GB Wind Farm Ltd.

Giant's Burn Wind Farm EIA

Technical Appendix 6.4: Bat Survey Report

Final report
Prepared by LUC
July 2025

Giant's Burn Wind Farm Ltd.

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Project Number
12852

Version	Status	Prepared	Checked	Approved	Date
1.	First Draft for Client Review	S. Edwards	E. McMurchy	S. Jackson-Matthews	28.05.2025
2.	Second Draft for Client Review	S. Edwards	E. McMurchy	A. Dennis	20.06.2025
3.	Final Version	E. McMurchy	A. Dennis	A. Dennis	01.07.2025

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FS566056
EMS566057
OHS627041

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Chapter 1
Introduction

1.1 This appendix details the full methods and results of the bat surveys undertaken to inform the Ecological Impact Assessment (EcIA) of the proposed Giant's Burn Wind Farm (the 'Proposed Development'). The EcIA is provided in Chapter 6 of the Environmental Impact Assessment Report (EIA Report).

Supporting Documents

1.2 This appendix supports the EcIA in addition to the following appendices:

- Appendix 6.1: Desk Study and Legal Context;
- Appendix 6.2: Habitats and Vegetation Survey Report;
- Appendix 6.3: Protected Species Survey Report; and
- Appendix 6.5: Biodiversity Enhancement Strategy (BES).

1.3 This appendix is supported by the following figures which can be found in Volume 3a of the EIA report:

- Figure 3.1: Proposed Development;
- Figure 6.1: Ecology Survey Area; and
- Figures 6.7a-c: Bat Survey Results.

Terminology and Survey Areas

1.4 The following terminology will be used throughout this appendix:

- Site
  - All land within the Site Boundary as shown in Figure 3.1.
- Proposed Development
  - The physical process involved in the development of the land at Giant's Burn Wind Farm including construction, operation and decommissioning of a seven turbine wind farm, Battery Energy Storage System (BESS) and ancillary infrastructure (described in detail in Chapter 3).
- Bat Survey Area (BSA)
  - The area within which bat surveys were undertaken in line with good practice guidelines[1]. The Bat Survey Area (BSA) is defined as a 200 m buffer plus rotor radius (81 m) of proposed turbine locations (as shown in Figures 6.7a-c).

Scope

1.5 In February 2024, a Scoping Report[2] was submitted on behalf of Giant's Burn Wind Farm Ltd. ('the Applicant'), as a means of agreeing the full scope of surveys with relevant consultees to inform the EcIA.

1.6 Surveys for the following species were undertaken within the ESA:

- Otter *Lutra lutra*;
- Water vole *Arvicola amphibius*;
- Pine marten *Martes martes*;
- Red squirrel *Sciurus vulgaris*;
- Badger *Meles meles*; and
- Bats *Chiroptera*.

1.7 All other protected species surveys are addressed separately in Appendix 6.3.

1.8 Reference should be made to Chapter 7 of the EIA Report for details of ornithological survey and assessment.

[1] NatureScot (2021). *Bats and Onshore Wind Turbines - Survey, Assessment and Mitigation*. Available at: https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation [Accessed May 2025].

[2] LUC (2023). *Giant's Burn Wind Farm Environmental Impact Assessment Scoping Report*.

Chapter 2
Methods

Background

2.1 NatureScot released survey guidance in January 2019, which was updated with revisions in August 2021[1] with a view to standardising wind farm related bat survey best practice in the United Kingdom. This guidance has been followed as far as reasonably practicable.

Desk Study

2.2 A desk study was undertaken to inform the bat surveys. A detailed account of the methods adopted, and findings, is provided in Appendix 6.1, which also sets out the legislative provisions afforded to bats.

Field Surveys

Bat Roost Potential

2.3 An assessment for Bat Roost Potential (BRP) was undertaken between June and October 2024, with additional surveys undertaken in April 2025 along proposed access tracks. BRP surveys were undertaken on trees and built structures within the BSA following assessment criteria set out in standard guidance prepared by the Bat Conservation Trust (BCT)[3].

2.4 The criteria used to categorise BRP are summarised in Table 2.1 and Table 2.2. These tables also summarises what surveys, if any, are required for each category.

Table 2.1 Bat Roost Potential Categories

Bat Roost Potential	Roosting Habitat Features	Commuting and Foraging Features	Survey Requirement
Negligible	Negligible habitat features likely to support roosting, commuting or foraging bats.		No surveys required.
Low	Structures in this category offer one or more potential roost sites for individual, opportunistically roosting bats. These sites do not offer the space, shelter or appropriate conditions to support large numbers of bats or maternity roosts. Trees in this category include those of sufficient size and age to support suitable roosting features, but none are visible from the ground.	Habitat on and around the site could be used by a small number of commuting bats. This category includes densely urbanised landscapes or linear vegetation features poorly connected to the wider landscape (e.g., gappy hedges in an agricultural context).	One dusk or dawn survey required for structures. No surveys required for trees.
Moderate	Structures and trees in this category offer one or more roost site that, due to their space, shelter or conditions, offer roosting potential for a range of species. Roosts may be more permanent, rather than opportunistic. Small maternity roosts of common species may form in one of these roost sites.	Habitat on and around the site is well-connected to wider continuous habitat and offers commuting and foraging habitat to a larger number of bats across a number of species. (e.g., tree lines or linked gardens in the urban context, or continuous hedge/ tree lines and watercourses in an agricultural setting).	One dusk and one dawn survey required for both structures and trees. Tree-climbing may be an appropriate alternative to dusk and dawn surveys.
High	Structures and trees in this category have one or more potential roost sites that are suitable for large number of bats. Roosts are likely to be permanent and include maternity roosts. Potential roost sites exist for a wide range of species or species of particular conservation interest.	Habitat on and around the site is diverse, continuous and linked to extensive suitable habitat. This category includes well-vegetated rivers, streams, hedgerows and woodland edge. Habitat is sufficiently diverse to offer opportunities to a wide range of species or those of particular conservation interest.	Three surveys, including both dusk and dawn elements. Tree-climbing may be an appropriate alternative to dusk and dawn surveys.

Table 2.2: Bat Roost Suitability Categories of trees

Suitability	Description	Survey requirement
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.	No further surveys. Provide appropriate compensation for all PRF-Is.
PRF-M	PRF is suitable for multiple bats and may therefore be used by maternity colony.	Three visits between May and September, with at least two of the surveys between May and August.

2.5 No structures were recorded within the BSA, and trees within the BSA were assessed for BRP where appropriate.

Ground-Level Static Surveys

2.6 In accordance with NatureScot guidance[1], between nine and ten ground-level automated detectors were deployed across the BSA. The original turbine layout extended up to nine turbines. However, in May 2024, the layout was altered; one turbine was removed and two of the proposed turbines were moved from the north of the BSA to the south of the BSA. To ensure adequate coverage of the BSA, and consistency of data collection, the bat surveys were therefore based on the footprint, oversail and anticipated land take of the original nine turbine layout, plus the new locations of the two southernmost turbines.

2.7 The BSA was dominated by open moorland, with a range of upland habitats, including bog, and had areas of both flat and sloping topography. The BSA was enclosed on almost all sides by Sitka spruce conifer plantation and was drained by a number of small watercourses, including tributaries of the Balgaidh Burn, Eas a' Chaibeil, Allt a' Chromain and Giant's Burn. Detectors were deployed as evenly across the BSA where possible, while also being deployed as close as possible to proposed turbine locations.

2.8 Between nine and ten Wildlife Acoustics full spectrum detectors were used, comprising a combination of detector types (Song Meter SM4 and SM Mini). In line with best practice guidelines[1]. Detectors were deployed for a minimum of ten consecutive nights in each of the designated survey 'seasons' of Spring (April – May), Summer (June – mid-August) and Autumn (mid-August – October). Details of survey periods are provided in Table 2.3.

[3] Collins, J.C. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)*. The Bat Conservation Trust, London. Available at: https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-4th-edition [Accessed May 2025].

2.9 A Davis Vantage View' weather station (Model No: 6120UK) was deployed (NS 14778 78599 and NS 14662 78230) across all survey seasons at an approximate elevation of 330 - 357 m. Data collected from the weather station was used to provide climatical information.

Table 2.3: Ground-Level Static Survey Deployment Dates

Season	Dates Deployed	Number of Consecutive Nights
Spring	16 April – 08 May 2024	22
Summer	24 June – 24 July 2024	30
Autumn	24 September – 9 October 2024	15

2.10 Table 2.4 provides details of detector locations and their proximity to turbines, as well as the surrounding habitat. Detector locations are also shown in Figure 6.7a-c.

Table 2.4: Detector Location Details

Detector Location	Grid Reference	Habitat Type	Elevation (m)	Proximity to Nearest Turbine (m)
D1	NS 14087 77503	Felled conifer plantation, adjacent to mature conifer plantation edge.	388	255
D2	NS 14418 77846	Felled conifer plantation, adjacent to tributary of the Balgaidh Burn.	365	284
D3	NS 14419 78360	Blanket bog.	361	215
D4	NS 14536 78865	Mosaic of blanket bog and marshy grassland.	344	170
D5	NS 13952 78119	Blanket bog.	405	395
D6	NS 13942 78621	Marshy grassland.	328	240
D7	NS 14126 79082	Blanket bog.	307	143
D8	NS 14548 79347	Mosaic of blanket bog and wet modified bog.	303	76
D9	NS 14237 79808	Blanket bog.	260	150
D10	NS 13822 79967	Mosaic of dry dwarf shrub heath and blanket bog.	257	554

2.11 To allow for temporal comparison, where possible, detectors were deployed at the same locations during each season. However, minor changes to the placement of the detector may have occurred as a result of different surveyors undertaking the deployment.

2.12 All detectors were programmed to start recording 30 minutes before sunset and stop recording 30 minutes after sunrise.

Analysis

2.13 Bat passes from SM4 and SM Mini detectors were analysed using Kaleidoscope Pro software. Data was analysed using the Auto ID feature, followed by manual verification by suitably experienced ecologists.

2.14 A two-stage analysis of bat species data was then undertaken with the traditional Bat Activity Index (BAI) calculated, in addition to processing data using Ecobat software.

Bat Activity Index (BAI)

2.15 To allow for an accurate and reliable comparison of bat passes between detector locations and across all three survey seasons, BAI was calculated. BAI is determined by taking the number of bat passes (in this instance per genus, per detector location) and dividing it by the number of hours recorded; this will give the number of bat passes per hour[4].

2.16 Full-spectrum sound files are approximately 14 seconds long, so it is not always possible to distinguish if the file contains multiple calls from a single bat or single calls from multiple bats. For this reason, as a measure of standardisation, one individual was recorded for each species recorded in a single sound file and bat 'calls' are referred to as 'bat passes'.

2.17 The calculation of BAI allows relative comparisons to aid exploration of patterns of usage within the BSA, as well as use of the BSA across different seasons. It also removes any bias created by the variation in the duration of the static detector deployment periods.

Ecobat

2.18 The calculation of BAI described above is limited to comparisons within the BSA and does not take account of the wider context in the surrounding landscape. The second step therefore involves comparing the data collected within the BSA to a larger database of bat call data from a wider area.

2.19 Ecobat[5] is a web-based tool, run by The Mammal Society, which allows bat call data to be uploaded and compared with a database of other bat call data within a defined geographic region and similar time of year. In this case, the parameters selected to compare bat data collected in the BSA was bat call data within the county of Argyll-shire and during a similar time of year (+/- 30 days). Ecobat allows an objective activity level to be assigned to uploaded bat data, indicating the relative importance of the data when compared with other data in the database.

2.20 Ecobat returns a percentile for each species and genus. This percentile indicates the relative importance of the activity level. For example, an 80th percentile would indicate that the activity is greater than 80% of comparison records levels. Percentile levels have been given definitions to easily identify important data sets. Percentiles are split as follows:

- Low activity: 0-20th percentile;
- Low to Moderate activity: 21st-40th percentile;
- Moderate activity: 41st-60th percentile;
- Moderate to High activity: 61st-80th percentile; and
- High activity: 81st-100th percentile.

Risk Assessment

2.21 To quantify the risk of the Proposed Development to bats, site-based risk factors are incorporated into the analysis. This consists of a two-stage process. Stage one consists of scoring the predominant habitat based on habitat suitability for bats from Low (1) to High (3)[1] based on the potential to support bats, by assessing the roosting, foraging and commuting opportunities present.

2.22 The second stage is to conduct a three-factor analysis utilising development-related features to score the project size from Small (1) to Large (3)[1]. This involves assessing the number of proposed turbines, the height of proposed turbines, and wind developments within 5 km or 10 km (dependent on number of proposed turbines) of the BSA, to provide an overall project size score.

[4] Hundt, L.H. (2012). *Bat Surveys: Good Practice Guidelines (2nd Edition)*. Bat Conservation Trust, London.

[5] The Mammal Society (n.d.). *Ecobat*. Available at: https://ecobat.mammal.org.uk/login [Accessed May 2025].

2.23 An overall 'Site Risk Level' for the Proposed Development can then be determined using the risk assessment matrix from the NatureScot guidance[1] (see Table 4.1). This is used in conjunction with Ecobat data to provide an overall collision risk category to bat species and genus.

Constraints and Limitations

2.24 The timeframe in which a survey is undertaken provides a snapshot of activity in the BSA and will not necessarily detect all evidence of use by a species. Ecological surveys are limited by a variety of factors which affect the presence of flora and fauna such as season, migration patterns and species behaviour. Evidence of species is not always discovered during the survey. This does not mean that a species is absent.

2.25 Nine detectors were originally deployed, based on the original nine-turbine layout. However, due to changes in the proposed turbine layout, ten detectors were deployed within the BSA in the Summer and Autumn (see Paragraph 2.6). The positions of the original nine detectors were altered to reflect the new layout, with two detectors being moved further south to allow for the addition of two southern turbines. Despite the most northernly turbine being removed during this design change, a detector was deployed in this location for the full survey season, to ensure adequate coverage of the BSA. The number of detectors within the BSA is therefore higher than recommended by guidance[1]. However, the guidance also acknowledges that turbine locations are often subject to change. Given the higher number of detectors deployed overall, the bat surveys therefore provide more information about the use of the wider Site and landscape by bats, and this is not considered to be a material limitation to the assessment of activity levels and risk.

2.26 During field surveys, it was not possible to fully survey all conifer plantation forestry for BRP. This was largely due to the density of trees, and health and safety issues encountered when surveying dense forest. Commercial forestry is generally considered to be an unsuitable habitat for roosting bats as it is often a dense monoculture lacking in potential roosting features, as was the case within the majority of the BSA. Therefore, it is not considered this will have had a substantive effect on the results of the survey. On occasions where trees within conifer plantations develop bat roost features, the BRP of these features is generally categorised at most as 'Low', which does not require further survey work.

2.27 Due to a technical fault, no precipitation data was available from the on-site weather station for the Summer survey period. This is not considered to be a significant limitation to the analysis, as precipitation data from the closest weather station (Glasgow Airport Weather Station, ~32 km south)[6] was used to supplement the on-site data.

2.28 Minor changes to the placement of each detector have occurred as a result of different surveyors undertaking the deployment and the accuracy of GPS equipment which varied by a maximum of 5 m. These differences were minimal and therefore the data recorded during each season was considered suitable to undertake a reliable comparison.

2.29 During bat sound analysis, *Myotis* spp. calls were only identified to genus rather than species level due to the difficulty in identifying these genera to species via sound analysis. There were also a small number of *Pipistrellus* spp. calls which were only identified to genus level. This was mainly due to a number of recordings containing 'social calls'. Common and soprano pipistrelle social calls are very short, and their frequencies can overlap, making species identification difficult. Genus data was included within the assessment and, given that the mitigation for species in each genus will be consistent regardless of which species was recorded, this is not considered a limitation to this assessment.

2.30 Ecobat[5] became available for use in January 2025. However, the newly released application was acknowledged to be in the early stages, and it was unclear at that point how statistically robust the data outputs were. Ecobat went offline in 2023 and remained offline for a period of almost two years. As a result, a large proportion of bat acoustic data from 2023 to 2025 has not been uploaded to the Ecobat server. This means that Ecobat currently does not have a reliable and robust database and requires more data from 2023-2025 to be uploaded before meaningful analysis can be undertaken. In addition to this, it has not been communicated with Ecobat users that the software is now operational. As a result, many users may not be aware of the expectation to upload their datasets.

[6] Meteostat (2023). *Glasgow Airport Weather Station Data for 2024*. Available at: https://meteostat.net/en/place/gb/dunoon?s=03140&t=2024-09-14/2024-10-04 [Accessed May 2025].

Chapter 3
Baseline Results

Desk Study

3.1 A detailed account of the methods adopted, and findings, is provided in Appendix 6.1, which also sets out the legislative provisions afforded to bat species.

3.2 The desk study returned ten records of soprano pipistrelle, four records of common pipistrelle, four records of brown long-eared, one record of Daubenton's bat, two unidentified pipistrelle records and eight unidentified bat records within 10 km of the BSA.

Field Study

Site Overview

3.3 The Site is located approximately 1.3 km west of Dunoon within the Argyll and Bute administrative area, and has a total area of approximately 700.6 ha. The area is topographically complex and is characterised by several raised peaks including Tom Odhar (256 m AOD) to the east, and Kilbride Hill (3,960 m AOD) to the south. The area reaches a topographic height at Cruanch nan Capuall to the north-west, at an elevation of 611 m AOD.

3.4 The Site largely comprises open moorland with a range of upland habitats, including blanket bog. The undulating topography and variable climatic conditions give rise to a complex habitat assemblage, containing a variety of vegetation communities and habitats. The west of the Site is largely dominated by acid grassland, while the centre of the Site, which is the location of the proposed wind farm infrastructure, is largely comprised of mosaics of blanket bog, wet modified bog and dry heath, with occasional acid flushes and marshy grassland. The lower slopes of the Site, to the north-west, north and east, are dominated by conifer plantation. Small areas of broadleaved woodland, acid grassland and bracken were also recorded on freer-draining sloping ground, particularly along the north-west boundary of the ESA. Despite the presence of habitats of conservation interest[7], the Site has been impacted by the history of land management.

3.5 The Site is drained by a number of small tributaries such as Giant's Burn and Spout Burn, which eventually flow into the Glenkin Burn to the north-west of the Site. On the east side of the Site, tributaries such as the Badd Burn drain into Balgaidh Burn, which flows south-east towards Dunoon.

3.6 For more detailed descriptions of the habitats recorded during the surveys, see Appendix 6.2.

3.7 Optimal habitat for bats is likely restricted to the lowland fringes of the west and east coasts of the Cowal Peninsula. The BSA is located 2.7 km away from the Loch Lomond and The Trossachs National Park where optimal habitat areas for bats are present in the form of ancient broadleaved woodland and upland oak woodland, along with waterbodies such as the Loch Eck which is sited 5.3 km away. These woodlands border grazing fields separated by hedgerows and in close proximity to the coast, offering a range of habitats for bats to exploit. Similar extents of ancient woodland are present around the BSA, with one stand encroaching within the BSA on the north-western Site Boundary.

Bat Roost Potential Surveys

3.8 The majority of the BSA was characterised by open heathland and blanket bog habitats, with most of the forestry cover occurring to the east of the BSA and along the proposed access tracks. Conifer plantation was typically dense and lacking in potential roosting features, therefore the category of bat roost suitability noted in trees within surveyed areas of plantation was 'PRF-N'. Three 'PRF-I' stands of semi-natural broadleaved woodland were identified with one on the north-east access track into the BSA and two on the north-western slopes of the BSA. One 'PRF-M' stand of semi-natural broadleaved woodland was also recorded on the north-western slopes of the BSA, No further survey work is required for any of these woodlands.

3.9 No structures were recorded within the BSA.

Ground-Level Static Surveys

3.10 A total of 572.5 hours of recording were undertaken across the three survey seasons, as detailed in Table 3.1.

3.11 Due to variations between survey seasons, only the total number of hours recorded, and numbers of nights are presented. Variation in recording hours per season is due to changes in night length and number of nights deployed.

Table 3.1: Recording Hours During Each Survey Season

Season	Total Number of Hours Recorded	Number of Consecutive Nights Recorded
Spring	180.8	22
Summer	195.1	30
Autumn	196.6	15
Total	**572.5**	**67**

Weather Data Summary

3.12 Data from an on-site weather station, supplemented with data from the closest weather station (Glasgow Airport) was analysed according to NatureScot guidance[1] Glasgow Airport weather station data[6] was used to provide an overview of precipitation data for the Summer survey period.

3.13 Table 3.2 provides a summary of the on-site weather station and precipitation data for the survey seasons obtained from weather station data.

Table 3.2: Summary of Weather Station Data

Deployment Dates	Consecutive Nights Recorded	Average Temperature (°C) (Range)	Days Average Temperature Above 8°C	Average Wind Speed (m/s) (Range)	Average Precipitation (mm) (Range)	Days of Precipitation ≤ 1mm
Spring 2024						
16 April – 08 May 2024	22	11.9 (8.0 – 17.0)	22	14.6 (5.0 – 31.0)	2.5 (0.0 – 14.8)	16
Summer 2024						
24 June – 24 July 2024	30	15.3 (10.0 – 20.0)	26	18.5 (8.0 – 34.0)	2.2[6] (0.0 – 5.8)[6]	12
Autumn 2024						
24 September – 9 October 2024	15	10.8 (8.0 – 14.0)	10	15.4 (8.0 – 21.0)	2.7 (0.0 – 17.2)	9

[7] Defined as Annex 1 habitats, Scottish Biodiversity List habitats, habitats included in the Argyll and Bute Local Biodiversity Action Plan, and habitats considered to indicate potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs).

Bat Activity Index (BAI)

3.14 The following species were recorded during the static surveys:

- Common pipistrelle *Pipistrellus pipistrellus;*
- Soprano pipistrelle *Pipistrellus pygmaeus;*
- Nathusius' pipistrelle *Pipistrellus nathusii;*
- Unidentified *Nyctalus* spp.;
- Unidentified *Myotis* spp.;
- Brown long-eared bat *Plecotus aurltus;* and
- Unidentified *Pipistrellus* species.

3.15 To allow for a comprehensive assessment, all bats are referred to in terms of their genus (*Pipistrellus* spp., *Plecotus* spp., *Nyctalus* spp. and *Myotis* spp.).

Species Variation

3.16 *Pipistrellus* spp. were dominant during the static surveys, accounting for 86.0% of the total bat passes recorded across all three seasons. The remaining bat passes consisted of *Myotis* spp. (10.3%), *Plecotus* spp. (3.5%) and *Nyctalus* spp. (0.2%).

3.17 The summer period was when most of the bat passes occurred, accounting for 84.4% of the total bat passes, whilst 12.4% of passes occurred in the autumn and 3.2% occurred in the spring.

3.18 BAI for each genus at each detector location, across each season, are presented in Table 3.3.

Table 3.3: BAI According to Genus per Detector Location Across Survey Seasons

Detector Number	BAI per Survey Season (to two d.p.)		
	Spring	Summer	Autumn
D1			
Pipistrellus spp.	0.01	1.45	0.02
Myotis spp.	0.00	0.03	0.02
Nyctalus spp.	0.00	0.06	0.02
Plecotus spp.	0.00	0.00	0.02
D2			
Pipistrellus spp.	0.02	1.45	0.02
Myotis spp.	0.00	0.02	0.00
Nyctalus spp.	0.03	0.03	0.03
Plecotus spp.	0.00	0.01	0.00
D3			
Pipistrellus spp.	0.03	0.96	0.05
Myotis spp.	0.00	0.07	0.00
Nyctalus spp.	0.00	0.06	0.05
Plecotus spp.	0.00	0.01	0.01
D4			
Pipistrellus spp.	0.29	1.59	0.09
Myotis spp.	0.01	0.08	0.00
Nyctalus spp.	0.02	0.07	0.03
Plecotus spp.	0.00	0.00	0.00
D5			
Pipistrellus spp.	0.01	0.28	0.01
Myotis spp.	0.00	0.03	0.01
Nyctalus spp.	0.01	0.01	0.01
Plecotus spp.	0.00	0.00	0.00
D6			
Pipistrellus spp.	0.02	1.39	0.08
Myotis spp.	0.00	0.07	0.01
Nyctalus spp.	0.01	1.28	0.04
Plecotus spp.	0.00	0.01	0.00
D7			
Pipistrellus spp.	0.05	0.53	0.41
Myotis spp.	0.00	0.10	0.00
Nyctalus spp.	0.02	0.05	0.01
Plecotus spp.	0.00	0.00	0.00
D8			
Pipistrellus spp.	0.12	0.35	0.35
Myotis spp.	0.00	0.02	0.01
Nyctalus spp.	0.04	0.01	0.02
Plecotus spp.	0.00	0.00	0.00
D9			
Pipistrellus spp.	0.06	7.14	0.92
Myotis spp.	0.01	0.27	0.01

Detector Number	BAI per Survey Season (to two d.p.)		
	Spring	Summer	Autumn
Nyctalus spp.	0.02	0.26	0.04
Plecotus spp.	0.00	0.01	0.00
D10			
Pipistrellus spp.	N/A	0.25	0.38
Myotis spp.	N/A	0.00	0.01
Nyctalus spp.	N/A	0.00	0.02
Plecotus spp.	N/A	0.00	0.00

Spatial Variation – Total BAI

3.19 The results from the ten detectors are shown in Table 3.3 and Chart 3.1.

3.20 Detector 9 recorded the highest BAI score (BAI 8.72). Detector 9 was located near the northern Site Boundary of the BSA, and was located within blanket bog close to an immature stand of Sitka spruce conifer plantation. The Detector was close to a small tributary, which flowed north into the Allt na Criche.

3.21 Detector 6 was located within the centre of the BSA and recorded the second highest BAI score (BAI 2.89). This detector was located within open blanket bog, close to semi-natural broadleaved woodland, and the Spout Burn.

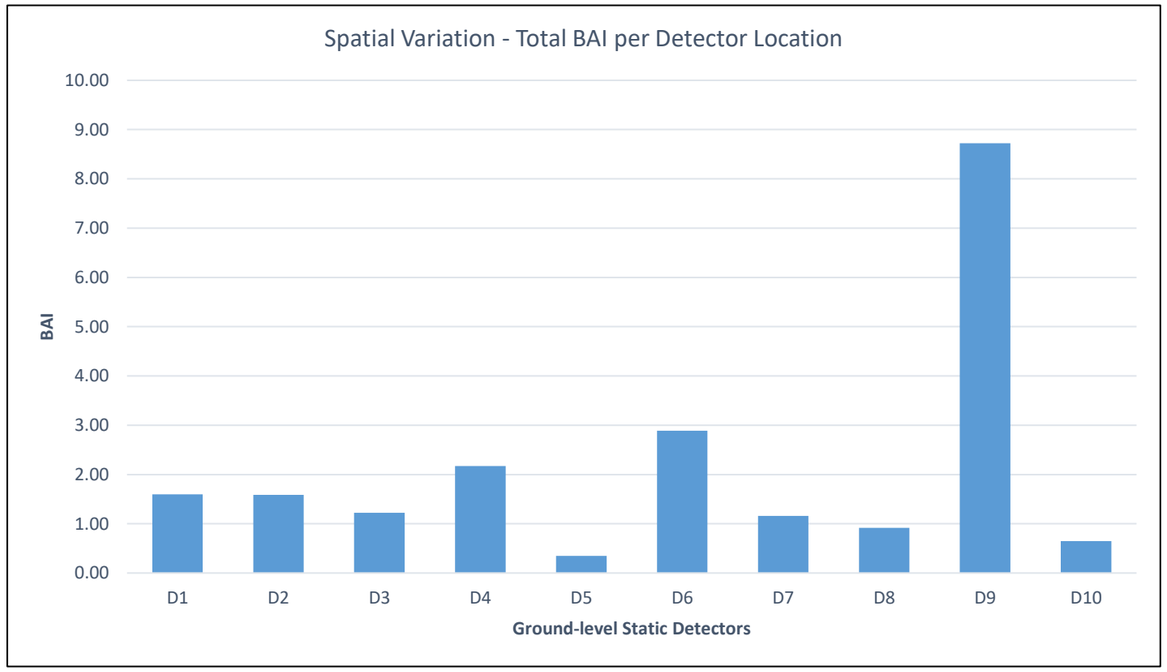
3.22 Detectors 4, 1 and 2 recorded the third to fifth highest BAI scores (BAI 2.17, BAI 1.60 and BAI 1.59 respectively). Detector 4 was located within the centre of the BSA, within a depression of blanket bog that gives rise to a small area of marshy grassland. Detector 1 was located in the south of the BSA, within an area of felled forestry plantation surrounded by small blocks of Sitka spruce conifer plantation. Detector 2 was located nearby, within the south-east of the BSA, in a more open area of felled forestry plantation, adjacent to a tributary of the Balgaidh Burn.

3.23 Areas that recorded the lowest BAI included Detectors 3, 5, 7, 8 and 10, all of which had BAI ≤ 1.22. All of these detectors recorded ≤ 238 passes for the entire survey period. Detectors 10 (BAI 0.65) and 5 (BAI 0.35) recorded the lowest BAI, only recording 127 and 68 passes respectively.

3.24 Detectors 3 and 5 were located in the south-east of the BSA in blanket bog, close to blocks of Sitka spruce conifer plantation. Detectors 7, 8 and 10 were located in the north of BSA, in open areas of blanket bog. Detector 10 had Sitka spruce conifer plantation to the north and Scots pine conifer plantation to the west.

3.25 Within the BSA, a higher BAI score was often associated with proximity to watercourses, along with blocks of woodland, particularly within the north of the BSA; where Detector 9 accounted for 41.1% of all recorded bat activity. Conversely, detectors deployed in open areas of blanket bog, that were not in proximity to linear features, corresponded to relatively lower BAI scores.

Chart 3.1: Spatial Variation – Total BAI per Detector Location



Seasonal Variation – Total BAI

3.26 Total BAI was calculated to allow comparison across the three survey seasons (Chart 3.2).

3.27 Activity levels were highest in Summer (BAI 17.92), with a lower level recorded in Autumn (BAI 2.60) and Spring (BAI 0.66).

3.28 The Summer period was when most of the bat passes occurred, accounting for 3,495 of the total bat passes, whilst 512 of passes occurred in the Autumn and 134 occurred in the Spring.

Chart 3.2: Seasonal Variation – Total BAI per Season

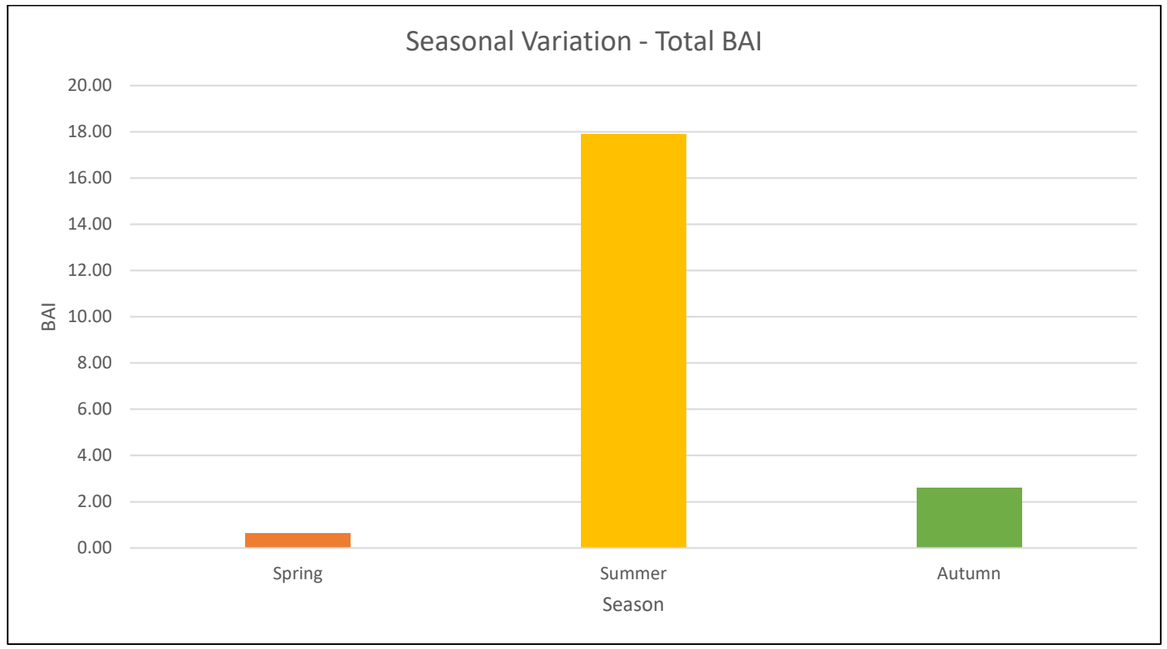
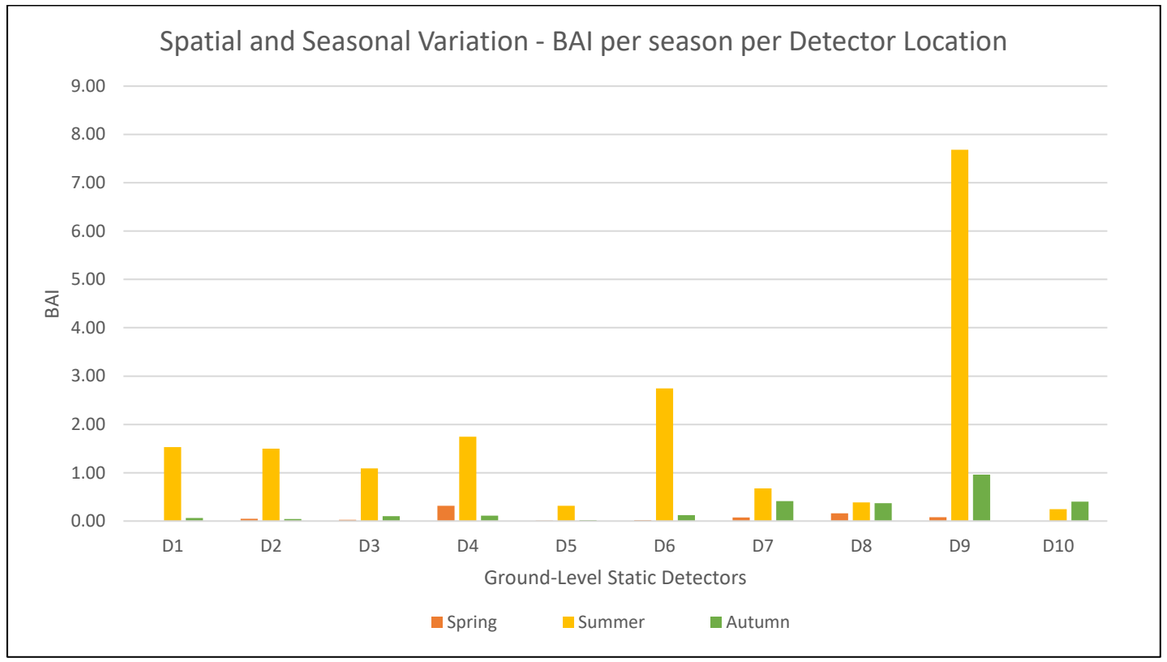


Chart 3.3: Spatial and Seasonal Variation – BAI per Season per Detector Location



Spatial and Seasonal Variation – BAI per Season per Detector Location

3.29 Seasonal variation across detector locations is shown in Chart 3.3.

3.30 Detector 9 recorded the highest BAI score (BAI 7.68) in Summer, with Detector 6 (BAI 2.74) and Detector 4 (BAI 1.74) recording the second and third highest BAI scores respectively. The remaining detectors had lower BAI scores, ranging from 1.53 to 0.25.

3.31 Activity levels in Autumn were low, with BAI scores ranging from 0.02 to 0.96. Detectors 9 and 7 had the highest scores in Autumn (BAI 0.96 and 0.41 respectively). BAI scores were also very low in Spring, ranging from 0.00 to 0.32 across all detectors.

Seasonal Variation – BAI per Genus

3.32 Table 3.4 and Chart 3.4 summarise BAI per genus, across all seasons.

3.33 *Pipistrellus* spp. activity levels follow the same pattern as total bat activity, with the highest levels in Summer (BAI 15.38), with notably lower levels in the Autumn (BAI 2.30), and Spring (BAI 0.59). The summer period was when most of the *Pipistrellus* spp. passes occurred, accounting for 84.3% of the total bat passes, whilst 12.7% of passes occurred in the autumn and 3% occurred in the spring.

3.34 *Myotis* spp. activity levels were highest in Summer (BAI 0.68), lower in Autumn (BAI 0.05) and lowest in Spring (BAI 0.01). The summer period was when most of the *Myotis* spp. passes occurred, accounting for 92.3% of the total bat passes, whilst 6.3% of passes occurred in the autumn and 1.4% occurred in the spring.

3.35 *Nyctalus* spp. activity levels were very low throughout the survey period, with a total of 9 passes recorded. Activity levels were highest in Summer (BAI 1.83). The summer period was when most of the *Nyctaus* spp. bat passes occurred, accounting for 55.5% of the total bat passes whilst 44.4% of passes occurred in the autumn.

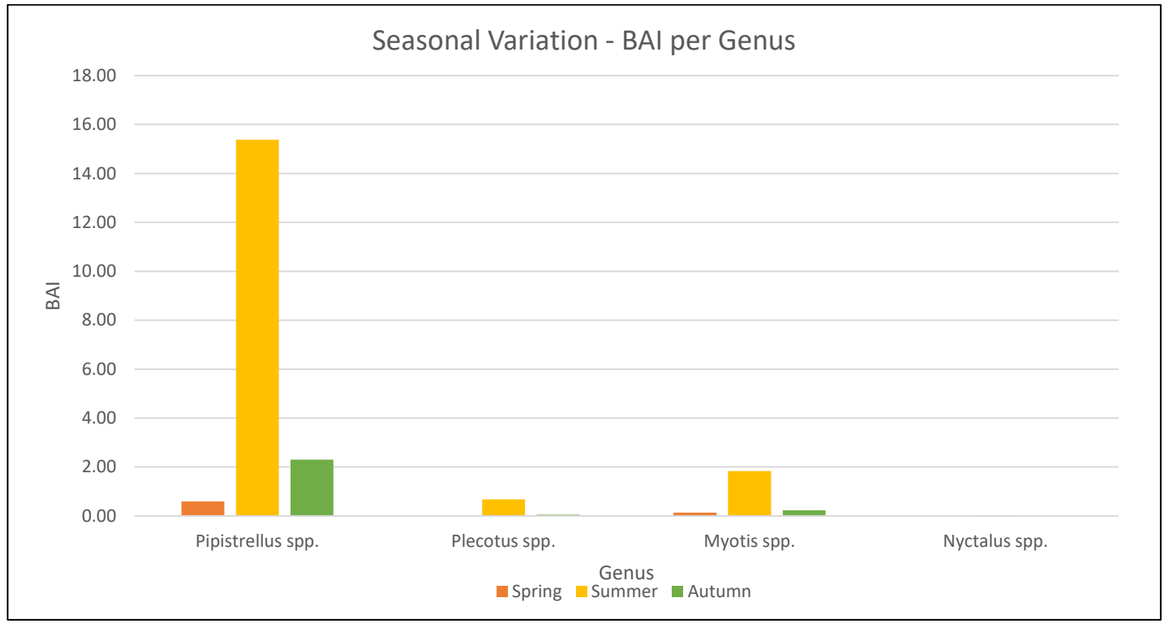
3.36 *Plecotus* spp. activity levels were low throughout the survey seasons, with a total of 143 passes recorded. Activity was highest in Summer (BAI 0.68) with low activity in the Autumn (BAI 0.05) and Spring (BAI 0.01). The summer period was when most of the *Plecotus* spp. passes occurred, accounting for 83.4% of the total bat passes, whilst 10.7% of passes occurred in the autumn and 5.9% occurred in the spring.

Table 3.4: Total BAI per Genus per Season

Genus	Spring	Summer	Autumn
Pipistrellus spp.	0.59	15.38	2.30
Plecotus spp.	0.01	0.68	0.05

Genus	Spring	Summer	Autumn
Nyctalus spp.	0.14	1.83	0.23
Myotis spp.	0.00	0.03	0.02

Chart 3.4: Seasonal Variation – BAI per Genus



Ecobat Results

3.37 Full reports of the Ecobat output for each survey season can be found in Annex A.

3.38 The following tables display the percentiles and corresponding categories provided by Ecobat.

Table 3.5: Activity Categories per Species - Spring

Species/ Species Group	Median Percentile	Activity Level Category	95% CIs[8]	Max Percentile	Nights recorded (out of 962)	Reference Range[9]
Myotis	72	Moderate to High	72 – 72	100	20	25
Pipistrellus spp.	50	Moderate	50 – 50	100	6	8
Pipistrellus pipistrellus	2	Low	4 – 27.5	48	26	708
Pipistrellus pygmaeus	4	Low	7.5 – 7.5	16	10	252
Plecotus	100	High	0	100	2	2

[8] Confidence Interval is the range of values within which the mean value for the dataset lies.

Table 3.6: Activity Categories per Species – Summer

Species/ Species Group	Median Percentile	Activity Level Category	95% Cis	Max Percentile	Nights recorded (out of 598)	Reference Range
Myotis	16	Low	26 – 52	100	76	357
Nyctalus	18	Low	18 – 18	18	5	148
Pipistrellus spp.	39	Low to Moderate	52.2 – 85	100	50	120
Pipistrellus nathusii	40	Low to Moderate	84 – 84	100	13	22
Pipistrellus pipistrellus	8	Low	7.5 – 68.5	58	143	4,015
Pipistrellus pygmaeus	16	Low	9.5 – 40.5	55	68	836
Plecotus	37	Low to Moderate	57 – 94	100	60	148

Table 3.7: Activity Categories per Species – Autumn

Species/ Species Group	Median Percentile	Activity Level Category	95% Cis	Max Percentile	Nights recorded (out of 598)	Reference Range
Myotis	56	Moderate	64.5 – 64.5	100	29	46
Nyctalus	11	Low	0	18	2	27
Pipistrellus spp.	42	Moderate	0	100	5	7
Pipistrellus pipistrellus	5	Low	3.5 – 30	58	53	1,264
Pipistrellus pygmaeus	5	Low	6.5 – 8	49	42	512
Plecotus	62	Moderate to High	62 – 62	62	8	24

Table 3.8: Activity Categories per Species – All Seasons

Species/ Genus	Activity Levels Category		
	Spring	**Summer**	**Autumn**
Myotis	Moderate to High	Low	Moderate
Nyctalus	N/A	Low	Low
Pipistrellus spp.	Moderate	Low to Moderate	Moderate
Pipistrellus nathusii	N/A	Low to Moderate	N/A
Pipistrellus pipistrellus	Low	Low	Low

[9] Reference Range is the number of nights of data already held by Ecobat, against which the uploaded data is compared. Ecobat recommends a 200+ Reference Range to be confident in the relative activity level.

Species/ Genus	Activity Levels Category		
	Spring	**Summer**	**Autumn**
Pipistrellus pygmaeus	Low	Low	Low
Plecotus	High	Low to Moderate	Moderate to High

3.39 Across all three seasons, Ecobat calculated a 'Low' Activity Level for *Pipistrellus pipistrellus* and *Pipistrellus pygmaeus*, based on a total of 3,404 passes. The Reference Range for all of these results was > 200, indicating a robust analysis. However, Ecobat applied a 'Moderate' Activity Level to *Pipistrellus* spp. for Spring and Autumn, based on 8 and 7 passes respectively, and a Low to Moderate Activity for the Summer, based on 120 passes. The Reference Ranges for each analysis were all ≤ 120, and therefore do not indicate a robust analysis. It is more likely that *Pipistrellus* spp. activity is considered to be low across the entire season, in line with *Pipistrellus pipistrellus* and *Pipistrellus pygmaeus* activity levels.

3.40 *Pipistrellus nathusii* recorded Low to Moderate activity levels in the Summer although the reference range for this was below the recommended level.

3.41 *Plecotus auritus* recorded High activity levels for Spring, Low to Moderate activity levels in Summer and Moderate to High activity levels in Autumn. However, the reference range during all of these seasons were below the recommended level.

3.42 *Nyctalus* activity levels were assigned Low across the Summer and Autumn survey seasons.

3.43 Activity levels at the individual turbine scale may be higher than the average across the BSA.

Detector Location

3.44 **Table 3.9** below presents the bat activity categories assigned to each species, at each detector location, across the three seasons.

Table 3.9: Ecobat Activity Categories for Species/Genus at all Locations Across all Seasons[10]

Detector ID	Spring					Summer							Autumn					
Main Array of Detectors	***Myotis***	***Pipistrellus pipistrellus***	***Pipistrellus pygmaeus***	***Pipistrellus* spp.**	***Plecotus***	***Myotis***	***Nyctalus***	***Pipistrellus nathusii***	***Pipistrellus pipistrellus***	***Pipistrellus pygmaeus***	***Pipistrellus* spp.**	***Plecotus***	***Myotis***	***Nyctalus***	***Pipistrellus pipistrellus***	***Pipistrellus pygmaeus***	***Pipistrellus* spp.**	***Plecotus***
D1	Moderate to High	Low	Nil	Moderate	Nil	Low	Nil	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Low	Low	Low	Nil	Moderate to High
D2	Moderate to High	Low	Nil	Nil	Nil	Low	Low	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Nil	Nil
D3	Moderate to High	Low	Low	Nil	Nil	Low	Low	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Nil	Low	Nil	Moderate to High
D4	Moderate to High	Low	Low	Moderate	Nil	Nil	Nil	Nil	Low	Low	Low to Moderate	Nil	Moderate	Nil	Low	Low	Moderate	Moderate to High
D5	Moderate to High	Nil	Nil	Moderate	Nil	Low	Low	Low to Moderate	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Moderate	Moderate to High

[10] Cells that are defined as 'Nil' indicate working detectors from which either no data or insufficient data (no bat passes or a low number of bat passes) were available to quantify activity levels. Cells that are defined as 'No data' indicate the occurrence of a technical fault such that the detector was not recording during the survey period.

3.45 Ecobat data is separated by species rather than genus, as grouped above; however, in this report data is discussed according to genus to allow comparison with BAI calculations. Where it is relevant to activity levels, individual species will be discussed.

3.46 Activity levels at each detector location during each season were quantified and compared with data held by Ecobat in a national reference dataset. As at the species level per season above, this allows a percentile to be assigned to each species at each detector location and from this a category of bat activity.

3.47 *Pipistrellus pipistrellus* activity levels were generally similar across detectors and seasons, generally low across the entire survey period with Nil activity levels at Detector 3 in Autumn, along with at Detectors 5 and 10 in Spring.

3.48 *Pipistrellus pygmaeus* activity levels were low overall with Nil activity levels at Detectors 1, 2, 5, 7, 8 and 10 in Spring.

3.49 *Pipistrellus* spp. activity levels were Low to Moderate at all detectors in Summer but were most commonly Nil or Moderate across the remaining survey period.

3.50 *Plecotus* spp. were identified as having Low to Moderate activity levels at all detector locations in Summer, with the exception of Detector 4 which was Nil. In Spring, Nil activity was recorded at all detectors, with the exception of Detectors 6 and 9 which was High. In Autumn activity levels were most commonly Nil or Moderate to High.

3.51 *Pipistrellus pipistrellus* and *Pipistrellus pygmeaus* recorded above the recommended 200 reference range[9], as specified in Ecobat to ensure a high level of confidence in the relative activity level, across the whole survey period. Activity levels for *Myotis* in the Summer survey period also recorded above this reference range whilst the remaining species groups all recorded below this reference range. The number of similar nights of data within the Ecobat database was not sufficient to give a comparison with field data. This limitation is balanced by the BAI analysis as this still allows for the comparison of activity levels between genera. The date range and geographic region were not expanded to increase the searchable data in Ecobat as this would include nights from different seasons and areas with few geographic (and hence climactic) similarities to the Site.

Detector ID	Spring					Summer							Autumn					
D6	Moderate to High	Low	Low	Nil	High	Low	Nil	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Moderate	Nil
D7	Nil	Low	Nil	Moderate	Nil	Low	Nil	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Moderate	Moderate to High
D8	Nil	Low	Nil	Nil	Nil	Low	Low	Low to Moderate	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Nil	Nil
D9	Moderate to High	Low	Low	Moderate	High	Low	Nil	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Nil	Low	Low	Nil	Moderate to High
D10	Nil	Nil	Nil	Nil	Nil	Low	Nil	Nil	Low	Low	Low to Moderate	Low to Moderate	Moderate	Low	Low	Low	Moderate	Nil

Chapter 4
Discussion and Interpretation

Desk Study

4.1 A detailed account of the methods adopted, and findings, is provided in Appendix 6.1, which also sets out the legislative provisions afforded to protected species.

4.2 The desk study returned ten records of soprano pipistrelle, four records of common pipistrelle, four records of brown long-eared, one record of Daubenton's bat, two unidentified pipistrelle records and eight unidentified bat records within 10 km of the BSA. There were no other records of bats within the Study Area.

Bat Roost Potential

4.3 No buildings or structures within the BSA were identified as having sufficient suitability to support roosting bats.

4.4 As previously stated, it was not possible to survey all trees in detail within the BSA; however one PRF-M and three PRF-I woodlands within the BSA were identified as having sufficient suitability to support roosting bats. Roosting features were found in these areas of broadleaved woodland, but the majority of trees, which were plantation, were considered to be PRF-N.

4.5 Considering the results of the surveys, and that the majority of the BSA consists of conifer plantation, bat roost potential across the BSA is considered to be low.

Ground-Level Static Surveys

Interpretation Method

4.6 This section applies the data collection, and the Ecobat analysis, in identifying a series of risk types, according to the NatureScot guidance[1] The data is interpreted below in a sequential manner, to arrive at a conclusion of risk analysis.

Species Variation

4.7 *Pipistrellus* spp. dominated the bat activity recorded during the surveys, accounting for 86% of all passes recorded. Detectors 9, 6 and 4 accounted for 64.69% of all passes. Excluding Detectors 1 and 2, all detectors were located within open blanket bog and/or marshy grassland. Detector 9 was located within open blanket bog near an immature plantation stand of Sitka spruce conifer plantation, along with a small tributary running into the Allt na Criche. Detector 6 was located within open blanket bog near a semi-natural rowan and birch woodland, along a tributary of the Glenkin Burn. Detector 4 was located at the centre of the BSA, within a depression of blanket bog that gave rise to a small area of marshy grassland. Detector 1 was located in the south of the BSA, within an area of felled forestry plantation surrounded by small blocks of Sitka spruce conifer plantation. Detector 2 was located nearby at the south-east of the BSA in a more open area of felled forestry plantation adjacent to tributary of the Balgaidh Burn.

4.8 In comparison with levels of *Pipistrellus* spp., all other species recorded during the surveys were found to be present in very low numbers. *Myotis* spp. accounted for 10.3% of total passes across all seasons, with the highest passes associated with Detector 6 accounting for 60.9% of all *Myotis* spp. passes. Detectors 1, 2, 3, 4, 7 and 8 accounted for 23.53% of all *Myotis* spp. passes.

4.9 *Plecotus* spp. accounted for 3.5% of all bat passes with Detectors 9, 7 and 4 accounted for 64.1% of passes. *Nyctalus* spp. accounted for 0.2% of all bat passes, with only nine passes recorded. Detectors 1, 3 and 9 accounted for 77.7% of these passes.

4.10 The Summer period was when most of the bat passes occurred, accounting for 84.4% of the total bat passes, whilst 12.4% of passes occurred in the Autumn and 3.2% occurred in the Spring.

Spatial Variation

4.11 Detectors 9 at the north of the BSA individually accounted for 40.9% of bat passes recorded for the entire survey period. Detectors 4, 6 and 7 at the centre of the accounted for 29.3% of bat passes whilst Detectors 1, 2, and 3 at the south end of the BSA accounted for 20.8% of bat passes.

4.12 All detectors were placed either within areas of blanket bog or marshy grassland with the exception of Detectors 1 and 2, which were located in felled forestry plantation. Higher bat activity was generally recorded by detectors that were located close to watercourses; such as Detector 9 being located near the Allt na Criche and Detector 6 which was located close to a tributary of the Spout Burn. Many of these watercourses, along with other linear features on-site such as plantation edges and forest rides, will give bats opportunities to navigate to other waterbodies within the wider area, such as where the Balgaidh Burn flows into the Bishop's Glen.

4.13 Felled plantation essentially lacks linear features which bats use to commute, although it can contribute to the creation of edge habitats at the Site Boundary with adjacent standing woodland. Detectors 1 and 2 were located in felled plantation with some proximity to tributaries of the Balgaidh Burn, and recorded the forth and fifth highest BAI respectively.

4.14 *Pipistrellus* spp. activity was highest in the north of the BSA, with 67.8% of all passes recorded, led by Detector 9 accounting for 44.3% of these passes, whilst the south of the BSA accounted for 32.2% of passes

4.15 *Myotis* spp. activity was lower in comparison to *Pipistrellus* spp., with only 425 passes recorded. The north-western half of the BSA accounted for 81.6% of *Myotis* spp. passes, with 60.9% of these coming from Detector 6, whilst the south-east accounted for 18.4% of all *Myotis* spp. passes.

4.16 A total of 142 passes were recorded for *Plecotus* spp., with 66.2% passes recorded in the north-western half of the BSA, with Detector 9 accounting for 38.73% of these whilst 33.8% of *Plecotus* spp. passes came from the south-east of the BSA.

4.17 Only 17 passes of *Nyctalus* spp. were recorded throughout the entire survey period. 66.6% of *Nyctalus* spp. passes were recorded in the south-east, with 11.1% in the west and 22.2% in the north of the BSA.

4.18 Detector 9, which recorded the highest number of passes throughout the entire survey period, was located 115 m east of a tributary of the Allt na Criche. Detector 6 recorded the second highest number of bat passes and was located 60 m south-west from a tributary of the Spout Burn. Detector 4 recorded the third highest amount of bat passes but was not located near any watercourses or other linear features. Detectors 1 and 2, which recorded the fourth and fifth highest amount of bat passes respectively, were both located directly adjacent to tributaries of the Balgaidh Burn.

4.19 Given the limited roosting opportunities within the BSA, it is likely that bats are largely commuting into the BSA to forage. Bats are likely using watercourses and forest rides to navigate into and around the BSA, exploiting foraging opportunities along riparian habitats, forest rides and woodland edges.

Site Risk Assessment

4.20 As per the guidance developed by NatureScot[1] a Site Risk Assessment was conducted to quantify the risk posed to bat habitat by the Proposed Development.

4.21 The habitat is scored from 'Low' to 'High' based on the potential to support bats, by assessing the roosting, foraging, and commuting opportunities present.

4.22 A three-factor analysis is carried out to score the project size from 'Small' (1) to 'Large' (3). This involves assessing the number of proposed turbines, the height of proposed turbines, and wind developments within 5 km or 10 km (dependent on number of proposed turbines) of the Proposed Development, to provide an overall project size score.

4.23 An overall 'Site Risk Level' for the Proposed Development can then be determined using the risk assessment matrix from the NatureScot guidance[1] (see Table 4.1).

Table 4.1: Initial Site Risk Assessment Matrix

	Project Size			
Habitat Risk		Small	Medium	Large
	Low	1	2	3
	Medium	2	3	4
	High	3	4	5

Habitat Risk

4.24 The BSA generally lacks roosting opportunities for bats. There is a lack of structures within the BSA with suitability to support roosting bats. Woodland areas were almost entirely commercial conifer plantation (including recently felled plantation), with limited semi-mature rowan and birch woodland cover occurring on the west side of the BSA, which generally lack suitable roosting opportunities for bats. Regarding foraging opportunities, the numerous watercourses present throughout the BSA are likely to provide the most productive invertebrate prey source, with forays into more open habitats during suitable weather conditions. However, the absence of waterbodies, mature broadleaved woodland, and prominent linear features (e.g., hedgerows, large watercourses and extensive connected broadleaved woodland) within the BSA, means that foraging and commuting opportunities for bats are limited to smaller watercourses, tracks and forest rides. For the reasons stated, the habitat risk is considered to be **Low**.

Risk Assessment

4.25 The Proposed Development comprises seven turbines. This number of turbines would equate to a Small project size[1]. However, the turbine blade tips are up to 200 m in height, which indicates a 'Large' project size. While the project size will be seven turbines, considering the height of the blade tips and the number of operational wind farms within 5 km of the Proposed Development, a **Medium** project size has been applied to ensure a conservative assessment.

4.26 As of June 2025, no operational or consented wind farms were identified within 5 km of the Site.

4.27 Having evaluated the habitat risk as **Low** and the project size as **Medium**, the BSA is assessed as having a Site Risk Level of 2, which equates to a **Medium** Site Risk for collision effects on bats as per Table 4.1.

Collision Risk Assessment

4.28 Following the steps outlined in the NatureScot guidance[1] the Site Risk level, determined using Table 4.1, was used in conjunction with the BAI results to assess the overall risk to each species categorised as 'high collision risk'.

4.29 High collision risk species in Scotland include the following species:

- Common pipistrelle;
- Soprano pipistrelle;
- Nathusius' pipistrelle;
- Noctule *Nyctalus noctule*; and
- Leisler's bat.

4.30 With the exception of *Myotis* spp. and *Plecotus* spp., the species recorded within the BSA are high collision risk. Soprano and common pipistrelle accounted for the majority of activity recorded, with 3,004 passes for common pipistrelle, and 400 passes for soprano pipistrelle. In addition, there were 135 passes assigned to *Pipistrellus* spp., where the recording could only be verified to genus. *Pipistrellus* spp. accounted for 86% of all bat species recorded for the entire survey period.

4.31 A total of nine passes were recorded as *Nyctalus* spp., where the recording could only be verified to genus.

4.32 Twenty-two Nathusius' pipistrelle passes were recorded during the Summer survey period with Detector 9 recording 15 of these calls, whilst Detector 6 recorded seven. Both detectors were located at the north-western half of the BSA.

4.33 For each high collision risk species, the guidance was followed to determine the 'Typical' and 'Peak' risks posed to these species by the Proposed Development.

- Typical Risk: The risk posed to a species by the Proposed Development based on the mean activity levels of that species. Used to determine the likely general effect of the Proposed Development on each species.
- Peak Risk: The risk posed by the Proposed Development based on the highest recorded activity level of that species. Used to identify the highest risk posed by the Proposed Development to account for peaks in bat activity.

4.34 To calculate the Typical Risk, the most common activity category provided by Ecobat was used. This was the most common category assigned to each species at all locations over all survey seasons. To calculate the Peak Risk, the highest activity level assigned to a species was used.

4.35 Table 4.2 was used in accordance with NatureScot guidance[1] to return a numerical value for the Typical and Peak Risk for each species.

4.36 Results of Typical and Peak Risks posed by the Proposed Development, to each high-risk species are presented in Table 4.3.

Table 4.2: Overall Risk Assessment Matrix

Site Level Risk	Ecobat Activity Category					
	Nil (0)	Low (1)	Low-moderate (2)	Moderate (3)	Moderate-high (4)	High (5)
Lowest (1)	0	1	2	3	4	5
Low (2)	0	2	4	6	8	10
Medium (3)	0	3	6	9	12	15
High (4)	0	4	8	12	16	20
Highest (5)	0	5	10	15	20	25

Table 4.3: Overall Risk Outcomes per Species

Species	'Typical' Risk	'Peak' Risk
Myotis	9	12
Nyctalus	3	3
Pipistrellus nathusii	6	6
Pipistrellus pipistrellus	3	3
Pipistrellus pygmaeus	3	3
Pipistrellus spp.	9	9
Plecotus	9	15
* See following paragraphs for additional context and assessment regarding Peak Risk to bat species		

4.37 From this overall assessment, risks posed by the Proposed Development to high collision risk species were grouped according to the NatureScot guidance[1]:

- Low risk to species (green): 0–4;
- Medium risk to species (amber): 5–12; and

- High risk to species (red): 15–25.

4.38 The results indicate that across the BSA, there is a Low Typical Risk to common pipistrelle, Nathusius' pipistrelle, soprano pipistrelle and *Nyctalus* spp. At times of peak activity, the Peak Risk to both species is Low.

4.39 The analysis indicates that the Peak Risk to *Myotis* spp., *Pipistrellus* spp. and *Plecotus* spp. is High; however, these could not be identified to species level and are based on small reference ranges (<200), and so are not considered to be statistically robust.

4.40 The Site Risk Level assigned was intentionally conservative to ensure a robust assessment. For these reasons, a Low level of both Typical and Peak Risk is considered most representative of the Site. Taking into account the Site Risk Level (Moderate), it is reasonable to conclude that the Proposed Development poses a Medium overall risk to individual bats.

Population Level Risk Assessment

4.41 Ecobat provides an objective analysis of activity levels of bat species within the BSA. Using the Ecobat data allows for the determination of the risks posed to each species recorded at the BSA.

4.42 As specified in the NatureScot guidance[1], the risk to each species is then considered at the population level, specifically those which have a high population vulnerability. Nathusius pipistrelle, noctule and Leisler's bat are classified as species of high population vulnerability. However, given the low activity levels and that the Cowal Peninsula does not form a core part of the range of these species' groups, the risk is considered to be Low.

4.43 Whilst the analysis of the bat activity data for the BSA calculates a Low Typical Risk to pipistrelle species of bat, these are not considered species of high population vulnerability and so no further assessment of collision risk is required.

Annex A

Ecobat Outputs

Ecobat Report
2025-03-27

Geo filter: county, Time filter: +- 1 month

Summary

Bats were detected on **14** nights between **17/04/2024** and **07/05/2024**, using **9** static bat detectors. Throughout this period, **5** species were recorded. **Table 1.** Detectors were placed at the following locations:

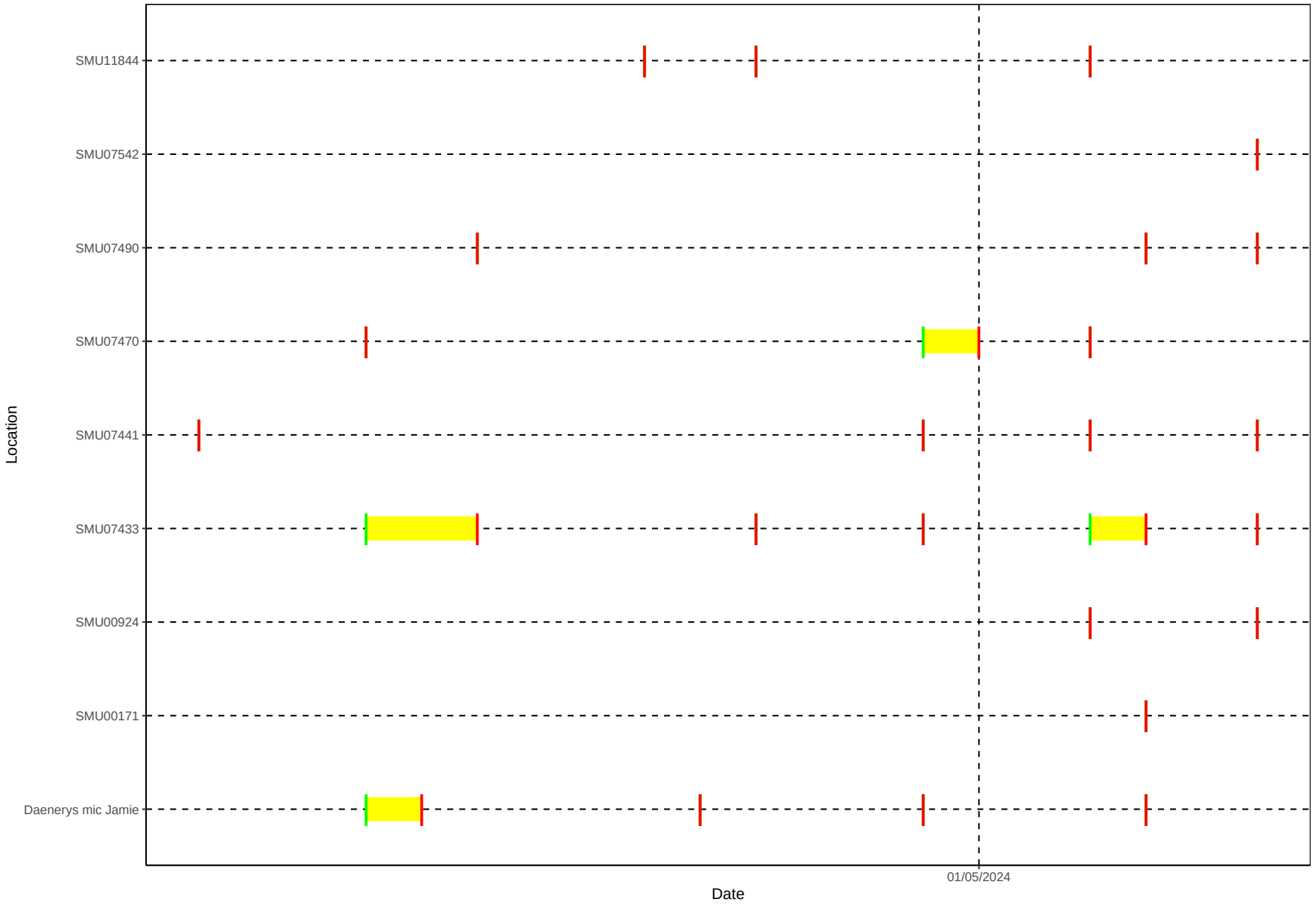
Detector ID	Latitude	Longitude
SMU07542	55.95851	-4.980957
Daenerys mic Jamie	55.96197	-4.975672
SMU07490	55.96522	-4.969808
SMU07470	55.96985	-4.969198
SMU00171	55.96260	-4.983985
SMU07441	55.96625	-4.978728
SMU00924	55.97046	-4.976648
SMU07433	55.97521	-4.978595
SMU11844	55.97647	-4.985323

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
Daenerys mic Jamie	7
SMU00171	2
SMU00924	3
SMU07433	9
SMU07441	4
SMU07470	8
SMU07490	3
SMU07542	1
SMU11844	7

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


SMU11844
SMU07542
SMU07490
SMU07470
SMU07441
SMU07433
SMU00924
SMU00171
Daenerys mic Jamie
Location
01/05/2024
Date

Part 1: Percentile 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.

Per Detector

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

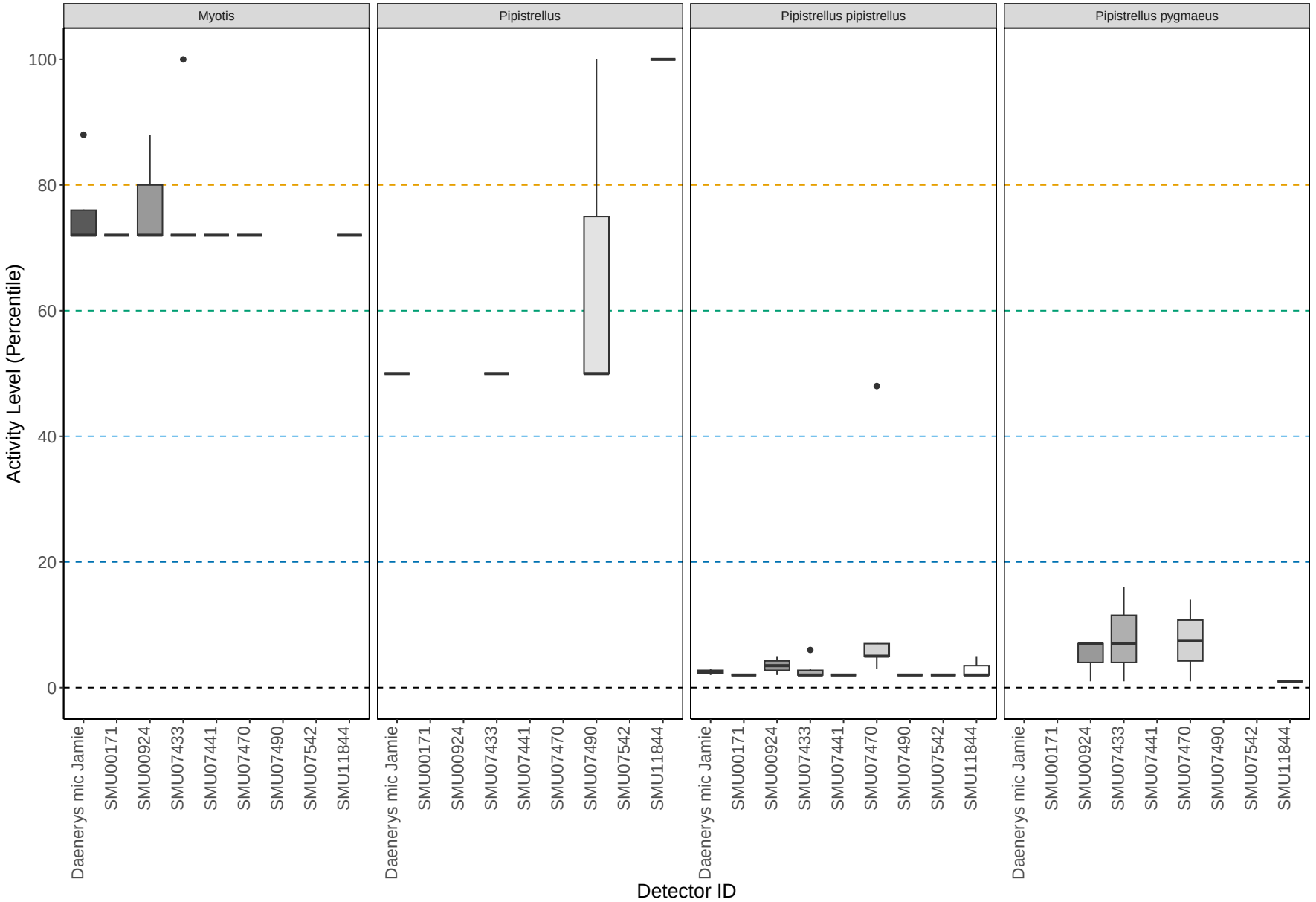
Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Daenerys mic Jamie	Myotis	0	1	3	0	0	0
Daenerys mic Jamie	Pipistrellus	0	0	0	1	0	0
Daenerys mic Jamie	Pipistrellus pipistrellus	0	0	0	0	0	2
SMU00171	Myotis	0	0	1	0	0	0
SMU00171	Pipistrellus pipistrellus	0	0	0	0	0	1
SMU00924	Myotis	0	1	2	0	0	0
SMU00924	Pipistrellus pipistrellus	0	0	0	0	0	2
SMU00924	Pipistrellus pygmaeus	0	0	0	0	0	3
SMU07433	Myotis	1	0	4	0	0	0
SMU07433	Pipistrellus	0	0	0	1	0	0
SMU07433	Pipistrellus pipistrellus	0	0	0	0	0	6
SMU07433	Pipistrellus pygmaeus	0	0	0	0	0	3
SMU07441	Myotis	0	0	1	0	0	0
SMU07441	Pipistrellus pipistrellus	0	0	0	0	0	3
SMU07470	Myotis	0	0	3	0	0	0
SMU07470	Pipistrellus pipistrellus	0	0	0	1	0	6
SMU07470	Pipistrellus pygmaeus	0	0	0	0	0	2
SMU07470	Plecotus	1	0	0	0	0	0
SMU07490	Pipistrellus	1	0	0	2	0	0

Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU07490	Pipistrellus pipistrellus	0	0	0	0	0	1
SMU07542	Pipistrellus pipistrellus	0	0	0	0	0	1
SMU11844	Myotis	0	0	3	0	0	0
SMU11844	Pipistrellus	1	0	0	0	0	0
SMU11844	Pipistrellus pipistrellus	0	0	0	0	0	3
SMU11844	Pipistrellus pygmaeus	0	0	0	0	0	2
SMU11844	Plecotus	1	0	0	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
Daenerys mic Jamie	Myotis	72	72 - 72	88	4	25
Daenerys mic Jamie	Pipistrellus	50	0	50	1	8
Daenerys mic Jamie	Pipistrellus pipistrellus	3	2.5 - 2.5	3	2	708
SMU00171	Myotis	72	0	72	1	25
SMU00171	Pipistrellus pipistrellus	2	0	2	1	708
SMU00924	Myotis	72	72 - 72	88	3	25
SMU00924	Pipistrellus pipistrellus	4	3.5 - 3.5	5	2	708
SMU00924	Pipistrellus pygmaeus	7	7 - 7	7	3	252
SMU07433	Myotis	72	72 - 72	100	5	25
SMU07433	Pipistrellus	50	0	50	1	8
SMU07433	Pipistrellus pipistrellus	2	2 - 3	6	6	708
SMU07433	Pipistrellus pygmaeus	7	1 - 16	16	3	252
SMU07441	Myotis	72	0	72	1	25
SMU07441	Pipistrellus pipistrellus	2	2 - 2	2	3	708
SMU07470	Myotis	72	72 - 72	72	3	25
SMU07470	Pipistrellus pipistrellus	5	4 - 27.5	48	7	708
SMU07470	Pipistrellus pygmaeus	8	7.5 - 7.5	14	2	252
SMU07470	Plecotus	100	0	100	1	2
SMU07490	Pipistrellus	50	50 - 50	100	3	8
SMU07490	Pipistrellus pipistrellus	2	0	2	1	708
SMU07542	Pipistrellus pipistrellus	2	0	2	1	708
SMU11844	Myotis	72	72 - 72	72	3	25
SMU11844	Pipistrellus	100	0	100	1	8
SMU11844	Pipistrellus pipistrellus	2	2 - 2	5	3	708
SMU11844	Pipistrellus pygmaeus	1	1 - 1	1	2	252
SMU11844	Plecotus	100	0	100	1	2

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).


Myotis
Pipistrellus
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Activity Level (Percentile)
100
80
60
40
20
0
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID

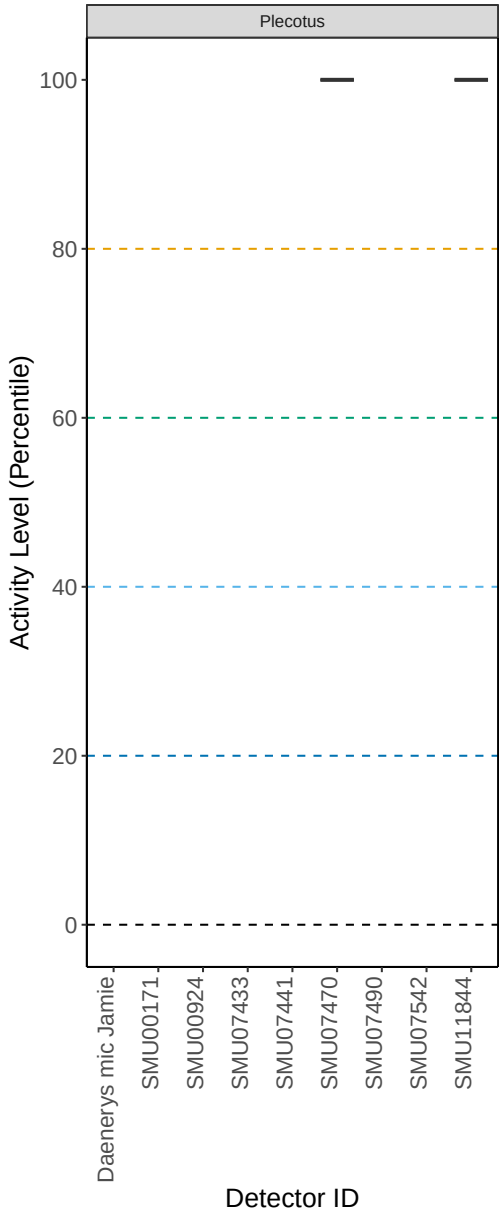
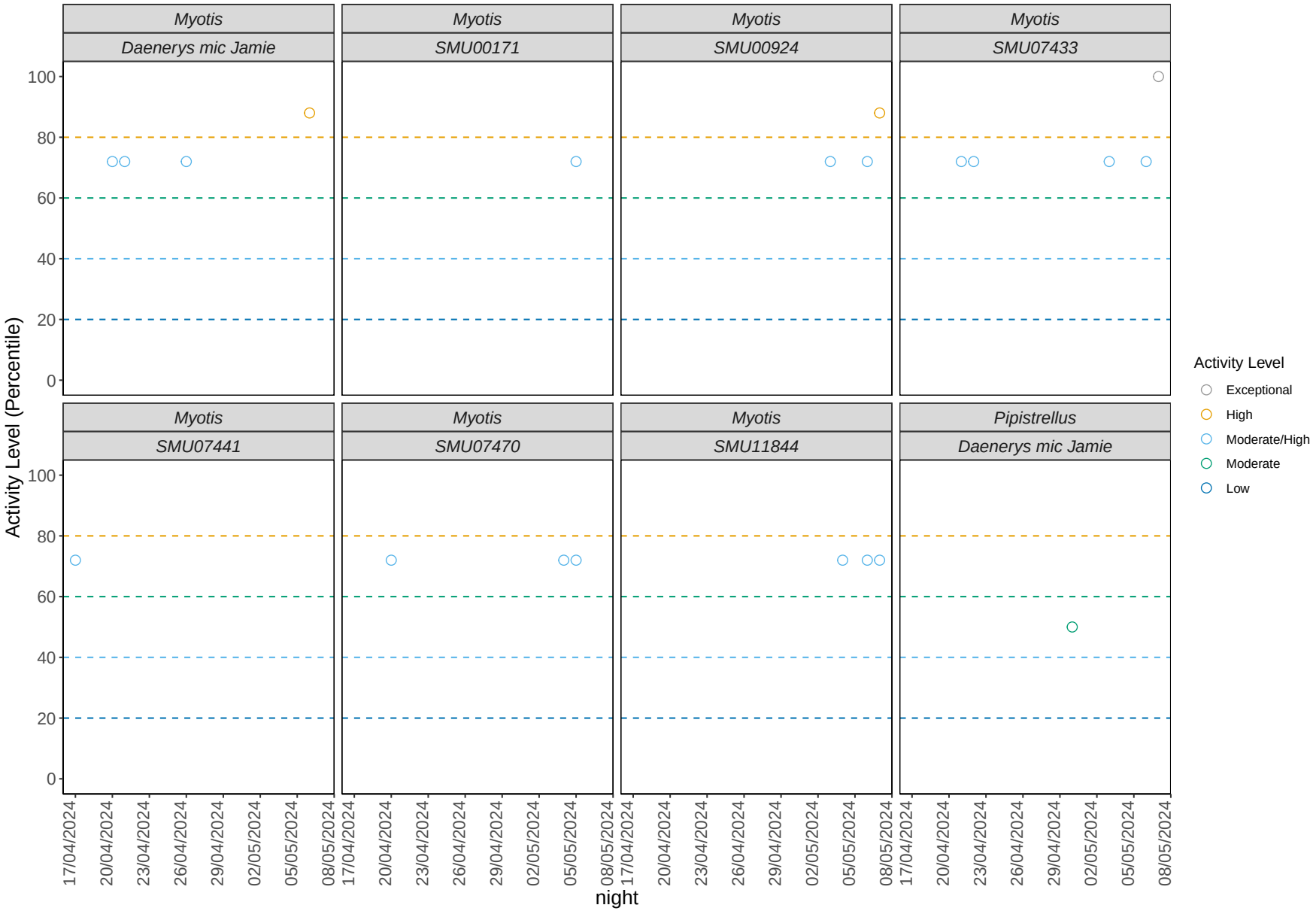
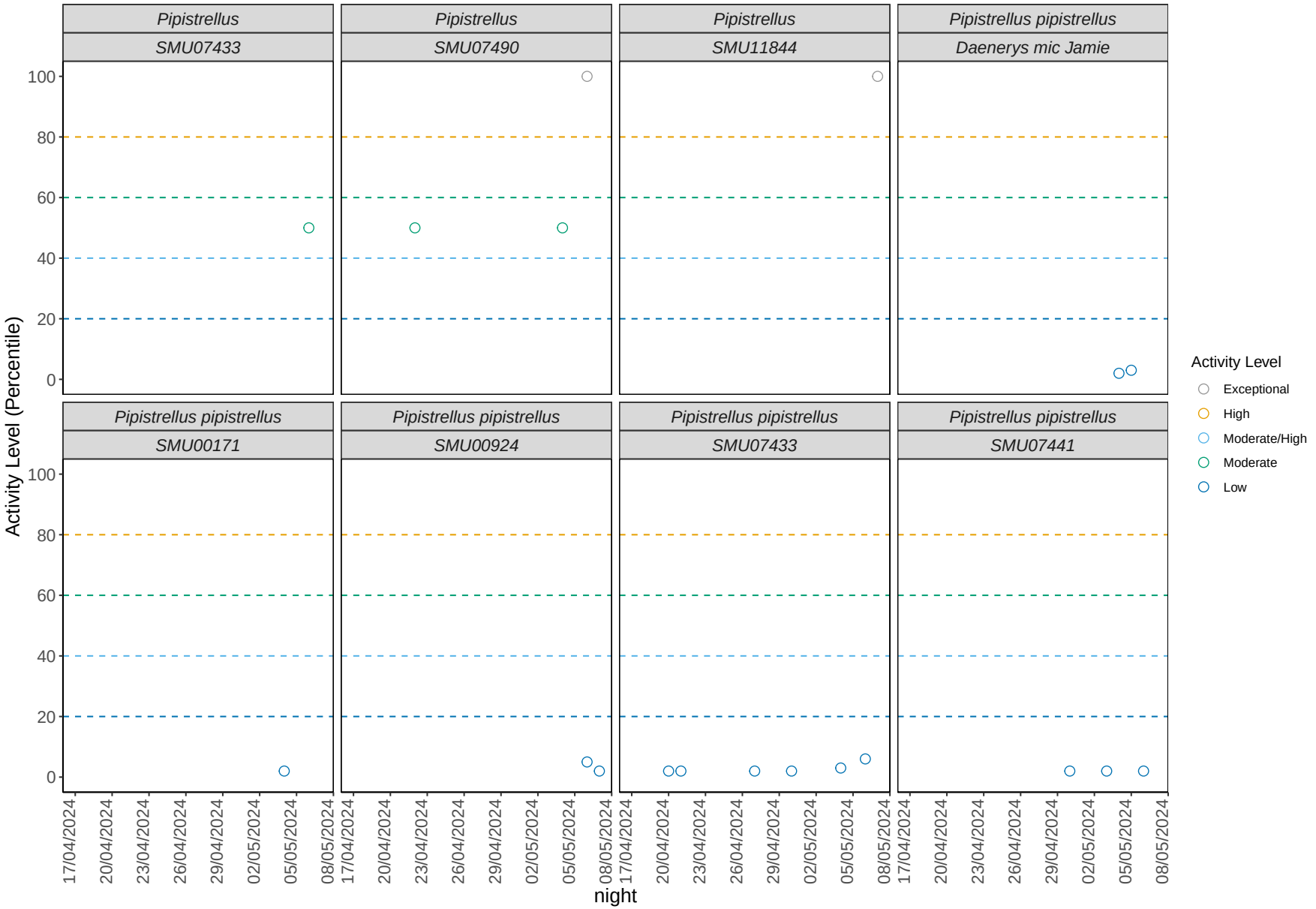
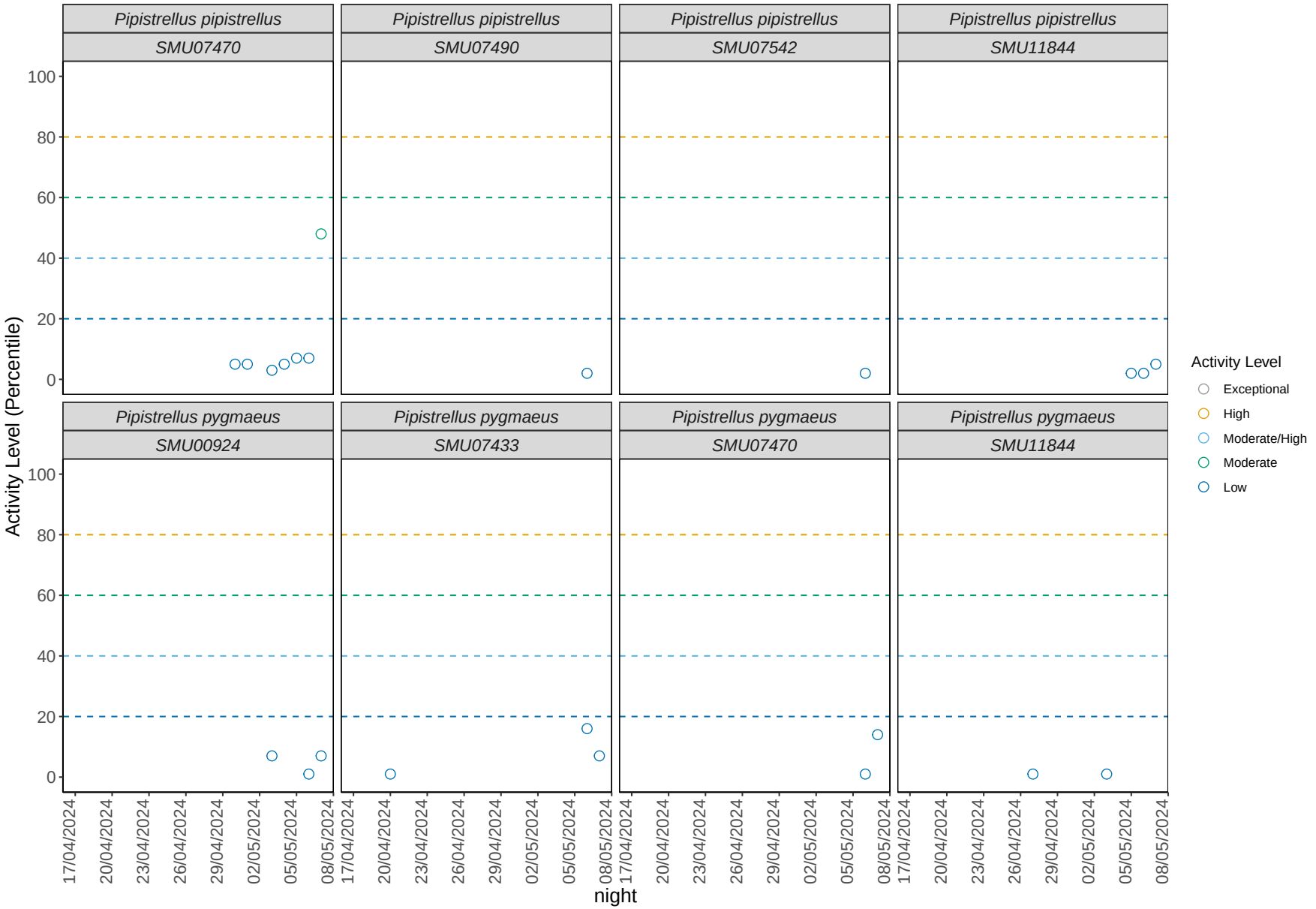
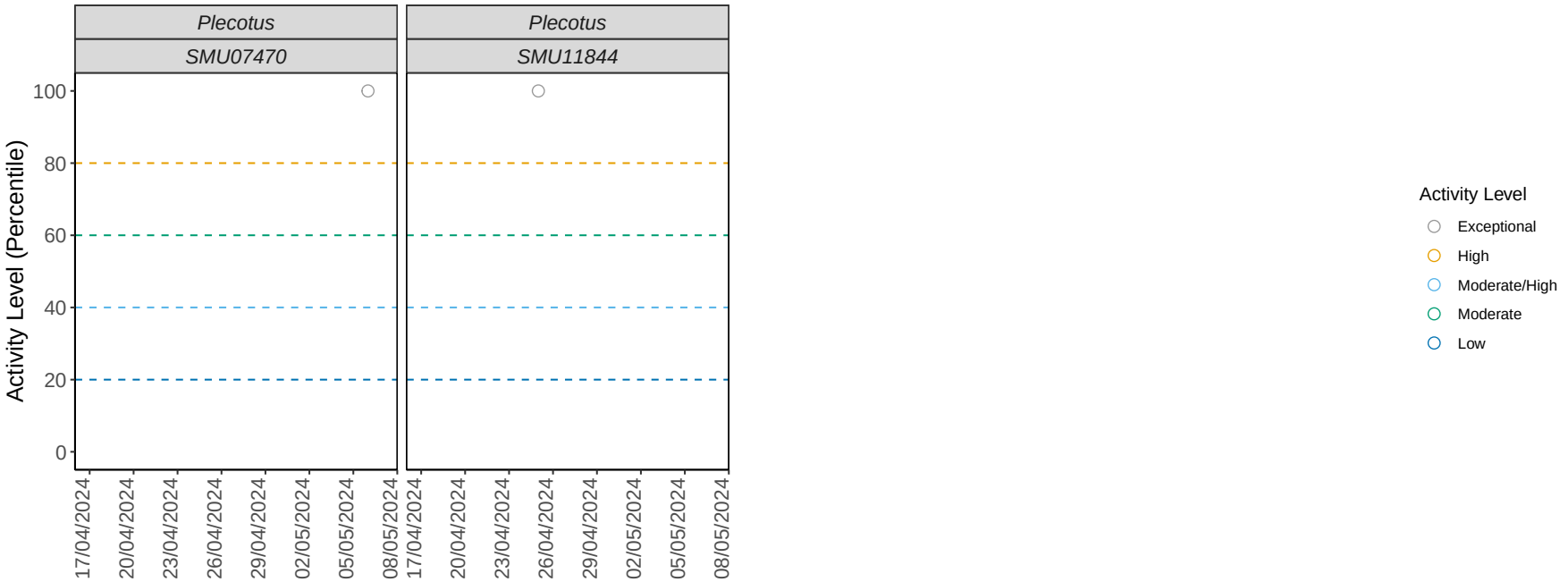

Plecotus
100
80
60
40
20
0
Activity Level (Percentile)
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID

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


Myotis
Daenerys mic Jamie
Myotis
SMU00171
Myotis
SMU00924
Myotis
SMU07433
Myotis
SMU07441
Myotis
SMU07470
Myotis
SMU11844
Pipistrellus
Daenerys mic Jamie
Activity Level (Percentile)
100
80
60
40
20
0
17/04/2024
20/04/2024
23/04/2024
26/04/2024
29/04/2024
02/05/2024
05/05/2024
08/05/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low


Pipistrellus
SMU07433
Pipistrellus
SMU07490
Pipistrellus
SMU11844
Pipistrellus pipistrellus
Daenerys mic Jamie
Pipistrellus pipistrellus
SMU00171
Pipistrellus pipistrellus
SMU00924
Pipistrellus pipistrellus
SMU07433
Pipistrellus pipistrellus
SMU07441
Activity Level (Percentile)
100
80
60
40
20
0
17/04/2024
20/04/2024
23/04/2024
26/04/2024
29/04/2024
02/05/2024
05/05/2024
08/05/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low


Pipistrellus pipistrellus
SMU07470
Pipistrellus pipistrellus
SMU07490
Pipistrellus pipistrellus
SMU07542
Pipistrellus pipistrellus
SMU11844
Pipistrellus pygmaeus
SMU00924
Pipistrellus pygmaeus
SMU07433
Pipistrellus pygmaeus
SMU07470
Pipistrellus pygmaeus
SMU11844
Activity Level (Percentile)
100
80
60
40
20
0
17/04/2024
20/04/2024
23/04/2024
26/04/2024
29/04/2024
02/05/2024
05/05/2024
08/05/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low


Plecotus
SMU07470
Plecotus
SMU11844
Activity Level (Percentile)
100
80
60
40
20
0
17/04/2024
20/04/2024
23/04/2024
26/04/2024
29/04/2024
02/05/2024
05/05/2024
08/05/2024
Activity Level
Exceptional
High
Moderate/High
Moderate
Low

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Daenerys mic Jamie	Myotis	Apr	0	0	3	0	0	0
Daenerys mic Jamie	Myotis	May	0	1	0	0	0	0
Daenerys mic Jamie	Pipistrellus	Apr	0	0	0	1	0	0
Daenerys mic Jamie	Pipistrellus pipistrellus	May	0	0	0	0	0	2
SMU00171	Myotis	May	0	0	1	0	0	0
SMU00171	Pipistrellus pipistrellus	May	0	0	0	0	0	1
SMU00924	Myotis	May	0	1	2	0	0	0
SMU00924	Pipistrellus pipistrellus	May	0	0	0	0	0	2
SMU00924	Pipistrellus pygmaeus	May	0	0	0	0	0	3
SMU07433	Myotis	Apr	0	0	2	0	0	0
SMU07433	Myotis	May	1	0	2	0	0	0
SMU07433	Pipistrellus	May	0	0	0	1	0	0
SMU07433	Pipistrellus pipistrellus	Apr	0	0	0	0	0	4
SMU07433	Pipistrellus pipistrellus	May	0	0	0	0	0	2
SMU07433	Pipistrellus pygmaeus	Apr	0	0	0	0	0	1
SMU07433	Pipistrellus pygmaeus	May	0	0	0	0	0	2
SMU07441	Myotis	Apr	0	0	1	0	0	0
SMU07441	Pipistrellus pipistrellus	Apr	0	0	0	0	0	1

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU07441	Pipistrellus pipistrellus	May	0	0	0	0	0	2
SMU07470	Myotis	Apr	0	0	1	0	0	0
SMU07470	Myotis	May	0	0	2	0	0	0
SMU07470	Pipistrellus pipistrellus	Apr	0	0	0	0	0	1
SMU07470	Pipistrellus pipistrellus	May	0	0	0	1	0	5
SMU07470	Pipistrellus pygmaeus	May	0	0	0	0	0	2
SMU07470	Plecotus	May	1	0	0	0	0	0
SMU07490	Pipistrellus	Apr	0	0	0	1	0	0
SMU07490	Pipistrellus	May	1	0	0	1	0	0
SMU07490	Pipistrellus pipistrellus	May	0	0	0	0	0	1
SMU07542	Pipistrellus pipistrellus	May	0	0	0	0	0	1
SMU11844	Myotis	May	0	0	3	0	0	0
SMU11844	Pipistrellus	May	1	0	0	0	0	0
SMU11844	Pipistrellus pipistrellus	May	0	0	0	0	0	3
SMU11844	Pipistrellus pygmaeus	Apr	0	0	0	0	0	1
SMU11844	Pipistrellus pygmaeus	May	0	0	0	0	0	1
SMU11844	Plecotus	Apr	1	0	0	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
Daenerys mic Jamie	Myotis	Apr	72	72 - 72	72	3
Daenerys mic Jamie	Myotis	May	88	72 - 72	88	1
Daenerys mic Jamie	Pipistrellus	Apr	50	0	50	1
Daenerys mic Jamie	Pipistrellus pipistrellus	May	3	2.5 - 2.5	3	2
SMU00171	Myotis	May	72	0	72	1
SMU00171	Pipistrellus pipistrellus	May	2	0	2	1
SMU00924	Myotis	May	72	72 - 72	88	3
SMU00924	Pipistrellus pipistrellus	May	4	3.5 - 3.5	5	2
SMU00924	Pipistrellus pygmaeus	May	7	7 - 7	7	3
SMU07433	Myotis	Apr	72	72 - 72	72	2
SMU07433	Myotis	May	72	72 - 72	100	3
SMU07433	Pipistrellus	May	50	0	50	1
SMU07433	Pipistrellus pipistrellus	Apr	2	2 - 3	2	4
SMU07433	Pipistrellus pipistrellus	May	5	2 - 3	6	2
SMU07433	Pipistrellus pygmaeus	Apr	1	1 - 16	1	1
SMU07433	Pipistrellus pygmaeus	May	12	1 - 16	16	2
SMU07441	Myotis	Apr	72	0	72	1
SMU07441	Pipistrellus pipistrellus	Apr	2	2 - 2	2	1
SMU07441	Pipistrellus pipistrellus	May	2	2 - 2	2	2
SMU07470	Myotis	Apr	72	72 - 72	72	1
SMU07470	Myotis	May	72	72 - 72	72	2
SMU07470	Pipistrellus pipistrellus	Apr	5	4 - 27.5	5	1
SMU07470	Pipistrellus pipistrellus	May	6	4 - 27.5	48	6
SMU07470	Pipistrellus pygmaeus	May	8	7.5 - 7.5	14	2
SMU07470	Plecotus	May	100	0	100	1
SMU07490	Pipistrellus	Apr	50	50 - 50	50	1
SMU07490	Pipistrellus	May	75	50 - 50	100	2
SMU07490	Pipistrellus pipistrellus	May	2	0	2	1
SMU07542	Pipistrellus pipistrellus	May	2	0	2	1
SMU11844	Myotis	May	72	72 - 72	72	3
SMU11844	Pipistrellus	May	100	0	100	1
SMU11844	Pipistrellus pipistrellus	May	2	2 - 2	5	3
SMU11844	Pipistrellus pygmaeus	Apr	1	1 - 1	1	1

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
SMU11844	Pipistrellus pygmaeus	May	1	1 - 1	1	1
SMU11844	Plecotus	Apr	100	0	100	1

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	1	2	17	0	0	0
Pipistrellus	2	0	0	4	0	0
Pipistrellus pipistrellus	0	0	0	1	0	25
Pipistrellus pygmaeus	0	0	0	0	0	10
Plecotus	2	0	0	0	0	0

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis	72	72 - 72	100	20
Pipistrellus	50	50 - 50	100	6
Pipistrellus pipistrellus	2	4 - 27.5	48	26
Pipistrellus pygmaeus	4	7.5 - 7.5	16	10
Plecotus	100	0	100	2

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

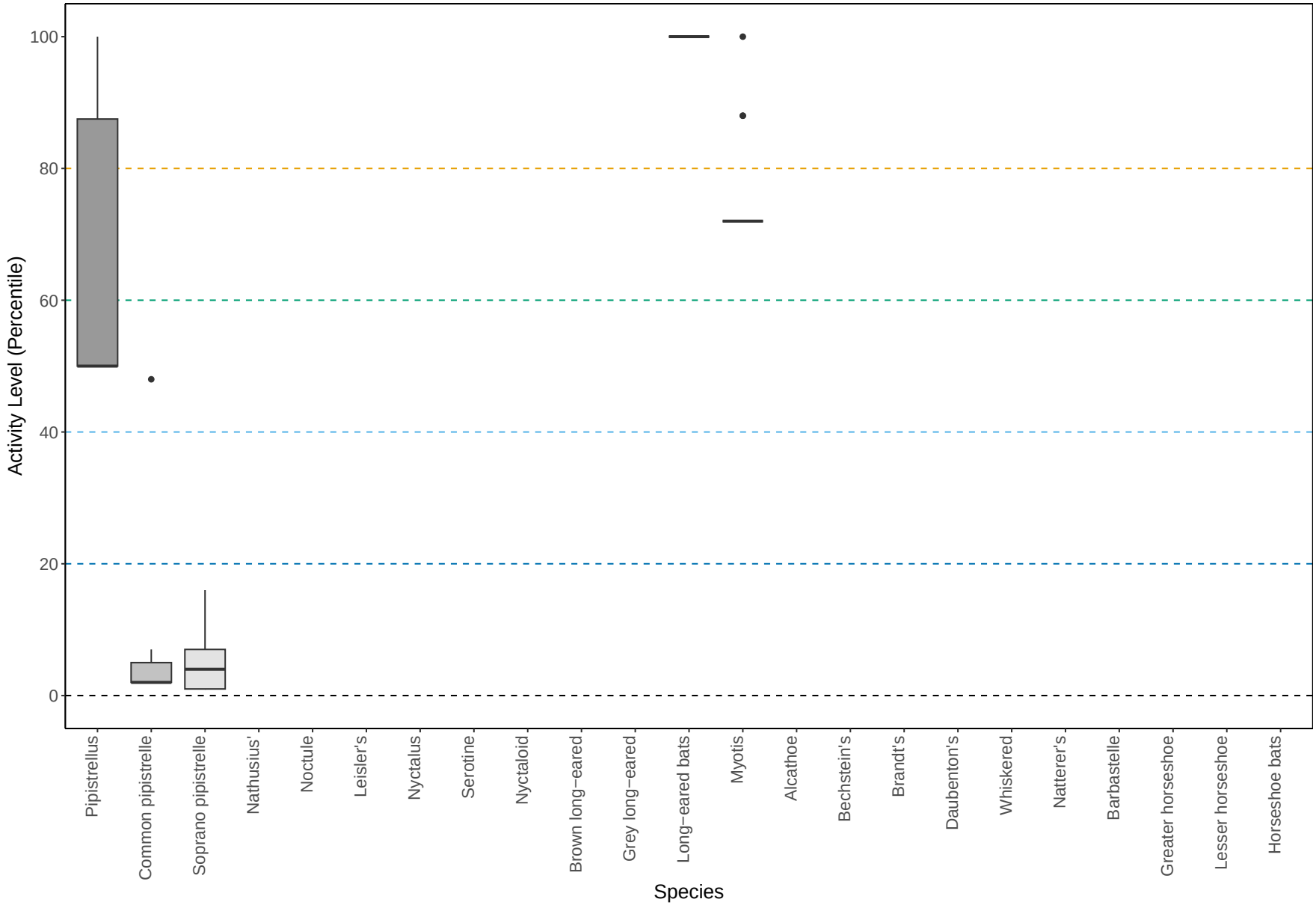

Activity Level (Percentile)
100
80
60
40
20
0
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Noctule
Leisler's
Nyctalus
Serotine
Nyctaloid
Brown long−eared
Grey long−eared
Long−eared bats
Myotis
Alcathoe
Bechstein's
Brandt's
Daubenton's
Whiskered
Natterer's
Barbastelle
Greater horseshoe
Lesser horseshoe
Horseshoe bats
Species

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

Per Site, Per Month

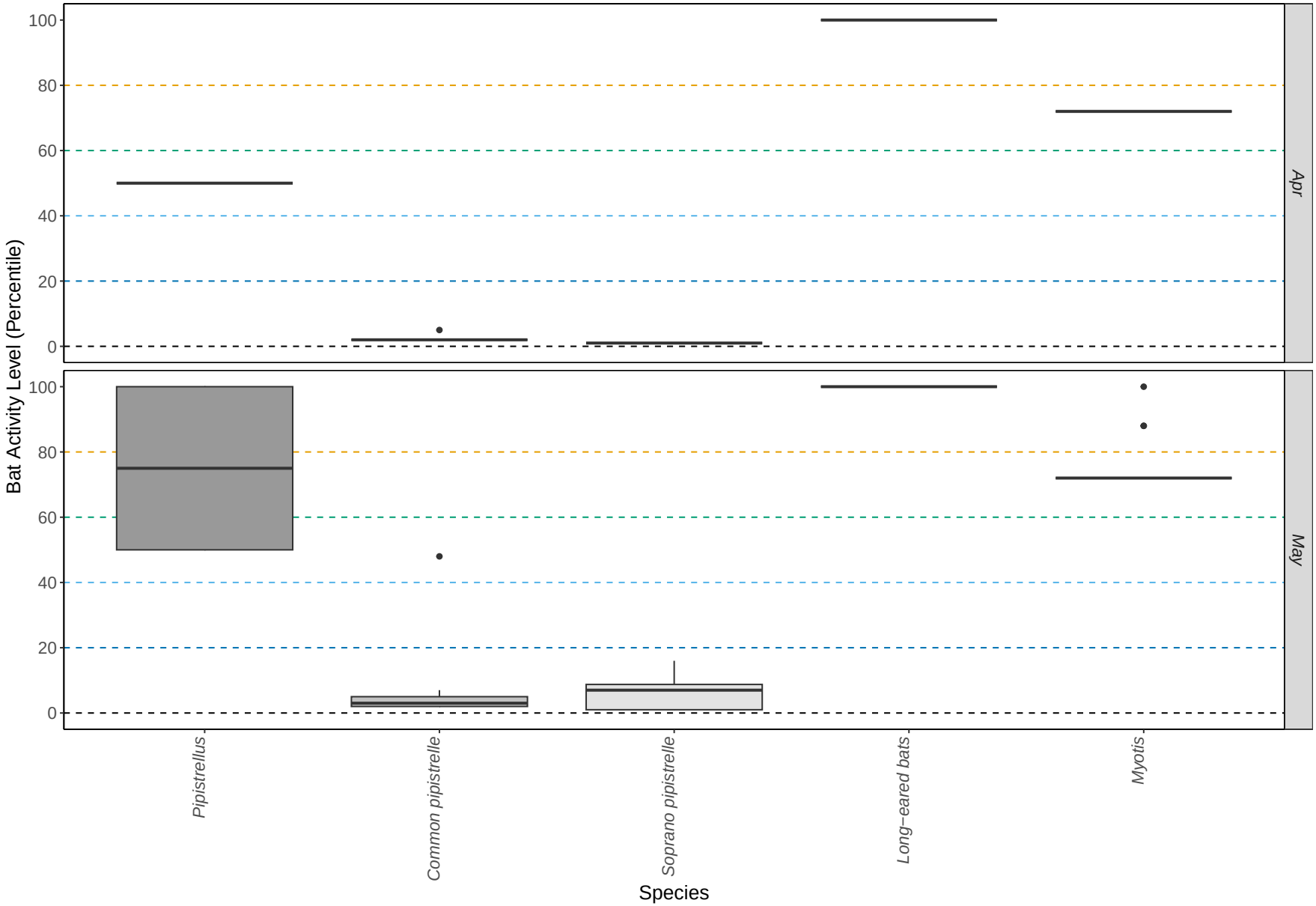
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	Apr	0	0	7	0	0	0
Myotis	May	1	2	10	0	0	0
Pipistrellus	Apr	0	0	0	2	0	0
Pipistrellus	May	2	0	0	2	0	0
Pipistrellus pipistrellus	Apr	0	0	0	0	0	6
Pipistrellus pipistrellus	May	0	0	0	1	0	19
Pipistrellus pygmaeus	Apr	0	0	0	0	0	2
Pipistrellus pygmaeus	May	0	0	0	0	0	8
Plecotus	Apr	1	0	0	0	0	0
Plecotus	May	1	0	0	0	0	0

