissioned to carry out the bat activity surveys as subconsultant to CGO. The surveys were led by Ellen Marshall (CL17-2017-28407-CLS-CLS) assisted by Adrian Cox (CL18-2019-43340-CLS-CLS), John Harvey (CL17-2018-34117-CLS-CLS), Veronica Cantero Sanchez, Kerry Baker, Victoria Halford, Amy Dennett, Phoebe Collier, Elizabeth Oldring. Initial surveys were led by Amy Trewick (CL18-2018-37960-CLS-CLS), formerly of B&G.

This report aims to follow CIEEM (2017) guidance, and provide sufficient information to assist an EcIA conforming to CIEEM (2018) guidance. A separate bat roosts survey report was conducted (Gleed-Owen & Trewick, 2021).

1.4. Site context

The development site is land to the south of HMP Gartree, predominantly used to graze sheep (*Ovis ariea*). It comprises fields of poor semi-improved grassland, with hedgerows, and lines of trees. The red line includes a wider area to the northwest of Welland Avenue, set aside for Biodiversity Net Gain (BNG) habitat enhancements.

The wider landscape in which HMP Gartree is situated is rural, with arable and pasture farming. It is primarily open in nature, with scattered residential properties and pockets of woodland. Hedgerows and treelines create interconnecting ecological corridors throughout the area. Within 1km to the southeast, a large new residential development at Airfield Farm is expanding the urban area of the town of Market Harborough.

1.5. Proposed works

An Outline Planning Application (OPA) is proposed, with all matters reserved except for access and scale for the construction of a new Category B prison of up to 82,555m^2 GEA (gross external area) within a secure perimeter fence together with access parking, landscaping, and associated engineering works on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire, LE16 7RP.

The indicative site layout proposes a range of buildings and facilities typical of a Category B resettlement prison, including seven new houseblocks (1,715 prisoners in total), supporting development including kitchen and other facilities, ancillary development including car parking (c.523 spaces), internal road layout, and perimeter fencing. The house blocks will be four storeys in height, whilst the other buildings will range from one to three storeys.

The new prison will be designed and built to be highly sustainable and to exceed local and national planning policy requirements in terms of sustainability. MoJ's aspirations include targeting near-zero carbon operations, 10% BNG, and at least BREEAM 'Excellent' certification, with endeavours to achieving BREEAM 'Outstanding'.

2. Methodology

2.1. Desk study

A Preliminary Ecological Appraisal (PEA) conducted by Ramboll (Molesworth, 2020) guided Mace's instruction of bat activity surveys and other phase 2 ecological surveys.

CGO was instructed in December 2020, with bat activity surveys sub-consulted to B&G in early 2021. An updated LRERC search was sought by CGO in July 2021, for protected and notable species data within 2km of the development. The Defra MAGIC website was also queried for mitigation licences issued by Natural England (https://magic.defra.gov.uk/MagicMap.aspx).

2.2. Transect surveys

B&G devised a transect route following standard guidance (Collins, 2016) to cover the whole development site and Zone of Influence (ZoI). Monthly dusk transect surveys were conducted from April to October 2021, with paired surveyors for safety and ease of recording. In addition, a dawn transect was conducted in June. The surveys followed published Covid-19 safety advice (BCT, 2020; CIEEM, 2020; IUCN, 2020).

Surveys began at sunset and ended at least two hours after sunset, and were conducted in conditions suitable for bat activity. The route was followed at walking pace, with stops at 12 predetermined points to conduct three-minute counts of bat activity. All bat activity was recorded, including species, number, behaviour, and where possible height of pass and/or foraging activity.

The following equipment was used: Echo Meter Touch 2 full-spectrum detectors paired with iPhones and iPads.

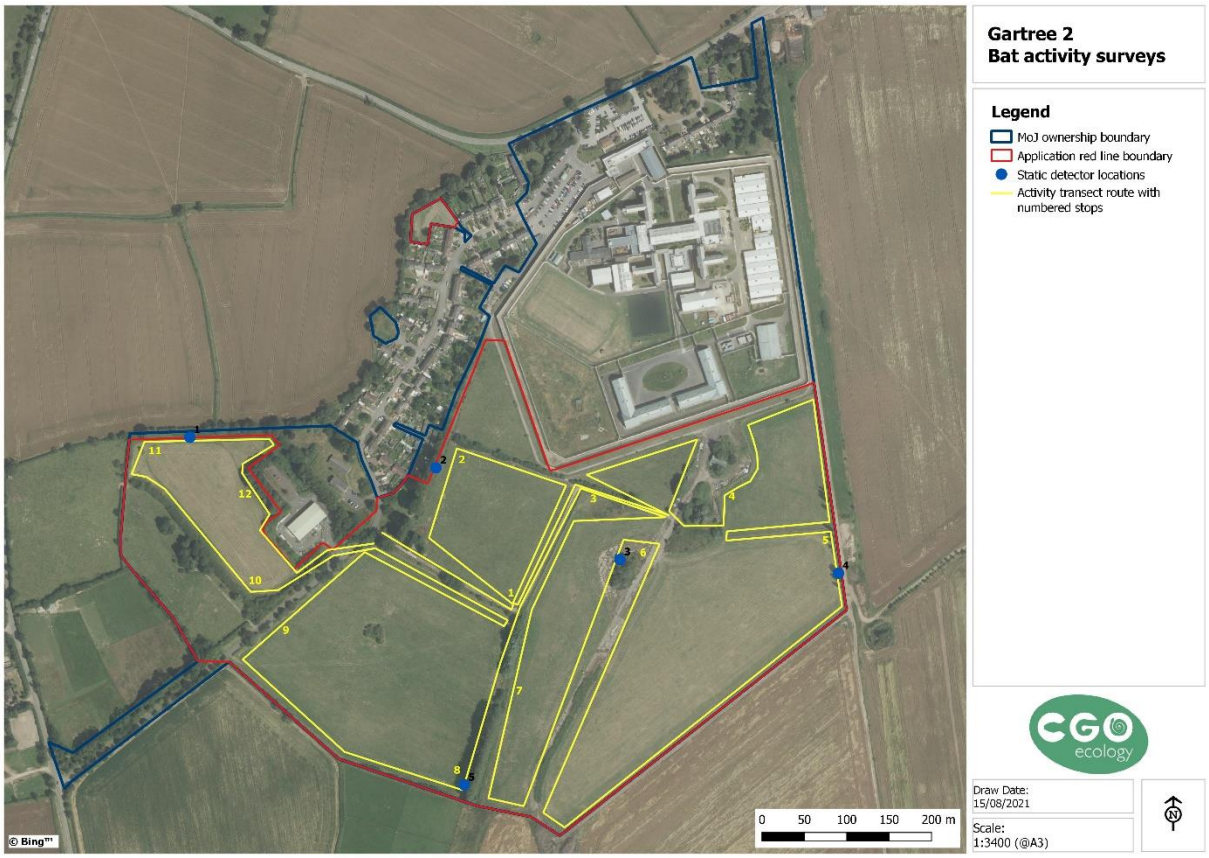


Figure 3 – Transect walking route with stopping points (yellow), and static detector locations (blue dots).

2.3. Static detector surveys

Five Wildlife Acoustics Song Meter detectors (SM4, SM2, SM Mini) were deployed for five consecutive nights each month. The locations were selected to represent the available habitats on site, spread spatially to cover the whole site, including developed and retained areas. All detectors were programmed to begin listening at 30 minutes prior to sunset, and to stop recording at 30 minutes after sunrise. The recorded bat calls were downloaded, and noise filtered using Kaleidoscope software. They were analysed in zero crossing mode using Analook software to identify bat species, and where possible, call type.

2.4. Incidental observations

Sightings of notable wildlife observed during the bat emergence/re-entry surveys were also recorded. Results have been fed into the relevant survey datasets.

2.5. Limitations

During the May transect, two static detectors (locations 1 and 2) suffered a technical failure, and the data recorded by them was corrupted and not recoverable. In August, two SM4 detectors (2 and 5) were sabotaged (their microphones were disconnected) and no recordings were made. In September, greater efforts were made to hide the equipment, and locations were moved slightly (less than 10m from original points). However, two detectors (2 and 5) again had their microphones disconnected before any data could be gathered. In October, static location 5 failed and stopped recording after two nights.

The resulting loss of data is considered a relatively minor limitation, as full datasets were recorded at all locations for at least one month in each of the key activity periods (spring and autumn transitional periods, summer foraging peak, swarming/mating). The data provided is considered to provide a full assessment of bat activity on the site.

Light intermittent rain was experienced during the May transect, for periods of up to five minutes at a time, but this is not considered to have impacted the data gathered.

3. Baseline ecological conditions

3.1. Desk study

Natural England has issued only one European Protected Species (EPS) mitigation licence for bats within 2km, for common pipistrelle (*Pipistrellus pipistrellus*) and brown long-eared bat (*Plecotus auritus*) around 1.3km south.

The LRERC (2021) search yielded 121 bat records within 2km, comprising at least eight species: common pipistrelle (18 records), soprano pipistrelle (*Pipistrellus pygmaeus,* 10), Nathusius' pipistrelle (*Pipistrellus nathusii*, 5), undetermined pipistrelle (40), brown long-eared bat (10), Daubenton's bat (*Myotis daubentonii,* 3), Natterer's bat (*Myotis nattereri,* 1), undetermined *Myotis* (1), noctule (*Nyctalus noctula,* 12), serotine (*Eptesicus serotinus*, 1), and 20 of unidentified bat species.

The nearest bat record is for a non-specific roost in a property within the Gartree residential estate to the west of the existing prison, outside the ZoI of the proposed development.

3.2. Transect surveys

Activity levels were variable throughout the transect surveys, with bat activity on site considered to be generally moderate throughout the season. See Appendix 1 for full results and maps. The transect undertaken in May showed below average activity for the site in comparison to the remaining months.

Transect date	Sunset/ sunrise time	Start time	Finish time	Weather conditions
19th April 2021	20:07	20:07	22:07	Start temp 12ºC. Finish temp 12ºC. Precipitation: 0. Wind strength: 0 (Beaufort). Cloud cover: 0%. Humidity 55% to 56%.
11th May 2021	20:47	20:47	22:47	Start temp 12ºC. Finish temp 12ºC Precipitation: 0-1. Wind strength: 0. Cloud cover: 10%. Humidity 81% to 81%.
7th June 2021	21.25	21:25	23:25	Start temp 19ºC. Finish temp 14ºC Precipitation: 0. Wind strength: 1. Cloud cover: 25%. Humidity 81% to 84%.
8th June 2021	04:40	02:40	04:40	Start temp 14ºC. Finish temp 14ºC Precipitation: 0. Wind strength: 1. Cloud cover: 40%. Humidity 84% to 87%.
14th July 2021	21:21	21:21	23:27	Start temp 19ºC. Finish temp 17ºC Precipitation: 0. Wind strength: 1. Cloud cover: 0%. Humidity 62% to 73%.
2nd August 2021	20:55	20:55	23:10	Start temp 17ºC. Finish temp 15ºC Precipitation: 0. Wind strength: 0. Cloud cover: 75%. Humidity 78% to 81%.
7th September 2021	19:39	19:39	21:40	Start temp 27ºC. Finish temp 21ºC Precipitation: 0. Wind strength: 0. Cloud cover: 0%. Humidity 64% to 71%.
6th October 2021	18:30	18:30	21:03	Start temp 12ºC. Finish temp 10ºC Precipitation: 0. Wind strength: 0. Cloud cover: 50%. Humidity 72% to 75%.

Table 1 – Dates, times, weather conditions for transect surveys.

Four bat species were recorded during transects: common pipistrelle, soprano pipistrelle, noctule, and unidentified *Myotis* species. Due to the infrequency and short duration of the *Myotis* calls (only two passes were identified on the August transect), these were not identified to species.

The majority of passes during all transect surveys related to commuting activity, with bats passing through the site along commuting routes, typically linear and edge features. However, some foraging activity was observed, particularly by common pipistrelle, and associated with areas near points 4, 6, 7, and 8. These are wooded areas of the site. Points 4 and 6 are adjacent to a cluster of trees and scrub around the farm building complex.

Points 7 and 8 are along a line of planted poplars from the centre of the site to the south boundary, adjoining an east-west hedgerow along the south boundary. This tree-line appears to provide a commuting and foraging route connected to the wider landscape. Bats were frequently observed foraging on the west side of the tree-line. As expected, bat activity was limited over open areas of the site, primarily grassland grazed by sheep.

Of the species identified, common pipistrelle was the most frequent, and dominated the call activity on all transects. It was the sole species identified during the May, September and October transects. Soprano pipistrelles were the second most-commonly-encountered bat. Noctule activity was limited to occasional passes, and generally heard commuting but not seen.

3.3. Static detector surveys

The five static detector positions recorded seven bat species: common pipistrelle, soprano pipistrelle, unidentified *Myotis*, noctule, Leisler's, serotine, and brown long-eared bat. Activity is dominated by common pipistrelle passes, showing that this species is regularly present on site, foraging and commuting along woodland edges/tree-lines and other linear features.

Registrations for other species are occasional and lower in number, indicating that they are likely to be passing through the site, commuting to other foraging or roosting sites, rather than foraging on site. Occasional foraging activity was detected for other species, such as noctule at location 3 in June. Full results and graphical representations of the data are presented in Appendix 2.

