

APPENDIX 6.3

Littleton Wind Farm Bat Report

LITTLETON WIND FARM

Littleton Wind Farm Bat Report

Prepared for:

Littleton Wind Farm DAC



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Littleton Wind Farm Bat Assessment

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Abstract: This report details the bat surveys conducted at the proposed Littleton Wind Farm, Co. Tipperary in 2023 and 2025.

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1. INTRODUCTION

This report details the results of the bat surveys carried out for the proposed development during 2023 and 2025 with 2023 surveys carried out based on an evolving layout. Surveys in 2024 were not conducted due to programme elongation on project delivery.

The proposed development comprises a 11-turbine wind farm, associated grid connection infrastructure and turbine delivery route. The assessment considers turbines with an 81 m blade length, ensuring that potential bat-sensitive habitats within this distance are fully evaluated (200m + blade length). In addition to a desktop study, the following field surveys were undertaken within and adjacent to the Proposed Development:

- Bat activity transects
- Static detector surveys at proposed turbine locations
- Roost/ Dusk Emergence surveys

All surveys adhered to NatureScot (2021) and Collins (2023) guidelines throughout all surveys of the proposed development. These guidelines remain current at the time of writing. These guidelines are the standard approach for bat survey and impact assessment for wind farm developments in Ireland.

Figures 6-3, 6-4, 6-5, 6-6, 6-7, 6-10, 6-11 and 6-12 (relevant figures for this report) are provided in the EIAR Appendix VI and are therefore not included within this bat report. These figures support the wider ecological context of the assessment and should be read alongside the findings presented herein. The figures relevant to this report are:

- Figure 6-3: Static Detector Locations 2023
- Figure 6-4: Static Detector Locations 2025
- Figure 6-5: Transect routes and turbine locations
- Figure 6-6: Grid Connection Survey Locations
- Figure 6-7: Habitat Map
- Figure 6-10: Round 1 transect route and distribution of bats
- Figure 6-11 Round 2 transect route and distribution of bats
- Figure 6-12: Round 3 transect route and distribution of bats



1.1 Statement of Authority

Contributor	Role	Biography
Rita Mansfield	Report Reviewer	Rita holds a BSc.(Hons) in Applied Ecology and a H. Dip Environmental Protection and Pollution Control. Rita is experienced as a technical ecology lead within the environmental and planning services sector. She is a qualified ecologist with responsibility for environmental impact assessment, planning applications (conventional and strategic infrastructure development), Appropriate Assessment, foreshore licensing, and stakeholder engagement for large scale plans and projects in Ireland, including for wind energy developments. Rita has undertaken and managed a wide range of ecological field assessments including mammal, herpetofauna, bird, fishery, invertebrate and habitat assessments. Rita has held numerous licences under the Wildlife Act and Habitats Directive for disturbance to species which included mitigation (e.g. construction of artificial otter holt, bat exclusion). Rita has provided advice on ecological / environmental design to various private and public sector clients. Rita is an experienced Project Manager and Senior Associate Director at FT. With 22 years' experience specialising in statutory consent and environmental assessment for large scale public infrastructure projects in the energy, water (including flood relief schemes) and transport sectors. Rita provides technical advisory services through all stages of project delivery from feasibility assessment, impact assessment, CPO, design, contract administration and construction.
Orla Commins	Report Author Static detector surveys 2025 Static detector analysis	Orla Commins is a Graduate Ecologist with Fehily Timoney and Company. She holds a first-class BSc in Ecology and Environmental Biology from University College Cork. Since joining Fehily Timoney, she has prepared comprehensive Appropriate Assessments, Ecological Impact Assessments and has completed ornithological reports, bat reports, a wide range of field work, mapping and data management.
Ben O'Dwyer	Report Author	Ben is a Senior Project Ecologist with Fehily Timoney with over 9 years' experience in ecological assessment and holds a BSc (Hons) in Wildlife Biology from Institute of Technology Tralee (now MTU). He has prepared ECIAs, EIAR Biodiversity chapters, AA Screening reports and Natura Impact Statements for numerous large scale infrastructure projects in the renewable energy, commercial, waste management and transport sectors. He is an experienced and versatile field surveyor and his experience across a broad range of habitats and projects in Ireland has given him an extensive knowledge of protected sites and species across the country.