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
Myotis	Apr	72	72 - 72	72	7
Myotis	May	72	72 - 72	100	13
Pipistrellus	Apr	50	50 - 50	50	2
Pipistrellus	May	75	50 - 50	100	4
Pipistrellus pipistrellus	Apr	2	4 - 27.5	5	6
Pipistrellus pipistrellus	May	3	4 - 27.5	48	20
Pipistrellus pygmaeus	Apr	1	1 - 16	1	2
Pipistrellus pygmaeus	May	7	7.5 - 7.5	16	8
Plecotus	Apr	100	0	100	1
Plecotus	May	100	0	100	1

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


Bat Activity Level (Percentile)
100
80
60
40
20
0
Apr
May
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Long−eared bats
Myotis
Species

Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

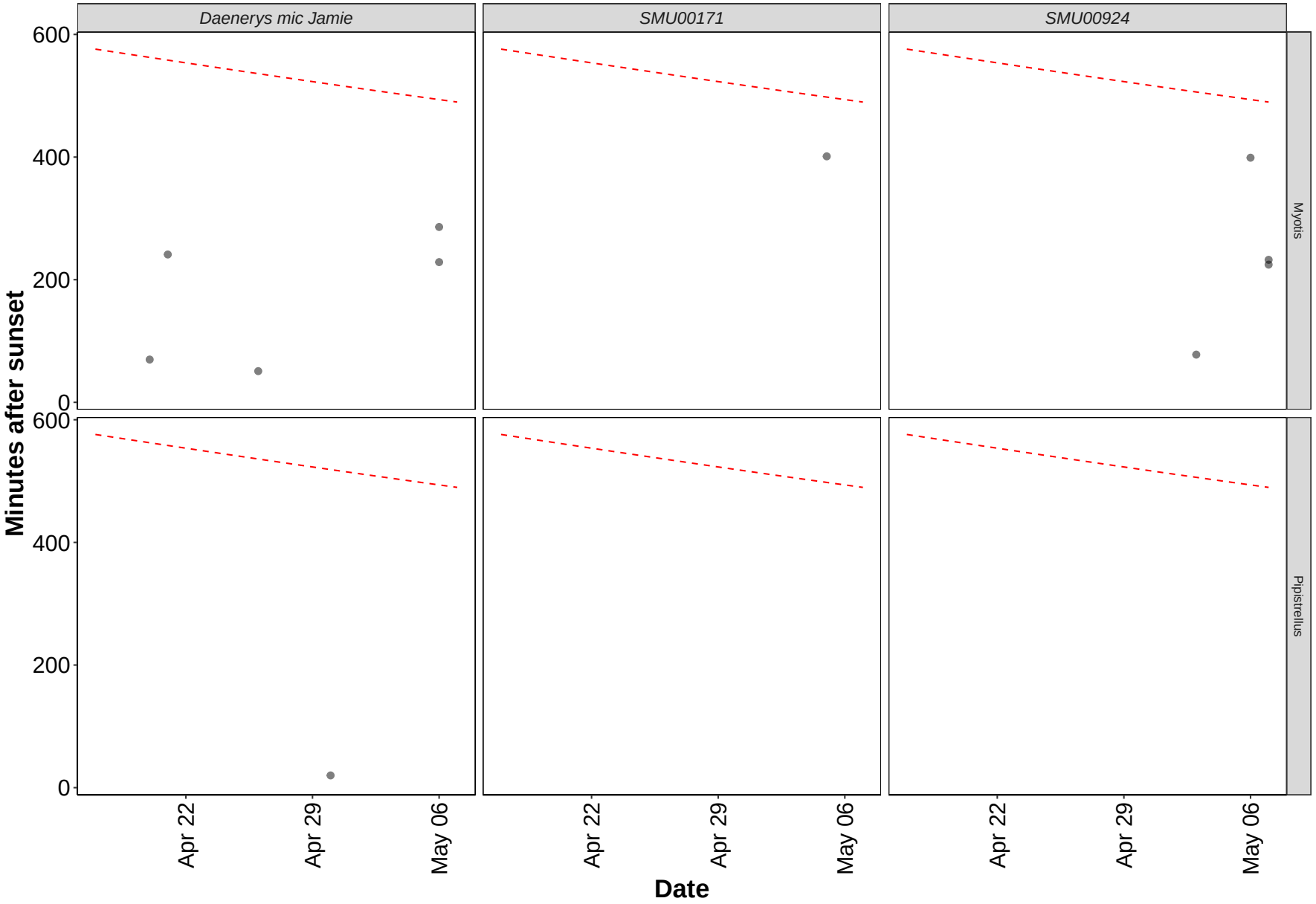
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

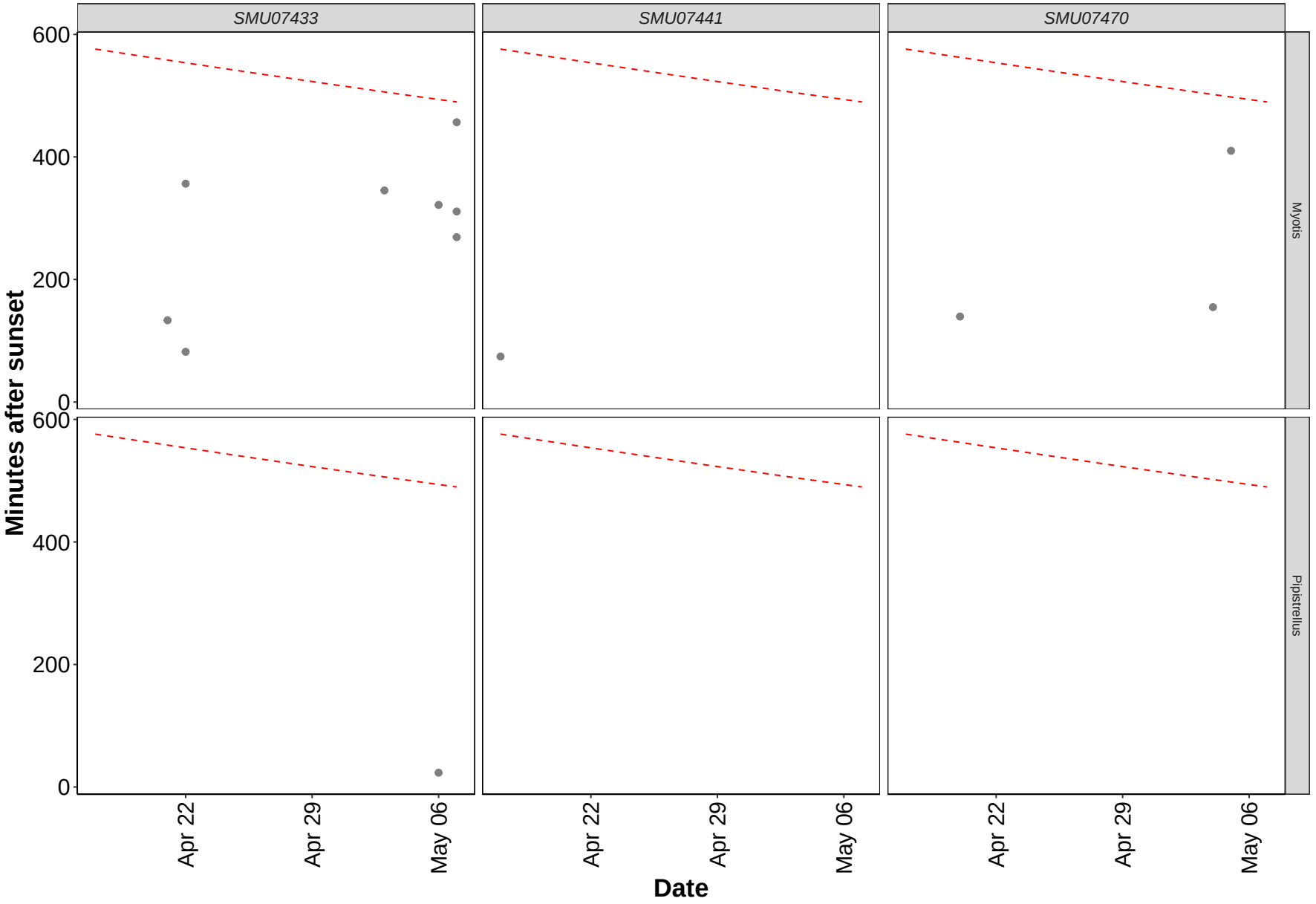
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2024-04-17	20:31	06:07	9.6
2024-04-20	20:37	05:59	9.4
2024-04-21	20:39	05:57	9.3
2024-04-22	20:41	05:55	9.2
2024-04-25	20:47	05:47	9.0
2024-04-26	20:49	05:45	8.9
2024-04-27	20:51	05:43	8.9
2024-04-30	20:57	05:36	8.6
2024-05-01	20:59	05:34	8.6
2024-05-03	21:03	05:29	8.4
2024-05-04	21:05	05:27	8.4
2024-05-05	21:07	05:25	8.3
2024-05-06	21:09	05:23	8.2
2024-05-07	21:11	05:21	8.2

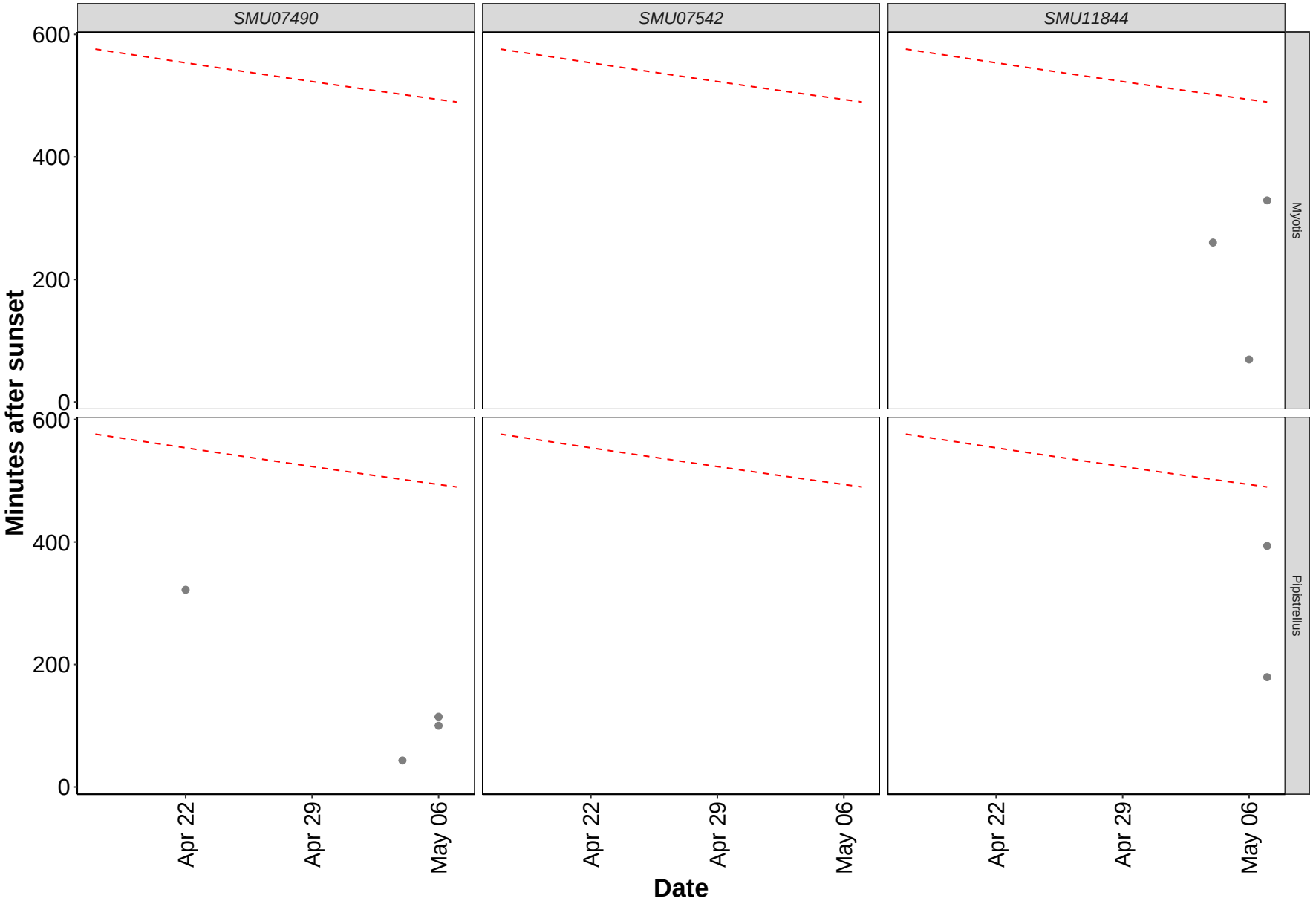
Distribution of Bat Activity Across the Night through Time

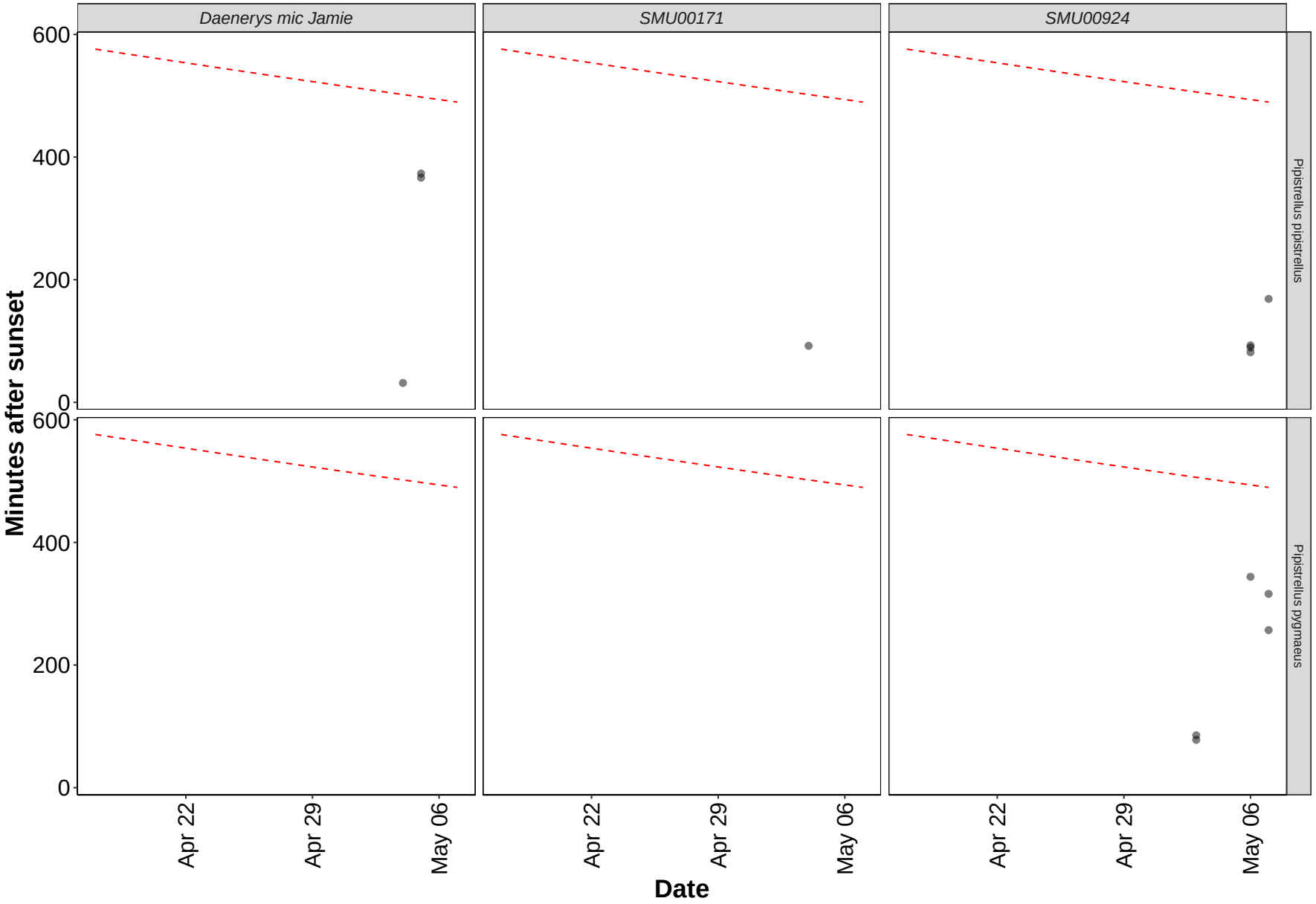
Per Detector

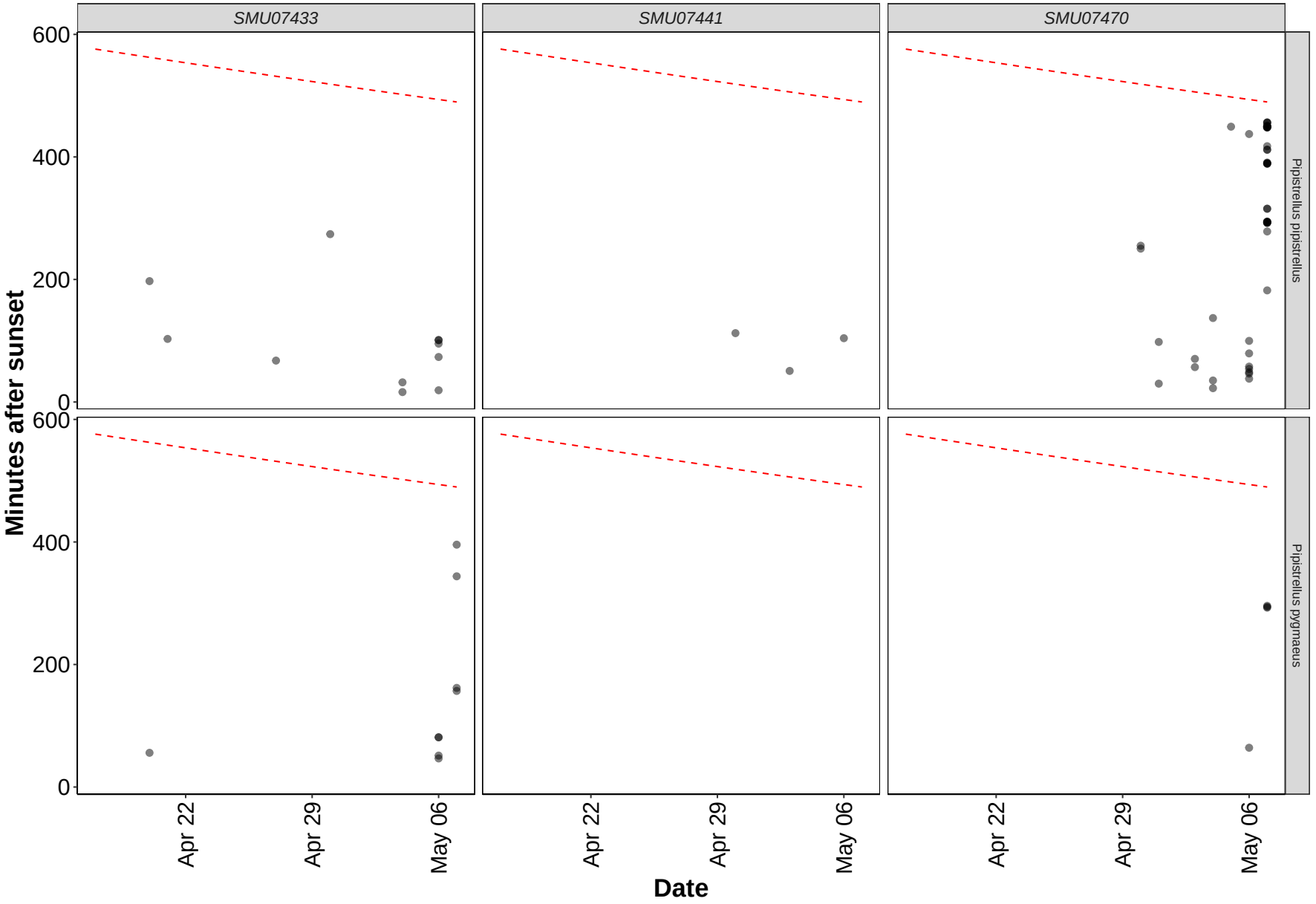
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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


Daenerys mic Jamie
SMU00171
SMU00924
Myotis
Pipistrellus
Minutes after sunset
600
400
200
0
Apr 22
Apr 29
May 06
Date


SMU07433
SMU07441
SMU07470
Myotis
Pipistrellus
Minutes after sunset
600
400
200
0
Apr 22
Apr 29
May 06
Date


SMU07490
SMU07542
SMU11844
Myotis
Pipistrellus
Minutes after sunset
600
400
200
0
Apr 22
Apr 29
May 06
Date


Daenerys mic Jamie
SMU00171
SMU00924
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Minutes after sunset
600
400
200
0
Apr 22
Apr 29
May 06
Date


SMU07433
SMU07441
SMU07470
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Minutes after sunset
0
200
400
600
Apr 22
Apr 29
May 06
Date

Roost Emergence Time and Bat Observation

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

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

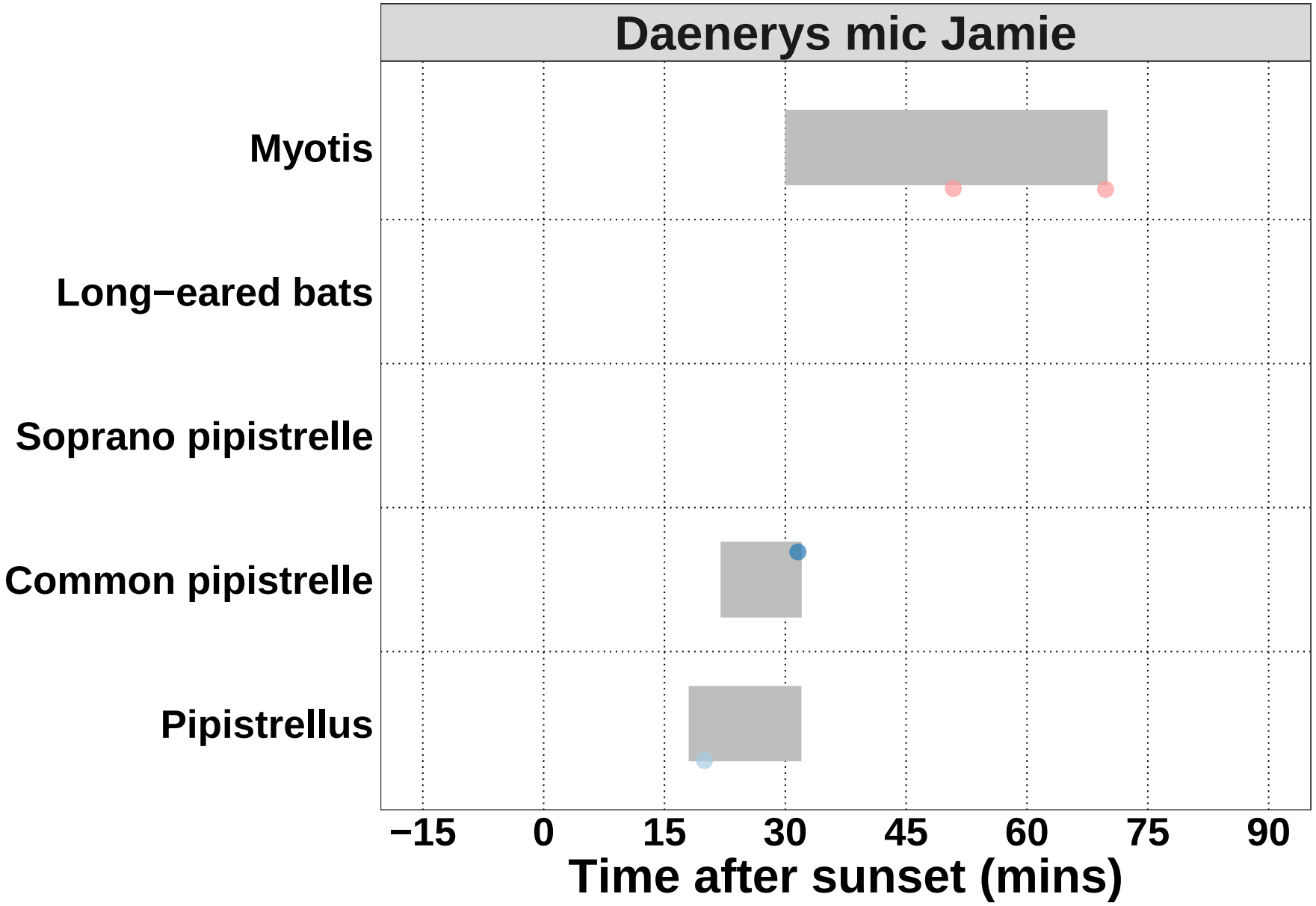
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

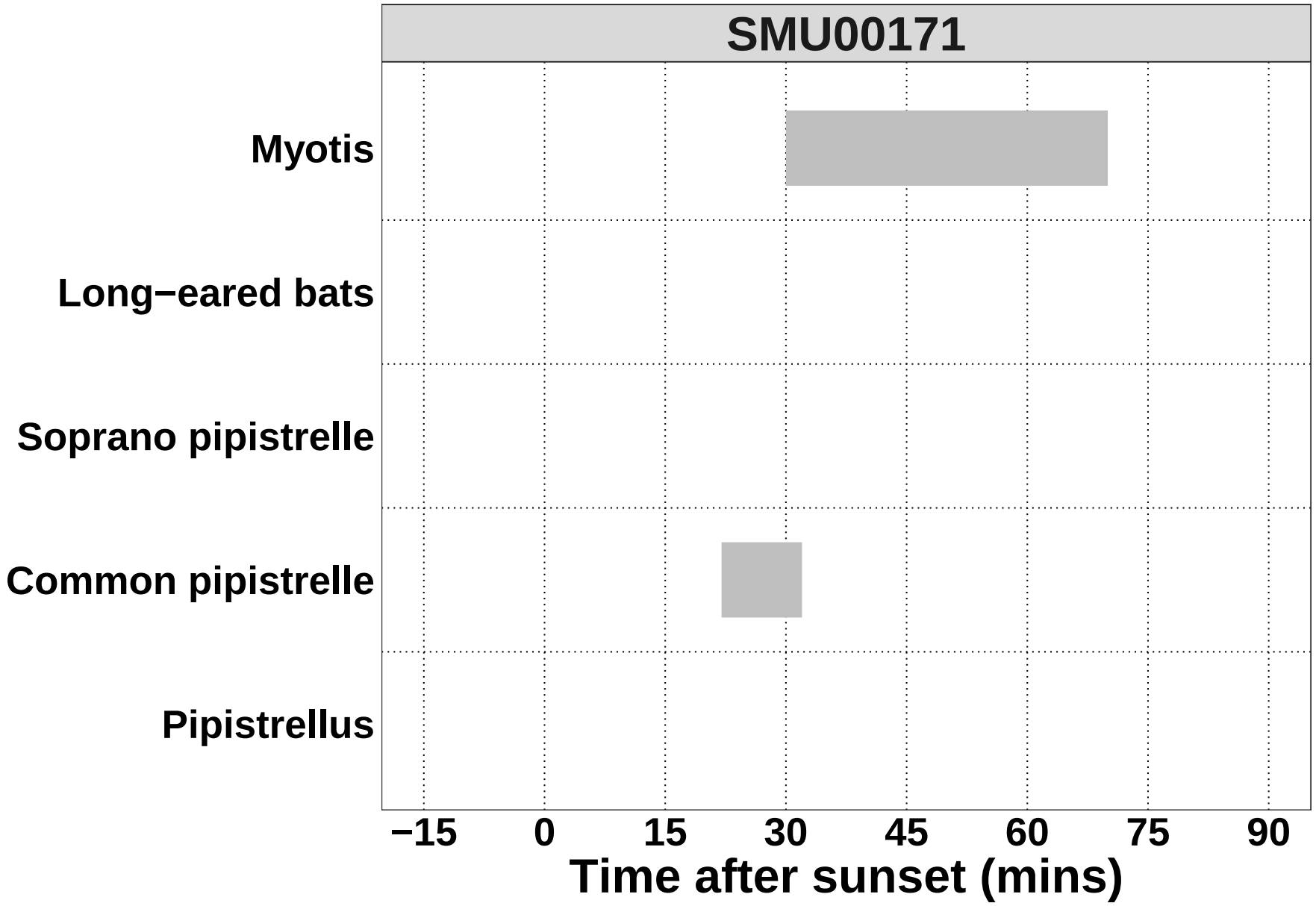
Table 12: Table continues below

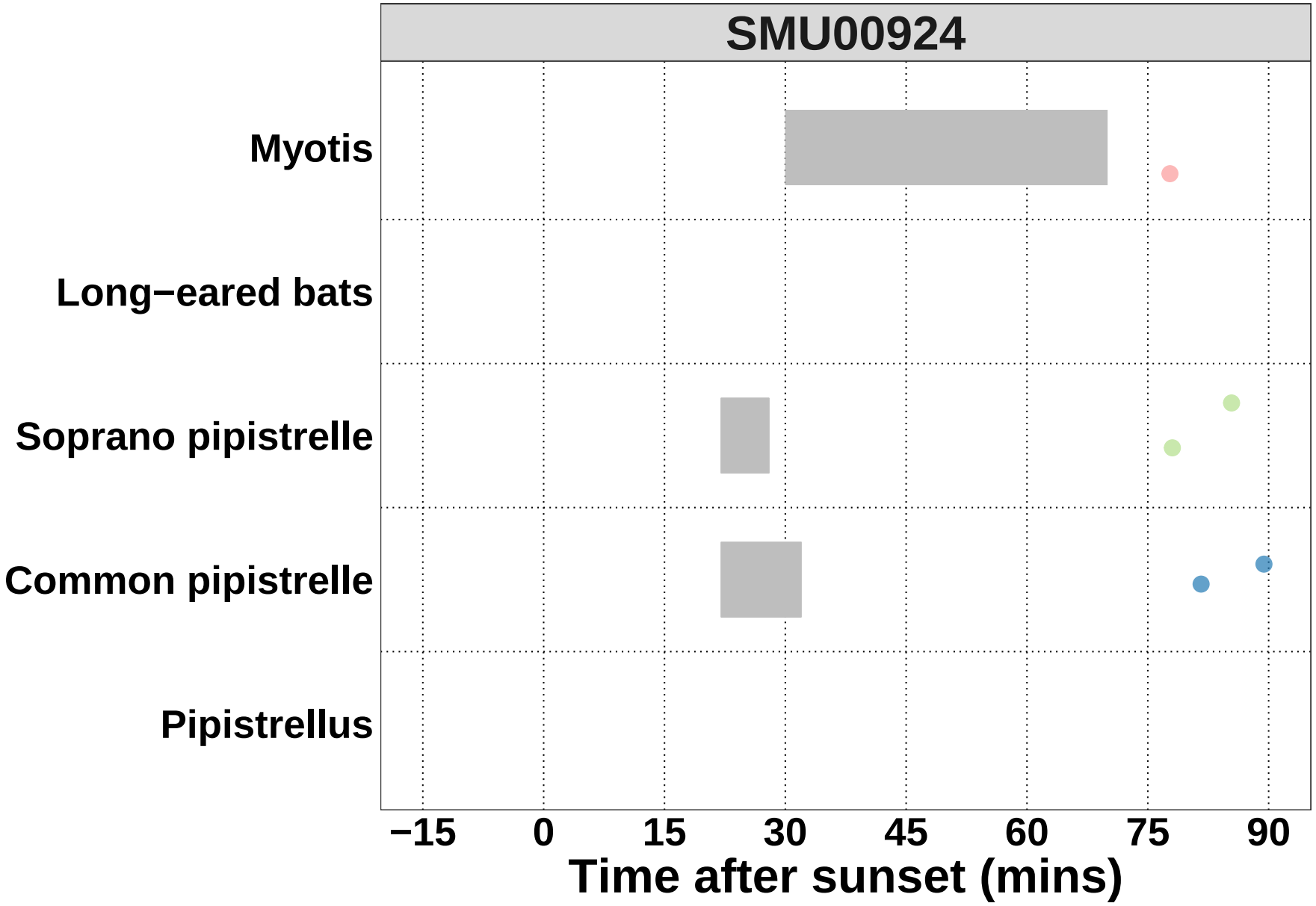
Species	Detector ID	2024-04-20	2024-04-26	2024-04-30	2024-05-01	2024-05-04	2024-05-06
Pipistrellus	Daenerys mic Jamie	0	0	1	0	0	0
Pipistrellus	SMU07433	0	0	0	0	0	1
Common pipistrelle	Daenerys mic Jamie	0	0	0	0	1	0
Common pipistrelle	SMU07433	0	0	0	0	1	1
Common pipistrelle	SMU07470	0	0	0	1	1	0
Myotis	Daenerys mic Jamie	1	1	0	0	0	0
Myotis	SMU11844	0	0	0	0	0	1

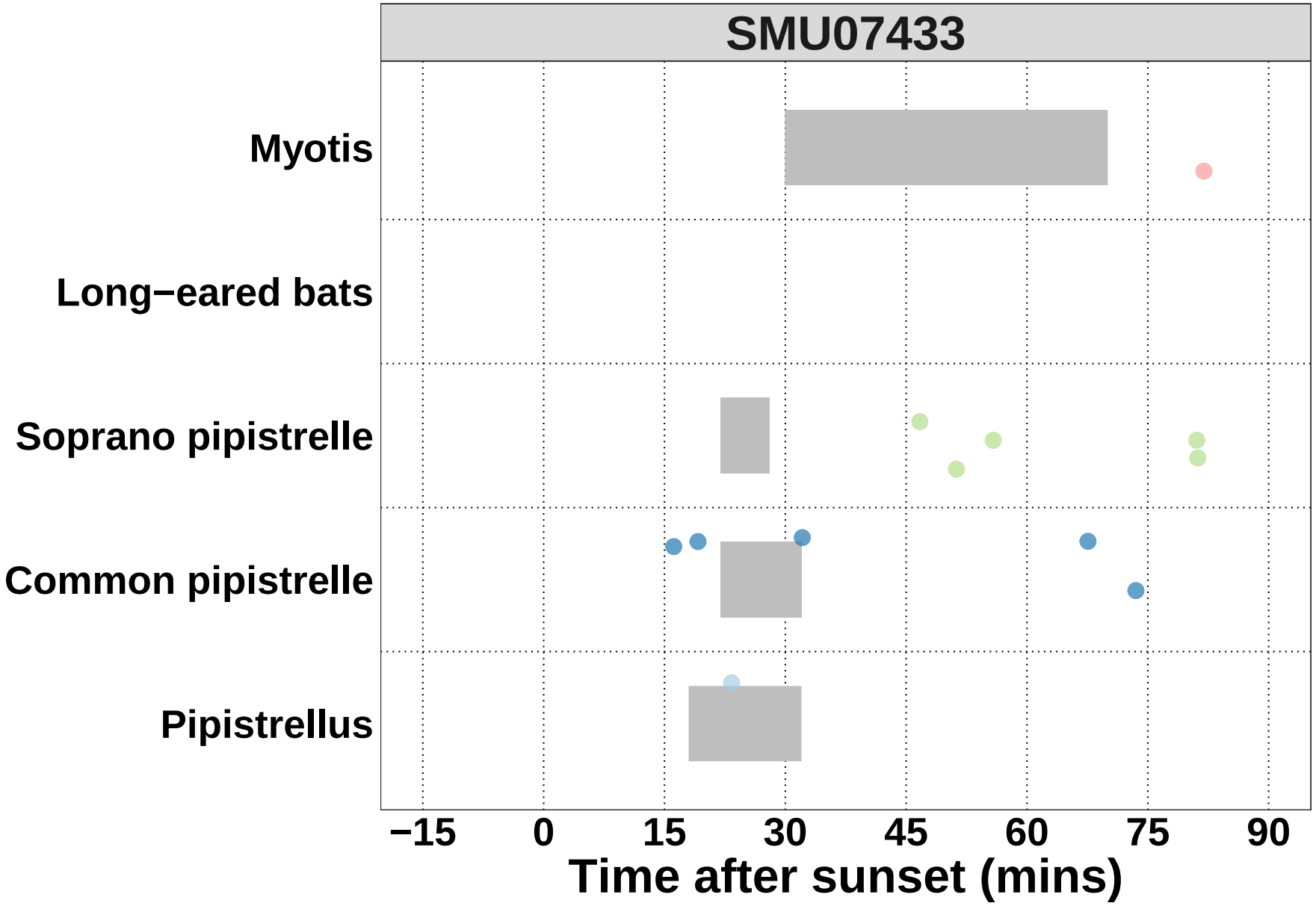
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

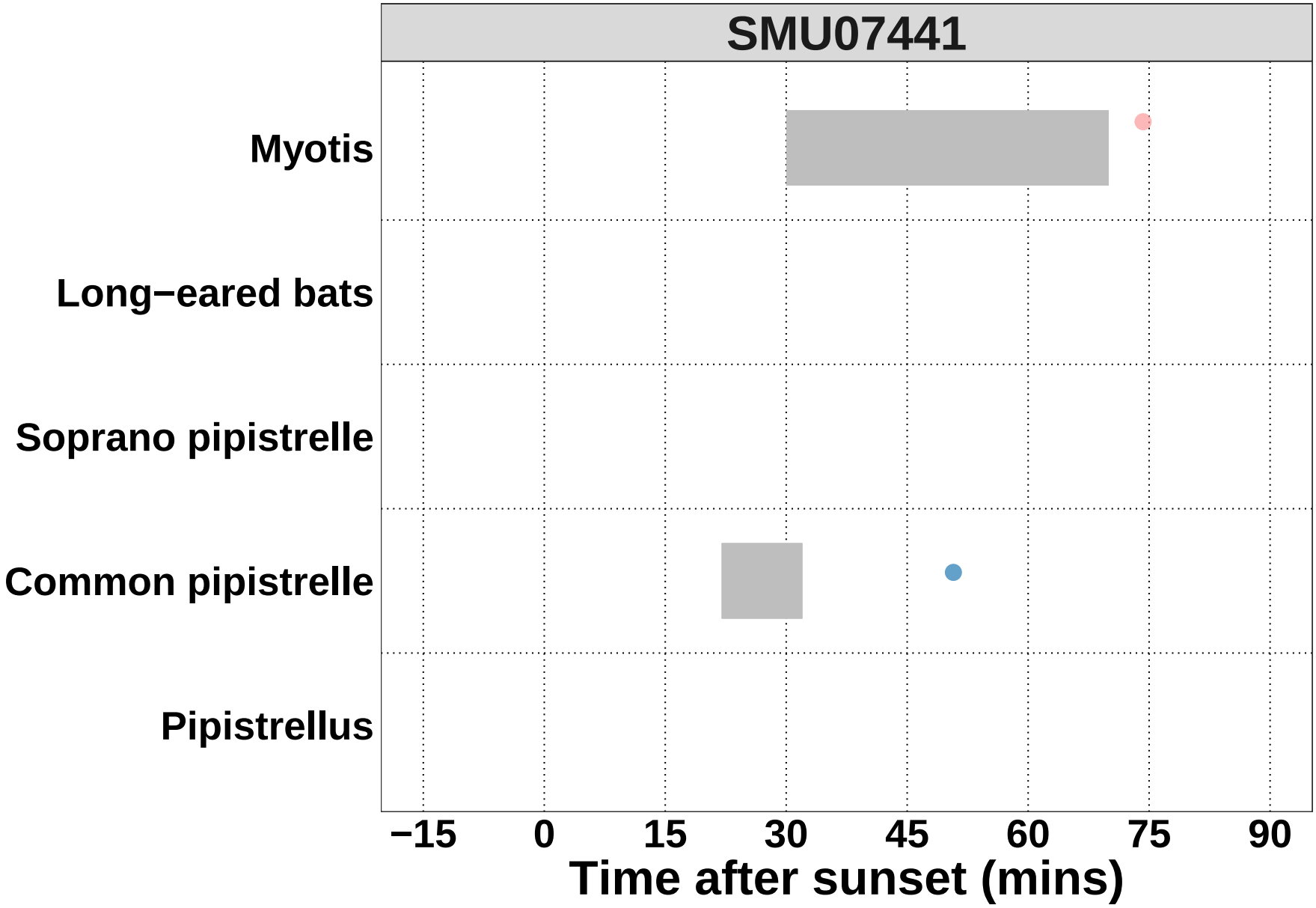
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occuring earlier than this time range, may potentially indicate the presence of a nearby roost.

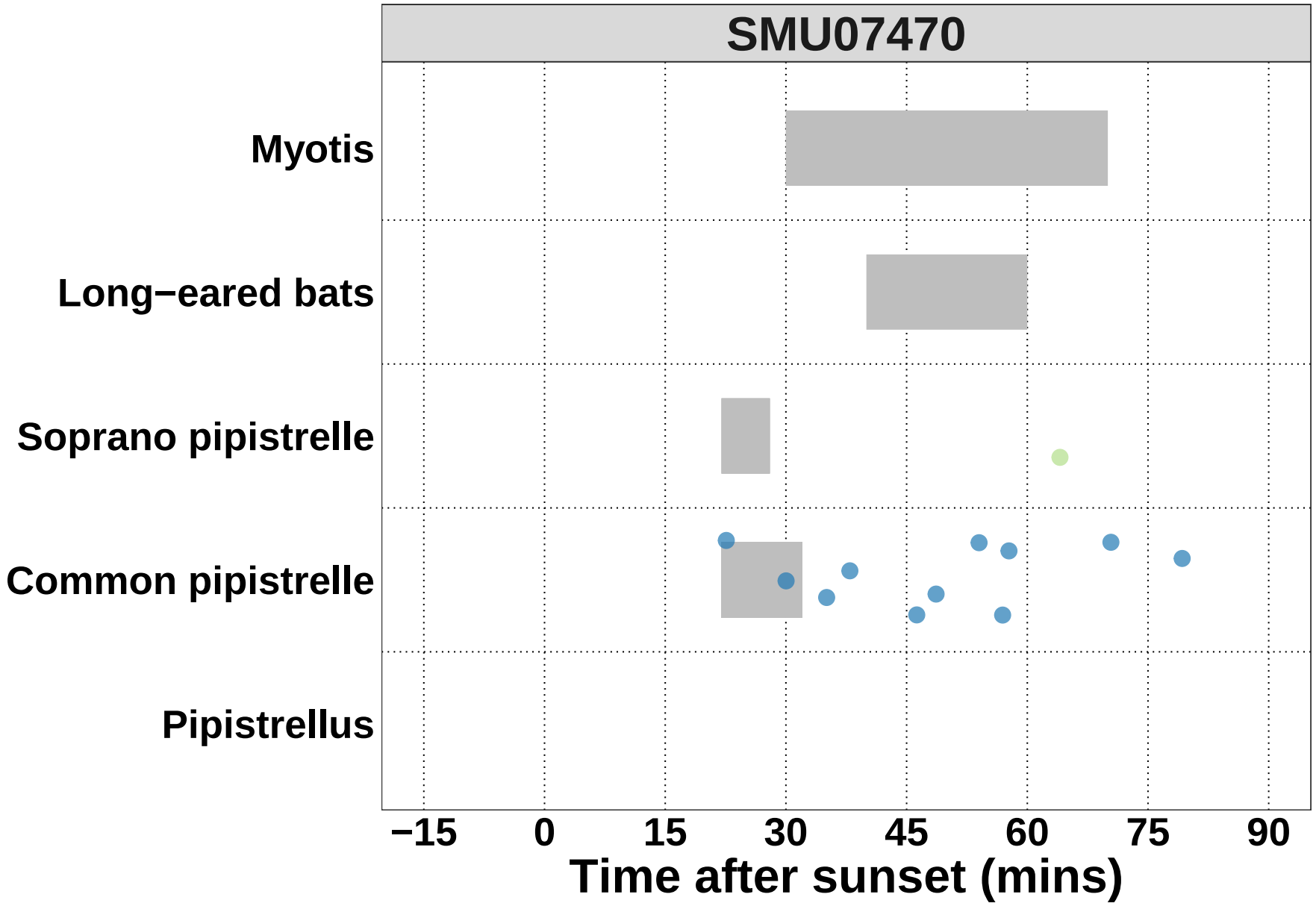

Daenerys mic Jamie
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

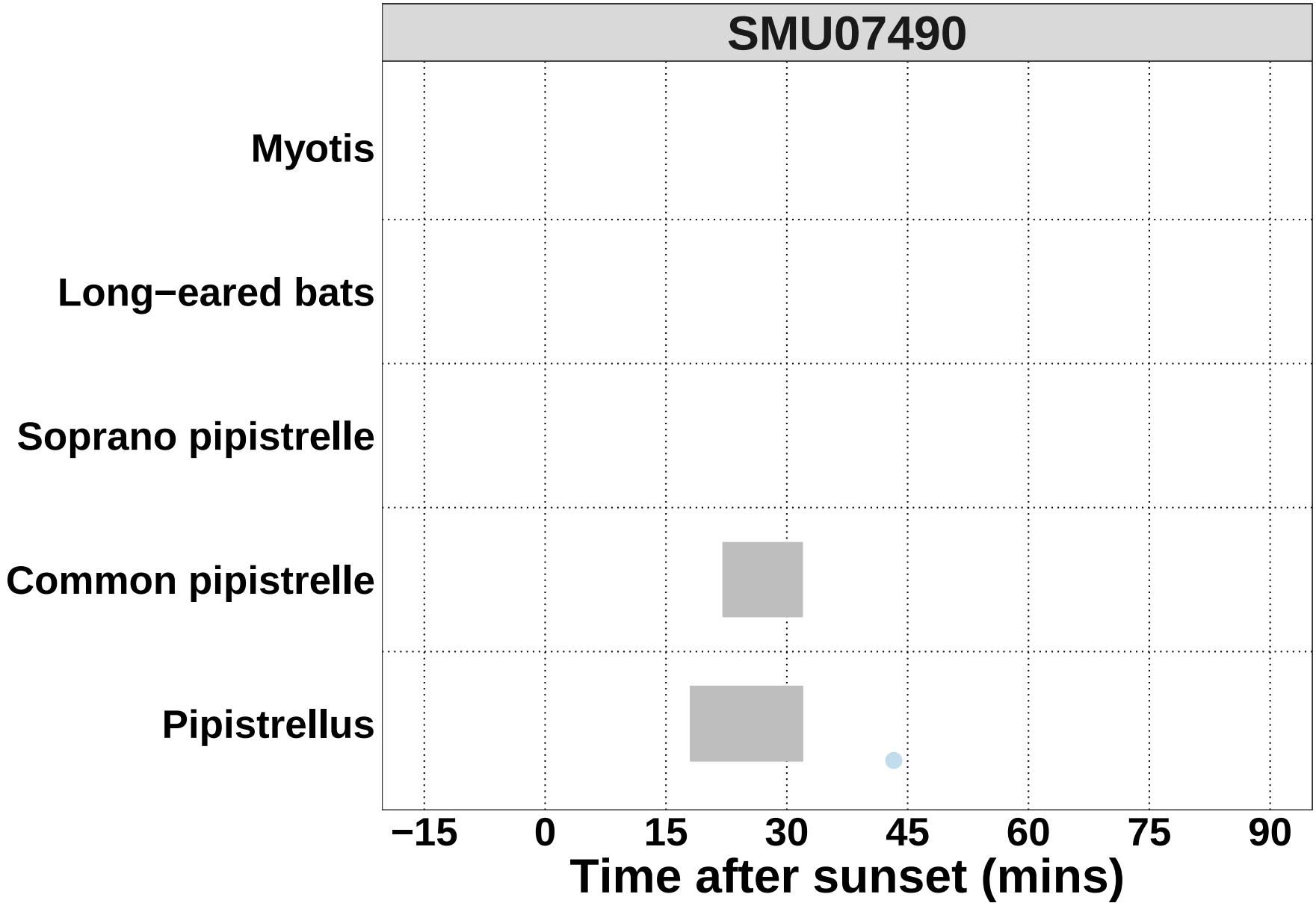

SMU00171
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

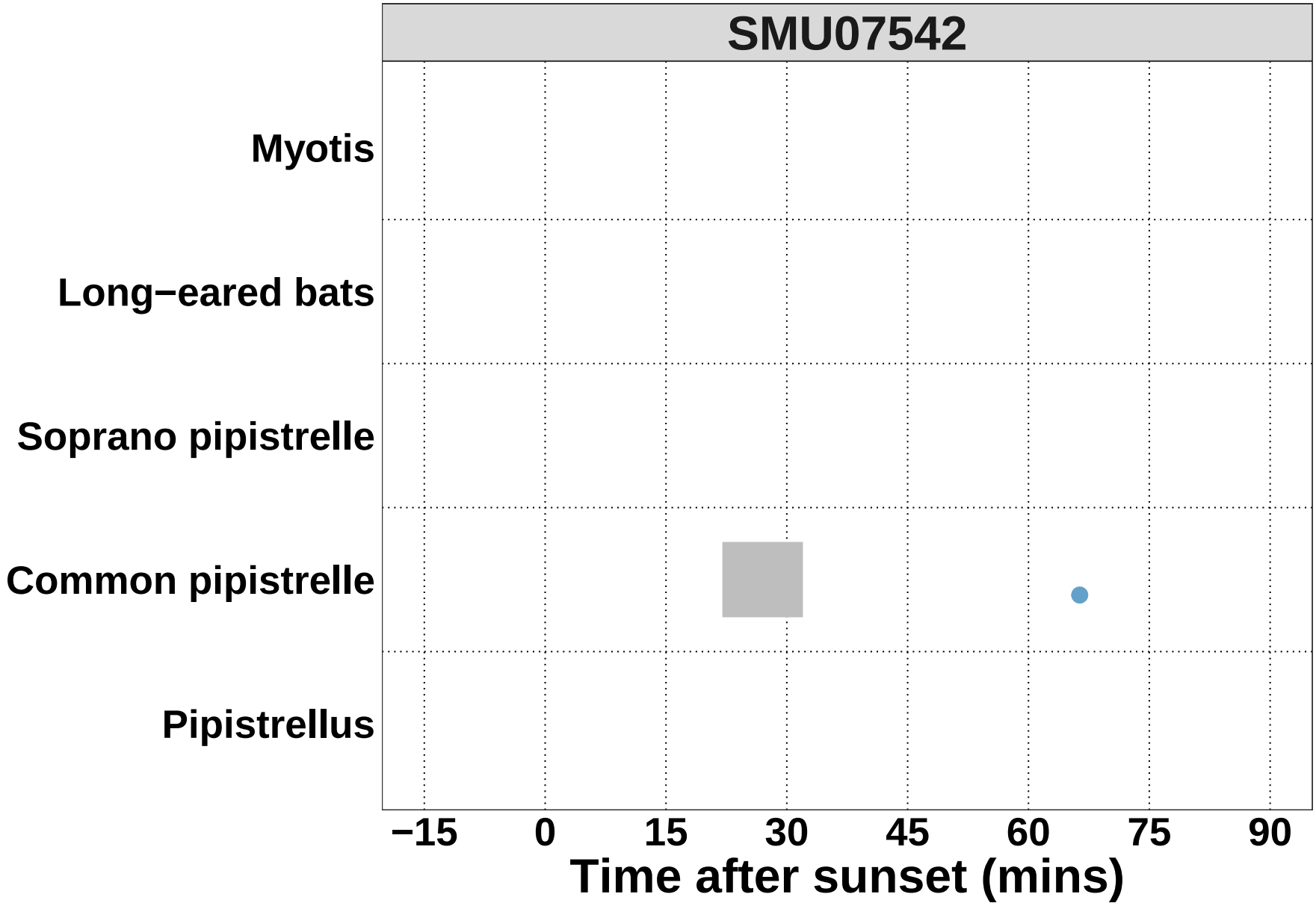

SMU00924
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

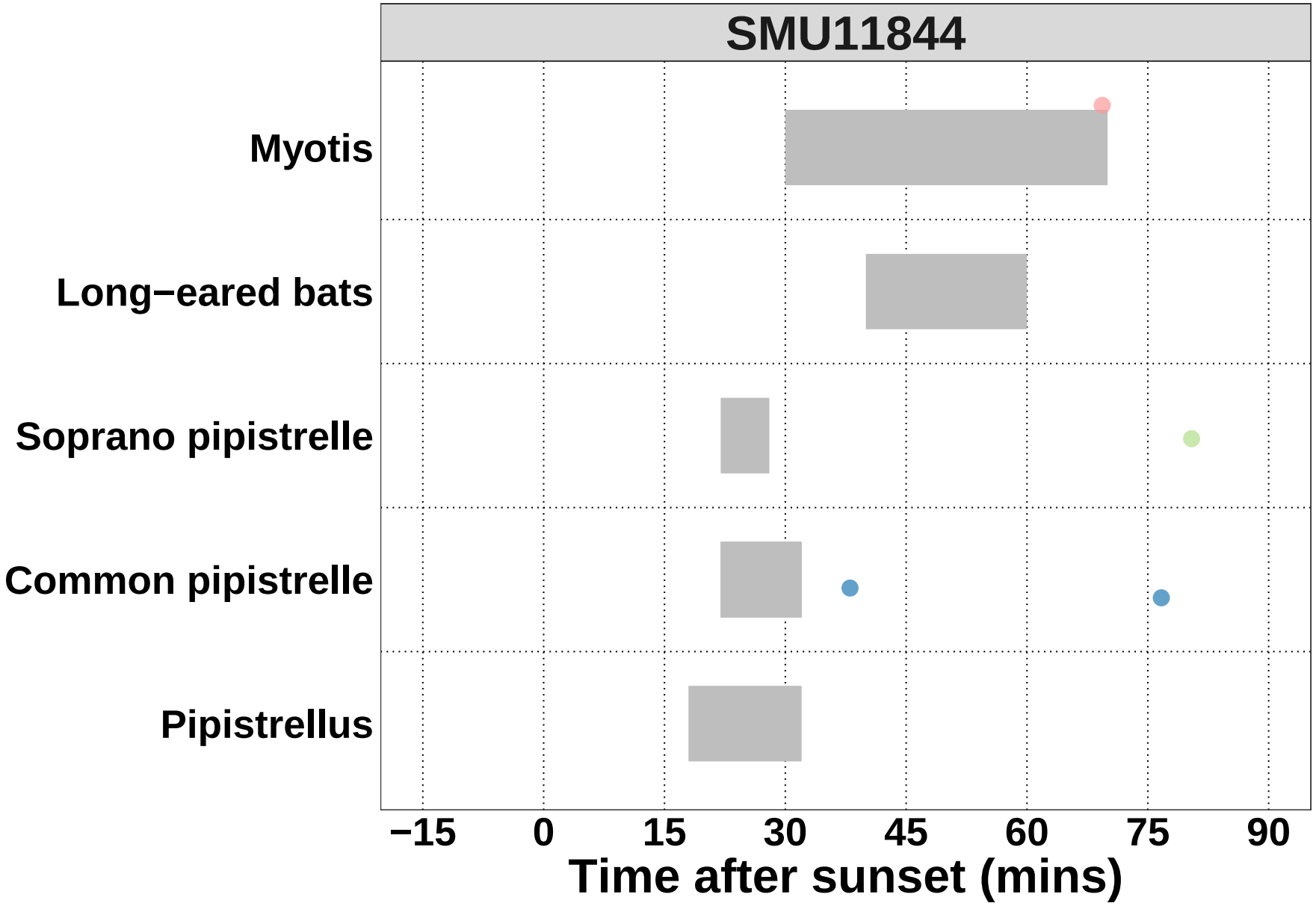

SMU07433
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07441
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07470
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07490
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07542
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU11844
Myotis
Long−eared bats
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

Count 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 (%)
Myotis	25	18.7
Pipistrellus	8	6.0
Pipistrellus pipistrellus	79	59.0
Pipistrellus pygmaeus	20	14.9
Plecotus	2	1.5
Total	134	100.1

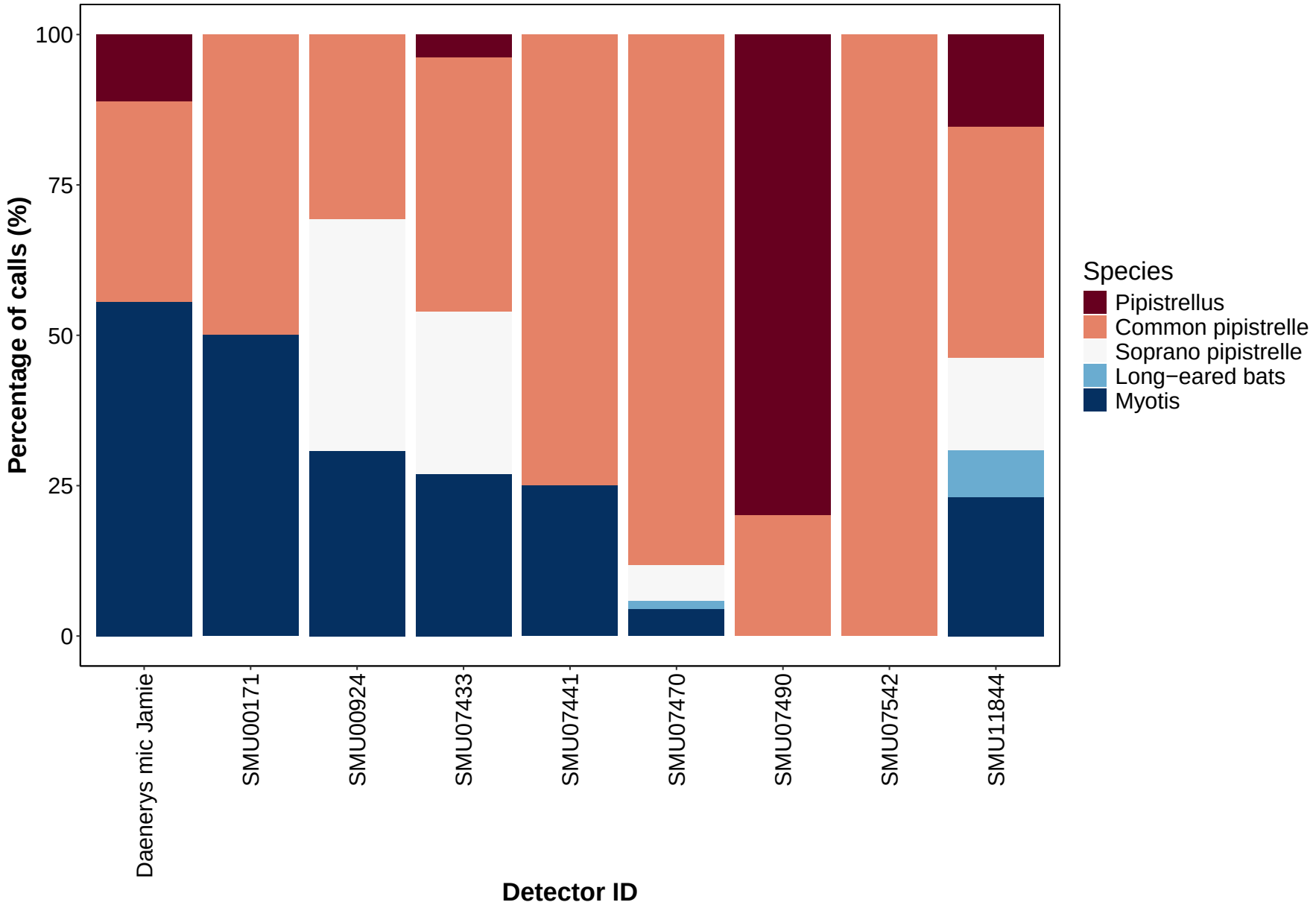
Per Detector

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

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Pipistrellus	Daenerys mic Jamie	1	11.111111
Pipistrellus	SMU07433	1	3.448276
Pipistrellus	SMU07490	4	80.000000
Pipistrellus	SMU11844	2	14.285714
Common pipistrelle	Daenerys mic Jamie	3	33.333333
Common pipistrelle	SMU00171	1	50.000000
Common pipistrelle	SMU00924	4	30.769231
Common pipistrelle	SMU07433	11	37.931035
Common pipistrelle	SMU07441	3	75.000000
Common pipistrelle	SMU07470	49	85.964912
Common pipistrelle	SMU07490	1	20.000000
Common pipistrelle	SMU07542	1	100.000000
Common pipistrelle	SMU11844	6	42.857143
Soprano pipistrelle	SMU00924	5	38.461539
Soprano pipistrelle	SMU07433	9	31.034483
Soprano pipistrelle	SMU07470	4	7.017544
Soprano pipistrelle	SMU11844	2	14.285714
Long-eared bats	SMU07470	1	1.754386
Long-eared bats	SMU11844	1	7.142857
Myotis	Daenerys mic Jamie	5	55.555556
Myotis	SMU00171	1	50.000000
Myotis	SMU00924	4	30.769231
Myotis	SMU07433	8	27.586207
Myotis	SMU07441	1	25.000000
Myotis	SMU07470	3	5.263158
Myotis	SMU11844	3	21.428571

Species Composition

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


Percentage of calls (%)
100
75
50
25
0
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID
Species
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Long−eared bats
Myotis

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.

Nighlty 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	Daenerys mic Jamie	0.1
Pipistrellus	SMU07433	0.1
Pipistrellus	SMU07490	0.1
Pipistrellus	SMU11844	0.2
Common pipistrelle	Daenerys mic Jamie	0.2
Common pipistrelle	SMU00171	0.1
Common pipistrelle	SMU00924	0.2
Common pipistrelle	SMU07433	0.1
Common pipistrelle	SMU07441	0.1
Common pipistrelle	SMU07470	0.5
Common pipistrelle	SMU07490	0.1
Common pipistrelle	SMU07542	0.1
Common pipistrelle	SMU11844	0.1
Soprano pipistrelle	SMU00924	0.2
Soprano pipistrelle	SMU07433	0.2
Soprano pipistrelle	SMU07470	0.2
Soprano pipistrelle	SMU11844	0.1
Long-eared bats	SMU07470	0.1
Long-eared bats	SMU11844	0.1
Myotis	Daenerys mic Jamie	0.1
Myotis	SMU00171	0.1
Myotis	SMU00924	0.1
Myotis	SMU07433	0.1
Myotis	SMU07441	0.1
Myotis	SMU07470	0.1
Myotis	SMU11844	0.1

Mean Per Detector

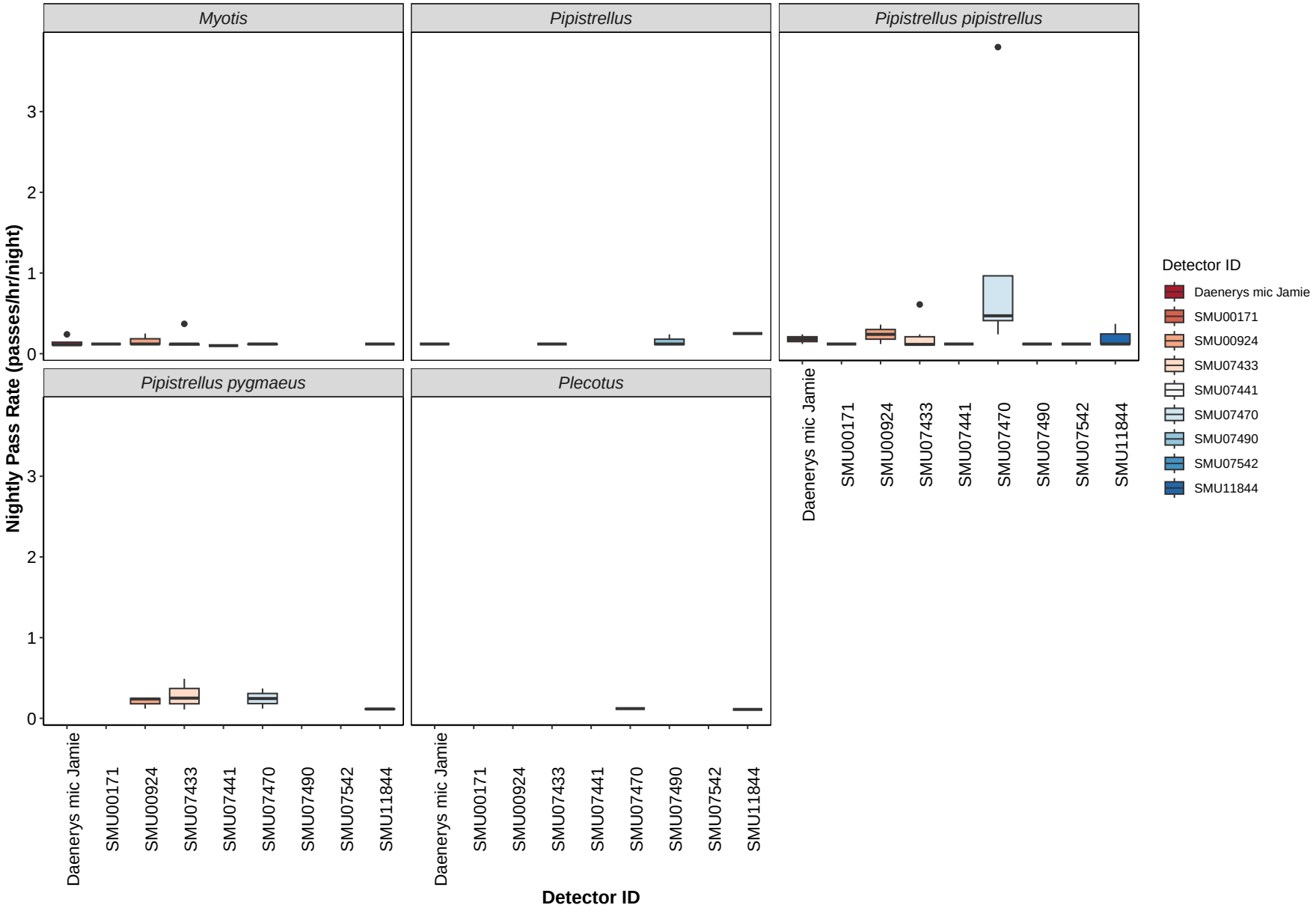
Table 17. The mean Nightly Pass Rate (bat passes per hour, per night) of each species at each detector. Values are given to 1 decimal place.

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	Daenerys mic Jamie	0.1
Pipistrellus	SMU07433	0.1
Pipistrellus	SMU07490	0.2
Pipistrellus	SMU11844	0.2
Common pipistrelle	Daenerys mic Jamie	0.2
Common pipistrelle	SMU00171	0.1
Common pipistrelle	SMU00924	0.2
Common pipistrelle	SMU07433	0.2
Common pipistrelle	SMU07441	0.1
Common pipistrelle	SMU07470	1.0
Common pipistrelle	SMU07490	0.1
Common pipistrelle	SMU07542	0.1
Common pipistrelle	SMU11844	0.2
Soprano pipistrelle	SMU00924	0.2
Soprano pipistrelle	SMU07433	0.3
Soprano pipistrelle	SMU07470	0.2
Soprano pipistrelle	SMU11844	0.1
Long-eared bats	SMU07470	0.1
Long-eared bats	SMU11844	0.1
Myotis	Daenerys mic Jamie	0.1
Myotis	SMU00171	0.1
Myotis	SMU00924	0.2
Myotis	SMU07433	0.2
Myotis	SMU07441	0.1
Myotis	SMU07470	0.1
Myotis	SMU11844	0.1

Per Detector

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.


Myotis
Pipistrellus
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Plecotus
Nightly Pass Rate (passes/hr/night)
0
1
2
3
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID
Detector ID
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844

Split by Month

Total Bat Passes per Detector each Month

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
Pipistrellus	Daenerys mic Jamie	1	0
Pipistrellus	SMU07433	0	1
Pipistrellus	SMU07490	1	3
Pipistrellus	SMU11844	0	2
Common pipistrelle	Daenerys mic Jamie	0	3
Common pipistrelle	SMU00171	0	1
Common pipistrelle	SMU00924	0	4
Common pipistrelle	SMU07433	4	7
Common pipistrelle	SMU07441	1	2
Common pipistrelle	SMU07470	4	56
Common pipistrelle	SMU07490	0	1
Common pipistrelle	SMU07542	0	1
Common pipistrelle	SMU11844	0	5
Soprano pipistrelle	SMU00924	0	5
Soprano pipistrelle	SMU07433	1	6
Soprano pipistrelle	SMU07470	0	4
Soprano pipistrelle	SMU11844	1	1
Long-eared bats	SMU07470	0	1
Long-eared bats	SMU11844	1	0
Myotis	Daenerys mic Jamie	3	2
Myotis	SMU00171	0	1
Myotis	SMU00924	0	4
Myotis	SMU07433	2	5
Myotis	SMU07441	1	0
Myotis	SMU07470	1	2
Myotis	SMU11844	0	3

Survey Effort

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

month	Detector ID	No. of Survey Nights
Apr	Daenerys mic Jamie	4
Apr	SMU07433	5
Apr	SMU07441	2
Apr	SMU07470	2
Apr	SMU07490	1
Apr	SMU11844	2
May	Daenerys mic Jamie	3
May	SMU00171	2
May	SMU00924	3
May	SMU07433	4
May	SMU07441	2
May	SMU07470	6
May	SMU07490	2
May	SMU07542	1
May	SMU11844	5

Nightly Bat Passes 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
Pipistrellus	Daenerys mic Jamie	0.1	NA
Pipistrellus	SMU07433	NA	0.1
Pipistrellus	SMU07490	0.1	0.2
Pipistrellus	SMU11844	NA	0.2
Common pipistrelle	Daenerys mic Jamie	NA	0.2
Common pipistrelle	SMU00171	NA	0.1
Common pipistrelle	SMU00924	NA	0.2
Common pipistrelle	SMU07433	0.1	0.4
Common pipistrelle	SMU07441	0.1	0.1
Common pipistrelle	SMU07470	0.5	0.7
Common pipistrelle	SMU07490	NA	0.1
Common pipistrelle	SMU07542	NA	0.1
Common pipistrelle	SMU11844	NA	0.1
Soprano pipistrelle	SMU00924	NA	0.2
Soprano pipistrelle	SMU07433	0.1	0.4
Soprano pipistrelle	SMU07470	NA	0.2
Soprano pipistrelle	SMU11844	0.1	0.1
Long-eared bats	SMU07470	NA	0.1
Long-eared bats	SMU11844	0.1	NA
Myotis	Daenerys mic Jamie	0.1	0.2
Myotis	SMU00171	NA	0.1
Myotis	SMU00924	NA	0.1
Myotis	SMU07433	0.1	0.1
Myotis	SMU07441	0.1	NA
Myotis	SMU07470	0.1	0.1
Myotis	SMU11844	NA	0.1

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.

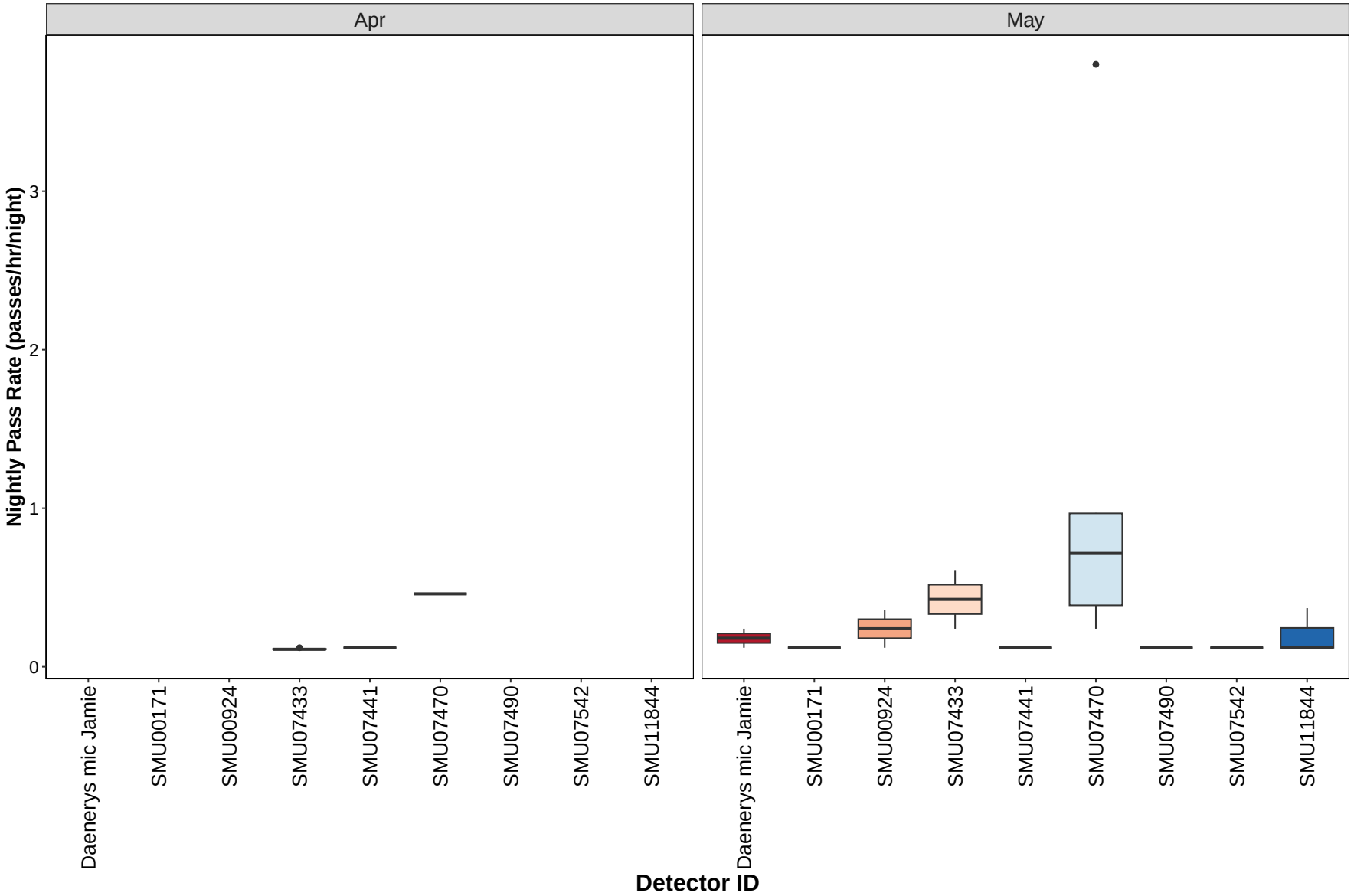
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

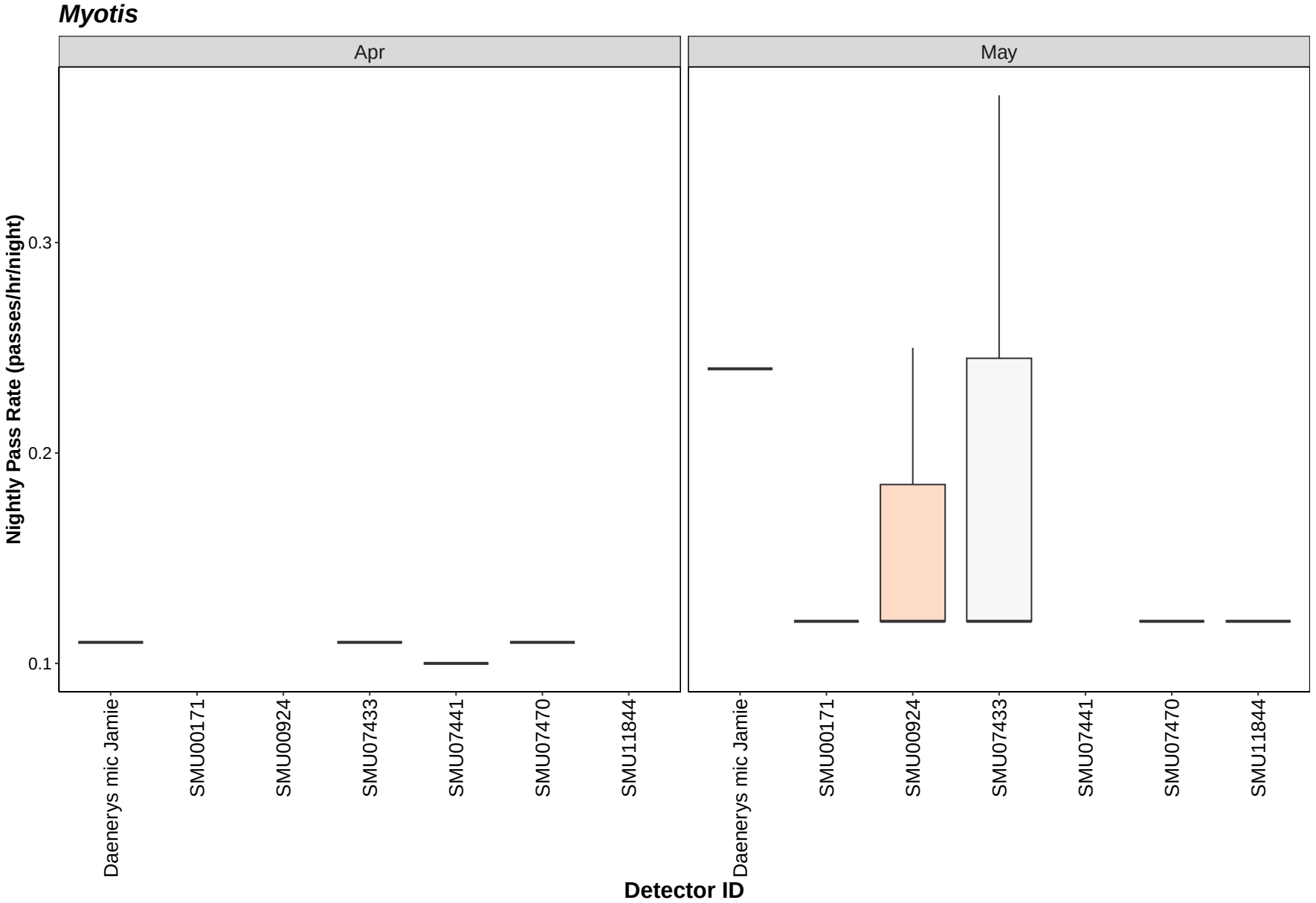
Species	Detector ID	Apr	May
Pipistrellus	Daenerys mic Jamie	0.1	NA
Pipistrellus	SMU07433	NA	0.1
Pipistrellus	SMU07490	0.1	0.2
Pipistrellus	SMU11844	NA	0.2
Common pipistrelle	Daenerys mic Jamie	NA	0.2
Common pipistrelle	SMU00171	NA	0.1
Common pipistrelle	SMU00924	NA	0.2
Common pipistrelle	SMU07433	0.1	0.4
Common pipistrelle	SMU07441	0.1	0.1
Common pipistrelle	SMU07470	0.5	1.1
Common pipistrelle	SMU07490	NA	0.1
Common pipistrelle	SMU07542	NA	0.1
Common pipistrelle	SMU11844	NA	0.2
Soprano pipistrelle	SMU00924	NA	0.2
Soprano pipistrelle	SMU07433	0.1	0.4
Soprano pipistrelle	SMU07470	NA	0.2
Soprano pipistrelle	SMU11844	0.1	0.1
Long-eared bats	SMU07470	NA	0.1
Long-eared bats	SMU11844	0.1	NA
Myotis	Daenerys mic Jamie	0.1	0.2
Myotis	SMU00171	NA	0.1
Myotis	SMU00924	NA	0.2
Myotis	SMU07433	0.1	0.2
Myotis	SMU07441	0.1	NA
Myotis	SMU07470	0.1	0.1
Myotis	SMU11844	NA	0.1

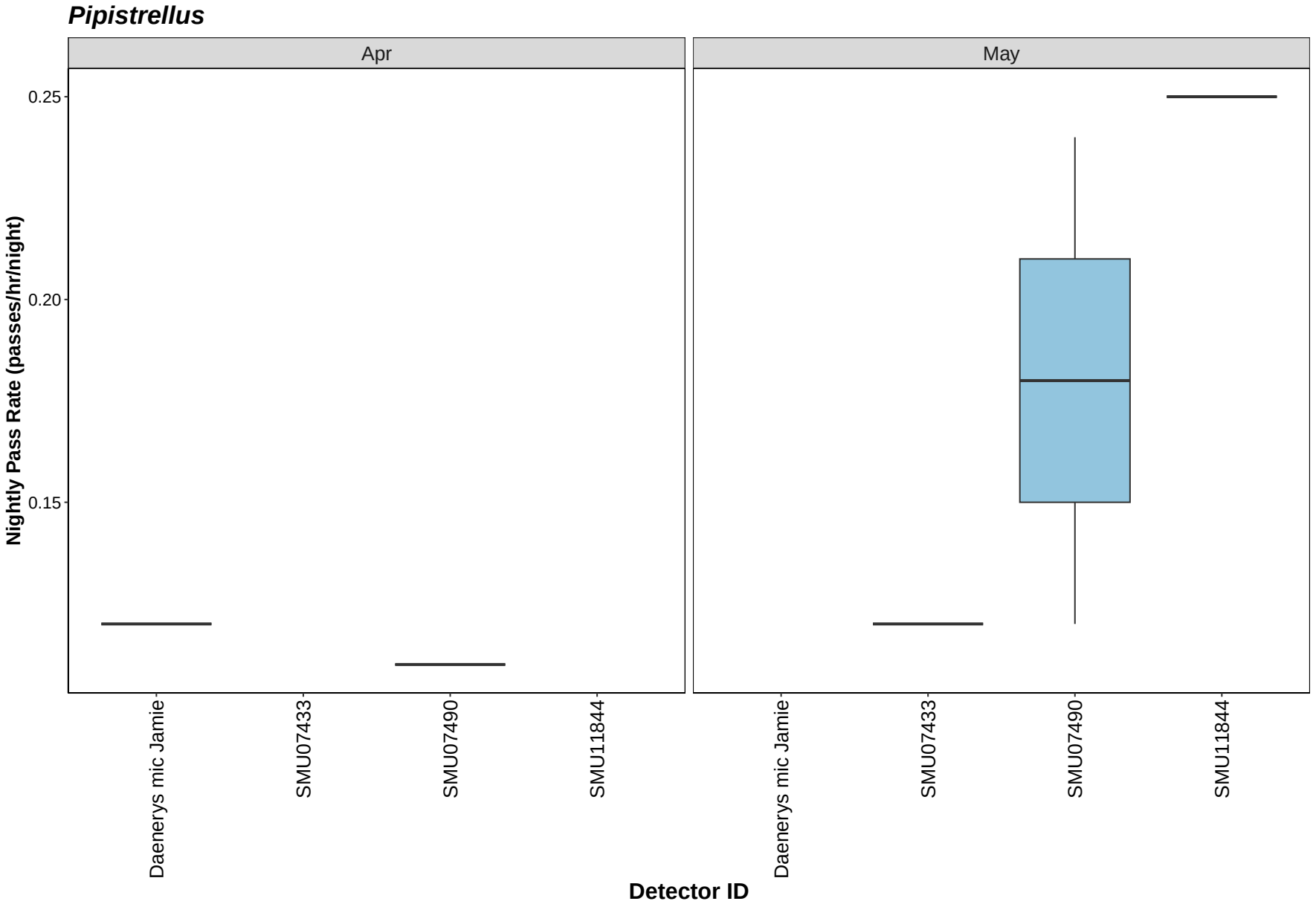
Per Detector

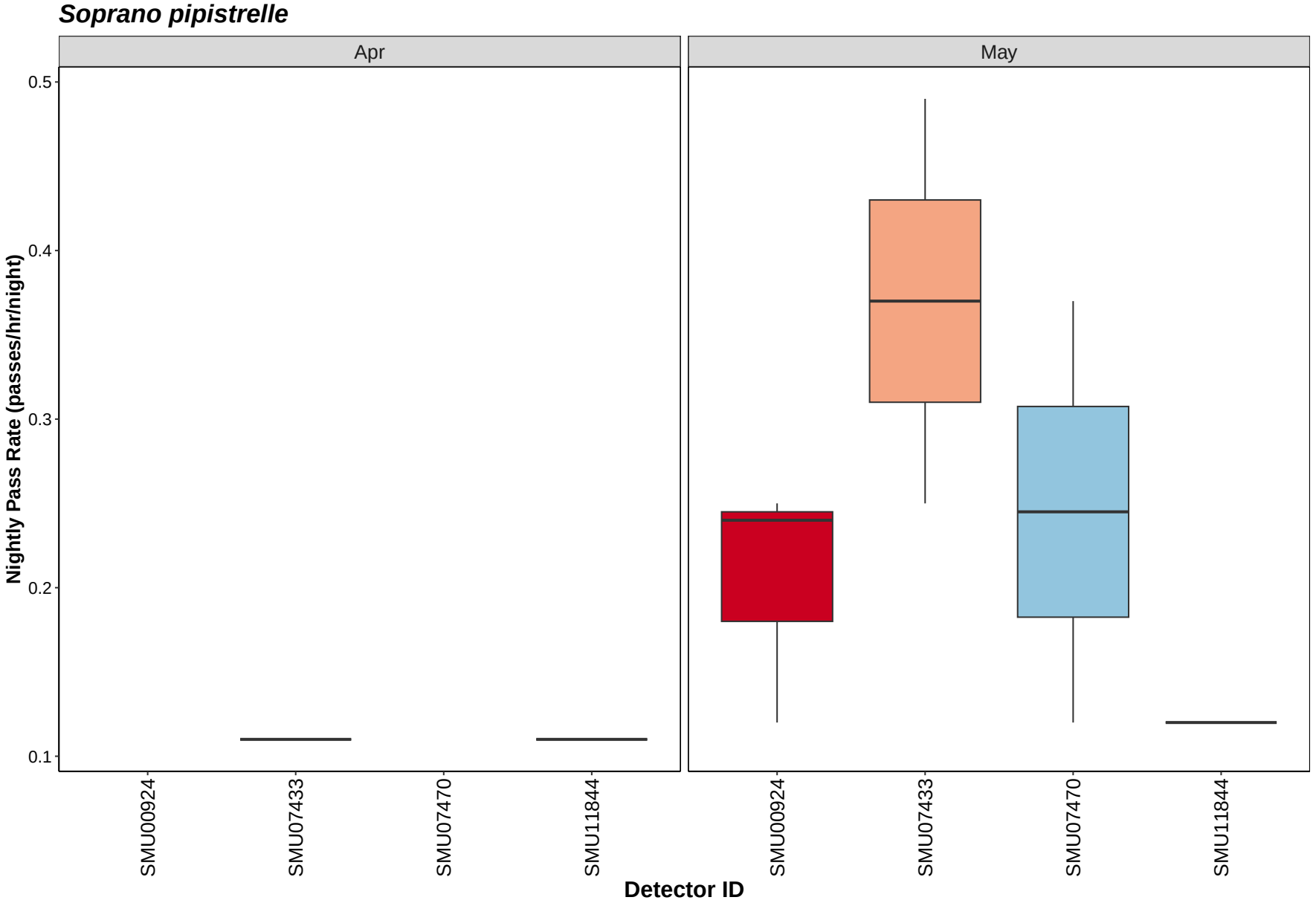
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.

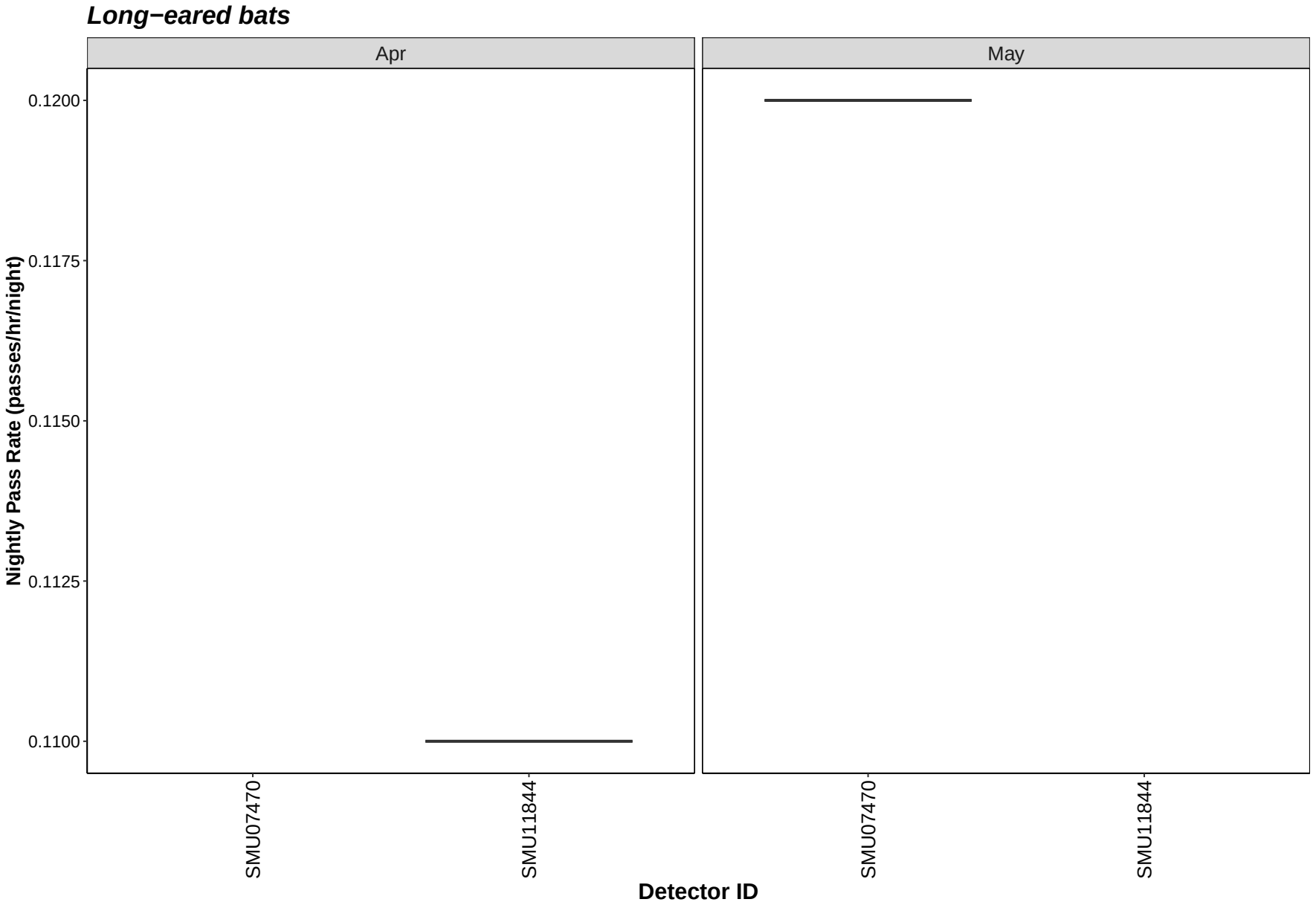
Common pipistrelle




Myotis
Apr
May
Nightly Pass Rate (passes/hr/night)
0.3
0.2
0.1
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU11844
Detector ID


Pipistrellus
Apr
May
0.25
0.20
0.15
Nightly Pass Rate (passes/hr/night)
Daenerys mic Jamie
SMU07433
SMU07490
SMU11844
Detector ID


Soprano pipistrelle
Apr
May
Nightly Pass Rate (passes/hr/night)
0.5
0.4
0.3
0.2
0.1
SMU00924
SMU07433
SMU07470
SMU11844
SMU00924
SMU07433
SMU07470
SMU11844
Detector ID


Long−eared bats
Apr
May
0.1200
0.1175
0.1150
0.1125
0.1100
Nightly Pass Rate (passes/hr/night)
SMU07470
SMU11844
SMU07470
SMU11844
Detector ID

Bat Activity per Detector Location

Figure 13. Detector ID reference:

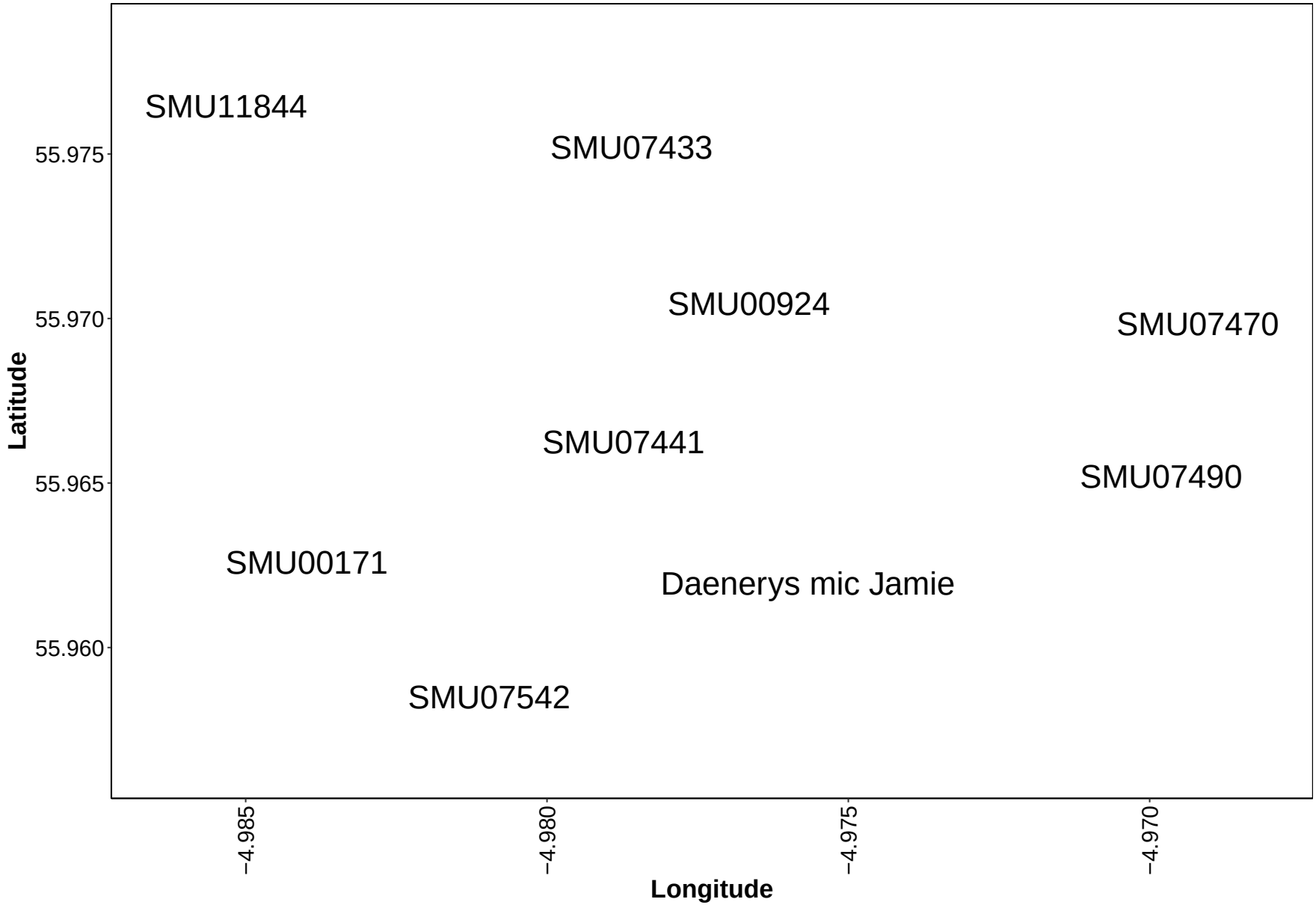

SMU11844
SMU07433
SMU00924
SMU07470
SMU07441
SMU07490
SMU00171
Daenerys mic Jamie
SMU07542
55.975
55.970
55.965
55.960
Latitude
−4.985
−4.980
−4.975
−4.970
Longitude

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.

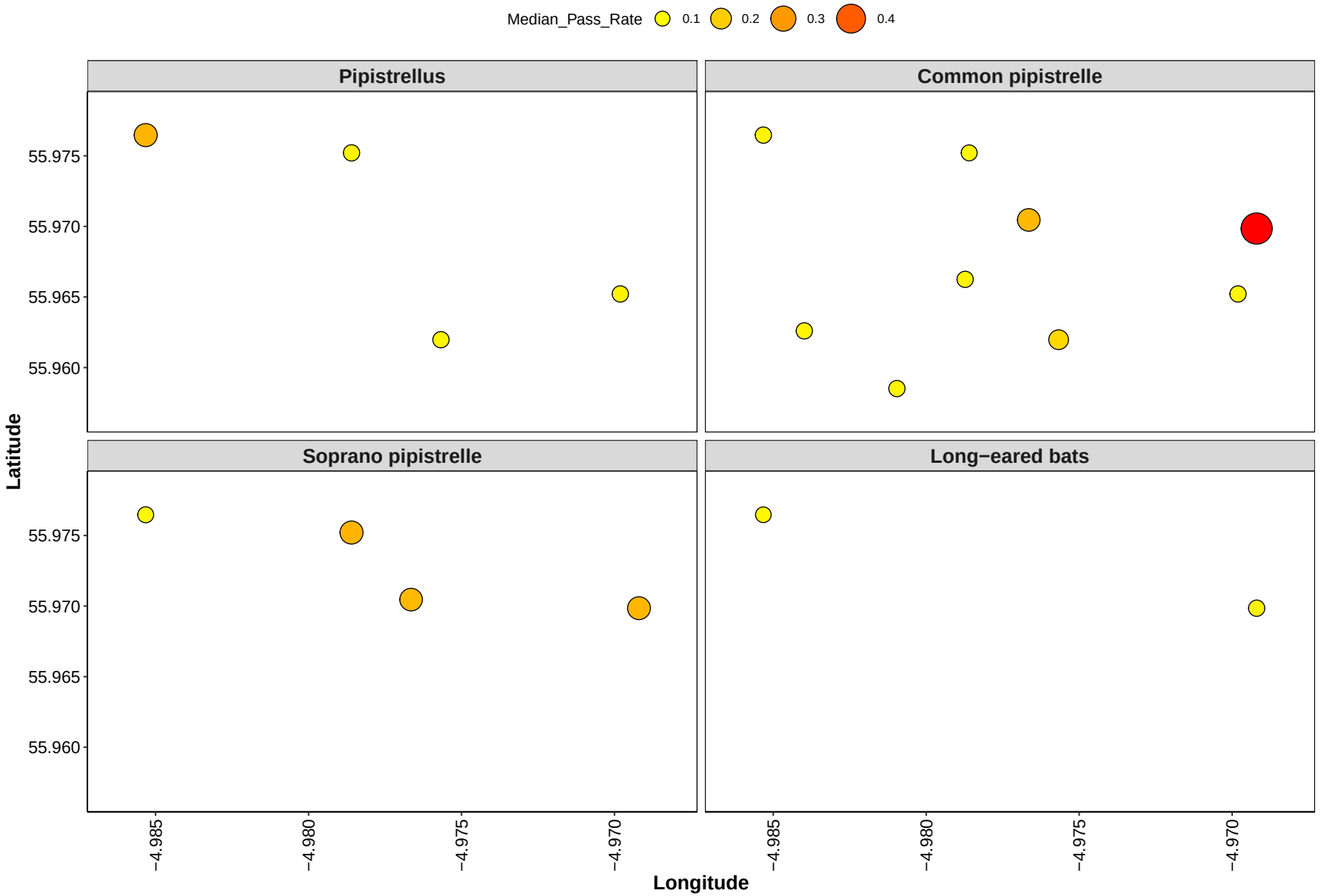
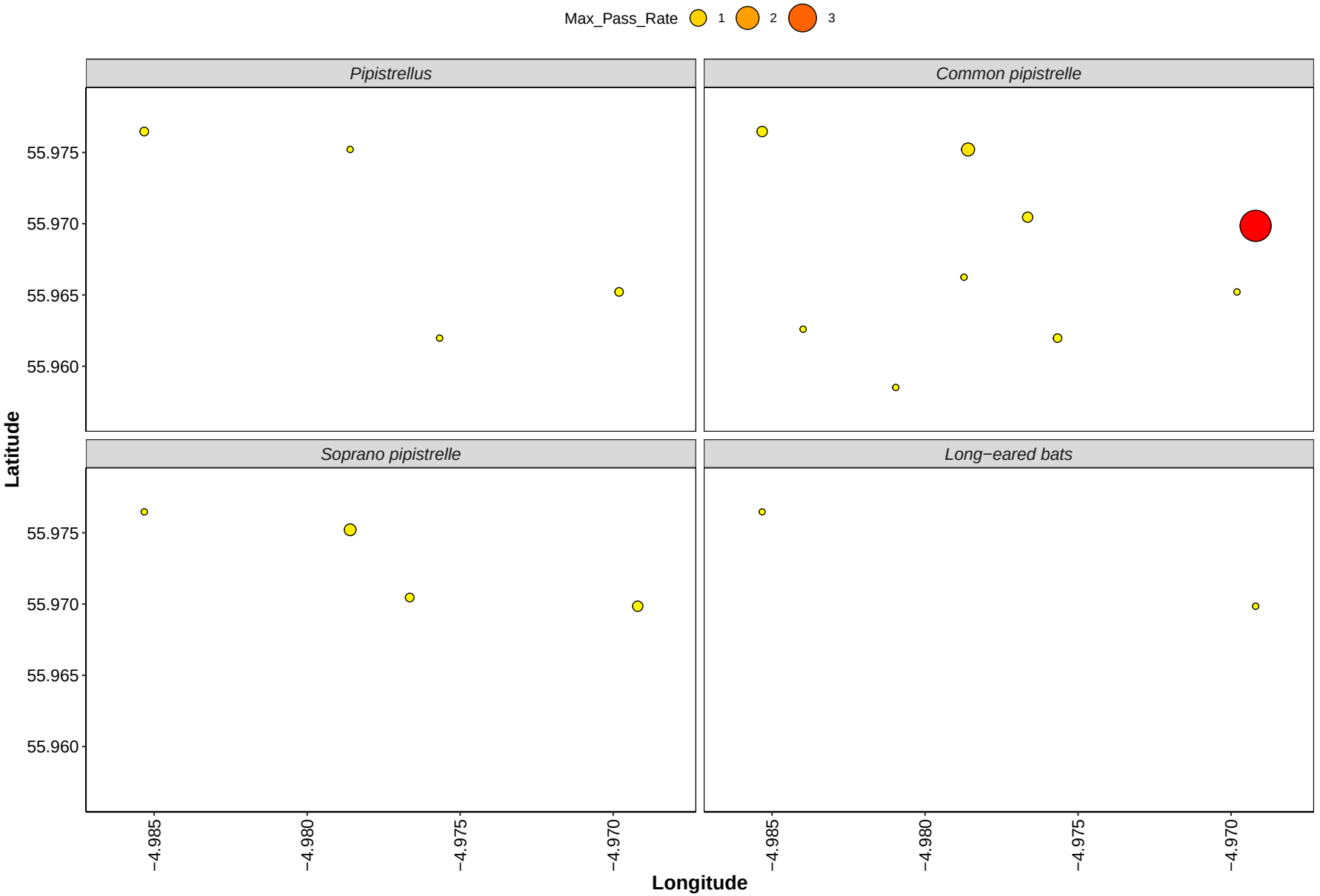

Median_Pass_Rate
0.1
0.2
0.3
0.4
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Long−eared bats
Latitude
55.975
55.970
55.965
55.960
−4.985
−4.980
−4.975
−4.970
Longitude

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
1
2
3
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Long−eared bats
Latitude
55.975
55.970
55.965
55.960
−4.985
−4.980
−4.975
−4.970
Longitude

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

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
Common pipistrelle	Daenerys mic Jamie	0.0
Common pipistrelle	SMU00171	0.1
Common pipistrelle	SMU00924	0.1
Common pipistrelle	SMU07433	0.1
Common pipistrelle	SMU07441	0.1
Common pipistrelle	SMU07470	0.5
Common pipistrelle	SMU07490	0.0
Common pipistrelle	SMU07542	0.1
Common pipistrelle	SMU11844	0.0
Long-eared bats	Daenerys mic Jamie	0.0
Long-eared bats	SMU00171	0.0
Long-eared bats	SMU00924	0.0
Long-eared bats	SMU07433	0.0
Long-eared bats	SMU07441	0.0
Long-eared bats	SMU07470	0.0
Long-eared bats	SMU07490	0.0
Long-eared bats	SMU07542	0.0
Long-eared bats	SMU11844	0.0
Myotis	Daenerys mic Jamie	0.1
Myotis	SMU00171	0.1
Myotis	SMU00924	0.1
Myotis	SMU07433	0.1
Myotis	SMU07441	0.0
Myotis	SMU07470	0.0
Myotis	SMU07490	0.0
Myotis	SMU07542	0.0
Myotis	SMU11844	0.0
Pipistrellus	Daenerys mic Jamie	0.0
Pipistrellus	SMU00171	0.0
Pipistrellus	SMU00924	0.0
Pipistrellus	SMU07433	0.0
Pipistrellus	SMU07441	0.0
Pipistrellus	SMU07470	0.0
Pipistrellus	SMU07490	0.1
Pipistrellus	SMU07542	0.0
Pipistrellus	SMU11844	0.0

Species	Detector ID	Median Pass Rate
Soprano pipistrelle	Daenerys mic Jamie	0.0
Soprano pipistrelle	SMU00171	0.0
Soprano pipistrelle	SMU00924	0.2
Soprano pipistrelle	SMU07433	0.0
Soprano pipistrelle	SMU07441	0.0
Soprano pipistrelle	SMU07470	0.0
Soprano pipistrelle	SMU07490	0.0
Soprano pipistrelle	SMU07542	0.0
Soprano pipistrelle	SMU11844	0.0

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.