Of the five static detectors, location 5 consistently recorded the greatest variety of species, and a high average number of passes per night (Appendix 2, Figure 8). The location is on the south edge of the site, at the south end of the planted poplar tree-line, on a well-connected east-west hedgerow line. It is evidently an important foraging and commuting feature within the local landscape. Location 5 is also notable because it supported the greatest average number of passes recorded for *Myotis* species, with an average sum of 173 passes per night at this location. This average is heavily influenced by a high number of passes of these species of bats within the September data (Appendix 2, Figure 6). *Myotis* were identified at all other static locations, albeit in low numbers. This indicates that the south edge of the site is of high value to this species.

This result is mirrored within the results of the bat transect surveys, which identify foraging behaviour by bat species at several key areas of the site including areas close to static detector location 5.

Location 1 appears to support the lowest species diversity and overall number of bat passes per night, although levels of common pipistrelle activity are comparable to other locations. Locations 2 and 4 recorded relatively high levels of activity in comparison to Locations 1 and 3. Locations 2, 4 and 5 are located adjacent to tree-lines.

Activity appears relatively consistent per month (Appendix 2, Figure 9), with August showing slightly reduced levels of activity. September provided the highest number of passes per night for most species present. This is likely due to unusually-warm overnight conditions within the monitoring period, which probably led to increased bat activity. Pipistrelle social calls appeared in significant numbers in August, and continued through September and October.

The most important areas of commuting and foraging habitat for bats appear to be the hedgerows and line of trees along and towards the south boundary (location 5), a line of poplars outside the east boundary (location 4), and a tree line, hedgerow and scrub along the north boundary (location 2).

Deployment Month	Deployment date	Collection date
April 2021	19/04/2021	24/04/2021
May 2021	13/05/2021	18/05/2021
June 2021	07/06/2021	14/06/2021
July 2021	07/07/2021	12/07/2021
August 2021	02/08/2021	11/08/2021
September 2021	07/09/2021	12/09/2021
October 2021	06/10/2021	11/10/2021

Table 2 – Static detector deployment dates.

4. Impact assessment

The proposals will result in the loss of all existing vegetation within the development footprint, including the planted poplar tree-line towards the south boundary, which is important for bat foraging and commuting. The farm building complex and associated trees and scrub are of lesser importance. All important tree-lines and hedgerows around the perimeter of the site will be retained.

At present, most of the site is dark, and only the northern margins are subjected to any light pollution. The proposals will require external lighting for security purposes, which will result in increased levels of light pollution along all boundaries. This has the potential to disrupt or displace bat commuting and foraging routes.

Due to a loss of foraging and commuting habitats and the potential impacts of light pollution, the proposals are considered to result in a significant negative effect upon foraging and commuting bat populations, particularly common pipistrelle and *Myotis* species.

5. Mitigation

Sympathetic landscaping must be provided, to enhance retained boundary features such as hedgerows, tree-lines, and existing fence-lines that do not have hedgerows or trees. This is required in order to fully compensate the predicted impacts of the development. These impacts will affect at least seven bat species, with a significant local impact on common pipistrelle, soprano pipistrelle, and *Myotis* species. Mitigation must be secured via a Landscape Ecological Management Plan (LEMP).

Mitigation and compensation must include creation of new woodland strips, tree-lines and hedgerows comprised of native species. This is recommended particularly at the southern boundary of the site where removal of suitable commuting and foraging habitats is anticipated to have the greatest effect.

The current proposals to create a woodland belt along the entire southern edge of the site will fully compensate for the loss of foraging and commuting habitat in due course (up to 30 years for woodland to mature). Grassland enhancement proposed on land northwest of Welland Avenue will assist in providing interim compensation.

Existing vegetation along site boundaries will be retained. Retained trees and hedgerows must be protected from accidental impacts during construction, through the use of tree protection fencing.

New external lighting around the site perimeter must be designed to minimise the operational effects on commuting and foraging bats. A sensitive lighting strategy will be devised to minimise impacts on currently-dark areas such as the north, south, and east boundaries of the site, and along Welland Avenue. Any external operational lighting must follow the principles set out in the *Bats and artificial lighting in the UK* guidance note (BCT & ILP, 2018), as follows:

- Avoid lighting of key habitat features altogether, i.e. no lighting of any vegetation, such as trees and hedgerows, to maintain flight lines for commuting bats.
- New streetlighting should be installed at the minimum possible density and shortest possible column height.
- Luminaires lacking UV elements should be utilised.
- Use of LED luminaires wherever possible due to their sharp cut-off and good colour retention.
- A ‘warm white’ spectrum should be adopted (ideally <2700Kelvin) to reduce blue-light elements.
- Peak luminaire wavelengths of >550nm avoids the element of lighting most disturbing to UK bat species.

With the above mitigation in place, the proposals’ impacts will be reduced from major to minor negative impacts on foraging and commuting bats. There will be an unavoidable time lag in achieving this, however.

6. Residual effects, enhancements

A residual effect will be the displacement of current foraging and commuting routes by the construction of the prison. This will be fully offset by the creation of new woodland along the south and east margins of the new prison, and enhancements to planting elsewhere within the red line.

As an enhancement, 20 batboxes (artificial roosts), suitable for a range of species and roost types, will be installed in suitable locations on retained trees around the prison estate. Batboxes such as the Improved Crevice Bat Box (by Nestbox) or 2F batbox (by Schwegler) are recommended, and are considered to provide suitable roosting habitat for the pipistrelle and *Myotis* species present on site. Some larger roost type boxes will be included, including at least two maternity boxes and two colony/hibernation boxes.

Batboxes should be positioned in clusters of two or three where possible, on trees or building elevations, typically facing a south to southeast direction, at a height of at least 4m. Batboxes must not be positioned in such a way as to obstruct any existing roosting features. Batbox locations, numbers and types must be secured within the LEMP.

7. References

BCT (2020) *BCT Response to IUCN COVID-19 Recommendations for Bat Field Workers.* Bat Conservation Trust, London. https://www.bats.org.uk/news/2020/04/bct-response-to-iucn-covid-19-recommendations-for-bat-field-workers (Published 16th April 2020)

BCT & ILP (2018) *Bats and artificial lighting in the UK. Guidance Note 08/18.* Bat Conservation Trust, London & Institution of Lighting Professionals, Rugby.

CIEEM (2017) *Guidelines for Ecological Report Writing.* Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1 (Sept 2019).* Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2020) *IUCN warns against passing Covid-19 to bats.* Chartered Institute of Ecology and Environmental Management, Winchester. https://cieem.net/iucn-bct-cv19-bats/ (Published 22nd April 2020)

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

Gleed-Owen, C. & Trewick, A. (2021). *Bat roost surveys for new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire*. CGO Ecology Ltd, Christchurch.

IUCN (2020) *Recommended suspension of Field Activities for the Protection of Bats.* The International Union for Conservation of Nature Bat Specialist Group, Gland. https://www.iucnbsg.org/ (Published 12th April 2020)

LRERC (2021) *LRERC Environmental Information Search (CONFIDENTIAL VERSION).* Leicestershire and Rutland Environment Records Centre, Leicester.

Molesworth, J. (2020) *Raven. Preliminary Ecological Appraisal.* Ramboll, Exeter.

8. Appendices

Appendix 1 – Transect survey results

Transect 1 – 19th April 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date:19/04/2021
Sunset: 20:07.
Start: 20:07.
End: 22:07.
Weather conditions:
Start temperature: 12°C. Finish temperature: 12°C.
Precipitation 0, Wind strength 0/5, Cloud cover 0/8.
Humidity start: 55%. Humidity finish: 55%.
Surveyors: Amy Dennett (AD) & Amy Trewick (AT)

Equipment: EM Touch & iPad/iPhone.

Survey summary: 2x species of pipistrelle foraging in 1 field and a low quantity commuting around the trees and hedge rows.

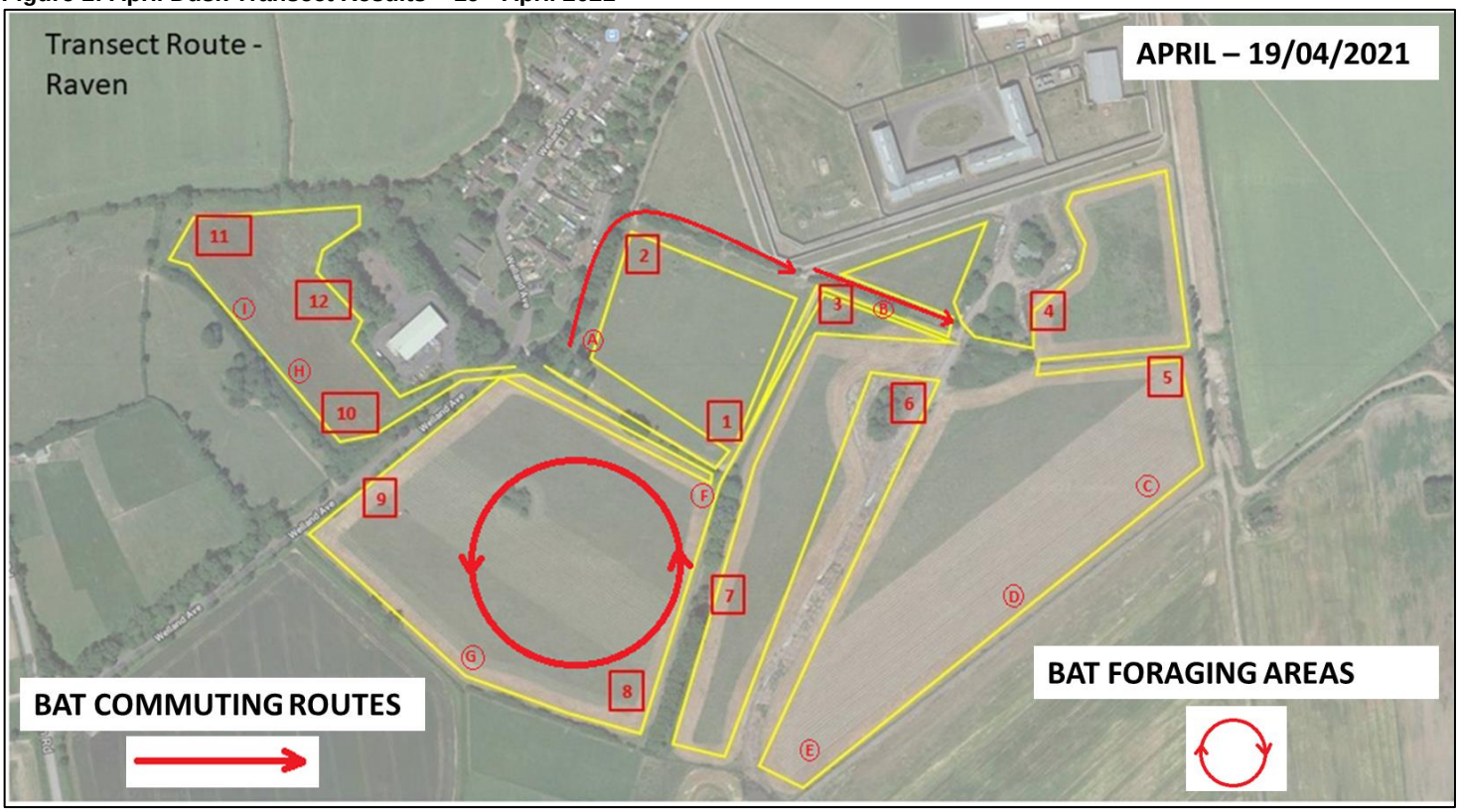
Incidental observations: N/A.

Survey constraints: N/A.

Table 1 – All Bat Activity Recorded During Transect 1 on the 19/04/2021 Refer to Fig. 1

Time (24 Hrs)	Surveyor[1]	Species[2]	No. bats	Bat Activity	Map Annotation
20:11	AT / AD	P.pip	1	HNS, Brief pass	1 (A)
20:38	AT / AD	P.pip	1	Passing from West to East over field	3 (B)
20:49	AT / AD	P.pip	1	HNS, Brief pass	4
21:05	AT / AD	P.pip	1	HNS, Brief pass	5-6 I
21:06	AT / AD	P.pip	1	HNS, Brief pass	5-6 (D)
21:09	AT / AD	P.pip	1	HNS, Brief pass	5-6 (D)
21:13	AT / AD	P.pyg	1	HNS	6 I
21:19	AT / AD	P.pip	1	HNS, Passing	6 (F)
21:29	AT / AD	P.pyg	1	HNS, Passing	7
21:30	AT / AD	P.pip	1	HNS, Passing	7
21:42	AT / AD	P.pip	1	HNS, Bat foraging close to trees and inside field	8
21:46	AT / AD	P.pip	1-5	Bat foraging close to trees and inside field	8 (G)
22:01	AT / AD	P.pyg	1	HNS	10-11 (H)
22:02	AT / AD	P.pip	1	HNS	10-11 (I)

Figure 1: April Dusk Transect Results – 19th April 2021



Transect 2 – 11th May 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date:11/05/2021
Sunset: 20:47.
Start: 20:47.
End: 22:47.
Weather conditions:
Start temperature: 12°C. Finish temperature: 12°C.
Precipitation Light intermittent, Wind strength 0.5/5, Cloud cover 1/8.
Humidity start: 81%. Humidity finish: 81%.
Surveyors: John Harvey (JH) & Phoebe Collier (PC)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Common pipistrelle foraging in 1 field and a low quantity commuting around the trees and hedge rows. Very little activity.

