

OTTERPOOL PARK

Environmental Statement Appendix 7.14 - Bat Static Detector Surveys 2017 and 2021

MARCH 2022



CONTENTS

EXECUTIVE SUMMARY	I
1 INTRODUCTION	1
1.1 Overview	1
1.2 Site Location and Setting.....	1
1.3 Proposed Development.....	2
1.4 Bat Biology	2
1.5 Bat Legislation	3
1.6 Policy	3
1.7 Conservation status of bats	5
2 APPROACH AND METHODOLOGY	7
2.1 Introduction and Overview	7
2.2 Purpose of the Surveys, Proportionality and Design	7
2.3 Habitat Assessment	7
2.4 Desk Study	7
2.5 Survey Design and Methodology	8
2.6 Data Analysis Methodology 2017.....	10
2.7 Data Analysis Methodology 2021.....	13
2.8 Categorising Activity Levels 2017	15
2.9 Assessment of Swarming Activity 2017 & 2021	19
2.10 Survey Limitations.....	19
2.11 Analysis Limitations.....	20
2.12 Other Bat Surveys Conducted	21
3 RESULTS	23
3.1 Reporting Outline	23
3.2 Desk Study	23
3.3 Field Surveys	26
4 DISCUSSION.....	53
4.1 Introduction.....	53
4.2 Between Site Activity Levels	53
4.3 Within Site Activity Levels 2017 and 2021	53

5	MITIGATION RECOMMENDATIONS AND FURTHER WORK	56
5.1	Introduction.....	56
5.2	Design Mitigation.....	56
5.3	Additional Mitigation.....	57
5.4	Further Survey Work.....	59
6	CONCLUSIONS	60
7	REFERENCES	62
	FIGURE 1: BAT STATIC DETECTOR SURVEYS – DETECTOR POSITIONS 2017	64
	FIGURE 2: BAT STATIC DETECTOR SURVEYS – NORMALISED ACTIVITY LEVELS BETWEEN BAT STATIC DETECTOR POSITIONS 2017.....	65
	FIGURE 3: BAT STATIC DETECTOR SURVEYS – BAT ASSEMBLAGE VALUE (PERCENTAGE OF PASSES OF ‘RARER’ SPECIES) 2017	66
	FIGURE 4: BAT STATIC DETECTOR SURVEYS – SUMMARY OF RESULTS INFERRED FROM STATIC DETECTOR POSITIONS 2017	67
	FIGURE 5: BAT STATIC DETECTOR SURVEYS – DETECTOR POSITIONS 2021	68
	FIGURE 6: BAT STATIC DETECTOR SURVEYS – NORMALISED ACTIVITY LEVELS BETWEEN BAT STATIC DETECTOR POSITIONS 2021.....	69
	FIGURE 7: BAT STATIC DETECTOR SURVEYS – BAT ASSEMBLAGE VALUE (PERCENTAGE OF PASSES OF ‘RARER’ SPECIES) 2021	70
	FIGURE 8: BAT STATIC DETECTOR SURVEYS – SUMMARY OF RESULTS INFERRED FROM STATIC DETECTOR POSITIONS 2021	71
	FIGURE 9: BAT STATIC DETECTOR SURVEYS – SUMMARY OF RESULTS INFERRED FROM STATIC DETECTOR POSITIONS 2017 AND 2021	72
	APPENDIX A : BAT PASSES RAW DATA 2017	73
	APPENDIX B : BAT PASSES RAW DATA 2021	74

APPENDIX C : RECORDING DATES OF STATIC DATA ANALYSED 2021	77
APPENDIX D MINUTES OF DATA RECORDING ANALYSED 2017.....	78
APPENDIX E : MINUTES OF DATA RECORDING ANALYSED 2021.....	80
APPENDIX F : FIRST / LAST BAT RAW DATA 2017.....	85
APPENDIX G : SUPPORTING INFORMATION - SM4 SET UP DETAILS.....	86
APPENDIX H : ANNEXE 2 SPECIES DISTRIBUTION WITHIN THE UK.....	87
APPENDIX I : SURVEYOR PEN PORTRAITS	90
APPENDIX J : ECOBAT ASSESSMENT DATA DETAILS 2017	92
APPENDIX K : ECOBAT ASSESSMENT DATA DETAILS 2021 (FULL OUTPUT).....	96
APPENDIX L : DATA VERIFICATION RESULTS 2017	97
APPENDIX M : DATA VERIFICATION RESULTS 2021.....	98
APPENDIX N : CORRESPONDENCE WITH KCC R.E. BARBASTELLE.....	100
APPENDIX O : GRAPHICAL REPRESENTATION OF LIKELY ROOST AREAS IDENTIFIED IN 2021	101

TABLES

Table 1: Basic ecological information on the bat species recorded on the site.....	2
Table 2: Bat species listed on S41 of the NERC Act 2006.....	4
Table 3: Conservation status of bat species in Kent and the UK (information obtained from Kent Bat Group (Kent Bat Group 2018))	5
Table 4: Rationale for the selection of the 2021 detector positions	9
Table 5: Bat auto ID results data classification	11
Table 6: Simplified species groups utilised within the static detector result analysis.....	13
Table 7: Bat auto ID results data classification	14
Table 8: Ecobat tool activity level bandings	17
Table 9: Categorisation of bats according to Wray 2010	18
Table 10: Average emergence time for bat species with potential to be present within the site.....	18

Table 11: Bat related appendices and information within the ES.....	23
Table 12: Summary of Desk Study Data	23
Table 13: Bat roosts recorded within the vicinity of the Otterpool site	24
Table 14: Data from other sources (previous planning applications)	25
Table 15: The calls per month identified for each species 2021	27
Table 16: Minutes of recording utilised within the activity calculations 2017	31
Table 17: Average number of passes at each deployment location and assessment of activity level 2017 ..	32
Table 18: Areas where 'low' activity was recorded 2017.....	33
Table 19: Areas where 'medium' activity was recorded 2017	34
Table 20: Areas where 'high' levels of activity were recorded 2017	34
Table 21: Average number of passes at each deployment location and assessment of activity level 2021 ..	35
Table 22: Areas where 'medium' activity was recorded 2021	36
Table 23: Areas where 'high' levels of activity were recorded 2021	37
Table 24: Summary of activity assessment at each deployment location – changes 2017 - 2021.....	37
Table 25: Proportions of calls identified to each species group (all positions, all months).....	38
Table 26: Proportions of calls identified to each species group (all positions, all months)	38
Table 27: Proportions of calls identified to each species group (all positions, all months) 2021	40
Table 28: Percentage of passes of 'common' and 'rarer' species of bats.....	41
Table 29: Percentage of passes of 'common' and 'rarer' species of bats 2021.....	42
Table 30: Qualitative assessment of potential for roosts to be nearby each of the static positions 2017.....	48
Table 31: Number of records indicating potential for a nearby roost recorded in 2021	51
Table 32: Description and assessment of nearby roost potential	51
Table 33: Number of passes recorded by each detector in each deployment (prior to data handling)	73
Table 34: 2021 Statics raw data	74
Table 35: Recording dates of static detector survey placements analysed	77
Table 36 Minutes of data recording analysed 2017	78
Table 37: Minutes of recording 2021	80
Table 38: Details of data used for Ecobat assessment and results	92
Table 39: Results from bat data verification exercise.....	97
Table 40: Results from bat data verification exercise 2021.....	98

IMAGES

Image 1: Aerial imagery of the site.....	1
Image 2: The average activity level across all positions throughout the survey season (normalised) 2017 ..	27

Image 3: The normalised calls per hour for each month 2021	28
Image 4: The normalised calls per hour for each month broken down by species 2021	28
Image 5: Excerpt from the ecobat assessment (Appendix H) showing the 'between site' valuation of the species activity recorded 2021	30
Image 6: Average activity (passes per hour) at each deployment location 2017	33
Image 7: Normalised passes per hour by detector location 2021	36
Image 8: Proportion of bat passes recorded at each deployment location	39
Image 9: Proportion of calls attributable to each species / species group in 2021	40
Image 10: Chart showing the percentage of passes of common and rarer bats. Series 1 represents 'common' bats, series 2 represents 'rarer' bats.	43
Image 11: Average number of passes per hour rarer bats at each detector position	44
Image 12: Average number of passes per hour rarer bats at each deployment location.	44
Image 13: Relative activity of bat species with common and soprano pipistrelle removed	45
Image 14: Proportion of pipistrelle bats and other bats recorded at each location 2021	46
Image 15: Passes per hour of 'rare and rarest bat species 2021	46
Image 16: Passes per hour of 'rare' and 'rarest' bats 2021	47
Image 17: Distribution of Bechstein's bats within the UK	87
Image 18: Distribution of Barbastelle bats within the UK	88
Image 19: Distribution of Bechstein's bats within Kent as recorded within the BCT surveys	89

Executive Summary

Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for bat species to inform an Environmental Impact Assessment (EIA) for the proposed new development and accompany an outline planning application. The proposed development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site". This report outlines the results of wide-scale automated (static) bat detector surveys across the site undertaken over a season in 2017 (April to October), as well as update surveys in 2021, to a defined repeatable methodology.

The site is located within Folkestone, Kent within the administrative boundary of Folkestone and Hythe District Council (F&HDC) and spans an area located immediately south of Junction 11 of the M20. The site is largely agricultural in nature with the majority of the site comprising arable and pasture fields, a disused horseracing course with an artificial lake ('Folkestone Racecourse Lake'), areas modified from historical use (airfields), existing historic settlements and relatively new industrial areas. The site area encompasses the proposed Otterpool Park Area Development application site and is approximately 589 ha.

During the surveys, a small number of technical issues occurred, including data storage cards becoming corrupted, detectors malfunctioning and detectors being interfered with by third parties. However, this was taken into consideration when results were assessed, and a weighting was applied to control the impact of these issues and normalise the results.

Automated detectors were operational for two seasons of automated detector surveys. All recordings were analysed using the auto-identification software resulting in the identification of 42,512 bat passes over 2017 and 57,283 over 2021 to species or group level.

The results of this study, as set out in Section 3, include:

- The assemblage of species recorded on the site;
- An assessment of the bat activity within the site;
- differences in activity in different parts of the study area;
- an assessment of important commuting, foraging and roosting areas within the site; and
- a consideration of 'bat hot-spots'.

The findings from these data, combined with data collected across other studies, will inform the impact assessment, and will also enable the comparison of the data collected pre-construction, to that collected during construction, and in the post-construction period, as appropriate.

During the surveys, important areas for bat activity and which were likely to support foraging, commuting or roosting bats were identified. Measures to reduce the impact to these areas will be incorporated with the masterplan and outline planning. Mitigation measures to be employed would include:

- Creation of dark corridors within the development, that are designed to ensure that bats can continue to utilise the area;
- Retention and enhancement of foraging areas and retained and enhanced connectivity between foraging areas;
- Creation of bat roosting features including bat barns and installation of tree roost boxes and roost boxes within structures;
- Where roads etc. cross commuting corridors, planting / underpasses / bridges to ensure that bats can continue to traverse these features.

The surveys, when combined with the other bat surveys referred to within this document, are considered sufficient to inform the EIA and Tier 1 Application, to allow for masterplan design and to inform outline planning. However, due to the details of the proposed development and the requirement for an extended build out, subsequent surveys are likely to be required to inform each phase of the development, at Planning Tiers 2 and 3. These surveys will inform detailed planning and construction mitigation and avoidance.

Overall, the results of the 2021 survey concluded that:

- No further surveys are required to inform a 2021 resubmission of the ES; and
- The valuations utilised in the 2018 submission are considered to be valid, with no evidence of any major changes in habitat within the survey area.

Increases in activity in some areas, value for rarer species and evidence of nearby roosts for the 2021 surveys will be incorporated into the impact assessment

1 Introduction

1.1 Overview

1.1.1 Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for bat species to inform an Environmental Impact Assessment (EIA) for the proposed new development and accompany an outline planning application. The proposed development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site". This report outlines the results of wide-scale automated (static) bat detector surveys across the site undertaken over a season in 2017 (April to October), as well as update surveys in 2021, to a defined repeatable methodology.

1.2 Site Location and Setting

1.2.1 The site is located within Folkestone, Kent within the administrative boundary of Folkestone and Hythe District Council (F&HDC) and spans a large area located immediately south of Junction 11 of the M20. The site as referred to in this report is a 'Study Area' initially identified for development and is largely agricultural in nature with the majority of the site comprising arable and pasture fields, a disused horseracing course with an artificial lake ('Folkestone Racecourse Lake'), areas modified from historical use (airfields), existing historic settlements and relatively new industrial areas.

1.2.2 The M20 motorway, Channel Tunnel Rail Link and Westenhanger Station are located to the north of the site, beyond which lie the villages of Stanford and Postling within a largely rural setting including the Kent Downs Area of Outstanding Natural Beauty (AONB). This AONB extends to the east, beyond which lies the town of Hythe, and to the south where it includes Lympe village. The site also includes the settlements of Barrowhill, Sellindge, Westenhanger and Newingreen. Lympe Industrial Park and some areas of woodland are located immediately south of the site. In addition, East Stour River flows through the site in a north-east to west direction. The site is centred on Ordnance Survey Grid Reference TR 111 363.

1.2.3 An aerial image illustrating the site is presented in Image 1.

Image 1: Aerial imagery of the site.



1.3 Proposed Development

1.3.1 The planning application seeks permission for a new garden settlement accommodating up to 8,500 homes (Use Classes C2 and C3) and Use Class E, F, B2, C1, Sui Generis development, including use of retained buildings as identified, with related infrastructure, highway works, green and blue infrastructure, with access, appearance, landscaping, layout and scale matters to be reserved.

1.4 Bat Biology

1.4.1 Within the UK there are 18 species of bats, of which 17 species are known to be breeding in the UK. All of the UK species of bats eat insects and locate their prey utilising echolocation.

1.4.2 British bats are insectivorous, occupying many habitat types. Habitats of particular importance for bats include, woodland, hedgerows, ponds, rivers and trees, and structures where they roost. They require warm summer breeding roosts and temperature-stable, cool hibernation sites.

1.4.3 When the weather warms up in spring, bats emerge to feed. UK bats mate in the Autumn and the females store the sperm until spring. Pregnant females tend to gather together in maternity roosts to give birth, usually giving birth to one offspring per year. The females suckle the offspring for four to five weeks, until they are developed enough to fly.

1.4.4 The table below (Table 1) outlines basic ecological data on bat species recorded within the desk study or within the site.

Table 1: Basic ecological information on the bat species recorded on the site

Species / Species Group (Common Name)	Latin Binomial	Light Tolerance	Roost Sites
Serotine	<i>Eptesicus serotinus</i>	Light tolerant. Will forage around artificial lights	Roosts in buildings in cavities and sometimes found in trees.
Daubenton's Bat	<i>Myotis daubentonii</i>	Not tolerant of light. Artificial light may impact upon foraging and commuting.	Roosts in hollow trees, bridges and sometimes buildings close to water.
Natterers' Bat	<i>Myotis nattereri</i>	Not tolerant of light. Artificial light may impact upon foraging and commuting.	Roosts in tree holes and different types of building.
Leisler's Bat	<i>Nyctalus leisleri</i>	Light tolerant. Will forage around artificial lights	Roosts in trees, bat boxes, and buildings including houses.
Noctule	<i>Nyctalus noctule</i>	Light tolerant. Will forage around artificial lights	Roosts almost exclusively in tree holes.
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	Light tolerant. Will forage around artificial lights	Hibernation roosts in hollow trees and crevices in cliffs.
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Light tolerant. Will forage around artificial lights	Maternity colonies usually found in buildings. Will roost in crevices. Males

Species / Species Group (Common Name)	Latin Binomial	Light Tolerance	Roost Sites
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Light tolerant. Will forage around artificial lights	will roost in buildings and trees and in bat boxes.
Barbastelle	<i>Barbastellus barbastellus</i>	Artificial light may impact upon foraging and commuting.	Mainly tree roosting, particularly behind bark. Nursery colonies have been found in building crevices but in England roosts have also been located in cracks in trees in areas of high humidity. Once the young can fly it seems that the colony may sometimes divide into smaller units and then reconvene at a single roost in late July – sometimes in one of the roosts used before the young were born. The majority of UK winter records are of single bats in underground sites.
Brown Long-eared Bat	<i>Plecotus auritus</i>	Not tolerant of light. Artificial light may impact upon foraging and commuting.	Maternity roosts found in trees, in the voids of large old buildings and in bat boxes in woodlands. Bats require enough space for unobstructed internal flight.

1.5 Bat Legislation

- 1.5.1 This section provides an overview of the legislation applicable to bats, for further information the source legislation should be reviewed.
- 1.5.2 All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act (2000) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Together, this legislation makes it illegal to recklessly, intentionally or deliberately:
- Take, kill or injure a bat;
 - Damage, destroy, or obstruct access to, a bat roost; and,
 - Disturb a bat occupying a roost.
- 1.5.3 A bat roost is defined in the legislation as “any structure or place which a bat uses for shelter or protection”.
- 1.5.4 Annexe II bats are those species listed on Annexe II of the Habitats Directive, which lists animal and plant species of Community interest whose conservation requires the designation of Special Areas of Conservation (SAC’s).

1.6 Policy

- 1.6.1 The loss of existing roost and foraging sites is an important factor in the decline in bat populations and national planning policy has been devised to halt or reverse this decline.

1.6.2 The National Planning Policy Framework (HMSO 2021). The NPPF, sets out how the planning system should protect and enhance nature conservation interests. Section 15 is concerned with conserving and enhancing the natural environment (paragraphs 174 and 179).

1.6.3 Planning policies and decisions should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

1.6.4 To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation ; and
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Table 2: Bat species listed on S41 of the NERC Act 2006

Common name	Scientific name
Barbastelle bat	<i>Barbastella barbastellus</i>
Bechstein`s bat	<i>Myotis bechsteinii</i>
Noctule	<i>Nyctalus noctula</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>

1.7 Conservation status of bats

1.7.1 Of the 14 bat species that have been recorded in Kent, only four of these are considered 'common'. Daubenton's bats are relatively common near water, common soprano pipistrelle and brown long-eared bats are common and widespread throughout the county. Noctule, serotine, Natterer's and Leisler's bats are uncommon and the other species recorded within the county scarce or rare. A summary of the status of the bats in Kent is presented in Table 3, information obtained from Kent Bat Group (Kent Bat Group 2018).

1.7.2 The main threats to bats in the UK are thought to include:

- Building and development work, leading to loss or damage of roosts;
- Loss of habitat through development and land use change; and
- The intensification of agriculture, inappropriate riparian management and changes in land use; leading to a decline of insect prey and loss of connectivity for feeding and commuting (BCT 2018).

Table 3: Conservation status of bat species in Kent and the UK (information obtained from Kent Bat Group (Kent Bat Group 2018))

Common name	Scientific name	UK status	Kent status
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>	Native, very rare and endangered	Not considered present
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	Native, rare and endangered	Not considered present
Whiskered bat	<i>Myotis mystacinus</i>	Native, locally distributed	Scarce and elusive
Brandt's bat	<i>Myotis brandtii</i>	Native, common in west and north England, rare or absent elsewhere	Rare and elusive
Bechstein's bat	<i>Myotis bechsteinii</i>	Native, very rare	Very rare (see ES Appendix 7.14 for further information)
Daubenton's bat	<i>Myotis daubentonii</i>	Native, common throughout much of the UK	Common near water
Natterer's bat	<i>Myotis nattereri</i>	Generally scarce	Scarce
Serotine	<i>Eptesicus serotinus</i>	Native, widespread in southern Britain	Widespread but declining
Noctule	<i>Nyctalus noctula</i>	Native, generally uncommon, but more numerous in well-wooded areas	Generally uncommon, declining
Leisler's bat	<i>Nyctalus leisleri</i>	Native, widespread, scarce in GB, common in Northern Ireland	Scarce, may be under-recorded

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Common name	Scientific name	UK status	Kent status
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Native, common across the UK	Common
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Native, common across the UK	Common
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	Native, rare	Scarce, often migrant
Barbastelle	<i>Barbastella barbastellus</i>	Native, widespread but rare	Not present or very rare
Brown long-eared bat	<i>Plecotus auritus</i>	Native, common	Common
Grey long-eared bat	<i>Plecotus austriacus</i>	Native, very rare	Not present or very rare
Alcathoe's bat	<i>Myotis alcathoe</i>	Native, uncertain distribution	Insufficient data, status uncertain, probably rare

2 Approach and Methodology

2.1 Introduction and Overview

2.1.1 This report outlines the results of the bat static detector surveys conducted across the site. This report should be read alongside the following reports:

- Otterpool Park Environmental Statement Chapter 7: Biodiversity
- Otterpool Park EIA bat activity transect surveys report (ES Appendix 7.12);
- Otterpool Park EIA bat building assessment and emergence / re-entry survey report (ES Appendix 7.13); and
- Otterpool Park EIA bat survey summary and impact assessment (ES Appendix 7.11).

2.2 Purpose of the Surveys, Proportionality and Design

2.2.1 The purpose of the static detector surveys was multi-faceted, namely:

- To allow the assemblage of bats utilising the site to be determined, including:
 - The overall assemblage of bats;
 - To determine the presence of species listed on 'Annexe II' of the Habitats Directive utilising the site (where possible); and
 - To determine the presence of notable or rare bats utilising the site.
- To provide a broad assessment of the bat activity within the site;
- To determine if any areas are of particular overall importance for bats, either commuting, foraging or swarming;
- To allow a qualitative assessment of the likelihood of bats roosting in close proximity to the static (automated) detector deployment positions.
- To provide a large baseline data set to which future monitoring data can be compared to assess the impacts of any development upon bats.

2.3 Habitat Assessment

2.3.1 In order to inform the survey design, a habitat assessment was undertaken to identify habitats and areas likely to be of value for bats. This Assessment was undertaken on 4, 5 and 6 October 2016 by Arcadis ecologists Guy Stone and Brandon Murray, combined with a Phase 1 habitat survey. During this survey, key habitat areas, including likely commuting routes, foraging areas and roosting locations were identified. These assessments were utilised to design and scope the bat surveys.

2.3.2 Update surveys across the site have been conducted throughout 2017 – 2021, with the most recent comprehensive habitat assessment conducted in May 2020. In addition, any habitat changes noted during the bat surveys were recorded.

2.4 Desk Study

2.4.1 A desk study was conducted to collate and review existing information regarding bats within the site and the surrounding area. A selection of resources was utilised to inform the desk study, including publicly available data sets, previous survey information regarding the site obtained from previous planning applications and from local record centres. Initially, records centre data from a desk study requested in May 2016 was utilised to inform the surveys, with an updated information request for records within a 2km radius of the site from Kent

and Medway Biological Records Centre (KMBRC) obtained in March 2018 and again in April 2020.

2.4.2 The following data was reviewed to inform the desk study:

- Aerial photography (e.g. google mapping);
- WYG (2016) Shepway District Council, Folkestone Kent, Extended Phase 1 Habitat Survey Ecology Report;
- Highways England (2016) M20 Lorry Area Stanford West Interim Environmental Assessment Report;
- Ecotricity (2012) Harringe Brooks Wind Park Environmental Statement;
- Peter Brett Associates LLP (2015) Link Park Phase 2 Supplementary Environmental Statement Non Technical Summary;
- CSA Environmental Planning (2013) Ecological Appraisal – Lympne, Former Lympne Airfield – Proposed Housing Development;
- Ecology Solutions Ltd (2014) Ecological Assessment, Land at Sellindge, Kent;
- NBN Atlas <https://nbn.org.uk/>.

2.5 Survey Design and Methodology

Survey scope

2.5.1 The deployment of static detectors was based upon the prescriptions present within the relevant Bat Survey Guidelines (Collins 2016). The survey period was conducted between April and October 2017. At each static detector position, five nights of data were analysed for each deployment. In October 2017, static positions were limited to locations where swarming behaviour was considered to have the potential to occur.

2.5.2 The update surveys were conducted between April and October 2021.

Static detector positioning 2017

2.5.3 The number of static detector positions employed in 2017 was determined according to the parameters within the Bat Survey Guidelines (Collins, J. 2016). Three detectors were positioned per 'transect', with the number of transects required being based upon the size of the site (for transect details see the associated bat transect report, ES Appendix 7.12).

2.5.4 The locations of the static detectors were determined according to a 'Judgemental' sampling protocol, as other, more randomised detector deployment strategies were not practicable. This was due to access limitations, risk of interference from the public and land usage (i.e. detectors had to be positioned where they would not interfere with industrial or farming uses of the site).

2.5.5 The judgemental positioning employed the following assessment considerations:

- Distributed across the site and transect areas to gain maximum area coverage;
- Positioned within or adjacent to a range of habitats present on and around the site, ensuring that all broad habitats received coverage from the detectors;
- A subset of the detectors were positioned on linear features considered likely to be of value for bats in particular where it was considered that these areas may require traversing by roads etc.;
- Some detectors were positioned adjacent to inaccessible areas to record bats potentially emerging from these areas.

2.5.6 The detector microphones were positioned at 1 - 2m above the ground where possible, attached to landscape features (fence posts, trees, structures) with the microphones in a 45 degree downwards position. Where the microphones were positioned in linear features, the microphones were positioned at 90 degrees to the direction of the feature. Positioning of the microphones was selected to be in areas where vegetation etc would not interfere with the microphone.

Static detector positioning 2021

2.5.7 The positioning of the 2021 detectors was based on the 2017 deployments, utilising many of the same locations. However, since 2017 access arrangements on site have changed, as has the proposed layout therefore some of the deployment locations are not appropriate for redeployment. Of the detector locations deployed in 2017, ten were carried through to 2021. The details of the rationale for the selection of the ten detectors deployed in 2021 is presented in Table 4 below.

Table 4: Rationale for the selection of the 2021 detector positions

Number	Status 2021	Justification
1	Removed	Very low activity recorded in 2017, also adding little information as detector 2 covers woodland habitat.
2	Retained	Capturing edge of woodland and bats crossing west
3	Retained	By lake high levels of activity
4	Retained	High activity by castle and racetrack
4a	Removed	Placed to capture swarming – none recorded in 2017 – not repeated.
5	Removed	Very low activity in an area retained as landscape buffer in 2021 layout
6	Retained	Monitoring usage of river
7	Retained, moved slightly north west for access	Monitoring use of river
8	Retained	Monitoring use of small woodlands and edge of airfield
9	Removed	In area retained within the layout including woodland and SSSI to north (i.e. no impact)
10 / 10a	Removed	Placed to capture swarming – none recorded in 2017 – not repeated.
11	Removed	In woodland – access denied
12	Retained	Retained to monitor commuting and woodland assemblage
13	Retained	To monitor usage of river corridor
14	Retained	To monitor use of small woodland
15	Retained	To monitor use of commuting route

- 2.5.8 As in 2017, the detector microphones were positioned at 1 - 2m above the ground where possible, attached to landscape features (fence posts, trees, structures) with the microphones in a 45 degree downwards position. Where the microphones were positioned in linear features, the microphones were positioned at 90 degrees to the direction of the feature. Positioning of the microphones was selected to be in areas where vegetation etc would not interfere with the microphone.

Static detector programming 2017 and 2021

- 2.5.9 The detectors were programmed to commence recording 30 minutes prior to sunset and continue recording throughout the night until 30 minutes after sunrise, in line with good practice guidelines. Details of the programming of the detectors is presented in Appendix C.

2.6 Data Analysis Methodology 2017

- 2.6.1 Due to the large amount of data to be analysed, it was assessed that an automated detector analysis protocol would be required. Previous Arcadis projects have identified that in 2017 the most reliable data analysis software available was 'SonoChiro' (in-house study conducted by Paola Reason and Kathryn Skinner, summary in paper 'Recommendations for using automatic bat identification software with full spectrum recordings' (Reason *et al* 2016)). As outlined below, this assessment has been superseded, with other software since being found by Arcadis to be more functionally reliable.
- 2.6.2 In 2017, all data was analysed using automated analysis software 'SonoChiro'. The details of the settings for the SonoChiro parameters can be seen in Appendix C.
- 2.6.3 SonoChiro provides three levels of identification. The three levels of identification provided by SonoChiro work on a confidence scale. Identification is provided for the potential species represented by a call (species level identification) and this identification is assigned a confidence level on a scale of 1 to 10; with 1 indicating the lowest level of confidence in the accuracy of the identification and 10 indicating the greatest level of confidence in the identification. A further identification is provided to the group level, and this identification is similarly provided with a confidence level on the same 1 to 10 scale.
- 2.6.4 The overall identification is the identification that SonoChiro has the greatest level of confidence in being correct. Starting from the species level identification a threshold value of 5 is enforced. Where a species level identification is greater than 5, this identification is then provided as the overall identification. Where a species level identification is less than or equal to 5 the species level identification is discarded and the group level identification is considered. In this scenario the same threshold value of 5 is enforced on the group level identification; where this is greater than 5 the group level identification is provided as the overall identification, where it is less than or equal to 5 the group level identification is discarded and an overall identification of Chiro sp. is used. An identification of Chiro sp. indicates that there is clearly a bat call present, but the auto identification software cannot derive sufficient information from the call to provide, to a suitably confident level, a species or group identification.

2.6.5 Despite the high quality of ‘SonoChiro’ data analysis, all detector software has a percentage of incorrect or uncertain identifications. To address this issue, a verification protocol was conducted, whereby a subset of the June data was assessed for quality. The results of this assessment can be seen presented in Appendix L. During this assessment, the success of SonoChiro species and group identification was largely found to be within acceptable parameters. This assessment did change how certain species identifications were handled – see below. Table 5 and Table 6 show how the auto ID verification changed how certain bats were handled in the analysis.

Table 5: Bat auto ID results data classification

Auto ID Category	Meaning of Category	Findings 2017	Data handling 2017
BarBar	Barbastelle	All files manually checked checked – all were incorrect ID, largely noise or insects.	Removed from dataset
ChiroSp	‘Bat’	Largely found to be noise, or common bats well recorded across the site. Records with a ‘probability’ of 4 or above of being an Annexe II bat were manually assessed. These were not found to be correct identifications, largely insects.	Remove from data set
Myonat	Natter’s Bat	33.9% correct, but the vast majority of bats recorded were confirmed to be myotis (96.9%).	Grouped with other Myotis Bats
Nycnoc	Noctule Bat	100% Correct	Retained as a group where required, added to ‘big bat’ group where stated.
ENVsp	‘Big Bat’ – Noctule, Serotine or Leisler’s	Largely big bats	Grouped with ‘big bats’
Eptnil	‘Northern’ Big Bat	Largely big bats	Grouped with ‘big bats’
Eptser	Serotine	High quality identifications – correct.	Retained as a group where required, added to ‘big bat’ group where stated.
Myosp	Myotis bat	100% correct identifications	Retained, Natterers bats added (Myonat)
Pipnat	Nathusius’ Pipistrelle	75% correct – all others common or soprano pipistrelles	Retained as a group. Pip35 added.
parasi	Could be a bat	Noise or common well recorded bats	Removed from data set
Pip35	Likely to be a Nathusius’ pipistrelle	100% contained Nathusius’ pipistrelle calls	Added to Nathusius’ pipistrelle group.

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Auto ID Category	Meaning of Category	Findings 2017	Data handling 2017
Pip50	Common or Soprano Pipistrelle	100% contained common or soprano pipistrelle calls	Added to 'Pipistrelle Group'
PippiT	Common Pipistrelle	99.32% correct	Retained as a group or bundled as 'pipistrelles'
Pippyg	Soprano pipistrelle	100% correct	Retained as a group or bundled as 'pipistrelles'
Pleaur	Brown Long-eared Bat	Very low number of calls recorded (0.4% of total) - 0% correctly identified to species group.	Removed from analysis. This group is largely under recorded (due to quiet calls) and this has been taken into account in the results analysis. Transect data was used to identify the usage of the site by this group.
Pleaus	Grey Long-eared Bat (unlikely to be present on the site due to location).		
Plesp	Long eared group bat		
Rhifer	Greater horseshoe bat	Incorrect identifications (not present in this area)	Removed from data set
Rhihip	Lesser horseshoe bat		
Rhisip	Horseshoe species		

2.6.6 This left the following bat identifications for analysis. Two levels of identification were used in the analysis, 'species group – where bats were identified to the most accurate level which could be relied upon, and 'broad group' which was used where a broader assessment was preferable.

Table 6: Simplified species groups utilised within the static detector result analysis

Auto ID Category	Meaning of Category	'Species Group'	Broad Group
Myonat	Natter's Bat	Myotis	Myotis
Myosp	Myotis bat		
Nycnoc	Noctule Bat	Noctule	Big bat
ENVsp	'Big Bat' – Noctule, Serotine or Leisler's	'Big bat'	
Eptnil	'Northern' Big Bat		
Eptser	Serotine	Serotine	
Pipnat	Nathusius' Pipistrelle	Nathusius' Pipistrelle	Nathusius' pipistrelle
Pip35	Likely to be a Nathusius' pipistrelle		
Pip50	Common or soprano Pipistrelle	Common or soprano Pipistrelle	Common or soprano pipistrelle
PippiT	Common pipistrelle	Common pipistrelle	
Pippyg	Soprano pipistrelle	Soprano pipistrelle	

2.6.7 Subsequent to the automated data analysis, the resulting data was assessed and information on the timing of the recording of the first / last bat of each species on each recording night was obtained. The raw data from this assessment is presented in Appendix F. This data, assessed over the season was utilised to determine the likelihood of a roost of a given species being in close proximity to the detector location. Information on the average emergence / re-entry time of various species recorded on the site was used alongside this information to make a qualitative assessment of the potential for bat roosts to be present around the static detector positions.

Activity Normalisation 2017

2.6.8 Subsequent to each set of static data being analysed, the data was 'normalised' to allow activity levels between positions to be compared. This was conducted by dividing the number of calls recorded by the number of minutes that a detector was recording.

2.7 Data Analysis Methodology 2021

2.7.1 As in 2017, due to the large amount of data to be analysed, it was assessed that an automated detector analysis protocol would be required. In 2017, data was analysed using 'Sonochiro'. The Sonochiro programme has subsequently been found to be less functionally reliable than other options available, due to improvements in competing software, and as such a more reliable program was selected for the analysis in 2021 (kaleidoscope). This adds an inherent difference in assessment to the 2017 vs 2021 comparison, however this was considered worthwhile for the increased reliability and accuracy of the Kaleidoscope programme. It is not considered that this difference in analysis programme makes identifying

changes to the bat assemblage on site less reliable and the assessment is considered robust.

2.7.2 Despite the high quality of automated data analysis, all detector software has a percentage of incorrect or uncertain identifications. To address this issue, a verification protocol was again conducted, whereby:

- All of April data was manually checked;
- Six of ten May deployments were completely manually checked
- One of the June deployments was completely manually checked
- 5% of all of the other deployments were manually checked.

2.7.3 The results of this assessment can be seen presented in Appendix M. During this assessment, the success of the Kaleidoscope species identification was largely found to be within acceptable parameters. This assessment did change how certain species identifications were handled – see below. Table 7 shows how the auto ID verification changed how certain bats were handled in the analysis.

2.7.4 For each detector, five nights of surveys were utilised to inform the reporting (even though on some occasions detectors were deployed longer). Where this was the case, the first five nights were utilised. However, all recordings were analysed using kaleidoscope. All bats identified as barbastelle were manually assessed as identifying the presence or likely absence of this species was deemed important. A single barbastelle call was identified in the recordings. Although this was outside of the five nights selected from that deployment, this bat was included in the analysis due to the importance of this finding.

Table 7: Bat auto ID results data classification

Auto ID result	Findings 2021	Data handling 2021
Barbastelle	All files manually checked– all were incorrect ID, largely noise or insects.	One barbastelle recorded. Kept as a separate species group.
Natter’s Bat, Alcathoe Bechstein Brandt’s Daubenton’s Mystacinus Myotis spp.	Accuracy of species identification ranged between c.30% and c.70%. Accuracy to genus was >85% for all species.	All grouped to ‘Myotis’ Group
Noctule Bat, ‘Big Bat’, Leisler’s	Less than 10% correct	Removed from data set unless manually identified.
Serotine	70% correct to species level and 91% correct to goup level	Kept as a separate species group
Nathusius’ pipistrelle	c.70% correct	Kept as a separate species group
Common or soprano pipistrelle	>95% correct to genus	‘Pipistrellus’ group
Common pipistrelle	c.99% correct	Kept as a separate species group

Auto ID result	Findings 2021	Data handling 2021
Soprano pipistrelle	c.99% correct	Kept as a separate species group
Brown long-eared Bat Grey long-eared Bat (unlikely to be present on the site due to location). Long eared group bat	c. 83% correct as long-eared bats	Kept as a separate species group (brown long-eared bat)
Greater horseshoe bat	Incorrect identifications (not present in this area)	Removed from data set
No ID	<10% bats	Removed from data set
Noise	>98% was noise	Removed from data set

2.7.5 This left the following bat identification categories were used for analysis in 2021.

- Plecotus auritus
- Myotis
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Pipistrellus nathusii
- Nyctalus noctula
- Pipistrellus
- Eptesicus serotinus
- Nyctaloid (Big bat)
- Nyctalus leisleri
- Barbastella barbastellus

Activity Normalisation

2.7.6 As in 2017, subsequent to each set of static data being analysed, the data was 'normalised' to allow activity levels between positions to be compared. This was conducted by dividing the number of calls recorded by the number of hours that a detector was recording.

Data Handling 2021

2.7.7 Since 2017, the approach to assessing data has also evolved. In 2017, all data was manually handled and assessed. However, for the 2021 data, an 'R' script was available that allows more comprehensive automated data handling. This approach was utilised in 2021, and provides improvements in the depth of assessment and graphical representation of the data. This method does provide slightly different outputs to those in 2017, but still allows for any significant changes to the overall assemblage to be identified.

2.8 Categorising Activity Levels 2017

2.8.1 In order to enable different areas of the site to be analysed for relative activity levels, it was necessary to allocate the level of activity recorded to broad banding. There is no formally accepted methodology for this, as bat survey methods, environmental factors and

equipment used can have a significant impact upon the results. As a result, two methods were assessed for determining the activity levels on site, these were compared to determine which would give a result that was sufficiently nuanced for the proposed Development objectives and was broadly in line with the results of the other surveys on site and the observations from the ecologists in the field.

Activity assessment of deployments (within site) 2017 and 2021

- 2.8.2 This assessment involved reviewing the calculated activity levels and banding the results in to low, medium and high. This would give a relative activity levels within the site, using only the data collected from within the site.
- 2.8.3 When the data was assessed, the detector locations were split into three broad groups, low, medium and high activity areas. These have been split as follows:
- low activity 7.5 passes per hour average or less;
 - medium activity greater than 7.5 to 15 passes per hour;
 - high activity greater than 15 passes per hour.
- 2.8.4 This split was based upon professional judgement after review of the data, in the absence of any published guidance.

Activity assessment of deployments (between site, using of 'Ecobat') 2017

- 2.8.5 The 2017 survey assessment uses the Ecobat tool, an emerging tool which uses a large dataset collated from the UK which forms the Ecobat database. For assessment using the tool, a subset of this database was chosen, within a 200km radius of the site, to give a comparative level of activity. This activity level is grouped into a percentile:
- "Percentiles provide a numerical indicator of the relative importance of a nights' worth of bat activity. For example, activity data in the 70th percentile would indicate that the recorded data was in the top 30% of activity for the reference range." (Ecobat Website 2018).
- 2.8.6 For this assessment, the following parameters were used to compare the activity within the site to this 200km database:
- Recording sessions were grouped into monthly recordings;
 - Pipistrelle species were used as a proxy for overall activity levels (as the vast number of passes were pipistrelle bats);
 - Passes were averaged into an average 'passes per night'.
- 2.8.7 Once a percentile of activity level was obtained for each month, this was averaged between the months for each position to allow an average percentile to be utilised to give an activity assessment. The bandings utilised were as follows:

Table 8: Ecobat tool activity level bandings

Activity Level	Percentile
Low activity.	0-20th percentiles
Low to moderate activity	21st-40th percentiles
Moderate activity	41st-60th percentiles
Moderate to high activity	61st-80th percentiles
High activity	81st-100th percentiles.

Activity assessment of deployments (between site, using of 'Ecobat') 2021

- 2.8.8 The 2021 assessment also uses the Ecobat tool. This tool has been improved since the 2019 submission and provided more valuable data. For assessment using the tool, a subset of this database was chosen, within a 100km radius (more results are searchable now so a smaller radius was chosen) of the site, to give a comparative level of activity. This activity level is again grouped into a percentile, as outlined above.
- 2.8.9 Unlike the 2017 assessment, the 2021 assessment analysed the comparative activity levels of all species recorded. Full details of the Ecobat assessment are shown in Appendix J and Appendix K.

Sensitivity of assessment methodology 2017 and 2021

- 2.8.10 Once the activity levels were calculated, these were also contextualised to the assessments of the ecologists conducting other bat surveys on the site, using professional judgement.
- 2.8.11 From this it was assessed that the Ecobat assessment is a useful assessment of bat activity within the south east of England, but not sensitive at the local or site level.
- 2.8.12 As a result, the following assessment was made:
- The site assessment would be used for assessing activity levels between locations within the site;
 - The Ecobat assessment would be broadly used to assess activity levels across the site against comparable sites elsewhere within the country (in the south east of England within 200km).

Valuation of 'bat rarity' 2017 and 2021

- 2.8.13 Within the site in order to subdivide the bats into meaningful subsets, it was necessary to categorise the 'rarity' of species present (after Wray 2010). This categorisation is based upon the rarity of each species within its range. This assess categorisation is further used within other valuation assessments associated with the project.

2.8.14 Table 9 lists the three bandings of rarity utilised within the assessment.

Table 9: Categorisation of bats according to Wray 2010

Rarity within range	Species	Notes on presence on site
Rarest (population under 10,000)	Greater horseshoe, Bechstein's, alcaethoe, greater mouse-eared, barbastelle, grey long-eared.	None of these species were definitively recorded within the site
Rarer (population 10,000 – 100,000)	Lesser horseshoe, whiskered, Brandt's, Daubenton's, Natterer's, Leisler's, noctule, Nathusius' pipistrelle, serotine.	Myotis bats, Leisler's, noctule, Nathusius' pipistrelle and serotine recorded on the site.
Common (population over 100,000)	Common pipistrelle, soprano pipistrelle, brown long-eared.	All of these species are present within the site

Assessment of likelihood of nearby roosts at each detector location 2017

2.8.15 The static detector data was utilised to identify a quantitative assessment of the likelihood of a nearby roost being present. This was able to identify where roosts were likely to be present, but was not used to rule out the presence of nearby roosts (as bats may have left roosts and not passed the detector).

2.8.16 In order to conduct this assessment the first and last bats recorded of each species were investigated. As bats emerge to forage etc around sunset, the amount of time after sunset that bats tend to emerge differs between species. The table below (Table 10) shows the average emergence time after sunset for each bat species recorded / likely to be present on the site.

Table 10: Average emergence time for bat species with potential to be present within the site

Bat species	Average (median) emergence time (minutes after sunset)
Noctule	5
Leisler's bat	18
Serotine	20
Common and Soprano pipistrelle	32
Whiskered bat	32
Brown long-eared bat	54
Natterer's bat	75
Daubenton's bat	84

2.8.17 The time after sunset and / or before sunrise that the first and last bat of each species was recorded was assessed. Where this was close to or before the average emergence / re-entry time of a species this was noted. This combined with an assessment of the roosting

opportunities around a location were combined, along within the results from other surveys, to assess the likelihood of nearby roosts. It should be noted that this is a qualitative assessment only for risk assessment and was utilised as such.

Assessment of likelihood of nearby roosts at each detector location 2021

2.8.18 The R script used to analyse the 2021 data automatically produces an assessment of the likelihood of nearby roosts, based upon the recording time in relation to the emergence window for the species. This is presented in the results section of this report and in Appendix O. The results are derived as presented in the methodology for 2017, however this is automated within the R script.

2.9 Assessment of Swarming Activity 2017 & 2021

2.9.1 In order to assess the potential of the site to support swarming activity, two detectors were placed across the site in Autumn. These locations were selected as the most likely places for swarming to occur. The locations of these deployments (location 4a and 10a) are presented in Figure 1.

2.9.2 In order to determine if swarming was occurring, the level of activity and species diversity at each of these locations was assessed against the site baseline (and the nearby detector placements), to determine if activity or species diversity indicative of swarming was present.

2.9.3 The assessment of swarming activity was not repeated in the 2021 survey (as no evidence of swarming was recorded in 2017).

2.10 Survey Limitations

Limitations 2017

2.10.1 Within the survey design, it was not possible to deploy detectors to all locations simultaneously, due to the risk of interference by members of the public and financial considerations. However, due to the rotational deployment for the purposes of this study, considering the large amount of data collected, and the normalisation calculations applied (assessing 'passes per hour'), this issue is unlikely to have affected the veracity of the data. The rotations utilised are presented in Figure 1.

2.10.2 Long-eared bats are difficult to record during bat detector surveys (due to the low sound volume of their calls). The usage of the site by this species will be extrapolated from the transect surveys and a precautionary approach. This is a limitation of all detector surveys, but the manned transect surveys which include visual observations control the impact of this limitation (ES Appendix 7.12).

2.10.3 It is difficult within automated survey data to determine a 'bat pass', as without visual observations, the same individual bat may pass multiple times or multiple bats may pass the detector. However, to address this issue, the same parameters for file partitioning were utilised on all detectors, and a single sound file was identified as a bat 'pass'. This allows a repeatable comparison of activity levels between static locations. It is not possible from this data (or any static (automated) detector data) to accurately assess the number of bats within an area, it is an assessment of bat 'activity'

2.10.4 Due to access constraints, static detectors could not be deployed at the Otterpool Park site until the 19 April 2017. There were three sets of static deployments, five detectors per deployment, within each rotation. Two sets of deployments were within April 2017 (i.e. 10 static surveys) – the final sets of static data for 'April' (i.e. five static surveys) was collected between 3 – 8 May. Locations of deployments are presented in Figure 1.

2.10.5 Of these five detectors per deployment (15 static surveys), during the April collection (last rotation collected in May) one set of survey data failed. The static detector at position 8 was

tampered with, the microphone was removed from the detector by a member of the public. Therefore, the last deployment at location 8 in April (collected in May) was not included in the analysis. However, there were sufficient data (14 static surveys collected within the April deployment therefore this is not considered to be a limitation to the survey.

- 2.10.6 During the June deployment at position 5 and the July deployment at position 3, the SD cards became corrupted, and no data was recoverable. However, each of these months still had 14 static surveys collected therefore this is not considered to be a limitation to the survey.
- 2.10.7 Within the deployment in August at position 3, an error occurred within the detector and data was only recoverable for three nights, rather than 5, between 8 August and 11 August. In total 1828 minutes of survey data was collected. Therefore, there were 14 and a half data sets collected for August therefore this is not considered to be a limitation to the survey.
- 2.10.8 The September deployments at positions 4 and 9 were successful, but an extended survey period was conducted and it was not possible to reduce the data set to the 5 nights, due to date data becoming corrupted on the SD card. This extended survey data period was normalised as explained above. This is not considered to have impacted upon the survey veracity. During the September deployment at position 15, the data was corrupted, and although the files were recovered, meta data was lost. This data is utilised for the activity analysis, but not for the 'first and last;' bat assessment. However, considering the five other deployments at this location, this is not considered to have impacted upon the results.
- 2.10.9 On six occasions (July at position 15, August at position 5 and 13 and September at position 5, 8 and 10), apparently functioning detectors in locations with high activity on other deployments recorded no bat activity, or only 'noise'. It was considered reasonable assume to be due to a faulty detector (faulty or damp microphones, interference with equipment) or excessive loud 'noise' making noise sources (generators, crickets, farm machinery, rustling wind / leaves) covering up bat calls. Where it was reasonable to assume that the absence of activity from a deployment was not in line with the other findings for the deployment location, this data was omitted from the analysis to prevent an artificially lower activity level being calculated.
- 2.10.10 Despite these survey issues, the equipment functioned correctly in the vast majority of the surveys, with over 260,252 minutes (4338 hours) of data analysed and recorded from across the site. Details of the minutes of data analysed are presented in Appendix D.
- 2.10.11 In addition, in the analysis, all data was assessed using a 'passes per hour' manipulation/normalisation, in order to ensure that variations in deployment period were minimised within the comparative results.

2021 Limitations 2021

- 2.10.12 During the 2021 surveys, detectors only failed on two occasions, April at positions 8 and 15. It was found when the data was analysed that no bats were recorded during these deployments. As with 2017, this was addressed as all data was assessed using a 'passes per hour' manipulation/normalisation, in order to ensure that variations in deployment period were minimised within the comparative results.

2.11 Analysis Limitations

Limitations 2017

- 2.11.1 The detection rate of bats varies between species dependent upon the parameters of their echolocation calls. It is very important to recognise these differences in the inferences that are drawn from the raw data.

- 2.11.2 An extensive amount of data was collected, and the decision was made to use auto-identification software rather than to undertake identifications manually. While auto-identification is in its relative infancy and has its flaws, it is likely to be no less accurate overall than the subjective identification by a number of human observers over large volumes of data, even if a human is likely to be more accurate in dealing with small numbers of calls. A series of detailed trials was undertaken to ensure that the most accurate and suitable system for this particular dataset was employed. The limitations of auto-identification were taken into account when interpreting the data.
- 2.11.3 Despite the high quality of 'SonoChiro' data analysis, all detector software has a percentage of incorrect or uncertain identifications. To address this issue, a verification protocol was conducted, whereby a subset of the June data was assessed for quality. The results of this assessment can be seen presented in Appendix L. During this assessment, the success of SonoChiro species and group identification was largely found to be within acceptable parameters. This assessment did change how certain species identifications were handled. Table 5 and Table 6 show how the auto ID verification changed how certain bats were handled in the analysis.
- 2.11.4 The Ecobat tool doesn't provide database details and is not possible to interrogate. However, it was a useful contextualising tool for the site assemblage in comparison with the south-east of England.

Limitations 2021

- 2.11.5 The detection rate of bats varies between species dependent upon the parameters of their echolocation calls. It is very important to recognise these differences in the inferences that are drawn from the raw data.
- 2.11.6 In 2017, data was analysed using 'Sonochiro'. By 2021 the Sonochiro programme was found to be less reliable than other options available, and as such a more reliable program was selected for the analysis in 2021 (kaleidoscope). This adds an inherent difference in assessment to the 2017 vs 2021 comparison, however this was considered worthwhile for the increased accuracy of the Kaleidoscope programme. It is not considered that this difference in analysis programme makes identifying changes to the bat assemblage on site less reliable and the assessment is considered robust.
- 2.11.7 Within the 2021 Ecobat assessment output, some 'bugs' were identified (for example some of the analysis omitted some species). It is understood that the Ecobat tool is constantly being improved to address these bugs. Where bugs were apparent, the data output by the tool in these sections was not utilised to inform the assessment. The full data output from the Ecobat tool in 2021 is presented in Appendix K.
- 2.11.8 As with 2017 the Ecobat tool doesn't provide database details and is not possible to interrogate. However, it was a useful contextualising tool for the site assemblage in comparison with the south east of England.

2.12 Other Bat Surveys Conducted

- 2.12.1 Alongside the static (automated) surveys, a range of other surveys were conducted, to thoroughly assess the usage of the Otterpool Park site by bats. The following surveys were conducted, and the results of these surveys can be seen in the appropriate reports.
- 2.12.2 The results from the surveys are compiled and assessed holistically in the associated ES (ES Chapter 7: Biodiversity) and in the Bat Mitigation Strategy (ES Appendix 7.18).

Desk study

2.12.3 Prior to the surveys commencing, in order to determine the likely usage of the site by bats, a desk study was conducted. This obtained any data of any bats, bat roosts or signs recorded within 2km of the site. The data from this survey was used to determine the level of survey required. The details of the desk study conducted can be seen in ES Appendix 7.11.

Preliminary roost assessments (buildings)

2.12.4 Alongside the surveys reported within this document, a preliminary roost assessment of buildings was conducted. This assessed the likelihood of these structures supporting significant bat roosts. Details of these surveys is reported in the Preliminary Roost Assessment and Bat Emergence / Re-Entry Surveys Report (ES Appendix 7.13).

Bat emergence / re-entry surveys

2.12.5 Subsequent to the Preliminary Roost Assessments, where a moderate or high likelihood of significant bat roosts being present was identified, emergence / re-entry surveys were conducted. The results of these surveys are reported in the Preliminary Roost Assessment and Bat Emergence / Re-Entry Surveys Appendix (ES Appendix 7.13).

Activity (transect) surveys

2.12.6 Alongside the static (automated) surveys, transect surveys were conducted. These assessed the assemblage of bats present within and around the site and also provided a qualitative assessment of bat behaviour and usage of the site. The results of these surveys are reported in the Bat Activity (Transect) Survey Report (ES Appendix 7.12).

3 Results

3.1 Reporting Outline

3.1.1 The results of the desk study, habitat assessment, building assessment and bat emergence / re-entry surveys are presented in this section. Bat related appendices within the EIA are outlined below, Table 11.

Table 11: Bat related appendices and information within the ES

Appendix	Title	Description
7.11	Bat survey results summary and impact assessment	This appendix includes a summary of all of the bat surveys conducted, a valuation of the bats present within and around the site (where appropriate) and outlines the potential impacts from the development.
7.12	Bat Activity Survey (Transects)	This appendix includes the results of the bat activity transects conducted across the site in 2017 and 2021.
7.13	Bat Building Assessment and Emergence / Re-entry Surveys	This appendix includes the results of the building assessments conducted across the site 2017 - 2021 and the emergence/ re-entry surveys conducted across the site in 2017 - 2020.

3.2 Desk Study

3.2.1 The desk study revealed that no designated sites are present within 2km of the site and no Special Areas of Conservation (SACs) where bats are a qualifying feature occur within 30km of the site. Due to the long lived and site loyal nature of bat species no time limit was placed on the data examined (all data received from KMBRC was reviewed).

3.2.2 The information from KMBRC (which included information from Kent bat Group) returned records of nine bat species within 5km of the site. The table below (Table 12) presents a summary of the desk study data obtained from the KMBRC. Basic ecological information on each of the species is also presented.

Table 12: Summary of Desk Study Data

Species	Records (non-roost)	Records (roosts)
Soprano pipistrelle	48	22
Common pipistrelle	190	34
Nathusius' pipistrelle	4	6
Noctule	28	1
Serotine bat	42	54

Species	Records (non-roost)	Records (roosts)
Brown long-eared bat	18	54
Daubenton's bat	24	5
Whiskered Bat	1	0
Natterer's Bat	4	9

3.2.3 Multiple records of roosts were returned from within 5km of the site. Where sufficient accuracy for these results was provided, these locations are presented on Figure 1. In summary, the roosts listed within Table 13 are located within the vicinity of the Otterpool Park Site. Only those within the site or in the immediate vicinity of the site are listed.

3.2.4 N.B. Roosts identified as a component of the Otterpool project are identified in ES Appendix 7.13 and are not repeated here to avoid double counting.

Table 13: Bat roosts recorded within the vicinity of the Otterpool site

Roost Location	Species	Roost Type	Notes	Year recorded
Within Barrow Hill, Sellindge TR108375	Unknown	Unknown	Droppings only	1992
Within Westenhanger Village TR127368	Pipistrelle	Unknown roost	1 bat	2000
By Railway station building TR128372	Unknown	Unknown	N/A	1989
Two Chimneys, Westenhanger Village TR128365	Pipistrelle	Unknown	1 bat	1988
Within Lymgne village TR119350	Pipistrelle	Maternity	One bat recorded	2007
Within Lymgne village TR119350	Pipistrelle	Maternity Roost	Maternity roost recorded on multiple dates peak count 114 bats in 1995.	1995, 1999, 2007, 2008
Within Otterpool Manor TR109365	Common pipistrelle	Summer roost	2 bats (see notes from wind farm surveys below)	2009
South of the site by Lymgne Castle TR119347	Serotine	Unknown	Droppings only	2001

Roost Location	Species	Roost Type	Notes	Year recorded
Within Stanford TR129377	Long-eared species	Hibernating bat	1 bat	2010

3.2.5 In addition, information was also obtained from previous surveys conducted on and around the site in order to inform other planning decisions. This is presented in Table 14.

Table 14: Data from other sources (previous planning applications)

Information Source	Data obtained
CSa – Former Lympne Airfield – Proposed Housing Development, Ecological Appraisal, January 2013.	<p>Static surveys conducted in July, August and September 2012 on Lympne Airfield site (TR 114 353).</p> <p>'Low' bat activity recorded across the site, higher activity recorded in certain locations. Species recorded were common pipistrelle and pipistrelle species.</p> <p>Static detectors were placed onsite in July 2012 and September 2012. Species recorded were common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, pipistrelle species (not identified to species), long-eared bat species (not identified to species), noctule, serotine, 'big bat' species (not identified to species), and myotis bat (not identified to species).</p> <p>Structures with low potential for roosting bats were identified around the periphery of the site including bunkers.</p>
TEP, Link Park Green Energy, ES Chapter 7: Biodiversity, Surveys conducted in 2013	<p>Transect and static surveys conducted in 2013 on a former quarry site around TR 112 366</p> <p>Low levels of commuting and foraging by common pipistrelle bats recorded across the site. Soprano pipistrelle, serotine and myotis bats (not identified to species) were also recorded.</p> <p>Static surveys showed steady moderate levels of bat foraging along the woodland edge.</p>
Ecotricity, Harringe Brooks Wind Park Environmental Statement April 2012.	<p>Bat roost assessments conducted in 2009. Bat static and transect surveys conducted in 2009.</p> <p>Fifty five trees around the proposed wind farm location were identified as having medium bat roost potential.</p> <p>Bat roost assessments found three structures with bat roosting potential within Otterpool Manor (TR 109 365) had high bat roost potential. One building was confirmed as having a common pipistrelle roost.</p> <p>At Harringe Court (TR 094 370) three buildings were identified as having medium bat roost potential.</p> <p>Activity surveys were conducted in 2009. During the survey 253 bat passes were recorded. Species recorded included Daubenton's bats, common pipistrelle bats, soprano pipistrelle bats and Leisler's bats. The largest number of bat passes were recorded within or adjacent to Harringe Brooks Woods or towards the East Stour River.</p>
Ecology Solutions Ltd, Land at Sellindge, Kent, Ecological Assessment July 2014.	<p>Surveys conducted in 2013 included tree assessments and bat activity transects around the Sellindge extension site (TR103380).</p> <p>The tree assessments found no confirmed bat roosts. The activity transects recorded low levels of activity within higher levels of activity along hedgerows, near tree belts and water bodies.</p> <p>The only species recorded within the transect surveys was common pipistrelle.</p>

Information Source	Data obtained
Highways England, Collaborative Delivery Framework M20 Lorry Area – Stanford West Bat Report	Surveys were conducted around TR123377. Tree and building assessments, transects and habitat assessments were conducted. The tree and building assessments conducted in 2016 found three trees with a high potential roosting features; six trees and one building with moderate roosting potential and one tree and one building with low roosting potential. A transect survey conducted in 2016 recorded common pipistrelle, soprano pipistrelle and myotis bats (not identified to species level).

3.3 Field Surveys

Introduction

3.3.1 Within this section, 2017 and 2021 survey information is presented. The 2017 data is presented first in each subsection, with the 2021 data presented afterwards. In each section, any differences suggested by the data between 2017 and 2021 are identified, along with how this affects the impact assessment.

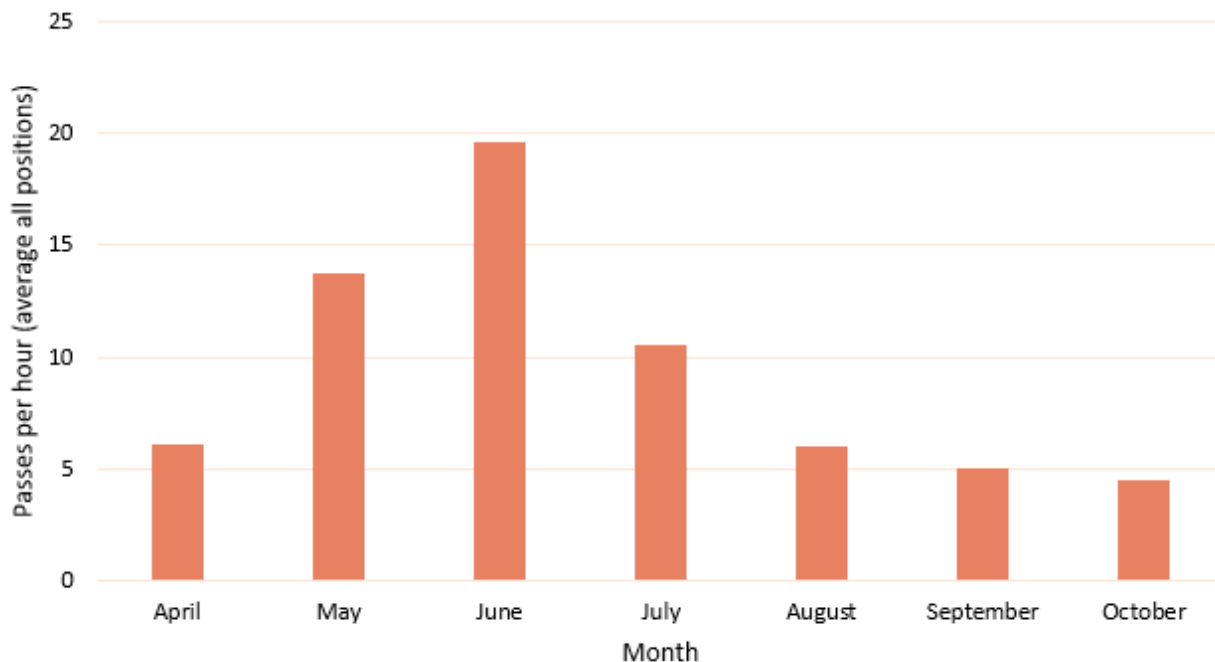
Seasonal variation of call frequency (i.e. activity)

Seasonal activity 2017

3.3.2 During the survey period, a total of 60,777 'bat calls' were identified by SonoChiro, during 4378 hours of data collection. Once the files which were excluded from the analysis were removed (see section 2 Approach and Methodology), 42,512 calls from across the site were identified to species group, and the call frequency from across the site was normalised into 'passes per hour'.

3.3.3 Overall, the seasonal distribution of call frequency was as expected, with the majority of calls being recorded within July. There was a notable decline in calls after July. Image 2 below shows the level of call activity throughout the year.

Image 2: The average activity level across all positions throughout the survey season (normalised) 2017



Seasonal variation of call frequency (i.e. activity) 2021

3.3.4 During the 2021 survey period, a total of 57,283 'bat calls' were identified to species group, during 2852 hours of recording. The calls identified per month are presented in Table 15. To normalise the data the call rate from across the site was normalised into 'passes per hour'. The normalised passes per hour for the 2021 surveys for each month are presented in Image 3. This is further broken down by species in Image 4.

Table 15: The calls per month identified for each species 2021

Species	Apr	May	Jun	Jul	Aug	Sep
<i>Barbastella barbastellus</i>	1					
<i>Eptesicus serotinus</i>	7	9	24	23	80	262
<i>Myotis spp.</i>	179	152	164	131	369	1,387
<i>Nyctalus leisleri</i>		2	1	6	8	125
<i>Nyctalus noctula</i>	5	179	927	1,107	99	1,478
<i>Pipistrellus nathusii</i>	7	15	22	20	1	108
<i>Pipistrellus pipistrellus</i>	602	8,335	5,601	10,273	7,940	6,783
<i>Pipistrellus pygmaeus</i>	228	2,532	1,835	2,062	1,320	1,999
<i>Pipistrellus spp.</i>	1	20	1			
<i>Plecotus auritus</i>	13	84	91	22	78	565

Image 3: The normalised calls per hour for each month 2021

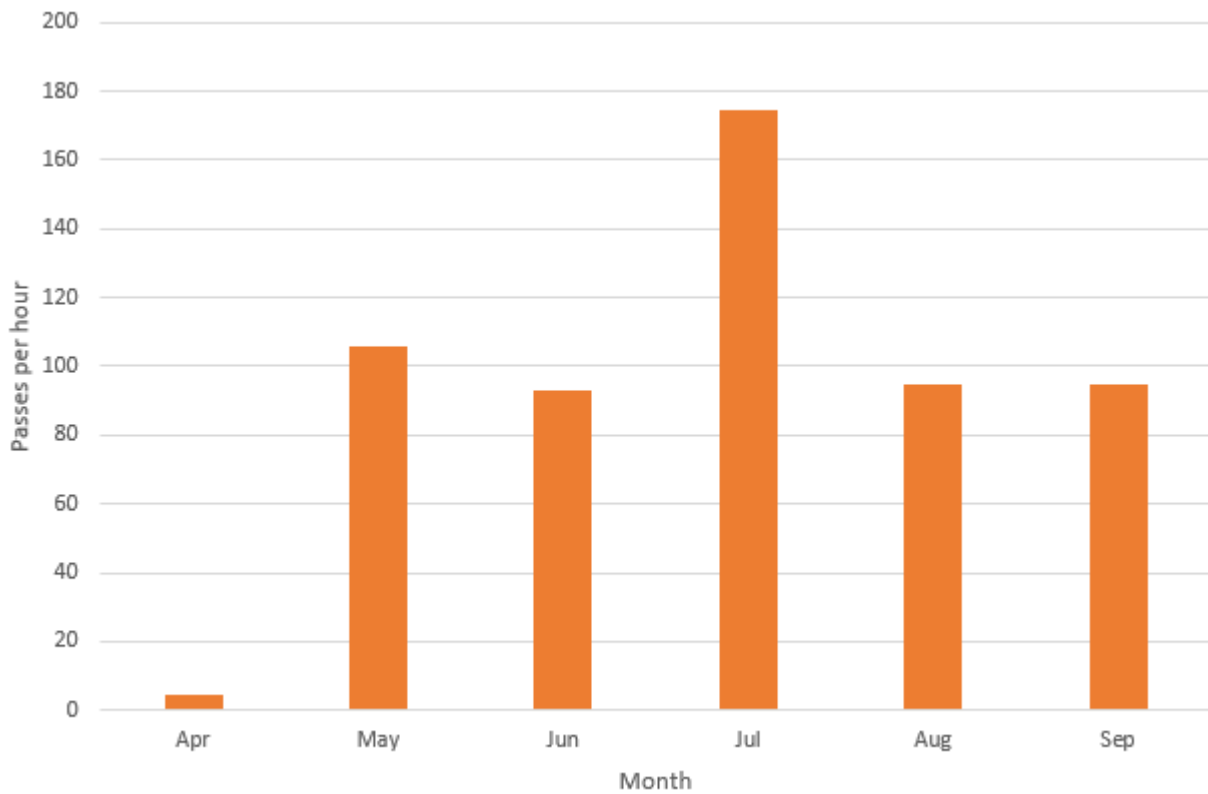
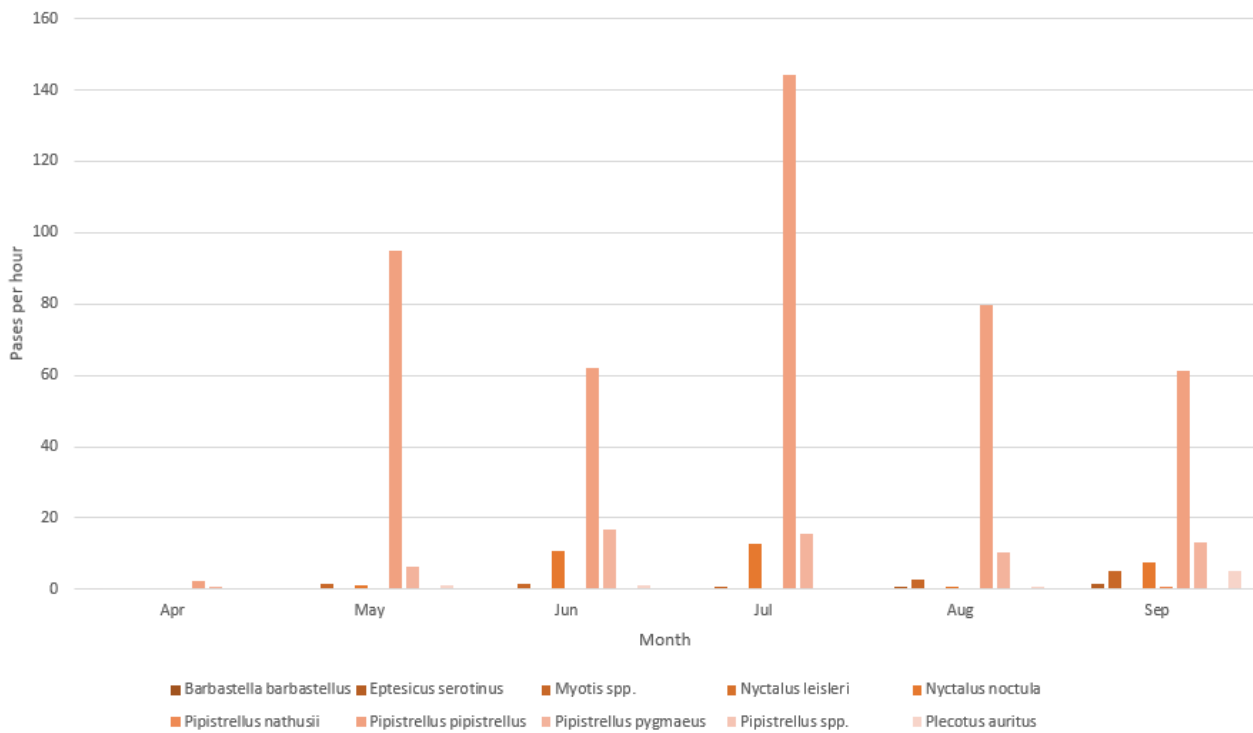


Image 4: The normalised calls per hour for each month broken down by species 2021



3.3.5 The 2021 data showed a midsummer peak in July, with lower call rates in the start and end of the survey period.

Seasonal variation of call frequency (i.e. activity) – changes 2017 - 2021

- 3.3.6 The 2017 and 2021 data showed a slightly different distribution of calls. Both years had a midsummer peak (June in 2017, July in 2021), with lower call rates at the start and end of the survey season. The differences in call rate were not as pronounced in 2021. This may be attributable to the 2021 weather.
- 3.3.7 The differences in the seasonal call rates between 2017 and 2021 are not considered to be sufficient to suggest that there has been a notable change in the bats seasonal utilisation of the site.
- 3.3.8 Bat activity assessments

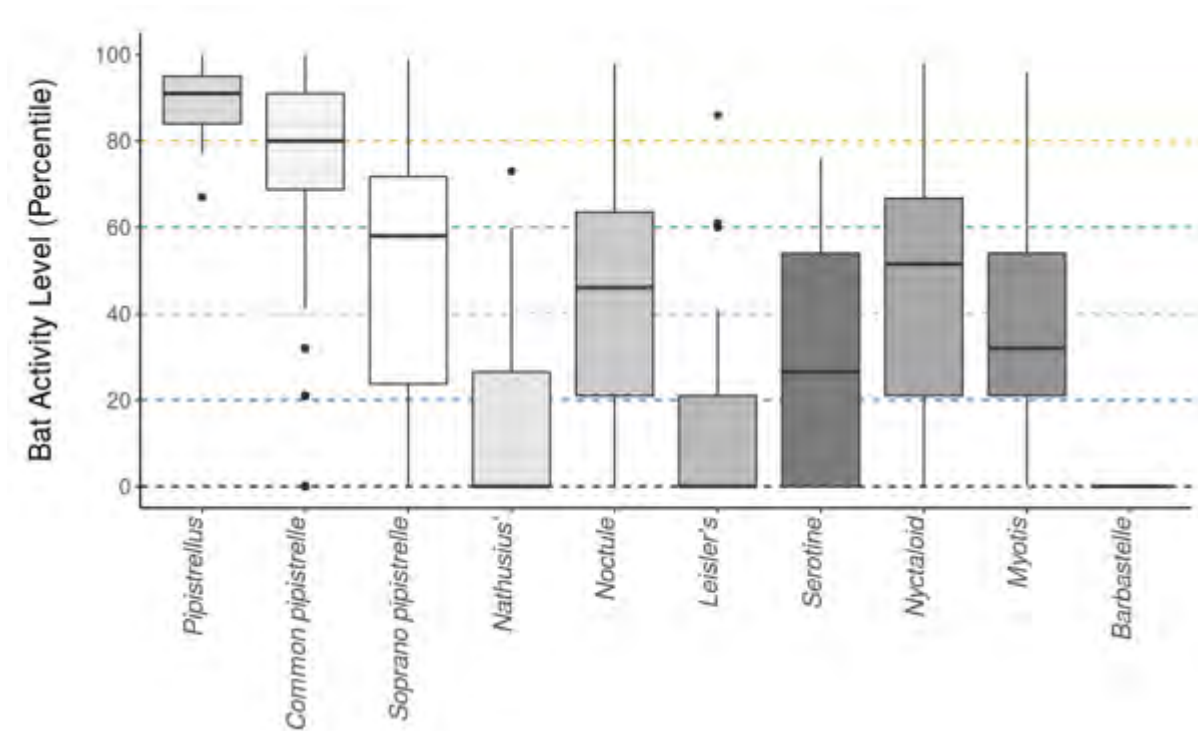
Between site activity assessment 2017

- 3.3.9 Overall, the average percentile activity for the site, as assessed by Ecobat was 63, meaning the site is in approximately in the top 40% of activity levels for comparative sites, meaning the activity level was medium – high within the Ecobat assessment criteria. However, this needs to be assessed carefully as variations in surveying methodologies can create a skew in the results. Firstly, the static position points within the Otterpool park site were selected to cover notable habitat types (i.e. the best habitats) and therefore are likely to have picked out heterogeneous habitats, which are likely to have a higher level of bat activity than randomly selected survey quadrants within the area.
- 3.3.10 As a result, it is assessed that the Ecobat assessment may overvalue the activity levels within the site, which was backed up by professional judgement of the activity levels on the site. Therefore, for the assessment an overall activity level of 'medium' was determined, which is within the range of activity outlined by Ecobat but takes into consideration the limitations identified.

Between site activity assessment 2021

- 3.3.11 The 2021 assessment conducted using Ecobat allowed the between site activity to be assessed for each species / group, whereas in 2017 an overall activity was assessed using pipistrelle as an indicator species. An excerpt of the 2021 data showing this assessment is presented in Image 5. As in 2017, the activity of 'pipistrellus' was in the top 40% for pipistrellus genus, c.90th percentile (where a species definition could not be confirmed) and 80th percentile for common pipistrelle and 60th percentile for soprano pipistrelle. Overall, these results suggest there is no significant change between the 2017 and 2021 assessment, with the site overall being in the same 'top 40%' percentile for overall common and soprano pipistrelle activity.
- 3.3.12 For the other species, the activity levels were notably lower than comparable sites in the 100km area. This is particularly true of Barbastelle, where only one record of this species has been returned over the 2017 – 2021 survey period. This species was in the bottom 5% percentile. Low activity levels were also recorded of Leisler's and Nathusius' pipistrelle, with activity in the bottom 20% percentile.
- 3.3.13 Nyctaloid (big bat) and noctule were all within the 40 – 60th percentile, this means that these species occurred with an activity comparable to the median site in the local area (within 100km).
- 3.3.14 Myotis bats and serotine were in the 20 – 40% percentile, suggesting that the activity levels of these species are below the levels on other sites in the local area.

Image 5: Except from the ecobat assessment (Appendix K) showing the 'between site' valuation of the species activity recorded 2021



Between site activity assessment changes between 2017 and 2021

3.3.15 No notable change in the 'between site' activity assessment was identified between the 2017 and 2021 results. The 2021 results allow a more comprehensive assessment of the activity, particularly in relation to individual species, which will be utilised to inform the impact assessment (reported in ES Appendix 7.11)

Within site activity assessment

Within site activity assessment 2017

3.3.16 Activity levels across the site varied greatly. Once the data was normalised (to a passes per minute value), clear variations between the number of calls at each transect location became apparent. Table 16 below outlines the 'calls per minute' across the site at each sampling location, normalised for survey effort. Where no calls were recorded (largely due to interference within the recordings or technical issues), these months were removed from the analysis.

Table 16: Minutes of recording utilised within the activity calculations 2017

Deployment location	April	May	June	July	August	September	October	Total
1	3145	2807	2576	2679	3200	3707	+	18114
2	2990	2704	2554	2773	3330	3839	+	18190
3	3232	2880	2610	**	1828****	4874	+	15424
4	3232	2880	2610	2628	3064	8464****	+	22878
5	3145	2807	**	2679	*	*	+	8631
6	3232	2880	2610	2628	3064	4163	+	18577
7	3145	2807	2576	2679	3200	3707	+	18114
8	*****	2168	2554	2773	3330	*	+	10825
9	3232	2880	2610	2628	3046	7779****	+	22175
10	2990	2716	2554	2773	3330	*	+	18202
11	3232	2880	2610	2628	3046	4874	+	19270
12	2990	2704	2554	1656	3330	3839	+	17073
13	3145	2807	2576	2679	*	3707	+	14914
14	3145	2807	2576	2679	3200	3707	+	18114
15	2990	2716	2554	*	3330	3839	+	15429
10A	+	+	+	+	+	+	4071	4071
4A	+	+	+	+	+	+	4090	4090

* Static data collected but upon examination all files were noise or not attributable to a bat.

** Data corrupted on SD card and not recoverable

*** Partial loss of meta data - not possible to reduce to five nights of survey – all data was used and averaged for consistency.

**** Detector developed a fault after 3 nights of surveying.

***** Microphone removed from detector

Meta data corrupted, only species information recovered

+ Detector not deployed

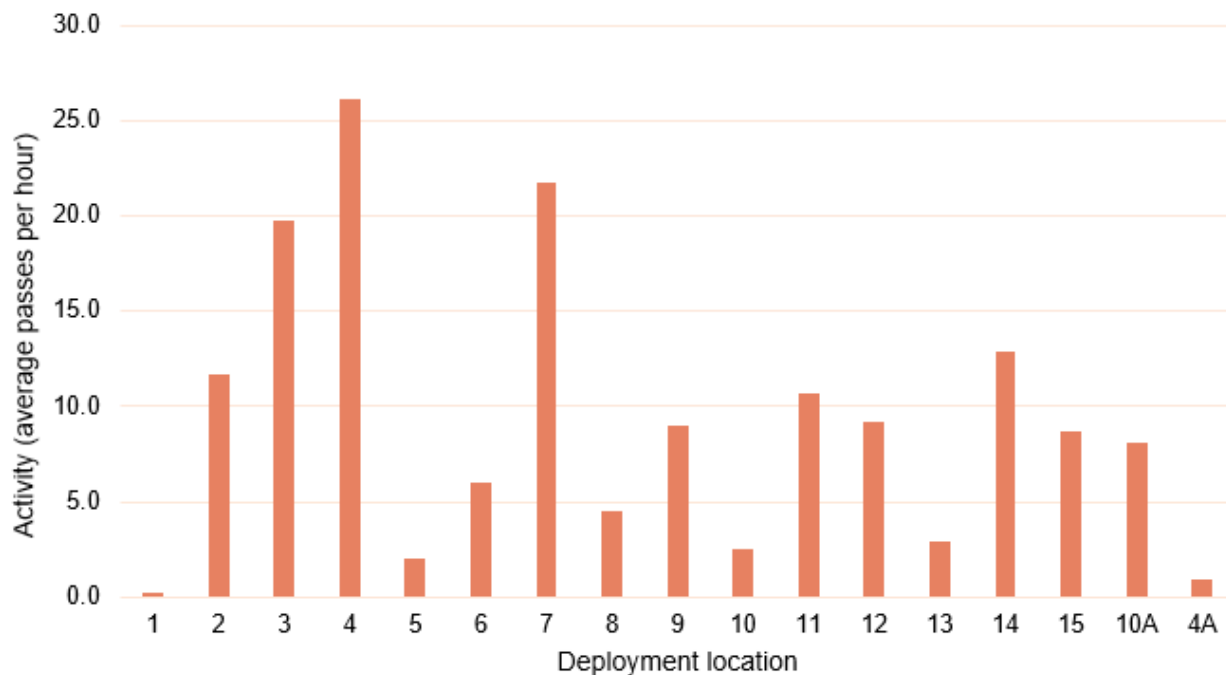
Table 17: Average number of passes at each deployment location and assessment of activity level 2017

Position	Month (passes per minute, ppm)							Average (ppm)	Passes per hour (pph)	Within site
	April	May	June	July	August	September	October			
1	0.00	0.010	0.003	0.003	0.000	0.000		0.003	0.2	Low
2	0.02	0.720	0.159	0.109	0.048	0.121		0.195	11.7	Medium
3	0.33	0.409	0.874		0.018	0.014		0.329	19.7	High
4	0.05	0.333	0.937	0.416	0.482	0.396		0.436	26.2	High
5	0.00	0.066		0.064				0.044	2.6	Low
6	0.19	0.200	0.074	0.091	0.024	0.018		0.100	6.0	Low
7	0.01	0.957	0.832	0.205	0.061	0.115		0.363	21.8	High
8		0.012	0.219	0.009	0.062			0.075	4.5	Low
9	0.03	0.067	0.342	0.207	0.213	0.038		0.150	9.0	Medium
10	0.00	0.019	0.139	0.040	0.011			0.042	2.5	Low
11	0.00	0.044	0.030	0.665	0.106	0.150		0.166	10.0	Medium
12	0.49	0.173	0.167	0.012	0.024	0.054		0.153	9.2	Medium
13	0.04	0.066	0.128	0.007		0.001		0.048	2.9	Low
14	0.12	0.190	0.349	0.448	0.085	0.101		0.215	12.9	Medium
15	0.02	0.163	0.317		0.076	0.160		0.148	8.9	Medium
10A							0.135			Medium
4A							0.016			Low

* passes per minute (ppm); passes per hour (pph)

3.3.17 The chart below (Image 6) shows this data as a graph. The results for positions 10A and 4A are included for consistency and are discussed in the sections below. These locations were however only conducted in October to assess the likelihood of swarming in these areas.

Image 6: Average activity (passes per hour) at each deployment location 2017



Within site activity levels - 2017- low

3.3.18 Of detector positions 1 – 15 (including 10A and 4A), seven locations had ‘low’ levels of activity. These locations are described in Table 18 below. The location of these detectors is presented in Figure 1.

Table 18: Areas where ‘low’ activity was recorded 2017

Position	Activity (passes per hour)	Area description
1	0.2	This is a location within a small copse of trees within an arable field.
5	2.6	This is a location within a hedgerow to the north of the site between an improved grassland field and an arable field.
6	6	This is a location adjacent to the river corridor of the East Stour River, surrounded by arable fields and improved grassland grazing.
8	4.5	This location was within a small woodland adjacent to Lymyne village and a large improved grassland field.
10	2.5	This area is located adjacent to some small young woodlands and a number of dilapidated military buildings surrounded by neutral semi-improved grassland.
13	2.9	This was a location adjacent to the East Stour River, in the far west of the study area.
4A	1.0	This location was adjacent to Westenhanger Castle

Within site activity levels – 2017 - medium

3.3.19 Of detector positions 1 – 15 (including 10A and 4A), seven locations had ‘medium’ levels of activity. These locations are described in Table 19 below. The location of these detectors is presented in Figure 1.

Table 19: Areas where ‘medium’ activity was recorded 2017

Position	Activity (passes per hour)	Area description
2	11.7	This detector was located within a row of trees/shrubs (Sycamore, Ash and Elder) adjacent to the A20 road. Beyond the road to the east was the large woodland of Sandling Park and Folks Wood.
9	9.0	This detector was in a woodland edge adjacent to a grazed improved grassland field. The woodland was relatively recently planted (within the last 50 years estimated).
10A	8.1	This was a location adjacent to some derelict military bunkers.
11	10	This detector was located on an ancient woodland edge adjacent to a waterbody and a damp, neutral semi improved grassland field.
12	9.2	This detector was located within a hedge adjacent to an arable field and agricultural pond.
14	12.9	This detector was located to a small woodland, Park Wood, which contained multiple ancient woodland indicators.
15	8.9	This detector was placed within a hedge row between two arable fields.

Within site activity levels – 2017 - high

3.3.20 Of detector positions 1 – 15 (including 10A and 4A), three locations had ‘high’ levels of activity. These locations are described in Table 20 below. The location of these detectors is presented in Figure 1.

Table 20: Areas where ‘high’ levels of activity were recorded 2017

Position	Activity	Area description
3	19.7	This detector was located adjacent to a large waterbody within the racetrack area.
4	26.2	This detector was located within a complex of buildings associated with the racecourse. This area is illuminated with some artificial lighting, the high level of activity may be partially attributable to light tolerant bats foraging under the illuminated areas.
7	21.8	The detector was located adjacent to a stream which is a tributary to the East Stour River. This stream is surrounded by improved grassland fields.

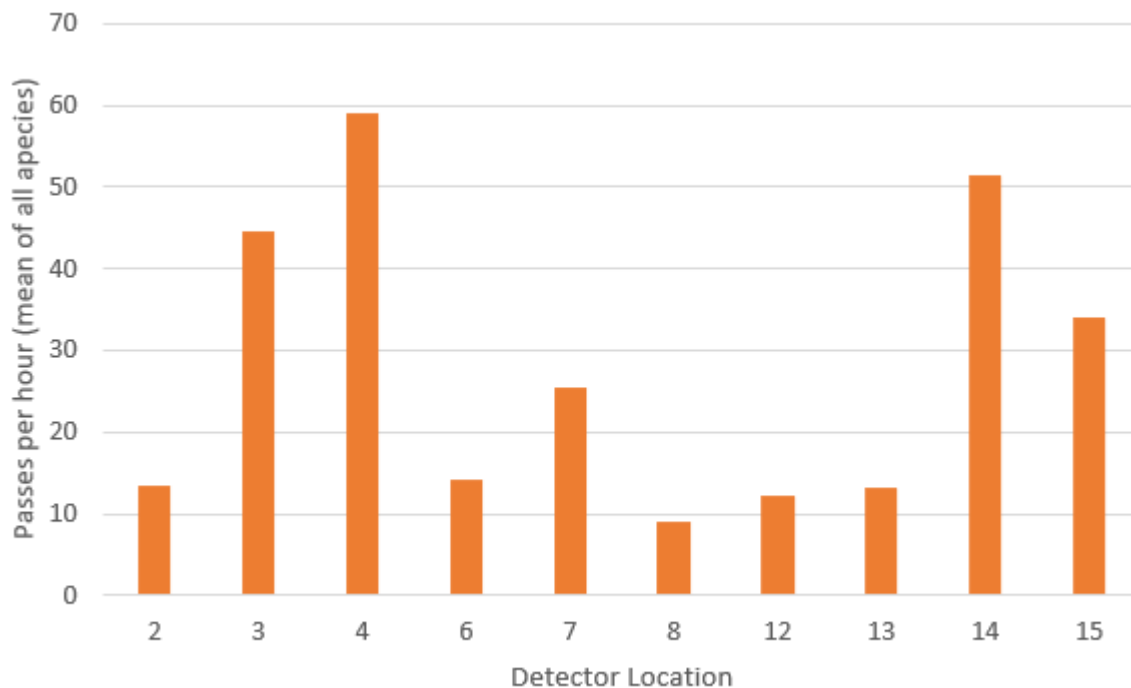
Within site activity assessment 2021

3.3.21 Activity levels across the site varied. Once the data was normalised (to a passes per minute value), variations between the number of calls at each location became apparent. Table 21 below outlines the 'calls per minute' across the site at each detector location, normalised for survey effort. This is presented as a chart in Image 7.

Table 21: Average number of passes at each deployment location and assessment of activity level 2021

Position	Passes per hour (pph)	Activity assessment
2	13.38	Medium
3	44.61	High
4	58.96	High
6	14.25	Medium
7	25.57	High
8	9.08	Medium
12	12.33	Medium
13	13.1	Medium
14	51.42	High
15	34.06	High

Image 7: Normalised passes per hour by detector location 2021



Within site activity levels – 2021 - medium

3.3.22 Of the 10 detector positions 2 – 15, five locations had ‘medium’ levels of activity. These locations are described in Table 22 below. The location of these detectors is presented in Figure 5.

Table 22: Areas where ‘medium’ activity was recorded 2021

Position	Activity (passes per hour)	Area description
2	13.38	This detector was located within a row of trees and shrubs (Sycamore, Ash and Elder) adjacent to the A20 road. Beyond the road to the east was the large woodland of Sandling Park and Folks Wood.
6	14.25	This is a location adjacent to the river corridor of the East Stour River, surrounded by arable fields and improved grassland grazing.
8	9.08	This location was within a small woodland adjacent to Lypne village and a large improved grassland field.
12	12.33	This detector was located within a hedge adjacent to an arable field and agricultural pond.
13	13.1	This was a location adjacent to the East Stour River, in the far west of the study area.

Within site activity levels – 2021 - high

3.3.23 Of the 10 detector positions 2 – 15, five locations had ‘high’ levels of activity. These locations are described in Table 23 below. The location of these detectors is presented in Figure 5.

Table 23: Areas where ‘high’ levels of activity were recorded 2021

Position	Activity	Area description
3	44.61	This detector was located adjacent to a large waterbody within the racetrack area.
4	58.96	This detector was located within a complex of buildings associated with the racecourse. This area is illuminated with some artificial lighting, the high level of activity may be partially attributable to light tolerant bats foraging under the illuminated areas.
7	25.57	The detector was located adjacent to a stream which is a tributary to the East Stour River. This stream is surrounded by improved grassland fields.
14	51.42	This detector was located to a small woodland, Park Wood, which contained multiple ancient woodland indicators.
15	34.06	This detector was place within a hedge row between two arable fields.

Within site activity assessment changes between 2017 and 2021

3.3.24 Overall, there were some changes in the activity assessment at each location. This is summarised in Table 24. The activity assessments were the same as in 2017 or had increased. None of the detectors had recorded a change from low to high activity.

3.3.25 Where an activity valuation has increased, this will be used in the impact assessment.

Table 24: Summary of activity assessment at each deployment location – changes 2017 - 2021

Position	Activity assessment 2017	Activity assessment 2021	Change
2	Medium	Medium	None
3	High	High	None
4	High	High	None
6	Low	Medium	Increase
7	High	High	None
8	Low	Medium	Increase
12	Medium	Medium	None
13	Low	Medium	Increase
14	Medium	High	Increase

Position	Activity assessment 2017	Activity assessment 2021	Change
15	Medium	High	Increase

Assemblage of Species – Sitewide assemblage

Sitewide assemblage 2017

- 3.3.26 No Annex II species (as listed under the Habitats Directive) were identified within the site during the surveys in 2017.
- 3.3.27 No barbastelle calls were recorded during the survey. No definitive Bechstein's calls were recorded. Some calls of 'Myotis' bats were identified by the SonoChiro software as having a low potential to be Bechstein's bats, however no calls with a confidence level of >4 were identified (confidence graded from 0 – 10). Also, this bat species has not been previously recorded within or surrounding the site (KMBR data, BCT Bechstein Survey (BCT 2011) and BCT hibernation survey data). This data is all presented in Appendix H. As a result, it is assessed that Bechstein's bats are unlikely to be present within the site.
- 3.3.28 The calls recorded were largely common or soprano pipistrelle bats, these bats formed 93% of the calls recorded. The numbers of calls from each species group are presented in Table 25.

Table 25: Proportions of calls identified to each species group (all positions, all months).

Species Group (as accurate as can be reliably determined)	Count	% of calls (rounded to 1 d.p.)
Common pipistrelle	32592	78.4
Soprano pipistrelle	4386	10.5
Myotis	2367	5.7
Common or soprano pipistrelle	1726	4.2
'Big bat'	242	0.6
Nathusius' pipistrelle	146	0.4
Noctule	108	0.3
Serotine	7	0.02

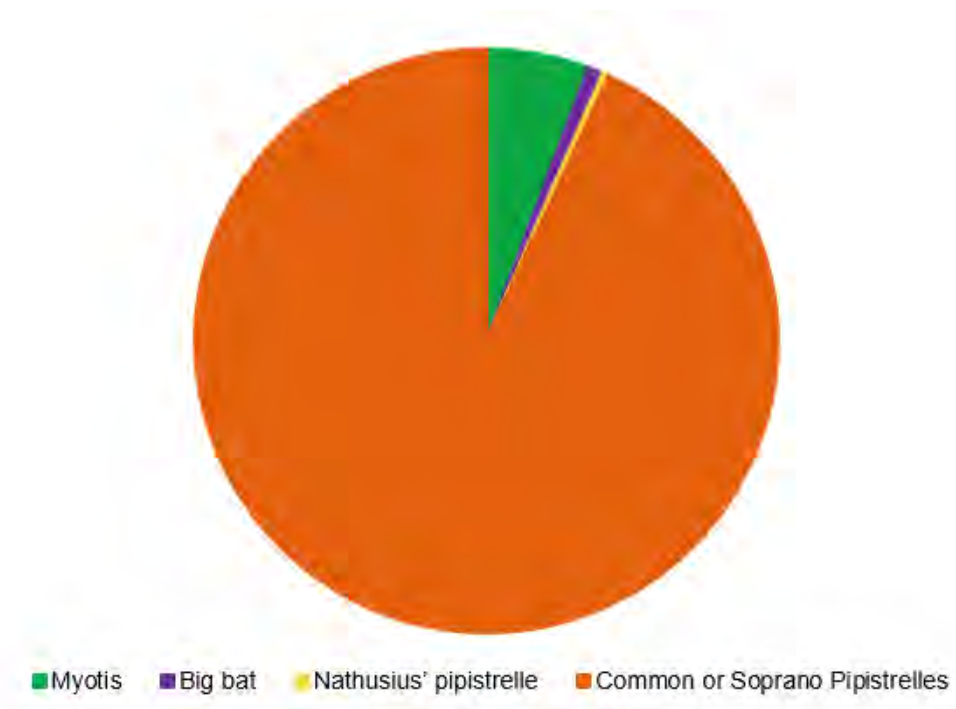
Table 26: Proportions of calls identified to each species group (all positions, all months)

Species Group (Broad Groups)	Count	% of calls
Common or soprano pipistrelle	38704	93.0
Myotis	2367	5.7

Species Group (Broad Groups)	Count	% of calls
Big bat	357	0.9
Nathusius' pipistrelle	146	0.4

3.3.29 This distribution of data is shown as Image 8 below.

Image 8: Proportion of bat passes recorded at each deployment location



3.3.30 This assemblage assessment determined by the static surveys aligned with that of the transect surveys results. An overarching document collating this information is presented within the Bats Summary Valuation and Impact Assessment (ES Appendix 7.11) within the Chapter 7: Biodiversity of the EIA and within the Bat Mitigation Strategy (7.18).

Sitewide assemblage 2021

3.3.31 One barbastelle call was recorded during the survey. This was recorded at a single location. Considering that all records identified by the auto ID software as having potential to the barbastelle were manually checked, it can be stated with a high degree of confidence that this species is not reliant on the site. The single record is likely to be associated with a single individual bat traversing the site to more valuable habitats further afield. This assessment was communicated to KCC in 2021, and it was confirmed that the KCC ecology team were in agreement with this assessment. This correspondence is presented in Appendix N.