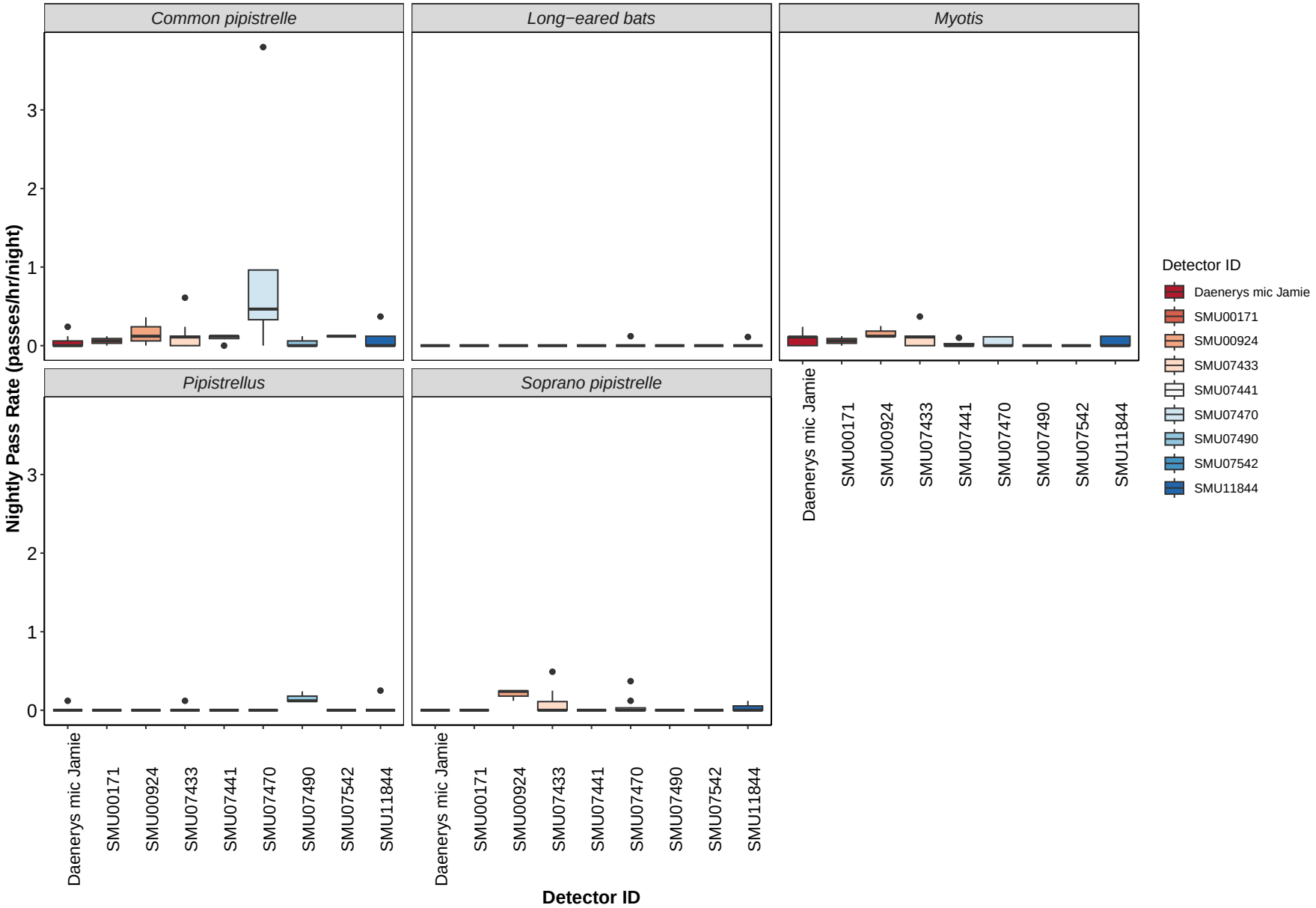
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Mean Pass Rate
Common pipistrelle	Daenerys mic Jamie	0.1
Common pipistrelle	SMU00171	0.1
Common pipistrelle	SMU00924	0.2
Common pipistrelle	SMU07433	0.1
Common pipistrelle	SMU07441	0.1
Common pipistrelle	SMU07470	0.9
Common pipistrelle	SMU07490	0.0
Common pipistrelle	SMU07542	0.1
Common pipistrelle	SMU11844	0.1
Long-eared bats	Daenerys mic Jamie	0.0
Long-eared bats	SMU00171	0.0
Long-eared bats	SMU00924	0.0
Long-eared bats	SMU07433	0.0
Long-eared bats	SMU07441	0.0
Long-eared bats	SMU07470	0.0
Long-eared bats	SMU07490	0.0
Long-eared bats	SMU07542	0.0
Long-eared bats	SMU11844	0.0
Myotis	Daenerys mic Jamie	0.1
Myotis	SMU00171	0.1
Myotis	SMU00924	0.2
Myotis	SMU07433	0.1
Myotis	SMU07441	0.0
Myotis	SMU07470	0.0
Myotis	SMU07490	0.0
Myotis	SMU07542	0.0
Myotis	SMU11844	0.1
Pipistrellus	Daenerys mic Jamie	0.0
Pipistrellus	SMU00171	0.0
Pipistrellus	SMU00924	0.0
Pipistrellus	SMU07433	0.0
Pipistrellus	SMU07441	0.0
Pipistrellus	SMU07470	0.0
Pipistrellus	SMU07490	0.2
Pipistrellus	SMU07542	0.0
Pipistrellus	SMU11844	0.0

Species	Detector ID	Mean Pass Rate
Soprano pipistrelle	Daenerys mic Jamie	0.0
Soprano pipistrelle	SMU00171	0.0
Soprano pipistrelle	SMU00924	0.2
Soprano pipistrelle	SMU07433	0.1
Soprano pipistrelle	SMU07441	0.0
Soprano pipistrelle	SMU07470	0.1
Soprano pipistrelle	SMU07490	0.0
Soprano pipistrelle	SMU07542	0.0
Soprano pipistrelle	SMU11844	0.0

Per Detector

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.


Common pipistrelle
Long−eared bats
Myotis
Pipistrellus
Soprano pipistrelle
Nightly Pass Rate (passes/hr/night)
0
1
2
3
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID
Detector ID
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844

Survey Effort

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

month	Detector ID	No. of Survey Nights
Apr	Daenerys mic Jamie	4
Apr	SMU07433	5
Apr	SMU07441	2
Apr	SMU07470	2
Apr	SMU07490	1
Apr	SMU11844	2
May	Daenerys mic Jamie	3
May	SMU00171	2
May	SMU00924	3
May	SMU07433	4
May	SMU07441	2
May	SMU07470	6
May	SMU07490	2
May	SMU07542	1
May	SMU11844	5

Nighlty 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	May
Common pipistrelle	Daenerys mic Jamie	0.0	0.1
Common pipistrelle	SMU00171	NA	0.1
Common pipistrelle	SMU00924	NA	0.1
Common pipistrelle	SMU07433	0.1	0.1
Common pipistrelle	SMU07441	0.1	0.1
Common pipistrelle	SMU07470	0.2	0.7
Common pipistrelle	SMU07490	0.0	0.1
Common pipistrelle	SMU07542	NA	0.1
Common pipistrelle	SMU11844	0.0	0.1
Long-eared bats	Daenerys mic Jamie	0.0	0.0
Long-eared bats	SMU00171	NA	0.0
Long-eared bats	SMU00924	NA	0.0
Long-eared bats	SMU07433	0.0	0.0
Long-eared bats	SMU07441	0.0	0.0
Long-eared bats	SMU07470	0.0	0.0
Long-eared bats	SMU07490	0.0	0.0
Long-eared bats	SMU07542	NA	0.0
Long-eared bats	SMU11844	0.1	0.0
Myotis	Daenerys mic Jamie	0.1	0.0
Myotis	SMU00171	NA	0.1
Myotis	SMU00924	NA	0.1
Myotis	SMU07433	0.0	0.1
Myotis	SMU07441	0.0	0.0
Myotis	SMU07470	0.1	0.0
Myotis	SMU07490	0.0	0.0
Myotis	SMU07542	NA	0.0
Myotis	SMU11844	0.0	0.1
Pipistrellus	Daenerys mic Jamie	0.0	0.0
Pipistrellus	SMU00171	NA	0.0
Pipistrellus	SMU00924	NA	0.0
Pipistrellus	SMU07433	0.0	0.0
Pipistrellus	SMU07441	0.0	0.0
Pipistrellus	SMU07470	0.0	0.0
Pipistrellus	SMU07490	0.1	0.2
Pipistrellus	SMU07542	NA	0.0
Pipistrellus	SMU11844	0.0	0.0

Species	Detector ID	Apr	May
Soprano pipistrelle	Daenerys mic Jamie	0.0	0.0
Soprano pipistrelle	SMU00171	NA	0.0
Soprano pipistrelle	SMU00924	NA	0.2
Soprano pipistrelle	SMU07433	0.0	0.1
Soprano pipistrelle	SMU07441	0.0	0.0
Soprano pipistrelle	SMU07470	0.0	0.0
Soprano pipistrelle	SMU07490	0.0	0.0
Soprano pipistrelle	SMU07542	NA	0.0
Soprano pipistrelle	SMU11844	0.1	0.0

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.

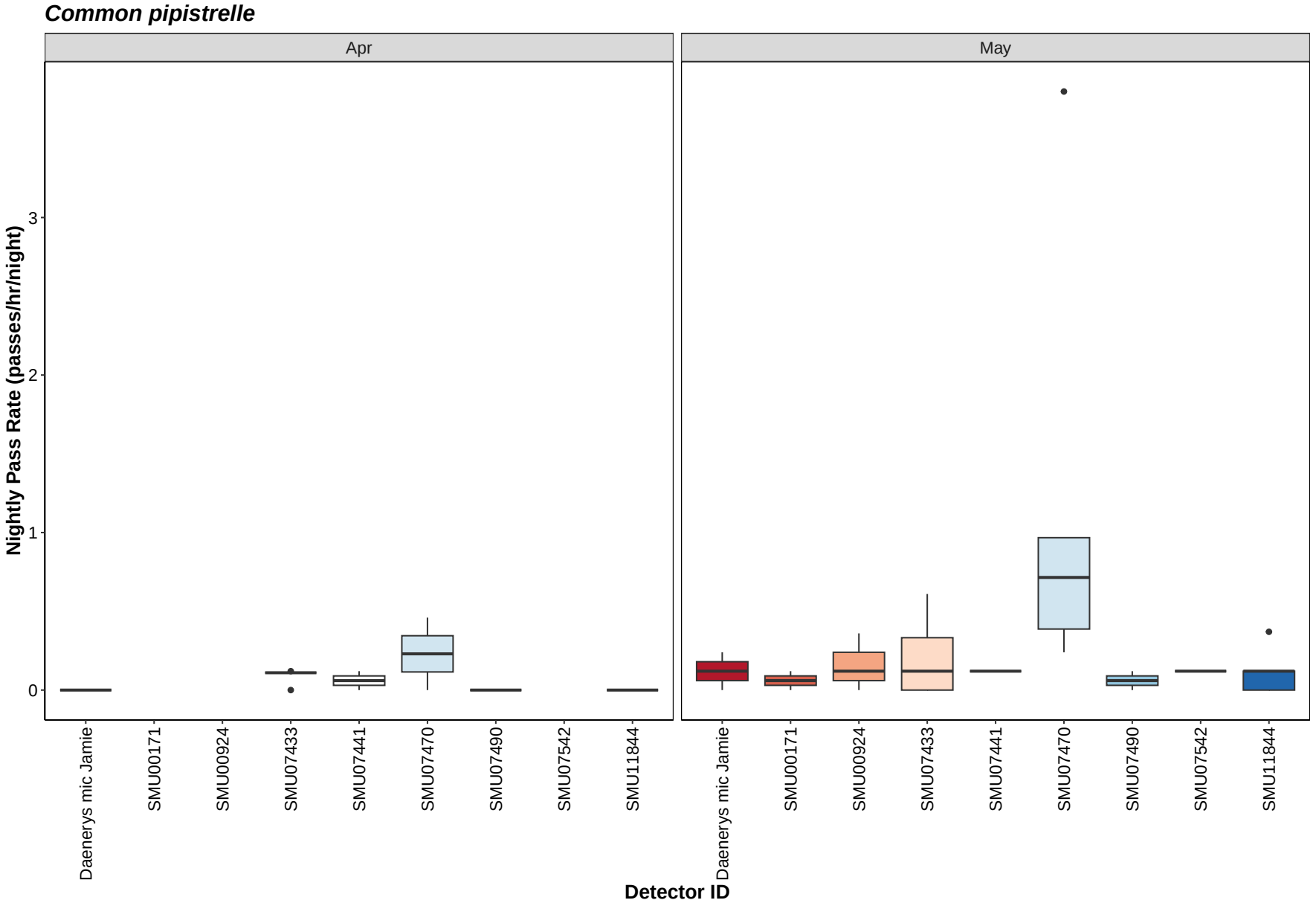
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

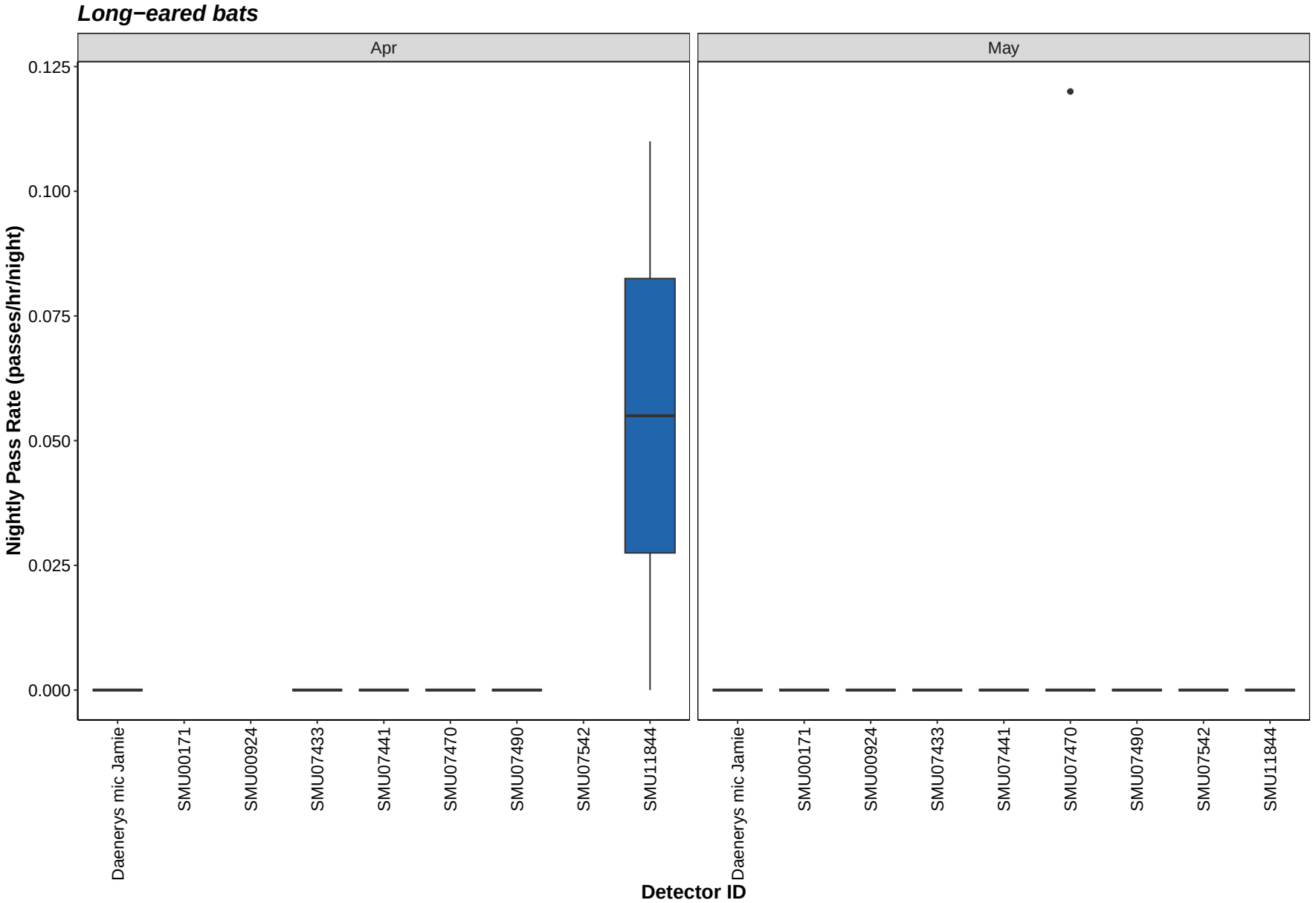
Species	Detector ID	Apr	May
Common pipistrelle	Daenerys mic Jamie	0.0	0.1
Common pipistrelle	SMU00171	NA	0.1
Common pipistrelle	SMU00924	NA	0.2
Common pipistrelle	SMU07433	0.1	0.2
Common pipistrelle	SMU07441	0.1	0.1
Common pipistrelle	SMU07470	0.2	1.1
Common pipistrelle	SMU07490	0.0	0.1
Common pipistrelle	SMU07542	NA	0.1
Common pipistrelle	SMU11844	0.0	0.1
Long-eared bats	Daenerys mic Jamie	0.0	0.0
Long-eared bats	SMU00171	NA	0.0
Long-eared bats	SMU00924	NA	0.0
Long-eared bats	SMU07433	0.0	0.0
Long-eared bats	SMU07441	0.0	0.0
Long-eared bats	SMU07470	0.0	0.0
Long-eared bats	SMU07490	0.0	0.0
Long-eared bats	SMU07542	NA	0.0
Long-eared bats	SMU11844	0.1	0.0
Myotis	Daenerys mic Jamie	0.1	0.1
Myotis	SMU00171	NA	0.1
Myotis	SMU00924	NA	0.2
Myotis	SMU07433	0.0	0.2
Myotis	SMU07441	0.0	0.0
Myotis	SMU07470	0.1	0.0
Myotis	SMU07490	0.0	0.0
Myotis	SMU07542	NA	0.0
Myotis	SMU11844	0.0	0.1
Pipistrellus	Daenerys mic Jamie	0.0	0.0
Pipistrellus	SMU00171	NA	0.0
Pipistrellus	SMU00924	NA	0.0
Pipistrellus	SMU07433	0.0	0.0
Pipistrellus	SMU07441	0.0	0.0
Pipistrellus	SMU07470	0.0	0.0
Pipistrellus	SMU07490	0.1	0.2
Pipistrellus	SMU07542	NA	0.0
Pipistrellus	SMU11844	0.0	0.0

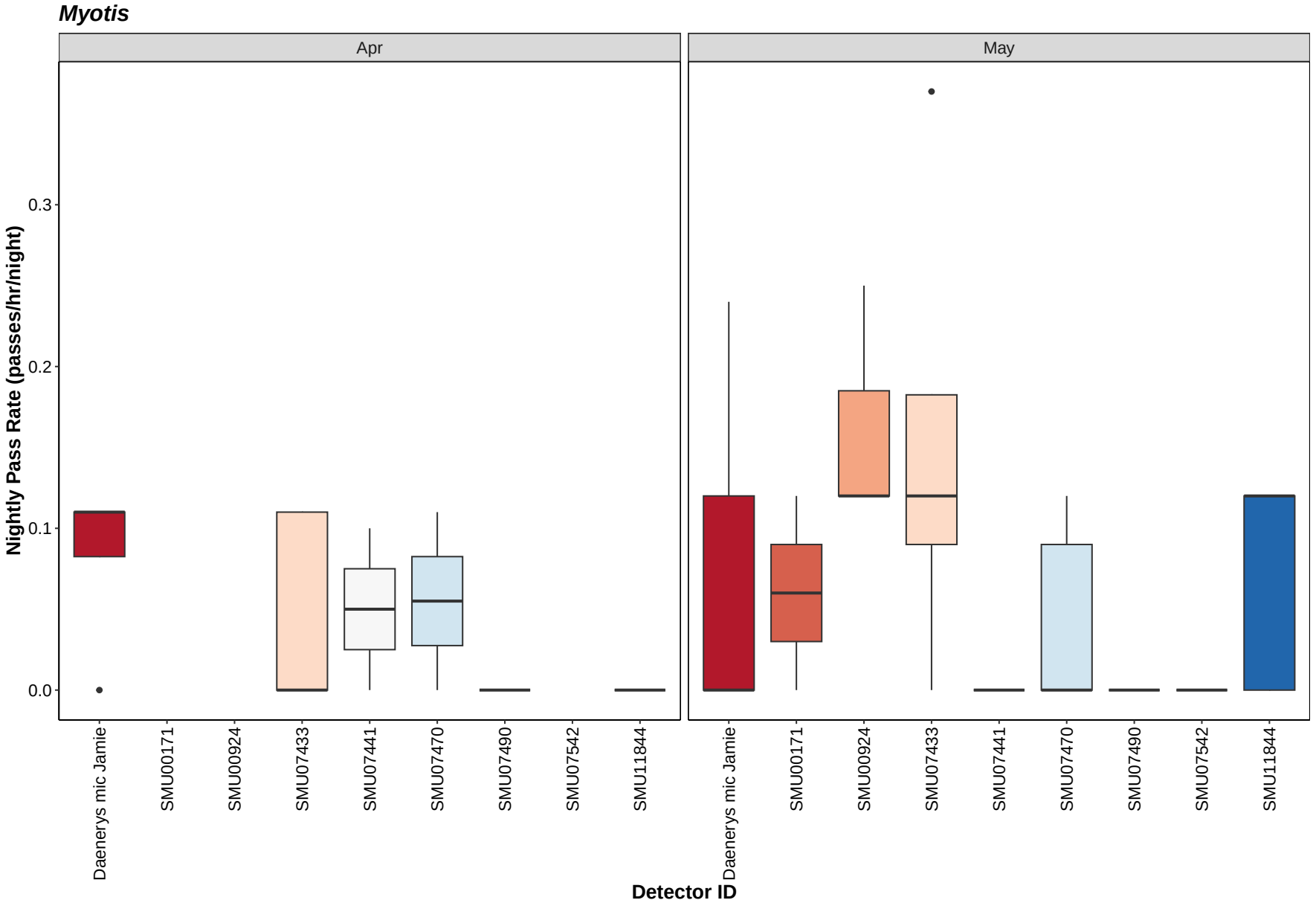
Species	Detector ID	Apr	May
Soprano pipistrelle	Daenerys mic Jamie	0.0	0.0
Soprano pipistrelle	SMU00171	NA	0.0
Soprano pipistrelle	SMU00924	NA	0.2
Soprano pipistrelle	SMU07433	0.0	0.2
Soprano pipistrelle	SMU07441	0.0	0.0
Soprano pipistrelle	SMU07470	0.0	0.1
Soprano pipistrelle	SMU07490	0.0	0.0
Soprano pipistrelle	SMU07542	NA	0.0
Soprano pipistrelle	SMU11844	0.1	0.0

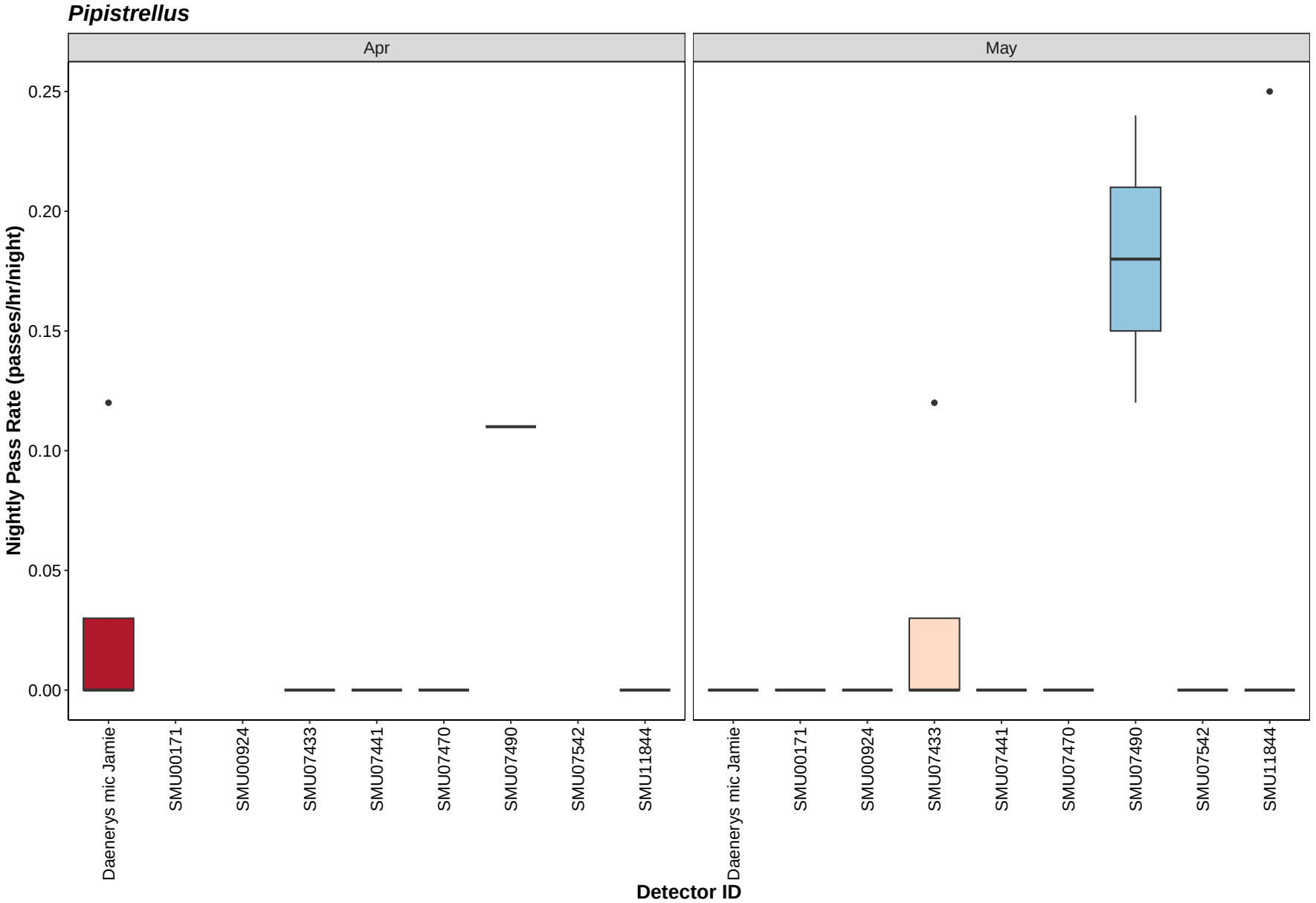
Per Detector

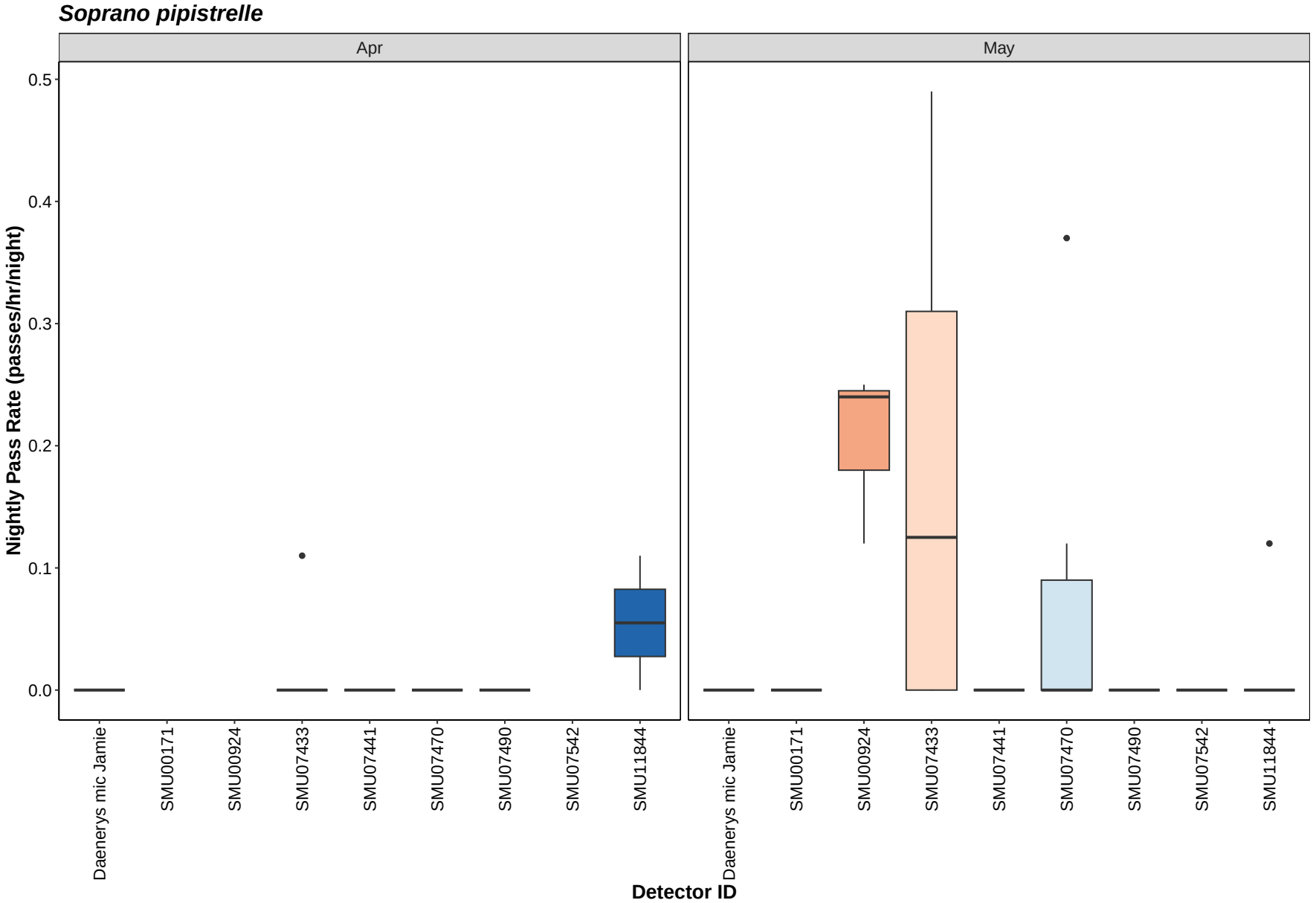
Figure 17. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.


Common pipistrelle
Apr
May
Nightly Pass Rate (passes/hr/night)
0
1
2
3
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID


Long−eared bats
Apr
May
Nightly Pass Rate (passes/hr/night)
0.125
0.100
0.075
0.050
0.025
0.000
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID


Myotis
Apr
May
Nightly Pass Rate (passes/hr/night)
0.0
0.1
0.2
0.3
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID


Pipistrellus
Apr
May
Nightly Pass Rate (passes/hr/night)
0.25
0.20
0.15
0.10
0.05
0.00
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID


Soprano pipistrelle
Apr
May
Nightly Pass Rate (passes/hr/night)
0.0
0.1
0.2
0.3
0.4
0.5
Daenerys mic Jamie
SMU00171
SMU00924
SMU07433
SMU07441
SMU07470
SMU07490
SMU07542
SMU11844
Detector ID

Bat Activity per Detector Location

Figure 18. Detector ID reference:

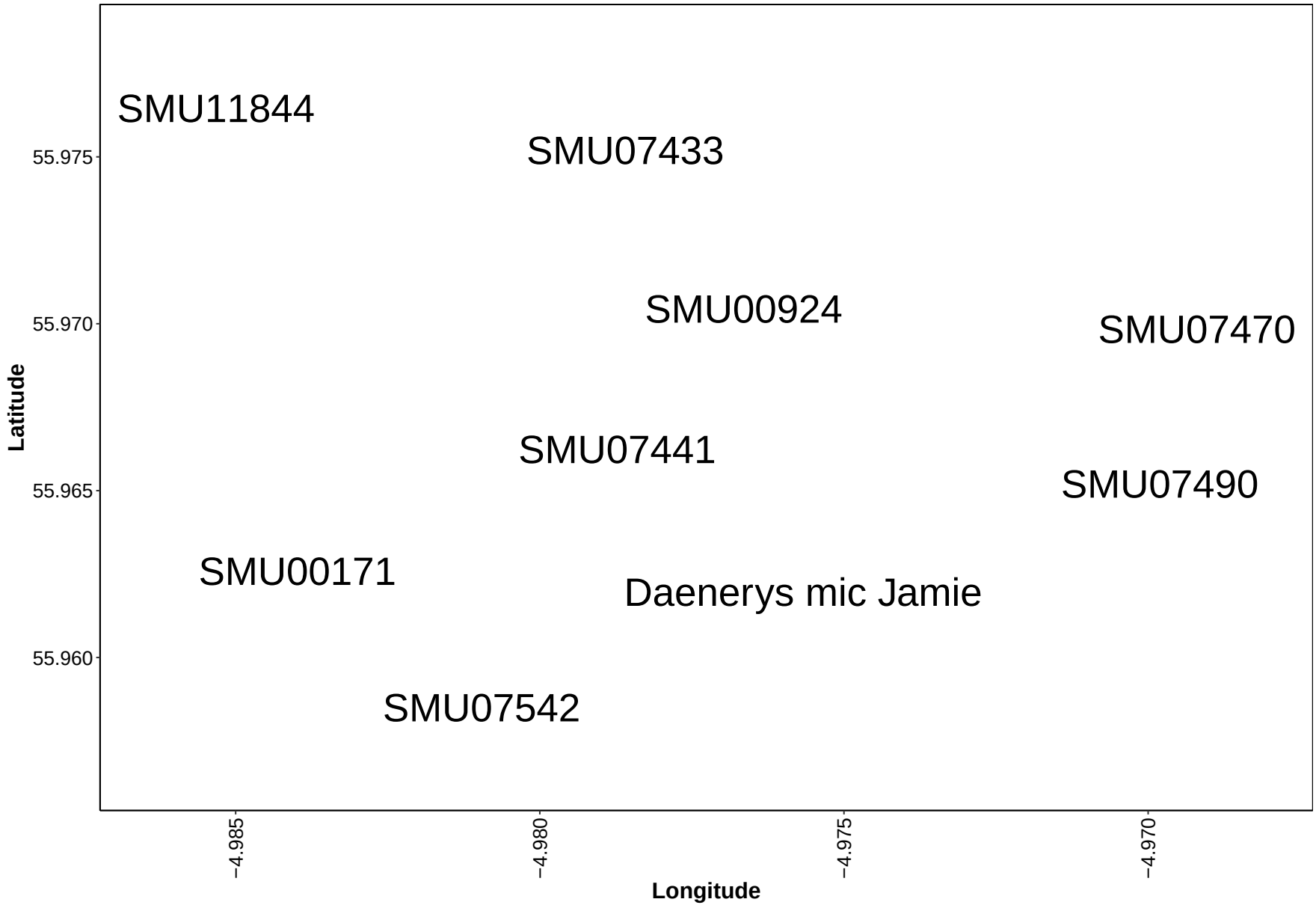

SMU11844
SMU07433
SMU00924
SMU07470
SMU07441
SMU07490
SMU00171
Daenerys mic Jamie
SMU07542
55.975
55.970
55.965
55.960
Latitude
−4.985
−4.980
−4.975
−4.970
Longitude

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.

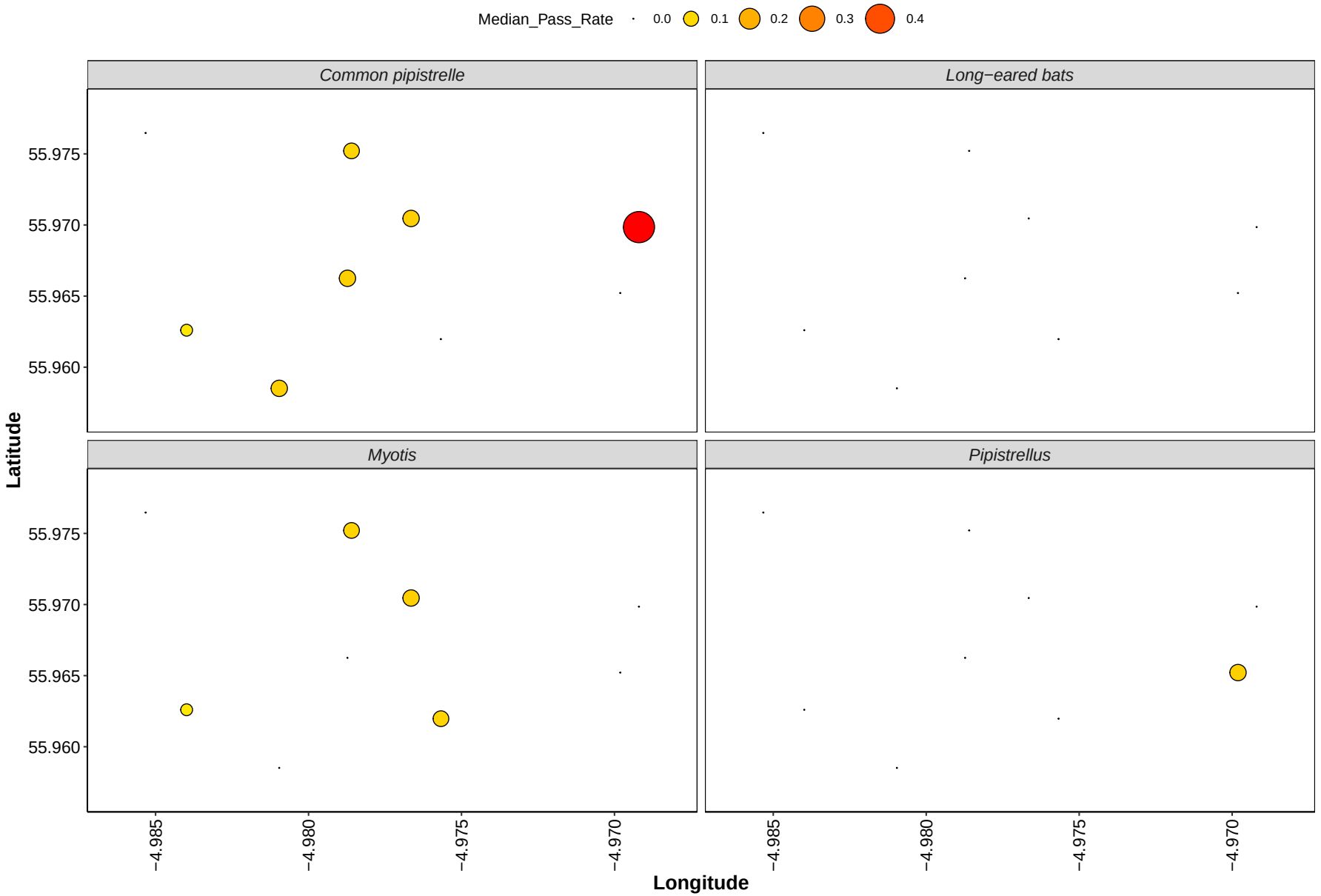
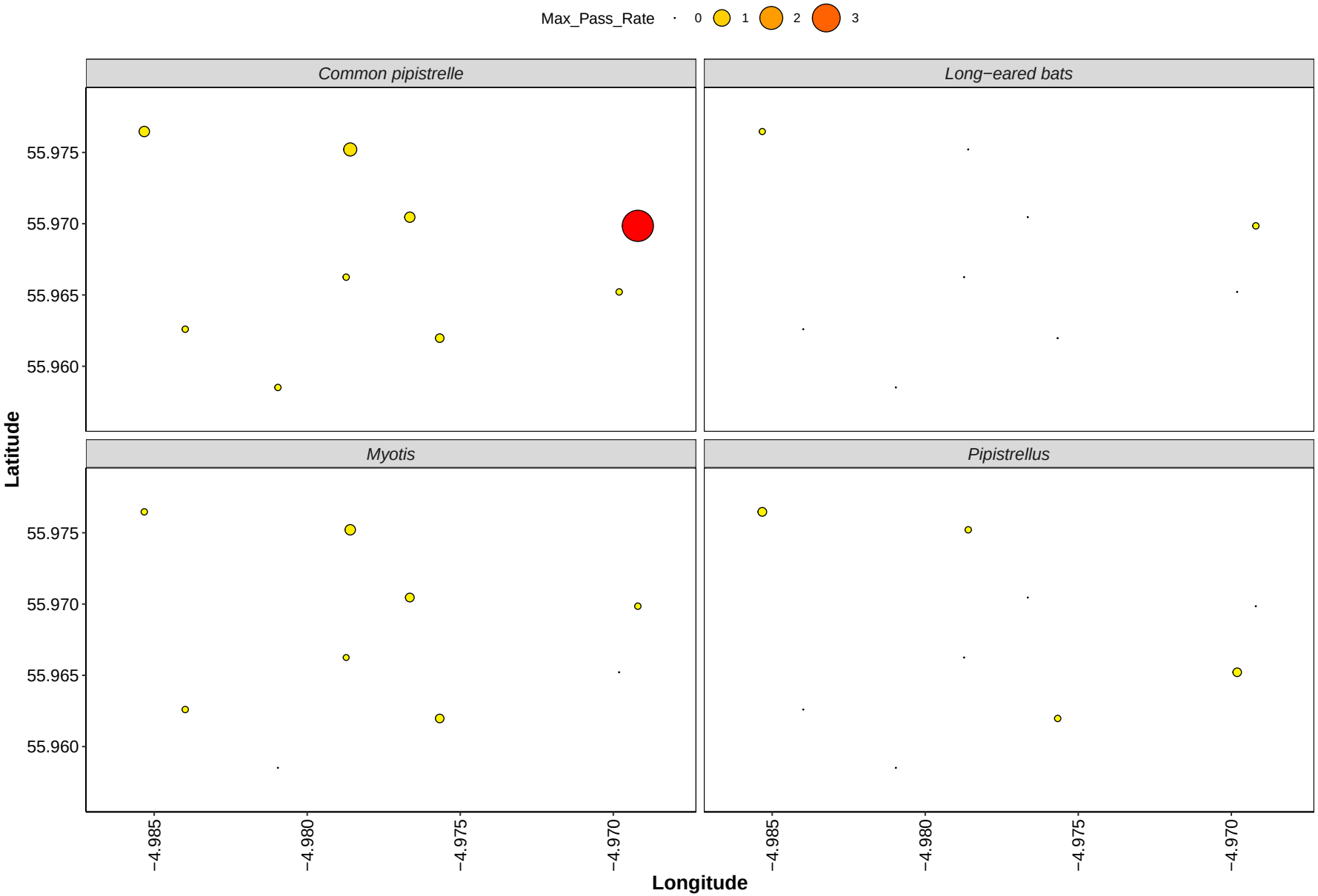

Median_Pass_Rate
0.0
0.1
0.2
0.3
0.4
Common pipistrelle
Long−eared bats
Myotis
Pipistrellus
Latitude
55.975
55.970
55.965
55.960
−4.985
−4.980
−4.975
−4.970
Longitude

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
1
2
3
Common pipistrelle
Long−eared bats
Myotis
Pipistrellus
Latitude
55.975
55.970
55.965
55.960
−4.985
−4.980
−4.975
−4.970
Longitude

Thank you for using Ecobat!

Ecobat Report
2025-03-27

Geo filter: county, Time filter: +- 1 month

Summary

Bats were detected on **27** nights between **24/06/2024** and **23/07/2024**, using **10** static bat detectors. Throughout this period, **7** species were recorded. **Table 1.** Detectors were placed at the following locations:

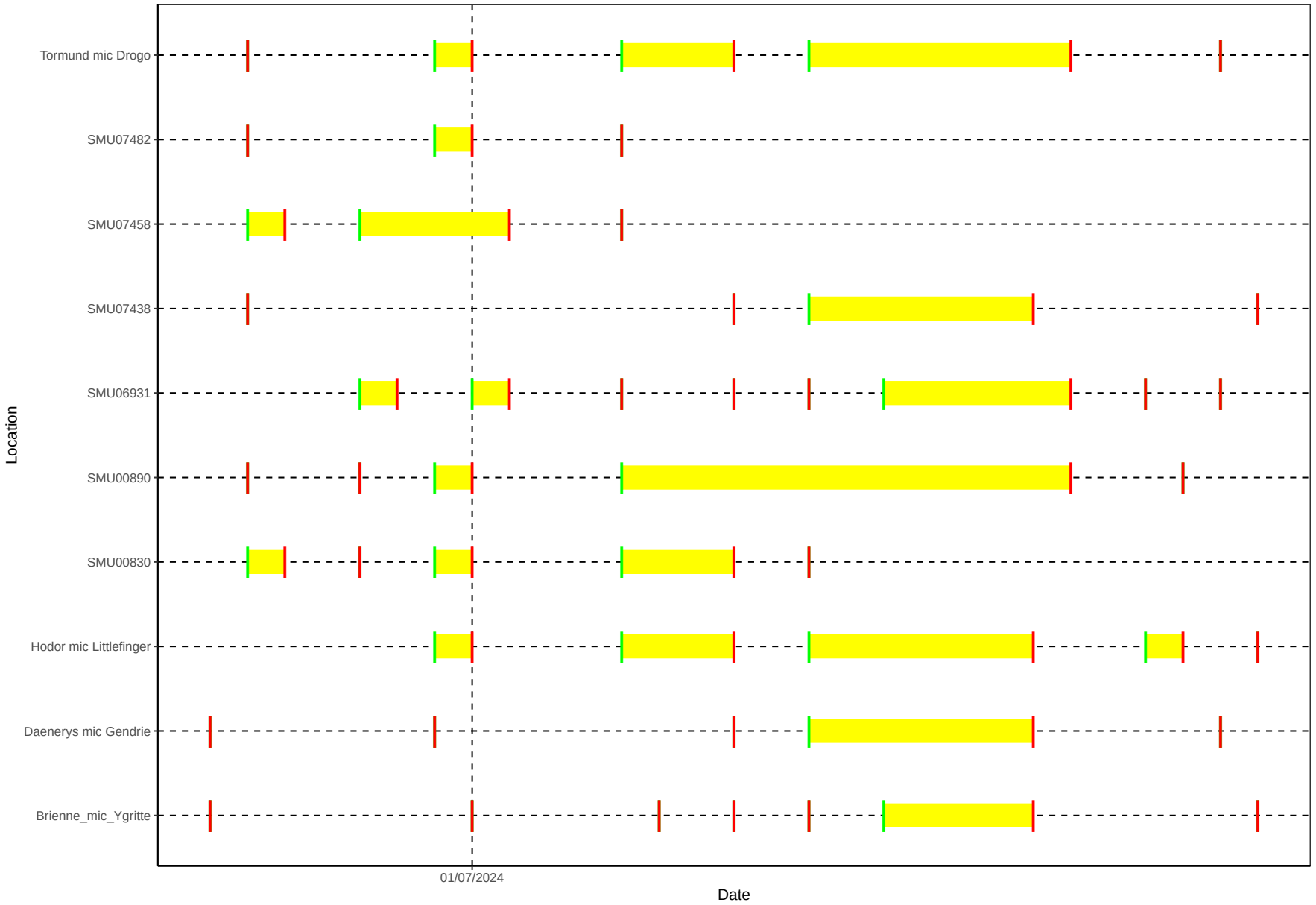
Detector ID	Latitude	Longitude
Brienne_mic_Ygritte	55.95448	-4.979404
Daenerys mic Gendrie	55.95768	-4.974350
Hodor mic Littlefinger	55.96229	-4.974684
SMU07482	55.96683	-4.973106
SMU07438	55.95994	-4.981983
SMU00890	55.96445	-4.982493
Tormund mic Drogo	55.96866	-4.979872
SMU06931	55.97119	-4.973295
SMU07458	55.97521	-4.978595
SMU00830	55.97647	-4.985323

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
Brienne_mic_Ygritte	11
Daenerys mic Gendrie	12
Hodor mic Littlefinger	17
SMU00830	10
SMU00890	21
SMU06931	17
SMU07438	10
SMU07458	26
SMU07482	15
Tormund mic Drogo	18

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


Tormund mic Drogo
SMU07482
SMU07458
SMU07438
SMU06931
SMU00890
SMU00830
Hodor mic Littlefinger
Daenerys mic Gendrie
Brienne_mic_Ygritte
Location
01/07/2024
Date

Part 1: Percentile 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.

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Brienne_mic_Ygritte	Myotis	0	0	0	0	1	8
Brienne_mic_Ygritte	Pipistrellus	0	0	0	0	5	0
Brienne_mic_Ygritte	Pipistrellus pipistrellus	0	0	0	5	2	3
Brienne_mic_Ygritte	Pipistrellus pygmaeus	0	0	0	2	1	3
Brienne_mic_Ygritte	Plecotus auritus	0	0	0	1	3	0
Daenerys mic Gendrie	Myotis	0	0	0	0	0	5
Daenerys mic Gendrie	Nyctalus	0	0	0	0	0	1
Daenerys mic Gendrie	Pipistrellus	0	0	1	0	0	0
Daenerys mic Gendrie	Pipistrellus pipistrellus	2	0	0	0	3	4
Daenerys mic Gendrie	Pipistrellus pygmaeus	0	0	0	1	4	2
Daenerys mic Gendrie	Plecotus auritus	0	0	0	0	3	0
Hodor mic Littlefinger	Myotis	0	0	0	0	0	9
Hodor mic Littlefinger	Nyctalus	0	0	0	0	0	1
Hodor mic Littlefinger	Pipistrellus	0	0	0	2	3	0
Hodor mic Littlefinger	Pipistrellus pipistrellus	0	0	0	2	2	10
Hodor mic Littlefinger	Pipistrellus pygmaeus	0	0	0	0	4	5

Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Hodor mic Littlefinger	Plecotus auritus	0	0	2	2	4	0
SMU00830	Pipistrellus	0	0	0	0	2	0
SMU00830	Pipistrellus pipistrellus	0	0	0	0	0	10
SMU00830	Pipistrellus pygmaeus	0	0	0	0	1	1
SMU00890	Myotis	1	1	2	4	5	5
SMU00890	Nyctalus	0	0	0	0	0	1
SMU00890	Pipistrellus	0	2	2	0	5	0
SMU00890	Pipistrellus nathusii	1	0	1	0	0	0
SMU00890	Pipistrellus pipistrellus	0	0	0	4	3	10
SMU00890	Pipistrellus pygmaeus	0	0	0	0	4	3
SMU00890	Plecotus auritus	0	0	0	4	5	0
SMU06931	Myotis	0	0	0	0	0	2
SMU06931	Pipistrellus	0	0	0	0	2	0
SMU06931	Pipistrellus pipistrellus	0	0	0	0	0	16
SMU06931	Pipistrellus pygmaeus	0	0	0	2	0	3
SMU06931	Plecotus auritus	0	0	0	0	4	0
SMU07438	Myotis	0	0	0	0	0	2
SMU07438	Pipistrellus	0	0	0	2	2	0
SMU07438	Pipistrellus pipistrellus	0	0	0	0	2	6
SMU07438	Pipistrellus pygmaeus	0	0	0	0	0	6
SMU07438	Plecotus auritus	0	0	0	1	3	0
SMU07458	Myotis	0	0	0	0	7	13
SMU07458	Nyctalus	0	0	0	0	0	2
SMU07458	Pipistrellus	0	0	1	2	8	0

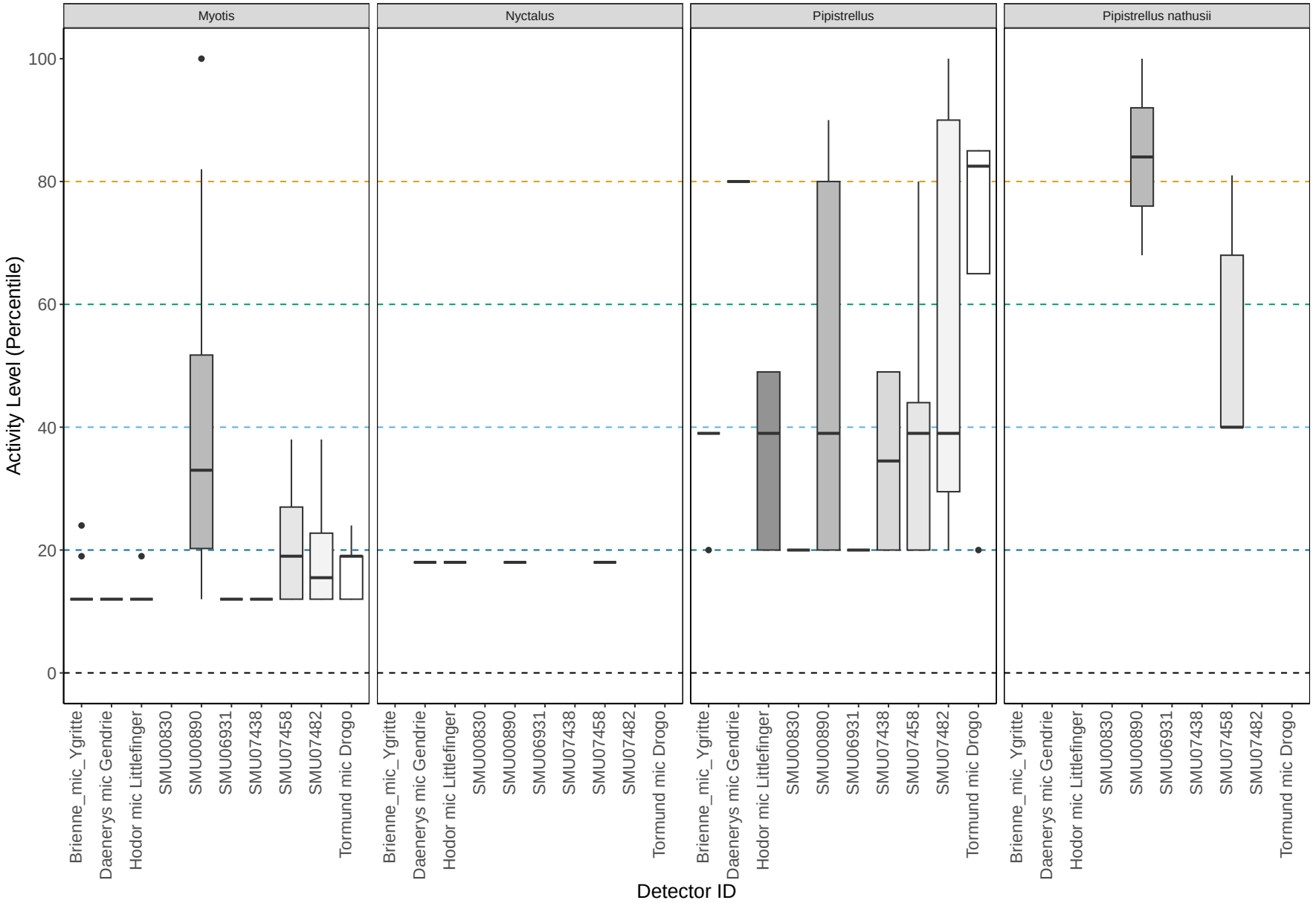
Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU07458	Pipistrellus nathusii	0	2	2	0	7	0
SMU07458	Pipistrellus pipistrellus	2	7	1	9	4	3
SMU07458	Pipistrellus pygmaeus	0	0	0	4	2	6
SMU07458	Plecotus auritus	2	6	2	0	4	0
SMU07482	Myotis	0	0	0	0	2	4
SMU07482	Pipistrellus	2	0	1	0	4	0
SMU07482	Pipistrellus pipistrellus	0	0	2	0	8	5
SMU07482	Pipistrellus pygmaeus	0	0	0	0	4	3
SMU07482	Plecotus auritus	0	0	2	2	2	0
Tormund mic Drogo	Myotis	0	0	0	0	1	4
Tormund mic Drogo	Pipistrellus	0	2	1	0	1	0
Tormund mic Drogo	Pipistrellus pipistrellus	0	0	0	0	0	18
Tormund mic Drogo	Pipistrellus pygmaeus	0	0	0	0	2	5
Tormund mic Drogo	Plecotus auritus	0	0	2	4	2	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
Brienne_mic_Ygritte	Myotis	12	12 - 15.5	24	9	357
Brienne_mic_Ygritte	Pipistrellus	39	39 - 39	39	5	120
Brienne_mic_Ygritte	Pipistrellus pipistrellus	34	19.5 - 48	52	10	4015
Brienne_mic_Ygritte	Pipistrellus pygmaeus	12	3 - 35	50	6	836
Brienne_mic_Ygritte	Plecotus auritus	29	29 - 29	44	4	148
Daenerys mic Gendrie	Myotis	12	12 - 12	12	5	357
Daenerys mic Gendrie	Nyctalus	18	0	18	1	27
Daenerys mic Gendrie	Pipistrellus	80	0	80	1	120
Daenerys mic Gendrie	Pipistrellus pipistrellus	20	7.5 - 68.5	100	9	4015
Daenerys mic Gendrie	Pipistrellus pygmaeus	26	9.5 - 40.5	55	7	836
Daenerys mic Gendrie	Plecotus auritus	29	29 - 29	29	3	148
Hodor mic Littlefinger	Myotis	12	12 - 12	19	9	357
Hodor mic Littlefinger	Nyctalus	18	0	18	1	27
Hodor mic Littlefinger	Pipistrellus	39	20 - 49	49	5	120
Hodor mic Littlefinger	Pipistrellus pipistrellus	9	5.5 - 28.5	47	14	4015
Hodor mic Littlefinger	Pipistrellus pygmaeus	8	3 - 27.5	33	9	836
Hodor mic Littlefinger	Plecotus auritus	44	29 - 64.5	70	8	148
SMU00830	Pipistrellus	20	20 - 20	20	2	120
SMU00830	Pipistrellus pipistrellus	4	2.5 - 6	8	10	4015
SMU00830	Pipistrellus pygmaeus	12	11.5 - 11.5	20	2	836
SMU00890	Myotis	33	26 - 52	100	18	357
SMU00890	Nyctalus	18	0	18	1	27
SMU00890	Pipistrellus	39	20 - 80	90	9	120
SMU00890	Pipistrellus nathusii	84	84 - 84	100	2	22
SMU00890	Pipistrellus pipistrellus	14	10 - 34	49	17	4015
SMU00890	Pipistrellus pygmaeus	20	11.5 - 20	20	7	836
SMU00890	Plecotus auritus	29	29 - 44	59	9	148
SMU06931	Myotis	12	12 - 12	12	2	357
SMU06931	Pipistrellus	20	20 - 20	20	2	120
SMU06931	Pipistrellus pipistrellus	3	2.5 - 4.5	6	16	4015
SMU06931	Pipistrellus pygmaeus	16	8 - 48	48	5	836
SMU06931	Plecotus auritus	29	29 - 29	29	4	148
SMU07438	Myotis	12	12 - 12	12	2	357

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
SMU07438	Pipistrellus	35	20 - 49	49	4	120
SMU07438	Pipistrellus pipistrellus	7	5 - 20	20	8	4015
SMU07438	Pipistrellus pygmaeus	8	3 - 12	16	6	836
SMU07438	Plecotus auritus	29	29 - 29	44	4	148
SMU07458	Myotis	19	15.5 - 25	38	20	357
SMU07458	Nyctalus	18	18 - 18	18	2	27
SMU07458	Pipistrellus	39	29.5 - 50	80	11	120
SMU07458	Pipistrellus nathusii	40	40 - 60.5	81	11	22
SMU07458	Pipistrellus pipistrellus	53	43 - 70	96	26	4015
SMU07458	Pipistrellus pygmaeus	18	5.5 - 33.5	47	12	836
SMU07458	Plecotus auritus	85	57 - 94	100	14	148
SMU07482	Myotis	16	12 - 25	38	6	357
SMU07482	Pipistrellus	39	29.5 - 90	100	7	120
SMU07482	Pipistrellus pipistrellus	25	14 - 36.5	70	15	4015
SMU07482	Pipistrellus pygmaeus	23	3 - 29.5	33	7	836
SMU07482	Plecotus auritus	44	29 - 77	77	6	148
Tormund mic Drogo	Myotis	19	12 - 21.5	24	5	357
Tormund mic Drogo	Pipistrellus	83	52.5 - 85	85	4	120
Tormund mic Drogo	Pipistrellus pipistrellus	2	2 - 8.5	14	18	4015
Tormund mic Drogo	Pipistrellus pygmaeus	16	5.5 - 18	20	7	836
Tormund mic Drogo	Plecotus auritus	59	36.5 - 64.5	70	8	148

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).


Myotis
Nyctalus
Pipistrellus
Pipistrellus nathusii
Activity Level (Percentile)
100
80
60
40
20
0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID

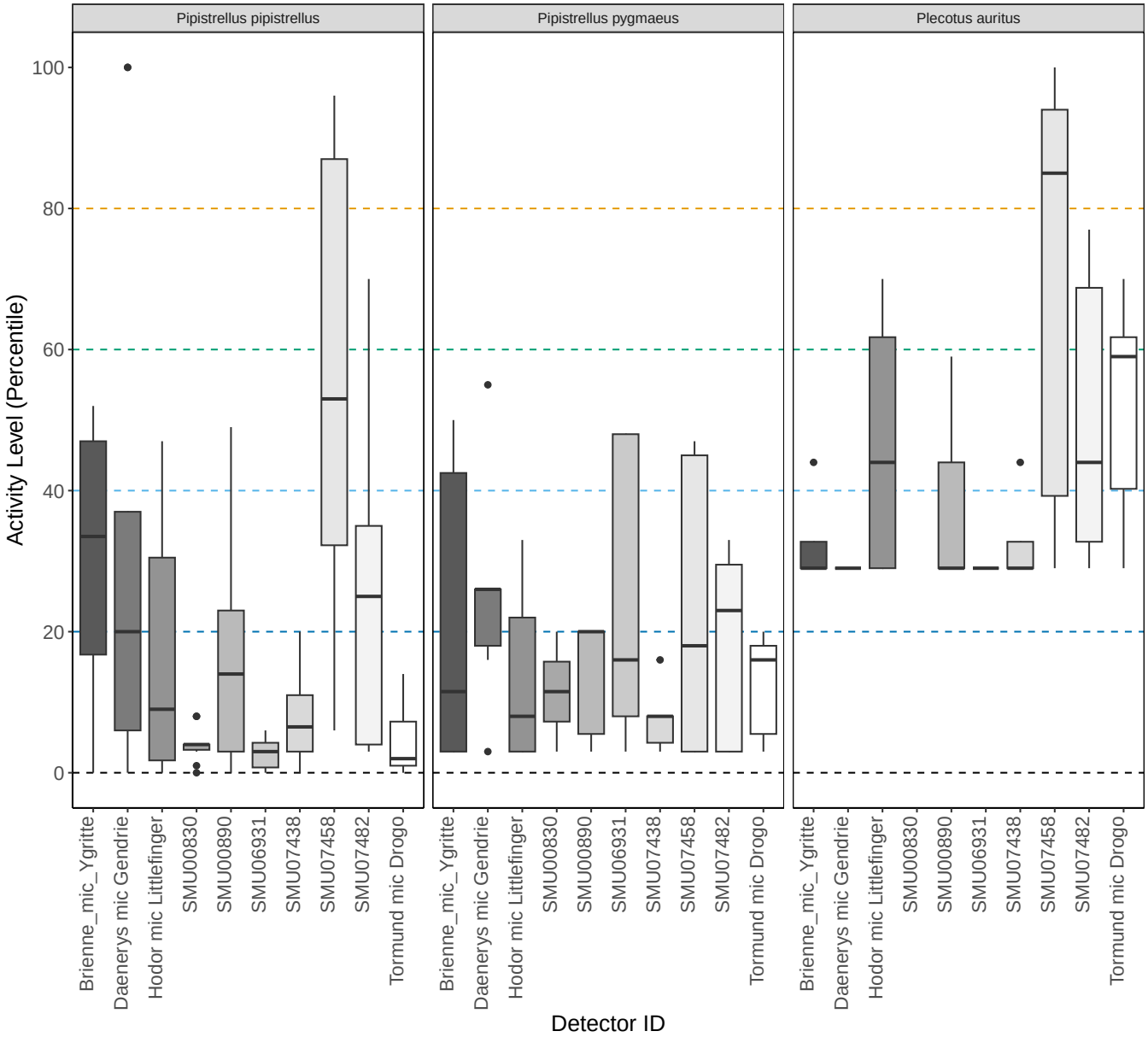
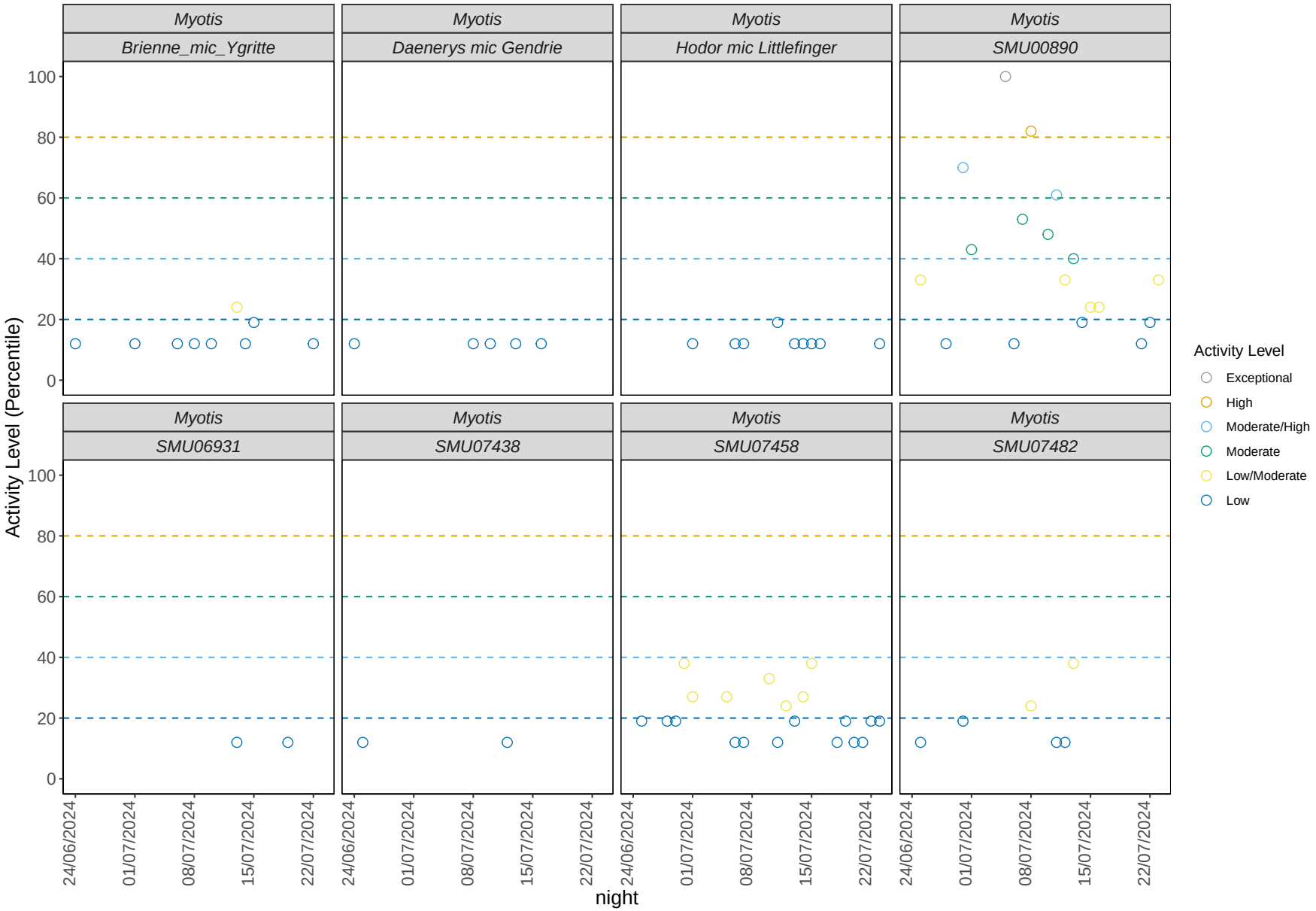
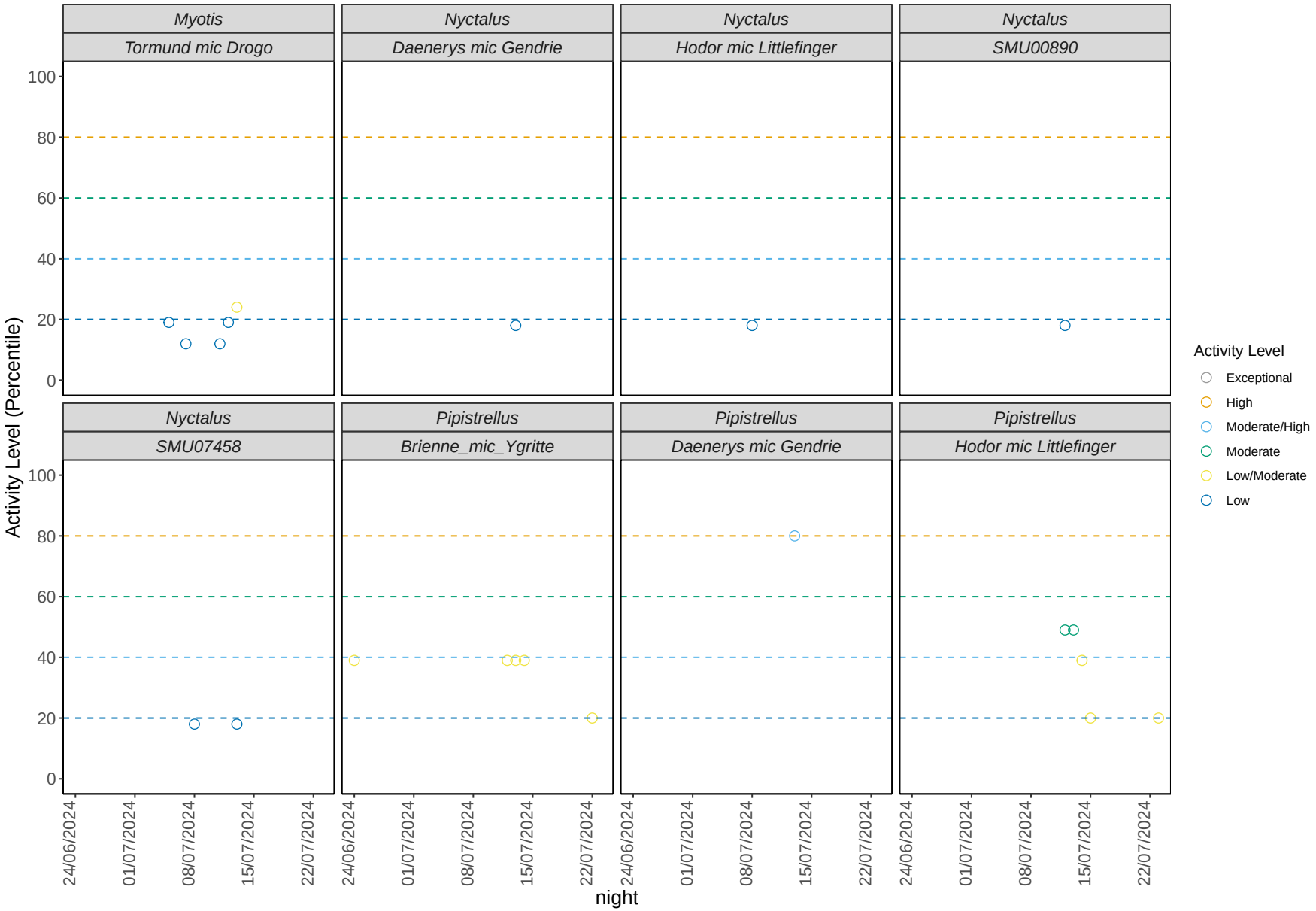
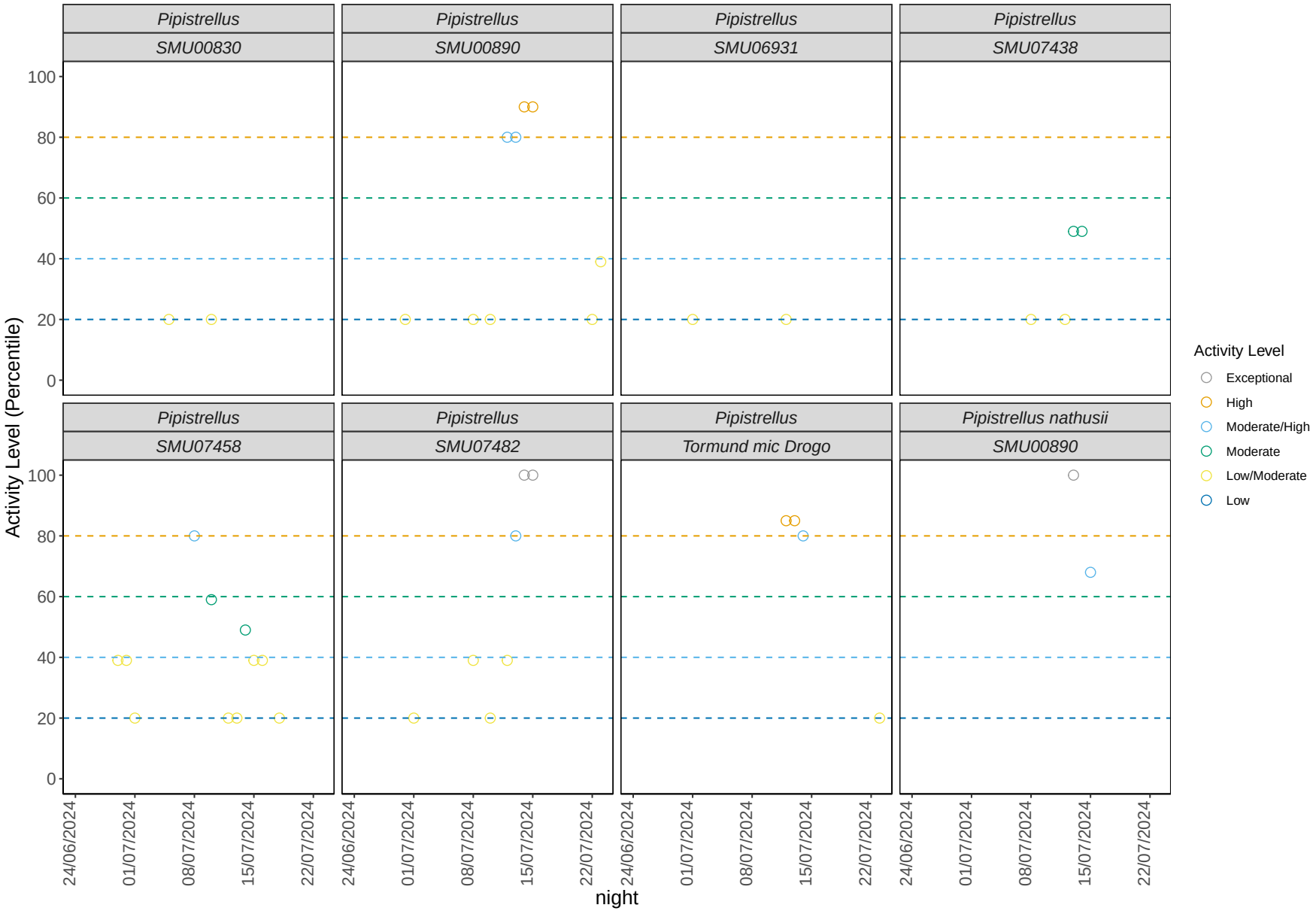
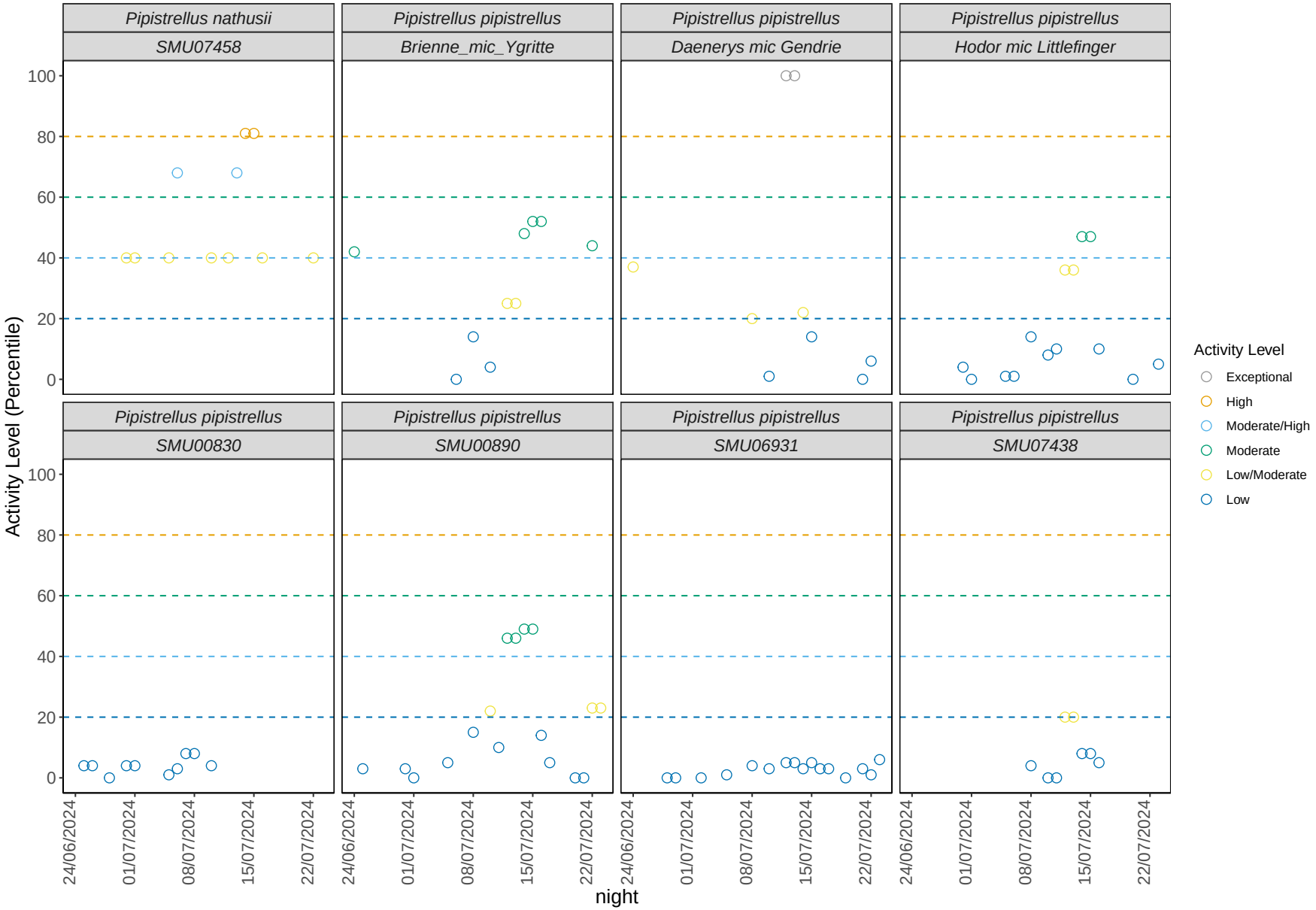

Pipistrellus pipistrellus
Pipistrellus pygmaeus
Plecotus auritus
Activity Level (Percentile)
100
80
60
40
20
0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID

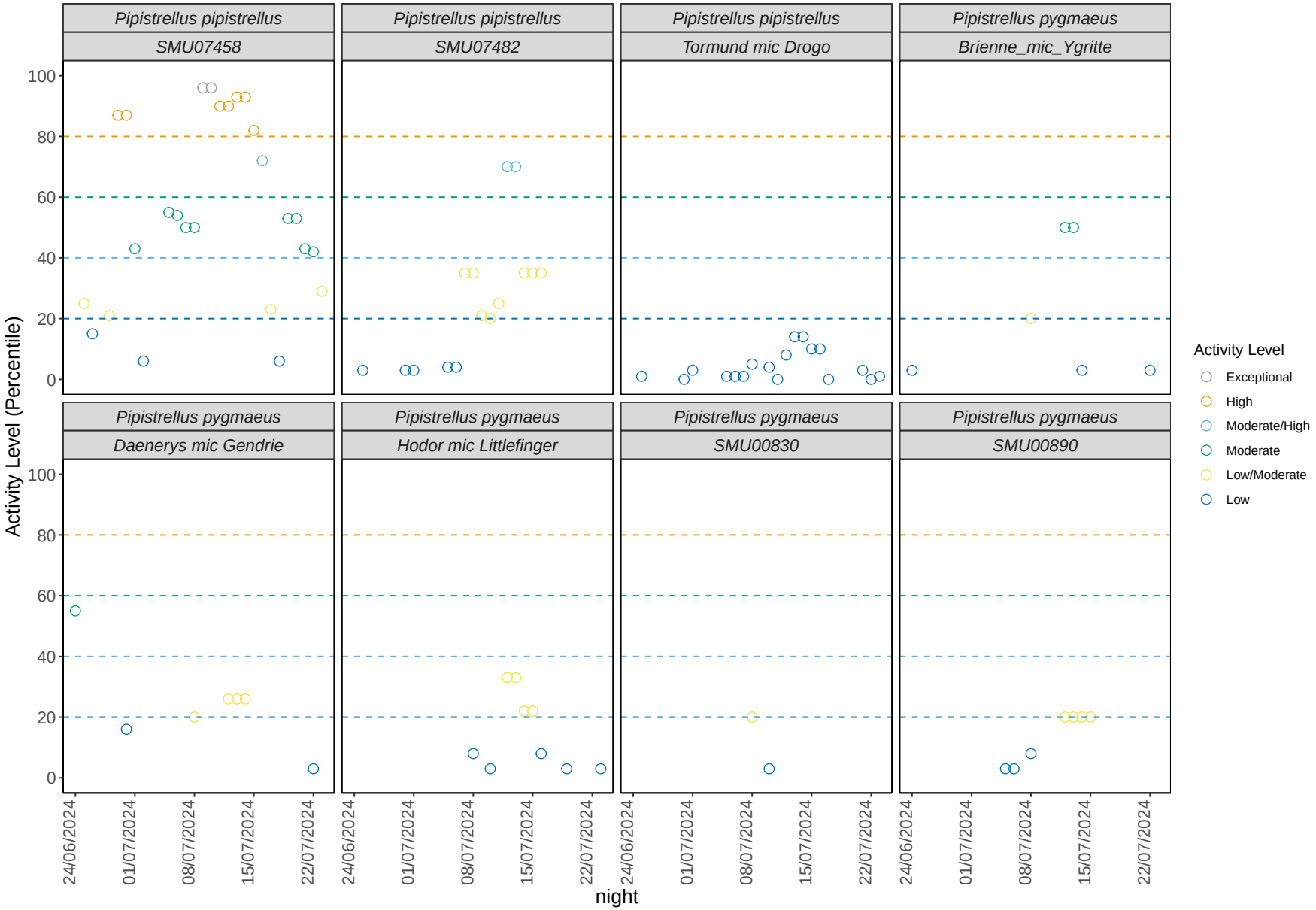
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

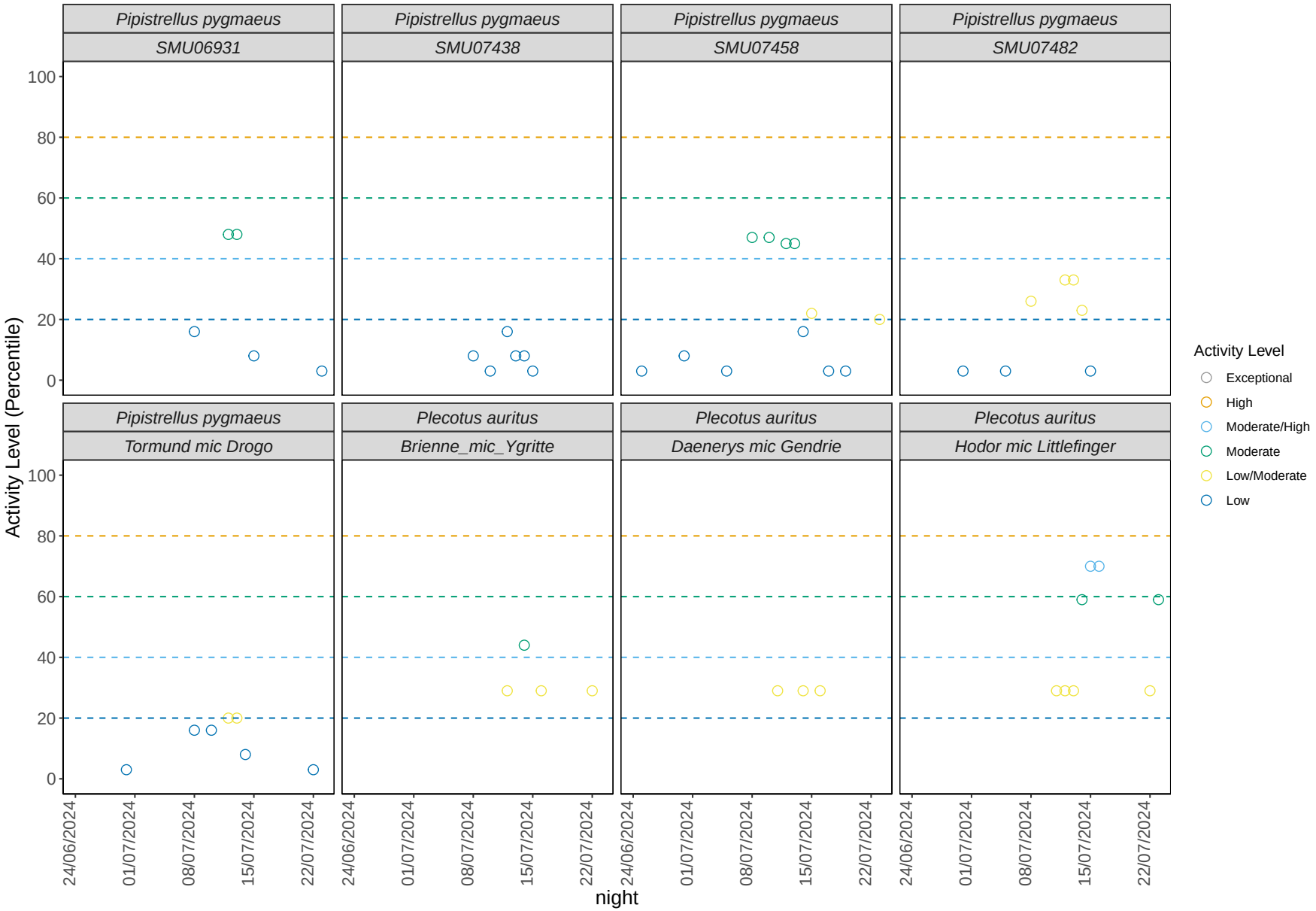

Myotis
Brienne_mic_Ygritte
Myotis
Daenerys mic Gendrie
Myotis
Hodor mic Littlefinger
Myotis
SMU00890
Myotis
SMU06931
Myotis
SMU07438
Myotis
SMU07458
Myotis
SMU07482
Activity Level (Percentile)
0
20
40
60
80
100
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low

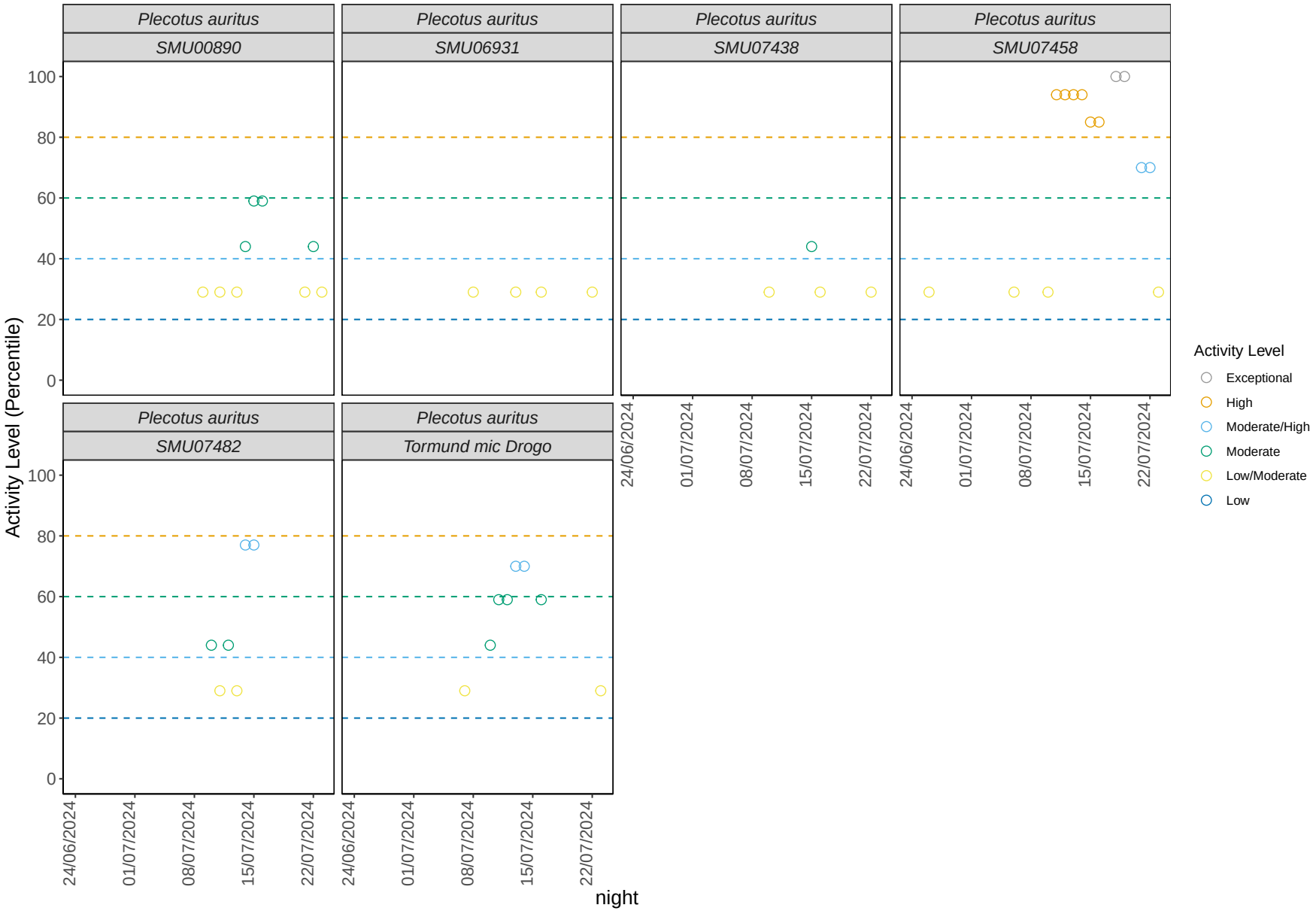

Myotis
Tormund mic Drogo
Nyctalus
Daenerys mic Gendrie
Nyctalus
Hodor mic Littlefinger
Nyctalus
SMU00890
Nyctalus
SMU07458
Pipistrellus
Brienne_mic_Ygritte
Pipistrellus
Daenerys mic Gendrie
Pipistrellus
Hodor mic Littlefinger
Activity Level (Percentile)
0
20
40
60
80
100
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus
SMU00830
Pipistrellus
SMU00890
Pipistrellus
SMU06931
Pipistrellus
SMU07438
Pipistrellus
SMU07458
Pipistrellus
SMU07482
Pipistrellus
Tormund mic Drogo
Pipistrellus nathusii
SMU00890
Activity Level (Percentile)
0
20
40
60
80
100
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus nathusii
SMU07458
Pipistrellus pipistrellus
Brienne_mic_Ygritte
Pipistrellus pipistrellus
Daenerys mic Gendrie
Pipistrellus pipistrellus
Hodor mic Littlefinger
Pipistrellus pipistrellus
SMU00830
Pipistrellus pipistrellus
SMU00890
Pipistrellus pipistrellus
SMU06931
Pipistrellus pipistrellus
SMU07438
Activity Level (Percentile)
100
80
60
40
20
0
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus pipistrellus
SMU07458
Pipistrellus pipistrellus
SMU07482
Pipistrellus pipistrellus
Tormund mic Drogo
Pipistrellus pygmaeus
Brienne_mic_Ygritte
Pipistrellus pygmaeus
Daenerys mic Gendrie
Pipistrellus pygmaeus
Hodor mic Littlefinger
Pipistrellus pygmaeus
SMU00830
Pipistrellus pygmaeus
SMU00890
Activity Level (Percentile)
0
20
40
60
80
100
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus pygmaeus
SMU06931
Pipistrellus pygmaeus
SMU07438
Pipistrellus pygmaeus
SMU07458
Pipistrellus pygmaeus
SMU07482
Pipistrellus pygmaeus
Tormund mic Drogo
Plecotus auritus
Brienne_mic_Ygritte
Plecotus auritus
Daenerys mic Gendrie
Plecotus auritus
Hodor mic Littlefinger
Activity Level (Percentile)
0
20
40
60
80
100
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Plecotus auritus
SMU00890
Plecotus auritus
SMU06931
Plecotus auritus
SMU07438
Plecotus auritus
SMU07458
Plecotus auritus
SMU07482
Plecotus auritus
Tormund mic Drogo
Activity Level (Percentile)
100
80
60
40
20
0
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Brienne_mic_Ygritte	Myotis	Jun	0	0	0	0	0	1
Brienne_mic_Ygritte	Myotis	Jul	0	0	0	0	1	7
Brienne_mic_Ygritte	Pipistrellus	Jun	0	0	0	0	1	0
Brienne_mic_Ygritte	Pipistrellus	Jul	0	0	0	0	4	0
Brienne_mic_Ygritte	Pipistrellus pipistrellus	Jun	0	0	0	1	0	0
Brienne_mic_Ygritte	Pipistrellus pipistrellus	Jul	0	0	0	4	2	3
Brienne_mic_Ygritte	Pipistrellus pygmaeus	Jun	0	0	0	0	0	1
Brienne_mic_Ygritte	Pipistrellus pygmaeus	Jul	0	0	0	2	1	2
Brienne_mic_Ygritte	Plecotus auritus	Jul	0	0	0	1	3	0
Daenerys mic Gendrie	Myotis	Jun	0	0	0	0	0	1
Daenerys mic Gendrie	Myotis	Jul	0	0	0	0	0	4
Daenerys mic Gendrie	Nyctalus	Jul	0	0	0	0	0	1
Daenerys mic Gendrie	Pipistrellus	Jul	0	0	1	0	0	0
Daenerys mic Gendrie	Pipistrellus pipistrellus	Jun	0	0	0	0	1	0
Daenerys mic Gendrie	Pipistrellus pipistrellus	Jul	2	0	0	0	2	4
Daenerys mic Gendrie	Pipistrellus pygmaeus	Jun	0	0	0	1	0	1
Daenerys mic Gendrie	Pipistrellus pygmaeus	Jul	0	0	0	0	4	1

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Daenerys mic Gendrie	Plecotus auritus	Jul	0	0	0	0	3	0
Hodor mic Littlefinger	Myotis	Jul	0	0	0	0	0	9
Hodor mic Littlefinger	Nyctalus	Jul	0	0	0	0	0	1
Hodor mic Littlefinger	Pipistrellus	Jul	0	0	0	2	3	0
Hodor mic Littlefinger	Pipistrellus pipistrellus	Jun	0	0	0	0	0	1
Hodor mic Littlefinger	Pipistrellus pipistrellus	Jul	0	0	0	2	2	9
Hodor mic Littlefinger	Pipistrellus pygmaeus	Jul	0	0	0	0	4	5
Hodor mic Littlefinger	Plecotus auritus	Jul	0	0	2	2	4	0
SMU00830	Pipistrellus	Jul	0	0	0	0	2	0
SMU00830	Pipistrellus pipistrellus	Jun	0	0	0	0	0	4
SMU00830	Pipistrellus pipistrellus	Jul	0	0	0	0	0	6
SMU00830	Pipistrellus pygmaeus	Jul	0	0	0	0	1	1
SMU00890	Myotis	Jun	0	0	1	0	1	1
SMU00890	Myotis	Jul	1	1	1	4	4	4
SMU00890	Nyctalus	Jul	0	0	0	0	0	1
SMU00890	Pipistrellus	Jun	0	0	0	0	1	0
SMU00890	Pipistrellus	Jul	0	2	2	0	4	0
SMU00890	Pipistrellus nathusii	Jul	1	0	1	0	0	0
SMU00890	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
SMU00890	Pipistrellus pipistrellus	Jul	0	0	0	4	3	8

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU00890	Pipistrellus pygmaeus	Jul	0	0	0	0	4	3
SMU00890	Plecotus auritus	Jul	0	0	0	4	5	0
SMU06931	Myotis	Jul	0	0	0	0	0	2
SMU06931	Pipistrellus	Jul	0	0	0	0	2	0
SMU06931	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
SMU06931	Pipistrellus pipistrellus	Jul	0	0	0	0	0	14
SMU06931	Pipistrellus pygmaeus	Jul	0	0	0	2	0	3
SMU06931	Plecotus auritus	Jul	0	0	0	0	4	0
SMU07438	Myotis	Jun	0	0	0	0	0	1
SMU07438	Myotis	Jul	0	0	0	0	0	1
SMU07438	Pipistrellus	Jul	0	0	0	2	2	0
SMU07438	Pipistrellus pipistrellus	Jul	0	0	0	0	2	6
SMU07438	Pipistrellus pygmaeus	Jul	0	0	0	0	0	6
SMU07438	Plecotus auritus	Jul	0	0	0	1	3	0
SMU07458	Myotis	Jun	0	0	0	0	1	3
SMU07458	Myotis	Jul	0	0	0	0	6	10
SMU07458	Nyctalus	Jul	0	0	0	0	0	2
SMU07458	Pipistrellus	Jun	0	0	0	0	2	0
SMU07458	Pipistrellus	Jul	0	0	1	2	6	0
SMU07458	Pipistrellus nathusii	Jun	0	0	0	0	1	0
SMU07458	Pipistrellus nathusii	Jul	0	2	2	0	6	0
SMU07458	Pipistrellus pipistrellus	Jun	0	2	0	0	2	1

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU07458	Pipistrellus pipistrellus	Jul	2	5	1	9	2	2
SMU07458	Pipistrellus pygmaeus	Jun	0	0	0	0	0	2
SMU07458	Pipistrellus pygmaeus	Jul	0	0	0	4	2	4
SMU07458	Plecotus auritus	Jun	0	0	0	0	1	0
SMU07458	Plecotus auritus	Jul	2	6	2	0	3	0
SMU07482	Myotis	Jun	0	0	0	0	0	2
SMU07482	Myotis	Jul	0	0	0	0	2	2
SMU07482	Pipistrellus	Jul	2	0	1	0	4	0
SMU07482	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
SMU07482	Pipistrellus pipistrellus	Jul	0	0	2	0	8	3
SMU07482	Pipistrellus pygmaeus	Jun	0	0	0	0	0	1
SMU07482	Pipistrellus pygmaeus	Jul	0	0	0	0	4	2
SMU07482	Plecotus auritus	Jul	0	0	2	2	2	0
Tormund mic Drogo	Myotis	Jul	0	0	0	0	1	4
Tormund mic Drogo	Pipistrellus	Jul	0	2	1	0	1	0
Tormund mic Drogo	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
Tormund mic Drogo	Pipistrellus pipistrellus	Jul	0	0	0	0	0	16
Tormund mic Drogo	Pipistrellus pygmaeus	Jun	0	0	0	0	0	1

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Tormund mic Drogo	Pipistrellus pygmaeus	Jul	0	0	0	0	2	4
Tormund mic Drogo	Plecotus auritus	Jul	0	0	2	4	2	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
Brienne_mic_Ygritte	Myotis	Jun	12	12 - 15.5	12	1
Brienne_mic_Ygritte	Myotis	Jul	12	12 - 15.5	24	8
Brienne_mic_Ygritte	Pipistrellus	Jun	39	39 - 39	39	1
Brienne_mic_Ygritte	Pipistrellus	Jul	39	39 - 39	39	4
Brienne_mic_Ygritte	Pipistrellus pipistrellus	Jun	42	19.5 - 48	42	1
Brienne_mic_Ygritte	Pipistrellus pipistrellus	Jul	25	19.5 - 48	52	9
Brienne_mic_Ygritte	Pipistrellus pygmaeus	Jun	3	3 - 35	3	1
Brienne_mic_Ygritte	Pipistrellus pygmaeus	Jul	20	3 - 35	50	5
Brienne_mic_Ygritte	Plecotus auritus	Jul	29	29 - 29	44	4
Daenerys mic Gendrie	Myotis	Jun	12	12 - 12	12	1
Daenerys mic Gendrie	Myotis	Jul	12	12 - 12	12	4
Daenerys mic Gendrie	Nyctalus	Jul	18	0	18	1
Daenerys mic Gendrie	Pipistrellus	Jul	80	0	80	1
Daenerys mic Gendrie	Pipistrellus pipistrellus	Jun	37	7.5 - 68.5	37	1
Daenerys mic Gendrie	Pipistrellus pipistrellus	Jul	17	7.5 - 68.5	100	8
Daenerys mic Gendrie	Pipistrellus pygmaeus	Jun	36	9.5 - 40.5	55	2
Daenerys mic Gendrie	Pipistrellus pygmaeus	Jul	26	9.5 - 40.5	26	5
Daenerys mic Gendrie	Plecotus auritus	Jul	29	29 - 29	29	3
Hodor mic Littlefinger	Myotis	Jul	12	12 - 12	19	9
Hodor mic Littlefinger	Nyctalus	Jul	18	0	18	1
Hodor mic Littlefinger	Pipistrellus	Jul	39	20 - 49	49	5
Hodor mic Littlefinger	Pipistrellus pipistrellus	Jun	4	5.5 - 28.5	4	1
Hodor mic Littlefinger	Pipistrellus pipistrellus	Jul	10	5.5 - 28.5	47	13
Hodor mic Littlefinger	Pipistrellus pygmaeus	Jul	8	3 - 27.5	33	9
Hodor mic Littlefinger	Plecotus auritus	Jul	44	29 - 64.5	70	8
SMU00830	Pipistrellus	Jul	20	20 - 20	20	2
SMU00830	Pipistrellus pipistrellus	Jun	4	2.5 - 6	4	4
SMU00830	Pipistrellus pipistrellus	Jul	4	2.5 - 6	8	6
SMU00830	Pipistrellus pygmaeus	Jul	12	11.5 - 11.5	20	2
SMU00890	Myotis	Jun	33	26 - 52	70	3
SMU00890	Myotis	Jul	33	26 - 52	100	15
SMU00890	Nyctalus	Jul	18	0	18	1
SMU00890	Pipistrellus	Jun	20	20 - 80	20	1