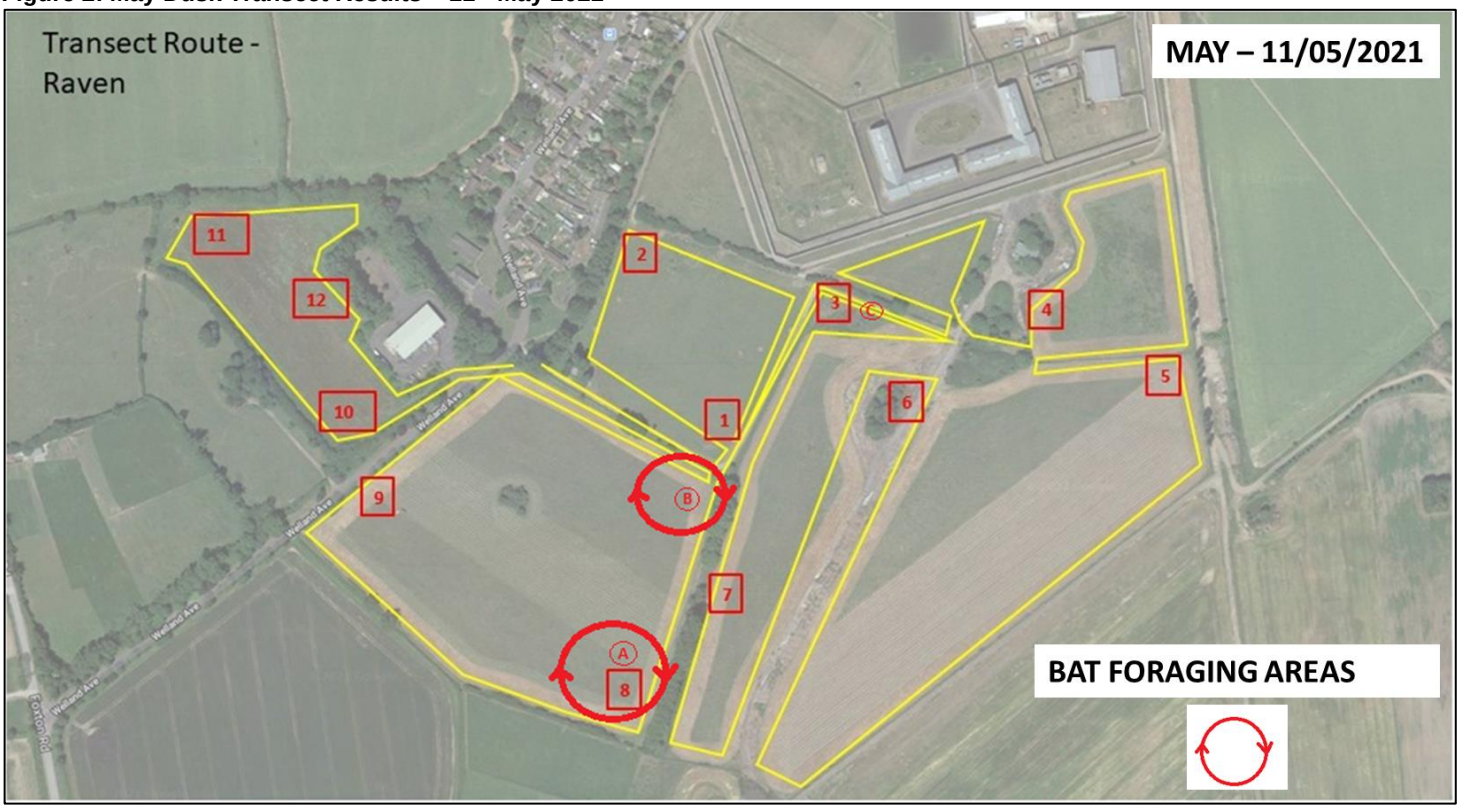
Incidental observations: N/A.

Survey constraints: N/A.

Table 2 – All Bat Activity Recorded During Transect 2 on the 11/05/2021 Refer to Fig. 2.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
21:27-21:32	JH / PC	P.pip	1	HNS	9
21:37-21:42	JH / PC	P.pip	1-5	Bat foraging, northern corner of field within tree line and hedgerows	8 (A)
21:42-21:47	JH / PC	P.pip	1-5	Bat foraging, northern corner of field within tree line	8 (B)
22:27-22:32	JH / PC	P.pip	1	HNS, Brief pass	3 I

Figure 2: May Dusk Transect Results – 11th May 2021



Transect 3 – 7th/8th June 2021 (Dusk/Dawn)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date: 07/06/2021 / 08/06/2021
Sunset: 21:25,**sunrise:** 04:42.
Start: 21:25.
End: 23:25.
Weather conditions:
Start temperature: 19°C. Finish temperature: 14°C.
Precipitation 0, Wind strength 1/5, Cloud cover 2/8.
Humidity: High throughout.
Surveyors: Veronica Cantero Sanchez (VC) & Phoebe Collier (PC)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Occasional pass of noctules which locations were assumed over the fields at height. Moderate quantity of common pipistrelles foraging around the trees, track, and hedgerows.

Incidental observations: N/A.

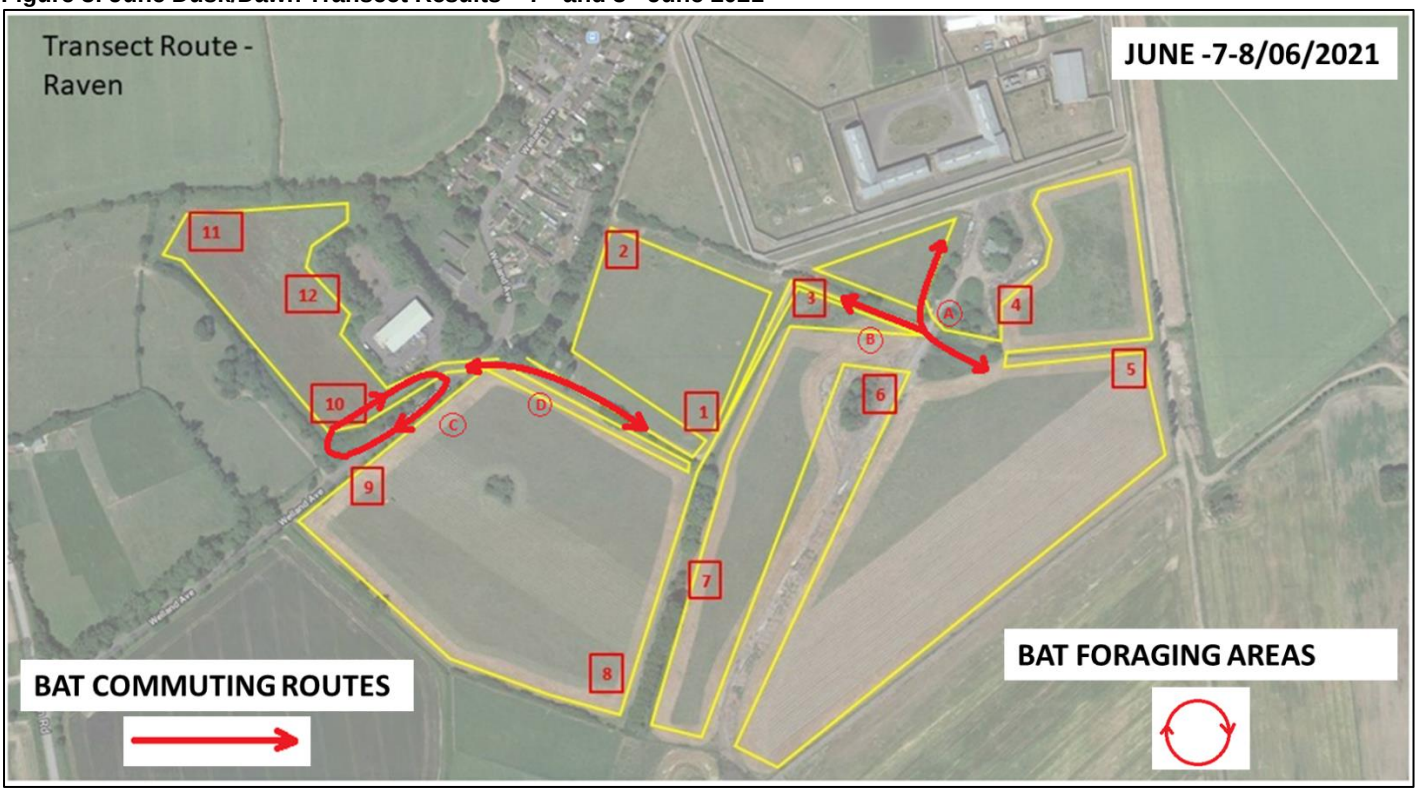
Survey constraints: N/A.

Table 3 – All Bat Activity Recorded During Transect 3 on the 07/06/2021 Refer to Fig. 3.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
Dusk / Sunset					
22:10	VC / PC	P.pip	1	HNS	¾
22:13	VC / PC	P.pip	1	Bat commuting, Up and down the hedgerows and tree lines	¾ (A)
22:15	VC / PC	P.pip	1	HNS	¾
22:16	VC / PC	P.pip	2	Bat foraging, Up and down the hedgerows	3 (B)
22:27	VC / PC	N.noc	1	HNS	2/3
22:42	VC / PC	P.pip	1	HNS	11
22:57	VC / PC	N.noc & P.pip	1	HNS	9
23:12	VC / PC	P.pip	1	HNS	8
23:22	VC / PC	P.pip	1-5	Bat foraging, Up and down the hedgerows	3 (B)

Dawn (Sunrise)					
02:59	VC / PC	P.pip	2	Bat foraging, Up and down the hedgerows	9/10 (D)
03:02	VC / PC	P.pip	1	HNS	9/10
03:03	VC / PC	P.pip	1	Bat commuting along road	9/10 I
03:06	VC / PC	P.pip	1	Bat commuting along road	9/10 I
03:13	VC / PC	P.pip	1	HNS	9
03:21	VC / PC	P.pip	1	HNS, 2 passes	8
03:28	VC / PC	P.pip	1	HNS	1
03:39	VC / PC	P.pip	1	HNS	2
03:54	VC / PC	P.pip	1	HNS	7

Figure 3: June Dusk/Dawn Transect Results – 7th and 8th June 2021



Transect 4 – 14th July 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date: 14/07/2021
Sunset: 21:21.
Start: 21:21.
End: 23:27
Weather conditions:
Start temperature: 19°C. Finish temperature: 17°C.
Precipitation 0, Wind strength 1-2/5, Cloud cover 0/8.
Humidity: 62% - 73%.
Surveyors: John Harvey (JH) & Phoebe Collier (PC)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Occasional passes of common pipistrelle and soprano pipistrelle bats.
Low quantity of common pipistrelles foraging around the trees, track, and hedge rows. Activity was considered generally low.

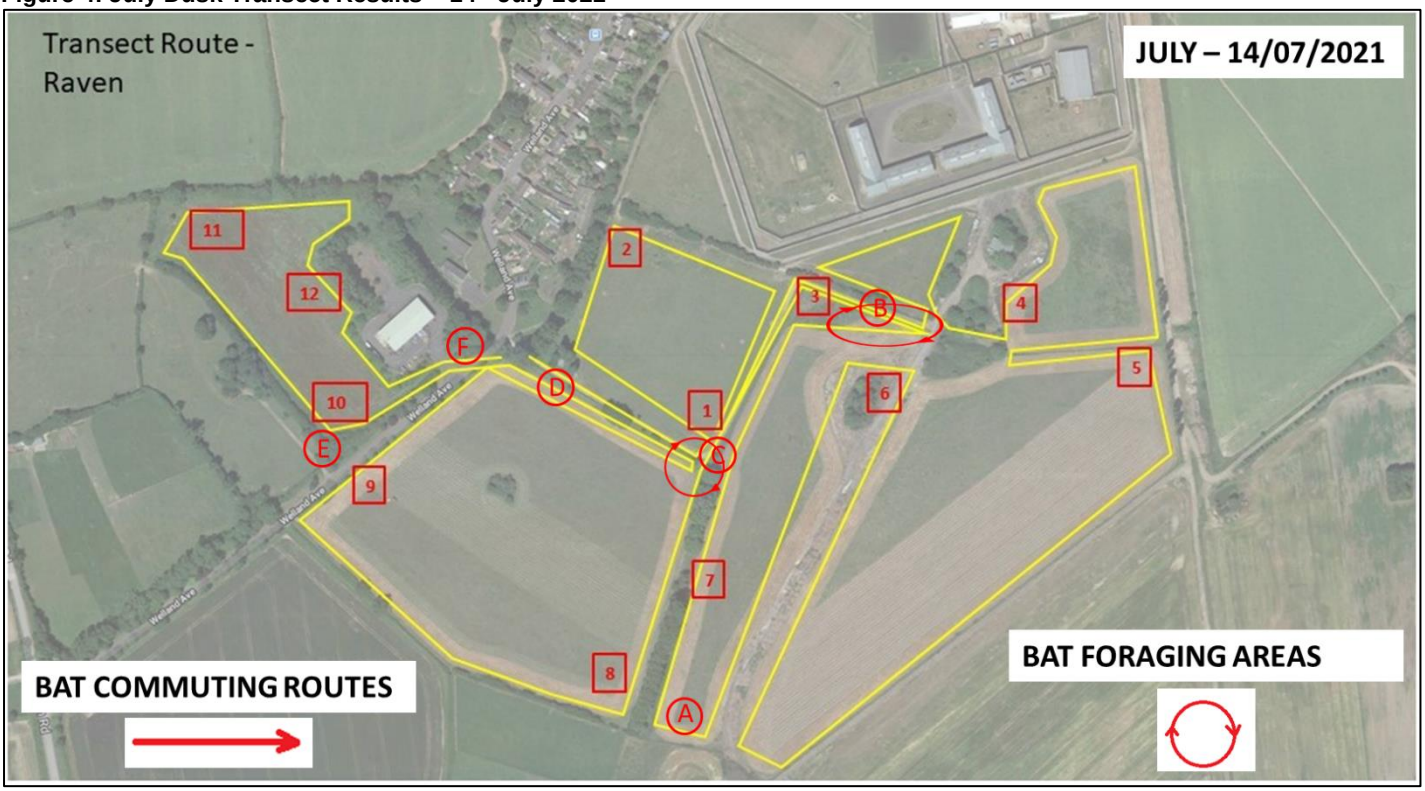
Incidental observations: N/A.