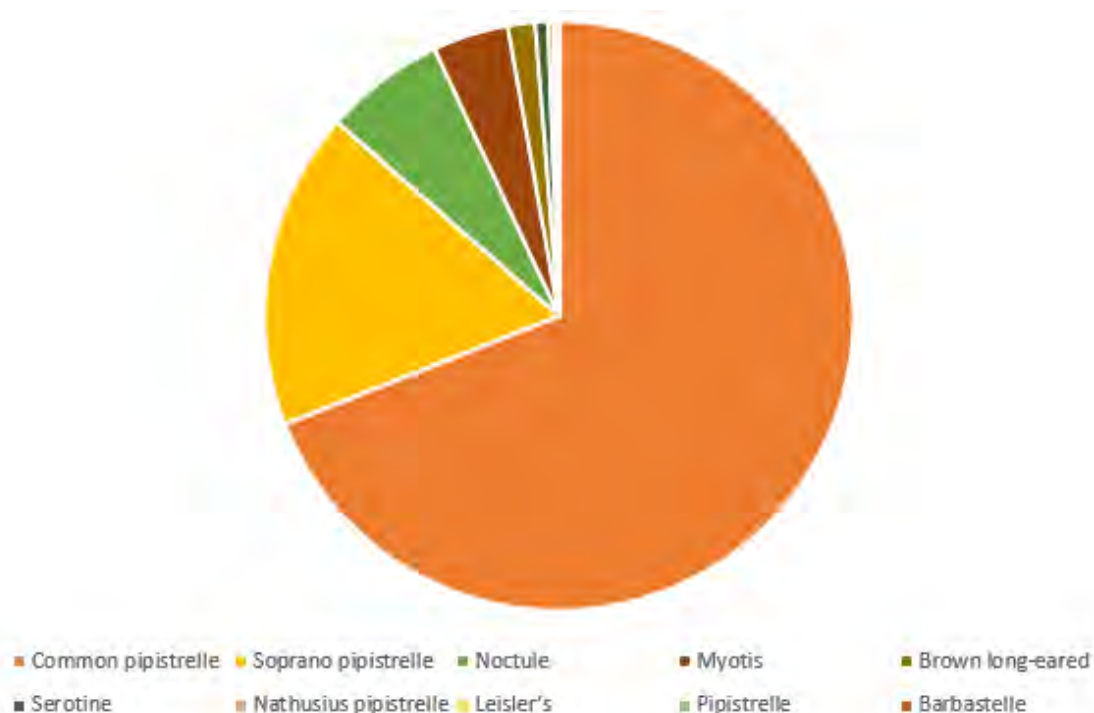
3.3.32 No definitive Bechstein's calls were recorded. Some calls of 'Myotis' bats were identified by the Kaleidoscope software as having a potential to be Bechstein's bats, however no calls could be definitively confirmed to be Bechsteins. Also, this bat species has not been previously recorded within or surrounding the site (KMBR data, BCT Bechstein Survey (BCT 2011) and BCT hibernation survey data). This data is all presented in Appendix H. As a result, it is assessed that Bechstein's bats are unlikely to be present within the site.

3.3.33 The calls recorded were largely common or soprano pipistrelle, these bats formed 86.48% of the calls recorded. The numbers of calls from each species group are presented in Table 27. This is also presented as a chart in Image 9.

Table 27: Proportions of calls identified to each species group (all positions, all months) 2021

Scientific Name	Common Name	Count (No)	Percentage of total (%)
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	39534	69.02
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	9976	17.42
<i>Nyctalus noctula</i>	Noctule	3795	6.63
<i>Myotis spp.</i>	Myotis	2382	4.16
<i>Plecotus auritus</i>	Brown long-eared	853	1.49
<i>Eptesicus serotinus</i>	Serotine	405	0.71
<i>Pipistrellus nathusii</i>	Nathusius pipistrelle	173	0.30
<i>Nyctalus leisleri</i>	Leisler's	142	0.25
<i>Pipistrellus spp.</i>	Pipistrelle	22	0.04
<i>Barbastella barbastellus</i>	Barbastelle	1	0.00

Image 9: Proportion of calls attributable to each species / species group in 2021



Sitewide assemblage changes 2017 - 2021

3.3.34 Between 2017 and 2021, there were many similarities in the assemblage recorded on the site. Pipistrelle species made up the large proportion of the calls in both 2017 and 2021. Myotis calls were comparable, consisting of c.5% of the calls in 2017 and 2021.

3.3.35 There were a few notable changes in the assemblage recorded on the site, namely:

- in 2021 barbastelle was recorded for the first time (one call)
- in 2021 the proportion of noctule calls increased.

Detector location assemblage

Detector location assemblage 2017

3.3.36 Across the site, the assemblage of bats utilising each area varies with location. The activity level alone does not necessarily represent the value of the area (i.e. an area where a common pipistrelle bat repeatedly forages may not necessarily be more valuable than a location where a varied assemblage of bats forage / commute). To examine the diversity of the assemblage at each location, the proportion of bats which were not identified as 'common or soprano pipistrelle was examined.

3.3.37 Table 28 shows the percentage of bat passes recorded within each of the two groups (common and soprano pipistrelles and 'other bats'. All data has been normalised for recording time into a 'passes per minute'. Locations where the proportion of bats which were common or soprano pipistrelles was less than 90% are highlighted to highlight areas where the assemblage of bats was richest.

Table 28: Percentage of passes of 'common' and 'rarer' species of bats.

Position	Percentage of common bats (passes of common or soprano pipistrelle)*	Percentage of passes of 'rarer' bat species
1	97.8	2.2
2	97.1	2.9
3	84.7	15.3
4	95.2	4.8
5	96.7	3.3
6	95.4	4.6
7	99.4	0.6
8	91.8	8.2
9	97.5	2.5
10	81.2	18.8
11	75.0	25.0
12	98.3	1.7

Position	Percentage of common bats (passes of common or soprano pipistrelle)*	Percentage of passes of 'rarer' bat species
13	91.8	8.2
14	89.2	10.8
15	96.3	3.7
10A	98.2	1.8
4A	95.4	4.6

Detector location assemblage 2021

3.3.38 Across the site, the 2021 assemblage of bats utilising each area again varies with location. The activity level alone does not necessarily represent the value of the area. To examine the diversity of the assemblage at each location, the proportion of bats which were not identified as 'common or soprano pipistrelle' was examined.

3.3.39 Table 29 shows the percentage of bat passes recorded within each of the two groups (common and soprano pipistrelle and 'other bats'). All data has been normalised for recording time into a 'passes per minute'. Locations where the proportion of bats which were common or soprano pipistrelle was less than 90% are highlighted to highlight areas where the assemblage of bats was richest.

Table 29: Percentage of passes of 'common' and 'rarer' species of bats 2021

Position	Percentage of common bats (passes of common or soprano pipistrelle)*	Percentage of passes of 'rarer' bat species
2	91.28	8.72
3	81.22	18.78
4	93.57	6.43
6	94.58	5.42
7	65.99	34.01
8	89.57	10.43
12	90.92	9.08
13	72.11	27.89
14	82.36	17.64
15	96.80	3.20

Detector location assemblage changes 2017 - 2021

3.3.40 The key changes were that between 2017 and 2021, two additional locations appeared to be of value for the 'rarer' bats, locations 7 and 13. In the impact assessment this will be accounted for.

Common and rarer bats distribution 2017

3.3.41 In addition to assessing the proportion of passes at each location, the total number of passes of the 'rarer' bats was assessed. The number of rarer bats at a position was not necessarily proportional to the number of common and soprano pipistrelle bats observed, suggesting that some areas were more important to these rarer bat species (and that bat activity was not necessarily higher overall).

3.3.42 Image 11 to Image 13 show the relative distribution of common and rarer bats. The number of passes of rarer bats is relatively uniformly low (below three passes per hour), there are two locations with a higher level of "rarer" bat passes, namely positions 3 and 11.

3.3.43 When rarer bats are assessed, as presented in Image 13, the majority of this increase is attributable to a high number of myotis bats which were recorded at these locations. This is likely because both of these locations are adjacent to water (either the Folkestone Racecourse Lake or Harringe Brooks Woodland, which contains ponds). During the activity transects, in both of these locations, high numbers of passes of Daubenton's bats were recorded.

Image 10: Chart showing the percentage of passes of common and rarer bats. Series 1 represents 'common' bats, series 2 represents 'rarer' bats.

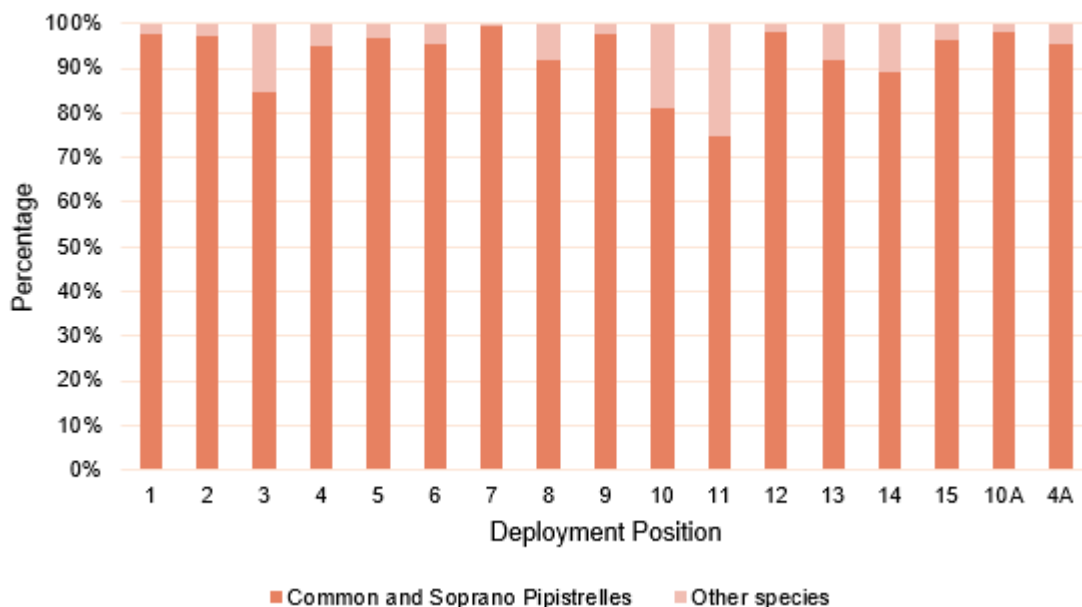


Image 11: Average number of passes per hour rarer bats at each detector position

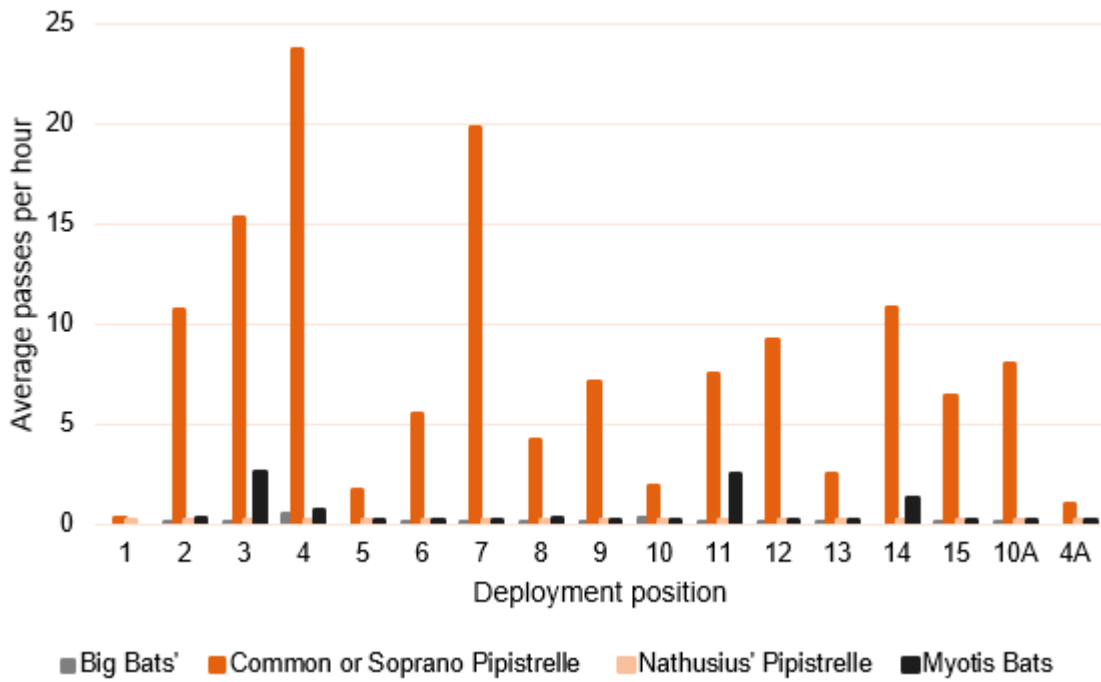


Image 12: Average number of passes per hour rarer bats at each deployment location.

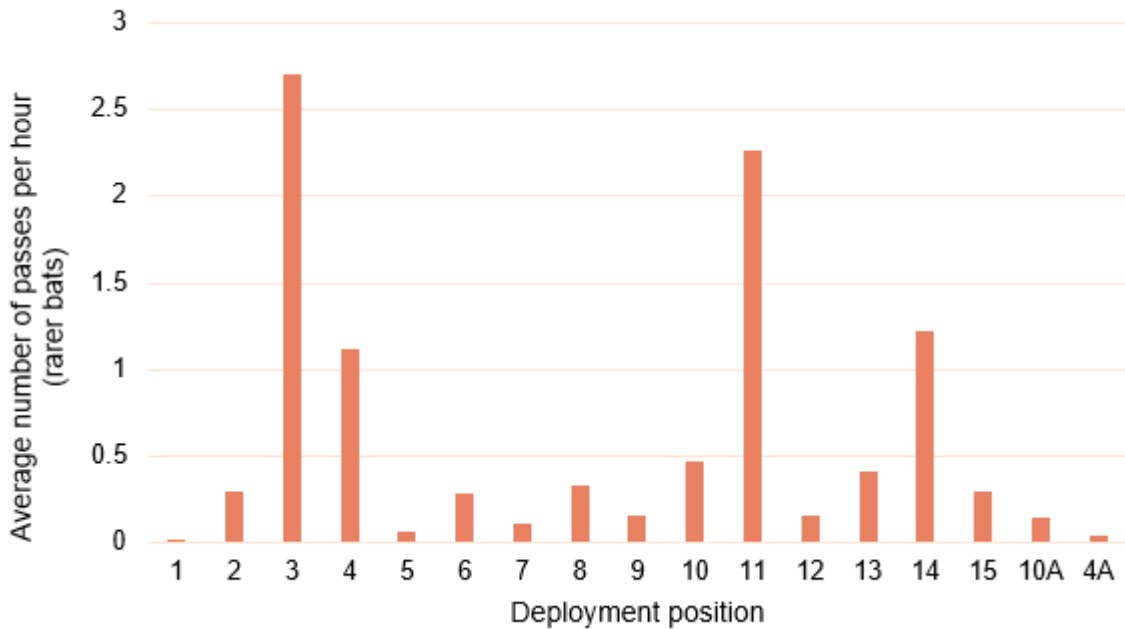
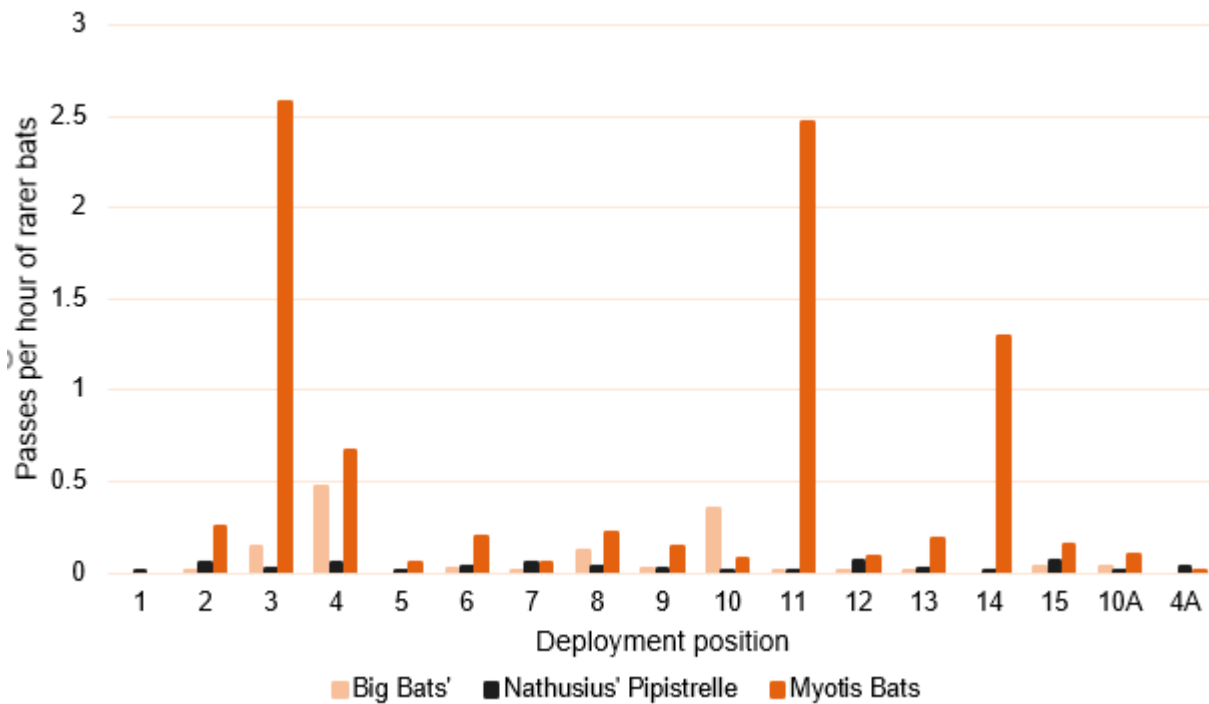


Image 13: Relative activity of bat species with common and soprano pipistrelle removed



Common and rarer bats distribution 2021

- 3.3.44 As in 2017, in addition to assessing the proportion of passes at each location, the total number of passes of the 'rarer' bats was assessed in 2021. The number of rarer bats at a position was not necessarily proportional to the number of common and soprano pipistrelle observed, suggesting that some areas were more important to these rarer bat species (and that bat activity was not necessarily higher overall).
- 3.3.45 Image 14 shows the relative distribution of common (pipistrelle) and rarer bats. Image 15 presents the pass rate of the rare and rarer bats at each location. The number of passes of rarer bats at five locations is relatively uniformly low (below two passes per hour), there are five locations with a higher level of 'rarer' bat passes, namely positions 3, 4, 7, 13 and 14.
- 3.3.46 When rarer bats are assessed, as presented in Image 16, the majority of this increase is attributable to a high number of noctule bats recorded at locations 7 and 14. Conversely, a high number of Myotis bats were recorded at location 13. As before, this is likely because this location is adjacent to water. Locations 13 and 4 appeared to have a notable proportion of a number of rarer bats, including big bats and myotis bats.

Image 14: Proportion of pipistrelle bats and other bats recorded at each location 2021

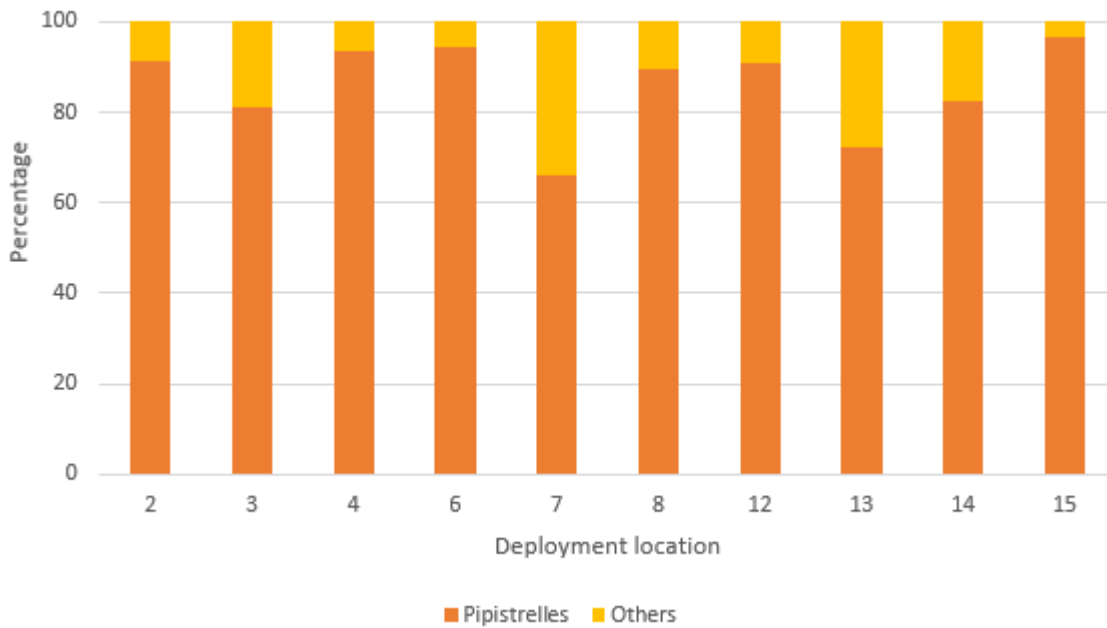


Image 15: Passes per hour of 'rare and rarest bat species 2021

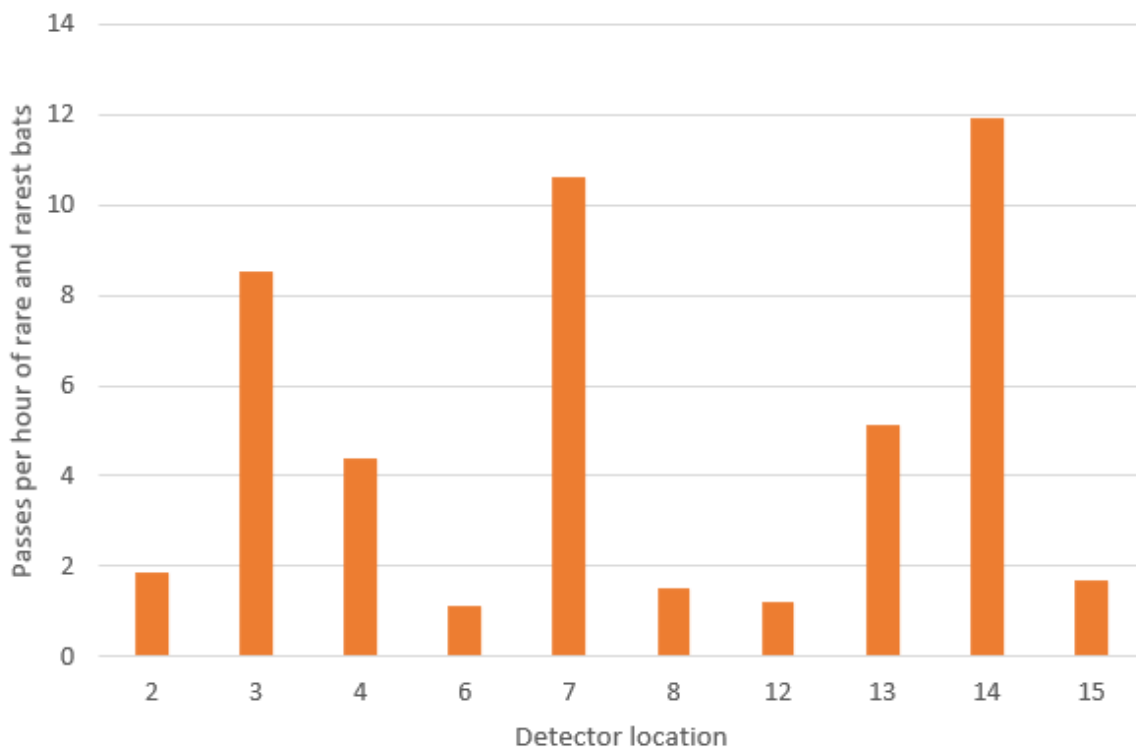
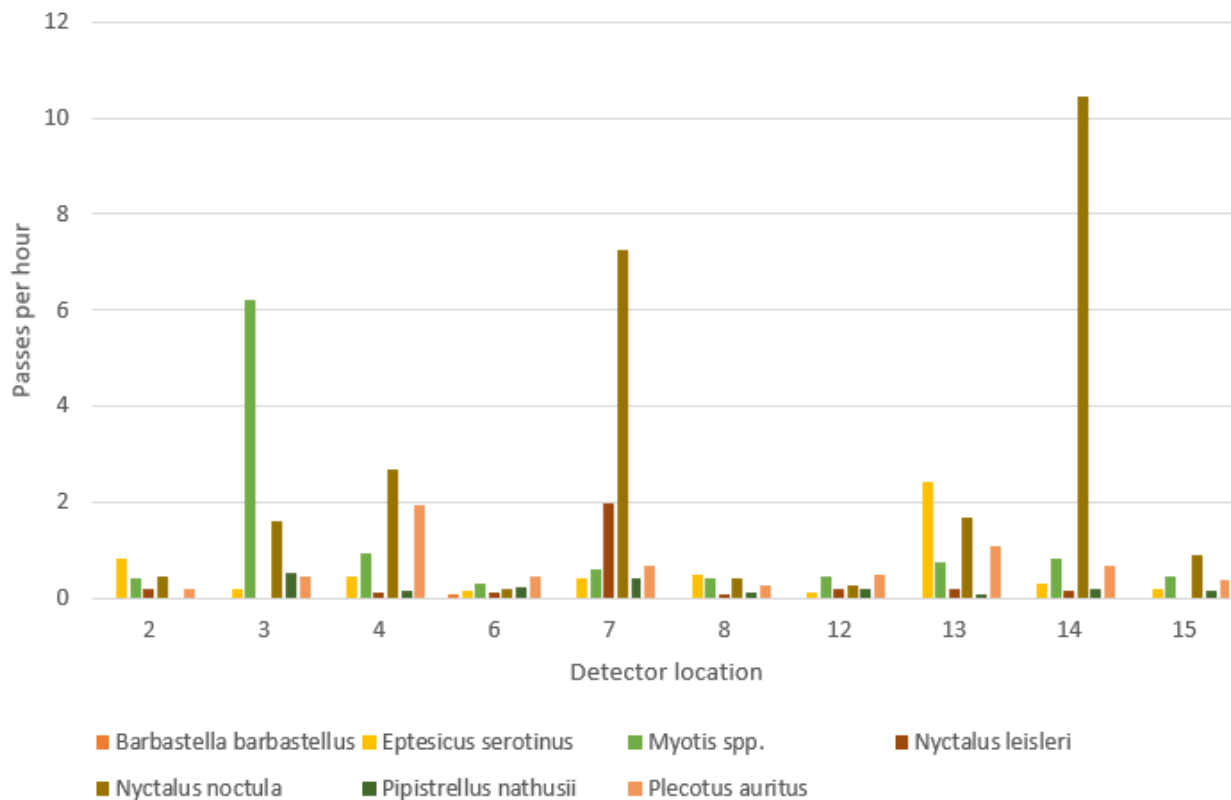


Image 16: Passes per hour of 'rare' and 'rarest' bats 2021



Common and rarer bats distribution changes 2017 – 2021

3.3.47 Within the 2021 assessment, an increased number of locations were found to have importance for rarer bats. This will be utilised to inform the impact assessment.

Areas where bat emergence times indicate nearby roosts 2017

3.3.48 Table 30 outlines the first and last bats of each species recorded at each location during the survey months.

3.3.49 This section of the report should be read alongside the Preliminary Roost Assessment and Emergence / Re-entry Survey Report (ES Appendix 7.13). The following 'potential' roosting areas were identified during the surveys in 2017.

Table 30: Qualitative assessment of potential for roosts to be nearby each of the static positions 2017

Location	Nearby roosts likely (qualitative assessment)?	Rationale / Evidence
1	No (although roosts are known to be in the buildings at Hilltop Farm, see the bat building report (ES Appendix 7.13) for further details).	Very few bat calls around sunrise or sunset, a few common pipistrelle calls around 40mins before sunrise or after sunset. Considering the surrounding area, it is unlikely that there are any roosts in the immediate surrounds of position 1.
2	Yes, likely to be common pipistrelle roosts nearby. Potential for myotis roosts	<p>Many calls throughout the season close to sunrise / sunset. Some calls were after sunrise.</p> <p>A low number of Myotis calls were recorded under one hour after sunset / before sunrise. This suggests that there may be nearby roosts.</p> <p>Considering the habitats in the area, roosts are likely to be located in the woodland to the east.</p>
3	<p>Yes. Noctule roosts likely to be present in the area, most likely associated with trees to the north.</p> <p>Common and soprano pipistrelle roosts likely to be in the area, but not in the immediate vicinity.</p>	<p>Noctule calls were recorded soon after sunset or prior to sunrise throughout the season, including calls 5 minutes before sunrise, and multiple calls around 20 minutes after sunset. This was also recorded on the emergence and transect surveys, with bats recorded very early (dusk) or late (dawn) observed fling to / from suspected roosts to the north. It is considered likely that noctule roosts exist in the trees surrounding Westenhanger Castle.</p> <p>Common and soprano pipistrelle calls were recorded throughout the survey period, frequently less than one hour after sunset or prior to sunrise. This suggests that bat roosts are nearby (within the racecourse buildings to the north, where roosts were recorded in other surveys. Roosts may also be present within the residential buildings to the east of the site.</p>
4 / 4A	Yes – very likely to be common pipistrelle roosts in the surrounding buildings.	Calls very soon after sunset / prior to sunrise (calls 10 – 20 minutes after sunset throughout the season). These bats are likely to be associated with roosts recorded during the emergence surveys in the surrounding buildings. Details in these roosts can be found in the associated emergence / re-entry report.
5	No	Very few calls recorded soon after sunset or prior to sunrise, the earliest calls determined to a species group level were a few calls of common pipistrelle around 30 -40 minutes after sunset / prior to sunrise. Considering the low number of these early calls, it is considered unlikely that roosts are nearby.
6	No roosts likely to be in the immediate vicinity of the detector location, common pipistrelle roosts likely to be relatively nearby.	Intermittently throughout the season, calls of common pipistrelle were recorded close to sunset / sunrise, including one call three minutes after sunset. However, there was not a clear regular reoccurrence of common pipistrelle calls throughout the season, and the majority of early/late calls were 30 -60 minutes after sunset / prior to sunrise. Therefore roosts are likely to be nearby, potentially located within the residential buildings to the west of the site.
7	No roosts likely to be in the immediate vicinity of the detector location, common pipistrelle roosts likely to be relatively nearby.	Throughout the season, calls of common pipistrelle were recorded soon after sunset or before sunrise. On 40 occasions (of 70 dusks / dawns) common pipistrelle bats were recorded less than one hour before sunrise / after sunset. Some of the calls

Location	Nearby roosts likely (qualitative assessment)?	Rationale / Evidence
		<p>were a little as 14 minutes after / before sunrise . sunset, but this was not true throughout the season.</p> <p>It is considered that roosts are likely to be nearby, potentially within tress along the stream corridor or within farm buildings to the south and north along the stream, with early emerging bats commuting along the river corridor.</p>
8	<p>No roosts likely to be in the immediate vicinity of the detector location, common pipistrelle roosts likely to be relatively nearby, likely within Lympne village to the east.</p>	<p>There was not a pattern of early / late bat calls throughout the season (with a few exceptions), but calls were recorded 30 – 60 minutes after sunset / before sunrise.</p> <p>It is known from the data search that there is a large pipistrelle roost within the Lympne village to the east. The relatively early recorded bats are likely to have originated from roosts in and around Lympne, as the habitat immediately surrounding the detector location offers minimal roosting opportunities (consisting of improved grassland and a small woodland).</p>
9	<p>Common pipistrelle roosts likely to be nearby.</p>	<p>Throughout the season, common pipistrelle calls were recorded soon before / after the sunrise / sunset, with a notable number of calls less than 20 minutes before sunrise or prior to sunset.</p> <p>The woodland which is nearby to this location is young (likely to be less than 50 years old) but may offer roosting opportunities. The nearby buildings of Otterpool Manor and Otterpool farm are also known to support bat roosts.</p>
10	<p>No evidence that roosts are nearby.</p>	<p>This detector location was within an area which has a number of nearby bunkers, dilapidated buildings and military pillboxes.</p> <p>However, there was no evidence that there were nearby roosts, with very few calls from any bat species less than one hour before sunrise or after sunset. A few scattered early calls (largely 40 – 60 mins after sunset / before sunrise) were recorded, but the pattern of these calls was not sufficiently strong to suggest a nearby roost.</p>
11	<p>Potential for soprano pipistrelle roosts to be nearby.</p> <p>Potential for nearby myotis roosts.</p>	<p>Throughout the season, there were a few notable occurrences of soprano pipistrelle calls soon after sunset or before sunrise, notably calls 10 – 30 minutes from sunset / before sunrise. This suggests that there is likely to be a soprano pipistrelle roost within the woodland where this deployment was located.</p> <p>Observation of the habitat and timing and proportion of calls detected from this location suggested that myotis bats are likely to be roosting in this area (as no other significant areas of suitable habitat are in the vicinity).</p>
12	<p>No roosts likely to be in the immediate vicinity of the detector location, common and soprano pipistrelle roosts likely to be relatively nearby.</p>	<p>Throughout the season there was a noticeable trend for moderately early /late calls of common and soprano pipistrelles to be recorded (most of these early / late calls recorded 30 – 60 minutes after sunset / prior to sunrise.</p> <p>When the location of the detector is considered, combined with the observations of the transect surveys, it is determined that it is likely that roosts are located within the Ancient woodland to the south, and that bats commute along the hedgerow where the detector was placed.</p>

Location	Nearby roosts likely (qualitative assessment)?	Rationale / Evidence
13	No roosts likely to be in the immediate vicinity of the detector location, common pipistrelle roosts likely to be relatively nearby.	There was not a clear pattern of early / late bat calls throughout the season (with a few exceptions), but calls were recorded 30 – 60 minutes after sunset / before sunrise. Common and soprano pipistrelle bats could be roosting within the trees along the East Stour River Corridor.
14	Yes –likely to be common pipistrelle roosts in Park Wood. Some evidence that myotis bat roosts may be nearby.	A pattern of calls of common and soprano pipistrelle being recorded soon after sunset / prior to sunrise was recorded, with a large number of calls 20 – 30 minutes before / after sunrise / sunset. A few calls were recorded prior to sunset / after sunrise/. There were some early (for the species group) Myotis bat calls too throughout the season It is considered likely that pipistrelle and potentially Myotis bat roosts are located within the trees of Park Wood.
15	No roosts likely to be in the immediate vicinity of the detector location, common and soprano pipistrelle roosts likely to be relatively nearby.	Throughout the season there was a noticeable trend for moderately early /late calls of common and soprano pipistrelle to be recorded (most of these early / late calls recorded 30 – 60 minutes after sunset / prior to sunrise. When the location of the detector is considered, combined with the observations of the transect surveys, it is determined that it is likely that roosts are located within the Ancient woodland to the south, and that bats commute along the hedgerow where the detector was placed.
4a	N/A – Data not collected throughout the year so insufficient data to make a determination.	N/A
10a	N/A – Data not collected throughout the year so insufficient data to make a determination.	N/A

Areas where bat emergence times indicate nearby roosts 2021

- 3.3.50 As outlined above, the R script utilised in 2021 uses the bat observations and compares them to the estimated emergence time for a species to exit the roost; indicating whether a roost for that species is nearby. The roost emergence times for the bat species is based on the work of Russ, 2012; the calculation uses the upper roost emergence time as the threshold to be included in the list of bats potentially near a roost.
- 3.3.51 This results in a number of calls that indicate the potential for a nearby roost to be present for each location for each species. This is a less qualitative (more quantitative) assessment than the method utilised in 2017. The results of this assessment are presented in Table 31. A graphical representation of this data is presented in Appendix O, and the likelihood of roosts being present at each static position is discussed in Table 32.

Table 31: Number of records indicating potential for a nearby roost recorded in 2021

Location / species	2	3	4	6	7	8	12	13	14	15
<i>Eptesicus serotinus</i>			6					10		
<i>Myotis spp.</i>	3	97	10		14	1	4	13	11	3
<i>Nyctalus leisleri</i>								4		
<i>Nyctalus noctula</i>	1	16	24	2		1		21	3	2
<i>Pipistrellus nathusii</i>			1							
<i>Pipistrellus pipistrellus</i>	49	114	652	3	8	67	8	58	217	20
<i>Pipistrellus pygmaeus</i>	4	64				36	7	39	11	30
<i>Pipistrellus sp.</i>			1							
<i>Plecotus auritus</i>	4	7	3	1	2		10	16	1	3

Table 32: Description and assessment of nearby roost potential

Location	Nearby roosts likely (R assessment)	Rationale / Evidence
2	Yes, likely to be myotis, noctule, pipistrelle and brown long-eared bat	Considering the habitats in the area, roosts are likely to be located in the woodland to the east.
3	Yes, likely to be myotis, noctule, pipistrelle and brown long-eared bat	Considering how close this detector is to Sandling park, the bats may be roosting in that location, within Westenhanger Village or in the Westenhanger Castle. There are limited roosting opportunities within the immediate vicinity of this detector (within 100m)
4	Yes, potentially myotis, noctule, pipistrelle, serotine and brown long-eared bat	Serotine and noctule have potential to be roosting in the nearby mature trees. It is known that myotis, brown long-eared bat and pipistrelle are roosting within the castle buildings.
6	Very low number of calls around the emergence time. Unlikely to be many roosts nearby.	Not a clear regular reoccurrence of roost indicating calls throughout the season. Any roosts (if present) potentially located within the residential buildings to the west of the location.
7	Potentially myotis bats or pipistrelle, but not lots of early / late calls at this location.	Throughout the season, calls of common pipistrelle were recorded soon after sunset or before sunrise. It is considered that roosts have potential to be nearby, potentially within trees along the stream corridor or within farm buildings to the south and north along the stream, with early emerging bats commuting along the river corridor.
8	Yes, likely to be pipistrelle bats.	There was not a pattern of early / late bat calls throughout the season, the few calls were mainly pipistrelle.

Location	Nearby roosts likely (R assessment)	Rationale / Evidence
		It is known from the data search that there is a large pipistrelle roost within the Lypne village to the east. The relatively early recorded bats are likely to have originated from roosts in and around Lypne, as the habitat immediately surrounding the detector location offers minimal roosting opportunities (consisting of improved grassland and a small woodland).
12	Low numbers of early calls. Some potential for nearby roosts (but not definitive).	When the location of the detector is considered, combined with the observations of the transect surveys, it is determined that it is likely that roosts are located within the Ancient woodland to the south, and that bats commute along the hedgerow where the detector was placed.
13	Yes, potentially myotis, noctule, pipistrelle, serotine and brown long-eared bat.	Common and soprano pipistrelle could be roosting within the trees along the East Stour River Corridor.
14	Yes, high numbers of early / late pipistrelle calls.	A pattern of calls of common and soprano pipistrelle was recorded soon after sunset / prior to sunrise. There were some early (for the species group) Myotis bat calls too throughout the season It is considered likely that pipistrelle and potentially Myotis bat roosts are located within the trees of Park Wood.
15	Yes, high numbers of early / late pipistrelle calls.	Throughout the season there was a noticeable trend for moderately early /late calls of common and soprano pipistrelle to be recorded (most of these early / late calls recorded 30 – 60 minutes after sunset / prior to sunrise. When the location of the detector is considered, combined with the observations of the transect surveys, it is determined that it is likely that roosts are located within the Ancient woodland to the south, and that bats commute along the hedgerow where the detector was placed.

Areas where bat emergence times indicate nearby roosts changes 2017 - 2021

3.3.52 Overall, there were minimal changes in the assessment of likely nearby roosts between 2017 and 2021.

Assessment of swarming activity 2017 and 2021

3.3.53 The two locations selected in 2017 where swarming activity was deemed most likely were:

- 4a – a location nearby to location 4, adjacent to Westenhanger Castle buildings;
- 10a – A location nearby to location 10, adjacent to a number of defunct military bunkers.

3.3.54 When the data from these autumn deployments was analysed, it was determined that there was not a significant increase in activity or in the diversity of bat calls. As a result, it was assessed that it was unlikely that the site supports swarming activity for bats.

3.3.55 As no indication of swarming activity was recorded in 2017, this assessment was not repeated in 2021 as it was determined no additional information of value would be obtained.

4 Discussion

4.1 Introduction

4.1.1 This assessment should be read alongside the assessment of the results of the transect surveys and the building assessments and emergence / re-entry surveys in the associated reports (ES Appendices 7.12, 7.13). All of these results are compiled and assessed in combination in the EIA, bat summary (ES Appendix 7.11) Chapter 7: Biodiversity and the Bat Mitigation Strategy (ES Appendix 7.18). This information regarding the activity across the site has been utilised to design the masterplanning of the site to minimise impacts to bats.

4.2 Between Site Activity Levels

4.2.1 The Ecobat activity assessment provides a high-level comparison between sites surveyed within 200km (in 2017) and 100km (in 2021).

4.2.2 Overall, the average percentile activity for the site was 63 in 2017, (i.e. in the top 40% of activity levels for comparative sites) meaning that the activity level was medium – high within the Ecobat assessment criteria. The locations assessed are however the most suitable bat habitats on site therefore it is likely that overall assessment is at maximum ‘medium’ when applied sitewide.

4.2.3 The 2021 results support this overall assessment of activity that the site has a relatively high level of activity overall compared to comparable sites, being in the top 40th percentile.

4.3 Within Site Activity Levels 2017 and 2021

Areas with high levels of bat activity

4.3.1 The analysis of the results suggests that certain areas (and habitats) present on the site have high levels of activity for bats. The most valuable areas appeared to be the following areas:

- Along the East Stour Corridor (position 6 and 13);
- The corridor along the East Stour River tributary in the south east of the site (detector position 7) and in the west of the site (position 15);
- The area around the Folkestone Racecourse Lake, (position 3);
- An area around the racecourse buildings (position 4) and on the periphery of Newingreen (position 8);
- An area around Park Wood in the west of the site (position 14).

4.3.2 Other areas which with high levels of activity were the areas around Harringe Brooks Wood and adjacent to Sandling Park Wood (position 2 and 11) and a small woodland nearby the Link Park industrial area (static position 9).

4.3.3 Therefore the most important areas around the site for foraging bats is likely to be the:

- Woodlands on and around site;
- East Stour River tributary and the Folkestone Racecourse Lake.

Areas with lower levels of bat activity

- 4.3.4 In 2017 there was a lower level of activity around the East Stour River corridor at positions 6 and 13 than predicted from the habitat assessments. This was not the case in 2021, with medium activity levels at both locations. This may be attributable to changes to farming around this corridor, although no habitat change was apparent.
- 4.3.5 In 2017, the lowest levels of activity were recorded in locations within or on the periphery of (but not located within a connected hedgerow) intensively managed arable fields, at positions 1 and 5. This was predicted by the habitat assessments. This was mirrored in the transect results.

Areas with “rarer” bat activity 2017 and 2021

- 4.3.6 In addition to the areas where high levels of activity were recorded, it was important to determine which areas of the site are of importance due to the assemblage of bats they support (i.e. support a significant number of the less recorded species of bats).
- 4.3.7 When the proportion of bat calls not attributable to common or soprano pipistrelle was assessed, six locations had a notably higher proportion of rarer bats. These locations were:
- Position 3 adjacent to the Folkestone Racecourse Lake;
 - Position 7, the corridor along the East Stour River tributary in the south east of the site
 - Position 10, within the bunker area to the west of the site;
 - Position 11, adjacent to Harringe Brooks Wood in the west of the site;
 - Position 13, along the East Stour River;
 - Position 14, adjacent to Park Wood in the west of the site.
- 4.3.8 In these areas, calls by ‘rarer’ bats made up more than 10% of the overall calls. This suggests that these areas have importance for ‘rarer’ bats. These areas were of particular value for myotis bats. This trend, particularly around Harringe Brooks Wood, aligns with the transect survey results (see ES Appendix 7.12).
- 4.3.9 The area around the Folkestone Racecourse Lake (position 3) was also found to be important for myotis bats. During the transect surveys, Daubenton’s bats were recorded foraging over the lake.
- 4.3.10 Positions 7 and 14 were found to be of value to big bats, particularly Noctule.
- 4.3.11 The land around position 10, had a relatively low level of activity overall in the 2017 surveys, (aligned with the transect surveys). This area is not within the OPA but is within the ‘area of search’ and contains a number of dilapidated bunkers and military buildings, surrounded by semi-improved neutral grassland. This area was used by a proportion of rarer bats, suggesting that this is a foraging area for species including myotis bats, with a lower level of usage by the more common species.
- 4.3.12 Overall, areas adjacent to woodlands, standing water, including Folkestone Racecourse Lake and ponds within the woodlands were found to be important for the rarer species of bats.

Areas where linear features have high activity 2017 and 2021

- 4.3.13 Commuting activity (bats moving from roosting areas to foraging areas or between foraging areas) is difficult to determine from static (automated) detector data. However, activity levels from detectors placed in or near linear features (hedgerows etc.) can be used to infer the level of commuting activity along these corridors.

- 4.3.14 Locations within linear features which had a notably high level of activity were position 6, 7 and 13 located adjacent to the East Stour River and tributaries of the East Stour River. This suggests that these riparian corridors are of particular importance for commuting bats.
- 4.3.15 The detector located at position 15 (adjacent to the ditch between the East Stour River and Harringe Brooks Wood) recorded intermediate levels of activity, likely due to commuting bats utilising this corridor to travel between the river corridor to the north and the woodland to the south (also aligned with the transect surveys results).

Areas where bat emergence times indicate nearby roosts 2017 and 2021

- 4.3.16 It is difficult to determine roosting activity from static detectors alone, however as explained above, the emergence times recorded during the survey season combined with habitat and feature assessment data can be utilised to infer the potential presence of nearby roosts.
- 4.3.17 Overall, the data from many of the detector positions suggested that roosts may be present nearby. These were:
- Position 2: the detector results from this area suggested that there may be roosts in the woodland to the east of this location. It is likely bats emerging from the woodland are commuting across the site to habitats to the west within the site (aligned with the transect surveys results).
 - Position 3: Although the presence of roosts in this immediate vicinity was not observed, it was likely that the houses to the east supported roosting bats.
 - Position 4: It is known that the buildings around this location support roosting bats (from other surveys). This aligned with the automated detector surveys. Common and soprano pipistrelle roosts are likely to be located within the racecourse building within this area.
 - Position 6: Any roosts (if present) potentially located within the residential buildings to the west of the location.
 - Position 7: Bats were detected very early after sunset or late before sunrise. This suggested that bats were roosting nearby, potentially in trees along the corridor.
 - Position 8: The result from this detector placement suggested that bat roosts are located within nearby structures, potentially within Lympne Village to the east. It is known from the desk study that a maternity roost of pipistrelle bats is located within this area.
 - Position 9: Roosts are likely to be present within the area surrounding the location of position 9. Roosts are known to be present within the Otterpool Manor buildings and Otterpool farm. There is also potential that bats are roosting within the woodland to the immediate south of position 9.
 - Position 11: Roosts are likely to be in the vicinity of this detector, namely soprano pipistrelle roosts. There was also an assessment that *Myotis* bats are likely to be roosting in this area.
 - Position 12: It is determined that it is likely that roosts are located within the Ancient woodland to the south, and that bats commute along the hedgerow where the detector was placed.
 - Position 13: Common and soprano pipistrelle bats could be roosting within the trees along the East Stour River Corridor.
 - Position 14: The results suggested that the woodland where this detector was placed was likely to support pipistrelle roosts. There is potential that the houses to the east of this area also supported roosts.

5 Mitigation Recommendations and Further Work

5.1 Introduction

5.1.1 This section of the report broadly outlines the mitigation approaches which may be employed to address the potential impacts to the usage of the site by bats identified in this report. This is an overview of the mitigation to be applied. Full details are provided within the mitigation strategy. Further details are presented within the bat mitigation strategy document (ES Appendix 7.18) and within Chapter 7: Biodiversity. Overall, impacts to bats within the site are largely addressed through avoidance within the design of the project.

5.2 Design Mitigation

Areas with high activity likely to support foraging bats

5.2.1 Within the masterplan, the following measures are being employed to safeguard foraging bats within the development.

- Retention and buffering of important foraging areas;
- Maintenance of known and likely commuting routes between foraging and roosting areas across the site;
- Creation of new habitats likely to be of high value for foraging bats.
- Creation of new valuable habitats such as ponds and Sustainable Drainage Systems (SuDs);
- Enhancement of existing habitats, such as creating heterogeneity in the East Stour River Corridor.

5.2.2 This is an overview of the mitigation to be applied. Full details are provided within the mitigation strategy.

Areas with high activity likely to support commuting bats

5.2.3 This information will allow the impact to bats resulting from the proposed development to be minimised at the masterplanning stage. The approach to this is likely to include:

- Maintenance of known and likely commuting routes between foraging and roosting areas across the site;
- Identification of commuting routes and enhancement of these corridors, including landscaping and maintenance of low light levels;
- Creation of new commuting routes between areas known to be of value for bats; and
- Creation of new “dark corridors” suitable for commuting between areas known to be of value for bats

5.2.4 This is an overview of the mitigation to be applied. Full details are provided within the mitigation strategy.

Areas with high activity likely to be within proximity to roosting bats

5.2.5 This information will allow the impact to bats resulting from the proposed development to be minimised at the masterplanning stage. The approach to this is likely to include:

- Retention of on-site roosts where possible;
- Minimisation of impacts to offsite roosts, through pollution, light spill, recreational impacts etc.

- Installation of new roosting opportunities including bat houses/barns and tree/structure mounted boxes;
- Retention and enhancement of connectivity between known / likely roosting sites and foraging habitats.

5.3 Additional Mitigation

5.3.1 During the build out of the development, the following will be required to ensure that impacts to bats are identified and can be adequately mitigated.

Construction mitigation

General

5.3.2 During the construction phase of the development, a range of measures will need to be implemented to ensure that impacts to bats are minimised. These measures would be specified within a Code of Construction Practice (CoCP) and would include (but not be limited to)

- Prescriptions for the provision of tool box talks for on-site contractors and staff, informing them of the legal protection afforded to bats;
- Prescriptions for site lighting to minimise the impacts and disturbance to bats (duration of works and construction lighting specifications);
- Buffers and offsets from sensitive areas for bats, to be fenced and protected appropriately.
- Appropriate measures are put in place to control dust and other emissions that could affect air quality.
- Site compounds, storage facilities and staff facilities are suitably bunded and located in places that would not have an adverse effect on the environment; in particular, the CoCP would ensure that retained trees are protected.
- In advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (woodlands, mature trees and hedgerows) and their associated buffer zones to ensure that they are not subject to accidental damage (to be determined on a phase by phase basis).
- Haul routes, storage compounds and staff facilities would be located away from retained habitats to minimise disturbance to the species they support.
- An Ecological Clerk of Works is in place to oversee site clearance, in particular any works that have the potential to disturb notable receptors. They would also ensure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred.
- The Ecological Clerk of Works would ensure that hedgerow translocation is undertaken in accordance with an agreed method statement. They would also ensure that the retained and translocated hedgerows are monitored to ensure that they are managed appropriately.

5.3.3 An ecological clerk of works would be employed to ensure that the ecological protection measures outlined in the CoCP are adhered to. They would also undertake regular monitoring to ensure that the protection measures remain in place for the time that they are required.

5.3.4 The Ecological Clerk of Works would report to the Site Manager and/or Environmental Clerk of Works to ensure that remedial actions are undertaken in a timely manner.

Roost mitigation and licensing

- 5.3.5 During demolition and tree removal on the site, there will be a need to safeguard roosting bats within structures and trees to be removed. This will need to be informed by up-to-date roost surveys, conducted at Tier 2 and 3 of the planning application. Disturbance or removal of any roosts is likely to require a licence from the statutory Authority (Natural England) and may specify:
- Dedicated mitigation;
 - Specific timings for works;
 - Displacement and exclusion of bats from structures;
 - Supervision by a licensed ecologist of demolition works.
 - Suitable alternative roosting provision will also be likely to be required, which may include bat barns and houses and / or bat boxes.
- 5.3.6 Details of derogation licences that may be required are specified within Chapter 7: Biodiversity of the ES.

Operational Mitigation

Safeguarding habitats

- 5.3.7 In order to minimise the potential for operational impacts to the bat populations within the site, measures will be implemented to minimise these impacts. These are likely to include:
- Installation of new roosting opportunities including bat houses/barns and tree/structure mounted boxes (both as an enhancement within the new development and as mitigation for roost loss, where appropriate) will be conducted. This is outlined within the Bat Mitigation Strategy (ES Appendix 7.18) but will be specified in detail within the detailed planning for each zone / phase of the development.
 - Implementation of a suitable lighting strategy, ensuring that dark corridors and areas important for foraging bats are kept dark; and
 - Features being installed to limit access by humans in areas where disturbance may adversely impact bats. This could include fences or carefully deployed SuDS features.

Maintenance and monitoring

- 5.3.8 Maintenance and monitoring will be required of any retained or created habitats. An outline of the desired outcomes for the monitoring and maintenance is provided within a site Biodiversity Action Plan - BAP (ES Appendix 7.20). As each phase parcel is brought forward for development, detailed strategies will be required for creation, management and maintenance of the habitats created will be required (this is beyond the remit of this document).
- 5.3.9 A broad outline of the locations of proposed habitat creation is provided within the mitigation strategies (ES Appendix 7.18).

Design parameters for built parcels

- 5.3.10 The value of the built parcels for bats will be maximised.
- 5.3.11 Native planting, including scrub and trees, will provide habitats and food sources for foraging and commuting bats. In addition, bat boxes may be strategically placed to target specific species, and a minimum number of bat boxes per a certain number of built structures and trees should be installed, to be determined separately.

5.3.12 Within the built parcels, parameters will be set (dependent upon the proposed density of the parcels buildings) for the GI which will be of value for bats. This will include:

- Parameters for amounts of green roofs within built parcels;
- Parameters for the number of trees and street trees within built parcels;
- A dedicated lighting strategy will be required to minimise light spill; and
- Parameters for the number of additional bat roosts.

5.4 Further Survey Work

5.4.1 This survey, when combined with the other bat surveys referred to within this document, are considered sufficient to inform the masterplan design (at Tier 1) and provide sufficient baseline information for the EIA. However, due to the details of the proposed development and the requirement for an extended build out, subsequent surveys are likely to be required to inform detailed design of the development at Tier 2 and 3. These surveys will inform detailed planning and construction mitigation and avoidance following the grant of outline permission for Otterpool Park. This section of the report outlines the survey work likely to be required as the development progresses. The following surveys are likely to be required during the buildout:

- Further 'preliminary roost assessment' surveys of structures (PRA), as access to previously inaccessible areas is obtained;
- Further, and more detailed PRA and subsequent emergence / re-entry surveys to identify roosts to safeguard individual roosts (of structures to be removed, once this is known). These should be phased to be conducted as each phase proceeds to planning and be designed to ensure that sufficient data can be collected to allow a licence to be obtained (determined by the current best practice and licence guidelines at the time of the development);
- Assessment of the roosting potential of trees, especially those identified within these surveys as likely to support bat roosts; once the details of tree impacts and removal is known. These assessments are likely to be followed by climbed tree inspection or emergence surveys, where trees are to be removed. These should be phased as each parcel proceeds to planning.
- The assessments above are likely to prompt the requirement for emergence / re-entry surveys to be completed on trees within the development area.
- Throughout the development buildout and subsequent to buildout completion, monitoring of the bat usage of the site will need to be conducted, to determine any significant change in the usage of the site by the recorded assemblage of bats.

6 Conclusions

6.1.1 The static detector surveys conducted in 2017 and 2021 revealed the following information:

- The site is not of value to Annex II bat species, with a single barbastelle call recorded over 2017 and 2021 in all survey types;
- Overall, the site is likely to have a maximum of a 'medium - high' activity level when compared to similar sites;
- The assemblage of bats utilising the site is largely common, in line with the bat distribution in Kent, being largely formed of common and soprano pipistrelle bats, with a lower level of activity of rarer bats including Myotis bats and some 'big bats'.
- Long-eared bats were not possible to reliably record during the surveys (likely due to the low sound volume of their calls). The usage of the site by this species will be extrapolated from the transect surveys and a precautionary approach adopted.
- Intensively farmed areas and isolated hedgerows had notably lower bat pass rates. Areas located adjacent to woodlands, the East Stour River, tributaries of the East Stour River, within building complexes where roosts are known to be present and by the Folkestone Racecourse Lake supported the highest levels of bat activity.
- Areas adjacent to ancient woodlands and around the Folkestone Racecourse Lake were of the highest value to the 'rarer' bats (i.e. not common or soprano pipistrelles), particularly myotis bats.
- The potential location of bat roosts was inferred from the static data. This data was combined with the transect survey data and emergence / re-entry surveys

6.1.2 This information will allow the impact to bats resulting from the proposed development being minimised at the masterplanning stage. The approach to this is likely to include:

- Retention and buffering of important foraging areas;
- Maintenance of known and likely commuting routes between foraging and roosting areas across the site;
- Identification of commuting routes and enhancement of these corridors, including landscaping and maintenance of low light levels;
- Implementation of a dedicated lighting strategy to minimise light spill
- Creation of new habitats likely to be of high value for foraging bats.
- Creation of new commuting routes between areas known to be of value for bats;
- Creation of new dark corridors;
- Creation of new valuable habitats such as ponds and SuDs;
- Installation of new roosting opportunities including bat houses/barns and tree/structure mounted boxes;
- Enhancement of existing habitats, such as creating heterogeneity in the East Stour River Corridor.

6.1.3 The surveys conducted will inform detailed planning and construction mitigation and avoidance. This section of the report outlines the survey work likely to be required as the development progresses. The following surveys are likely to be required during the buildout:

- Further 'preliminary roost assessment' (PRA) surveys of structures, as access to previously inaccessible areas is obtained;

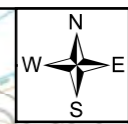
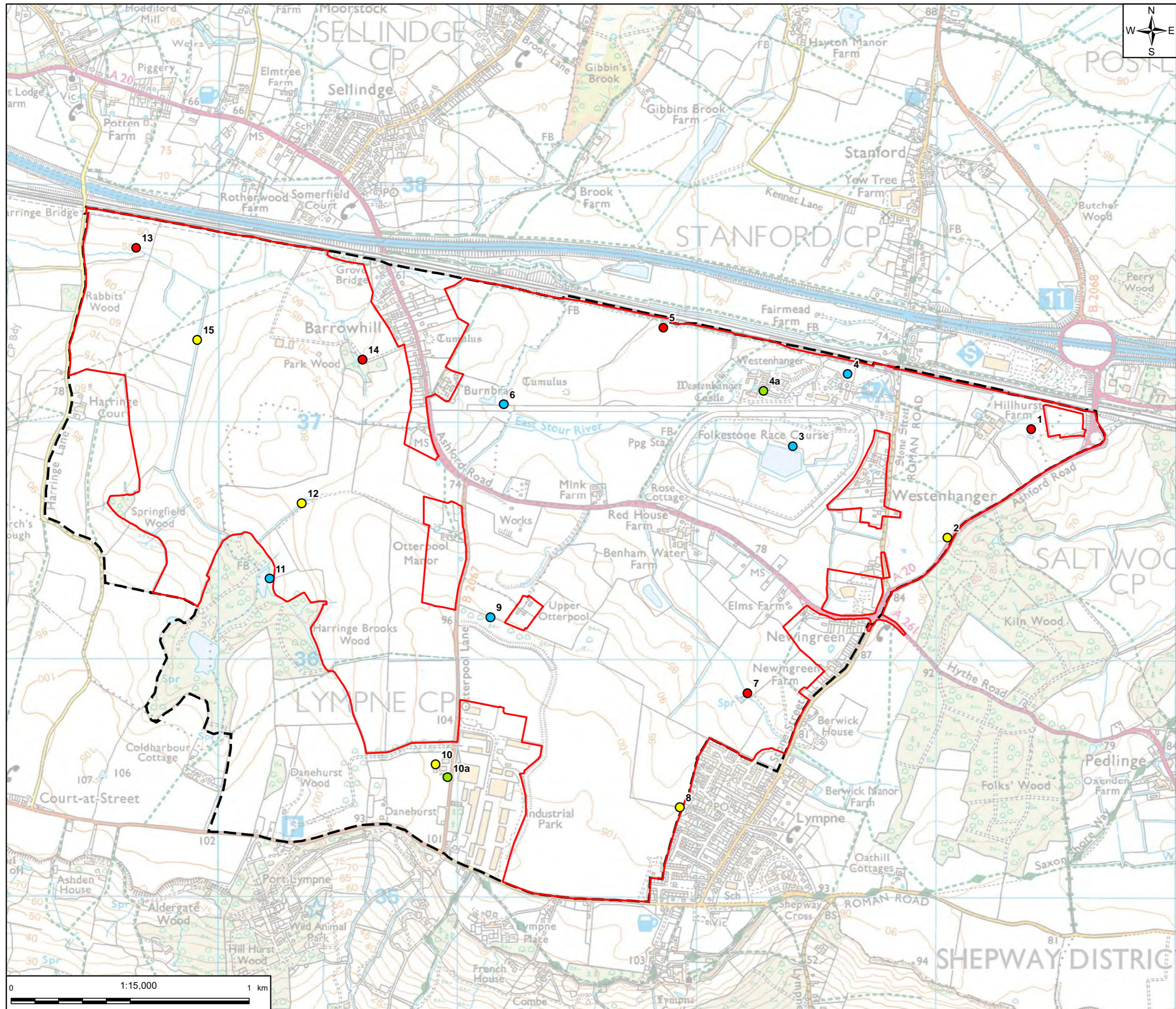
- Further, and more detailed PRA and subsequent emergence / re-entry surveys (of structures to be removed, once this is known) to identify roosts to safeguard populations. These should be phased to be conducted as each phase proceeds to planning and be designed to ensure that sufficient data can be collected to allow a licence to be obtained (determined by the current best practice and licence guidelines at the time of the development);
- Assessment of the roosting potential of trees, especially those identified within these surveys as likely to support bat roosts; once the details of tree impacts and removal is known. These should be phased as each parcel proceeds to planning.
- The assessments above are likely to prompt the requirement for emergence / re-entry surveys to be completed on trees within the development area.
- Throughout the development buildout and subsequent to buildout completion, monitoring of the bat usage of the site will need to be conducted, to determine any significant change in the usage of the site by the recorded assemblage of bats.

7 References

Ref	Reference Description
Ref 1	BCT (Online accessed August 2018) Bat Conservation Trust Bat hibernation survey data; Bat Conservation Trust Distribution Atlas of Bats in Britain and Ireland (1980-1999): data spreadsheet; Biological Records Centre Mammals Database; Natural England Batsites inventory for Britain; Natural England from JNCC Online (http://jncc.defra.gov.uk/publications/JNCC312/species.asp?FeatureIntCode=S1308)
Ref 2	BCT (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
Ref 3	BCT (2011) Bechsteins Bat Survey, Final Report, September 2007 – September 2011, Bat conservation Trust, http://www.bats.org.uk/data/files/publications/Bechsteins_bat_survey_final_report.pdf
Ref 4	BCT (Online, accessed August 2018) Bat Conservation Trust Bat hibernation survey data; Bat Conservation Trust Distribution Atlas of Bats in Britain and Ireland (1980-1999): data spreadsheet; Biological Records Centre Mammals Database; Natural England Bat sites inventory for Britain; Natural England from JNCC Online (http://jncc.defra.gov.uk/publications/JNCC312/species.asp?FeatureIntCode=S1323)
Ref 5	BCT (Online, accessed December 2018) Threats to Bats https://www.bats.org.uk/about-bats/threats-to-bats
Ref 6	BSBI, 2007. Botanical Society for the British Isles. BSBI 2007 List. Available at: http://www.bsbi.org.uk/resources.html [Accessed on 3rd February 2016].
Ref 7	BSI, 2013. Biodiversity - Code of Practice for Planning and Development BS42020:2013. BSI Standards Limited: London. CIEEM, 2016. Guidelines for Ecological Impact Assessment in the UK and Ireland.
Ref 8	Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London
Ref 9	CSa Environmental Planning (2013) Ecological Appraisal – Lymgne, Former Lymgne Airfield – Proposed Housing Development;
Ref 10	Ecobat website (2018) http://ecobat.org.uk/overview accessed December 2018;
Ref 11	Ecology Solutions Ltd (2014) Ecological Assessment, Land at Sellindge., Kent;
Ref 12	Ecotricity (2012) Harringe Brooks Wind Park Environmental Statement;
Ref 13	Highways England (2016) M20 Lorry Area Stanford West Interim Environmental Assessment Report;
Ref 14	HMSO (2018) A Green Future: Our 25 Year Plan to Improve the Environment
Ref 15	HMSO (2021) National Planning Policy Framework
Ref 16	Institution of Lighting Professionals, 2009. Bats and Lighting in the UK. Institution of Lighting Professionals. Available at: https://www.theilp.org.uk/documents/bats-and-lighting-in-the-uk/ [Accessed on 26th March 2014.
Ref 17	JNCC, 2015. UK BAP Priority Species and Habitats. Available at: http://jncc.defra.gov.uk/page-5705 [Accessed on 3rd February 2016].
Ref 18	Kent Bat Group (accesses online December 2018) UK Mammals: Species Status and Population Trends http://www.kentbatgroup.org.uk/bats-in-kent/

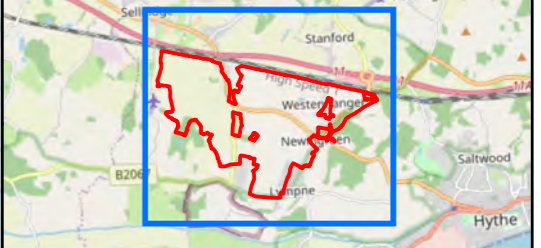
Ref	Reference Description
Ref 20	Natural Environment and Rural Communities (NERC) Act 2006: Available at: http://www.legislation.gov.uk/ukpga/ [Accessed on 3rd February 2016].
Ref 21	Peter Brett Associates LLP (2015) Link Park Phase 2 Supplementary Environmental Statement Non Technical Summary;
Ref 22	Reason, P, Newson, S Jones K (2016). Recommendations for using automatic bat identification software with full spectrum recordings.
Ref 23	Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester. Collins, J. (ed.), 2016.
Ref 24	The Habitats Directive. Available http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm . [Accessed on 3 rd February 2016].
Ref 25	Waterman Energy, Environment & Design Limited (2010) Ecological Appraisal, Folkestone Racecourse, Kent;
Ref 26	Wildlife and Countryside Act 1981 (as amended). Available at: http://www.legislation.gov.uk/ukpga/1981/69 [Accessed on 3rd February 2016].
Ref 27	Wray S, Wells D, Long E, Mitchell-Jones T, December 2010. Valuing Bats in Ecological Impact Assessment, IEEM In-Practice p 23-25
Ref 28	WYG (2016) Shepway District Council, Folkestone Kent, Extended Phase 1 Habitat Survey Ecology Report

Figure 1: Bat Static Detector Surveys – Detector positions 2017



- Legend**
- Outline Planning Application Boundary
 - Framework Masterplan Boundary
 - Rotation 1
 - Rotation 2
 - Rotation 3
 - Additional October Deployment Locations

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
02	07-03-2022	FOR INFORMATION	PS	BM	MG
01	28-12-2018	FOR INFORMATION	EP	BM	MG

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

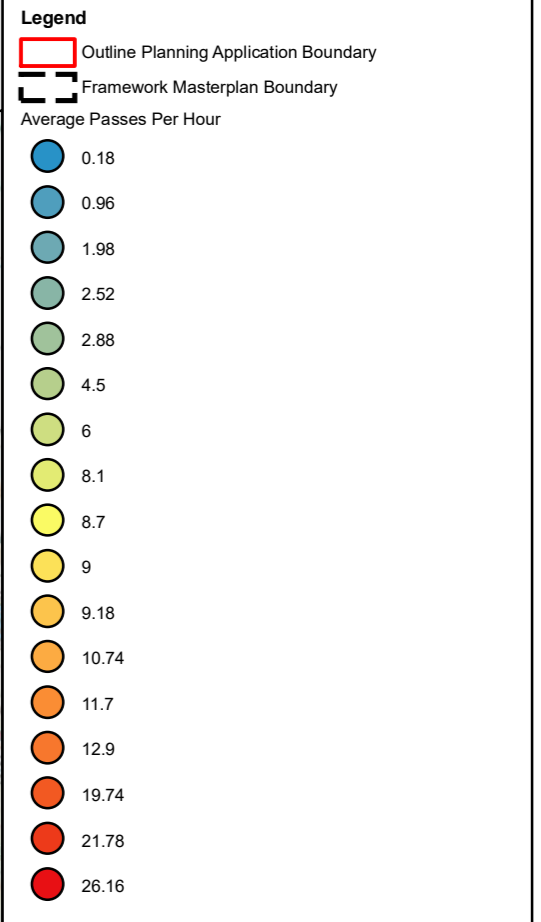
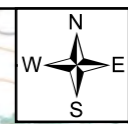
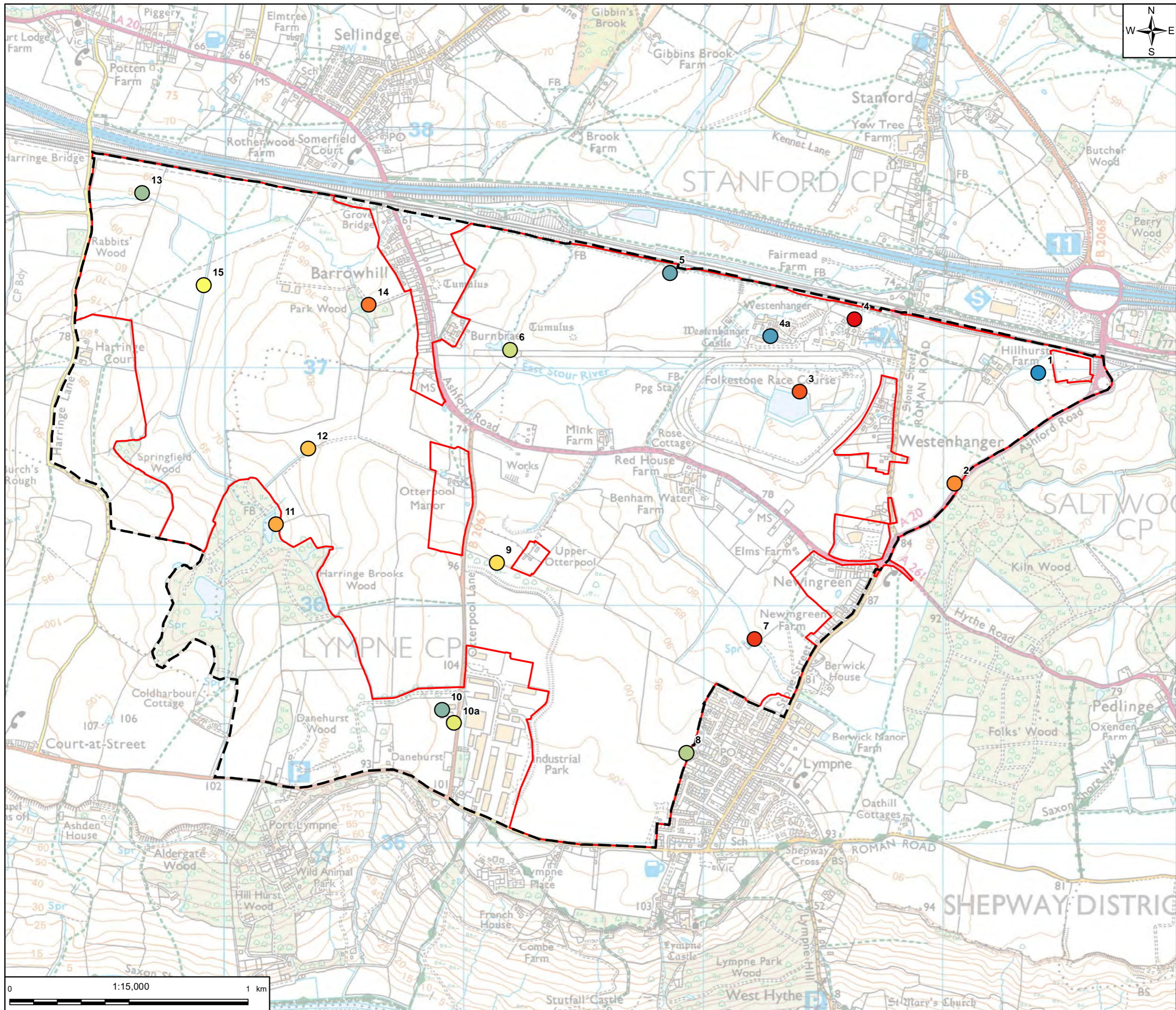

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 1
Bat Static Detector Deployment Locations
2017

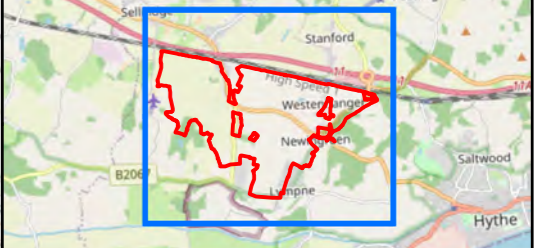
0 1:15,000 1 km

scale	original size	datum	grid
1:15,000	A3	Sx	BNG

Figure 2: Bat Static Detector Surveys – Normalised activity levels between bat static detector positions 2017



Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
02	07-03-2022	FOR INFORMATION	PS	BM	MG
01	28-12-2018	FOR INFORMATION	EP	BM	MG

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 2
 Normalised Activity Levels
 Between Static Detector Positions
 2017

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

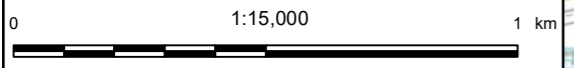
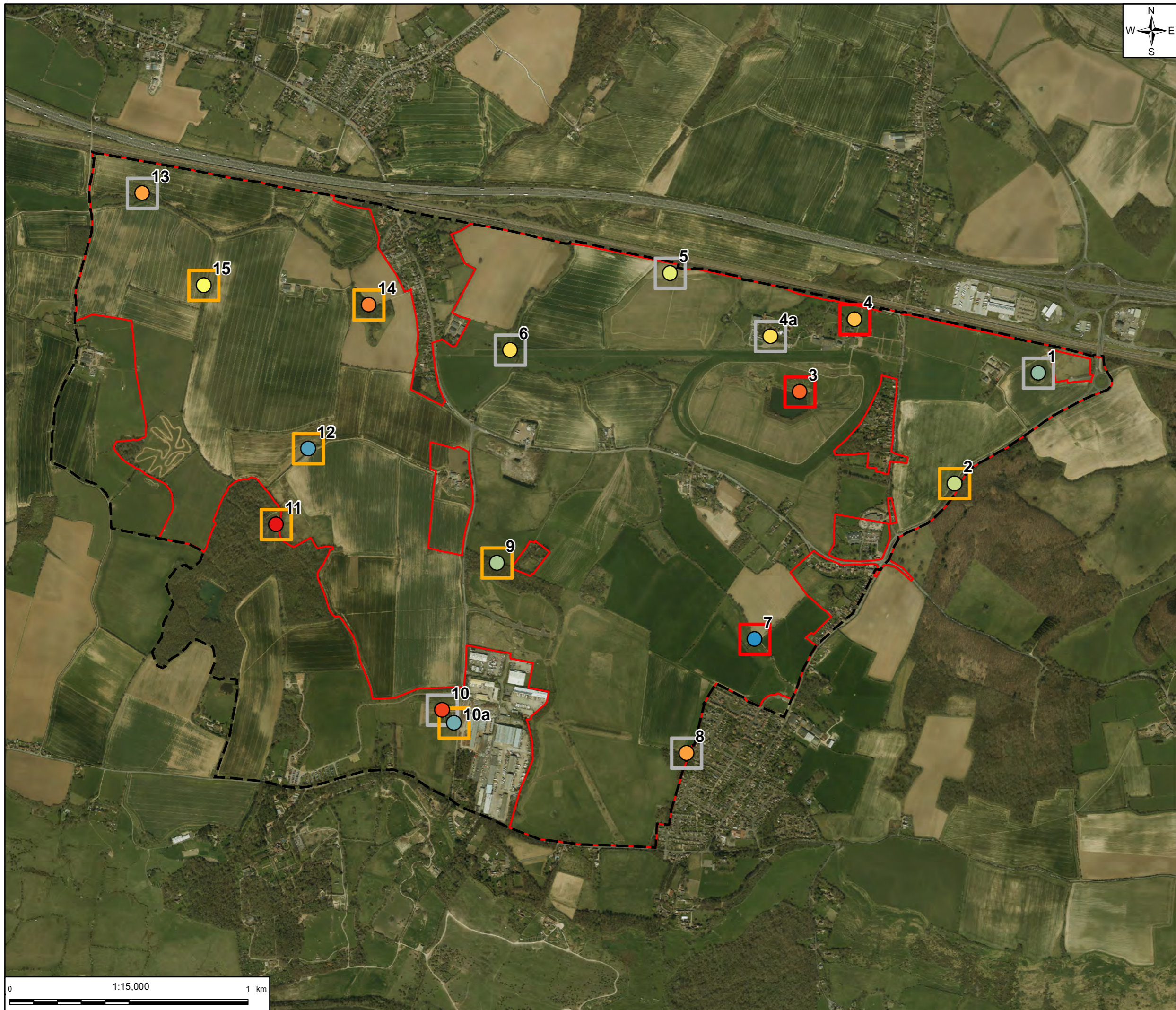


Figure 3: Bat Static Detector Surveys – Bat assemblage value (percentage of passes of ‘rarer’ species) 2017



Legend

- Outline Planning Application Boundary

Overall activity (qualitative Arcadis assessment)

- High Activity (greater than 15 passes per hour)
- Medium Activity (greater than 7.5 to 15 passes per hour)
- Low Activity (7.5 passes per hour average or less)

Percentage of Bat Calls of "Rarer" Species

- 0.6
- 1.7
- 1.8
- 2.2
- 2.5
- 2.9
- 3.3
- 3.7
- 4.6
- 4.8
- 8.2
- 10.8
- 15.3
- 18.8
- 25

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
02	07-03-2022	FOR INFORMATION	PS	BM	MG
01	28-12-2018	FOR INFORMATION	EP	BM	MG

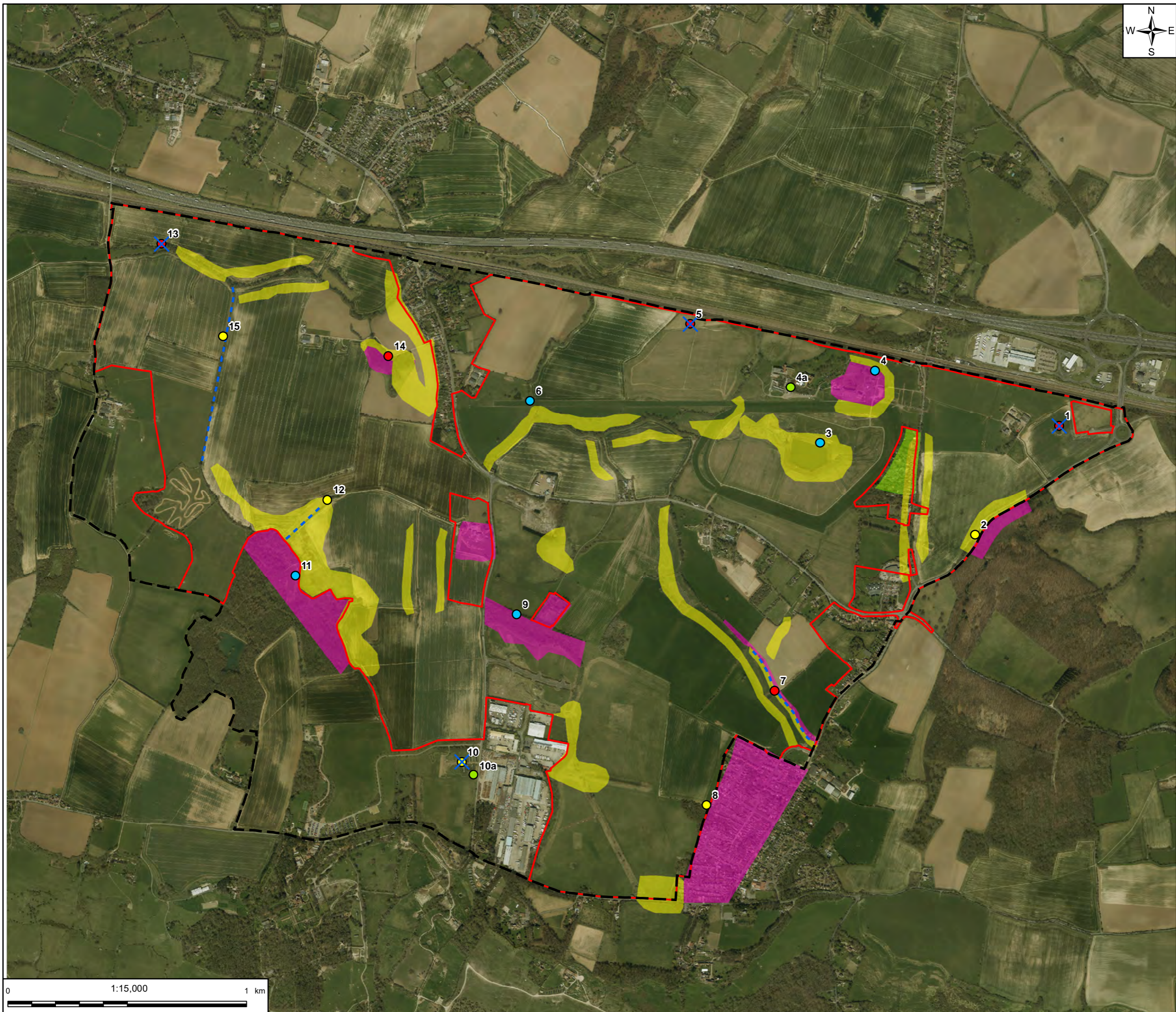
ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 3
Bat Static Detector Surveys -
Percentage of Bat Calls of 'Rarer' Species
2017

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

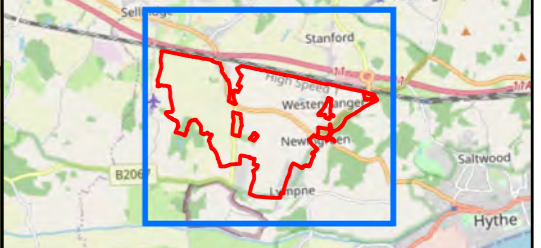
Figure 4: Bat static Detector Surveys – Summary of results inferred from static detector positions 2017



Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Low Bat Activity Position
- Rotation 1
- Rotation 2
- Rotation 3
- Additional October
- Commuting Route
- Important Foraging Area
- Likely Roost Location
- Potential Roost Location

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
02	07-03-2022	FOR INFORMATION	PS	BM	MG
01	28-12-2018	FOR INFORMATION	EP	BM	MG

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 4
Summary of Results Inferred
from Static Detector Bat Surveys
2017

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

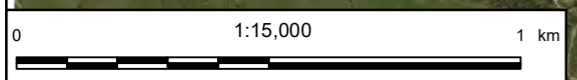
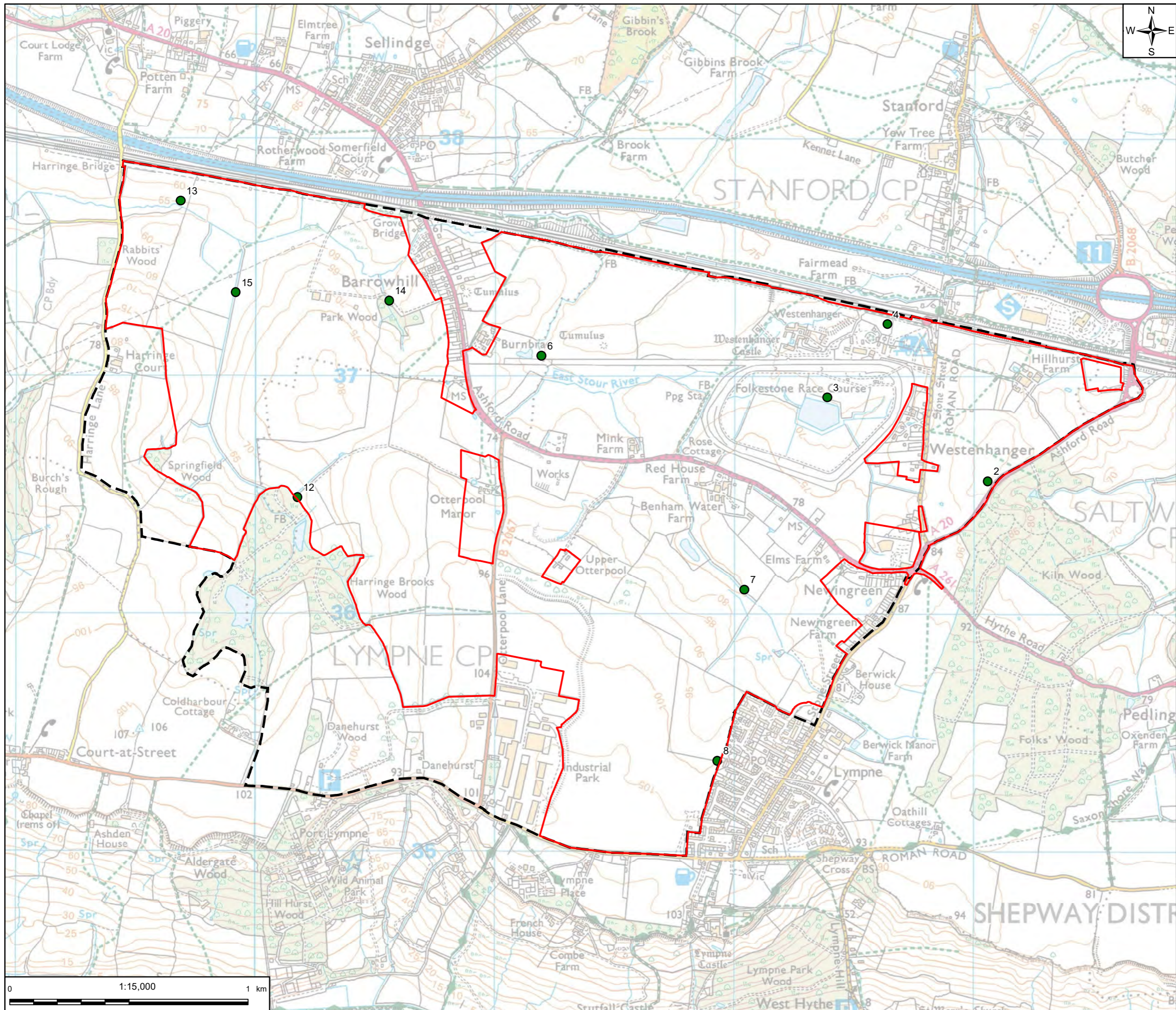
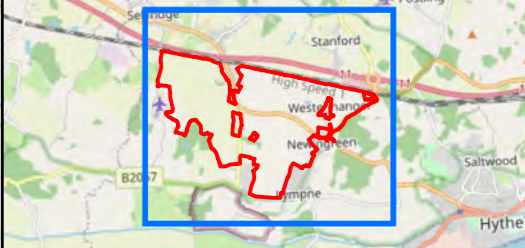


Figure 5: Bat Static Detector Surveys – Detector positions 2021



- Legend**
- Outline Planning Application Boundary
 - Framework Masterplan Boundary
 - Bat Detector Locations

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673

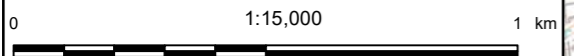


REV	Date	Description	Drawn	Check	Approv
01	01/12/2021	FOR INFORMATION	KF	MG	BM

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

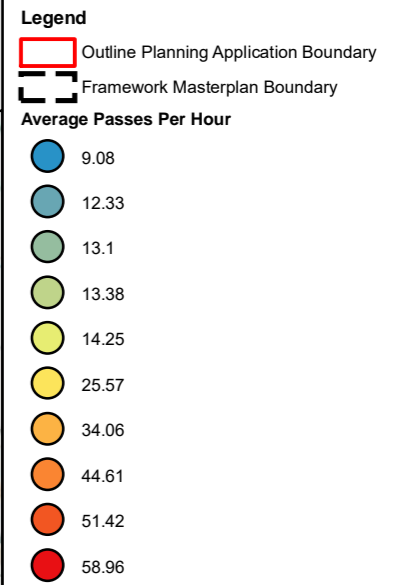
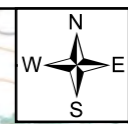
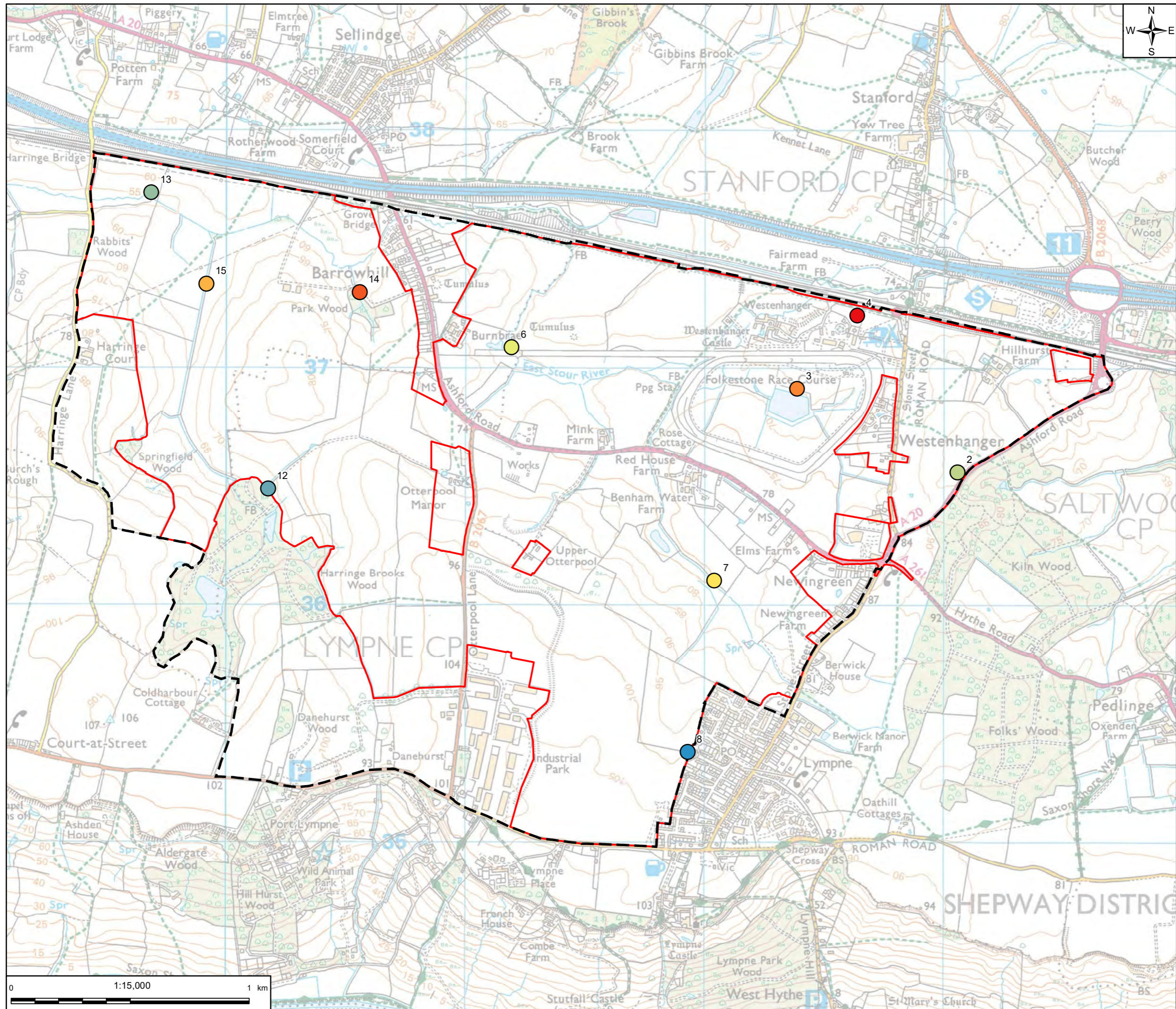

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 5
Bat Static Detector Deployment Locations
2021

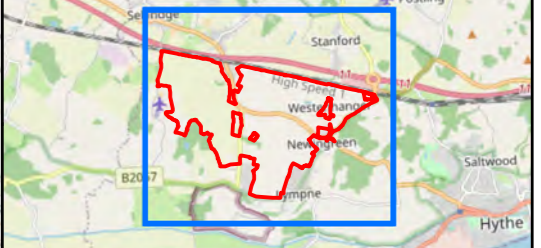


scale	original size	datum	grid
1:15,000	A3	Sx	BNG

Figure 6: Bat Static Detector Surveys – Normalised activity levels between bat static detector positions 2021



Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
01	03/12/2021	FOR INFORMATION	KF	MG	BM

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 6
Normalised Activity Levels
Between Static Detector Positions
2021

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

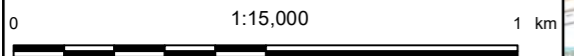
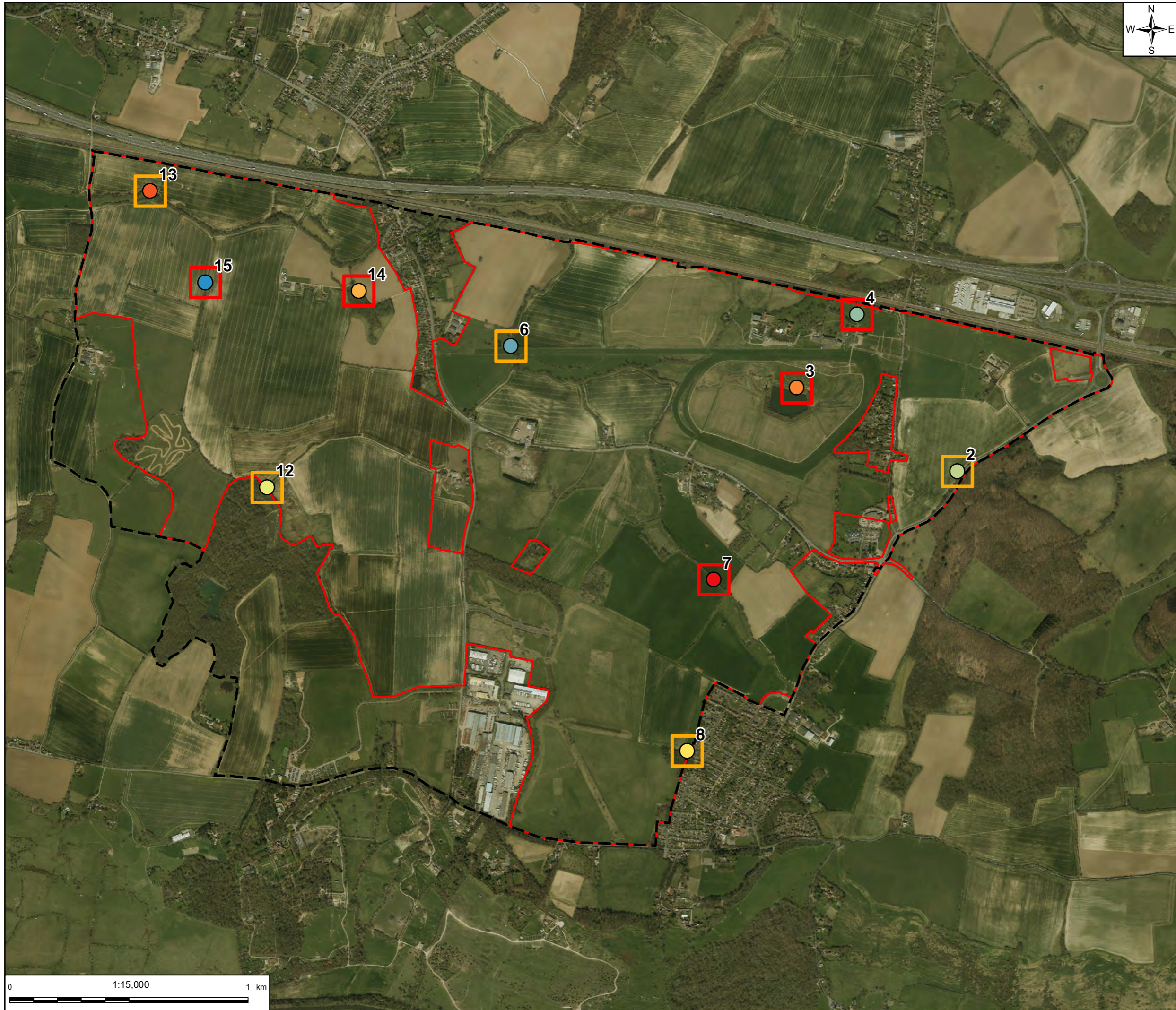


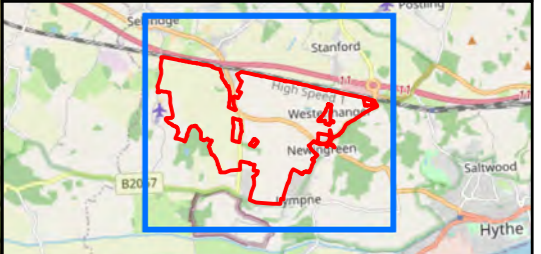
Figure 7: Bat Static Detector Surveys – Bat assemblage value (percentage of passes of ‘rarer’ species) 2021



Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Overall activity (qualitative Arcadis assessment)**
- High (greater than 15 passes per hour)
- Medium (greater than 7.5 to 15 passes per hour)
- Percentage of Bat Calls of "Rarer" Species**
- 3.2
- 5.42
- 6.43
- 8.72
- 9.08
- 10.43
- 17.64
- 18.78
- 27.89
- 34.01

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
01	03/12/2021	FOR INFORMATION	KF	MG	BM

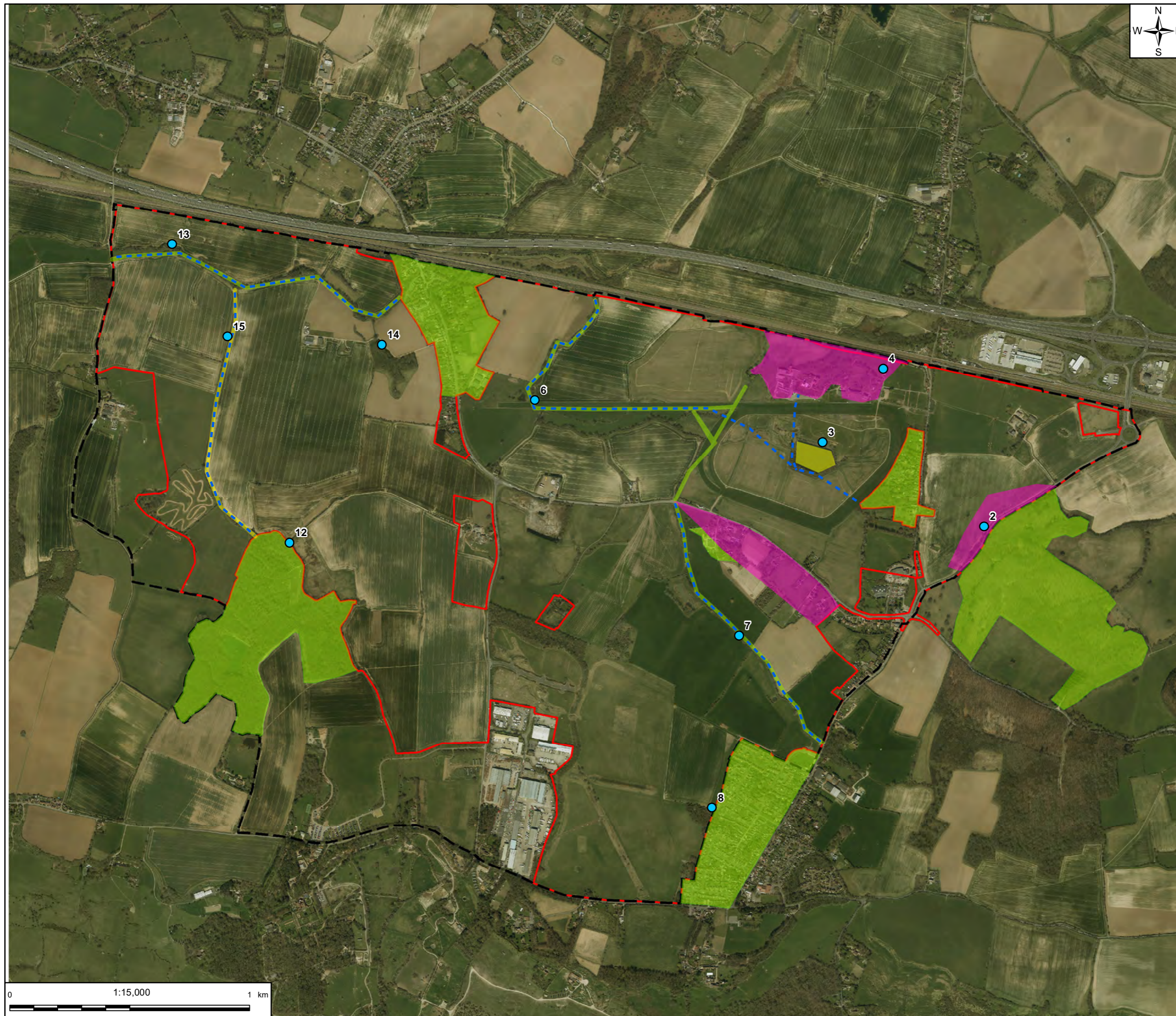
ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 7
Bat Static Detector Surveys -
Percentage of Bat Calls of 'Rarer' Species
2021

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

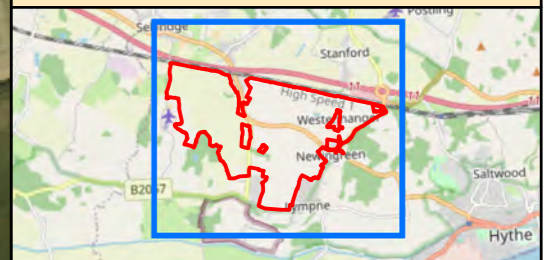
Figure 8: Bat static Detector Surveys – Summary of results inferred from static detector positions 2021



Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Bat Detector Locations
- Commuting Route
- Important Foraging
- Likely or Confirmed Roost Location
- Potential Roost Location

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673

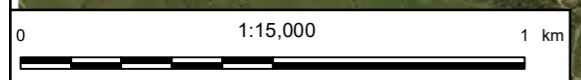


REV	Date	Description	Drawn	Check	Approv
01	03/12/2021	FOR INFORMATION	KF	MG	BM

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

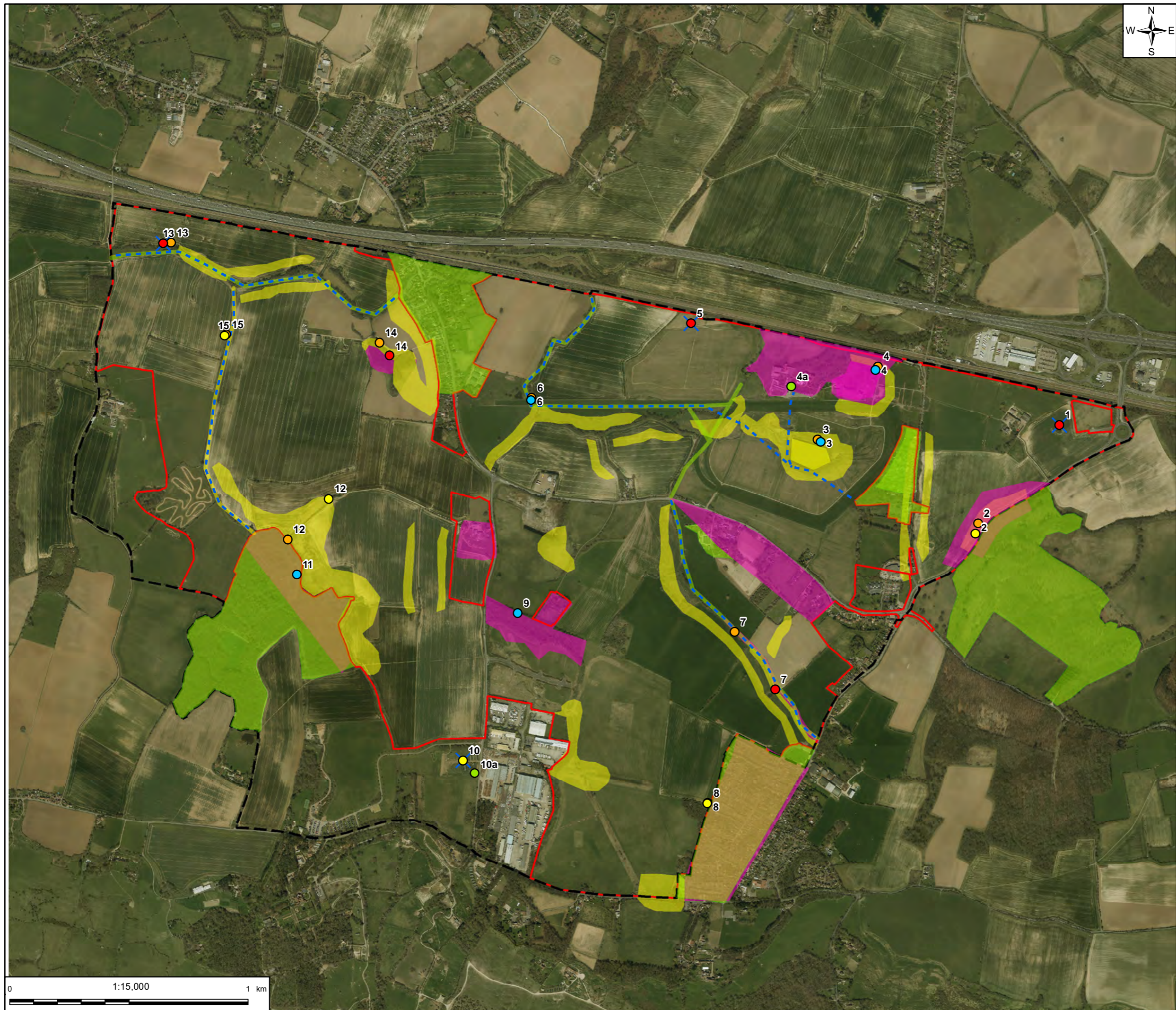

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 8
Summary of Results Inferred
from Static Detector Bat Surveys
2021



scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

Figure 9: Bat static Detector Surveys – Summary of results inferred from static detector positions 2017 and 2021



Legend

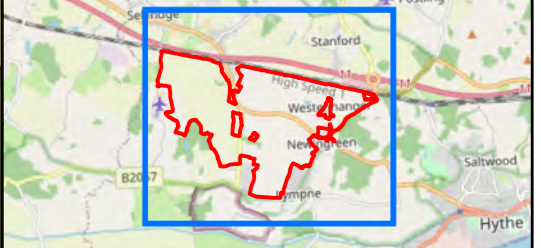
- Outline Planning Application Boundary
- Framework Masterplan Boundary
- X Low Bat Acitivity

Bat Detector Locations 2017

- Rotation 1
- Rotation 2
- Rotation 3
- Additional October
- Bat Detector Locations 2021

- Commuting Route
- Important Foraging
- Likely or Confirmed Roost Location
- Potential Roost Location

Layer Credits: Contains Ordnance Survey data © Crown copyright 2021 OS 0100031673



REV	Date	Description	Drawn	Check	Approv
01	03/12/2021	FOR INFORMATION	KF	MG	BM

ARCADIS
 80Fen
 80 Fenchurch Street
 London
 EC3M 4BY

OTTERPOOL PARK
 COUNTRYSIDE · CONNECTED · CREATIVE

Figure 9
 Summary of all Results from
 2017 and 2021 Surveys

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

APPENDIX A: Bat Passes Raw Data 2017

Table 33 below shows the total number of passes detected by the SonoChiro software within each survey month for each position, prior to data handling and removal of noise.