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
SMU00890	Pipistrellus	Jul	60	20 - 80	90	8
SMU00890	Pipistrellus nathusii	Jul	84	84 - 84	100	2
SMU00890	Pipistrellus pipistrellus	Jun	3	10 - 34	3	2
SMU00890	Pipistrellus pipistrellus	Jul	15	10 - 34	49	15
SMU00890	Pipistrellus pygmaeus	Jul	20	11.5 - 20	20	7
SMU00890	Plecotus auritus	Jul	29	29 - 44	59	9
SMU06931	Myotis	Jul	12	12 - 12	12	2
SMU06931	Pipistrellus	Jul	20	20 - 20	20	2
SMU06931	Pipistrellus pipistrellus	Jun	0	2.5 - 4.5	0	2
SMU06931	Pipistrellus pipistrellus	Jul	3	2.5 - 4.5	6	14
SMU06931	Pipistrellus pygmaeus	Jul	16	8 - 48	48	5
SMU06931	Plecotus auritus	Jul	29	29 - 29	29	4
SMU07438	Myotis	Jun	12	12 - 12	12	1
SMU07438	Myotis	Jul	12	12 - 12	12	1
SMU07438	Pipistrellus	Jul	35	20 - 49	49	4
SMU07438	Pipistrellus pipistrellus	Jul	7	5 - 20	20	8
SMU07438	Pipistrellus pygmaeus	Jul	8	3 - 12	16	6
SMU07438	Plecotus auritus	Jul	29	29 - 29	44	4
SMU07458	Myotis	Jun	19	15.5 - 25	38	4
SMU07458	Myotis	Jul	19	15.5 - 25	38	16
SMU07458	Nyctalus	Jul	18	18 - 18	18	2
SMU07458	Pipistrellus	Jun	39	29.5 - 50	39	2
SMU07458	Pipistrellus	Jul	39	29.5 - 50	80	9
SMU07458	Pipistrellus nathusii	Jun	40	40 - 60.5	40	1
SMU07458	Pipistrellus nathusii	Jul	40	40 - 60.5	81	10
SMU07458	Pipistrellus pipistrellus	Jun	25	43 - 70	87	5
SMU07458	Pipistrellus pipistrellus	Jul	53	43 - 70	96	21
SMU07458	Pipistrellus pygmaeus	Jun	6	5.5 - 33.5	8	2
SMU07458	Pipistrellus pygmaeus	Jul	21	5.5 - 33.5	47	10
SMU07458	Plecotus auritus	Jun	29	57 - 94	29	1
SMU07458	Plecotus auritus	Jul	85	57 - 94	100	13
SMU07482	Myotis	Jun	16	12 - 25	19	2
SMU07482	Myotis	Jul	18	12 - 25	38	4
SMU07482	Pipistrellus	Jul	39	29.5 - 90	100	7
SMU07482	Pipistrellus pipistrellus	Jun	3	14 - 36.5	3	2
SMU07482	Pipistrellus pipistrellus	Jul	35	14 - 36.5	70	13

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
SMU07482	Pipistrellus pygmaeus	Jun	3	3 - 29.5	3	1
SMU07482	Pipistrellus pygmaeus	Jul	25	3 - 29.5	33	6
SMU07482	Plecotus auritus	Jul	44	29 - 77	77	6
Tormund mic Drogo	Myotis	Jul	19	12 - 21.5	24	5
Tormund mic Drogo	Pipistrellus	Jul	83	52.5 - 85	85	4
Tormund mic Drogo	Pipistrellus pipistrellus	Jun	1	2 - 8.5	1	2
Tormund mic Drogo	Pipistrellus pipistrellus	Jul	3	2 - 8.5	14	16
Tormund mic Drogo	Pipistrellus pygmaeus	Jun	3	5.5 - 18	3	1
Tormund mic Drogo	Pipistrellus pygmaeus	Jul	16	5.5 - 18	20	6
Tormund mic Drogo	Plecotus auritus	Jul	59	36.5 - 64.5	70	8

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	1	1	2	4	16	52
Nyctalus	0	0	0	0	0	5
Pipistrellus	2	4	6	6	32	0
Pipistrellus nathusii	1	2	3	0	7	0
Pipistrellus pipistrellus	4	7	3	20	24	85
Pipistrellus pygmaeus	0	0	0	9	22	37
Plecotus auritus	2	6	8	14	30	0

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis	16	26 - 52	100	76
Nyctalus	18	18 - 18	18	5
Pipistrellus	39	52.5 - 85	100	50
Pipistrellus nathusii	40	84 - 84	100	13
Pipistrellus pipistrellus	8	7.5 - 68.5	100	143
Pipistrellus pygmaeus	16	9.5 - 40.5	55	68
Plecotus auritus	37	57 - 94	100	60

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

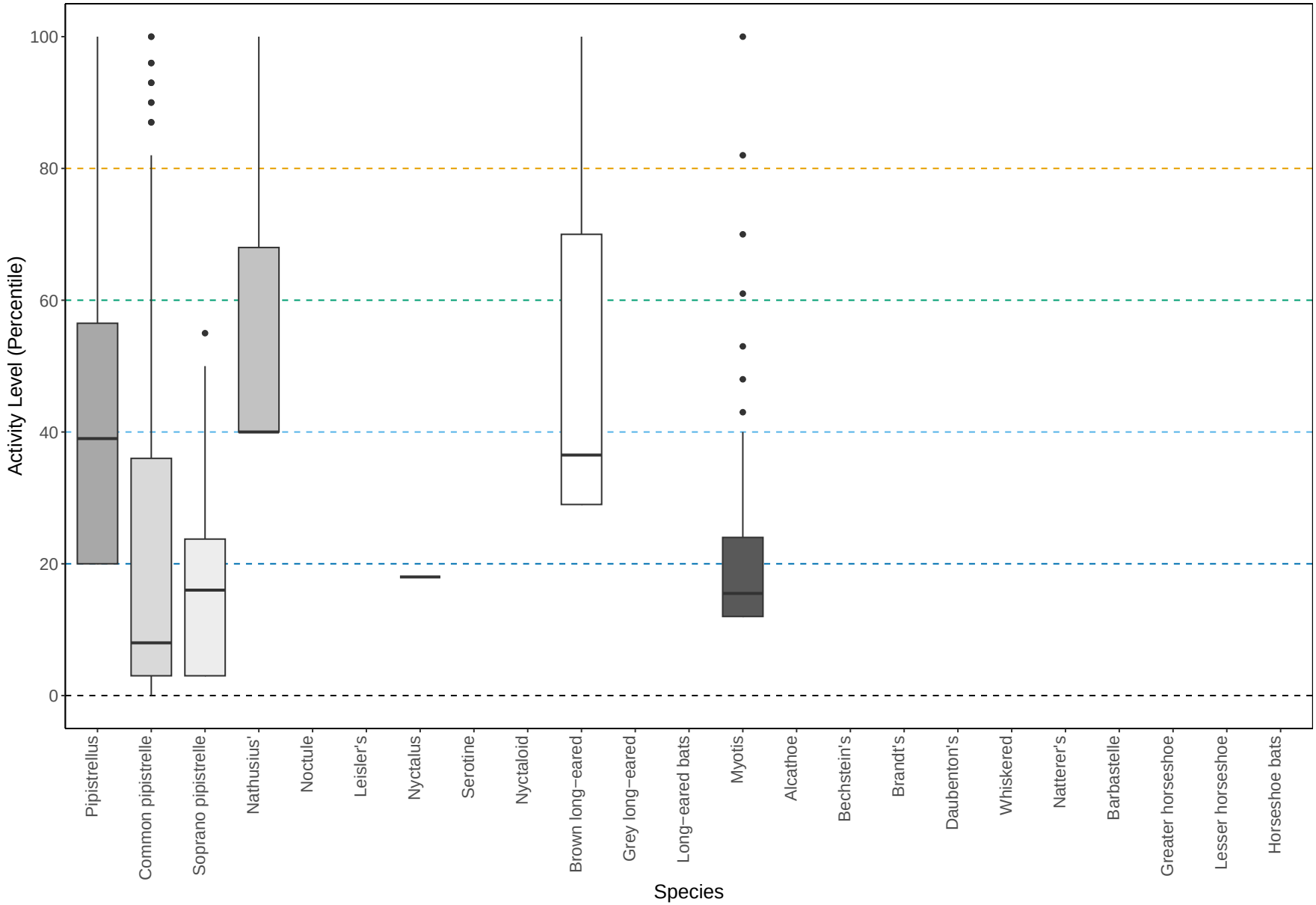
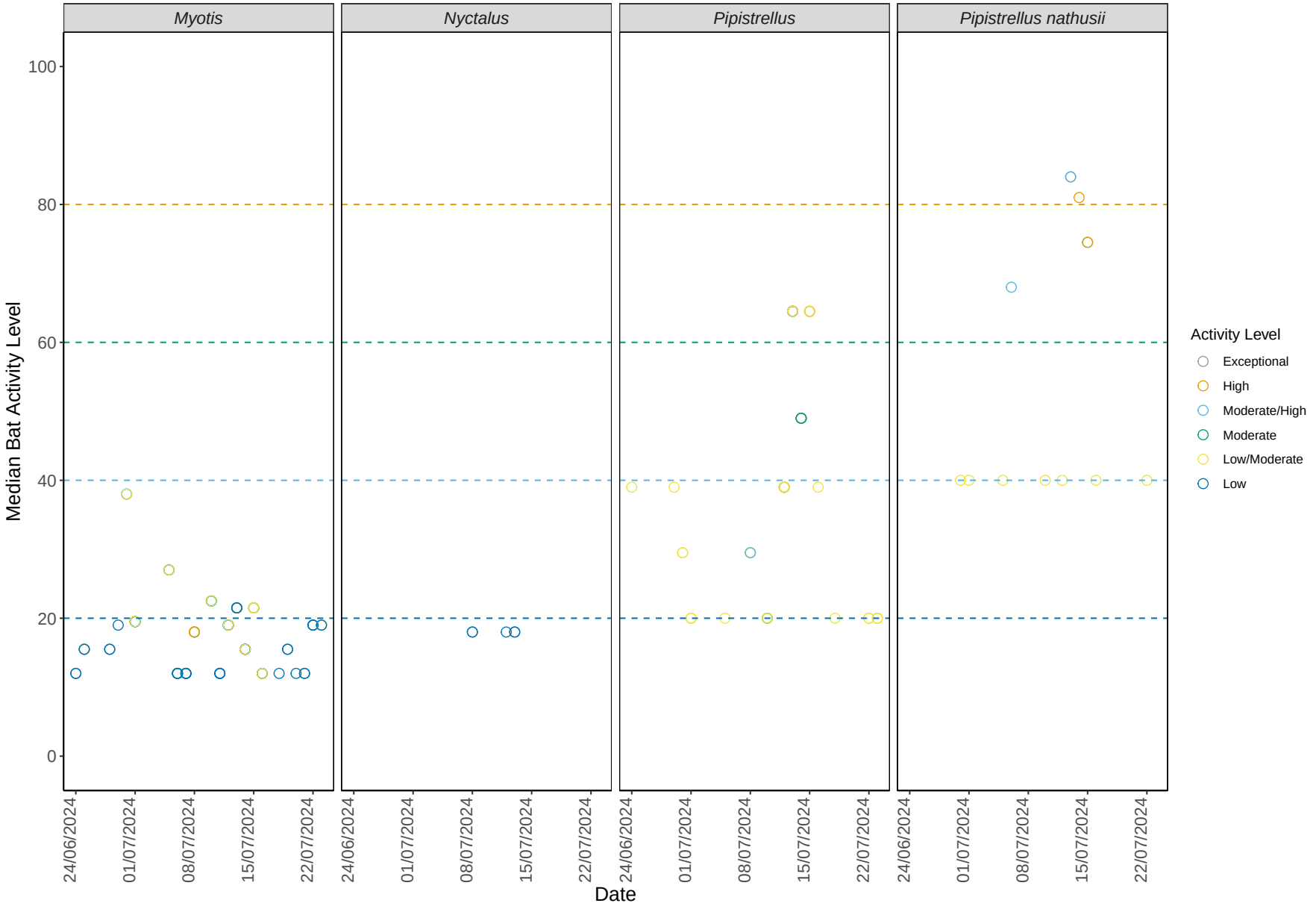
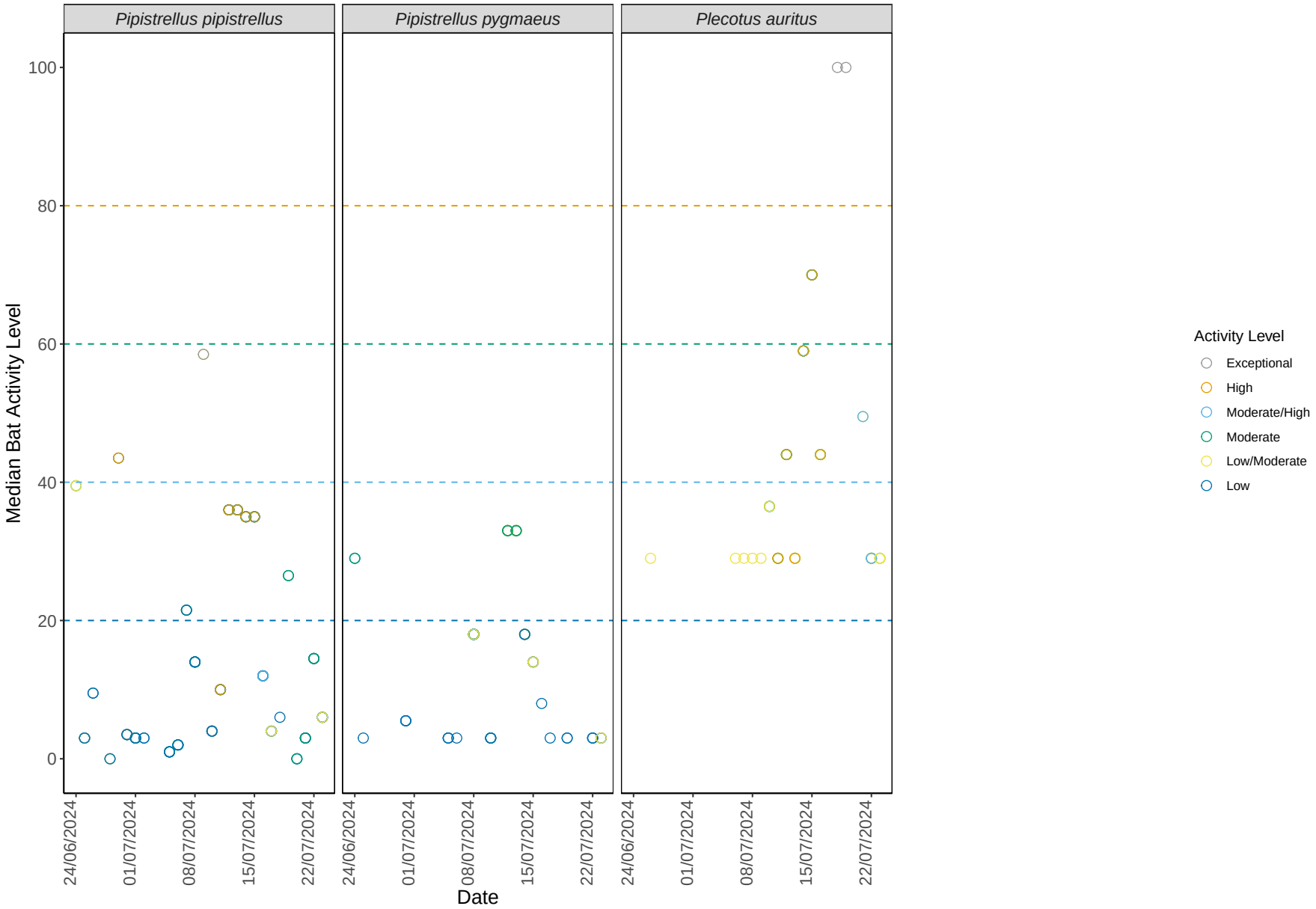

Activity Level (Percentile)
100
80
60
40
20
0
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Noctule
Leisler's
Nyctalus
Serotine
Nyctaloid
Brown long−eared
Grey long−eared
Long−eared bats
Myotis
Alcathoe
Bechstein's
Brandt's
Daubenton's
Whiskered
Natterer's
Barbastelle
Greater horseshoe
Lesser horseshoe
Horseshoe bats
Species

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


Myotis
Nyctalus
Pipistrellus
Pipistrellus nathusii
Median Bat Activity Level
100
80
60
40
20
0
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
Date
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus pipistrellus
Pipistrellus pygmaeus
Plecotus auritus
Median Bat Activity Level
100
80
60
40
20
0
24/06/2024
01/07/2024
08/07/2024
15/07/2024
22/07/2024
Date
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low

Per Site, Per Month

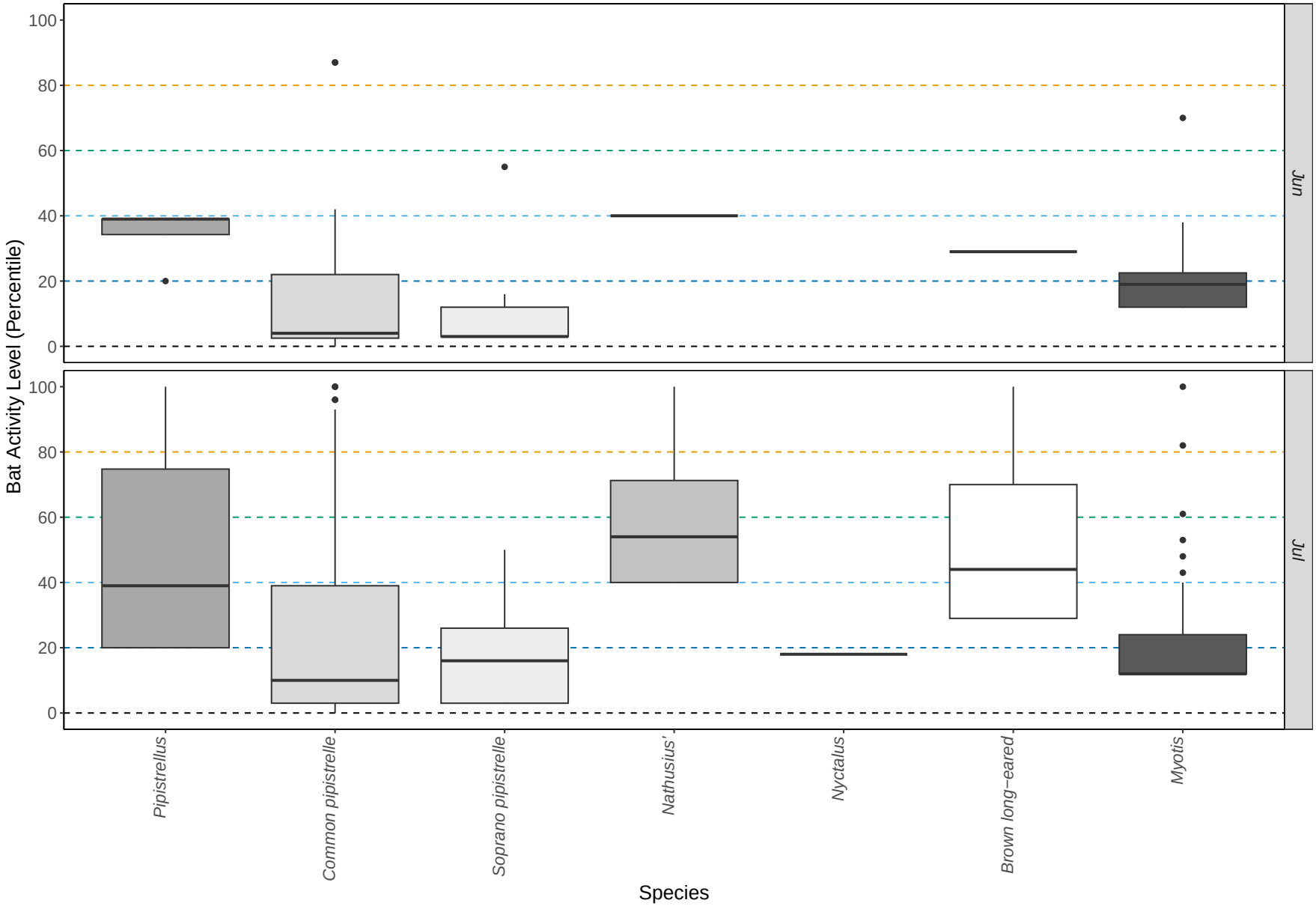
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	Jun	0	0	1	0	2	9
Myotis	Jul	1	1	1	4	14	43
Nyctalus	Jul	0	0	0	0	0	5
Pipistrellus	Jun	0	0	0	0	4	0
Pipistrellus	Jul	2	4	6	6	28	0
Pipistrellus nathusii	Jun	0	0	0	0	1	0
Pipistrellus nathusii	Jul	1	2	3	0	6	0
Pipistrellus pipistrellus	Jun	0	2	0	1	3	14
Pipistrellus pipistrellus	Jul	4	5	3	19	21	71
Pipistrellus pygmaeus	Jun	0	0	0	1	0	6
Pipistrellus pygmaeus	Jul	0	0	0	8	22	31
Plecotus auritus	Jun	0	0	0	0	1	0
Plecotus auritus	Jul	2	6	8	14	29	0

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
Myotis	Jun	19	26 - 52	70	12
Myotis	Jul	12	26 - 52	100	64
Nyctalus	Jul	18	18 - 18	18	5
Pipistrellus	Jun	39	39 - 39	39	4
Pipistrellus	Jul	39	52.5 - 85	100	46
Pipistrellus nathusii	Jun	40	40 - 60.5	40	1
Pipistrellus nathusii	Jul	54	84 - 84	100	12
Pipistrellus pipistrellus	Jun	4	7.5 - 68.5	87	20
Pipistrellus pipistrellus	Jul	10	7.5 - 68.5	100	123
Pipistrellus pygmaeus	Jun	3	9.5 - 40.5	55	7
Pipistrellus pygmaeus	Jul	16	9.5 - 40.5	50	61
Plecotus auritus	Jun	29	57 - 94	29	1
Plecotus auritus	Jul	44	57 - 94	100	59

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


Bat Activity Level (Percentile)
100
80
60
40
20
0
Jun
Jul
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Nyctalus
Brown long−eared
Myotis
Species

Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

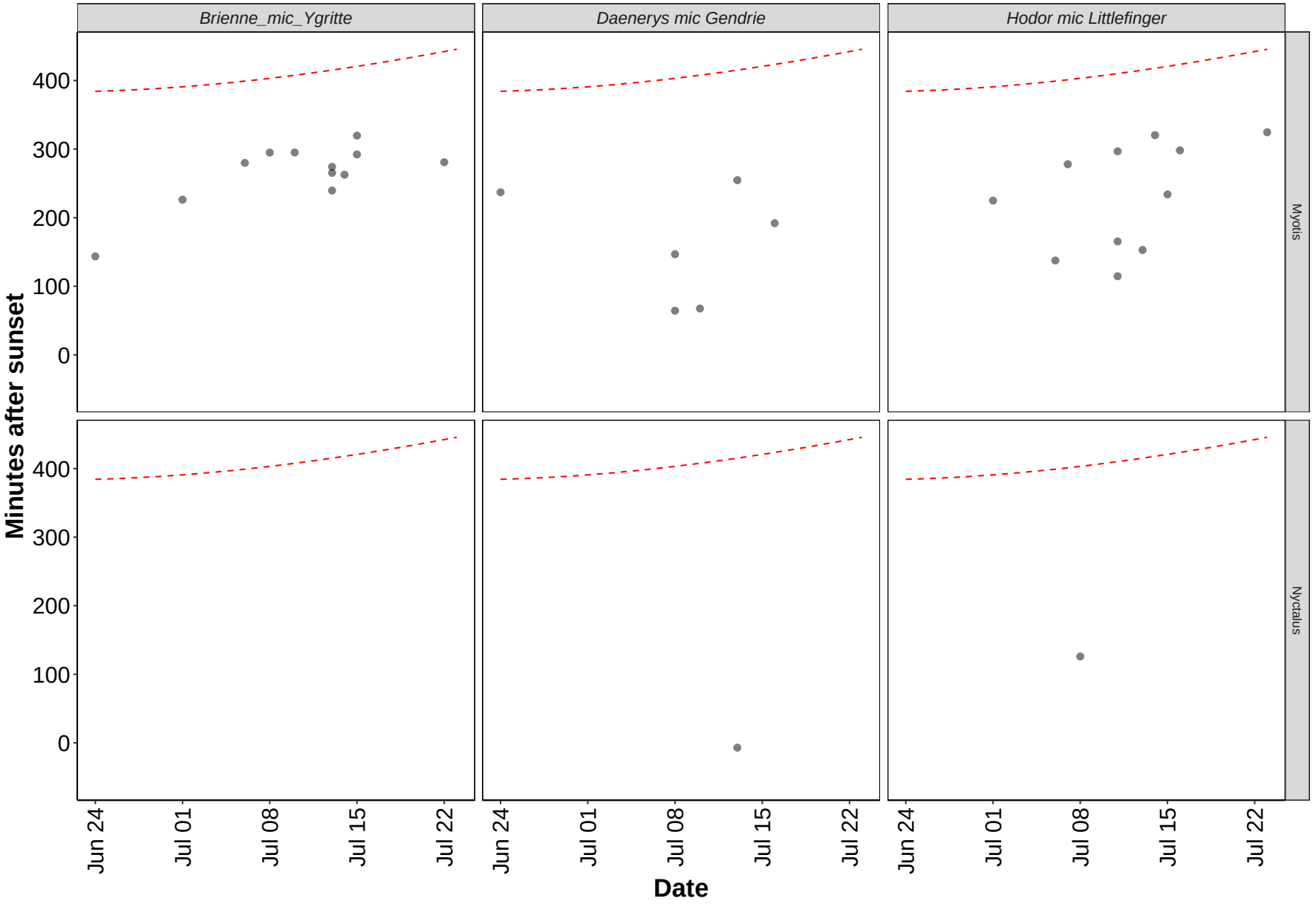
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

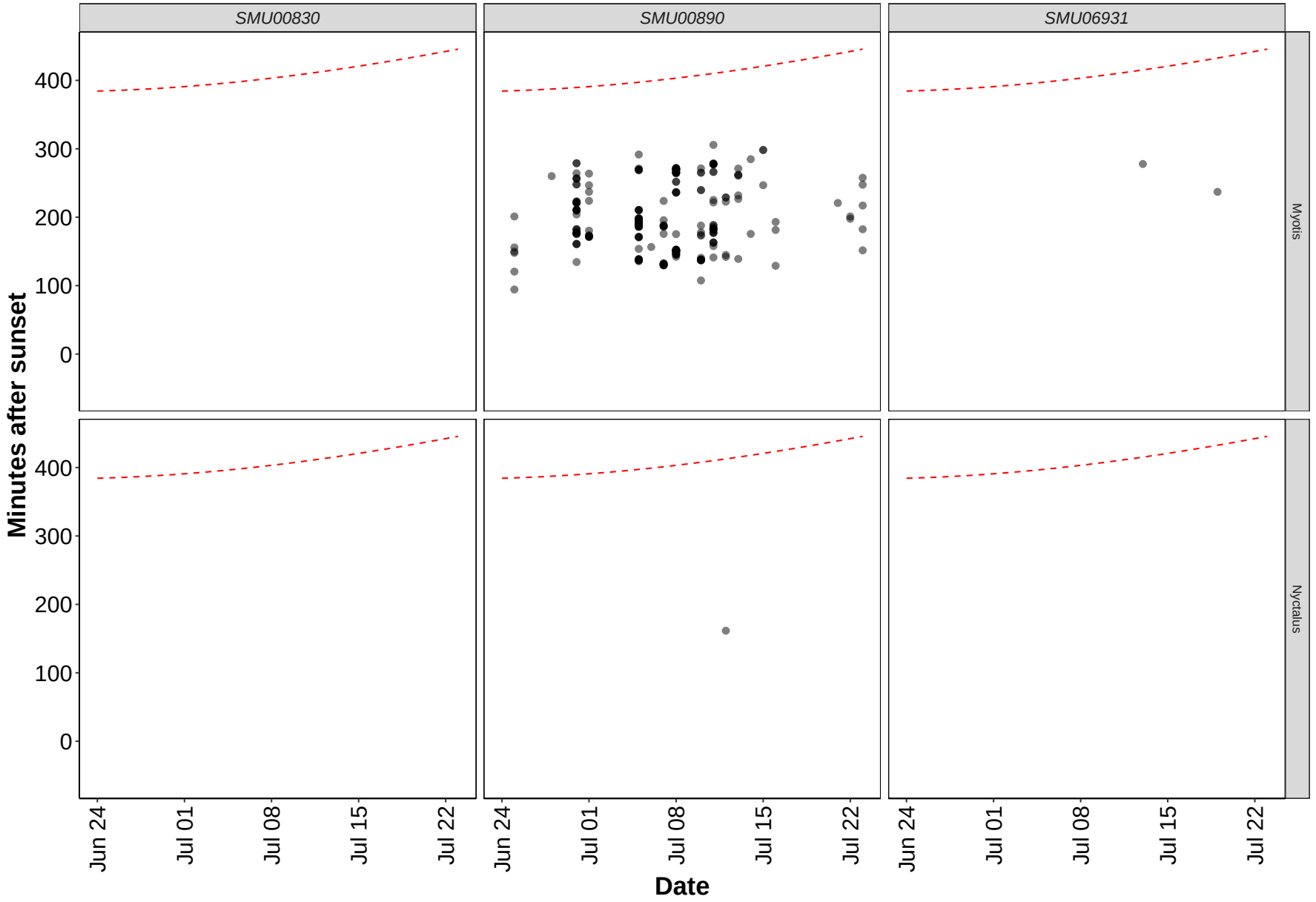
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2024-06-24	22:11	04:36	6.4
2024-06-25	22:11	04:36	6.4
2024-06-26	22:11	04:37	6.4
2024-06-28	22:11	04:38	6.5
2024-06-29	22:10	04:39	6.5
2024-06-30	22:10	04:39	6.5
2024-07-01	22:09	04:40	6.5
2024-07-02	22:09	04:41	6.5
2024-07-05	22:07	04:44	6.6
2024-07-06	22:06	04:45	6.7
2024-07-07	22:05	04:47	6.7
2024-07-08	22:05	04:48	6.7
2024-07-09	22:04	04:49	6.8
2024-07-10	22:03	04:50	6.8
2024-07-11	22:02	04:52	6.8
2024-07-12	22:01	04:53	6.9
2024-07-13	21:59	04:55	6.9
2024-07-14	21:58	04:56	7.0
2024-07-15	21:57	04:58	7.0
2024-07-16	21:56	04:59	7.1
2024-07-17	21:54	05:01	7.1
2024-07-18	21:53	05:02	7.2
2024-07-19	21:51	05:04	7.2
2024-07-20	21:50	05:06	7.3
2024-07-21	21:48	05:07	7.3
2024-07-22	21:47	05:09	7.4
2024-07-23	21:45	05:11	7.4

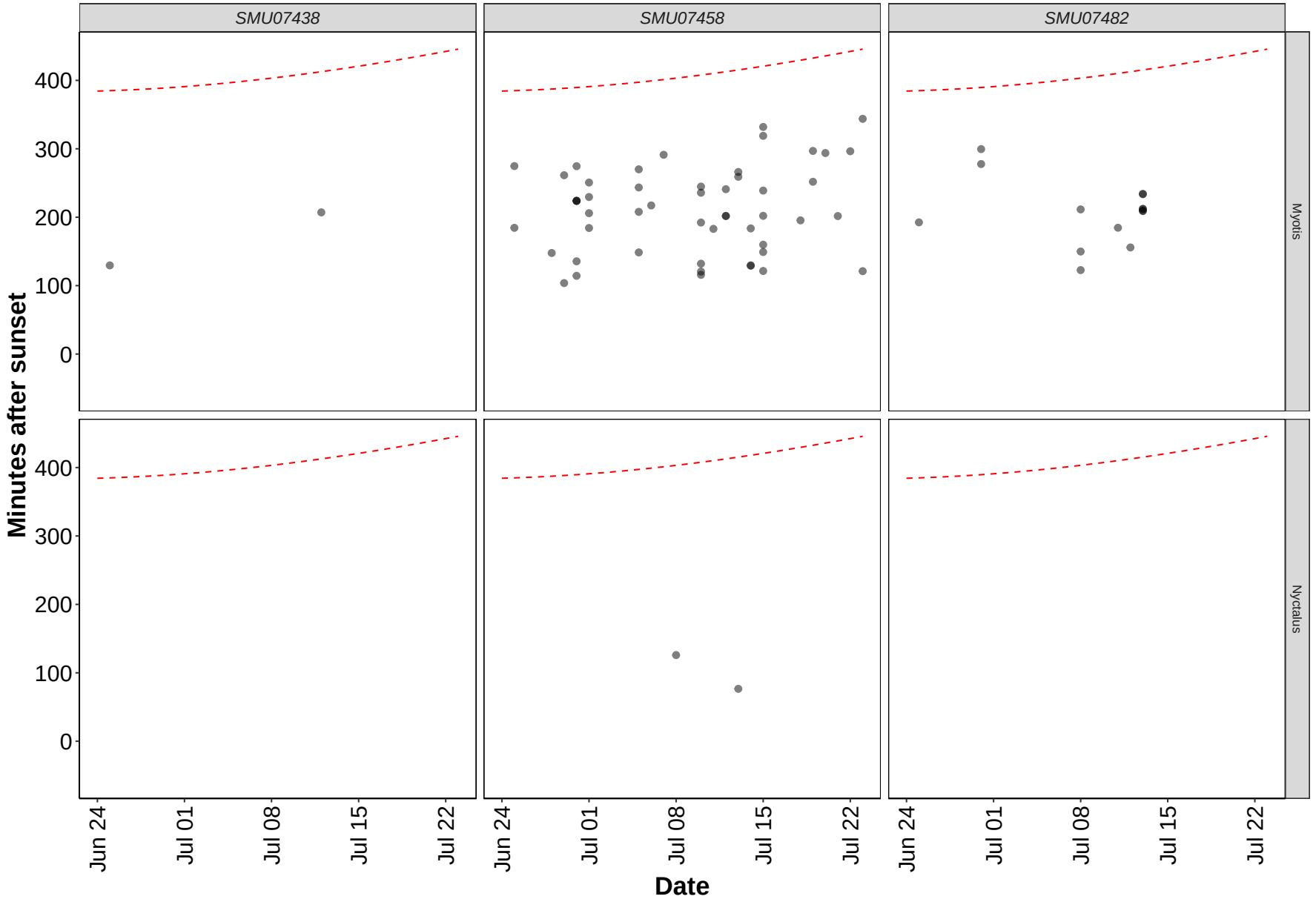
Distribution of Bat Activity Across the Night through Time

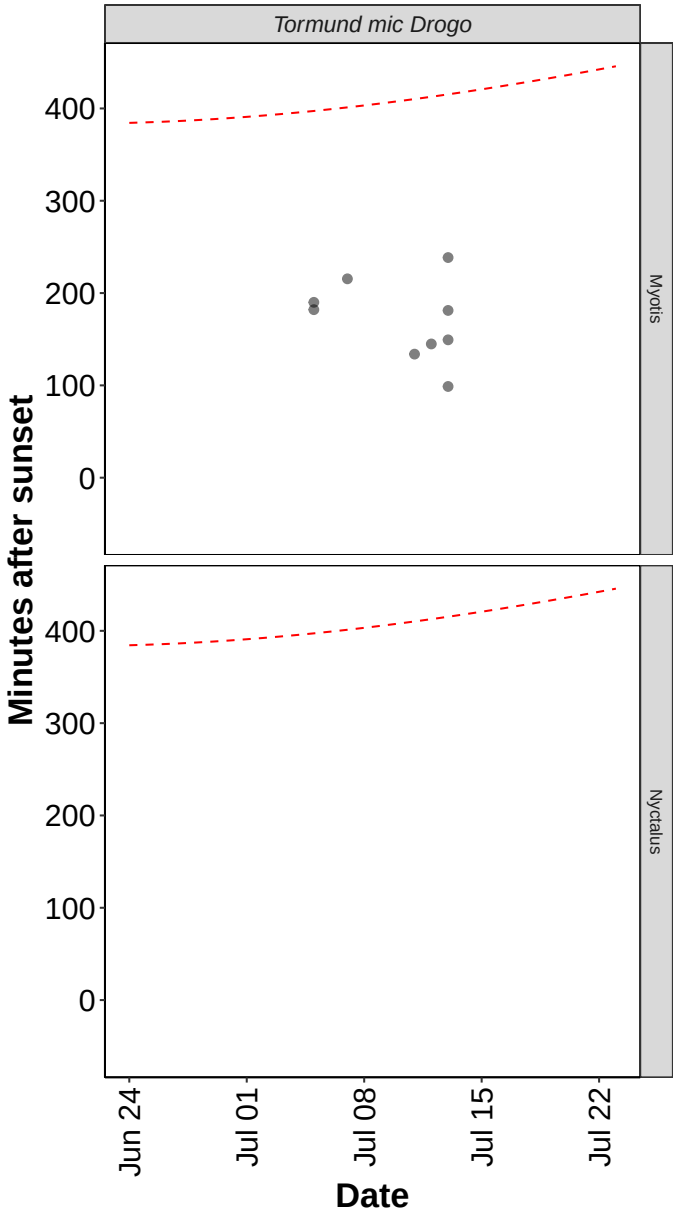
Per Detector

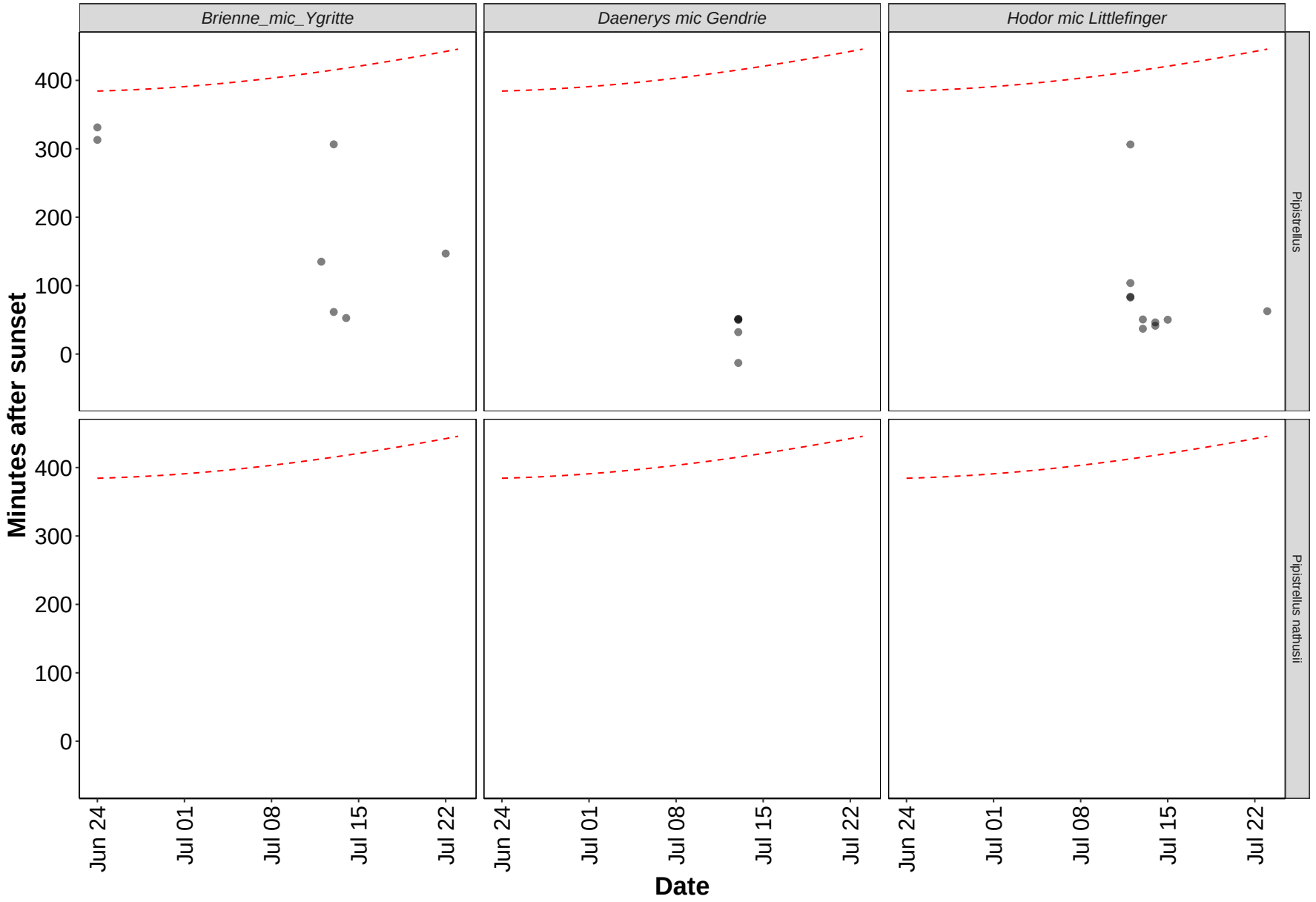
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

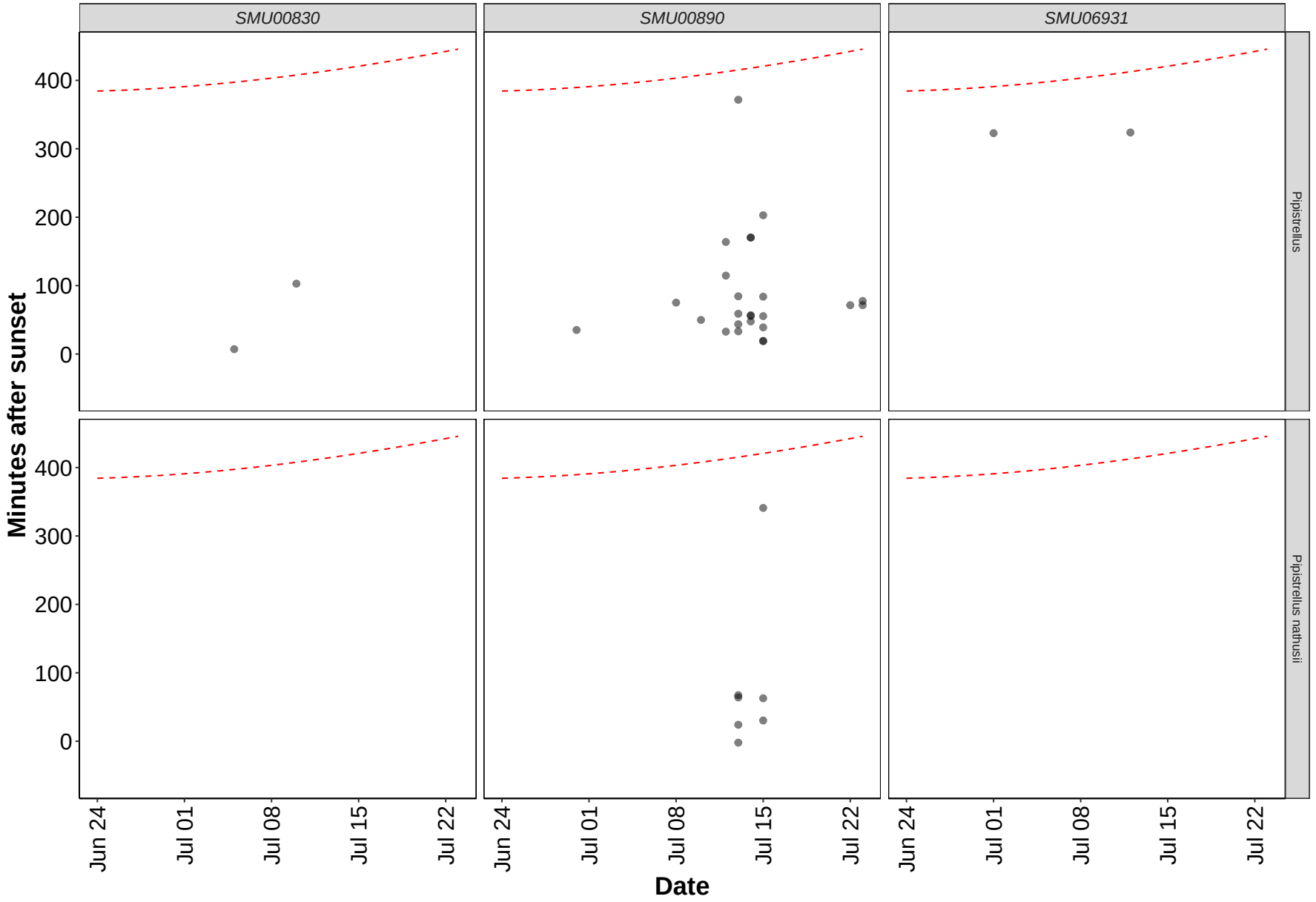

Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
Myotis
Nyctalus
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date

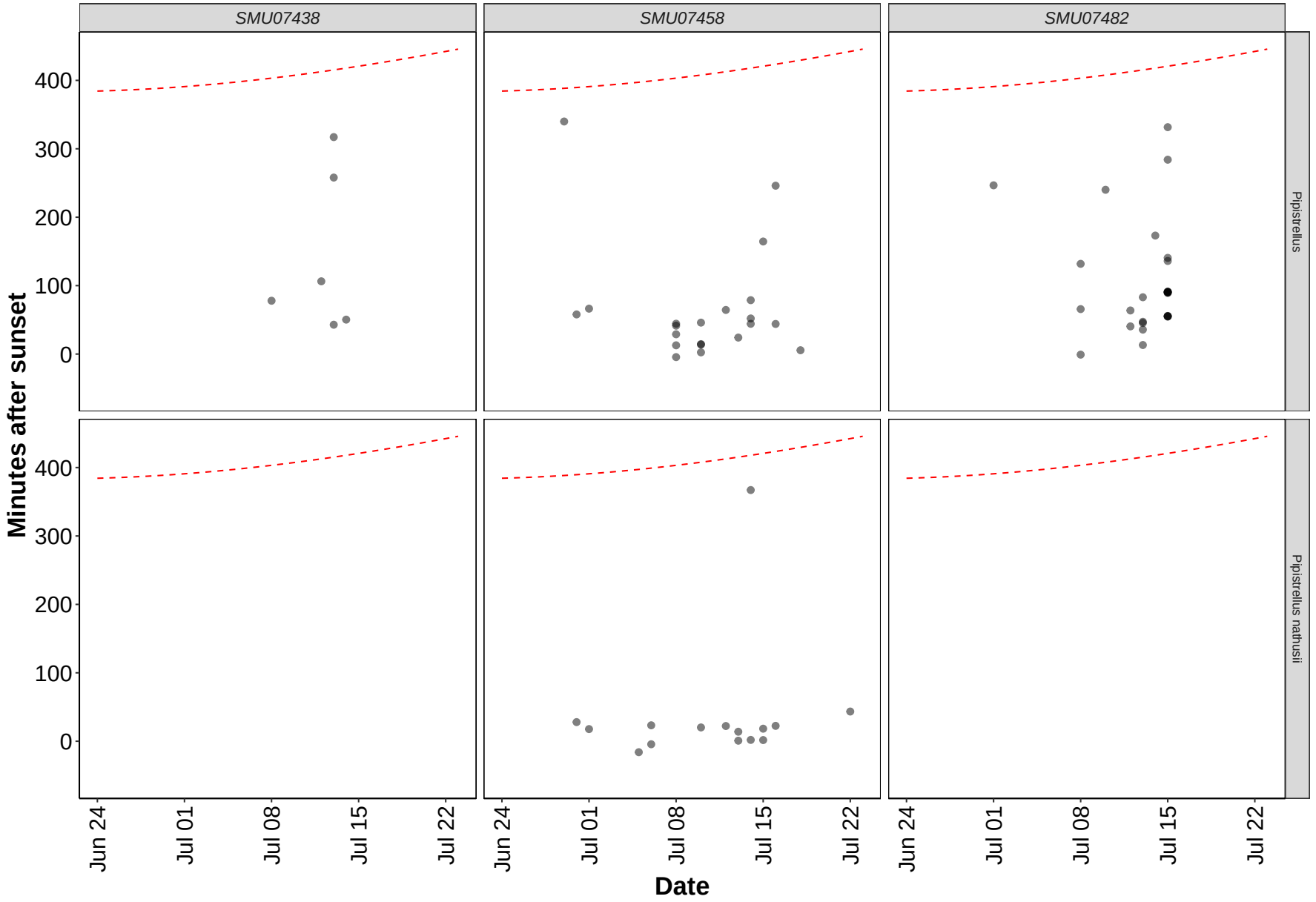

SMU00830
SMU00890
SMU06931
Myotis
Nyctalus
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date

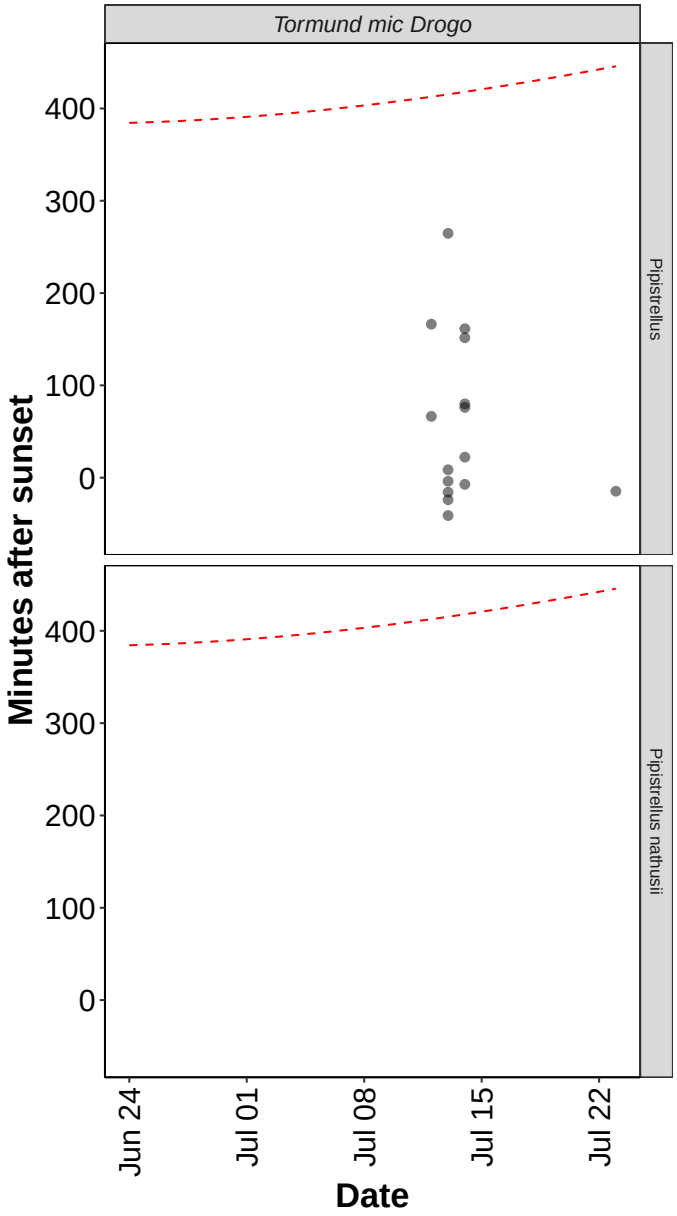

SMU07438
SMU07458
SMU07482
Myotis
Nyctalus
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date

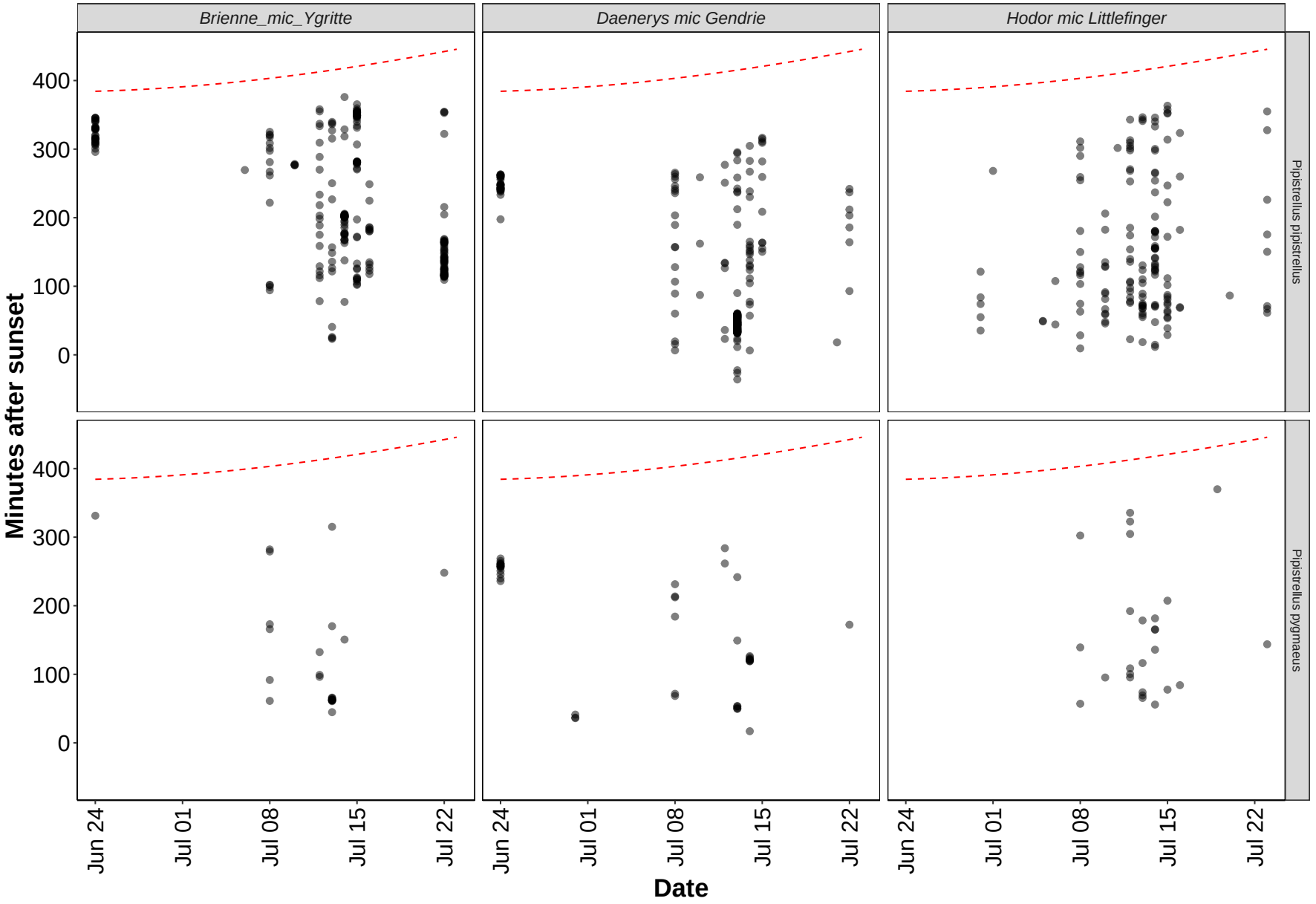

Tormund mic Drogo
Myotis
Nyctalus
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date


Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
Pipistrellus
Pipistrellus nathusii
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date


SMU00830
SMU00890
SMU06931
Pipistrellus
Pipistrellus nathusii
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date


SMU07438
SMU07458
SMU07482
Pipistrellus
Pipistrellus nathusii
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date


Tormund mic Drogo
Pipistrellus
Pipistrellus nathusii
Minutes after sunset
400
300
200
100
0
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date


Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Minutes after sunset
0
100
200
300
400
Jun 24
Jul 01
Jul 08
Jul 15
Jul 22
Date

Roost Emergence Time and Bat Observation

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

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

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 12: Table continues below

Species	Detector ID	2024-06-25	2024-06-26	2024-06-28	2024-06-29
Pipistrellus	Daenerys mic Gendrie	0	0	0	0
Pipistrellus	SMU00830	0	0	0	0
Pipistrellus	SMU00890	0	0	0	0
Pipistrellus	SMU07458	0	0	0	0
Pipistrellus	SMU07482	0	0	0	0
Pipistrellus	Tormund mic Drogo	0	0	0	0
Common pipistrelle	Brienne_mic_Ygritte	0	0	0	0
Common pipistrelle	Daenerys mic Gendrie	0	0	0	0
Common pipistrelle	Hodor mic Littlefinger	0	0	0	0
Common pipistrelle	SMU00830	0	1	0	0
Common pipistrelle	SMU00890	0	0	0	0
Common pipistrelle	SMU06931	0	0	1	0
Common pipistrelle	SMU07458	8	3	1	2
Common pipistrelle	SMU07482	0	0	0	0
Common pipistrelle	Tormund mic Drogo	2	0	0	0
Soprano pipistrelle	Daenerys mic Gendrie	0	0	0	0
Soprano pipistrelle	SMU06931	0	0	0	0
Soprano pipistrelle	Tormund mic Drogo	0	0	0	0
Nathusius’	SMU00890	0	0	0	0
Nathusius’	SMU07458	0	0	0	0
Nyctalus	Daenerys mic Gendrie	0	0	0	0
Brown long-eared	SMU07458	0	0	0	0
Brown long-eared	Tormund mic Drogo	0	0	0	0
Myotis	Daenerys mic Gendrie	0	0	0	0

Table 13: Table continues below

2024-06-30	2024-07-01	2024-07-02	2024-07-05	2024-07-06	2024-07-07	2024-07-08
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	3
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	3
0	0	0	0	0	0	2
1	0	0	0	0	1	1
1	0	0	1	0	0	0
0	0	1	0	0	0	0
12	2	2	33	22	0	6
0	0	0	0	0	0	2
0	0	0	2	1	0	3
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
1	1	0	1	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	0	0	1

Table 14: Table continues below

2024-07-10	2024-07-11	2024-07-12	2024-07-13	2024-07-14	2024-07-15	2024-07-16
0	0	0	1	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	2	0
3	0	0	1	0	0	0

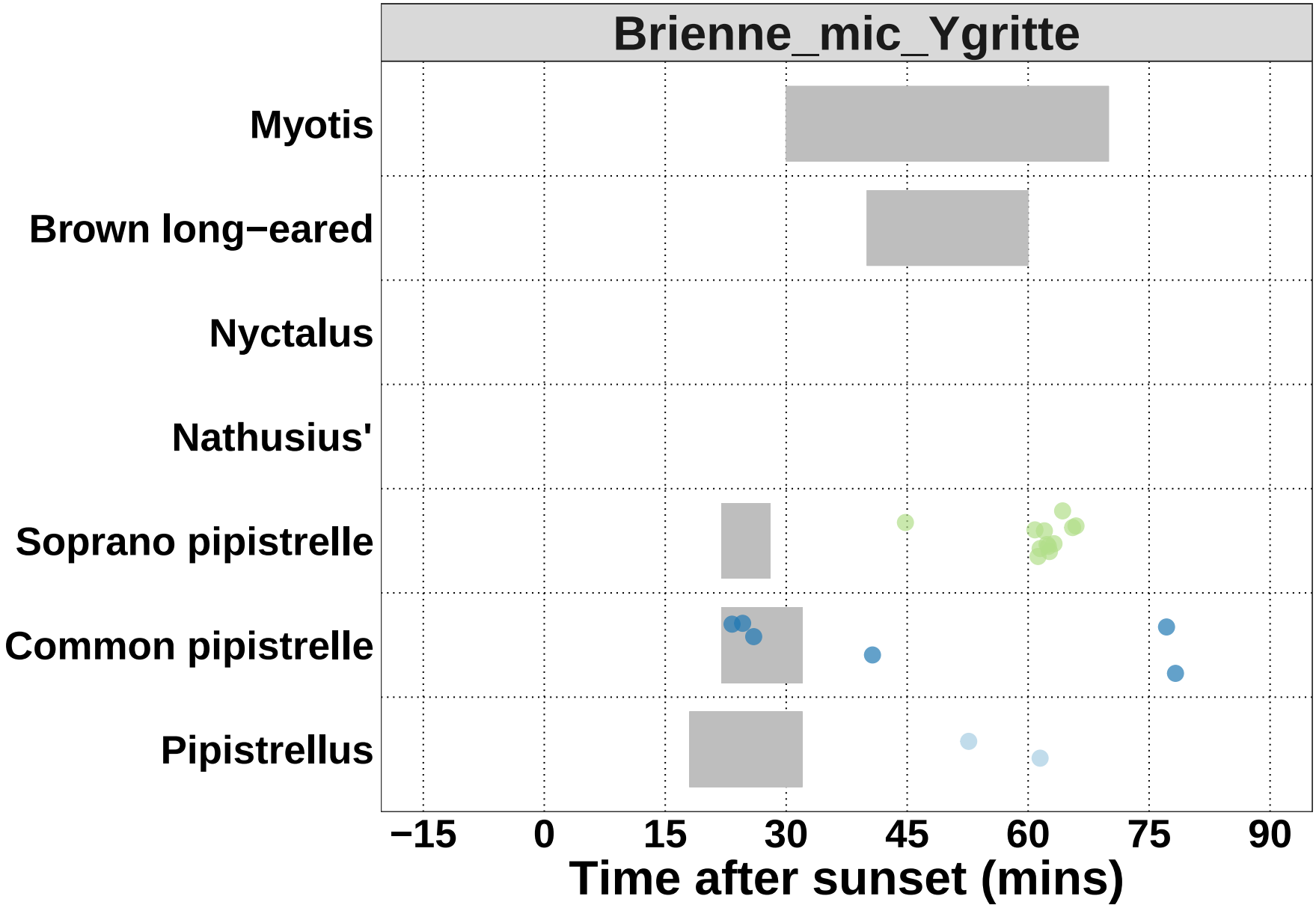
2024-07-10	2024-07-11	2024-07-12	2024-07-13	2024-07-14	2024-07-15	2024-07-16
0	0	0	1	0	0	0
0	0	0	5	2	0	0
0	0	0	3	0	0	0
0	0	1	9	1	0	0
0	0	1	1	2	1	0
2	0	0	0	0	0	0
2	0	0	2	1	4	1
0	0	0	1	0	0	0
52	12	13	17	17	13	8
5	0	0	5	1	2	0
3	1	1	5	5	2	3
0	0	0	0	1	0	0
0	0	0	1	0	0	0
2	0	2	2	1	0	0
0	0	0	2	0	0	0
1	0	1	2	1	2	1
0	0	0	1	0	0	0
0	0	0	1	0	0	0
0	0	0	0	0	0	1
1	0	0	0	0	0	0

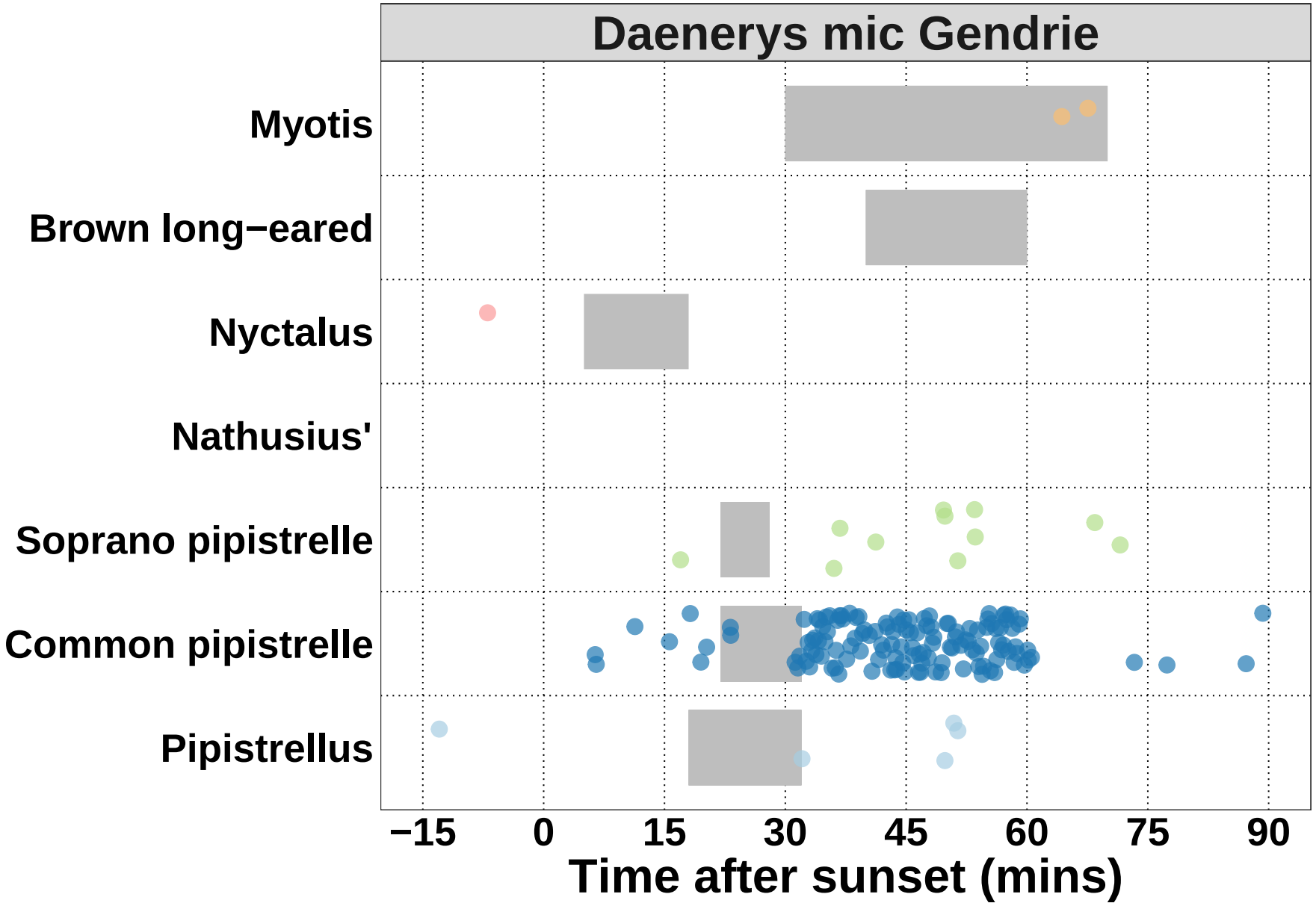
2024-07-17	2024-07-18	2024-07-21	2024-07-22	2024-07-23
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0	0	0
0	0	1	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	0	0	0

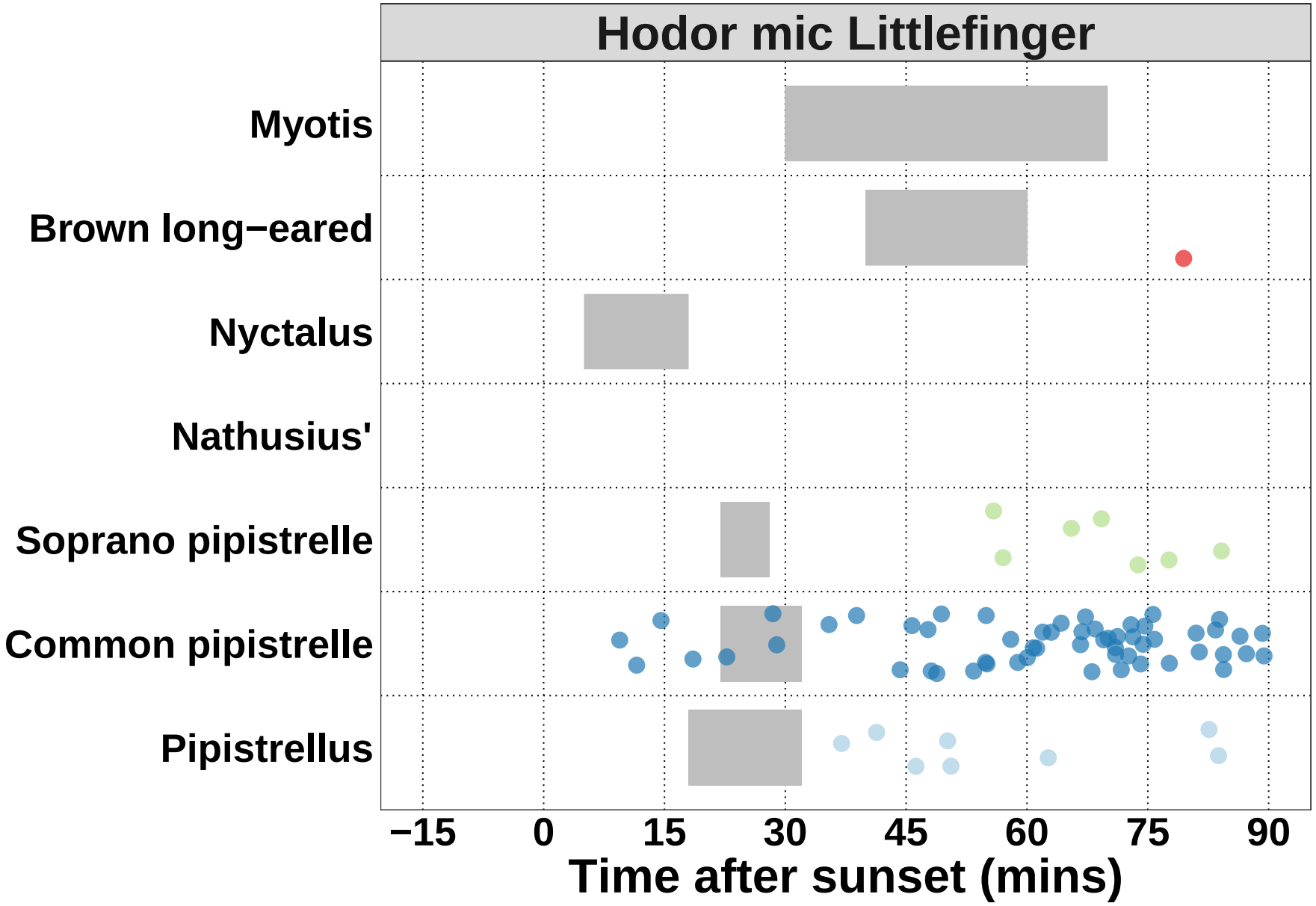
2024-07-17	2024-07-18	2024-07-21	2024-07-22	2024-07-23
1	3	11	7	5
0	0	0	0	0
1	0	2	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0	0	0

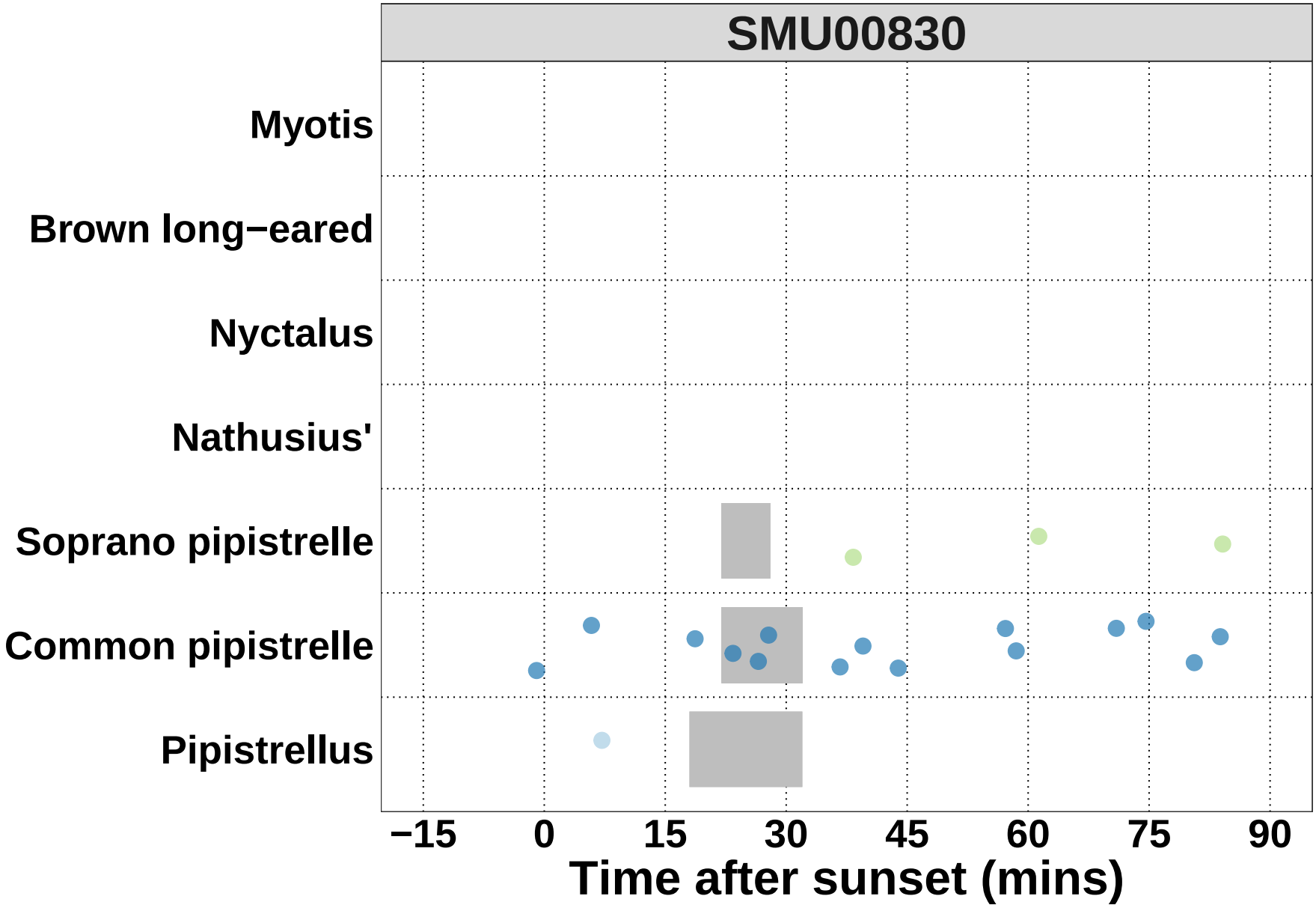
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

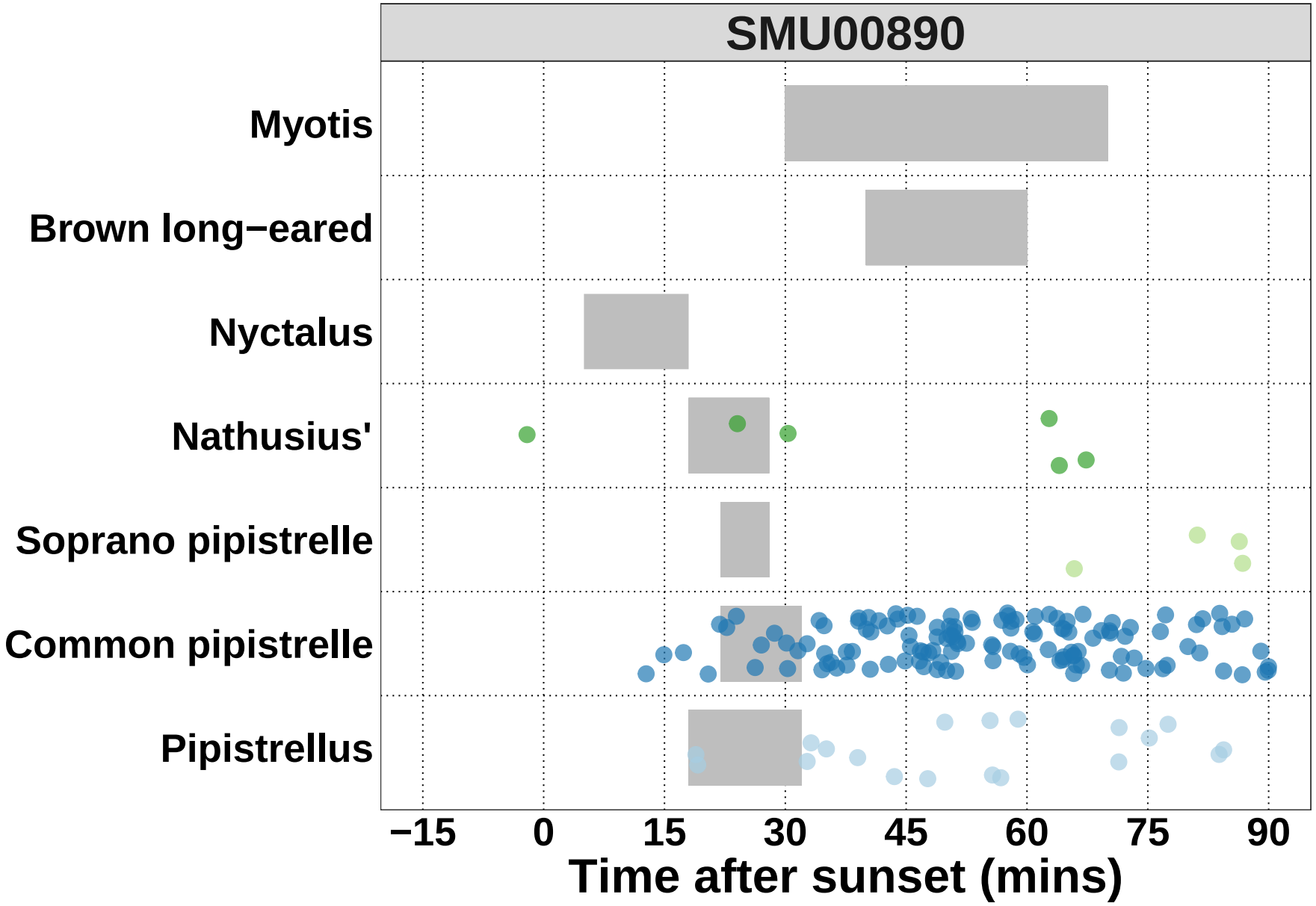
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occuring earlier than this time range, may potentially indicate the presence of a nearby roost.

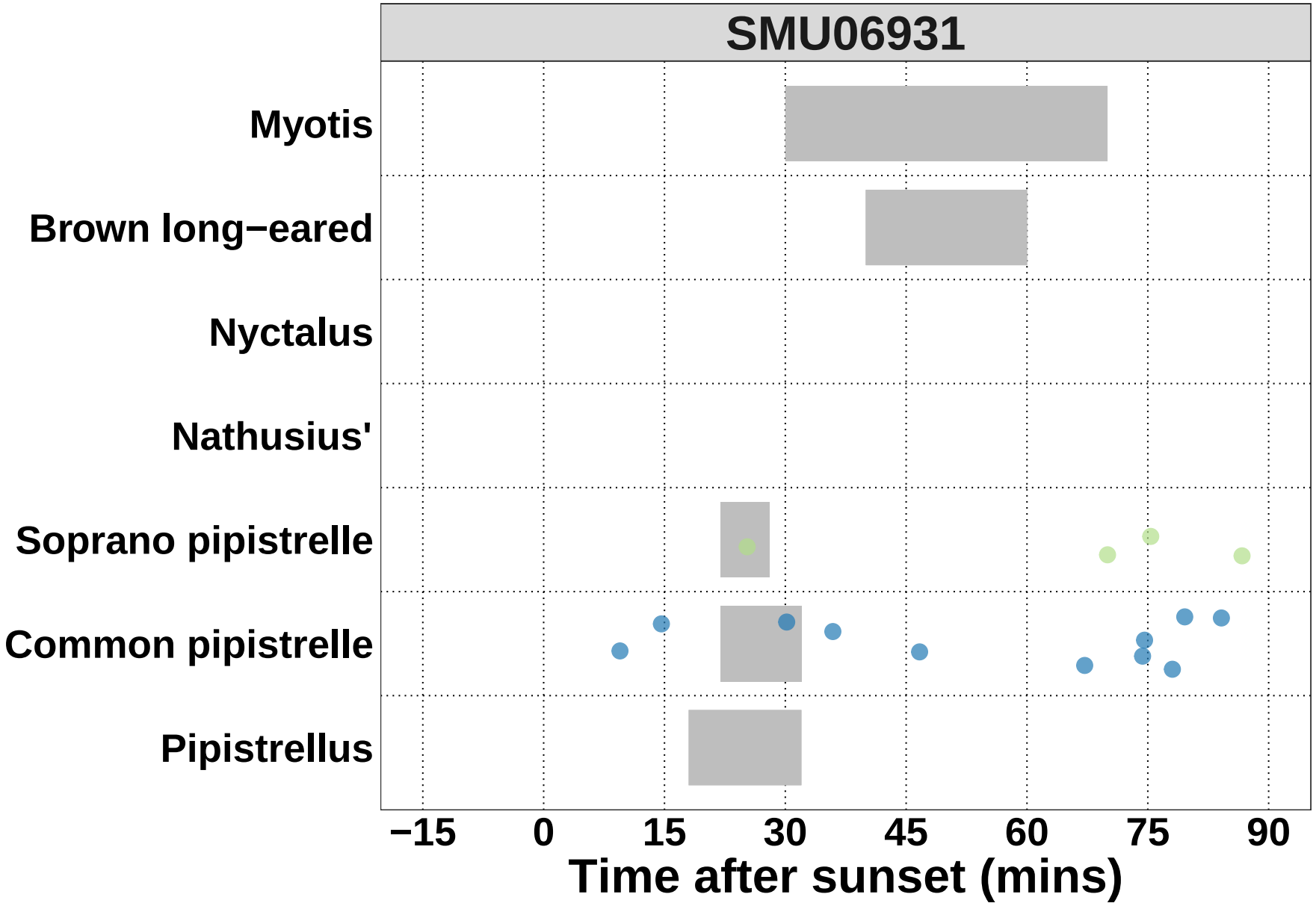

Brienne_mic_Ygritte
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

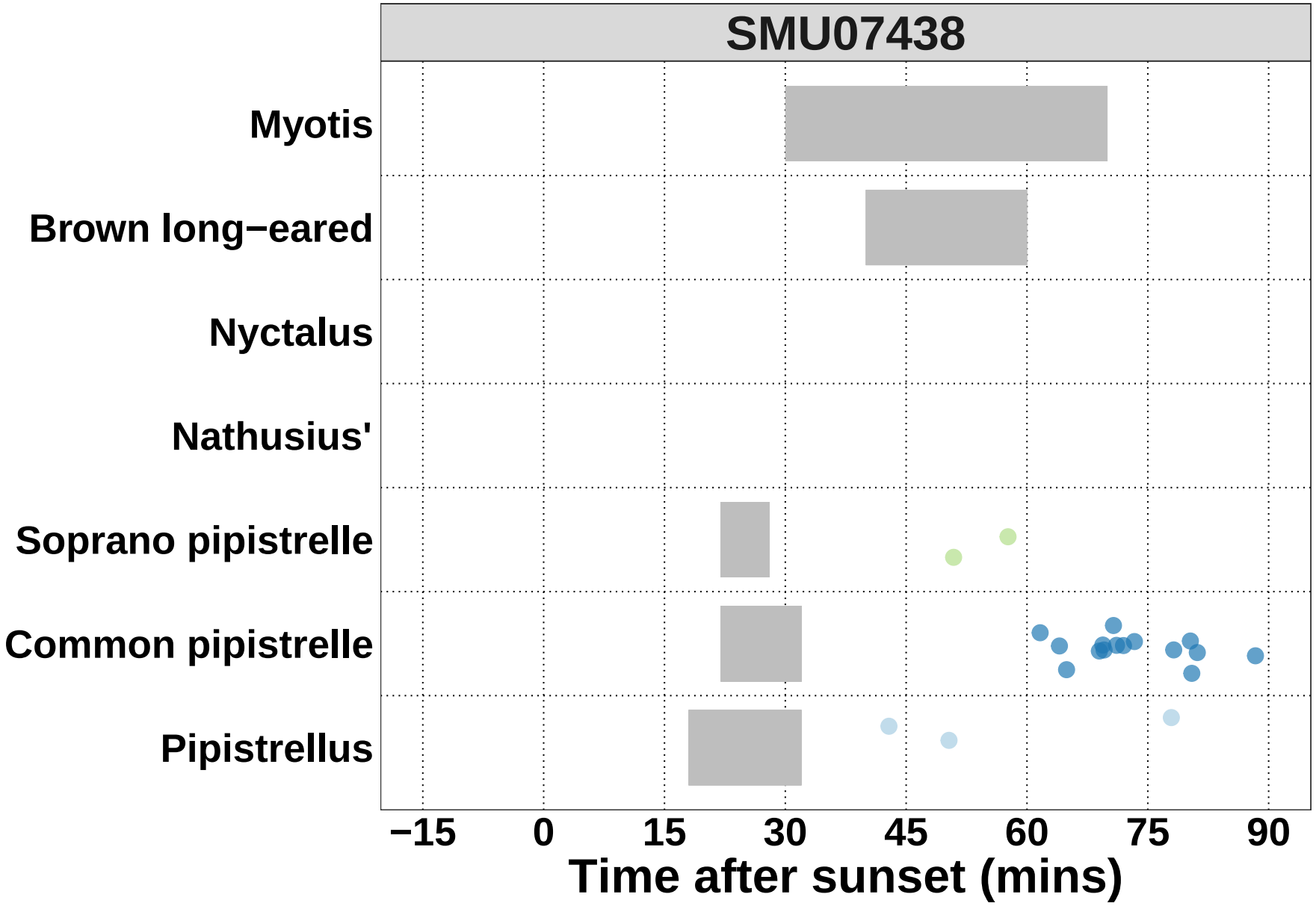

Daenerys mic Gendrie
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

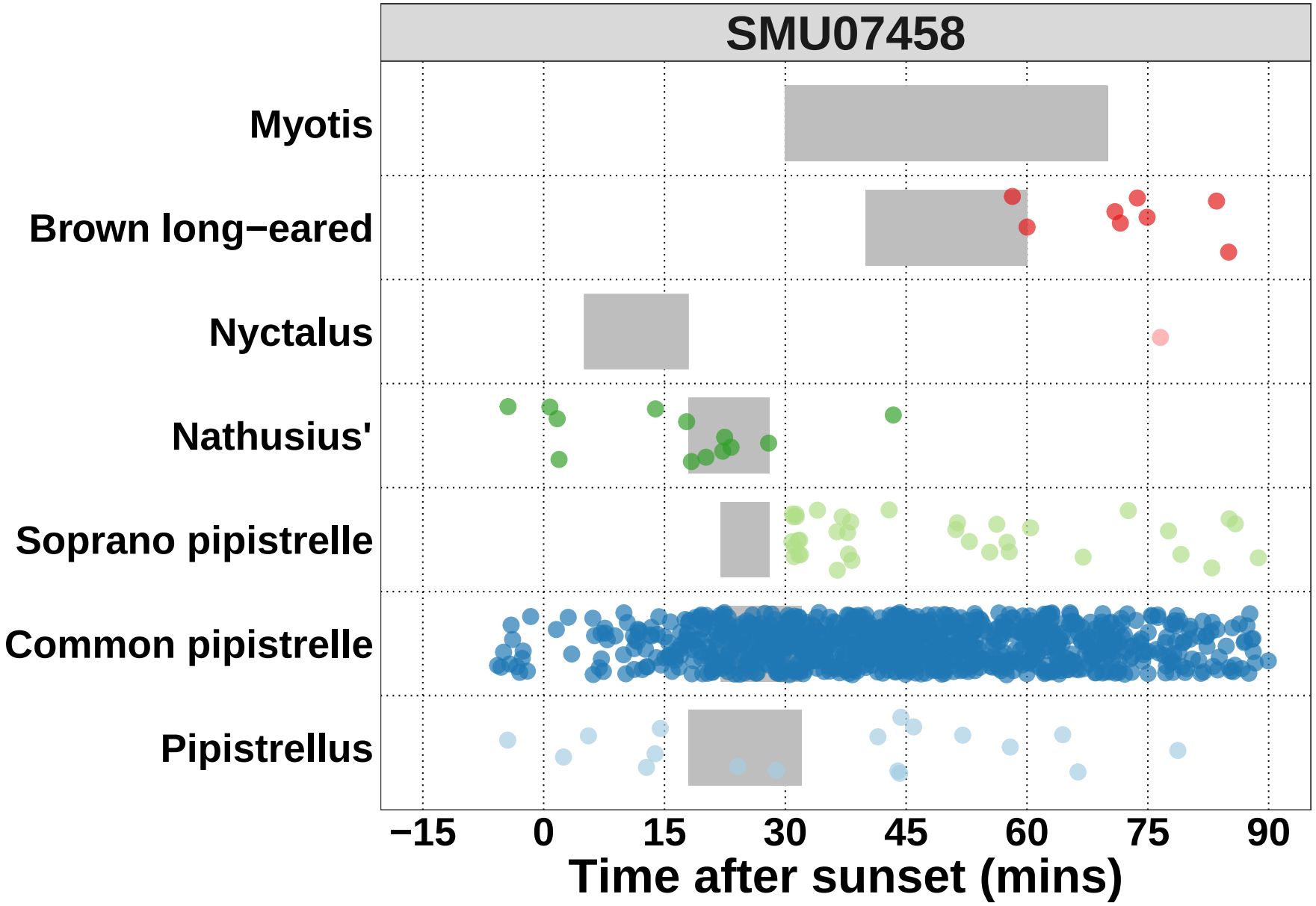

Hodor mic Littlefinger
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

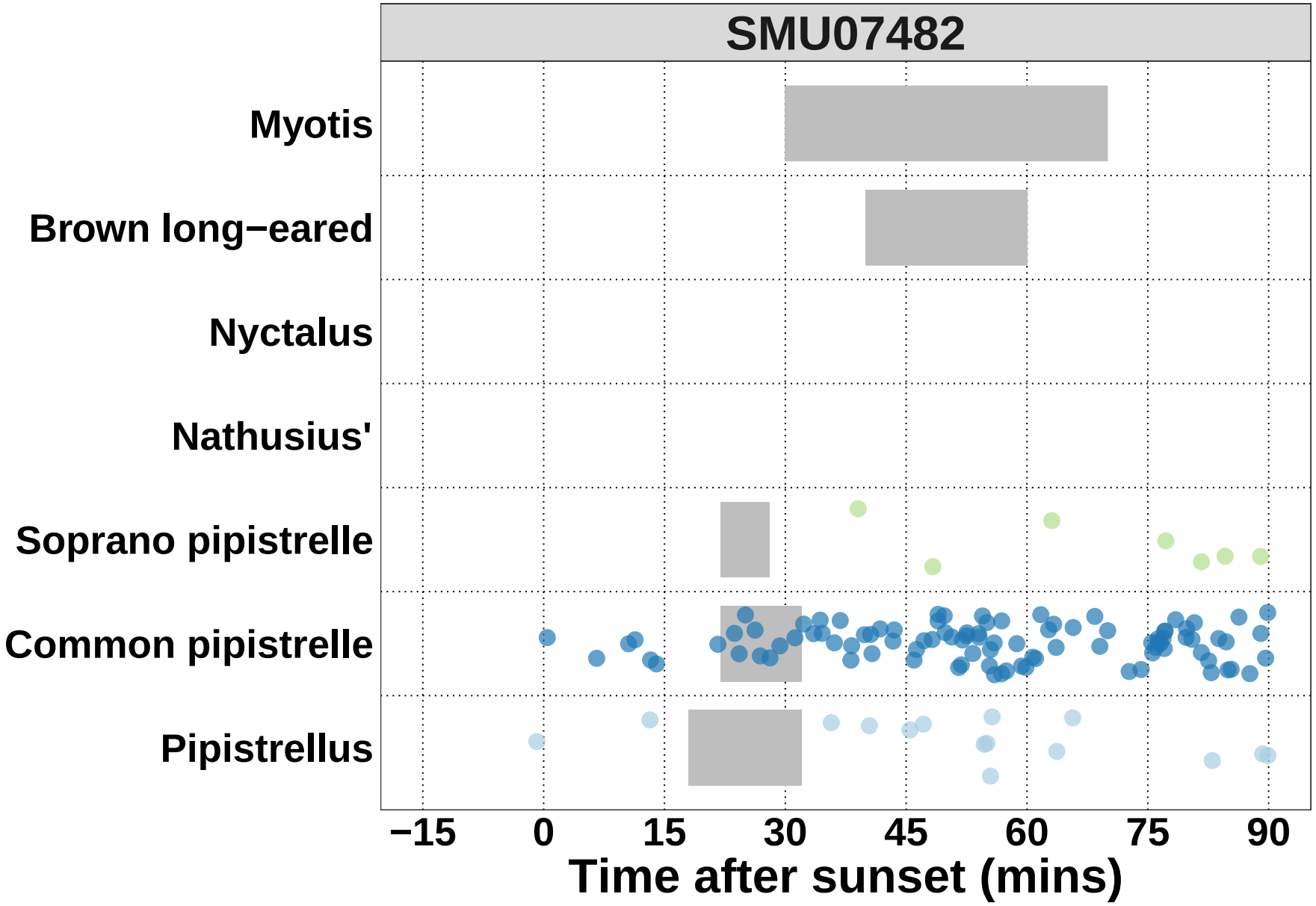

SMU00830
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

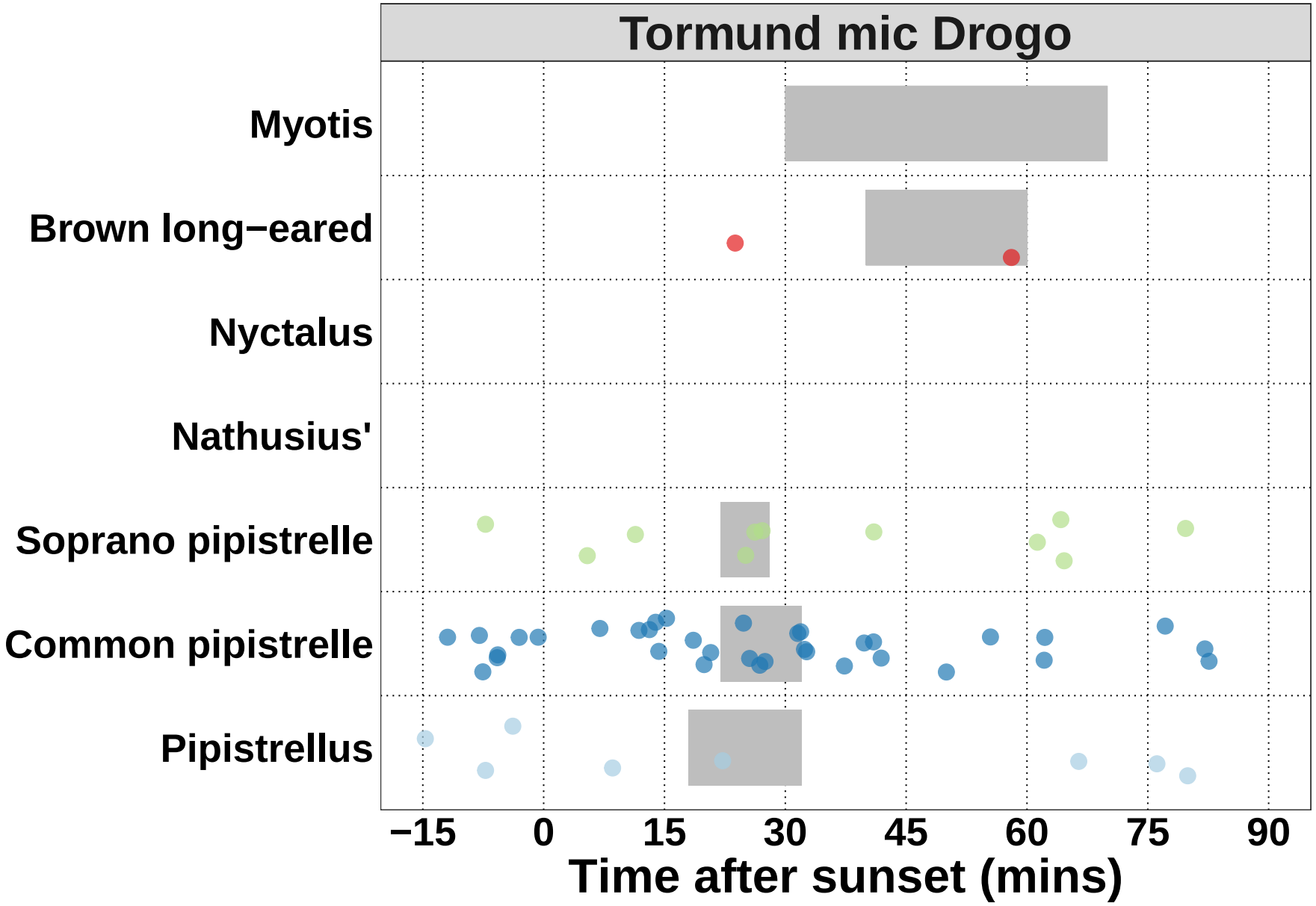

SMU00890
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU06931
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07438
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07458
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07482
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


Tormund mic Drogo
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - *Maternity period defined as 15th June - 30th July.