Survey constraints: N/A.

Table 4 – All Bat Activity Recorded During Transect 4 on the 17/07/2021 Refer to Fig. 4.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
21:48	JH / PC	P.pip	1	HNS	3
22:15	JH / PC	P.pip, S.pip	2	Both bats observed foraging in the corner of the field adjacent to treeline	A
22:25	JH / PC	P.pip	1	HNS – foraging	B
22:45	JH / PC	P.pip	1	Brief pass	C
22:49	JH / PC	P.pip	1	HNS – brief pass	D, 9-10
23:02	JH / PC	P.pip	1	HNS	E, 10
23:08	JH / PC	P.pip	1	HNS	F, 12-1
23:12	JH / PC	P.pip	1	HNS	C, 1

Figure 4: July Dusk Transect Results – 14th July 2021



Transect 5 – 2nd August 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date: 02/08/2021
Sunset: 20:55.
Start: 20:55.
End: 23:10
Weather conditions:
Start temperature: 17°C. Finish temperature: 15°C.
Precipitation 0, Wind strength 0, Cloud cover 6/8.
Humidity: 78% - 81%.
Surveyors: Veronica Cantero Sanchez (VC) & Ellen Marshall (EM)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Occasional passes of common pipistrelle and myotis bats. Majority of passes short and brief, likely commuting.
One common pipistrelle observed foraging around the lighting to the prison boundary. Activity was considered generally low despite optimal conditions.

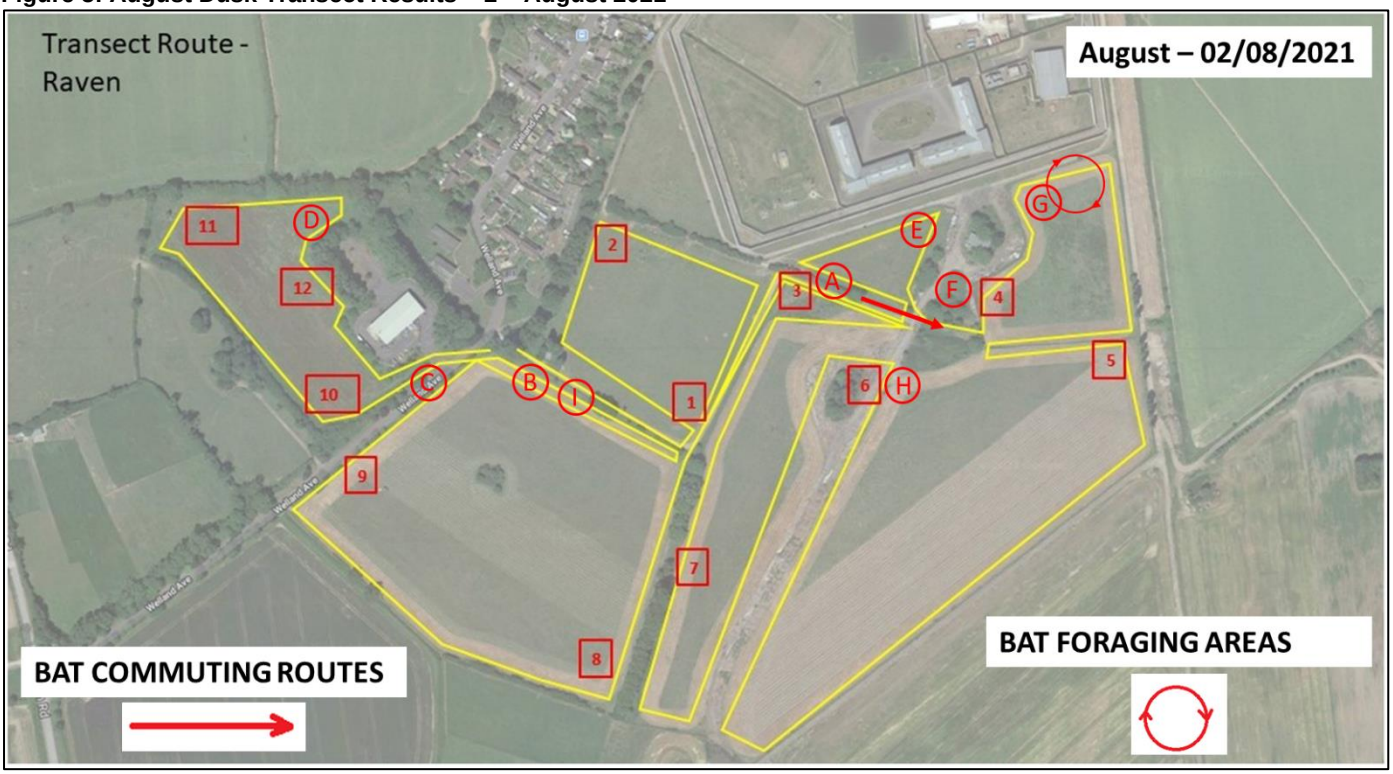
Incidental observations: Tawny owl heard calling close to point count 7.

Survey constraints: N/A.

Table 5 – All Bat Activity Recorded During Transect 5 on the 02/08/2021 Refer to Fig. 5.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
21:20	VC/ EM	P.pip	1	HNS, several passes considered to be close to treeline	7
21:30	VC/ EM	P.pip	2	2 bats seen commuting east, both bats flying low c. 5m	A
21:41	VC/ EM	P.pip	1	HNS – brief pass	8
21:58	VC/ EM	Myo	1	HNS	B
21:59	VC/ EM	P.pip	1	HNS	C
22:12	VC/ EM	P.pip	1	HNS	D
22:25	VC/ EM	P.pip	2	Two bats at once, HNS assumed commuting	C
22:40	VC/ EM	P.pip	1	Brief pass, HNS	E
22:43	VC/ EM	P.pip	1	Brief pass, HNS	F
22:46	VC/ EM	P.pip	1	Foraging around security lights at the northern boundary	G
22:53	VC/ EM	P.pip	1	Brief pass, HNS	H
23:00	VC/ EM	Myo	1	Brief pass, assumed commuting	I

Figure 5: August Dusk Transect Results – 2nd August 2021



Transect 6 – 7th September 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date: 07/09/2021
Sunset: 19:39.
Start: 19:39.
End: 21:40.
Weather conditions:
Start temperature: 27°C. Finish temperature: 21°C.
Precipitation 0, Wind strength 0 – 1, Cloud cover 0/8.
Humidity: 64% - 71%.
Surveyors: Elizabeth Oldring (EO) & Ellen Marshall (EM)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Occasional passes of common pipistrelle bats, with no other species recorded. Majority of passes short and brief, with some foraging associated with vegetated hedgerows and treeline areas. Activity was considered moderate, likely due to unusually high evening temperatures providing good foraging opportunities.

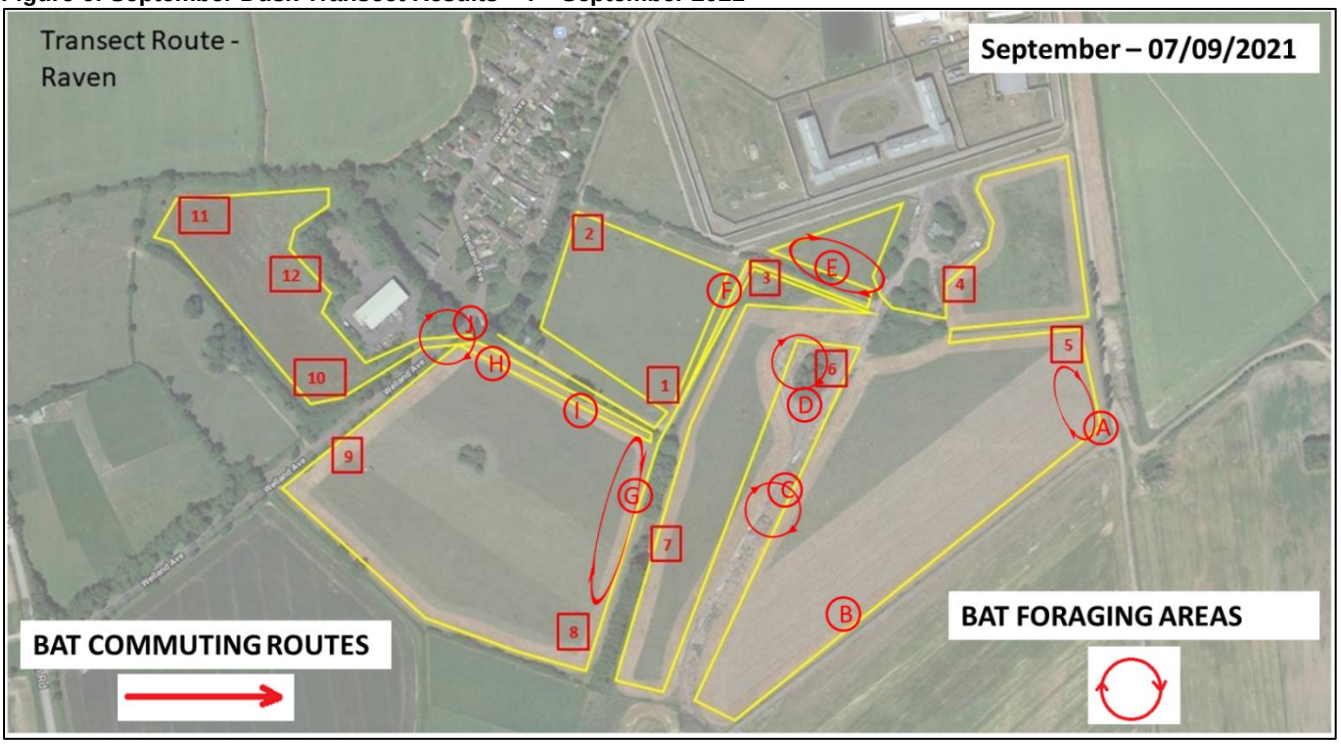
Incidental observations: N/A

Survey constraints: N/A.

Table 6 – All Bat Activity Recorded During Transect 6 on the 07/09/2021 Refer to Fig. 6.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
20:24	EO/ EM	P.pip	1	Foraging at 4m in height along poplar tree line, several foraging passes.	5
20:33	EO/ EM	P.pip	1	As above	A
20:38	EO/ EM	P.pip	1	HNS – single pass, assumed commuting	B
20:43	EO/ EM	P.pip	1	Foraging low, at 4m overhead	C
20:44	EO/ EM	P.pip	1	Foraging around copse and trees.	D, 6
20:53	EO/ EM	P.pip	1	Foraging along hedgerow	E
20:57	EO/ EM	P.pip	1	Commuting pass, HNS	F
21:01	EO/ EM	P.pip	2	Two bats foraging along treeline continuously for 5 minutes	G
21:26	EO/ EM	P.pip	1	Brief pass, HNS	H
21:29	EO/ EM	P.pip	1	Occasional passes, HNS	I
21:35	EO/ EM	P.pip	1	Foraging around streetlights	J

Figure 6: September Dusk Transect Results – 7th September 2021



Transect 7 – 6th October 2021 (Dusk)

Survey site: Gartree, Market Harborough – Whole site Transect.
Date: 06/10/2021
Sunset: 18:30.
Start: 18:30.
End: 21:03.
Weather conditions:
Start temperature: 12°C. Finish temperature: 10°C.
Precipitation 0, Wind strength 0, Cloud cover 4/8.
Humidity: 72% - 75%.
Surveyors: Kerry Baker (KB) & Victoria Halford (VH)

Equipment: EM Touch & iPad/iPhone.

Survey summary: Passes and occasional foraging by common pipistrelle bats, with no other species recorded. Majority of passes short and brief, with some foraging associated with vegetated hedgerows and treeline areas. Activity was considered moderate.