Table 33: Number of passes recorded by each detector in each deployment (prior to data handling)

Count of File	Month (number of passes recorded)							Total Passes
Row Labels	April	May	June	July	August	September	October	Total
1	0	28	10	10	1	124	N/A	173
2	77	2164	503	368	1332	627	N/A	5071
3	1769	1605	2944	N/A	47	893	N/A	7258
4	197	1034	2559	1198	1684	3740	N/A	10412
5	11	193	N/A	184	322*	597*	N/A	985
6	662	613	278	373	491	973	N/A	3390
7	59	2804	2263	605	520	911	N/A	7162
8	2	36	636	190	435	0*	N/A	1299
9	162	216	919	599	718	1096	N/A	3710
10	21	63	403	327	391	1*	N/A	1205
11	18	173	103	2548	809	1232	N/A	4883
12	1487	626	509	122	390	1142	N/A	4276
13	170	215	413	20	3*	3	N/A	824
14	423	686	1453	1961	787	964	N/A	6274
15	90	483	919	0*	491	1114	N/A	3097
10A	N/A	N/A	N/A	N/A	N/A	N/A	637	637
4A	N/A	N/A	N/A	N/A	N/A	N/A	121	121
Grand Total	5148	10939	13912	8505	8099	13416	758	60777

* When analysed no files were recorded or all were 'noise' or files to be removed from the analysis. Where this was the case, and these results were not in line with the other findings for the deployment location, these results were omitted to prevent false reduction in average activity levels. Further details are presented within the limitations section.

APPENDIX B: Bat Passes Raw Data 2021

Table 34: 2021 Statics raw data

Month	Location	<i>Barbastella barbastellu</i>	<i>Eptesicus serotinus</i>	<i>Myotis spp.</i>	<i>Nyctalus leisleri</i>	<i>Nyctalus noctula</i>	<i>Pipistrellus nathusii</i>	<i>Pipistrellus pipistrellus</i>	<i>Pipistrellus pygmaeus</i>	<i>Pipistrellus spp.</i>	<i>Plecotus auritus</i>
April	Location 12			2				15	2		3
April	Location 13			16				256	158		
April	Location 14		7					1	12		
April	Location 2			12				44	5		
April	Location 3			149	5	5		154	51		6
April	Location 4						2	108		1	3
April	Location 6	1						23			1
April	Location 7							1			
May	Location 12			4			2	573	27	1	18
May	Location 13			27			1	369	31	3	2
May	Location 14		3	17			1	646	235	5	1
May	Location 15			17			6	1,281	2,076	1	8
May	Location 2			3	1			245	48		
May	Location 3			42	1	1		2,264	26		8
May	Location 4		6		2	173	2	296	2		1
May	Location 6			2	1			1,777	11		2
May	Location 7			40			2	875	76	10	44
May	Location 8				3			9			
June	Location 12			11	1	2		198	131		19
June	Location 13			5		46		81	18		
June	Location 14		3	3		610	2	1,041	116		10
June	Location 15			9		24	1	752	82		11

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Month	Location	<i>Barbastella barbastellu</i>	<i>Eptesicus serotinus</i>	<i>Myotis spp.</i>	<i>Nyctalus leisleri</i>	<i>Nyctalus noctula</i>	<i>Pipistrellus nathusii</i>	<i>Pipistrellus pipistrellus</i>	<i>Pipistrellus pygmaeus</i>	<i>Pipistrellus spp.</i>	<i>Plecotus auritus</i>
June	Location 2		1	27				390	70	1	6
June	Location 3		1	83			3	351	1,060		1
June	Location 4		11	4	1	220	1	1,842	25		4
June	Location 6		1	11			11	113	3		2
June	Location 7		7	10		26	2	368	253		37
June	Location 8			1				465	77		1
July	Location 12		1	2	1	5		94	187		7
July	Location 13			10	2	79		82	4		
July	Location 14		6	74		845	8	2,691	842		
July	Location 15		3	8		52	1	770	77		2
July	Location 2		3	1	1	2		300	19		
July	Location 3		2	16		7	1	476	640		
July	Location 4					13	3	4,794	5		
July	Location 6		2	11	1	5	4	293	34		3
July	Location 7		4	7	1	85	3	513	189		7
July	Location 8		2	2		14		260	65		3
August	Location 12			45			1	601	374		21
August	Location 13			65		16		49	1		
August	Location 14			20	2	22		2,041	377		21
August	Location 15							923	134		
August	Location 2		57	1	4	31		1,030	24		
August	Location 3		1	229		18		440	288		
August	Location 4		21	7	1	10		2,438	34		
August	Location 6		1	2	1	2		198	2		5

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Month	Location	<i>Barbastella barbastellu</i>	<i>Eptesicus serotinus</i>	<i>Myotis spp.</i>	<i>Nyctalus leisleri</i>	<i>Nyctalus noctula</i>	<i>Pipistrellus nathusii</i>	<i>Pipistrellus pipistrellus</i>	<i>Pipistrellus pygmaeus</i>	<i>Pipistrellus spp.</i>	<i>Plecotus auritus</i>
August	Location 7							110	31		19
August	Location 8							110	55		12
September	Location 12	1	22	8	19	3	117	104			44
September	Location 13	129	33	7	130	2	588	38			79
September	Location 14		13	1	27	2	153	60			63
September	Location 15		40		2	3	241	106			26
September	Location 2	43	14		18		252	22			9
September	Location 3	6	1,093		255	56	1,670	1,334			35
September	Location 4	28	110		25	6	3,010	199			223
September	Location 6	1	21		10	7	274	48			51
September	Location 7	25	15	107	965	25	338	50			19
September	Location 8	29	26	2	27	4	140	38			16

APPENDIX C: Recording dates of static data analysed 2021

Table 35: Recording dates of static detector survey placements analysed

Position	Data Analysed for each month					
	April	May	June	July	August	September
2	16.04.2021 - 20.04.2021	21.05.2021 – 25.05.2021	24.06.2021- 28.06.2021	01.07.2021 – 05.07.2021	16.08.2021 – 20.08.2021	03.09.2021 – 07.09.2021
3	26.04.2021 – 30.04.2021	21.05.2021 – 25.05.2021	24.06.2021 – 28.06.2021	01.07.2021 – 05.07.2021	16.08.2021 – 20.08.2021	03.09.2021- 07.09.2021
4	26.04.2021 – 30.04.2021	26.05.2021 – 30.05.2021	10.06.2021 – 14.06.2021	12.07.2021 – 16.07.2021	12.08.2021 – 16.08.2021	08.09.2021 – 12.09.2021
6	20.04.2021 – 25.04.2021	26.05.2021 – 30.05.2021	10.06.2021 – 14.06.2021	12.07.2021 – 16.07.2021	12.08.2021 – 16.08.2021	08.09.2021 – 12.09.2021
7	20.04.2021 – 25.04.2021	26.05.2021 – 30.05.2021	10.06.2021 – 14.06.2021	12.07.2021 – 16.07.2021	12.08.2021 – 16.08.2021	08.09.2021 – 12.09.2021
8	No data	21.05.2021 – 25.05.2021	24.06.2021 – 28.06.2021	01.07.2021 – 05.07.2021	16.08.2021 – 20.08.2021	03.09.2021 – 07.09.2021
12	16.04.2021- 20.04.2021	21.05.2021 – 25.05.2021	10.06.2021 – 14.06.2021	12.07.2021 – 16.07.2021	12.08.2021 – 16.08.2021	08.09.2021 – 12.09.2021
13	26.04.2021 – 30.04.2021	25.05.2021 – 29.05.2021	24.06.2021 – 28.06.2021	01.07.2021 – 05.07.2021	16.08.2021 – 20.08.2021	03.09.2021 – 07.09.2021
14	22.04.2021 – 26.04.2021	25.05.2021 – 29.05.2021	24.06.2021 – 28.06.2021	01.07.2021 – 05.07.2021	16.08.2021 – 20.08.2021	03.09.2021 – 07.09.2021
15	No data	21.05.2021 – 25.05.2021	09.06.2021 – 13.06.2021	12.07.2021 – 16.07.2021	12.08.2021 – 16.08.2021	08.09.2021 – 12.09.2021

APPENDIX D Minutes of data recording analysed 2017

Table 36 Minutes of data recording analysed 2017

Position	Month (minutes of data recorded)							Total minutes	Minutes Utilised in Assessment
	April	May	June	July	August	September	October		
1	3145	2807	2576	2679	3200	3707	0	18114	18114
2	2990	2704	2554	2773	3330	3839	0	18190	18190
3	3232	2880	2610	0**	1828***	4874	0	15424	13596
4	3232	2880	2610	2628	3064	8464***	0	22878	14414
5	3145	2807	0**	2679	3200*	3707*	0	15538	12338
6	3232	2880	2610	2628	3064	4163	0	18577	18577
7	3145	2807	2576	2679	3200	3707	0	18114	18114
8	0***	2168	2554	2773	3330	3839*	0	17654	13815
9	3232	2880	2610	2628	3046	7779***	0	22175	14396
10	2990	2716	2554	2773	3330	3839*	0	18202	14363
11	3232	2880	2610	2628	3046	4874	0	19270	16224
12	2990	2704	2554	1656	3330	3839	0	17073	17073
13	3145	2807	2576	2679	3200*	3707	0	18114	18114
14	3145	2807	2576	2679	3200	3707	0	18114	18114
15	2990	2716	2554	2773*	3330	3839#	0	14363	11590
10A	0	0	0	0	0	0	4071	4071	4071
4A	0	0	0	0	0	0	4090	4090	4090
							Grand Total	283800 minutes	245193

* Static data collected but upon examination all files were noise or not attributable to a bat.

** Data corrupted on SD card and not recoverable

*** Partial loss of meta data - not possible to reduce to five nights of survey – all data was used and averaged for consistency.

**** Detector developed a fault after 3 nights of surveying.

***** Microphone removed from detector

APPENDIX E: Minutes of data recording analysed 2021

Table 37: Minutes of recording 2021

Night	Sunset	Sunrise	TOTAL Nights	Minutes of recording per night	Total minutes	Total Hours
16-Apr-21	19:53	05:57	2	666	1332	22.2
17-Apr-21	19:55	05:55	2	660	1320	22
18-Apr-21	19:57	05:53	2	654	1308	21.8
19-Apr-21	19:58	05:51	2	654	1308	21.8
20-Apr-21	20:00	05:49	4	648	2592	43.2
21-Apr-21	20:01	05:47	2	648	1296	21.6
22-Apr-21	20:03	05:45	3	642	1926	32.1
24-Apr-21	20:06	05:41	3	636	1908	31.8
25-Apr-21	20:08	05:39	3	636	1908	31.8
26-Apr-21	20:10	05:37	4	630	2520	42
27-Apr-21	20:11	05:35	4	624	2496	41.6
28-Apr-21	20:13	05:33	3	618	1854	30.9

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Night	Sunset	Sunrise	TOTAL Nights	Minutes of recording per night	Total minutes	Total Hours
29-Apr-21	20:15	05:31	3	618	1854	30.9
30-Apr-21	20:16	05:30	3	612	1836	30.6
21-May-21	20:48	04:57	5	546	2730	45.5
22-May-21	20:50	04:56	5	546	2730	45.5
23-May-21	20:51	04:55	5	546	2730	45.5
24-May-21	20:52	04:54	5	540	2700	45
25-May-21	20:54	04:53	7	540	3780	63
26-May-21	20:55	04:52	5	534	2670	44.5
27-May-21	20:56	04:51	5	534	2670	44.5
28-May-21	20:58	04:50	5	534	2670	44.5
29-May-21	20:59	04:49	5	528	2640	44
30-May-21	21:00	04:48	3	528	1584	26.4
09-Jun-21	21:09	04:42	1	510	510	8.5
10-Jun-21	21:10	04:42	5	510	2550	42.5

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Night	Sunset	Sunrise	TOTAL Nights	Minutes of recording per night	Total minutes	Total Hours
11-Jun-21	21:11	04:42	5	510	2550	42.5
12-Jun-21	21:12	04:42	5	510	2550	42.5
13-Jun-21	21:12	04:41	5	510	2550	42.5
14-Jun-21	21:11	04:40	4	510	2040	34
24-Jun-21	21:16	04:43	5	510	2550	42.5
25-Jun-21	21:16	04:43	5	510	2550	42.5
26-Jun-21	21:16	04:44	5	510	2550	42.5
27-Jun-21	21:16	04:44	5	510	2550	42.5
28-Jun-21	21:16	04:45	5	510	2550	42.5
01-Jul-21	21:15	04:47	5	510	2550	42.5
02-Jul-21	21:15	04:47	5	510	2550	42.5
03-Jul-21	21:14	04:48	5	516	2580	43
04-Jul-21	21:14	04:49	5	516	2580	43
05-Jul-21	21:13	04:50	5	516	2580	43

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Night	Sunset	Sunrise	TOTAL Nights	Minutes of recording per night	Total minutes	Total Hours
12-Jul-21	21:09	04:57	5	528	2640	44
13-Jul-21	21:08	04:58	5	528	2640	44
14-Jul-21	21:07	04:59	5	534	2670	44.5
15-Jul-21	21:06	05:00	5	534	2670	44.5
16-Jul-21	21:05	05:01	5	534	2670	44.5
12-Aug-21	20:25	05:40	5	618	3090	51.5
13-Aug-21	20:23	05:42	5	618	3090	51.5
14-Aug-21	20:21	05:44	5	624	3120	52
15-Aug-21	20:19	05:45	5	624	3120	52
16-Aug-21	20:17	05:47	10	630	6300	105
17-Aug-21	20:15	05:48	5	636	3180	53
18-Aug-21	20:13	05:50	5	636	3180	53
19-Aug-21	20:11	05:51	5	642	3210	53.5
20-Aug-21	20:09	05:53	5	642	3210	53.5

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Night	Sunset	Sunrise	TOTAL Nights	Minutes of recording per night	Total minutes	Total Hours
03-Sep-21	19:39	06:15	5	696	3480	58
04-Sep-21	19:37	06:16	5	702	3510	58.5
05-Sep-21	19:35	06:18	5	702	3510	58.5
06-Sep-21	19:33	06:20	5	708	3540	59
07-Sep-21	19:30	06:21	5	708	3540	59
08-Sep-21	19:28	06:23	5	714	3570	59.5
09-Sep-21	19:26	06:24	5	720	3600	60
10-Sep-21	19:24	06:26	5	720	3600	60
11-Sep-21	19:21	06:27	5	726	3630	60.5
12-Sep-21	19:19	06:29	5	732	3660	61

APPENDIX F: **First / Last Bat Raw Data 2017**

The tables below show the first and last bat recorded during each static deployment. When no bats were recorded on a deployment, these columns are removed to reduce the amount of data presented. Cells highlighted in red show when a bat was recorded less than one hour from sunset / sunrise.

Table 1: Position 1 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/17		25/04/17		26/04/17		27/04/17		28/04/17		29/04/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2: Position 1 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/17		16/05/17		17/05/17		18/05/17		19/05/17		20/05/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:17	01:48	22:33	03:18	23:58	02:15	N/A	N/A	22:00	N/A	N/A
Time before / after sunrise / sunset	N/A	00:40	03:16	01:54	01:45	03:18	02:47	N/A	N/A	01:17	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	00:51	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	02:53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3: Position 1 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/17		08/06/17		09/06/17		10/06/17		11/06/17		12/06/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:07	N/A	N/A	N/A	22:15	N/A	22:49	02:40	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:09	N/A	N/A	02:01	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:47	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:39	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 4: Position 1 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/17		13/07/17		14/07/17		15/07/17		16/07/17		17/07/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	04:10	N/A	N/A	N/A	N/A	N/A	02:30	N/A	04:15	N/A
Time before / after sunrise / sunset	N/A	N/A	00:46	N/A	N/A	N/A	N/A	N/A	02:30	N/A	00:46	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 5: Position 1 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/17		17/08/17		18/08/17		19/08/17		20/08/17		21/08/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 6: Position 1 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/17		13/09/17		14/09/17		15/09/17		16/09/17		17/09/17	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:00	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:34	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 7: Position 2 'April'

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn 05:25	Dusk 20:19	Dawn 05:24	Dusk 20:21	Dawn 05:22	Dusk 20:22	Dawn 05:20	Dusk 20:24	Dawn 05:18	Dusk 20:25	Dawn 05:17	Dusk 20:27
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:08	N/A	N/A	N/A	21:12	04:06	N/A	N/A	21:10	02:30	N/A
Time before / after sunrise / sunset	N/A	05:36	N/A	N/A	N/A	00:50	01:14	N/A	N/A	00:45	02:47	N/A
Soprano pip	N/A	N/A	00:05	N/A	00:11	23:40	N/A	N/A	N/A	21:05	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	05:19	N/A	05:11	03:18	N/A	N/A	N/A	00:40	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:33	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:08	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:52	N/A	21:21	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:28	N/A	00:56	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	23:41	N/A	N/A	04:09	N/A	04:00	21:52	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	03:22	N/A	N/A	01:13	N/	01:20	01:28	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:10	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:45	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:05	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:40	N/A	N/A
Chiro spp.	N/A	N/A	04:10	N/A	04:16	N/A	03:37	N/A	01:00	21:12	03:52	N/A
Time before / after sunrise / sunset	N/A	N/A	01:14	N/A	01:06	N/A	01:43	N/A	04:18	00:47	01:25	N/A

Table 8: Position 2 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn 04:55	Dusk 20:49	Dawn 04:54	Dusk 20:50	Dawn 04:53	Dusk 20:51	Dawn 04:52	Dusk 20:52	Dawn 04:51	Dusk 20:54	Dawn 04:50	Dusk 20:55
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	01:22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:31	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:20	04:06	21:02	03:53	21:26	03:54	21:51	03:50	21:31	03:36	N/A
Time before / after sunrise / sunset	N/A	00:31	00:48	00:12	01:00	00:35	00:58	00:59	01:01	00:37	01:14	N/A
Soprano pip	N/A	21:22	04:03	21:33	04:01	21:37	03:55	21:39	03:54	21:34	02:55	N/A
Time before / after sunrise / sunset	N/A	00:33	00:51	00:43	00:52	00:46	00:57	00:47	00:57	00:40	01:55	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	03:42	N/A	N/A	21:49	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	01:11	N/A	N/A	00:57	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54	04:50	20:55
Common/Soprano pip	N/A	22:38	03:54	22:35	04:07	22:22	03:49	21:45	04:00	23:15	03:59	N/A
Time before / after sunrise / sunset	N/A	01:49	01:00	01:45	00:46	01:31	01:03	00:53	00:51	02:21	00:51	N/A
Myotis spp.	N/A	N/A	02:05	21:38	N/A	21:57	01:37	N/A	N/A	23:47	01:57	N/A
Time before / after sunrise / sunset	N/A	N/A	02:49	00:48	N/A	01:06	03:15	N/A	N/A	02:53	02:53	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	02:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	02:34	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:31	03:56	21:21	03:56	21:26	04:27	21:39	03:46	21:35	02:39	N/A
Time before / after sunrise / sunset	N/A	00:42	00:58	00:31	00:57	00:35	00:25	00:47	01:05	00:41	02:11	N/A

Table 9: Position 2 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn 04:41	Dusk 21:09	Dawn 04:41	Dusk 21:10	Dawn 04:41	Dusk 21:10	Dawn 04:41	Dusk 21:11	Dawn 04:41	Dusk 21:11	Dawn 04:41	Dusk 21:11
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:39	03:54	21:41	05:09	21:44	03:56	22:12	03:57	21:54	03:48	N/A
Time before / after sunrise / sunset	N/A	00:30	00:47	00:31	00:00	00:34	00:45	01:01	00:44	00:43	00:53	N/A
Soprano pip	N/A	22:17	03:56	23:21	03:38	22:04	03:44	21:55	03:42	22:09	03:21	N/A
Time before / after sunrise / sunset	N/A	01:08	00:45	02:11	01:03	00:54	00:57	00:44	00:59	00:58	01:20	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Common/Soprano pip	N/A	N/A	01:04	22:30	04:02	N/A	01:54	N/A	02:34	22:04	02:30	N/A
Time before / after sunrise / sunset	N/A	N/A	03:37	01:20	00:39	N/A	02:47	N/A	02:07	00:53	02:11	N/A
Myotis spp.	N/A	N/A	01:39	N/A	02:28	N/A	03:31	22:05	N/A	22:15	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	03:02	N/A	02:13	N/A	01:10	00:54	N/A	01:04	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:21	03:55	22:12	03:52	23:44	03:39	21:37	02:56	22:44	03:55	N/A
Time before / after sunrise / sunset	N/A	00:12	00:46	01:02	00:49	02:34	01:02	00:26	01:45	01:33	00:46	N/A

Table 10: Position 2 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)									
	20/07/2017		21/07/2017		22/07/2017		24/07/2017		25/07/2017	
	Dawn 05:05	Dusk 20:57	Dawn 05:06	Dusk 20:55	Dawn 05:07	Dusk 20:54	Dawn 05:10	Dusk 20:52	Dawn 05:12	Dusk 20:50
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:19	04:15	21:25	02:10	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:22	00:51	00:30	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	23:27	03:56	N/A	02:01	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:30	01:10	N/A	03:06	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)									
	20/07/2017		21/07/2017		22/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:10	20:52	05:12	20:50
Common/Soprano pip	N/A	23:01	02:13	22:19	00:57	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:04	02:53	01:24	04:10	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	21:48	N/A	21:32	01:10	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:51	N/A	00:37	03:57	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	22:28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:14	04:15	21:33	01:42	N/A	05:42	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:17	00:51	00:38	03:25	N/A	00:01	N/A	N/A	N/A

Table 11: Position 2 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn 05:55	Dusk 19:58	Dawn 05:57	Dusk 19:56	Dawn 05:58	Dusk 19:54	Dawn 06:00	Dusk 19:52	Dawn 06:02	Dusk 19:50	Dawn 06:03	Dusk 19:48
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:20	04:51	22:23	02:12	20:52	05:16	19:59	05:19	20:13	05:23	N/A
Time before / after sunrise / sunset	N/A	00:22	01:06	02:27	03:46	00:58	00:44	00:07	00:43	00:23	00:40	N/A
Soprano pip	N/A	23:17	04:27	N/A	01:04	20:32	05:19	N/A	05:19	N/A	05:34	N/A
Time before / after sunrise / sunset	N/A	03:19	01:30	N/A	04:54	00:38	00:41	N/A	00:43	N/A	00:29	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	23:03	04:27	23:36	N/A	N/A	N/A	N/A	04:35	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	03:05	01:30	03:40	N/A	N/A	N/A	N/A	01:27	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	20:54	N/A	N/A	05:19	N/A	03:53	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:00	N/A	N/A	00:43	N/A	02:10	N/A
Myotis spp.	N/A	N/A	03:16	N/A	00:54	N/A	04:56	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:41	N/A	05:04	N/A	01:04	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	19:45	05:05	19:59	05:47	20:17	05:19	20:10	05:20	20:24	04:57	N/A
Time before / after sunrise / sunset	N/A	00:01	00:52	00:03	00:11	00:23	00:41	00:18	00:42	00:34	01:06	N/A

Table 12: Position 2 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/08/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn 06:37	Dusk 18:59	Dawn 06:39	Dusk 18:56	Dawn 06:40	Dusk 18:54	Dawn 06:42	Dusk 18:52	Dawn 06:44	Dusk 18:50	Dawn 06:45	Dusk 18:47
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	02:18	N/A	N/A	20:49	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:24	N/A	N/A	01:59	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19:41	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:51	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	00:25	23:29	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	06:15	04:35	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	19:18	N/A	19:31	05:54	19:31	06:08	19:23	06:06	19:10	06:00	N/A
Time before / after sunrise / sunset	N/A	00:19	N/A	00:35	00:46	00:37	00:34	00:31	00:38	00:20	00:45	N/A
Soprano pip	N/A	20:33	N/A	19:47	06:04	21:15	N/A	19:41	05:51	19:11	06:09	N/A
Time before / after sunrise / sunset	N/A	01:34	N/A	00:51	00:36	02:21	N/A	00:49	00:53	00:21	00:36	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	23:48	N/A	N/A	01:46	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	04:54	N/A	N/A	04:58	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	23:47	03:29	N/A	N/A	N/A	N/A	N/A	02:29	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	04:51	03:11	N/A	N/A	N/A	N/A	N/A	04:16	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/08/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:37	18:59	06:39	18:56	06:40	18:54	06:42	18:52	06:44	18:50	06:45	18:47
Common/Soprano pip	N/A	N/A	04:32	N/A	N/A	N/A	N/A	N/A	05:46	N/A	02:09	N/A
Time before / after sunrise / sunset	N/A	N/A	02:07	N/A	N/A	N/A	N/A	N/A	00:58	N/A	04:36	N/A
Myotis spp.	N/A	19:46	00:40	21:30	04:46	19:59	02:34	20:25	04:33	20:25	04:06	N/A
Time before / after sunrise / sunset	N/A	00:47	05:59	02:34	01:54	01:05	04:08	01:33	02:11	01:35	02:39	N/A
Long-eared bat	N/A	19:48	N/A	N/A	N/A	N/A	N/A	N/A	05:07	20:46	N/A	N/A
Time before / after sunrise / sunset	N/A	00:49	N/A	N/A	N/A	N/A	N/A	N/A	01:37	01:56	N/A	N/A
ENV	N/A	N/A	N/A	20:04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	19:41	05:35	20:07	04:50	19:45	02:49	20:44	04:43	19:46	05:47	N/A
Time before / after sunrise / sunset	N/A	00:42	01:04	01:11	01:50	00:51	03:53	01:52	02:01	00:56	00:58	N/A

Table 13: Position 3 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn 05:52	Dusk 19:56	Dawn 05:50	Dusk 19:58	Dawn 05:48	Dusk 20:00	Dawn 05:46	Dusk 20:01	Dawn 05:44	Dusk 20:03	Dawn 05:42	Dusk 20:04
Natterers	N/A	N/A	N/A	N/A	02:20	N/A	N/A	N/A	N/A	23:19	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:28	N/A	N/A	N/A	N/A	03:16	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:57	N/A	20:39	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:56	N/A	00:36	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	20:44	02:33	20:39	05:12	20:31	N/A	20:36	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:46	03:15	00:39	00:34	00:30	N/A	00:33	N/A	N/A
Soprano pip	N/A	N/A	N/A	20:31	00:11	20:25	05:16	20:30	N/A	20:45	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:33	05:37	00:25	00:30	00:29	N/A	00:42	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	21:30	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:30	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Common/Soprano pip	N/A	N/A	N/A	20:33	N/A	20:27	03:48	20:38	N/A	20:52	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:35	N/A	00:27	01:58	00:37	N/A	00:49	N/A	N/A
Myotis spp.	N/A	20:53	01:30	22:16	03:56	22:18	04:38	21:01	04:54	21:20	03:53	N/A
Time before / after sunrise / sunset	N/A	00:57	04:20	02:18	01:52	02:18	01:08	01:00	00:50	01:17	01:49	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	00:17	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	05:29	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	21:52	02:39	N/A	N/A	20:45	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:52	03:07	N/A	N/A	00:42	N/A	N/A
Chiro spp.	N/A	20:52	01:31	20:32	03:50	20:20	05:12	20:58	04:56	20:30	03:52	N/A
Time before / after sunrise / sunset	N/A	00:56	04:19	00:34	01:58	00:20	00:34	00:57	00:48	00:27	01:50	N/A

Table 14: Position 3 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn 05:15	Dusk 20:28	Dawn 05:13	Dusk 20:30	Dawn 05:12	Dusk 20:31	Dawn 05:10	Dusk 20:33	Dawn 05:09	Dusk 20:34	Dawn 05:07	Dusk 20:36
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	04:47	20:56	04:48	N/A	04:43	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	00:23	00:23	00:21	N/A	00:24	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	01:13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:59	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:30	N/A	21:03	04:19	21:04	04:38	21:32	04:06	21:28	04:21	N/A
Time before / after sunrise / sunset	N/A	01:02	N/A	00:33	00:53	00:33	00:32	00:59	01:03	00:54	00:46	N/A
Soprano pip	N/A	21:36	N/A	21:37	04:17	21:11	04:30	21:30	04:19	21:35	03:37	N/A
Time before / after sunrise / sunset	N/A	01:08	N/A	01:07	00:55	00:40	00:40	00:57	00:50	01:01	01:30	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:51	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:18	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:19	00:09	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:46	05:00	N/A	N/A	N/A
Common/Soprano pip	N/A	21:33	N/A	21:40	00:52	21:01	04:20	21:34	04:18	22:04	04:15	N/A
Time before / after sunrise / sunset	N/A	01:05	N/A	01:10	04:20	00:30	00:50	01:01	00:51	01:30	00:52	N/A
Myotis spp.	N/A	21:37	01:39	21:27	00:52	21:47	01:40	N/A	03:22	22:56	04:06	N/A
Time before / after sunrise / sunset	N/A	01:09	03:34	00:57	04:20	01:16	03:30	N/A	01:47	02:22	01:01	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	21:37	N/A	N/A	01:42	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:06	N/A	N/A	03:27	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:19	N/A	21:08	04:30	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:46	N/A	00:34	00:37	N/A
Chiro spp.	N/A	21:23	01:44	20:50	01:54	21:16	04:51	20:58	04:48	21:03	04:29	N/A
Time before / after sunrise / sunset	N/A	00:55	03:29	00:20	03:18	00:45	00:19	00:25	00:21	00:29	00:38	N/A

Table 15: Position 3 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn 04:46	Dusk 21:00	Dawn 04:45	Dusk 21:01	Dawn 04:45	Dusk 21:02	Dawn 04:44	Dusk 21:03	Dawn 04:43	Dusk 21:04	Dawn 04:43	Dusk 21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	21:39	04:09	N/A	N/A	21:55	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:39	00:36	N/A	N/A	00:53	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:31	03:47	21:53	03:57	21:58	03:57	22:06	02:53	21:58	03:38	N/A
Time before / after sunrise / sunset	N/A	00:31	00:58	00:52	00:48	00:56	00:47	01:03	01:50	00:54	01:05	N/A
Soprano pip	N/A	21:33	03:52	22:01	03:44	22:07	04:01	N/A	01:47	22:35	03:44	N/A
Time before / after sunrise / sunset	N/A	00:33	00:53	01:00	01:01	01:05	00:43	N/A	02:56	01:31	00:59	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	23:18	02:07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:25	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Time before / after sunrise / sunset	N/A	02:18	02:38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:18	N/A
Common/Soprano pip	N/A	22:24	04:04	21:56	03:56	21:54	04:00	N/A	02:50	22:05	03:39	N/A
Time before / after sunrise / sunset	N/A	01:24	00:41	00:55	00:49	00:52	00:44	N/A	01:53	01:01	01:04	N/A
Myotis spp.	N/A	21:52	03:12	21:58	03:39	22:58	00:02	N/A	N/A	22:59	02:15	N/A
Time before / after sunrise / sunset	N/A	00:52	01:33	00:57	01:06	01:56	04:42	N/A	N/A	01:55	02:28	N/A
Long-eared bat	N/A	N/A	03:48	N/A	N/A	N/A	N/A	N/A	N/A	23:51	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:57	N/A	N/A	N/A	N/A	N/A	N/A	02:47	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	22:00	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	00:58	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:11	04:14	21:58	03:57	21:53	04:01	22:32	02:48	22:03	03:43	N/A
Time before / after sunrise / sunset	N/A	00:11	00:31	00:57	00:48	00:51	00:43	01:29	01:55	00:59	01:00	N/A

Position 3 July

(No Data – SD card corrupted)

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	08/08/2017		09/08/2017		10/08/2017		11/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:32	20:28	05:34	20:26	05:35	20:24	05:37	20:22
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	04:37	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:57	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	05:10	20:07	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:24	00:00	N/A	N/A	N/A	N/A

Table 17: Position 3 August 30/08/2017 – 30/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)			
	30/08/2017		31/08/2017	
	Dawn 06:06	Dusk 19:43	Dawn 06:08	Dusk 19:41
Natterers	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	00:10	N/A
Time before / after sunrise / sunset	N/A	N/A	05:58	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)			
	30/08/2017		31/08/2017	
	Dawn 06:06	Dusk 19:43	Dawn 06:08	Dusk 19:41
Common/Soprano pip	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Myotis spp.	N/A	22:22	04:25	N/A
Time before / after sunrise / sunset	N/A	02:39	01:43	N/A
Long-eared bat	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A
Chiro spp.	N/A	20:48	05:08	N/A
Time before / after sunrise / sunset	N/A	01:05	01:00	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Common/Soprano pip	N/A	N/A	05:06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	02:51	N/A	04:46	N/A	03:57	20:15	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	03:18	N/A	01:25	N/A	02:15	00:40	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	04:52	N/A	05:01	23:38	04:29	N/A	05:15	19:53	06:04	N/A	N/A	N/A
Time before / after sunrise / sunset	01:17	N/A	01:10	04:01	01:43	N/A	00:59	00:21	00:12	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/09/2017		08/09/2017		09/09/2017		10/09/2017		11/09/2017		12/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:19	19:26	06:20	19:24	06:22	19:21	06:23	19:19	06:25	19:17	06:26	19:14
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	06:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	00:05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Khul/Nath/Savi pip	N/A	02:29	21:51	N/A	N/A	N/A	22:07	N/A	N/A	N/A	02:29	21:51
Time before / after sunrise / sunset	N/A	03:19	01:51	N/A	N/A	N/A	02:04	N/A	N/A	N/A	03:19	01:51
Common/Soprano pip	N/A	N/A	20:35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:35
Time before / after sunrise / sunset	N/A	N/A	00:35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:35
Myotis spp.	23:09	N/A	N/A	01:45	N/A	00:02	N/A	N/A	N/A	23:09	N/A	N/A
Time before / after sunrise / sunset	03:11	N/A	N/A	04:01	N/A	05:42	N/A	N/A	N/A	03:11	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	22:23	N/A	23:35	03:07	20:59	N/A	21:04	N/A	N/A	22:23	N/A	23:35
Time before / after sunrise / sunset	02:25	N/A	03:35	02:39	00:58	N/A	01:01	N/A	N/A	02:25	N/A	03:35
Chiro spp.	20:55	N/A	20:31	N/A	23:00	N/A	20:27	N/A	N/A	20:55	N/A	20:31
Time before / after sunrise / sunset	00:57	N/A	1	N/A	02:59	N/A	00:24	N/A	N/A	00:57	N/A	00:31

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	21:10	N/A	21:47	N/A	22:27	03:11	22:04	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:40	N/A	01:16	N/A	01:54	01:58	01:30	N/A	N/A
Myotis spp.	N/A	21:41	N/A	N/A	N/A	21:39	N/A	N/A	N/A	21:59	03:24	N/A
Time before / after sunrise / sunset	N/A	01:13	N/A	N/A	N/A	01:08	N/A	N/A	N/A	01:25	01:43	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:54	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:20	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:43	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:09	N/A	N/A
Chiro spp.	N/A	21:14	N/A	20:53	N/A	20:45	04:34	21:09	03:25	21:34	01:41	N/A
Time before / after sunrise / sunset	N/A	00:46	N/A	00:23	N/A	00:14	00:36	00:36	01:44	01:00	03:26	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Khul/Nath/Savi pip	N/A	N/A	N/A	23:11	N/A	N/A	00:33	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:10	N/A	N/A	04:11	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	23:09	03:09	21:35	03:21	21:37	03:30	N/A	03:06	N/A	02:09	N/A
Time before / after sunrise / sunset	N/A	02:09	01:36	00:34	01:24	00:35	01:14	N/A	01:37	N/A	02:34	N/A
Myotis spp.	N/A	N/A	N/A	N/A	00:46	23:39	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:59	02:37	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	00:12	N/A	02:45	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	04:33	N/A	01:59	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:21	03:58	21:34	03:13	21:34	04:23	N/A	04:41	21:58	03:30	N/A
Time before / after sunrise / sunset	N/A	00:21	00:47	00:33	01:32	00:32	00:21	N/A	00:02	00:54	01:13	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:41	04:13	21:48	04:08	23:42	04:07	21:30	04:18	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:32	00:38	00:40	00:44	02:35	00:46	00:23	00:36	N/A	N/A	N/A
Myotis spp.	N/A	23:28	02:36	22:10	N/A	23:51	01:11	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:19	02:15	01:02	N/A	02:44	03:42	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	03:13	N/A	N/A	N/A	N/A	21:55	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:38	N/A	N/A	N/A	N/A	00:48	N/A	N/A	N/A	N/A
ENV	N/A	21:55	02:52	22:34	02:49	N/A	02:09	23:08	01:25	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:46	01:59	01:26	02:03	N/A	02:44	02:01	03:29	N/A	N/A	N/A
Chiro spp.	N/A	21:33	04:15	21:33	03:54	21:57	03:43	21:36	04:17	N/A	03:26	N/A
Time before / after sunrise / sunset	N/A	00:24	00:36	00:25	00:58	00:50	01:10	00:29	00:37	N/A	01:29	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	08/08/2017		09/08/2017		10/08/2017		11/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:32	20:28	05:34	20:26	05:35	20:24	05:37	20:22
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	22:13	00:24	20:51	N/A	20:50	04:15	20:57
Time before / after sunrise / sunset	N/A	01:45	05:10	00:25	N/A	00:26	01:22	00:35
Myotis spp.	N/A	23:29	02:55	N/A	03:57	21:45	02:21	21:33
Time before / after sunrise / sunset	N/A	03:01	02:39	N/A	01:38	01:21	03:16	01:11
Long-eared bat	N/A	N/A	N/A	N/A	00:39	22:17	01:27	22:44
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	04:56	01:53	04:10	02:22
ENV	N/A	N/A	02:39	22:00	04:30	N/A	03:56	22:03
Time before / after sunrise / sunset	N/A	N/A	02:55	01:34	01:05	N/A	01:41	01:41
Chiro spp.	N/A	21:14	03:07	20:56	04:54	21:13	04:58	21:08
Time before / after sunrise / sunset	N/A	00:46	02:27	00:30	00:41	00:49	00:39	00:46

Table 25: Position 4 August 12/08/2017 – 13/08/2017 & 30/08/2017 – 31/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	12/08/2017		13/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:38	20:20	05:40	20:18	06:06	19:43	06:08	19:41
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	21:33	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:13	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	04:13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	01:25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	05:21	20:41	05:27	N/A	N/A	21:42	N/A	20:07
Time before / after sunrise / sunset	00:17	00:21	00:13	N/A	N/A	01:59	N/A	00:26
Soprano pip	04:59	22:28	03:42	N/A	N/A	N/A	N/A	20:31
Time before / after sunrise / sunset	00:39	02:08	01:58	N/A	N/A	N/A	N/A	00:50
Brown long-eared bat	N/A	N/A	00:14	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	05:26	N/A	N/A	N/A	N/A	N/A
Serotine	N/A	21:05	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:45	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	12/08/2017		13/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:38	20:20	05:40	20:18	06:06	19:43	06:08	19:41
Khul/Nath/Savi pip	04:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	01:23	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	04:59	21:24	04:37	N/A	N/A	N/A	N/A	20:05
Time before / after sunrise / sunset	00:39	01:04	01:03	N/A	N/A	N/A	N/A	00:24
Myotis spp.	01:34	21:48	05:02	N/A	N/A	N/A	01:31	21:01
Time before / after sunrise / sunset	04:04	01:28	00:38	N/A	N/A	N/A	04:37	01:20
Long-eared bat	00:24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	05:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	21:01	04:01	N/A	N/A	N/A	N/A	21:02
Time before / after sunrise / sunset	N/A	00:41	01:39	N/A	N/A	N/A	N/A	01:21
Chiro spp.	04:52	20:58	03:30	N/A	N/A	22:50	N/A	20:11
Time before / after sunrise / sunset	00:46	00:38	02:10	N/A	N/A	03:07	N/A	00:30

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	01:41	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:33	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	20:37	N/A	20:53	05:34	20:19	02:30	20:39	05:38	20:58	03:56	19:54
Time before / after sunrise / sunset	N/A	00:58	N/A	01:16	00:38	00:44	03:44	01:07	00:38	01:28	02:21	00:26
Myotis spp.	03:15	21:28	00:57	22:14	N/A	21:52	02:54	21:21	03:48	21:02	02:38	20:16
Time before / after sunrise / sunset	02:54	01:49	05:14	02:37	N/A	02:17	03:20	01:49	02:28	01:32	03:39	00:48
Long-eared bat	02:30	23:44	00:46	22:14	01:37	N/A	N/A	21:39	05:03	N/A	04:41	23:14
Time before / after sunrise / sunset	03:39	04:05	05:25	02:37	04:35	N/A	N/A	02:07	01:13	N/A	01:36	03:46
ENV	01:14	21:05	N/A	20:19	N/A	N/A	N/A	22:33	00:21	23:29	04:02	N/A
Time before / after sunrise / sunset	04:55	01:26	N/A	00:42	N/A	N/A	N/A	03:01	05:55	03:59	02:15	N/A
Chiro spp.	01:53	20:21	04:15	20:07	03:31	19:51	03:56	19:59	05:29	21:04	04:19	19:48
Time before / after sunrise / sunset	04:16	00:42	01:56	00:30	02:41	00:16	02:18	00:27	00:47	01:34	01:58	00:20

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	20:13	05:50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:47	00:30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	03:29	21:22	05:10	23:21	04:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	02:50	01:56	01:10	03:57	01:53	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	05:08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	01:11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	04:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	02:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	04:30	20:35	05:10	23:46	03:30	19:46	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	01:49	01:09	01:10	04:22	02:52	00:25	N/A	N/A	N/A	N/A	N/A	N/A

Table 28: Position 4A October

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/10/2017		02/10/2017		03/10/2017		04/10/2017		05/10/2017		06/10/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:56	18:31	06:58	18:29	07:00	18:27	07:01	18:25	07:03	18:23	07:04	18:20
Common pip	N/A	N/A	06:10	N/A	N/A	19:27	05:56	N/A	03:10	19:00	04:58	N/A
Time before / after sunrise / sunset	N/A	N/A	00:48	N/A	N/A	01:00	01:05	N/A	03:53	00:37	02:06	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	20:42	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:15	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	06:13	N/A	N/A	22:22	00:35	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	00:48	N/A	N/A	03:59	06:29	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	01:07	N/A	N/A	N/A	N/A	19:54	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	05:53	N/A	N/A	N/A	N/A	01:31	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	03:36	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	03:25	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	06:30	23:35	01:24	19:03	05:32	20:18	02:20	N/A	05:23	N/A
Time before / after sunrise / sunset	N/A	N/A	00:28	05:06	05:36	00:36	01:29	01:53	04:43	N/A	01:41	N/A

Table 29: Position 5 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/2017		25/04/2017		26/04/2017		27/04/2017		28/04/2017		29/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:17	01:18	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:06	04:15	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 30: Position 5 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	01:41	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	03:21	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:08	03:44	21:19	04:08	N/A	03:34	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:31	01:20	00:40	00:55	N/A	01:28	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	21:46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	22:38	01:58	22:42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:01	03:06	02:03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:50	00:28	21:39	N/A	N/A	02:31	N/A	N/A	22:33	N/A	N/A
Time before / after sunrise / sunset	N/A	01:13	04:36	01:00	N/A	N/A	02:31	N/A	N/A	01:50	N/A	N/A

Table 31: Position 5 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 32: Position 5 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:10	N/A	22:02	03:26	21:58	04:08	21:58	04:21	21:39	N/A	N/A
Time before / after sunrise / sunset	N/A	01:05	N/A	00:58	01:32	00:55	00:51	00:56	00:39	00:38	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	00:25	N/A	02:15	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:34	N/A	02:45	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	22:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	22:47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	22:54	N/A	22:11	N/A	22:11	N/A	N/A	04:22	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:49	N/A	01:07	N/A	01:08	N/A	N/A	00:38	N/A	N/A	N/A

Table 33: Position 5 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	20:14	05:30	20:31	05:31	20:34	04:50	N/A	03:59	20:23	01:49	N/A
Time before / after sunrise / sunset	N/A	00:01	00:16	00:20	00:16	00:25	00:59	N/A	01:52	00:18	04:03	N/A

Table 34: Position 5 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	21:36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 35: Position 6 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Natterers	N/A	N/A	N/A	22:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	20:36	02:31	20:03	05:07	20:28	N/A	20:37	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:38	03:17	00:03	00:39	00:27	N/A	00:34	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	01:45	N/A	N/A	N/A	04:06	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:01	N/A	N/A	N/A	01:36	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	23:28	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	03:28	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	21:52	N/A	21:03	N/A	20:45	N/A	20:49	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:54	N/A	01:03	N/A	00:44	N/A	00:46	N/A	N/A
Myotis spp.	N/A	N/A	N/A	22:01	N/A	21:43	N/A	23:53	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:03	N/A	01:43	N/A	03:52	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	22:02	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:02	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	N/A	21:40	05:02	20:18	01:07	20:42	N/A	20:45	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:42	00:46	00:18	04:39	00:41	N/A	00:42	N/A	N/A

Table 36: Position 6 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	20:54	04:16	21:10	04:32	21:13	04:11	21:09	04:23	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:24	00:56	00:39	00:38	00:40	00:58	00:35	00:44	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:08	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:34	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	21:37	N/A	01:23	23:52	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	05:10	N/A	03:46	03:18	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:18	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:44	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	20:58	N/A	21:01	N/A	22:30	04:15	21:53	02:33	22:01	N/A	N/A
Time before / after sunrise / sunset	N/A	00:30	N/A	00:31	N/A	01:59	00:55	01:20	02:36	01:27	N/A	N/A

Table 37: Position 6 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	22:23	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:21	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	03:05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	01:40	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:42	03:46	21:47	03:42	21:42	03:54	N/A	N/A	22:04	00:32	N/A
Time before / after sunrise / sunset	N/A	00:42	00:59	00:46	01:03	00:40	00:50	N/A	N/A	01:00	04:11	N/A
Soprano pip	N/A	22:02	N/A	23:09	N/A	23:50	N/A	N/A	N/A	N/A	01:35	N/A
Time before / after sunrise / sunset	N/A	01:02	N/A	02:08	N/A	02:48	N/A	N/A	N/A	N/A	03:08	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	00:32	N/A	N/A	N/A	N/A	N/A	N/A	22:38	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:13	N/A	N/A	N/A	N/A	N/A	N/A	01:34	N/A	N/A
Common/Soprano pip	N/A	21:49	N/A	21:52	N/A	N/A	N/A	N/A	N/A	21:49	N/A	N/A
Time before / after sunrise / sunset	N/A	00:49	N/A	00:51	N/A	N/A	N/A	N/A	N/A	00:45	N/A	N/A
Myotis spp.	N/A	21:55	03:18	N/A	N/A	22:06	01:02	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:55	01:27	N/A	N/A	01:04	03:42	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	22:35	02:18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:35	02:27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	22:53	N/A	N/A	N/A	22:33	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:51	N/A	N/A	N/A	01:29	N/A	N/A
Chiro spp.	N/A	21:51	02:56	21:44	00:36	22:05	03:24	N/A	N/A	21:49	02:07	N/A
Time before / after sunrise / sunset	N/A	00:51	01:49	00:43	04:09	01:03	01:20	N/A	N/A	00:45	02:36	N/A

Table 38: Position 6 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Natterers	N/A	N/A	N/A	N/A	01:42	23:19	00:07	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:10	02:12	04:46	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	00:57	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	03:56	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:54	04:08	21:49	04:04	21:55	03:49	21:53	04:09	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:45	00:43	00:41	00:48	00:48	01:04	00:46	00:45	N/A	N/A	N/A
Soprano pip	N/A	23:57	N/A	22:05	01:30	N/A	02:50	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:48	N/A	00:57	03:22	N/A	02:03	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	23:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	22:49	N/A	N/A	N/A	02:35	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Time before / after sunrise / sunset	N/A	01:40	N/A	N/A	N/A	5:28	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	21:56	02:40	N/A	03:32	N/A	00:51	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:48	02:12	N/A	01:21	N/A	04:03	N/A	N/A	N/A
Myotis spp.	N/A	22:55	03:30	22:52	02:44	22:14	01:43	23:26	01:28	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:46	01:21	01:44	02:08	01:07	03:10	02:19	03:26	N/A	N/A	N/A
Long-eared bat	N/A	22:19	03:48	22:38	02:38	22:07	03:32	22:25	03:09	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:10	01:03	01:30	02:14	01:00	01:21	01:18	01:45	N/A	N/A	N/A
ENV	N/A	22:05	N/A	22:18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:56	N/A	01:10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	22:33	04:05	20:52	04:02	22:10	03:46	21:13	03:34	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:24	00:46	00:00	00:50	01:03	01:07	00:06	01:20	N/A	N/A	N/A

Table 39: Position 6 August 08/08/2017 – 11/06/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	08/08/2017		09/08/2017		10/08/2017		11/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:32	20:28	05:34	20:26	05:35	20:24	05:37	20:22
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:05	N/A	20:54	04:54	21:16	00:28	22:50
Time before / after sunrise / sunset	N/A	00:37	N/A	00:28	00:41	00:52	05:09	02:28
Soprano pip	N/A	N/A	03:29	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:05	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	08/08/2017		09/08/2017		10/08/2017		11/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:32	20:28	05:34	20:26	05:35	20:24	05:37	20:22
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	01:02	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:35	N/A
Common/Soprano pip	N/A	N/A	N/A	22:41	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:15	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	04:01	N/A	04:32	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	01:34	N/A	01:05	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:01	04:22	20:34	03:25	21:01	04:18	20:43
Time before / after sunrise / sunset	N/A	00:33	01:12	00:08	02:10	00:37	01:19	00:21

Table 40: Position 6 August 11/08/2017 – 12/08/2017 & 30/08/2017 – 31/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	12/08/2017		13/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:38	20:20	05:40	20:18	06:06	19:43	06:08	19:41
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	05:10	21:00	04:52	N/A	N/A	23:17	01:04	20:12
Time before / after sunrise / sunset	00:28	00:40	00:48	N/A	N/A	03:34	05:04	00:31
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	12/08/2017		13/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:38	20:20	05:40	20:18	06:06	19:43	06:08	19:41
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	04:50	20:51	02:39	N/A	N/A	22:09	01:39	19:54
Time before / after sunrise / sunset	00:48	00:31	03:01	N/A	N/A	02:26	04:29	00:13

Table 41: Position 6 September 01/09/2017 – 06/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	23:12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	03:35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:03	05:28	20:11	05:36	20:14	01:24	20:52	01:47	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:24	00:43	00:34	00:36	00:39	04:50	01:20	04:29	N/A	N/A	N/A
Soprano pip	N/A	20:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	21:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	21:38	N/A	N/A	04:56	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:59	N/A	N/A	01:16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	04:58	20:08	04:13	19:31	04:00	19:23	02:54	19:22	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	01:11	00:29	01:58	00:00	02:12	###	03:20	###	N/A	N/A	N/A	N/A

Table 42: Position 6 September 07/09/2017 – 12/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/09/2017		08/09/2017		09/09/2017		10/09/2017		11/09/2017		12/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:19	19:26	06:20	19:24	06:22	19:21	06:23	19:19	06:25	19:17	06:26	19:14
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 43: Position 7 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/2017		25/04/2017		26/04/2017		27/04/2017		28/04/2017		29/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Natterers	N/A	21:40	N/A	N/A	N/A	N/A	N/A	23:58	N/A	21:39	N/A	N/A
Time before / after sunrise / sunset	N/A	01:36	N/A	N/A	N/A	N/A	N/A	03:49	N/A	01:28	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:56	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:37	N/A
Common pip	N/A	20:46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:47	N/A	N/A
Time before / after sunrise / sunset	N/A	00:42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:36	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:05	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:54	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/2017		25/04/2017		26/04/2017		27/04/2017		28/04/2017		29/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	21:48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:42	03:22	N/A
Time before / after sunrise / sunset	N/A	01:44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:31	02:11	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:18	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:07	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	23:38	N/A	21:26	N/A	N/A	N/A	N/A	N/A	N/A	03:20	N/A
Time before / after sunrise / sunset	N/A	03:34	N/A	01:20	N/A	N/A	N/A	N/A	N/A	N/A	02:13	N/A

Table 44: Position 7 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	01:01	N/A	01:51	N/A	02:42	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:03	N/A	03:12	N/A	02:20	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:07	04:34	21:08	04:44	23:51	04:48	N/A	04:32	21:01	04:18	N/A
Time before / after sunrise / sunset	N/A	00:30	00:30	00:29	00:19	03:11	00:14	N/A	00:28	00:18	00:41	N/A
Soprano pip	N/A	N/A	02:23	23:13	04:21	N/A	04:06	N/A	04:19	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:41	02:34	00:42	N/A	00:56	N/A	00:41	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	01:17	N/A	01:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Time before / after sunrise / sunset	N/A	N/A	03:47	N/A	03:34	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	22:55	04:29	N/A	03:12	N/A	03:12	N/A	04:18	21:25	N/A	N/A
Time before / after sunrise / sunset	N/A	02:18	00:35	N/A	01:51	N/A	01:50	N/A	00:42	00:42	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:58	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:15	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	23:18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:16	03:33	21:04	05:17	N/A	04:27	N/A	04:30	21:40	01:09	N/A
Time before / after sunrise / sunset	N/A	00:39	01:31	00:25	00:00	N/A	00:35	N/A	00:30	00:57	03:50	N/A

Table 45: Position 7 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	01:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:28	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:39	04:11	21:30	04:07	21:33	03:54	21:47	03:53	21:38	03:51	N/A
Time before / after sunrise / sunset	N/A	00:34	00:31	00:24	00:35	00:27	00:48	00:40	00:48	00:30	00:50	N/A
Soprano pip	N/A	N/A	N/A	N/A	00:58	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:44	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	22:50	00:13	N/A	01:13	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Time before / after sunrise / sunset	N/A	01:45	04:29	N/A	03:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	22:05	N/A	N/A	04:08	21:53	02:09	N/A	03:26	23:06	03:47	N/A
Time before / after sunrise / sunset	N/A	01:00	N/A	N/A	00:34	00:47	02:33	N/A	01:15	01:58	00:54	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:46	03:54	22:01	04:06	21:35	03:51	21:42	03:50	21:54	03:47	N/A
Time before / after sunrise / sunset	N/A	00:41	00:48	00:55	00:36	00:29	00:51	00:35	00:51	00:46	00:54	N/A

Table 46: Position 7 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:45	04:09	N/A	04:14	21:33	04:33	21:22	04:39	21:31	04:33	N/A
Time before / after sunrise / sunset	N/A	00:40	00:47	N/A	00:44	00:30	00:26	00:20	00:21	00:30	00:28	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	04:13	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	00:46	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	04:33	21:30	04:11	N/A	04:17	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	00:26	00:28	00:49	N/A	00:44	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	22:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:38	03:02	21:41	N/A	N/A	04:24	21:24	04:33	N/A	04:10	N/A
Time before / after sunrise / sunset	N/A	00:33	01:54	00:37	N/A	N/A	00:35	00:22	00:27	N/A	00:51	N/A

Table 47: Position 7 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	05:16	N/A	05:14	20:35	05:07	20:37	04:34	20:26	00:36	N/A
Time before / after sunrise / sunset	N/A	N/A	00:30	N/A	00:33	00:26	00:42	00:30	01:17	00:21	05:16	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:34	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:17	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	02:36	N/A	N/A	N/A	N/A	20:00	02:45	20:57	00:52	N/A
Time before / after sunrise / sunset	N/A	N/A	03:10	N/A	N/A	N/A	N/A	00:00	03:06	00:52	05:00	N/A

Table 48: Position 7 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	19:36	05:04	19:42	04:26	19:40	05:41	19:28	05:48	19:53	05:32	N/A
Time before / after sunrise / sunset	N/A	00:22	01:24	00:30	02:04	00:30	00:50	00:20	00:45	00:48	01:02	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	02:53	22:10	00:55	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:37	03:00	05:36	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	22:00	N/A	N/A	N/A	19:42	N/A	19:27	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:46	N/A	N/A	N/A	00:32	N/A	00:19	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	05:04	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	01:27	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	19:39	05:08	19:32	05:12	19:09	05:21	19:31	05:03	20:23	05:33	N/A
Time before / after sunrise / sunset	N/A	00:25	01:20	00:20	01:18	00:00	01:10	00:23	01:30	01:18	01:01	N/A

Table 49: Position 8 May 03/05/2017 – 08/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 50: Position 8 May 23/05/2017 – 28/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54	04:50	20:55
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:38	N/A	21:42	03:37	21:47	01:39	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:49	N/A	00:52	01:16	00:56	03:13	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54	04:50	20:55
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	02:25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	02:28	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	N/A	22:20	03:09	21:42	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:30	01:44	00:51	N/A	N/A	N/A	N/A	N/A	N/A

Table 51: Position 8 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:23	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:12	N/A	N/A	N/A	N/A
Common pip	N/A	21:47	03:35	22:01	03:16	21:48	02:51	21:47	03:45	21:57	03:40	N/A
Time before / after sunrise / sunset	N/A	00:38	01:06	00:51	01:25	00:38	01:50	00:36	00:56	00:46	01:01	N/A
Soprano pip	N/A	21:52	03:54	22:27	03:44	21:40	01:32	22:01	03:35	22:01	03:42	N/A
Time before / after sunrise / sunset	N/A	00:43	00:47	01:17	00:57	00:30	03:09	00:50	01:06	00:50	00:59	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	03:42	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	00:59	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	22:03	N/A	N/A	02:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:54	N/A	N/A	02:22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:53	03:44	N/A	02:22	21:47	01:31	22:07	02:16	22:00	02:34	N/A
Time before / after sunrise / sunset	N/A	00:44	00:57	N/A	02:19	00:37	03:10	00:56	02:25	00:49	02:07	N/A
Myotis spp.	N/A	N/A	02:21	23:04	02:02	N/A	02:45	23:39	N/A	23:08	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:20	01:54	02:39	N/A	01:56	02:28	N/A	01:57	N/A	N/A
Long-eared bat	N/A	22:55	03:21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:46	01:20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:34	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:07	N/A	N/A	N/A
Chiro spp.	N/A	22:16	03:52	N/A	03:43	21:53	03:41	22:24	03:32	22:11	03:08	N/A
Time before / after sunrise / sunset	N/A	01:07	00:49	N/A	00:58	00:43	01:00	01:13	01:09	01:00	01:33	N/A

Table 52: Position 8 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	20/07/2017		21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	02:10	N/A	N/A	N/A	N/A	23:19	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:56	N/A	N/A	N/A	N/A	02:26	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	01:43	N/A	04:07	21:45	04:16	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:24	N/A	01:02	00:52	00:54	N/A	N/A	N/A
Soprano pip	N/A	N/A	03:32	N/A	02:48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:34	N/A	02:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	20/07/2017		21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	02:46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	02:21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	23:12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:59	03:34	21:45	02:57	N/A	03:14	21:30	03:18	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:02	01:32	00:50	02:10	N/A	01:55	00:37	01:52	N/A	N/A	N/A

Table 53: Position 8 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	01:00	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	05:00	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:30	05:14	20:33	04:22	20:28	05:40	20:17	05:21	20:26	05:11	N/A
Time before / after sunrise / sunset	N/A	00:32	00:43	00:37	01:36	00:34	00:20	00:25	00:41	00:36	00:52	N/A
Soprano pip	N/A	20:34	N/A	20:45	N/A	N/A	04:30	N/A	00:29	N/A	03:02	N/A
Time before / after sunrise / sunset	N/A	00:36	N/A	00:49	N/A	N/A	01:30	N/A	05:33	N/A	03:01	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	01:05	N/A	N/A	N/A	N/A	N/A	00:57	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	04:53	N/A	N/A	N/A	N/A	N/A	05:06	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	22:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:47	N/A
Time before / after sunrise / sunset	N/A	02:17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:16	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	22:49	02:32	N/A	N/A	22:41	02:52	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:55	03:28	N/A	N/A	02:51	03:11	N/A
Myotis spp.	N/A	21:55	02:23	22:07	00:57	21:15	04:19	22:06	01:42	21:08	03:16	N/A
Time before / after sunrise / sunset	N/A	01:57	03:34	02:11	05:01	01:21	01:41	02:14	04:20	01:18	02:47	N/A
Long-eared bat	N/A	20:56	01:11	22:18	02:12	21:29	04:24	21:01	03:59	23:36	04:59	N/A
Time before / after sunrise / sunset	N/A	00:58	04:46	02:22	03:46	01:35	01:36	01:09	02:03	03:46	01:04	N/A
ENV	N/A	21:48	05:09	20:33	04:17	N/A	04:39	22:07	N/A	20:22	N/A	N/A
Time before / after sunrise / sunset	N/A	01:50	00:48	00:37	01:41	N/A	01:21	02:15	N/A	00:32	N/A	N/A
Chiro spp.	N/A	20:40	04:29	20:37	03:12	20:41	05:08	20:41	05:21	20:36	04:35	N/A
Time before / after sunrise / sunset	N/A	00:42	01:28	00:41	02:46	00:47	00:52	00:49	00:41	00:46	01:28	N/A

Table 54: Position 8 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:37	18:59	06:39	18:56	06:40	18:54	06:42	18:52	06:44	18:50	06:45	18:47
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 55: Position 9 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:43	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:59	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	23:27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	03:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:13	N/A	20:12	N/A	20:02	05:08	20:25	N/A	20:24	N/A	N/A
Time before / after sunrise / sunset	N/A	00:17	N/A	00:14	N/A	00:02	00:38	00:24	N/A	00:21	N/A	N/A
Soprano pip	N/A	N/A	N/A	22:23	N/A	N/A	N/A	N/A	N/A	22:31	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:25	N/A	N/A	N/A	N/A	N/A	02:28	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	22:04	N/A	21:33	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:06	N/A	01:33	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	01:01	23:28	01:42	21:27	02:29	N/A	03:23	21:17	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:49	03:30	04:06	01:27	03:17	N/A	02:21	01:14	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	21:40	02:19	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:40	03:27	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:44	00:18	22:01	04:03	22:26	04:06	21:46	04:13	21:55	N/A	N/A
Time before / after sunrise / sunset	N/A	01:48	05:32	02:03	01:45	02:26	01:40	01:45	01:31	01:52	N/A	N/A

Table 56: Position 9 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:24	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:45	N/A	N/A	N/A
Common pip	N/A	21:12	N/A	N/A	02:43	20:49	04:20	21:18	04:32	21:24	04:26	N/A
Time before / after sunrise / sunset	N/A	00:44	N/A	N/A	02:29	00:18	00:50	00:45	00:37	00:50	00:41	N/A
Soprano pip	N/A	N/A	N/A	22:12	03:26	N/A	N/A	21:44	00:40	21:28	02:29	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:42	01:46	N/A	N/A	01:11	04:29	00:54	02:38	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:02	N/A	22:28	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:29	N/A	01:54	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:00	00:02	21:33	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:27	05:07	00:59	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:10	00:36	23:27	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:37	04:33	02:53	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:46	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:13	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:15	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:42	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	N/A	N/A	03:56	21:41	N/A	21:55	04:41	22:22	04:19	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	01:16	01:10	N/A	01:22	00:28	01:48	00:48	N/A

Table 57: Position 9 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:27	03:52	21:39	03:43	21:33	03:59	N/A	04:14	21:30	04:09	N/A
Time before / after sunrise / sunset	N/A	00:27	00:53	00:38	01:02	00:31	00:45	N/A	00:29	00:26	00:34	N/A
Soprano pip	N/A	21:22	N/A	22:01	N/A	22:04	N/A	N/A	N/A	22:07	N/A	N/A
Time before / after sunrise / sunset	N/A	00:22	N/A	01:00	N/A	01:02	N/A	N/A	N/A	01:03	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	01:01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:15	N/A
Time before / after sunrise / sunset	N/A	N/A	03:44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:28	N/A
Myotis spp.	N/A	23:32	N/A	N/A	02:37	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:32	N/A	N/A	02:08	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:26	02:58	N/A	00:14	21:53	01:32	N/A	03:48	22:56	04:00	N/A
Time before / after sunrise / sunset	N/A	00:26	01:47	N/A	04:31	00:51	03:12	N/A	00:55	01:52	00:43	N/A

Table 58: Position 9 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:13	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:06	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:38	04:05	21:32	04:12	21:38	04:05	21:38	04:04	N/A	02:22	N/A
Time before / after sunrise / sunset	N/A	00:29	00:46	00:24	00:40	00:31	00:48	00:31	00:50	N/A	02:33	N/A
Soprano pip	N/A	N/A	02:26	N/A	03:01	N/A	03:58	22:12	03:29	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:25	N/A	01:51	N/A	00:55	01:05	01:25	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	04:23	N/A	01:58	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Time before / after sunrise / sunset	N/A	N/A	00:28	N/A	02:54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	22:36	02:31	N/A	01:39	22:11	02:49	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:28	02:21	N/A	03:14	01:04	02:05	N/A	N/A	N/A
Myotis spp.	N/A	22:43	02:47	N/A	N/A	N/A	00:11	23:51	02:26	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:34	02:04	N/A	N/A	N/A	04:42	02:44	02:28	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:56	03:57	22:21	02:30	23:12	04:17	22:06	03:34	N/A	02:40	N/A
Time before / after sunrise / sunset	N/A	00:47	00:54	01:13	02:22	02:05	00:36	00:59	01:20	N/A	02:15	N/A

Table 59: Position 9 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:13	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:06	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:38	04:05	21:32	04:12	21:38	04:05	21:38	04:04	N/A	02:22	N/A
Time before / after sunrise / sunset	N/A	00:29	00:46	00:24	00:40	00:31	00:48	00:31	00:50	N/A	02:33	N/A
Soprano pip	N/A	N/A	02:26	N/A	03:01	N/A	03:58	22:12	03:29	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:25	N/A	01:51	N/A	00:55	01:05	01:25	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	04:23	N/A	01:58	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Time before / after sunrise / sunset	N/A	N/A	00:28	N/A	02:54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	22:36	02:31	N/A	01:39	22:11	02:49	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:28	02:21	N/A	03:14	01:04	02:05	N/A	N/A	N/A
Myotis spp.	N/A	22:43	02:47	N/A	N/A	N/A	00:11	23:51	02:26	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:34	02:04	N/A	N/A	N/A	04:42	02:44	02:28	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:56	03:57	22:21	02:30	23:12	04:17	22:06	03:34	N/A	02:40	N/A
Time before / after sunrise / sunset	N/A	00:47	00:54	01:13	02:22	02:05	00:36	00:59	01:20	N/A	02:15	N/A

Table 60: Position 9 August 07/08/2017 – 10/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	07/08/2017		08/08/2017		09/08/2017		10/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:30	20:30	05:32	20:28	05:34	20:26	05:35	20:24
Natterers	N/A	N/A	N/A	N/A	N/A	21:46	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:20	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:51	05:10	20:51	05:03	20:47	05:07	20:46
Time before / after sunrise / sunset	N/A	00:21	00:22	00:23	00:31	00:21	00:28	00:22
Soprano pip	N/A	N/A	N/A	N/A	03:22	N/A	N/A	22:35
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	02:12	N/A	N/A	02:11
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	07/08/2017		08/08/2017		09/08/2017		10/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:30	20:30	05:32	20:28	05:34	20:26	05:35	20:24
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	23:23	N/A	21:59	00:06	N/A	03:56	21:02
Time before / after sunrise / sunset	N/A	02:53	N/A	01:31	05:28	N/A	01:39	00:38
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:13	03:36	22:06	05:03	20:58	05:05	22:27
Time before / after sunrise / sunset	N/A	00:43	01:56	01:38	00:31	00:32	00:30	02:03

Table 61: Position 9 August 11/08/2017 – 12/08/2017 & 30/08/2017 – 31/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	11/08/2017		12/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:37	20:22	05:38	20:20	06:06	19:43	06:08	19:41
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	20:42	05:16	N/A	N/A	N/A	N/A	20:50	20:42
Time before / after sunrise / sunset	00:20	00:22	N/A	N/A	N/A	N/A	01:09	00:20
Soprano pip	N/A	04:09	N/A	N/A	N/A	N/A	20:30	N/A
Time before / after sunrise / sunset	N/A	01:29	N/A	N/A	N/A	N/A	00:49	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	11/08/2017		12/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:37	20:22	05:38	20:20	06:06	19:43	06:08	19:41
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	21:20	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	01:39	N/A
Common/Soprano pip	21:37	N/A	N/A	N/A	N/A	N/A	N/A	21:37
Time before / after sunrise / sunset	01:15	N/A	N/A	N/A	N/A	N/A	N/A	01:15
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	22:12	04:22	N/A	N/A	N/A	N/A	20:58	22:12
Time before / after sunrise / sunset	01:50	01:16	N/A	N/A	N/A	N/A	01:17	01:50
ENV	21:33	N/A	N/A	N/A	N/A	N/A	N/A	21:33
Time before / after sunrise / sunset	01:11	N/A	N/A	N/A	N/A	N/A	N/A	01:11
Chiro spp.	21:32	04:58	N/A	N/A	N/A	N/A	19:56	21:32
Time before / after sunrise / sunset	01:10	00:40	N/A	N/A	N/A	N/A	00:15	01:10

Table 62: Position 9 September 01/09/2017 – 06/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Natterers	N/A	N/A	N/A	N/A	N/A	22:08	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:33	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	23:39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	04:02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:02	00:38	20:18	05:14	19:59	05:35	20:07	05:39	19:57	05:43	20:57
Time before / after sunrise / sunset	N/A	02:23	05:33	00:41	00:58	00:24	00:39	00:35	00:37	00:27	00:34	01:29
Soprano pip	N/A	22:19	05:32	22:17	05:30	21:53	N/A	21:58	00:00	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:40	00:39	02:40	00:42	02:18	N/A	02:26	06:16	N/A	N/A	N/A
Brown long-eared bat	02:17	N/A	N/A	21:06	03:40	21:37	01:08	21:24	03:43	20:50	02:56	20:06
Time before / after sunrise / sunset	03:52	N/A	N/A	01:29	02:32	02:02	05:06	01:52	02:33	01:20	03:21	00:38
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:09	19:39	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	01:44	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:30	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:26	N/A	N/A	N/A	20:58
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:54	N/A	N/A	N/A	01:30
Myotis spp.	N/A	N/A	N/A	21:15	04:17	22:30	N/A	N/A	05:08	N/A	05:03	21:51
Time before / after sunrise / sunset	N/A	N/A	N/A	01:38	01:55	02:55	N/A	N/A	01:08	N/A	01:14	02:23
Long-eared bat	00:55	N/A	04:08	20:42	N/A	20:41	02:52	20:47	00:25	20:47	02:33	20:27
Time before / after sunrise / sunset	05:14	N/A	02:03	01:05	N/A	01:06	03:22	01:15	05:51	01:17	03:44	00:59
ENV	N/A	22:22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:31
Time before / after sunrise / sunset	N/A	02:43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:03
Chiro spp.	04:49	22:01	02:49	20:40	03:15	20:03	03:00	20:22	04:44	20:09	04:56	20:23
Time before / after sunrise / sunset	01:20	02:22	03:22	01:03	02:57	00:28	03:14	00:50	01:32	00:39	01:21	00:55

Table 63: Position 9 September 07/09/2017 – 12/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/09/2017		08/09/2017		09/09/2017		10/09/2017		11/09/2017		12/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:19	19:26	06:20	19:24	06:22	19:21	06:23	19:19	06:25	19:17	06:26	19:14
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	05:59	19:45	05:39	N/A	02:28	N/A	N/A	N/A	N/A	N/A	06:00	N/A
Time before / after sunrise / sunset	00:20	00:19	00:41	N/A	03:54	N/A	N/A	N/A	N/A	N/A	00:26	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	20:17	00:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 64: Position 10 May 03/05/2017 – 08/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:41	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:16	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 65: Position 10 May 22/05/2017 – 27/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	22/05/2017		23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:57	20:47	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:01	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:09	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:57	02:09	21:28	01:13	21:34	02:10	23:21	02:24	23:05	00:47	N/A
Time before / after sunrise / sunset	N/A	01:10	02:46	00:39	03:41	00:44	02:43	02:30	02:28	02:13	04:04	N/A
Soprano pip	N/A	21:58	N/A	21:59	01:38	23:21	01:43	N/A	01:30	23:09	N/A	N/A
Time before / after sunrise / sunset	N/A	01:11	N/A	01:10	03:16	02:31	03:10	N/A	03:22	02:17	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	22/05/2017		23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:57	20:47	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	23:54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:55	N/A	N/A
Time before / after sunrise / sunset	N/A	03:07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:03	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	02:09	N/A	01:30	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	02:44	N/A	03:22	N/A	N/A	N/A
Myotis spp.	N/A	21:48	N/A	N/A	N/A	21:55	N/A	N/A	N/A	21:58	N/A	N/A
Time before / after sunrise / sunset	N/A	01:01	N/A	N/A	N/A	01:05	N/A	N/A	N/A	01:06	N/A	N/A
Long-eared bat	N/A	22:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	23:09	N/A	N/A	N/A	N/A	N/A	N/A	01:26	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:22	N/A	N/A	N/A	N/A	N/A	N/A	03:26	N/A	N/A	N/A

Table 66: Position 10 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	01:46	23:24	02:55	N/A	N/A	N/A	01:22	N/A	02:48	N/A
Time before / after sunrise / sunset	N/A	N/A	02:55	02:14	01:46	N/A	N/A	N/A	03:19	N/A	01:53	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:50	01:34	N/A	03:01	22:10	03:55	22:09	03:10	23:00	04:03	N/A
Time before / after sunrise / sunset	N/A	00:41	03:07	N/A	01:40	01:00	00:46	00:58	01:31	01:49	00:38	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	21:57	N/A	N/A	N/A	22:57	01:14	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	00:47	N/A	N/A	N/A	01:46	03:27	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	23:20	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:10	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	23:37	N/A	23:39	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:27	N/A	02:28	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	22:12	N/A	N/A	N/A	22:13	00:33	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:02	N/A	N/A	N/A	01:02	04:08	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	22:54	03:13	23:01	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:44	01:28	01:50	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	22:35	02:17	N/A	N/A	N/A	N/A	23:54	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:25	02:24	N/A	N/A	N/A	N/A	02:43	N/A	N/A

Table 67: Position 10 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	20/07/2017		21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50
Natterers	N/A	N/A	00:26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:59	03:04	22:14	04:18	22:15	03:37	23:41	04:04	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:02	02:02	01:19	00:49	01:21	01:32	02:48	01:06	N/A	N/A	N/A
Soprano pip	N/A	N/A	04:22	23:41	03:46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:44	02:46	01:21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	21:51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	20/07/2017		21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50
Time before / after sunrise / sunset	N/A	N/A	N/A	00:56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	01:43	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	01:58	N/A	01:29	N/A	N/A	23:50	00:07	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	03:08	N/A	03:38	N/A	N/A	02:57	05:03	N/A	N/A	N/A
Long-eared bat	N/A	N/A	00:09	N/A	N/A	22:07	03:54	22:00	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:57	N/A	N/A	01:13	01:15	01:07	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:00	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:12	N/A

Table 68: Position 10 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	04:33	21:05	05:07	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	01:27	01:13	00:55	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	04:37	N/A	N/A	N/A	03:49	21:02	03:36	21:05	02:22	N/A
Time before / after sunrise / sunset	N/A	N/A	01:20	N/A	N/A	N/A	02:11	01:10	02:26	01:15	03:41	N/A
Soprano pip	N/A	N/A	03:50	N/A	05:24	N/A	N/A	N/A	04:52	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:07	N/A	00:34	N/A	N/A	N/A	01:10	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:41	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:21	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	01:39	23:28	02:56	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	04:21	03:36	03:06	N/A	N/A	N/A

Table 69: Position 10 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:37	18:59	06:39	18:56	06:40	18:54	06:42	18:52	06:44	18:50	06:45	18:47
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 70: Position 10A October

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/10/2017		02/10/2017		03/10/2017		04/10/2017		05/10/2017		06/10/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:56	18:31	06:58	18:29	07:00	18:27	07:01	18:25	07:03	18:23	07:04	18:20
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:25	06:04	21:51	02:14	19:01	05:14	19:12	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:54	00:54	03:22	04:46	00:34	01:47	00:47	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	01:04	19:23	N/A	19:00	N/A	19:22	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	05:54	00:54	N/A	00:33	N/A	00:57	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	22:02	05:44	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	03:35	01:17	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	23:48	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	05:21	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	23:44	01:06	N/A	N/A	19:14	N/A	19:15	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	05:13	05:52	N/A	N/A	00:47	N/A	00:50	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	03:55	21:20	04:39	21:30	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/10/2017		02/10/2017		03/10/2017		04/10/2017		05/10/2017		06/10/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:56	18:31	06:58	18:29	07:00	18:27	07:01	18:25	07:03	18:23	07:04	18:20
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	03:05	02:53	02:22	03:05	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	02:09	N/A	04:27	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	04:51	N/A	02:34	N/A	N/A	N/A	N/A	N/A
ENV	N/A	19:07	N/A	N/A	00:06	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:36	N/A	N/A	06:54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:02	05:52	20:54	02:18	20:13	05:41	19:21	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:31	01:06	02:25	04:42	01:46	01:20	00:56	N/A	N/A	N/A	N/A

Table 71: Position 11 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	20:40	02:52	20:39	N/A	20:40	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:42	02:56	00:39	N/A	00:39	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	00:23	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	05:23	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/04/2017		20/04/2017		21/04/2017		22/04/2017		23/04/2017		24/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:52	19:56	05:50	19:58	05:48	20:00	05:46	20:01	05:44	20:03	05:42	20:04
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	23:40	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	03:40	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	20:42	N/A	22:34	N/A	N/A	N/A	20:39	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:46	N/A	02:36	N/A	N/A	N/A	00:38	N/A	N/A	N/A	N/A

Table 72: Position 11 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Natterers	N/A	N/A	N/A	N/A	N/A	21:34	N/A	21:49	00:47	21:47	02:01	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:03	N/A	01:16	04:22	01:13	03:06	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	21:12	03:32	N/A	00:18	21:27	04:00	21:20	04:22	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:42	01:40	N/A	04:52	00:54	01:09	00:46	00:45	N/A
Soprano pip	N/A	21:32	N/A	21:01	03:26	20:45	04:47	21:09	04:40	N/A	04:44	N/A
Time before / after sunrise / sunset	N/A	01:04	N/A	00:31	01:46	00:14	00:23	00:36	00:29	N/A	00:23	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	09/05/2017		10/05/2017		11/05/2017		12/05/2017		13/05/2017		14/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:15	20:28	05:13	20:30	05:12	20:31	05:10	20:33	05:09	20:34	05:07	20:36
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:00	N/A	N/A	03:57	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:27	N/A	N/A	01:10	N/A
Myotis spp.	N/A	N/A	N/A	22:11	N/A	21:40	N/A	23:43	00:37	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:41	N/A	01:09	N/A	03:10	04:32	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	05:25	21:59	05:01	21:15	N/A	22:43	04:41	22:20	03:52	N/A
Time before / after sunrise / sunset	N/A	N/A	00:00	01:29	00:11	00:44	N/A	02:10	00:28	01:46	01:15	N/A

Table 73: Position 11 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Natterers	N/A	N/A	01:26	N/A	N/A	22:59	02:32	N/A	N/A	22:40	02:13	N/A
Time before / after sunrise / sunset	N/A	N/A	03:19	N/A	N/A	01:57	02:12	N/A	N/A	01:36	02:30	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:52	03:33	22:16	03:49	21:58	03:41	N/A	N/A	21:59	01:46	N/A
Time before / after sunrise / sunset	N/A	01:52	01:12	01:15	00:56	00:56	01:03	N/A	N/A	00:55	02:57	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	02/06/2017		03/06/2017		04/06/2017		05/06/2017		06/06/2017		07/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:46	21:00	04:45	21:01	04:45	21:02	04:44	21:03	04:43	21:04	04:43	21:05
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	03:31	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	01:14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	23:17	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:15	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	01:42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	03:03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	22:51	03:08	N/A	02:20	22:33	03:56	N/A	N/A	22:41	02:13	N/A
Time before / after sunrise / sunset	N/A	01:51	01:37	N/A	02:25	01:31	00:48	N/A	N/A	01:37	02:30	N/A

Table 74: Position 11 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:34	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:20	N/A	N/A	N/A
Common pip	N/A	22:00	03:53	22:05	04:04	21:54	04:02	21:53	03:04	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:51	00:58	00:57	00:48	00:47	00:51	00:46	01:50	N/A	N/A	N/A
Soprano pip	N/A	21:57	04:19	21:55	04:13	21:48	04:10	22:08	02:19	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:48	00:32	00:47	00:39	00:41	00:43	01:01	02:35	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	22:26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/07/2017		08/07/2017		09/07/2017		10/07/2017		11/07/2017		12/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:50	21:09	04:51	21:08	04:52	21:07	04:53	21:07	04:54	21:06	04:55	21:05
Time before / after sunrise / sunset	N/A	01:17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	23:19	04:19	21:55	04:06	22:47	04:07	21:41	02:12	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:10	00:32	00:47	00:46	01:40	00:46	00:34	02:42	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:27	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:20	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	22:01	04:18	22:08	03:59	22:08	04:09	22:00	02:42	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:52	00:33	01:00	00:53	01:01	00:44	00:53	02:12	N/A	N/A	N/A

Table 75: Position 11 August 07/08/2017 – 10/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	07/08/2017		08/08/2017		09/08/2017		10/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:30	20:30	05:32	20:28	05:34	20:26	05:35	20:24
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 76: Position 11 August 11/08/2017 – 12/08/2017 & 30/08/2017 – 31/08/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	11/08/2017		12/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:37	20:22	05:38	20:20	06:06	19:43	06:08	19:41
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:51
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:10
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:00
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:19
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)							
	11/08/2017		12/08/2017		30/08/2017		31/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:37	20:22	05:38	20:20	06:06	19:43	06:08	19:41
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	22:50	04:36	21:30
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	03:07	01:32	01:49
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	N/A	N/A	N/A	22:39	05:21	20:16
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	02:56	00:47	00:35

Table 77: Position 11 September 01/09/2017 – 06/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28	06:11	19:37
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	05:06	N/A	05:27	20:15	02:56	20:05	N/A	N/A	N/A	N/A	05:06	N/A
Time before / after sunrise / sunset	01:05	N/A	00:45	00:40	03:18	00:33	N/A	N/A	N/A	N/A	01:05	N/A
Soprano pip	05:40	20:08	05:48	20:10	05:35	20:01	N/A	N/A	N/A	N/A	05:40	20:08
Time before / after sunrise / sunset	00:31	00:31	00:24	00:35	00:39	00:29	N/A	N/A	N/A	N/A	00:31	00:31
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	01/09/2017		02/09/2017		03/09/2017		04/09/2017		05/09/2017		06/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:11	19:37	06:12	19:35	06:14	19:32	06:16	19:30	06:17	19:28	06:11	19:37
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	05:37	N/A	05:30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	05:37	N/A
Time before / after sunrise / sunset	00:34	N/A	00:42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:34	N/A
Myotis spp.	05:18	21:08	05:24	20:12	03:00	N/A	N/A	N/A	N/A	N/A	05:18	21:08
Time before / after sunrise / sunset	00:53	01:31	00:48	00:37	03:14	N/A	N/A	N/A	N/A	N/A	00:53	01:31
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	03:46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:46	N/A
Time before / after sunrise / sunset	02:25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:25	N/A
Chiro spp.	05:37	20:11	05:20	20:06	02:59	20:00	N/A	N/A	N/A	N/A	05:37	20:11
Time before / after sunrise / sunset	00:34	00:34	00:52	00:31	03:15	00:28	N/A	N/A	N/A	N/A	00:34	00:34

Table 78: Position 11 September 07/09/2017 – 12/09/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/09/2017		08/09/2017		09/09/2017		10/09/2017		11/09/2017		12/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:19	19:26	06:20	19:24	06:22	19:21	06:23	19:19	06:25	19:17	06:26	19:14
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	06:10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	00:09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 79: Position 12 May 03/05/2017 – 08/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:50	04:22	20:48	N/A	21:21	N/A	20:58	04:29	20:59	02:58	N/A
Time before / after sunrise / sunset	N/A	00:31	01:02	00:27	N/A	00:59	N/A	00:34	00:49	00:34	02:19	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:11	N/A	20:53	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:47	N/A	00:28	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:29	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:04	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	23:11	04:24	21:06	N/A	N/A	N/A	N/A	N/A	21:13	N/A	N/A
Time before / after sunrise / sunset	N/A	02:52	01:00	00:45	N/A	N/A	N/A	N/A	N/A	00:48	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:18	N/A	21:30	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:54	N/A	01:05	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:47	N/A	21:19	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:23	N/A	00:54	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	23:11	03:14	22:23	05:46	N/A	N/A	21:00	N/A	21:13	00:17	N/A
Time before / after sunrise / sunset	N/A	02:52	02:10	02:02	00:01	N/A	N/A	00:36	N/A	00:48	05:00	N/A

Table 80: Position 12 May 23/05/2017 – 28/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54	04:50	20:55
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:22	04:02	21:57	04:00	21:41	04:05	21:48	03:57	21:38	03:36	N/A
Time before / after sunrise / sunset	N/A	00:33	00:52	01:07	00:53	00:50	00:47	00:56	00:54	00:44	01:14	N/A
Soprano pip	N/A	21:30	00:17	21:29	01:57	21:40	04:07	21:38	04:11	21:47	03:42	N/A
Time before / after sunrise / sunset	N/A	00:41	04:37	00:39	02:56	00:49	00:45	00:46	00:40	00:53	01:08	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:14	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:22	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017		28/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54	04:50	20:55
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:30	01:04	21:31	01:53	21:42	04:06	21:34	N/A	21:48	03:24	N/A
Time before / after sunrise / sunset	N/A	00:41	03:50	00:41	03:00	00:51	00:46	00:42	N/A	00:54	01:26	N/A
Myotis spp.	N/A	N/A	03:39	N/A	00:15	N/A	N/A	22:04	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:15	N/A	04:38	N/A	N/A	01:12	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	23:45	N/A	22:13	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:55	N/A	01:22	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:20	03:42	21:30	05:00	21:39	04:05	21:27	02:35	21:33	03:38	N/A
Time before / after sunrise / sunset	N/A	00:31	01:12	00:40	00:01	00:48	00:47	00:35	02:16	00:39	01:12	N/A