Contributor	Role	Biography
Kate O'Regan	Bat activity survey 2023	Kate O'Regan is a Project Ecologist with Fehily Timoney and Company. She holds a first-class BSc. in Zoology and first-class MSc in Marine Biology from University College Cork. She has completed numerous bat surveys for proposed wind farm developments and has prepared reports and desktop studies for a number of renewable energy projects since joining Fehily Timoney. She has previous experience in data management, statistical analysis, mapping and technical report writing. Kate has also completed a wide range of surveys including bird, intertidal, subtidal, insect and mammal surveys.
Chandra Walter	Bat activity survey 2023 Static detector surveys 2023	Chandra Walter is a Project Ecologist with Fehily Timoney. Chandra holds a BSc in Ecology from University College Cork and an MSc in Organic Horticulture from University College Cork. (Both First Class Honours). Her degrees focused on nature conservation and included a wide variety of surveying skills, including habitat surveys, bird surveys and insect surveys, research skills and report writing. She has completed numerous bat surveys for proposed wind farm developments and also completed reporting and assessment for a diverse range of projects.

1.2 Bat Species

Bats belong to the Order Chiroptera and to date, nine species are recorded as resident in Ireland. These nine species are divided into two families:

- Vespertilionidae, which contains eight Irish species (Daubenton's bat, Natterer's bat, whiskered bat, Leisler's bat, brown long-eared bat, soprano pipistrelle, common pipistrelle and Nathusius' pipistrelle; and
- Rhinolophidae, which contain one Irish species, the lesser horseshoe bat.

Brandt's bat *Myotis brandii* has only been recorded once in Ireland from a site in Co. Wicklow and is classified as a vagrant. In 2013, a single male greater horseshoe bat *Rhinolophus ferrumequinum* was recorded in Co. Wexford. In 2020 an individual was also recorded in Glendalough, Co. Wicklow. Both were considered to be vagrants. The development is outside the distribution range for lesser horseshoe bat (Bat Conservation Ireland (BCI), 2020). Therefore, these bat species mentioned above are therefore excluded from further assessment, and this report will focus on the eight bat species that occur within the distribution range of the proposed development.

Nathusius' Pipistrelle while present on site, its most regularly recorded population occurs in Northern Ireland, where the species is encountered more frequently. Records from the remainder of the country are comparatively infrequent and typically relate to passage individuals or small numbers of foraging bats. Therefore, while the species may be present within the wider region, it is generally considered to occur in low numbers outside its main concentration in Northern Ireland.



1.3 Legislation

1.3.1 Protected Status of bats in Ireland

In the Republic of Ireland, under Annex IV of the EU Habitats Directive (92/43/EEC) and Schedule 5 of the Wildlife Acts 1976 as amended, all bats and their roosts are protected by law. It is an offence to deliberately disturb, injure or kill a bat, or disturb its roost without the appropriate licence.

1.3.2 E.U. Legislation

Under the Habitats Directive 1992 (EEC 92/43), each member state of the E.U. was requested to identify habitats of national importance and priority species of flora and fauna. These habitats are now designated as Special Areas of Conservation (SAC).

In Ireland, all bat species are classified as Annex IV species under the Habitats Directive. Annex IV species are species in need of strict protection. Lesser horseshoe bat is also classified as an Annex II species (Priority Species). Annex II species require the designation of Special Areas of Conservation (SAC) specifically for their protection however, there are no SACs designated for lesser horseshoe within the county or within 10km of the proposed development.

All species of bat in Ireland are strictly protected under the Habitats Directive to include deliberate disturbance of these species as well as deterioration or destruction of breeding or resting places.