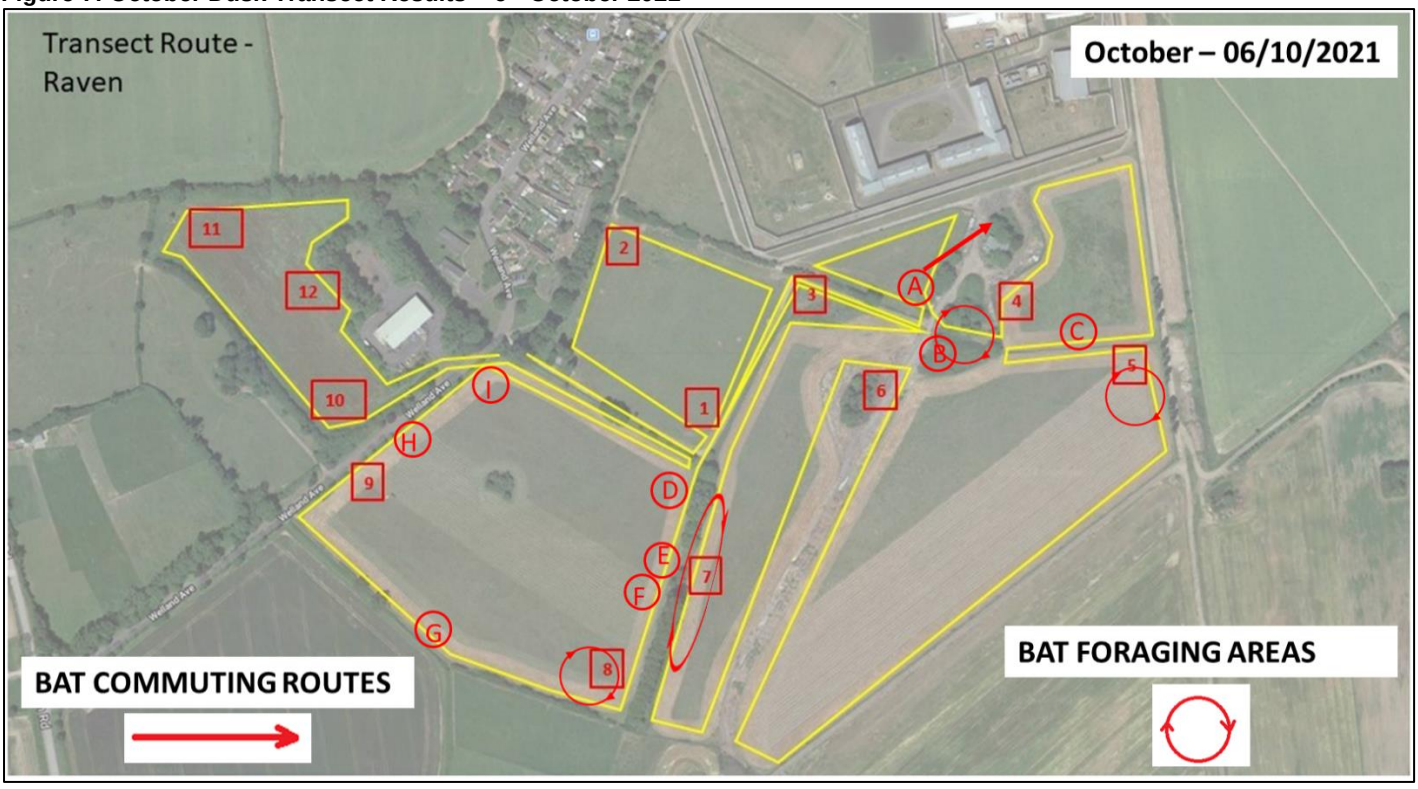
Incidental observations: Barn owl observed commuting at 19:03 from point count 4 to point count 5 and offsite to the east.

Survey constraints: N/A.

Table 7 – All Bat Activity Recorded During Transect 7 on the 06/10/2021 Refer to Fig. 7.

Time (24 Hrs)	Surveyor	Species	No. bats	Bat Activity	Map Annotation
19:00	KB/ VH	P.pip	1	Commuting, east into trees	A, 4
19:02	KB/ VH	P.pip	1	Foraging, multiple passes associated with vegetation	B, 4
19:04	KB/ VH	P.pip	1	Continuous foraging by same bat as above for 3 mins at point 4.	4
19:12	KB/ VH	P.pip	1	Single pass, HNS	C
19:18	KB/ VH	P.pip	1	HNS, continuous passes, assumed foraging.	5
19:59	KB/ VH	P.pip	1	HNS, continuous passes, foraging.	7
20:07	KB/ VH	P.pip	1	Commuting pass, HNS	D
20:09	KB/ VH	P.pip	1	Commuting pass, HNS	E
20:12	KB/ VH	P.pip	1	Commuting pass, HNS	F
20:16 – 20:19	KB/ VH	P.pip	1	HNS, foraging for 3 minutes	8
20:23	KB/ VH	P.pip	1	Commuting pass, HNS	G
20:37	KB/ VH	P.pip	1	Commuting pass, HNS	H
20:40	KB/ VH	P.pip	1	Social calls and brief forage, HNS	I
21:01	KB/ VH	P.pip	1	Brief pass, HNS	J

Figure 7: October Dusk Transect Results – 6th October 2021



Appendix 2 – Static detector survey results

Bat Activity – April

Deployment Dates: 19/04/2021 to 24/04/2021

Summary

Activity was dominated at all locations by common pipistrelle (*Pipistrellus pipistrellus*) passes. Other species present include soprano pipistrelle (*Pipistrellus pygmaeus)*, brown long eared bat (*Plecotus auritus)*, Leisler's (*Nyctalus leisleri)*, Noctule (*Nyctalus noctula)* and *Myotis* species. However, these registrations are very low in number, usually reflecting 5 or fewer passes within the monitoring period.

Table 1: Location 1

Night	Species Label	Number
2021/04/20	Pip sp	3
2021/04/20	Pip45	121
2021/04/22	Pip45	2
2021/04/23	Pip45	6
2021/04/24	Pip45	1

Table 2: Location 2

Night	Species Label	Number
2021/04/20	BLE	1
2021/04/20	Pip45	882
2021/04/20	Pip55	3
2021/04/22	Pip45	133
2021/04/23	Pip45	383
2021/04/24	Pip45	32

Table 3: Location 3

Night	Species Label	Number
2021/04/19	Noct	2
2021/04/20	Leis	3
2021/04/20	Myotis	1
2021/04/20	Noct	1
2021/04/20	Pip45	618
2021/04/20	Pip55	1
2021/04/21	Pip45	1
2021/04/22	Noct	1
2021/04/22	Pip45	213
2021/04/23	Pip45	624
2021/04/23	Pip55	3
2021/04/24	Pip45	91

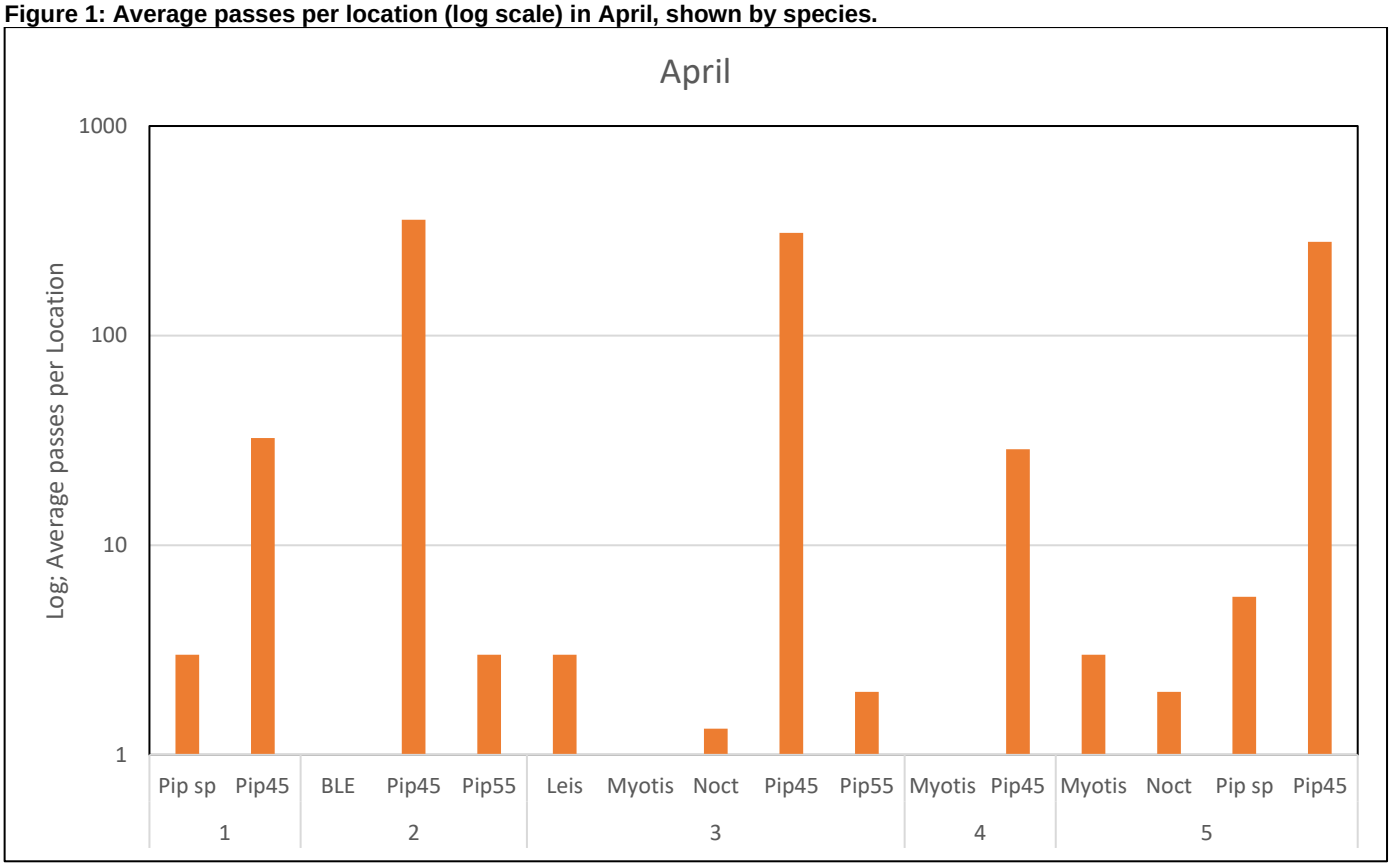
Table 5: Location 4

Night	Species Label	Number
2021/04/20	Pip45	45
2021/04/22	Pip45	15
2021/04/23	Myotis	1
2021/04/23	Pip45	41
2021/04/24	Pip45	14

Table 5: Location 5

Night	Species Label	Number
2021/04/20	Noct	2
2021/04/20	Pip sp	8
2021/04/20	Pip45	694
2021/04/22	Pip	4
2021/04/22	Pip45	221
2021/04/23	Myotis	3
2021/04/23	Pip sp	5
2021/04/23	Pip45	199
2021/04/24	Pip45	7

Figure 1: Average passes per location (log scale) in April, shown by species.



Bat Activity – May

Deployment Dates: 13/05/2021 to 18/05/2021

Summary

Only three locations generated data due to equipment failure, therefore no data is available for locations 1 and 2. Activity is dominated at all locations by common pipistrelle passes. Other species present include soprano pipistrelle, brown long eared, Leisler's, and *Myotis*. However, these registrations are very low in number, with *Myotis* only present at location 5 on one single pass, and Leisler's only present at locations 3 and 4. Noctule was more commonly encountered with passes present at all locations and a significant number of passes at location 4 on the night of the 14th indicating foraging activity at this location.