Table 81: Position 12 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:43	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:32	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	22:05	03:46	21:56	03:43	21:54	03:31	22:01	03:50	22:09	03:40	N/A
Time before / after sunrise / sunset	N/A	00:56	00:55	00:46	00:58	00:44	01:10	00:50	00:51	00:58	01:01	N/A
Soprano pip	N/A	21:55	N/A	22:08	03:32	N/A	02:40	21:57	N/A	22:46	03:25	N/A
Time before / after sunrise / sunset	N/A	00:46	N/A	00:58	01:09	N/A	02:01	00:46	N/A	01:35	01:16	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	22:33	N/A	N/A	01:23	N/A	03:11	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:24	N/A	N/A	03:18	N/A	01:30	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	22:24	03:21	22:16	03:27	22:09	N/A	N/A	03:00	N/A	03:10	N/A
Time before / after sunrise / sunset	N/A	01:15	01:20	01:06	01:14	00:59	N/A	N/A	01:41	N/A	01:31	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	22:16	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:06	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	22:05	03:29	22:09	03:30	22:00	00:48	22:40	03:50	22:09	03:36	N/A
Time before / after sunrise / sunset	N/A	00:56	01:12	00:59	01:11	00:50	03:53	01:29	00:51	00:58	01:05	N/A

Table 82: Position 12 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	20/07/2017		21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:05	20:57	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	04:36	21:54	02:43	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:30	00:59	02:24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	04:25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 83: Position 12 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:30	05:00	20:30	05:25	20:44	05:31	20:35	05:24	20:49	04:59	N/A
Time before / after sunrise / sunset	N/A	00:32	00:57	00:34	00:33	00:50	00:29	00:43	00:38	00:59	01:04	N/A
Soprano pip	N/A	23:37	04:59	N/A	N/A	N/A	05:31	20:34	N/A	20:32	N/A	N/A
Time before / after sunrise / sunset	N/A	03:39	00:58	N/A	N/A	N/A	00:29	00:42	N/A	00:42	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	03:36	N/A	N/A	20:55	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	02:24	N/A	N/A	01:05	N/A	N/A
Common/Soprano pip	N/A	N/A	05:18	N/A	N/A	N/A	N/A	23:41	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:39	N/A	N/A	N/A	N/A	03:49	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	05:10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	00:48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:09	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:17	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:19	04:21	22:55	05:24	20:47	05:33	21:03	04:53	19:58	05:17	N/A
Time before / after sunrise / sunset	N/A	01:21	N/A	02:59	00:34	00:53	00:27	01:11	01:09	00:08	00:46	N/A

Table 84: Position 12 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:37	18:59	06:39	18:56	06:40	18:54	06:42	18:52	06:44	18:50	06:45	18:47
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	19:29	N/A	19:32	06:05	19:24	06:15	19:21	01:27	19:37	05:44	N/A
Time before / after sunrise / sunset	N/A	00:30	N/A	00:36	00:35	00:30	00:27	00:29	05:17	00:47	01:01	N/A
Soprano pip	N/A	19:35	04:51	19:19	06:07	19:11	05:56	19:27	05:28	19:30	06:06	N/A
Time before / after sunrise / sunset	N/A	00:36	01:48	00:23	00:33	00:17	00:46	00:35	01:16	00:40	00:39	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:37	18:59	06:39	18:56	06:40	18:54	06:42	18:52	06:44	18:50	06:45	18:47
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	22:30	05:28	21:20	N/A	23:27	02:32	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	03:34	01:12	02:26	N/A	04:35	04:12	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	19:29	N/A	N/A	00:07	N/A	N/A	N/A	05:46	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	00:33	N/A	N/A	06:35	N/A	N/A	N/A	00:59	N/A
Myotis spp.	N/A	21:54	03:13	N/A	03:02	21:47	01:26	20:22	02:34	22:24	N/A	N/A
Time before / after sunrise / sunset	N/A	02:55	03:26	N/A	03:38	02:53	05:16	01:30	04:10	03:34	N/A	N/A
Long-eared bat	N/A	N/A	05:00	22:52	03:37	21:43	N/A	22:52	04:13	21:33	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:39	03:56	03:03	02:49	N/A	04:00	02:31	02:43	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:01	04:17	21:02	05:40	18:58	03:44	18:37	03:00	20:03	06:06	N/A
Time before / after sunrise / sunset	N/A	02:02	02:22	02:06	01:00	00:04	02:58	00:00	03:44	01:13	00:39	N/A

Table 85: Position 13 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	20:45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:50	03:54	N/A
Time before / after sunrise / sunset	N/A	00:41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:39	01:39	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:45	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:34	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	19/09/2017		20/09/2017		21/09/2017		22/09/2017		23/09/2017		24/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:00	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:49	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	23:12	N/A	N/A	N/A	22:33	N/A	N/A	N/A	21:02	N/A	N/A
Time before / after sunrise / sunset	N/A	03:08	N/A	N/A	N/A	02:25	N/A	N/A	N/A	00:51	N/A	N/A

Table 86: Position 13 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	00:45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:23	04:26	21:12	04:29	23:55	04:07	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:46	00:38	00:33	00:34	03:15	00:55	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	22:01	03:52	N/A	03:06	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:24	01:12	N/A	01:57	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	21:30	01:40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Time before / after sunrise / sunset	N/A	00:53	03:24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:31	04:26	21:45	01:48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:54	00:38	01:06	03:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	21:47	N/A	22:05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:10	N/A	01:26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:41	04:26	22:44	01:48	N/A	02:11	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:04	00:38	02:05	03:15	N/A	02:51	N/A	N/A	N/A	N/A	N/A

Table 87: Position 13 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Natterers	N/A	N/A	02:40	22:33	N/A	N/A	N/A	22:44	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	02:02	01:27	N/A	N/A	N/A	01:37	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:35	03:43	21:11	03:51	21:42	03:55	21:35	03:29	21:43	03:27	N/A
Time before / after sunrise / sunset	N/A	00:30	00:59	00:05	00:51	00:36	00:47	00:28	01:12	00:35	01:14	N/A
Soprano pip	N/A	21:34	02:20	N/A	N/A	21:52	03:55	21:51	03:16	21:49	02:11	N/A
Time before / after sunrise / sunset	N/A	00:29	02:22	N/A	N/A	00:46	00:47	00:44	01:25	00:41	02:30	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	01:36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:47	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Time before / after sunrise / sunset	N/A	N/A	03:06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:54	N/A
Common/Soprano pip	N/A	22:05	N/A	N/A	01:59	21:53	N/A	21:53	00:35	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:00	N/A	N/A	02:43	00:47	N/A	00:46	04:06	N/A	N/A	N/A
Myotis spp.	N/A	23:05	02:13	N/A	03:12	N/A	03:08	23:28	03:16	22:20	01:08	N/A
Time before / after sunrise / sunset	N/A	02:00	02:29	N/A	01:30	N/A	01:34	02:21	01:25	01:12	03:33	N/A
Long-eared bat	N/A	N/A	N/A	23:11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:15	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04:26	N/A	N/A	N/A
Chiro spp.	N/A	21:38	03:44	21:13	04:42	21:42	03:41	21:36	02:17	21:53	03:48	N/A
Time before / after sunrise / sunset	N/A	00:33	00:58	00:07	00:00	00:36	01:01	00:29	02:24	00:45	00:53	N/A

Table 88: Position 13 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22:01	04:23	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:00	00:38	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 89: Position 13 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	N/A	N/A	N/A	N/A	20:27	02:02	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	00:18	03:47	N/A	N/A	N/A	N/A	N/A

Table 90: Position 13 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	02:29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 91: Position 14 April

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/2017		25/04/2017		26/04/2017		27/04/2017		28/04/2017		29/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	19:50	N/A	N/A	N/A	N/A	N/A	20:43	N/A	20:33	03:35	N/A
Time before / after sunrise / sunset	N/A	00:00	N/A	N/A	N/A	N/A	N/A	00:34	N/A	00:22	01:58	N/A
Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:42	00:09	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:31	05:24	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:00	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:49	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	24/04/2017		25/04/2017		26/04/2017		27/04/2017		28/04/2017		29/04/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:42	20:04	05:40	20:06	05:38	20:08	05:37	20:09	05:35	20:11	05:33	20:13
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:43	01:25	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:32	04:08	N/A
Myotis spp.	N/A	21:19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:49	03:25	N/A
Time before / after sunrise / sunset	N/A	01:15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:38	02:08	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	19:50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:43	04:59	N/A
Time before / after sunrise / sunset	N/A	00:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:32	00:34	N/A

Table 92: Position 14 May

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:19	04:17	21:08	04:20	N/A	03:13	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:42	00:47	00:29	00:43	N/A	01:49	N/A	N/A	N/A	N/A	N/A
Soprano pip	N/A	20:54	03:56	20:59	03:08	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:17	01:08	00:20	01:55	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	15/05/2017		16/05/2017		17/05/2017		18/05/2017		19/05/2017		20/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:37	05:04	20:39	05:03	20:40	05:02	20:42	05:00	20:43	04:59	20:45
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:12	04:19	21:43	03:39	N/A	03:23	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:35	00:45	01:04	01:24	N/A	01:39	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	21:40	03:56	22:16	00:43	22:05	02:07	22:32	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:03	01:08	01:37	04:20	01:25	02:55	01:50	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:14	04:26	21:08	03:31	23:16	03:22	22:18	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	00:37	00:38	00:29	01:32	02:36	01:40	01:36	N/A	N/A	N/A	N/A

Table 93: Position 14 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:27	04:13	21:33	04:00	21:39	03:53	21:41	03:23	21:45	03:33	N/A
Time before / after sunrise / sunset	N/A	00:22	00:29	00:27	00:42	00:33	00:49	00:34	01:18	00:37	01:08	N/A
Soprano pip	N/A	21:19	04:11	21:30	N/A	21:32	04:19	21:52	03:36	21:44	04:00	N/A
Time before / after sunrise / sunset	N/A	00:14	00:31	00:24	N/A	00:26	00:23	00:45	01:05	00:36	00:41	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	07/06/2017		08/06/2017		09/06/2017		10/06/2017		11/06/2017		12/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:43	21:05	04:42	21:06	04:42	21:06	04:42	21:07	04:41	21:08	04:41	21:09
Common/Soprano pip	N/A	21:27	03:46	N/A	N/A	22:36	03:20	22:31	03:51	21:48	04:00	N/A
Time before / after sunrise / sunset	N/A	00:22	00:56	N/A	N/A	01:30	01:22	01:24	00:50	00:40	00:41	N/A
Myotis spp.	N/A	23:52	04:01	N/A	N/A	22:38	03:05	N/A	00:21	N/A	02:41	N/A
Time before / after sunrise / sunset	N/A	02:47	00:41	N/A	N/A	01:32	01:37	N/A	04:20	N/A	02:00	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:46	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02:38	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:35	04:12	21:32	04:14	22:32	04:16	21:39	04:14	22:23	03:39	N/A
Time before / after sunrise / sunset	N/A	00:30	00:30	00:26	00:28	01:26	00:26	00:32	00:27	01:15	01:02	N/A

Table 94: Position 14 July

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:32	04:00	21:26	04:05	21:32	03:11	21:26	03:38	21:48	02:44	N/A
Time before / after sunrise / sunset	N/A	00:27	00:56	00:22	00:53	00:29	01:48	00:24	01:22	00:47	02:17	N/A
Soprano pip	N/A	21:23	03:44	23:19	04:27	21:33	04:43	N/A	02:12	N/A	02:18	N/A
Time before / after sunrise / sunset	N/A	00:18	01:12	02:15	00:31	00:30	00:16	N/A	02:48	N/A	02:43	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/07/2017		13/07/2017		14/07/2017		15/07/2017		16/07/2017		17/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:55	21:05	04:56	21:04	04:58	21:03	04:59	21:02	05:00	21:01	05:01	21:00
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	21:24	03:22	23:28	04:29	21:33	03:17	21:29	01:00	21:34	01:57	N/A
Time before / after sunrise / sunset	N/A	00:19	01:34	02:24	00:29	00:30	01:42	00:27	04:00	00:33	03:04	N/A
Myotis spp.	N/A	21:55	02:35	22:19	02:41	22:45	04:00	N/A	N/A	N/A	01:27	N/A
Time before / after sunrise / sunset	N/A	00:50	02:21	01:15	02:17	01:42	00:59	N/A	N/A	N/A	03:34	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	21:04	04:28	21:19	04:38	21:34	04:53	21:29	03:33	21:37	02:32	N/A
Time before / after sunrise / sunset	N/A	00:00	00:28	00:15	00:20	00:31	00:06	00:27	01:27	00:36	02:29	N/A

Table 95: Position 14 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Natterers	N/A	N/A	01:54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	03:52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	05:22	20:31	04:43	20:55	04:58	21:01	N/A	21:21	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:24	00:20	01:04	00:46	00:51	00:54	N/A	01:16	N/A	N/A
Soprano pip	N/A	22:48	05:17	23:13	05:49	20:30	05:21	22:33	04:38	20:16	N/A	N/A
Time before / after sunrise / sunset	N/A	02:35	00:29	03:02	00:00	00:21	00:28	02:26	01:13	00:11	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	16/08/2017		17/08/2017		18/08/2017		19/08/2017		20/08/2017		21/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:44	20:13	05:46	20:11	05:47	20:09	05:49	20:07	05:51	20:05	05:52	20:03
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	02:48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	02:59	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	01:03	N/A	05:50	20:32	05:26	20:15	N/A	21:46	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	04:43	N/A	00:00	00:23	00:23	00:08	N/A	01:41	N/A	N/A
Myotis spp.	N/A	N/A	02:11	23:11	N/A	22:11	02:31	23:53	04:10	21:54	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	03:35	03:00	N/A	02:02	03:18	03:46	01:41	01:49	N/A	N/A
Long-eared bat	N/A	23:56	N/A	23:43	N/A	N/A	01:19	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	03:43	N/A	03:32	N/A	N/A	04:30	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	20:42	04:55	19:52	06:00	20:16	05:32	20:28	05:23	20:17	N/A	N/A
Time before / after sunrise / sunset	N/A	00:29	00:51	00:00	00:00	00:07	00:17	00:21	00:28	00:12	N/A	N/A

Table 96: Position 14 September

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	00:14	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	06:17	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	19:34	05:41	19:39	05:22	19:44	N/A	19:41	N/A	22:26	N/A	N/A
Time before / after sunrise / sunset	N/A	00:20	00:47	00:27	01:08	00:34	N/A	00:33	N/A	03:21	N/A	N/A
Soprano pip	N/A	20:57	N/A	19:38	05:33	21:36	04:46	21:31	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:43	N/A	00:26	00:57	02:26	01:45	02:23	N/A	N/A	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	12/09/2017		13/09/2017		14/09/2017		15/09/2017		16/09/2017		17/09/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	06:26	19:14	06:28	19:12	06:30	19:10	06:31	19:08	06:33	19:05	06:34	19:03
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	20:15	05:36	22:02	05:57	21:13	04:20	20:29	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:01	00:52	02:50	00:33	02:03	02:11	01:21	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	20:33	01:56	20:06	03:24	20:13	05:11	20:37	00:02	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	01:21	04:34	00:56	03:07	01:05	01:22	01:32	06:32	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chiro spp.	N/A	19:39	05:42	19:39	06:01	19:33	04:22	19:52	05:20	20:05	02:08	N/A
Time before / after sunrise / sunset	N/A	00:25	00:46	00:27	00:29	00:23	02:09	00:44	01:13	01:00	04:26	N/A

Table 97: Position 15 May 03/05/2017 – 08/05/2017

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Natterers	N/A	N/A	02:59	N/A	N/A	N/A	01:17	N/A	N/A	22:30	02:58	N/A
Time before / after sunrise / sunset	N/A	N/A	02:25	N/A	N/A	N/A	04:03	N/A	N/A	02:05	02:19	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	N/A	04:45	20:49	04:37	21:13	N/A	21:22	N/A	20:55	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:39	00:28	00:45	00:51	N/A	00:58	N/A	00:30	N/A	N/A
Soprano pip	N/A	21:10	N/A	N/A	N/A	23:06	N/A	23:15	03:36	21:02	02:47	N/A
Time before / after sunrise / sunset	N/A	00:51	N/A	N/A	N/A	02:44	N/A	02:51	01:42	00:37	02:30	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lesser horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	03/05/2017		04/05/2017		05/05/2017		06/05/2017		07/05/2017		08/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:25	20:19	05:24	20:21	05:22	20:22	05:20	20:24	05:18	20:25	05:17	20:27
Chiro spp.	N/A	N/A	04:26	N/A	N/A	21:11	N/A	21:26	N/A	21:19	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:58	N/A	N/A	00:49	N/A	01:02	N/A	00:54	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	22/05/2017		23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:57	20:47	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:56	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:04	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	04:02	N/A	04:00	N/A	03:54	N/A	03:50	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	00:52	N/A	00:53	N/A	00:58	N/A	01:01	N/A
Myotis spp.	N/A	N/A	03:56	N/A	N/A	N/A	N/A	N/A	03:12	22:25	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	00:59	N/A	N/A	N/A	N/A	N/A	01:40	01:33	N/A	N/A
Horseshoe spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	22:13	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	01:23	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:36	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:15	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	22/05/2017		23/05/2017		24/05/2017		25/05/2017		26/05/2017		27/05/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:57	20:47	04:55	20:49	04:54	20:50	04:53	20:51	04:52	20:52	04:51	20:54
Chiro spp.	N/A	21:58	03:51	22:36	03:58	21:58	04:10	21:49	04:00	22:27	03:52	N/A
Time before / after sunrise / sunset	N/A	01:11	01:04	01:47	00:56	01:08	00:43	00:58	00:52	01:35	00:59	N/A

Table 99: Position 15 June

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Natterers	N/A	22:17	N/A	N/A	N/A	22:19	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	01:08	N/A	N/A	N/A	01:09	N/A	N/A	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common pip	N/A	21:51	03:48	22:10	03:49	21:51	03:47	22:02	03:47	22:13	03:57	N/A
Time before / after sunrise / sunset	N/A	00:42	00:53	01:00	00:52	00:41	00:54	00:51	00:54	01:02	00:44	N/A
Soprano pip	N/A	21:49	03:27	N/A	03:23	22:24	03:42	21:47	03:52	21:53	02:34	N/A
Time before / after sunrise / sunset	N/A	00:40	01:14	N/A	01:18	01:14	00:59	00:36	00:49	00:42	02:07	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lesser horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	13/06/2017		14/06/2017		15/06/2017		16/06/2017		17/06/2017		18/06/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	04:41	21:09	04:41	21:10	04:41	21:10	04:41	21:11	04:41	21:11	04:41	21:11
Chiro spp.	N/A	21:57	03:28	22:23	03:00	22:12	03:20	22:25	03:51	22:43	03:41	N/A
Time before / after sunrise / sunset	N/A	00:48	01:13	01:13	01:41	01:02	01:21	01:14	00:50	01:32	01:00	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	21/07/2017		22/07/2017		23/07/2017		24/07/2017		25/07/2017		26/07/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:06	20:55	05:07	20:54	05:09	20:53	05:10	20:52	05:12	20:50	05:13	20:49
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Common/Soprano pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Horseshoe spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ENV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 101: Position 15 August

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Natterers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23:45	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03:53	N/A	N/A	N/A	N/A
Noctule	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nathusius' pip	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:25	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:33	N/A	N/A	N/A	N/A
Common pip	N/A	20:32	05:19	20:31	02:42	20:32	05:20	20:26	03:06	20:23	05:08	N/A
Time before / after sunrise / sunset	N/A	00:34	00:38	00:35	03:16	00:38	00:40	00:34	02:56	00:33	00:55	N/A
Soprano pip	N/A	20:37	03:04	20:37	04:59	20:42	05:29	20:44	04:39	20:32	N/A	N/A
Time before / after sunrise / sunset	N/A	00:39	02:53	00:41	00:59	00:48	00:31	00:52	01:23	00:42	N/A	N/A
Brown long-eared bat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lesser horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20:27	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:37	N/A	N/A
Greater horseshoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:00	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:10	N/A	N/A
Khul/Nath/Savi pip	N/A	N/A	N/A	21:56	N/A	N/A	N/A	N/A	N/A	21:01	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:11	N/A	N/A
Common/Soprano pip	N/A	N/A	04:32	22:22	N/A	21:18	N/A	N/A	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	01:25	02:26	N/A	01:24	N/A	N/A	N/A	N/A	N/A	N/A
Myotis spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	00:33	N/A	04:30	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	05:29	N/A	01:33	N/A
Horseshoe spp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21:03	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01:13	N/A	N/A
Long-eared bat	N/A	N/A	N/A	22:06	N/A	22:25	N/A	N/A	03:17	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	N/A	02:10	N/A	02:31	N/A	N/A	02:45	N/A	N/A	N/A
ENV	N/A	N/A	00:32	22:25	N/A	N/A	03:27	21:09	N/A	N/A	N/A	N/A
Time before / after sunrise / sunset	N/A	N/A	05:25	02:29	N/A	N/A	02:33	01:17	N/A	N/A	N/A	N/A

Species	Time of First Pass (after sunset) and Last Pass (before sunrise)											
	23/08/2017		24/08/2017		25/08/2017		26/08/2017		27/08/2017		28/08/2017	
	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk	Dawn	Dusk
	05:55	19:58	05:57	19:56	05:58	19:54	06:00	19:52	06:02	19:50	06:03	19:48
Chiro spp.	N/A	20:14	04:21	21:06	03:29	20:41	05:02	20:44	04:45	20:23	04:55	N/A
Time before / after sunrise / sunset	N/A	00:16	01:36	01:10	02:29	00:47	00:58	00:52	01:17	00:33	01:08	N/A

APPENDIX G: Supporting Information - SM4 Set up details

SM4 default settings

Deployment Scenario		Reason
SM4BAT-FS		
Start dd/mm/yy hh:mm:ss	Ignore	
Slot A	128GB	
Slot B	128GB	
Mic 0:	SMM-U1	
Trig Ratio (%)	10% (default)	
Battery (Wh)	72 Wh (default)	
Setting		
Prefix	SM4-FS-001 (to 030)	
Gain	12dB	
Timezone	UTC+01 (= BST. Need to change to UTC when the clock go back)	
Lat	xx.xxN	Add appropriate value
Lon:	yy.yyW	Add appropriate value
16 kHz HPF	Off	
Sample rate	256kHz	
Call duration min	0.5ms	
Call duration max	Off	
Call frequency min	10kHz (default is 16kHz)	
Trigger level	Use default (12dB)	
Trigger window	3s	
Trigger max time	00:15	
Sunrise/sunset		
LED delay off		
Schedule		
Start	Set - 00:30	
Duty	always	
End	Rise + 00:30	

APPENDIX H: **Annexe 2 Species Distribution within the UK**

The images below are taken from published sources and shown the distribution of Annexe II bat species (as listed on the Habitats Directive)

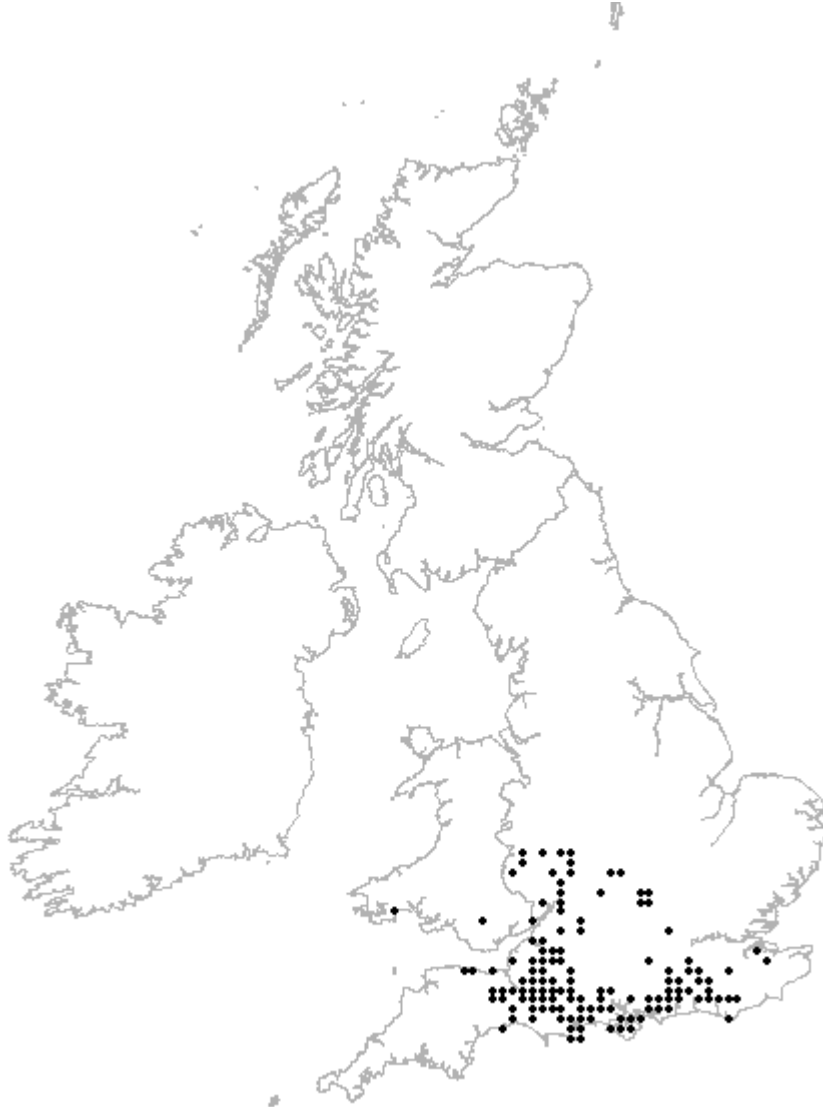


Image 17: Distribution of Bechstein's bats within the UK

Bat Conservation Trust Bat hibernation survey data; Bat Conservation Trust Distribution Atlas of Bats in Britain and Ireland (1980-1999): data spreadsheet; Biological Records Centre Mammals Database; Natural England Bat sites inventory for Britain; Natural England from JNCC Online (<http://jncc.defra.gov.uk/publications/JNCC312/species.asp?FeatureIntCode=S1323>)

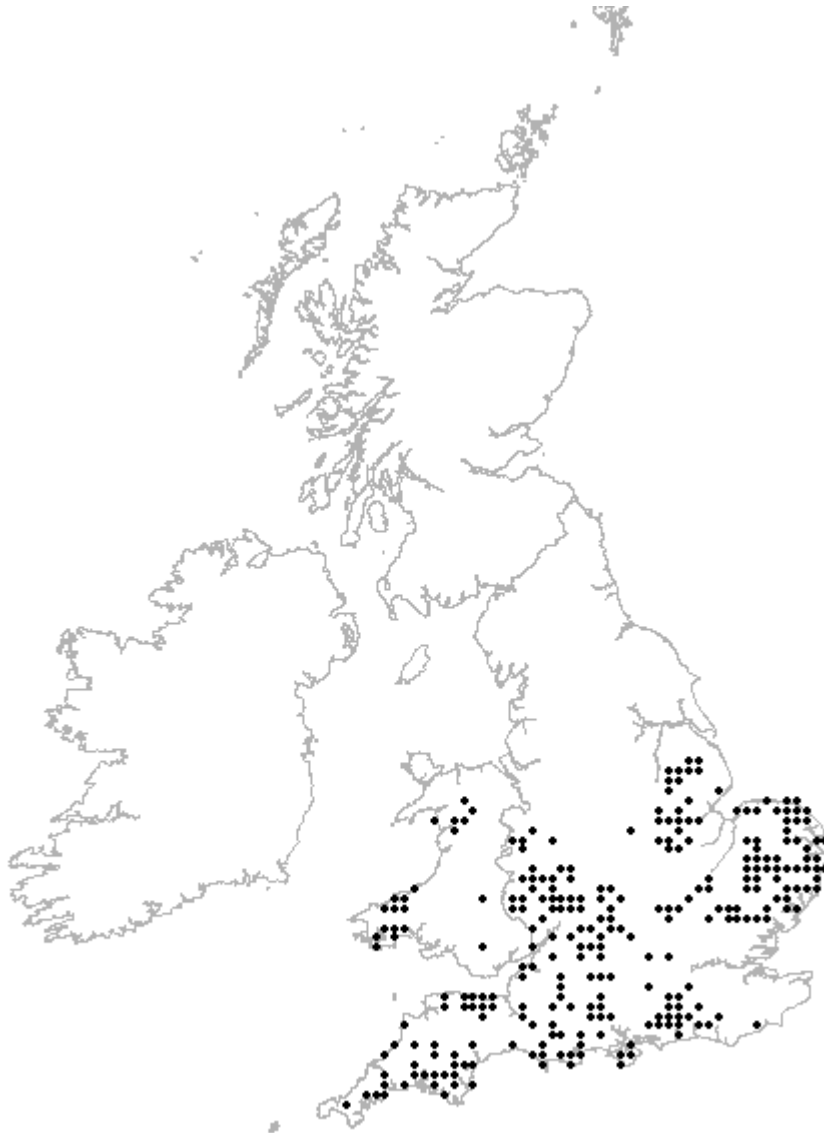
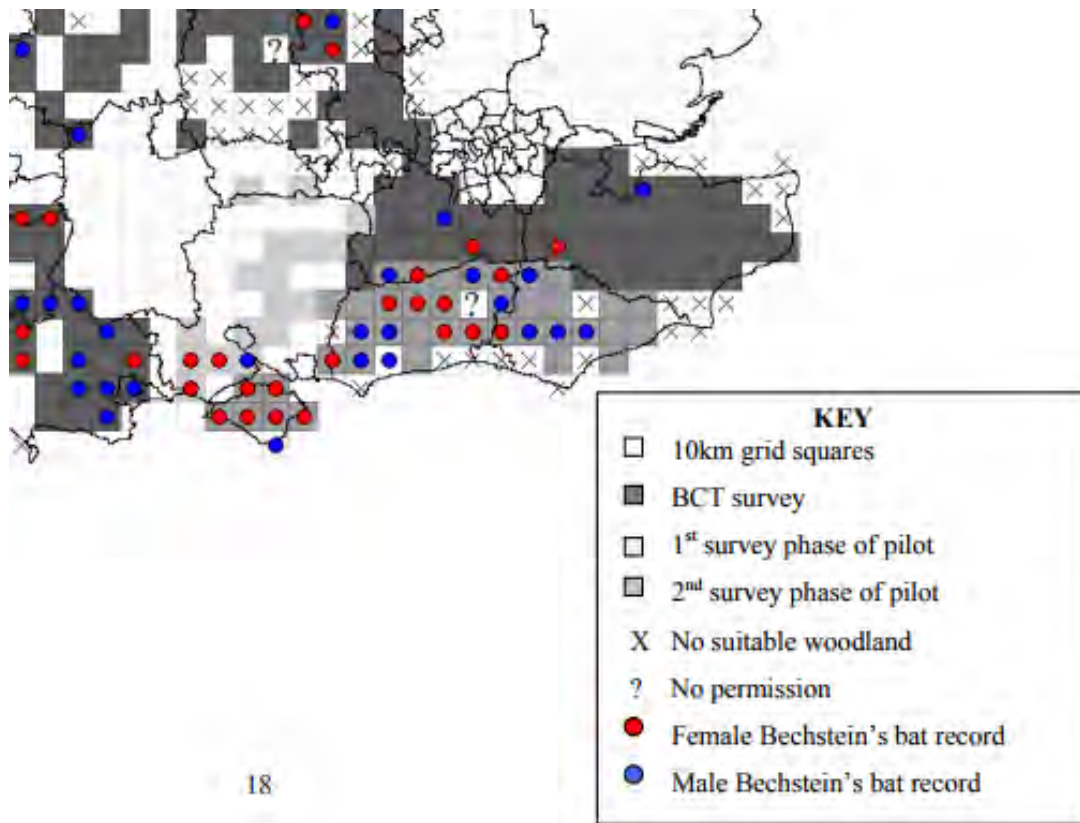


Image 18: Distribution of Barbastelle bats within the UK

Bat Conservation Trust Bat hibernation survey data; Bat Conservation Trust Distribution Atlas of Bats in Britain and Ireland (1980-1999): data spreadsheet; Biological Records Centre Mammals Database; Natural England Batsites inventory for Britain; Natural England from JNCC Online (<http://jncc.defra.gov.uk/publications/JNCC312/species.asp?FeatureIntCode=S1308>)



18

Image 19: Distribution of Bechstein's bats within Kent as recorded within the 2021 BCT surveys



This report was produced free of charge by the Mammal Society to support evidence-based conservation of bats.

The following analyses are based on data supplied by the user to the Mammal Society's Ecobat website. The outputs are designed to assist decision-making, but do not replace expert interpretation by the user. The creation of the Ecobat tool was supported by the Natural Environment Research Council (NERC).

Bat Activity Analysis

Site Name: Otterpool

Author: Brandon Murray

30/11/2021

Summary

Bats were detected on **62** nights between **2021-04-16** and **2021-09-12**, using **10** static bat detectors. Throughout this period **10** species were recorded. **Table 1.** Detectors were placed at the following locations:

Detector ID	Latitude	Longitude
Location 6	51.09415	1.014725
Location 4	51.09480	1.035496
Location 7	51.08503	1.026276
Location 2	51.08873	1.041107
Location 3	51.09214	1.031709
Location 14	51.09647	1.005762
Location 8	51.07863	1.024259
Location 12	51.08920	0.999797
Location 15	51.09701	0.996607
Location 13	51.10055	0.993532

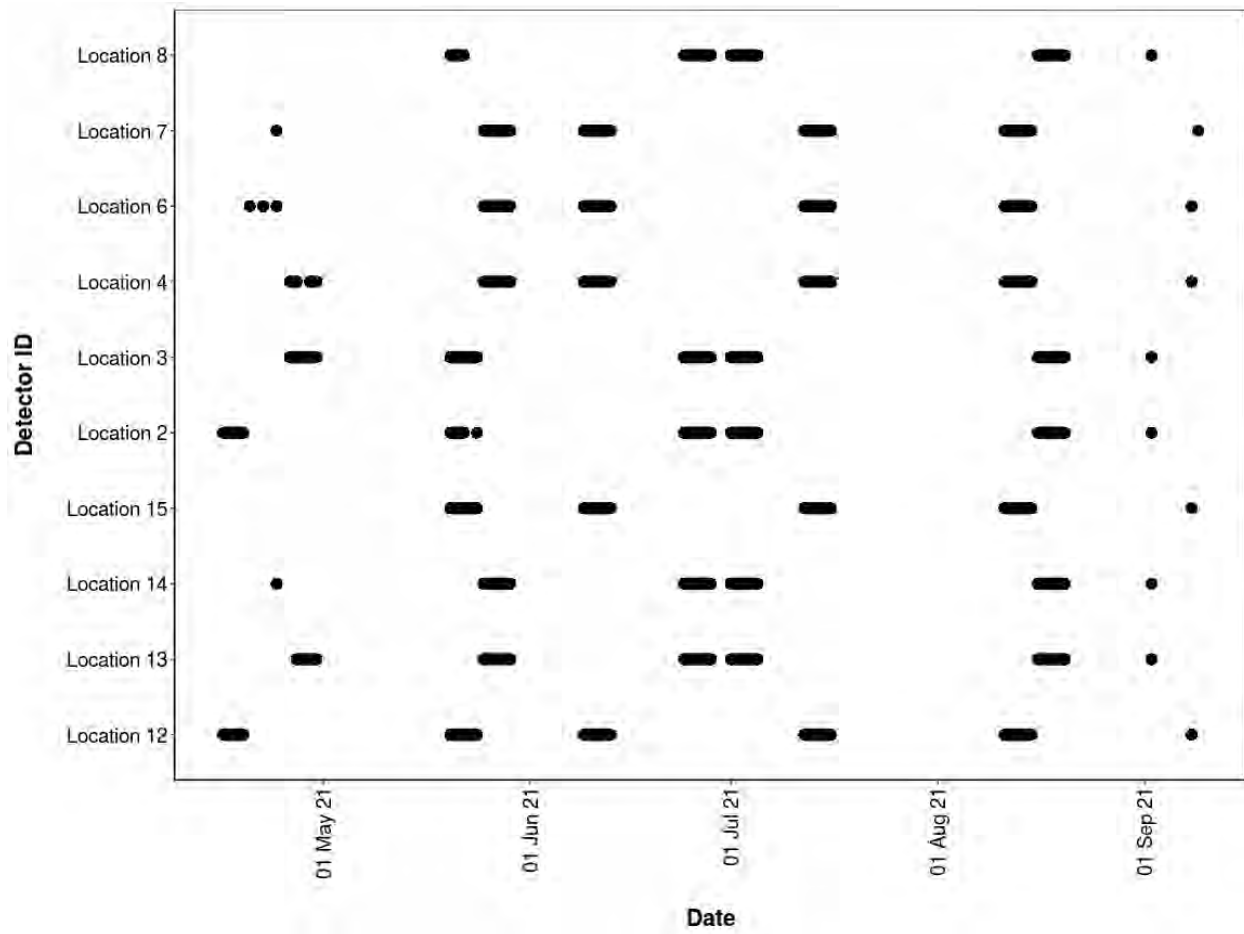
Survey Nights

Table 2. The number of nights that bats were detected on each recorder. This is not the same as the number of nights that detectors were active if there were nights when no bats were detected.

Detector ID	No. of nights
Location 12	29
Location 13	29
Location 14	26
Location 15	25
Location 2	28
Location 3	30
Location 4	29
Location 6	28
Location 7	25
Location 8	23

Survey Nights

Figure 1. Horizontal bars show nights when acoustic detectors recorded bats.



PART 1: Percentiles Analysis

This first part of the analysis looks at the relative activity levels of the bats you recorded. We take your value for the total bat passes each night for each species, and compare this to the values in our reference database. We tell you what percentile your data falls at, and therefore what the relative activity level is. For example, if the reference database has values of 5, 10, 15, 20 and you submit a value of 18, this will be the 80th percentile, and be classed as high activity.

The reference range dataset was stratified to include:

- Only records from within 30 days of the survey date.
- Only records from within 100km radius of the survey location.

PER DETECTOR

Table 3. Summary table showing the number of nights recorded bat activity fell into each activity band for each species.

Detector ID	Species/Species Group	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Location 12	<i>Eptesicus serotinus</i>	0	0	0	0	2
Location 12	<i>Myotis</i>	0	1	8	3	9
Location 12	<i>Nyctaloid</i>	0	0	1	2	2
Location 12	<i>Nyctalus leisleri</i>	0	0	1	2	1
Location 12	<i>Nyctalus noctula</i>	0	0	2	3	4
Location 12	<i>Pipistrellus</i>	1	0	0	0	0
Location 12	<i>Pipistrellus nathusii</i>	0	0	0	2	3
Location 12	<i>Pipistrellus pipistrellus</i>	6	14	5	2	0
Location 12	<i>Pipistrellus pygmaeus</i>	0	4	4	0	3
Location 13	<i>Eptesicus serotinus</i>	0	5	0	0	0
Location 13	<i>Myotis</i>	0	3	10	8	2
Location 13	<i>Nyctalus leisleri</i>	0	0	0	4	1
Location 13	<i>Nyctalus noctula</i>	0	7	7	4	0
Location 13	<i>Pipistrellus</i>	2	1	0	0	0
Location 13	<i>Pipistrellus nathusii</i>	0	0	0	0	3
Location 13	<i>Pipistrellus pipistrellus</i>	6	10	7	3	3

Location 13	<i>Pipistrellus pygmaeus</i>	1	1	3	4	3
Location 14	<i>Eptesicus serotinus</i>	0	0	2	1	1
Location 14	<i>Myotis</i>	1	1	6	5	4
Location 14	<i>Nyctaloid</i>	2	0	1	0	0
Location 14	<i>Nyctalus leisleri</i>	0	0	0	1	1
Location 14	<i>Nyctalus noctula</i>	9	1	5	3	1
Location 14	<i>Pipistrellus</i>	3	0	0	0	0
Location 14	<i>Pipistrellus nathusii</i>	0	0	1	2	5
Location 14	<i>Pipistrellus pipistrellus</i>	16	7	2	0	1
Location 14	<i>Pipistrellus pygmaeus</i>	2	3	1	1	0
Location 15	<i>Eptesicus serotinus</i>	0	0	0	1	1
Location 15	<i>Myotis</i>	0	1	7	4	6
Location 15	<i>Nyctaloid</i>	0	0	2	0	1
Location 15	<i>Nyctalus noctula</i>	0	2	6	1	2
Location 15	<i>Pipistrellus</i>	1	0	0	0	0
Location 15	<i>Pipistrellus nathusii</i>	0	0	0	2	6
Location 15	<i>Pipistrellus pipistrellus</i>	13	9	1	1	0
Location 15	<i>Pipistrellus pygmaeus</i>	3	5	1	1	0
Location 2	<i>Eptesicus serotinus</i>	0	4	3	3	3
Location 2	<i>Myotis</i>	0	1	1	11	3

Location 2	<i>Nyctaloid</i>	0	4	2	2	2
Location 2	<i>Nyctalus leisleri</i>	0	0	0	1	2
Location 2	<i>Nyctalus noctula</i>	0	1	5	4	2
Location 2	<i>Pipistrellus</i>	1	0	0	0	0
Location 2	<i>Pipistrellus pipistrellus</i>	14	6	2	1	2
Location 2	<i>Pipistrellus pygmaeus</i>	0	3	0	4	1
Location 3	<i>Eptesicus serotinus</i>	0	0	0	3	3
Location 3	<i>Myotis</i>	6	8	8	1	3
Location 3	<i>Nyctaloid</i>	0	0	1	2	1
Location 3	<i>Nyctalus noctula</i>	1	2	4	6	4
Location 3	<i>Pipistrellus nathusii</i>	0	1	5	0	6
Location 3	<i>Pipistrellus pipistrellus</i>	22	3	3	0	0
Location 3	<i>Pipistrellus pygmaeus</i>	2	4	1	1	0
Location 4	<i>Eptesicus serotinus</i>	0	1	8	3	3
Location 4	<i>Myotis</i>	0	5	1	1	5
Location 4	<i>Nyctaloid</i>	1	4	0	0	0
Location 4	<i>Nyctalus leisleri</i>	0	0	0	0	4
Location 4	<i>Nyctalus noctula</i>	3	6	5	6	1
Location 4	<i>Pipistrellus</i>	0	1	0	0	0
Location 4	<i>Pipistrellus nathusii</i>	0	0	0	5	4

Location 4	<i>Pipistrellus pipistrellus</i>	23	4	0	1	0
Location 4	<i>Pipistrellus pygmaeus</i>	0	0	2	2	3
Location 6	<i>Barbastella barbastellus</i>	0	0	0	0	1
Location 6	<i>Eptesicus serotinus</i>	0	0	0	1	3
Location 6	<i>Myotis</i>	0	0	4	9	4
Location 6	<i>Nyctaloid</i>	0	0	1	1	0
Location 6	<i>Nyctalus leisleri</i>	0	0	0	0	2
Location 6	<i>Nyctalus noctula</i>	0	0	0	5	5
Location 6	<i>Pipistrellus nathusii</i>	0	0	0	8	3
Location 6	<i>Pipistrellus pipistrellus</i>	10	15	1	1	0
Location 6	<i>Pipistrellus pygmaeus</i>	0	0	1	2	4
Location 7	<i>Eptesicus serotinus</i>	0	1	2	3	3
Location 7	<i>Myotis</i>	0	2	6	3	3
Location 7	<i>Nyctaloid</i>	4	0	5	2	1
Location 7	<i>Nyctalus leisleri</i>	1	1	1	1	1
Location 7	<i>Nyctalus noctula</i>	4	3	5	1	1
Location 7	<i>Pipistrellus</i>	3	0	0	0	0
Location 7	<i>Pipistrellus nathusii</i>	0	0	4	2	2
Location 7	<i>Pipistrellus pipistrellus</i>	12	9	2	1	1
Location 7	<i>Pipistrellus pygmaeus</i>	3	5	1	0	1

Location 8	<i>Eptesicus serotinus</i>	0	1	2	1	2
Location 8	<i>Myotis</i>	0	0	2	3	2
Location 8	<i>Nyctaloid</i>	0	3	2	2	1
Location 8	<i>Nyctalus leisleri</i>	0	0	0	0	2
Location 8	<i>Nyctalus noctula</i>	0	0	4	4	4
Location 8	<i>Pipistrellus nathusii</i>	0	0	0	1	2
Location 8	<i>Pipistrellus pipistrellus</i>	10	8	2	0	1
Location 8	<i>Pipistrellus pygmaeus</i>	0	2	0	0	0

Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
Location 12	<i>Eptesicus serotinus</i>	0	0 - 0	0	2	172
Location 12	<i>Myotis</i>	21	31 - 53	71	21	358
Location 12	<i>Nyctaloid</i>	21	21 - 21	46	5	433
Location 12	<i>Nyctalus leisleri</i>	21	21 - 21	41	4	88
Location 12	<i>Nyctalus noctula</i>	21	21 - 37.5	54	9	266
Location 12	<i>Pipistrellus</i>	82	0	82	1	1193
Location 12	<i>Pipistrellus nathusii</i>	0	26.5 - 26.5	32	5	132
Location 12	<i>Pipistrellus pipistrellus</i>	72	64.5 - 77	98	27	713
Location 12	<i>Pipistrellus pygmaeus</i>	56	52.5 - 76	79	11	517
Location 13	<i>Eptesicus serotinus</i>	74	69 - 75	76	5	172
Location 13	<i>Myotis</i>	41	36.5 - 52.5	76	23	358
Location 13	<i>Nyctalus leisleri</i>	21	21 - 21	21	5	88
Location 13	<i>Nyctalus noctula</i>	58	46 - 66	78	18	266
Location 13	<i>Pipistrellus</i>	85	77 - 94	94	3	1193
Location 13	<i>Pipistrellus nathusii</i>	0	0 - 0	0	3	132
Location 13	<i>Pipistrellus pipistrellus</i>	64	57.5 - 73.5	97	29	713
Location 13	<i>Pipistrellus pygmaeus</i>	32	32 - 66	91	12	517

Location 14	<i>Eptesicus serotinus</i>	42	32 - 54	54	4	172
Location 14	<i>Myotis</i>	21	31 - 54.5	82	17	358
Location 14	<i>Nyctaloid</i>	91	46 - 92	92	3	433
Location 14	<i>Nyctalus leisleri</i>	11	10.5 - 10.5	21	2	88
Location 14	<i>Nyctalus noctula</i>	65	53 - 89.5	93	19	266
Location 14	<i>Pipistrellus</i>	91	84 - 98	98	3	1193
Location 14	<i>Pipistrellus nathusii</i>	0	21 - 21	41	8	132
Location 14	<i>Pipistrellus pipistrellus</i>	88	79 - 91.5	99	26	713
Location 14	<i>Pipistrellus pygmaeus</i>	69	39.5 - 88	92	7	517
Location 15	<i>Eptesicus serotinus</i>	11	10.5 - 10.5	21	2	172
Location 15	<i>Myotis</i>	27	31 - 52.5	61	18	358
Location 15	<i>Nyctaloid</i>	46	50 - 50	54	3	433
Location 15	<i>Nyctalus noctula</i>	52	39.5 - 60.5	67	11	266
Location 15	<i>Pipistrellus</i>	100	0	100	1	1193
Location 15	<i>Pipistrellus nathusii</i>	0	26.5 - 26.5	32	8	132
Location 15	<i>Pipistrellus pipistrellus</i>	86	76 - 89	99	24	713
Location 15	<i>Pipistrellus pygmaeus</i>	69	58 - 86.5	99	10	517
Location 2	<i>Eptesicus serotinus</i>	41	32 - 64.5	72	13	172
Location 2	<i>Myotis</i>	32	26.5 - 40.5	69	16	358
Location 2	<i>Nyctaloid</i>	52	35 - 72	78	10	433

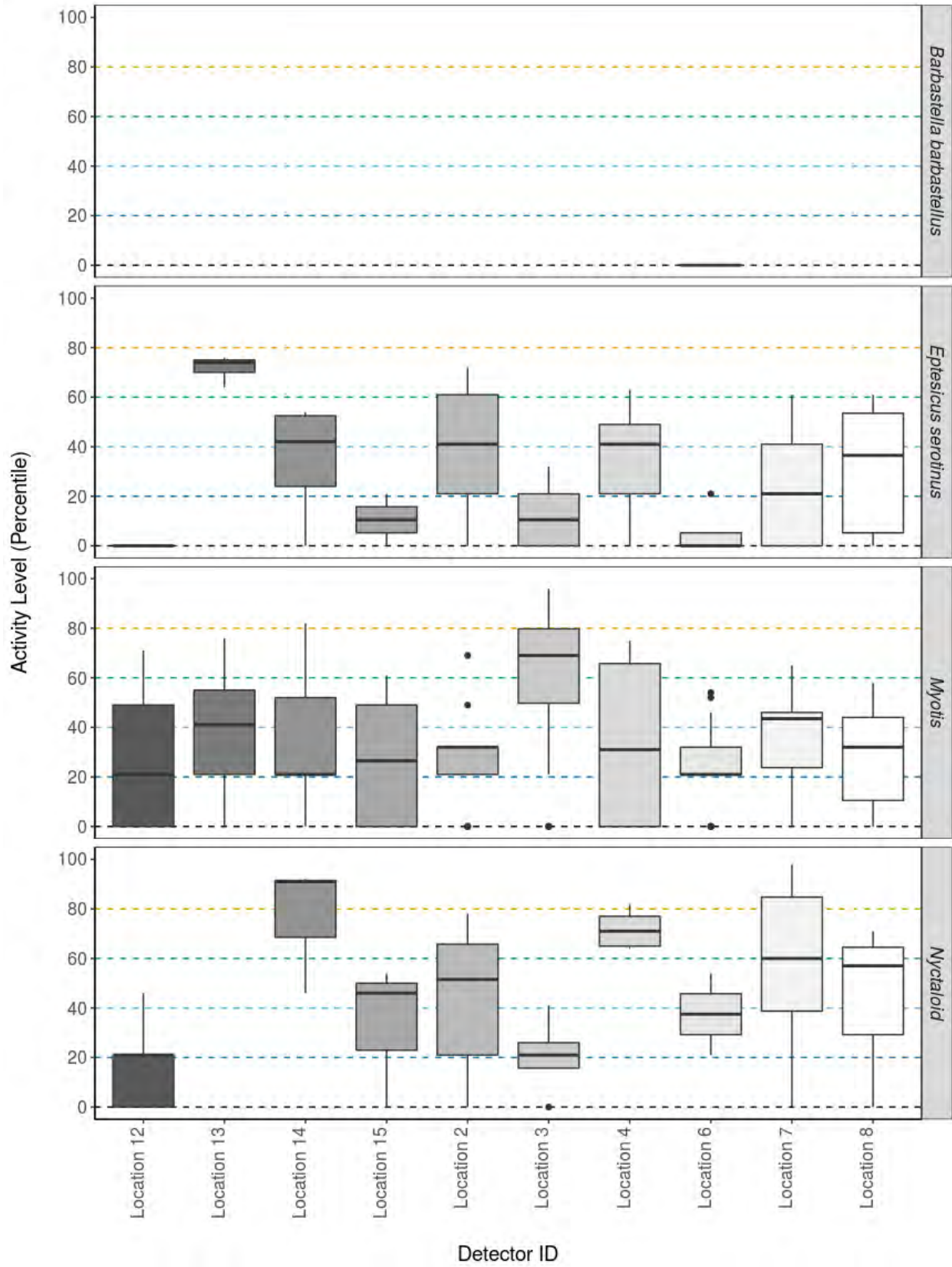
Location 2	<i>Nyctalus leisleri</i>	0	0 - 0	32	3	88
Location 2	<i>Nyctalus noctula</i>	37	26.5 - 50.5	64	12	266
Location 2	<i>Pipistrellus</i>	95	0	95	1	1193
Location 2	<i>Pipistrellus pipistrellus</i>	82	71 - 87	96	25	713
Location 2	<i>Pipistrellus pygmaeus</i>	32	26.5 - 69.5	78	8	517
Location 3	<i>Eptesicus serotinus</i>	11	21 - 21	32	6	172
Location 3	<i>Myotis</i>	69	60 - 77.5	96	26	358
Location 3	<i>Nyctaloid</i>	21	21 - 21	41	4	433
Location 3	<i>Nyctalus noctula</i>	32	32 - 61.5	91	17	266
Location 3	<i>Pipistrellus nathusii</i>	21	41 - 60	73	12	132
Location 3	<i>Pipistrellus pipistrellus</i>	89	80 - 90.5	100	28	713
Location 3	<i>Pipistrellus pygmaeus</i>	66	43 - 80	93	8	517
Location 4	<i>Eptesicus serotinus</i>	41	33.5 - 50	63	15	172
Location 4	<i>Myotis</i>	31	31 - 73.5	75	12	358
Location 4	<i>Nyctaloid</i>	71	65 - 77	82	5	433
Location 4	<i>Nyctalus leisleri</i>	0	0 - 0	0	4	88
Location 4	<i>Nyctalus noctula</i>	56	44 - 67	86	21	266
Location 4	<i>Pipistrellus</i>	67	0	67	1	1193
Location 4	<i>Pipistrellus nathusii</i>	21	21 - 21	21	9	132
Location 4	<i>Pipistrellus pipistrellus</i>	95	84 - 96	100	28	713

Location 4	<i>Pipistrellus pygmaeus</i>	21	21 - 60	60	7	517
Location 6	<i>Barbastella barbastellus</i>	0	0	0	1	1
Location 6	<i>Eptesicus serotinus</i>	0	0 - 0	21	4	172
Location 6	<i>Myotis</i>	21	21 - 36.5	54	17	358
Location 6	<i>Nyctaloid</i>	38	37.5 - 37.5	54	2	433
Location 6	<i>Nyctalus leisleri</i>	0	0 - 0	0	2	88
Location 6	<i>Nyctalus noctula</i>	11	26.5 - 32	32	10	266
Location 6	<i>Pipistrellus nathusii</i>	21	21 - 26.5	32	11	132
Location 6	<i>Pipistrellus pipistrellus</i>	78	73 - 83.5	98	27	713
Location 6	<i>Pipistrellus pygmaeus</i>	0	21 - 46	46	7	517
Location 7	<i>Eptesicus serotinus</i>	21	26.5 - 51	61	9	172
Location 7	<i>Myotis</i>	44	33.5 - 54.5	65	14	358
Location 7	<i>Nyctaloid</i>	60	41 - 79	98	12	433
Location 7	<i>Nyctalus leisleri</i>	60	21 - 86	86	5	88
Location 7	<i>Nyctalus noctula</i>	62	52.5 - 81.5	98	14	266
Location 7	<i>Pipistrellus</i>	91	90 - 97	97	3	1193
Location 7	<i>Pipistrellus nathusii</i>	37	31 - 52.5	56	8	132
Location 7	<i>Pipistrellus pipistrellus</i>	79	72 - 85	96	25	713
Location 7	<i>Pipistrellus pygmaeus</i>	72	63 - 81	87	10	517
Location 8	<i>Eptesicus serotinus</i>	37	21 - 61	61	6	172

Location 8	<i>Myotis</i>	32	21 - 58	58	7	358
Location 8	<i>Nyctaloid</i>	57	26.5 - 70	71	8	433
Location 8	<i>Nyctalus leisleri</i>	0	0 - 0	0	2	88
Location 8	<i>Nyctalus noctula</i>	21	21 - 52.5	56	12	266
Location 8	<i>Pipistrellus nathusii</i>	0	0 - 0	21	3	132
Location 8	<i>Pipistrellus pipistrellus</i>	72	70.5 - 81	89	21	713
Location 8	<i>Pipistrellus pygmaeus</i>	72	71.5 - 71.5	79	2	517

###Figures

Figure 2. The recorded activity of bats during the survey. The centre line indicates the median activity level whereas the box represents the interquartile range (the spread of the middle 50% of nights of activity)



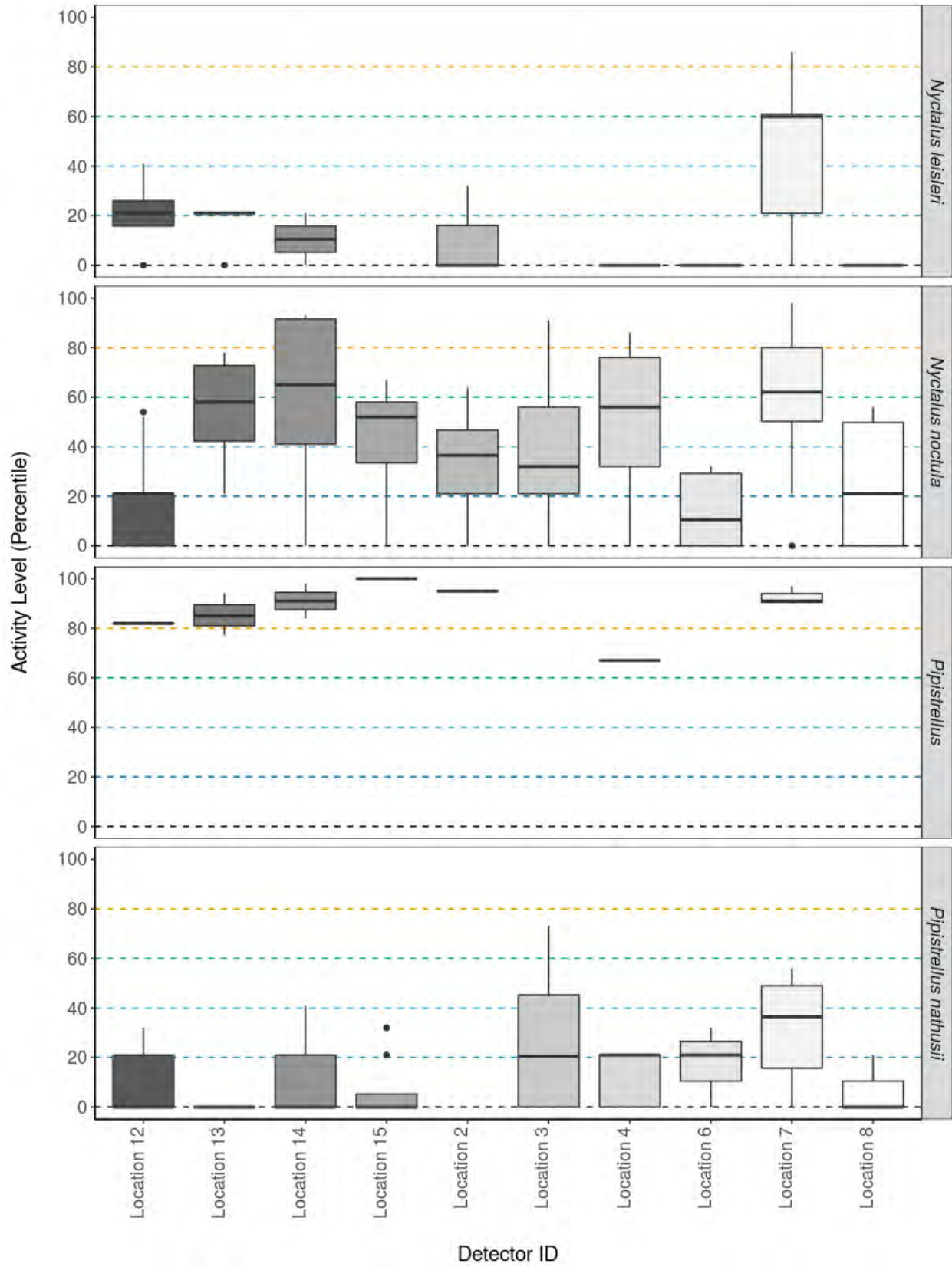
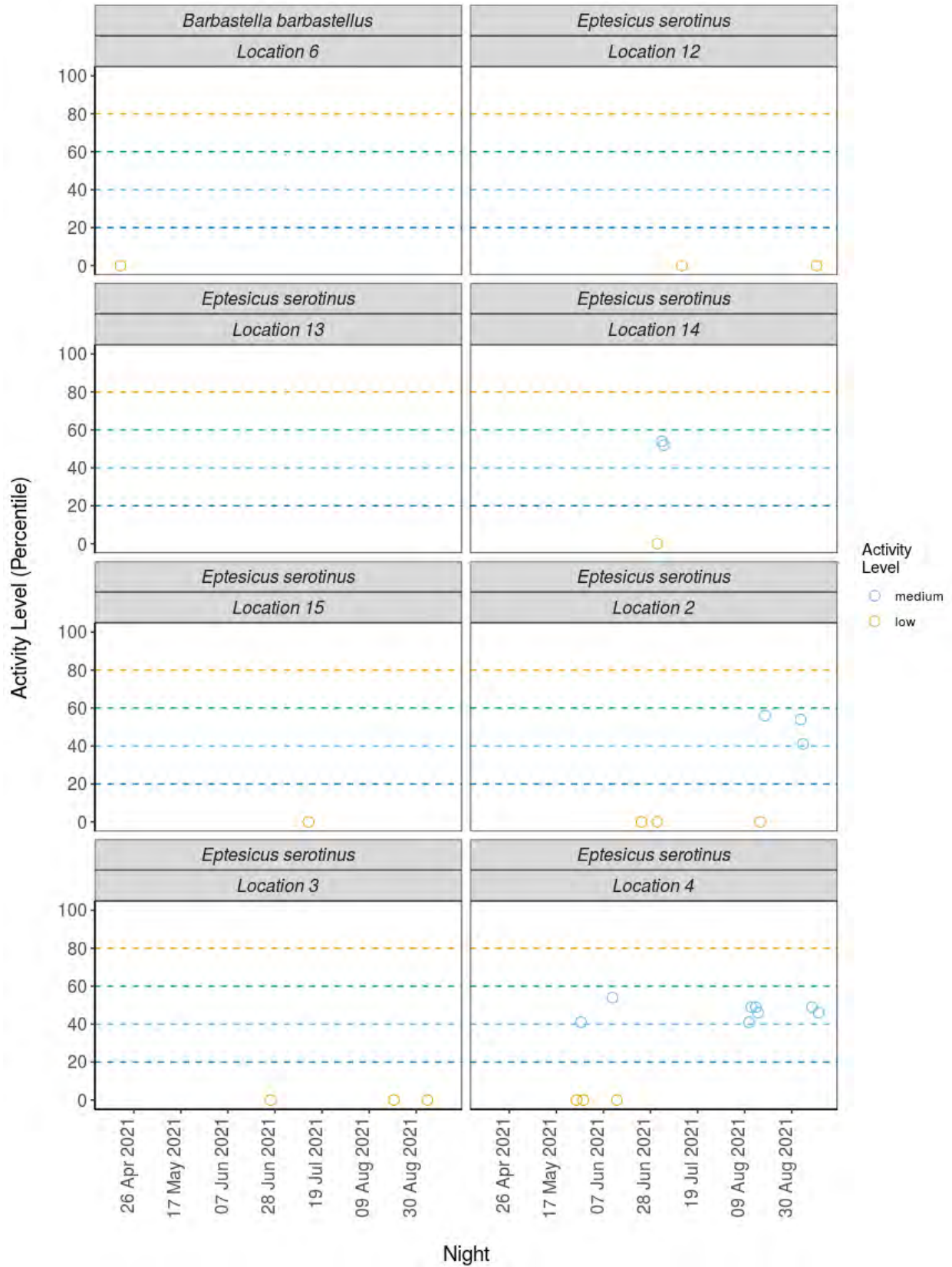
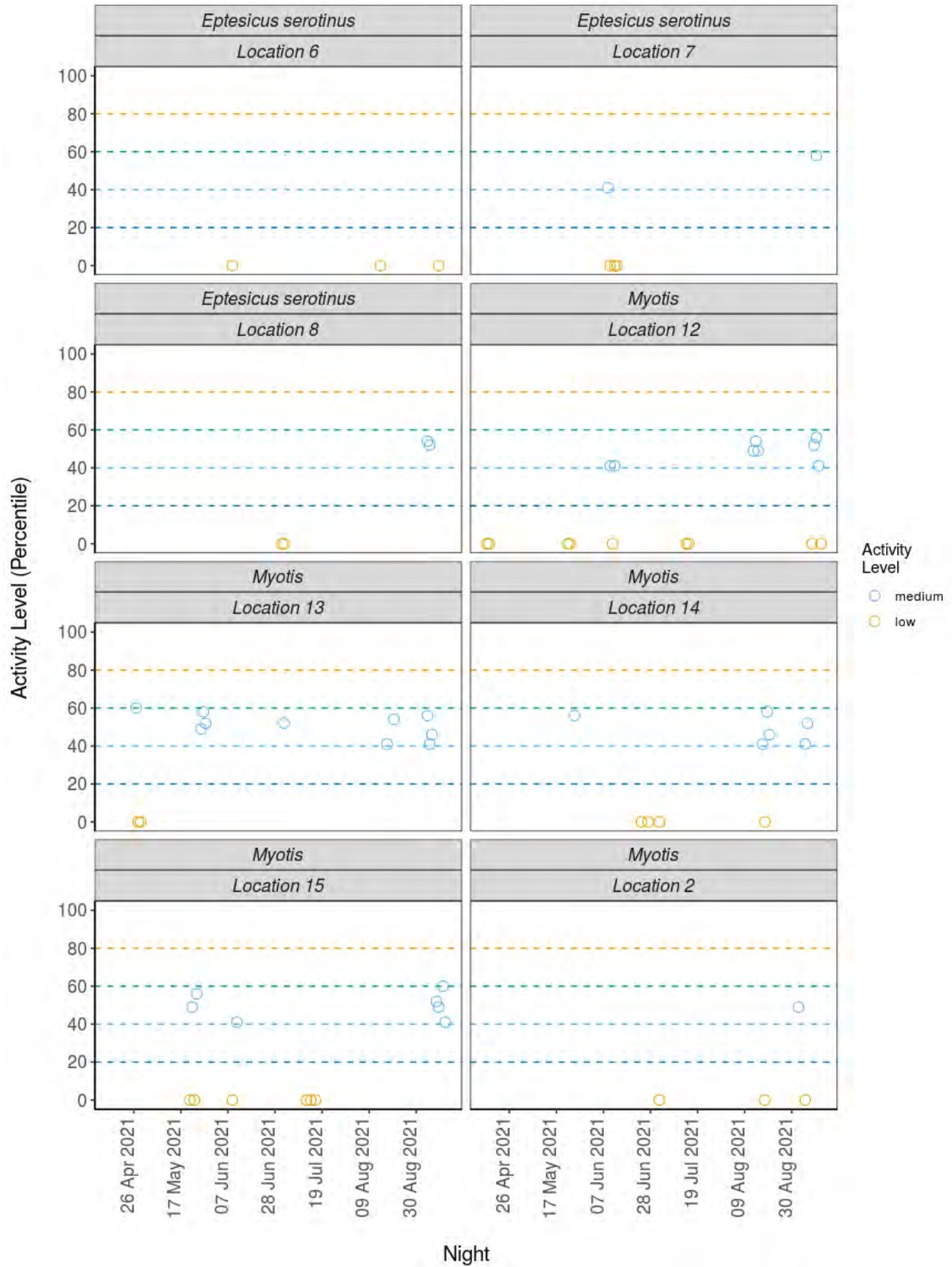
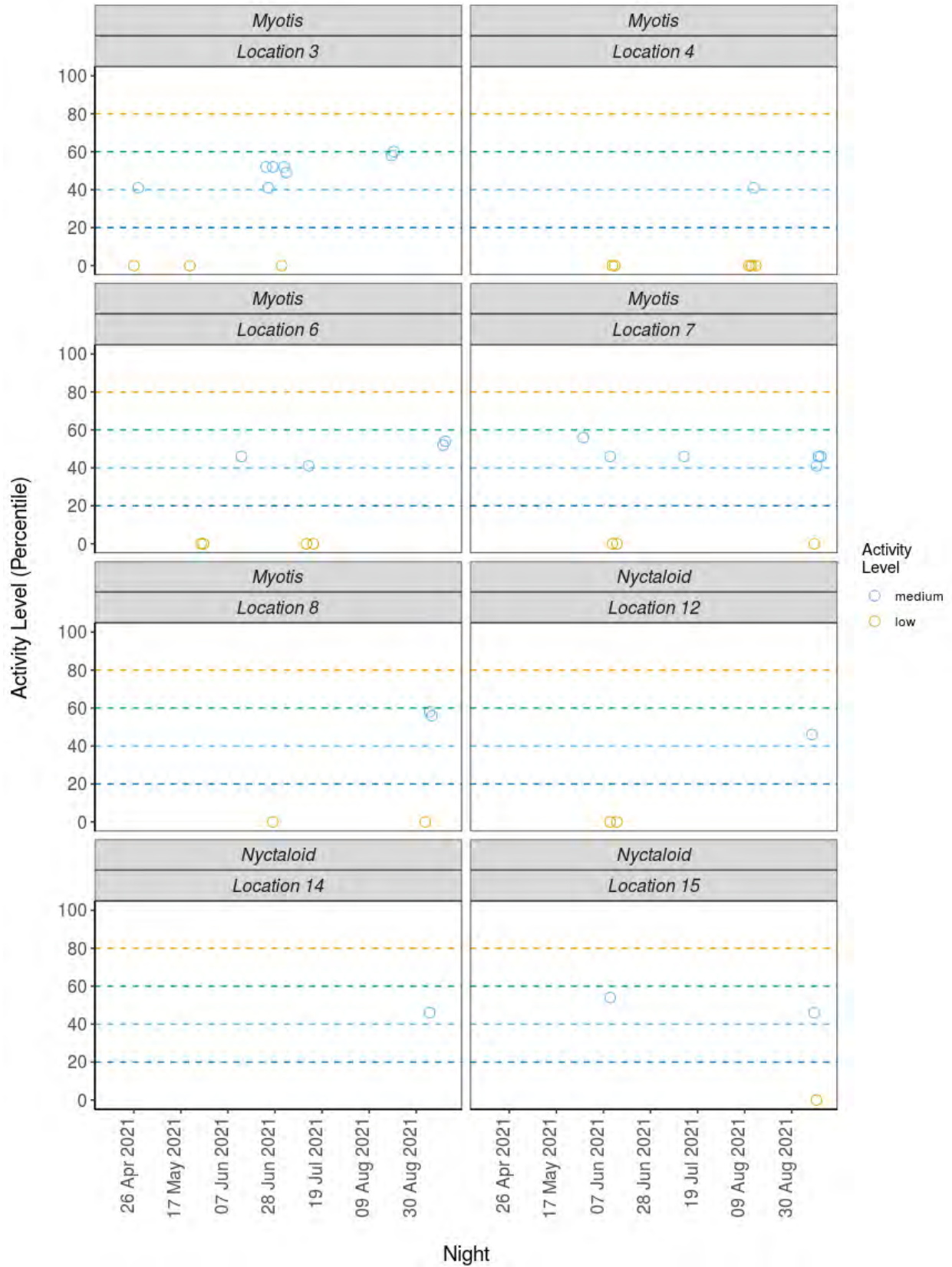
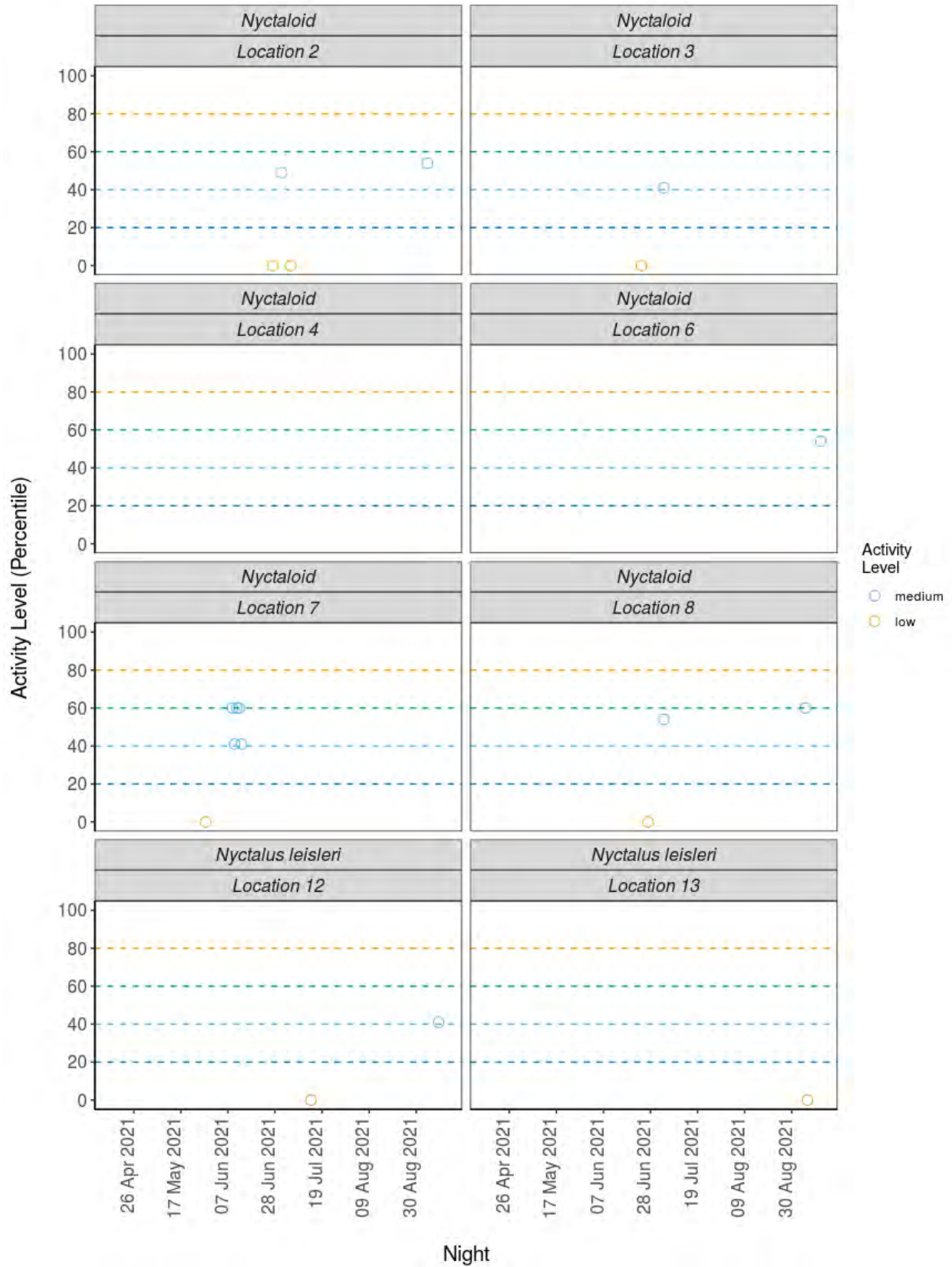


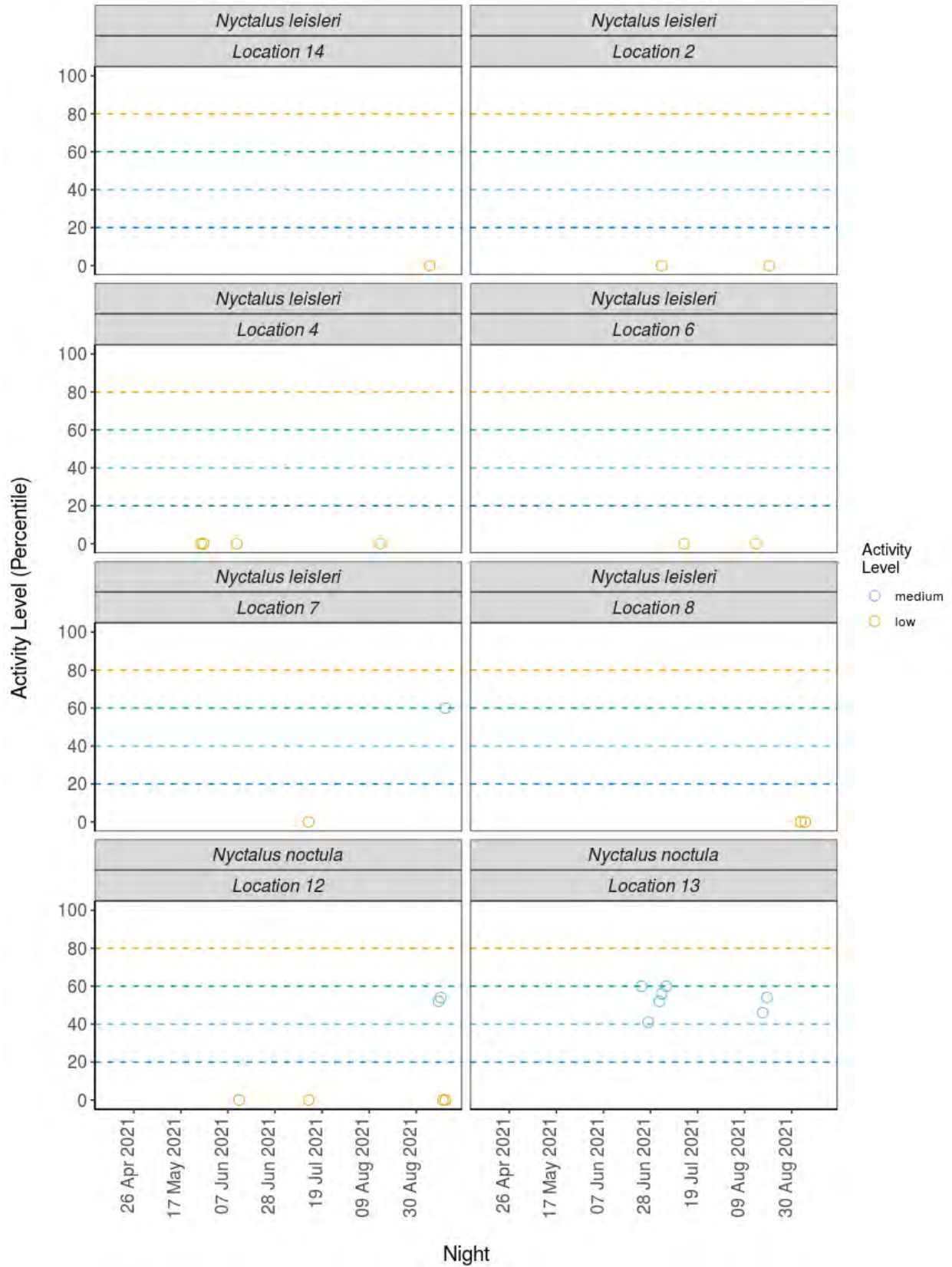
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

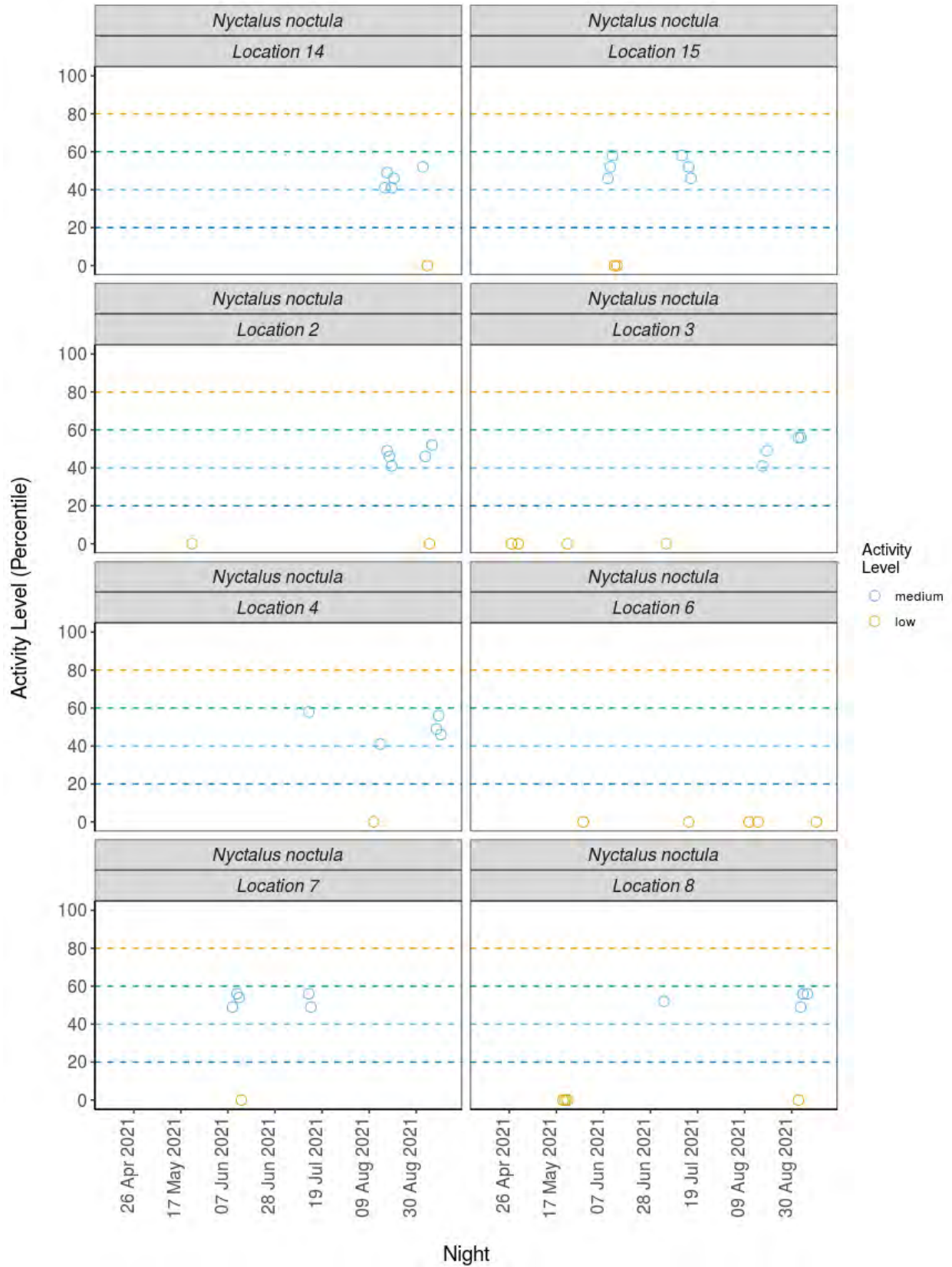


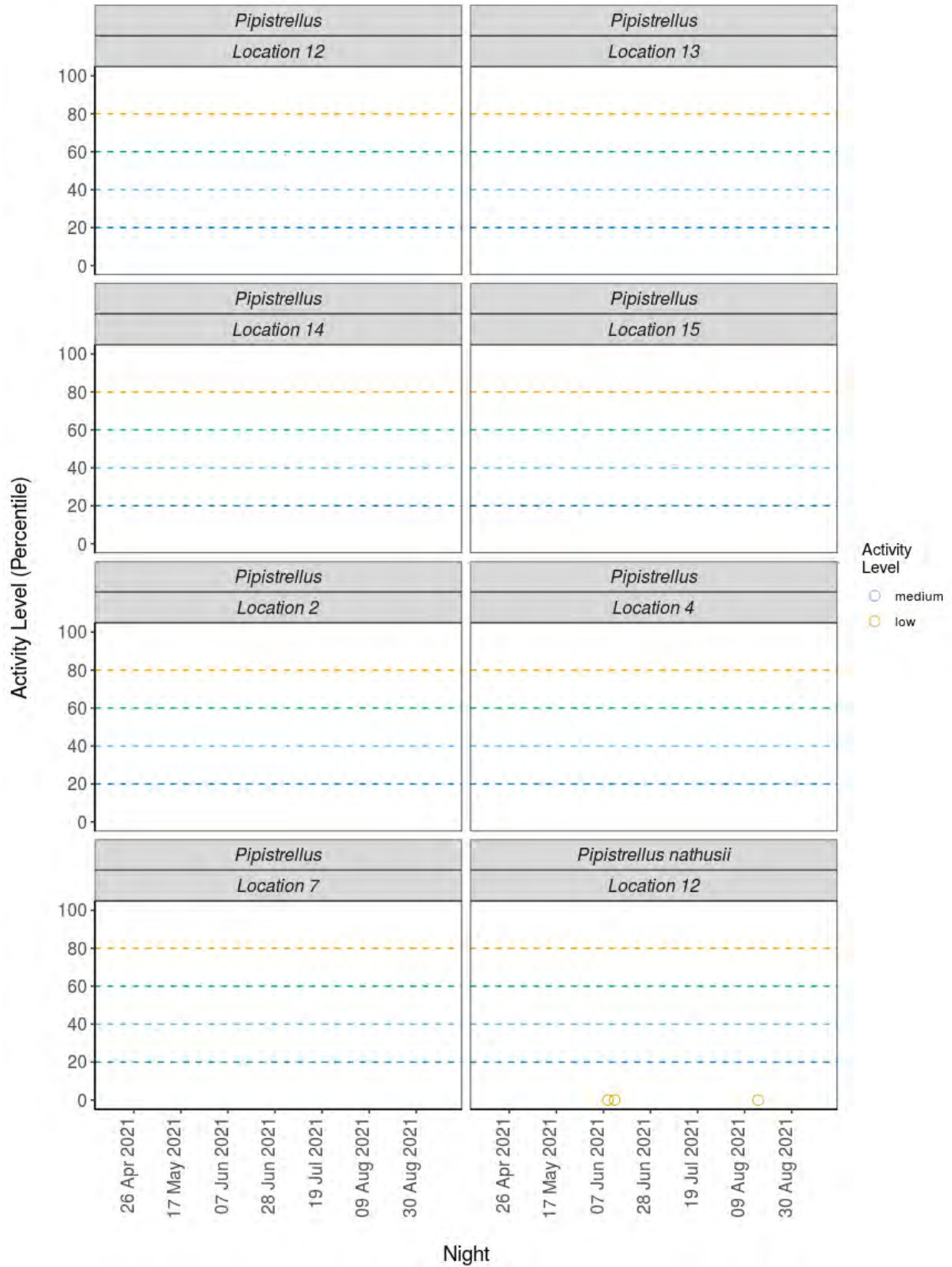


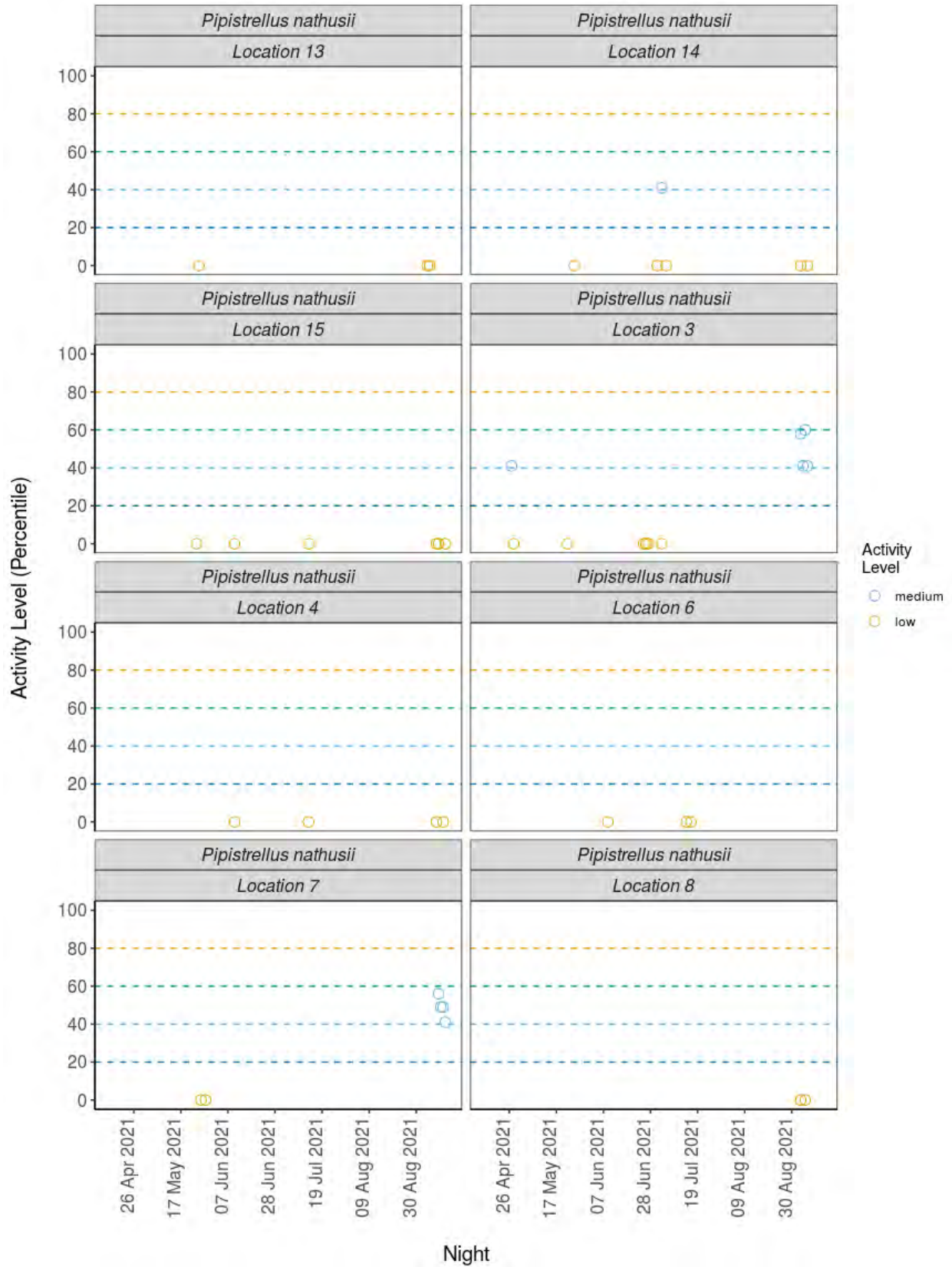


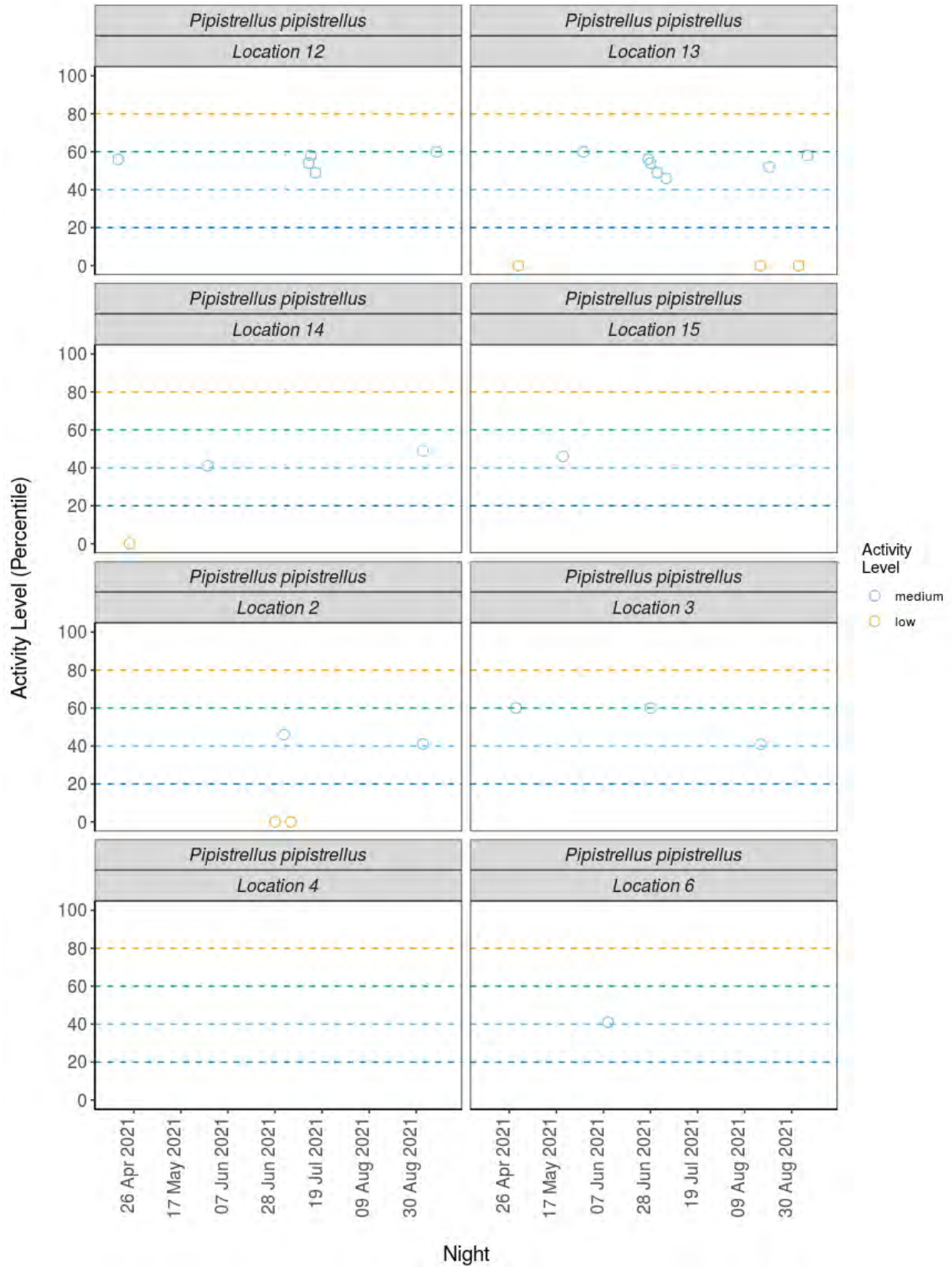


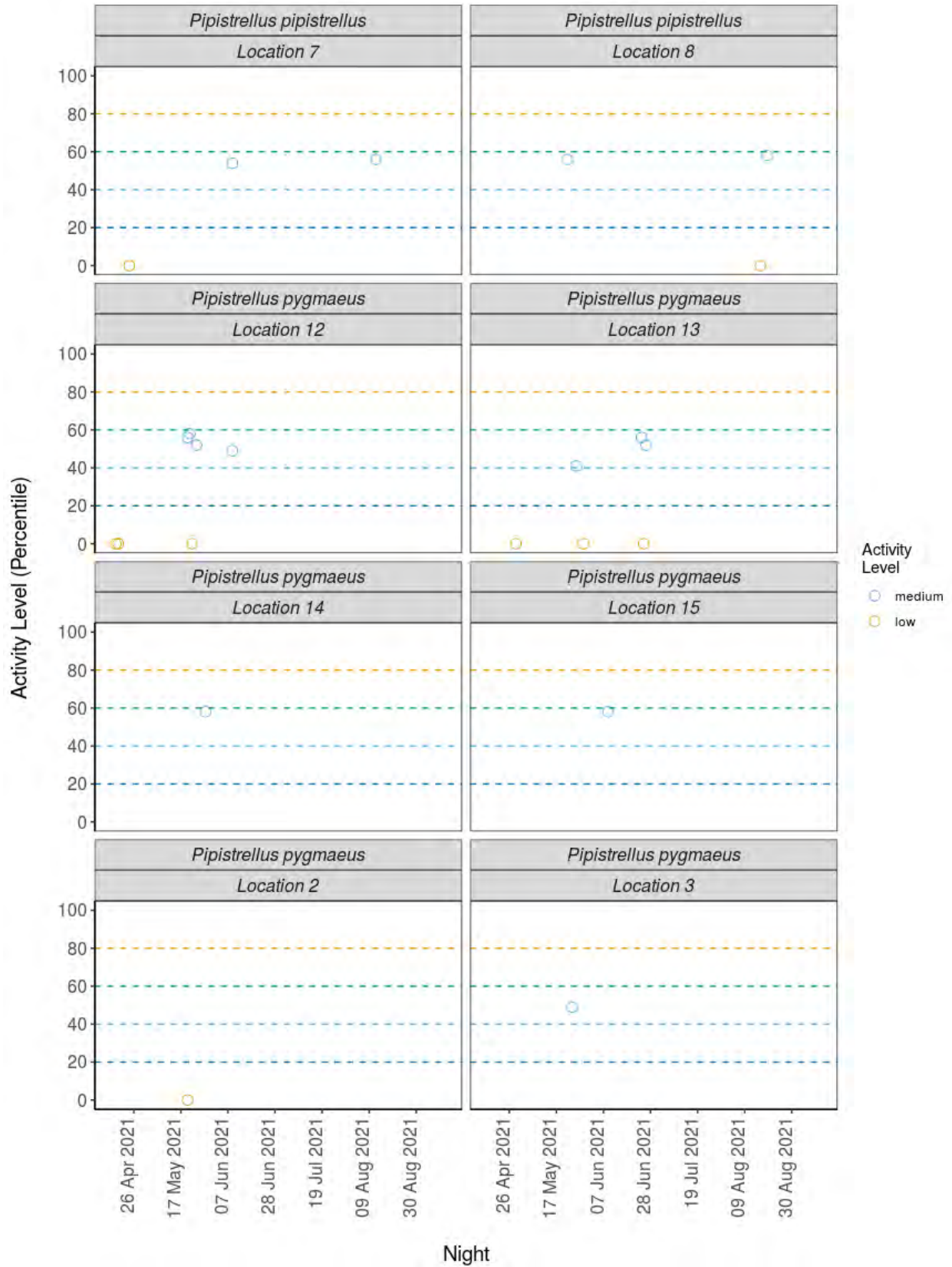


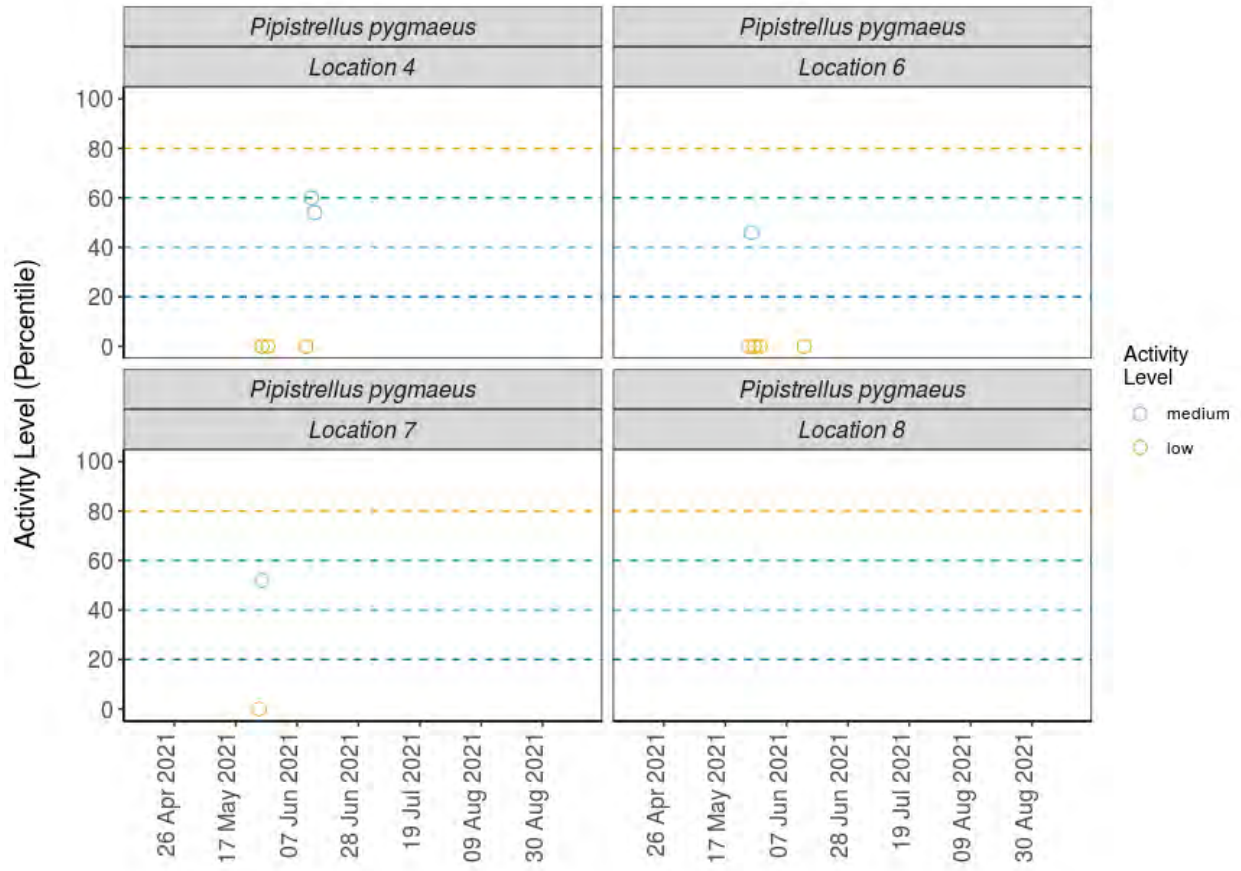












Night

PER DETECTOR, PER MONTH

Table 5. Summary table showing the number of nights recorded bat activity fell into each activity band for each species at each detector during each month.