Table 16: Table continues below

Species	Detector ID	2024-06-25	2024-06-26	2024-06-28	2024-06-29
Pipistrellus	Daenerys mic Gendrie	0	0	0	0
Pipistrellus	SMU00830	0	0	0	0
Pipistrellus	SMU00890	0	0	0	0
Pipistrellus	SMU07458	0	0	0	0
Pipistrellus	SMU07482	0	0	0	0
Pipistrellus	Tormund mic Drogo	0	0	0	0
Common pipistrelle	Brienne_mic_Ygritte	0	0	0	0
Common pipistrelle	Daenerys mic Gendrie	0	0	0	0
Common pipistrelle	Hodor mic Littlefinger	0	0	0	0
Common pipistrelle	SMU00830	0	1	0	0
Common pipistrelle	SMU00890	0	0	0	0
Common pipistrelle	SMU06931	0	0	1	0
Common pipistrelle	SMU07458	8	3	1	2
Common pipistrelle	SMU07482	0	0	0	0
Common pipistrelle	Tormund mic Drogo	2	0	0	0
Soprano pipistrelle	Daenerys mic Gendrie	0	0	0	0
Soprano pipistrelle	SMU06931	0	0	0	0
Soprano pipistrelle	Tormund mic Drogo	0	0	0	0
Nathusius'	SMU00890	0	0	0	0
Nathusius'	SMU07458	0	0	0	0
Nyctalus	Daenerys mic Gendrie	0	0	0	0
Brown long-eared	SMU07458	0	0	0	0
Brown long-eared	Tormund mic Drogo	0	0	0	0
Myotis	Daenerys mic Gendrie	0	0	0	0

Table 17: Table continues below

2024-06-30	2024-07-01	2024-07-02	2024-07-05	2024-07-06	2024-07-07	2024-07-08
0	0	0	0	0	0	0
0	0	0	1	0	0	0

2024-06-30	2024-07-01	2024-07-02	2024-07-05	2024-07-06	2024-07-07	2024-07-08
0	0	0	0	0	0	0
0	0	0	0	0	0	3
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	3
0	0	0	0	0	0	2
1	0	0	0	0	1	1
1	0	0	1	0	0	0
0	0	1	0	0	0	0
12	2	2	33	22	0	6
0	0	0	0	0	0	2
0	0	0	2	1	0	3
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
1	1	0	1	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	0	0	1

Table 18: Table continues below

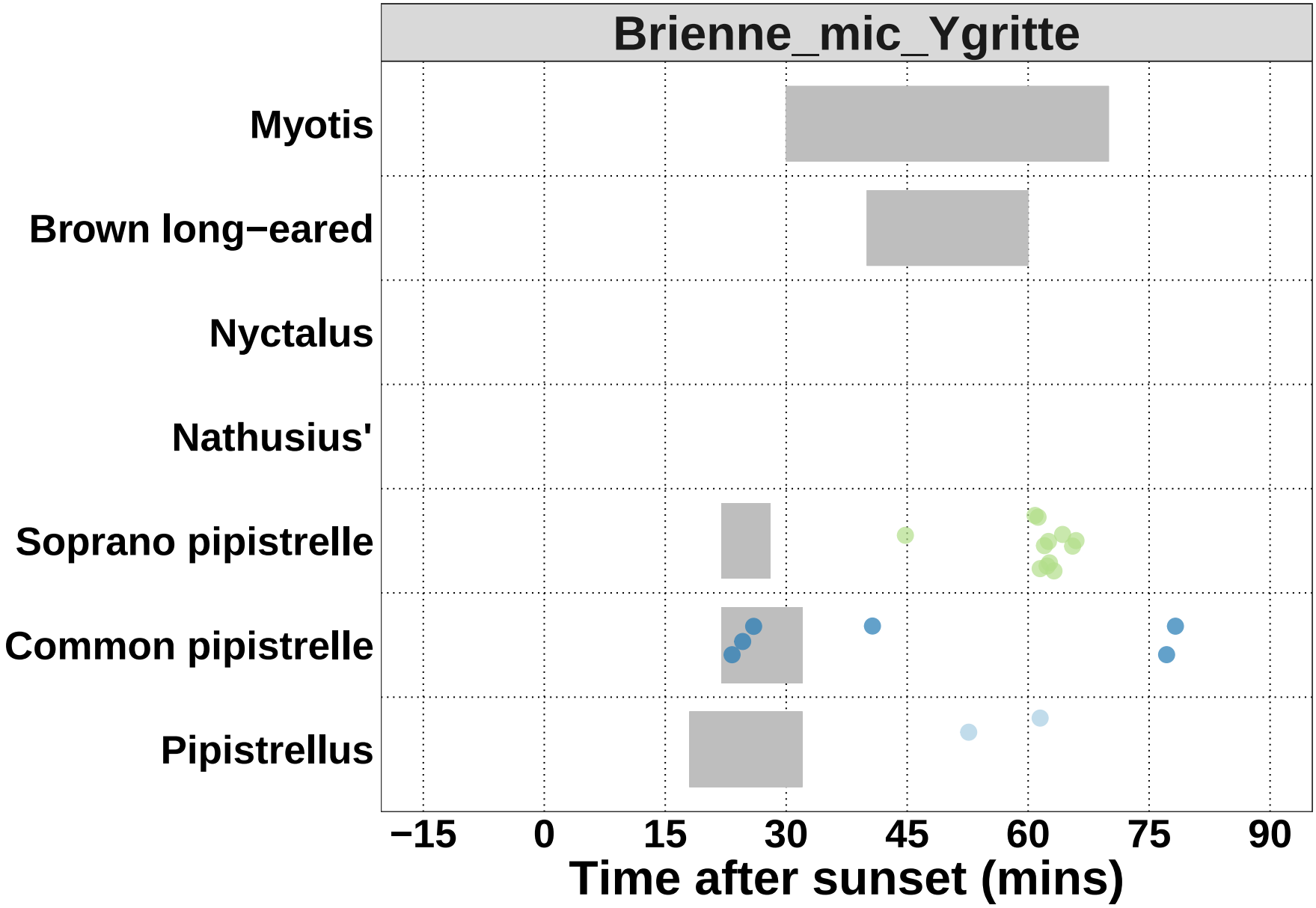
2024-07-10	2024-07-11	2024-07-12	2024-07-13	2024-07-14	2024-07-15	2024-07-16
0	0	0	1	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	2	0
3	0	0	1	0	0	0
0	0	0	1	0	0	0
0	0	0	5	2	0	0
0	0	0	3	0	0	0
0	0	1	9	1	0	0

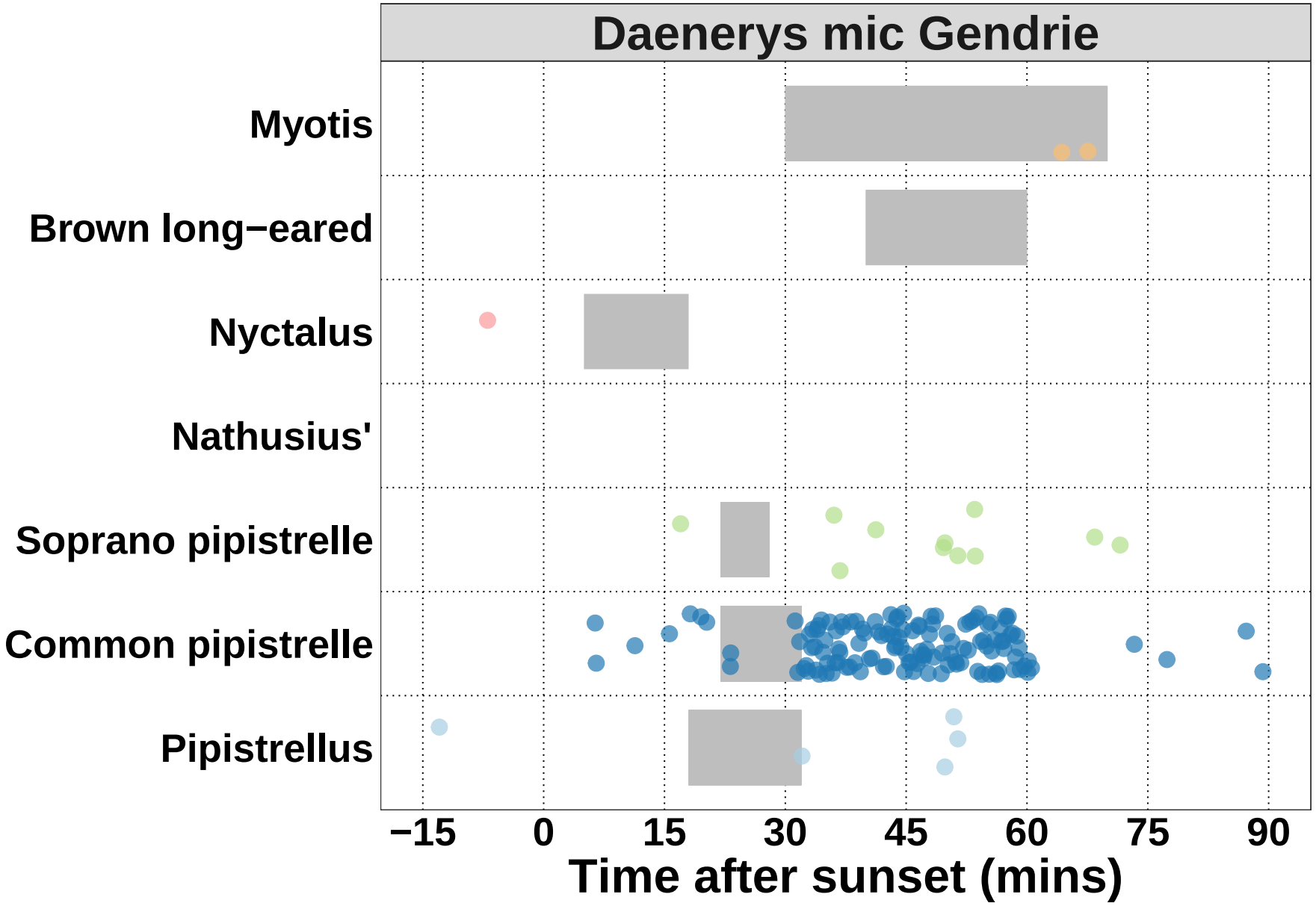
2024-07-10	2024-07-11	2024-07-12	2024-07-13	2024-07-14	2024-07-15	2024-07-16
0	0	1	1	2	1	0
2	0	0	0	0	0	0
2	0	0	2	1	4	1
0	0	0	1	0	0	0
52	12	13	17	17	13	8
5	0	0	5	1	2	0
3	1	1	5	5	2	3
0	0	0	0	1	0	0
0	0	0	1	0	0	0
2	0	2	2	1	0	0
0	0	0	2	0	0	0
1	0	1	2	1	2	1
0	0	0	1	0	0	0
0	0	0	1	0	0	0
0	0	0	0	0	0	1
1	0	0	0	0	0	0

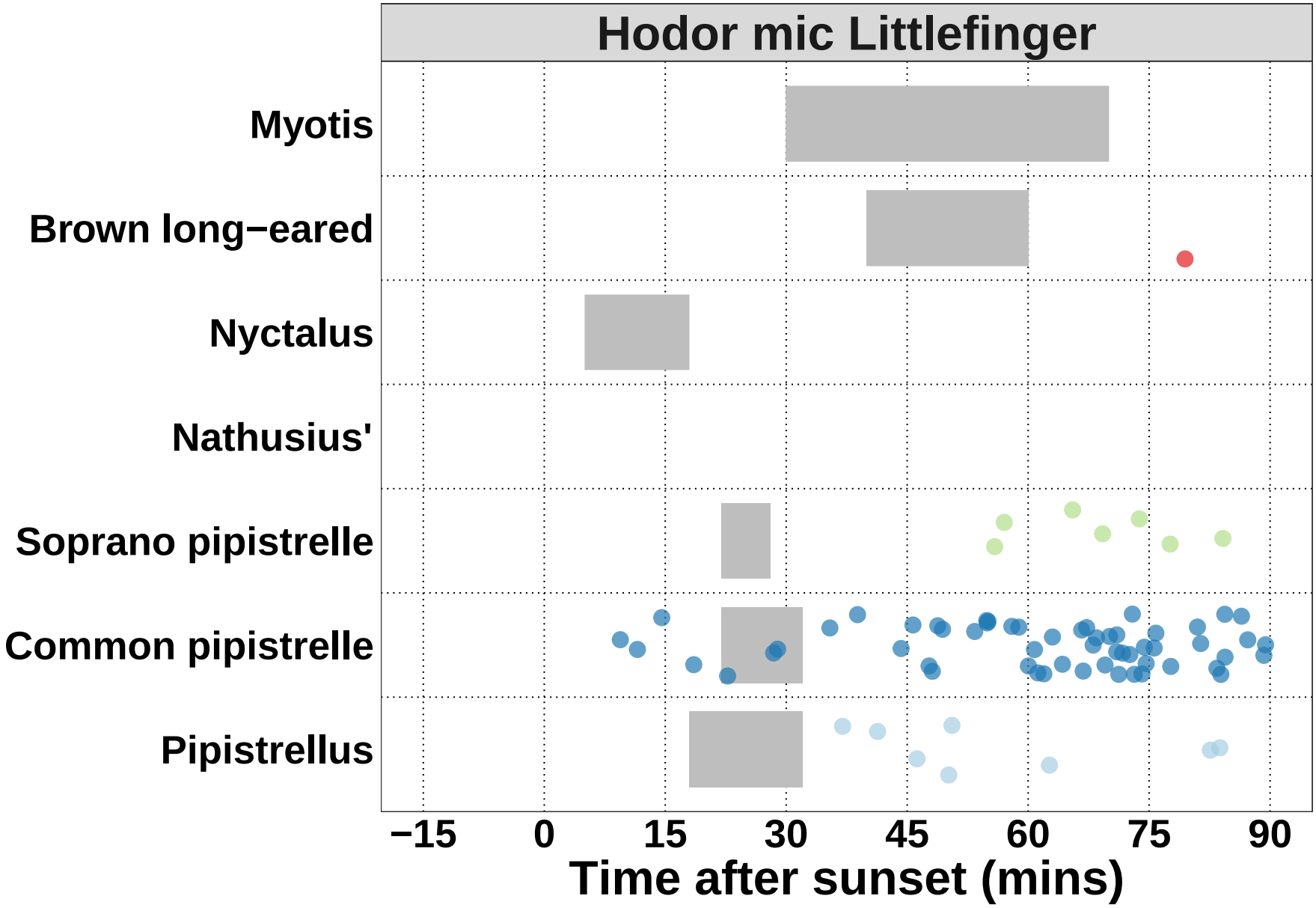
2024-07-17	2024-07-18	2024-07-21	2024-07-22	2024-07-23
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0	0	0
0	0	1	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	0	0	0
1	3	11	7	5
0	0	0	0	0
1	0	2	1	1
0	0	0	0	0

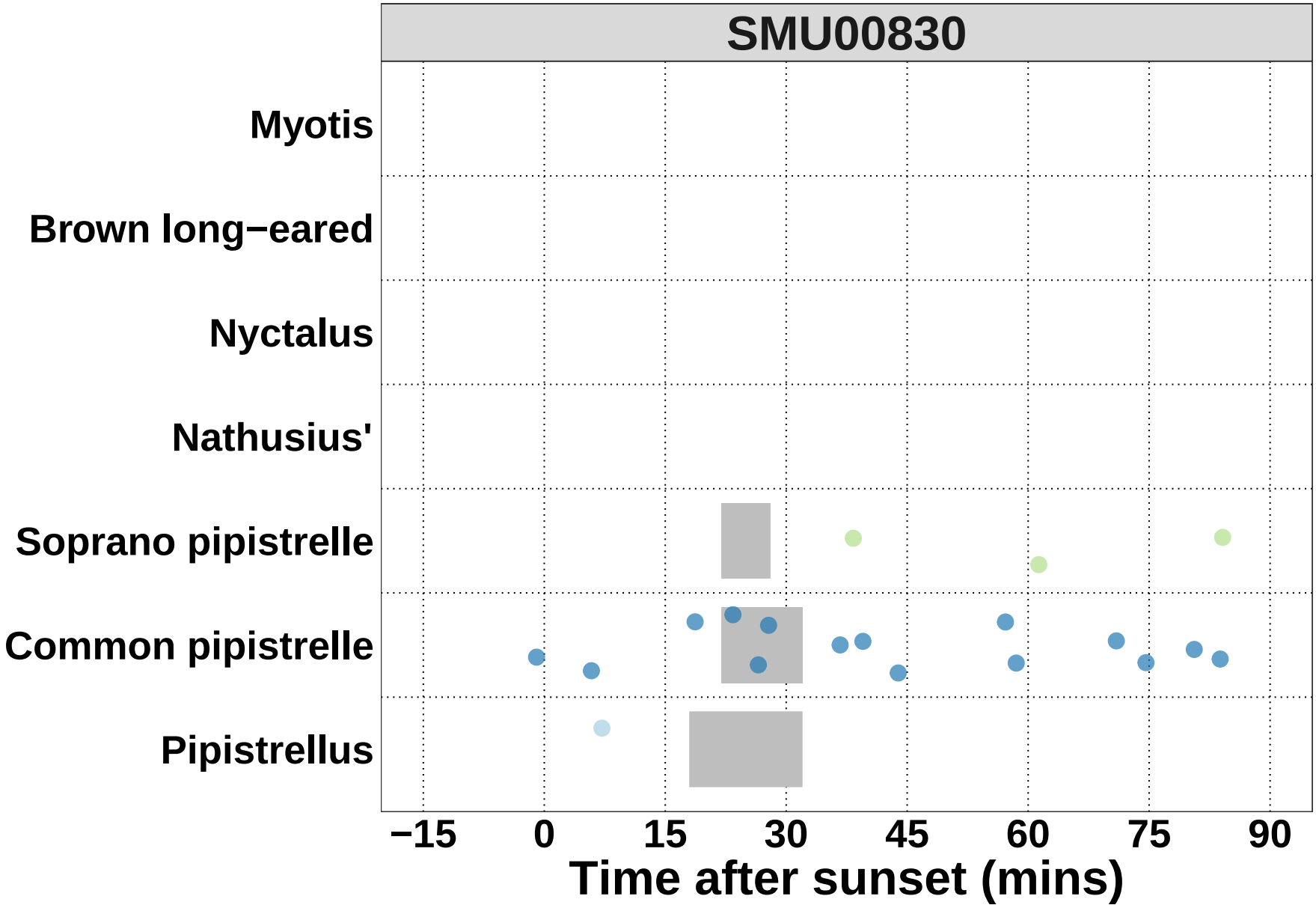
2024-07-17	2024-07-18	2024-07-21	2024-07-22	2024-07-23
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0	0	0

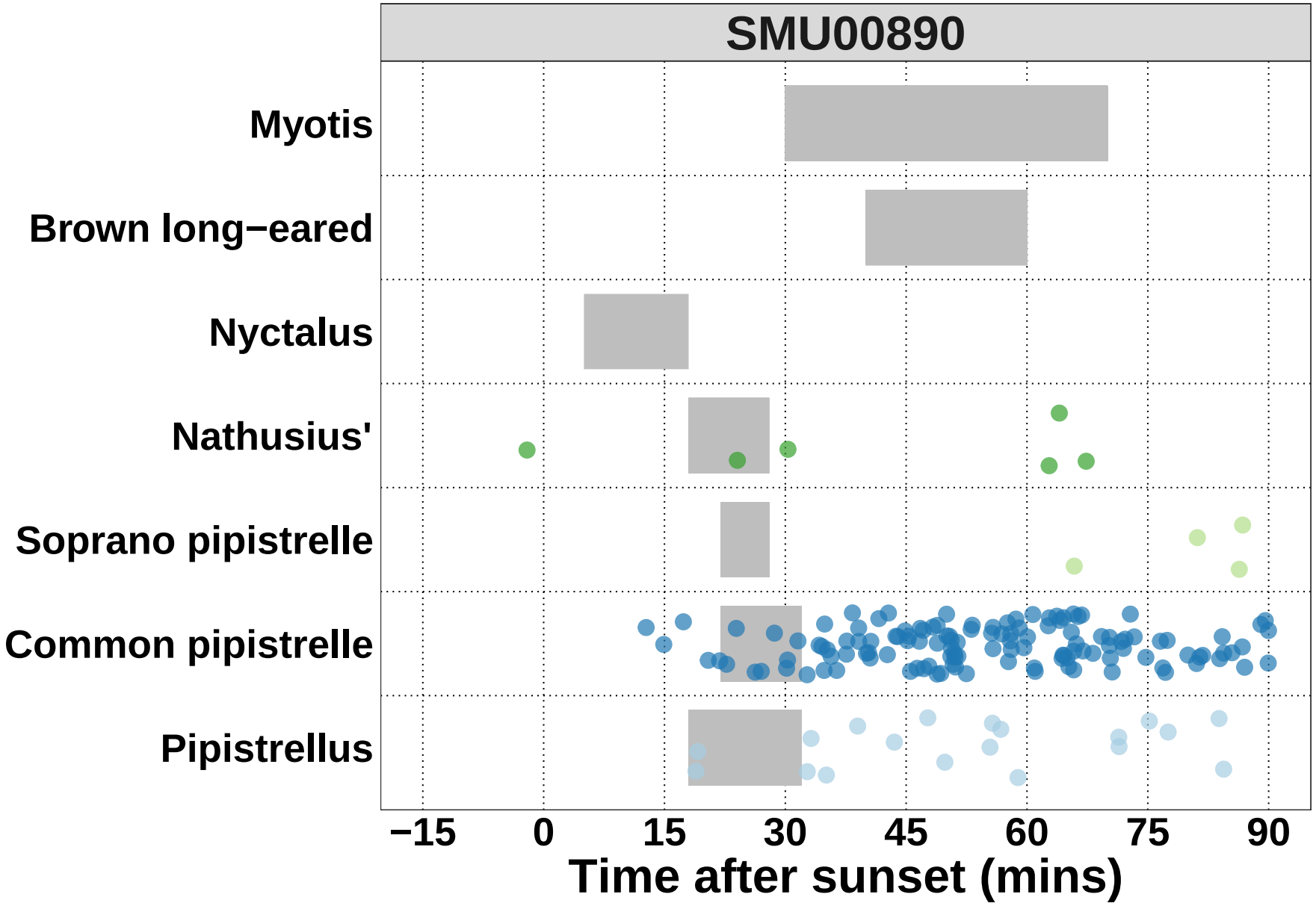
Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - Maternity period defined as 15th June - 30th July.

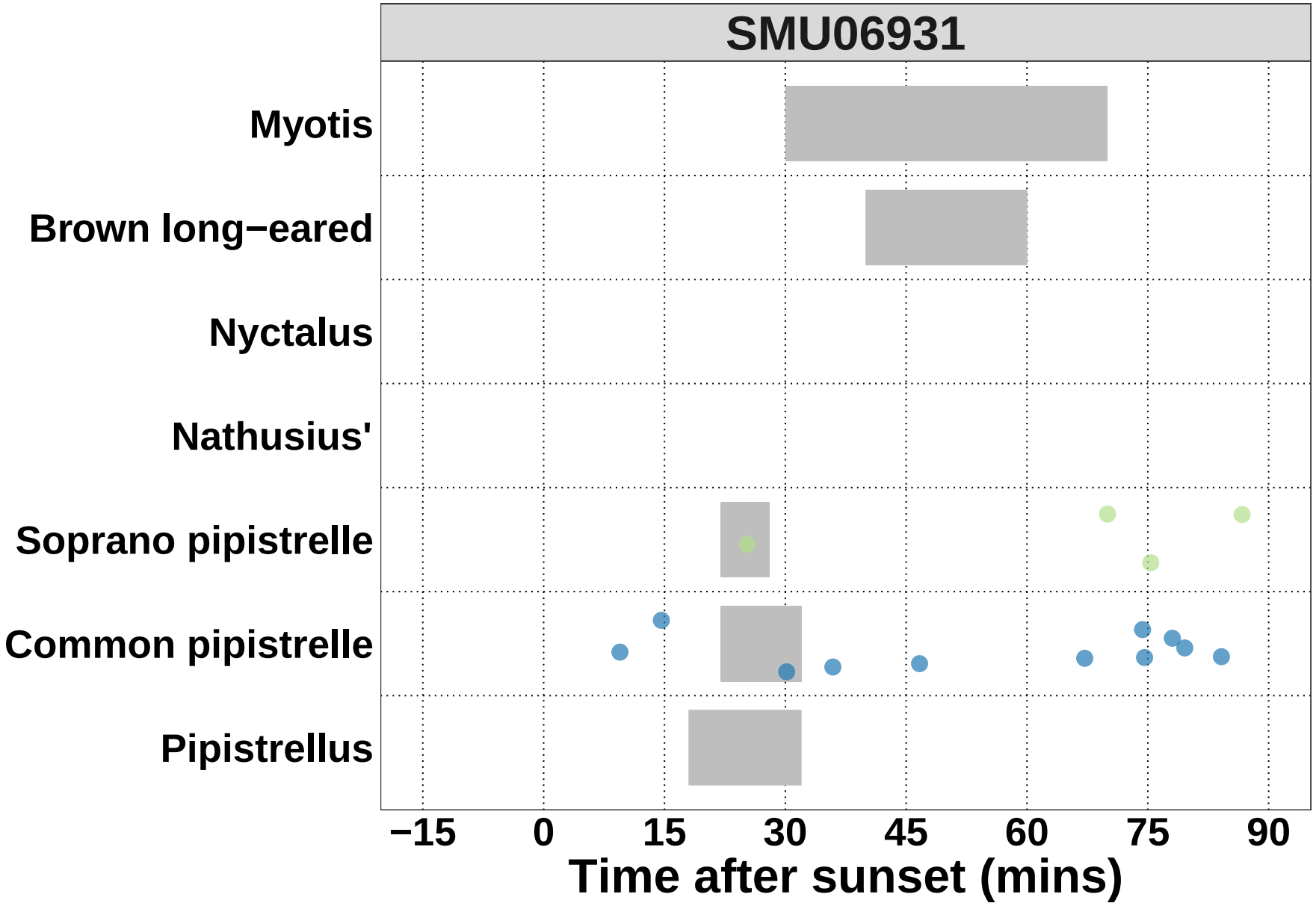

Brienne_mic_Ygritte
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

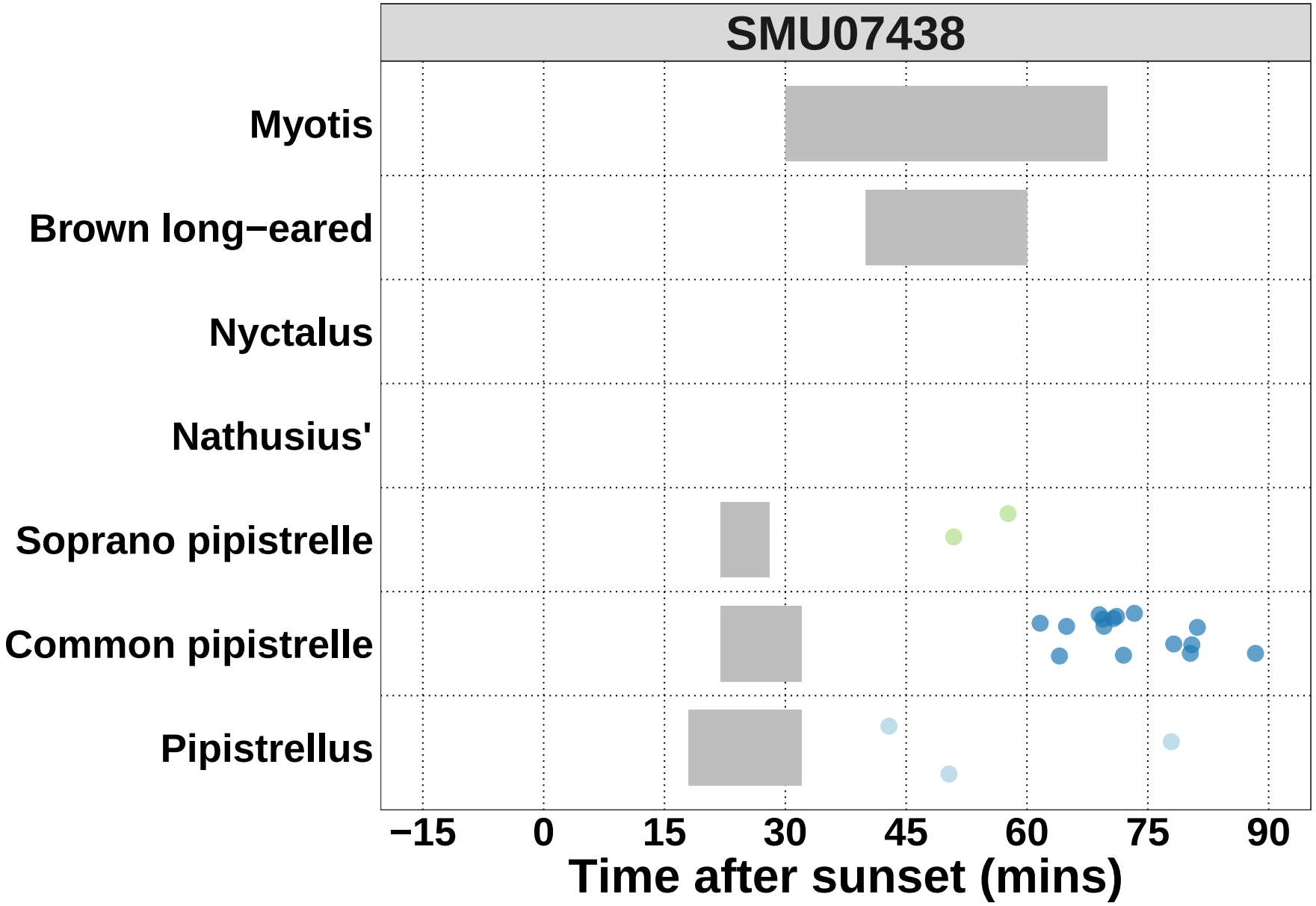

Daenerys mic Gendrie
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

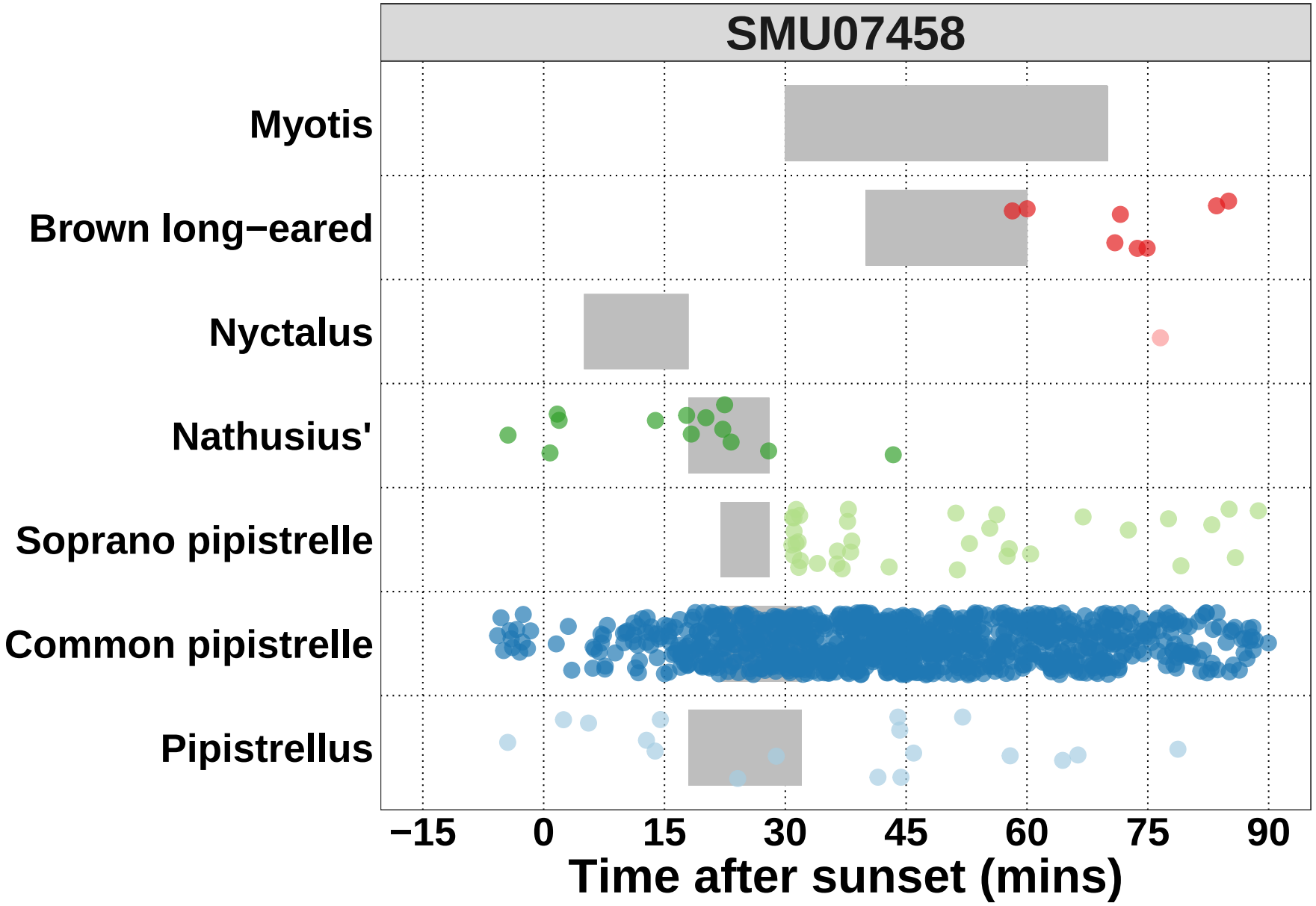

Hodor mic Littlefinger
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

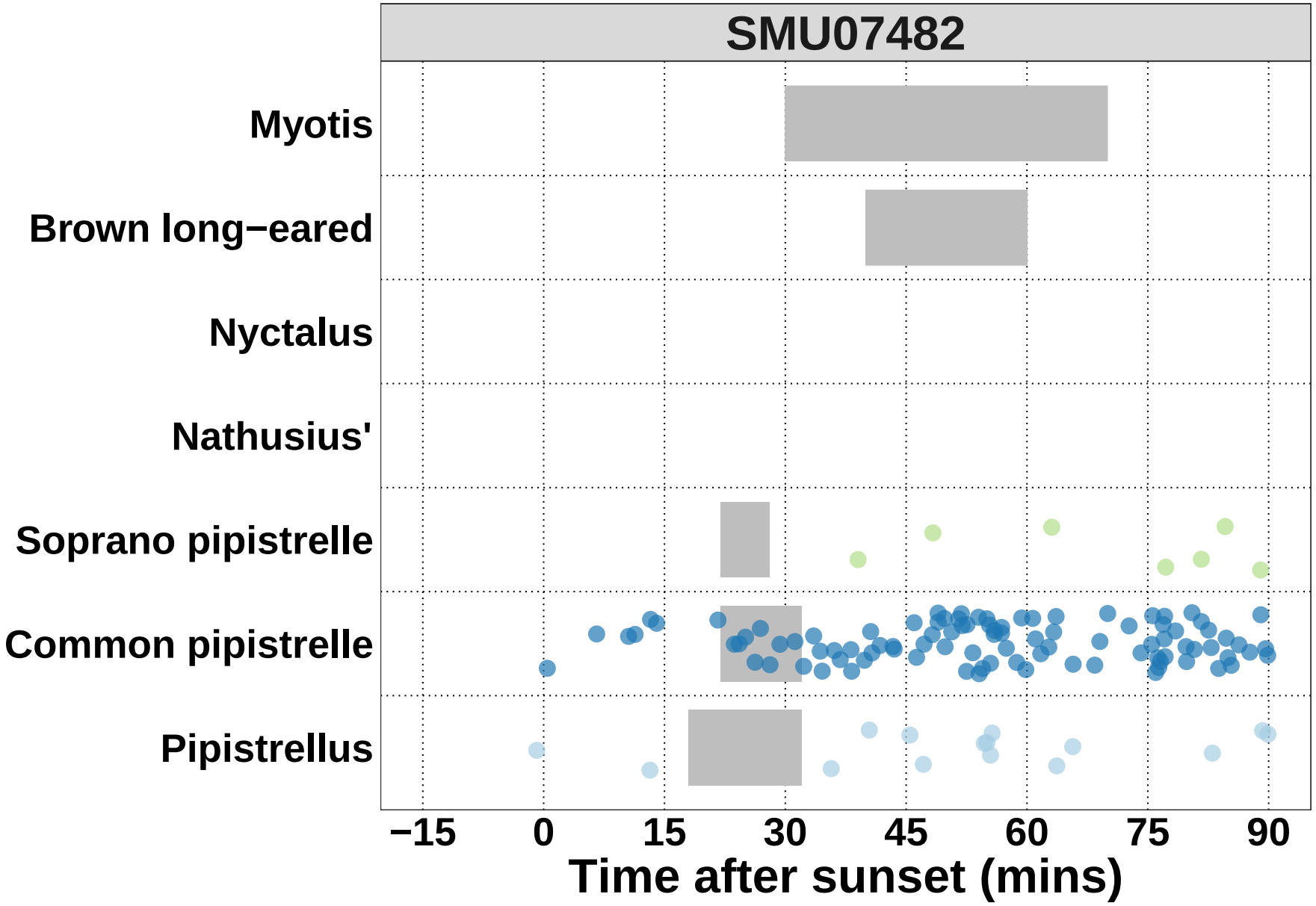

SMU00830
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

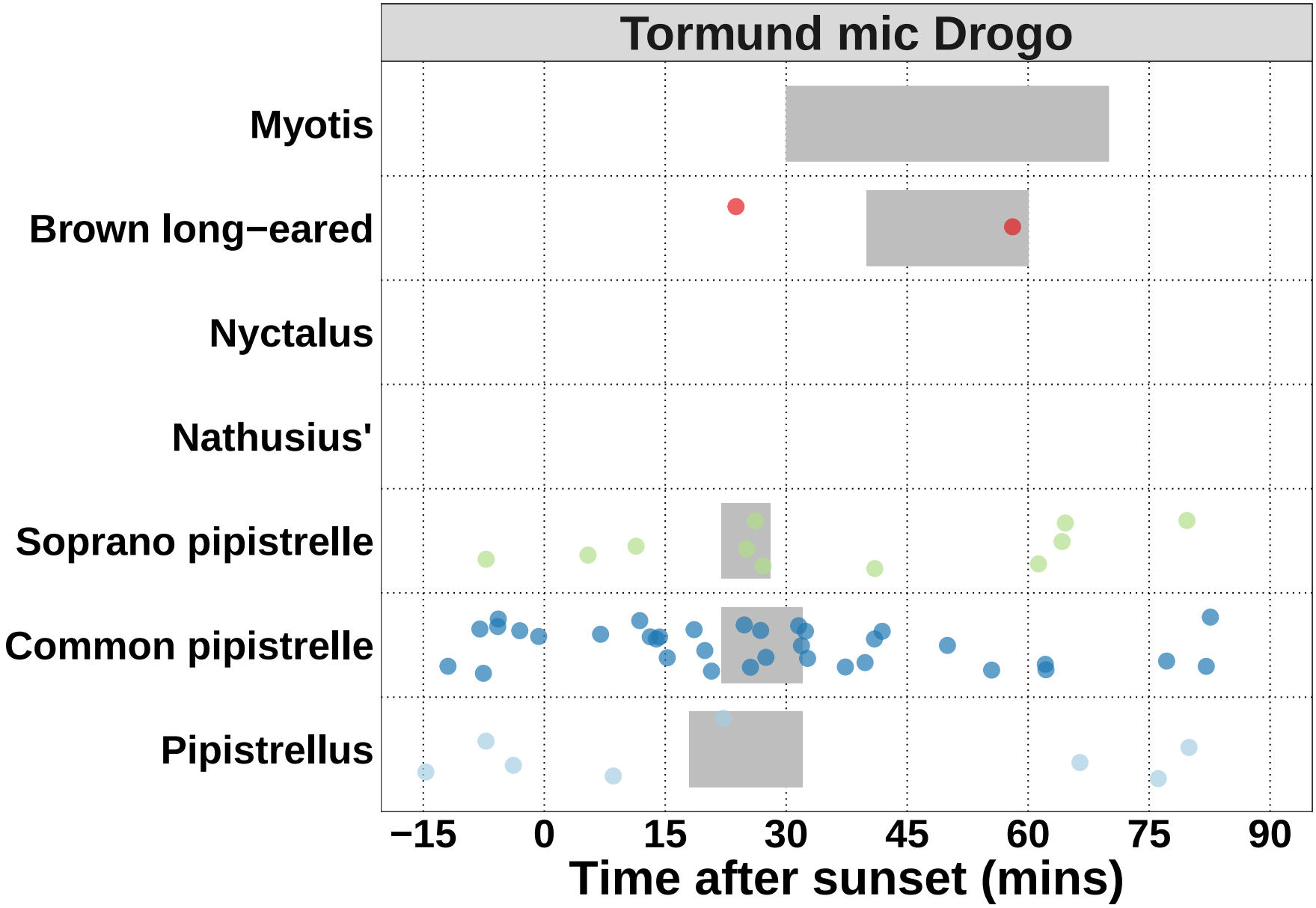

SMU00890
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU06931
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07438
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07458
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU07482
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


Tormund mic Drogo
Myotis
Brown long−eared
Nyctalus
Nathusius'
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

Count 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 (%)
Myotis	357	10.2
Nyctalus	5	0.1
Pipistrellus	120	3.4
Pipistrellus nathusii	22	0.6
Pipistrellus pipistrellus	2595	74.2
Pipistrellus pygmaeus	264	7.6
Plecotus auritus	132	3.8
Total	3495	99.9

Per Detector

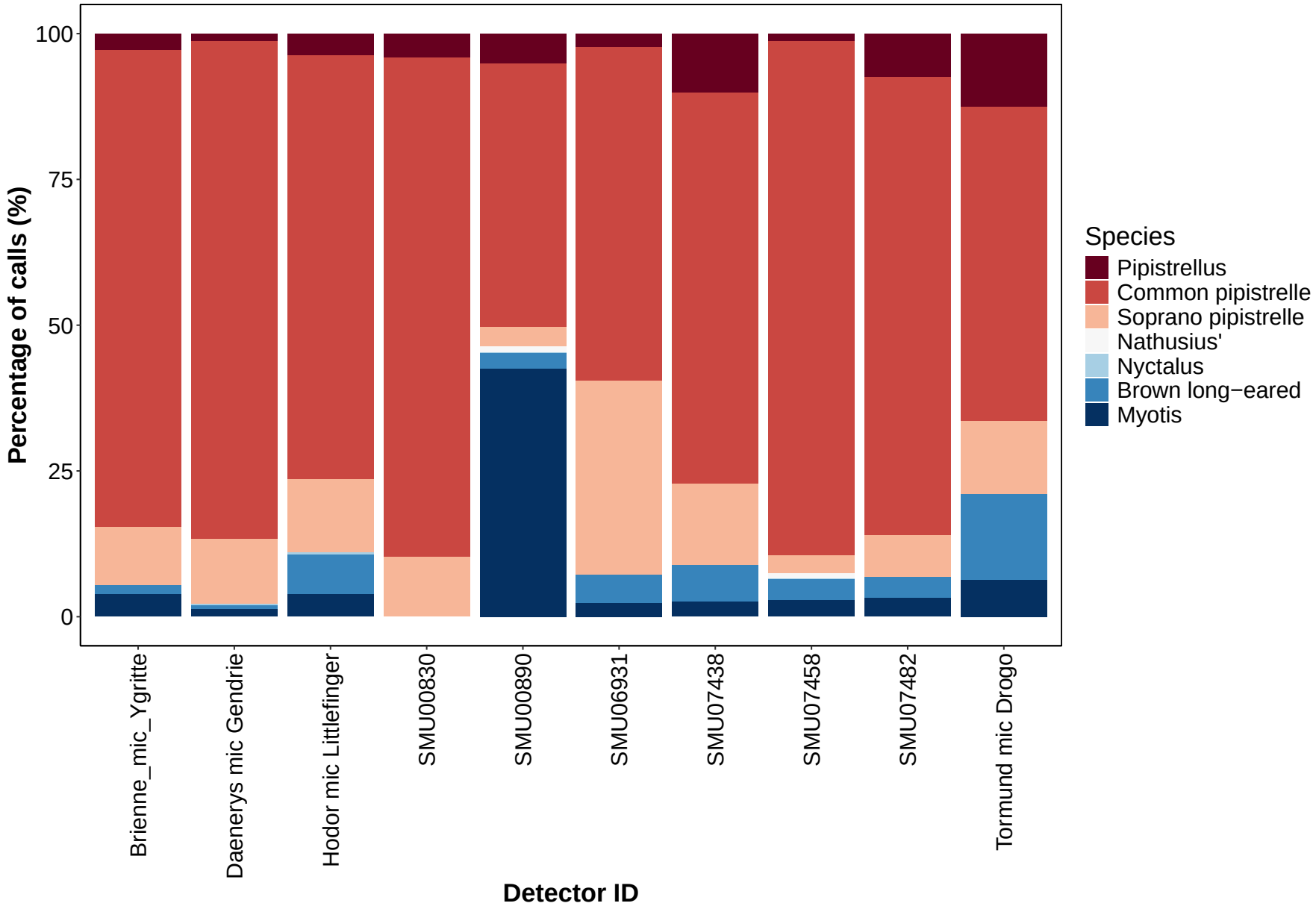
The number of passes recorded for each species at each detector.

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Pipistrellus	Brienne_mic_Ygritte	7	2.3411371
Pipistrellus	Daenerys mic Gendrie	5	1.7123288
Pipistrellus	Hodor mic Littlefinger	10	4.6948357
Pipistrellus	SMU00830	2	4.1666667
Pipistrellus	SMU00890	25	4.6728972
Pipistrellus	SMU06931	2	2.6666667
Pipistrellus	SMU07438	6	9.6774194
Pipistrellus	SMU07458	21	1.4009340
Pipistrellus	SMU07482	27	7.9411765
Pipistrellus	Tormund mic Drogo	15	11.3636364
Common pipistrelle	Brienne_mic_Ygritte	250	83.6120401
Common pipistrelle	Daenerys mic Gendrie	234	80.1369863
Common pipistrelle	Hodor mic Littlefinger	151	70.8920188
Common pipistrelle	SMU00830	39	81.2500000
Common pipistrelle	SMU00890	221	41.3084112
Common pipistrelle	SMU06931	47	62.6666667
Common pipistrelle	SMU07438	38	61.2903226
Common pipistrelle	SMU07458	1295	86.3909273
Common pipistrelle	SMU07482	252	74.1176471
Common pipistrelle	Tormund mic Drogo	68	51.5151515
Soprano pipistrelle	Brienne_mic_Ygritte	25	8.3612040
Soprano pipistrelle	Daenerys mic Gendrie	43	14.7260274
Soprano pipistrelle	Hodor mic Littlefinger	26	12.2065728
Soprano pipistrelle	SMU00830	7	14.5833333
Soprano pipistrelle	SMU00890	18	3.3644860
Soprano pipistrelle	SMU06931	20	26.6666667
Soprano pipistrelle	SMU07438	11	17.7419355
Soprano pipistrelle	SMU07458	62	4.1360907
Soprano pipistrelle	SMU07482	31	9.1176471
Soprano pipistrelle	Tormund mic Drogo	21	15.9090909
Nathusius'	SMU00890	7	1.3084112
Nathusius'	SMU07458	15	1.0006671

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Nyctalus	Daenerys mic Gendrie	1	0.3424658
Nyctalus	Hodor mic Littlefinger	1	0.4694836
Nyctalus	SMU00890	1	0.1869159
Nyctalus	SMU07458	2	0.1334223
Brown long-eared	Brienne_mic_Ygritte	5	1.6722408
Brown long-eared	Daenerys mic Gendrie	3	1.0273973
Brown long-eared	Hodor mic Littlefinger	14	6.5727700
Brown long-eared	SMU00890	13	2.4299065
Brown long-eared	SMU06931	4	5.3333333
Brown long-eared	SMU07438	5	8.0645161
Brown long-eared	SMU07458	53	3.5356905
Brown long-eared	SMU07482	16	4.7058824
Brown long-eared	Tormund mic Drogo	19	14.3939394
Myotis	Brienne_mic_Ygritte	12	4.0133779
Myotis	Daenerys mic Gendrie	6	2.0547945
Myotis	Hodor mic Littlefinger	11	5.1643192
Myotis	SMU00890	250	46.7289720
Myotis	SMU06931	2	2.6666667
Myotis	SMU07438	2	3.2258065
Myotis	SMU07458	51	3.4022682
Myotis	SMU07482	14	4.1176471
Myotis	Tormund mic Drogo	9	6.8181818

Species Composition

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


Percentage of calls (%)
100
75
50
25
0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID
Species
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Nyctalus
Brown long−eared
Myotis

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.

Nighlty 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	Brienne_mic_Ygritte	0.3
Pipistrellus	Daenerys mic Gendrie	0.7
Pipistrellus	Hodor mic Littlefinger	0.3
Pipistrellus	SMU00830	0.1
Pipistrellus	SMU00890	0.3
Pipistrellus	SMU06931	0.1
Pipistrellus	SMU07438	0.3
Pipistrellus	SMU07458	0.3
Pipistrellus	SMU07482	0.3
Pipistrellus	Tormund mic Drogo	0.8
Common pipistrelle	Brienne_mic_Ygritte	3.8
Common pipistrelle	Daenerys mic Gendrie	1.9
Common pipistrelle	Hodor mic Littlefinger	1.2
Common pipistrelle	SMU00830	0.6
Common pipistrelle	SMU00890	1.6
Common pipistrelle	SMU06931	0.4
Common pipistrelle	SMU07438	0.9
Common pipistrelle	SMU07458	6.8
Common pipistrelle	SMU07482	3.1
Common pipistrelle	Tormund mic Drogo	0.4
Soprano pipistrelle	Brienne_mic_Ygritte	0.4
Soprano pipistrelle	Daenerys mic Gendrie	1.0
Soprano pipistrelle	Hodor mic Littlefinger	0.3
Soprano pipistrelle	SMU00830	0.4
Soprano pipistrelle	SMU00890	0.6
Soprano pipistrelle	SMU06931	0.4
Soprano pipistrelle	SMU07438	0.3
Soprano pipistrelle	SMU07458	0.5
Soprano pipistrelle	SMU07482	0.9
Soprano pipistrelle	Tormund mic Drogo	0.4
Nathusius'	SMU00890	0.4
Nathusius'	SMU07458	0.1
Nyctalus	Daenerys mic Gendrie	0.1
Nyctalus	Hodor mic Littlefinger	0.1
Nyctalus	SMU00890	0.1
Nyctalus	SMU07458	0.1

Species	Detector ID	Median Pass Rate
Brown long-eared	Brienne_mic_Ygritte	0.1
Brown long-eared	Daenerys mic Gendrie	0.1
Brown long-eared	Hodor mic Littlefinger	0.3
Brown long-eared	SMU00890	0.1
Brown long-eared	SMU06931	0.1
Brown long-eared	SMU07438	0.1
Brown long-eared	SMU07458	0.9
Brown long-eared	SMU07482	0.3
Brown long-eared	Tormund mic Drogo	0.4
Myotis	Brienne_mic_Ygritte	0.1
Myotis	Daenerys mic Gendrie	0.1
Myotis	Hodor mic Littlefinger	0.1
Myotis	SMU00890	0.8
Myotis	SMU06931	0.1
Myotis	SMU07438	0.2
Myotis	SMU07458	0.3
Myotis	SMU07482	0.2
Myotis	Tormund mic Drogo	0.3

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.

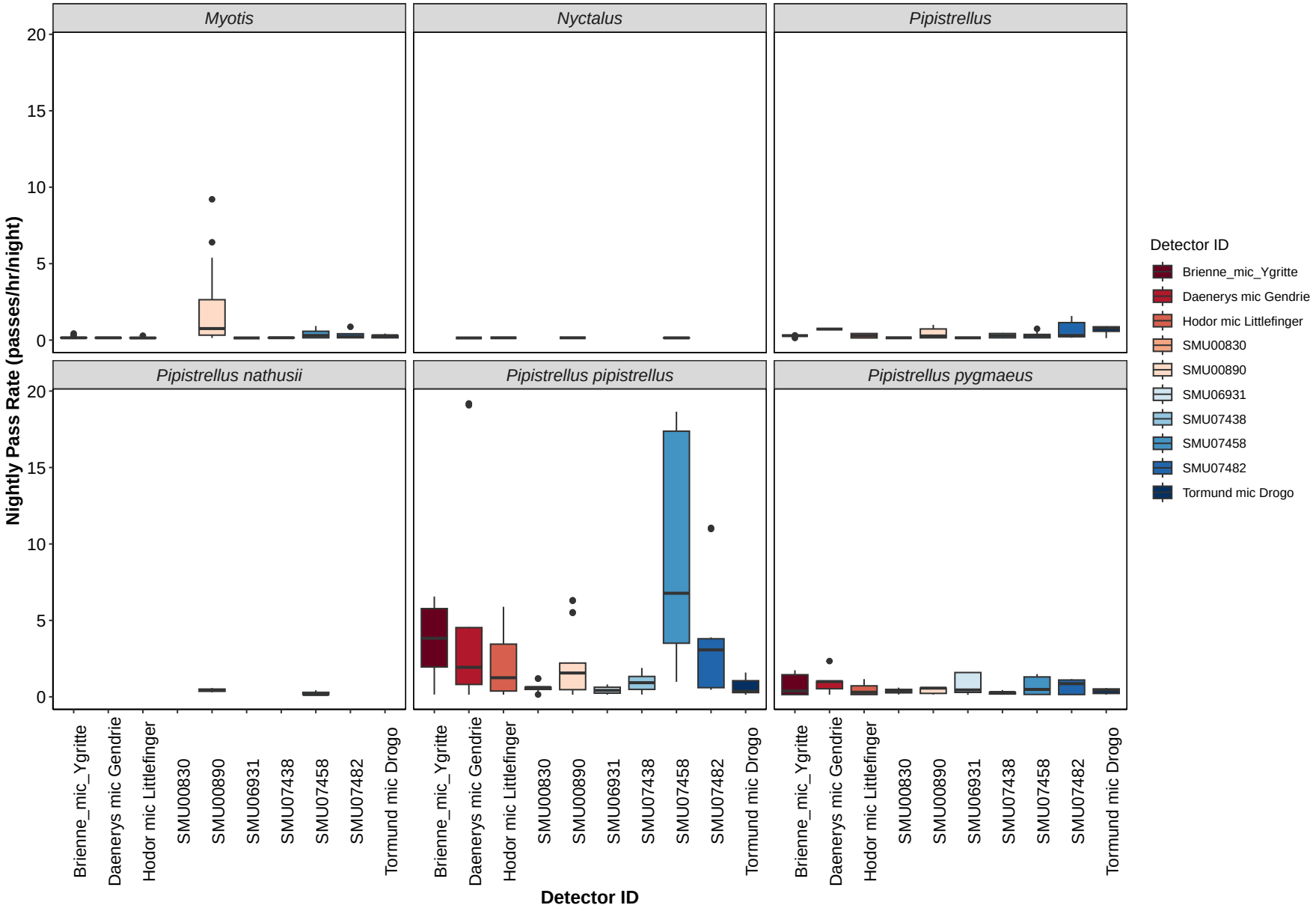
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

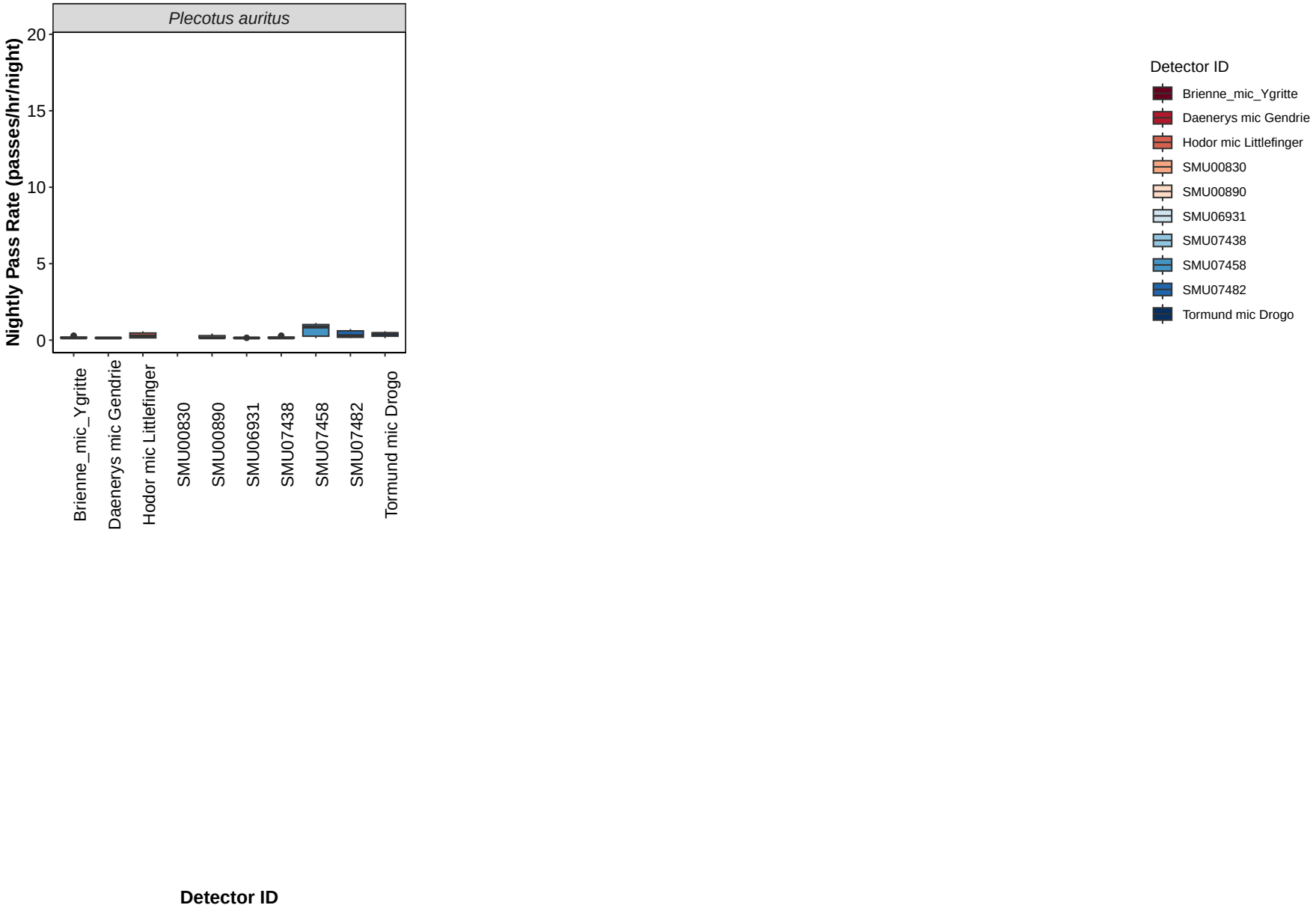
Species	Detector ID	Mean Pass Rate
Pipistrellus	Brienne_mic_Ygritte	0.3
Pipistrellus	Daenerys mic Gendrie	0.7
Pipistrellus	Hodor mic Littlefinger	0.3
Pipistrellus	SMU00830	0.1
Pipistrellus	SMU00890	0.5
Pipistrellus	SMU06931	0.1
Pipistrellus	SMU07438	0.3
Pipistrellus	SMU07458	0.3
Pipistrellus	SMU07482	0.7
Pipistrellus	Tormund mic Drogo	0.6
Common pipistrelle	Brienne_mic_Ygritte	3.7
Common pipistrelle	Daenerys mic Gendrie	5.5
Common pipistrelle	Hodor mic Littlefinger	2.0
Common pipistrelle	SMU00830	0.6
Common pipistrelle	SMU00890	2.2
Common pipistrelle	SMU06931	0.4
Common pipistrelle	SMU07438	1.0
Common pipistrelle	SMU07458	9.2
Common pipistrelle	SMU07482	3.4
Common pipistrelle	Tormund mic Drogo	0.6
Soprano pipistrelle	Brienne_mic_Ygritte	0.8
Soprano pipistrelle	Daenerys mic Gendrie	0.9
Soprano pipistrelle	Hodor mic Littlefinger	0.5
Soprano pipistrelle	SMU00830	0.4
Soprano pipistrelle	SMU00890	0.4
Soprano pipistrelle	SMU06931	0.8
Soprano pipistrelle	SMU07438	0.3
Soprano pipistrelle	SMU07458	0.7
Soprano pipistrelle	SMU07482	0.7
Soprano pipistrelle	Tormund mic Drogo	0.4

Species	Detector ID	Mean Pass Rate
Nathusius'	SMU00890	0.4
Nathusius'	SMU07458	0.2
Nyctalus	Daenerys mic Gendrie	0.1
Nyctalus	Hodor mic Littlefinger	0.1
Nyctalus	SMU00890	0.1
Nyctalus	SMU07458	0.1
Brown long-eared	Brienne_mic_Ygritte	0.2
Brown long-eared	Daenerys mic Gendrie	0.1
Brown long-eared	Hodor mic Littlefinger	0.3
Brown long-eared	SMU00890	0.2
Brown long-eared	SMU06931	0.1
Brown long-eared	SMU07438	0.2
Brown long-eared	SMU07458	0.7
Brown long-eared	SMU07482	0.4
Brown long-eared	Tormund mic Drogo	0.4
Myotis	Brienne_mic_Ygritte	0.2
Myotis	Daenerys mic Gendrie	0.1
Myotis	Hodor mic Littlefinger	0.2
Myotis	SMU00890	2.1
Myotis	SMU06931	0.1
Myotis	SMU07438	0.2
Myotis	SMU07458	0.4
Myotis	SMU07482	0.3
Myotis	Tormund mic Drogo	0.3

Per Detector

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.


Myotis
Nyctalus
Pipistrellus
Pipistrellus nathusii
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Nightly Pass Rate (passes/hr/night)
0
5
10
15
20
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID
Detector ID
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo


Plecotus auritus
Nightly Pass Rate (passes/hr/night)
0
5
10
15
20
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID
Detector ID
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo

Split by Month

Total Bat Passes per Detector each Month

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	Jun	Jul
Pipistrellus	Brienne_mic_Ygritte	2	7
Pipistrellus	Daenerys mic Gendrie	0	5
Pipistrellus	Hodor mic Littlefinger	0	10
Pipistrellus	SMU00830	0	2
Pipistrellus	SMU00890	1	29
Pipistrellus	SMU06931	0	2
Pipistrellus	SMU07438	0	8
Pipistrellus	SMU07458	4	20
Pipistrellus	SMU07482	0	33
Pipistrellus	Tormund mic Drogo	0	18
Common pipistrelle	Brienne_mic_Ygritte	32	225
Common pipistrelle	Daenerys mic Gendrie	29	312
Common pipistrelle	Hodor mic Littlefinger	4	187
Common pipistrelle	SMU00830	13	29
Common pipistrelle	SMU00890	6	257
Common pipistrelle	SMU06931	2	46
Common pipistrelle	SMU07438	0	53
Common pipistrelle	SMU07458	272	1369
Common pipistrelle	SMU07482	6	341
Common pipistrelle	Tormund mic Drogo	3	74
Soprano pipistrelle	Brienne_mic_Ygritte	1	30
Soprano pipistrelle	Daenerys mic Gendrie	18	26
Soprano pipistrelle	Hodor mic Littlefinger	0	33
Soprano pipistrelle	SMU00830	0	5
Soprano pipistrelle	SMU00890	0	20
Soprano pipistrelle	SMU06931	0	28
Soprano pipistrelle	SMU07438	0	11
Soprano pipistrelle	SMU07458	3	53
Soprano pipistrelle	SMU07482	1	31
Soprano pipistrelle	Tormund mic Drogo	1	17
Nathusius'	SMU00890	0	6
Nathusius'	SMU07458	1	16
Nyctalus	Daenerys mic Gendrie	0	1
Nyctalus	Hodor mic Littlefinger	0	1
Nyctalus	SMU00890	0	1
Nyctalus	SMU07458	0	2

Species	Detector ID	Jun	Jul
Brown long-eared	Brienne_mic_Ygritte	0	5
Brown long-eared	Daenerys mic Gendrie	0	3
Brown long-eared	Hodor mic Littlefinger	0	18
Brown long-eared	SMU00890	0	15
Brown long-eared	SMU06931	0	4
Brown long-eared	SMU07438	0	5
Brown long-eared	SMU07458	1	67
Brown long-eared	SMU07482	0	16
Brown long-eared	Tormund mic Drogo	0	21
Myotis	Brienne_mic_Ygritte	1	11
Myotis	Daenerys mic Gendrie	1	4
Myotis	Hodor mic Littlefinger	0	10
Myotis	SMU00890	41	207
Myotis	SMU06931	0	2
Myotis	SMU07438	1	1
Myotis	SMU07458	12	40
Myotis	SMU07482	3	11
Myotis	Tormund mic Drogo	0	9

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jun	Brienne_mic_Ygritte	1
Jun	Daenerys mic Gendrie	2
Jun	Hodor mic Littlefinger	1
Jun	SMU00830	4
Jun	SMU00890	3
Jun	SMU06931	2
Jun	SMU07438	1
Jun	SMU07458	5
Jun	SMU07482	2
Jun	Tormund mic Drogo	2
Jul	Brienne_mic_Ygritte	10
Jul	Daenerys mic Gendrie	10
Jul	Hodor mic Littlefinger	16
Jul	SMU00830	6
Jul	SMU00890	18
Jul	SMU06931	15
Jul	SMU07438	9
Jul	SMU07458	21
Jul	SMU07482	13
Jul	Tormund mic Drogo	16

Nightly Bat Passes 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	Jun	Jul
Pipistrellus	Brienne_mic_Ygritte	0.3	0.3
Pipistrellus	Daenerys mic Gendrie	NA	0.7
Pipistrellus	Hodor mic Littlefinger	NA	0.3
Pipistrellus	SMU00830	NA	0.1
Pipistrellus	SMU00890	0.1	0.5
Pipistrellus	SMU06931	NA	0.1
Pipistrellus	SMU07438	NA	0.3
Pipistrellus	SMU07458	0.3	0.3
Pipistrellus	SMU07482	NA	0.3
Pipistrellus	Tormund mic Drogo	NA	0.8
Common pipistrelle	Brienne_mic_Ygritte	5.0	2.9
Common pipistrelle	Daenerys mic Gendrie	4.5	1.8
Common pipistrelle	Hodor mic Littlefinger	0.6	1.3
Common pipistrelle	SMU00830	0.6	0.6
Common pipistrelle	SMU00890	0.5	1.8
Common pipistrelle	SMU06931	0.1	0.4
Common pipistrelle	SMU07438	NA	0.9
Common pipistrelle	SMU07458	3.1	6.8
Common pipistrelle	SMU07482	0.5	3.7
Common pipistrelle	Tormund mic Drogo	0.2	0.4
Soprano pipistrelle	Brienne_mic_Ygritte	0.2	0.6
Soprano pipistrelle	Daenerys mic Gendrie	1.4	1.0
Soprano pipistrelle	Hodor mic Littlefinger	NA	0.3
Soprano pipistrelle	SMU00830	NA	0.4
Soprano pipistrelle	SMU00890	NA	0.6
Soprano pipistrelle	SMU06931	NA	0.4
Soprano pipistrelle	SMU07438	NA	0.3
Soprano pipistrelle	SMU07458	0.2	0.6
Soprano pipistrelle	SMU07482	0.1	0.9
Soprano pipistrelle	Tormund mic Drogo	0.1	0.4
Nathusius'	SMU00890	NA	0.4
Nathusius'	SMU07458	0.1	0.1
Nyctalus	Daenerys mic Gendrie	NA	0.1
Nyctalus	Hodor mic Littlefinger	NA	0.1
Nyctalus	SMU00890	NA	0.1
Nyctalus	SMU07458	NA	0.1

Species	Detector ID	Jun	Jul
Brown long-eared	Brienne_mic_Ygritte	NA	0.1
Brown long-eared	Daenerys mic Gendrie	NA	0.1
Brown long-eared	Hodor mic Littlefinger	NA	0.3
Brown long-eared	SMU00890	NA	0.1
Brown long-eared	SMU06931	NA	0.1
Brown long-eared	SMU07438	NA	0.1
Brown long-eared	SMU07458	0.2	0.9
Brown long-eared	SMU07482	NA	0.3
Brown long-eared	Tormund mic Drogo	NA	0.4
Myotis	Brienne_mic_Ygritte	0.2	0.1
Myotis	Daenerys mic Gendrie	0.2	0.1
Myotis	Hodor mic Littlefinger	NA	0.1
Myotis	SMU00890	0.8	0.7
Myotis	SMU06931	NA	0.1
Myotis	SMU07438	0.2	0.1
Myotis	SMU07458	0.3	0.3
Myotis	SMU07482	0.2	0.3
Myotis	Tormund mic Drogo	NA	0.3

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.

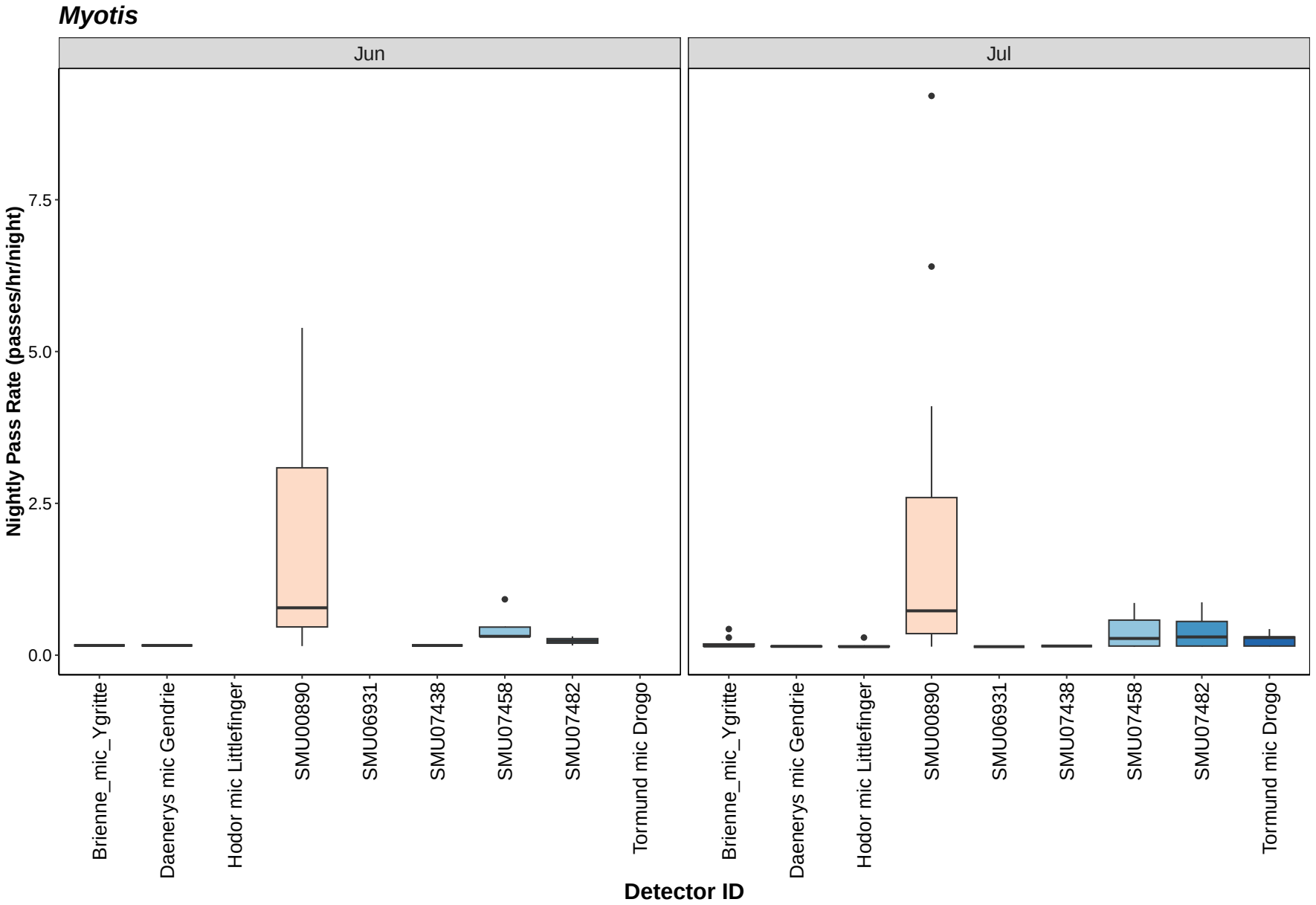
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

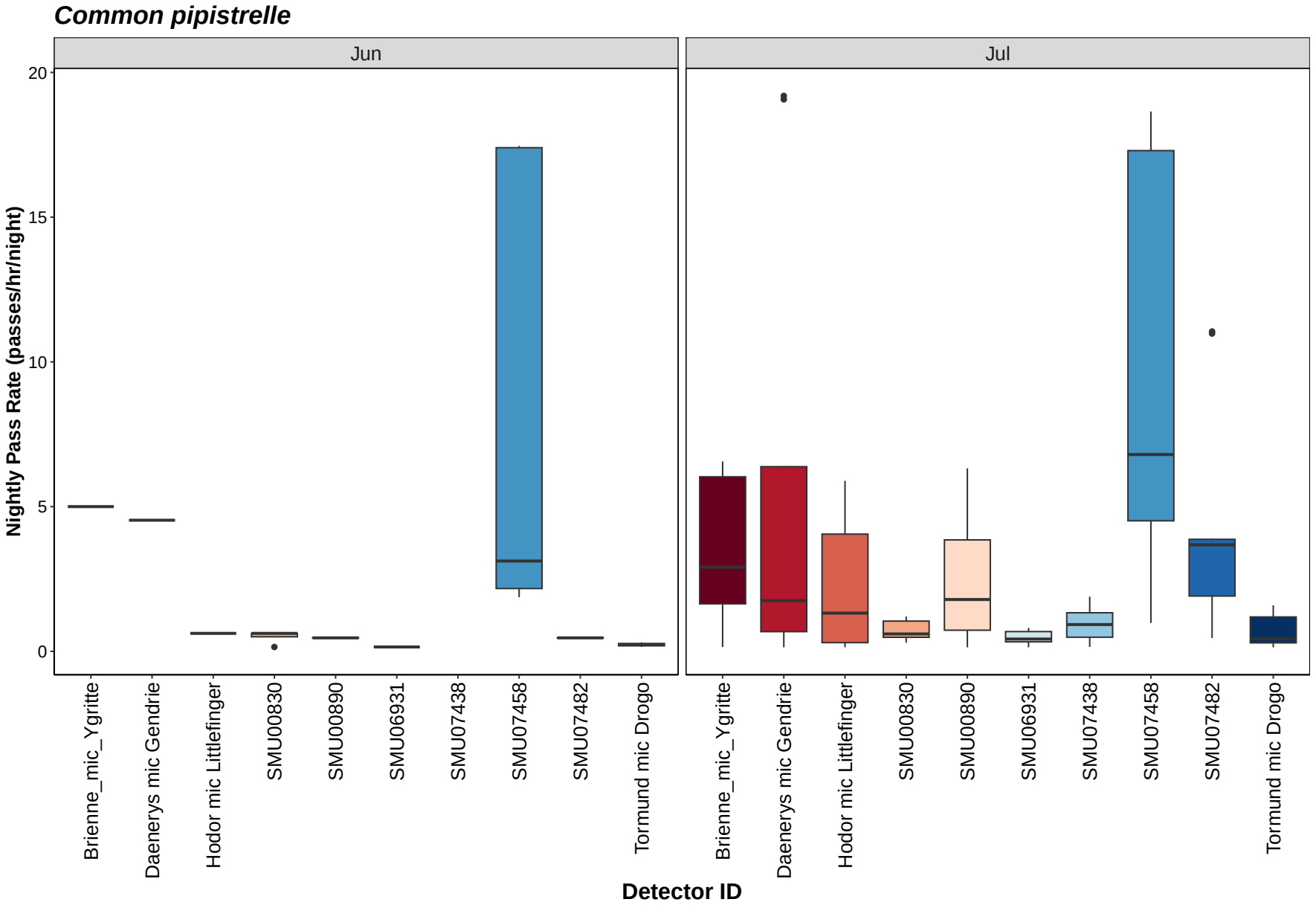
Species	Detector ID	Jun	Jul
Pipistrellus	Brienne_mic_Ygritte	0.3	0.3
Pipistrellus	Daenerys mic Gendrie	NA	0.7
Pipistrellus	Hodor mic Littlefinger	NA	0.3
Pipistrellus	SMU00830	NA	0.1
Pipistrellus	SMU00890	0.1	0.5
Pipistrellus	SMU06931	NA	0.1
Pipistrellus	SMU07438	NA	0.3
Pipistrellus	SMU07458	0.3	0.3
Pipistrellus	SMU07482	NA	0.7
Pipistrellus	Tormund mic Drogo	NA	0.6
Common pipistrelle	Brienne_mic_Ygritte	5.0	3.6
Common pipistrelle	Daenerys mic Gendrie	4.5	5.6
Common pipistrelle	Hodor mic Littlefinger	0.6	2.1
Common pipistrelle	SMU00830	0.5	0.7
Common pipistrelle	SMU00890	0.5	2.5
Common pipistrelle	SMU06931	0.1	0.5
Common pipistrelle	SMU07438	NA	1.0
Common pipistrelle	SMU07458	8.4	9.4
Common pipistrelle	SMU07482	0.5	3.8
Common pipistrelle	Tormund mic Drogo	0.2	0.7
Soprano pipistrelle	Brienne_mic_Ygritte	0.2	0.9
Soprano pipistrelle	Daenerys mic Gendrie	1.4	0.8
Soprano pipistrelle	Hodor mic Littlefinger	NA	0.5
Soprano pipistrelle	SMU00830	NA	0.4
Soprano pipistrelle	SMU00890	NA	0.4
Soprano pipistrelle	SMU06931	NA	0.8
Soprano pipistrelle	SMU07438	NA	0.3
Soprano pipistrelle	SMU07458	0.2	0.8
Soprano pipistrelle	SMU07482	0.1	0.8
Soprano pipistrelle	Tormund mic Drogo	0.1	0.4

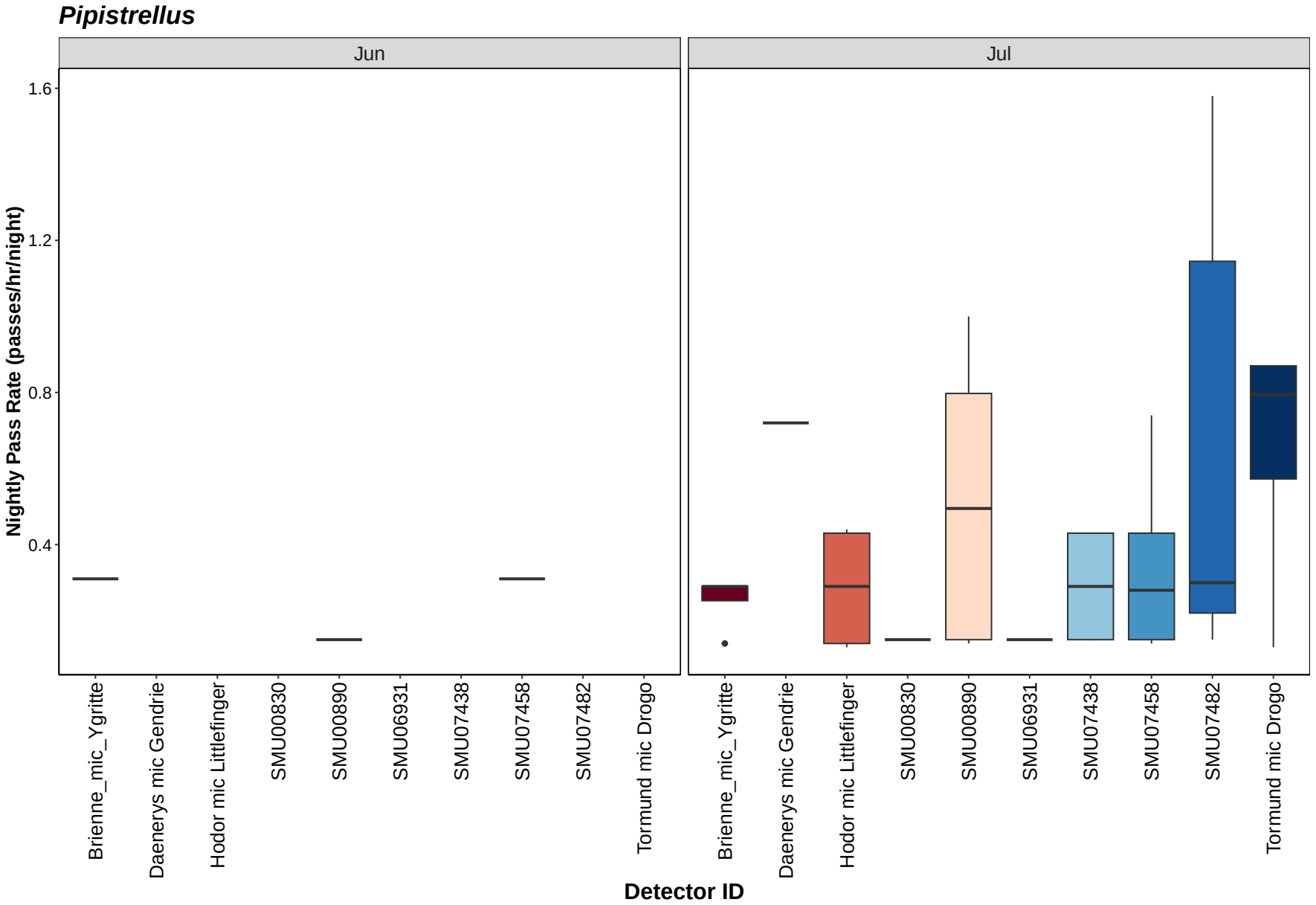
Species	Detector ID	Jun	Jul
Nathusius'	SMU00890	NA	0.4
Nathusius'	SMU07458	0.1	0.2
Nyctalus	Daenerys mic Gendrie	NA	0.1
Nyctalus	Hodor mic Littlefinger	NA	0.1
Nyctalus	SMU00890	NA	0.1
Nyctalus	SMU07458	NA	0.1
Brown long-eared	Brienne_mic_Ygritte	NA	0.2
Brown long-eared	Daenerys mic Gendrie	NA	0.1
Brown long-eared	Hodor mic Littlefinger	NA	0.3
Brown long-eared	SMU00890	NA	0.2
Brown long-eared	SMU06931	NA	0.1
Brown long-eared	SMU07438	NA	0.2
Brown long-eared	SMU07458	0.2	0.7
Brown long-eared	SMU07482	NA	0.4
Brown long-eared	Tormund mic Drogo	NA	0.4
Myotis	Brienne_mic_Ygritte	0.2	0.2
Myotis	Daenerys mic Gendrie	0.2	0.1
Myotis	Hodor mic Littlefinger	NA	0.2
Myotis	SMU00890	2.1	2.0
Myotis	SMU06931	NA	0.1
Myotis	SMU07438	0.2	0.1
Myotis	SMU07458	0.5	0.4
Myotis	SMU07482	0.2	0.4
Myotis	Tormund mic Drogo	NA	0.3

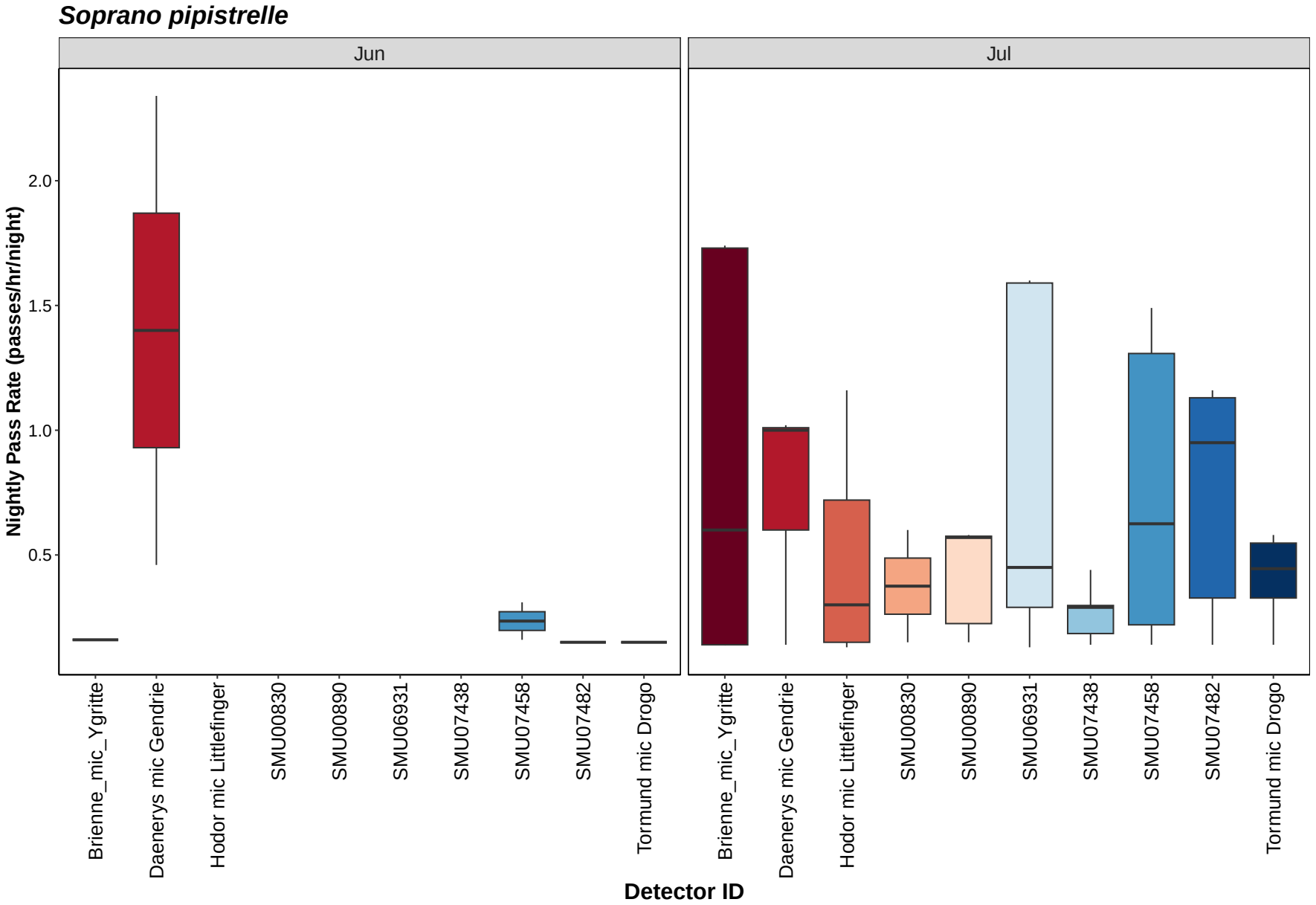
Per Detector

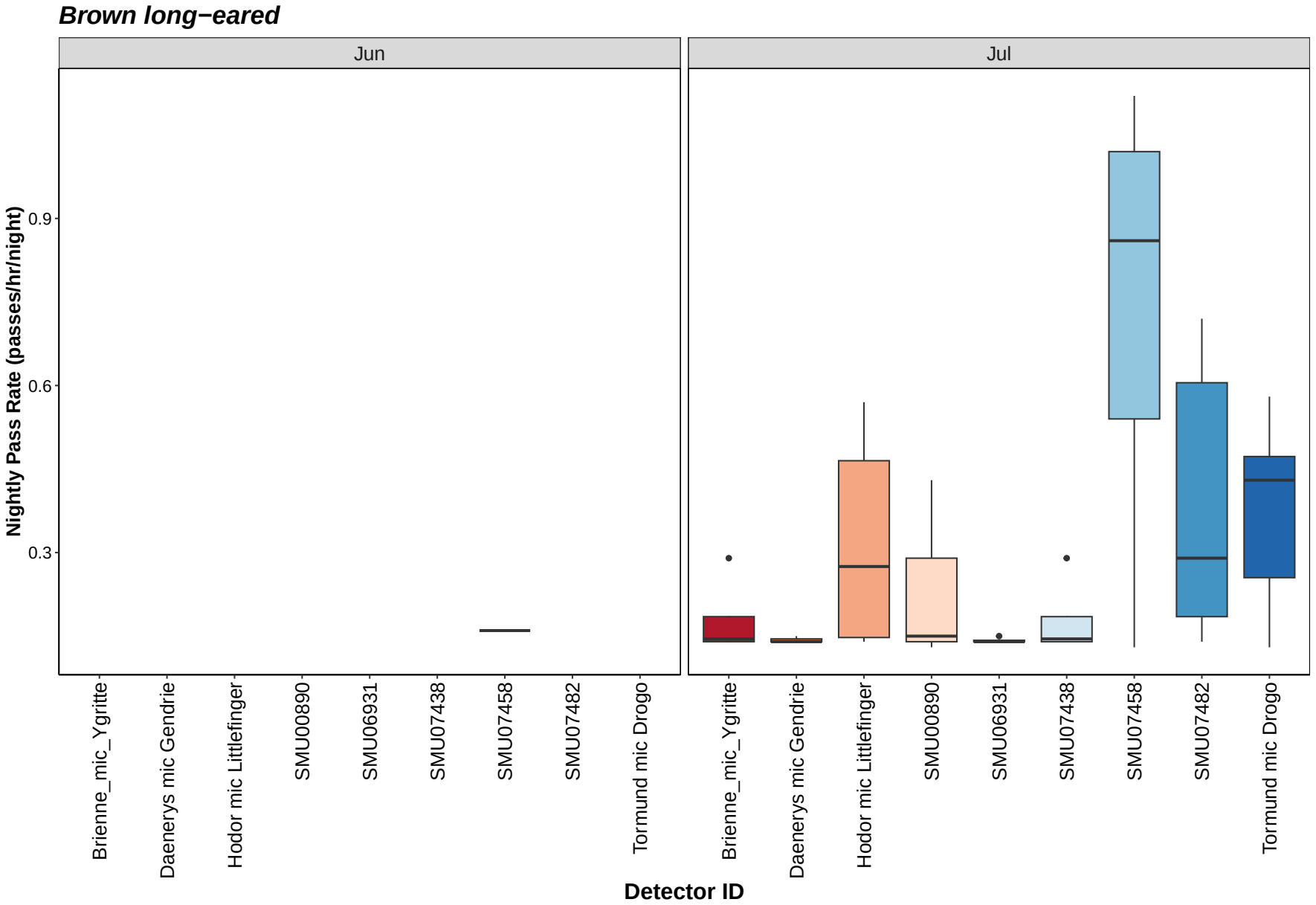
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.

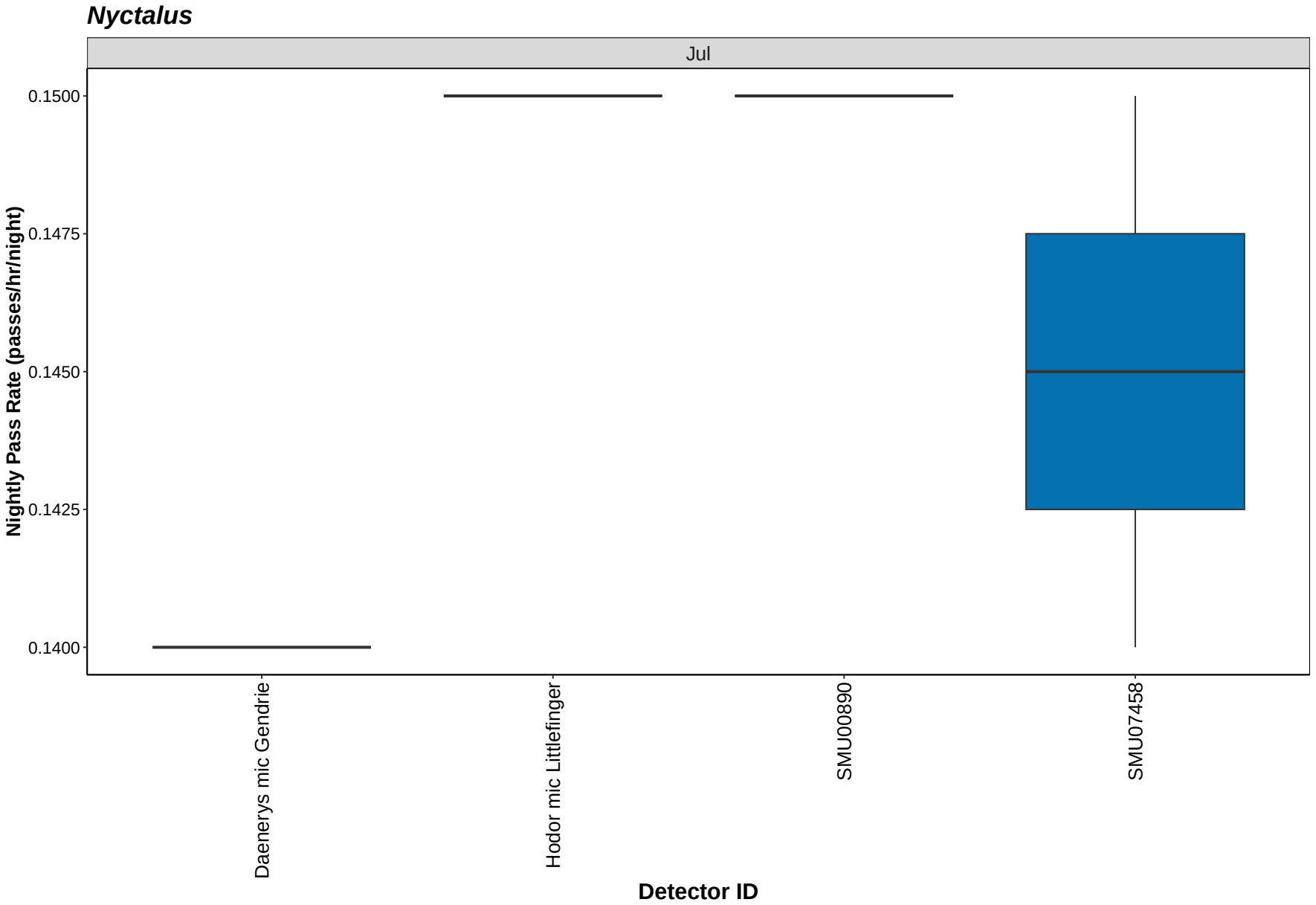

Myotis
Jun
Jul
Nightly Pass Rate (passes/hr/night)
7.5
5.0
2.5
0.0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID

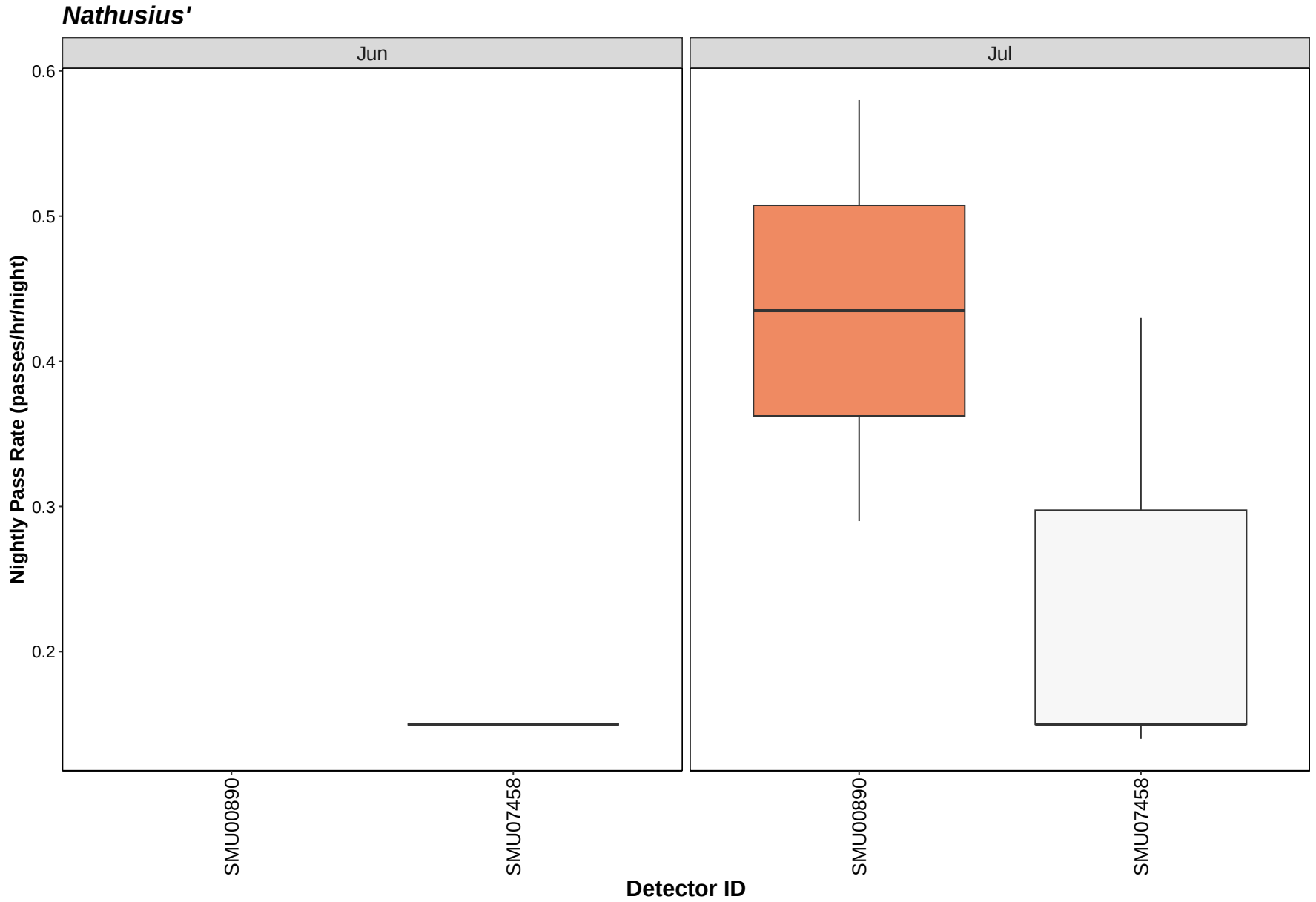

Common pipistrelle
Jun
Jul
Nightly Pass Rate (passes/hr/night)
20
15
10
5
0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Pipistrellus
Jun
Jul
Nightly Pass Rate (passes/hr/night)
1.6
1.2
0.8
0.4
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Soprano pipistrelle
Jun
Jul
Nightly Pass Rate (passes/hr/night)
2.0
1.5
1.0
0.5
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Brown long−eared
Jun
Jul
Nightly Pass Rate (passes/hr/night)
0.9
0.6
0.3
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Nyctalus
Jul
0.1500
0.1475
0.1450
0.1425
0.1400
Nightly Pass Rate (passes/hr/night)
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00890
SMU07458
Detector ID


Nathusius'
Jun
Jul
0.6
0.5
0.4
0.3
0.2
Nightly Pass Rate (passes/hr/night)
SMU00890
SMU07458
SMU00890
SMU07458
Detector ID

Bat Activity per Detector Location

Figure 13. Detector ID reference:

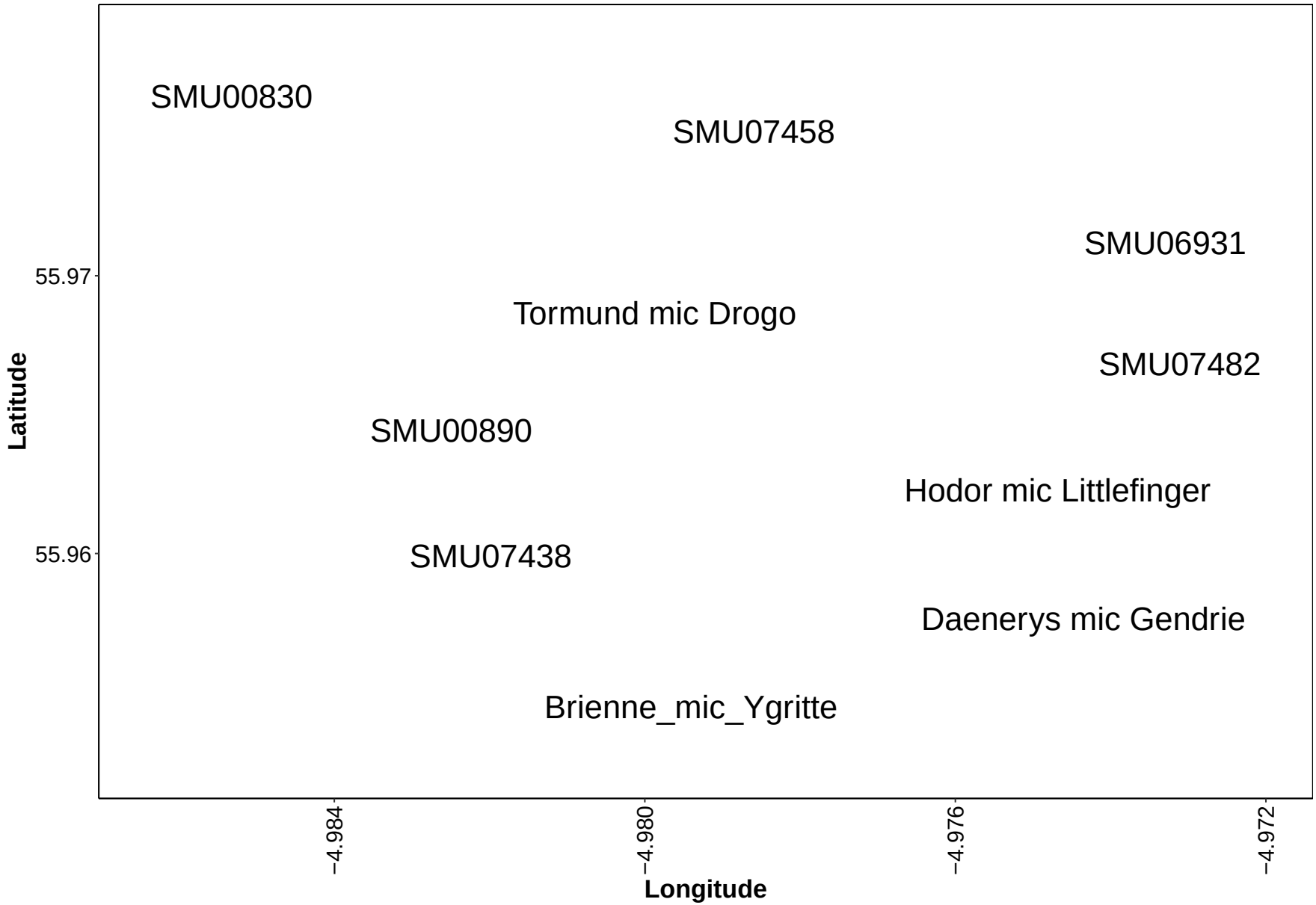
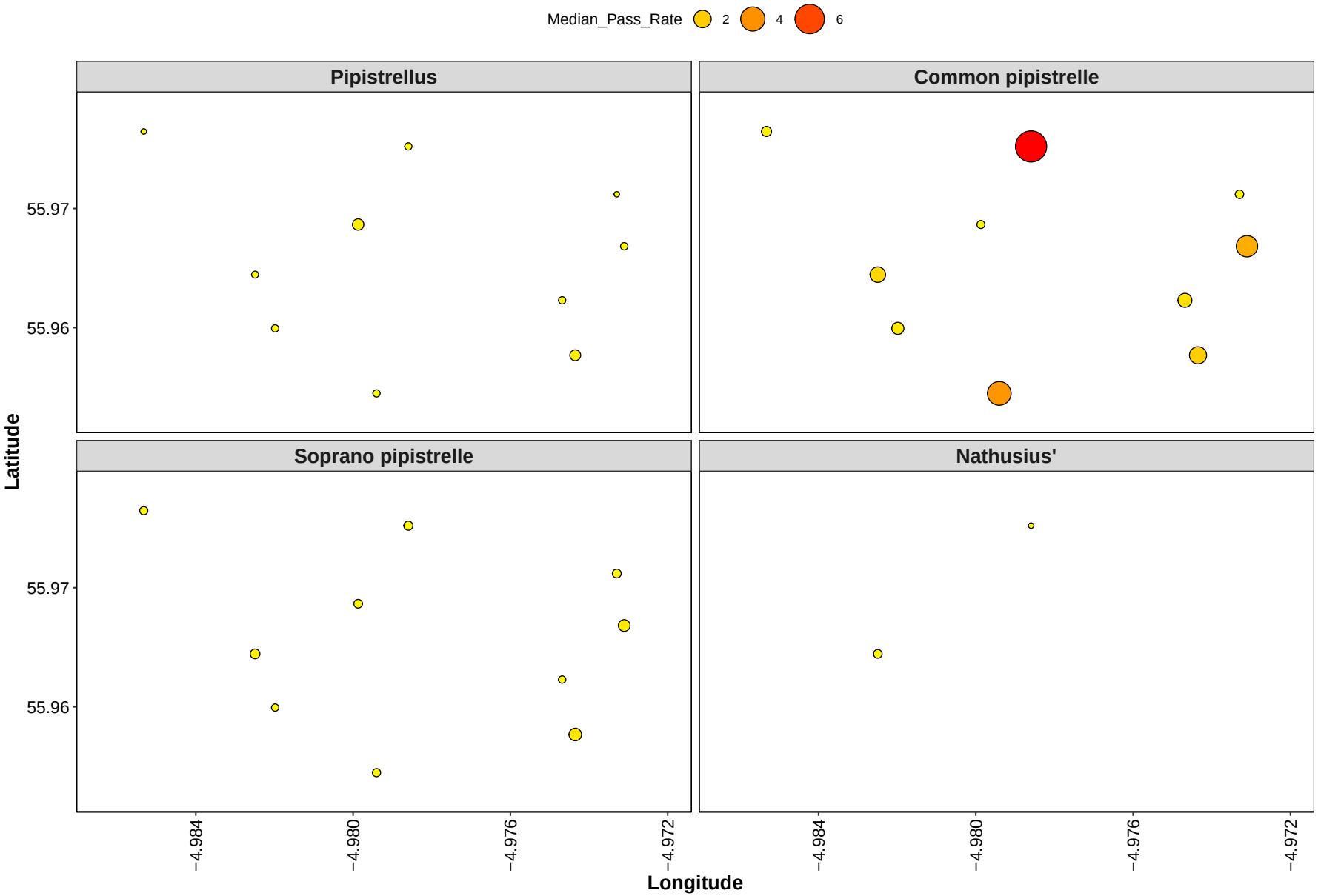

SMU00830
SMU07458
SMU06931
Tormund mic Drogo
SMU07482
SMU00890
Hodor mic Littlefinger
SMU07438
Daenerys mic Gendrie
Brienne_mic_Ygritte
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude

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
2
4
6
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

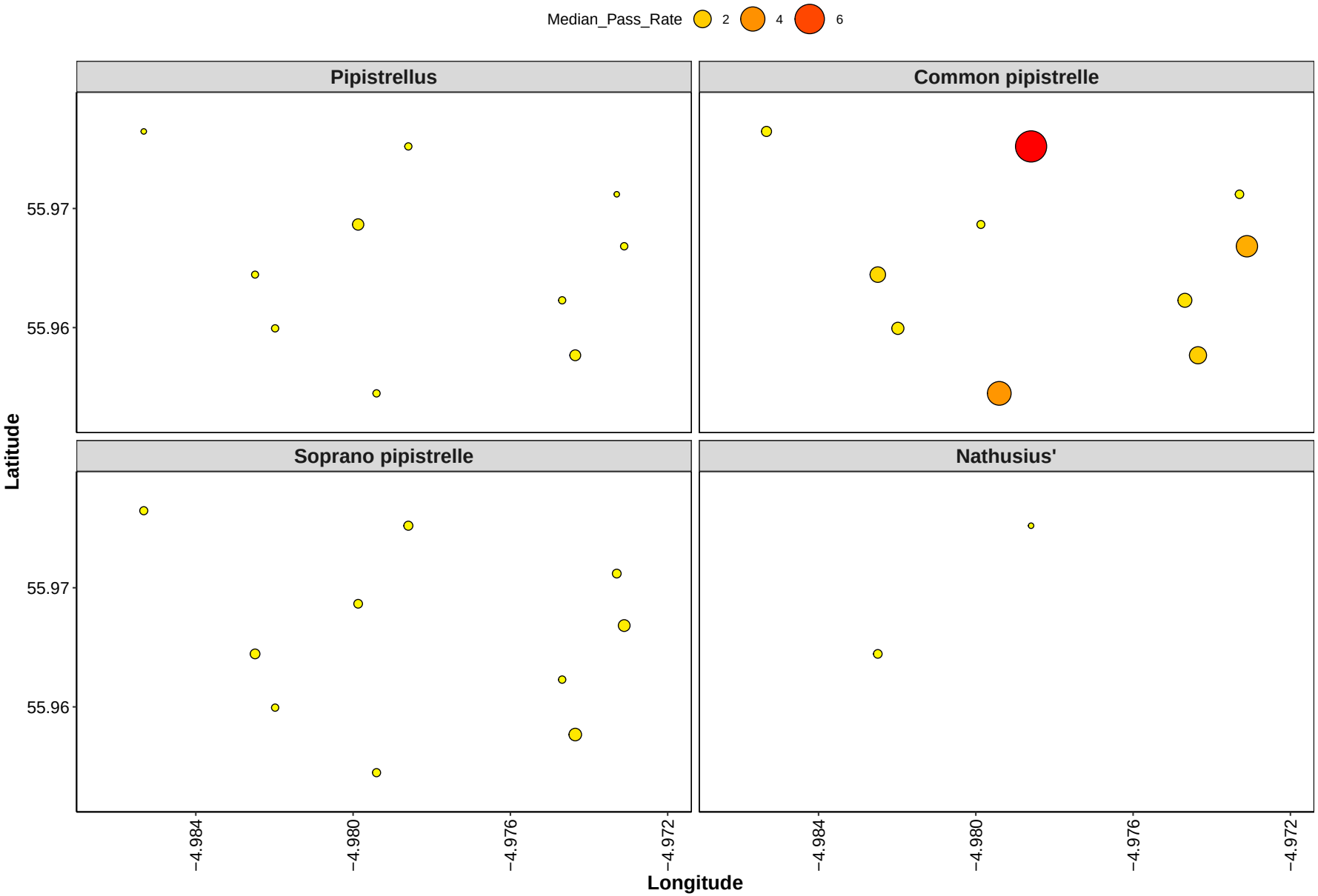
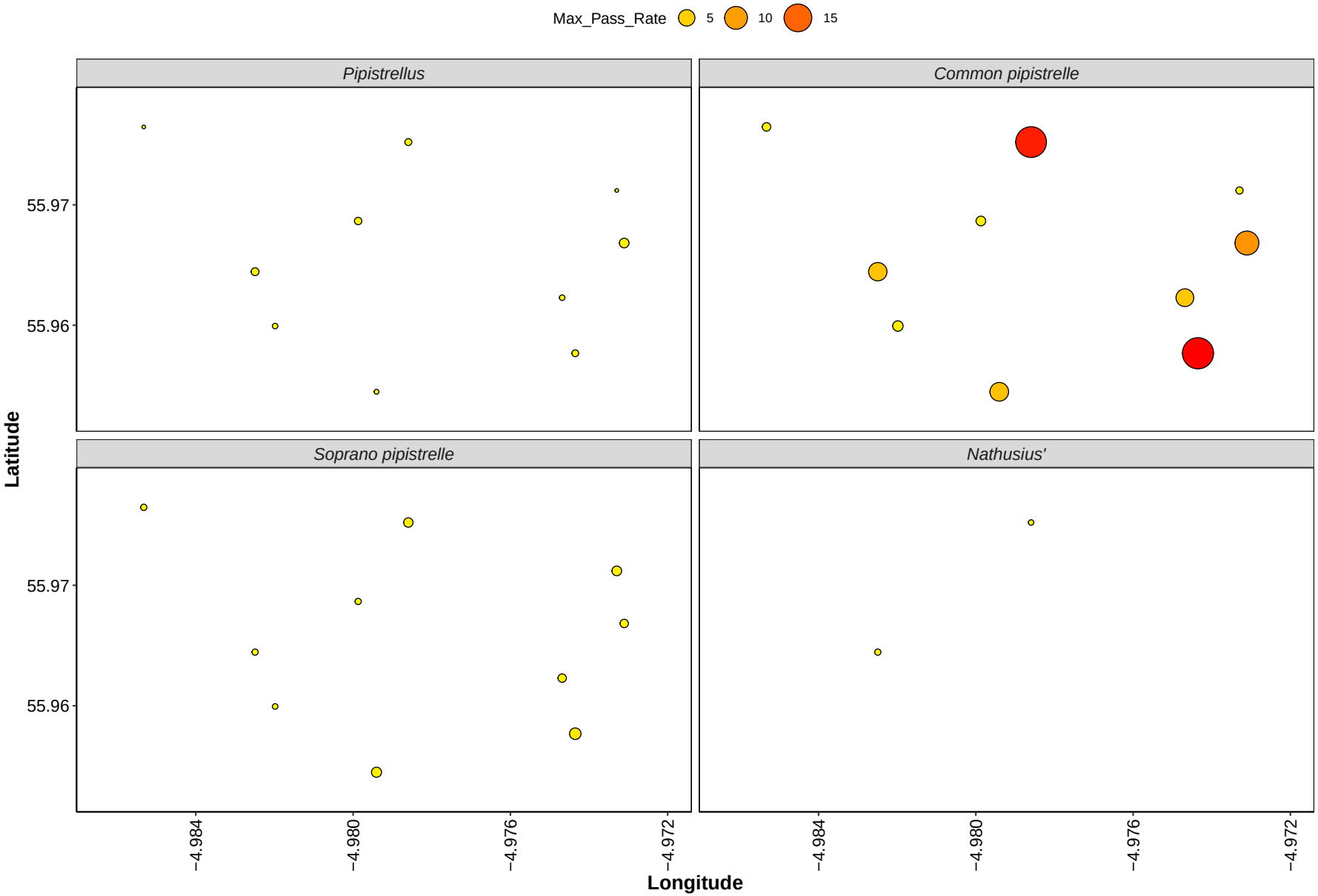
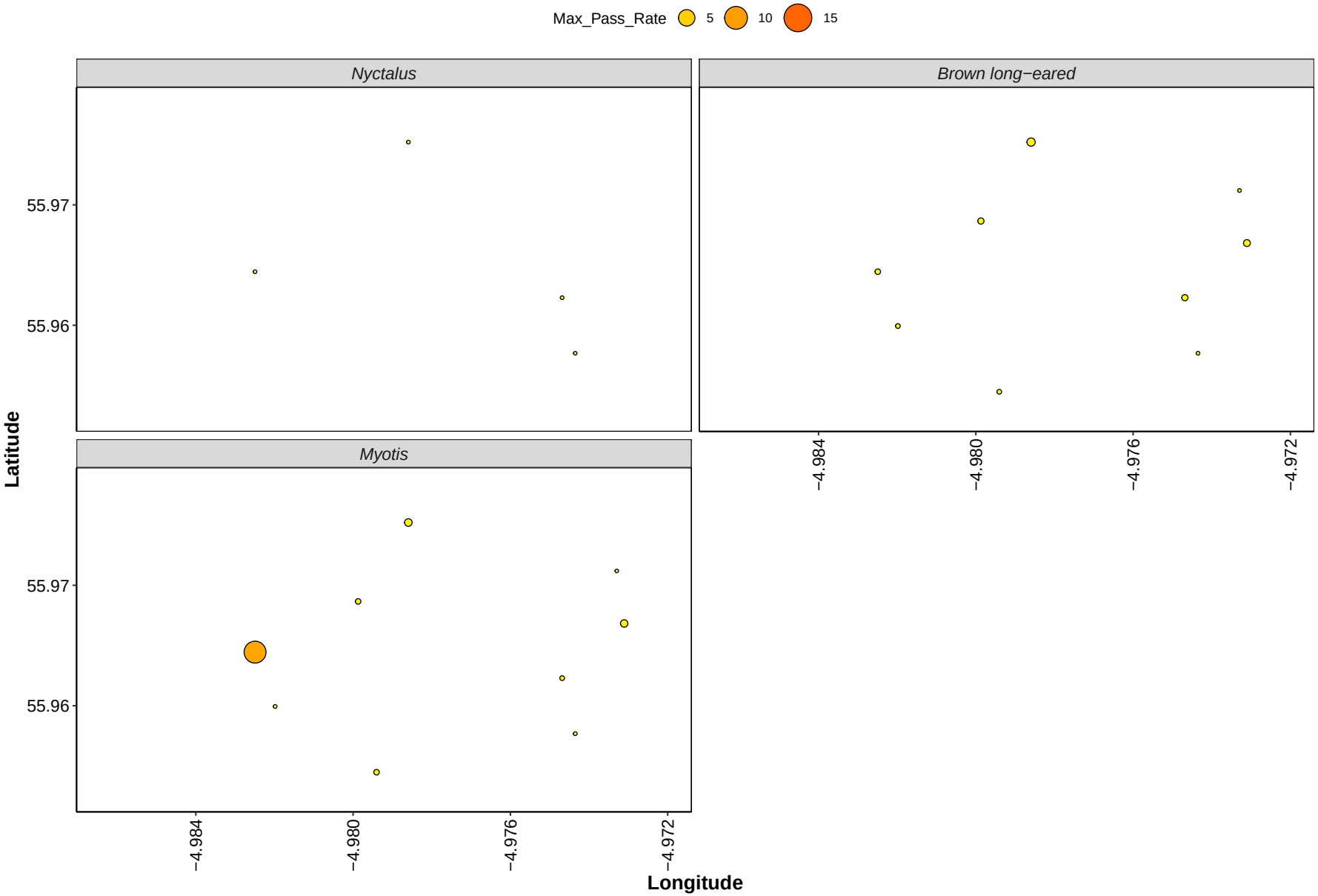

Median_Pass_Rate
2
4
6
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

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
5
10
15
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude


Max_Pass_Rate
5
10
15
Nyctalus
Brown long−eared
Myotis
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

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

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
Brown long-eared	Brienne_mic_Ygritte	0.0
Brown long-eared	Daenerys mic Gendrie	0.0
Brown long-eared	Hodor mic Littlefinger	0.0
Brown long-eared	SMU00830	0.0
Brown long-eared	SMU00890	0.0
Brown long-eared	SMU06931	0.0
Brown long-eared	SMU07438	0.0
Brown long-eared	SMU07458	0.1
Brown long-eared	SMU07482	0.0
Brown long-eared	Tormund mic Drogo	0.0
Common pipistrelle	Brienne_mic_Ygritte	2.9
Common pipistrelle	Daenerys mic Gendrie	1.2
Common pipistrelle	Hodor mic Littlefinger	0.7
Common pipistrelle	SMU00830	0.6
Common pipistrelle	SMU00890	0.8
Common pipistrelle	SMU06931	0.4
Common pipistrelle	SMU07438	0.7
Common pipistrelle	SMU07458	6.8
Common pipistrelle	SMU07482	3.1
Common pipistrelle	Tormund mic Drogo	0.4
Myotis	Brienne_mic_Ygritte	0.1
Myotis	Daenerys mic Gendrie	0.0
Myotis	Hodor mic Littlefinger	0.1
Myotis	SMU00830	0.0
Myotis	SMU00890	0.7
Myotis	SMU06931	0.0
Myotis	SMU07438	0.0
Myotis	SMU07458	0.3
Myotis	SMU07482	0.0
Myotis	Tormund mic Drogo	0.0
Nathusius'	Brienne_mic_Ygritte	0.0
Nathusius'	Daenerys mic Gendrie	0.0
Nathusius'	Hodor mic Littlefinger	0.0
Nathusius'	SMU00830	0.0
Nathusius'	SMU00890	0.0
Nathusius'	SMU06931	0.0

Species	Detector ID	Median Pass Rate
Nathusius'	SMU07438	0.0
Nathusius'	SMU07458	0.0
Nathusius'	SMU07482	0.0
Nathusius'	Tormund mic Drogo	0.0
Nyctalus	Brienne_mic_Ygritte	0.0
Nyctalus	Daenerys mic Gendrie	0.0
Nyctalus	Hodor mic Littlefinger	0.0
Nyctalus	SMU00830	0.0
Nyctalus	SMU00890	0.0
Nyctalus	SMU06931	0.0
Nyctalus	SMU07438	0.0
Nyctalus	SMU07458	0.0
Nyctalus	SMU07482	0.0
Nyctalus	Tormund mic Drogo	0.0
Pipistrellus	Brienne_mic_Ygritte	0.0
Pipistrellus	Daenerys mic Gendrie	0.0
Pipistrellus	Hodor mic Littlefinger	0.0
Pipistrellus	SMU00830	0.0
Pipistrellus	SMU00890	0.0
Pipistrellus	SMU06931	0.0
Pipistrellus	SMU07438	0.0
Pipistrellus	SMU07458	0.0
Pipistrellus	SMU07482	0.0
Pipistrellus	Tormund mic Drogo	0.0
Soprano pipistrelle	Brienne_mic_Ygritte	0.1
Soprano pipistrelle	Daenerys mic Gendrie	0.3
Soprano pipistrelle	Hodor mic Littlefinger	0.1
Soprano pipistrelle	SMU00830	0.0
Soprano pipistrelle	SMU00890	0.0
Soprano pipistrelle	SMU06931	0.0
Soprano pipistrelle	SMU07438	0.1
Soprano pipistrelle	SMU07458	0.0
Soprano pipistrelle	SMU07482	0.0
Soprano pipistrelle	Tormund mic Drogo	0.0

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.