Table 1: Location 3

Night	Label	Number
2021/05/13	Noct	2
2021/05/13	Pip sp	1
2021/05/13	Pip45	35
2021/05/14	Noct	2
2021/05/14	Pip sp	4
2021/05/14	Pip45	75
2021/05/15	Pip sp	1
2021/05/15	Pip45	25
2021/05/16	Noct	3
2021/05/16	Pip sp	4
2021/05/16	Pip45	136
2021/05/16	Pip55	1
2021/05/17	Noct	1
2021/05/17	Pip sp	1
2021/05/17	Pip45	77
2021/05/18	Leis	1
2021/05/18	Pip sp	1
2021/05/18	Pip45	119

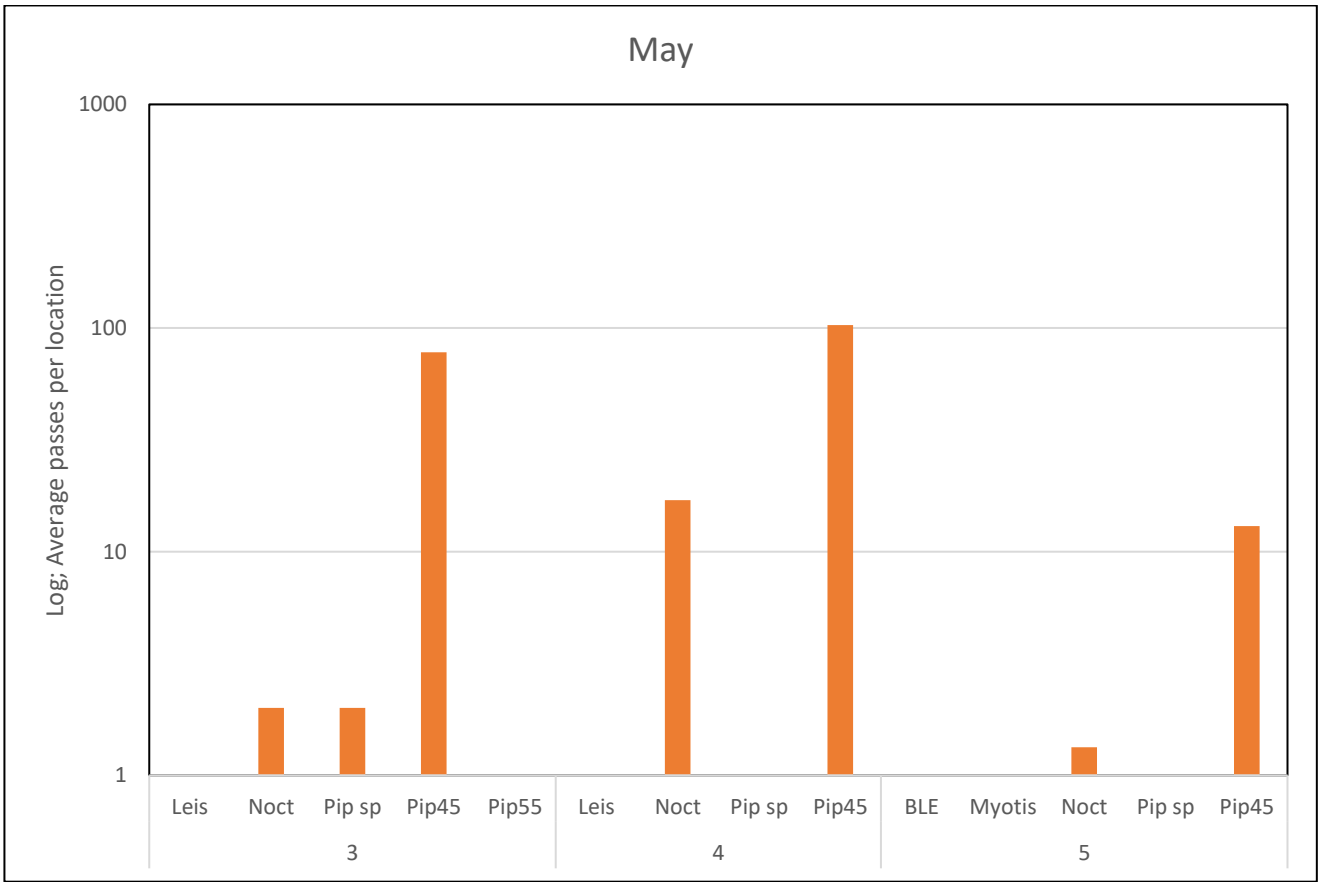
Table 2: Location 4

Night	Label	Number
2021/05/14	Leis	1
2021/05/14	Noct	33
2021/05/14	Pip45	424
2021/05/15	Pip45	22
2021/05/16	Pip45	56
2021/05/17	Pip45	1
2021/05/18	Noct	1
2021/05/18	Pip sp	1
2021/05/18	Pip45	12

Table 3: Location 5

Night	Label	Number
2021/05/14	Myotis	1
2021/05/14	Pip45	5
2021/05/15	BLE	1
2021/05/15	Pip45	7
2021/05/16	Noct	1
2021/05/16	Pip45	18
2021/05/17	Noct	2
2021/05/17	Pip45	10
2021/05/18	Noct	1
2021/05/18	Pip sp	1
2021/05/18	Pip45	25

Figure 2: Average passes per location (log scale) in May, shown by species.



Bat Activity – June

Deployment Dates: 07/06/2021 to 14/06/2021

Summary

Activity is dominated at all locations by common pipistrelle passes. Other species present include soprano pipistrelle, brown long eared, Leisler's, noctule, serotine (*Eptesicus serotinus)* and *Myotis*. However, these registrations are very low in number. Higher numbers of Noctule passes than average were identified at location 3, indicating foraging activity by this species.

Table 1: Location 1

Night	Species Label	Number
2021/06/07	BLE	1
2021/06/07	Noct	7
2021/06/07	Pip45	589
2021/06/08	Noct	6
2021/06/08	Pip45	281
2021/06/08	Pip55	1
2021/06/09	Noct	7
2021/06/09	Pip45	48
2021/06/09	Pip55	3
Recording failed		

Table 2: Location 2

Night	Species Label	Number
2021/06/07	Myotis	1
2021/06/07	Noct	1
2021/06/07	Pip45	392
2021/06/07	Pip55	2
2021/06/08	Pip45	208
2021/06/08	Pip55	1
2021/06/09	BLE	1
2021/06/09	Leis	1
2021/06/09	Myotis	1
2021/06/09	Noct	6
2021/06/09	Pip45	415
2021/06/09	Pip55	3
2021/06/10	Noct	2
2021/06/10	Pip45	1220
2021/06/10	Pip55	9
2021/06/11	Noct	9
2021/06/11	Pip45	525
2021/06/11	Pip55	2
2021/06/12	Noct	3
2021/06/12	Pip45	438
2021/06/12	Pip55	1
2021/06/13	Noct	2
2021/06/13	Pip45	580

Table 3: Location 3

Night	Species Label	Number
2021/06/07	Leis	2
2021/06/07	Noct	5
2021/06/07	Pip45	34
2021/06/08	Noct	6
2021/06/08	Pip45	31
2021/06/08	Sero	1
2021/06/09	BLE	1
2021/06/09	Noct	22
2021/06/09	Pip45	29
2021/06/09	Pip55	2
2021/06/10	BLE	1
2021/06/10	Noct	1
2021/06/10	Pip45	25
2021/06/11	Pip45	26
2021/06/12	Noct	2
2021/06/12	Pip45	19
2021/06/13	Noct	12
2021/06/13	Pip45	32

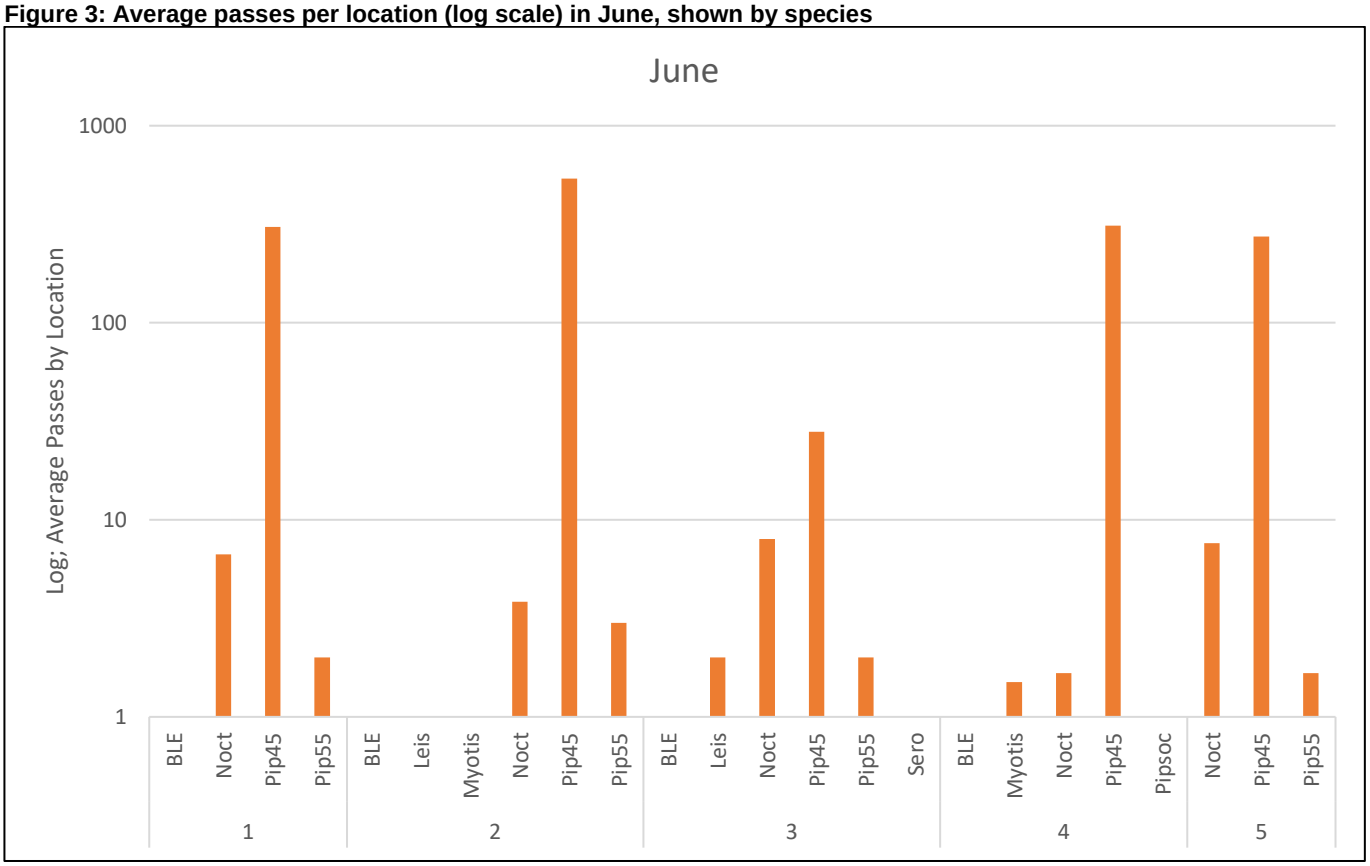
Table 4: Location 4

Night	Species Label	Number
2021/06/10	Noct	3
2021/06/10	Pip45	303
2021/06/10	Pipsoc	1
2021/06/11	BLE	1
2021/06/11	Noct	1
2021/06/11	Pip45	332
2021/06/12	Myotis	2
2021/06/12	Noct	1
2021/06/12	Pip45	321
2021/06/13	Myotis	1
2021/06/13	Pip45	288

Table 5: Location 5

Night	Species Label	Number
2021/06/07	Noct	1
2021/06/07	Pip45	573
2021/06/08	Noct	1
2021/06/08	Pip45	277
2021/06/09	Noct	10
2021/06/09	Pip45	180
2021/06/09	Pip55	3
2021/06/10	Noct	7
2021/06/10	Pip45	54
2021/06/10	Pip55	1
2021/06/11	Noct	28
2021/06/11	Pip45	421
2021/06/12	Noct	2
2021/06/12	Pip45	297
2021/06/12	Pip55	1
2021/06/13	Noct	11
2021/06/13	Pip45	114
2021/06/14	Noct	1

Figure 3: Average passes per location (log scale) in June, shown by species



Bat Activity – July

Deployment Dates: 07/07/2021 to 12/07/2021

Summary

Activity is dominated at all locations by common pipistrelle passes. Other species present include soprano pipistrelle, brown long eared, Leisler's, and *Myotis*, however these registrations are very low in number. Noctule was more commonly encountered, with passes present at all locations and a significant number of passes at location 4 on the night of the 8th indicating foraging activity at this location. Individual passes of serotine bat were identified at locations 2 and 3.

Table 1: Location 1

Night	Species Label	Number
2021/07/07	Pip45	2
2021/07/09	Pip55	1
2021/07/11	Pip55	1
2021/07/12	Noct	1
2021/07/12	Pip45	2

Table 2: Location 2

Night	Species Label	Number
2021/07/07	Pip45	338
2021/07/08	Noct	2
2021/07/08	Pip45	352
2021/07/09	Noct	2
2021/07/09	Pip45	203
2021/07/10	Pip45	73
2021/07/11	Noct	3
2021/07/11	Pip45	164
2021/07/12	Pip45	189

Table 3: Location 3

Night	Species Label	Number
2021/07/07	Pip45	22
2021/07/07	Sero	1
2021/07/08	Noct	6
2021/07/08	Pip45	19
2021/07/09	Noct	3
2021/07/09	Pip45	28
2021/07/10	Pip45	6
2021/07/11	Noct	1
2021/07/11	Pip45	6
2021/07/12	Noct	1
2021/07/12	Pip45	7