Detector ID	Species/Species Group	Month	Nights of High Activity	Nights of Moderate / High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Location 12	<i>Eptesicus serotinus</i>	Jul	0	0	0	0	1
Location 12	<i>Eptesicus serotinus</i>	Sep	0	0	0	0	1
Location 12	<i>Myotis</i>	Apr	0	0	0	0	2
Location 12	<i>Myotis</i>	May	0	0	0	1	2
Location 12	<i>Myotis</i>	Jun	0	0	2	1	1
Location 12	<i>Myotis</i>	Jul	0	0	0	0	2
Location 12	<i>Myotis</i>	Aug	0	1	3	1	0
Location 12	<i>Myotis</i>	Sep	0	0	3	0	2
Location 12	<i>Nyctaloid</i>	Jun	0	0	0	2	2
Location 12	<i>Nyctaloid</i>	Sep	0	0	1	0	0
Location 12	<i>Nyctalus leisleri</i>	Jul	0	0	0	0	1
Location 12	<i>Nyctalus leisleri</i>	Sep	0	0	1	2	0
Location 12	<i>Nyctalus noctula</i>	Jun	0	0	0	0	1
Location 12	<i>Nyctalus noctula</i>	Jul	0	0	0	2	1
Location 12	<i>Nyctalus noctula</i>	Sep	0	0	2	1	2

Locatio n 12	<i>Pipistrellus</i>	May	1	0	0	0	0
Locatio n 12	<i>Pipistrellus nathusii</i>	May	0	0	0	1	0
Locatio n 12	<i>Pipistrellus nathusii</i>	Jun	0	0	0	0	2
Locatio n 12	<i>Pipistrellus nathusii</i>	Aug	0	0	0	0	1
Locatio n 12	<i>Pipistrellus nathusii</i>	Sep	0	0	0	1	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	Apr	0	0	1	2	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	May	1	3	0	0	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	Jun	1	4	0	0	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	Jul	0	2	3	0	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	Aug	3	2	0	0	0
Locatio n 12	<i>Pipistrellus pipistrellus</i>	Sep	1	3	1	0	0
Locatio n 12	<i>Pipistrellus pygmaeus</i>	Apr	0	0	0	0	2
Locatio n 12	<i>Pipistrellus pygmaeus</i>	May	0	0	3	0	1
Locatio n 12	<i>Pipistrellus pygmaeus</i>	Jun	0	4	1	0	0
Locatio n 13	<i>Eptesicus serotinus</i>	Sep	0	5	0	0	0
Locatio n 13	<i>Myotis</i>	Apr	0	0	1	1	2
Locatio n 13	<i>Myotis</i>	May	0	0	3	2	0
Locatio n 13	<i>Myotis</i>	Jun	0	0	0	2	0
Locatio n 13	<i>Myotis</i>	Jul	0	0	1	1	0
Locatio n 13	<i>Myotis</i>	Aug	0	2	2	1	0

Locatio n 13	<i>Myotis</i>	Sep	0	1	3	1	0
Locatio n 13	<i>Nyctalus leisleri</i>	Jul	0	0	0	1	0
Locatio n 13	<i>Nyctalus leisleri</i>	Sep	0	0	0	3	1
Locatio n 13	<i>Nyctalus noctula</i>	Jun	0	1	2	2	0
Locatio n 13	<i>Nyctalus noctula</i>	Jul	0	2	3	0	0
Locatio n 13	<i>Nyctalus noctula</i>	Aug	0	0	2	1	0
Locatio n 13	<i>Nyctalus noctula</i>	Sep	0	4	0	1	0
Locatio n 13	<i>Pipistrellus</i>	May	2	1	0	0	0
Locatio n 13	<i>Pipistrellus nathusii</i>	May	0	0	0	0	1
Locatio n 13	<i>Pipistrellus nathusii</i>	Sep	0	0	0	0	2
Locatio n 13	<i>Pipistrellus pipistrellus</i>	Apr	1	0	0	2	1
Locatio n 13	<i>Pipistrellus pipistrellus</i>	May	3	1	1	0	0
Locatio n 13	<i>Pipistrellus pipistrellus</i>	Jun	0	3	2	0	0
Locatio n 13	<i>Pipistrellus pipistrellus</i>	Jul	0	3	2	0	0
Locatio n 13	<i>Pipistrellus pipistrellus</i>	Aug	0	2	1	1	1
Locatio n 13	<i>Pipistrellus pipistrellus</i>	Sep	2	1	1	0	1
Locatio n 13	<i>Pipistrellus pygmaeus</i>	Apr	1	0	0	2	1
Locatio n 13	<i>Pipistrellus pygmaeus</i>	May	0	1	1	2	1
Locatio n 13	<i>Pipistrellus pygmaeus</i>	Jun	0	0	2	0	1
Locatio n 14	<i>Eptesicus serotinus</i>	Jul	0	0	2	1	1

Locatio n 14	<i>Myotis</i>	May	0	0	1	3	0
Locatio n 14	<i>Myotis</i>	Jun	0	0	0	0	2
Locatio n 14	<i>Myotis</i>	Jul	1	1	0	1	1
Locatio n 14	<i>Myotis</i>	Aug	0	0	3	0	1
Locatio n 14	<i>Myotis</i>	Sep	0	0	2	1	0
Locatio n 14	<i>Nyctaloid</i>	Jun	1	0	0	0	0
Locatio n 14	<i>Nyctaloid</i>	Jul	1	0	0	0	0
Locatio n 14	<i>Nyctaloid</i>	Sep	0	0	1	0	0
Locatio n 14	<i>Nyctalus leisleri</i>	Aug	0	0	0	1	0
Locatio n 14	<i>Nyctalus leisleri</i>	Sep	0	0	0	0	1
Locatio n 14	<i>Nyctalus noctula</i>	Jun	4	0	0	0	0
Locatio n 14	<i>Nyctalus noctula</i>	Jul	5	0	0	0	0
Locatio n 14	<i>Nyctalus noctula</i>	Aug	0	0	4	1	0
Locatio n 14	<i>Nyctalus noctula</i>	Sep	0	1	1	2	1
Locatio n 14	<i>Pipistrellus</i>	May	3	0	0	0	0
Locatio n 14	<i>Pipistrellus nathusii</i>	May	0	0	0	0	1
Locatio n 14	<i>Pipistrellus nathusii</i>	Jun	0	0	0	1	0
Locatio n 14	<i>Pipistrellus nathusii</i>	Jul	0	0	1	1	2
Locatio n 14	<i>Pipistrellus nathusii</i>	Sep	0	0	0	0	2
Locatio n 14	<i>Pipistrellus pipistrellus</i>	Apr	0	0	0	0	1

Locatio n 14	<i>Pipistrellus pipistrellus</i>	May	3	1	1	0	0
Locatio n 14	<i>Pipistrellus pipistrellus</i>	Jun	4	1	0	0	0
Locatio n 14	<i>Pipistrellus pipistrellus</i>	Jul	5	0	0	0	0
Locatio n 14	<i>Pipistrellus pipistrellus</i>	Aug	4	1	0	0	0
Locatio n 14	<i>Pipistrellus pipistrellus</i>	Sep	0	4	1	0	0
Locatio n 14	<i>Pipistrellus pygmaeus</i>	May	1	2	1	1	0
Locatio n 14	<i>Pipistrellus pygmaeus</i>	Jun	1	1	0	0	0
Locatio n 15	<i>Eptesicus serotinus</i>	Jul	0	0	0	1	1
Locatio n 15	<i>Myotis</i>	May	0	0	2	0	2
Locatio n 15	<i>Myotis</i>	Jun	0	0	1	2	1
Locatio n 15	<i>Myotis</i>	Jul	0	0	0	2	3
Locatio n 15	<i>Myotis</i>	Sep	0	1	4	0	0
Locatio n 15	<i>Nyctaloid</i>	Jun	0	0	1	0	0
Locatio n 15	<i>Nyctaloid</i>	Sep	0	0	1	0	1
Locatio n 15	<i>Nyctalus noctula</i>	Jun	0	0	3	0	2
Locatio n 15	<i>Nyctalus noctula</i>	Jul	0	2	3	0	0
Locatio n 15	<i>Nyctalus noctula</i>	Sep	0	0	0	1	0
Locatio n 15	<i>Pipistrellus</i>	May	1	0	0	0	0
Locatio n 15	<i>Pipistrellus nathusii</i>	May	0	0	0	2	1
Locatio n 15	<i>Pipistrellus nathusii</i>	Jun	0	0	0	0	1

Locatio n 15	<i>Pipistrellus nathusii</i>	Jul	0	0	0	0	1
Locatio n 15	<i>Pipistrellus nathusii</i>	Sep	0	0	0	0	3
Locatio n 15	<i>Pipistrellus pipistrellus</i>	May	3	0	1	0	0
Locatio n 15	<i>Pipistrellus pipistrellus</i>	Jun	2	3	0	0	0
Locatio n 15	<i>Pipistrellus pipistrellus</i>	Jul	5	0	0	0	0
Locatio n 15	<i>Pipistrellus pipistrellus</i>	Aug	2	3	0	0	0
Locatio n 15	<i>Pipistrellus pipistrellus</i>	Sep	1	3	0	1	0
Locatio n 15	<i>Pipistrellus pygmaeus</i>	May	3	1	0	1	0
Locatio n 15	<i>Pipistrellus pygmaeus</i>	Jun	0	4	1	0	0
Locatio n 2	<i>Eptesicus serotinus</i>	Jun	0	0	0	0	1
Locatio n 2	<i>Eptesicus serotinus</i>	Jul	0	0	0	1	1
Locatio n 2	<i>Eptesicus serotinus</i>	Aug	0	3	1	0	1
Locatio n 2	<i>Eptesicus serotinus</i>	Sep	0	1	2	2	0
Locatio n 2	<i>Myotis</i>	Apr	0	0	0	4	0
Locatio n 2	<i>Myotis</i>	May	0	0	0	1	0
Locatio n 2	<i>Myotis</i>	Jun	0	1	0	3	0
Locatio n 2	<i>Myotis</i>	Jul	0	0	0	0	1
Locatio n 2	<i>Myotis</i>	Aug	0	0	0	0	1
Locatio n 2	<i>Myotis</i>	Sep	0	0	1	3	1
Locatio n 2	<i>Nyctaloid</i>	Jun	0	0	0	2	1

Locatio n 2	<i>Nyctaloid</i>	Jul	0	0	1	0	1
Locatio n 2	<i>Nyctaloid</i>	Aug	0	1	0	0	0
Locatio n 2	<i>Nyctaloid</i>	Sep	0	3	1	0	0
Locatio n 2	<i>Nyctalus leisleri</i>	Jul	0	0	0	0	1
Locatio n 2	<i>Nyctalus leisleri</i>	Aug	0	0	0	1	1
Locatio n 2	<i>Nyctalus noctula</i>	May	0	0	0	0	1
Locatio n 2	<i>Nyctalus noctula</i>	Jul	0	0	0	1	0
Locatio n 2	<i>Nyctalus noctula</i>	Aug	0	1	3	1	0
Locatio n 2	<i>Nyctalus noctula</i>	Sep	0	0	2	2	1
Locatio n 2	<i>Pipistrellus</i>	Jun	1	0	0	0	0
Locatio n 2	<i>Pipistrellus pipistrellus</i>	Apr	0	2	0	0	0
Locatio n 2	<i>Pipistrellus pipistrellus</i>	May	2	0	0	1	0
Locatio n 2	<i>Pipistrellus pipistrellus</i>	Jun	2	2	0	0	1
Locatio n 2	<i>Pipistrellus pipistrellus</i>	Jul	2	1	1	0	1
Locatio n 2	<i>Pipistrellus pipistrellus</i>	Aug	5	0	0	0	0
Locatio n 2	<i>Pipistrellus pipistrellus</i>	Sep	3	1	1	0	0
Locatio n 2	<i>Pipistrellus pygmaeus</i>	Apr	0	0	0	2	0
Locatio n 2	<i>Pipistrellus pygmaeus</i>	May	0	1	0	2	1
Locatio n 2	<i>Pipistrellus pygmaeus</i>	Jun	0	2	0	0	0
Locatio n 3	<i>Eptesicus serotinus</i>	Jun	0	0	0	0	1

Location 3	<i>Eptesicus serotinus</i>	Jul	0	0	0	1	0
Location 3	<i>Eptesicus serotinus</i>	Aug	0	0	0	0	1
Location 3	<i>Eptesicus serotinus</i>	Sep	0	0	0	2	1
Location 3	<i>Myotis</i>	Apr	1	2	1	0	1
Location 3	<i>Myotis</i>	May	0	2	0	0	1
Location 3	<i>Myotis</i>	Jun	1	0	3	0	0
Location 3	<i>Myotis</i>	Jul	0	0	2	1	1
Location 3	<i>Myotis</i>	Aug	1	2	2	0	0
Location 3	<i>Myotis</i>	Sep	3	2	0	0	0
Location 3	<i>Nyctaloid</i>	Jun	0	0	0	2	1
Location 3	<i>Nyctaloid</i>	Jul	0	0	1	0	0
Location 3	<i>Nyctalus noctula</i>	Apr	0	0	0	1	2
Location 3	<i>Nyctalus noctula</i>	May	0	0	0	0	1
Location 3	<i>Nyctalus noctula</i>	Jul	0	0	0	2	1
Location 3	<i>Nyctalus noctula</i>	Aug	0	0	2	3	0
Location 3	<i>Nyctalus noctula</i>	Sep	1	2	2	0	0
Location 3	<i>Pipistrellus nathusii</i>	Apr	0	0	1	0	1
Location 3	<i>Pipistrellus nathusii</i>	May	0	0	0	0	1
Location 3	<i>Pipistrellus nathusii</i>	Jun	0	0	0	0	3
Location 3	<i>Pipistrellus nathusii</i>	Jul	0	0	0	0	1

Locatio n 3	<i>Pipistrellus nathusii</i>	Sep	0	1	4	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	Apr	1	1	1	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	May	5	0	0	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	Jun	4	0	1	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	Jul	3	2	0	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	Aug	4	0	1	0	0
Locatio n 3	<i>Pipistrellus pipistrellus</i>	Sep	5	0	0	0	0
Locatio n 3	<i>Pipistrellus pygmaeus</i>	Apr	0	3	0	0	0
Locatio n 3	<i>Pipistrellus pygmaeus</i>	May	0	1	1	1	0
Locatio n 3	<i>Pipistrellus pygmaeus</i>	Jun	2	0	0	0	0
Locatio n 4	<i>Eptesicus serotinus</i>	May	0	0	1	0	2
Locatio n 4	<i>Eptesicus serotinus</i>	Jun	0	0	1	1	1
Locatio n 4	<i>Eptesicus serotinus</i>	Aug	0	0	4	0	0
Locatio n 4	<i>Eptesicus serotinus</i>	Sep	0	1	2	2	0
Locatio n 4	<i>Myotis</i>	Jun	0	0	0	1	2
Locatio n 4	<i>Myotis</i>	Aug	0	0	1	0	3
Locatio n 4	<i>Myotis</i>	Sep	0	5	0	0	0
Locatio n 4	<i>Nyctaloid</i>	Jun	1	2	0	0	0
Locatio n 4	<i>Nyctaloid</i>	Sep	0	2	0	0	0
Locatio n 4	<i>Nyctalus leisleri</i>	May	0	0	0	0	2

Locatio n 4	<i>Nyctalus leisleri</i>	Jun	0	0	0	0	1
Locatio n 4	<i>Nyctalus leisleri</i>	Aug	0	0	0	0	1
Locatio n 4	<i>Nyctalus noctula</i>	May	1	3	0	1	0
Locatio n 4	<i>Nyctalus noctula</i>	Jun	2	3	0	0	0
Locatio n 4	<i>Nyctalus noctula</i>	Jul	0	0	1	1	0
Locatio n 4	<i>Nyctalus noctula</i>	Aug	0	0	1	2	1
Locatio n 4	<i>Nyctalus noctula</i>	Sep	0	0	3	2	0
Locatio n 4	<i>Pipistrellus</i>	Apr	0	1	0	0	0
Locatio n 4	<i>Pipistrellus nathusii</i>	Apr	0	0	0	1	0
Locatio n 4	<i>Pipistrellus nathusii</i>	May	0	0	0	1	0
Locatio n 4	<i>Pipistrellus nathusii</i>	Jun	0	0	0	0	1
Locatio n 4	<i>Pipistrellus nathusii</i>	Jul	0	0	0	1	1
Locatio n 4	<i>Pipistrellus nathusii</i>	Sep	0	0	0	2	2
Locatio n 4	<i>Pipistrellus pipistrellus</i>	Apr	1	2	0	1	0
Locatio n 4	<i>Pipistrellus pipistrellus</i>	May	3	1	0	0	0
Locatio n 4	<i>Pipistrellus pipistrellus</i>	Jun	5	0	0	0	0
Locatio n 4	<i>Pipistrellus pipistrellus</i>	Jul	4	1	0	0	0
Locatio n 4	<i>Pipistrellus pipistrellus</i>	Aug	5	0	0	0	0
Locatio n 4	<i>Pipistrellus pipistrellus</i>	Sep	5	0	0	0	0
Locatio n 4	<i>Pipistrellus pygmaeus</i>	May	0	0	0	0	2

Locatio n 4	<i>Pipistrellus pygmaeus</i>	Jun	0	0	2	2	1
Locatio n 6	<i>Barbastella barbastellus</i>	Apr	0	0	0	0	1
Locatio n 6	<i>Eptesicus serotinus</i>	Jun	0	0	0	0	1
Locatio n 6	<i>Eptesicus serotinus</i>	Jul	0	0	0	1	0
Locatio n 6	<i>Eptesicus serotinus</i>	Aug	0	0	0	0	1
Locatio n 6	<i>Eptesicus serotinus</i>	Sep	0	0	0	0	1
Locatio n 6	<i>Myotis</i>	May	0	0	0	0	2
Locatio n 6	<i>Myotis</i>	Jun	0	0	1	3	0
Locatio n 6	<i>Myotis</i>	Jul	0	0	1	2	2
Locatio n 6	<i>Myotis</i>	Aug	0	0	0	1	0
Locatio n 6	<i>Myotis</i>	Sep	0	0	2	3	0
Locatio n 6	<i>Nyctaloid</i>	Sep	0	0	1	1	0
Locatio n 6	<i>Nyctalus leisleri</i>	Jul	0	0	0	0	1
Locatio n 6	<i>Nyctalus leisleri</i>	Aug	0	0	0	0	1
Locatio n 6	<i>Nyctalus noctula</i>	May	0	0	0	0	1
Locatio n 6	<i>Nyctalus noctula</i>	Jul	0	0	0	2	1
Locatio n 6	<i>Nyctalus noctula</i>	Aug	0	0	0	0	2
Locatio n 6	<i>Nyctalus noctula</i>	Sep	0	0	0	3	1
Locatio n 6	<i>Pipistrellus nathusii</i>	Jun	0	0	0	4	1
Locatio n 6	<i>Pipistrellus nathusii</i>	Jul	0	0	0	1	2

Locatio n 6	<i>Pipistrellus nathusii</i>	Sep	0	0	0	3	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	Apr	0	1	0	1	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	May	5	0	0	0	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	Jun	0	4	1	0	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	Jul	3	2	0	0	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	Aug	1	4	0	0	0
Locatio n 6	<i>Pipistrellus pipistrellus</i>	Sep	1	4	0	0	0
Locatio n 6	<i>Pipistrellus pygmaeus</i>	May	0	0	1	1	3
Locatio n 6	<i>Pipistrellus pygmaeus</i>	Jun	0	0	0	1	1
Locatio n 7	<i>Eptesicus serotinus</i>	Jun	0	0	1	0	3
Locatio n 7	<i>Eptesicus serotinus</i>	Jul	0	0	0	2	0
Locatio n 7	<i>Eptesicus serotinus</i>	Sep	0	1	1	1	0
Locatio n 7	<i>Myotis</i>	May	0	2	1	1	0
Locatio n 7	<i>Myotis</i>	Jun	0	0	1	1	2
Locatio n 7	<i>Myotis</i>	Jul	0	0	1	1	0
Locatio n 7	<i>Myotis</i>	Sep	0	0	3	0	1
Locatio n 7	<i>Nyctaloid</i>	May	0	0	0	2	1
Locatio n 7	<i>Nyctaloid</i>	Jun	0	0	5	0	0
Locatio n 7	<i>Nyctaloid</i>	Sep	4	0	0	0	0
Locatio n 7	<i>Nyctalus leisleri</i>	Jul	0	0	0	0	1

Locatio n 7	<i>Nyctalus leisleri</i>	Sep	1	1	1	1	0
Locatio n 7	<i>Nyctalus noctula</i>	Jun	0	0	3	1	1
Locatio n 7	<i>Nyctalus noctula</i>	Jul	0	3	2	0	0
Locatio n 7	<i>Nyctalus noctula</i>	Sep	4	0	0	0	0
Locatio n 7	<i>Pipistrellus</i>	May	3	0	0	0	0
Locatio n 7	<i>Pipistrellus nathusii</i>	May	0	0	0	0	2
Locatio n 7	<i>Pipistrellus nathusii</i>	Jun	0	0	0	1	0
Locatio n 7	<i>Pipistrellus nathusii</i>	Jul	0	0	0	1	0
Locatio n 7	<i>Pipistrellus nathusii</i>	Sep	0	0	4	0	0
Locatio n 7	<i>Pipistrellus pipistrellus</i>	Apr	0	0	0	0	1
Locatio n 7	<i>Pipistrellus pipistrellus</i>	May	4	0	0	1	0
Locatio n 7	<i>Pipistrellus pipistrellus</i>	Jun	3	1	1	0	0
Locatio n 7	<i>Pipistrellus pipistrellus</i>	Jul	3	2	0	0	0
Locatio n 7	<i>Pipistrellus pipistrellus</i>	Aug	1	3	1	0	0
Locatio n 7	<i>Pipistrellus pipistrellus</i>	Sep	1	3	0	0	0
Locatio n 7	<i>Pipistrellus pygmaeus</i>	May	0	3	1	0	1
Locatio n 7	<i>Pipistrellus pygmaeus</i>	Jun	3	2	0	0	0
Locatio n 8	<i>Eptesicus serotinus</i>	Jul	0	0	0	0	2
Locatio n 8	<i>Eptesicus serotinus</i>	Sep	0	1	2	1	0
Locatio n 8	<i>Myotis</i>	Jun	0	0	0	0	1

Locatio n 8	<i>Myotis</i>	Jul	0	0	0	1	0
Locatio n 8	<i>Myotis</i>	Sep	0	0	2	2	1
Locatio n 8	<i>Nyctaloid</i>	Jun	0	0	0	1	1
Locatio n 8	<i>Nyctaloid</i>	Jul	0	0	1	0	0
Locatio n 8	<i>Nyctaloid</i>	Sep	0	3	1	1	0
Locatio n 8	<i>Nyctalus leisleri</i>	Sep	0	0	0	0	2
Locatio n 8	<i>Nyctalus noctula</i>	May	0	0	0	0	3
Locatio n 8	<i>Nyctalus noctula</i>	Jul	0	0	1	3	0
Locatio n 8	<i>Nyctalus noctula</i>	Sep	0	0	3	1	1
Locatio n 8	<i>Pipistrellus nathusii</i>	Sep	0	0	0	1	2
Locatio n 8	<i>Pipistrellus pipistrellus</i>	May	0	0	1	0	0
Locatio n 8	<i>Pipistrellus pipistrellus</i>	Jun	5	0	0	0	0
Locatio n 8	<i>Pipistrellus pipistrellus</i>	Jul	3	2	0	0	0
Locatio n 8	<i>Pipistrellus pipistrellus</i>	Aug	1	2	1	0	1
Locatio n 8	<i>Pipistrellus pipistrellus</i>	Sep	1	4	0	0	0
Locatio n 8	<i>Pipistrellus pygmaeus</i>	Jun	0	2	0	0	0

Table 6. Summary table showing key metrics for each species recorded per month. Please note that we cannot split the reference range by month, hence this column is not shown in this table.

Detector ID	Species/Species Group	Month	Median Percentile	95% CIs	Max Percentile	Nights Recorded
Location 12	<i>Eptesicus serotinus</i>	Jul	0	0 - 0	0	1
Location 12	<i>Eptesicus serotinus</i>	Sep	0	0 - 0	0	1
Location 12	<i>Myotis</i>	Apr	0	31 - 53	0	2
Location 12	<i>Myotis</i>	May	0	31 - 53	21	3
Location 12	<i>Myotis</i>	Jun	31	31 - 53	41	4
Location 12	<i>Myotis</i>	Jul	0	31 - 53	0	2
Location 12	<i>Myotis</i>	Aug	49	31 - 53	71	5
Location 12	<i>Myotis</i>	Sep	41	31 - 53	56	5
Location 12	<i>Nyctaloid</i>	Jun	11	21 - 21	21	4
Location 12	<i>Nyctaloid</i>	Sep	46	21 - 21	46	1
Location 12	<i>Nyctalus leisleri</i>	Jul	0	21 - 21	0	1
Location 12	<i>Nyctalus leisleri</i>	Sep	21	21 - 21	41	3
Location 12	<i>Nyctalus noctula</i>	Jun	0	21 - 37.5	0	1
Location 12	<i>Nyctalus noctula</i>	Jul	21	21 - 37.5	21	3
Location 12	<i>Nyctalus noctula</i>	Sep	21	21 - 37.5	54	5
Location 12	<i>Pipistrellus</i>	May	82	0	82	1
Location 12	<i>Pipistrellus nathusii</i>	May	21	26.5 - 26.5	21	1

Location 12	<i>Pipistrellus nathusii</i>	Jun	0	26.5 - 26.5	0	2
Location 12	<i>Pipistrellus nathusii</i>	Aug	0	26.5 - 26.5	0	1
Location 12	<i>Pipistrellus nathusii</i>	Sep	32	26.5 - 26.5	32	1
Location 12	<i>Pipistrellus pipistrellus</i>	Apr	32	64.5 - 77	56	3
Location 12	<i>Pipistrellus pipistrellus</i>	May	77	64.5 - 77	98	4
Location 12	<i>Pipistrellus pipistrellus</i>	Jun	72	64.5 - 77	85	5
Location 12	<i>Pipistrellus pipistrellus</i>	Jul	58	64.5 - 77	80	5
Location 12	<i>Pipistrellus pipistrellus</i>	Aug	81	64.5 - 77	95	5
Location 12	<i>Pipistrellus pipistrellus</i>	Sep	65	64.5 - 77	80	5
Location 12	<i>Pipistrellus pygmaeus</i>	Apr	0	52.5 - 76	0	2
Location 12	<i>Pipistrellus pygmaeus</i>	May	54	52.5 - 76	58	4
Location 12	<i>Pipistrellus pygmaeus</i>	Jun	74	52.5 - 76	79	5
Location 13	<i>Eptesicus serotinus</i>	Sep	74	69 - 75	76	5
Location 13	<i>Myotis</i>	Apr	16	36.5 - 52.5	60	4
Location 13	<i>Myotis</i>	May	49	36.5 - 52.5	58	5
Location 13	<i>Myotis</i>	Jun	27	36.5 - 52.5	32	2
Location 13	<i>Myotis</i>	Jul	42	36.5 - 52.5	52	2
Location 13	<i>Myotis</i>	Aug	54	36.5 - 52.5	76	5
Location 13	<i>Myotis</i>	Sep	46	36.5 - 52.5	63	5
Location 13	<i>Nyctalus leisleri</i>	Jul	21	21 - 21	21	1

Location 13	<i>Nyctalus leisleri</i>	Sep	21	21 - 21	21	4
Location 13	<i>Nyctalus noctula</i>	Jun	41	46 - 66	72	5
Location 13	<i>Nyctalus noctula</i>	Jul	60	46 - 66	78	5
Location 13	<i>Nyctalus noctula</i>	Aug	46	46 - 66	54	3
Location 13	<i>Nyctalus noctula</i>	Sep	74	46 - 66	76	5
Location 13	<i>Pipistrellus</i>	May	85	77 - 94	94	3
Location 13	<i>Pipistrellus nathusii</i>	May	0	0 - 0	0	1
Location 13	<i>Pipistrellus nathusii</i>	Sep	0	0 - 0	0	2
Location 13	<i>Pipistrellus pipistrellus</i>	Apr	21	57.5 - 73.5	95	4
Location 13	<i>Pipistrellus pipistrellus</i>	May	81	57.5 - 73.5	94	5
Location 13	<i>Pipistrellus pipistrellus</i>	Jun	64	57.5 - 73.5	73	5
Location 13	<i>Pipistrellus pipistrellus</i>	Jul	66	57.5 - 73.5	75	5
Location 13	<i>Pipistrellus pipistrellus</i>	Aug	52	57.5 - 73.5	72	5
Location 13	<i>Pipistrellus pipistrellus</i>	Sep	73	57.5 - 73.5	97	5
Location 13	<i>Pipistrellus pygmaeus</i>	Apr	27	32 - 66	91	4
Location 13	<i>Pipistrellus pygmaeus</i>	May	32	32 - 66	69	5
Location 13	<i>Pipistrellus pygmaeus</i>	Jun	52	32 - 66	56	3
Location 14	<i>Eptesicus serotinus</i>	Jul	42	32 - 54	54	4
Location 14	<i>Myotis</i>	May	21	31 - 54.5	56	4
Location 14	<i>Myotis</i>	Jun	0	31 - 54.5	0	2

Location 14	<i>Myotis</i>	Jul	45	31 - 54.5	82	4
Location 14	<i>Myotis</i>	Aug	44	31 - 54.5	58	4
Location 14	<i>Myotis</i>	Sep	41	31 - 54.5	52	3
Location 14	<i>Nyctaloid</i>	Jun	92	46 - 92	92	1
Location 14	<i>Nyctaloid</i>	Jul	91	46 - 92	91	1
Location 14	<i>Nyctaloid</i>	Sep	46	46 - 92	46	1
Location 14	<i>Nyctalus leisleri</i>	Aug	21	10.5 - 10.5	21	1
Location 14	<i>Nyctalus leisleri</i>	Sep	0	10.5 - 10.5	0	1
Location 14	<i>Nyctalus noctula</i>	Jun	91	53 - 89.5	93	4
Location 14	<i>Nyctalus noctula</i>	Jul	92	53 - 89.5	93	5
Location 14	<i>Nyctalus noctula</i>	Aug	41	53 - 89.5	49	5
Location 14	<i>Nyctalus noctula</i>	Sep	21	53 - 89.5	65	5
Location 14	<i>Pipistrellus</i>	May	91	84 - 98	98	3
Location 14	<i>Pipistrellus nathusii</i>	May	0	21 - 21	0	1
Location 14	<i>Pipistrellus nathusii</i>	Jun	21	21 - 21	21	1
Location 14	<i>Pipistrellus nathusii</i>	Jul	11	21 - 21	41	4
Location 14	<i>Pipistrellus nathusii</i>	Sep	0	21 - 21	0	2
Location 14	<i>Pipistrellus pipistrellus</i>	Apr	0	79 - 91.5	0	1
Location 14	<i>Pipistrellus pipistrellus</i>	May	81	79 - 91.5	97	5
Location 14	<i>Pipistrellus pipistrellus</i>	Jun	91	79 - 91.5	98	5

Location 14	<i>Pipistrellus pipistrellus</i>	Jul	99	79 - 91.5	99	5
Location 14	<i>Pipistrellus pipistrellus</i>	Aug	96	79 - 91.5	99	5
Location 14	<i>Pipistrellus pipistrellus</i>	Sep	76	79 - 91.5	80	5
Location 14	<i>Pipistrellus pygmaeus</i>	May	68	39.5 - 88	92	5
Location 14	<i>Pipistrellus pygmaeus</i>	Jun	79	39.5 - 88	84	2
Location 15	<i>Eptesicus serotinus</i>	Jul	11	10.5 - 10.5	21	2
Location 15	<i>Myotis</i>	May	25	31 - 52.5	56	4
Location 15	<i>Myotis</i>	Jun	21	31 - 52.5	41	4
Location 15	<i>Myotis</i>	Jul	0	31 - 52.5	32	5
Location 15	<i>Myotis</i>	Sep	52	31 - 52.5	61	5
Location 15	<i>Nyctaloid</i>	Jun	54	50 - 50	54	1
Location 15	<i>Nyctaloid</i>	Sep	23	50 - 50	46	2
Location 15	<i>Nyctalus noctula</i>	Jun	46	39.5 - 60.5	58	5
Location 15	<i>Nyctalus noctula</i>	Jul	58	39.5 - 60.5	67	5
Location 15	<i>Nyctalus noctula</i>	Sep	21	39.5 - 60.5	21	1
Location 15	<i>Pipistrellus</i>	May	100	0	100	1
Location 15	<i>Pipistrellus nathusii</i>	May	21	26.5 - 26.5	32	3
Location 15	<i>Pipistrellus nathusii</i>	Jun	0	26.5 - 26.5	0	1
Location 15	<i>Pipistrellus nathusii</i>	Jul	0	26.5 - 26.5	0	1
Location 15	<i>Pipistrellus nathusii</i>	Sep	0	26.5 - 26.5	0	3

Location 15	<i>Pipistrellus pipistrellus</i>	May	92	76 - 89	99	4
Location 15	<i>Pipistrellus pipistrellus</i>	Jun	79	76 - 89	97	5
Location 15	<i>Pipistrellus pipistrellus</i>	Jul	91	76 - 89	93	5
Location 15	<i>Pipistrellus pipistrellus</i>	Aug	77	76 - 89	99	5
Location 15	<i>Pipistrellus pipistrellus</i>	Sep	73	76 - 89	91	5
Location 15	<i>Pipistrellus pygmaeus</i>	May	94	58 - 86.5	99	5
Location 15	<i>Pipistrellus pygmaeus</i>	Jun	68	58 - 86.5	69	5
Location 2	<i>Eptesicus serotinus</i>	Jun	0	32 - 64.5	0	1
Location 2	<i>Eptesicus serotinus</i>	Jul	11	32 - 64.5	21	2
Location 2	<i>Eptesicus serotinus</i>	Aug	61	32 - 64.5	68	5
Location 2	<i>Eptesicus serotinus</i>	Sep	41	32 - 64.5	72	5
Location 2	<i>Myotis</i>	Apr	32	26.5 - 40.5	32	4
Location 2	<i>Myotis</i>	May	32	26.5 - 40.5	32	1
Location 2	<i>Myotis</i>	Jun	27	26.5 - 40.5	69	4
Location 2	<i>Myotis</i>	Jul	0	26.5 - 40.5	0	1
Location 2	<i>Myotis</i>	Aug	0	26.5 - 40.5	0	1
Location 2	<i>Myotis</i>	Sep	21	26.5 - 40.5	49	5
Location 2	<i>Nyctaloid</i>	Jun	21	35 - 72	21	3
Location 2	<i>Nyctaloid</i>	Jul	25	35 - 72	49	2
Location 2	<i>Nyctaloid</i>	Aug	75	35 - 72	75	1

Location 2	<i>Nyctaloid</i>	Sep	66	35 - 72	78	4
Location 2	<i>Nyctalus leisleri</i>	Jul	0	0 - 0	0	1
Location 2	<i>Nyctalus leisleri</i>	Aug	16	0 - 0	32	2
Location 2	<i>Nyctalus noctula</i>	May	0	26.5 - 50.5	0	1
Location 2	<i>Nyctalus noctula</i>	Jul	21	26.5 - 50.5	21	1
Location 2	<i>Nyctalus noctula</i>	Aug	46	26.5 - 50.5	64	5
Location 2	<i>Nyctalus noctula</i>	Sep	32	26.5 - 50.5	52	5
Location 2	<i>Pipistrellus</i>	Jun	95	0	95	1
Location 2	<i>Pipistrellus pipistrellus</i>	Apr	70	71 - 87	71	2
Location 2	<i>Pipistrellus pipistrellus</i>	May	81	71 - 87	93	3
Location 2	<i>Pipistrellus pipistrellus</i>	Jun	75	71 - 87	95	5
Location 2	<i>Pipistrellus pipistrellus</i>	Jul	78	71 - 87	90	5
Location 2	<i>Pipistrellus pipistrellus</i>	Aug	92	71 - 87	96	5
Location 2	<i>Pipistrellus pipistrellus</i>	Sep	82	71 - 87	89	5
Location 2	<i>Pipistrellus pygmaeus</i>	Apr	27	26.5 - 69.5	32	2
Location 2	<i>Pipistrellus pygmaeus</i>	May	32	26.5 - 69.5	78	4
Location 2	<i>Pipistrellus pygmaeus</i>	Jun	70	26.5 - 69.5	78	2
Location 3	<i>Eptesicus serotinus</i>	Jun	0	21 - 21	0	1
Location 3	<i>Eptesicus serotinus</i>	Jul	21	21 - 21	21	1
Location 3	<i>Eptesicus serotinus</i>	Aug	0	21 - 21	0	1

Location 3	<i>Eptesicus serotinus</i>	Sep	21	21 - 21	32	3
Location 3	<i>Myotis</i>	Apr	71	60 - 77.5	85	5
Location 3	<i>Myotis</i>	May	68	60 - 77.5	70	3
Location 3	<i>Myotis</i>	Jun	52	60 - 77.5	83	4
Location 3	<i>Myotis</i>	Jul	35	60 - 77.5	52	4
Location 3	<i>Myotis</i>	Aug	75	60 - 77.5	90	5
Location 3	<i>Myotis</i>	Sep	95	60 - 77.5	96	5
Location 3	<i>Nyctaloid</i>	Jun	21	21 - 21	21	3
Location 3	<i>Nyctaloid</i>	Jul	41	21 - 21	41	1
Location 3	<i>Nyctalus noctula</i>	Apr	0	32 - 61.5	32	3
Location 3	<i>Nyctalus noctula</i>	May	0	32 - 61.5	0	1
Location 3	<i>Nyctalus noctula</i>	Jul	32	32 - 61.5	32	3
Location 3	<i>Nyctalus noctula</i>	Aug	32	32 - 61.5	49	5
Location 3	<i>Nyctalus noctula</i>	Sep	75	32 - 61.5	91	5
Location 3	<i>Pipistrellus nathusii</i>	Apr	21	41 - 60	41	2
Location 3	<i>Pipistrellus nathusii</i>	May	0	41 - 60	0	1
Location 3	<i>Pipistrellus nathusii</i>	Jun	0	41 - 60	0	3
Location 3	<i>Pipistrellus nathusii</i>	Jul	0	41 - 60	0	1
Location 3	<i>Pipistrellus nathusii</i>	Sep	58	41 - 60	73	5
Location 3	<i>Pipistrellus pipistrellus</i>	Apr	75	80 - 90.5	89	3

Location 3	<i>Pipistrellus pipistrellus</i>	May	95	80 - 90.5	100	5
Location 3	<i>Pipistrellus pipistrellus</i>	Jun	81	80 - 90.5	91	5
Location 3	<i>Pipistrellus pipistrellus</i>	Jul	81	80 - 90.5	95	5
Location 3	<i>Pipistrellus pipistrellus</i>	Aug	86	80 - 90.5	91	5
Location 3	<i>Pipistrellus pipistrellus</i>	Sep	95	80 - 90.5	98	5
Location 3	<i>Pipistrellus pygmaeus</i>	Apr	65	43 - 80	69	3
Location 3	<i>Pipistrellus pygmaeus</i>	May	49	43 - 80	67	3
Location 3	<i>Pipistrellus pygmaeus</i>	Jun	87	43 - 80	93	2
Location 4	<i>Eptesicus serotinus</i>	May	0	33.5 - 50	41	3
Location 4	<i>Eptesicus serotinus</i>	Jun	21	33.5 - 50	54	3
Location 4	<i>Eptesicus serotinus</i>	Aug	48	33.5 - 50	49	4
Location 4	<i>Eptesicus serotinus</i>	Sep	46	33.5 - 50	63	5
Location 4	<i>Myotis</i>	Jun	0	31 - 73.5	21	3
Location 4	<i>Myotis</i>	Aug	0	31 - 73.5	41	4
Location 4	<i>Myotis</i>	Sep	71	31 - 73.5	75	5
Location 4	<i>Nyctaloid</i>	Jun	77	65 - 77	82	3
Location 4	<i>Nyctaloid</i>	Sep	68	65 - 77	71	2
Location 4	<i>Nyctalus leisleri</i>	May	0	0 - 0	0	2
Location 4	<i>Nyctalus leisleri</i>	Jun	0	0 - 0	0	1
Location 4	<i>Nyctalus leisleri</i>	Aug	0	0 - 0	0	1

Location 4	<i>Nyctalus noctula</i>	May	76	44 - 67	84	5
Location 4	<i>Nyctalus noctula</i>	Jun	78	44 - 67	86	5
Location 4	<i>Nyctalus noctula</i>	Jul	45	44 - 67	58	2
Location 4	<i>Nyctalus noctula</i>	Aug	27	44 - 67	41	4
Location 4	<i>Nyctalus noctula</i>	Sep	46	44 - 67	56	5
Location 4	<i>Pipistrellus</i>	Apr	67	0	67	1
Location 4	<i>Pipistrellus nathusii</i>	Apr	21	21 - 21	21	1
Location 4	<i>Pipistrellus nathusii</i>	May	21	21 - 21	21	1
Location 4	<i>Pipistrellus nathusii</i>	Jun	0	21 - 21	0	1
Location 4	<i>Pipistrellus nathusii</i>	Jul	11	21 - 21	21	2
Location 4	<i>Pipistrellus nathusii</i>	Sep	11	21 - 21	21	4
Location 4	<i>Pipistrellus pipistrellus</i>	Apr	64	84 - 96	85	4
Location 4	<i>Pipistrellus pipistrellus</i>	May	82	84 - 96	90	4
Location 4	<i>Pipistrellus pipistrellus</i>	Jun	96	84 - 96	98	5
Location 4	<i>Pipistrellus pipistrellus</i>	Jul	100	84 - 96	100	5
Location 4	<i>Pipistrellus pipistrellus</i>	Aug	94	84 - 96	99	5
Location 4	<i>Pipistrellus pipistrellus</i>	Sep	98	84 - 96	99	5
Location 4	<i>Pipistrellus pygmaeus</i>	May	0	21 - 60	0	2
Location 4	<i>Pipistrellus pygmaeus</i>	Jun	32	21 - 60	60	5
Location 6	<i>Barbastella barbastellus</i>	Apr	0	0	0	1

Location 6	<i>Eptesicus serotinus</i>	Jun	0	0 - 0	0	1
Location 6	<i>Eptesicus serotinus</i>	Jul	21	0 - 0	21	1
Location 6	<i>Eptesicus serotinus</i>	Aug	0	0 - 0	0	1
Location 6	<i>Eptesicus serotinus</i>	Sep	0	0 - 0	0	1
Location 6	<i>Myotis</i>	May	0	21 - 36.5	0	2
Location 6	<i>Myotis</i>	Jun	21	21 - 36.5	46	4
Location 6	<i>Myotis</i>	Jul	21	21 - 36.5	41	5
Location 6	<i>Myotis</i>	Aug	21	21 - 36.5	21	1
Location 6	<i>Myotis</i>	Sep	21	21 - 36.5	54	5
Location 6	<i>Nyctaloid</i>	Sep	38	37.5 - 37.5	54	2
Location 6	<i>Nyctalus leisleri</i>	Jul	0	0 - 0	0	1
Location 6	<i>Nyctalus leisleri</i>	Aug	0	0 - 0	0	1
Location 6	<i>Nyctalus noctula</i>	May	0	26.5 - 32	0	1
Location 6	<i>Nyctalus noctula</i>	Jul	21	26.5 - 32	21	3
Location 6	<i>Nyctalus noctula</i>	Aug	0	26.5 - 32	0	2
Location 6	<i>Nyctalus noctula</i>	Sep	32	26.5 - 32	32	4
Location 6	<i>Pipistrellus nathusii</i>	Jun	21	21 - 26.5	32	5
Location 6	<i>Pipistrellus nathusii</i>	Jul	0	21 - 26.5	21	3
Location 6	<i>Pipistrellus nathusii</i>	Sep	21	21 - 26.5	32	3
Location 6	<i>Pipistrellus pipistrellus</i>	Apr	51	73 - 83.5	69	2

Location 6	<i>Pipistrellus pipistrellus</i>	May	96	73 - 83.5	98	5
Location 6	<i>Pipistrellus pipistrellus</i>	Jun	70	73 - 83.5	78	5
Location 6	<i>Pipistrellus pipistrellus</i>	Jul	80	73 - 83.5	90	5
Location 6	<i>Pipistrellus pipistrellus</i>	Aug	78	73 - 83.5	82	5
Location 6	<i>Pipistrellus pipistrellus</i>	Sep	76	73 - 83.5	91	5
Location 6	<i>Pipistrellus pygmaeus</i>	May	0	21 - 46	46	5
Location 6	<i>Pipistrellus pygmaeus</i>	Jun	11	21 - 46	21	2
Location 7	<i>Eptesicus serotinus</i>	Jun	0	26.5 - 51	41	4
Location 7	<i>Eptesicus serotinus</i>	Jul	21	26.5 - 51	21	2
Location 7	<i>Eptesicus serotinus</i>	Sep	58	26.5 - 51	61	3
Location 7	<i>Myotis</i>	May	60	33.5 - 54.5	65	4
Location 7	<i>Myotis</i>	Jun	16	33.5 - 54.5	46	4
Location 7	<i>Myotis</i>	Jul	34	33.5 - 54.5	46	2
Location 7	<i>Myotis</i>	Sep	44	33.5 - 54.5	46	4
Location 7	<i>Nyctaloid</i>	May	21	41 - 79	32	3
Location 7	<i>Nyctaloid</i>	Jun	60	41 - 79	60	5
Location 7	<i>Nyctaloid</i>	Sep	94	41 - 79	98	4
Location 7	<i>Nyctalus leisleri</i>	Jul	0	21 - 86	0	1
Location 7	<i>Nyctalus leisleri</i>	Sep	61	21 - 86	86	4
Location 7	<i>Nyctalus noctula</i>	Jun	49	52.5 - 81.5	56	5

Location 7	<i>Nyctalus noctula</i>	Jul	68	52.5 - 81.5	74	5
Location 7	<i>Nyctalus noctula</i>	Sep	93	52.5 - 81.5	98	4
Location 7	<i>Pipistrellus</i>	May	91	90 - 97	97	3
Location 7	<i>Pipistrellus nathusii</i>	May	0	31 - 52.5	0	2
Location 7	<i>Pipistrellus nathusii</i>	Jun	21	31 - 52.5	21	1
Location 7	<i>Pipistrellus nathusii</i>	Jul	32	31 - 52.5	32	1
Location 7	<i>Pipistrellus nathusii</i>	Sep	49	31 - 52.5	56	4
Location 7	<i>Pipistrellus pipistrellus</i>	Apr	0	72 - 85	0	1
Location 7	<i>Pipistrellus pipistrellus</i>	May	90	72 - 85	96	5
Location 7	<i>Pipistrellus pipistrellus</i>	Jun	83	72 - 85	92	5
Location 7	<i>Pipistrellus pipistrellus</i>	Jul	82	72 - 85	96	5
Location 7	<i>Pipistrellus pipistrellus</i>	Aug	66	72 - 85	81	5
Location 7	<i>Pipistrellus pipistrellus</i>	Sep	77	72 - 85	95	4
Location 7	<i>Pipistrellus pygmaeus</i>	May	65	63 - 81	74	5
Location 7	<i>Pipistrellus pygmaeus</i>	Jun	81	63 - 81	87	5
Location 8	<i>Eptesicus serotinus</i>	Jul	0	21 - 61	0	2
Location 8	<i>Eptesicus serotinus</i>	Sep	53	21 - 61	61	4
Location 8	<i>Myotis</i>	Jun	0	21 - 58	0	1
Location 8	<i>Myotis</i>	Jul	21	21 - 58	21	1
Location 8	<i>Myotis</i>	Sep	32	21 - 58	58	5

Location 8	<i>Nyctaloid</i>	Jun	16	26.5 - 70	32	2
Location 8	<i>Nyctaloid</i>	Jul	54	26.5 - 70	54	1
Location 8	<i>Nyctaloid</i>	Sep	63	26.5 - 70	71	5
Location 8	<i>Nyctalus leisleri</i>	Sep	0	0 - 0	0	2
Location 8	<i>Nyctalus noctula</i>	May	0	21 - 52.5	0	3
Location 8	<i>Nyctalus noctula</i>	Jul	27	21 - 52.5	52	4
Location 8	<i>Nyctalus noctula</i>	Sep	49	21 - 52.5	56	5
Location 8	<i>Pipistrellus nathusii</i>	Sep	0	0 - 0	21	3
Location 8	<i>Pipistrellus pipistrellus</i>	May	56	70.5 - 81	56	1
Location 8	<i>Pipistrellus pipistrellus</i>	Jun	87	70.5 - 81	89	5
Location 8	<i>Pipistrellus pipistrellus</i>	Jul	81	70.5 - 81	87	5
Location 8	<i>Pipistrellus pipistrellus</i>	Aug	67	70.5 - 81	82	5
Location 8	<i>Pipistrellus pipistrellus</i>	Sep	72	70.5 - 81	81	5
Location 8	<i>Pipistrellus pygmaeus</i>	Jun	72	71.5 - 71.5	79	2

PER SITE

In this 'Per Site' section of the analysis, all values are taken from across all of the detectors to provide site-wide averages/medians.

Table 7. Summary table showing the number of nights recorded bat activity fell into each activity band for each species.

Species/Species Group	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
<i>Barbastella barbastellus</i>	0	0	0	0	1
<i>Eptesicus serotinus</i>	0	12	17	16	21
<i>Myotis</i>	7	22	53	48	41
<i>Nyctaloid</i>	7	11	15	11	8
<i>Nyctalus leisleri</i>	1	1	2	9	14
<i>Nyctalus noctula</i>	17	22	43	37	24
<i>Pipistrellus</i>	11	2	0	0	0
<i>Pipistrellus nathusii</i>	0	1	10	22	34
<i>Pipistrellus pipistrellus</i>	132	85	25	10	8
<i>Pipistrellus pygmaeus</i>	11	27	14	15	15

Table 8. Summary table showing key metrics for each species recorded.

Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded
<i>Barbastella barbastellus</i>	0	0	0	1
<i>Eptesicus serotinus</i>	27	69 - 75	76	66
<i>Myotis</i>	32	60 - 77.5	96	171
<i>Nyctaloid</i>	52	65 - 77	98	52
<i>Nyctalus leisleri</i>	0	21 - 86	86	27
<i>Nyctalus noctula</i>	46	53 - 89.5	98	143
<i>Pipistrellus</i>	91	90 - 97	100	13
<i>Pipistrellus nathusii</i>	0	41 - 60	73	67
<i>Pipistrellus pipistrellus</i>	80	84 - 96	100	260
<i>Pipistrellus pygmaeus</i>	58	71.5 - 71.5	99	82

###Figures

Figure 4. The activity level (percentile) of bats recorded across each night of the bat survey for the **entire site**.

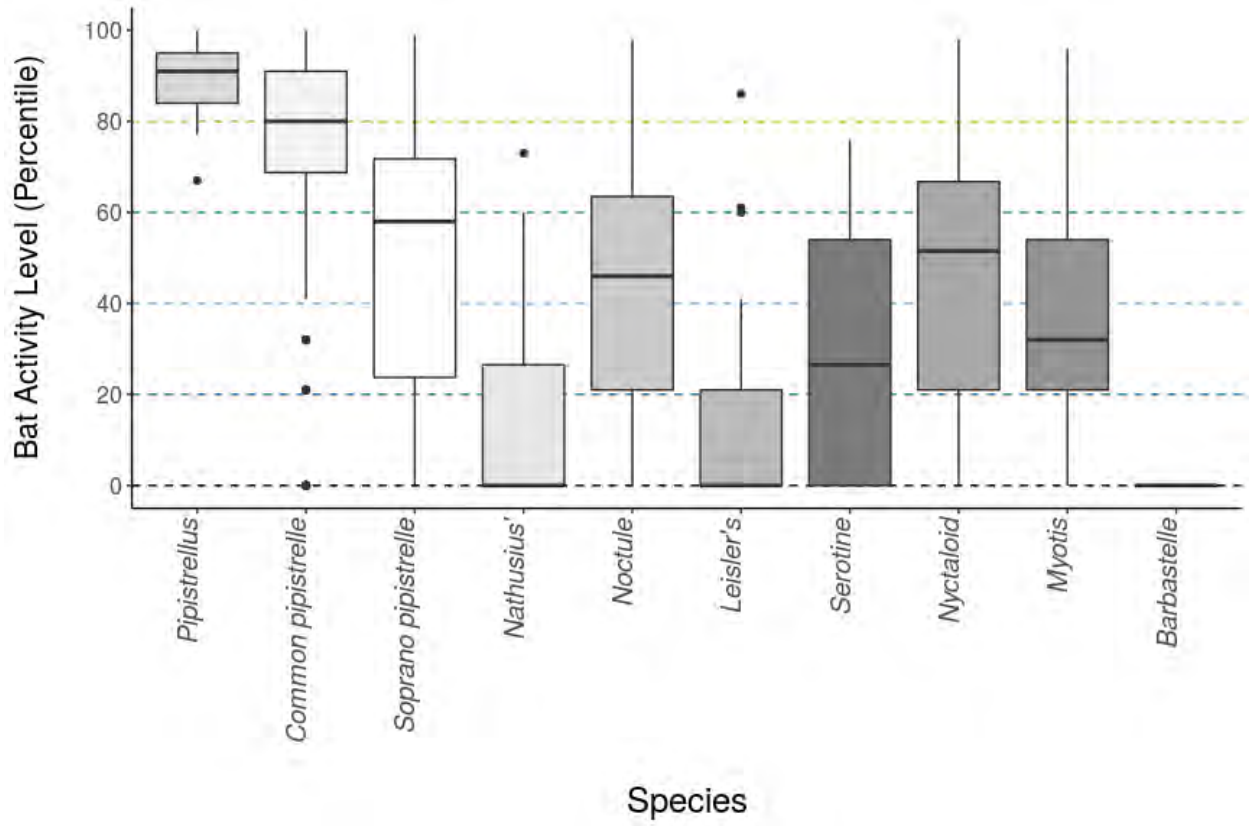
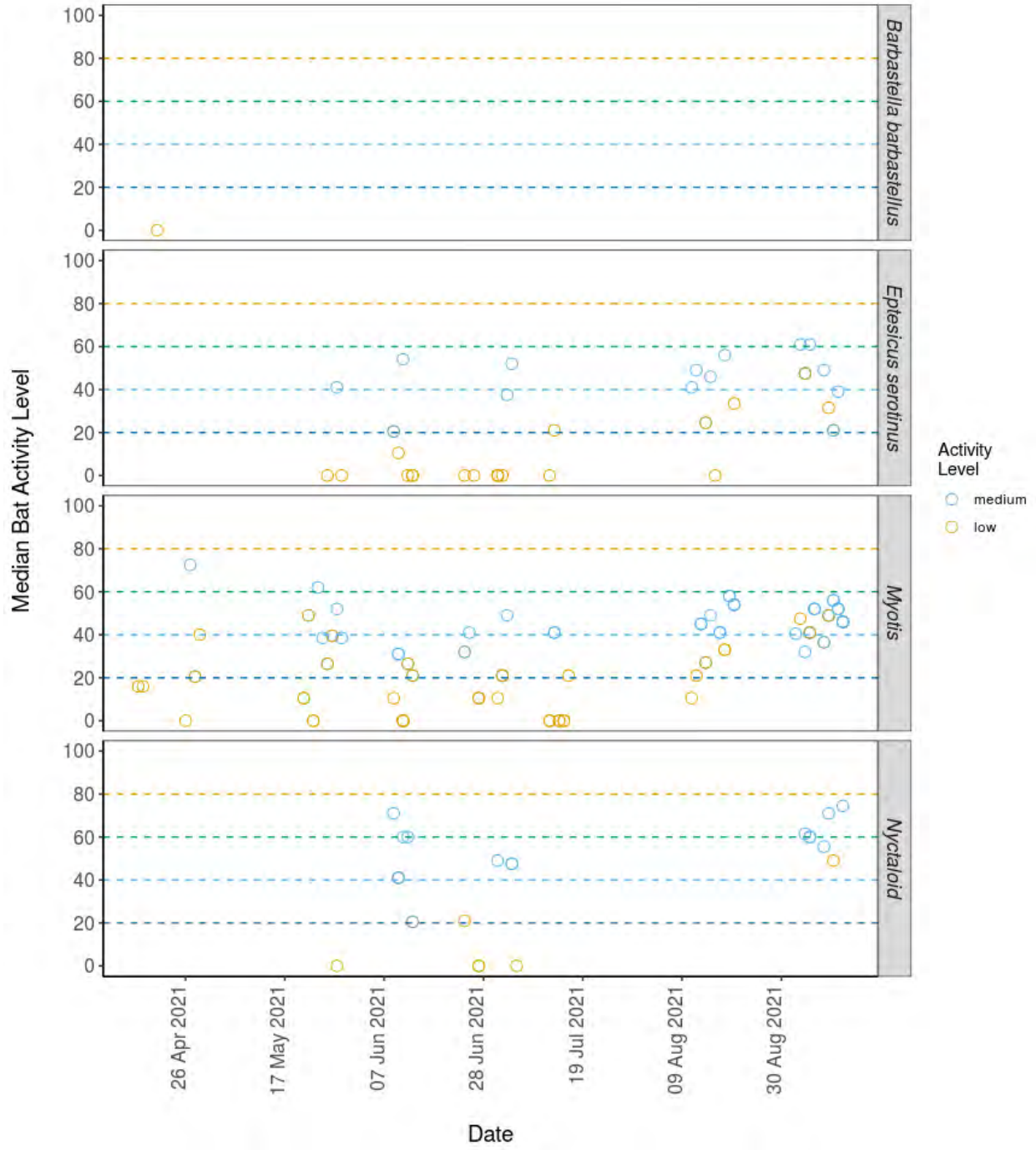
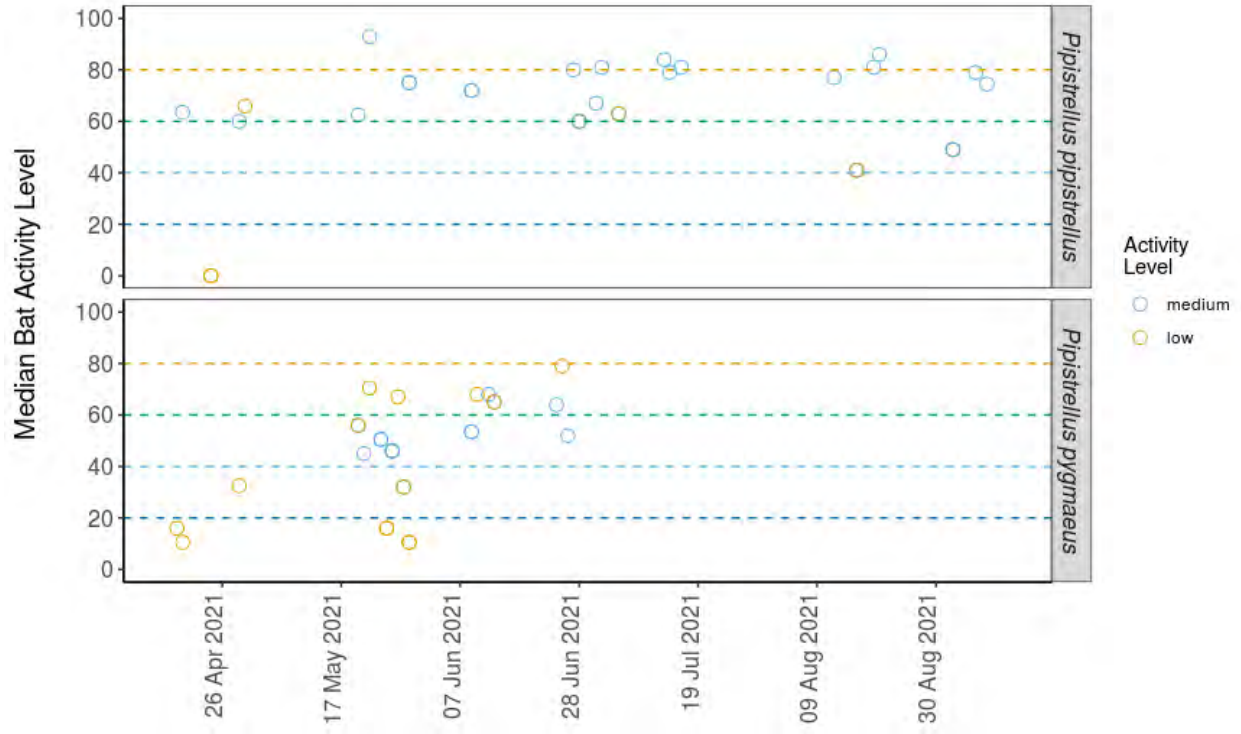


Figure 5. The median activity levels of bats recorded across all detectors each night.





Date

PER SITE, PER MONTH

Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

Species/Species Group	Month	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
<i>Barbastella barbastellus</i>	Apr	0	0	0	0	1
<i>Eptesicus serotinus</i>	May	0	0	1	0	2
<i>Eptesicus serotinus</i>	Jun	0	0	2	1	7
<i>Eptesicus serotinus</i>	Jul	0	0	2	7	6
<i>Eptesicus serotinus</i>	Aug	0	3	5	0	3
<i>Eptesicus serotinus</i>	Sep	0	9	7	8	3
<i>Myotis</i>	Apr	1	2	2	5	5
<i>Myotis</i>	May	0	4	7	8	7
<i>Myotis</i>	Jun	1	1	8	13	9
<i>Myotis</i>	Jul	1	1	5	9	10
<i>Myotis</i>	Aug	1	5	11	3	5
<i>Myotis</i>	Sep	3	9	20	10	5
<i>Nyctaloid</i>	May	0	0	0	2	1
<i>Nyctaloid</i>	Jun	2	2	6	7	5
<i>Nyctaloid</i>	Jul	1	0	3	0	1
<i>Nyctaloid</i>	Aug	0	1	0	0	0
<i>Nyctaloid</i>	Sep	4	8	6	2	1
<i>Nyctalus leisleri</i>	May	0	0	0	0	2
<i>Nyctalus leisleri</i>	Jun	0	0	0	0	1
<i>Nyctalus leisleri</i>	Jul	0	0	0	1	4
<i>Nyctalus leisleri</i>	Aug	0	0	0	2	3
<i>Nyctalus leisleri</i>	Sep	1	1	2	6	4
<i>Nyctalus noctula</i>	Apr	0	0	0	1	2
<i>Nyctalus noctula</i>	May	1	3	0	1	6

<i>Nyctalus noctula</i>	Jun	6	4	8	3	4
<i>Nyctalus noctula</i>	Jul	5	7	10	11	3
<i>Nyctalus noctula</i>	Aug	0	1	12	8	3
<i>Nyctalus noctula</i>	Sep	5	7	13	13	6
<i>Pipistrellus</i>	Apr	0	1	0	0	0
<i>Pipistrellus</i>	May	10	1	0	0	0
<i>Pipistrellus</i>	Jun	1	0	0	0	0
<i>Pipistrellus nathusii</i>	Apr	0	0	1	1	1
<i>Pipistrellus nathusii</i>	May	0	0	0	4	6
<i>Pipistrellus nathusii</i>	Jun	0	0	0	6	8
<i>Pipistrellus nathusii</i>	Jul	0	0	1	4	7
<i>Pipistrellus nathusii</i>	Aug	0	0	0	0	1
<i>Pipistrellus nathusii</i>	Sep	0	1	8	7	11
<i>Pipistrellus pipistrellus</i>	Apr	3	6	2	6	3
<i>Pipistrellus pipistrellus</i>	May	29	6	4	2	0
<i>Pipistrellus pipistrellus</i>	Jun	26	18	5	0	1
<i>Pipistrellus pipistrellus</i>	Jul	28	15	6	0	1
<i>Pipistrellus pipistrellus</i>	Aug	26	17	4	1	2
<i>Pipistrellus pipistrellus</i>	Sep	20	23	4	1	1
<i>Pipistrellus pygmaeus</i>	Apr	1	3	0	4	3
<i>Pipistrellus pygmaeus</i>	May	4	9	8	8	9
<i>Pipistrellus pygmaeus</i>	Jun	6	15	6	3	3

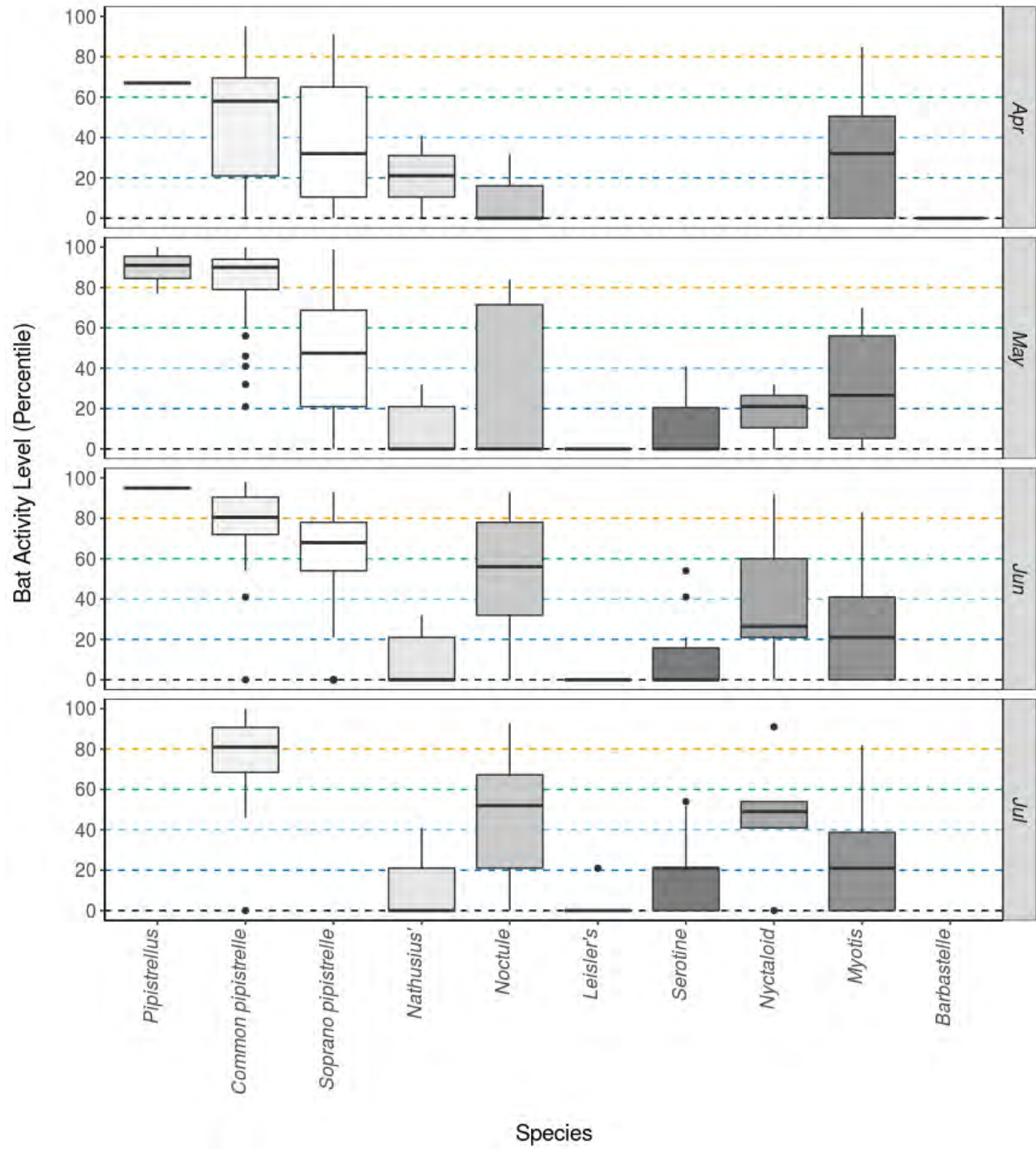
Table 10. Summary table showing key metrics for each species recorded per month.

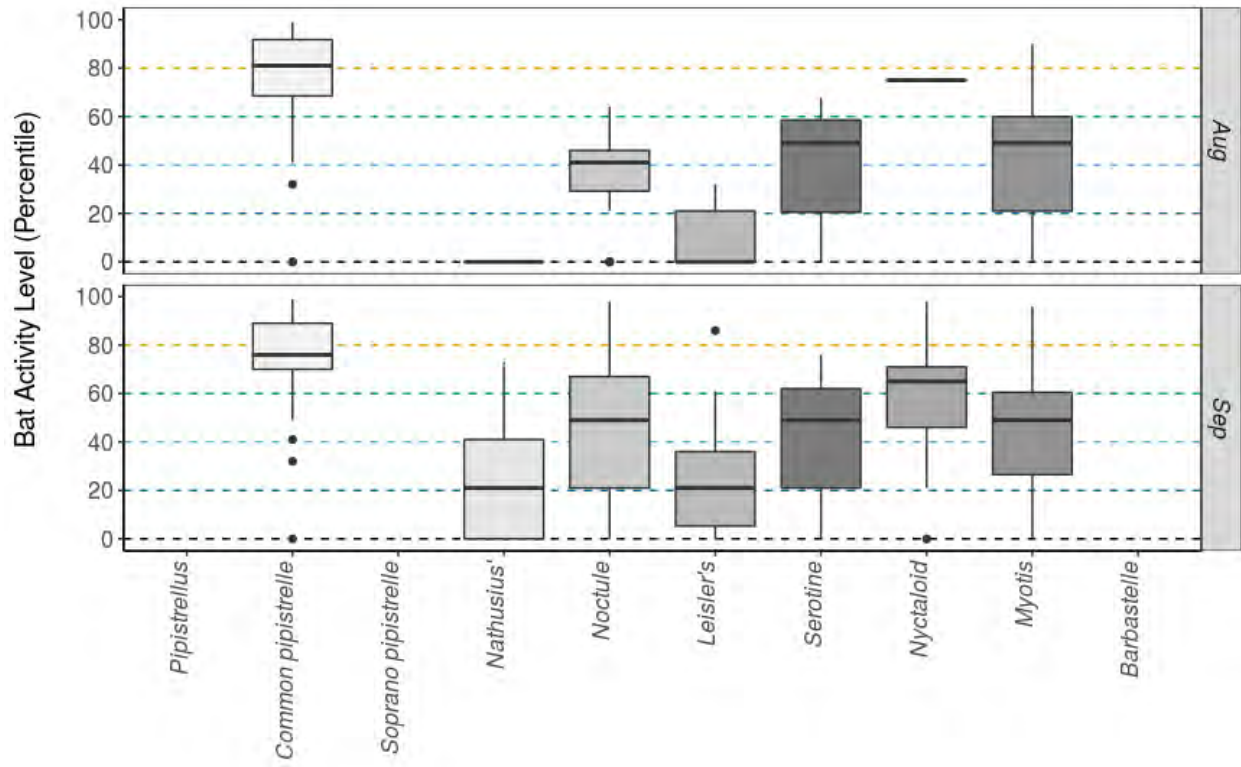
Species/Species Group	Month	Median Percentile	95% CIs	Max Percentile	Nights Recorded
<i>Barbastella barbastellus</i>	Apr	0	0	0	1
<i>Eptesicus serotinus</i>	May	0	33.5 - 50	41	3
<i>Eptesicus serotinus</i>	Jun	0	33.5 - 50	54	10
<i>Eptesicus serotinus</i>	Jul	21	32 - 64.5	54	15
<i>Eptesicus serotinus</i>	Aug	49	33.5 - 50	68	11
<i>Eptesicus serotinus</i>	Sep	49	69 - 75	76	27
<i>Myotis</i>	Apr	32	60 - 77.5	85	15
<i>Myotis</i>	May	27	60 - 77.5	70	26
<i>Myotis</i>	Jun	21	60 - 77.5	83	32
<i>Myotis</i>	Jul	21	60 - 77.5	82	26
<i>Myotis</i>	Aug	49	60 - 77.5	90	25
<i>Myotis</i>	Sep	49	60 - 77.5	96	47
<i>Nyctaloid</i>	May	21	41 - 79	32	3
<i>Nyctaloid</i>	Jun	27	65 - 77	92	22
<i>Nyctaloid</i>	Jul	49	46 - 92	91	5
<i>Nyctaloid</i>	Aug	75	35 - 72	75	1
<i>Nyctaloid</i>	Sep	65	65 - 77	98	21
<i>Nyctalus leisleri</i>	May	0	0 - 0	0	2
<i>Nyctalus leisleri</i>	Jun	0	0 - 0	0	1
<i>Nyctalus leisleri</i>	Jul	0	21 - 86	21	5
<i>Nyctalus leisleri</i>	Aug	0	10.5 - 10.5	32	5
<i>Nyctalus leisleri</i>	Sep	21	21 - 86	86	14

<i>Nyctalus noctula</i>	Apr	0	32 - 61.5	32	3
<i>Nyctalus noctula</i>	May	0	44 - 67	84	11
<i>Nyctalus noctula</i>	Jun	56	53 - 89.5	93	25
<i>Nyctalus noctula</i>	Jul	52	53 - 89.5	93	36
<i>Nyctalus noctula</i>	Aug	41	53 - 89.5	64	24
<i>Nyctalus noctula</i>	Sep	49	53 - 89.5	98	44
<i>Pipistrellus</i>	Apr	67	0	67	1
<i>Pipistrellus</i>	May	91	90 - 97	100	11
<i>Pipistrellus</i>	Jun	95	0	95	1
<i>Pipistrellus nathusii</i>	Apr	21	41 - 60	41	3
<i>Pipistrellus nathusii</i>	May	0	41 - 60	32	10
<i>Pipistrellus nathusii</i>	Jun	0	41 - 60	32	14
<i>Pipistrellus nathusii</i>	Jul	0	41 - 60	41	12
<i>Pipistrellus nathusii</i>	Aug	0	26.5 - 26.5	0	1
<i>Pipistrellus nathusii</i>	Sep	21	41 - 60	73	27
<i>Pipistrellus pipistrellus</i>	Apr	58	84 - 96	95	20
<i>Pipistrellus pipistrellus</i>	May	90	84 - 96	100	41
<i>Pipistrellus pipistrellus</i>	Jun	81	84 - 96	98	50
<i>Pipistrellus pipistrellus</i>	Jul	81	84 - 96	100	50
<i>Pipistrellus pipistrellus</i>	Aug	81	84 - 96	99	50
<i>Pipistrellus pipistrellus</i>	Sep	76	84 - 96	99	49
<i>Pipistrellus pygmaeus</i>	Apr	32	52.5 - 76	91	11
<i>Pipistrellus pygmaeus</i>	May	48	63 - 81	99	38
<i>Pipistrellus pygmaeus</i>	Jun	68	71.5 - 71.5	93	33

###Figures

Figure 6. The activity level (percentile) of bats recorded across each night of the bat survey for the entire site, split between months.





Species

PART 2: Nightly Analysis

ENTIRE SURVEY PERIOD

Sunrise and Sunset Times

Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

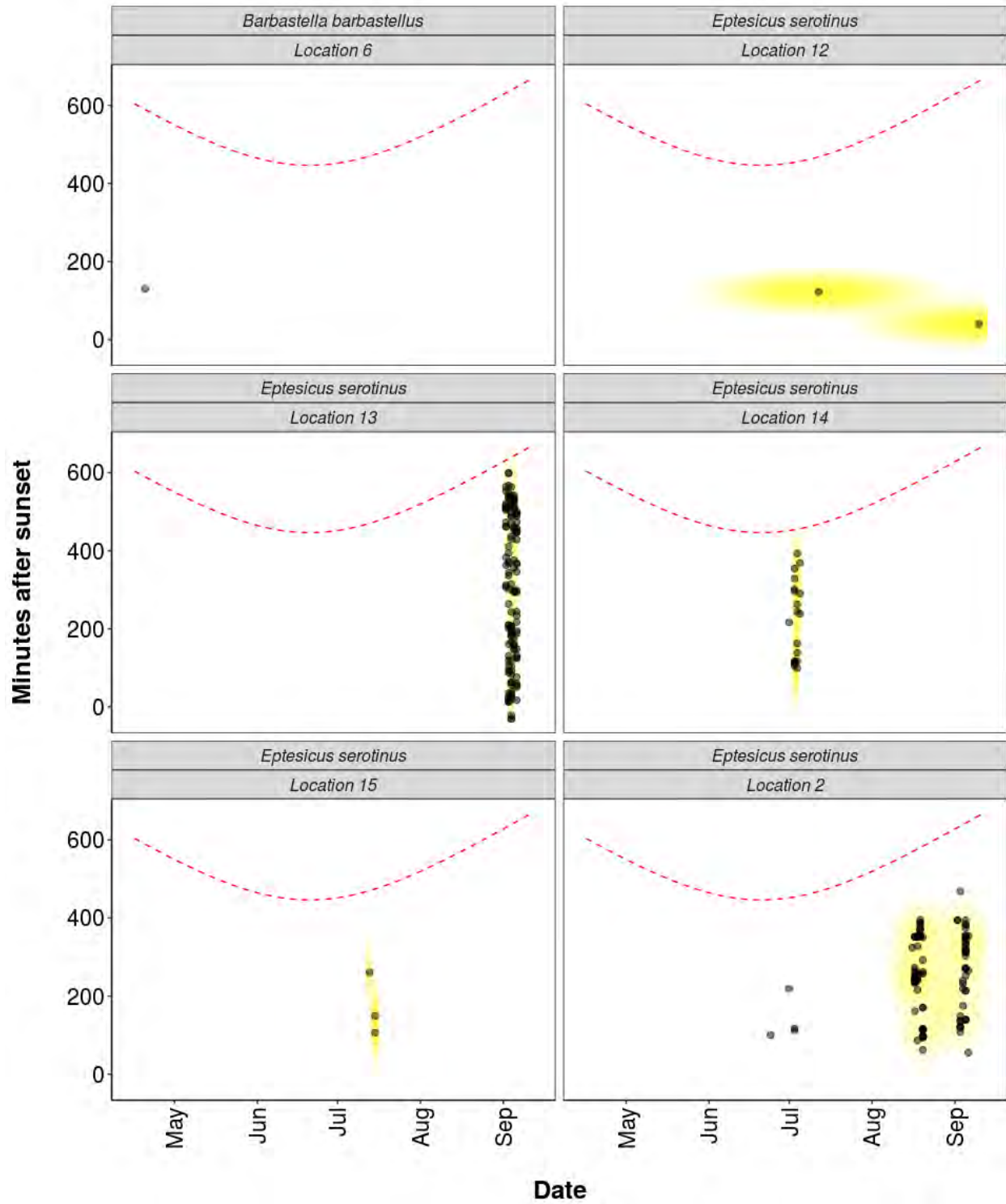
Night (y-m-d)	Sunset (hh:mm)	Sunrise (hh:mm)	Night Length (hours)
2021-04-16	19:53	05:57	10.1
2021-04-17	19:55	05:55	10.0
2021-04-18	19:56	05:53	9.9
2021-04-19	19:58	05:51	9.9
2021-04-20	20:00	05:49	9.8
2021-04-22	20:03	05:45	9.7
2021-04-24	20:06	05:41	9.6
2021-04-26	20:10	05:37	9.5
2021-04-27	20:11	05:35	9.4
2021-04-28	20:13	05:33	9.3
2021-04-29	20:15	05:31	9.3
2021-04-30	20:16	05:30	9.2
2021-05-20	20:47	04:58	8.2
2021-05-21	20:48	04:57	8.1
2021-05-22	20:50	04:56	8.1
2021-05-23	20:51	04:55	8.1
2021-05-24	20:52	04:54	8.0
2021-05-25	20:54	04:53	8.0
2021-05-26	20:55	04:52	7.9
2021-05-27	20:56	04:51	7.9
2021-05-28	20:57	04:50	7.9
2021-05-29	20:59	04:49	7.8
2021-06-09	21:09	04:42	7.5
2021-06-10	21:10	04:42	7.5
2021-06-11	21:11	04:42	7.5
2021-06-12	21:12	04:42	7.5
2021-06-13	21:12	04:41	7.5

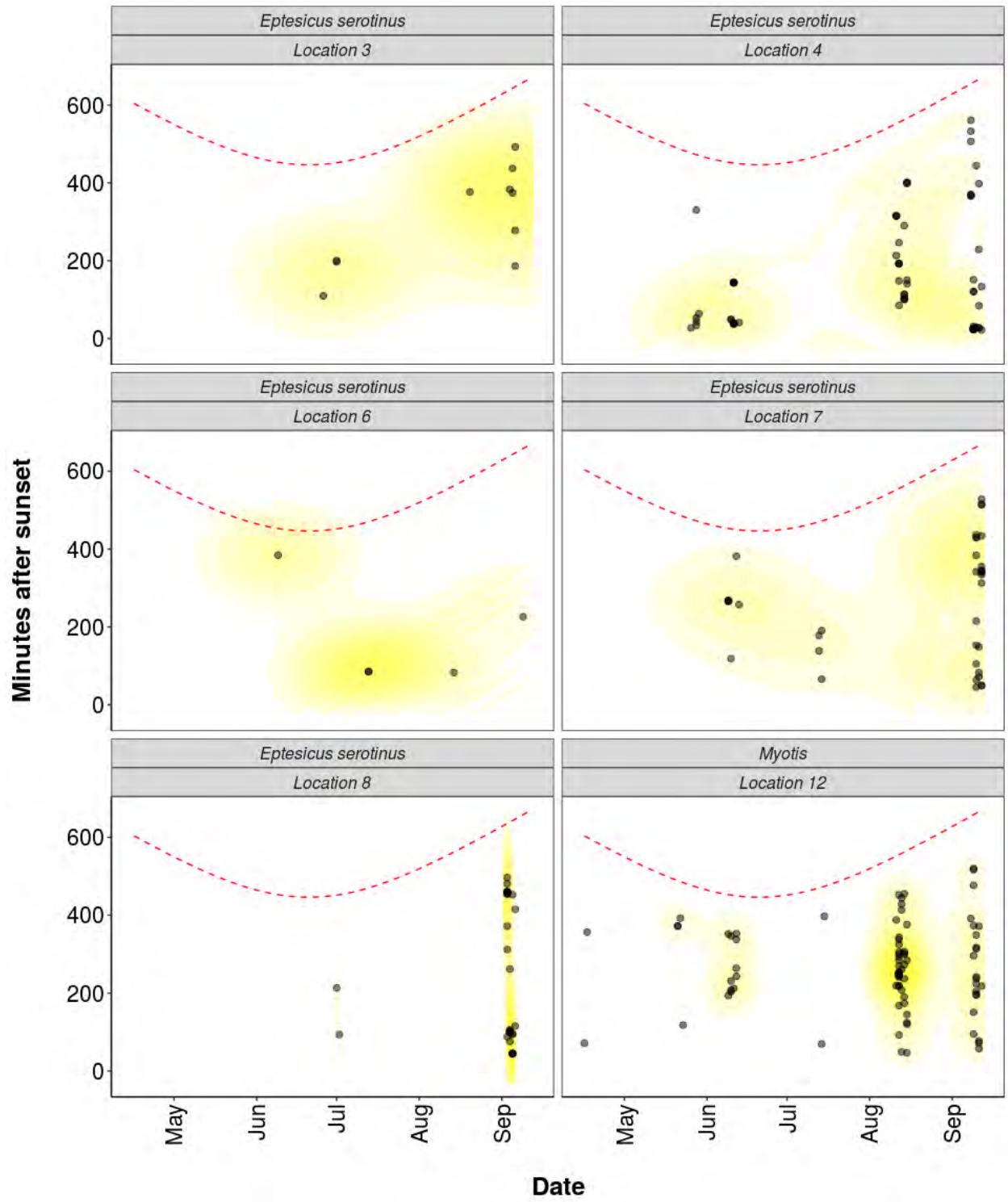
2021-06-24	21:16	04:43	7.5
2021-06-25	21:16	04:43	7.5
2021-06-26	21:16	04:44	7.5
2021-06-27	21:16	04:44	7.5
2021-06-28	21:16	04:45	7.5
2021-07-01	21:15	04:47	7.5
2021-07-02	21:15	04:47	7.5
2021-07-03	21:14	04:48	7.6
2021-07-04	21:14	04:49	7.6
2021-07-05	21:13	04:50	7.6
2021-07-12	21:09	04:57	7.8
2021-07-13	21:08	04:58	7.8
2021-07-14	21:07	04:59	7.9
2021-07-15	21:06	05:00	7.9
2021-07-16	21:05	05:01	7.9
2021-08-11	20:27	05:39	9.2
2021-08-12	20:25	05:40	9.3
2021-08-13	20:23	05:42	9.3
2021-08-14	20:21	05:43	9.4
2021-08-15	20:19	05:45	9.4
2021-08-16	20:17	05:47	9.5
2021-08-17	20:15	05:48	9.6
2021-08-18	20:13	05:50	9.6
2021-08-19	20:11	05:51	9.7
2021-08-20	20:09	05:53	9.7
2021-09-02	19:41	06:13	10.5
2021-09-03	19:39	06:15	10.6
2021-09-04	19:37	06:16	10.7
2021-09-05	19:35	06:18	10.7
2021-09-06	19:33	06:20	10.8
2021-09-08	19:28	06:23	10.9
2021-09-09	19:26	06:24	11.0
2021-09-10	19:24	06:26	11.0
2021-09-11	19:21	06:27	11.1
2021-09-12	19:19	06:29	11.2

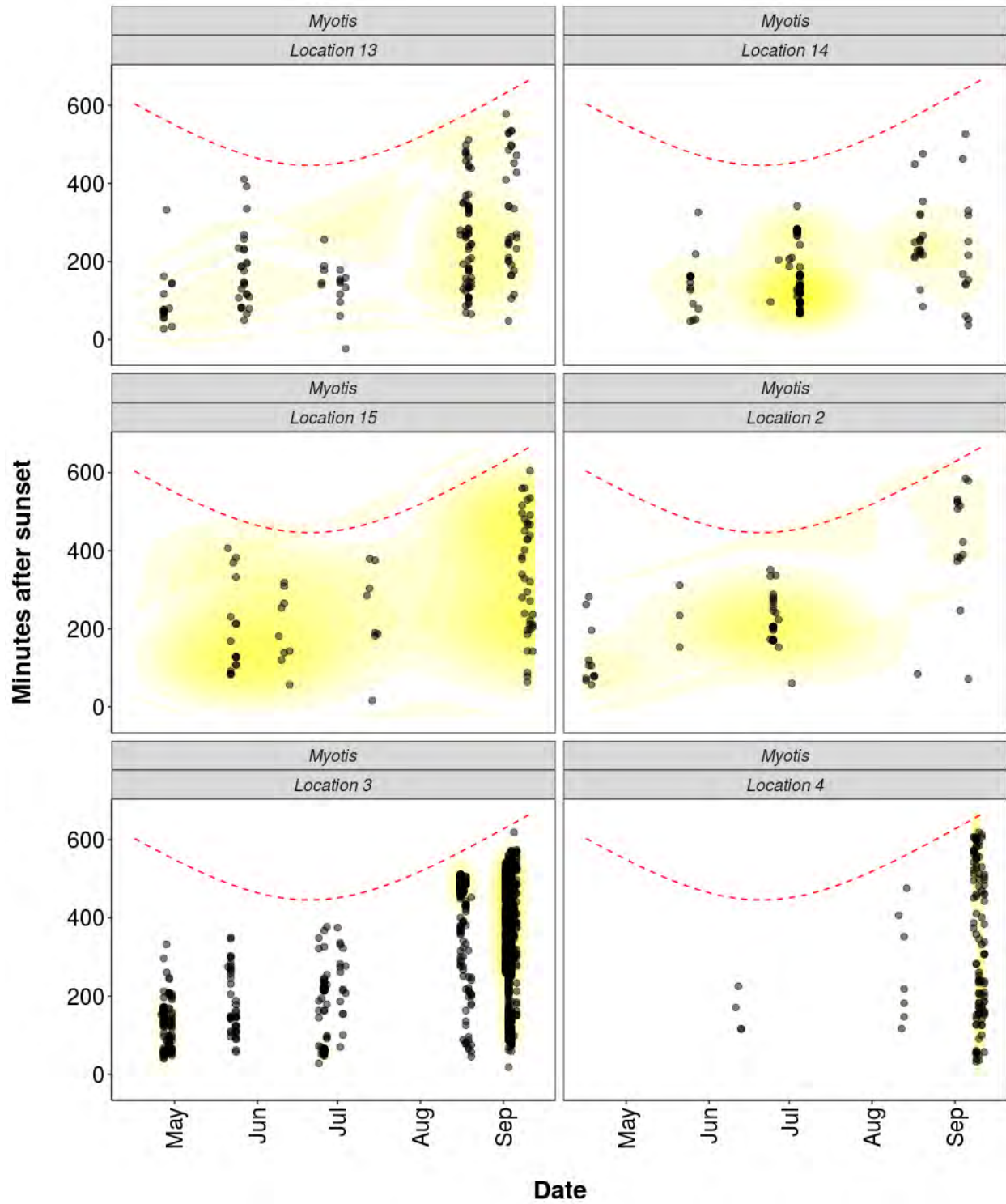
Distribution of Bat Activity Across the Night through Time

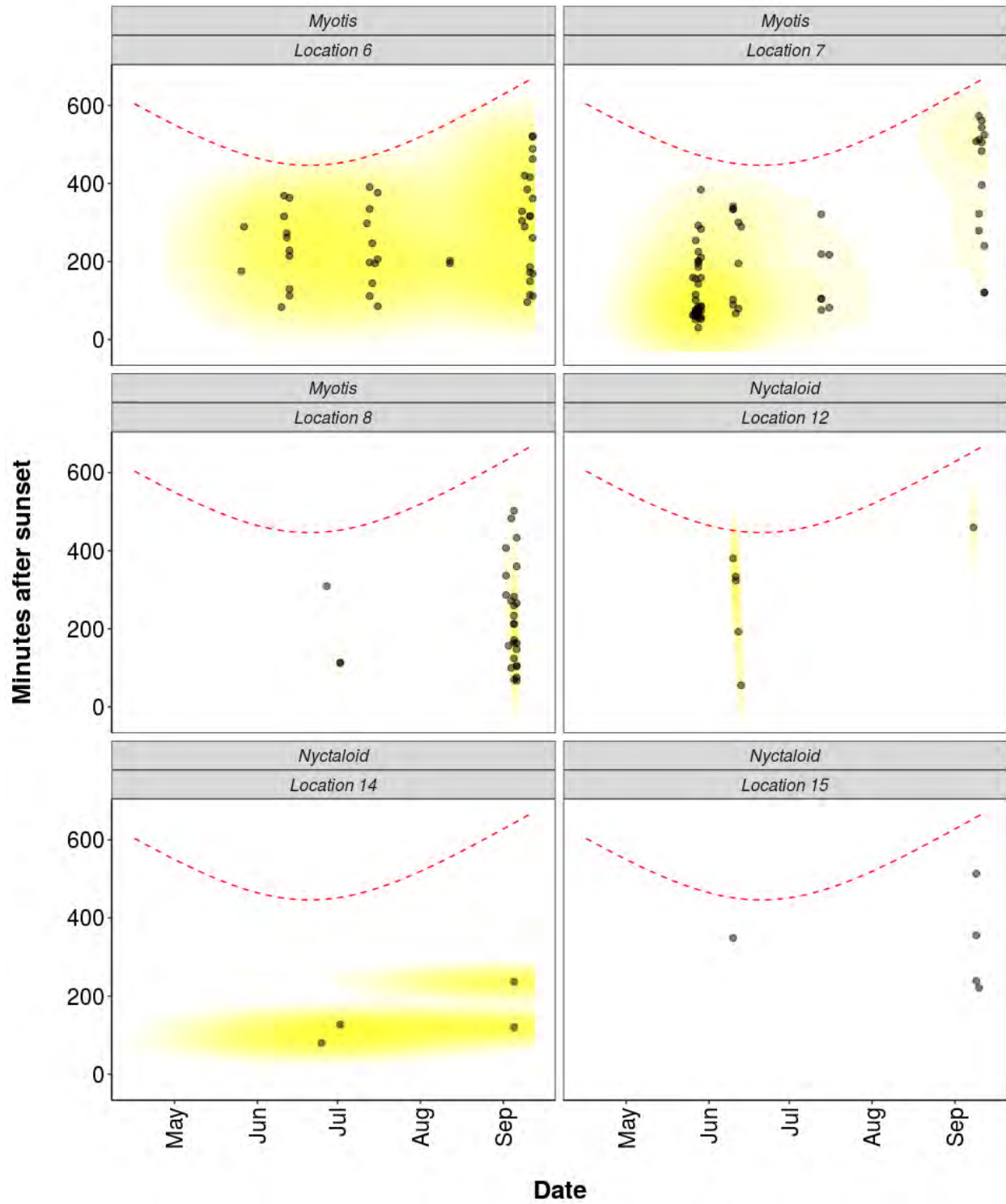
Per Detector

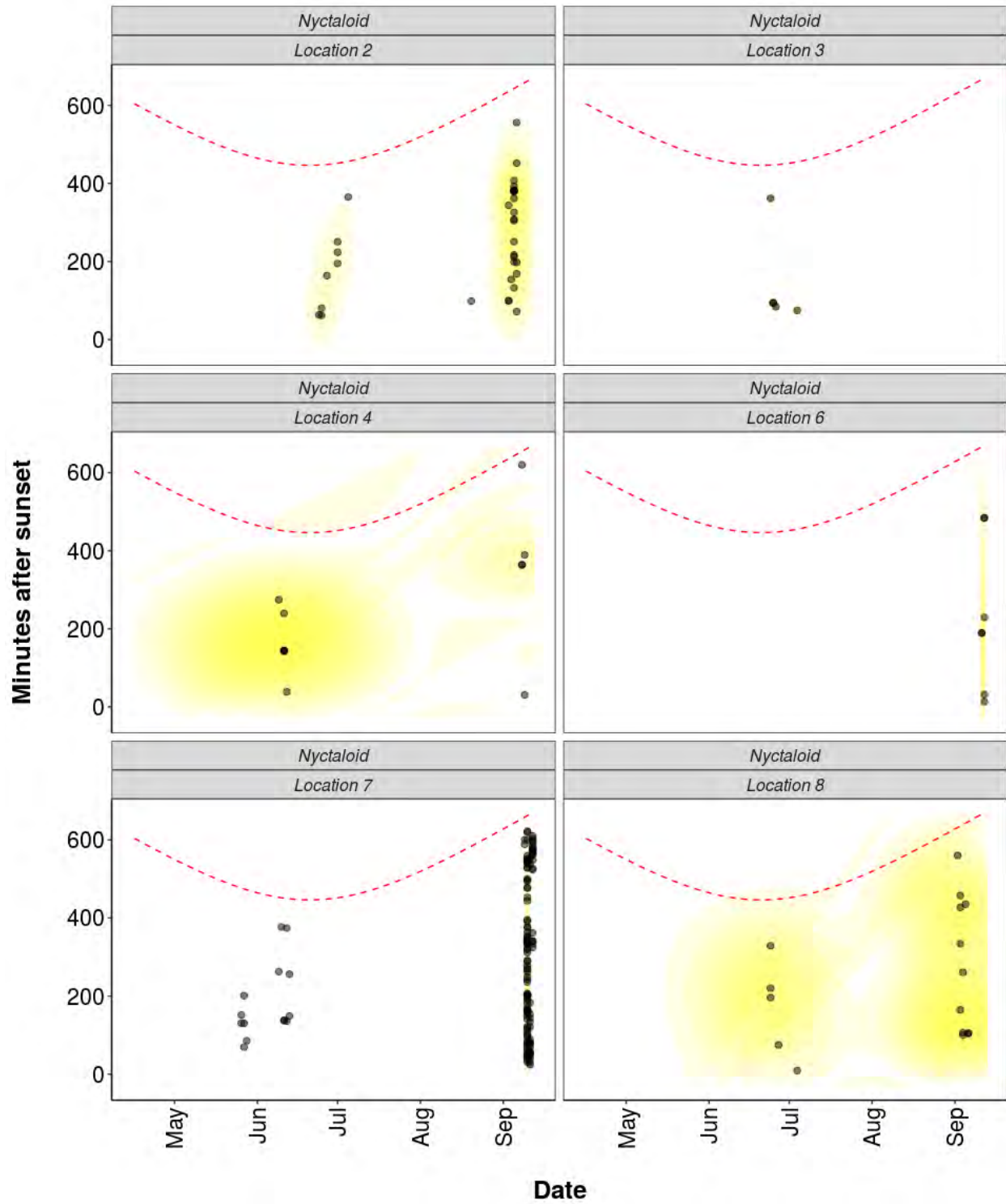
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only within each plot, and do not account for overall activity.