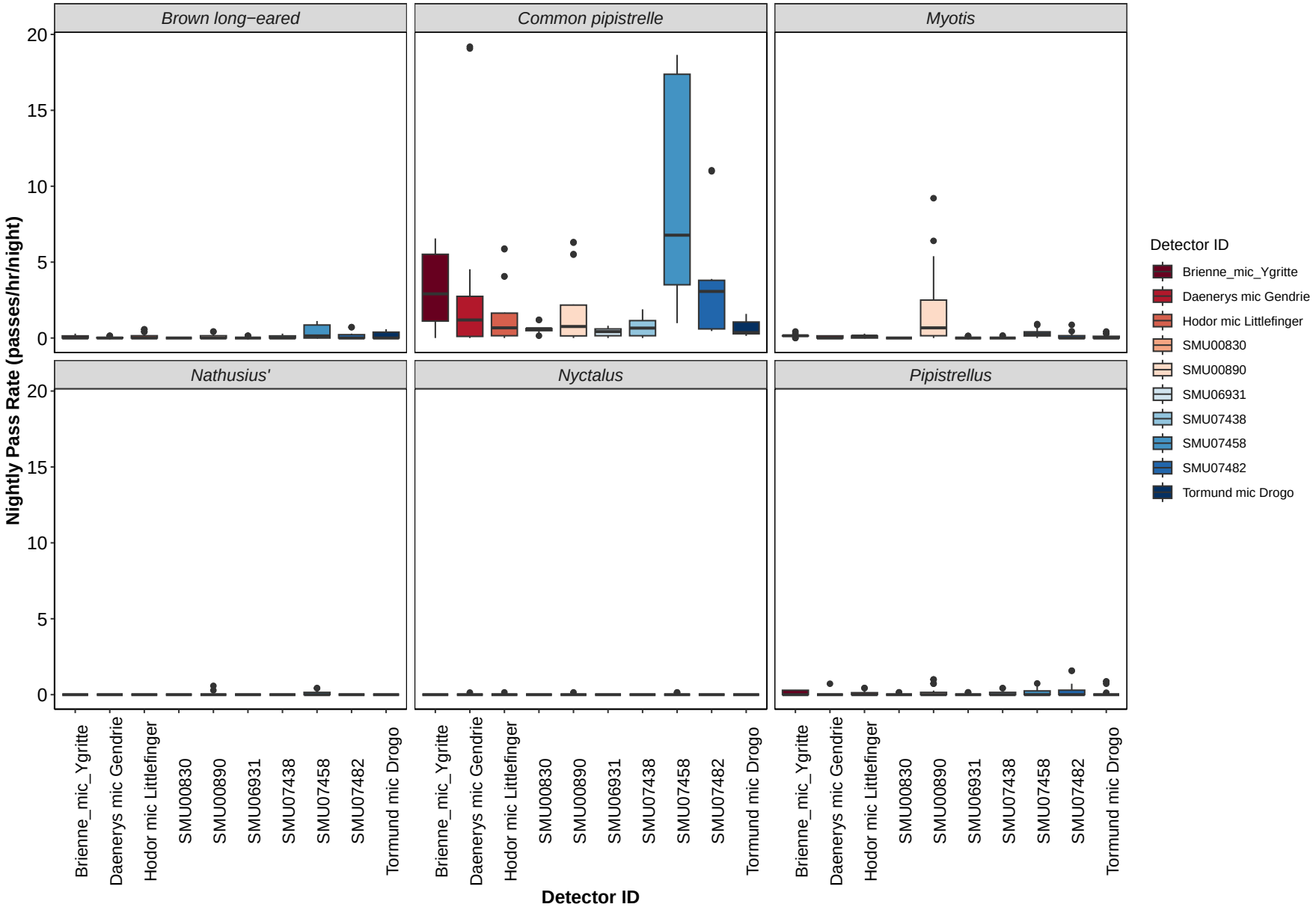
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

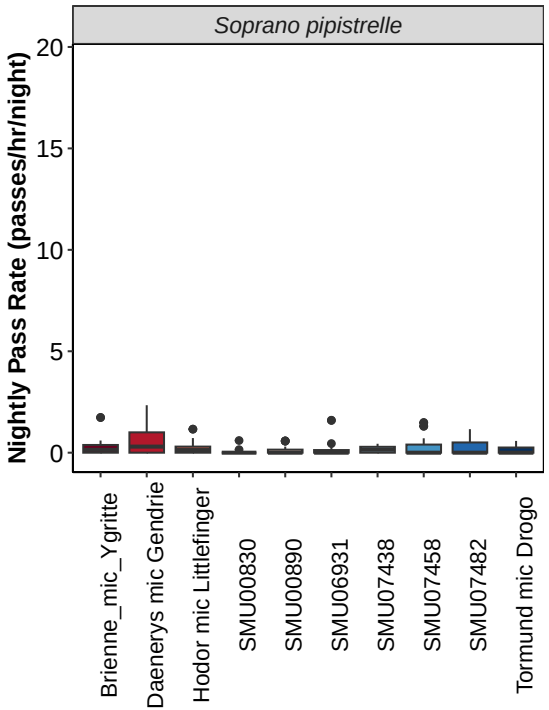
Species	Detector ID	Mean Pass Rate
Brown long-eared	Brienne_mic_Ygritte	0.1
Brown long-eared	Daenerys mic Gendrie	0.0
Brown long-eared	Hodor mic Littlefinger	0.1
Brown long-eared	SMU00830	0.0
Brown long-eared	SMU00890	0.1
Brown long-eared	SMU06931	0.0
Brown long-eared	SMU07438	0.1
Brown long-eared	SMU07458	0.4
Brown long-eared	SMU07482	0.2
Brown long-eared	Tormund mic Drogo	0.2
Common pipistrelle	Brienne_mic_Ygritte	3.4
Common pipistrelle	Daenerys mic Gendrie	4.1
Common pipistrelle	Hodor mic Littlefinger	1.6
Common pipistrelle	SMU00830	0.6
Common pipistrelle	SMU00890	1.8
Common pipistrelle	SMU06931	0.4
Common pipistrelle	SMU07438	0.8
Common pipistrelle	SMU07458	9.2
Common pipistrelle	SMU07482	3.4
Common pipistrelle	Tormund mic Drogo	0.6
Myotis	Brienne_mic_Ygritte	0.2
Myotis	Daenerys mic Gendrie	0.1
Myotis	Hodor mic Littlefinger	0.1
Myotis	SMU00830	0.0
Myotis	SMU00890	1.8
Myotis	SMU06931	0.0
Myotis	SMU07438	0.0
Myotis	SMU07458	0.3
Myotis	SMU07482	0.1
Myotis	Tormund mic Drogo	0.1
Nathusius'	Brienne_mic_Ygritte	0.0
Nathusius'	Daenerys mic Gendrie	0.0
Nathusius'	Hodor mic Littlefinger	0.0
Nathusius'	SMU00830	0.0
Nathusius'	SMU00890	0.0
Nathusius'	SMU06931	0.0

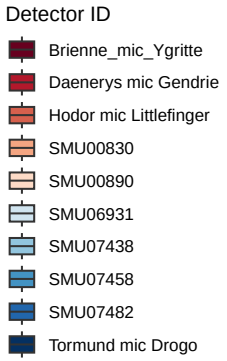
Species	Detector ID	Mean Pass Rate
Nathusius'	SMU07438	0.0
Nathusius'	SMU07458	0.1
Nathusius'	SMU07482	0.0
Nathusius'	Tormund mic Drogo	0.0
Nyctalus	Brienne_mic_Ygritte	0.0
Nyctalus	Daenerys mic Gendrie	0.0
Nyctalus	Hodor mic Littlefinger	0.0
Nyctalus	SMU00830	0.0
Nyctalus	SMU00890	0.0
Nyctalus	SMU06931	0.0
Nyctalus	SMU07438	0.0
Nyctalus	SMU07458	0.0
Nyctalus	SMU07482	0.0
Nyctalus	Tormund mic Drogo	0.0
Pipistrellus	Brienne_mic_Ygritte	0.1
Pipistrellus	Daenerys mic Gendrie	0.1
Pipistrellus	Hodor mic Littlefinger	0.1
Pipistrellus	SMU00830	0.0
Pipistrellus	SMU00890	0.2
Pipistrellus	SMU06931	0.0
Pipistrellus	SMU07438	0.1
Pipistrellus	SMU07458	0.1
Pipistrellus	SMU07482	0.3
Pipistrellus	Tormund mic Drogo	0.1
Soprano pipistrelle	Brienne_mic_Ygritte	0.4
Soprano pipistrelle	Daenerys mic Gendrie	0.5
Soprano pipistrelle	Hodor mic Littlefinger	0.3
Soprano pipistrelle	SMU00830	0.1
Soprano pipistrelle	SMU00890	0.1
Soprano pipistrelle	SMU06931	0.2
Soprano pipistrelle	SMU07438	0.2
Soprano pipistrelle	SMU07458	0.3
Soprano pipistrelle	SMU07482	0.3
Soprano pipistrelle	Tormund mic Drogo	0.1

Per Detector

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.


Brown long−eared
Common pipistrelle
Myotis
Nathusius'
Nyctalus
Pipistrellus
Nightly Pass Rate (passes/hr/night)
0
5
10
15
20
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID
Detector ID


Soprano pipistrelle
Nightly Pass Rate (passes/hr/night)
20
15
10
5
0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Detector ID
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jun	Brienne_mic_Ygritte	1
Jun	Daenerys mic Gendrie	2
Jun	Hodor mic Littlefinger	1
Jun	SMU00830	4
Jun	SMU00890	3
Jun	SMU06931	2
Jun	SMU07438	1
Jun	SMU07458	5
Jun	SMU07482	2
Jun	Tormund mic Drogo	2
Jul	Brienne_mic_Ygritte	10
Jul	Daenerys mic Gendrie	10
Jul	Hodor mic Littlefinger	16
Jul	SMU00830	6
Jul	SMU00890	18
Jul	SMU06931	15
Jul	SMU07438	9
Jul	SMU07458	21
Jul	SMU07482	13
Jul	Tormund mic Drogo	16

Nighlty 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	Jul	Jun
Brown long-eared	Brienne_mic_Ygritte	0.0	0.0
Brown long-eared	Daenerys mic Gendrie	0.0	0.0
Brown long-eared	Hodor mic Littlefinger	0.1	0.0
Brown long-eared	SMU00830	0.0	0.0
Brown long-eared	SMU00890	0.1	0.0
Brown long-eared	SMU06931	0.0	0.0
Brown long-eared	SMU07438	0.0	0.0
Brown long-eared	SMU07458	0.1	0.0
Brown long-eared	SMU07482	0.0	0.0
Brown long-eared	Tormund mic Drogo	0.1	0.0
Common pipistrelle	Brienne_mic_Ygritte	2.9	5.0
Common pipistrelle	Daenerys mic Gendrie	1.2	2.3
Common pipistrelle	Hodor mic Littlefinger	0.9	0.6
Common pipistrelle	SMU00830	0.6	0.6
Common pipistrelle	SMU00890	1.5	0.5
Common pipistrelle	SMU06931	0.4	0.1
Common pipistrelle	SMU07438	0.7	0.0
Common pipistrelle	SMU07458	6.8	3.1
Common pipistrelle	SMU07482	3.7	0.5
Common pipistrelle	Tormund mic Drogo	0.4	0.2
Myotis	Brienne_mic_Ygritte	0.1	0.2
Myotis	Daenerys mic Gendrie	0.0	0.1
Myotis	Hodor mic Littlefinger	0.1	0.0
Myotis	SMU00830	0.0	0.0
Myotis	SMU00890	0.6	0.8
Myotis	SMU06931	0.0	0.0
Myotis	SMU07438	0.0	0.2
Myotis	SMU07458	0.1	0.3
Myotis	SMU07482	0.0	0.2
Myotis	Tormund mic Drogo	0.0	0.0
Nathusius'	Brienne_mic_Ygritte	0.0	0.0
Nathusius'	Daenerys mic Gendrie	0.0	0.0
Nathusius'	Hodor mic Littlefinger	0.0	0.0
Nathusius'	SMU00830	0.0	0.0
Nathusius'	SMU00890	0.0	0.0
Nathusius'	SMU06931	0.0	0.0

Species	Detector ID	Jul	Jun
Nathusius'	SMU07438	0.0	0.0
Nathusius'	SMU07458	0.0	0.0
Nathusius'	SMU07482	0.0	0.0
Nathusius'	Tormund mic Drogo	0.0	0.0
Nyctalus	Brienne_mic_Ygritte	0.0	0.0
Nyctalus	Daenerys mic Gendrie	0.0	0.0
Nyctalus	Hodor mic Littlefinger	0.0	0.0
Nyctalus	SMU00830	0.0	0.0
Nyctalus	SMU00890	0.0	0.0
Nyctalus	SMU06931	0.0	0.0
Nyctalus	SMU07438	0.0	0.0
Nyctalus	SMU07458	0.0	0.0
Nyctalus	SMU07482	0.0	0.0
Nyctalus	Tormund mic Drogo	0.0	0.0
Pipistrellus	Brienne_mic_Ygritte	0.0	0.3
Pipistrellus	Daenerys mic Gendrie	0.0	0.0
Pipistrellus	Hodor mic Littlefinger	0.0	0.0
Pipistrellus	SMU00830	0.0	0.0
Pipistrellus	SMU00890	0.0	0.0
Pipistrellus	SMU06931	0.0	0.0
Pipistrellus	SMU07438	0.0	0.0
Pipistrellus	SMU07458	0.0	0.0
Pipistrellus	SMU07482	0.1	0.0
Pipistrellus	Tormund mic Drogo	0.0	0.0
Soprano pipistrelle	Brienne_mic_Ygritte	0.1	0.2
Soprano pipistrelle	Daenerys mic Gendrie	0.1	1.4
Soprano pipistrelle	Hodor mic Littlefinger	0.1	0.0
Soprano pipistrelle	SMU00830	0.0	0.0
Soprano pipistrelle	SMU00890	0.0	0.0
Soprano pipistrelle	SMU06931	0.0	0.0
Soprano pipistrelle	SMU07438	0.1	0.0
Soprano pipistrelle	SMU07458	0.0	0.0
Soprano pipistrelle	SMU07482	0.0	0.1
Soprano pipistrelle	Tormund mic Drogo	0.0	0.1

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.

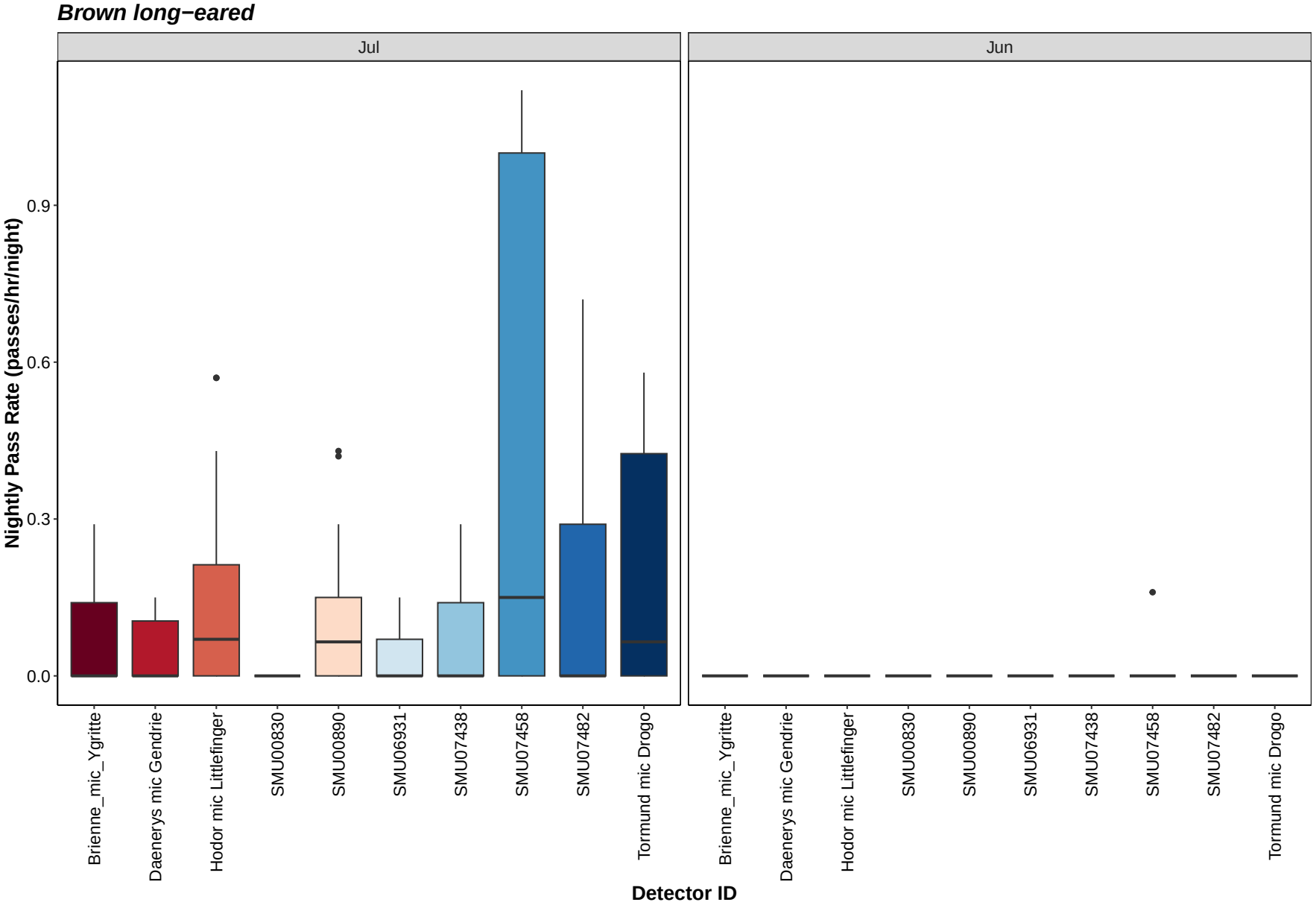
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

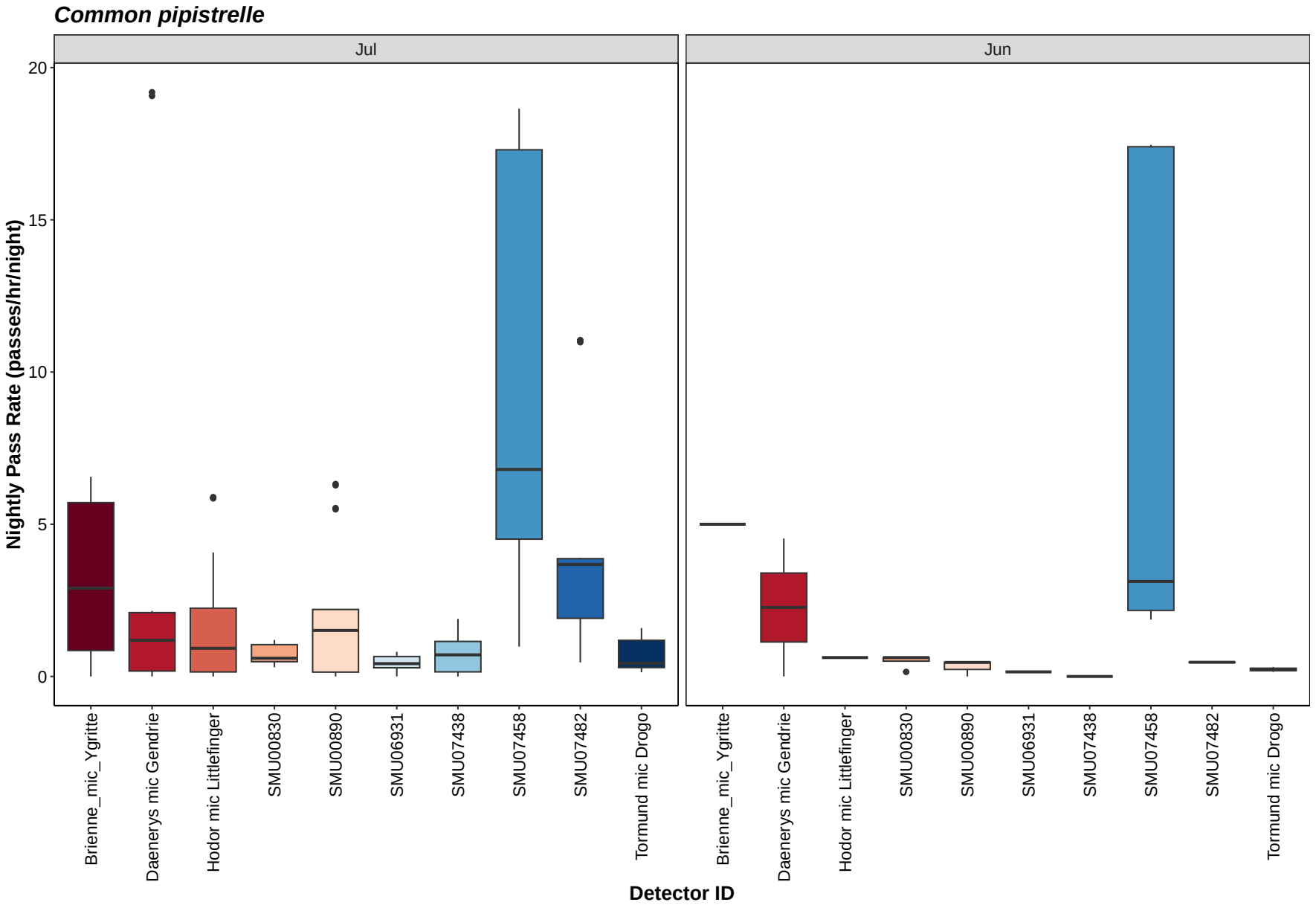
Species	Detector ID	Jul	Jun
Brown long-eared	Brienne_mic_Ygritte	0.1	0.0
Brown long-eared	Daenerys mic Gendrie	0.0	0.0
Brown long-eared	Hodor mic Littlefinger	0.2	0.0
Brown long-eared	SMU00830	0.0	0.0
Brown long-eared	SMU00890	0.1	0.0
Brown long-eared	SMU06931	0.0	0.0
Brown long-eared	SMU07438	0.1	0.0
Brown long-eared	SMU07458	0.5	0.0
Brown long-eared	SMU07482	0.2	0.0
Brown long-eared	Tormund mic Drogo	0.2	0.0
Common pipistrelle	Brienne_mic_Ygritte	3.2	5.0
Common pipistrelle	Daenerys mic Gendrie	4.5	2.3
Common pipistrelle	Hodor mic Littlefinger	1.7	0.6
Common pipistrelle	SMU00830	0.7	0.5
Common pipistrelle	SMU00890	2.0	0.3
Common pipistrelle	SMU06931	0.4	0.1
Common pipistrelle	SMU07438	0.9	0.0
Common pipistrelle	SMU07458	9.4	8.4
Common pipistrelle	SMU07482	3.8	0.5
Common pipistrelle	Tormund mic Drogo	0.7	0.2
Myotis	Brienne_mic_Ygritte	0.2	0.2
Myotis	Daenerys mic Gendrie	0.1	0.1
Myotis	Hodor mic Littlefinger	0.1	0.0
Myotis	SMU00830	0.0	0.0
Myotis	SMU00890	1.7	2.1
Myotis	SMU06931	0.0	0.0
Myotis	SMU07438	0.0	0.2
Myotis	SMU07458	0.3	0.4
Myotis	SMU07482	0.1	0.2
Myotis	Tormund mic Drogo	0.1	0.0
Nathusius'	Brienne_mic_Ygritte	0.0	0.0
Nathusius'	Daenerys mic Gendrie	0.0	0.0
Nathusius'	Hodor mic Littlefinger	0.0	0.0
Nathusius'	SMU00830	0.0	0.0
Nathusius'	SMU00890	0.0	0.0
Nathusius'	SMU06931	0.0	0.0

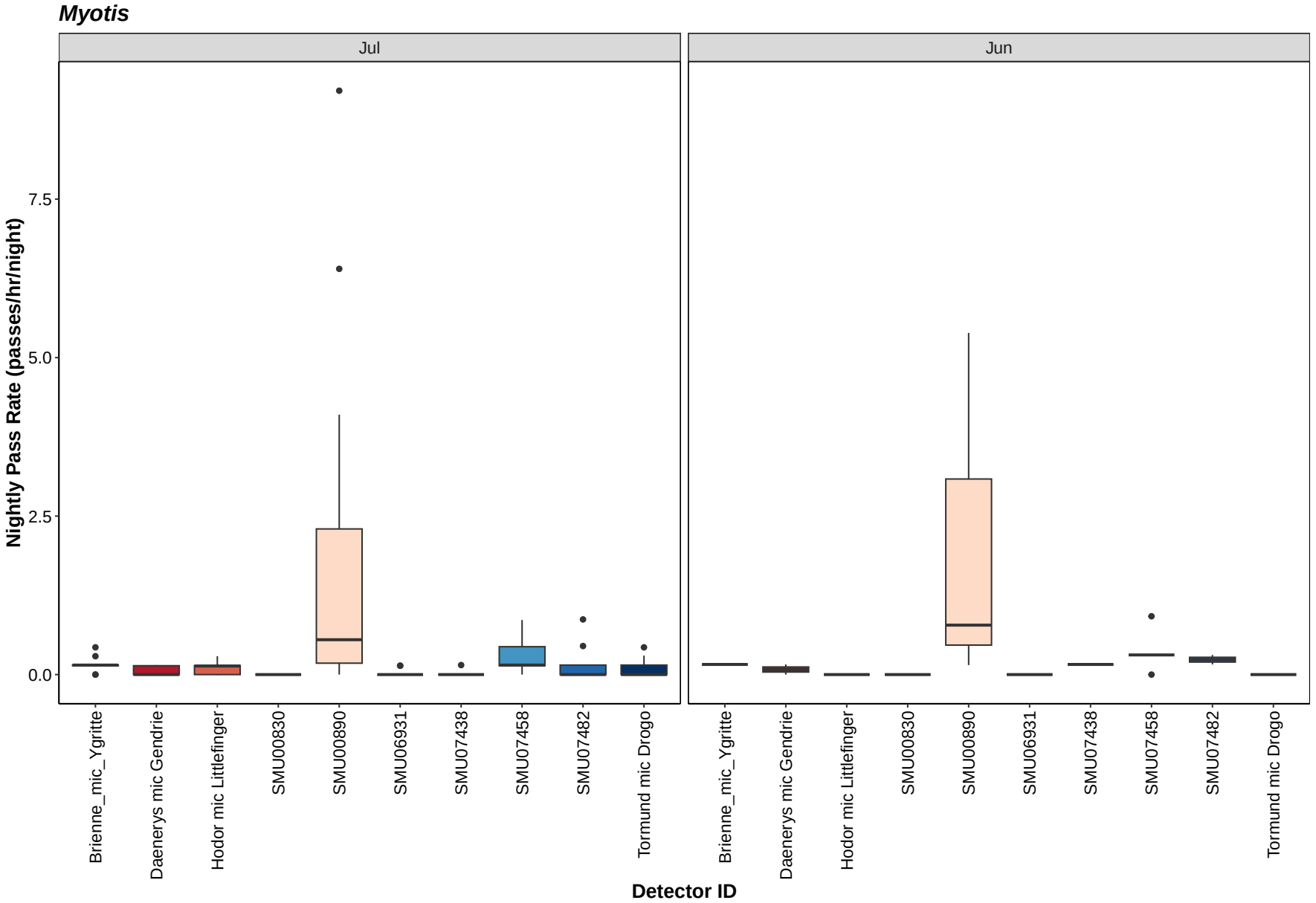
Species	Detector ID	Jul	Jun
Nathusius'	SMU07438	0.0	0.0
Nathusius'	SMU07458	0.1	0.0
Nathusius'	SMU07482	0.0	0.0
Nathusius'	Tormund mic Drogo	0.0	0.0
Nyctalus	Brienne_mic_Ygritte	0.0	0.0
Nyctalus	Daenerys mic Gendrie	0.0	0.0
Nyctalus	Hodor mic Littlefinger	0.0	0.0
Nyctalus	SMU00830	0.0	0.0
Nyctalus	SMU00890	0.0	0.0
Nyctalus	SMU06931	0.0	0.0
Nyctalus	SMU07438	0.0	0.0
Nyctalus	SMU07458	0.0	0.0
Nyctalus	SMU07482	0.0	0.0
Nyctalus	Tormund mic Drogo	0.0	0.0
Pipistrellus	Brienne_mic_Ygritte	0.1	0.3
Pipistrellus	Daenerys mic Gendrie	0.1	0.0
Pipistrellus	Hodor mic Littlefinger	0.1	0.0
Pipistrellus	SMU00830	0.0	0.0
Pipistrellus	SMU00890	0.2	0.0
Pipistrellus	SMU06931	0.0	0.0
Pipistrellus	SMU07438	0.1	0.0
Pipistrellus	SMU07458	0.1	0.1
Pipistrellus	SMU07482	0.4	0.0
Pipistrellus	Tormund mic Drogo	0.2	0.0
Soprano pipistrelle	Brienne_mic_Ygritte	0.4	0.2
Soprano pipistrelle	Daenerys mic Gendrie	0.4	1.4
Soprano pipistrelle	Hodor mic Littlefinger	0.3	0.0
Soprano pipistrelle	SMU00830	0.1	0.0
Soprano pipistrelle	SMU00890	0.2	0.0
Soprano pipistrelle	SMU06931	0.3	0.0
Soprano pipistrelle	SMU07438	0.2	0.0
Soprano pipistrelle	SMU07458	0.4	0.1
Soprano pipistrelle	SMU07482	0.3	0.1
Soprano pipistrelle	Tormund mic Drogo	0.2	0.1

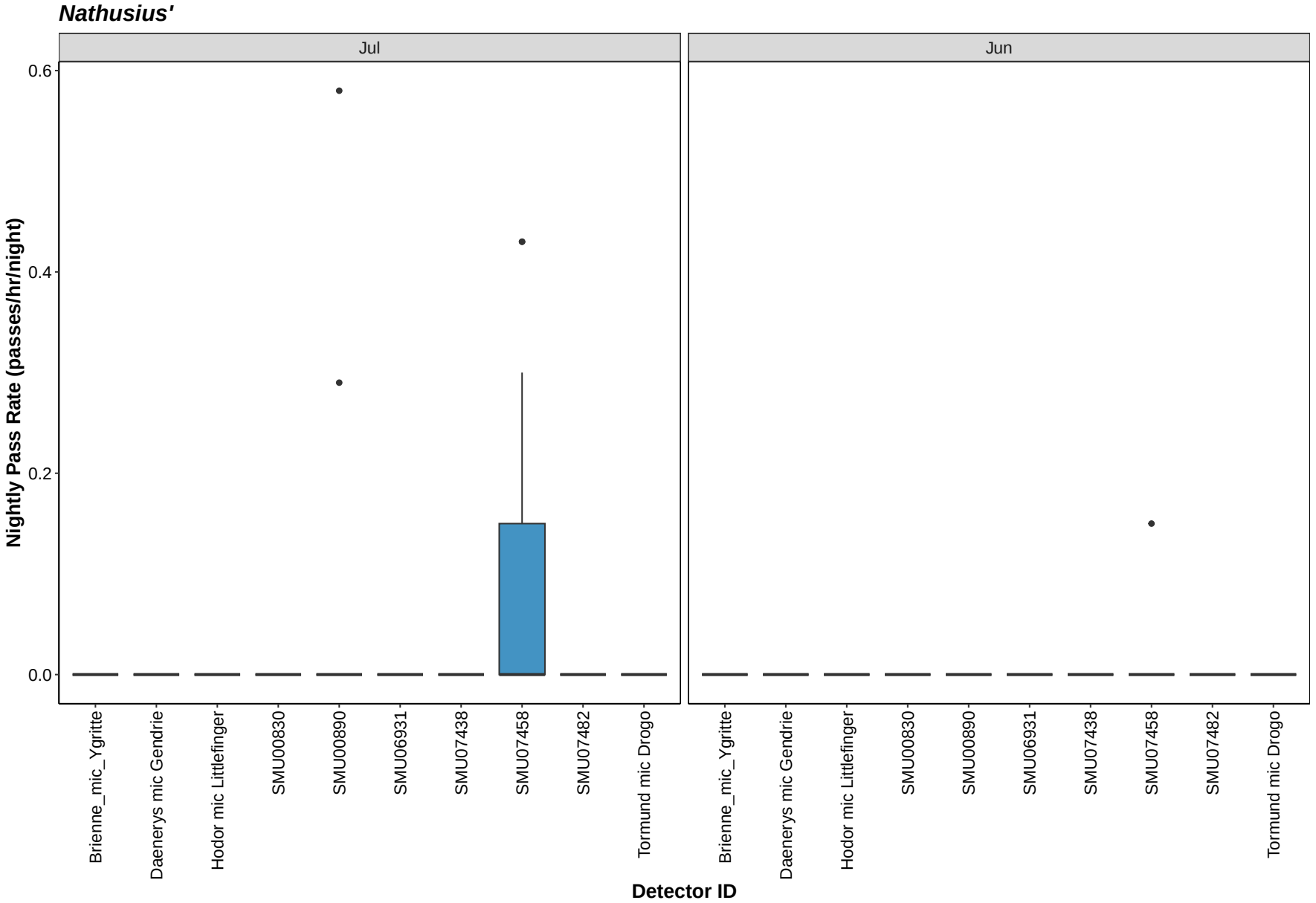
Per Detector

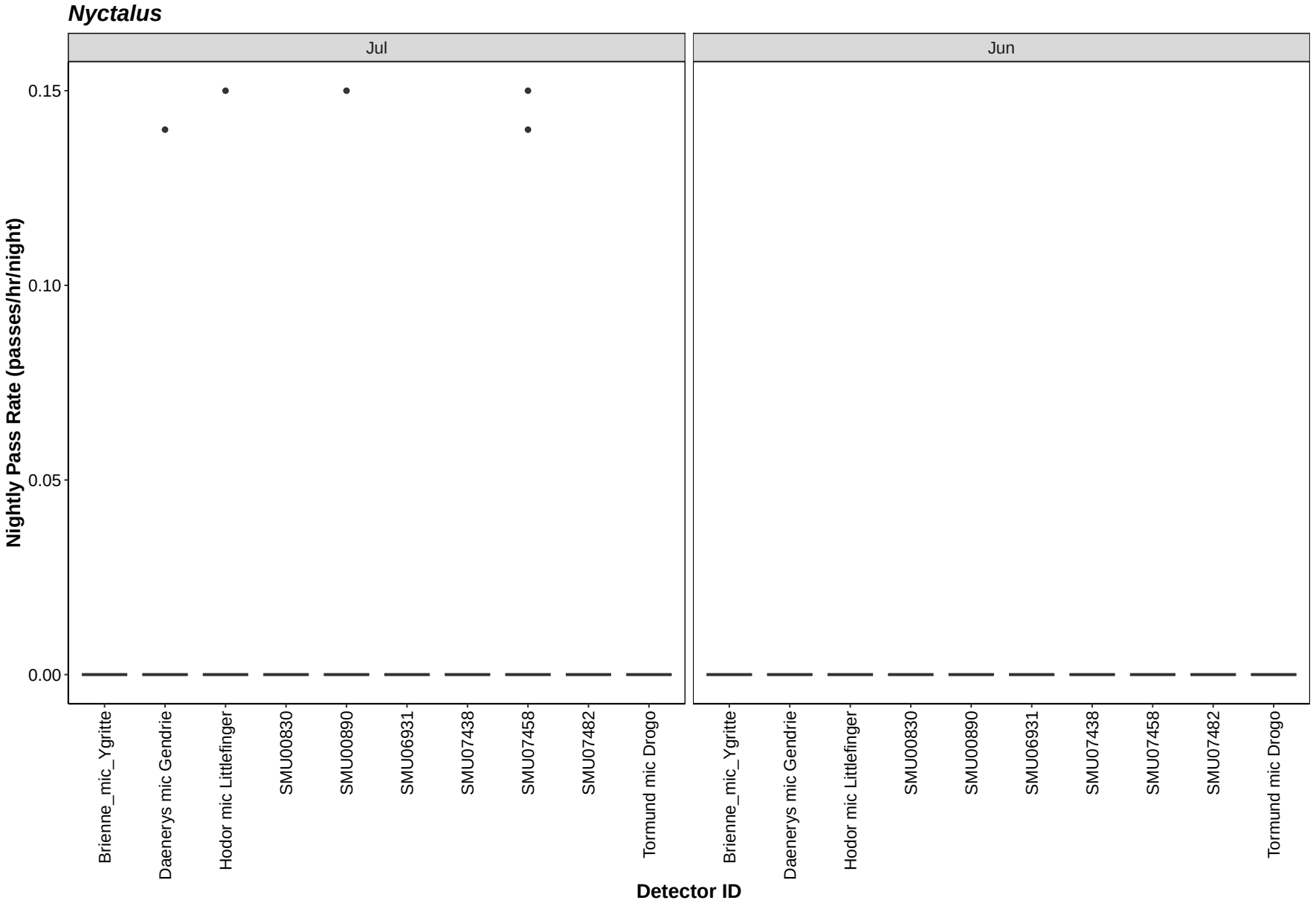
Figure 17. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.

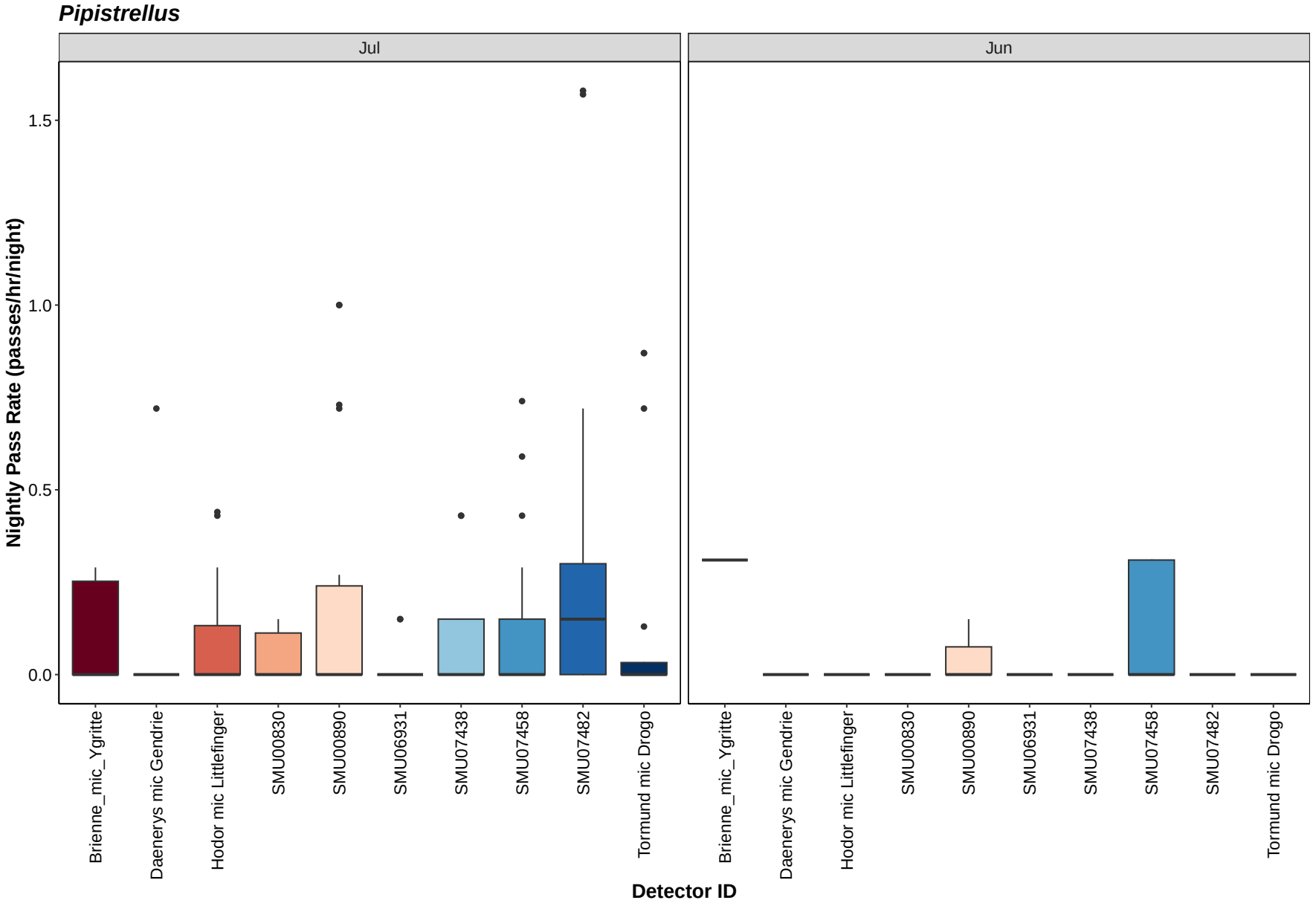

Brown long−eared
Jul
Jun
Nightly Pass Rate (passes/hr/night)
0.0
0.3
0.6
0.9
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID

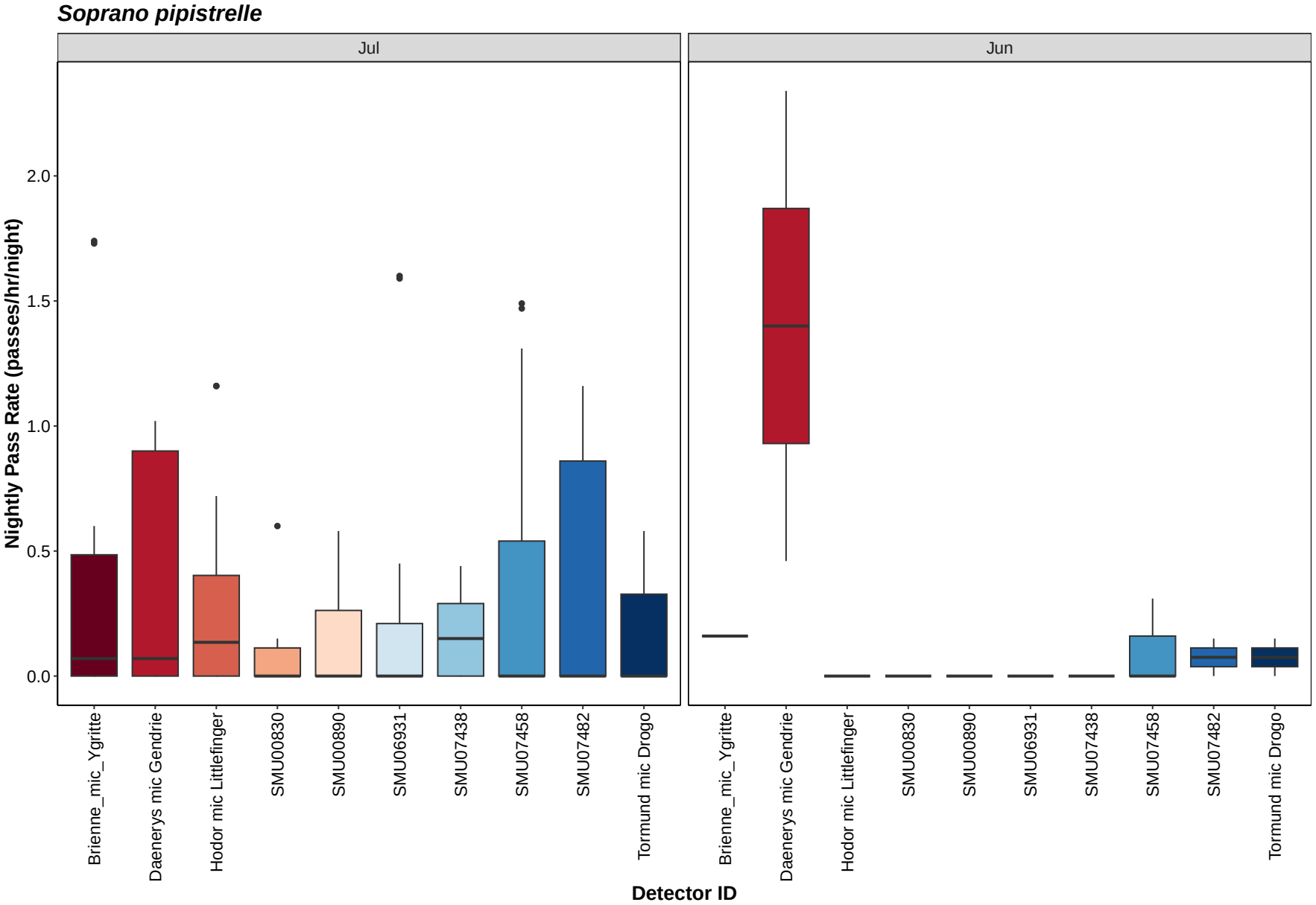

Common pipistrelle
Jul
Jun
Nightly Pass Rate (passes/hr/night)
0
5
10
15
20
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Myotis
Jul
Jun
Nightly Pass Rate (passes/hr/night)
7.5
5.0
2.5
0.0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Nathusius'
Jul
Jun
Nightly Pass Rate (passes/hr/night)
0.6
0.4
0.2
0.0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Nyctalus
Jul
Jun
Nightly Pass Rate (passes/hr/night)
0.15
0.10
0.05
0.00
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Pipistrellus
Jul
Jun
Nightly Pass Rate (passes/hr/night)
0.0
0.5
1.0
1.5
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID


Soprano pipistrelle
Jul
Jun
Nightly Pass Rate (passes/hr/night)
2.0
1.5
1.0
0.5
0.0
Brienne_mic_Ygritte
Daenerys mic Gendrie
Hodor mic Littlefinger
SMU00830
SMU00890
SMU06931
SMU07438
SMU07458
SMU07482
Tormund mic Drogo
Detector ID

Bat Activity per Detector Location

Figure 18. Detector ID reference:

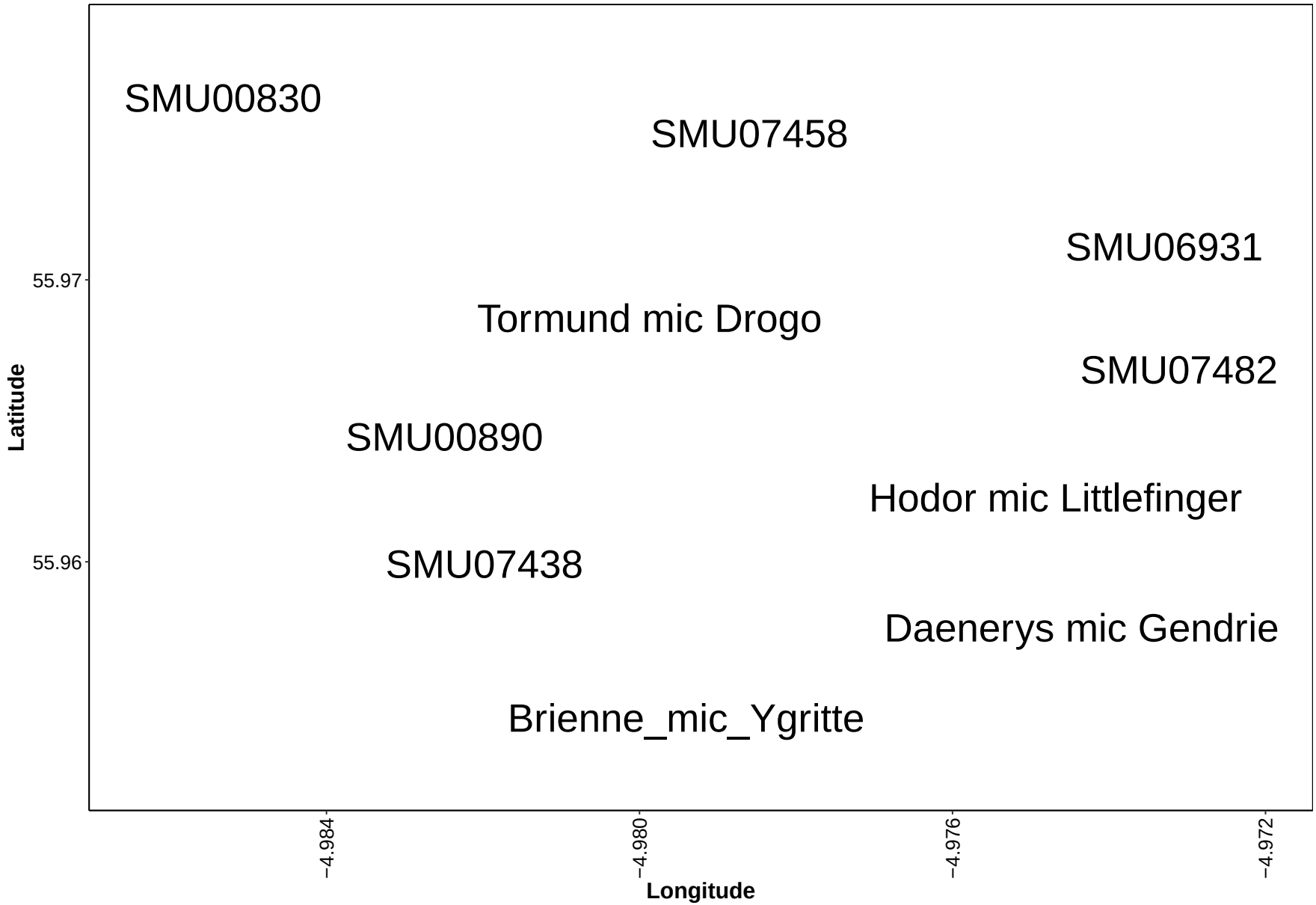
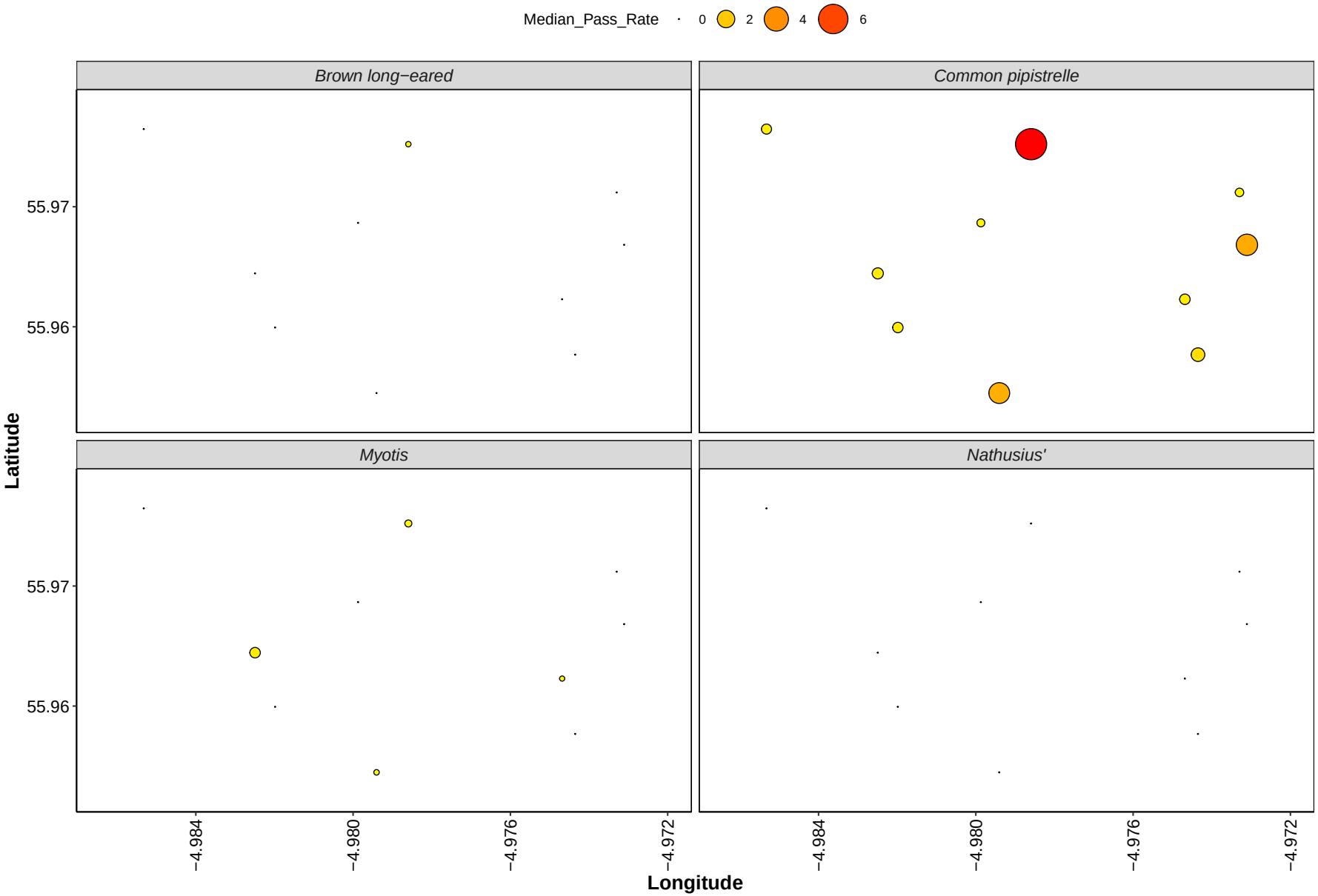

SMU00830
SMU07458
SMU06931
Tormund mic Drogo
SMU07482
SMU00890
Hodor mic Littlefinger
SMU07438
Daenerys mic Gendrie
Brienne_mic_Ygritte
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude

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.


Median_Pass_Rate
0
2
4
6
Brown long−eared
Common pipistrelle
Myotis
Nathusius'
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude

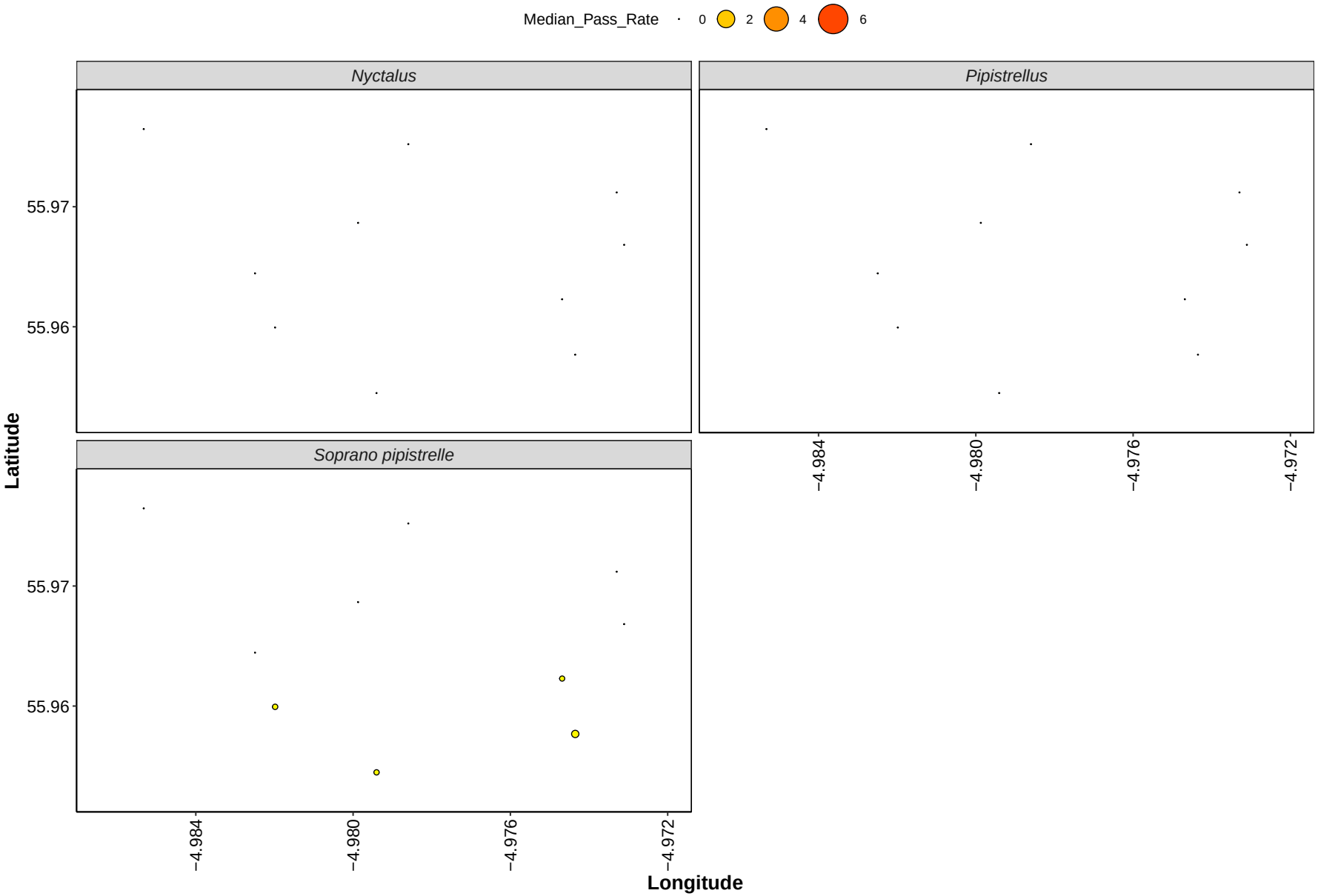
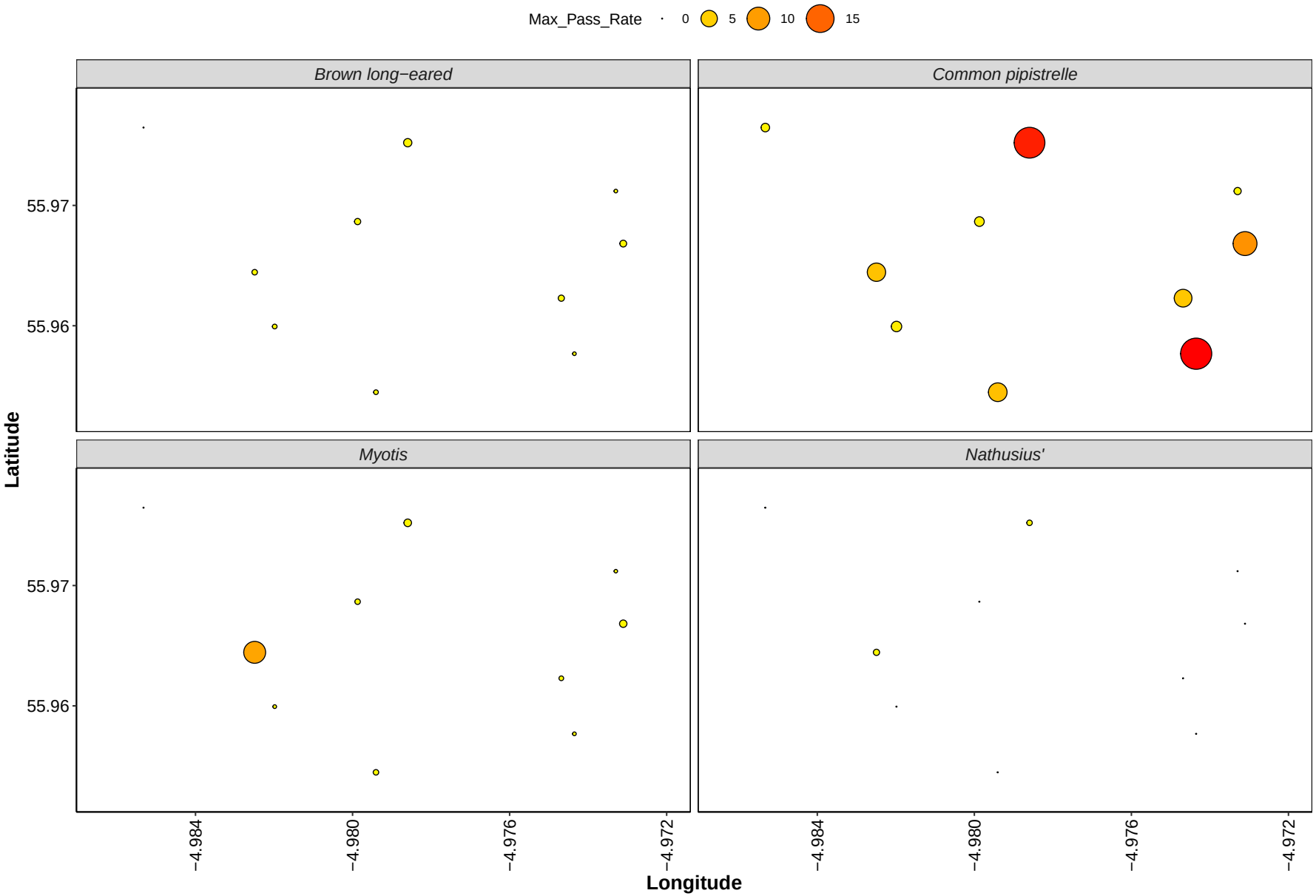
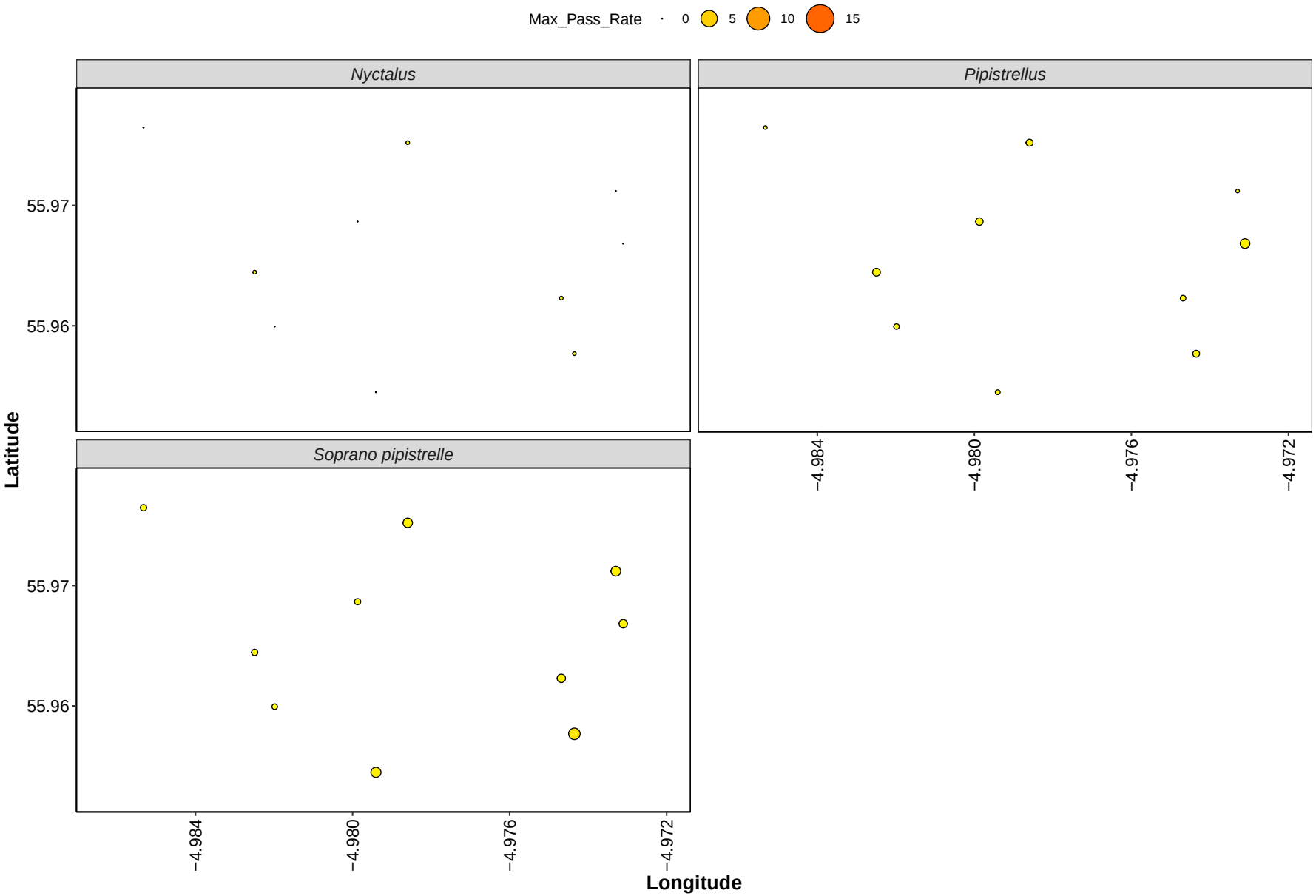

Median_Pass_Rate
0
2
4
6
Nyctalus
Pipistrellus
Soprano pipistrelle
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Latitude
Longitude

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
5
10
15
Brown long−eared
Common pipistrelle
Myotis
Nathusius'
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude


Max_Pass_Rate
0
5
10
15
Nyctalus
Pipistrellus
Soprano pipistrelle
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

Thank you for using Ecobat!

Ecobat Report
2025-03-27

Geo filter: county, Time filter: +- 1 month

Summary

Bats were detected on **13** nights between **24/09/2024** and **08/10/2024**, using **10** static bat detectors. Throughout this period, **6** species were recorded. **Table 1.** Detectors were placed at the following locations:

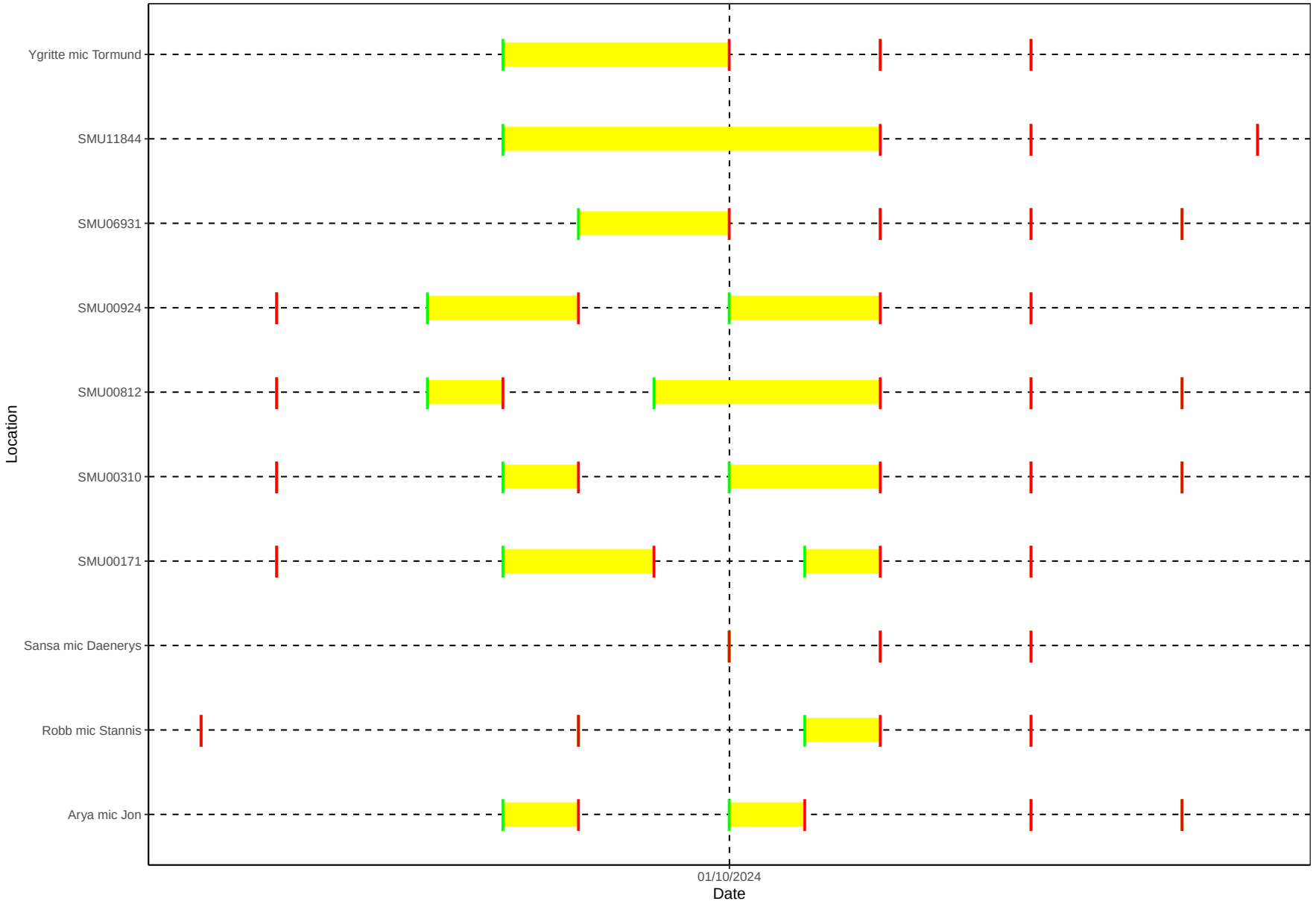
Detector ID	Latitude	Longitude
Arya mic Jon	55.95448	-4.979404
Robb mic Stannis	55.95768	-4.974350
Ygritte mic Tormund	55.96229	-4.974684
SMU06931	55.96683	-4.973106
Sansa mic Daenerys	55.95994	-4.981983
SMU11844	55.96445	-4.982493
SMU00812	55.96866	-4.979872
SMU00171	55.97119	-4.973295
SMU00924	55.97521	-4.978595
SMU00310	55.97647	-4.985323

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
Arya mic Jon	6
Robb mic Stannis	5
SMU00171	10
SMU00310	9
SMU00812	10
SMU00924	11
SMU06931	7
SMU11844	8
Sansa mic Daenerys	3
Ygritte mic Tormund	8

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


Ygritte mic Tormund
SMU11844
SMU06931
SMU00924
SMU00812
SMU00310
SMU00171
Sansa mic Daenerys
Robb mic Stannis
Arya mic Jon
Location
01/10/2024
Date

Part 1: Percentile 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.

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Arya mic Jon	Myotis	0	0	0	3	0	0
Arya mic Jon	Nyctalus	0	0	0	0	0	1
Arya mic Jon	Pipistrellus pipistrellus	0	0	0	0	0	2
Arya mic Jon	Pipistrellus pygmaeus	0	0	0	0	0	1
Arya mic Jon	Plecotus auritus	0	0	2	0	0	0
Robb mic Stannis	Myotis	0	0	1	3	0	0
Robb mic Stannis	Pipistrellus pipistrellus	0	0	0	0	0	1
Robb mic Stannis	Pipistrellus pygmaeus	0	0	0	0	0	1
Sansa mic Daenerys	Myotis	0	0	0	2	0	0
Sansa mic Daenerys	Pipistrellus pygmaeus	0	0	0	0	0	1
Sansa mic Daenerys	Plecotus auritus	0	0	1	0	0	0
SMU00171	Myotis	0	0	0	3	0	0
SMU00171	Pipistrellus	1	0	0	0	0	0
SMU00171	Pipistrellus pipistrellus	0	0	0	0	1	7
SMU00171	Pipistrellus pygmaeus	0	0	0	0	1	7
SMU00171	Plecotus auritus	0	0	1	0	0	0
SMU00310	Myotis	0	0	1	1	0	0
SMU00310	Pipistrellus	1	0	0	0	0	0
SMU00310	Pipistrellus pipistrellus	0	0	0	1	1	7

Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU00310	Pipistrellus pygmaeus	0	0	0	0	0	2
SMU00310	Plecotus auritus	0	0	1	0	0	0
SMU00812	Myotis	0	0	0	1	0	0
SMU00812	Pipistrellus	0	0	0	0	1	0
SMU00812	Pipistrellus pipistrellus	0	0	0	1	1	6
SMU00812	Pipistrellus pygmaeus	0	0	0	1	0	7
SMU00924	Myotis	0	1	0	2	0	0
SMU00924	Pipistrellus	0	0	0	0	1	0
SMU00924	Pipistrellus pipistrellus	0	0	0	4	2	5
SMU00924	Pipistrellus pygmaeus	0	0	0	3	0	4
SMU00924	Plecotus auritus	0	0	2	0	0	0
SMU06931	Myotis	0	0	1	2	0	0
SMU06931	Pipistrellus pipistrellus	0	0	0	0	0	5
SMU06931	Pipistrellus pygmaeus	0	0	0	0	0	5
SMU11844	Myotis	0	1	0	4	0	0
SMU11844	Pipistrellus pipistrellus	0	0	0	0	0	5
SMU11844	Pipistrellus pygmaeus	0	0	0	0	0	6
SMU11844	Plecotus auritus	0	0	1	0	0	0
Ygritte mic Tormund	Myotis	1	0	1	1	0	0
Ygritte mic Tormund	Nyctalus	0	0	0	0	0	1
Ygritte mic Tormund	Pipistrellus	0	0	0	0	1	0

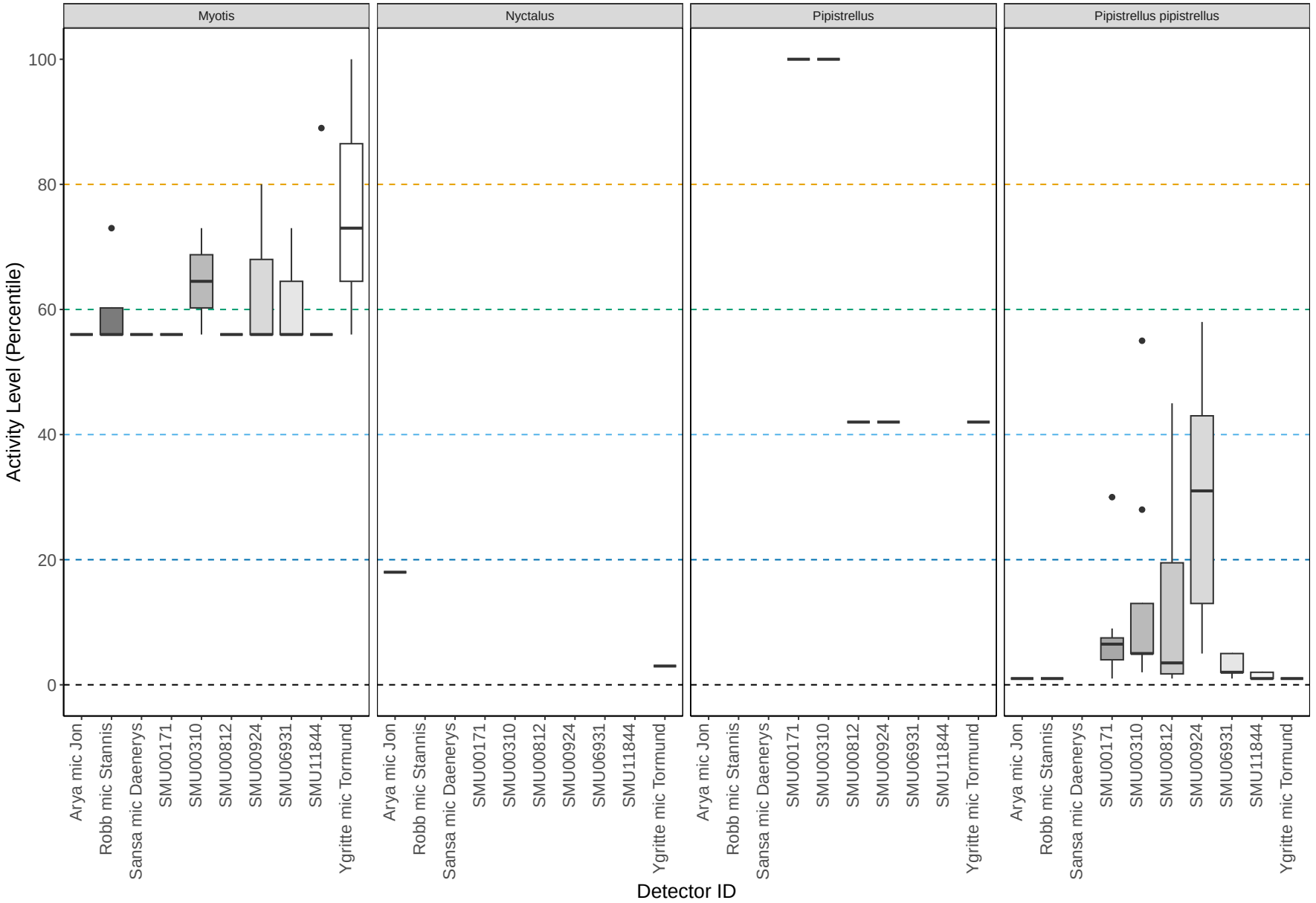
Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Ygritte mic Tormund	Pipistrellus pipistrellus	0	0	0	0	0	4
Ygritte mic Tormund	Pipistrellus pygmaeus	0	0	0	0	0	3

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
Arya mic Jon	Myotis	56	56 - 56	56	3	46
Arya mic Jon	Nyctalus	18	0	18	1	27
Arya mic Jon	Pipistrellus pipistrellus	1	1 - 1	1	2	1264
Arya mic Jon	Pipistrellus pygmaeus	5	0	5	1	512
Arya mic Jon	Plecotus auritus	62	62 - 62	62	2	24
Robb mic Stannis	Myotis	56	56 - 56	73	4	46
Robb mic Stannis	Pipistrellus pipistrellus	1	0	1	1	1264
Robb mic Stannis	Pipistrellus pygmaeus	5	0	5	1	512
Sansa mic Daenerys	Myotis	56	56 - 56	56	2	46
Sansa mic Daenerys	Pipistrellus pygmaeus	5	0	5	1	512
Sansa mic Daenerys	Plecotus auritus	62	0	62	1	24
SMU00171	Myotis	56	56 - 56	56	3	46
SMU00171	Pipistrellus	100	0	100	1	7
SMU00171	Pipistrellus pipistrellus	7	3 - 18.5	30	8	1264
SMU00171	Pipistrellus pygmaeus	5	5 - 15.5	26	8	512
SMU00171	Plecotus auritus	62	0	62	1	24
SMU00310	Myotis	65	64.5 - 64.5	73	2	46
SMU00310	Pipistrellus	100	0	100	1	7
SMU00310	Pipistrellus pipistrellus	5	3.5 - 30	55	9	1264
SMU00310	Pipistrellus pygmaeus	5	5 - 5	5	2	512
SMU00310	Plecotus auritus	62	0	62	1	24
SMU00812	Myotis	56	0	56	1	46
SMU00812	Pipistrellus	42	0	42	1	7
SMU00812	Pipistrellus pipistrellus	4	1.5 - 27	45	8	1264
SMU00812	Pipistrellus pygmaeus	5	5 - 15	41	8	512
SMU00924	Myotis	56	56 - 56	80	3	46
SMU00924	Pipistrellus	42	0	42	1	7
SMU00924	Pipistrellus pipistrellus	31	13 - 43	58	11	1264
SMU00924	Pipistrellus pygmaeus	17	10 - 47.5	49	7	512
SMU00924	Plecotus auritus	62	62 - 62	62	2	24
SMU06931	Myotis	56	56 - 56	73	3	46
SMU06931	Pipistrellus pipistrellus	2	1.5 - 5	5	5	1264
SMU06931	Pipistrellus pygmaeus	8	6.5 - 8	8	5	512

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
SMU11844	Myotis	56	56 - 56	89	5	46
SMU11844	Pipistrellus pipistrellus	1	1 - 1.5	2	5	1264
SMU11844	Pipistrellus pygmaeus	7	5 - 8	8	6	512
SMU11844	Plecotus auritus	62	0	62	1	24
Ygritte mic Tormund	Myotis	73	56 - 100	100	3	46
Ygritte mic Tormund	Nyctalus	3	0	3	1	27
Ygritte mic Tormund	Pipistrellus	42	0	42	1	7
Ygritte mic Tormund	Pipistrellus pipistrellus	1	1 - 1	1	4	1264
Ygritte mic Tormund	Pipistrellus pygmaeus	5	5 - 5	8	3	512

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).


Myotis
Nyctalus
Pipistrellus
Pipistrellus pipistrellus
Activity Level (Percentile)
0
20
40
60
80
100
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID

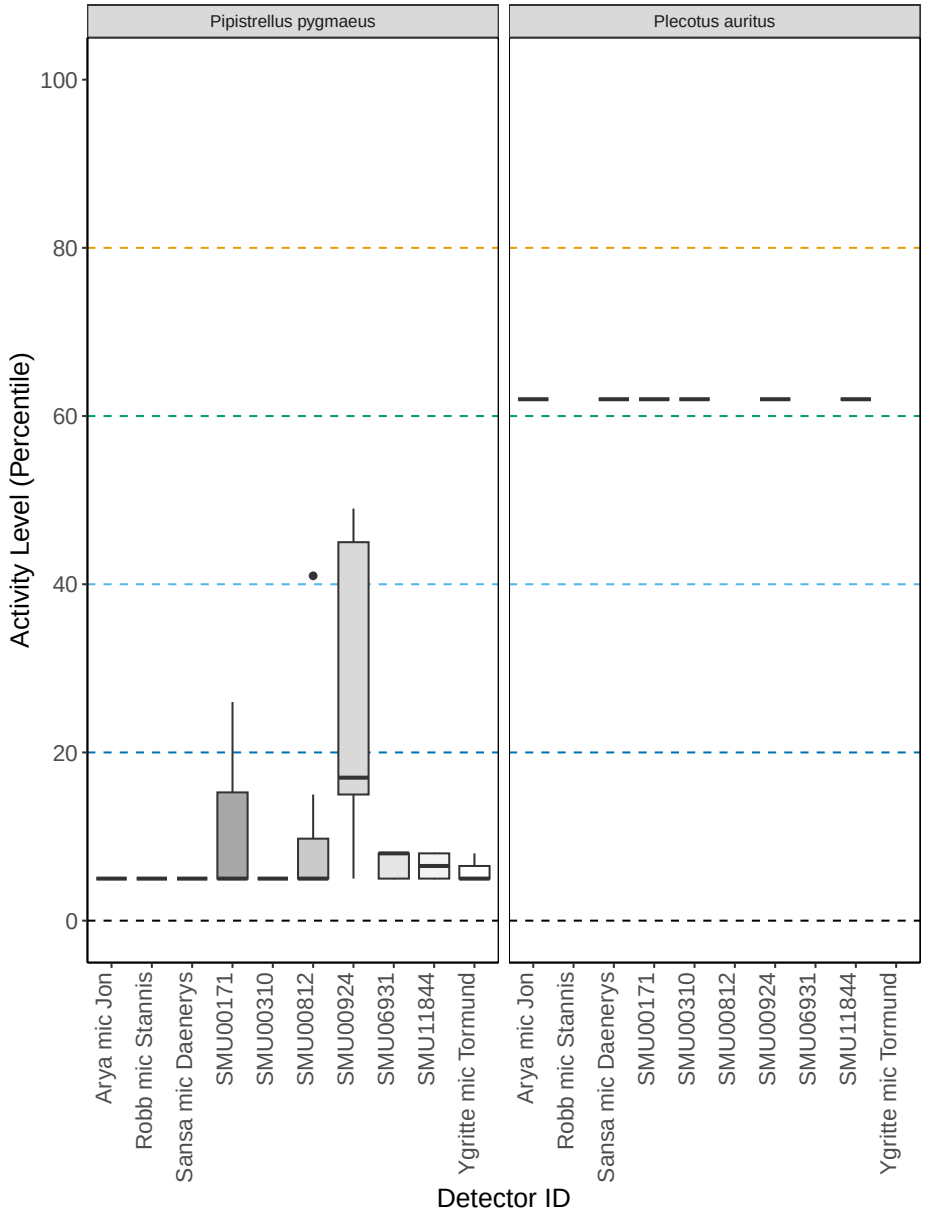
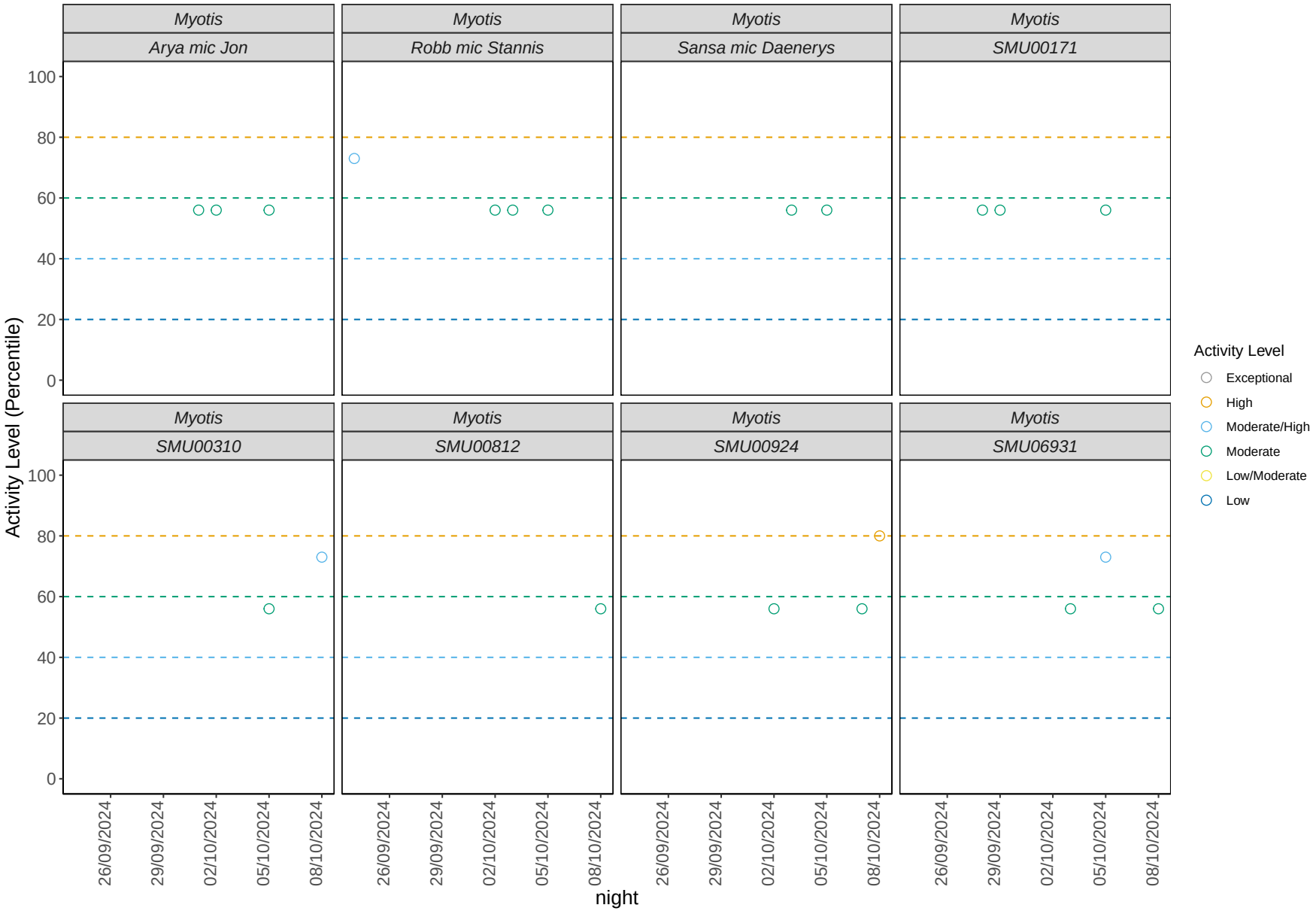
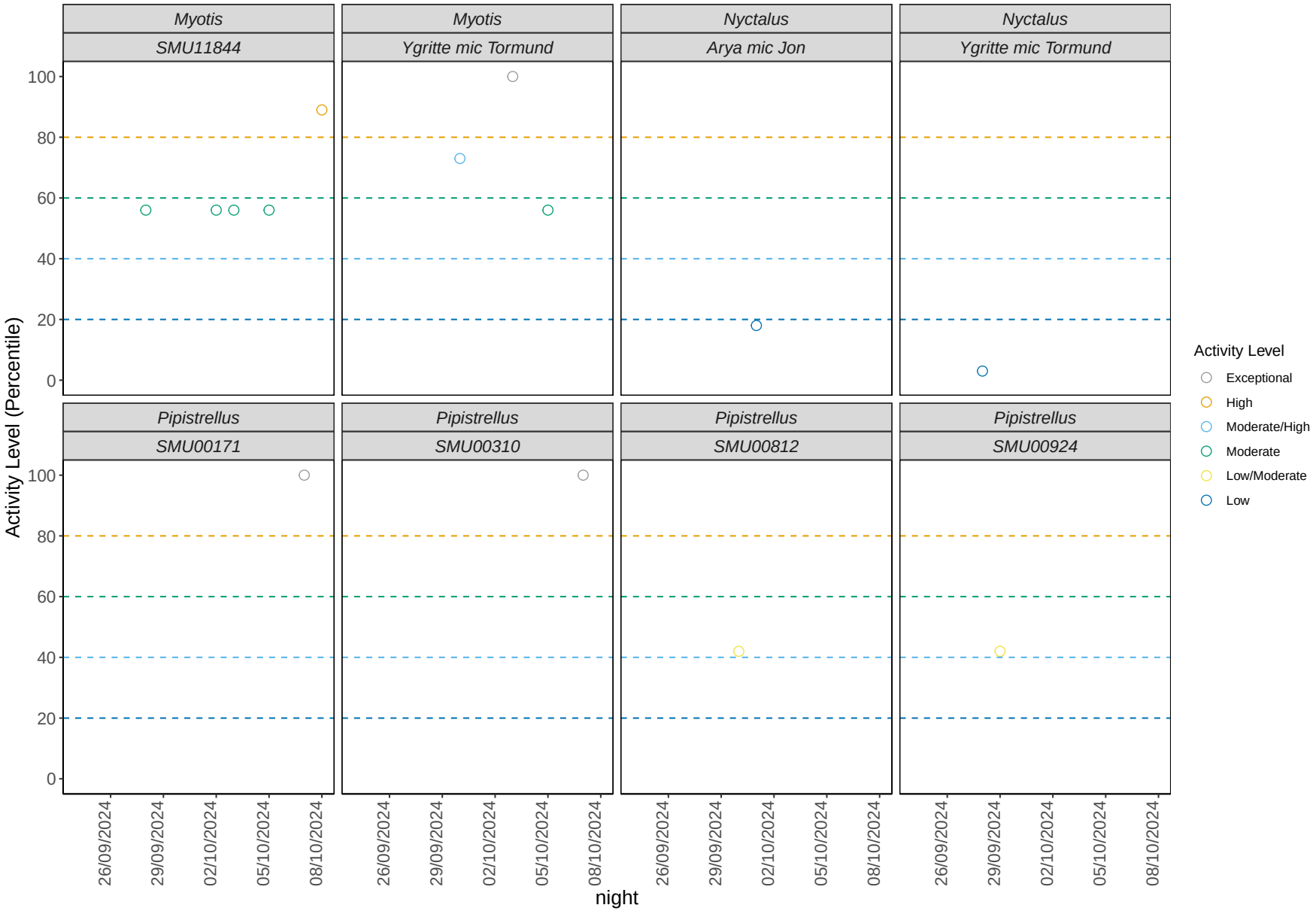
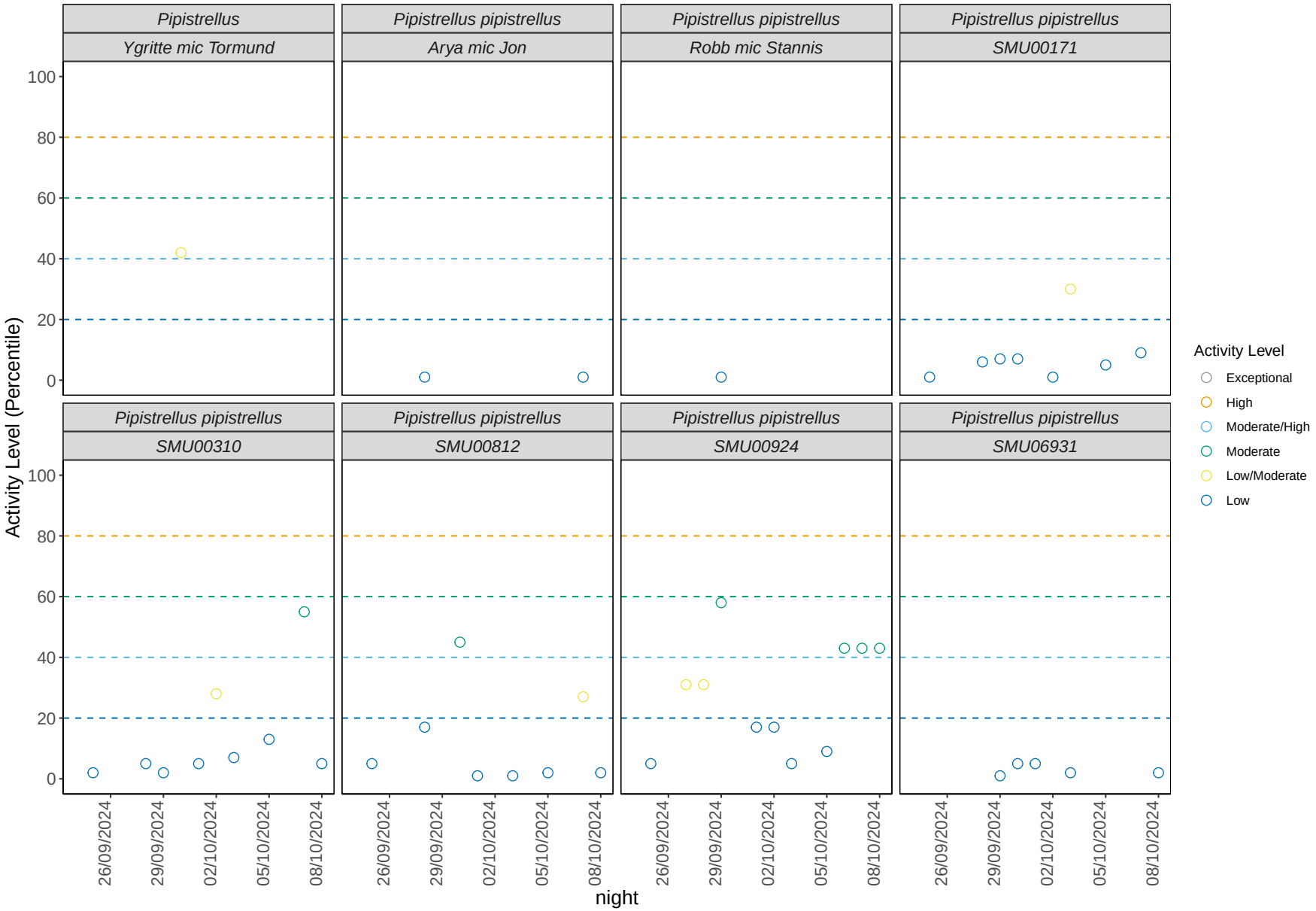
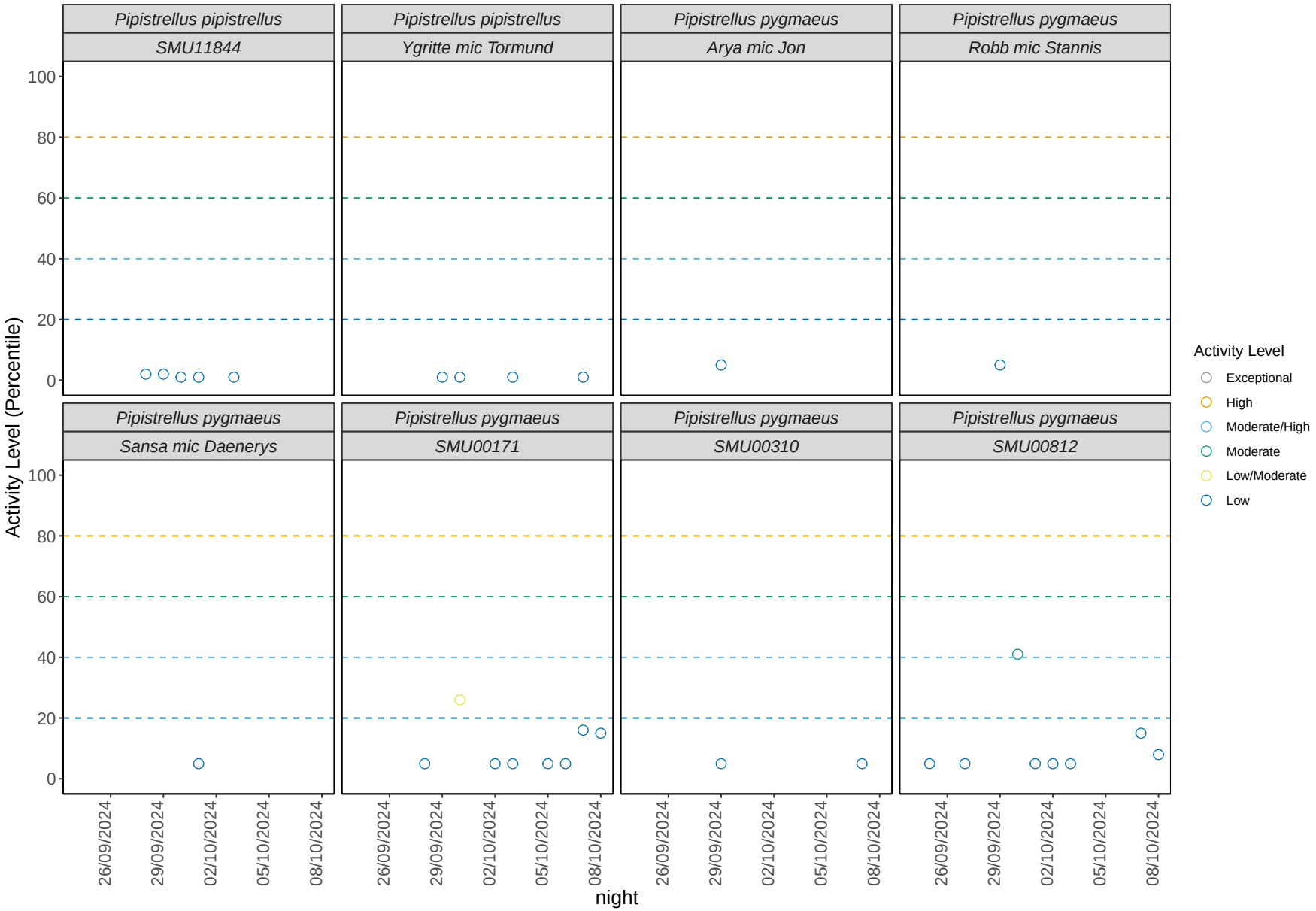