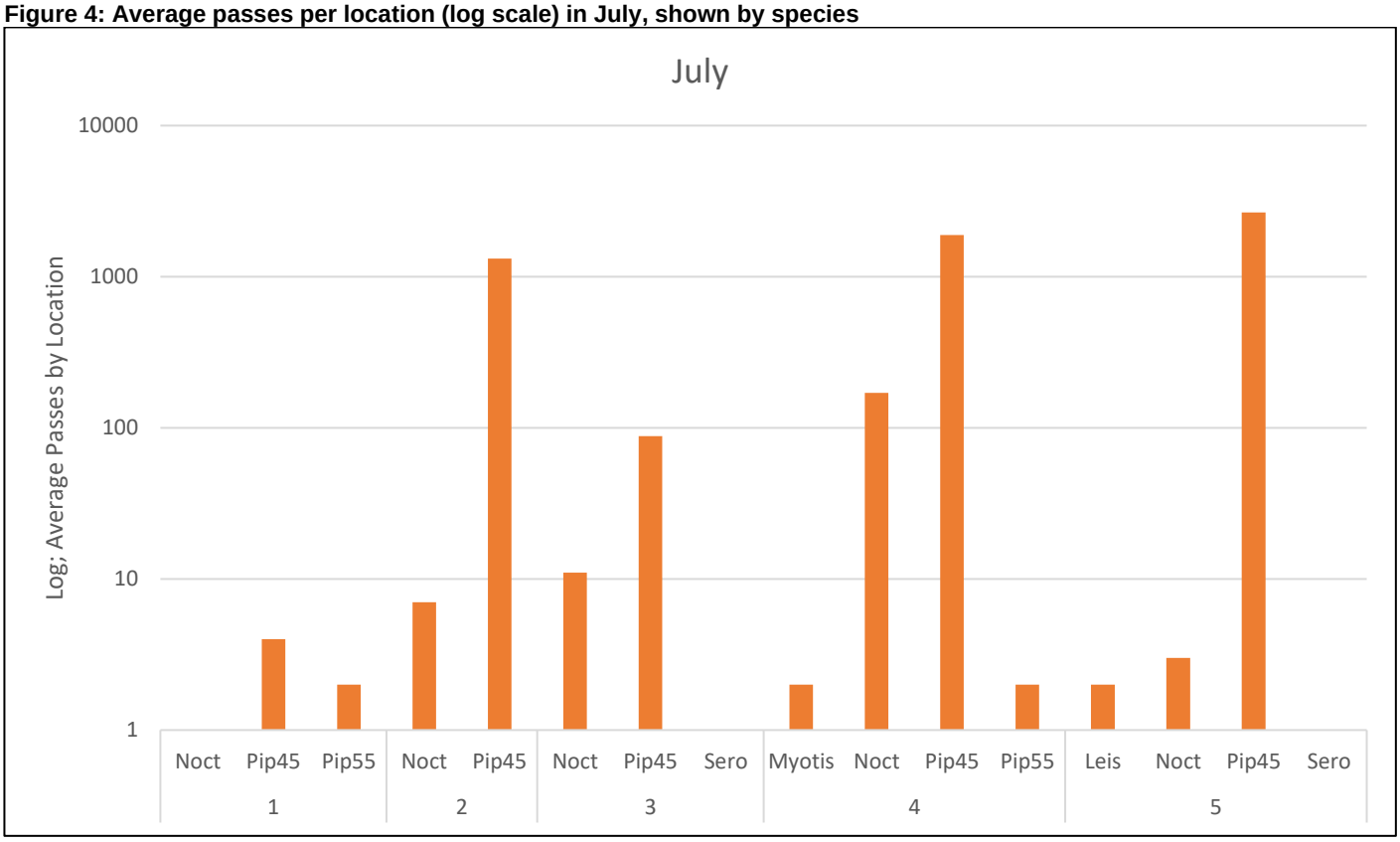
Table 4: Location 4

Night	Species Label	Number
2021/07/07	Noct	1
2021/07/07	Pip45	391
2021/07/08	Noct	66
2021/07/08	Pip45	616
2021/07/08	Pip55	2
2021/07/09	Myotis	1
2021/07/09	Noct	49
2021/07/09	Pip45	238
2021/07/10	Noct	2
2021/07/10	Pip45	186
2021/07/11	Myotis	1
2021/07/11	Noct	9
2021/07/11	Pip45	113
2021/07/12	Noct	43
2021/07/12	Pip45	342

Table 5: Location 5

Night	Species Label	Number
2021/07/07	Noct	2
2021/07/07	Pip45	865
2021/07/08	Noct	1
2021/07/08	Pip45	465
2021/07/08	Sero	1
2021/07/09	Pip45	740
2021/07/10	Pip45	371
2021/07/11	Leis	2
2021/07/11	Pip45	220

Figure 4: Average passes per location (log scale) in July, shown by species



Bat Activity – August

Deployment Dates: 02/08/2021 to 11/08/2021

Summary

Only three locations generated data due to equipment failure, therefore no data is available for locations 2 and 5. Activity was dominated at all locations by common pipistrelle passes. Other species present include soprano pipistrelle, brown long eared, Leisler's, serotine, noctule, and *Myotis* bats, however these registrations are relatively low in number. Leisler's were commonly encountered at location 3. Occasional social calls by pipistrelle species were identified.

Table 1: Location 1

Night	Species Label	Number
2021/08/07	Noct	3
2021/08/07	Pip45	2
2021/08/10	Myotis	1
2021/08/11	Pip45	1

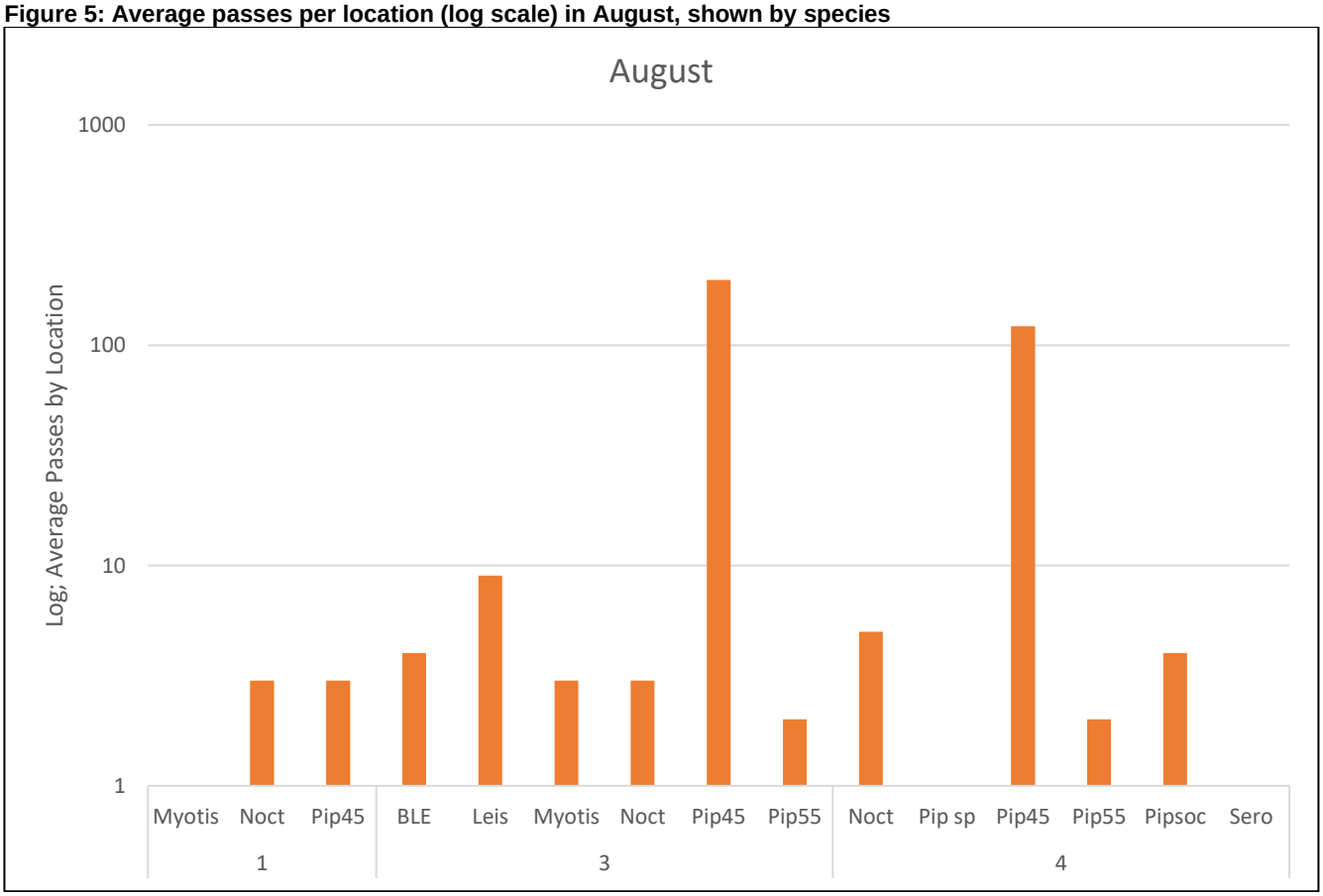
Table 2: Location 3

Night	Species Label	Number
2021/08/02	Leis	7
2021/08/02	Noct	3
2021/08/02	Pip45	11
2021/08/02	Pip55	2
2021/08/03	BLE	1
2021/08/03	Pip45	33
2021/08/04	BLE	2
2021/08/04	Myotis	2
2021/08/04	Pip45	16
2021/08/05	Pip45	120
2021/08/06	BLE	1
2021/08/06	Pip45	6
2021/08/07	Leis	2
2021/08/07	Pip45	8
2021/08/08	Myotis	1
2021/08/08	Pip45	4

Table 3: Location 4

Night	Species Label	Number
2021/08/02	Noct	1
2021/08/02	Pip sp	1
2021/08/02	Pip45	25
2021/08/02	Pipsoc	2
2021/08/03	Pip45	44
2021/08/03	Pip55	1
2021/08/04	Pip45	13
2021/08/04	Pip55	1
2021/08/05	Pip45	6
2021/08/06	Pip45	1
2021/08/07	Pip45	1
2021/08/09	Pip45	2
2021/08/09	Sero	1
2021/08/10	Noct	4
2021/08/10	Pip45	30
2021/08/10	Pipsoc	2

Figure 5: Average passes per location (log scale) in August, shown by species



Bat Activity – September

Deployment Dates: 07/09/2021 to 12/09/2021

Summary

Detectors at locations were sabotaged during recording, with microphones disconnected shortly after deployment. Remaining activity identified remarkably high levels of activity at all locations. It is considered that this is partly due to the warm conditions present during recording, with evening temperatures remaining above 20°C throughout which may have permitted increased bat activity. Significant numbers of passes by common pipistrelle bats were identified at locations 4 and 5, with a high number of social calls of pipistrelle bats also identified at these locations. Brown long eared bats were only identified at location 5. Significant numbers of *Myotis* passes were identified at location 5.

Table 1: Location 3

Night	Species Label	Number
2021/09/07	Leis	1
2021/09/07	Myotis	3
2021/09/07	Noct	1
2021/09/07	Pip45	638
2021/09/08	Myotis	1
2021/09/08	Noct	5
2021/09/08	Pip45	942
2021/09/08	Pip55	3
2021/09/08	Pipsoc	1
2021/09/09	Myotis	2
2021/09/09	Noct	9
2021/09/09	Pip45	569
2021/09/10	Myotis	1
2021/09/10	Noct	8
2021/09/10	Pip45	184
2021/09/11	Noct	5
2021/09/11	Pip45	48
2021/09/11	Pip55	1
2021/09/12	Noct	25
2021/09/12	Pip45	96
2021/09/12	Pip55	5

Table 2: Location 4

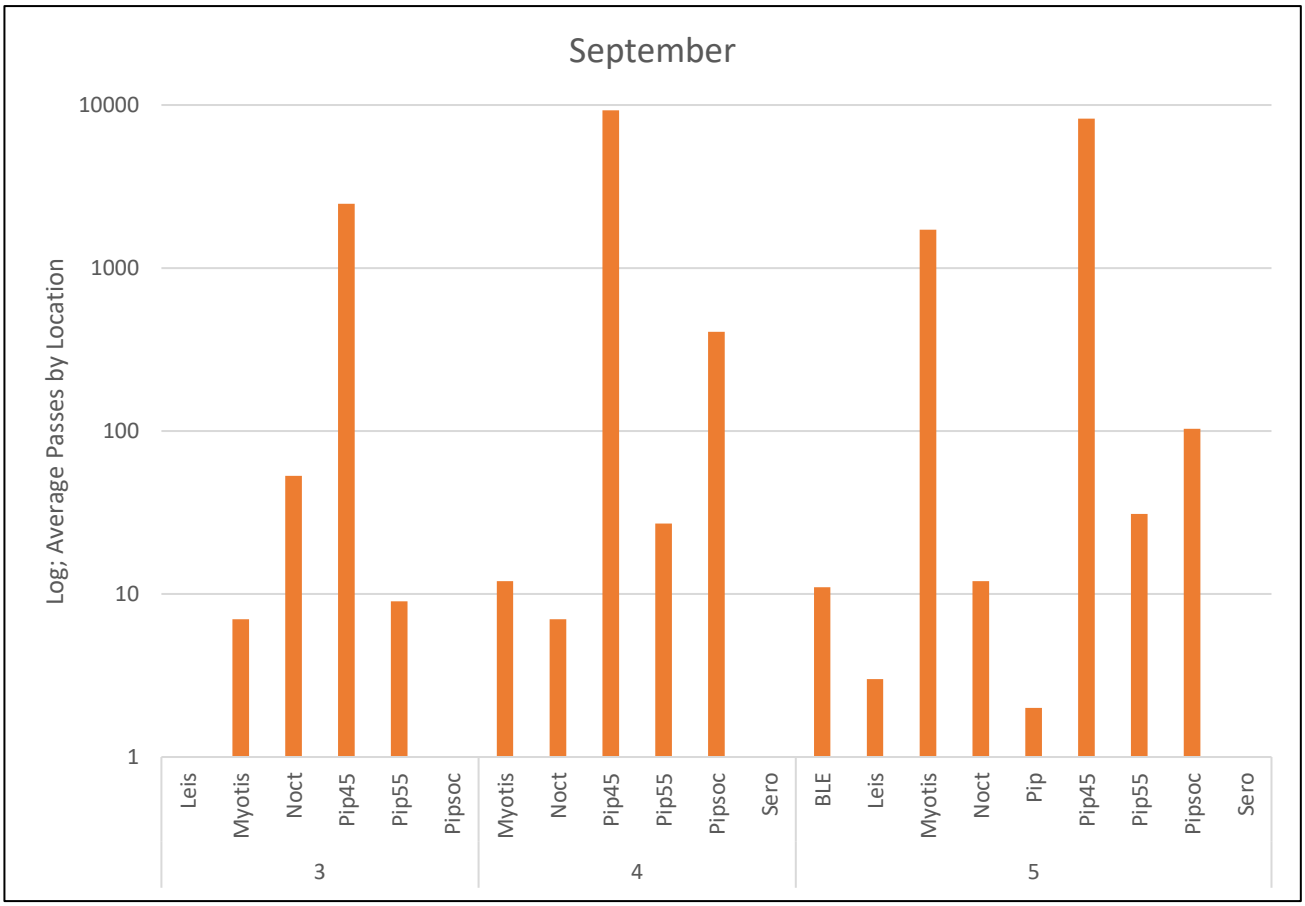
Night	Species Label	Number
2021/09/07	Myotis	4
2021/09/07	Pip45	1311
2021/09/07	Pip55	6
2021/09/07	Pipsoc	129
2021/09/07	Sero	1
2021/09/08	Myotis	3
2021/09/08	Noct	3
2021/09/08	Pip45	828
2021/09/08	Pip55	4
2021/09/08	Pipsoc	95
2021/09/09	Myotis	1
2021/09/09	Noct	1
2021/09/09	Pip45	1395
2021/09/09	Pip55	1
2021/09/09	Pipsoc	96
2021/09/10	Noct	3
2021/09/10	Pip45	2270
2021/09/10	Pip55	1
2021/09/10	Pipsoc	49
2021/09/11	Myotis	4
2021/09/11	Pip45	1059
2021/09/11	Pip55	7
2021/09/11	Pipsoc	35
2021/09/12	Pip45	2405
2021/09/12	Pip55	8
2021/09/12	Pipsoc	2