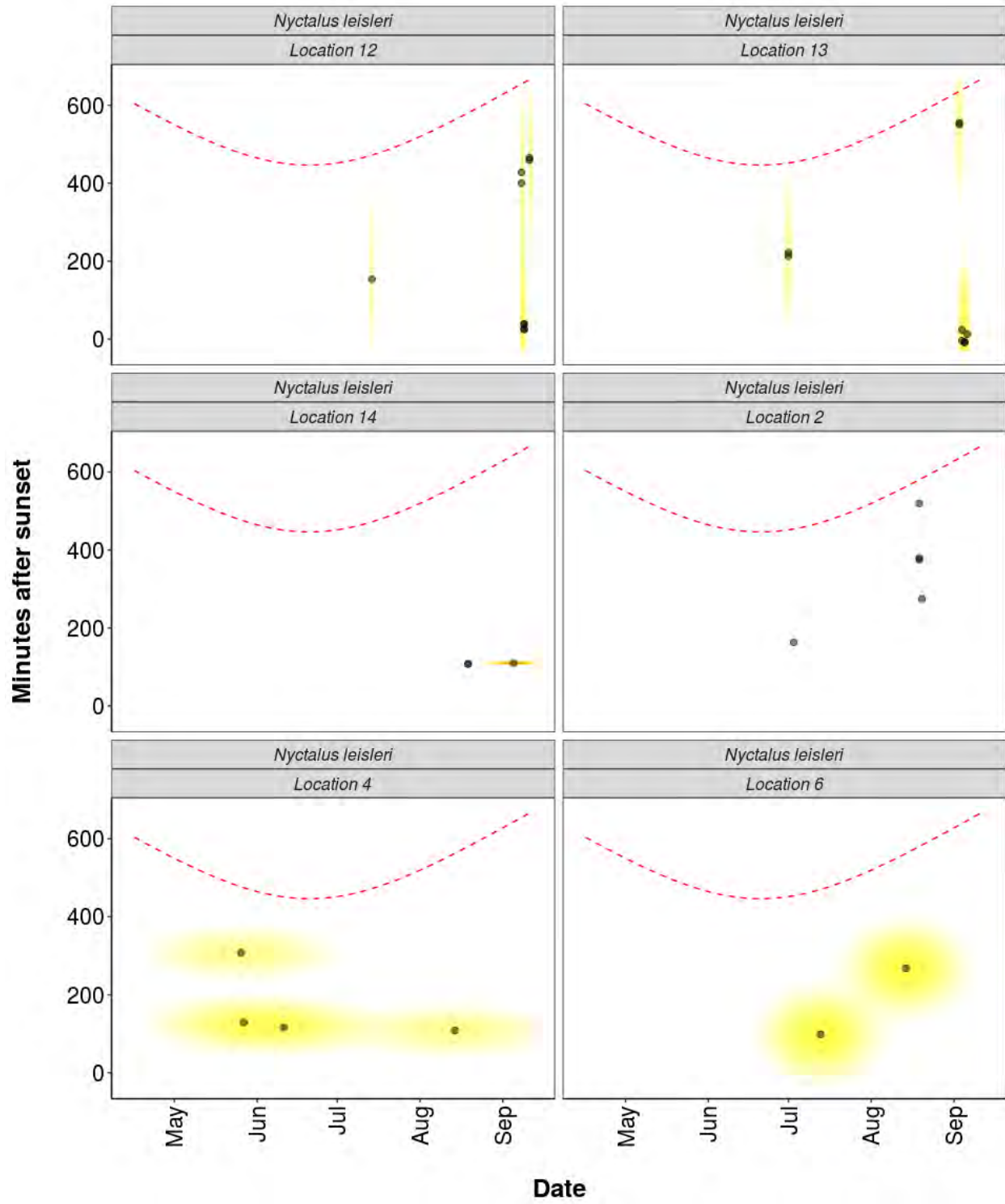


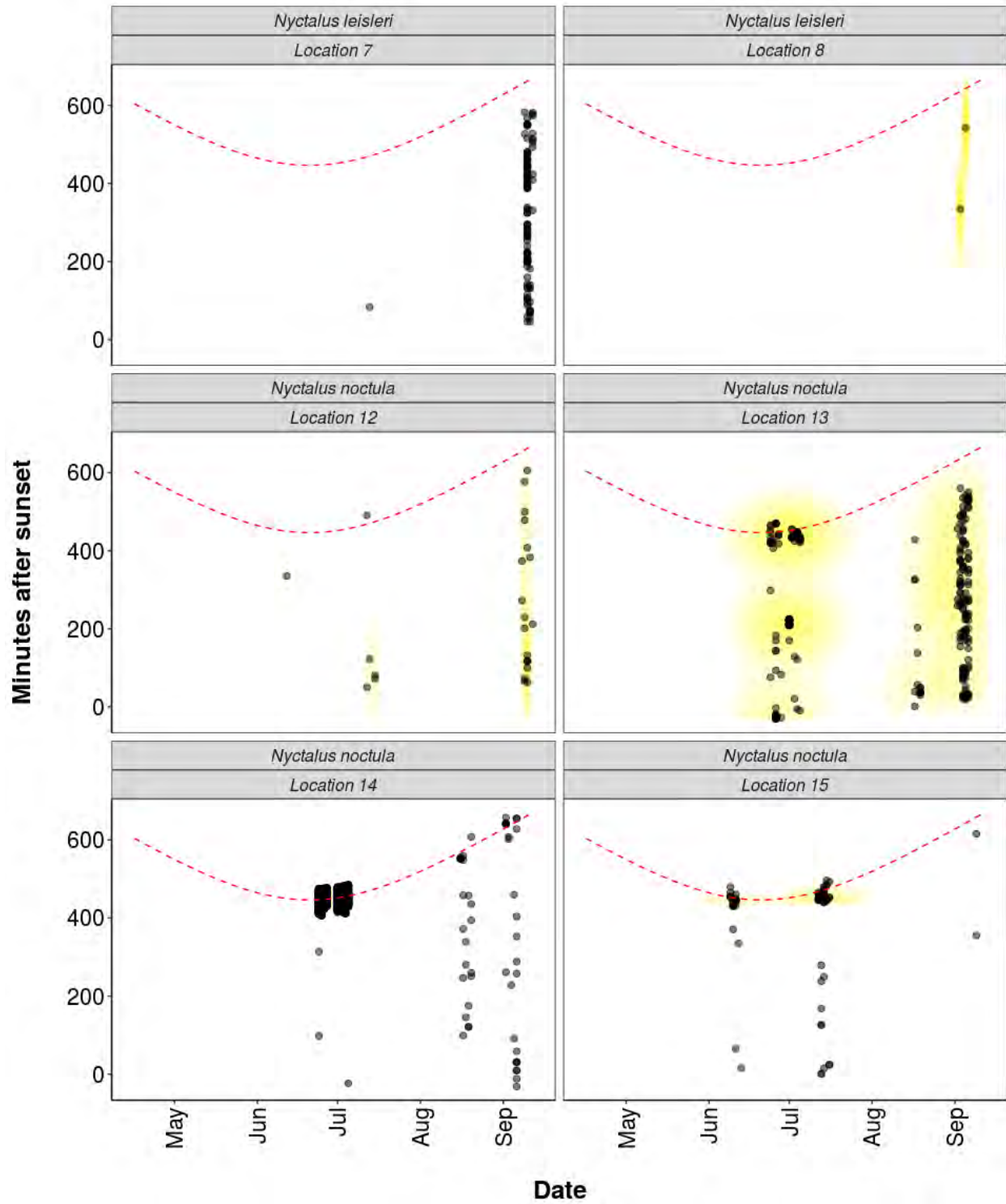


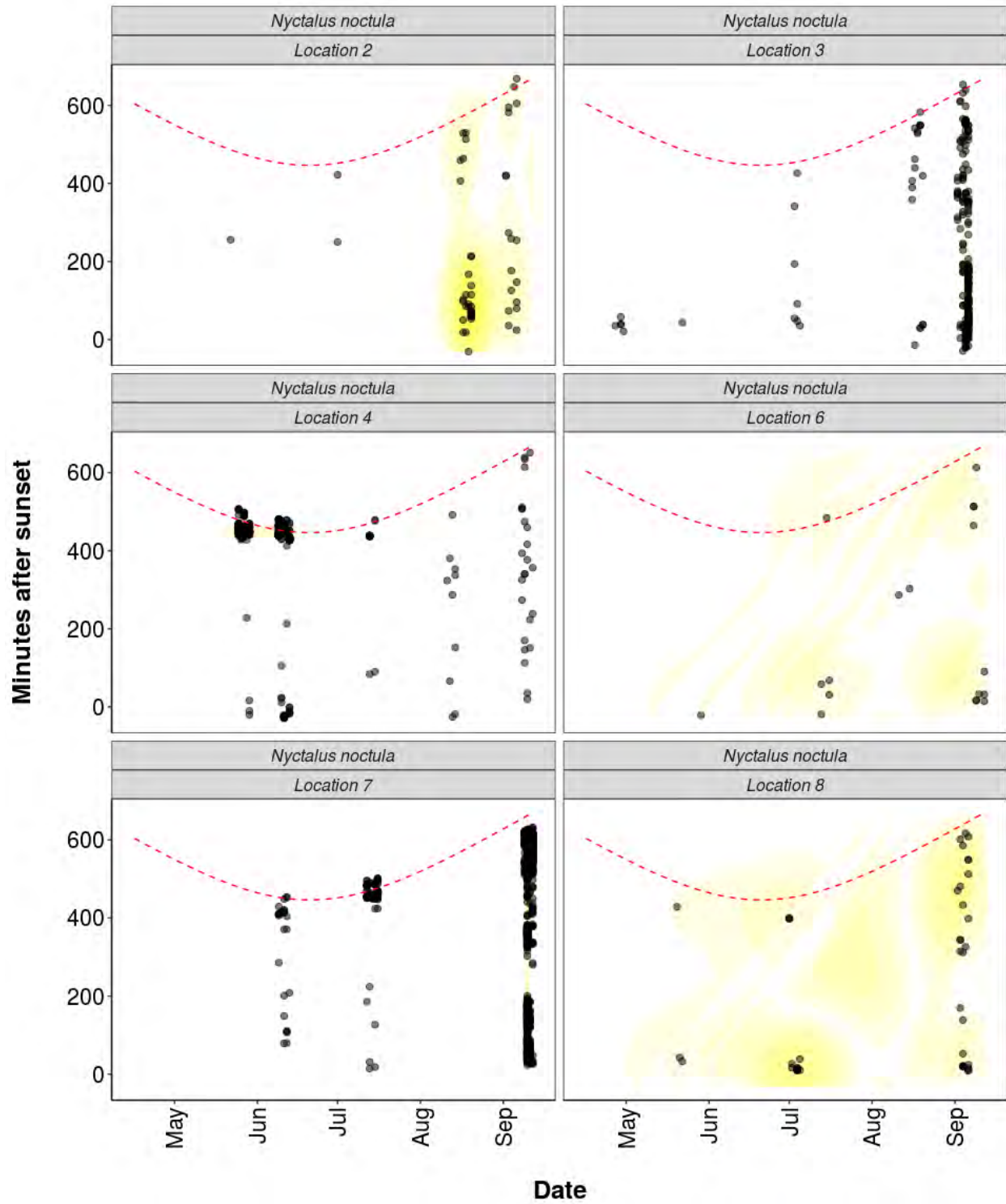


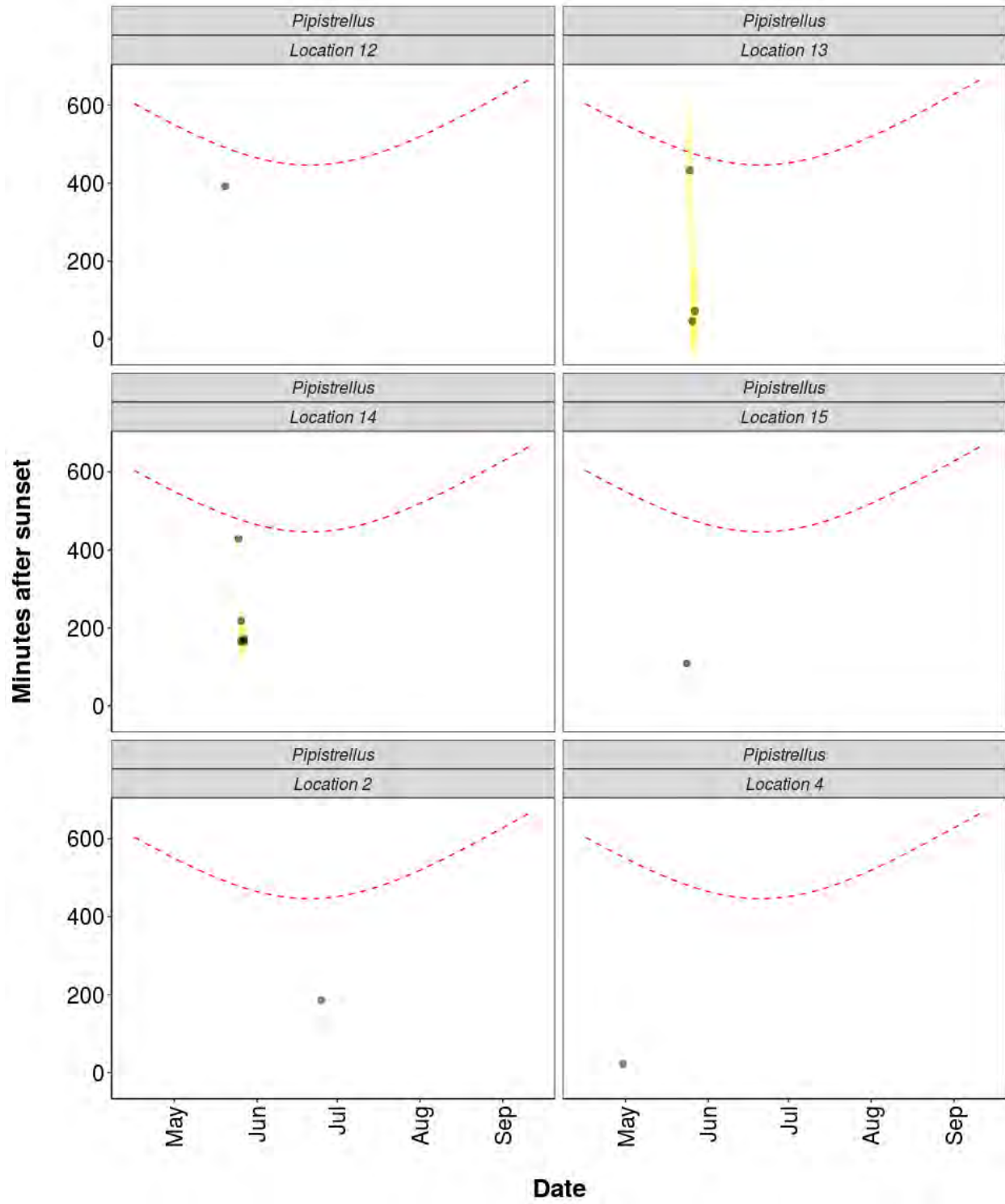


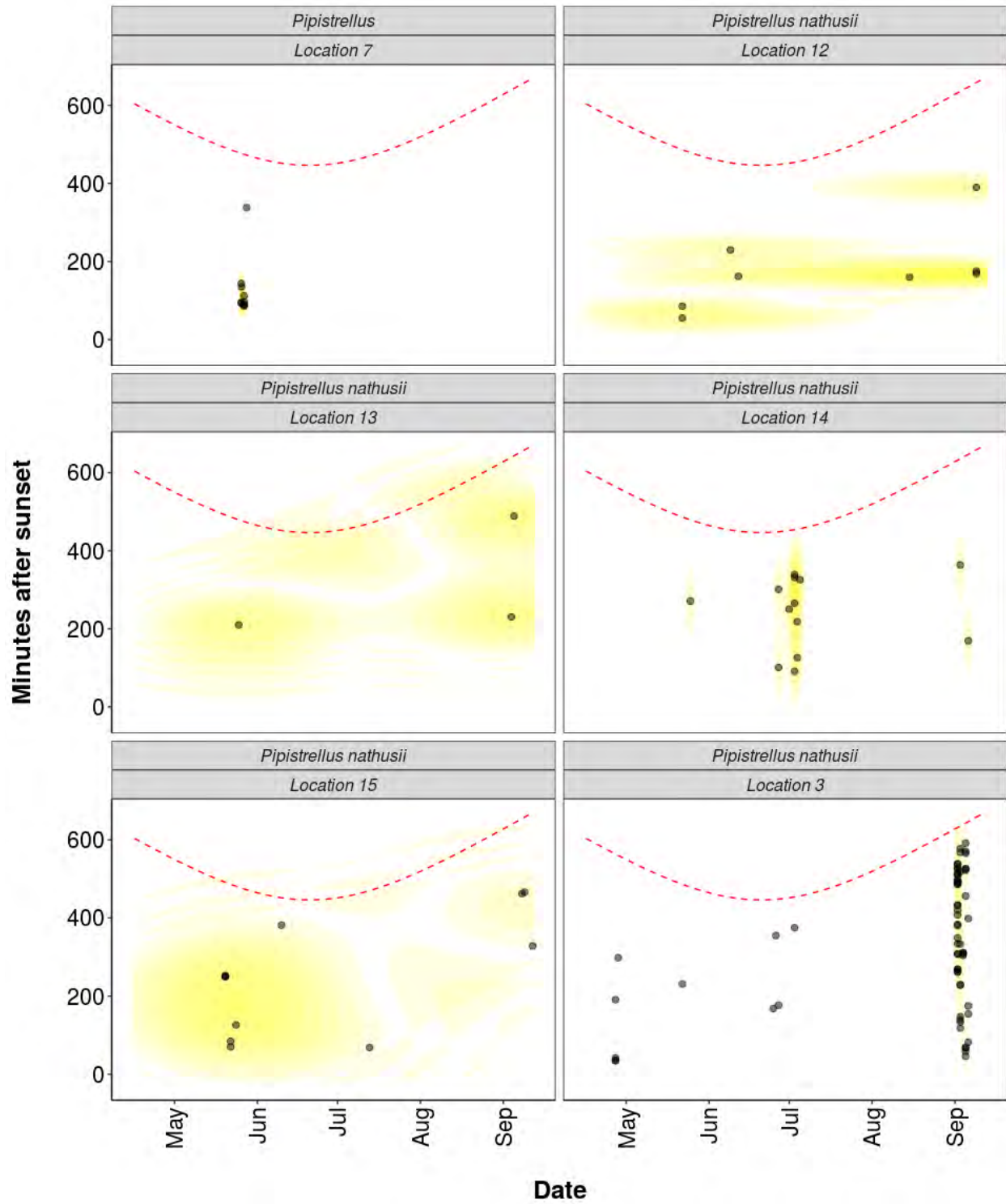


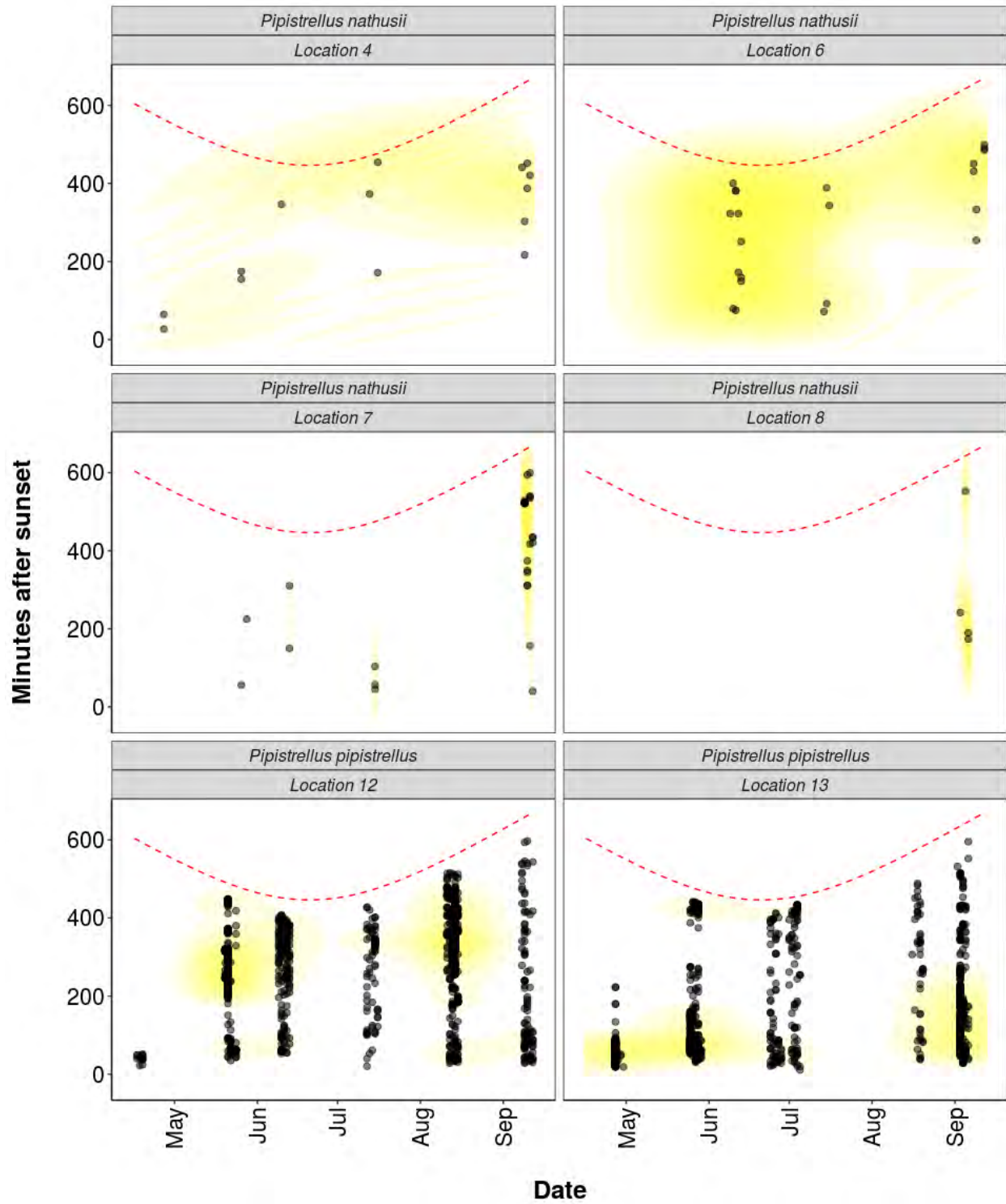


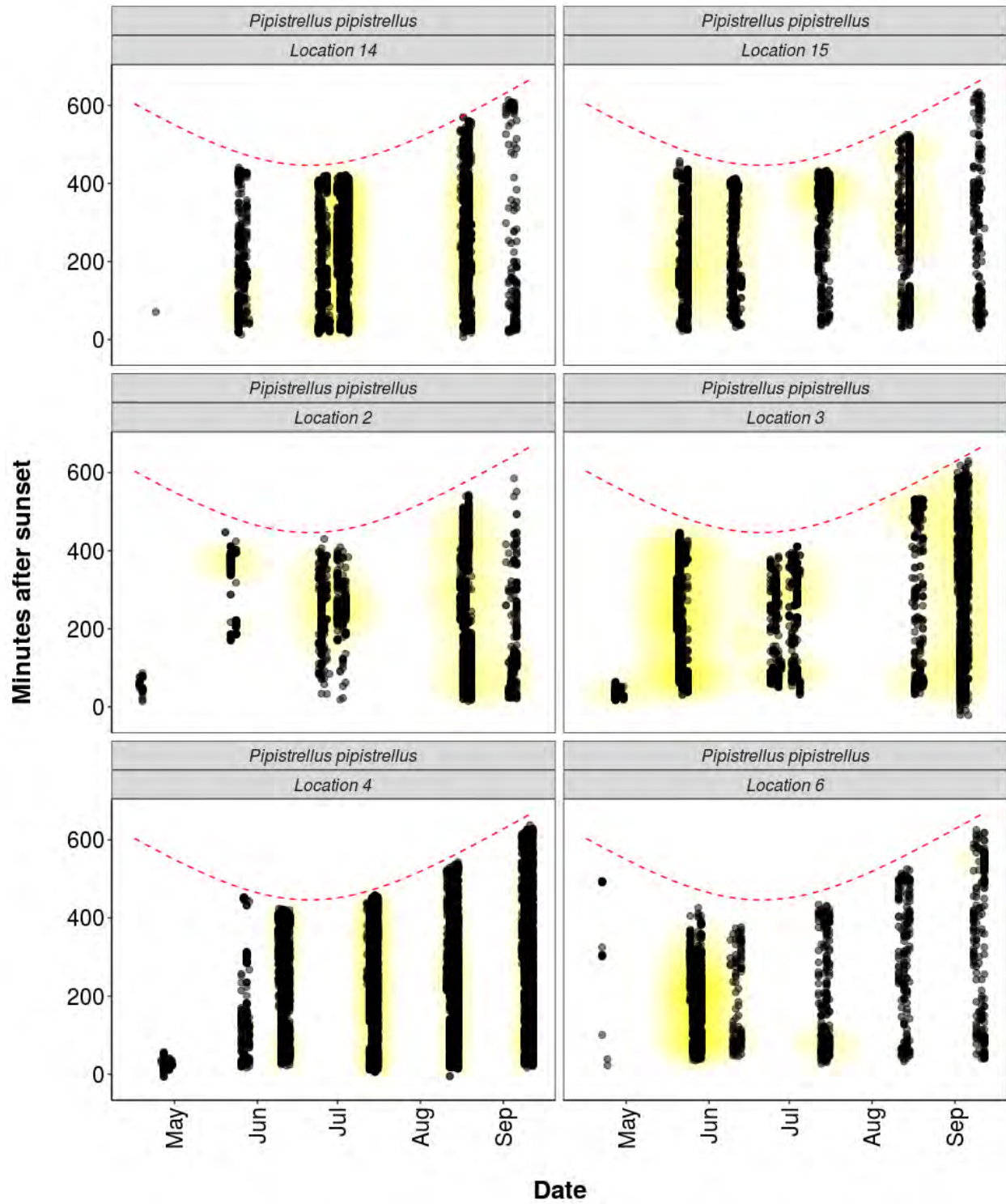


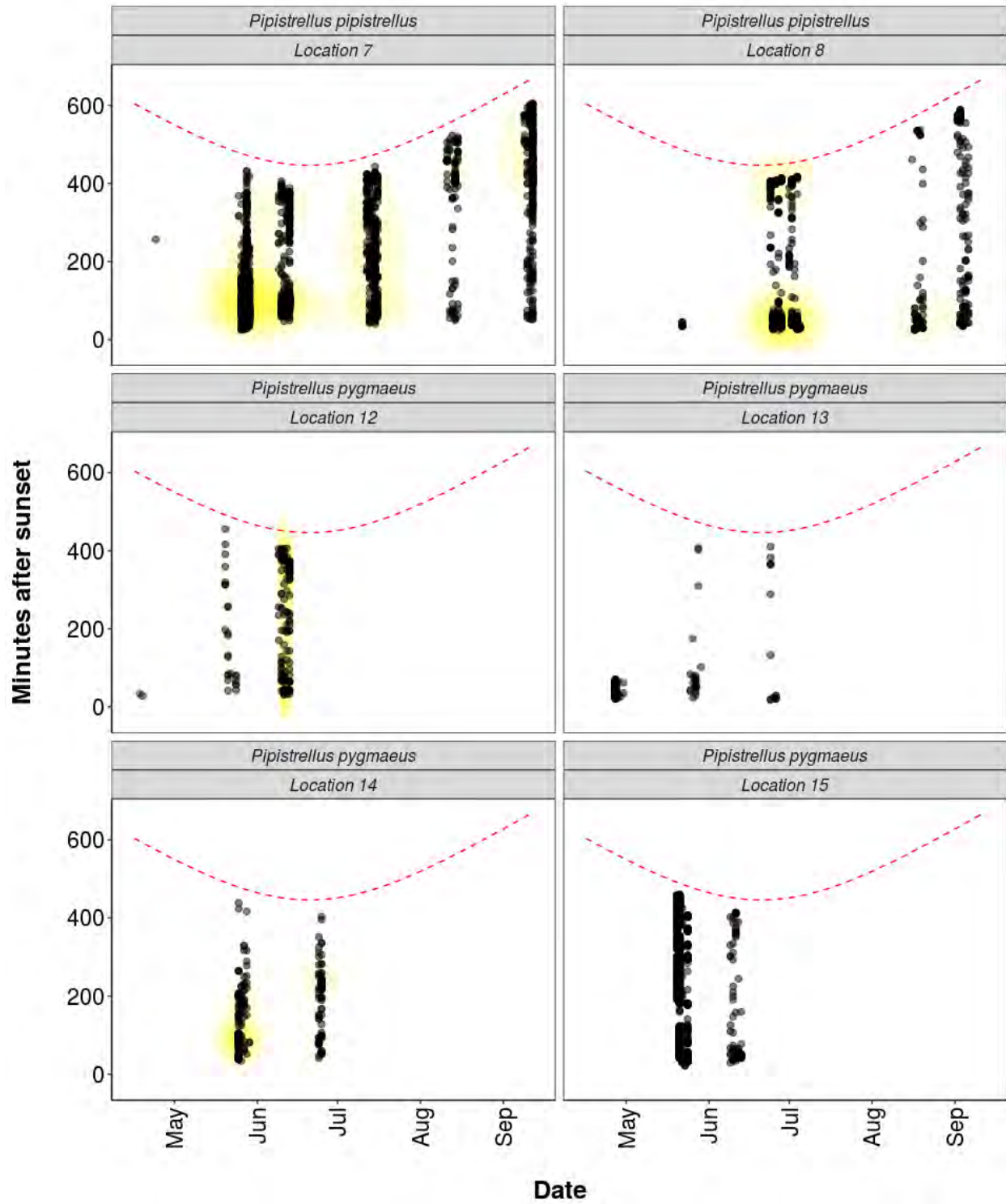


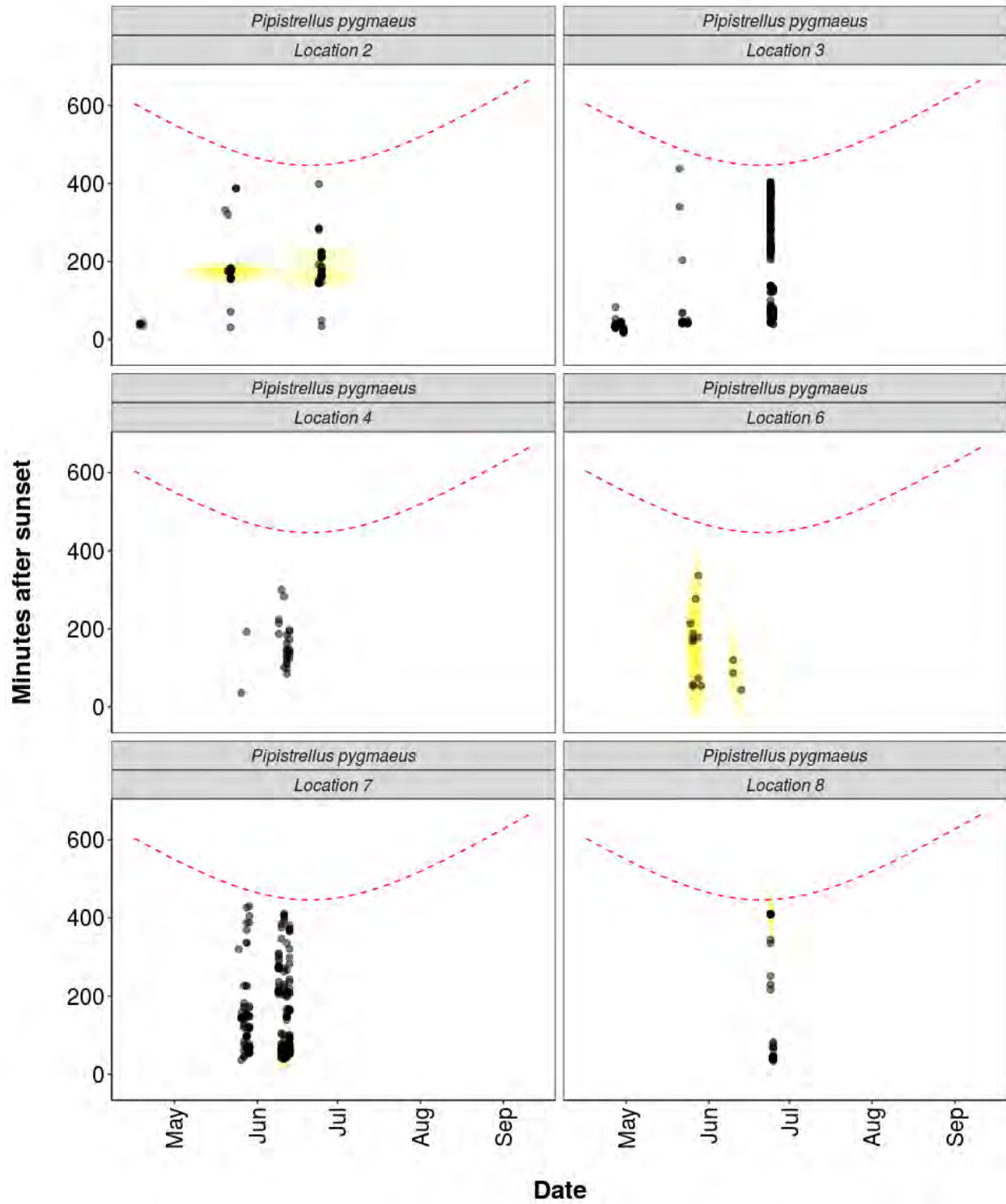












Roost Emergence Time and Bat Observation

Based on: *Russ, Jon. 2012. British Bat Calls a Guide to species Identification. Pelagic Publishing.*

For more information see <https://rbats-blog.updog.co/2018/05/29/bat-emergence/>

Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012) - Table

Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

Table continues below

Species	Detector ID	2021-04-16	2021-04-18	2021-04-19	2021-04-24	2021-04-26
Pipistrellus	Location 4	0	0	0	0	0
Common pipistrelle	Location 12	0	1	1	0	0
Common pipistrelle	Location 13	0	0	0	0	0
Common pipistrelle	Location 14	0	0	0	0	0
Common pipistrelle	Location 15	0	0	0	0	0
Common pipistrelle	Location 2	0	0	3	0	0
Common pipistrelle	Location 3	0	0	0	0	0
Common pipistrelle	Location 4	0	0	0	0	1
Common pipistrelle	Location 6	0	0	0	1	0
Common pipistrelle	Location 7	0	0	0	0	0
Common pipistrelle	Location 8	0	0	0	0	0
Soprano pipistrelle	Location 13	0	0	0	0	0

Soprano pipistrelle	Location 15	0	0	0	0	0
Soprano pipistrelle	Location 3	0	0	0	0	0
Nathusius' Noctule	Location 4	0	0	0	0	0
Noctule	Location 13	0	0	0	0	0
Noctule	Location 14	0	0	0	0	0
Noctule	Location 15	0	0	0	0	0
Noctule	Location 2	0	0	0	0	0
Noctule	Location 3	0	0	0	0	0
Noctule	Location 4	0	0	0	0	0
Noctule	Location 6	0	0	0	0	0
Noctule	Location 8	0	0	0	0	0
Leisler's	Location 13	0	0	0	0	0
Serotine	Location 13	0	0	0	0	0
Serotine	Location 4	0	0	0	0	0
Nyctaloid	Location 6	0	0	0	0	0
Nyctaloid	Location 7	0	0	0	0	0
Nyctaloid	Location 8	0	0	0	0	0
Myotis	Location 12	0	0	0	0	0
Myotis	Location 13	0	0	0	0	0
Myotis	Location 14	0	0	0	0	0
Myotis	Location 15	0	0	0	0	0
Myotis	Location 2	1	1	0	0	0
Myotis	Location 3	0	0	0	0	0
Myotis	Location 4	0	0	0	0	0
Myotis	Location 7	0	0	0	0	0
Myotis	Location 8	0	0	0	0	0

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	1	0	0	0
1	1	1	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	2	6	3	2	0	1
0	0	0	0	0	0	0

Table continues below

2021-06-12	2021-06-13	2021-06-24	2021-06-25	2021-06-26	2021-06-27	2021-06-28
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	2	2	3	1	1
0	0	47	22	1	4	13
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
2	1	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	14	0	1	8
0	0	2	1	3	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	17	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	6	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	1	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	3	32	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Table continues below

2021-07-02	2021-07-03	2021-07-04	2021-07-05	2021-07-12	2021-07-13	2021-07-14
0	0	0	0	0	0	0
0	0	0	0	1	0	0
0	1	2	2	0	0	0
14	8	21	18	0	0	0
0	0	0	0	0	0	0
1	1	0	0	0	0	0
0	0	0	2	0	0	0
0	0	0	0	0	69	71
0	0	0	0	0	1	0
0	0	0	0	0	0	0
0	0	8	9	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	1	0	0	0
0	0	0	1	0	0	0
0	0	0	0	0	2	0

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	1	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	0	0	0	0
0	0	0	0	0	0	1
1	0	1	0	0	0	0
0	0	0	6	0	0	0
0	0	0	0	0	0	1
1	0	0	0	0	0	0
1	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Table continues below

2021-07-15	2021-07-16	2021-08-12	2021-08-13	2021-08-14	2021-08-15	2021-08-17
0	0	0	0	0	0	0
0	0	1	0	0	1	0
0	0	0	0	0	0	0
0	0	0	0	0	0	5
0	0	1	0	0	0	0
0	0	0	0	0	0	4
0	0	0	0	0	0	0
94	63	33	34	43	37	0
1	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	19
0	0	0	0	0	0	0
0	0	0	0	0	0	0

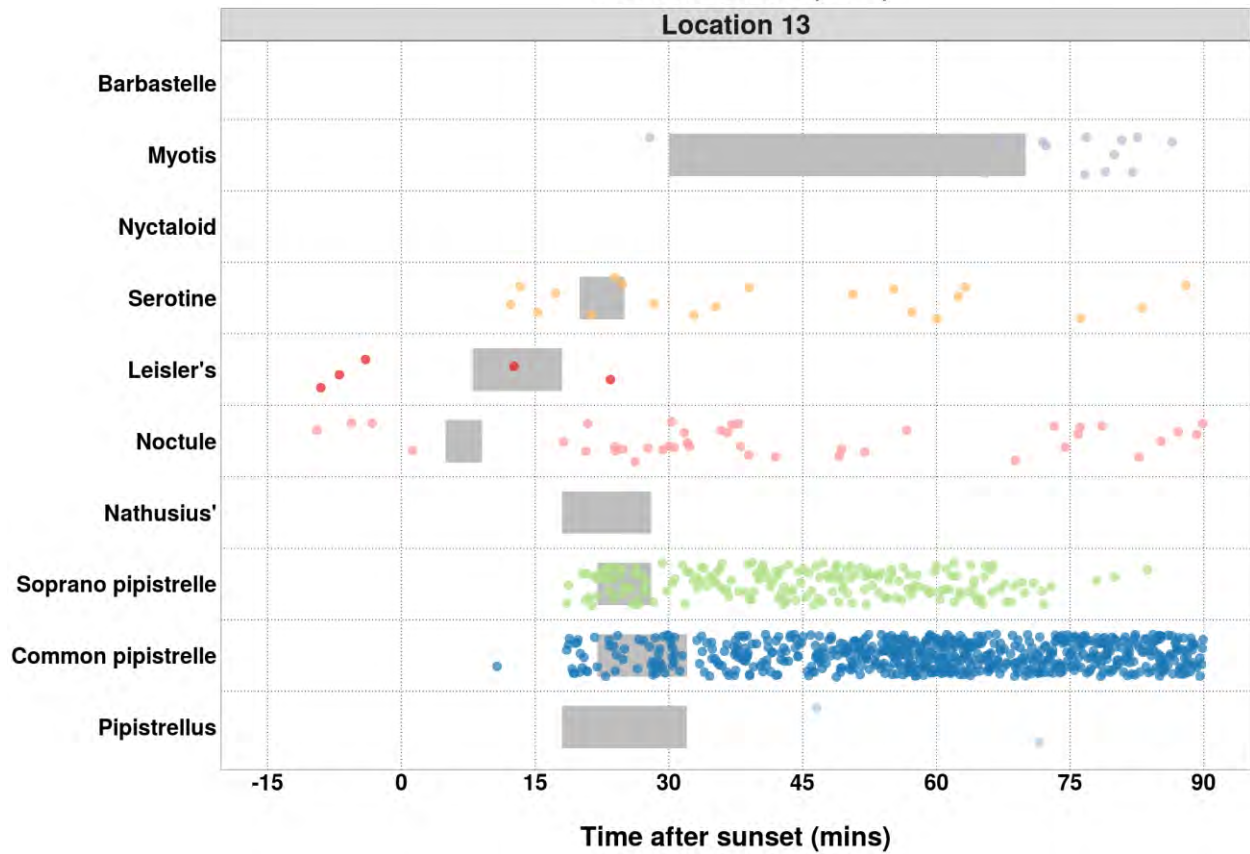
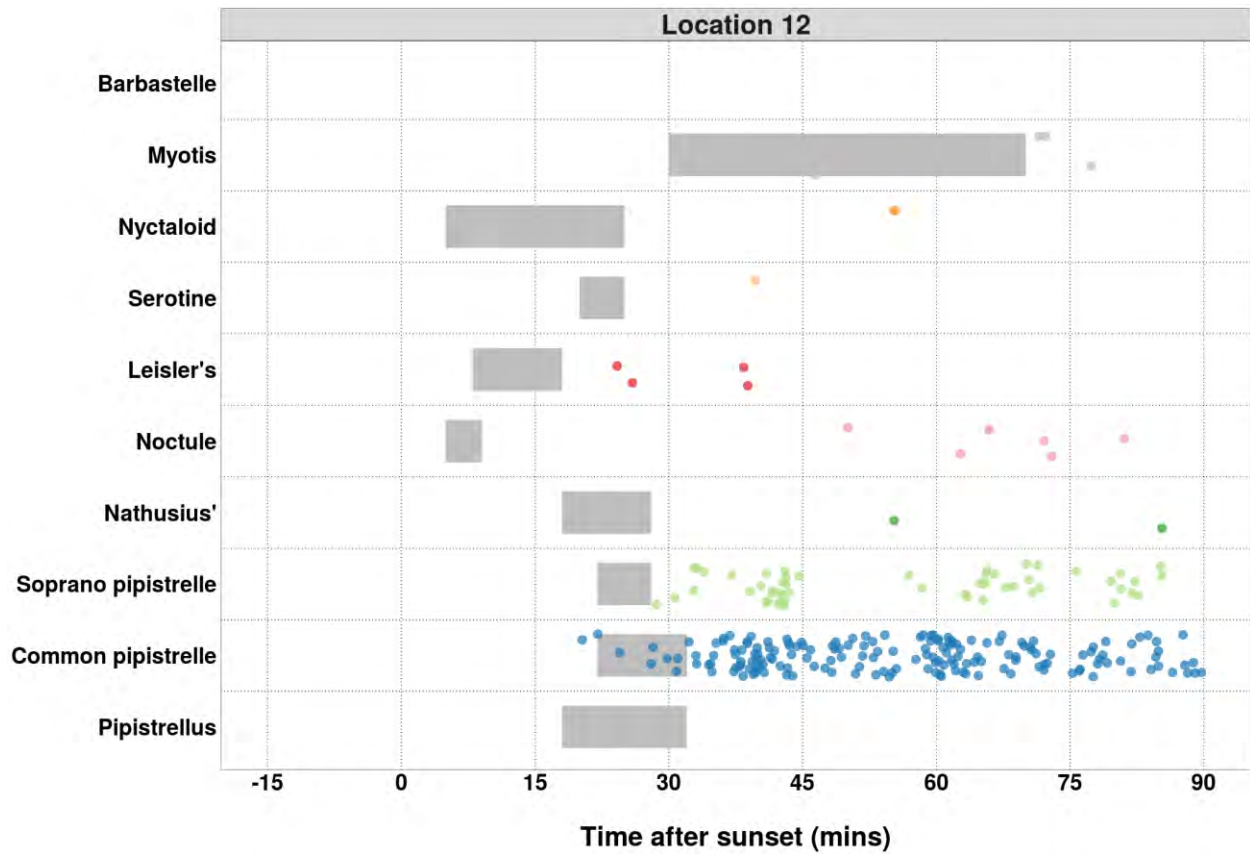
0	0	0	0	0	0	0
0	0	0	0	0	0	0
2	0	4	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	2
0	0	0	0	0	0	0
0	1	0	0	0	0	0
0	0	0	1	1	9	4
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	1
0	0	0	0	1	2	1
0	0	0	5	4	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1	0	1	1	0	0	0
0	0	0	0	0	1	2
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	2	2	3	1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	1

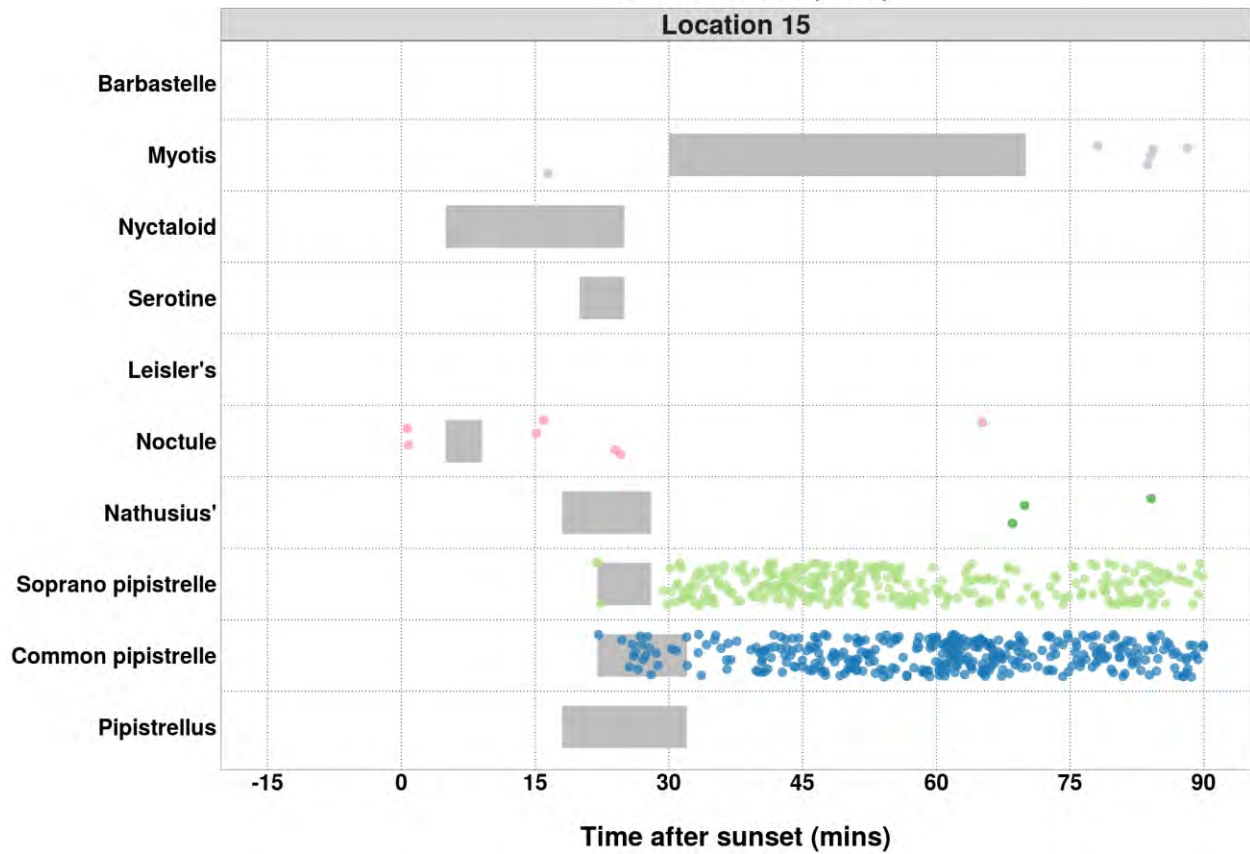
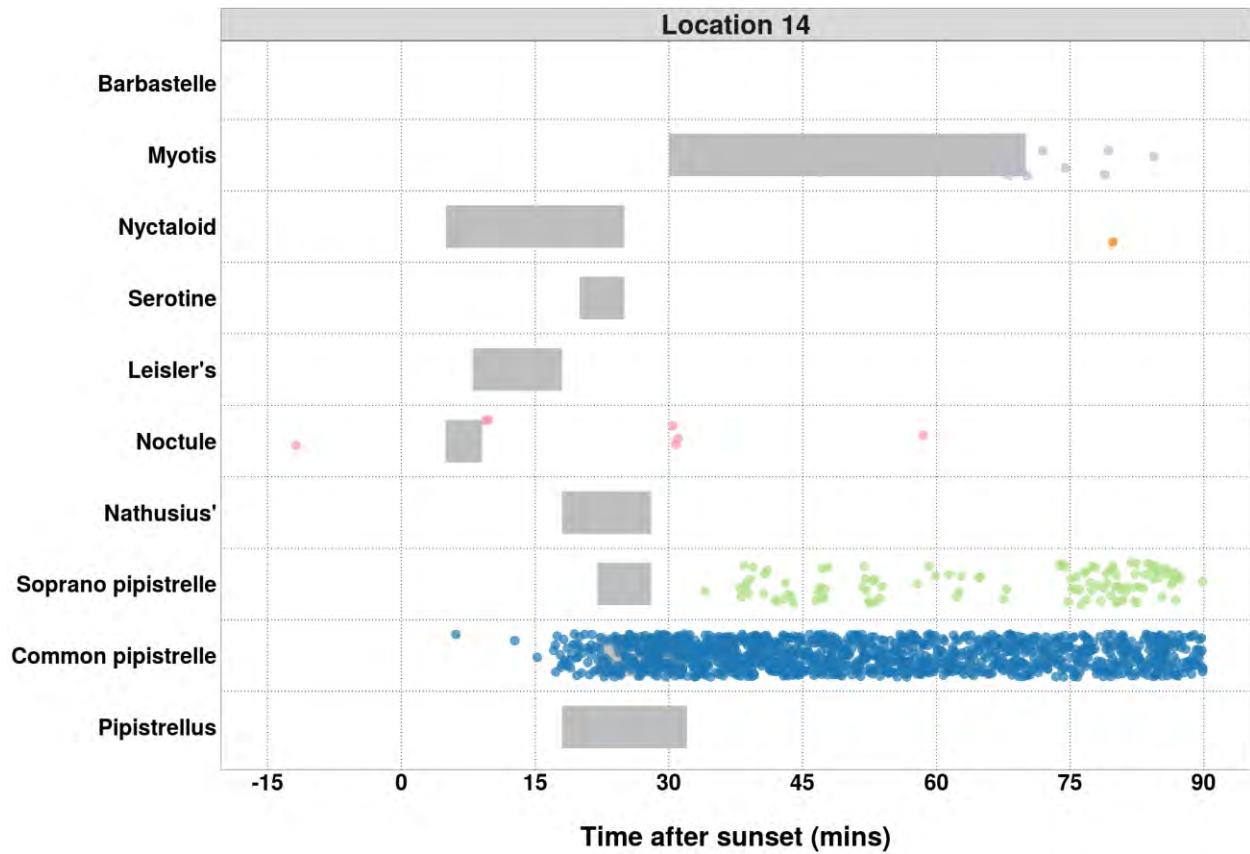
2021-09-09	2021-09-10	2021-09-11	2021-09-12
0	0	0	0
2	0	0	1
0	0	0	0
0	0	0	0

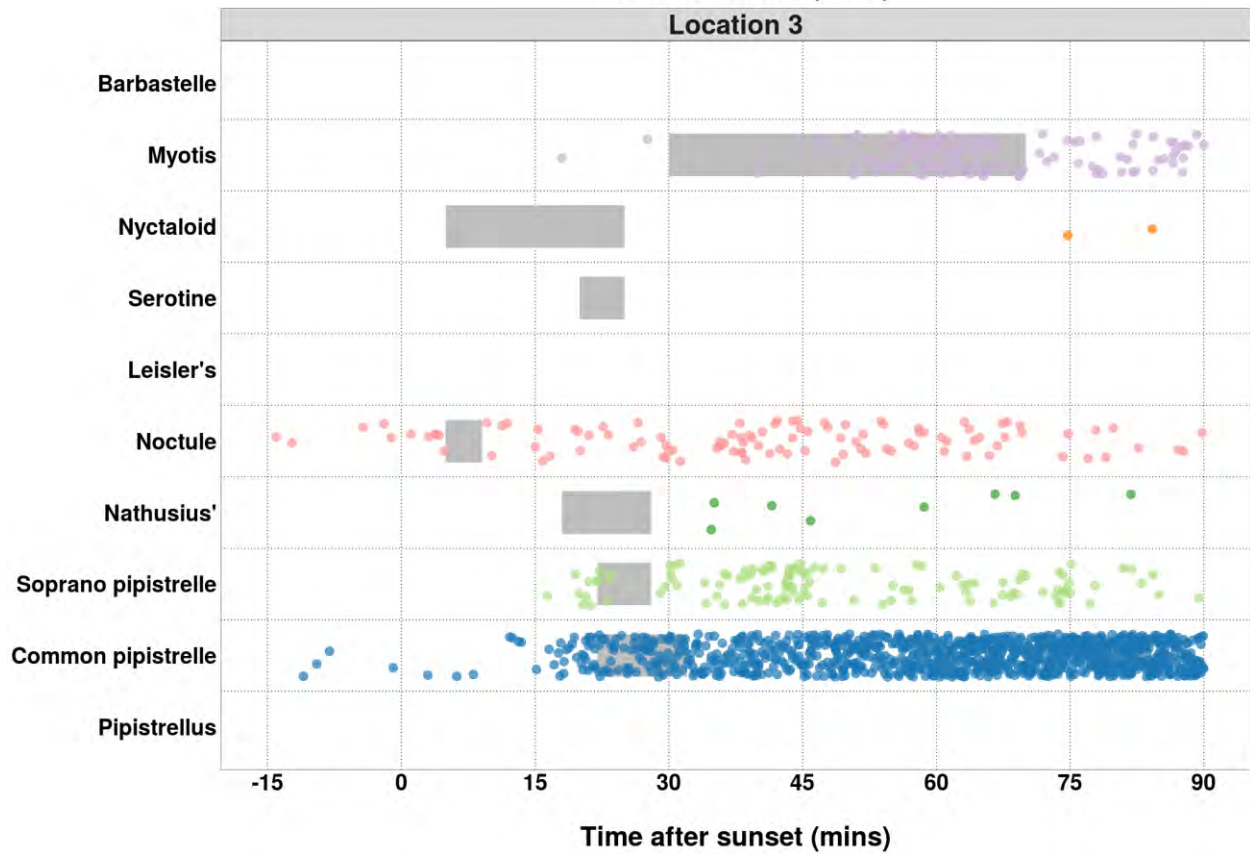
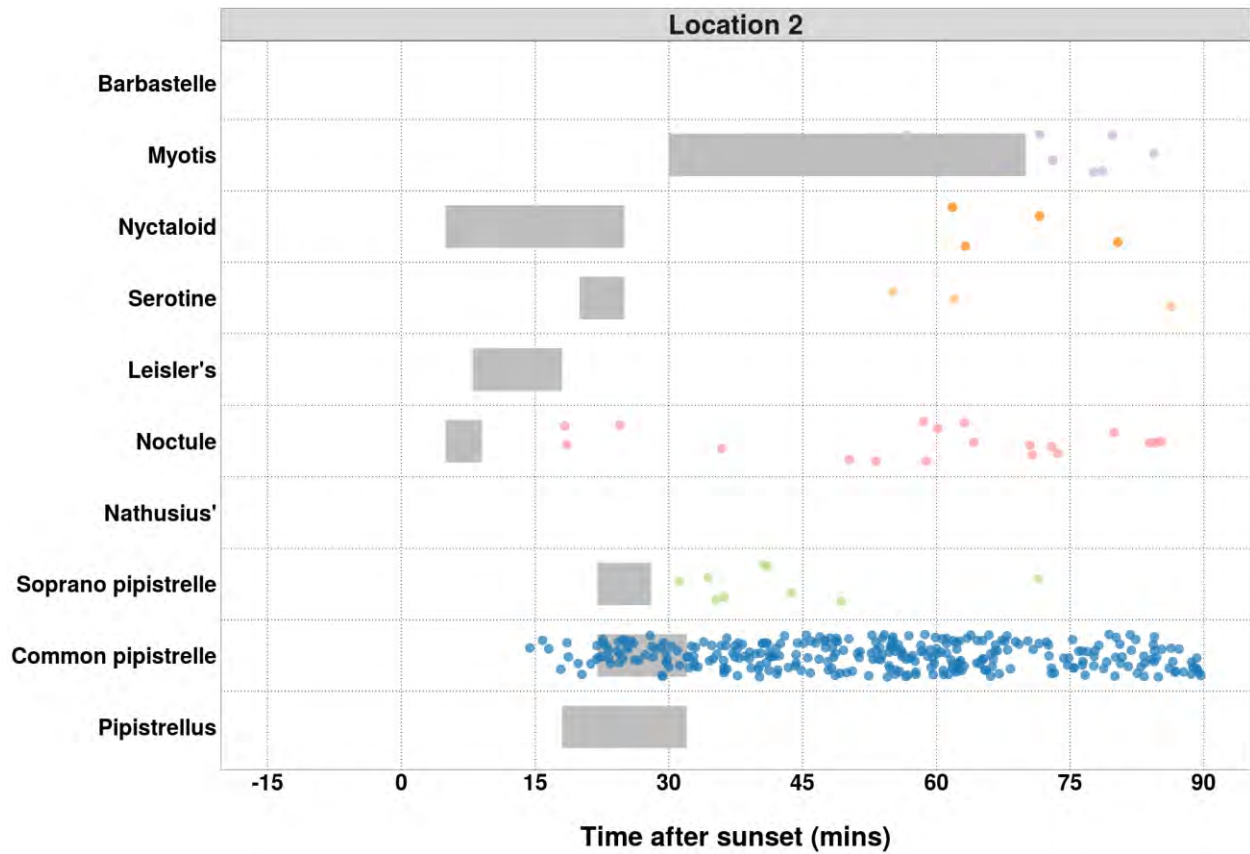
0	1	0	0
0	0	0	0
0	0	0	0
8	6	6	38
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	0	0	1
0	0	0	1
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
7	2	0	1
0	0	0	0
0	0	0	0

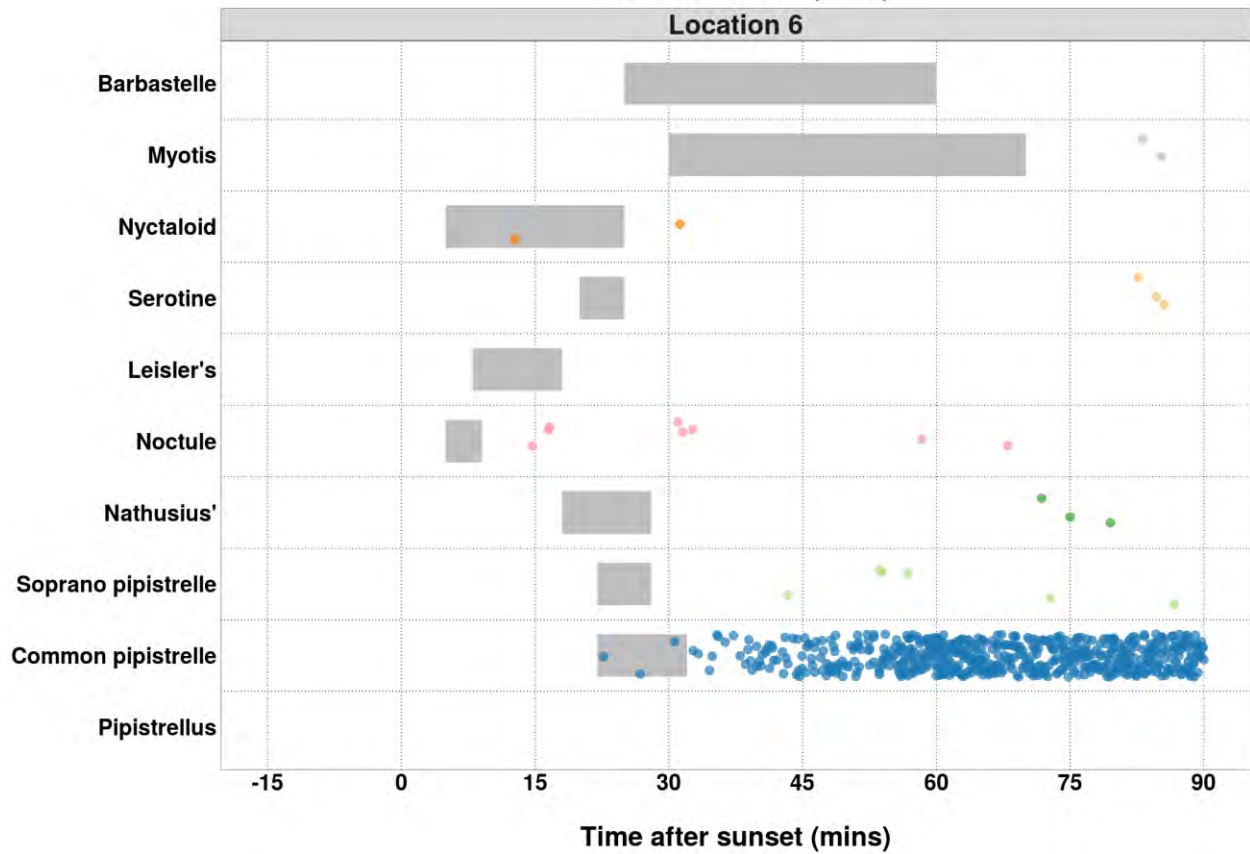
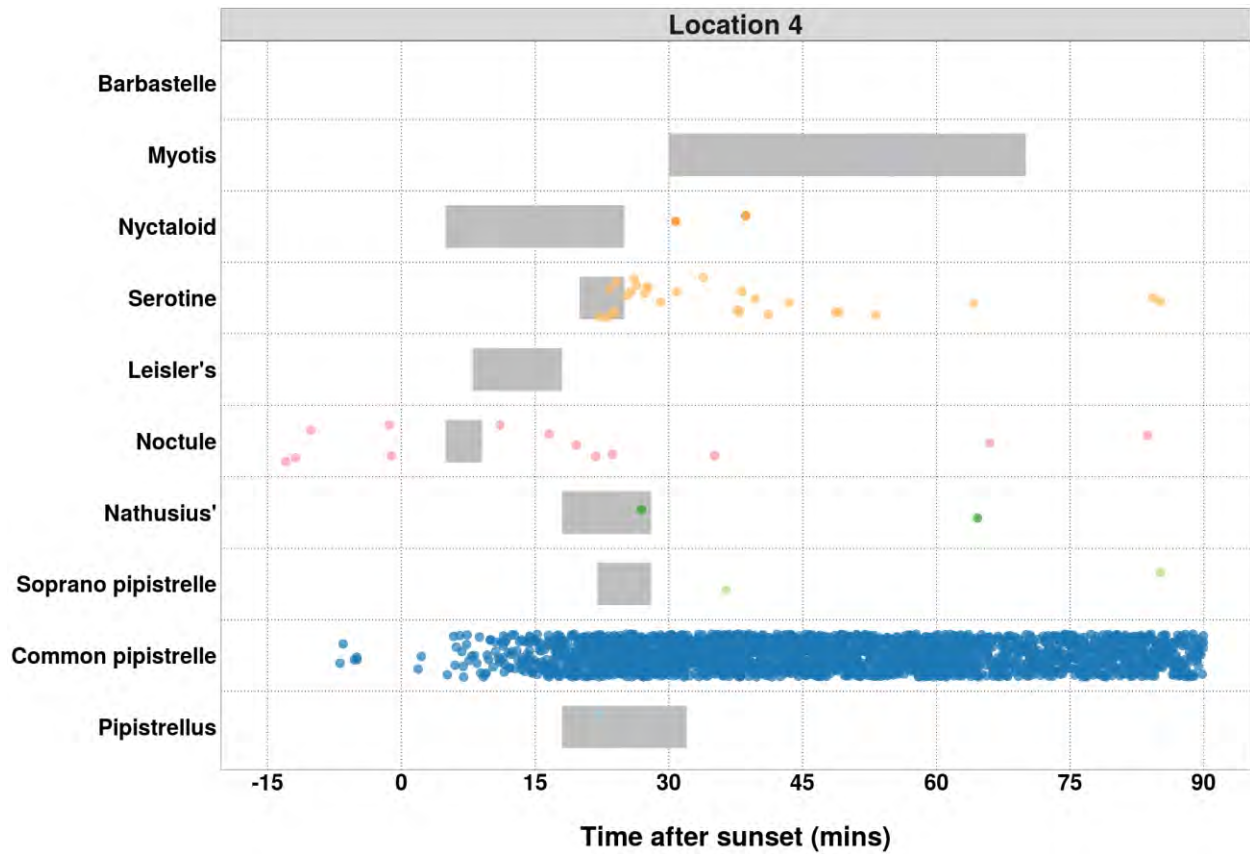
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012) - Figures

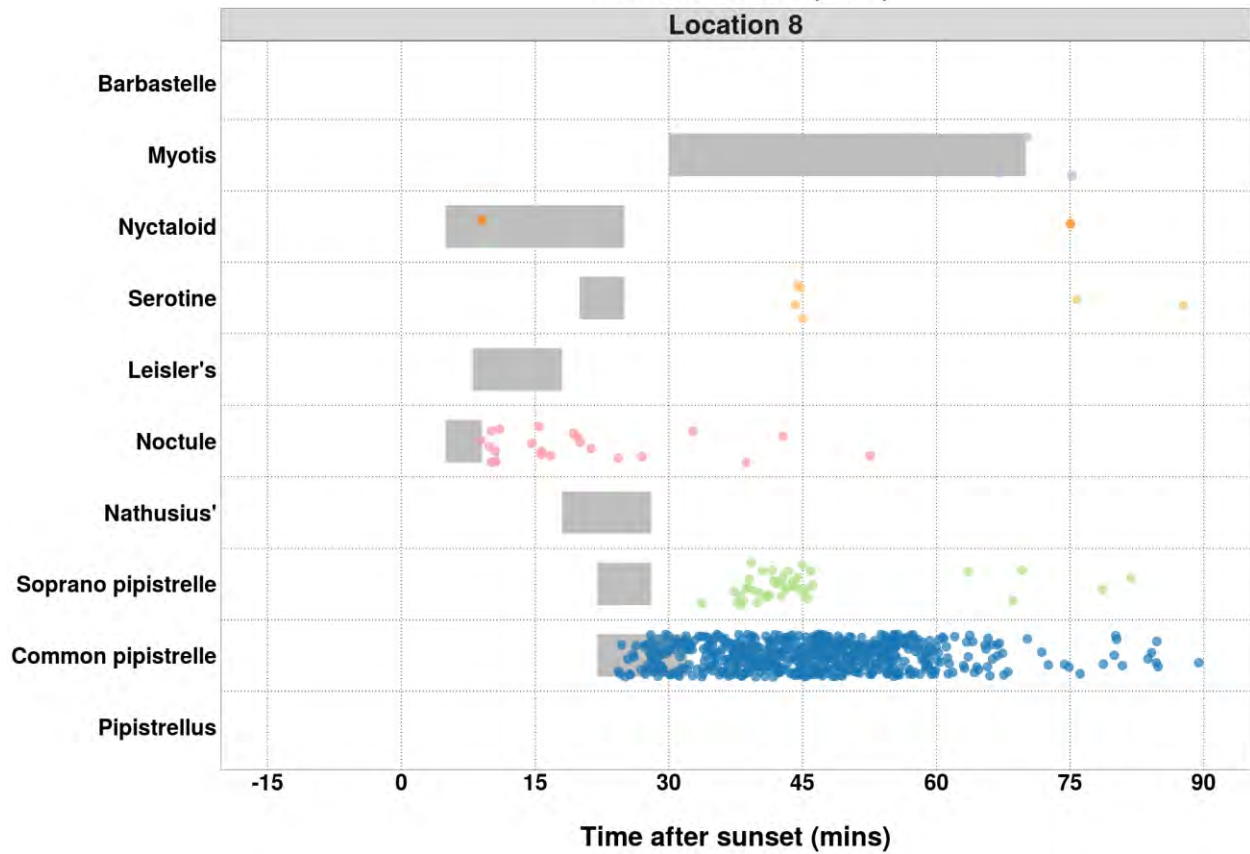
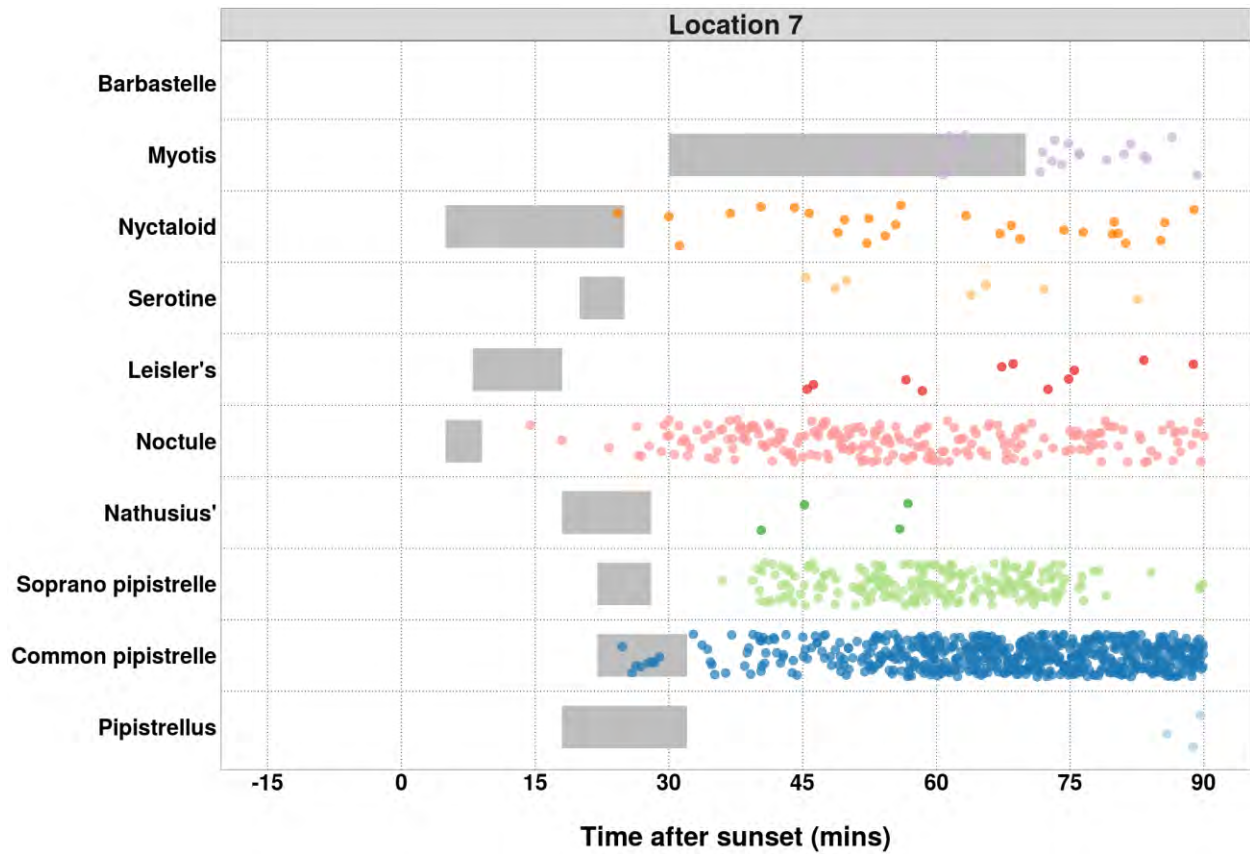
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.











Counts of Bat Passes

All detectors

Table 14. The total number of passes recorded for each species across all of the detectors. The 'Total' percentage may not be exactly 100% due to rounding of the percentages per species.

Species	Passes (No.)	Percentage of total (%)
Pipistrellus	3392	6.1
Common pipistrelle	39534	71.2
Soprano pipistrelle	3703	6.7
Nathusius'	173	0.3
Noctule	3795	6.8
Leisler's	142	0.3
Serotine	405	0.7
Nyctaloid	2021	3.6
Myotis	2382	4.3
Barbastelle	1	0.0
Total	55548	100.0

Counts of Bat Passes

Per Detector

Table 15. The number of passes recorded for each species at each detector.

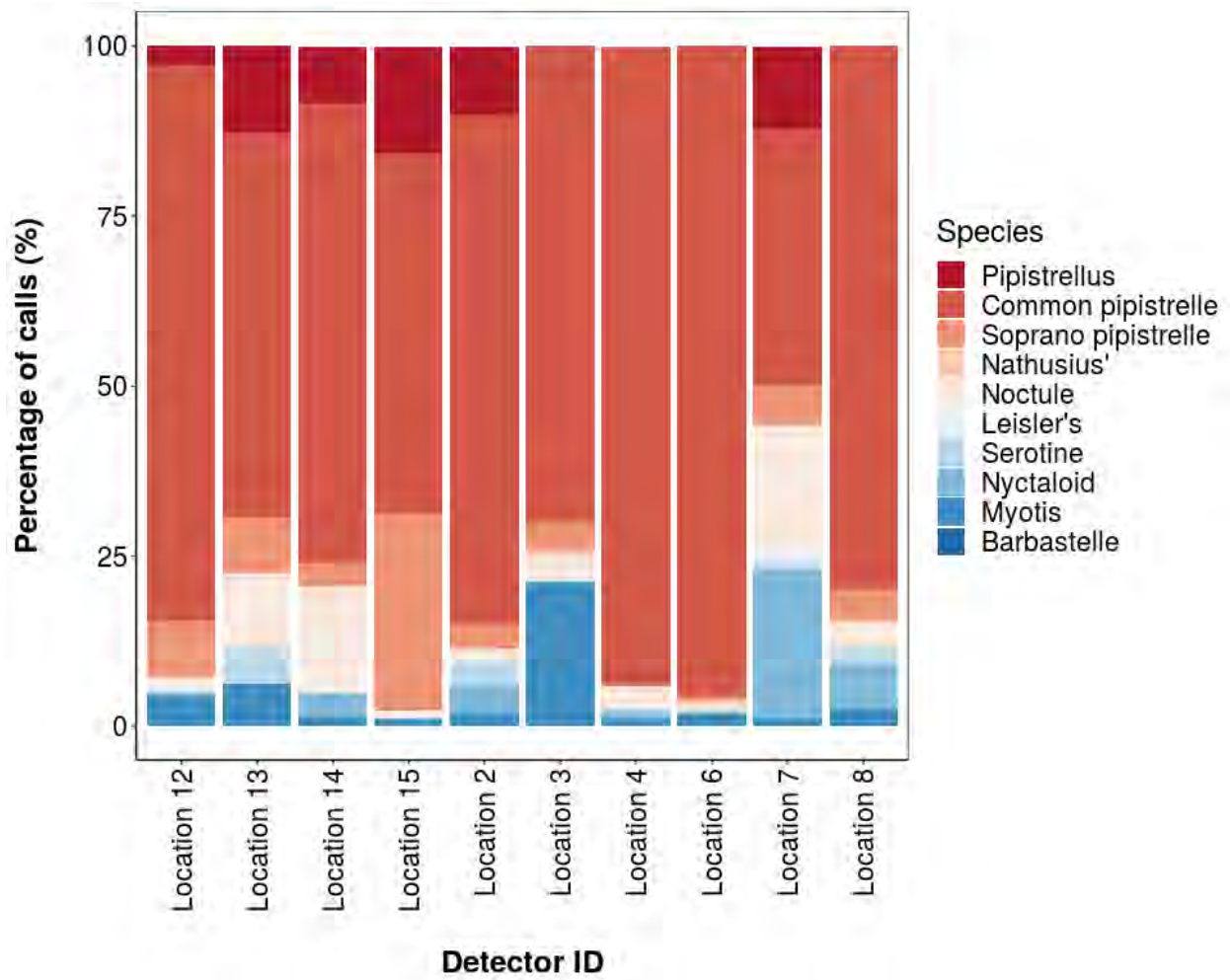
Species	Detector ID	Count (No)	Percentage by Detector (%)
Pipistrellus	Location 12	57	2.9
Pipistrellus	Location 13	324	12.8
Pipistrellus	Location 14	811	8.3
Pipistrellus	Location 15	1175	15.7
Pipistrellus	Location 2	306	10.1
Pipistrellus	Location 4	17	0.1
Pipistrellus	Location 7	702	12.0
Common pipistrelle	Location 12	1598	81.7
Common pipistrelle	Location 13	1425	56.5
Common pipistrelle	Location 14	6573	67.6
Common pipistrelle	Location 15	3967	53.0
Common pipistrelle	Location 2	2261	74.9
Common pipistrelle	Location 3	5355	69.9
Common pipistrelle	Location 4	12488	93.7
Common pipistrelle	Location 6	2678	95.7
Common pipistrelle	Location 7	2205	37.8
Common pipistrelle	Location 8	984	79.8
Soprano pipistrelle	Location 12	160	8.2
Soprano pipistrelle	Location 13	206	8.2
Soprano pipistrelle	Location 14	328	3.4
Soprano pipistrelle	Location 15	2158	28.9
Soprano pipistrelle	Location 2	105	3.5
Soprano pipistrelle	Location 3	318	4.2
Soprano pipistrelle	Location 4	27	0.2
Soprano pipistrelle	Location 6	14	0.5
Soprano pipistrelle	Location 7	329	5.6
Soprano pipistrelle	Location 8	58	4.7
Nathusius'	Location 12	8	0.4
Nathusius'	Location 13	3	0.1

Nathusius'	Location 14	13	0.1
Nathusius'	Location 15	11	0.1
Nathusius'	Location 3	66	0.9
Nathusius'	Location 4	14	0.1
Nathusius'	Location 6	22	0.8
Nathusius'	Location 7	32	0.5
Nathusius'	Location 8	4	0.3
Noctule	Location 12	25	1.3
Noctule	Location 13	271	10.7
Noctule	Location 14	1504	15.5
Noctule	Location 15	78	1.0
Noctule	Location 2	52	1.7
Noctule	Location 3	286	3.7
Noctule	Location 4	441	3.3
Noctule	Location 6	18	0.6
Noctule	Location 7	1076	18.4
Noctule	Location 8	44	3.6
Leisler's	Location 12	9	0.5
Leisler's	Location 13	9	0.4
Leisler's	Location 14	3	0.0
Leisler's	Location 2	5	0.2
Leisler's	Location 4	4	0.0
Leisler's	Location 6	2	0.1
Leisler's	Location 7	108	1.8
Leisler's	Location 8	2	0.2
Serotine	Location 12	2	0.1
Serotine	Location 13	129	5.1
Serotine	Location 14	19	0.2
Serotine	Location 15	3	0.0
Serotine	Location 2	104	3.4
Serotine	Location 3	10	0.1
Serotine	Location 4	66	0.5
Serotine	Location 6	5	0.2
Serotine	Location 7	36	0.6
Serotine	Location 8	31	2.5
Nyctaloid	Location 12	11	0.6

Nyctaloid	Location 14	343	3.5
Nyctaloid	Location 15	14	0.2
Nyctaloid	Location 2	127	4.2
Nyctaloid	Location 3	9	0.1
Nyctaloid	Location 4	145	1.1
Nyctaloid	Location 6	10	0.4
Nyctaloid	Location 7	1281	21.9
Nyctaloid	Location 8	81	6.6
Myotis	Location 12	86	4.4
Myotis	Location 13	156	6.2
Myotis	Location 14	127	1.3
Myotis	Location 15	74	1.0
Myotis	Location 2	58	1.9
Myotis	Location 3	1612	21.1
Myotis	Location 4	121	0.9
Myotis	Location 6	47	1.7
Myotis	Location 7	72	1.2
Myotis	Location 8	29	2.4
Barbastelle	Location 6	1	0.0

Species Composition

Figure 10. Percentage species composition of passes at each detector.



PART 2a: Presence Only

THE NEXT SECTION OF THE REPORT FEATURES THE RAW DATA SUPPLIED TO ECOBAT AND ONLY TAKES INTO ACCOUNT THE PRESENCE, AND NOT THE ABSENCE, OF EACH BAT SPECIES. FOR EACH NIGHT, THERE IS NO 'ZERO DATA' FOR WHEN SPECIES WERE NOT DETECTED.

Nightly Bat Pass Rate (Bat passes per hour)

Median Per Detector

Table 16. The median Nightly Pass Rate (bat passes per hour, per night) of each species. If NA, then no bat passes.

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the 'average' activity than is the mean. For further information see: *Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. Biodiversity and Conservation, 27(1), 265-267.*

<https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Median Pass Rate
Pipistrellus	Location 12	7.0
Pipistrellus	Location 13	9.6
Pipistrellus	Location 14	21.5
Pipistrellus	Location 15	146.4
Pipistrellus	Location 2	41.0
Pipistrellus	Location 4	1.8
Pipistrellus	Location 7	21.2
Common pipistrelle	Location 12	3.5
Common pipistrelle	Location 13	1.9
Common pipistrelle	Location 14	13.7
Common pipistrelle	Location 15	10.3
Common pipistrelle	Location 2	5.7
Common pipistrelle	Location 3	12.0
Common pipistrelle	Location 4	29.4
Common pipistrelle	Location 6	4.2
Common pipistrelle	Location 7	5.4
Common pipistrelle	Location 8	2.6
Soprano pipistrelle	Location 12	1.1
Soprano pipistrelle	Location 13	0.4
Soprano pipistrelle	Location 14	2.5
Soprano pipistrelle	Location 15	2.6
Soprano pipistrelle	Location 2	0.4
Soprano pipistrelle	Location 3	1.9

Soprano pipistrelle	Location 4	0.3
Soprano pipistrelle	Location 6	0.1
Soprano pipistrelle	Location 7	3.2
Soprano pipistrelle	Location 8	3.9
Nathusius'	Location 12	0.1
Nathusius'	Location 13	0.1
Nathusius'	Location 14	0.1
Nathusius'	Location 15	0.1
Nathusius'	Location 3	0.2
Nathusius'	Location 4	0.2
Nathusius'	Location 6	0.2
Nathusius'	Location 7	0.4
Nathusius'	Location 8	0.1
Noctule	Location 12	0.2
Noctule	Location 13	1.3
Noctule	Location 14	1.4
Noctule	Location 15	0.9
Noctule	Location 2	0.3
Noctule	Location 3	0.4
Noctule	Location 4	0.8
Noctule	Location 6	0.2
Noctule	Location 7	1.7
Noctule	Location 8	0.3
Leisler's	Location 12	0.2
Leisler's	Location 13	0.2
Leisler's	Location 14	0.2
Leisler's	Location 2	0.1
Leisler's	Location 4	0.1
Leisler's	Location 6	0.1
Leisler's	Location 7	1.0
Leisler's	Location 8	0.1
Serotine	Location 12	0.1
Serotine	Location 13	2.7
Serotine	Location 14	0.7
Serotine	Location 15	0.2
Serotine	Location 2	0.4

Serotine	Location 3	0.2
Serotine	Location 4	0.4
Serotine	Location 6	0.1
Serotine	Location 7	0.3
Serotine	Location 8	0.4
Nyctaloid	Location 12	0.3
Nyctaloid	Location 14	20.1
Nyctaloid	Location 15	0.5
Nyctaloid	Location 2	0.8
Nyctaloid	Location 3	0.3
Nyctaloid	Location 4	2.2
Nyctaloid	Location 6	0.4
Nyctaloid	Location 7	1.5
Nyctaloid	Location 8	1.0
Myotis	Location 12	0.2
Myotis	Location 13	0.4
Myotis	Location 14	0.3
Myotis	Location 15	0.3
Myotis	Location 2	0.3
Myotis	Location 3	2.4
Myotis	Location 4	0.4
Myotis	Location 6	0.2
Myotis	Location 7	0.4
Myotis	Location 8	0.3
Barbastelle	Location 6	0.1

Nightly Bat Pass Rate (Bat passes per hour)

Mean per Detector

Table 17. The mean Nightly Pass Rate (bat passes per hour, per night) of each species at each detector. Values are given to 1 decimal place.

We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Mean Pass Rate
Pipistrellus	Location 12	7.0
Pipistrellus	Location 13	13.6
Pipistrellus	Location 14	33.9
Pipistrellus	Location 15	146.4
Pipistrellus	Location 2	41.0
Pipistrellus	Location 4	1.8
Pipistrellus	Location 7	29.6
Common pipistrelle	Location 12	6.9
Common pipistrelle	Location 13	5.4
Common pipistrelle	Location 14	30.9
Common pipistrelle	Location 15	19.9
Common pipistrelle	Location 2	10.3
Common pipistrelle	Location 3	21.7
Common pipistrelle	Location 4	51.2
Common pipistrelle	Location 6	12.1
Common pipistrelle	Location 7	10.7
Common pipistrelle	Location 8	5.8
Soprano pipistrelle	Location 12	1.9
Soprano pipistrelle	Location 13	1.9
Soprano pipistrelle	Location 14	6.0
Soprano pipistrelle	Location 15	26.6
Soprano pipistrelle	Location 2	1.7
Soprano pipistrelle	Location 3	5.1
Soprano pipistrelle	Location 4	0.5
Soprano pipistrelle	Location 6	0.3
Soprano pipistrelle	Location 7	4.3

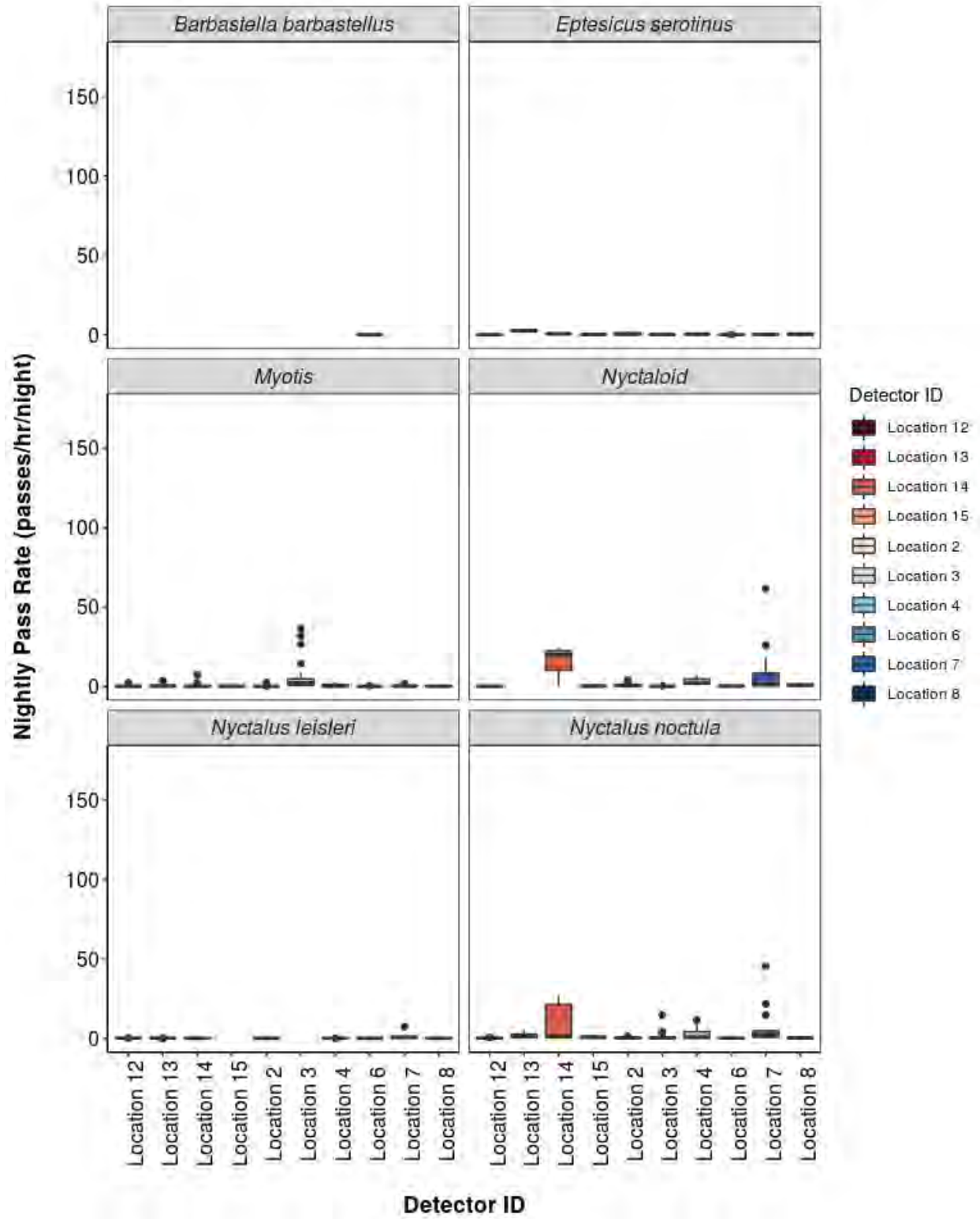
Soprano pipistrelle	Location 8	3.9
Nathusius'	Location 12	0.2
Nathusius'	Location 13	0.1
Nathusius'	Location 14	0.2
Nathusius'	Location 15	0.2
Nathusius'	Location 3	0.5
Nathusius'	Location 4	0.2
Nathusius'	Location 6	0.2
Nathusius'	Location 7	0.4
Nathusius'	Location 8	0.1
Noctule	Location 12	0.3
Noctule	Location 13	1.7
Noctule	Location 14	10.4
Noctule	Location 15	0.9
Noctule	Location 2	0.4
Noctule	Location 3	1.6
Noctule	Location 4	2.7
Noctule	Location 6	0.2
Noctule	Location 7	7.2
Noctule	Location 8	0.4
Leisler's	Location 12	0.2
Leisler's	Location 13	0.2
Leisler's	Location 14	0.2
Leisler's	Location 2	0.2
Leisler's	Location 4	0.1
Leisler's	Location 6	0.1
Leisler's	Location 7	2.0
Leisler's	Location 8	0.1
Serotine	Location 12	0.1
Serotine	Location 13	2.4
Serotine	Location 14	0.6
Serotine	Location 15	0.2
Serotine	Location 2	0.8
Serotine	Location 3	0.2
Serotine	Location 4	0.5
Serotine	Location 6	0.1

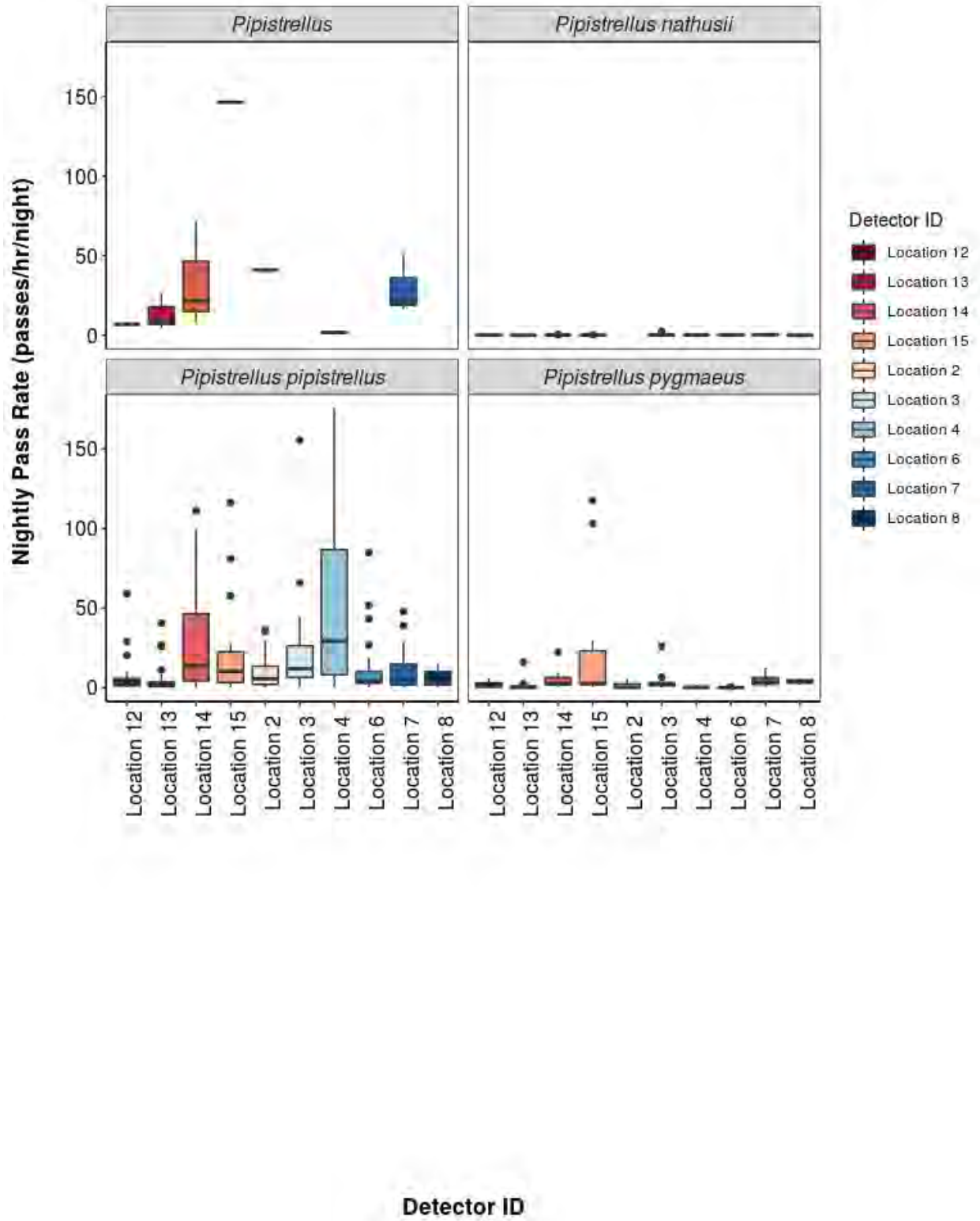
Serotine	Location 7	0.4
Serotine	Location 8	0.5
Nyctaloid	Location 12	0.3
Nyctaloid	Location 14	15.2
Nyctaloid	Location 15	0.5
Nyctaloid	Location 2	1.3
Nyctaloid	Location 3	0.3
Nyctaloid	Location 4	3.5
Nyctaloid	Location 6	0.4
Nyctaloid	Location 7	9.8
Nyctaloid	Location 8	1.0
Myotis	Location 12	0.4
Myotis	Location 13	0.7
Myotis	Location 14	0.9
Myotis	Location 15	0.4
Myotis	Location 2	0.4
Myotis	Location 3	6.2
Myotis	Location 4	0.9
Myotis	Location 6	0.3
Myotis	Location 7	0.6
Myotis	Location 8	0.4
Barbastelle	Location 6	0.1

Nightly Bat Passes (Bat passes per hour)

Per Detector - Figures

Figure 11. Boxplots for the number of bat passes per hour each night, for each detector. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent the ranges for the bottom 25% and the top 25% of the data values, excluding outliers. An outlier is any extreme value that lies further away from the box than 1.5 times the interquartile range. Outliers are shown as dots. Where very few passes are recorded it is not possible to produce the box, so the data are shown as a line.