Pipistrellus pygmaeus
Plecotus auritus
Activity Level (Percentile)
100
80
60
40
20
0
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID

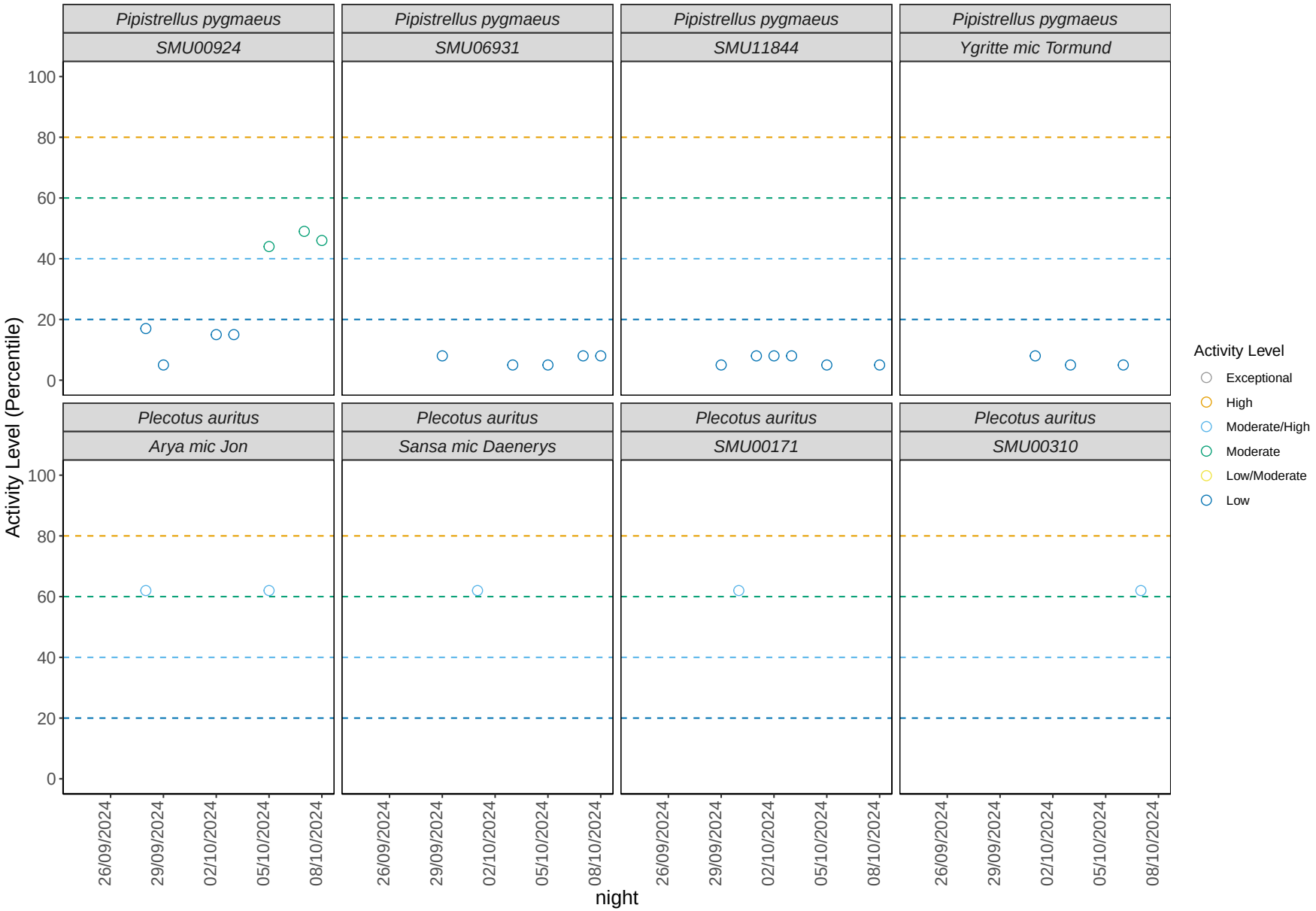
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

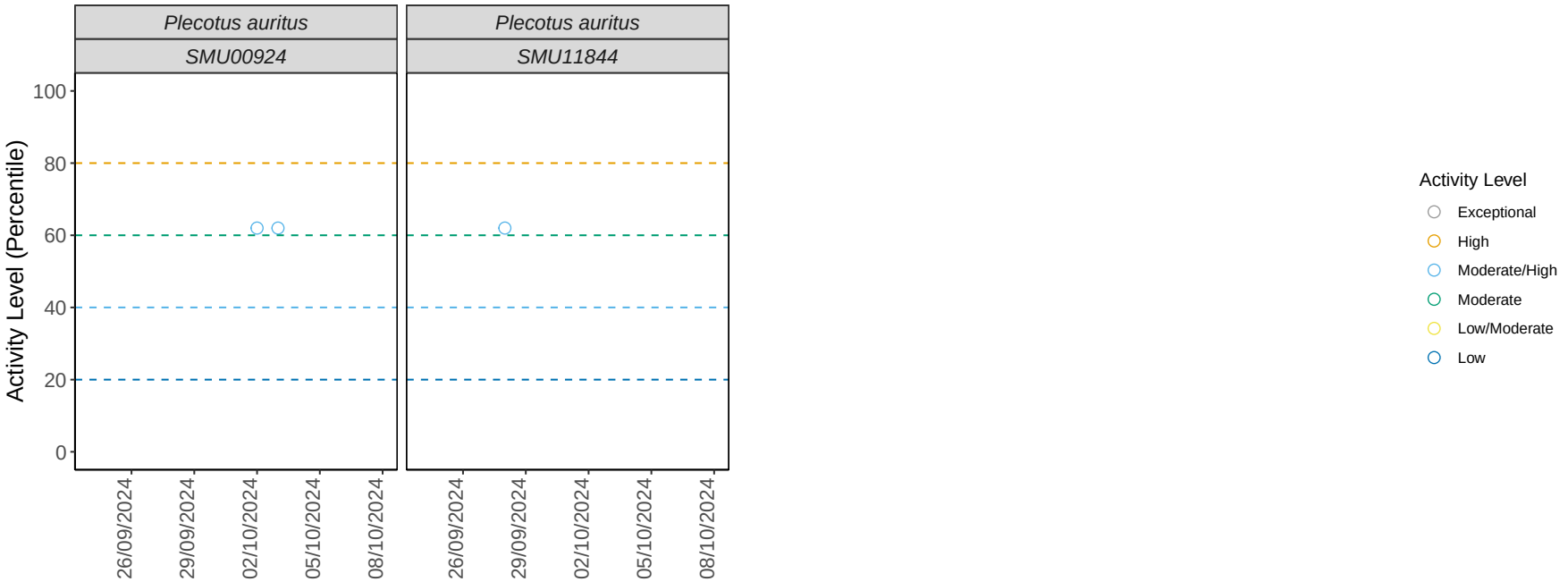

Myotis
Arya mic Jon
Myotis
Robb mic Stannis
Myotis
Sansa mic Daenerys
Myotis
SMU00171
Myotis
SMU00310
Myotis
SMU00812
Myotis
SMU00924
Myotis
SMU06931
Activity Level (Percentile)
100
80
60
40
20
0
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Myotis
SMU11844
Myotis
Ygritte mic Tormund
Nyctalus
Arya mic Jon
Nyctalus
Ygritte mic Tormund
Pipistrellus
SMU00171
Pipistrellus
SMU00310
Pipistrellus
SMU00812
Pipistrellus
SMU00924
Activity Level (Percentile)
0
20
40
60
80
100
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus
Ygritte mic Tormund
Pipistrellus pipistrellus
Arya mic Jon
Pipistrellus pipistrellus
Robb mic Stannis
Pipistrellus pipistrellus
SMU00171
Pipistrellus pipistrellus
SMU00310
Pipistrellus pipistrellus
SMU00812
Pipistrellus pipistrellus
SMU00924
Pipistrellus pipistrellus
SMU06931
Activity Level (Percentile)
100
80
60
40
20
0
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus pipistrellus
SMU11844
Pipistrellus pipistrellus
Ygritte mic Tormund
Pipistrellus pygmaeus
Arya mic Jon
Pipistrellus pygmaeus
Robb mic Stannis
Pipistrellus pygmaeus
Sansa mic Daenerys
Pipistrellus pygmaeus
SMU00171
Pipistrellus pygmaeus
SMU00310
Pipistrellus pygmaeus
SMU00812
Activity Level (Percentile)
100
80
60
40
20
0
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Pipistrellus pygmaeus
SMU00924
Pipistrellus pygmaeus
SMU06931
Pipistrellus pygmaeus
SMU11844
Pipistrellus pygmaeus
Ygritte mic Tormund
Plecotus auritus
Arya mic Jon
Plecotus auritus
Sansa mic Daenerys
Plecotus auritus
SMU00171
Plecotus auritus
SMU00310
Activity Level (Percentile)
0
20
40
60
80
100
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
night
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low


Plecotus auritus
SMU00924
Plecotus auritus
SMU11844
Activity Level (Percentile)
100
80
60
40
20
0
26/09/2024
29/09/2024
02/10/2024
05/10/2024
08/10/2024
Activity Level
Exceptional
High
Moderate/High
Moderate
Low/Moderate
Low

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Arya mic Jon	Myotis	Oct	0	0	0	3	0	0
Arya mic Jon	Nyctalus	Oct	0	0	0	0	0	1
Arya mic Jon	Pipistrellus pipistrellus	Sep	0	0	0	0	0	1
Arya mic Jon	Pipistrellus pipistrellus	Oct	0	0	0	0	0	1
Arya mic Jon	Pipistrellus pygmaeus	Sep	0	0	0	0	0	1
Arya mic Jon	Plecotus auritus	Sep	0	0	1	0	0	0
Arya mic Jon	Plecotus auritus	Oct	0	0	1	0	0	0
Robb mic Stannis	Myotis	Sep	0	0	1	0	0	0
Robb mic Stannis	Myotis	Oct	0	0	0	3	0	0
Robb mic Stannis	Pipistrellus pipistrellus	Sep	0	0	0	0	0	1
Robb mic Stannis	Pipistrellus pygmaeus	Sep	0	0	0	0	0	1
Sansa mic Daenerys	Myotis	Oct	0	0	0	2	0	0
Sansa mic Daenerys	Pipistrellus pygmaeus	Oct	0	0	0	0	0	1
Sansa mic Daenerys	Plecotus auritus	Oct	0	0	1	0	0	0
SMU00171	Myotis	Sep	0	0	0	2	0	0
SMU00171	Myotis	Oct	0	0	0	1	0	0

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU00171	Pipistrellus	Oct	1	0	0	0	0	0
SMU00171	Pipistrellus pipistrellus	Sep	0	0	0	0	0	4
SMU00171	Pipistrellus pipistrellus	Oct	0	0	0	0	1	3
SMU00171	Pipistrellus pygmaeus	Sep	0	0	0	0	1	1
SMU00171	Pipistrellus pygmaeus	Oct	0	0	0	0	0	6
SMU00171	Plecotus auritus	Sep	0	0	1	0	0	0
SMU00310	Myotis	Oct	0	0	1	1	0	0
SMU00310	Pipistrellus	Oct	1	0	0	0	0	0
SMU00310	Pipistrellus pipistrellus	Sep	0	0	0	0	0	3
SMU00310	Pipistrellus pipistrellus	Oct	0	0	0	1	1	4
SMU00310	Pipistrellus pygmaeus	Sep	0	0	0	0	0	1
SMU00310	Pipistrellus pygmaeus	Oct	0	0	0	0	0	1
SMU00310	Plecotus auritus	Oct	0	0	1	0	0	0
SMU00812	Myotis	Oct	0	0	0	1	0	0
SMU00812	Pipistrellus	Sep	0	0	0	0	1	0
SMU00812	Pipistrellus pipistrellus	Sep	0	0	0	1	0	2
SMU00812	Pipistrellus pipistrellus	Oct	0	0	0	0	1	4
SMU00812	Pipistrellus pygmaeus	Sep	0	0	0	1	0	2
SMU00812	Pipistrellus pygmaeus	Oct	0	0	0	0	0	5
SMU00924	Myotis	Oct	0	1	0	2	0	0
SMU00924	Pipistrellus	Sep	0	0	0	0	1	0

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
SMU00924	Pipistrellus pipistrellus	Sep	0	0	0	1	2	1
SMU00924	Pipistrellus pipistrellus	Oct	0	0	0	3	0	4
SMU00924	Pipistrellus pygmaeus	Sep	0	0	0	0	0	2
SMU00924	Pipistrellus pygmaeus	Oct	0	0	0	3	0	2
SMU00924	Plecotus auritus	Oct	0	0	2	0	0	0
SMU06931	Myotis	Oct	0	0	1	2	0	0
SMU06931	Pipistrellus pipistrellus	Sep	0	0	0	0	0	2
SMU06931	Pipistrellus pipistrellus	Oct	0	0	0	0	0	3
SMU06931	Pipistrellus pygmaeus	Sep	0	0	0	0	0	1
SMU06931	Pipistrellus pygmaeus	Oct	0	0	0	0	0	4
SMU11844	Myotis	Sep	0	0	0	1	0	0
SMU11844	Myotis	Oct	0	1	0	3	0	0
SMU11844	Pipistrellus pipistrellus	Sep	0	0	0	0	0	3
SMU11844	Pipistrellus pipistrellus	Oct	0	0	0	0	0	2
SMU11844	Pipistrellus pygmaeus	Sep	0	0	0	0	0	1
SMU11844	Pipistrellus pygmaeus	Oct	0	0	0	0	0	5
SMU11844	Plecotus auritus	Sep	0	0	1	0	0	0
Ygritte mic Tormund	Myotis	Sep	0	0	1	0	0	0
Ygritte mic Tormund	Myotis	Oct	1	0	0	1	0	0

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Ygritte mic Tormund	Nyctalus	Sep	0	0	0	0	0	1
Ygritte mic Tormund	Pipistrellus	Sep	0	0	0	0	1	0
Ygritte mic Tormund	Pipistrellus pipistrellus	Sep	0	0	0	0	0	2
Ygritte mic Tormund	Pipistrellus pipistrellus	Oct	0	0	0	0	0	2
Ygritte mic Tormund	Pipistrellus pygmaeus	Oct	0	0	0	0	0	3

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
Arya mic Jon	Myotis	Oct	56	56 - 56	56	3
Arya mic Jon	Nyctalus	Oct	18	0	18	1
Arya mic Jon	Pipistrellus pipistrellus	Sep	1	1 - 1	1	1
Arya mic Jon	Pipistrellus pipistrellus	Oct	1	1 - 1	1	1
Arya mic Jon	Pipistrellus pygmaeus	Sep	5	0	5	1
Arya mic Jon	Plecotus auritus	Sep	62	62 - 62	62	1
Arya mic Jon	Plecotus auritus	Oct	62	62 - 62	62	1
Robb mic Stannis	Myotis	Sep	73	56 - 56	73	1
Robb mic Stannis	Myotis	Oct	56	56 - 56	56	3
Robb mic Stannis	Pipistrellus pipistrellus	Sep	1	0	1	1
Robb mic Stannis	Pipistrellus pygmaeus	Sep	5	0	5	1
Sansa mic Daenerys	Myotis	Oct	56	56 - 56	56	2
Sansa mic Daenerys	Pipistrellus pygmaeus	Oct	5	0	5	1
Sansa mic Daenerys	Plecotus auritus	Oct	62	0	62	1
SMU00171	Myotis	Sep	56	56 - 56	56	2
SMU00171	Myotis	Oct	56	56 - 56	56	1
SMU00171	Pipistrellus	Oct	100	0	100	1
SMU00171	Pipistrellus pipistrellus	Sep	7	3 - 18.5	7	4
SMU00171	Pipistrellus pipistrellus	Oct	7	3 - 18.5	30	4
SMU00171	Pipistrellus pygmaeus	Sep	16	5 - 15.5	26	2
SMU00171	Pipistrellus pygmaeus	Oct	5	5 - 15.5	16	6
SMU00171	Plecotus auritus	Sep	62	0	62	1
SMU00310	Myotis	Oct	65	64.5 - 64.5	73	2
SMU00310	Pipistrellus	Oct	100	0	100	1
SMU00310	Pipistrellus pipistrellus	Sep	2	3.5 - 30	5	3
SMU00310	Pipistrellus pipistrellus	Oct	10	3.5 - 30	55	6
SMU00310	Pipistrellus pygmaeus	Sep	5	5 - 5	5	1
SMU00310	Pipistrellus pygmaeus	Oct	5	5 - 5	5	1
SMU00310	Plecotus auritus	Oct	62	0	62	1
SMU00812	Myotis	Oct	56	0	56	1
SMU00812	Pipistrellus	Sep	42	0	42	1
SMU00812	Pipistrellus pipistrellus	Sep	17	1.5 - 27	45	3
SMU00812	Pipistrellus pipistrellus	Oct	2	1.5 - 27	27	5

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
SMU00812	Pipistrellus pygmaeus	Sep	5	5 - 15	41	3
SMU00812	Pipistrellus pygmaeus	Oct	5	5 - 15	15	5
SMU00924	Myotis	Oct	56	56 - 56	80	3
SMU00924	Pipistrellus	Sep	42	0	42	1
SMU00924	Pipistrellus pipistrellus	Sep	31	13 - 43	58	4
SMU00924	Pipistrellus pipistrellus	Oct	17	13 - 43	43	7
SMU00924	Pipistrellus pygmaeus	Sep	11	10 - 47.5	17	2
SMU00924	Pipistrellus pygmaeus	Oct	44	10 - 47.5	49	5
SMU00924	Plecotus auritus	Oct	62	62 - 62	62	2
SMU06931	Myotis	Oct	56	56 - 56	73	3
SMU06931	Pipistrellus pipistrellus	Sep	3	1.5 - 5	5	2
SMU06931	Pipistrellus pipistrellus	Oct	2	1.5 - 5	5	3
SMU06931	Pipistrellus pygmaeus	Sep	8	6.5 - 8	8	1
SMU06931	Pipistrellus pygmaeus	Oct	7	6.5 - 8	8	4
SMU11844	Myotis	Sep	56	56 - 56	56	1
SMU11844	Myotis	Oct	56	56 - 56	89	4
SMU11844	Pipistrellus pipistrellus	Sep	2	1 - 1.5	2	3
SMU11844	Pipistrellus pipistrellus	Oct	1	1 - 1.5	1	2
SMU11844	Pipistrellus pygmaeus	Sep	5	5 - 8	5	1
SMU11844	Pipistrellus pygmaeus	Oct	8	5 - 8	8	5
SMU11844	Plecotus auritus	Sep	62	0	62	1
Ygritte mic Tormund	Myotis	Sep	73	56 - 100	73	1
Ygritte mic Tormund	Myotis	Oct	78	56 - 100	100	2
Ygritte mic Tormund	Nyctalus	Sep	3	0	3	1
Ygritte mic Tormund	Pipistrellus	Sep	42	0	42	1
Ygritte mic Tormund	Pipistrellus pipistrellus	Sep	1	1 - 1	1	2
Ygritte mic Tormund	Pipistrellus pipistrellus	Oct	1	1 - 1	1	2
Ygritte mic Tormund	Pipistrellus pygmaeus	Oct	5	5 - 5	8	3

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 Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	1	2	4	22	0	0
Nyctalus	0	0	0	0	0	2
Pipistrellus	2	0	0	0	3	0
Pipistrellus pipistrellus	0	0	0	6	5	42
Pipistrellus pygmaeus	0	0	0	4	1	37
Plecotus auritus	0	0	8	0	0	0

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis	56	64.5 - 64.5	100	29
Nyctalus	11	0	18	2
Pipistrellus	42	0	100	5
Pipistrellus pipistrellus	5	3.5 - 30	58	53
Pipistrellus pygmaeus	5	6.5 - 8	49	42
Plecotus auritus	62	62 - 62	62	8

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

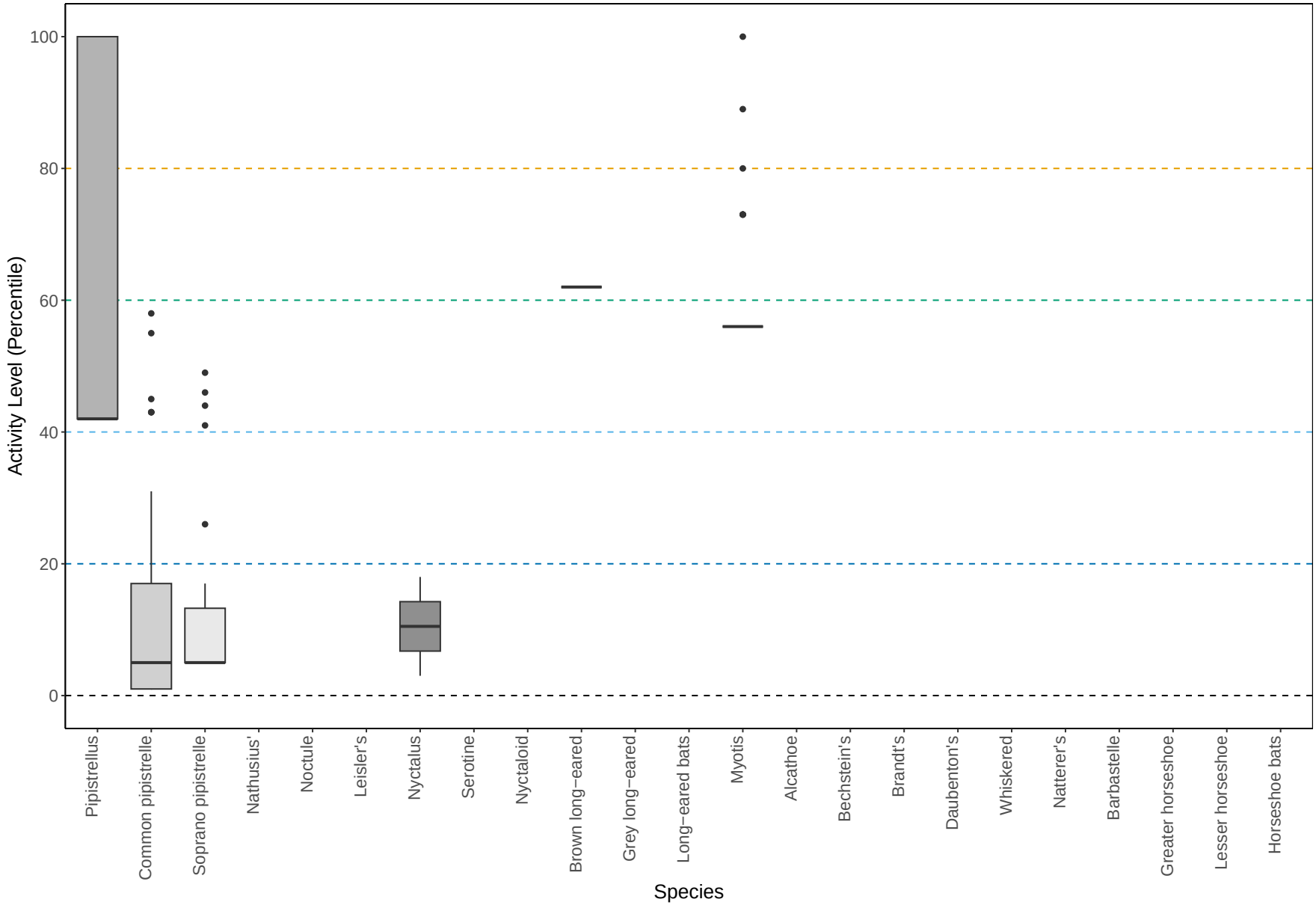

Activity Level (Percentile)
100
80
60
40
20
0
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nathusius'
Noctule
Leisler's
Nyctalus
Serotine
Nyctaloid
Brown long−eared
Grey long−eared
Long−eared bats
Myotis
Alcathoe
Bechstein's
Brandt's
Daubenton's
Whiskered
Natterer's
Barbastelle
Greater horseshoe
Lesser horseshoe
Horseshoe bats
Species

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

Per Site, Per Month

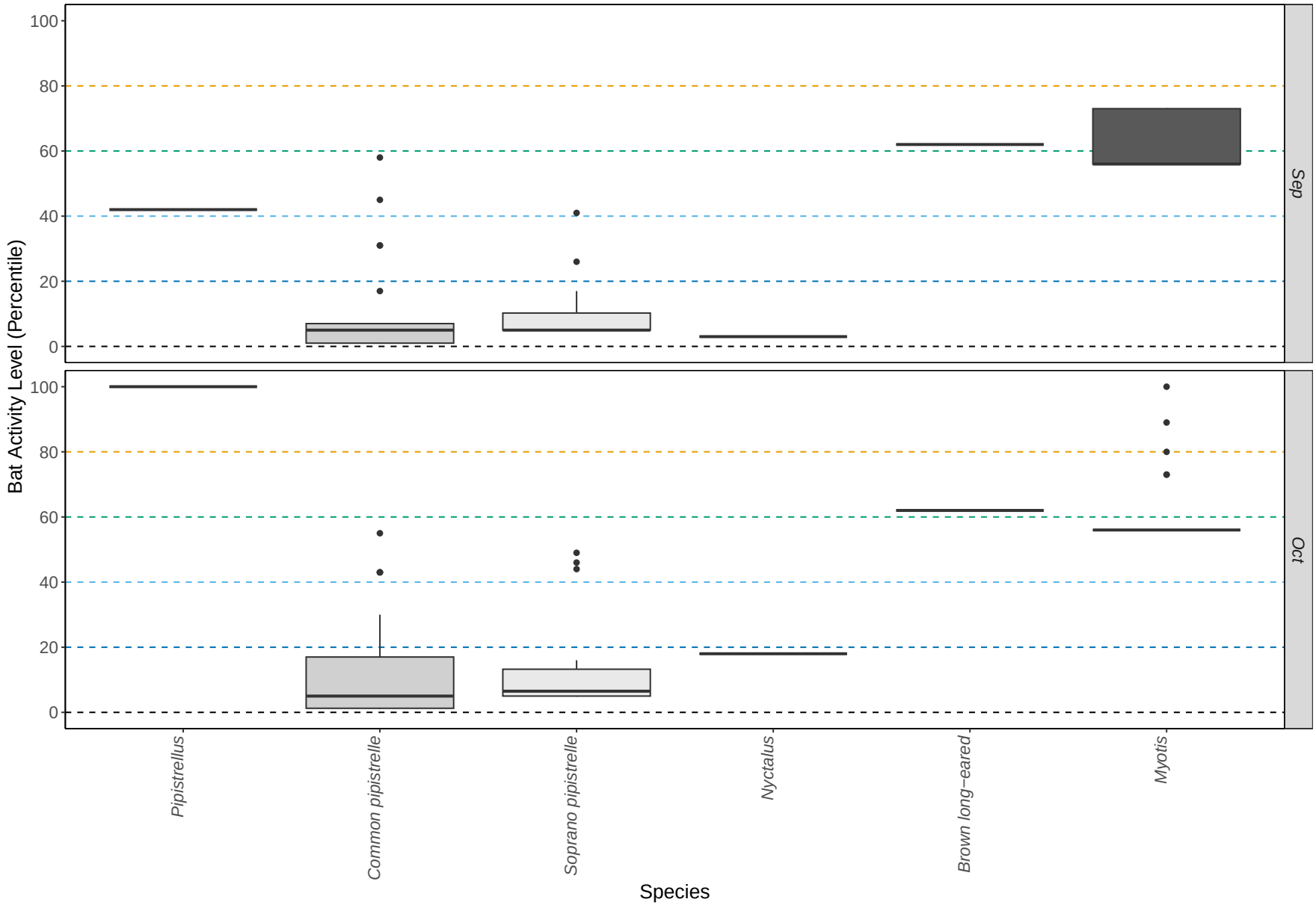
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
Myotis	Sep	0	0	2	3	0	0
Myotis	Oct	1	2	2	19	0	0
Nyctalus	Sep	0	0	0	0	0	1
Nyctalus	Oct	0	0	0	0	0	1
Pipistrellus	Sep	0	0	0	0	3	0
Pipistrellus	Oct	2	0	0	0	0	0
Pipistrellus pipistrellus	Sep	0	0	0	2	2	19
Pipistrellus pipistrellus	Oct	0	0	0	4	3	23
Pipistrellus pygmaeus	Sep	0	0	0	1	1	10
Pipistrellus pygmaeus	Oct	0	0	0	3	0	27
Plecotus auritus	Sep	0	0	3	0	0	0
Plecotus auritus	Oct	0	0	5	0	0	0

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
Myotis	Sep	56	56 - 56	73	5
Myotis	Oct	56	64.5 - 64.5	100	24
Nyctalus	Sep	3	0	3	1
Nyctalus	Oct	18	0	18	1
Pipistrellus	Sep	42	0	42	3
Pipistrellus	Oct	100	0	100	2
Pipistrellus pipistrellus	Sep	5	3.5 - 30	58	23
Pipistrellus pipistrellus	Oct	5	3.5 - 30	55	30
Pipistrellus pygmaeus	Sep	5	6.5 - 8	41	12
Pipistrellus pygmaeus	Oct	7	6.5 - 8	49	30
Plecotus auritus	Sep	62	62 - 62	62	3
Plecotus auritus	Oct	62	62 - 62	62	5

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


Bat Activity Level (Percentile)
100
80
60
40
20
0
Sep
Oct
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nyctalus
Brown long−eared
Myotis
Species

Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

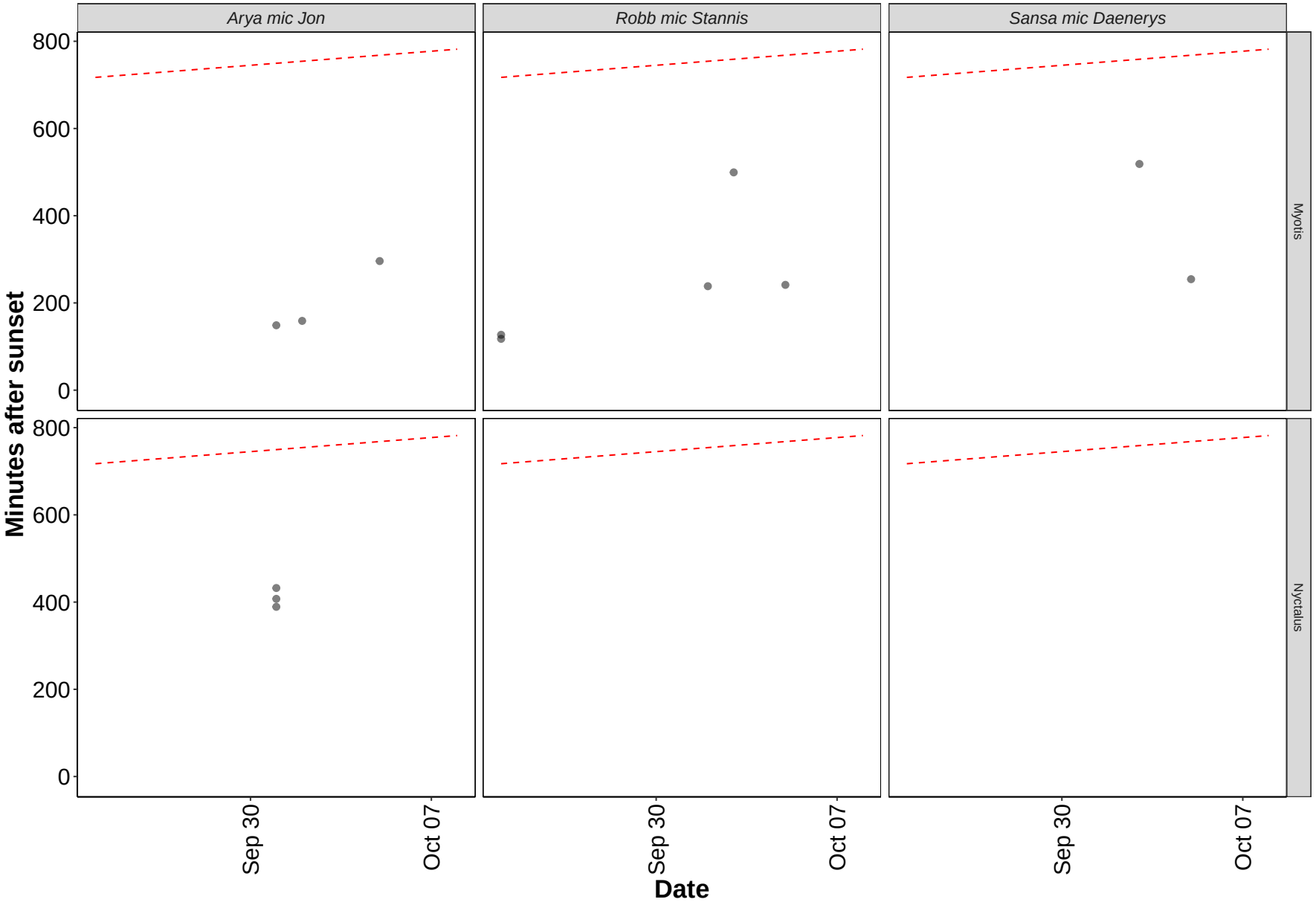
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

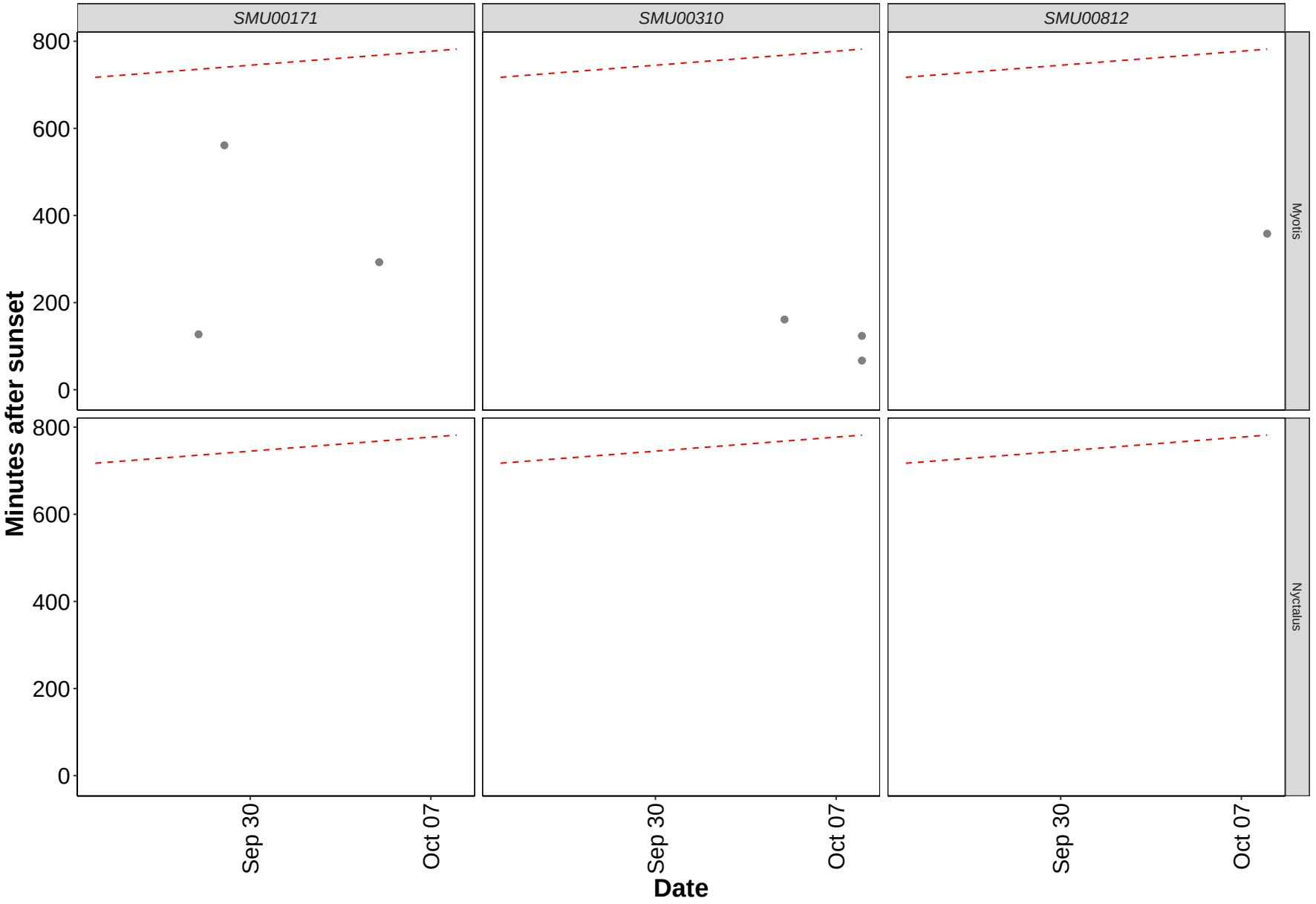
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2024-09-24	19:15	07:12	12.0
2024-09-25	19:12	07:14	12.0
2024-09-27	19:07	07:18	12.2
2024-09-28	19:04	07:20	12.3
2024-09-29	19:02	07:22	12.3
2024-09-30	18:59	07:24	12.4
2024-10-01	18:56	07:26	12.5
2024-10-02	18:54	07:28	12.6
2024-10-03	18:51	07:30	12.6
2024-10-05	18:46	07:34	12.8
2024-10-06	18:43	07:36	12.9
2024-10-07	18:41	07:38	13.0
2024-10-08	18:38	07:40	13.0

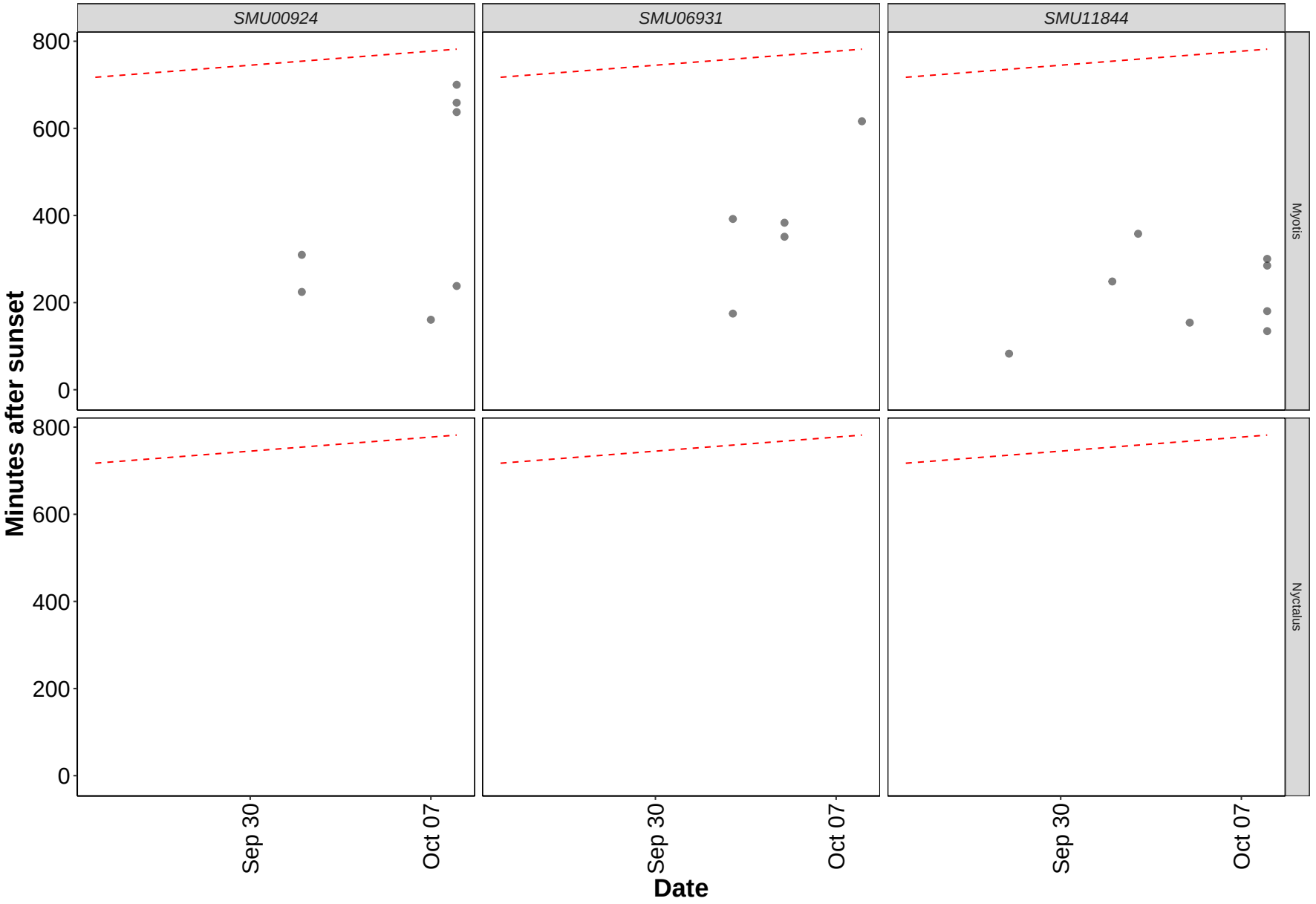
Distribution of Bat Activity Across the Night through Time

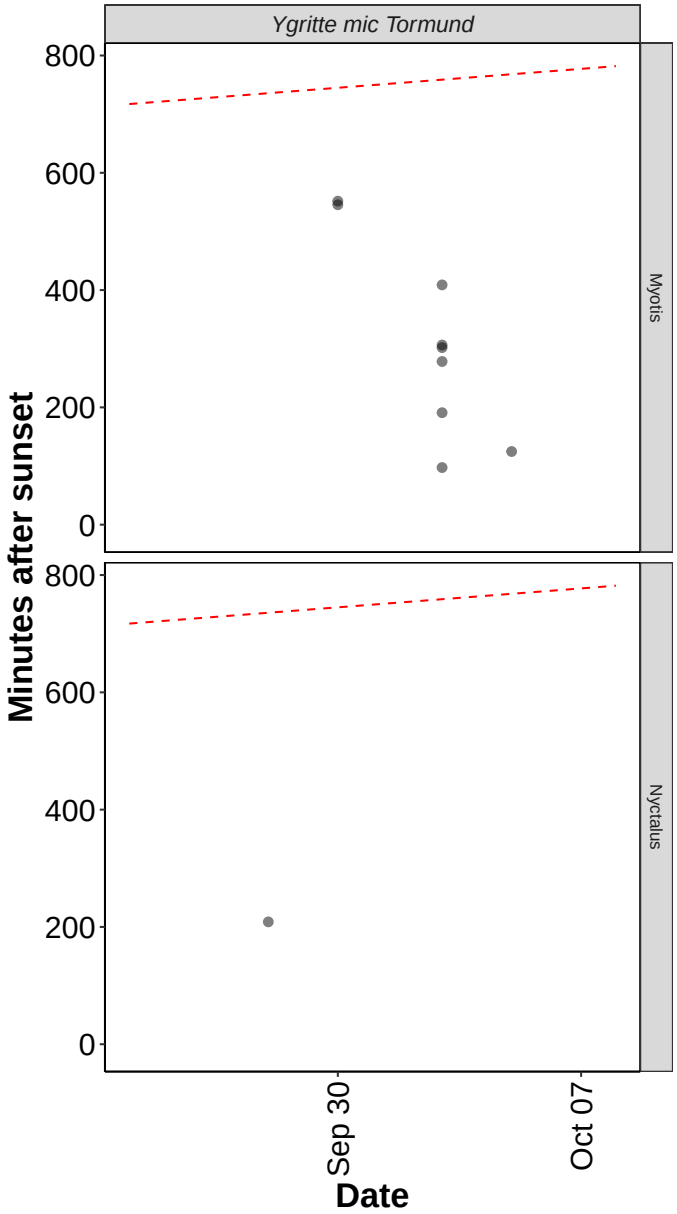
Per Detector

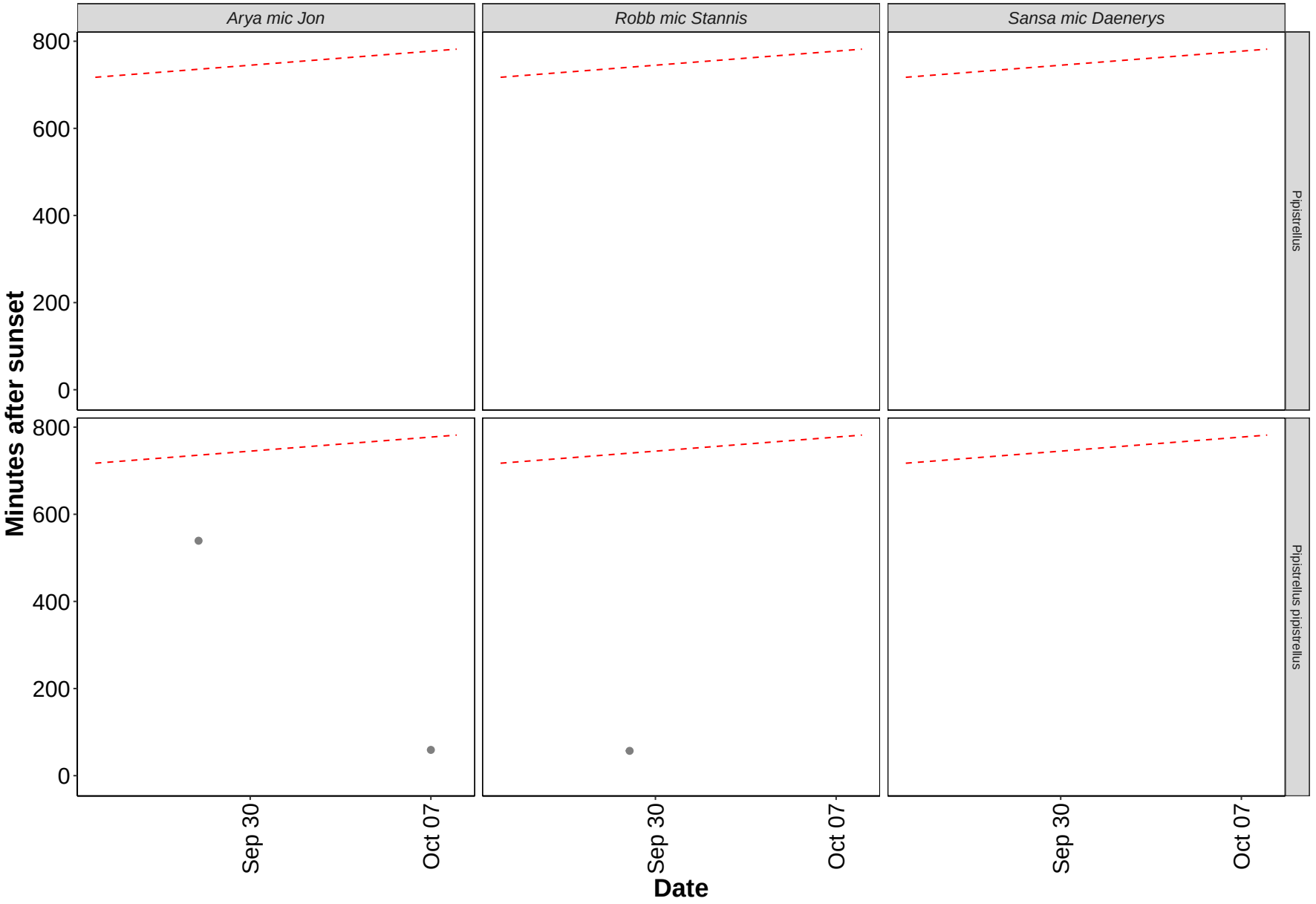
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

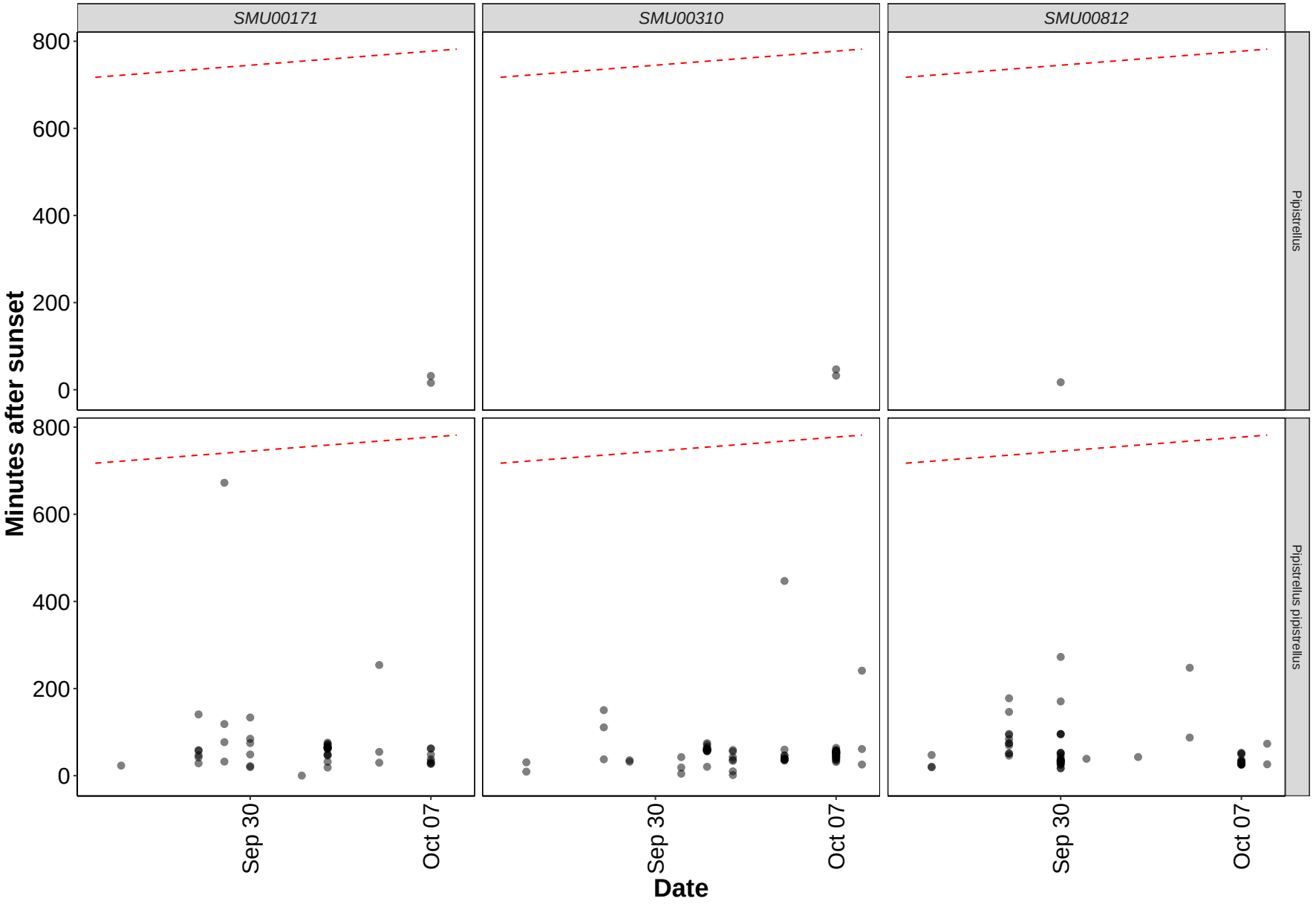

Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
Myotis
Nyctalus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date

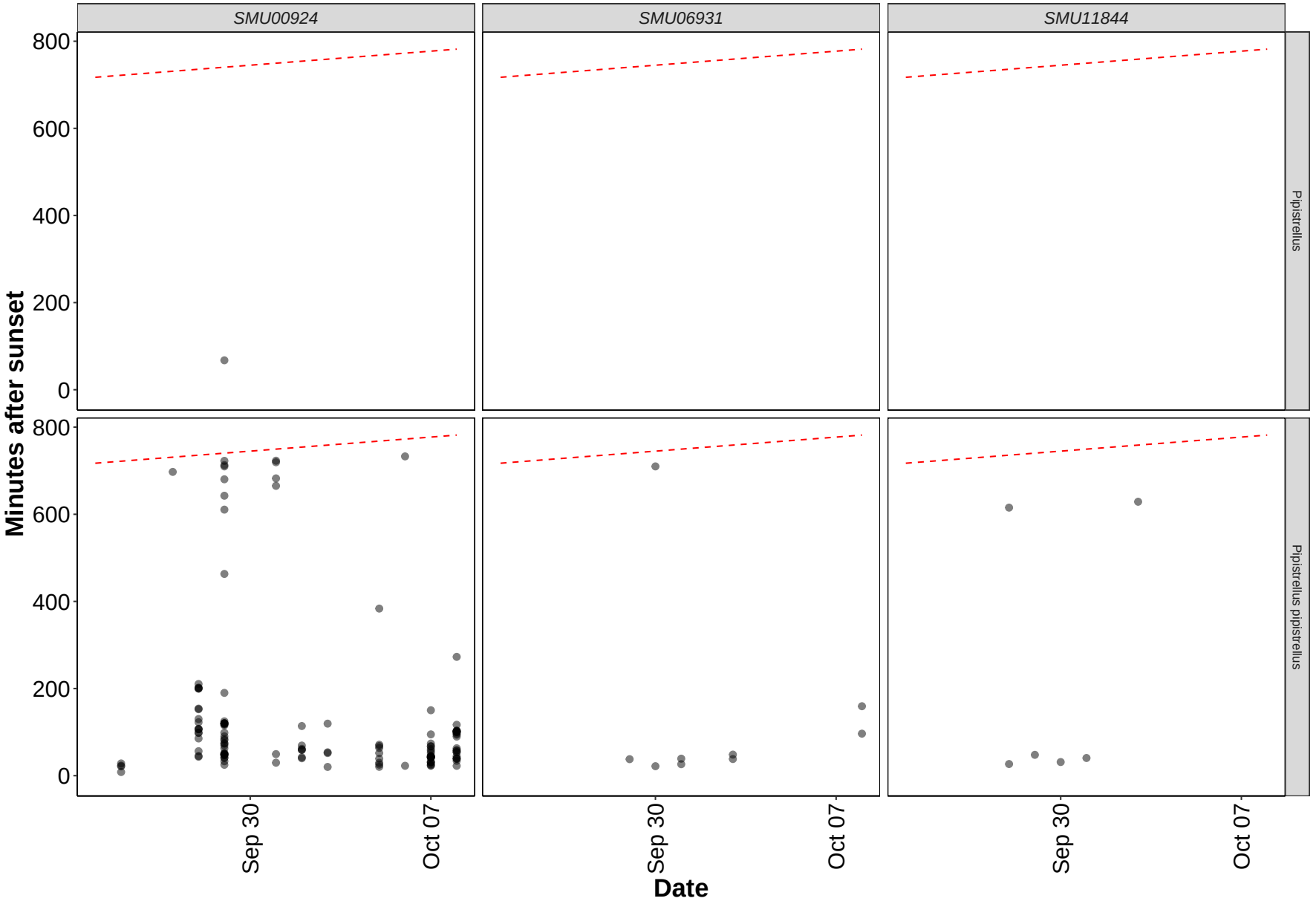

SMU00171
SMU00310
SMU00812
Myotis
Nyctalus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date


SMU00924
SMU06931
SMU11844
Myotis
Nyctalus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date


Ygritte mic Tormund
Myotis
Nyctalus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date


Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
Pipistrellus
Pipistrellus pipistrellus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date


SMU00171
SMU00310
SMU00812
Pipistrellus
Pipistrellus pipistrellus
Minutes after sunset
800
600
400
200
0
Sep 30
Oct 07
Date


SMU00924
SMU06931
SMU11844
Pipistrellus
Pipistrellus pipistrellus
Minutes after sunset
0
200
400
600
800
Sep 30
Oct 07
Date

Roost Emergence Time and Bat Observation

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

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

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 12: Table continues below

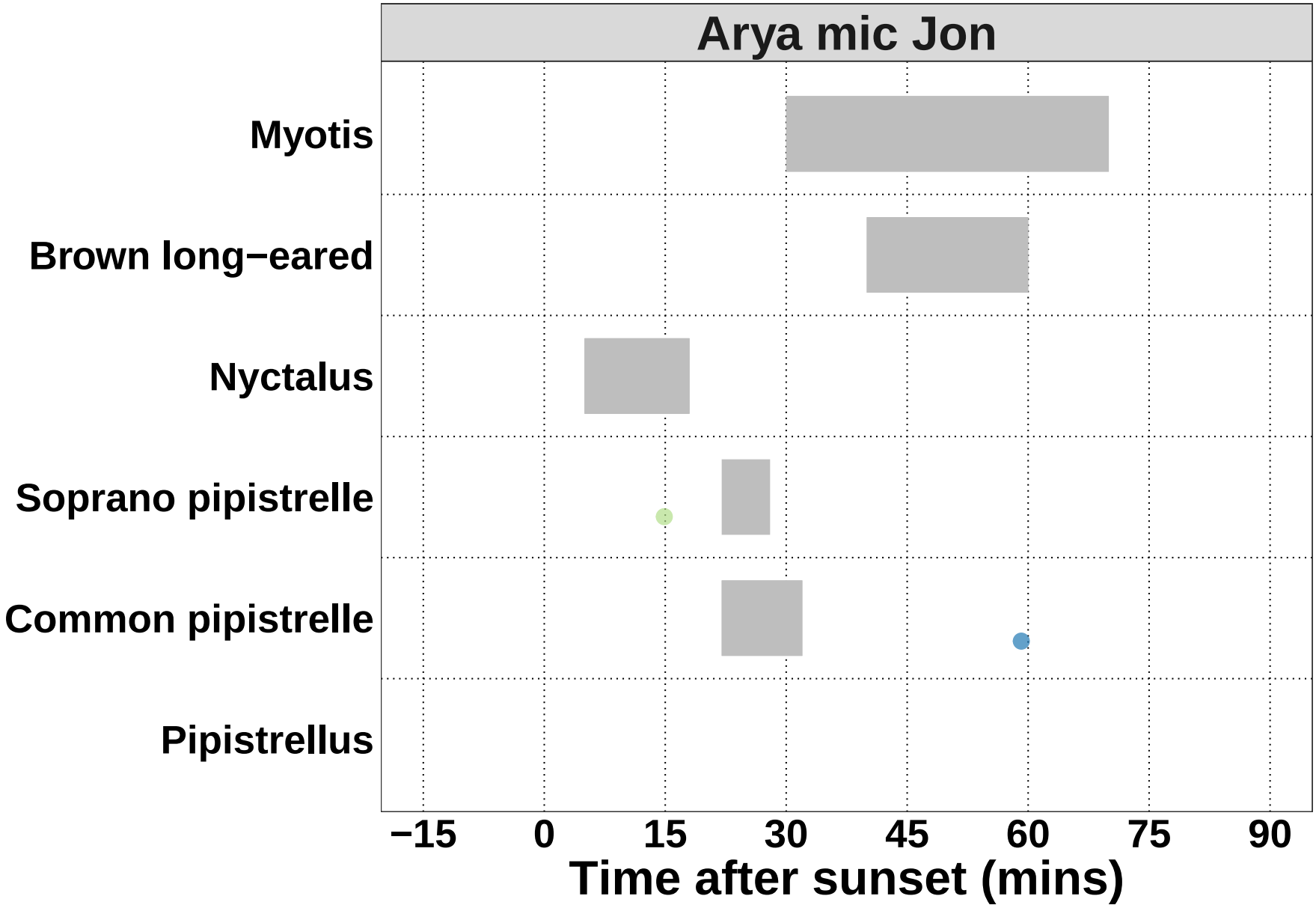
Species	Detector ID	2024-09-25	2024-09-28	2024-09-29	2024-09-30
Pipistrellus	SMU00171	0	0	0	0
Pipistrellus	SMU00812	0	0	0	1
Common pipistrelle	SMU00171	1	1	0	2
Common pipistrelle	SMU00310	2	0	1	0
Common pipistrelle	SMU00812	2	0	0	8
Common pipistrelle	SMU00924	4	0	1	0
Common pipistrelle	SMU06931	0	0	0	1
Common pipistrelle	SMU11844	0	1	0	1
Soprano pipistrelle	Arya mic Jon	0	0	1	0
Soprano pipistrelle	Robb mic Stannis	0	0	1	0
Soprano pipistrelle	SMU00171	0	0	0	3
Soprano pipistrelle	SMU00812	0	0	0	4
Soprano pipistrelle	SMU00924	0	0	0	0
Soprano pipistrelle	SMU06931	0	0	1	0
Soprano pipistrelle	SMU11844	0	0	0	0
Soprano pipistrelle	Sansa mic Daenerys	0	0	0	0
Soprano pipistrelle	Ygritte mic Tormund	0	0	0	0
Brown long-eared	SMU00310	0	0	0	0
Myotis	SMU00310	0	0	0	0

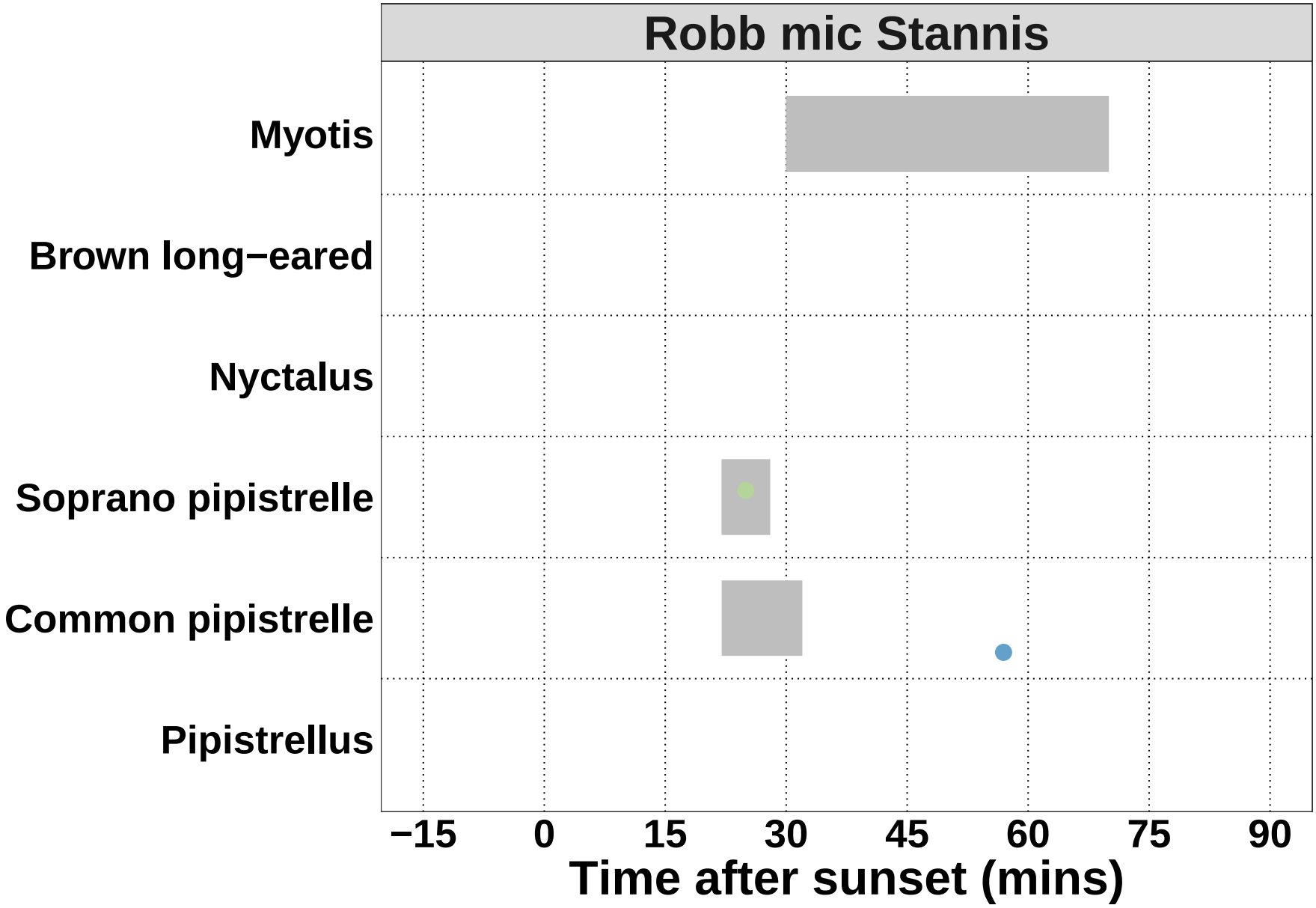
2024-10-01	2024-10-02	2024-10-03	2024-10-05	2024-10-06	2024-10-07	2024-10-08
0	0	0	0	0	2	0
0	0	0	0	0	0	0

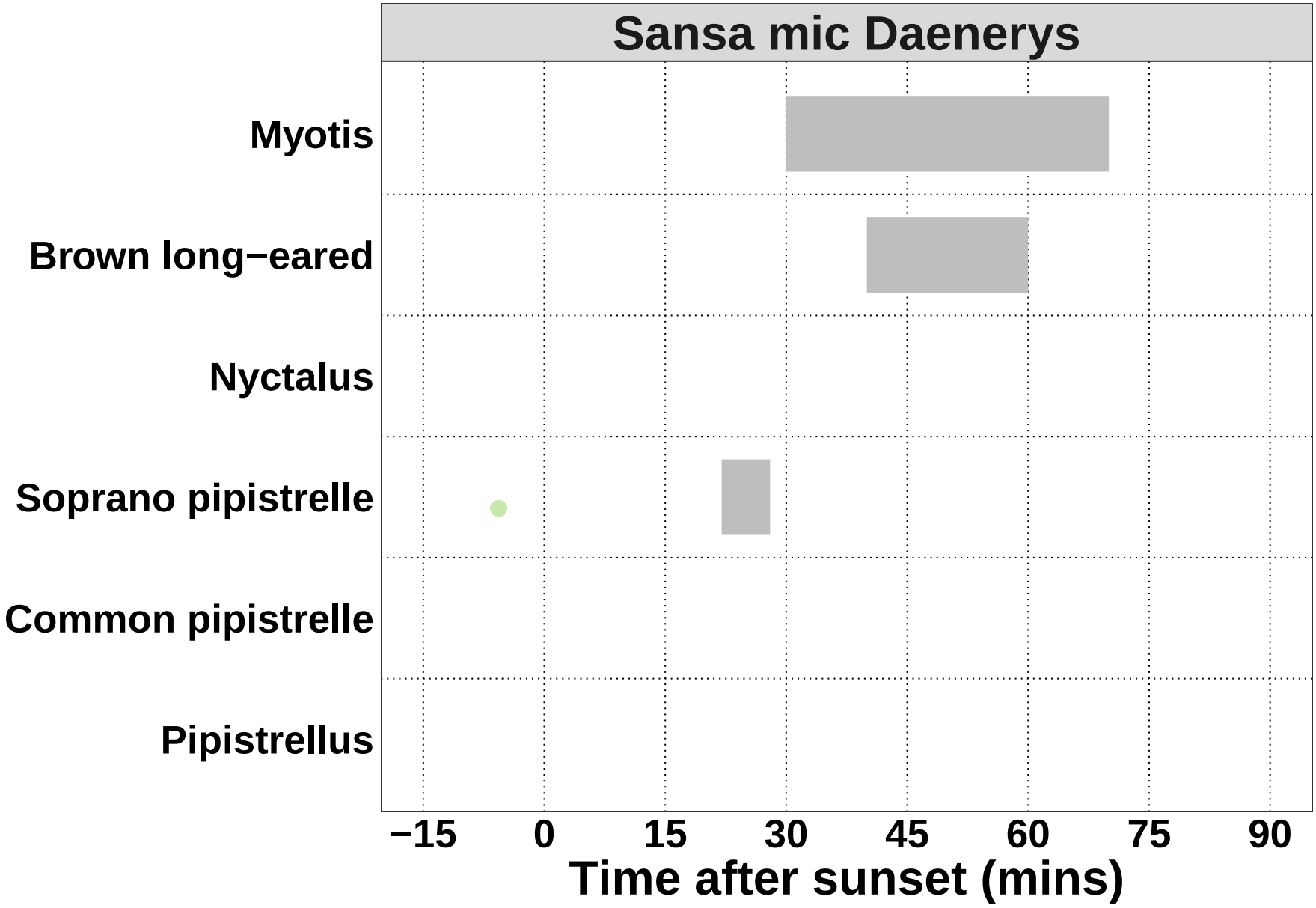
2024-10-01	2024-10-02	2024-10-03	2024-10-05	2024-10-06	2024-10-07	2024-10-08
0	1	2	1	0	3	0
2	1	2	0	0	1	1
0	0	0	0	0	8	1
1	0	1	3	1	6	1
1	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	0	1	0	1
0	1	0	0	0	2	0
0	0	0	0	0	2	0
0	0	1	0	0	0	0
1	0	1	0	0	0	0
1	0	0	0	0	0	0
0	0	1	0	1	0	0
0	0	0	0	0	1	0
0	0	0	0	0	0	1

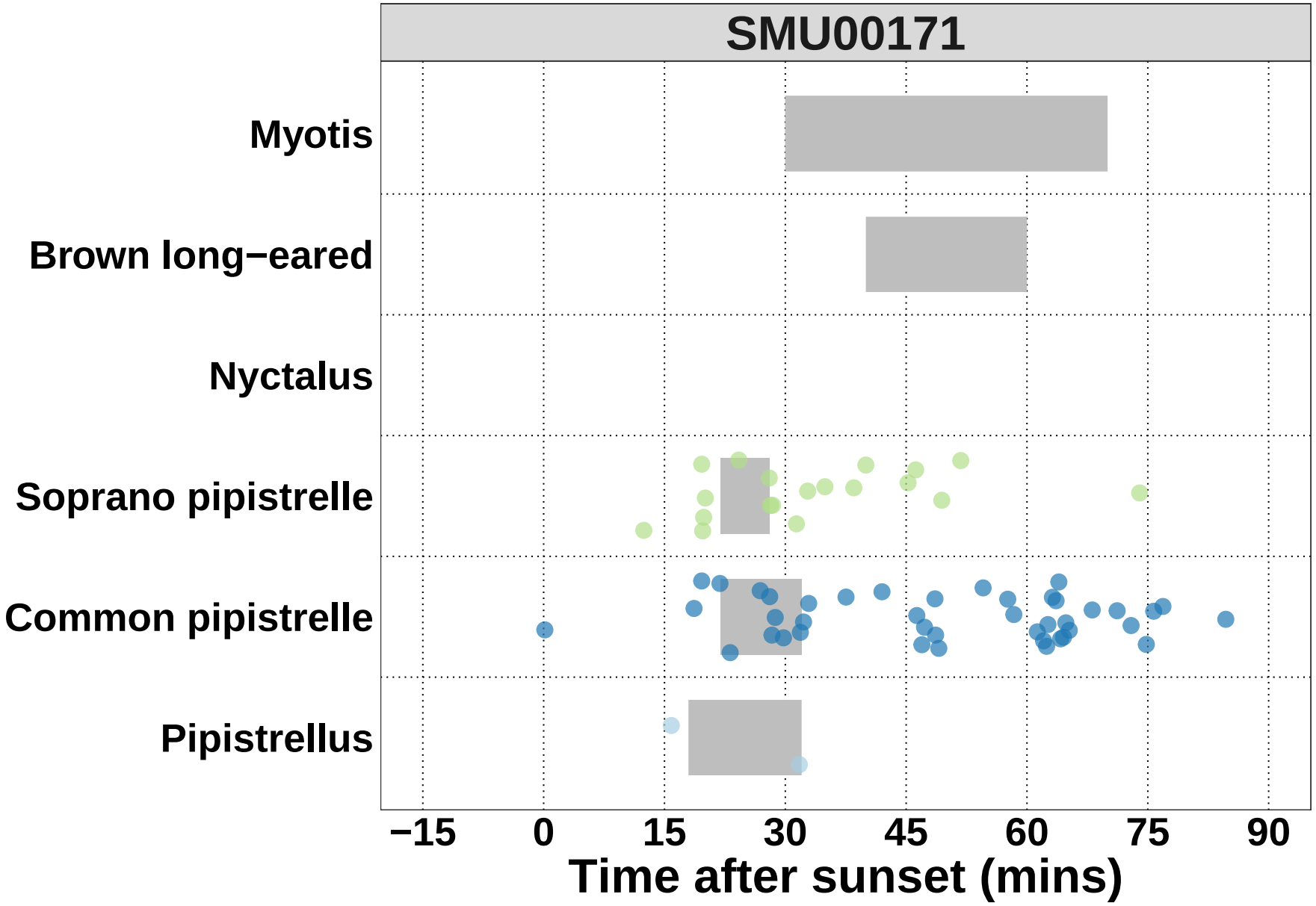
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

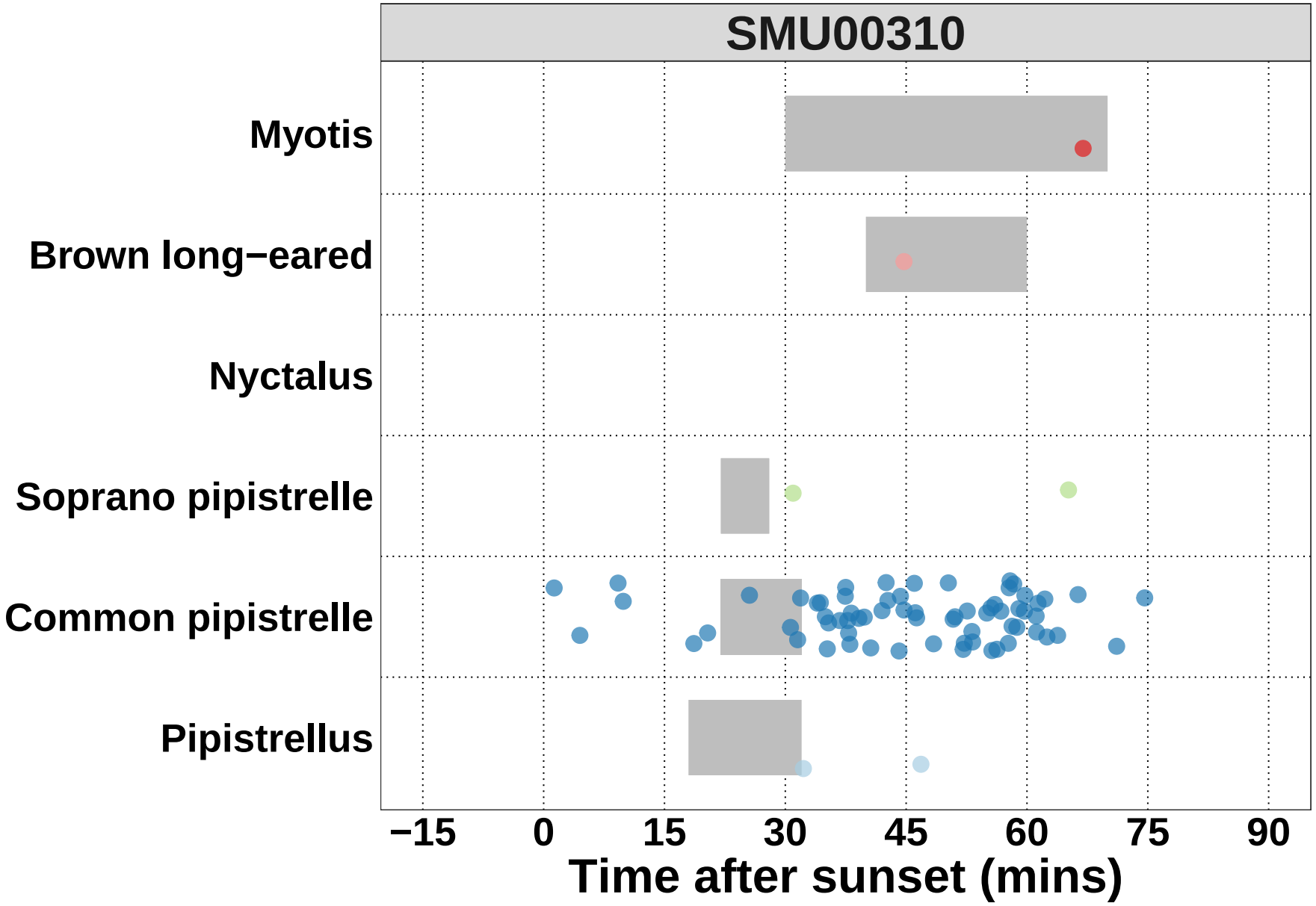
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occuring earlier than this time range, may potentially indicate the presence of a nearby roost.

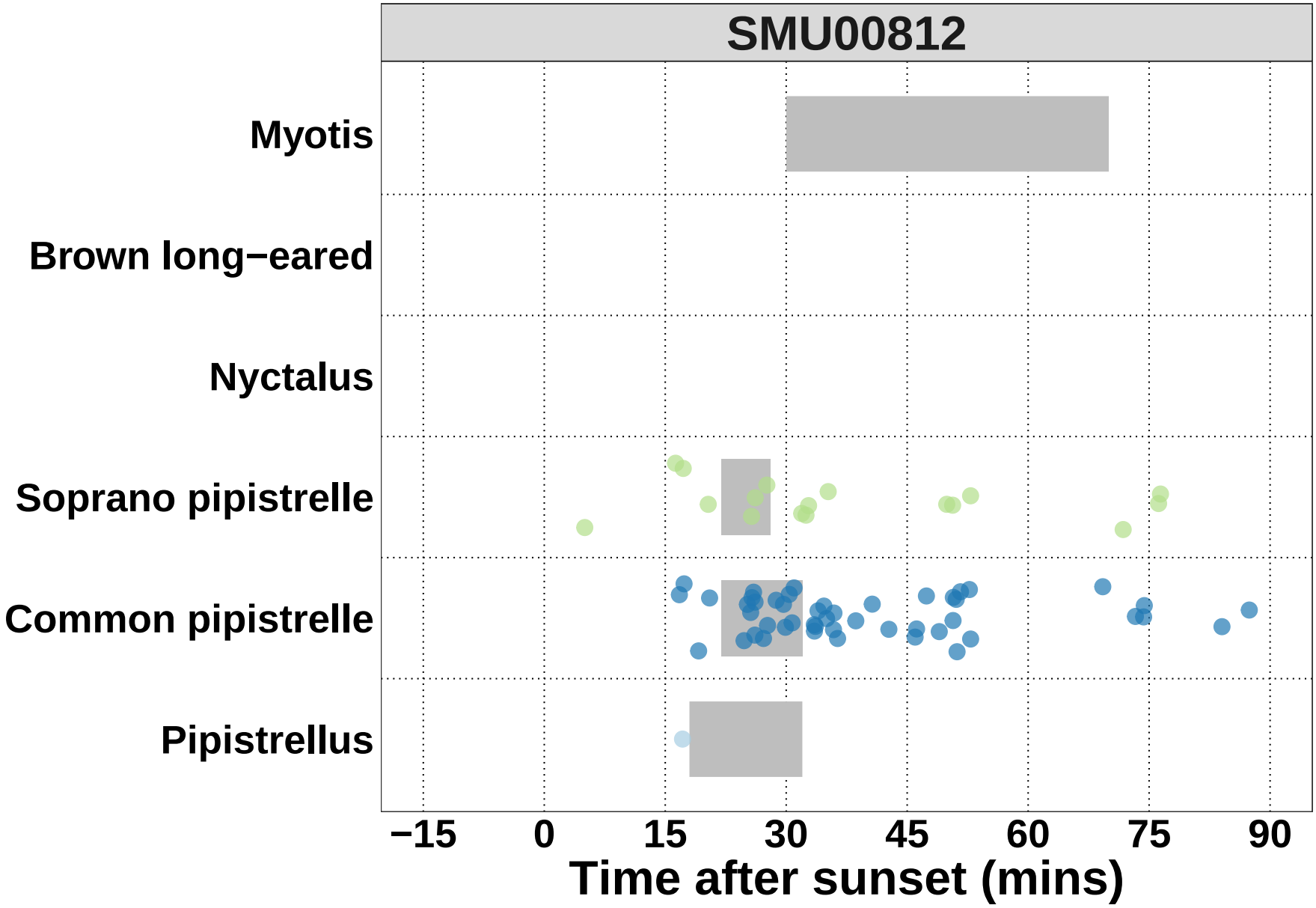

Arya mic Jon
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

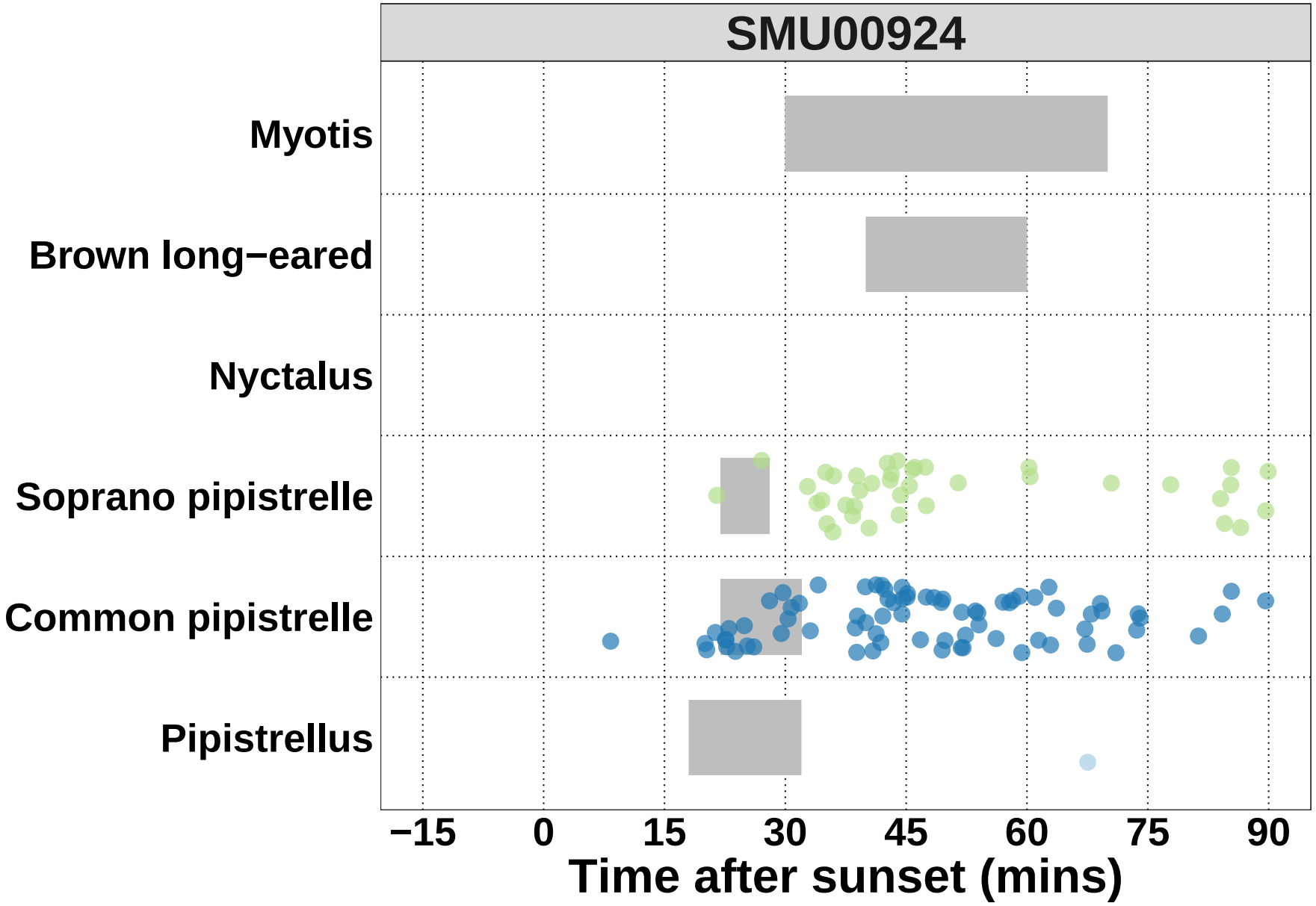

Robb mic Stannis
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

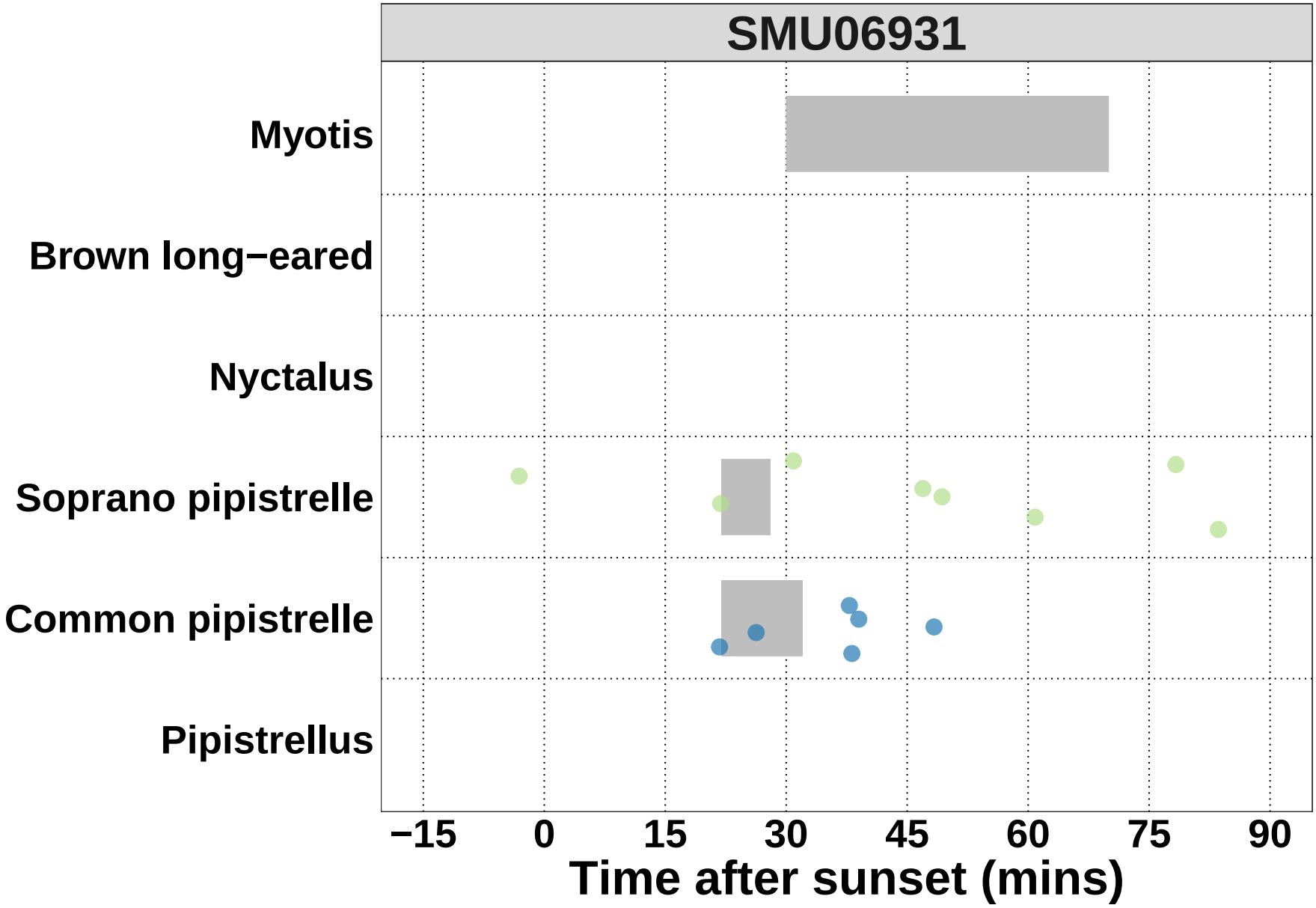

Sansa mic Daenerys
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

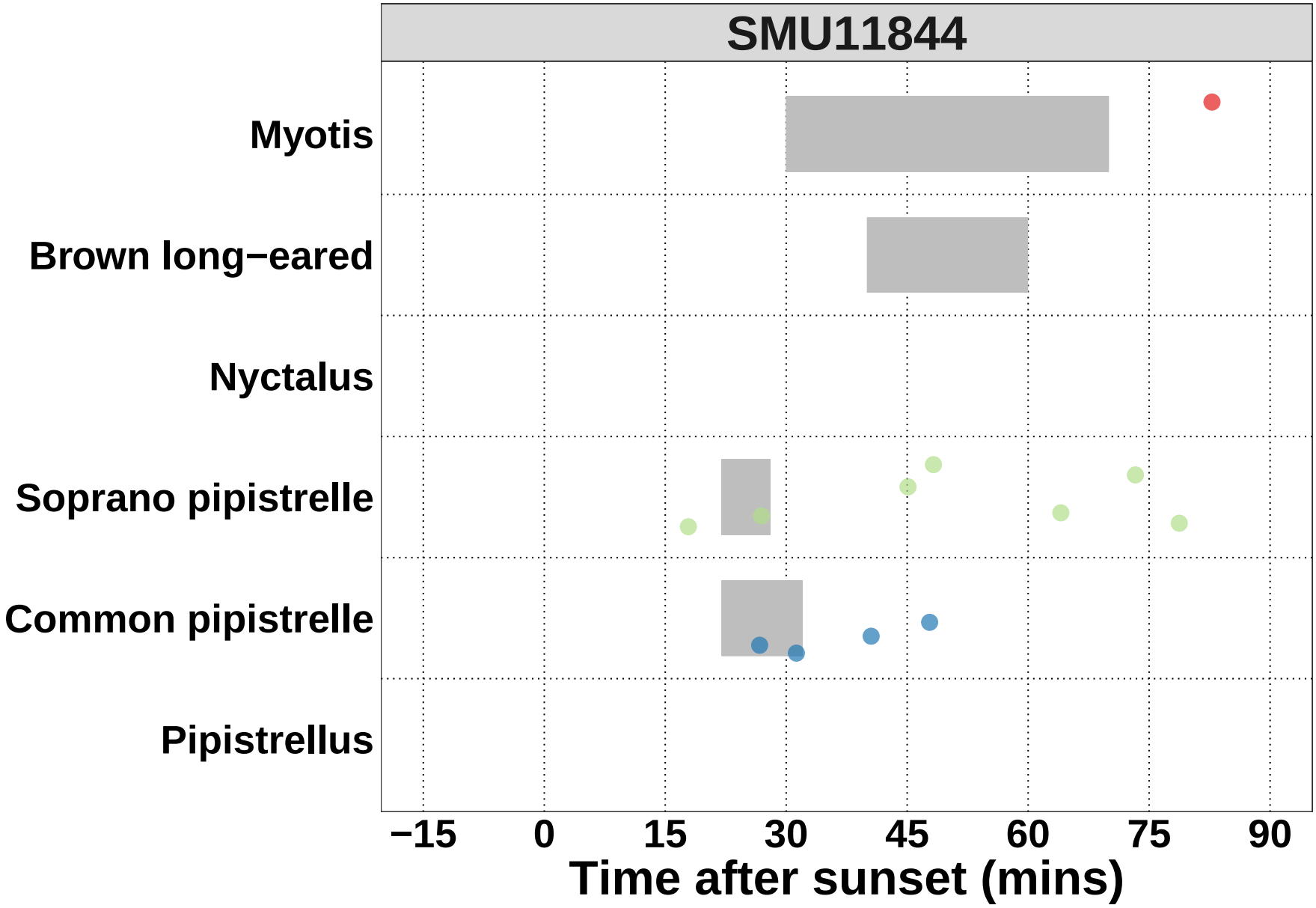

SMU00171
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

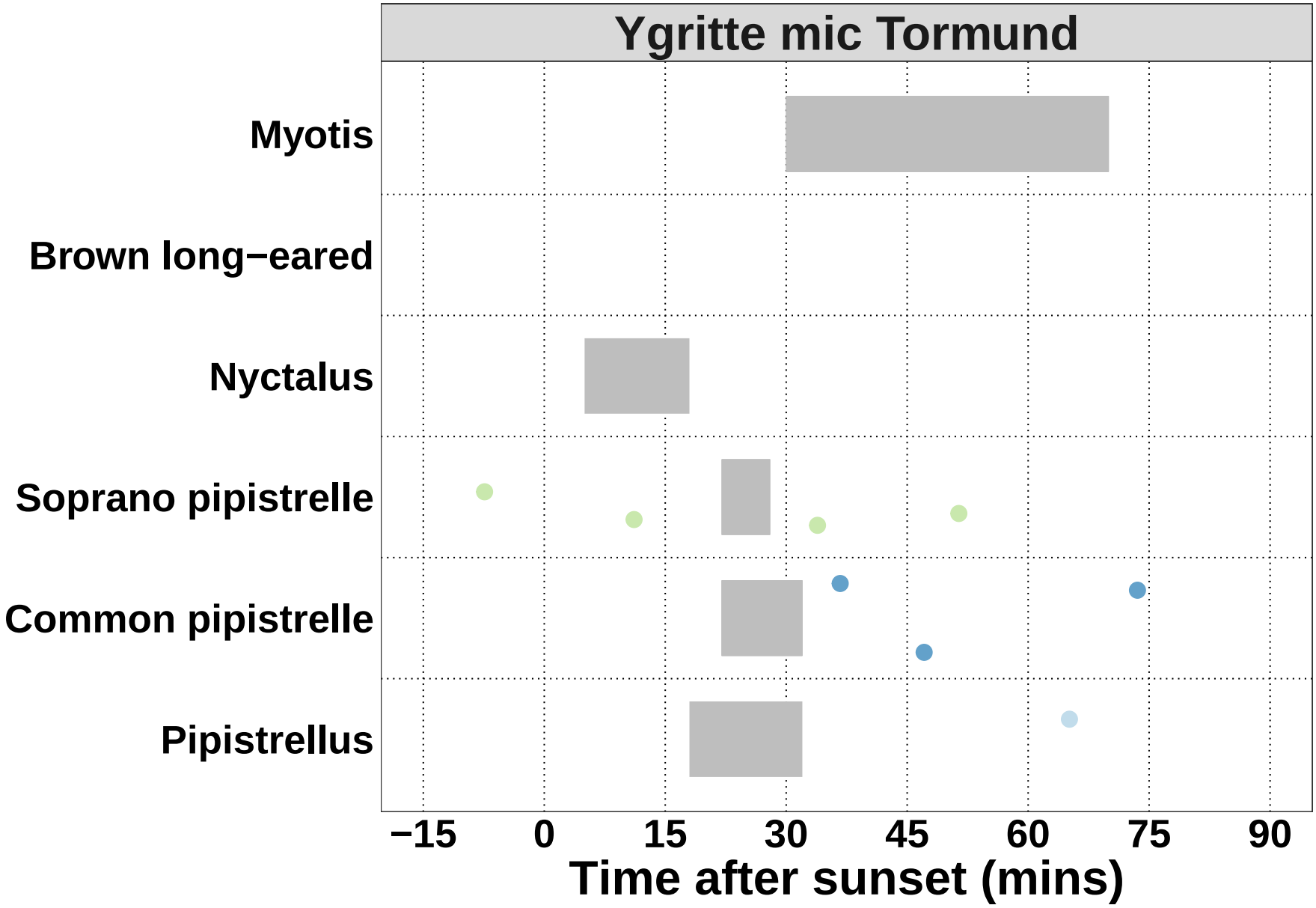

SMU00310
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU00812
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU00924
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU06931
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


SMU11844
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)


Ygritte mic Tormund
Myotis
Brown long−eared
Nyctalus
Soprano pipistrelle
Common pipistrelle
Pipistrellus
−15
0
15
30
45
60
75
90
Time after sunset (mins)

Count 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 (%)
Myotis	46	9.0
Nyctalus	4	0.8
Pipistrellus	7	1.4
Pipistrellus pipistrellus	330	64.5
Pipistrellus pygmaeus	116	22.7
Plecotus auritus	9	1.8
Total	512	100.2

Per Detector

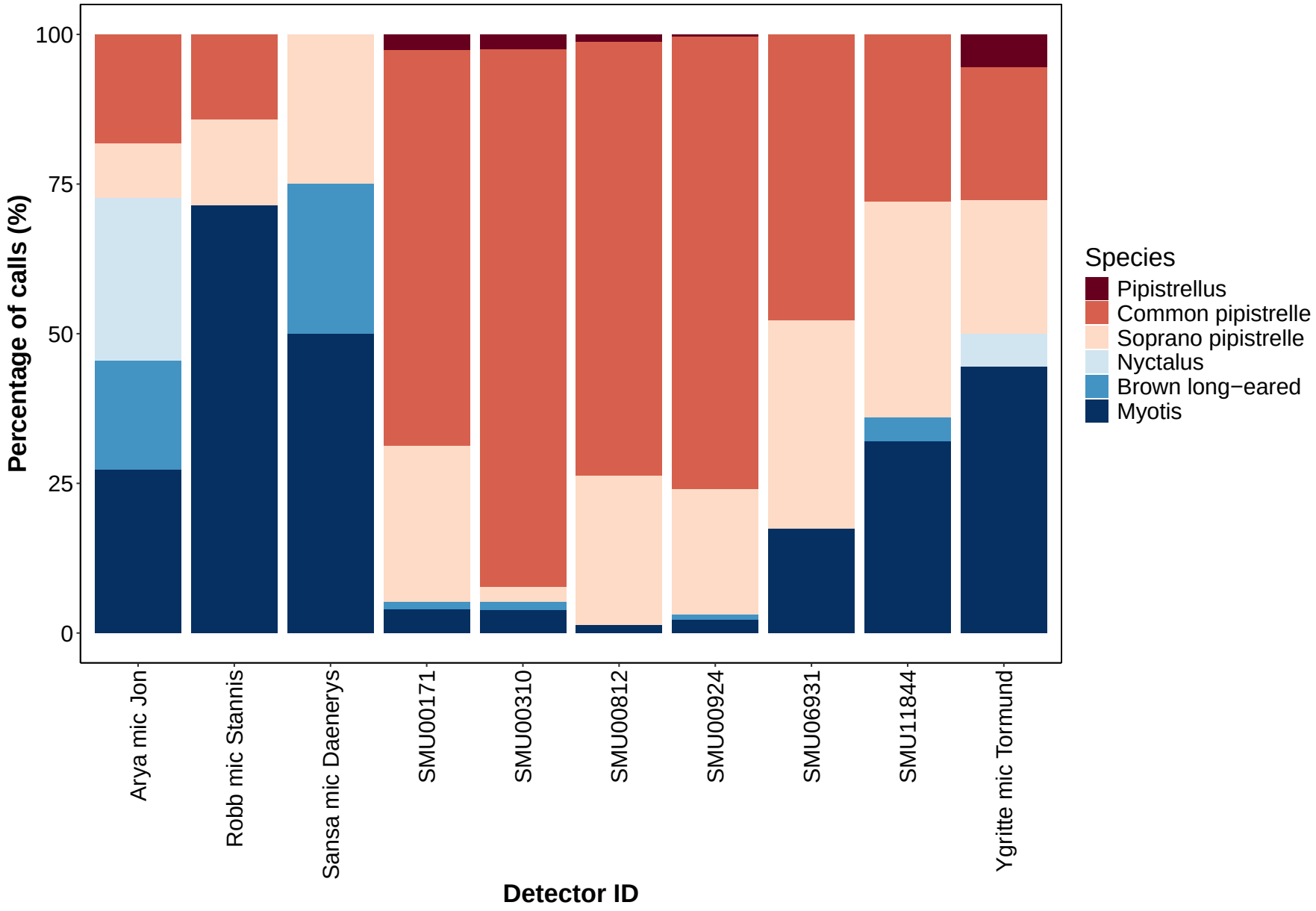
The number of passes recorded for each species at each detector.

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Pipistrellus	SMU00171	2	2.7397260
Pipistrellus	SMU00310	2	2.5316456
Pipistrellus	SMU00812	1	1.2345679
Pipistrellus	SMU00924	1	0.5291005
Pipistrellus	Ygritte mic Tormund	1	5.0000000
Common pipistrelle	Arya mic Jon	2	16.6666667
Common pipistrelle	Robb mic Stannis	1	12.5000000
Common pipistrelle	SMU00171	47	64.3835616
Common pipistrelle	SMU00310	71	89.8734177
Common pipistrelle	SMU00812	58	71.6049383
Common pipistrelle	SMU00924	131	69.3121693
Common pipistrelle	SMU06931	9	40.9090909
Common pipistrelle	SMU11844	6	25.0000000
Common pipistrelle	Ygritte mic Tormund	5	25.0000000
Soprano pipistrelle	Arya mic Jon	1	8.3333333
Soprano pipistrelle	Robb mic Stannis	2	25.0000000
Soprano pipistrelle	SMU00171	20	27.3972603
Soprano pipistrelle	SMU00310	2	2.5316456
Soprano pipistrelle	SMU00812	21	25.9259259
Soprano pipistrelle	SMU00924	48	25.3968254
Soprano pipistrelle	SMU06931	8	36.3636364
Soprano pipistrelle	SMU11844	9	37.5000000
Soprano pipistrelle	Sansa mic Daenerys	1	25.0000000
Soprano pipistrelle	Ygritte mic Tormund	4	20.0000000
Nyctalus	Arya mic Jon	3	25.0000000
Nyctalus	Ygritte mic Tormund	1	5.0000000
Brown long-eared	Arya mic Jon	3	25.0000000
Brown long-eared	SMU00171	1	1.3698630
Brown long-eared	SMU00310	1	1.2658228
Brown long-eared	SMU00924	2	1.0582011
Brown long-eared	SMU11844	1	4.1666667
Brown long-eared	Sansa mic Daenerys	1	25.0000000

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Myotis	Arya mic Jon	3	25.0000000
Myotis	Robb mic Stannis	5	62.5000000
Myotis	SMU00171	3	4.1095890
Myotis	SMU00310	3	3.7974684
Myotis	SMU00812	1	1.2345679
Myotis	SMU00924	7	3.7037037
Myotis	SMU06931	5	22.7272727
Myotis	SMU11844	8	33.3333333
Myotis	Sansa mic Daenerys	2	50.0000000
Myotis	Ygritte mic Tormund	9	45.0000000

Species Composition

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


Percentage of calls (%)
100
75
50
25
0
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID
Species
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nyctalus
Brown long−eared
Myotis

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.