Table 3: Location 5

Night	Species Label	Number
2021/09/07	BLE	3
2021/09/07	Leis	2
2021/09/07	Myotis	2
2021/09/07	Pip45	1228
2021/09/07	Pipsoc	7
2021/09/08	Myotis	186
2021/09/08	Noct	1
2021/09/08	Pip45	1881
2021/09/08	Pip55	7
2021/09/08	Pipsoc	56
2021/09/09	BLE	2
2021/09/09	Myotis	205
2021/09/09	Noct	7
2021/09/09	Pip	2
2021/09/09	Pip45	1254
2021/09/09	Pip55	6
2021/09/09	Pipsoc	16
2021/09/10	BLE	3
2021/09/10	Leis	1
2021/09/10	Myotis	290
2021/09/10	Noct	4
2021/09/10	Pip45	847

2021/09/10	Pip55	2
2021/09/10	Pipsoc	20
2021/09/11	BLE	2
2021/09/11	Myotis	633
2021/09/11	Pip45	913
2021/09/11	Pip55	2
2021/09/11	Pipsoc	3
2021/09/11	Sero	1
2021/09/12	BLE	1
2021/09/12	Myotis	405
2021/09/12	Pip45	2123
2021/09/12	Pip55	14
2021/09/12	Pipsoc	1

Figure 6: Average passes per location (log scale) in September, shown by species.



Bat Activity – October

Deployment Dates: 06/10/2021 to 11/10/2021

Summary

Activity is reduced in comparison to the September data, reflecting the onset of the Autumn months and a corresponding reduction in bat activity. As over the remainder of the year, activity is dominated at all locations by common pipistrelle passes. Other species present include soprano pipistrelle, brown long eared, noctule, and *Myotis.* However, these registrations are relatively low in number. Occasional social calls by pipistrelle species were identified.

Table 1: Location 1

Night	Species Label	Number
2021/10/06	Pip45	17
2021/10/06	Pipsoc	1
2021/10/07	Pip45	1
2021/10/09	Pip45	2
2021/10/10	Pip45	8

Table 2: Location 2

Night	Species Label	Number
2021/10/06	Pip45	125
2021/10/06	Pip55	1
2021/10/06	Pipsoc	12
2021/10/07	Pip45	61
2021/10/07	Pipsoc	14
2021/10/08	Pip45	33
2021/10/08	Pipsoc	1
2021/10/09	Myotis	4
2021/10/09	Pip45	315
2021/10/09	Pip55	3
2021/10/09	Pipsoc	52
2021/10/10	Noct	1
2021/10/10	Pip45	508
2021/10/10	Pipsoc	12

Table 3: Location 3

Night	Species Label	Number
2021/10/06	Myotis	1
2021/10/06	Noct	1
2021/10/06	Pip45	34
2021/10/06	Pipsoc	1
2021/10/07	Pip45	63
2021/10/08	Pip45	9
2021/10/08	Pipsoc	1
2021/10/09	Myotis	2
2021/10/09	Pip45	12
2021/10/10	Pip45	8

Table 4: Location 4

Night	Species Label	Number
2021/10/06	BLE	1
2021/10/06	Pip45	76
2021/10/07	BLE	1
2021/10/07	Myotis	1
2021/10/07	Pip45	138
2021/10/07	Pip55	3
2021/10/08	Pip45	33
2021/10/08	Pip55	2
2021/10/09	Pip45	82
2021/10/10	Pip45	13

Table 5: Location 5

Night	Species Label	Number
2021/10/06	BLE	2
2021/10/06	Myotis	3
2021/10/06	Pip	1
2021/10/06	Pip45	202
2021/10/06	Pip55	3
2021/10/06	Pipsoc	21
2021/10/07	BLE	1
2021/10/07	Myotis	1
2021/10/07	Noct	2
2021/10/07	Pip45	188
2021/10/07	Pip55	3
2021/10/07	Pipsoc	26
Recording failed		

Figure 7: Average passes per location (log scale) in October, shown by species.

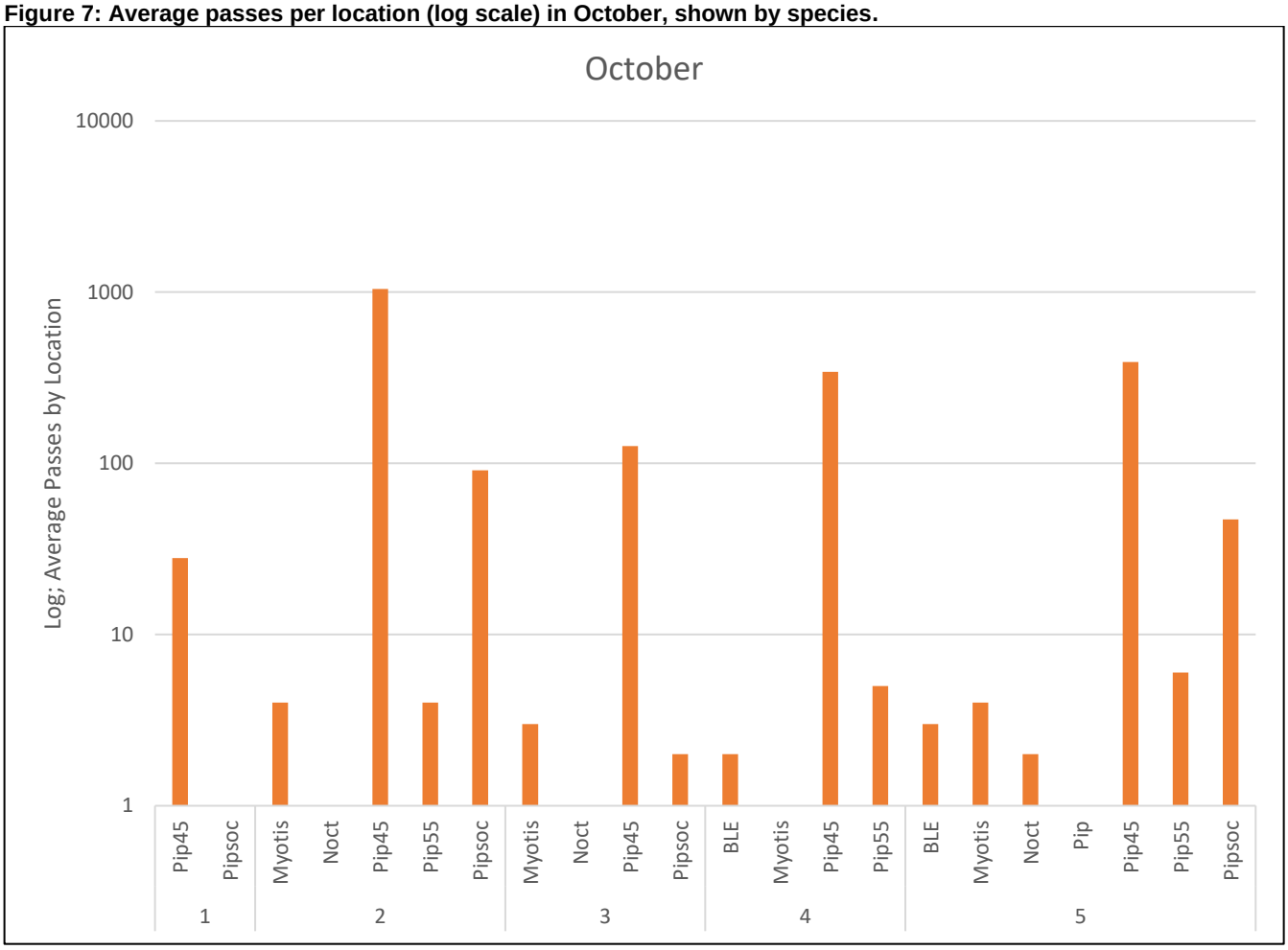


Figure 8: Average bat passes per static detector location.

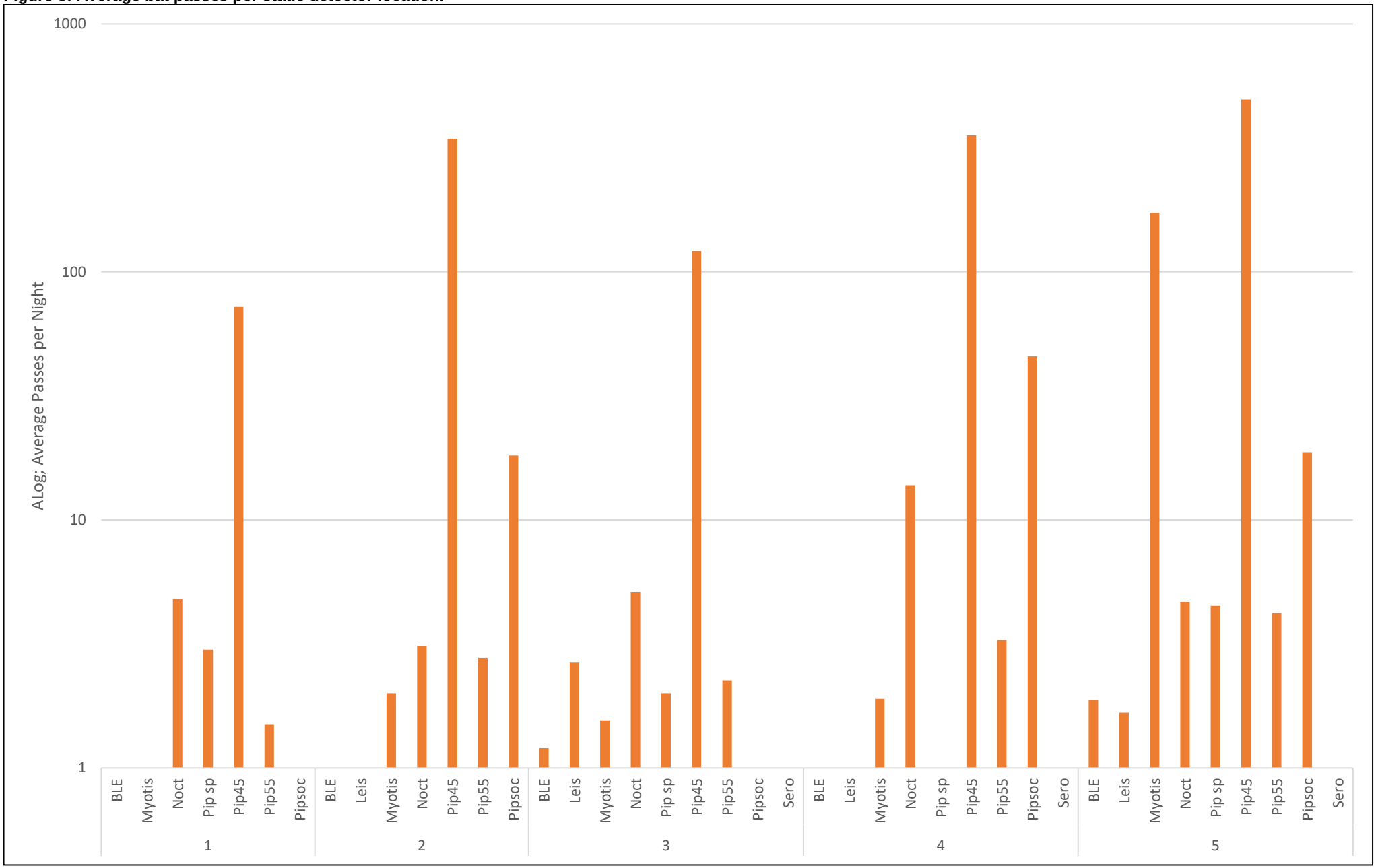


Figure 9: Average passes per month.