SPLIT BY MONTH

Total Bat Passes per Detector, each Month

Per Detector

Table 18. The total number of bat passes of each species in each month at each detector. This table simply tells you how many bats of each species were recorded passing each detector during each month. These numbers are not standardised by the night length, or how many nights each detector was active for during each month.

Species	Detector ID	Apr	May	Jun	Jul	Aug	Sep
Pipistrellus	Location 12	0	57	0	0	0	0
Pipistrellus	Location 13	0	324	0	0	0	0
Pipistrellus	Location 14	0	811	0	0	0	0
Pipistrellus	Location 15	0	1175	0	0	0	0
Pipistrellus	Location 2	0	0	306	0	0	0
Pipistrellus	Location 4	17	0	0	0	0	0
Pipistrellus	Location 7	0	702	0	0	0	0
Common pipistrelle	Location 12	15	573	198	94	601	117
Common pipistrelle	Location 13	256	369	81	82	49	588
Common pipistrelle	Location 14	1	646	1041	2691	2041	153
Common pipistrelle	Location 15	0	1281	752	770	923	241
Common pipistrelle	Location 2	44	245	390	300	1030	252
Common pipistrelle	Location 3	154	2264	351	476	440	1670
Common pipistrelle	Location 4	108	296	1842	4794	2438	3010
Common pipistrelle	Location 6	23	1777	113	293	198	274
Common pipistrelle	Location 7	1	875	368	513	110	338
Common pipistrelle	Location 8	0	9	465	260	110	140
Soprano pipistrelle	Location 12	2	27	131	0	0	0
Soprano pipistrelle	Location 13	158	31	17	0	0	0
Soprano pipistrelle	Location 14	0	230	98	0	0	0
Soprano pipistrelle	Location 15	0	2076	82	0	0	0
Soprano pipistrelle	Location 2	5	48	52	0	0	0
Soprano pipistrelle	Location 3	50	25	243	0	0	0
Soprano pipistrelle	Location 4	0	2	25	0	0	0

Soprano pipistrelle	Location 6	0	11	3	0	0	0
Soprano pipistrelle	Location 7	0	76	253	0	0	0
Soprano pipistrelle	Location 8	0	0	58	0	0	0
Nathusius'	Location 12	0	2	2	0	1	3
Nathusius'	Location 13	0	1	0	0	0	2
Nathusius'	Location 14	0	1	2	8	0	2
Nathusius'	Location 15	0	6	1	1	0	3
Nathusius'	Location 3	5	1	3	1	0	56
Nathusius'	Location 4	2	2	1	3	0	6
Nathusius'	Location 6	0	0	11	4	0	7
Nathusius'	Location 7	0	2	2	3	0	25
Nathusius'	Location 8	0	0	0	0	0	4
Noctule	Location 12	0	0	1	5	0	19
Noctule	Location 13	0	0	46	79	16	130
Noctule	Location 14	0	0	610	845	22	27
Noctule	Location 15	0	0	24	52	0	2
Noctule	Location 2	0	1	0	2	31	18
Noctule	Location 3	5	1	0	7	18	255
Noctule	Location 4	0	173	220	13	10	25
Noctule	Location 6	0	1	0	5	2	10
Noctule	Location 7	0	0	26	85	0	965
Noctule	Location 8	0	3	0	14	0	27
Leisler's	Location 12	0	0	0	1	0	8
Leisler's	Location 13	0	0	0	2	0	7
Leisler's	Location 14	0	0	0	0	2	1
Leisler's	Location 2	0	0	0	1	4	0
Leisler's	Location 4	0	2	1	0	1	0
Leisler's	Location 6	0	0	0	1	1	0
Leisler's	Location 7	0	0	0	1	0	107
Leisler's	Location 8	0	0	0	0	0	2
Serotine	Location 12	0	0	0	1	0	1
Serotine	Location 13	0	0	0	0	0	129
Serotine	Location 14	0	0	0	19	0	0
Serotine	Location 15	0	0	0	3	0	0
Serotine	Location 2	0	0	1	3	57	43
Serotine	Location 3	0	0	1	2	1	6

Serotine	Location 4	0	6	11	0	21	28
Serotine	Location 6	0	0	1	2	1	1
Serotine	Location 7	0	0	7	4	0	25
Serotine	Location 8	0	0	0	2	0	29
Nyctaloid	Location 12	0	0	6	0	0	5
Nyctaloid	Location 14	0	0	186	152	0	5
Nyctaloid	Location 15	0	0	8	0	0	6
Nyctaloid	Location 2	0	0	5	7	33	82
Nyctaloid	Location 3	0	0	5	4	0	0
Nyctaloid	Location 4	0	0	106	0	0	39
Nyctaloid	Location 6	0	0	0	0	0	10
Nyctaloid	Location 7	0	6	41	0	0	1234
Nyctaloid	Location 8	0	0	4	8	0	69
Myotis	Location 12	2	4	11	2	45	22
Myotis	Location 13	16	27	5	10	65	33
Myotis	Location 14	0	15	2	77	20	13
Myotis	Location 15	0	17	9	8	0	40
Myotis	Location 2	12	3	27	1	1	14
Myotis	Location 3	149	42	83	16	229	1093
Myotis	Location 4	0	0	4	0	7	110
Myotis	Location 6	0	2	11	11	2	21
Myotis	Location 7	0	40	10	7	0	15
Myotis	Location 8	0	0	1	2	0	26
Barbastelle	Location 6	1	0	0	0	0	0

Survey Effort

Table 19. The number of survey nights per month per detector.

Month	Detector ID	No. of Survey Nights
Apr	Location 12	4
Apr	Location 13	4
Apr	Location 14	1
Apr	Location 2	4
Apr	Location 3	5
Apr	Location 4	4
Apr	Location 6	3
Apr	Location 7	1
May	Location 12	5
May	Location 13	5
May	Location 14	5
May	Location 15	5
May	Location 2	4
May	Location 3	5
May	Location 4	5
May	Location 6	5
May	Location 7	5
May	Location 8	3
Jun	Location 12	5
Jun	Location 13	5
Jun	Location 14	5
Jun	Location 15	5
Jun	Location 2	5
Jun	Location 3	5
Jun	Location 4	5
Jun	Location 6	5
Jun	Location 7	5
Jun	Location 8	5
Jul	Location 12	5
Jul	Location 13	5
Jul	Location 14	5

Jul	Location 15	5
Jul	Location 2	5
Jul	Location 3	5
Jul	Location 4	5
Jul	Location 6	5
Jul	Location 7	5
Jul	Location 8	5
Aug	Location 12	5
Aug	Location 13	5
Aug	Location 14	5
Aug	Location 15	5
Aug	Location 2	5
Aug	Location 3	5
Aug	Location 4	5
Aug	Location 6	5
Aug	Location 7	5
Aug	Location 8	5
Sep	Location 12	5
Sep	Location 13	5
Sep	Location 14	5
Sep	Location 15	5
Sep	Location 2	5
Sep	Location 3	5
Sep	Location 4	5
Sep	Location 6	5
Sep	Location 7	4
Sep	Location 8	5

Nightly Bat Pass Rate for each Month

Median Per Detector

Table 20. The median Nightly Pass Rate (bat passes per hour, per night) of each species throughout each month. If NA, then no bat passes.

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the 'average' activity than is the mean. For further information see: *Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. Biodiversity and Conservation, 27(1), 265-267.*

<https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Apr	May	Jun	Jul	Aug	Sep
Pipistrellus	Location 12	NA	7.0	NA	NA	NA	NA
Pipistrellus	Location 13	NA	9.6	NA	NA	NA	NA
Pipistrellus	Location 14	NA	21.5	NA	NA	NA	NA
Pipistrellus	Location 15	NA	146.4	NA	NA	NA	NA
Pipistrellus	Location 2	NA	NA	41.0	NA	NA	NA
Pipistrellus	Location 4	1.8	NA	NA	NA	NA	NA
Pipistrellus	Location 7	NA	21.2	NA	NA	NA	NA
Common pipistrelle	Location 12	0.3	4.7	3.5	1.3	5.8	1.3
Common pipistrelle	Location 13	0.2	7.0	1.9	2.1	0.7	2.5
Common pipistrelle	Location 14	0.1	7.0	22.7	97.9	39.1	3.2
Common pipistrelle	Location 15	NA	21.1	5.8	20.5	4.1	2.6
Common pipistrelle	Location 2	2.2	6.5	4.3	5.7	18.0	5.3
Common pipistrelle	Location 3	3.5	33.4	7.4	7.0	8.6	26.6
Common pipistrelle	Location 4	1.5	7.3	48.8	130.6	25.1	62.6
Common pipistrelle	Location 6	1.2	43.1	2.8	6.2	4.2	3.1
Common pipistrelle	Location 7	0.1	18.7	8.8	7.4	1.7	3.4
Common pipistrelle	Location 8	NA	1.1	12.7	6.7	1.8	2.4
Soprano pipistrelle	Location 12	0.1	1.0	3.8	NA	NA	NA
Soprano pipistrelle	Location 13	0.3	0.4	0.9	NA	NA	NA
Soprano pipistrelle	Location 14	NA	2.4	6.6	NA	NA	NA
Soprano pipistrelle	Location 15	NA	29.8	2.4	NA	NA	NA
Soprano pipistrelle	Location 2	0.2	0.4	3.5	NA	NA	NA
Soprano pipistrelle	Location 3	1.6	0.8	16.3	NA	NA	NA

Soprano pipistrelle	Location 4	NA	0.1	0.4	NA	NA	NA
Soprano pipistrelle	Location 6	NA	0.1	0.2	NA	NA	NA
Soprano pipistrelle	Location 7	NA	1.9	7.3	NA	NA	NA
Soprano pipistrelle	Location 8	NA	NA	3.9	NA	NA	NA
Nathusius'	Location 12	NA	0.2	0.1	NA	0.1	0.3
Nathusius'	Location 13	NA	0.1	NA	NA	NA	0.1
Nathusius'	Location 14	NA	0.1	0.3	0.2	NA	0.1
Nathusius'	Location 15	NA	0.2	0.1	0.1	NA	0.1
Nathusius'	Location 3	0.3	0.1	0.1	0.1	NA	0.9
Nathusius'	Location 4	0.2	0.2	0.1	0.2	NA	0.1
Nathusius'	Location 6	NA	NA	0.3	0.1	NA	0.2
Nathusius'	Location 7	NA	0.1	0.3	0.4	NA	0.5
Nathusius'	Location 8	NA	NA	NA	NA	NA	0.1
Noctule	Location 12	NA	NA	0.1	0.2	NA	0.2
Noctule	Location 13	NA	NA	0.5	1.4	0.5	2.8
Noctule	Location 14	NA	NA	20.1	23.0	0.4	0.2
Noctule	Location 15	NA	NA	0.7	1.3	NA	0.2
Noctule	Location 2	NA	0.1	NA	0.3	0.5	0.3
Noctule	Location 3	0.1	0.1	NA	0.4	0.3	2.9
Noctule	Location 4	NA	4.3	5.7	0.8	0.3	0.4
Noctule	Location 6	NA	0.1	NA	0.2	0.1	0.3
Noctule	Location 7	NA	NA	0.8	2.3	NA	18.2
Noctule	Location 8	NA	0.1	NA	0.3	NA	0.6
Leisler's	Location 12	NA	NA	NA	0.1	NA	0.2
Leisler's	Location 13	NA	NA	NA	0.3	NA	0.2
Leisler's	Location 14	NA	NA	NA	NA	0.2	0.1
Leisler's	Location 2	NA	NA	NA	0.1	0.2	NA
Leisler's	Location 4	NA	0.1	0.1	NA	0.1	NA
Leisler's	Location 6	NA	NA	NA	0.1	0.1	NA
Leisler's	Location 7	NA	NA	NA	0.1	NA	1.0
Leisler's	Location 8	NA	NA	NA	NA	NA	0.1
Serotine	Location 12	NA	NA	NA	0.1	NA	0.1
Serotine	Location 13	NA	NA	NA	NA	NA	2.7
Serotine	Location 14	NA	NA	NA	0.7	NA	NA
Serotine	Location 15	NA	NA	NA	0.2	NA	NA
Serotine	Location 2	NA	NA	0.1	0.2	1.2	0.4

Serotine	Location 3	NA	NA	0.1	0.3	0.1	0.2
Serotine	Location 4	NA	0.1	0.3	NA	0.6	0.4
Serotine	Location 6	NA	NA	0.1	0.3	0.1	0.1
Serotine	Location 7	NA	NA	0.1	0.3	NA	0.9
Serotine	Location 8	NA	NA	NA	0.1	NA	0.7
Nyctaloid	Location 12	NA	NA	0.2	NA	NA	0.5
Nyctaloid	Location 14	NA	NA	24.9	20.1	NA	0.5
Nyctaloid	Location 15	NA	NA	1.1	NA	NA	0.3
Nyctaloid	Location 2	NA	NA	0.3	0.5	3.4	1.4
Nyctaloid	Location 3	NA	NA	0.3	0.5	NA	NA
Nyctaloid	Location 4	NA	NA	4.8	NA	NA	1.8
Nyctaloid	Location 6	NA	NA	NA	NA	NA	0.4
Nyctaloid	Location 7	NA	0.2	1.5	NA	NA	22.1
Nyctaloid	Location 8	NA	NA	0.3	1.1	NA	1.2
Myotis	Location 12	0.1	0.1	0.4	0.1	0.6	0.4
Myotis	Location 13	0.2	0.8	0.3	0.7	0.8	0.5
Myotis	Location 14	NA	0.2	0.1	1.3	0.5	0.4
Myotis	Location 15	NA	0.4	0.3	0.1	NA	0.6
Myotis	Location 2	0.3	0.4	0.3	0.1	0.1	0.2
Myotis	Location 3	2.5	2.4	0.9	0.5	3.2	26.7
Myotis	Location 4	NA	NA	0.1	NA	0.1	2.1
Myotis	Location 6	NA	0.1	0.3	0.2	0.2	0.2
Myotis	Location 7	NA	1.4	0.3	0.4	NA	0.4
Myotis	Location 8	NA	NA	0.1	0.3	NA	0.3
Barbastelle	Location 6	0.1	NA	NA	NA	NA	NA

Nightly Bat Pass Rate for each Month

Mean per Detector

Table 21: The mean Nightly Pass Rate (bat passes per hour, per night) of each species throughout each month. Values are given to 1 decimal place.

We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Apr	May	Jun	Jul	Aug	Sep
Pipistrellus	Location 12	NA	7.0	NA	NA	NA	NA
Pipistrellus	Location 13	NA	13.6	NA	NA	NA	NA
Pipistrellus	Location 14	NA	33.9	NA	NA	NA	NA
Pipistrellus	Location 15	NA	146.4	NA	NA	NA	NA
Pipistrellus	Location 2	NA	NA	41.0	NA	NA	NA
Pipistrellus	Location 4	1.8	NA	NA	NA	NA	NA
Pipistrellus	Location 7	NA	29.6	NA	NA	NA	NA
Common pipistrelle	Location 12	0.5	17.6	5.3	2.4	12.9	2.1
Common pipistrelle	Location 13	6.8	9.3	2.2	2.2	1.0	11.1
Common pipistrelle	Location 14	0.1	16.2	27.9	71.0	42.4	2.9
Common pipistrelle	Location 15	NA	39.8	20.0	19.6	19.6	4.4
Common pipistrelle	Location 2	2.2	10.1	10.5	7.9	21.5	4.7
Common pipistrelle	Location 3	5.5	55.7	9.4	12.6	9.1	31.3
Common pipistrelle	Location 4	2.9	9.4	49.0	121.6	52.2	54.4
Common pipistrelle	Location 6	1.2	45.1	3.0	7.4	4.2	4.9
Common pipistrelle	Location 7	0.1	22.2	9.8	13.0	2.4	7.6
Common pipistrelle	Location 8	NA	1.1	12.5	6.9	2.3	2.6
Soprano pipistrelle	Location 12	0.1	0.8	3.5	NA	NA	NA
Soprano pipistrelle	Location 13	4.2	0.8	0.8	NA	NA	NA
Soprano pipistrelle	Location 14	NA	5.8	6.6	NA	NA	NA
Soprano pipistrelle	Location 15	NA	50.9	2.2	NA	NA	NA
Soprano pipistrelle	Location 2	0.2	1.5	3.5	NA	NA	NA
Soprano pipistrelle	Location 3	1.8	1.0	16.3	NA	NA	NA
Soprano pipistrelle	Location 4	NA	0.1	0.7	NA	NA	NA
Soprano pipistrelle	Location 6	NA	0.3	0.2	NA	NA	NA
Soprano pipistrelle	Location 7	NA	1.9	6.7	NA	NA	NA

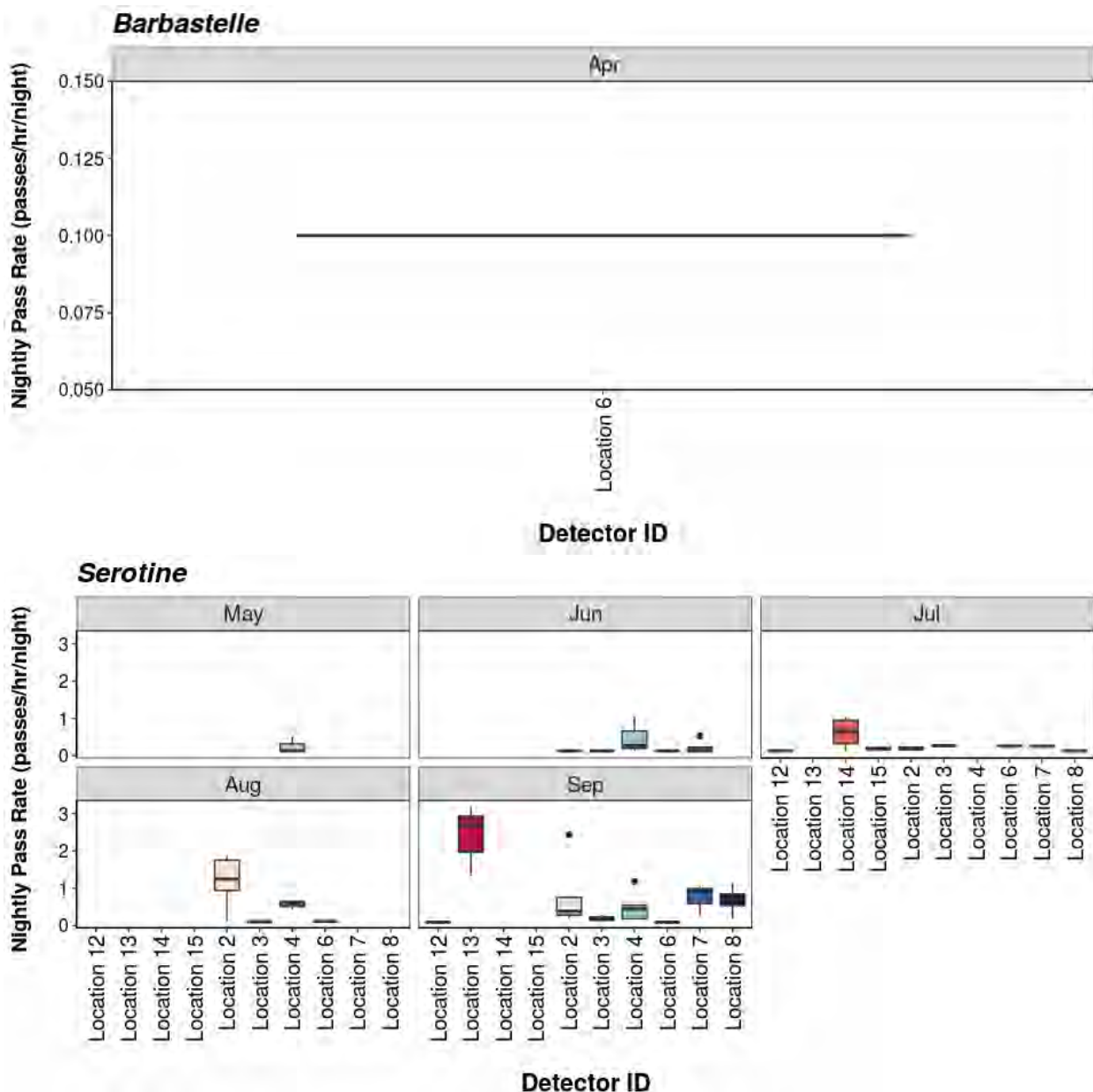
Soprano pipistrelle	Location 8	NA	NA	3.9	NA	NA	NA
Nathusius'	Location 12	NA	0.2	0.1	NA	0.1	0.3
Nathusius'	Location 13	NA	0.1	NA	NA	NA	0.1
Nathusius'	Location 14	NA	0.1	0.3	0.3	NA	0.1
Nathusius'	Location 15	NA	0.2	0.1	0.1	NA	0.1
Nathusius'	Location 3	0.3	0.1	0.1	0.1	NA	1.1
Nathusius'	Location 4	0.2	0.2	0.1	0.2	NA	0.1
Nathusius'	Location 6	NA	NA	0.3	0.2	NA	0.2
Nathusius'	Location 7	NA	0.1	0.3	0.4	NA	0.6
Nathusius'	Location 8	NA	NA	NA	NA	NA	0.1
Noctule	Location 12	NA	NA	0.1	0.2	NA	0.3
Noctule	Location 13	NA	NA	1.2	2.1	0.6	2.4
Noctule	Location 14	NA	NA	20.4	22.3	0.5	0.5
Noctule	Location 15	NA	NA	0.6	1.3	NA	0.2
Noctule	Location 2	NA	0.1	NA	0.3	0.6	0.3
Noctule	Location 3	0.2	0.1	NA	0.3	0.4	4.7
Noctule	Location 4	NA	4.4	5.8	0.8	0.3	0.5
Noctule	Location 6	NA	0.1	NA	0.2	0.1	0.2
Noctule	Location 7	NA	NA	0.7	2.2	NA	21.8
Noctule	Location 8	NA	0.1	NA	0.5	NA	0.5
Leisler's	Location 12	NA	NA	NA	0.1	NA	0.2
Leisler's	Location 13	NA	NA	NA	0.3	NA	0.2
Leisler's	Location 14	NA	NA	NA	NA	0.2	0.1
Leisler's	Location 2	NA	NA	NA	0.1	0.2	NA
Leisler's	Location 4	NA	0.1	0.1	NA	0.1	NA
Leisler's	Location 6	NA	NA	NA	0.1	0.1	NA
Leisler's	Location 7	NA	NA	NA	0.1	NA	2.4
Leisler's	Location 8	NA	NA	NA	NA	NA	0.1
Serotine	Location 12	NA	NA	NA	0.1	NA	0.1
Serotine	Location 13	NA	NA	NA	NA	NA	2.4
Serotine	Location 14	NA	NA	NA	0.6	NA	NA
Serotine	Location 15	NA	NA	NA	0.2	NA	NA
Serotine	Location 2	NA	NA	0.1	0.2	1.2	0.8
Serotine	Location 3	NA	NA	0.1	0.3	0.1	0.2
Serotine	Location 4	NA	0.3	0.5	NA	0.6	0.5
Serotine	Location 6	NA	NA	0.1	0.3	0.1	0.1

Serotine	Location 7	NA	NA	0.2	0.3	NA	0.8
Serotine	Location 8	NA	NA	NA	0.1	NA	0.7
Nyctaloid	Location 12	NA	NA	0.2	NA	NA	0.5
Nyctaloid	Location 14	NA	NA	24.9	20.1	NA	0.5
Nyctaloid	Location 15	NA	NA	1.1	NA	NA	0.3
Nyctaloid	Location 2	NA	NA	0.2	0.5	3.4	1.9
Nyctaloid	Location 3	NA	NA	0.2	0.5	NA	NA
Nyctaloid	Location 4	NA	NA	4.7	NA	NA	1.8
Nyctaloid	Location 6	NA	NA	NA	NA	NA	0.4
Nyctaloid	Location 7	NA	0.3	1.1	NA	NA	27.9
Nyctaloid	Location 8	NA	NA	0.3	1.1	NA	1.3
Myotis	Location 12	0.1	0.2	0.4	0.1	1.0	0.4
Myotis	Location 13	0.4	0.7	0.3	0.7	1.3	0.6
Myotis	Location 14	NA	0.5	0.1	2.5	0.5	0.4
Myotis	Location 15	NA	0.5	0.3	0.2	NA	0.7
Myotis	Location 2	0.3	0.4	0.9	0.1	0.1	0.3
Myotis	Location 3	3.2	1.7	2.8	0.5	4.8	20.6
Myotis	Location 4	NA	NA	0.2	NA	0.2	2.0
Myotis	Location 6	NA	0.1	0.4	0.3	0.2	0.4
Myotis	Location 7	NA	1.3	0.3	0.4	NA	0.3
Myotis	Location 8	NA	NA	0.1	0.3	NA	0.5
Barbastelle	Location 6	0.1	NA	NA	NA	NA	NA

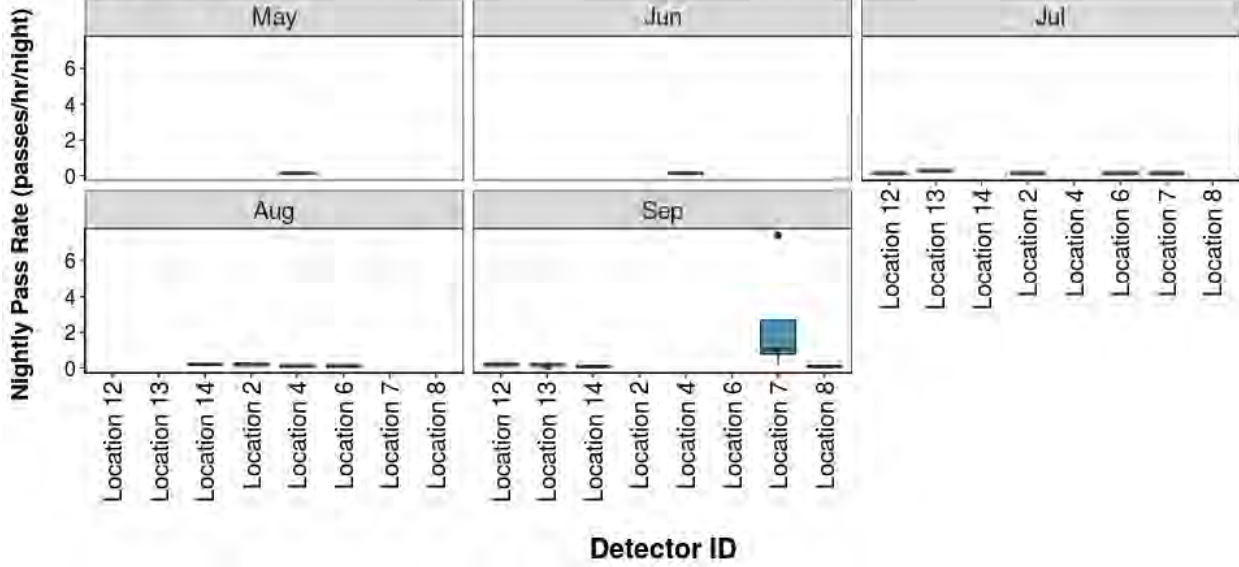
Nightly Bat Pass Rate for each Month

Per Detector - Figures

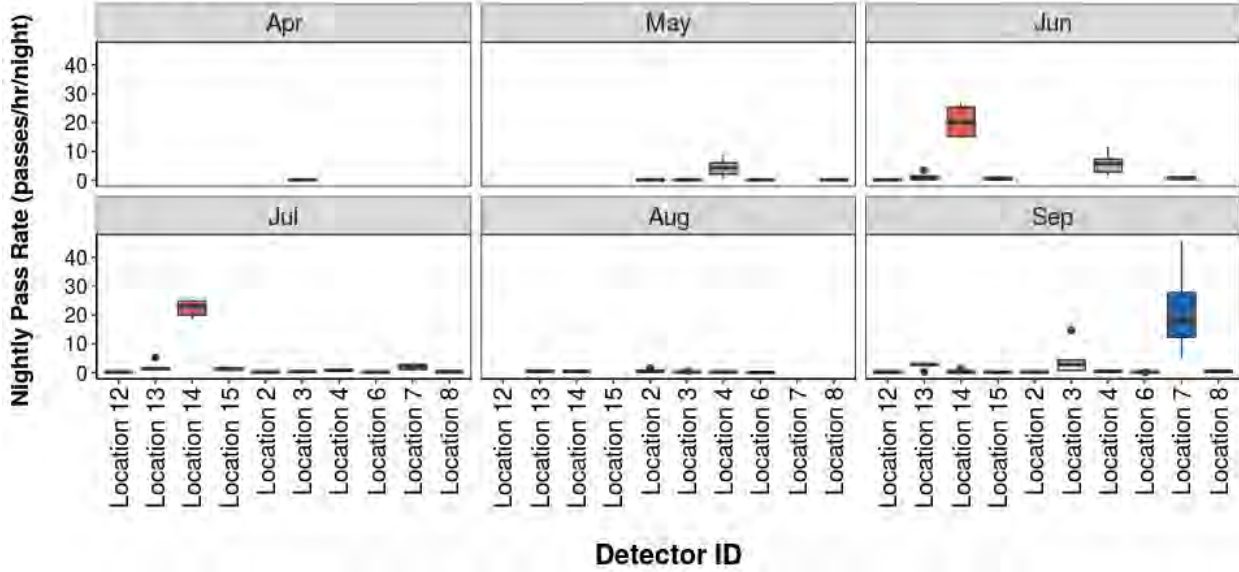
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent the ranges for the bottom 25% and the top 25% of the data values, excluding outliers. An outlier is any extreme value that lies further away from the box than 1.5 times the interquartile range. Outliers are shown as dots. Where very few passes are recorded it is not possible to produce the box, so the data are shown as a line.



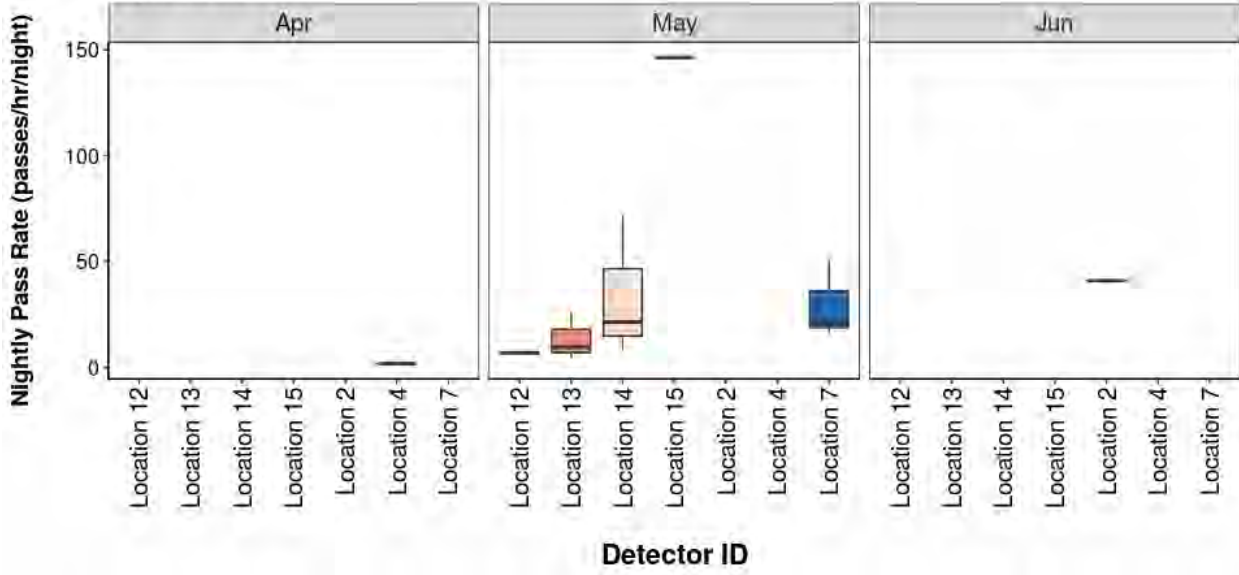
Leisler's



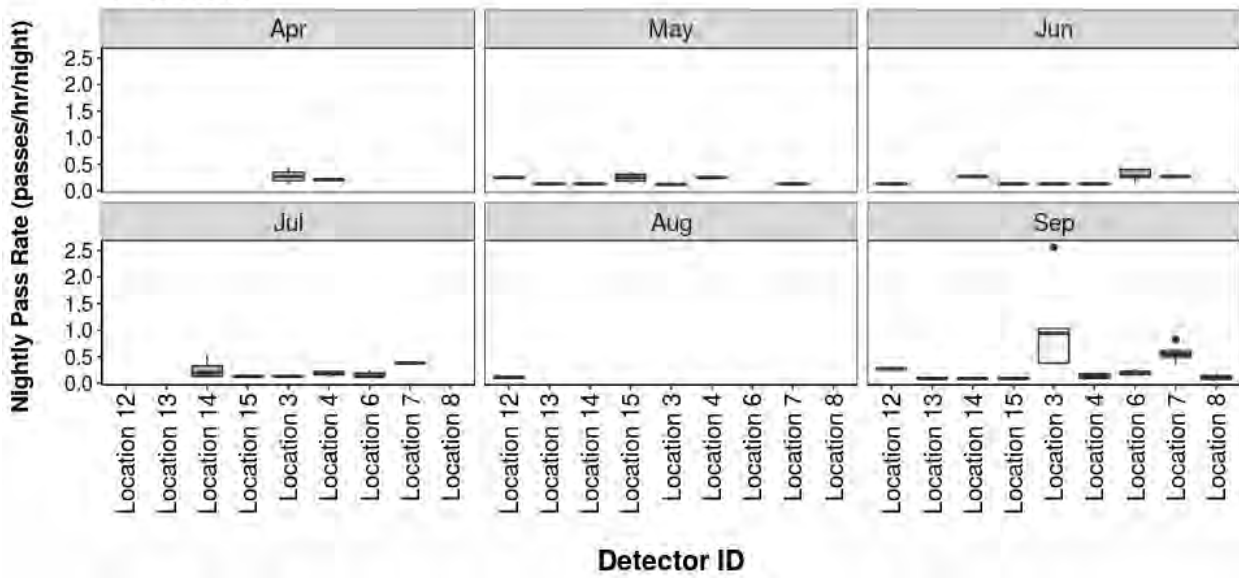
Noctule



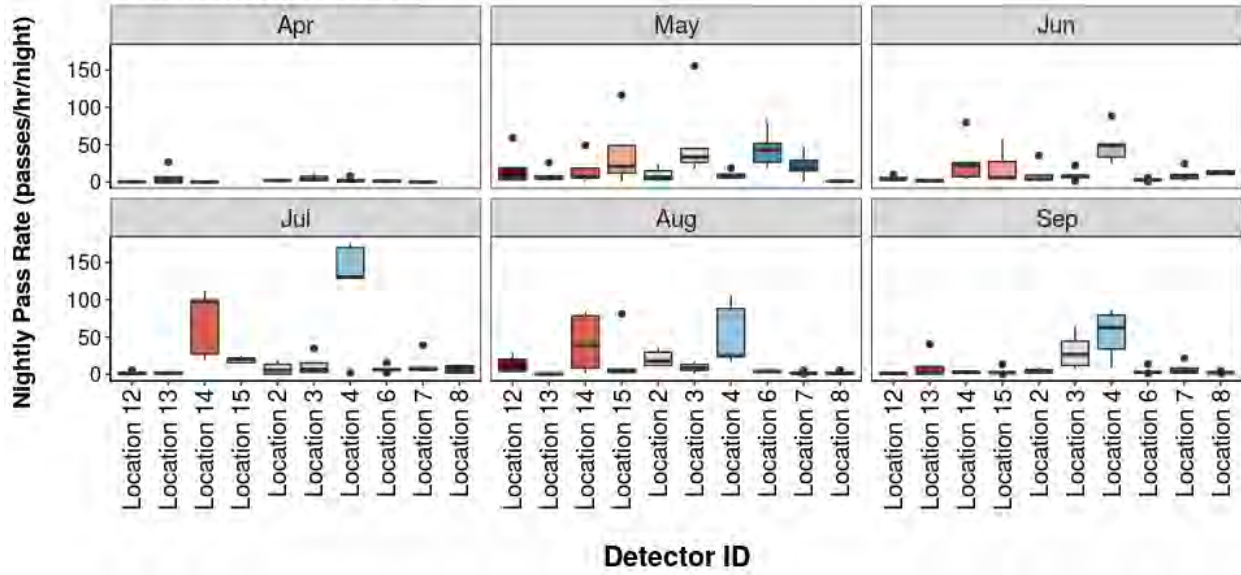
Pipistrellus



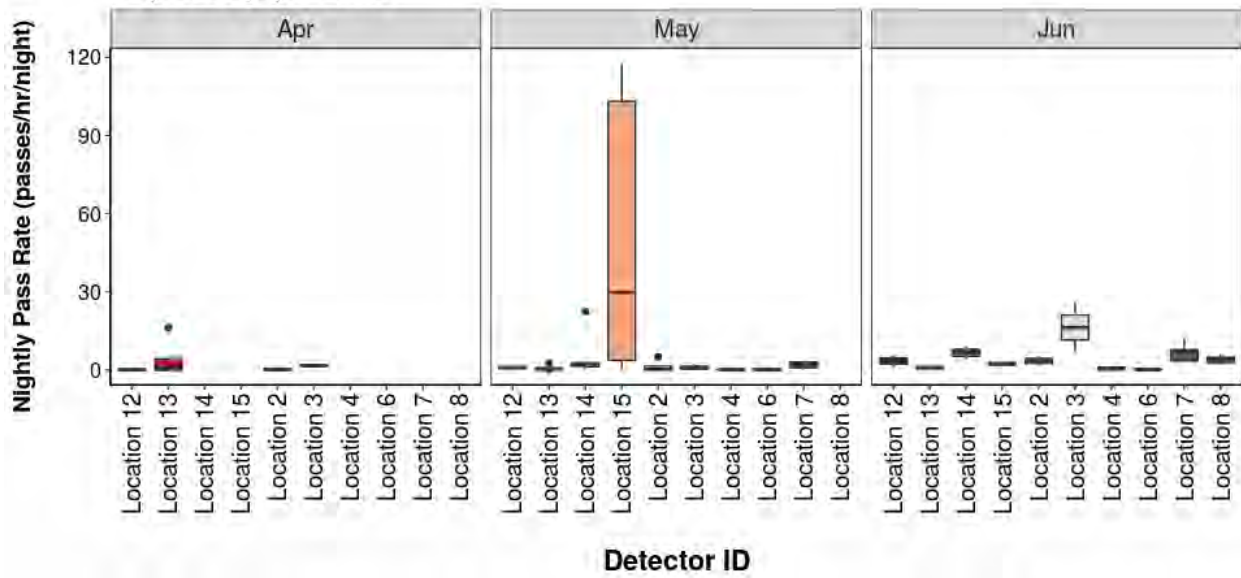
Nathusius'



Common pipistrelle



Soprano pipistrelle



Bat Activity per Detector Location

Figure 13. Detector ID reference:

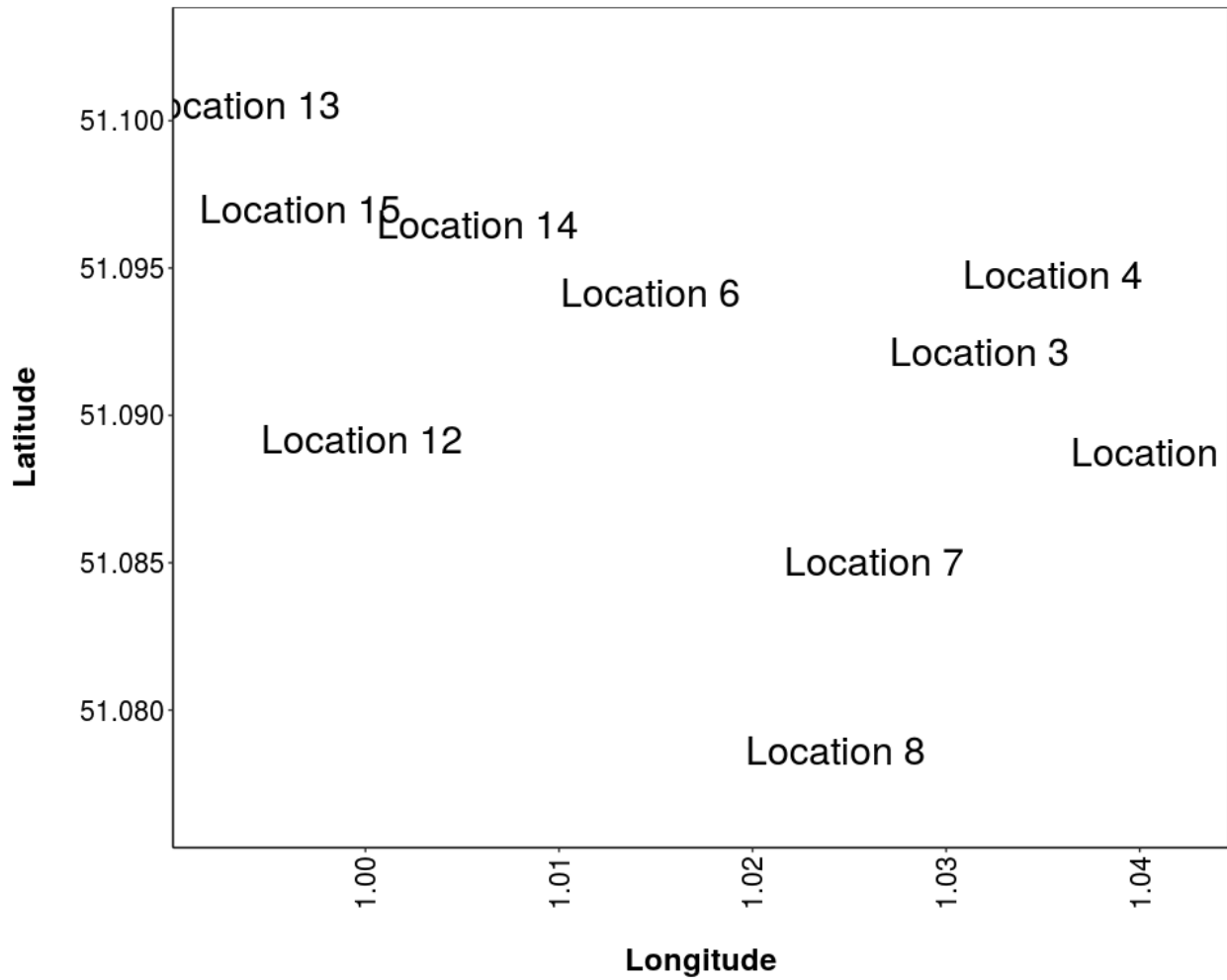
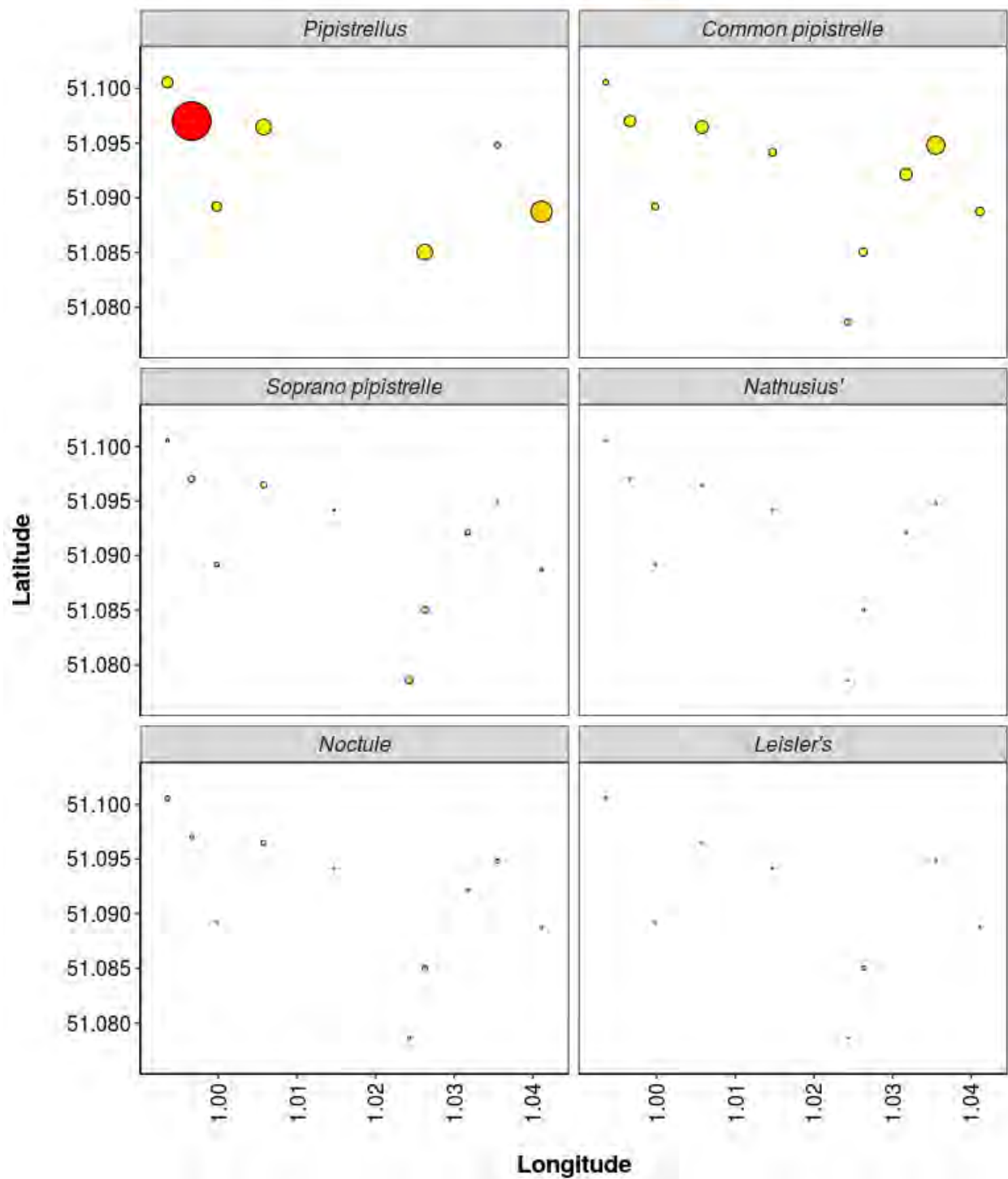


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.

Median.Pass.Rate ● 50 ● 100



Median.Pass.Rate 50 100

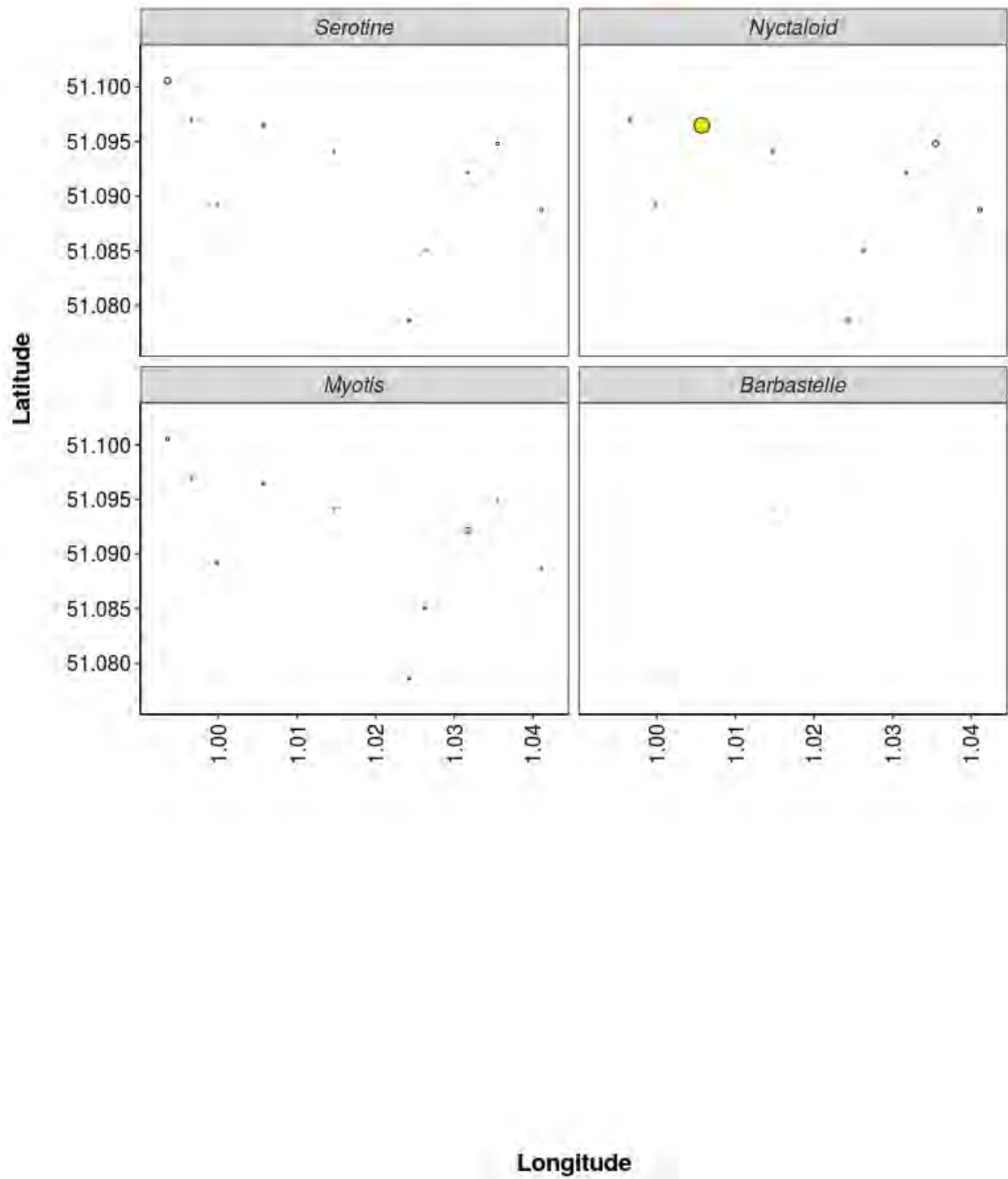
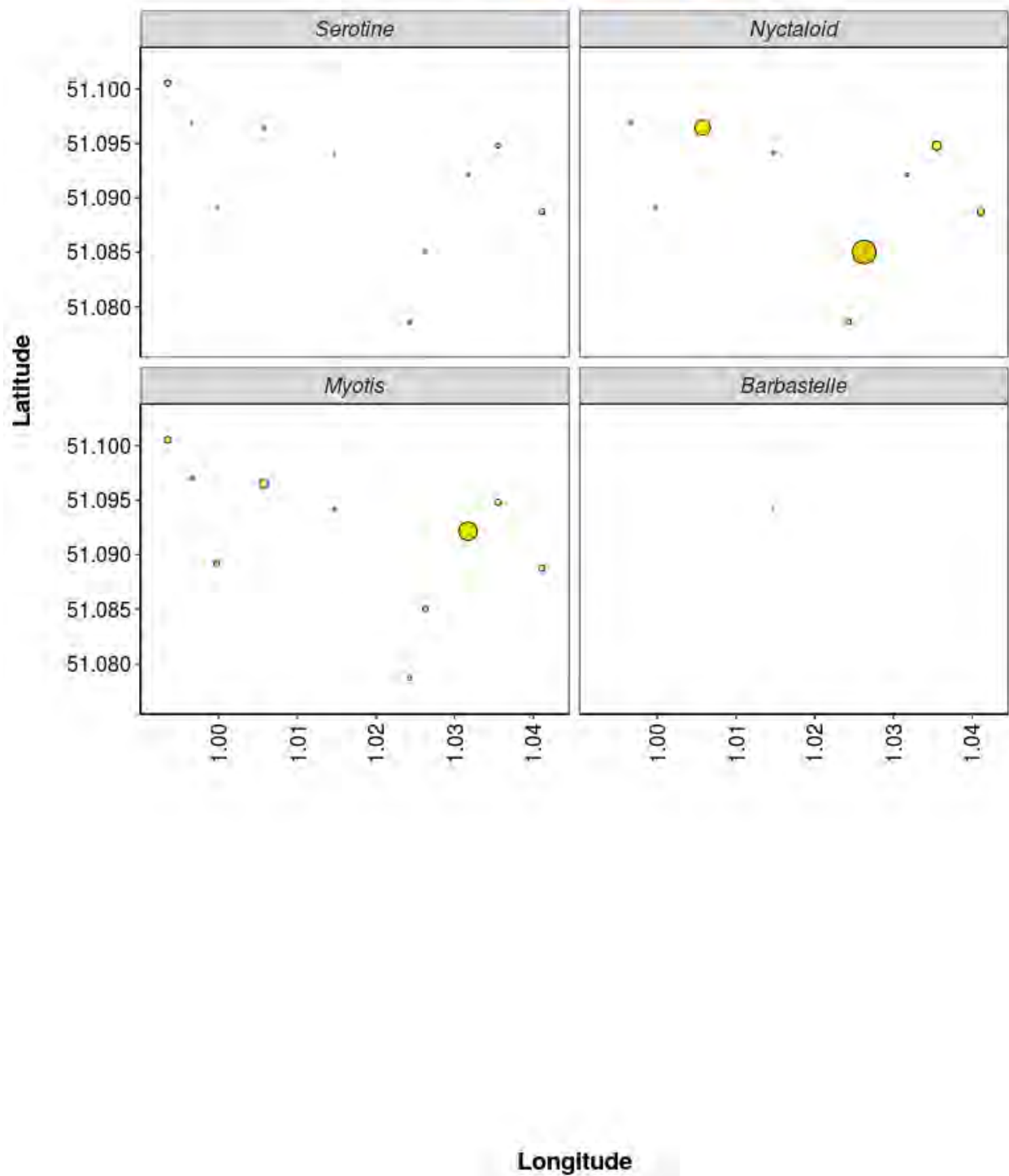


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.

Max.Pass.Rate 50 100 150



PART 2B: Includes absences

THE NEXT SECTION OF THE REPORT FEATURES THE DATA SUPPLIED TO ECOBAT BUT TAKES INTO ACCOUNT SPECIES ABSENCES, AND THEREFORE INCLUDES 'ZERO DATA' FOR WHEN SPECIES WERE NOT DETECTED AT EACH DETECTOR ON A NIGHT. THIS DRAMATICALLY LOWERS THE MEANS AND MEDIANS OF THE DATA PRESENTED.

Nightly Bat Pass Rate (Bat passes per hour)

Median Per Detector

Table 22. The median Nightly Pass Rate (bat passes per hour, per night) of each species. If NA, then no bat passes.

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the 'average' activity than is the mean. For further information see: *Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. Biodiversity and Conservation, 27(1), 265-267.*

<https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Median Pass Rate
Barbastelle	Location 12	0.0
Barbastelle	Location 13	0.0
Barbastelle	Location 14	0.0
Barbastelle	Location 15	0.0
Barbastelle	Location 2	0.0
Barbastelle	Location 3	0.0
Barbastelle	Location 4	0.0
Barbastelle	Location 6	0.0
Barbastelle	Location 7	0.0
Barbastelle	Location 8	0.0
Common pipistrelle	Location 12	3.4
Common pipistrelle	Location 13	1.9
Common pipistrelle	Location 14	13.7
Common pipistrelle	Location 15	7.0
Common pipistrelle	Location 2	5.4
Common pipistrelle	Location 3	10.5
Common pipistrelle	Location 4	25.1
Common pipistrelle	Location 6	3.8
Common pipistrelle	Location 7	5.4
Common pipistrelle	Location 8	2.4
Leisler's	Location 12	0.0
Leisler's	Location 13	0.0
Leisler's	Location 14	0.0

Leisler's	Location 15	0.0
Leisler's	Location 2	0.0
Leisler's	Location 3	0.0
Leisler's	Location 4	0.0
Leisler's	Location 6	0.0
Leisler's	Location 7	0.0
Leisler's	Location 8	0.0
Myotis	Location 12	0.1
Myotis	Location 13	0.4
Myotis	Location 14	0.2
Myotis	Location 15	0.1
Myotis	Location 2	0.1
Myotis	Location 3	1.1
Myotis	Location 4	0.0
Myotis	Location 6	0.1
Myotis	Location 7	0.1
Myotis	Location 8	0.0
Nathusius'	Location 12	0.0
Nathusius'	Location 13	0.0
Nathusius'	Location 14	0.0
Nathusius'	Location 15	0.0
Nathusius'	Location 2	0.0
Nathusius'	Location 3	0.0
Nathusius'	Location 4	0.0
Nathusius'	Location 6	0.0
Nathusius'	Location 7	0.0
Nathusius'	Location 8	0.0
Noctule	Location 12	0.0
Noctule	Location 13	0.4
Noctule	Location 14	0.5
Noctule	Location 15	0.0
Noctule	Location 2	0.0
Noctule	Location 3	0.1
Noctule	Location 4	0.4
Noctule	Location 6	0.0
Noctule	Location 7	0.3

Noctule	Location 8	0.1
Nyctaloid	Location 12	0.0
Nyctaloid	Location 13	0.0
Nyctaloid	Location 14	0.0
Nyctaloid	Location 15	0.0
Nyctaloid	Location 2	0.0
Nyctaloid	Location 3	0.0
Nyctaloid	Location 4	0.0
Nyctaloid	Location 6	0.0
Nyctaloid	Location 7	0.0
Nyctaloid	Location 8	0.0
Pipistrellus	Location 12	0.0
Pipistrellus	Location 13	0.0
Pipistrellus	Location 14	0.0
Pipistrellus	Location 15	0.0
Pipistrellus	Location 2	0.0
Pipistrellus	Location 3	0.0
Pipistrellus	Location 4	0.0
Pipistrellus	Location 6	0.0
Pipistrellus	Location 7	0.0
Pipistrellus	Location 8	0.0
Serotine	Location 12	0.0
Serotine	Location 13	0.0
Serotine	Location 14	0.0
Serotine	Location 15	0.0
Serotine	Location 2	0.0
Serotine	Location 3	0.0
Serotine	Location 4	0.1
Serotine	Location 6	0.0
Serotine	Location 7	0.0
Serotine	Location 8	0.0
Soprano pipistrelle	Location 12	0.0
Soprano pipistrelle	Location 13	0.0
Soprano pipistrelle	Location 14	0.0
Soprano pipistrelle	Location 15	0.0
Soprano pipistrelle	Location 2	0.0

Soprano pipistrelle	Location 3	0.0
Soprano pipistrelle	Location 4	0.0
Soprano pipistrelle	Location 6	0.0
Soprano pipistrelle	Location 7	0.0
Soprano pipistrelle	Location 8	0.0

Nightly Bat Pass Rate (Bat passes per hour)

Mean per Detector

Table 23. The mean Nightly Pass Rate (bat passes per hour, per night) of each species at each detector. Values are given to 1 decimal place.

We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Mean Pass Rate
Barbastelle	Location 12	0.0
Barbastelle	Location 13	0.0
Barbastelle	Location 14	0.0
Barbastelle	Location 15	0.0
Barbastelle	Location 2	0.0
Barbastelle	Location 3	0.0
Barbastelle	Location 4	0.0
Barbastelle	Location 6	0.0
Barbastelle	Location 7	0.0
Barbastelle	Location 8	0.0
Common pipistrelle	Location 12	6.4
Common pipistrelle	Location 13	5.4
Common pipistrelle	Location 14	30.9
Common pipistrelle	Location 15	19.1
Common pipistrelle	Location 2	9.2
Common pipistrelle	Location 3	20.2
Common pipistrelle	Location 4	49.5
Common pipistrelle	Location 6	11.6
Common pipistrelle	Location 7	10.7
Common pipistrelle	Location 8	5.3
Leisler's	Location 12	0.0
Leisler's	Location 13	0.0
Leisler's	Location 14	0.0
Leisler's	Location 15	0.0
Leisler's	Location 2	0.0
Leisler's	Location 3	0.0

Leisler's	Location 4	0.0
Leisler's	Location 6	0.0
Leisler's	Location 7	0.4
Leisler's	Location 8	0.0
Myotis	Location 12	0.3
Myotis	Location 13	0.6
Myotis	Location 14	0.6
Myotis	Location 15	0.3
Myotis	Location 2	0.2
Myotis	Location 3	5.4
Myotis	Location 4	0.4
Myotis	Location 6	0.2
Myotis	Location 7	0.3
Myotis	Location 8	0.1
Nathusius'	Location 12	0.0
Nathusius'	Location 13	0.0
Nathusius'	Location 14	0.1
Nathusius'	Location 15	0.1
Nathusius'	Location 2	0.0
Nathusius'	Location 3	0.2
Nathusius'	Location 4	0.1
Nathusius'	Location 6	0.1
Nathusius'	Location 7	0.1
Nathusius'	Location 8	0.0
Noctule	Location 12	0.1
Noctule	Location 13	1.1
Noctule	Location 14	7.6
Noctule	Location 15	0.4
Noctule	Location 2	0.2
Noctule	Location 3	0.9
Noctule	Location 4	1.9
Noctule	Location 6	0.1
Noctule	Location 7	4.1
Noctule	Location 8	0.2
Nyctaloid	Location 12	0.0
Nyctaloid	Location 13	0.0

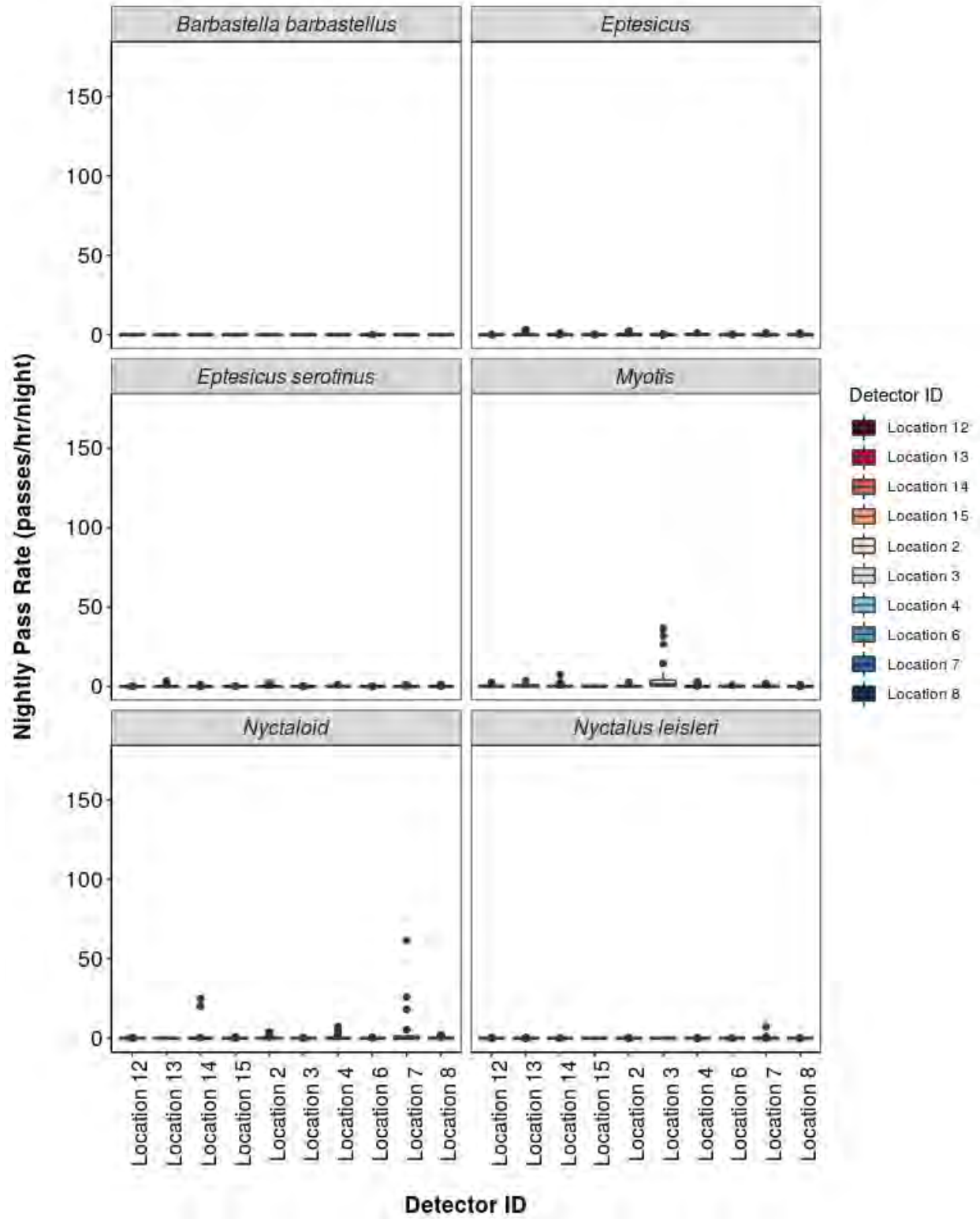
Nyctaloid	Location 14	1.8
Nyctaloid	Location 15	0.1
Nyctaloid	Location 2	0.5
Nyctaloid	Location 3	0.0
Nyctaloid	Location 4	0.6
Nyctaloid	Location 6	0.0
Nyctaloid	Location 7	4.7
Nyctaloid	Location 8	0.4
Pipistrellus	Location 12	0.2
Pipistrellus	Location 13	1.4
Pipistrellus	Location 14	3.9
Pipistrellus	Location 15	5.9
Pipistrellus	Location 2	1.5
Pipistrellus	Location 3	0.0
Pipistrellus	Location 4	0.1
Pipistrellus	Location 6	0.0
Pipistrellus	Location 7	3.6
Pipistrellus	Location 8	0.0
Serotine	Location 12	0.0
Serotine	Location 13	0.4
Serotine	Location 14	0.1
Serotine	Location 15	0.0
Serotine	Location 2	0.4
Serotine	Location 3	0.0
Serotine	Location 4	0.2
Serotine	Location 6	0.0
Serotine	Location 7	0.1
Serotine	Location 8	0.1
Soprano pipistrelle	Location 12	0.7
Soprano pipistrelle	Location 13	0.8
Soprano pipistrelle	Location 14	1.6
Soprano pipistrelle	Location 15	10.6
Soprano pipistrelle	Location 2	0.5
Soprano pipistrelle	Location 3	1.4
Soprano pipistrelle	Location 4	0.1
Soprano pipistrelle	Location 6	0.1

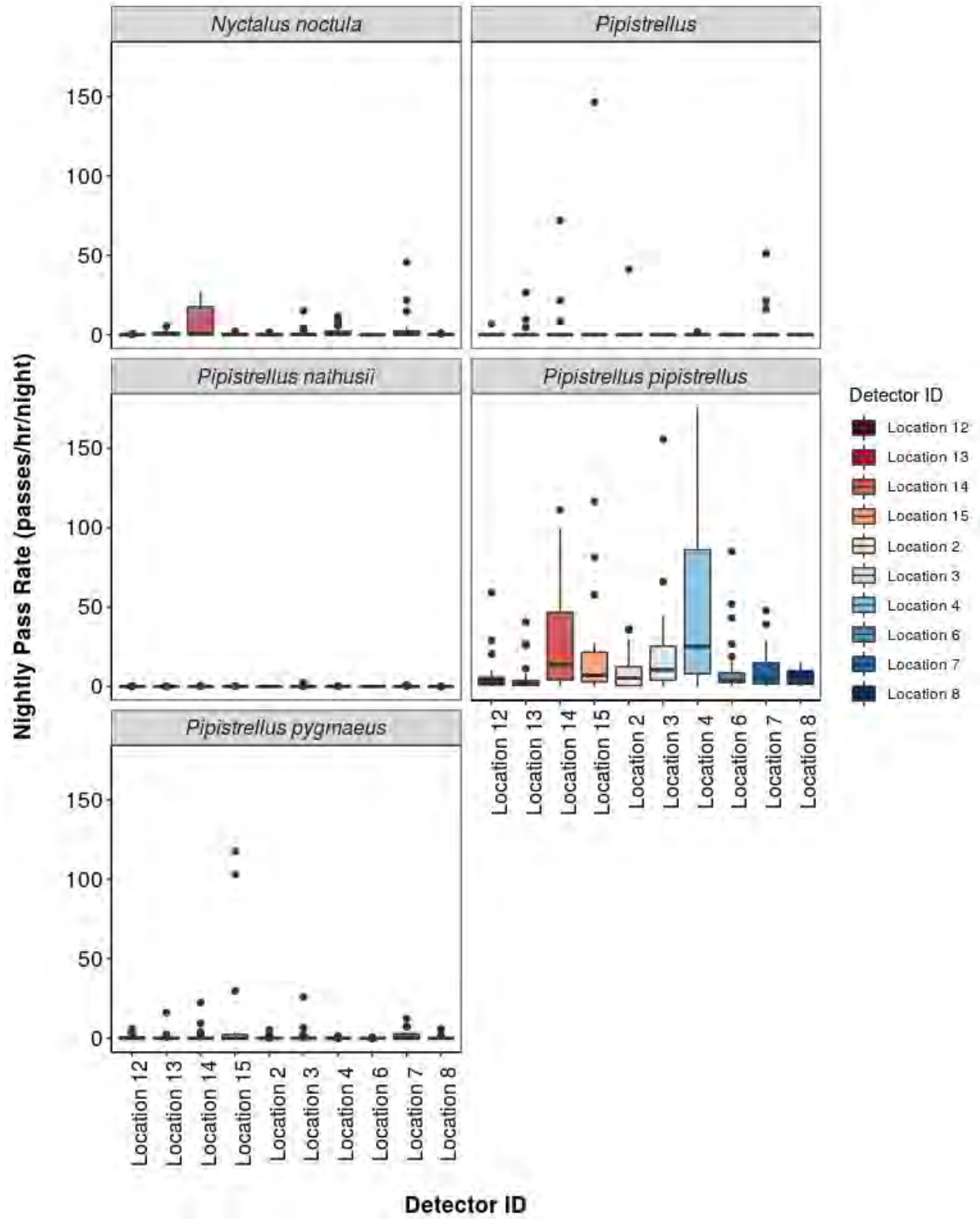
Soprano pipistrelle	Location 7	1.7
Soprano pipistrelle	Location 8	0.3

Nightly Bat Passes (Bat passes per hour)

Per Detector - Figures

Figure 16. Figures show boxplots for the number of bat passes per hour each night, for each detector. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent the ranges for the bottom 25% and the top 25% of the data values, excluding outliers. An outlier is any extreme value that lies further away from the box than 1.5 times the interquartile range. Outliers are shown as dots. Where very few passes are recorded it is not possible to produce the box, so the data are shown as a line.





Survey Effort

Table 24. The number of nights bats were detected per month per detector.

Month	Detector ID	No of Survey Nights
Apr	Location 12	4
Apr	Location 13	4
Apr	Location 14	1
Apr	Location 2	4
Apr	Location 3	5
Apr	Location 4	4
Apr	Location 6	3
Apr	Location 7	1
May	Location 12	5
May	Location 13	5
May	Location 14	5
May	Location 15	5
May	Location 2	4
May	Location 3	5
May	Location 4	5
May	Location 6	5
May	Location 7	5
May	Location 8	3
Jun	Location 12	5
Jun	Location 13	5
Jun	Location 14	5
Jun	Location 15	5
Jun	Location 2	5
Jun	Location 3	5
Jun	Location 4	5
Jun	Location 6	5
Jun	Location 7	5
Jun	Location 8	5
Jul	Location 12	5
Jul	Location 13	5
Jul	Location 14	5

Jul	Location 15	5
Jul	Location 2	5
Jul	Location 3	5
Jul	Location 4	5
Jul	Location 6	5
Jul	Location 7	5
Jul	Location 8	5
Aug	Location 12	5
Aug	Location 13	5
Aug	Location 14	5
Aug	Location 15	5
Aug	Location 2	5
Aug	Location 3	5
Aug	Location 4	5
Aug	Location 6	5
Aug	Location 7	5
Aug	Location 8	5
Sep	Location 12	5
Sep	Location 13	5
Sep	Location 14	5
Sep	Location 15	5
Sep	Location 2	5
Sep	Location 3	5
Sep	Location 4	5
Sep	Location 6	5
Sep	Location 7	4
Sep	Location 8	5

Nightly Bat Pass Rate for each Month

Median Per Detector

Table 25. The median Nightly Pass Rate (bat passes per hour, per night) of each species throughout each month. If NA, then no bat passes.

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the 'average' activity than is the mean. For further information see: *Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. Biodiversity and Conservation, 27(1), 265-267.*

<https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Apr	Aug	Jul	Jun	May	Sep
Barbastelle	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 13	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 14	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 3	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 4	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 7	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Common pipistrelle	Location 12	0.3	5.8	1.3	3.5	3.6	1.3
Common pipistrelle	Location 13	0.2	0.7	2.1	1.9	7.0	2.5
Common pipistrelle	Location 14	0.1	39.1	97.9	22.7	7.0	3.2
Common pipistrelle	Location 15	NA	4.1	20.5	5.8	15.8	2.6
Common pipistrelle	Location 2	1.0	18.0	5.7	4.3	3.4	5.3
Common pipistrelle	Location 3	1.2	8.6	7.0	7.4	33.4	26.6
Common pipistrelle	Location 4	1.5	25.1	130.6	48.8	6.7	62.6
Common pipistrelle	Location 6	0.3	4.2	6.2	2.8	43.1	3.1
Common pipistrelle	Location 7	0.1	1.7	7.4	8.8	18.7	3.4
Common pipistrelle	Location 8	NA	1.8	6.7	12.7	0.0	2.4
Leisler's	Location 12	0.0	0.0	0.0	0.0	0.0	0.2
Leisler's	Location 13	0.0	0.0	0.0	0.0	0.0	0.2
Leisler's	Location 14	0.0	0.0	0.0	0.0	0.0	0.0

Leisler's	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 3	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 4	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 7	0.0	0.0	0.0	0.0	0.0	1.0
Leisler's	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Myotis	Location 12	0.0	0.6	0.0	0.3	0.1	0.4
Myotis	Location 13	0.2	0.8	0.0	0.0	0.8	0.5
Myotis	Location 14	0.0	0.4	0.3	0.0	0.2	0.2
Myotis	Location 15	NA	0.0	0.1	0.3	0.1	0.6
Myotis	Location 2	0.3	0.0	0.0	0.3	0.0	0.2
Myotis	Location 3	2.5	3.2	0.3	0.9	0.1	26.7
Myotis	Location 4	0.0	0.1	0.0	0.1	0.0	2.1
Myotis	Location 6	0.0	0.0	0.2	0.3	0.0	0.2
Myotis	Location 7	0.0	0.0	0.0	0.1	1.1	0.4
Myotis	Location 8	NA	0.0	0.0	0.0	0.0	0.3
Nathusius'	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Nathusius'	Location 13	0.0	0.0	0.0	0.0	0.0	0.0
Nathusius'	Location 14	0.0	0.0	0.1	0.0	0.0	0.0
Nathusius'	Location 15	NA	0.0	0.0	0.0	0.1	0.1
Nathusius'	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Nathusius'	Location 3	0.0	0.0	0.0	0.1	0.0	0.9
Nathusius'	Location 4	0.0	0.0	0.0	0.0	0.0	0.1
Nathusius'	Location 6	0.0	0.0	0.1	0.3	0.0	0.2
Nathusius'	Location 7	0.0	0.0	0.0	0.0	0.0	0.5
Nathusius'	Location 8	NA	0.0	0.0	0.0	0.0	0.1
Noctule	Location 12	0.0	0.0	0.1	0.0	0.0	0.2
Noctule	Location 13	0.0	0.3	1.4	0.5	0.0	2.8
Noctule	Location 14	0.0	0.4	23.0	15.4	0.0	0.2
Noctule	Location 15	NA	0.0	1.3	0.7	0.0	0.0
Noctule	Location 2	0.0	0.5	0.0	0.0	0.0	0.3
Noctule	Location 3	0.1	0.3	0.1	0.0	0.0	2.9
Noctule	Location 4	0.0	0.2	0.0	5.7	4.3	0.4
Noctule	Location 6	0.0	0.0	0.1	0.0	0.0	0.3
Noctule	Location 7	0.0	0.0	2.3	0.8	0.0	18.2

Noctule	Location 8	NA	0.0	0.3	0.0	0.1	0.6
Nyctaloid	Location 12	0.0	0.0	0.0	0.1	0.0	0.0
Nyctaloid	Location 13	0.0	0.0	0.0	0.0	0.0	0.0
Nyctaloid	Location 14	0.0	0.0	0.0	0.0	0.0	0.0
Nyctaloid	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Nyctaloid	Location 2	0.0	0.0	0.0	0.1	0.0	1.4
Nyctaloid	Location 3	0.0	0.0	0.0	0.1	0.0	0.0
Nyctaloid	Location 4	0.0	0.0	0.0	1.9	0.0	0.0
Nyctaloid	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Nyctaloid	Location 7	0.0	0.0	0.0	1.5	0.1	22.1
Nyctaloid	Location 8	NA	0.0	0.0	0.0	0.0	1.2
Pipistrellus	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 13	0.0	0.0	0.0	0.0	4.5	0.0
Pipistrellus	Location 14	0.0	0.0	0.0	0.0	8.4	0.0
Pipistrellus	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 3	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 4	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 7	0.0	0.0	0.0	0.0	16.5	0.0
Pipistrellus	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Serotine	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Serotine	Location 13	0.0	0.0	0.0	0.0	0.0	2.7
Serotine	Location 14	0.0	0.0	0.4	0.0	0.0	0.0
Serotine	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Serotine	Location 2	0.0	1.2	0.0	0.0	0.0	0.4
Serotine	Location 3	0.0	0.0	0.0	0.0	0.0	0.1
Serotine	Location 4	0.0	0.5	0.0	0.1	0.1	0.4
Serotine	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Serotine	Location 7	0.0	0.0	0.0	0.1	0.0	0.6
Serotine	Location 8	NA	0.0	0.0	0.0	0.0	0.6
Soprano pipistrelle	Location 12	0.0	0.0	0.0	3.8	0.9	0.0
Soprano pipistrelle	Location 13	0.3	0.0	0.0	0.1	0.4	0.0
Soprano pipistrelle	Location 14	0.0	0.0	0.0	0.0	2.4	0.0
Soprano pipistrelle	Location 15	NA	0.0	0.0	2.4	29.8	0.0
Soprano pipistrelle	Location 2	0.1	0.0	0.0	0.0	0.4	0.0

Soprano pipistrelle	Location 3	1.6	0.0	0.0	0.0	0.2	0.0
Soprano pipistrelle	Location 4	0.0	0.0	0.0	0.4	0.0	0.0
Soprano pipistrelle	Location 6	0.0	0.0	0.0	0.0	0.1	0.0
Soprano pipistrelle	Location 7	0.0	0.0	0.0	7.3	1.9	0.0
Soprano pipistrelle	Location 8	NA	0.0	0.0	0.0	0.0	0.0

Nightly Bat Pass Rate for each Month

Mean per Detector

Table 26. The mean Nightly Pass Rate (bat passes per hour, per night) of each species throughout each month. Values are given to 1 decimal place.

We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Apr	Aug	Jul	Jun	May	Sep
Barbastelle	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 13	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 14	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 3	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 4	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 7	0.0	0.0	0.0	0.0	0.0	0.0
Barbastelle	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Common pipistrelle	Location 12	0.4	12.9	2.4	5.3	14.1	2.1
Common pipistrelle	Location 13	6.8	1.0	2.2	2.2	9.3	11.1
Common pipistrelle	Location 14	0.1	42.4	71.0	27.9	16.2	2.9
Common pipistrelle	Location 15	NA	19.6	19.6	20.0	31.8	4.4
Common pipistrelle	Location 2	1.1	21.5	7.9	10.5	7.6	4.7
Common pipistrelle	Location 3	3.3	9.1	12.6	9.4	55.7	31.3
Common pipistrelle	Location 4	2.9	52.2	121.6	49.0	7.5	54.4
Common pipistrelle	Location 6	0.8	4.2	7.4	3.0	45.1	4.9
Common pipistrelle	Location 7	0.1	2.4	13.0	9.8	22.2	7.6
Common pipistrelle	Location 8	NA	2.3	6.9	12.5	0.4	2.6
Leisler's	Location 12	0.0	0.0	0.0	0.0	0.0	0.1
Leisler's	Location 13	0.0	0.0	0.1	0.0	0.0	0.1
Leisler's	Location 14	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 15	NA	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 2	0.0	0.1	0.0	0.0	0.0	0.0
Leisler's	Location 3	0.0	0.0	0.0	0.0	0.0	0.0

Leisler's	Location 4	0.0	0.0	0.0	0.0	0.1	0.0
Leisler's	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Leisler's	Location 7	0.0	0.0	0.0	0.0	0.0	2.4
Leisler's	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Myotis	Location 12	0.0	1.0	0.1	0.3	0.1	0.4
Myotis	Location 13	0.4	1.3	0.3	0.1	0.7	0.6
Myotis	Location 14	0.0	0.4	2.0	0.1	0.4	0.2
Myotis	Location 15	NA	0.0	0.2	0.2	0.4	0.7
Myotis	Location 2	0.3	0.0	0.0	0.7	0.1	0.3
Myotis	Location 3	3.2	4.8	0.4	2.2	1.0	20.6
Myotis	Location 4	0.0	0.2	0.0	0.1	0.0	2.0
Myotis	Location 6	0.0	0.0	0.3	0.3	0.1	0.4
Myotis	Location 7	0.0	0.0	0.2	0.3	1.0	0.3
Myotis	Location 8	NA	0.0	0.1	0.0	0.0	0.5
Nathusius'	Location 12	0.0	0.0	0.0	0.1	0.0	0.1
Nathusius'	Location 13	0.0	0.0	0.0	0.0	0.0	0.0
Nathusius'	Location 14	0.0	0.0	0.2	0.1	0.0	0.0
Nathusius'	Location 15	NA	0.0	0.0	0.0	0.1	0.1
Nathusius'	Location 2	0.0	0.0	0.0	0.0	0.0	0.0
Nathusius'	Location 3	0.1	0.0	0.0	0.1	0.0	1.1
Nathusius'	Location 4	0.1	0.0	0.1	0.0	0.0	0.1
Nathusius'	Location 6	0.0	0.0	0.1	0.3	0.0	0.1
Nathusius'	Location 7	0.0	0.0	0.1	0.1	0.1	0.6
Nathusius'	Location 8	NA	0.0	0.0	0.0	0.0	0.1
Noctule	Location 12	0.0	0.0	0.1	0.0	0.0	0.3
Noctule	Location 13	0.0	0.3	2.1	1.2	0.0	2.4
Noctule	Location 14	0.0	0.5	22.3	16.4	0.0	0.5
Noctule	Location 15	NA	0.0	1.3	0.6	0.0	0.0
Noctule	Location 2	0.0	0.6	0.1	0.0	0.0	0.3
Noctule	Location 3	0.1	0.4	0.2	0.0	0.0	4.7
Noctule	Location 4	0.0	0.2	0.3	5.8	4.4	0.5
Noctule	Location 6	0.0	0.0	0.1	0.0	0.0	0.2
Noctule	Location 7	0.0	0.0	2.2	0.7	0.0	21.8
Noctule	Location 8	NA	0.0	0.4	0.0	0.1	0.5
Nyctaloid	Location 12	0.0	0.0	0.0	0.2	0.0	0.1
Nyctaloid	Location 13	0.0	0.0	0.0	0.0	0.0	0.0

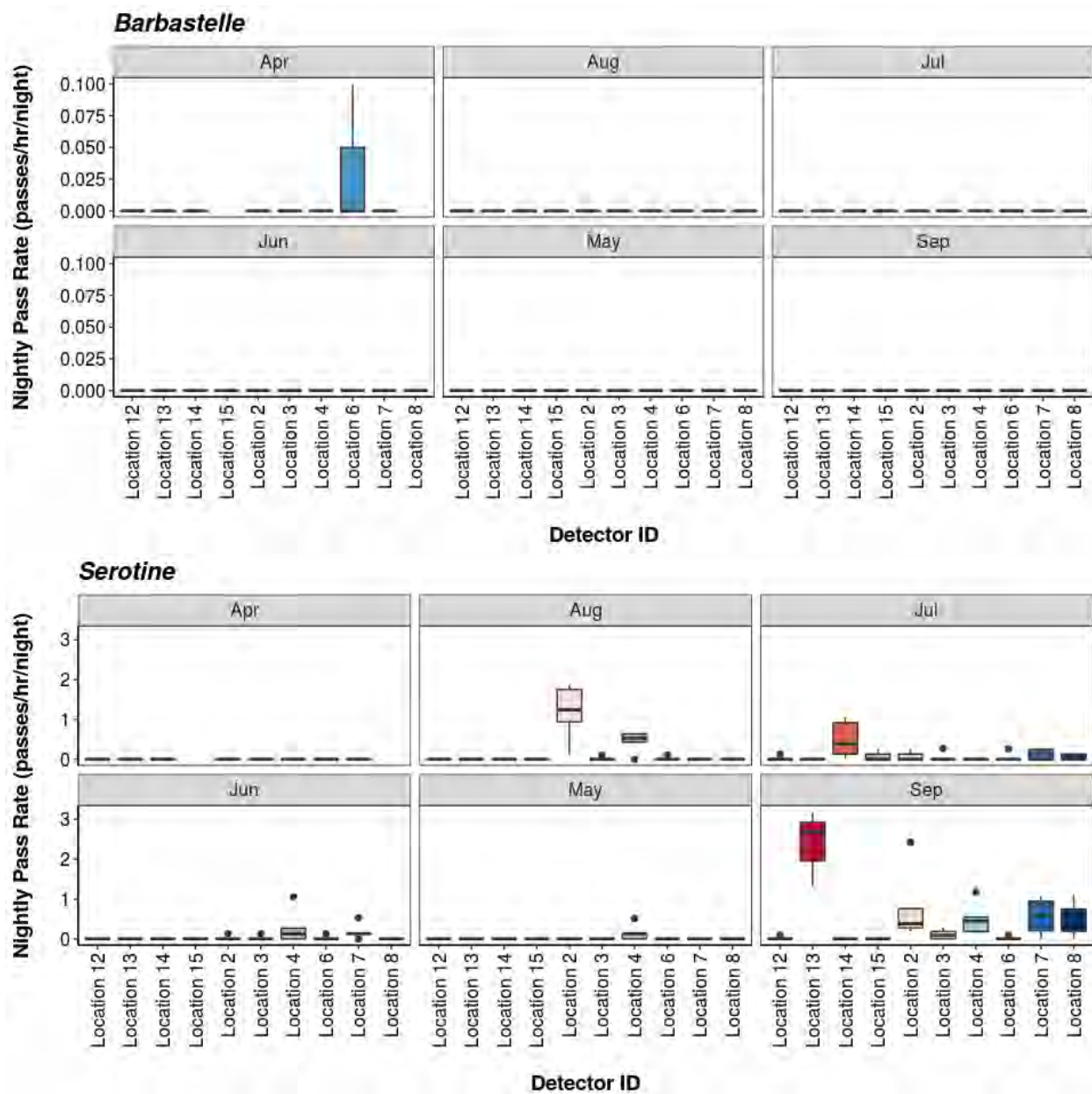
Nyctaloid	Location 14	0.0	0.0	4.0	5.0	0.0	0.1
Nyctaloid	Location 15	NA	0.0	0.0	0.2	0.0	0.1
Nyctaloid	Location 2	0.0	0.7	0.2	0.1	0.0	1.5
Nyctaloid	Location 3	0.0	0.0	0.1	0.1	0.0	0.0
Nyctaloid	Location 4	0.0	0.0	0.0	2.8	0.0	0.7
Nyctaloid	Location 6	0.0	0.0	0.0	0.0	0.0	0.2
Nyctaloid	Location 7	0.0	0.0	0.0	1.1	0.2	27.9
Nyctaloid	Location 8	NA	0.0	0.2	0.1	0.0	1.3
Pipistrellus	Location 12	0.0	0.0	0.0	0.0	1.4	0.0
Pipistrellus	Location 13	0.0	0.0	0.0	0.0	8.1	0.0
Pipistrellus	Location 14	0.0	0.0	0.0	0.0	20.4	0.0
Pipistrellus	Location 15	NA	0.0	0.0	0.0	29.3	0.0
Pipistrellus	Location 2	0.0	0.0	0.0	8.2	0.0	0.0
Pipistrellus	Location 3	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 4	0.5	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 6	0.0	0.0	0.0	0.0	0.0	0.0
Pipistrellus	Location 7	0.0	0.0	0.0	0.0	17.8	0.0
Pipistrellus	Location 8	NA	0.0	0.0	0.0	0.0	0.0
Serotine	Location 12	0.0	0.0	0.0	0.0	0.0	0.0
Serotine	Location 13	0.0	0.0	0.0	0.0	0.0	2.4
Serotine	Location 14	0.0	0.0	0.5	0.0	0.0	0.0
Serotine	Location 15	NA	0.0	0.1	0.0	0.0	0.0
Serotine	Location 2	0.0	1.2	0.1	0.0	0.0	0.8
Serotine	Location 3	0.0	0.0	0.1	0.0	0.0	0.1
Serotine	Location 4	0.0	0.4	0.0	0.3	0.2	0.5
Serotine	Location 6	0.0	0.0	0.1	0.0	0.0	0.0
Serotine	Location 7	0.0	0.0	0.1	0.2	0.0	0.6
Serotine	Location 8	NA	0.0	0.1	0.0	0.0	0.5
Soprano pipistrelle	Location 12	0.0	0.0	0.0	3.5	0.7	0.0
Soprano pipistrelle	Location 13	4.2	0.0	0.0	0.5	0.8	0.0
Soprano pipistrelle	Location 14	0.0	0.0	0.0	2.6	5.8	0.0
Soprano pipistrelle	Location 15	NA	0.0	0.0	2.2	50.9	0.0
Soprano pipistrelle	Location 2	0.1	0.0	0.0	1.4	1.5	0.0
Soprano pipistrelle	Location 3	1.1	0.0	0.0	6.5	0.6	0.0
Soprano pipistrelle	Location 4	0.0	0.0	0.0	0.7	0.1	0.0
Soprano pipistrelle	Location 6	0.0	0.0	0.0	0.1	0.3	0.0

Soprano pipistrelle	Location 7	0.0	0.0	0.0	6.7	1.9	0.0
Soprano pipistrelle	Location 8	NA	0.0	0.0	1.6	0.0	0.0

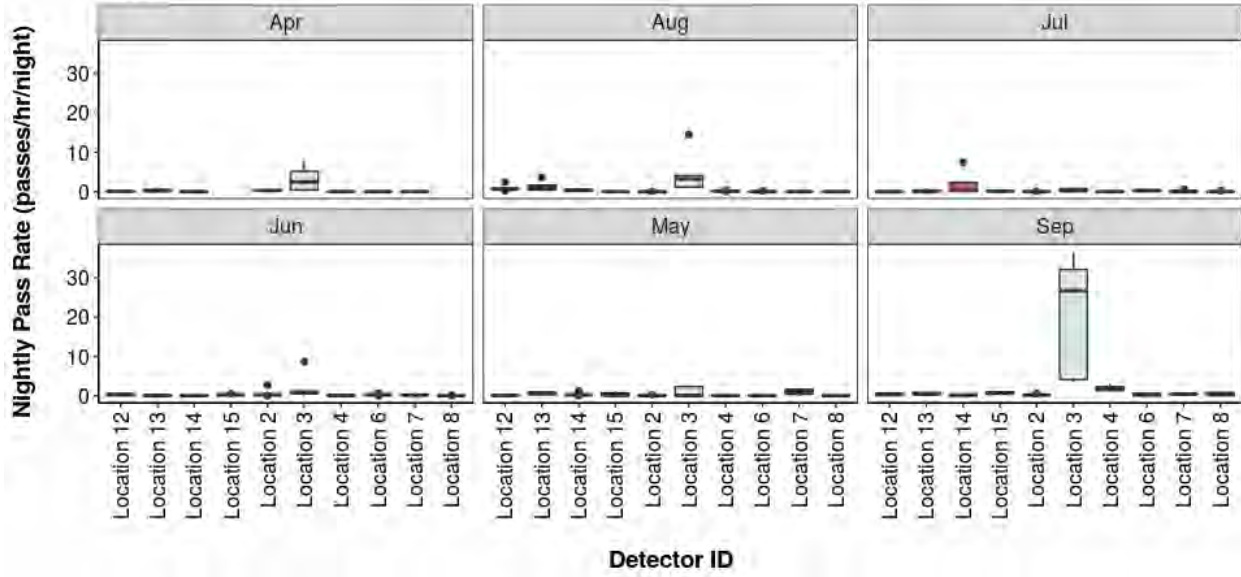
Nightly Bat Pass Rate for each Month

Per Detector - Figures

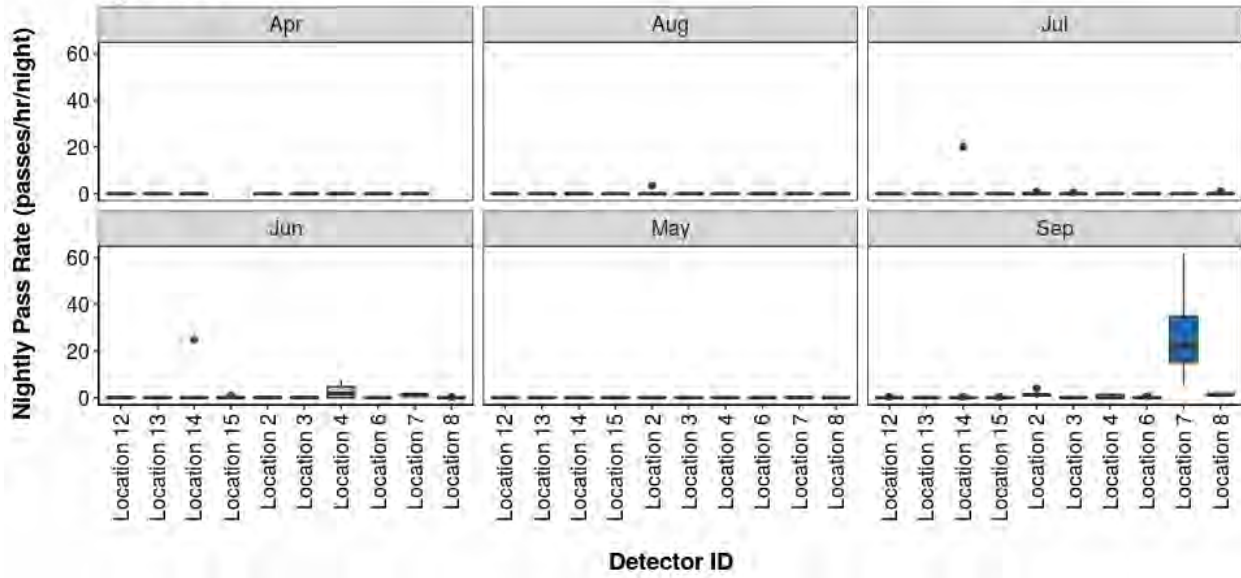
Figure 17. Figures show boxplots for the number of bat passes per hour by detector, for each month. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent the ranges for the bottom 25% and the top 25% of the data values, excluding outliers. An outlier is any extreme value that lies further away from the box than 1.5 times the interquartile range. Outliers are shown as dots. Where very few passes are recorded it is not possible to produce the box, so the data are shown as a line.