Nighlty 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	SMU00171	0.1
Pipistrellus	SMU00310	0.1
Pipistrellus	SMU00812	0.1
Pipistrellus	SMU00924	0.1
Pipistrellus	Ygritte mic Tormund	0.1
Common pipistrelle	Arya mic Jon	0.1
Common pipistrelle	Robb mic Stannis	0.1
Common pipistrelle	SMU00171	0.5
Common pipistrelle	SMU00310	0.2
Common pipistrelle	SMU00812	0.2
Common pipistrelle	SMU00924	1.6
Common pipistrelle	SMU06931	0.2
Common pipistrelle	SMU11844	0.1
Common pipistrelle	Ygritte mic Tormund	0.1
Soprano pipistrelle	Arya mic Jon	0.1
Soprano pipistrelle	Robb mic Stannis	0.1
Soprano pipistrelle	SMU00171	0.1
Soprano pipistrelle	SMU00310	0.1
Soprano pipistrelle	SMU00812	0.1
Soprano pipistrelle	SMU00924	0.4
Soprano pipistrelle	SMU06931	0.1
Soprano pipistrelle	SMU11844	0.1
Soprano pipistrelle	Sansa mic Daenerys	0.1
Soprano pipistrelle	Ygritte mic Tormund	0.1
Nyctalus	Arya mic Jon	0.2
Nyctalus	Ygritte mic Tormund	0.1
Brown long-eared	Arya mic Jon	0.1
Brown long-eared	SMU00171	0.1
Brown long-eared	SMU00310	0.1
Brown long-eared	SMU00924	0.1
Brown long-eared	SMU11844	0.1
Brown long-eared	Sansa mic Daenerys	0.1
Myotis	Arya mic Jon	0.1
Myotis	Robb mic Stannis	0.1
Myotis	SMU00171	0.1
Myotis	SMU00310	0.1

Species	Detector ID	Median Pass Rate
Myotis	SMU00812	0.1
Myotis	SMU00924	0.1
Myotis	SMU06931	0.1
Myotis	SMU11844	0.1
Myotis	Sansa mic Daenerys	0.1
Myotis	Ygritte mic Tormund	0.2

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.

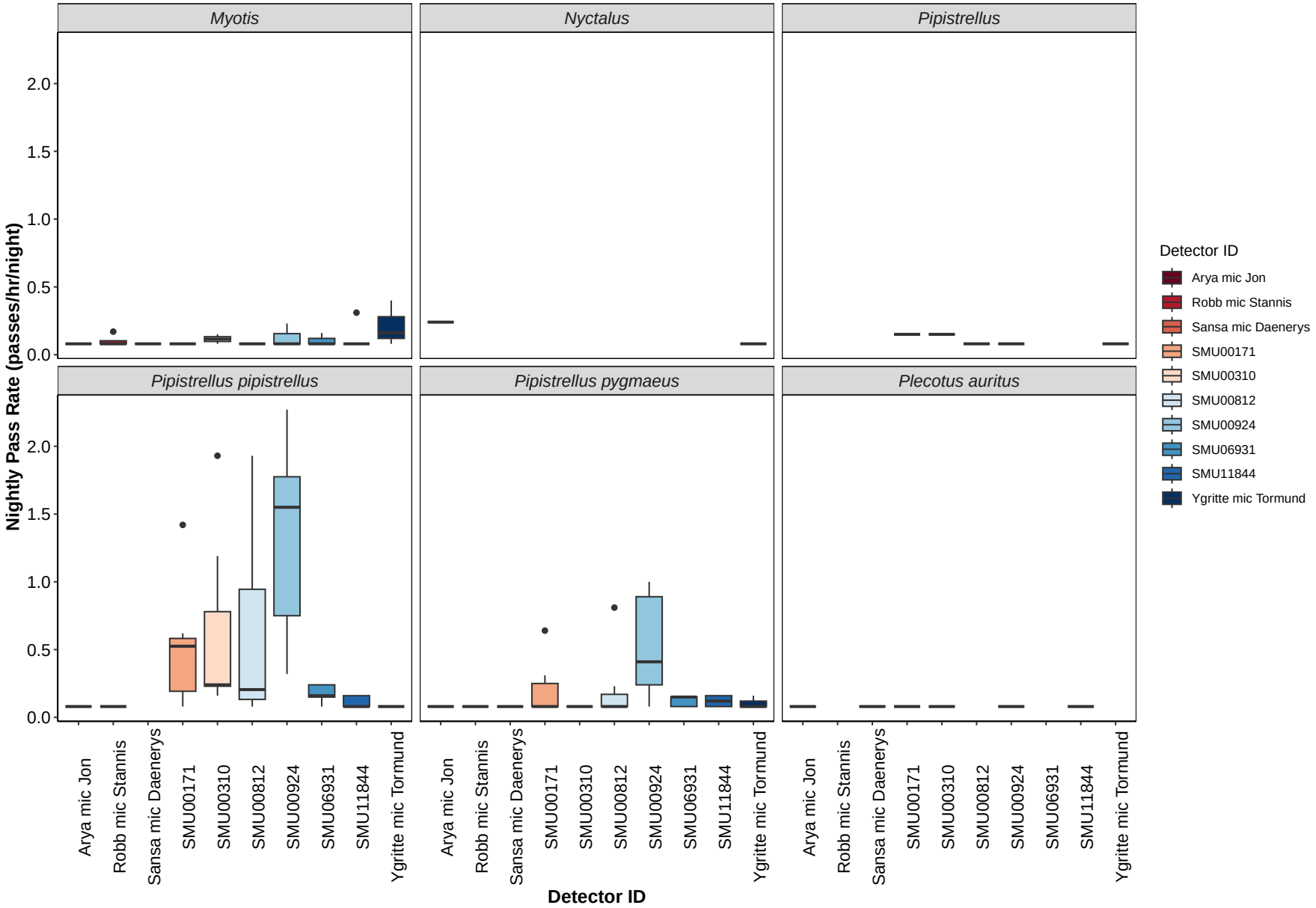
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Mean Pass Rate
Pipistrellus	SMU00171	0.1
Pipistrellus	SMU00310	0.1
Pipistrellus	SMU00812	0.1
Pipistrellus	SMU00924	0.1
Pipistrellus	Ygritte mic Tormund	0.1
Common pipistrelle	Arya mic Jon	0.1
Common pipistrelle	Robb mic Stannis	0.1
Common pipistrelle	SMU00171	0.5
Common pipistrelle	SMU00310	0.6
Common pipistrelle	SMU00812	0.6
Common pipistrelle	SMU00924	1.2
Common pipistrelle	SMU06931	0.2
Common pipistrelle	SMU11844	0.1
Common pipistrelle	Ygritte mic Tormund	0.1
Soprano pipistrelle	Arya mic Jon	0.1
Soprano pipistrelle	Robb mic Stannis	0.1
Soprano pipistrelle	SMU00171	0.2
Soprano pipistrelle	SMU00310	0.1
Soprano pipistrelle	SMU00812	0.2
Soprano pipistrelle	SMU00924	0.5
Soprano pipistrelle	SMU06931	0.1
Soprano pipistrelle	SMU11844	0.1
Soprano pipistrelle	Sansa mic Daenerys	0.1
Soprano pipistrelle	Ygritte mic Tormund	0.1
Nyctalus	Arya mic Jon	0.2
Nyctalus	Ygritte mic Tormund	0.1
Brown long-eared	Arya mic Jon	0.1
Brown long-eared	SMU00171	0.1
Brown long-eared	SMU00310	0.1
Brown long-eared	SMU00924	0.1

Species	Detector ID	Mean Pass Rate
Brown long-eared	SMU11844	0.1
Brown long-eared	Sansa mic Daenerys	0.1
Myotis	Arya mic Jon	0.1
Myotis	Robb mic Stannis	0.1
Myotis	SMU00171	0.1
Myotis	SMU00310	0.1
Myotis	SMU00812	0.1
Myotis	SMU00924	0.1
Myotis	SMU06931	0.1
Myotis	SMU11844	0.1
Myotis	Sansa mic Daenerys	0.1
Myotis	Ygritte mic Tormund	0.2

Per Detector

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.


Myotis
Nyctalus
Pipistrellus
Pipistrellus pipistrellus
Pipistrellus pygmaeus
Plecotus auritus
Nightly Pass Rate (passes/hr/night)
0.0
0.5
1.0
1.5
2.0
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID
Detector ID

Split by Month

Total Bat Passes per Detector each Month

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	Sep	Oct
Pipistrellus	SMU00171	0	2
Pipistrellus	SMU00310	0	2
Pipistrellus	SMU00812	1	0
Pipistrellus	SMU00924	1	0
Pipistrellus	Ygritte mic Tormund	1	0
Common pipistrelle	Arya mic Jon	1	1
Common pipistrelle	Robb mic Stannis	1	0
Common pipistrelle	SMU00171	21	30
Common pipistrelle	SMU00310	7	63
Common pipistrelle	SMU00812	38	20
Common pipistrelle	SMU00924	70	103
Common pipistrelle	SMU06931	4	7
Common pipistrelle	SMU11844	5	2
Common pipistrelle	Ygritte mic Tormund	2	2
Soprano pipistrelle	Arya mic Jon	1	0
Soprano pipistrelle	Robb mic Stannis	1	0
Soprano pipistrelle	Sansa mic Daenerys	0	1
Soprano pipistrelle	SMU00171	9	11
Soprano pipistrelle	SMU00310	1	1
Soprano pipistrelle	SMU00812	12	8
Soprano pipistrelle	SMU00924	6	42
Soprano pipistrelle	SMU06931	2	6
Soprano pipistrelle	SMU11844	1	8
Soprano pipistrelle	Ygritte mic Tormund	0	4
Nyctalus	Arya mic Jon	0	3
Nyctalus	Ygritte mic Tormund	1	0
Brown long-eared	Arya mic Jon	1	1
Brown long-eared	Sansa mic Daenerys	0	1
Brown long-eared	SMU00171	1	0
Brown long-eared	SMU00310	0	1
Brown long-eared	SMU00924	0	2
Brown long-eared	SMU11844	1	0
Myotis	Arya mic Jon	0	3
Myotis	Robb mic Stannis	2	3
Myotis	Sansa mic Daenerys	0	2
Myotis	SMU00171	2	1

Species	Detector ID	Sep	Oct
Myotis	SMU00310	0	3
Myotis	SMU00812	0	1
Myotis	SMU00924	0	5
Myotis	SMU06931	0	4
Myotis	SMU11844	1	7
Myotis	Ygritte mic Tormund	2	6

Survey Effort

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

month	Detector ID	No. of Survey Nights
Sep	Arya mic Jon	2
Sep	Robb mic Stannis	2
Sep	SMU00171	4
Sep	SMU00310	3
Sep	SMU00812	4
Sep	SMU00924	4
Sep	SMU06931	2
Sep	SMU11844	3
Sep	Ygritte mic Tormund	3
Oct	Arya mic Jon	4
Oct	Robb mic Stannis	3
Oct	SMU00171	6
Oct	SMU00310	6
Oct	SMU00812	6
Oct	SMU00924	7
Oct	SMU06931	5
Oct	SMU11844	5
Oct	Sansa mic Daenerys	3
Oct	Ygritte mic Tormund	5

Nightly Bat Passes 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	Sep	Oct
Pipistrellus	SMU00171	NA	0.1
Pipistrellus	SMU00310	NA	0.1
Pipistrellus	SMU00812	0.1	NA
Pipistrellus	SMU00924	0.1	NA
Pipistrellus	Ygritte mic Tormund	0.1	NA
Common pipistrelle	Arya mic Jon	0.1	0.1
Common pipistrelle	Robb mic Stannis	0.1	NA
Common pipistrelle	SMU00171	0.5	0.4
Common pipistrelle	SMU00310	0.2	0.7
Common pipistrelle	SMU00812	0.9	0.1
Common pipistrelle	SMU00924	1.6	0.9
Common pipistrelle	SMU06931	0.2	0.2
Common pipistrelle	SMU11844	0.2	0.1
Common pipistrelle	Ygritte mic Tormund	0.1	0.1
Soprano pipistrelle	Arya mic Jon	0.1	NA
Soprano pipistrelle	Robb mic Stannis	0.1	NA
Soprano pipistrelle	Sansa mic Daenerys	NA	0.1
Soprano pipistrelle	SMU00171	0.4	0.1
Soprano pipistrelle	SMU00310	0.1	0.1
Soprano pipistrelle	SMU00812	0.1	0.1
Soprano pipistrelle	SMU00924	0.2	0.9
Soprano pipistrelle	SMU06931	0.2	0.1
Soprano pipistrelle	SMU11844	0.1	0.2
Soprano pipistrelle	Ygritte mic Tormund	NA	0.1
Nyctalus	Arya mic Jon	NA	0.2
Nyctalus	Ygritte mic Tormund	0.1	NA
Brown long-eared	Arya mic Jon	0.1	0.1
Brown long-eared	Sansa mic Daenerys	NA	0.1
Brown long-eared	SMU00171	0.1	NA
Brown long-eared	SMU00310	NA	0.1
Brown long-eared	SMU00924	NA	0.1
Brown long-eared	SMU11844	0.1	NA
Myotis	Arya mic Jon	NA	0.1
Myotis	Robb mic Stannis	0.2	0.1
Myotis	Sansa mic Daenerys	NA	0.1
Myotis	SMU00171	0.1	0.1

Species	Detector ID	Sep	Oct
Myotis	SMU00310	NA	0.1
Myotis	SMU00812	NA	0.1
Myotis	SMU00924	NA	0.1
Myotis	SMU06931	NA	0.1
Myotis	SMU11844	0.1	0.1
Myotis	Ygritte mic Tormund	0.2	0.2

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.

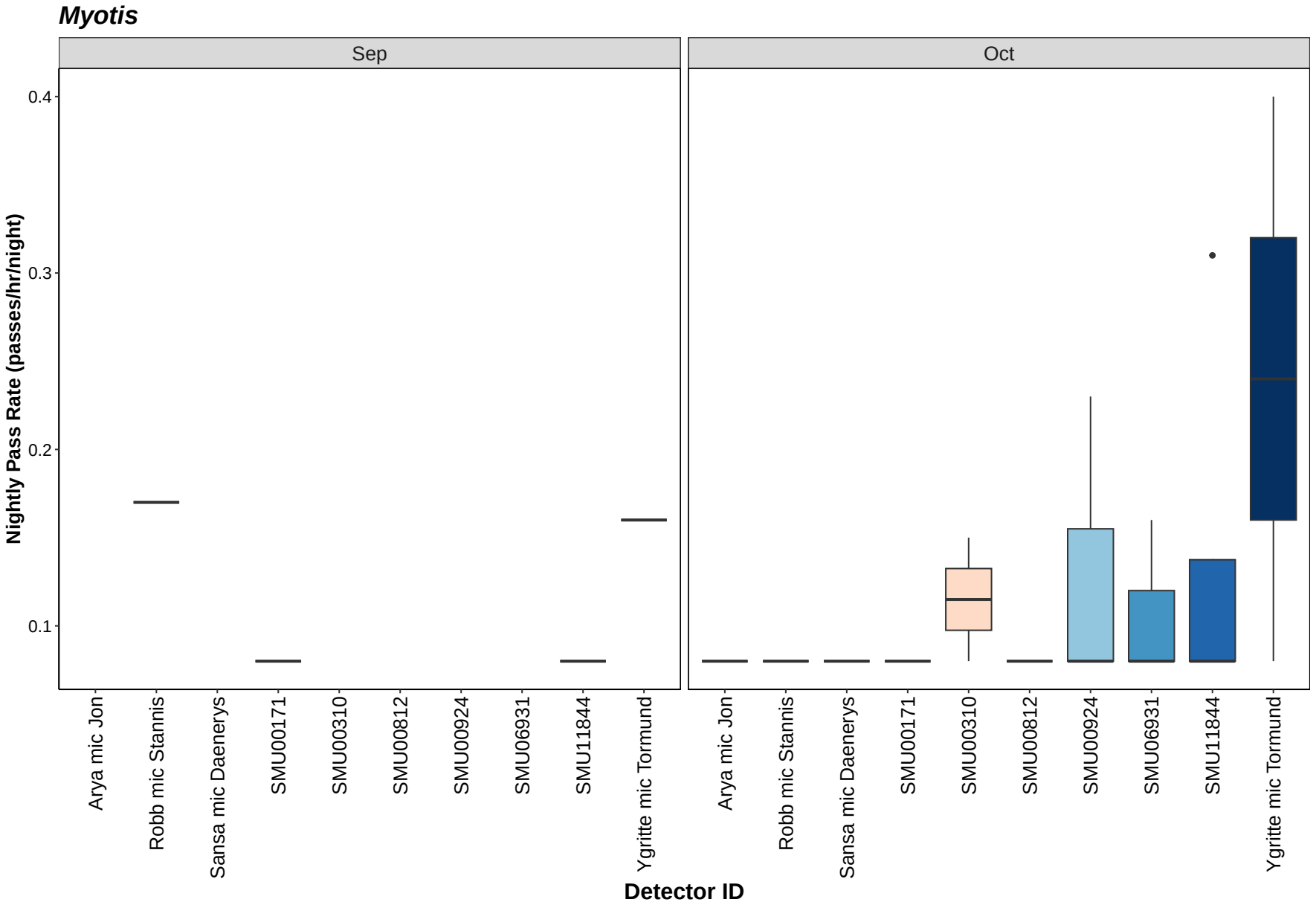
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

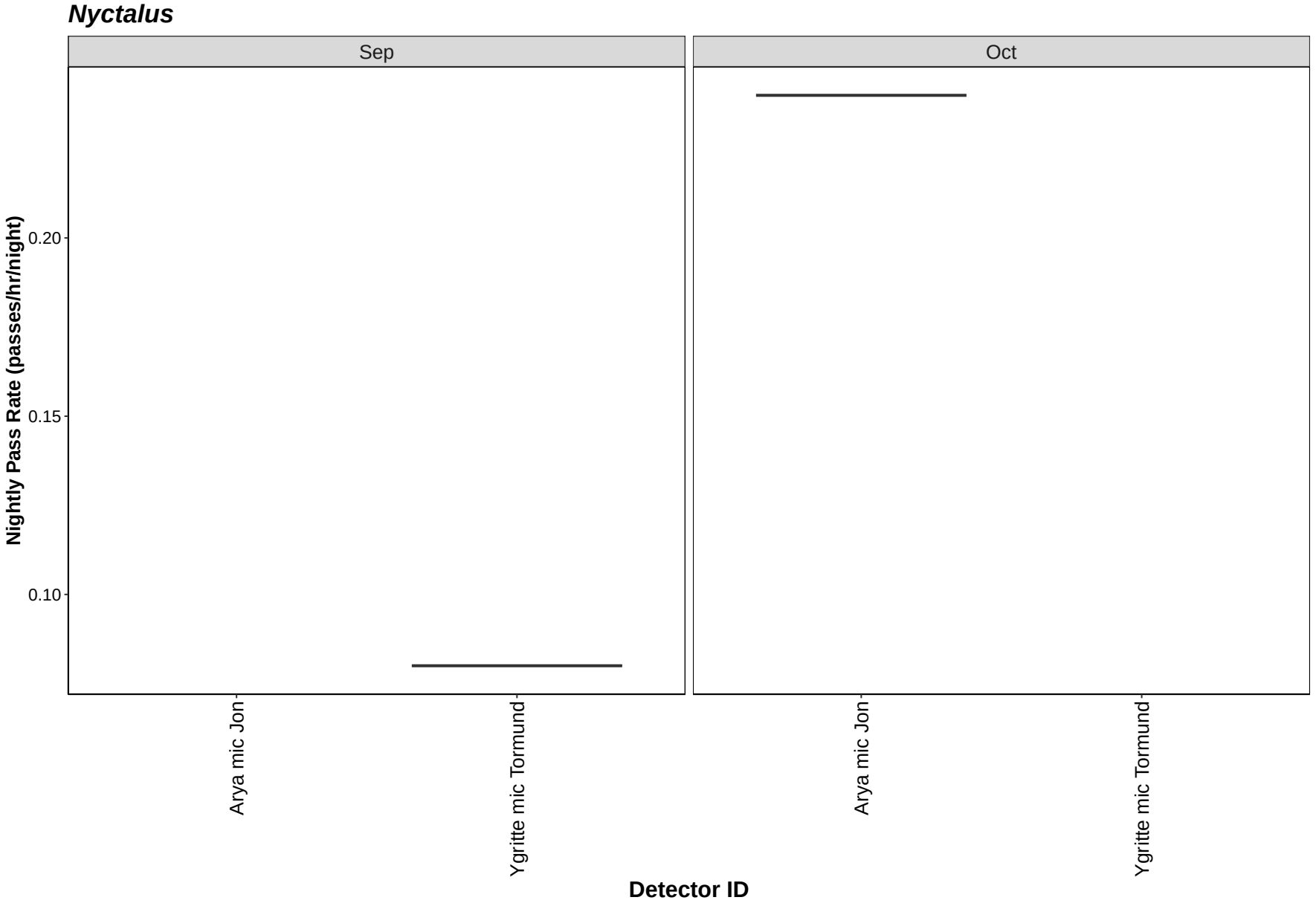
Species	Detector ID	Sep	Oct
Pipistrellus	SMU00171	NA	0.1
Pipistrellus	SMU00310	NA	0.1
Pipistrellus	SMU00812	0.1	NA
Pipistrellus	SMU00924	0.1	NA
Pipistrellus	Ygritte mic Tormund	0.1	NA
Common pipistrelle	Arya mic Jon	0.1	0.1
Common pipistrelle	Robb mic Stannis	0.1	NA
Common pipistrelle	SMU00171	0.4	0.6
Common pipistrelle	SMU00310	0.2	0.8
Common pipistrelle	SMU00812	1.0	0.3
Common pipistrelle	SMU00924	1.4	1.1
Common pipistrelle	SMU06931	0.2	0.2
Common pipistrelle	SMU11844	0.1	0.1
Common pipistrelle	Ygritte mic Tormund	0.1	0.1
Soprano pipistrelle	Arya mic Jon	0.1	NA
Soprano pipistrelle	Robb mic Stannis	0.1	NA
Soprano pipistrelle	Sansa mic Daenerys	NA	0.1
Soprano pipistrelle	SMU00171	0.4	0.1
Soprano pipistrelle	SMU00310	0.1	0.1
Soprano pipistrelle	SMU00812	0.3	0.1
Soprano pipistrelle	SMU00924	0.2	0.7
Soprano pipistrelle	SMU06931	0.2	0.1
Soprano pipistrelle	SMU11844	0.1	0.1
Soprano pipistrelle	Ygritte mic Tormund	NA	0.1
Nyctalus	Arya mic Jon	NA	0.2
Nyctalus	Ygritte mic Tormund	0.1	NA
Brown long-eared	Arya mic Jon	0.1	0.1
Brown long-eared	Sansa mic Daenerys	NA	0.1
Brown long-eared	SMU00171	0.1	NA
Brown long-eared	SMU00310	NA	0.1

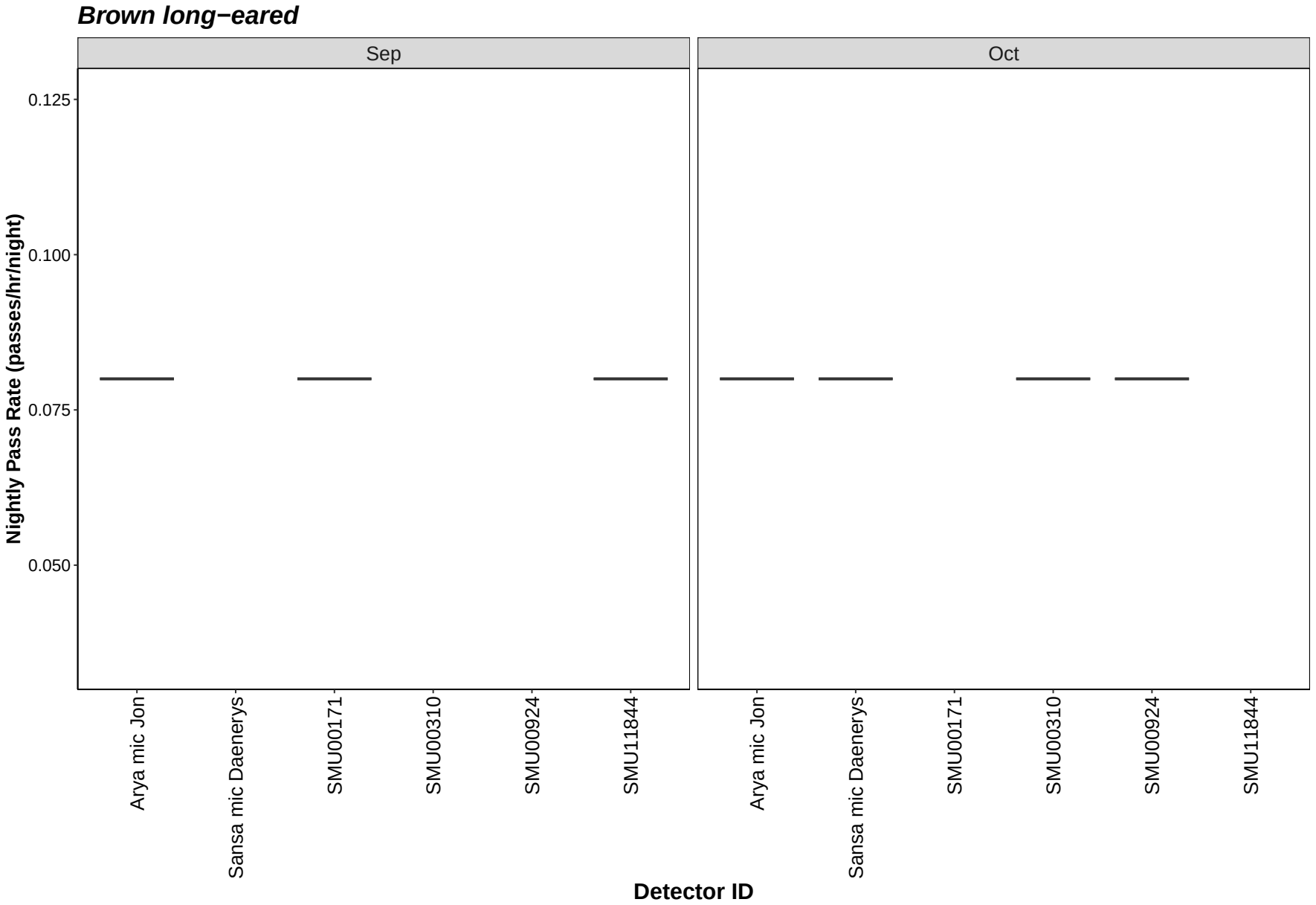
Species	Detector ID	Sep	Oct
Brown long-eared	SMU00924	NA	0.1
Brown long-eared	SMU11844	0.1	NA
Myotis	Arya mic Jon	NA	0.1
Myotis	Robb mic Stannis	0.2	0.1
Myotis	Sansa mic Daenerys	NA	0.1
Myotis	SMU00171	0.1	0.1
Myotis	SMU00310	NA	0.1
Myotis	SMU00812	NA	0.1
Myotis	SMU00924	NA	0.1
Myotis	SMU06931	NA	0.1
Myotis	SMU11844	0.1	0.1
Myotis	Ygritte mic Tormund	0.2	0.2

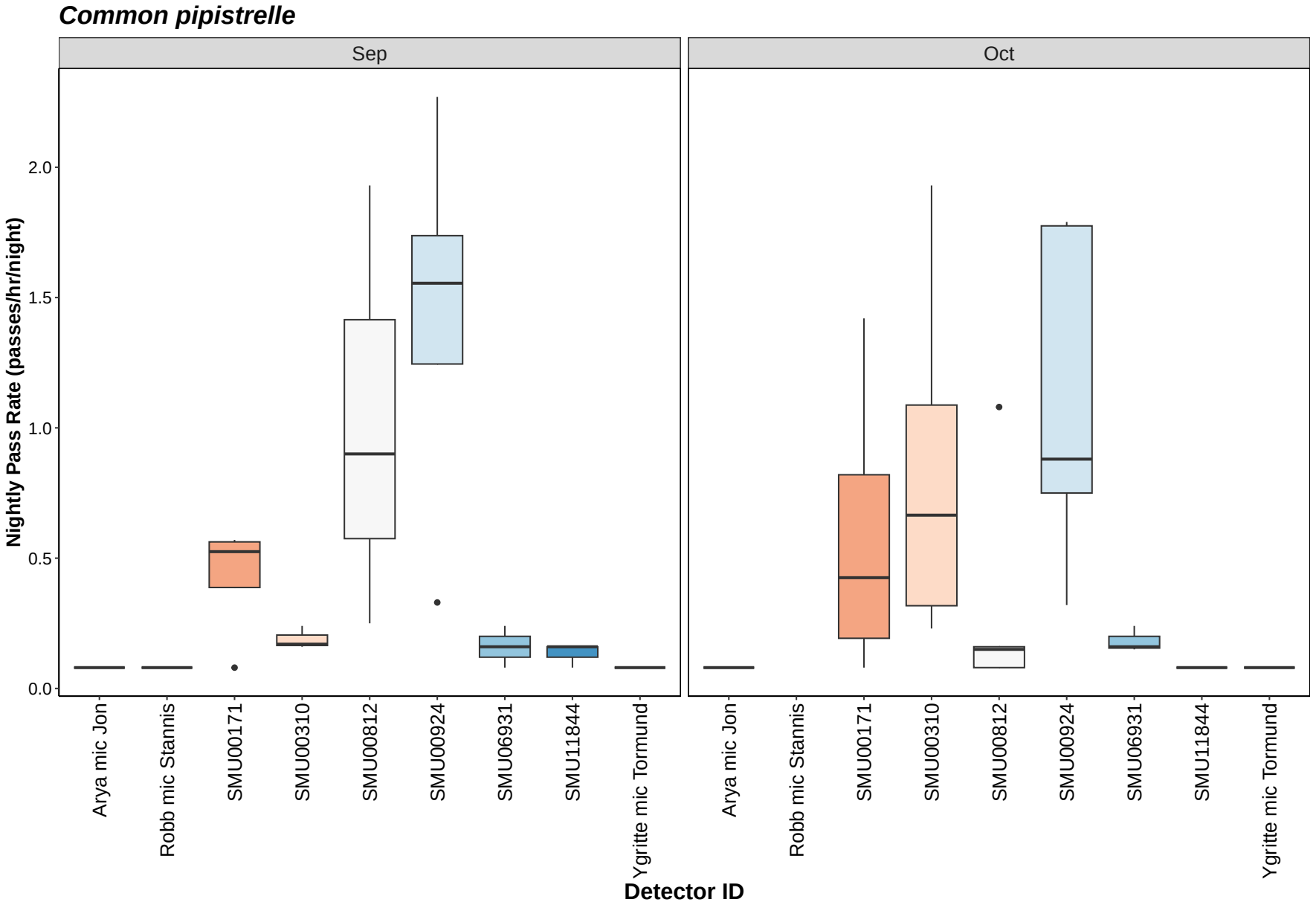
Per Detector

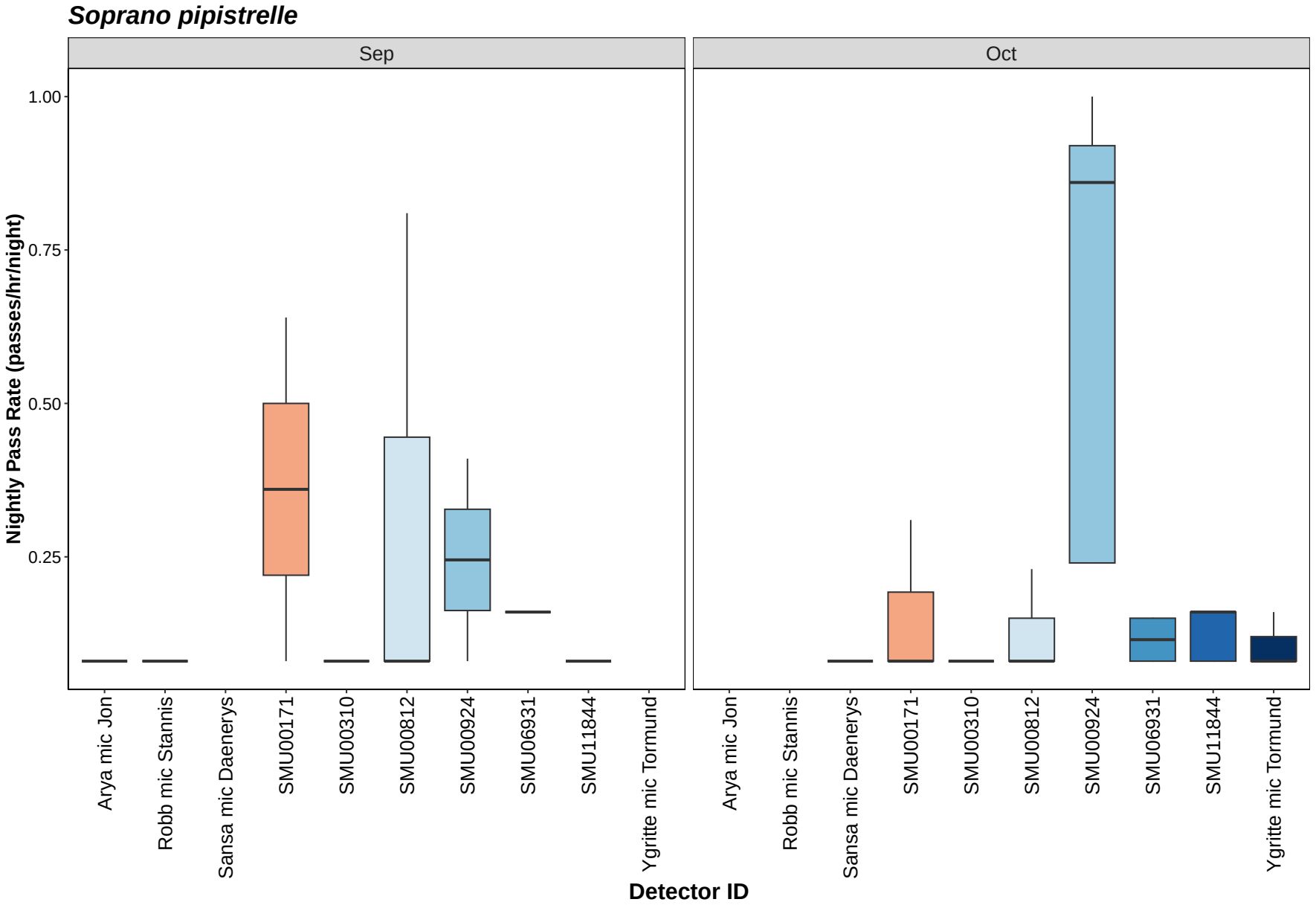
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.

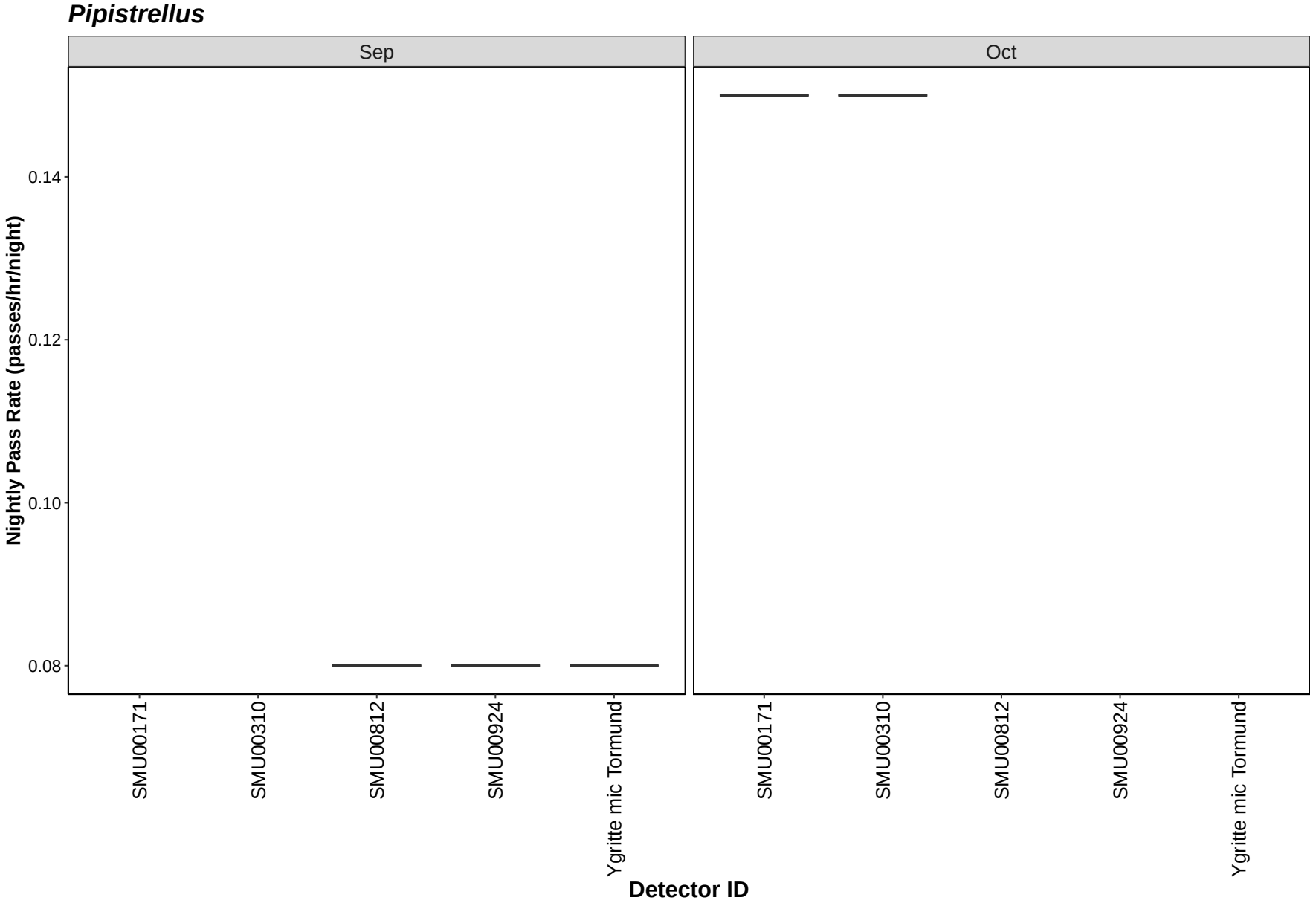

Myotis
Sep
Oct
Nightly Pass Rate (passes/hr/night)
0.4
0.3
0.2
0.1
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Nyctalus
Sep
Oct
Nightly Pass Rate (passes/hr/night)
0.20
0.15
0.10
Arya mic Jon
Ygritte mic Tormund
Arya mic Jon
Ygritte mic Tormund
Detector ID


Brown long−eared
Sep
Oct
0.125
0.100
0.075
0.050
Nightly Pass Rate (passes/hr/night)
Arya mic Jon
Sansa mic Daenerys
SMU00171
SMU00310
SMU00924
SMU11844
Detector ID


Common pipistrelle
Sep
Oct
Nightly Pass Rate (passes/hr/night)
0.0
0.5
1.0
1.5
2.0
Arya mic Jon
Robb mic Stannis
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Soprano pipistrelle
Sep
Oct
Nightly Pass Rate (passes/hr/night)
1.00
0.75
0.50
0.25
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Pipistrellus
Sep
Oct
Nightly Pass Rate (passes/hr/night)
0.14
0.12
0.10
0.08
SMU00171
SMU00310
SMU00812
SMU00924
Ygritte mic Tormund
Detector ID

Bat Activity per Detector Location

Figure 13. Detector ID reference:

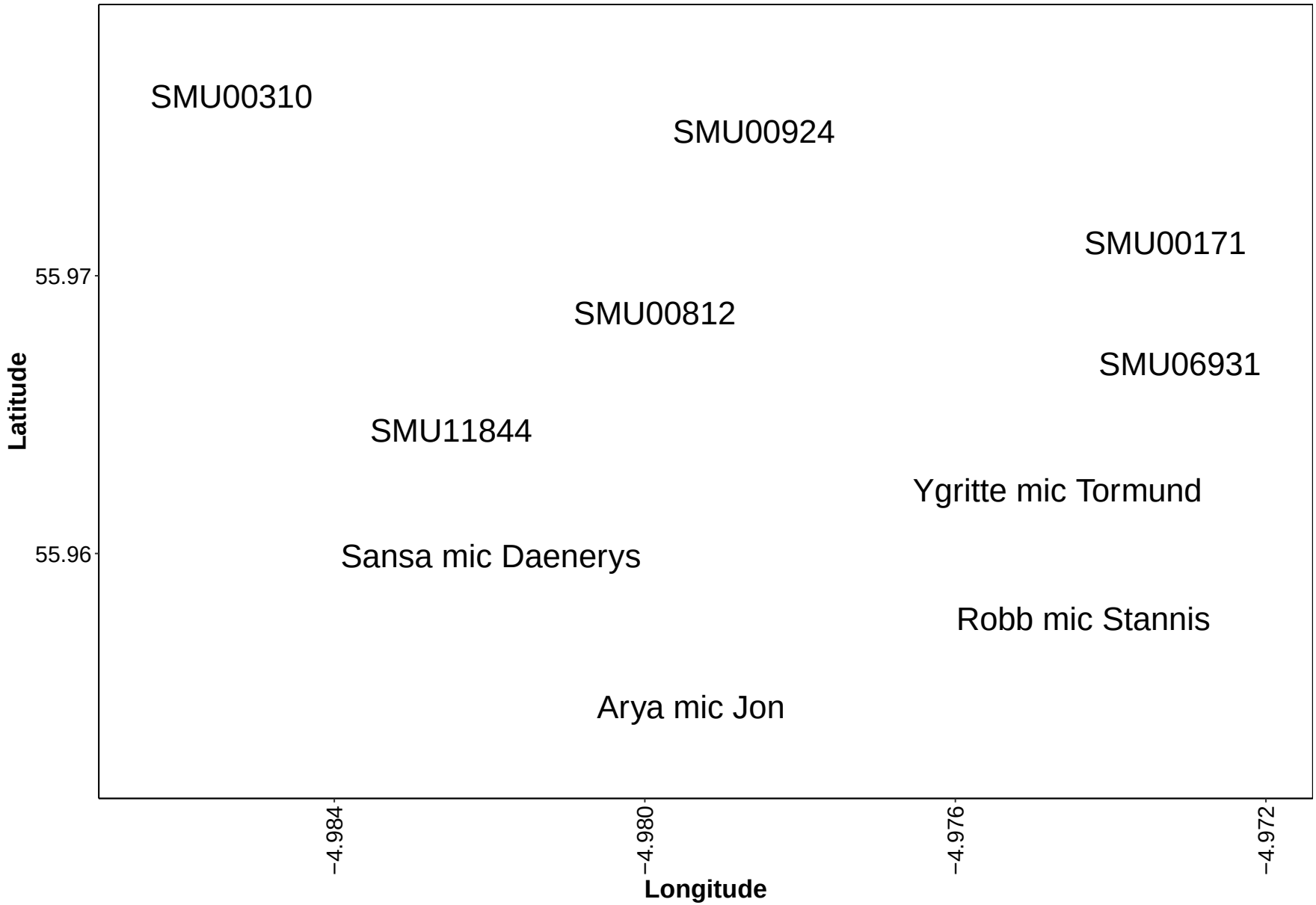

SMU00310
SMU00924
SMU00171
SMU00812
SMU06931
SMU11844
Ygritte mic Tormund
Sansa mic Daenerys
Robb mic Stannis
Arya mic Jon
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude

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.

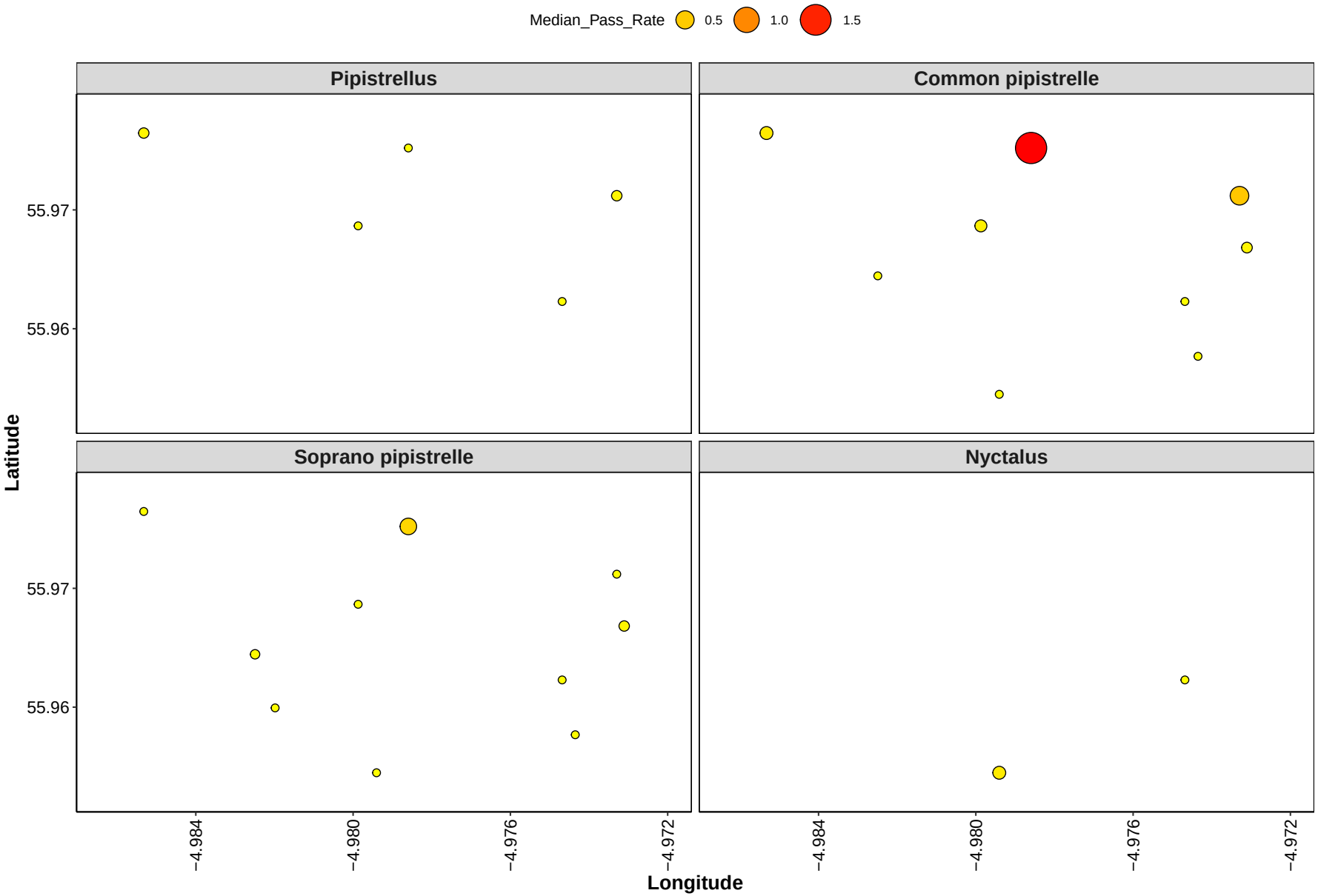
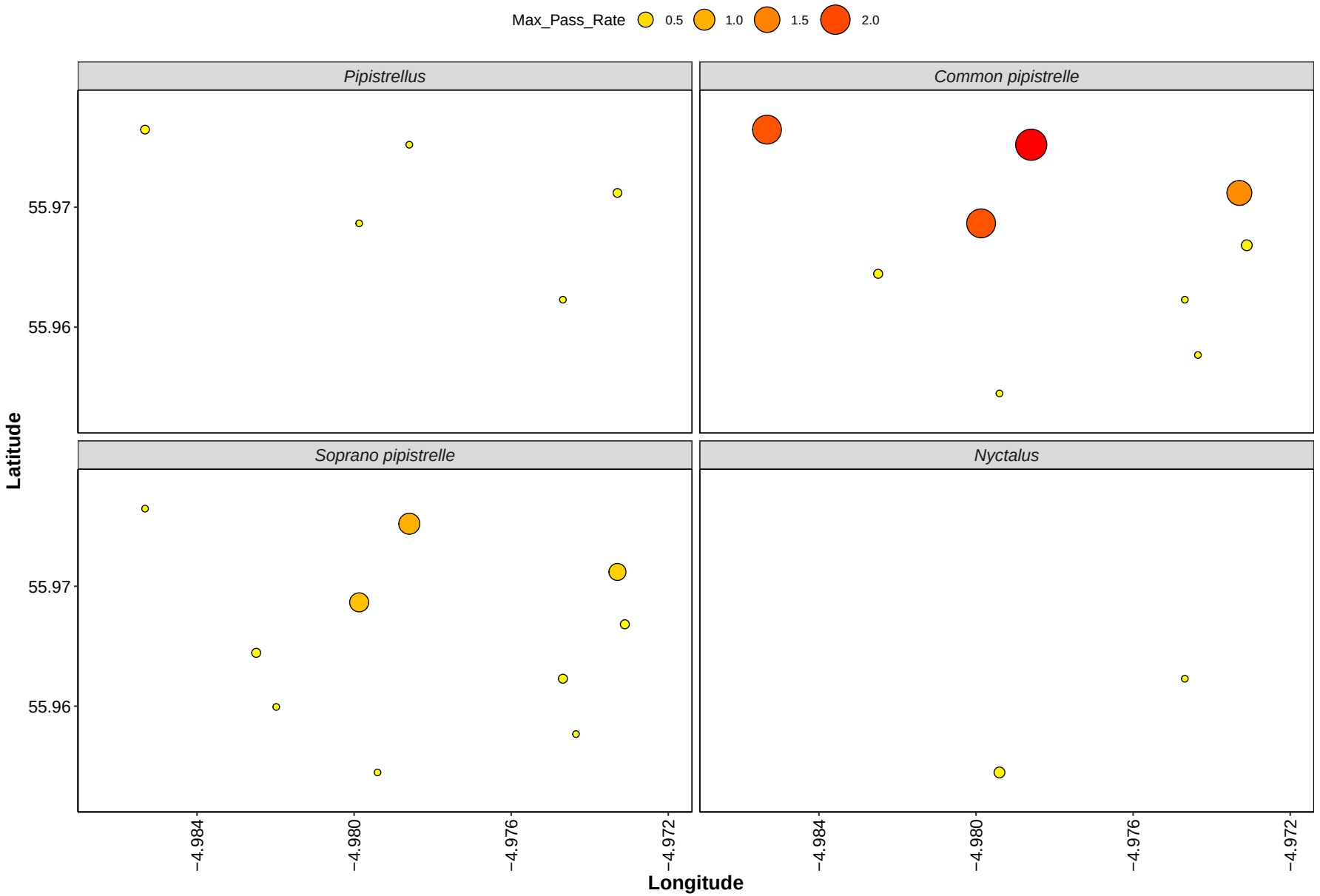

Median_Pass_Rate
0.5
1.0
1.5
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nyctalus
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

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
0.5
1.0
1.5
2.0
Pipistrellus
Common pipistrelle
Soprano pipistrelle
Nyctalus
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

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

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
Brown long-eared	Arya mic Jon	0.0
Brown long-eared	Robb mic Stannis	0.0
Brown long-eared	SMU00171	0.0
Brown long-eared	SMU00310	0.0
Brown long-eared	SMU00812	0.0
Brown long-eared	SMU00924	0.0
Brown long-eared	SMU06931	0.0
Brown long-eared	SMU11844	0.0
Brown long-eared	Sansa mic Daenerys	0.0
Brown long-eared	Ygritte mic Tormund	0.0
Common pipistrelle	Arya mic Jon	0.0
Common pipistrelle	Robb mic Stannis	0.0
Common pipistrelle	SMU00171	0.4
Common pipistrelle	SMU00310	0.2
Common pipistrelle	SMU00812	0.2
Common pipistrelle	SMU00924	1.6
Common pipistrelle	SMU06931	0.1
Common pipistrelle	SMU11844	0.1
Common pipistrelle	Sansa mic Daenerys	0.0
Common pipistrelle	Ygritte mic Tormund	0.0
Myotis	Arya mic Jon	0.0
Myotis	Robb mic Stannis	0.1
Myotis	SMU00171	0.0
Myotis	SMU00310	0.0
Myotis	SMU00812	0.0
Myotis	SMU00924	0.0
Myotis	SMU06931	0.0
Myotis	SMU11844	0.1
Myotis	Sansa mic Daenerys	0.1
Myotis	Ygritte mic Tormund	0.0
Nyctalus	Arya mic Jon	0.0
Nyctalus	Robb mic Stannis	0.0
Nyctalus	SMU00171	0.0
Nyctalus	SMU00310	0.0
Nyctalus	SMU00812	0.0
Nyctalus	SMU00924	0.0

Species	Detector ID	Median Pass Rate
Nyctalus	SMU06931	0.0
Nyctalus	SMU11844	0.0
Nyctalus	Sansa mic Daenerys	0.0
Nyctalus	Ygritte mic Tormund	0.0
Pipistrellus	Arya mic Jon	0.0
Pipistrellus	Robb mic Stannis	0.0
Pipistrellus	SMU00171	0.0
Pipistrellus	SMU00310	0.0
Pipistrellus	SMU00812	0.0
Pipistrellus	SMU00924	0.0
Pipistrellus	SMU06931	0.0
Pipistrellus	SMU11844	0.0
Pipistrellus	Sansa mic Daenerys	0.0
Pipistrellus	Ygritte mic Tormund	0.0
Soprano pipistrelle	Arya mic Jon	0.0
Soprano pipistrelle	Robb mic Stannis	0.0
Soprano pipistrelle	SMU00171	0.1
Soprano pipistrelle	SMU00310	0.0
Soprano pipistrelle	SMU00812	0.1
Soprano pipistrelle	SMU00924	0.2
Soprano pipistrelle	SMU06931	0.1
Soprano pipistrelle	SMU11844	0.1
Soprano pipistrelle	Sansa mic Daenerys	0.0
Soprano pipistrelle	Ygritte mic Tormund	0.0

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.

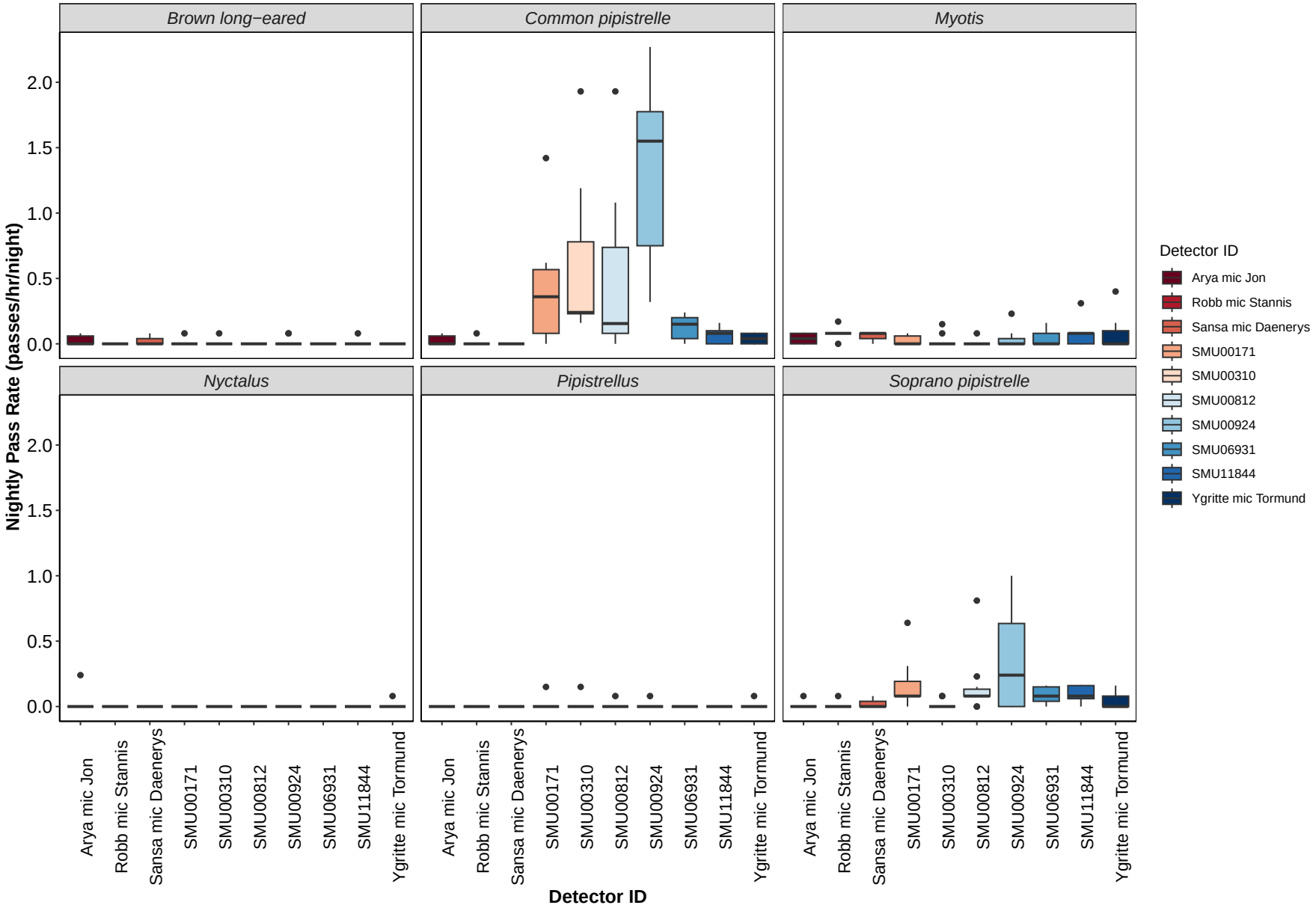
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

Species	Detector ID	Mean Pass Rate
Brown long-eared	Arya mic Jon	0.0
Brown long-eared	Robb mic Stannis	0.0
Brown long-eared	SMU00171	0.0
Brown long-eared	SMU00310	0.0
Brown long-eared	SMU00812	0.0
Brown long-eared	SMU00924	0.0
Brown long-eared	SMU06931	0.0
Brown long-eared	SMU11844	0.0
Brown long-eared	Sansa mic Daenerys	0.0
Brown long-eared	Ygritte mic Tormund	0.0
Common pipistrelle	Arya mic Jon	0.0
Common pipistrelle	Robb mic Stannis	0.0
Common pipistrelle	SMU00171	0.4
Common pipistrelle	SMU00310	0.6
Common pipistrelle	SMU00812	0.5
Common pipistrelle	SMU00924	1.2
Common pipistrelle	SMU06931	0.1
Common pipistrelle	SMU11844	0.1
Common pipistrelle	Sansa mic Daenerys	0.0
Common pipistrelle	Ygritte mic Tormund	0.0
Myotis	Arya mic Jon	0.0
Myotis	Robb mic Stannis	0.1
Myotis	SMU00171	0.0
Myotis	SMU00310	0.0
Myotis	SMU00812	0.0
Myotis	SMU00924	0.0
Myotis	SMU06931	0.0
Myotis	SMU11844	0.1
Myotis	Sansa mic Daenerys	0.1
Myotis	Ygritte mic Tormund	0.1
Nyctalus	Arya mic Jon	0.0
Nyctalus	Robb mic Stannis	0.0
Nyctalus	SMU00171	0.0
Nyctalus	SMU00310	0.0
Nyctalus	SMU00812	0.0
Nyctalus	SMU00924	0.0

Species	Detector ID	Mean Pass Rate
Nyctalus	SMU06931	0.0
Nyctalus	SMU11844	0.0
Nyctalus	Sansa mic Daenerys	0.0
Nyctalus	Ygritte mic Tormund	0.0
Pipistrellus	Arya mic Jon	0.0
Pipistrellus	Robb mic Stannis	0.0
Pipistrellus	SMU00171	0.0
Pipistrellus	SMU00310	0.0
Pipistrellus	SMU00812	0.0
Pipistrellus	SMU00924	0.0
Pipistrellus	SMU06931	0.0
Pipistrellus	SMU11844	0.0
Pipistrellus	Sansa mic Daenerys	0.0
Pipistrellus	Ygritte mic Tormund	0.0
Soprano pipistrelle	Arya mic Jon	0.0
Soprano pipistrelle	Robb mic Stannis	0.0
Soprano pipistrelle	SMU00171	0.2
Soprano pipistrelle	SMU00310	0.0
Soprano pipistrelle	SMU00812	0.2
Soprano pipistrelle	SMU00924	0.3
Soprano pipistrelle	SMU06931	0.1
Soprano pipistrelle	SMU11844	0.1
Soprano pipistrelle	Sansa mic Daenerys	0.0
Soprano pipistrelle	Ygritte mic Tormund	0.0

Per Detector

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.


Brown long−eared
Common pipistrelle
Myotis
Nyctalus
Pipistrellus
Soprano pipistrelle
Nightly Pass Rate (passes/hr/night)
0.0
0.5
1.0
1.5
2.0
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID
Detector ID
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund

Survey Effort

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

month	Detector ID	No. of Survey Nights
Sep	Arya mic Jon	2
Sep	Robb mic Stannis	2
Sep	SMU00171	4
Sep	SMU00310	3
Sep	SMU00812	4
Sep	SMU00924	4
Sep	SMU06931	2
Sep	SMU11844	3
Sep	Ygritte mic Tormund	3
Oct	Arya mic Jon	4
Oct	Robb mic Stannis	3
Oct	SMU00171	6
Oct	SMU00310	6
Oct	SMU00812	6
Oct	SMU00924	7
Oct	SMU06931	5
Oct	SMU11844	5
Oct	Sansa mic Daenerys	3
Oct	Ygritte mic Tormund	5

Nighlty 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	Oct	Sep
Brown long-eared	Arya mic Jon	0.0	0.0
Brown long-eared	Robb mic Stannis	0.0	0.0
Brown long-eared	Sansa mic Daenerys	0.0	NA
Brown long-eared	SMU00171	0.0	0.0
Brown long-eared	SMU00310	0.0	0.0
Brown long-eared	SMU00812	0.0	0.0
Brown long-eared	SMU00924	0.0	0.0
Brown long-eared	SMU06931	0.0	0.0
Brown long-eared	SMU11844	0.0	0.0
Brown long-eared	Ygritte mic Tormund	0.0	0.0
Common pipistrelle	Arya mic Jon	0.0	0.0
Common pipistrelle	Robb mic Stannis	0.0	0.0
Common pipistrelle	Sansa mic Daenerys	0.0	NA
Common pipistrelle	SMU00171	0.2	0.5
Common pipistrelle	SMU00310	0.7	0.2
Common pipistrelle	SMU00812	0.1	0.6
Common pipistrelle	SMU00924	0.9	1.6
Common pipistrelle	SMU06931	0.1	0.2
Common pipistrelle	SMU11844	0.0	0.2
Common pipistrelle	Ygritte mic Tormund	0.0	0.1
Myotis	Arya mic Jon	0.1	0.0
Myotis	Robb mic Stannis	0.1	0.1
Myotis	Sansa mic Daenerys	0.1	NA
Myotis	SMU00171	0.0	0.0
Myotis	SMU00310	0.0	0.0
Myotis	SMU00812	0.0	0.0
Myotis	SMU00924	0.0	0.0
Myotis	SMU06931	0.1	0.0
Myotis	SMU11844	0.1	0.0
Myotis	Ygritte mic Tormund	0.0	0.0
Nyctalus	Arya mic Jon	0.0	0.0
Nyctalus	Robb mic Stannis	0.0	0.0
Nyctalus	Sansa mic Daenerys	0.0	NA
Nyctalus	SMU00171	0.0	0.0
Nyctalus	SMU00310	0.0	0.0
Nyctalus	SMU00812	0.0	0.0

Species	Detector ID	Oct	Sep
Nyctalus	SMU00924	0.0	0.0
Nyctalus	SMU06931	0.0	0.0
Nyctalus	SMU11844	0.0	0.0
Nyctalus	Ygritte mic Tormund	0.0	0.0
Pipistrellus	Arya mic Jon	0.0	0.0
Pipistrellus	Robb mic Stannis	0.0	0.0
Pipistrellus	Sansa mic Daenerys	0.0	NA
Pipistrellus	SMU00171	0.0	0.0
Pipistrellus	SMU00310	0.0	0.0
Pipistrellus	SMU00812	0.0	0.0
Pipistrellus	SMU00924	0.0	0.0
Pipistrellus	SMU06931	0.0	0.0
Pipistrellus	SMU11844	0.0	0.0
Pipistrellus	Ygritte mic Tormund	0.0	0.0
Soprano pipistrelle	Arya mic Jon	0.0	0.0
Soprano pipistrelle	Robb mic Stannis	0.0	0.0
Soprano pipistrelle	Sansa mic Daenerys	0.0	NA
Soprano pipistrelle	SMU00171	0.1	0.0
Soprano pipistrelle	SMU00310	0.0	0.0
Soprano pipistrelle	SMU00812	0.1	0.1
Soprano pipistrelle	SMU00924	0.2	0.0
Soprano pipistrelle	SMU06931	0.1	0.1
Soprano pipistrelle	SMU11844	0.2	0.0
Soprano pipistrelle	Ygritte mic Tormund	0.1	0.0

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.

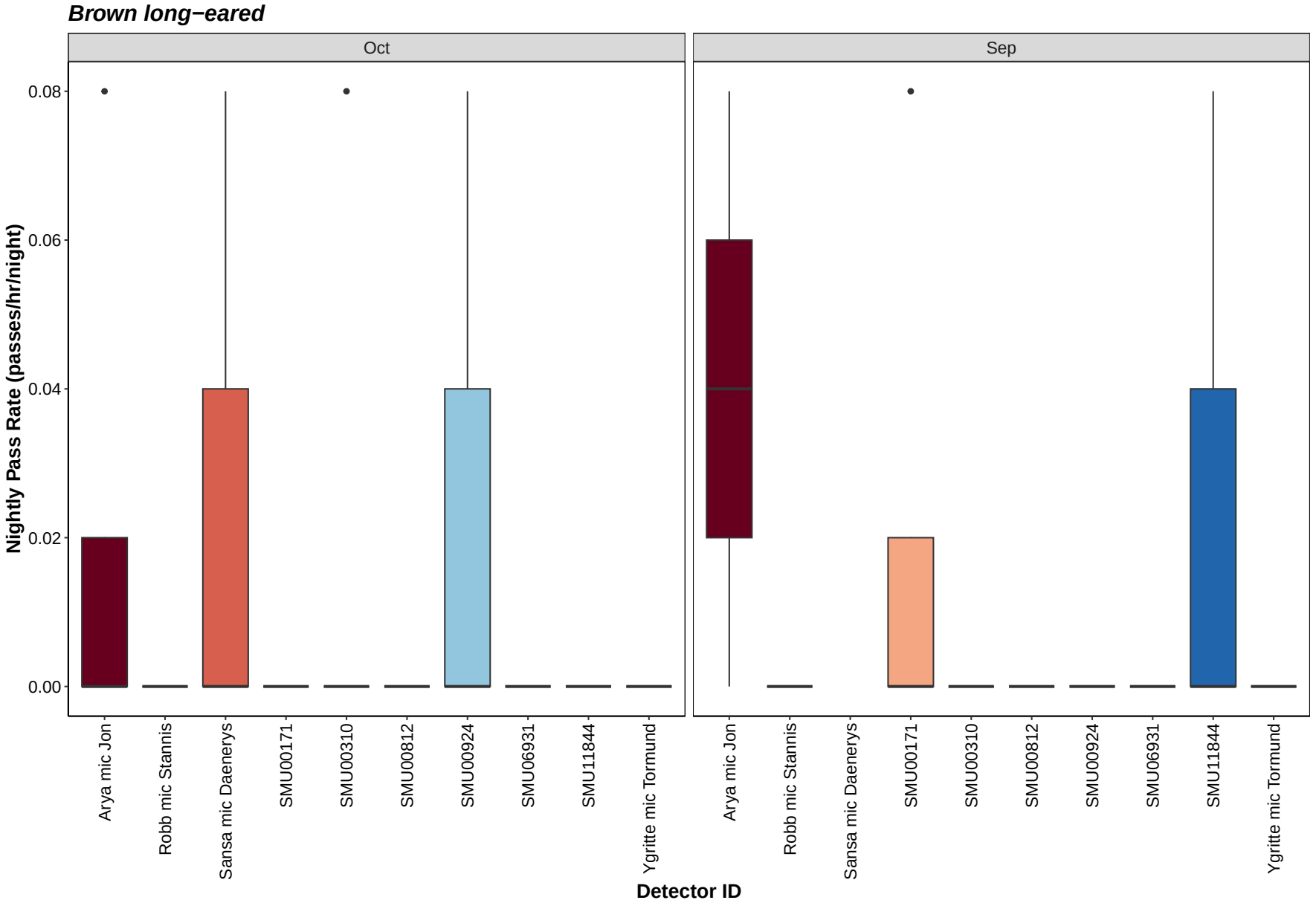
We recommend using the median values given above, for the reasons stated above, but provide the mean values in the table below.

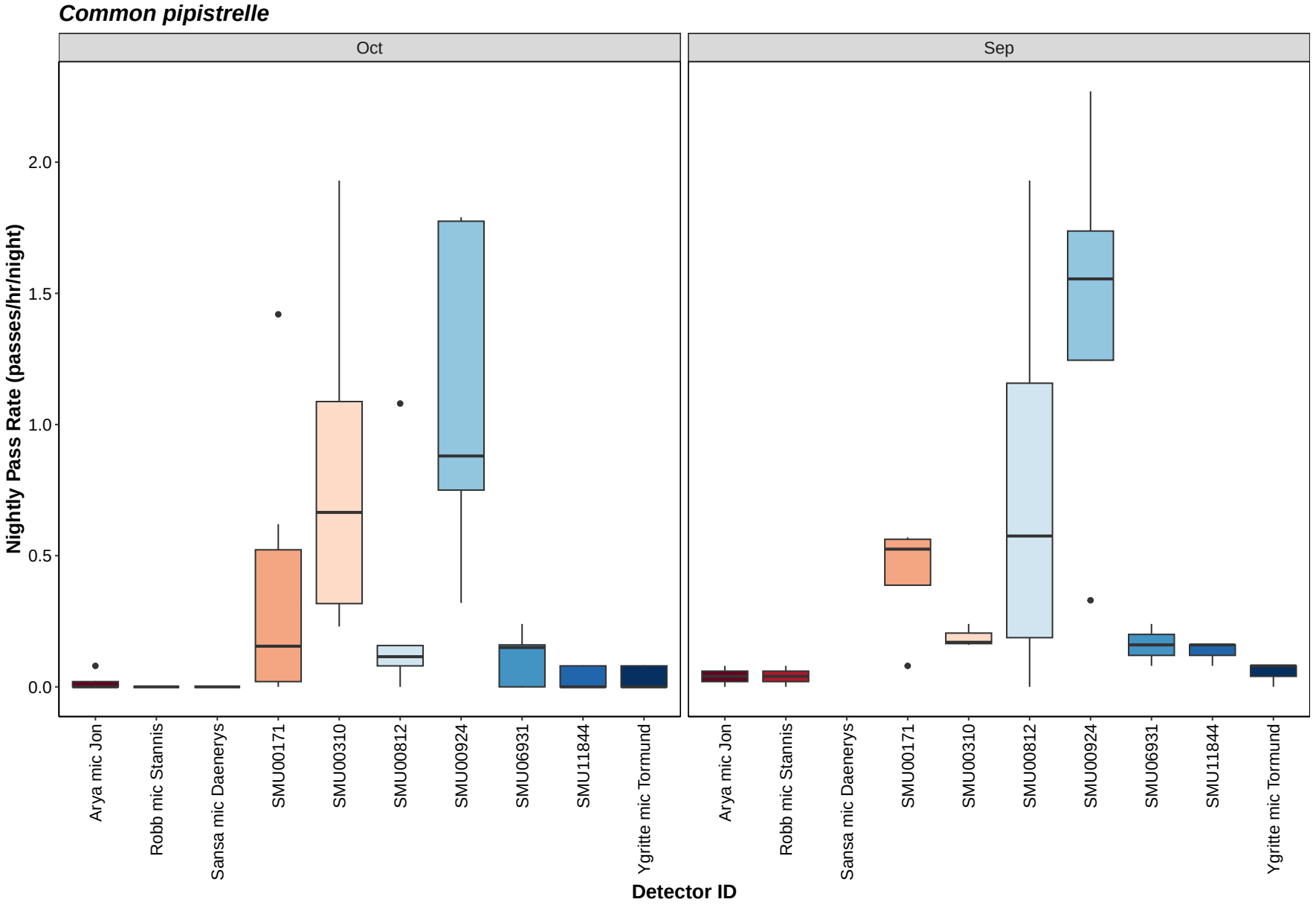
Species	Detector ID	Oct	Sep
Brown long-eared	Arya mic Jon	0.0	0.0
Brown long-eared	Robb mic Stannis	0.0	0.0
Brown long-eared	Sansa mic Daenerys	0.0	NA
Brown long-eared	SMU00171	0.0	0.0
Brown long-eared	SMU00310	0.0	0.0
Brown long-eared	SMU00812	0.0	0.0
Brown long-eared	SMU00924	0.0	0.0
Brown long-eared	SMU06931	0.0	0.0
Brown long-eared	SMU11844	0.0	0.0
Brown long-eared	Ygritte mic Tormund	0.0	0.0
Common pipistrelle	Arya mic Jon	0.0	0.0
Common pipistrelle	Robb mic Stannis	0.0	0.0
Common pipistrelle	Sansa mic Daenerys	0.0	NA
Common pipistrelle	SMU00171	0.4	0.4
Common pipistrelle	SMU00310	0.8	0.2
Common pipistrelle	SMU00812	0.3	0.8
Common pipistrelle	SMU00924	1.1	1.4
Common pipistrelle	SMU06931	0.1	0.2
Common pipistrelle	SMU11844	0.0	0.1
Common pipistrelle	Ygritte mic Tormund	0.0	0.1
Myotis	Arya mic Jon	0.1	0.0
Myotis	Robb mic Stannis	0.1	0.1
Myotis	Sansa mic Daenerys	0.1	NA
Myotis	SMU00171	0.0	0.0
Myotis	SMU00310	0.0	0.0
Myotis	SMU00812	0.0	0.0
Myotis	SMU00924	0.1	0.0
Myotis	SMU06931	0.1	0.0
Myotis	SMU11844	0.1	0.0
Myotis	Ygritte mic Tormund	0.1	0.1
Nyctalus	Arya mic Jon	0.1	0.0
Nyctalus	Robb mic Stannis	0.0	0.0
Nyctalus	Sansa mic Daenerys	0.0	NA
Nyctalus	SMU00171	0.0	0.0
Nyctalus	SMU00310	0.0	0.0
Nyctalus	SMU00812	0.0	0.0

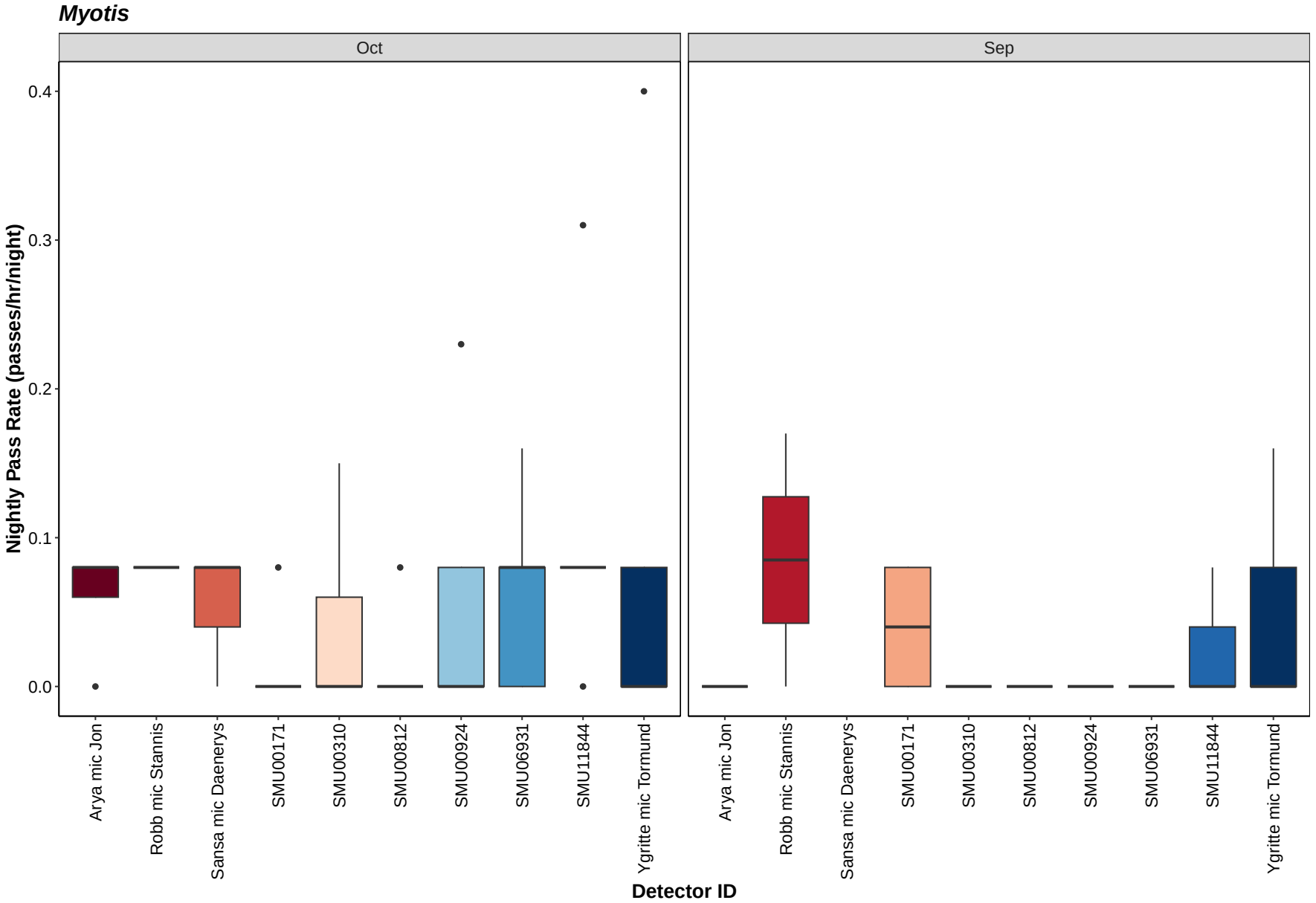
Species	Detector ID	Oct	Sep
Nyctalus	SMU00924	0.0	0.0
Nyctalus	SMU06931	0.0	0.0
Nyctalus	SMU11844	0.0	0.0
Nyctalus	Ygritte mic Tormund	0.0	0.0
Pipistrellus	Arya mic Jon	0.0	0.0
Pipistrellus	Robb mic Stannis	0.0	0.0
Pipistrellus	Sansa mic Daenerys	0.0	NA
Pipistrellus	SMU00171	0.0	0.0
Pipistrellus	SMU00310	0.0	0.0
Pipistrellus	SMU00812	0.0	0.0
Pipistrellus	SMU00924	0.0	0.0
Pipistrellus	SMU06931	0.0	0.0
Pipistrellus	SMU11844	0.0	0.0
Pipistrellus	Ygritte mic Tormund	0.0	0.0
Soprano pipistrelle	Arya mic Jon	0.0	0.0
Soprano pipistrelle	Robb mic Stannis	0.0	0.0
Soprano pipistrelle	Sansa mic Daenerys	0.0	NA
Soprano pipistrelle	SMU00171	0.1	0.2
Soprano pipistrelle	SMU00310	0.0	0.0
Soprano pipistrelle	SMU00812	0.1	0.2
Soprano pipistrelle	SMU00924	0.5	0.1
Soprano pipistrelle	SMU06931	0.1	0.1
Soprano pipistrelle	SMU11844	0.1	0.0
Soprano pipistrelle	Ygritte mic Tormund	0.1	0.0

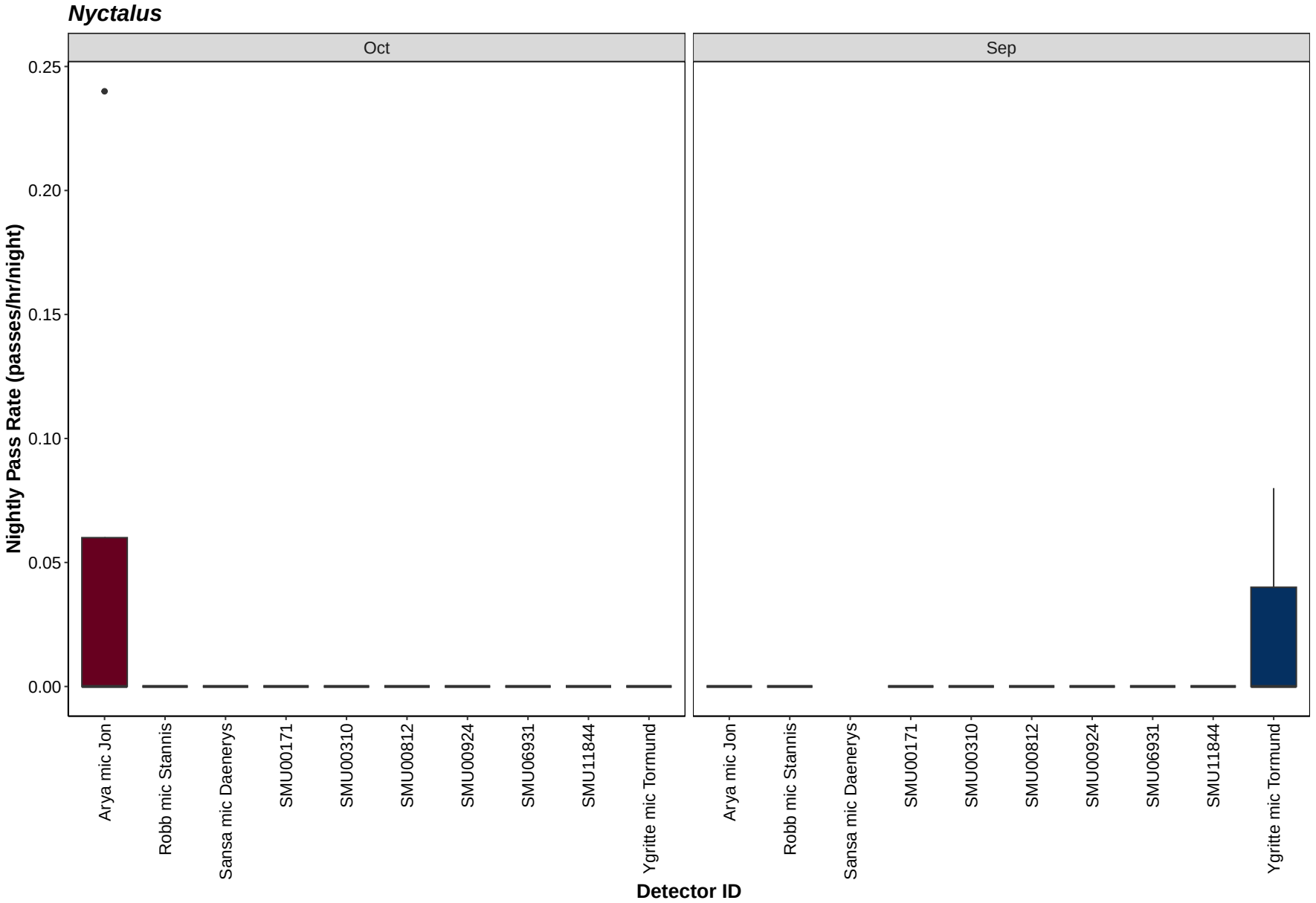
Per Detector

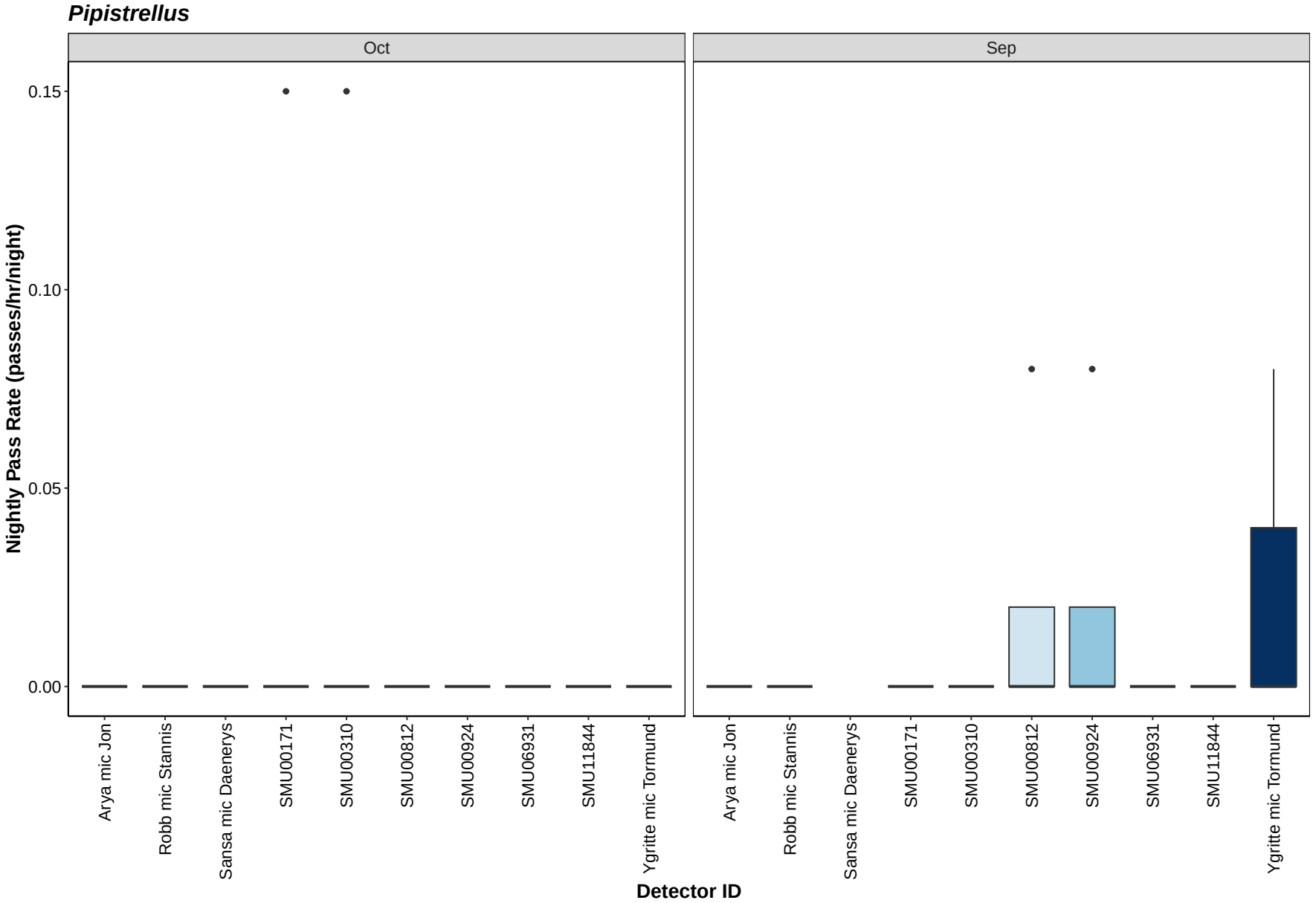
Figure 17. Figures show boxplots for the number of bat passes per hour by detector, for each month. The ‘box’ shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The ‘whiskers’ extend from the box and represent 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.

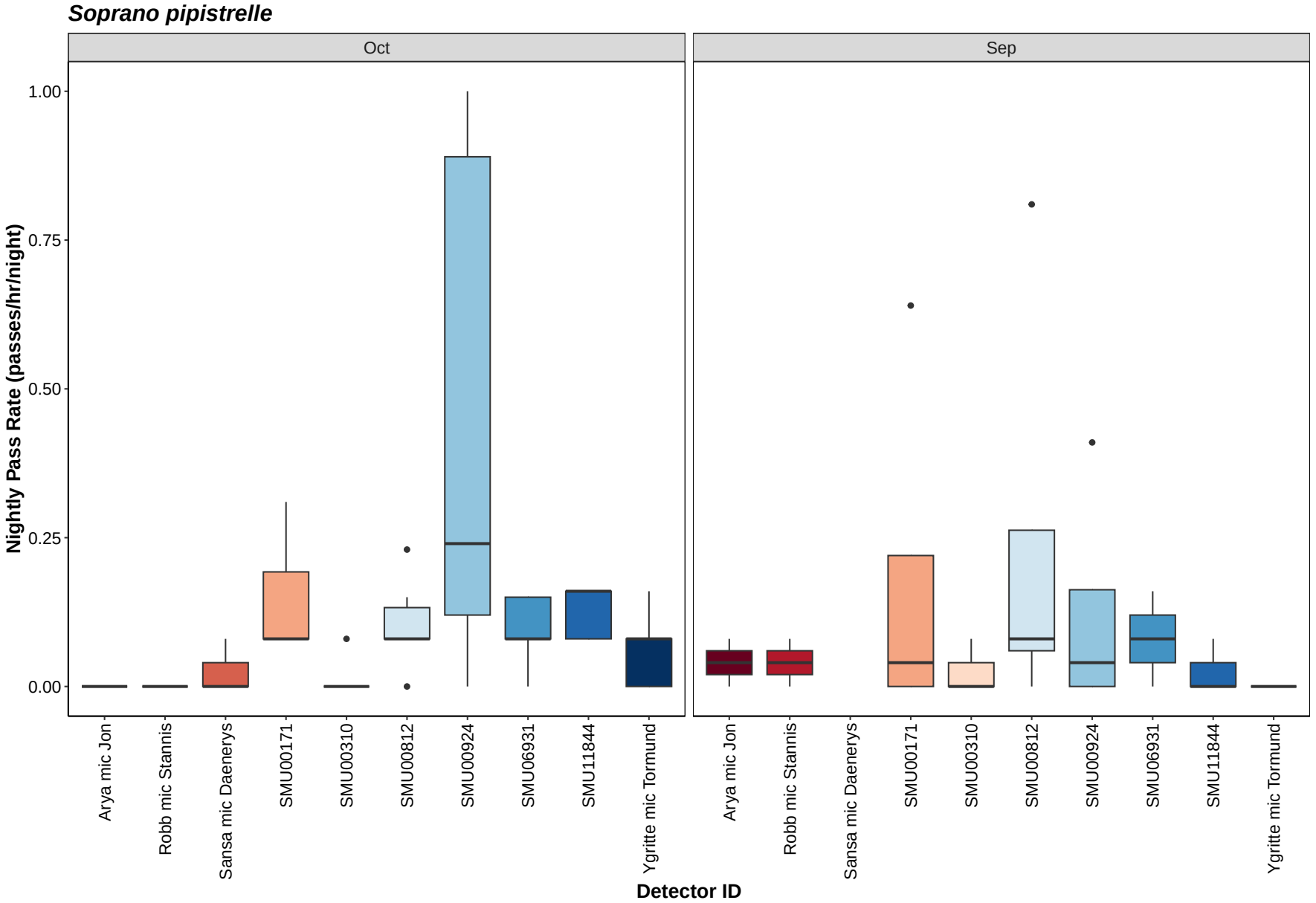

Brown long−eared
Oct
Sep
Nightly Pass Rate (passes/hr/night)
0.08
0.06
0.04
0.02
0.00
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Common pipistrelle
Oct
Sep
Nightly Pass Rate (passes/hr/night)
2.0
1.5
1.0
0.5
0.0
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Myotis
Oct
Sep
Nightly Pass Rate (passes/hr/night)
0.0
0.1
0.2
0.3
0.4
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Nyctalus
Oct
Sep
Nightly Pass Rate (passes/hr/night)
0.25
0.20
0.15
0.10
0.05
0.00
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Pipistrellus
Oct
Sep
Nightly Pass Rate (passes/hr/night)
0.15
0.10
0.05
0.00
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID


Soprano pipistrelle
Oct
Sep
Nightly Pass Rate (passes/hr/night)
1.00
0.75
0.50
0.25
0.00
Arya mic Jon
Robb mic Stannis
Sansa mic Daenerys
SMU00171
SMU00310
SMU00812
SMU00924
SMU06931
SMU11844
Ygritte mic Tormund
Detector ID

Bat Activity per Detector Location

Figure 18. Detector ID reference:

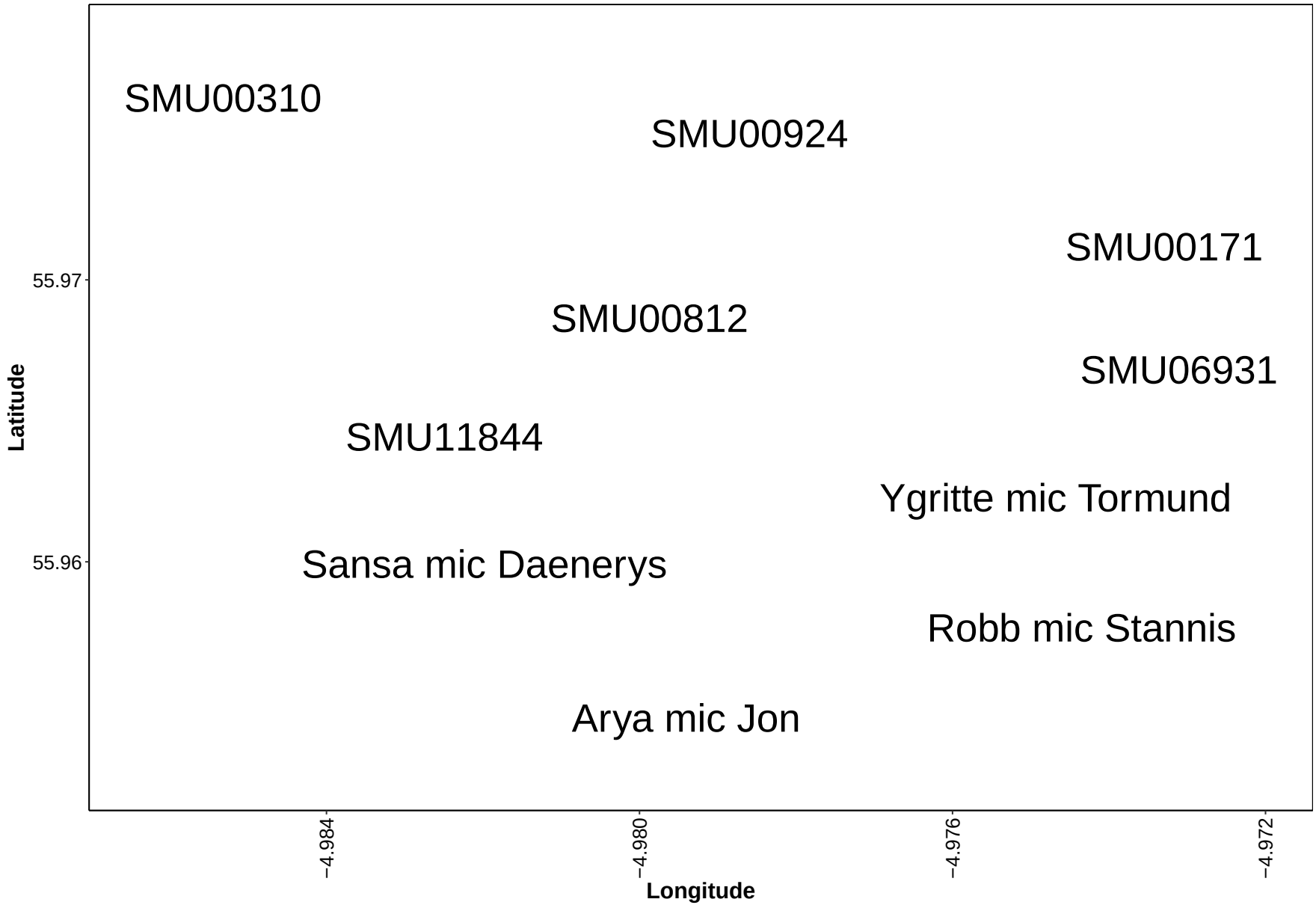

SMU00310
SMU00924
SMU00171
SMU00812
SMU06931
SMU11844
Ygritte mic Tormund
Sansa mic Daenerys
Robb mic Stannis
Arya mic Jon
55.97
55.96
Latitude
−4.984
−4.980
−4.976
−4.972
Longitude

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.

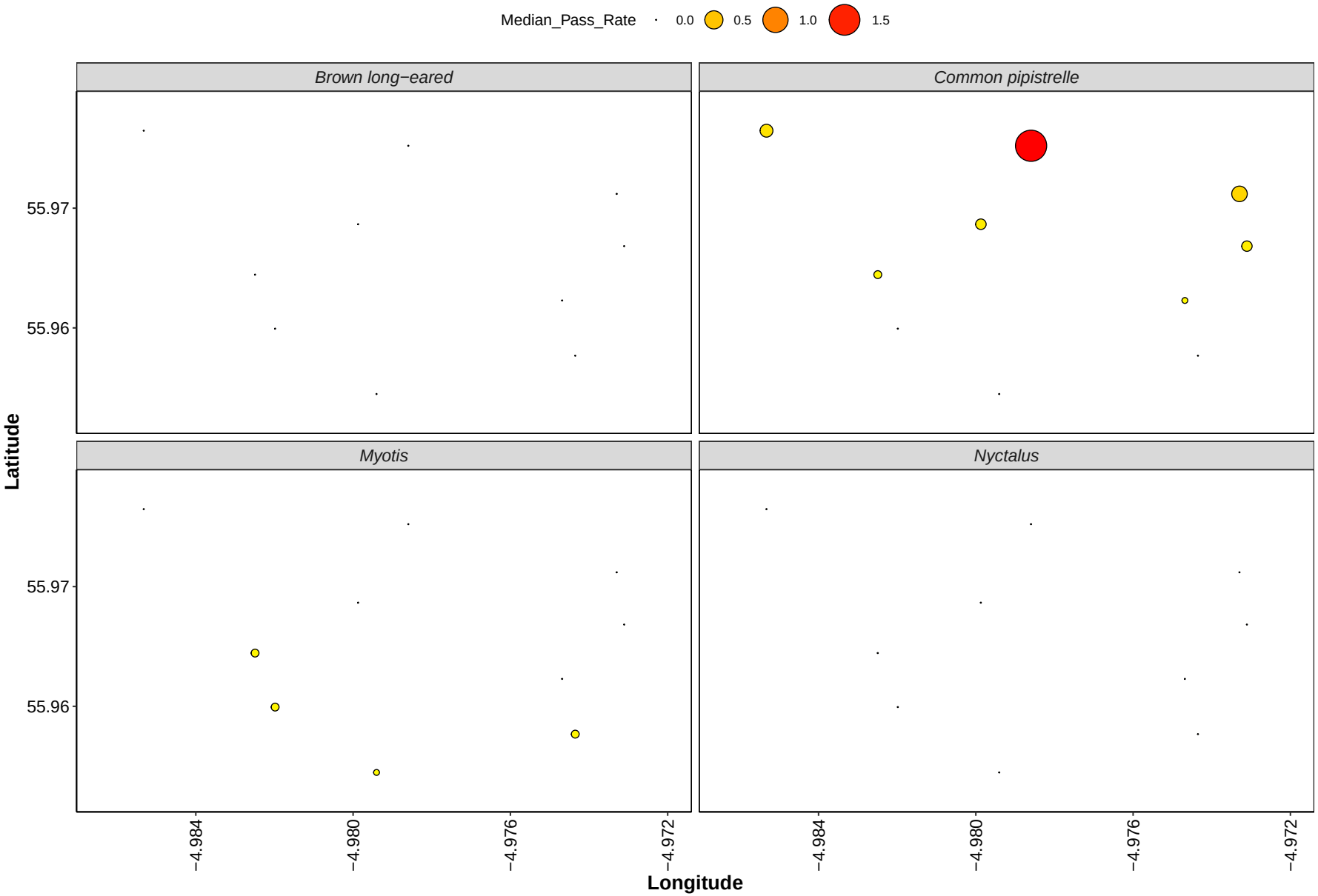
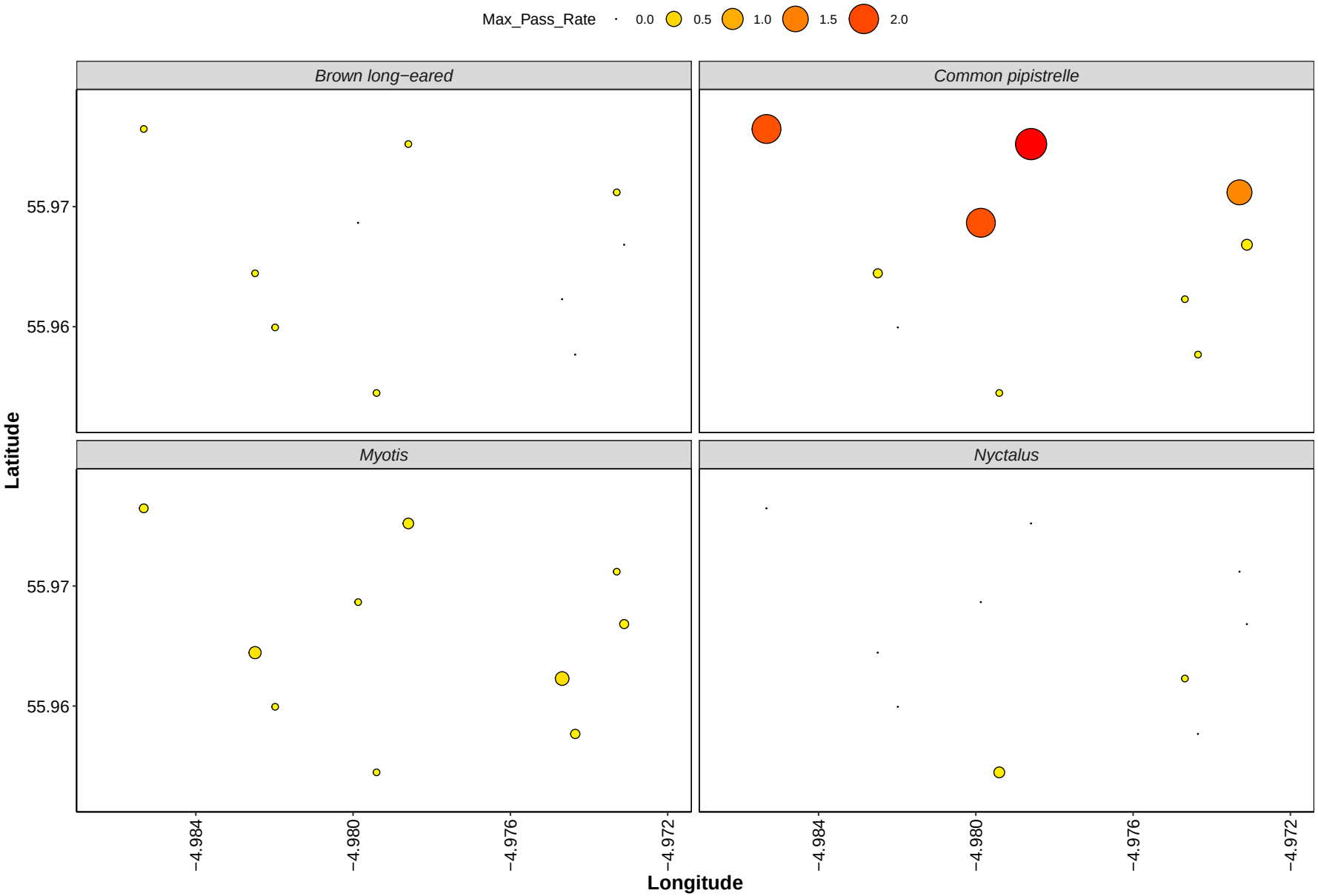

Median_Pass_Rate
0.0
0.5
1.0
1.5
Brown long−eared
Common pipistrelle
Myotis
Nyctalus
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

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
0.0
0.5
1.0
1.5
2.0
Brown long−eared
Common pipistrelle
Myotis
Nyctalus
Latitude
55.97
55.96
−4.984
−4.980
−4.976
−4.972
Longitude

Thank you for using Ecobat!