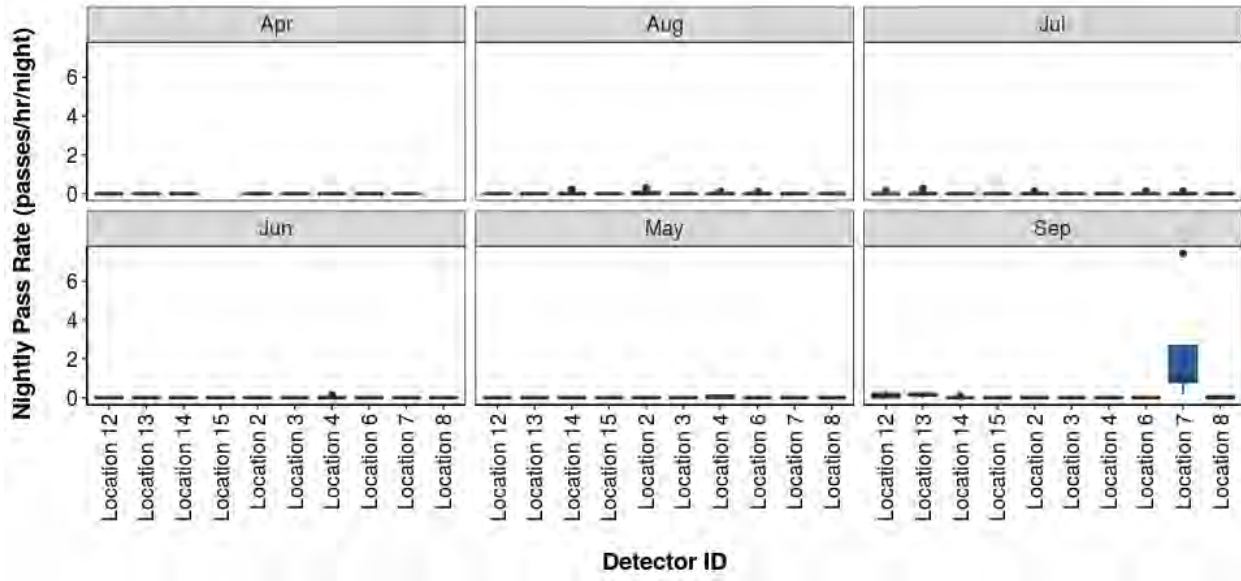
Myotis



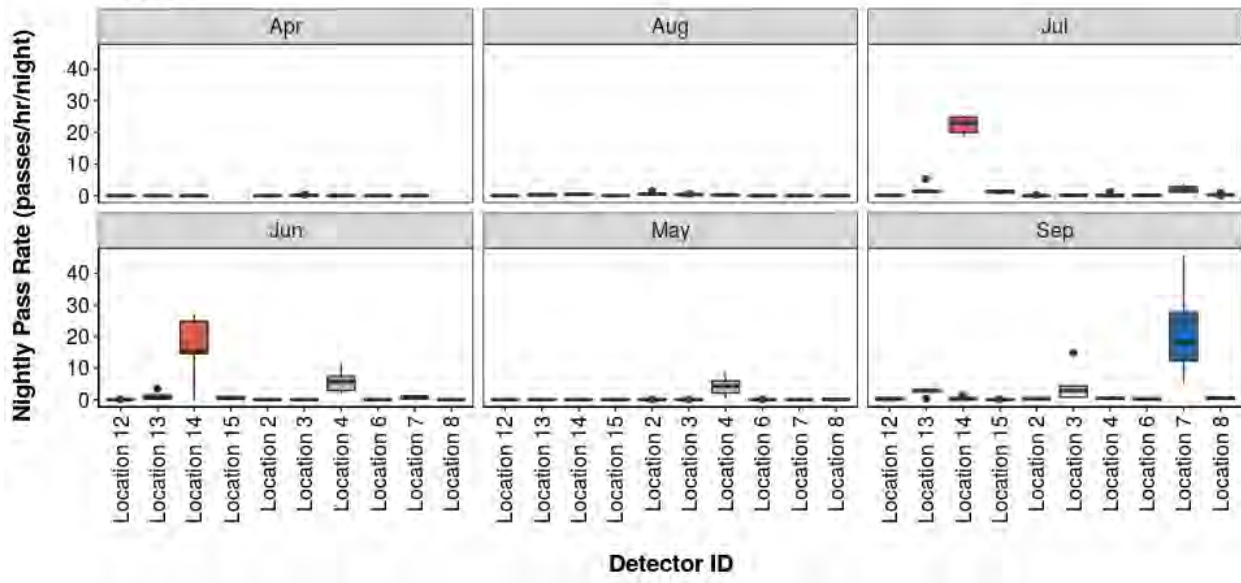
Nyctaloid



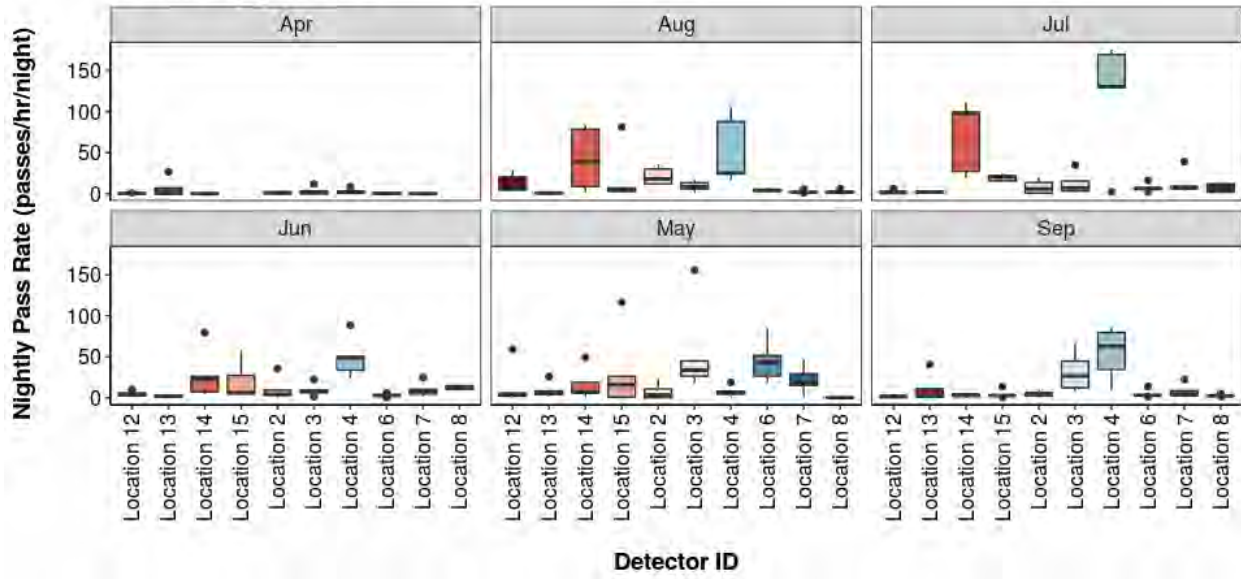
Leisler's



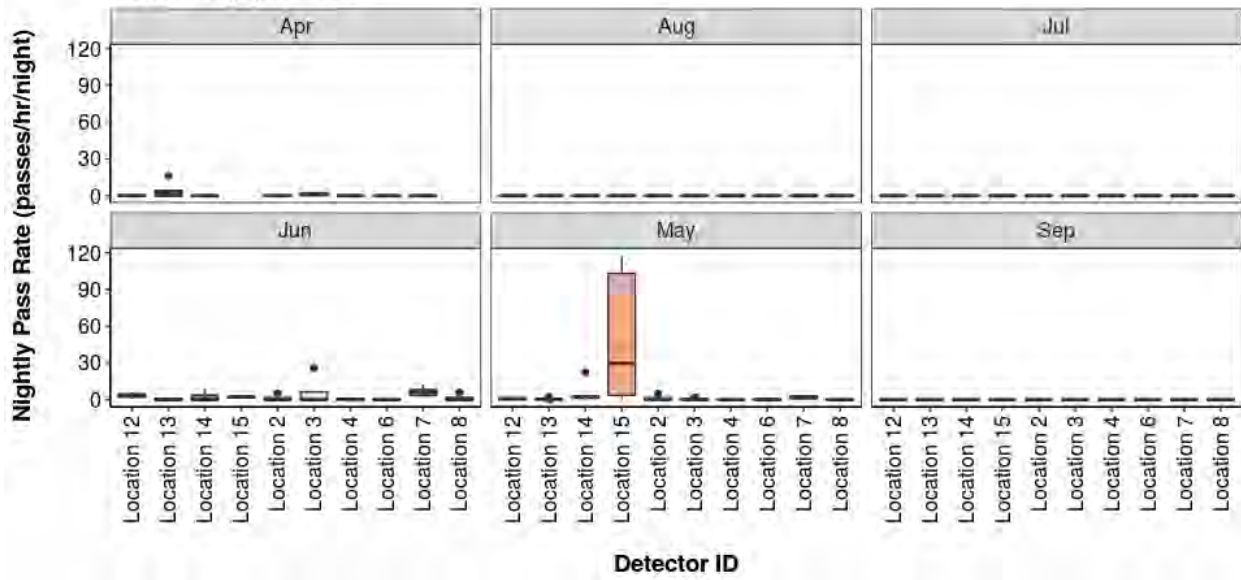
Noctule



Common pipistrelle



Soprano pipistrelle



Bat Activity per Detector Location

Figure 18. Detector ID reference:

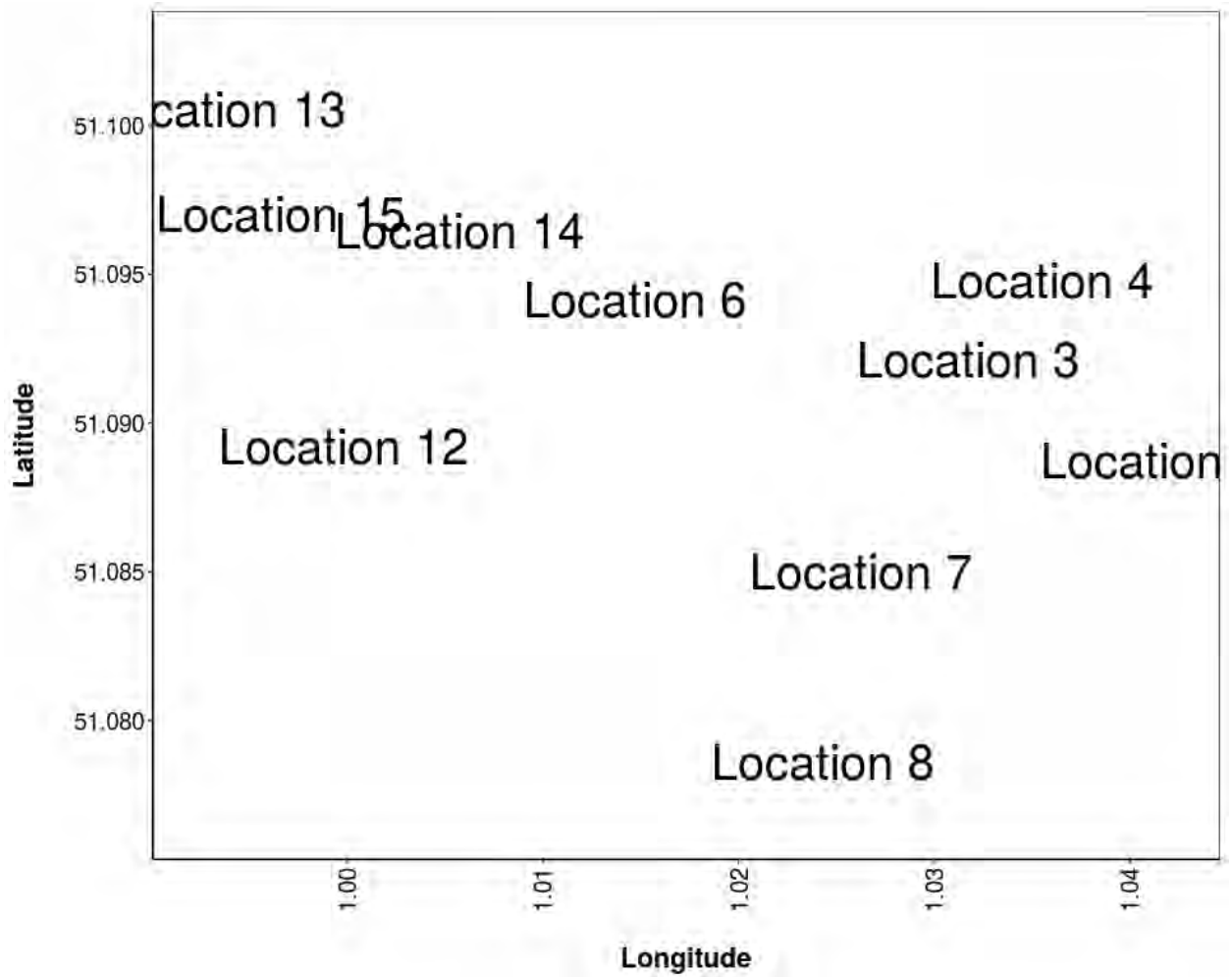
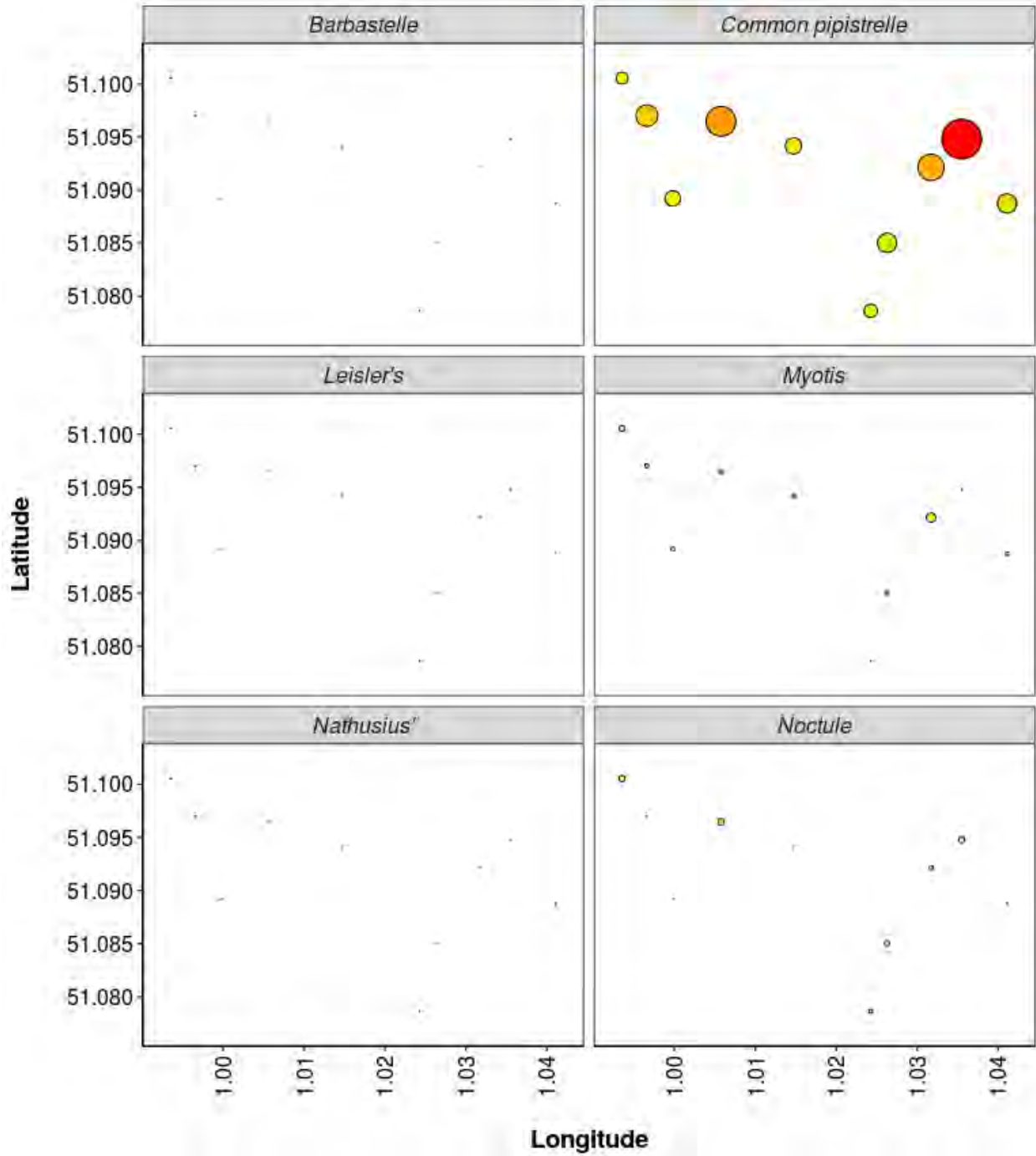


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



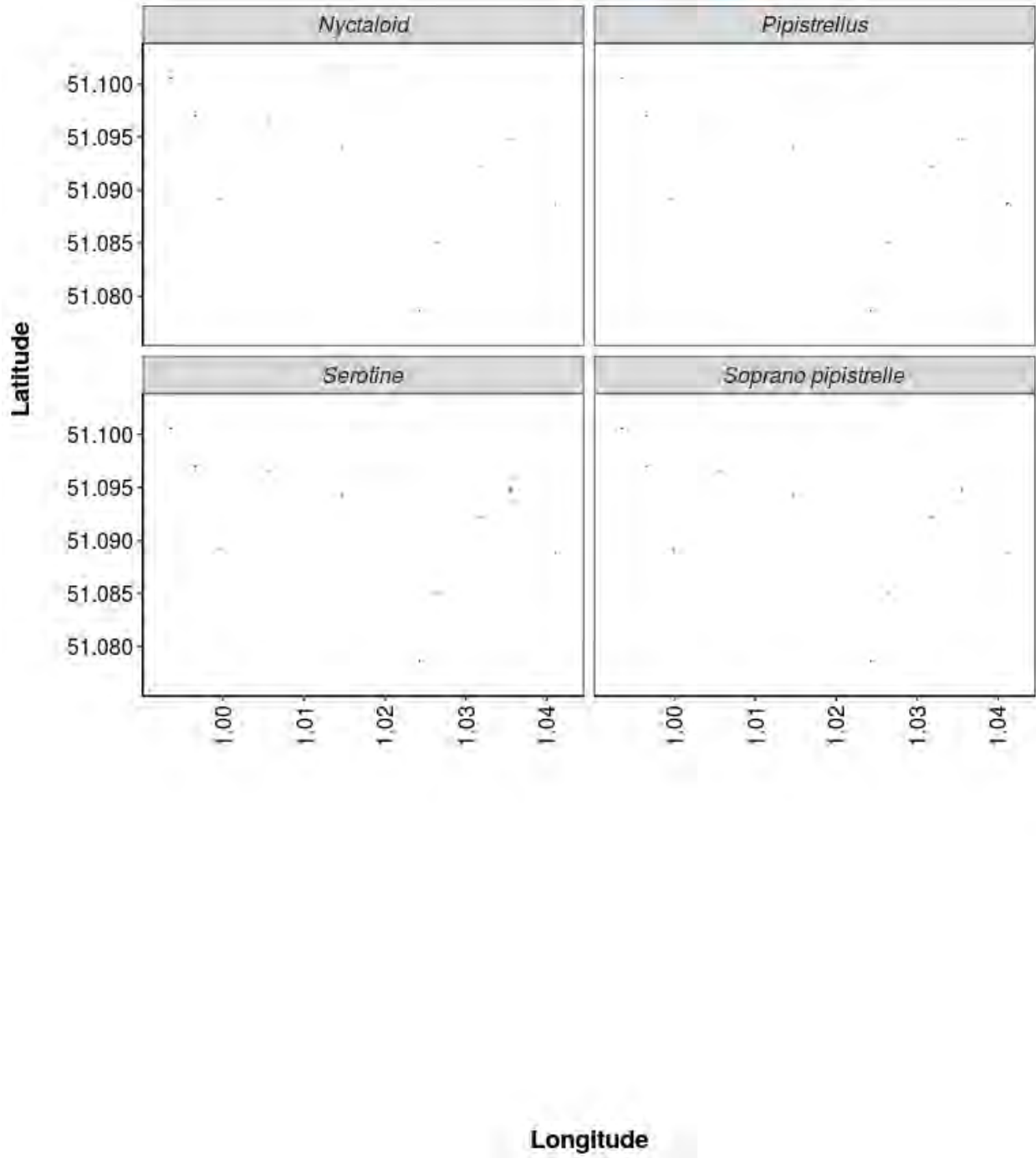
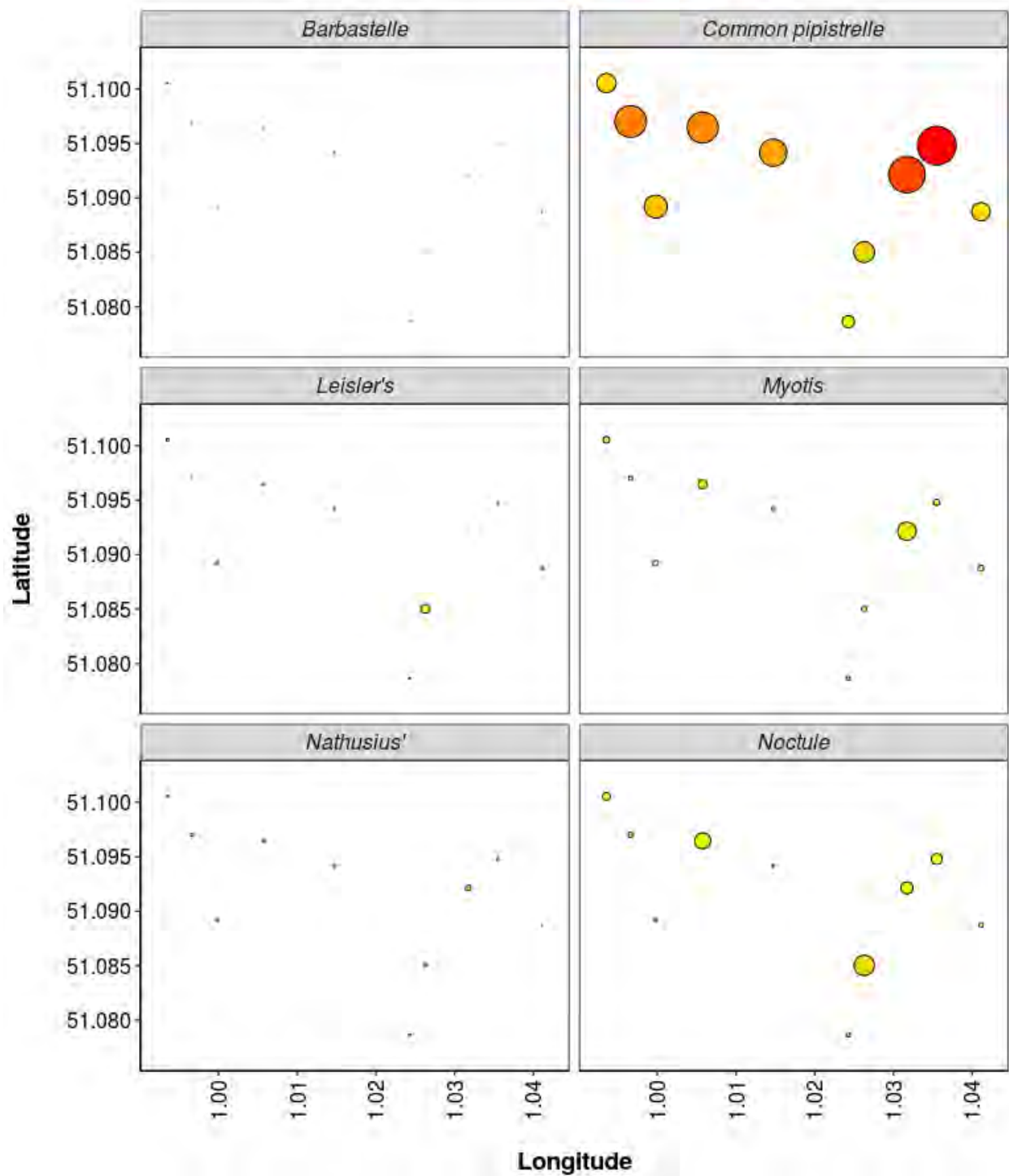
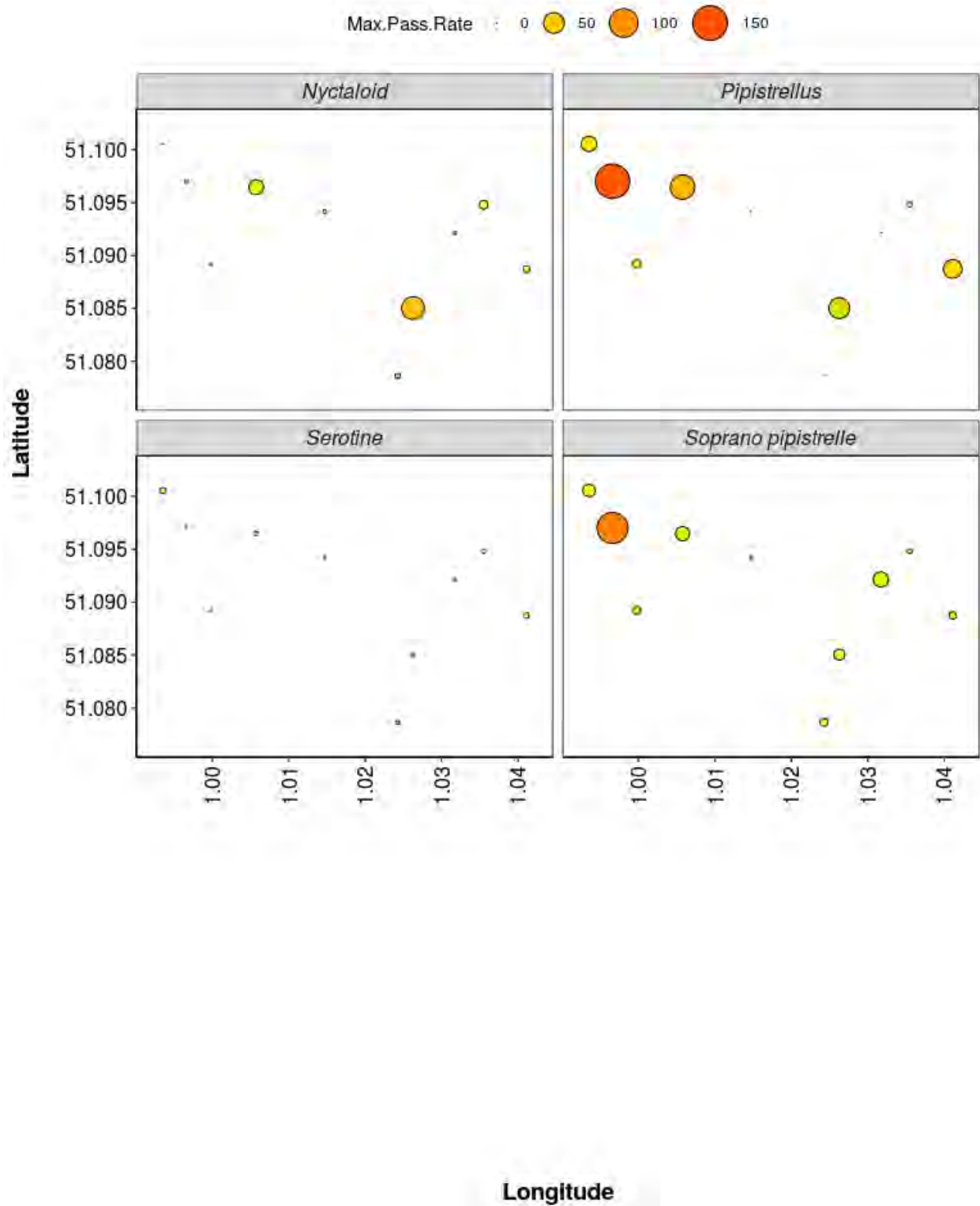


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.

Max.Pass.Rate 0 50 100 150





Thank you for using Ecobat! If you have any questions please email info@themammalsociety.org.uk

APPENDIX I: Surveyor Pen Portraits

Surveyor	Pen Portrait
<p>Brandon Murray MCIEEM (Principal Ecological Consultant) BSc(hons)</p>	<p>Brandon has been a professional ecologist for eleven years. Brandon has been planning, leading and completing bat surveys for over six years, including bat transects, static detector surveys, bat emergence and re-entry surveys and aerial tree inspections. Brandon is a Class II bat licence holder (Licence Number 2016-19420-CLS-CLS). Brandon has assessed the potential impacts to bats from multiple development projects and written bat survey and impact assessment reports for multiple sites. Brandon has been named on two bat development licences.</p>
<p>Dr Liat Wicks (Director – Sonar Ecology) CEcol MCIEEM PhD MSc BSc (hons)</p>	<p>Dr Wicks is a consultant and Chartered Ecologist with over fifteen years' professional experience specialising in bat survey design, mitigation and sound analysis across the UK. She holds 3 Natural England class licences for protected species, and is a class 2 licenced bat surveyor (Registration no. 2015-10211-CLS-CLS). She has produced numerous EPS applications, EIA chapters and authored Bat Masterplans for major infrastructure projects. She is often consulted on her expertise in sound analysis and survey design, and is a Level 1 Thermographer, utilising this skill in ecology survey work. Between 2012 and 2013 Dr Wicks was Head of Biodiversity at the Bat Conservation Trust.</p>
<p>Aline Brodzinski (Senior Ecologist) MCIEEM BSc (hons) MSc</p>	<p>Aline Brodzinski has been a professional ecologist for 10 years, and has been leading bat surveys for 7 years. Aline is proficient in surveying for a range of protected species including great crested newts, badgers, reptiles, water voles and otters.</p>
<p>Ellen Poppleton BSc (hons) Grad CIEEM</p>	<p>Ellen Poppleton has been an ecologist for over 5 years. She has experience surveying for reptiles, bats, badgers, amphibians and water voles. Ellen has received internal and on the job training to ensure that she can confidently conduct a range of protected species surveys.</p>
<p>Alex Ward (Graduate Consultant) BSc (hons) Affiliate IEMA</p>	<p>Alex is a graduate environmental consultant who is predominately involved as the environment lead on a coastal defence construction scheme for the Environment Agency. This has led him to be experienced in the delivery of environmental mitigation, ecological surveying and national and international permitting requirements. Alex has received in-house training in regards to the identification of both reptiles and bats during his time at Arcadis, including the usage of survey equipment.</p>

Surveyor	Pen Portrait
<p>Kathryn Skinner (Ecologist) ACIEEM, MSc, BSc (hons)</p>	<p>Kathryn is an ecologist and associate member of CIEEM with eight years' experience in ecological consultancy during which time she has specialised in bat surveys. Kathryn has been responsible for the design, co-ordination and implementation of bat surveys for several large scale Nationally Significant Infrastructure Projects. Furthermore she has extensive experience undertaking a range of bat activity surveys including transect and emergence/re-entry surveys using both manual and static detectors and undertaking bat echolocation call analysis using both manual and automated methodologies. Kathryn has produced a range of reports including Environmental Statements.</p>
<p>Nick Downs BSc PGCE MSc PhD CEnv MCIEEM</p>	<p>Nick has worked in the field of ecology for over 20 years, initially as a university researcher (5 years), and now as a consultant (15 years). Within consultancy, Nick has undertaken a number of roles including Ecological Clerk of Works, windfarm ornithological surveyor, and protected species surveyor (including associated report writing). Nick has considerable experience of legally protected species including survey, mitigation techniques and the licensing process, and is a Chartered Environmentalist. Nick holds Natural England survey licences for bats (including harp-trapping and mist netting), dormice (including fur-clipping), great crested newts, white-clawed crayfish, barn owls, natterjack toads, sand lizards and smooth snakes. He also holds Natural Resources Wales survey licences for bats, otters, dormice, great crested newts and barn owls.</p> <p>Nick has co-authored nine peer-reviewed scientific papers, all but one associated with bat ecology. He is familiar with a variety of data analysis and presentation techniques, including batsound analysis. He manages the internal UK Arcadis batsound training and accreditation process. Nick has been been a Natural England licensed batworker since 2003 (prior to this he was a licensed batworker with SNH), and has been a licensed bat trainer since 2008. Nick is currently an accredited agent on Dr Roger Ransome's greater horseshoe bat project licence (and previously on Eric Palmer's Bechstein's/barbastelle bat project licence).</p>

APPENDIX J: Ecobat assessment data details 2017

Table 38: Details of data used for Ecobat assessment and results

Location	Month (2017)	Species Analysed	Passes per night (average)	Activity Percentile
1	May	Pipistrellus	5	46
1	June	Pipistrellus	1	0
1	July	Pipistrellus	1	0
1	April	Pipistrellus	0	0
1	August	Pipistrellus	0	0
1	September	Pipistrellus	0	0
2	April	Pipistrellus	7	53
2	May	Pipistrellus	386	95
2	June	Pipistrellus	79	82
2	July	Pipistrellus	59	79
2	August	Pipistrellus	30	69
2	September	Pipistrellus	83	83
3	April	Pipistrellus	118	86
3	May	Pipistrellus	219	90
3	June	Pipistrellus	436	96
3	August	Pipistrellus	9	56
3	September	Pipistrellus	5	46
4	April	Pipistrellus	32	70
4	May	Pipistrellus	190	89
4	June	Pipistrellus	486	97
4	July	Pipistrellus	206	90
4	August	Pipistrellus	262	92
4	September	Pipistrellus	630	98
5	May	Pipistrellus	35	71

Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Location	Month (2017)	Species Analysed	Passes per night (average)	Activity Percentile
5	July	Pipistrellus	33	70
5	April	Pipistrellus	0	0
5	September	Pipistrellus	0	0
6	April	Pipistrellus	122	87
6	May	Pipistrellus	115	86
6	June	Pipistrellus	36	72
6	July	Pipistrellus	38	72
6	August	Pipistrellus	13	61
6	September	Pipistrellus	13	61
7	April	Pipistrellus	1	0
7	May	Pipistrellus	535	98
7	June	Pipistrellus	427	96
7	July	Pipistrellus	109	86
7	August	Pipistrellus	38	72
7	September	Pipistrellus	84	83
8	April	Pipistrellus	0	0
8	May	Pipistrellus	4	41
8	June	Pipistrellus	109	86
8	July	Pipistrellus	4	41
8	August	Pipistrellus	31	70
9	April	Pipistrellus	17	64
9	May	Pipistrellus	37	72
9	June	Pipistrellus	178	89
9	July	Pipistrellus	107	85
9	August	Pipistrellus	128	87
9	September	Pipistrellus	52	77

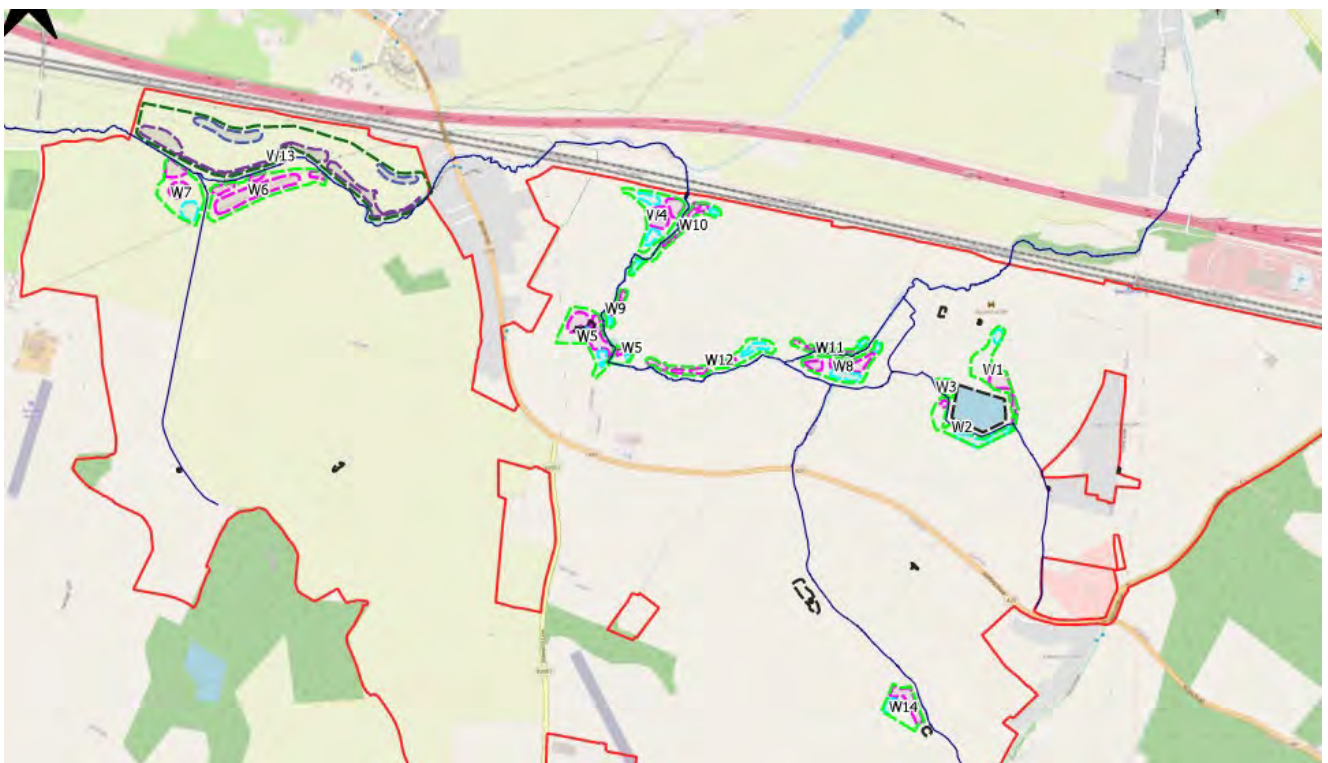
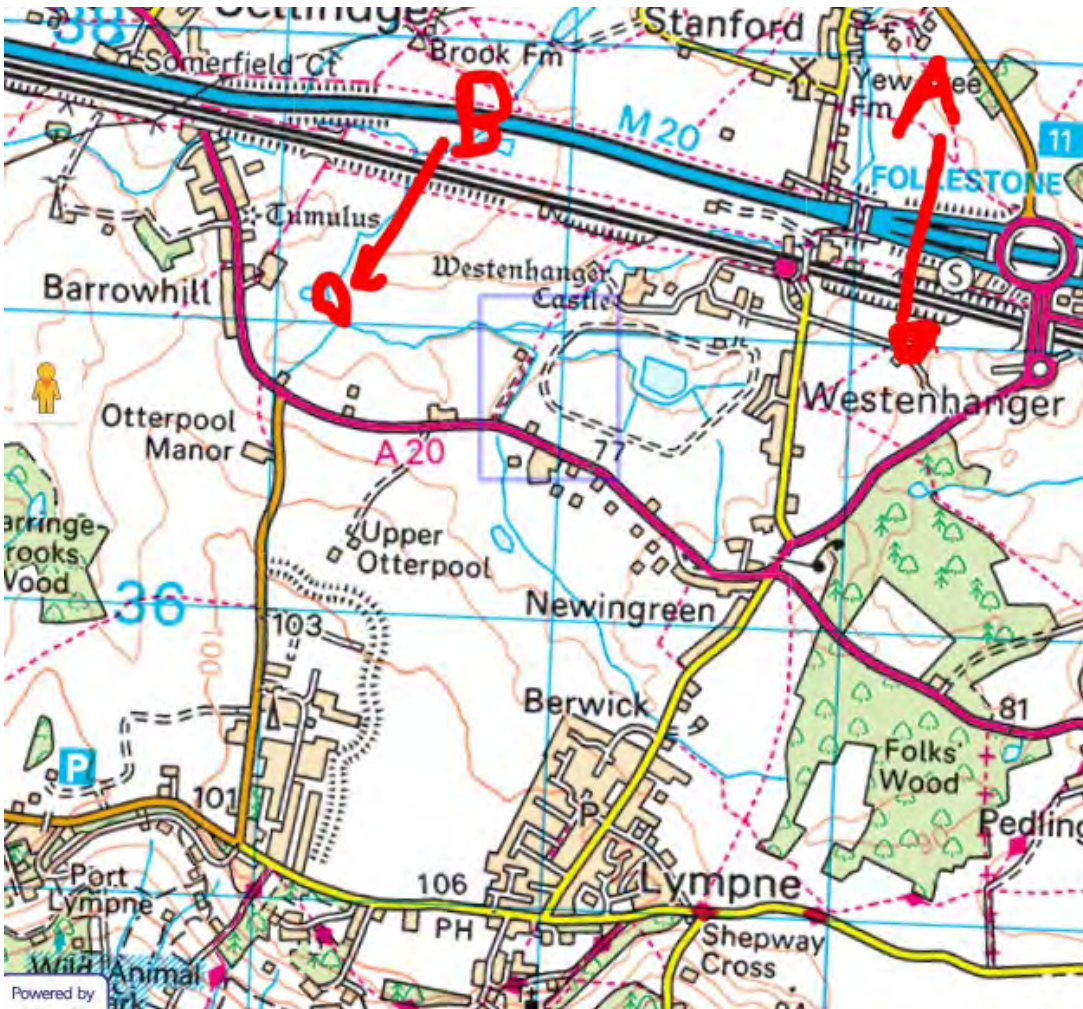
Otterpool Park
 ES Appendix 7.14 - Bat Static Detector Survey Report

Location	Month (2017)	Species Analysed	Passes per night (average)	Activity Percentile
10	May	Pipistrellus	8	54
10	June	Pipistrellus	56	78
10	July	Pipistrellus	20	65
10	August	Pipistrellus	5	46
10	April	Pipistrellus	0	0
11	April	Pipistrellus	2	22
11	May	Pipistrellus	17	64
11	June	Pipistrellus	8	54
11	July	Pipistrellus	349	94
11	September	Pipistrellus	27	68
12	April	Pipistrellus	291	93
12	May	Pipistrellus	93	84
12	June	Pipistrellus	84	83
12	July	Pipistrellus	4	41
12	August	Pipistrellus	15	62
12	September	Pipistrellus	35	71
13	April	Pipistrellus	24	68
13	May	Pipistrellus	35	71
13	June	Pipistrellus	57	79
13	July	Pipistrellus	3	35
13	20/08/2017	Pipistrellus	0	0
13	September	Pipistrellus	0	0
14	April	Pipistrellus	71	81
14	May	Pipistrellus	102	85
14	June	Pipistrellus	176	89
14	July	Pipistrellus	220	91

Otterpool Park
ES Appendix 7.14 - Bat Static Detector Survey Report

Location	Month (2017)	Species Analysed	Passes per night (average)	Activity Percentile
14	August	Pipistrellus	48	75
14	September	Pipistrellus	33	70
15	April	Pipistrellus	9	56
15	May	Pipistrellus	86	84
15	June	Pipistrellus	160	88
15	August	Pipistrellus	48	75

APPENDIX K: Ecobat assessment data details 2021 (full output)



APPENDIX L: Data Verification Results 2017

Table 39: Results from bat data verification exercise

Species	Exact Match	Match within same 'Group'
Natterer's	39.39%	96.9%
Noctule	100%	N/A
Nathusius' pipistrelle	75%	100%
Common pipistrelle	99.32%	N/A
Soprano pipistrelle	100%	N/A
Brown long-eared bat	0%	N/A
Greater horseshoe	0%	N/A
Pip35	0%	100%
Pip50	28.95%	100%
Myotis spp.	100%	100%
Long-eared bat	0%	0%
Big Bat	52.63%	100%
Parasi	0%	N/A
Chiro spp.	0%	98% (but all common or soprano pipistrelles)
Noise	79%	N/A

APPENDIX M: Data Verification Results 2021

Table 40: Results from bat data verification exercise 2021

Species	Exact Match	Match within same 'Group'	Action
Alcathoe	66.6%	88.8%	Merged to Myotis group
Bechstein	50% (low confidence)	100%	
Brandt's	33.3%	93.3%	
Daubenton's	58.9%	87.8%	
Mystacinus	57.6%	98.9%	
Natterers	71.25%	91.25%	
Myotis spp.	59.1%	90%	
Common Pipistrelle	96.66%	98.1%	Kept as Common pipistrelle
Soprano Pipistrelle	93.65%	98.36%	Kept as Common pipistrelle
Nathusius' Pipistrelle	69.77%	90.7%	Kept as Nathusius' pipistrelle
Pipistrelle spp.	98.14%	98.14%	Placed in pipistrelle group
Brown long eared / Grey long eared (not present)	35.19%	82.7%	Identified to species level – Brown Long-eared
Long eared spp.	36.68%	83.84%	
Serotine	70.78%	91.56%	Kept as Serotine
Noctule	6.9%	11.75% (86.49% was noise)	Removed from data set unless manually confirmed
Leisler's	18.6%	62.8% (34.9% was noise)	Kept as Leislers'
Big Bat	12.2%	19.14%	Where identified to genus, placed in to Eptesicus or Nyctalus. Where not identified to genus renamed Nyctaloid. Removed form data set where not manually confirmed.
Greater Horseshoe	0%	0%	Removed

Species	Exact Match	Match within same 'Group'	Action
No ID	7047 records (8.5% were bats)	69.3% was noise	Removed
Noise	127397 records (1.8% were bats)	98% was noise	Removed

APPENDIX N: **Correspondence with KCC r.e. Barbastelle**

From: @kent.gov.uk
Sent: Friday, August 27, 2021 8:03 PM
To: <@arcadis.com>
Cc: @folkestone-hythe.gov.uk
Subject: RE: Additional species finds at Otterpool

Follow Up Flag: Follow up
Flag Status: Completed

Hi,

Thank you for the update and very interesting to hear what you have recorded within the site!

I do agree with your conclusions in the below email.

The record of the barbastelle does however highlight (once again!) the importance of ensuring the open spaces are not impacted by artificial lighting.

Thanks,

MCIEEM | Senior Biodiversity Officer | **Kent County Council**
Natural Environment and Coast Team, Growth Environment & Transport, Kent County Council, Invicta House,
Maidstone, ME14 1XX | 03000413374 | @kent.gov.uk | www.kent.gov.uk

From: <@arcadis.com>
Sent: 26 August 2021 14:56
To: - GT EPE <@kent.gov.uk>
Cc: <@arcadis.com>; <@arcadis.com>
Subject: Additional species finds at Otterpool

Dear,

I hope that you are well.

We have found some interesting ecological finds at Otterpool recently.

A Black redstart pair are nesting in the farm buildings at Hilhurst farm (very unusual – these are usually an urban nesting species in the UK) (Location A below) and a single barbastelle was recorded on the river corridor at B.

With regards to the black redstart, we think that the proposed works are likely to provide more habitat for this species (considering their preference for urban environments) and there is lots of opportunity to include specific habitats such as green / brown roofs. Suitable avoidance during works will need to be employed in the vicinity of the Hilhurst farm during the proposed development (as they are a schedule 1 species).

With regards to the barbastelle, we were very surprised to have found this, considering we found no records on the desk study and no calls on the previous surveys (6+ months of 15 static detector surveys, tens of emergence surveys and 35 activity transects from 2017, 2018, 2019). This call was a single pass on a single occasion picked up on a static. As such, we think this is likely an individual bat which does not rely on the survey area for sustenance (also considering that this species is not present or very rare across Kent), and considering that barbastelle can commute over 20k from a roost, is likely to be roosting some distance from the site. We are however retaining the area where the bat was foraging in the linear riverside park, with additional aquatic features proposed in this area (see below). As such, we do not think that any additional mitigation is likely to be required.

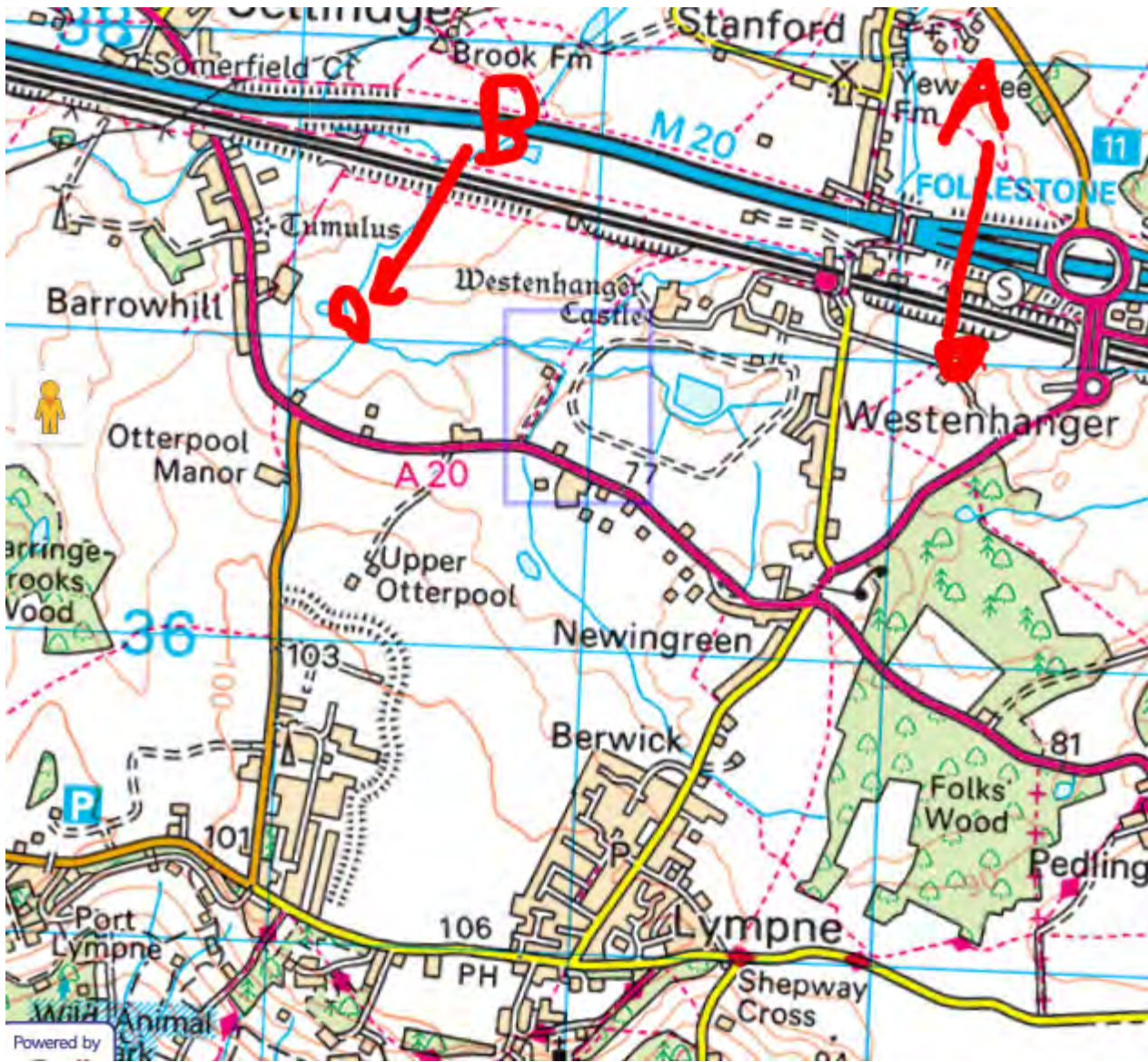
Aquatic wetland areas are the key habitat for barbastelle foraging, and considering the large increase in aquatic habitat provision proposed, the site is likely to be of increased value for barbastelle.

The site is not within the vicinity of a designated site designated for barbastelle, so there is no risk of impacting upon a 'qualifying species'. We do not think any additional survey is necessary, as a robust set of bat data is being collected (with update static and transect surveys this year), and advanced techniques (trapping/radio tracking) are unlikely to be of value. Considering we recorded one pass in over 6000+hours of survey, even if we were to try and radio track a bat we are extremely unlikely to catch a barbastelle, and are more likely to have a negative impact on other bats foraging in the area (through catching multiple non target species).

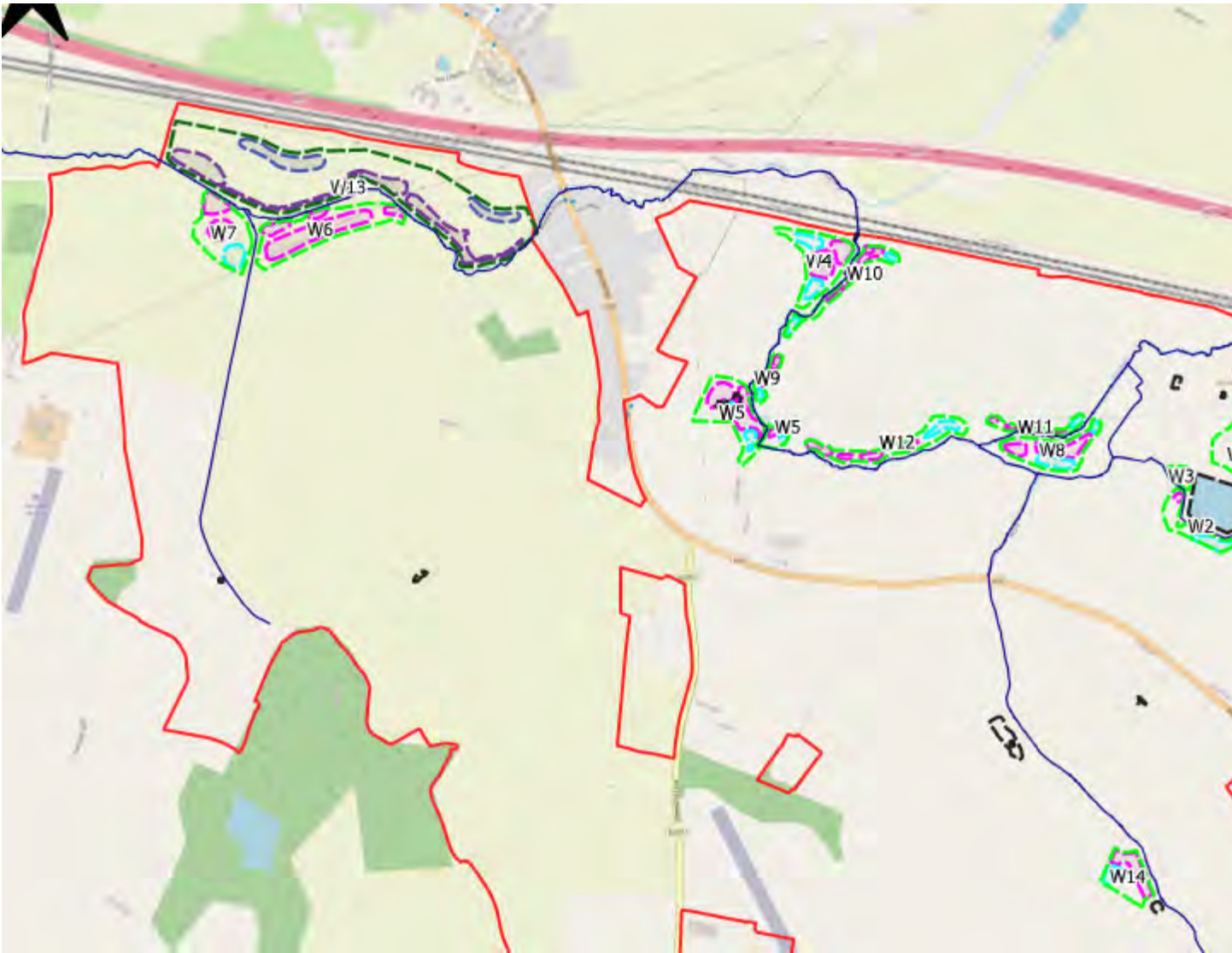
I hope that this approach aligns with your thoughts, happy to discuss if you would like.

Kind regards,

Location of finds

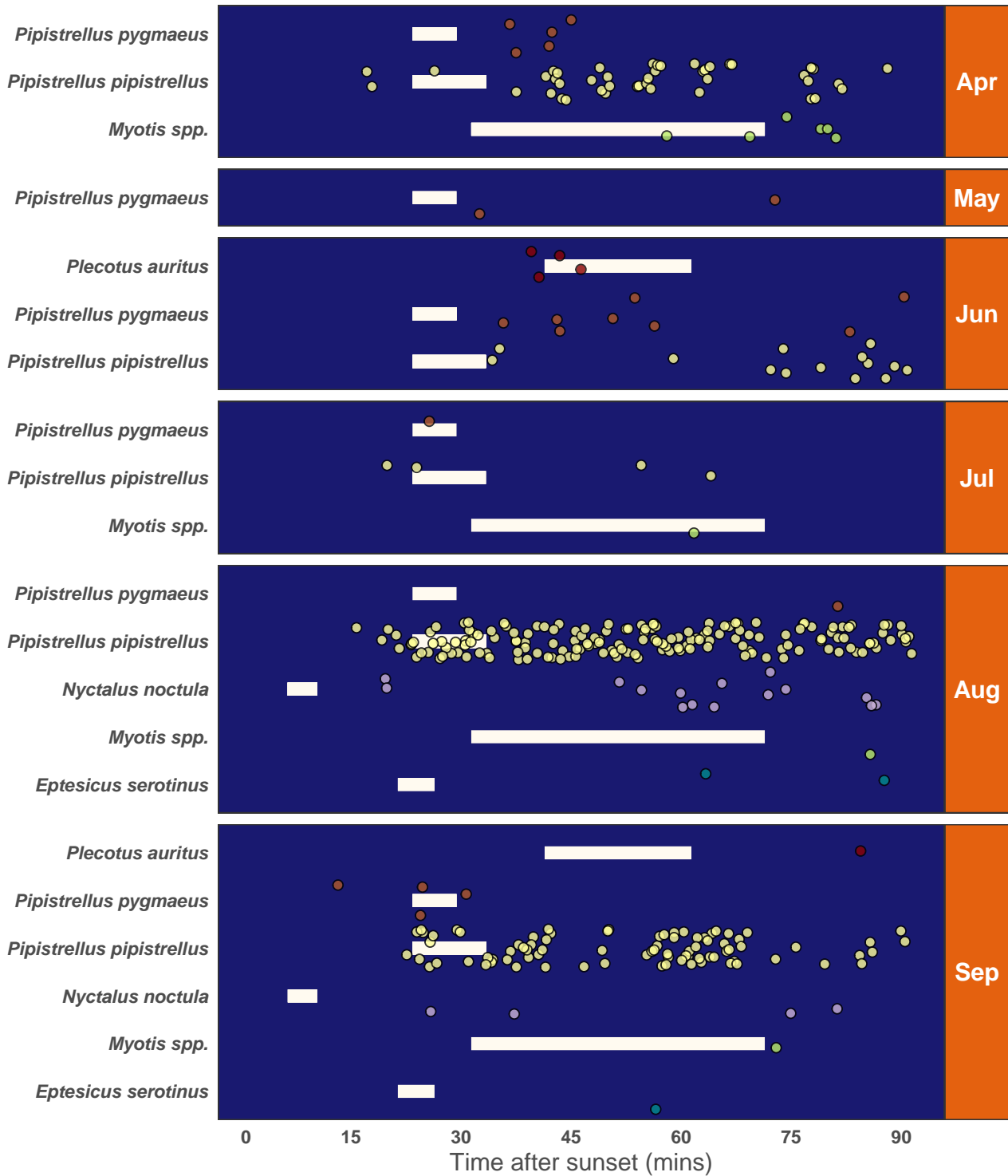


Location of proposed aquatic features



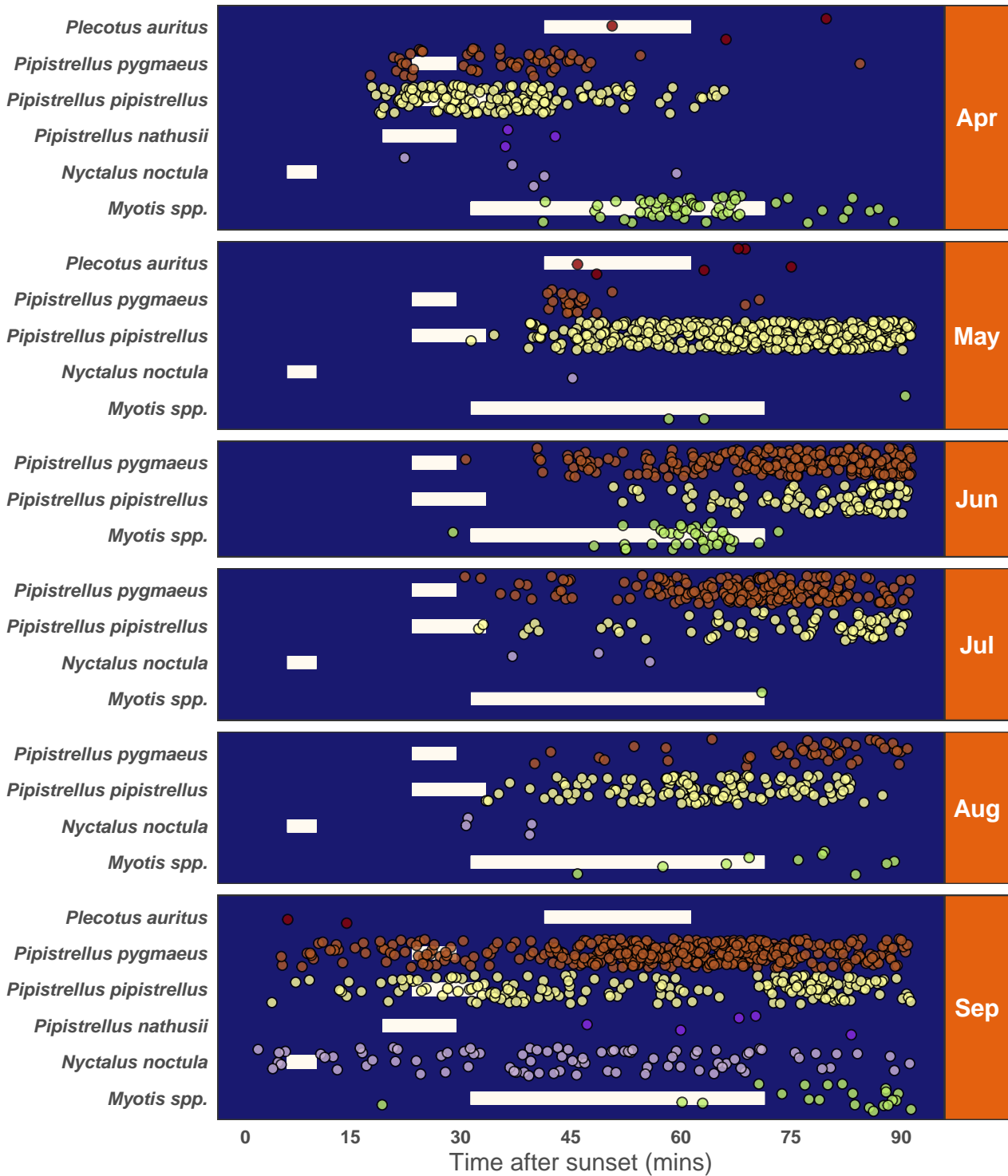
APPENDIX O: Graphical representation of likely roost areas identified in 2021

Location: Location 2



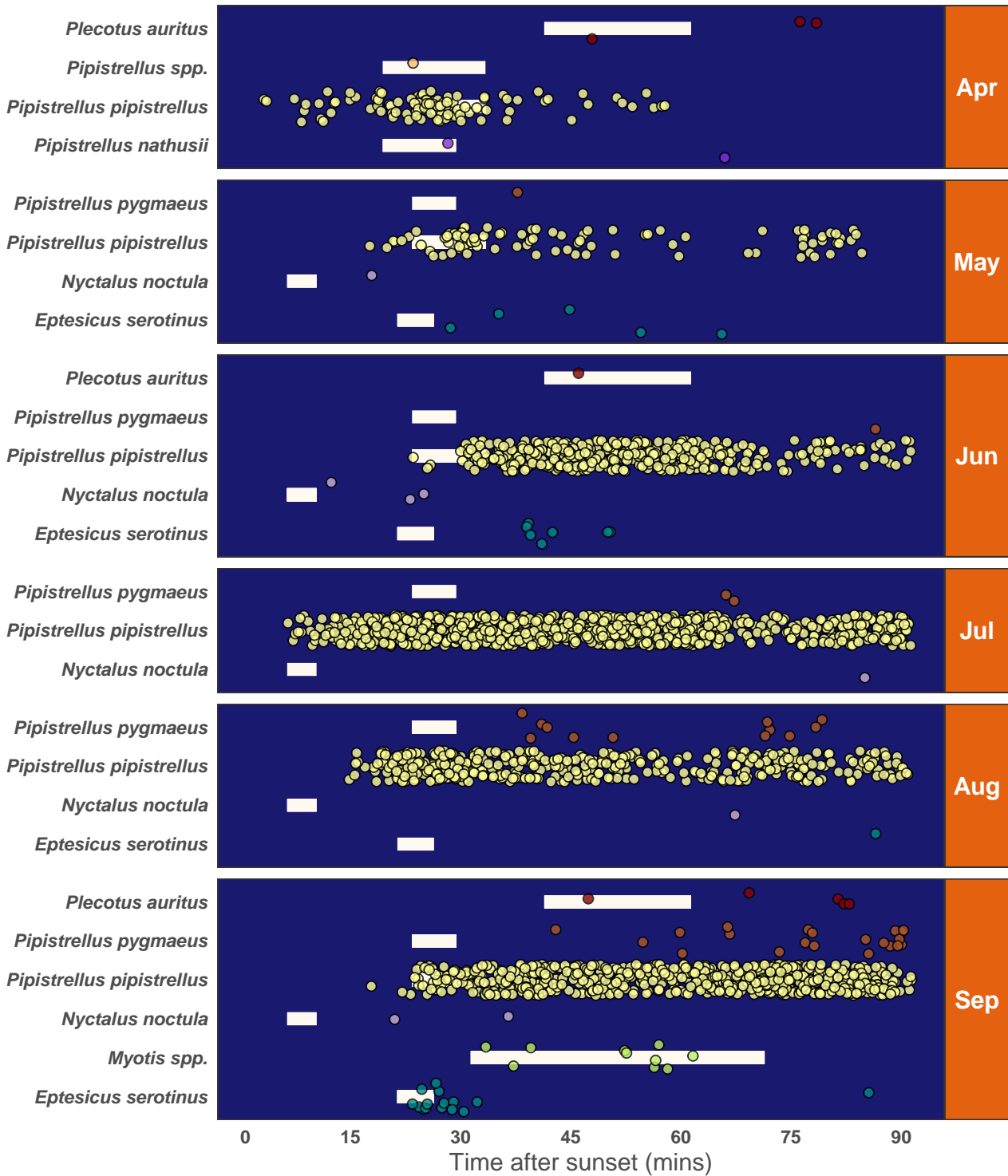
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 3



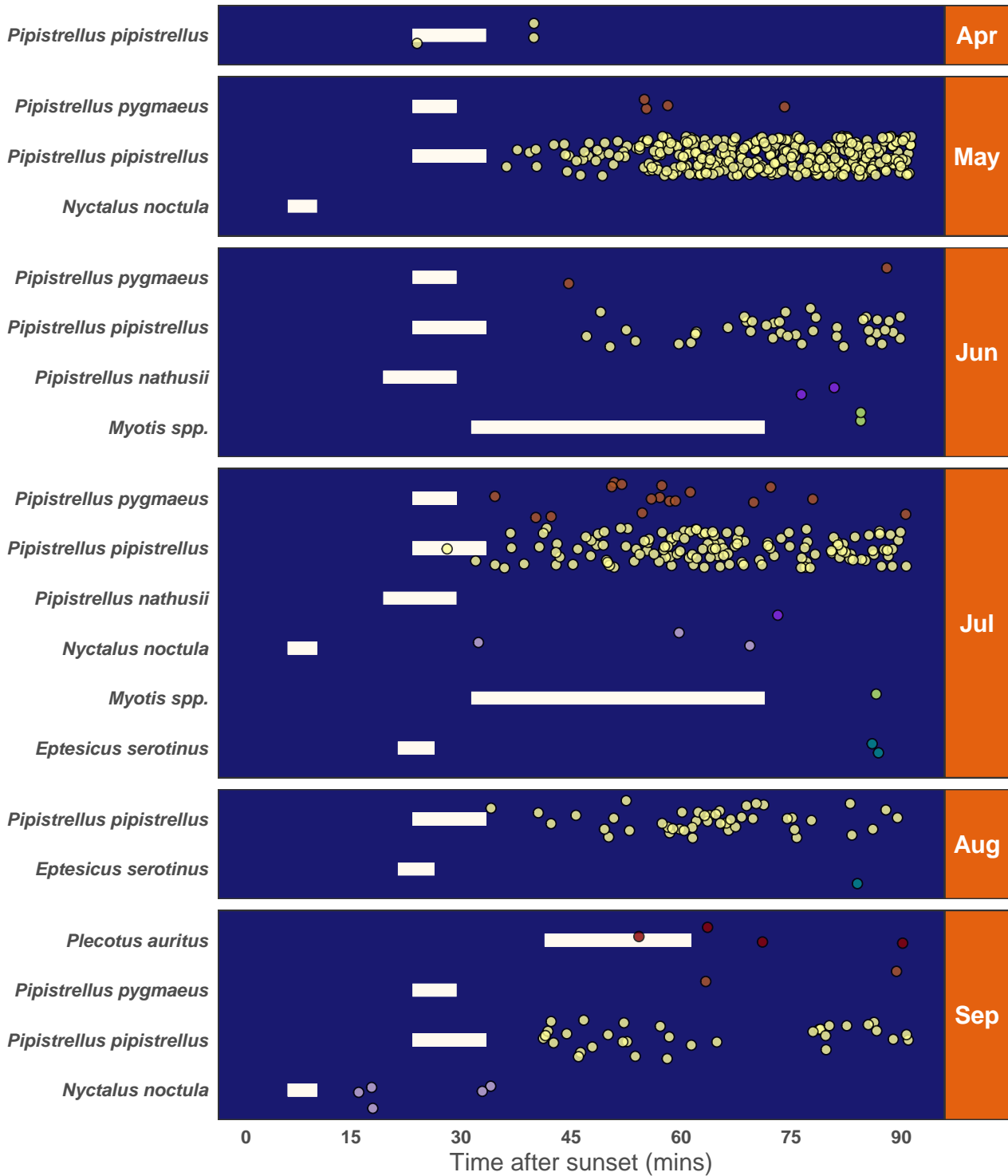
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 4



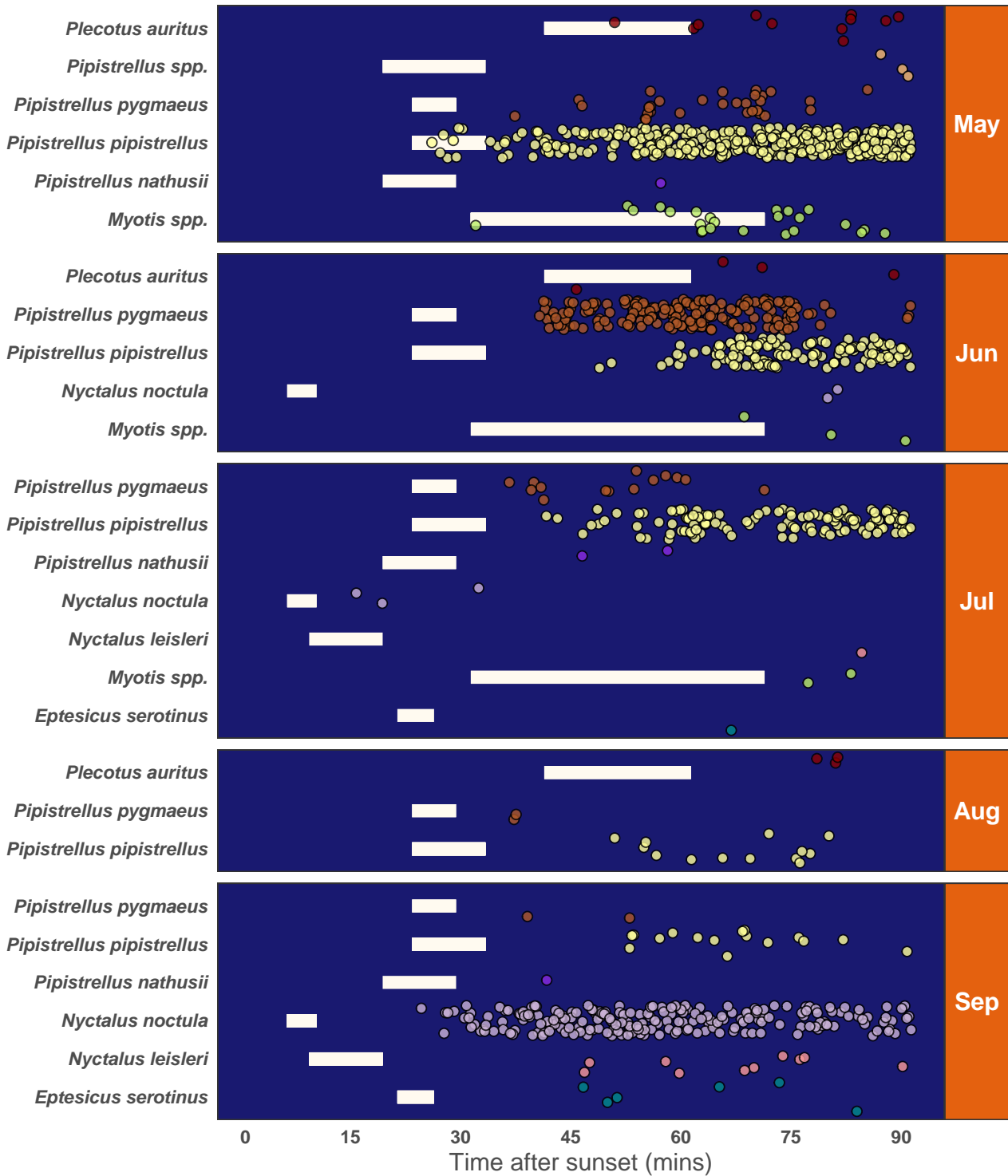
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 6



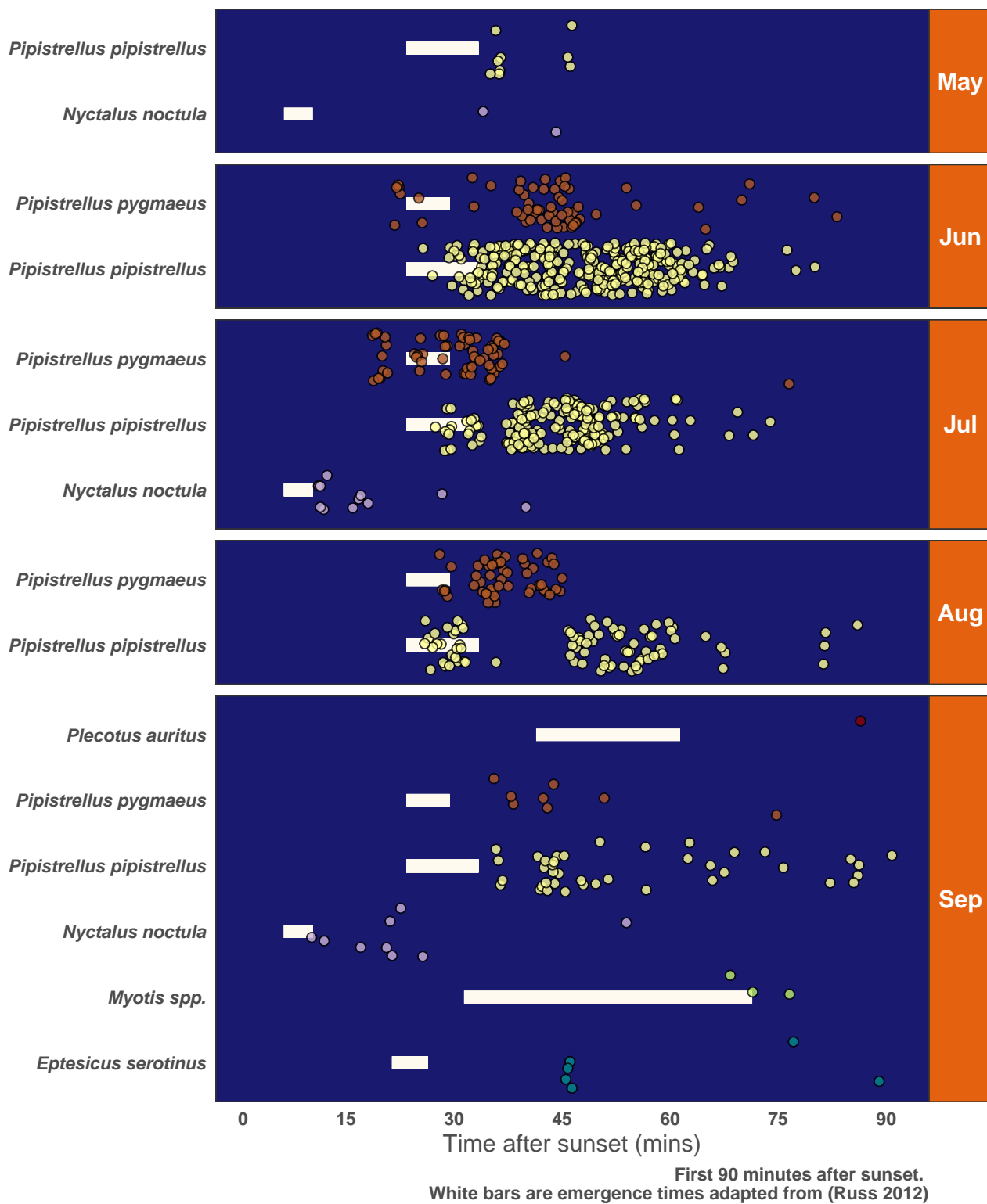
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 7

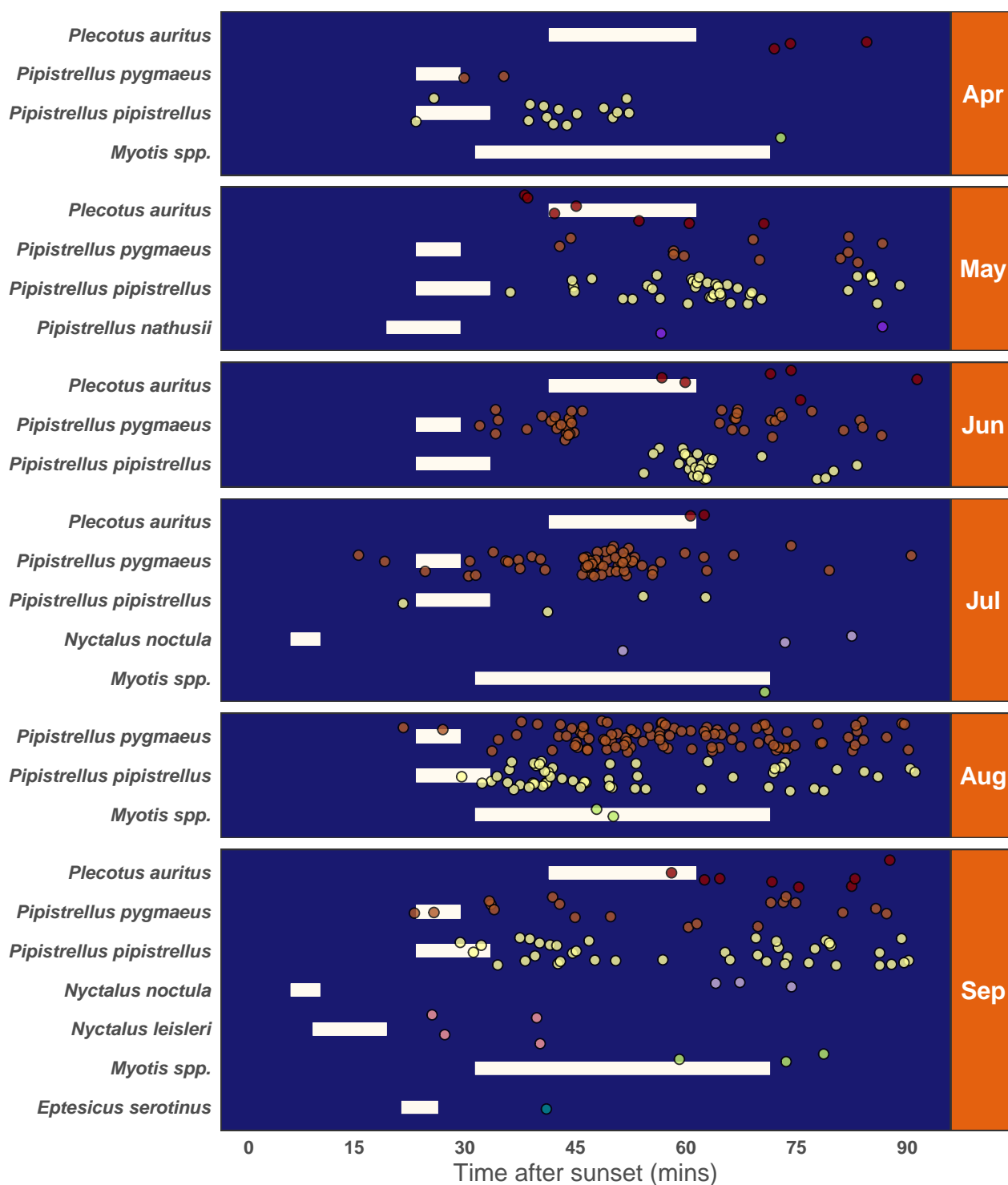


First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 8

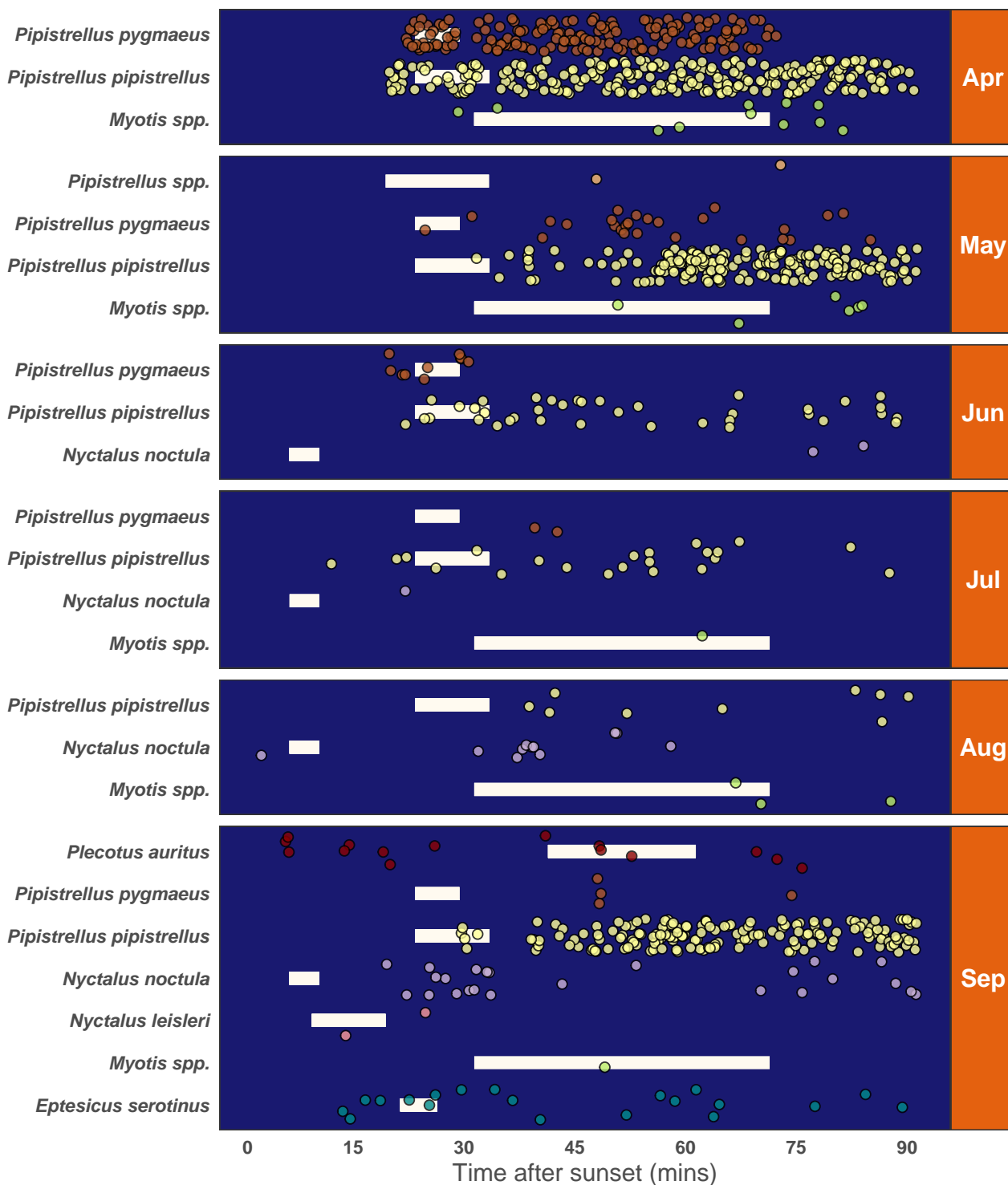


Location: Location 12



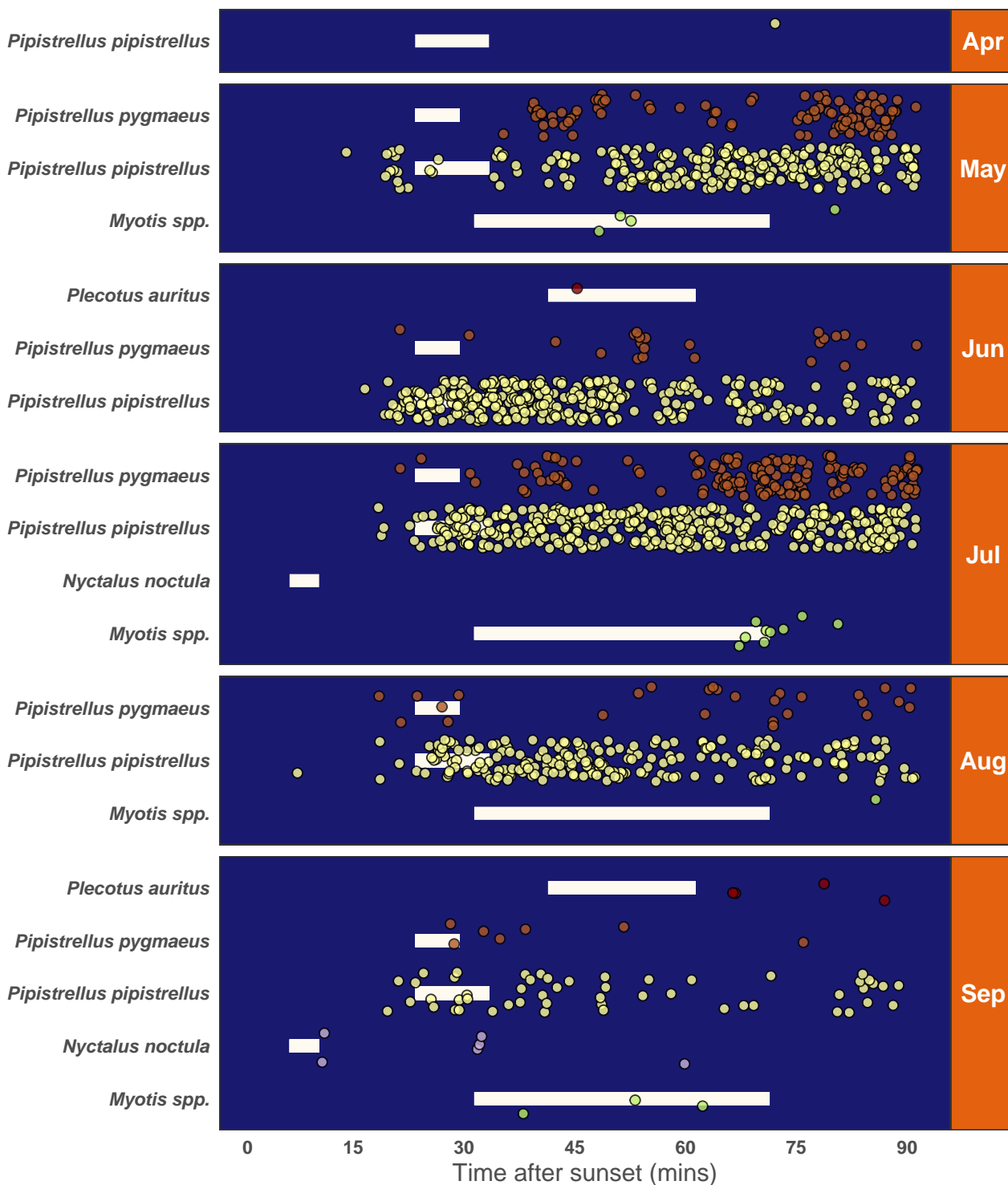
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 13



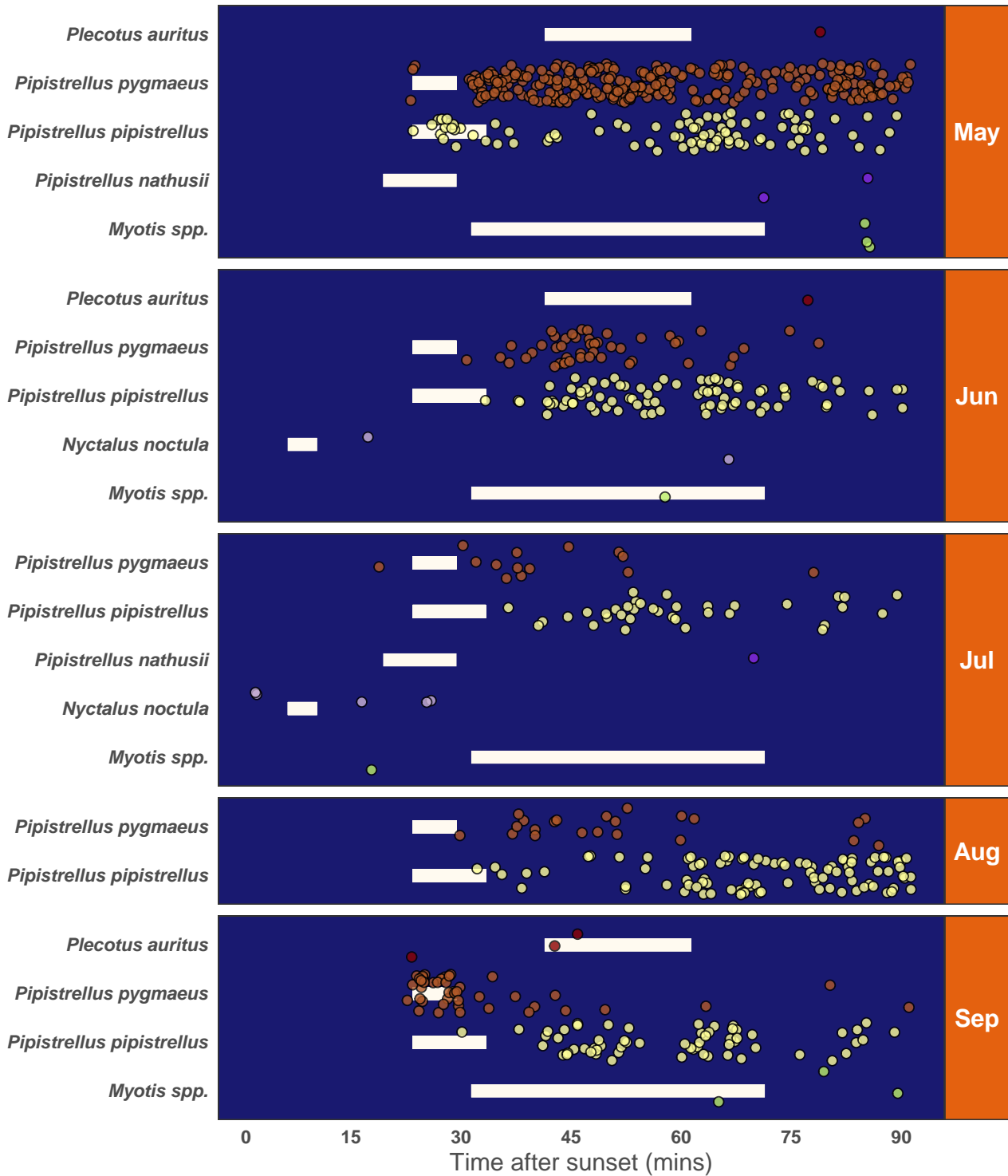
First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 14



First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Location: Location 15



First 90 minutes after sunset.
White bars are emergence times adapted from (Russ 2012)

Arcadis Consulting (UK) Ltd

80 Fen

80 Fenchurch Street

London

T: +44 (0) 20 7812 2000

arcadis.com