1.3.3 International Legislation

Ireland has ratified two international wildlife laws which include for the protection of bats:

- The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1982) – part of this convention stipulates that all bat species and their habitats are to be conserved.
- The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, Enacted 1983). This was instigated to protect migrant species across all European boundaries.

1.4 Site Location

The Wind Farm Site is located within the jurisdiction of Tipperary County Council. The majority of settlements closest to the site are situated to the west of the site. Ballinunty is the nearest, c.2 km southeast of the proposed turbine array. The village of Gortnahoe lies c. 2.5 km northeast of the site at its closest point, while New Birmingham is situated c. 2 km to the east. The small centre of population of Ballysloe is also located to the east, at just over 3 km from the nearest turbine. Littleton and Twomileborris are the only settlements within the central study area situated to the west of the site, located c. 2.6 km and c. 2 km from the proposed turbine array, respectively. The village of Killenaule lies c. 4 km southeast of the site and Horse and Jockey is c. 4.7 km to the west.

Urlingford is located c. 6.8 km north of the site and Johnstown c. 10.5 km to the north

The most notable settlements within the area are Thurles and Cashel. Thurles is located c. 9 km west of the site, while Cashel is c. 17 km to the southwest.



The Wind Farm Site is located within a bog group and includes lands in the townlands of Longfordpass North Longfordpass South, Leigh, Bawnreagh, Clonoura, Noard, Derryhogan, Derryvella, Ballybeg, Lanespark, Newhill and Killeen, County Tipperary. Refer to Figure 4.1, contained within Volume 4 of the EIAR, for the location of the Proposed Development.

The BEMP Lands are contained within the Wind Farm Site.

The TDR travels from the port of entry of Foynes to Junction 4 of the M8 Motorway to the Proposed Wind Farm Site entrance on the R639 at Longford Pass. The TDR passes through the townlands of Islands, Mountfinn, Urlingford, Fennor, Graiguepadeen, and Longford Pass North and Longford Pass East.

The proposed GC route will exit north of the Proposed Wind Farm Site along the Local Road L4114 and traverse the following townlands within County Tipperary: Longfordpass East, Graiguepadeen, Longfordpass North, Fennor and Longfordpass South. The cable then enters County Kilkenny, and traverses the following townland within the public road, terminating at the Ballyragget 110kV Substation: Freshford Lots, Borrisnoe, Killawardy, Clomantagh Upper, Acragar, Moneenaun, Urlingford, Kilrush, Glenreagh, Kilduff, Borrisnafarney, Barnane, Sweethill, Ridge, Balief Lower, Bohernarude, Kilmacuddy, Killoskehan, Cloncannon, Grange, Moatpark, Barna, Ballybeg, Parksgrove, Baunaniska, Ballyconra, Stook, Graigueswood, Clone, Borrisbeg, Borrismore, Gortagarry, Clomantagh (Mt. Garret), Mountfinn, Barnagrotty, Balief Upper, Clomantagh Lower, Tobernapeastia, Darbyshill, Monabrika, Aghnameadle and Blakefield.

The habitats at the application site were the subject of a detailed survey and assessment by Fehily Timoney and Company ecologists between July and October 2025. A habitat map of the Proposed Development lands is provided in Figure 6-7, Volume IV. All habitats described below have been classified in accordance with Fossitt (2000).

The Proposed Development is predominantly located within cutover bog (PB4) which often occurs in mosaics with areas of scrub (WS1) of grey willow/downy birch or gorse, immature woodland (WS2) and wet grassland (GS4). Raised bog (PB1) occurs around the edges of the Site. Calcareous and neutral grassland (GS1) occurs along the existing bog railway along the northern site access route and also in the southern part of Lanespark Bog, establishing respectively on imported material associated with the bog railway and on dry cutover bog. Various woodland types occur in small areas, such as (mixed) broadleaved woodland (WD1), (mixed) conifer woodland (WD3), oak-birch-holly woodland (WN1) and bog woodland (WN7).

Waterbodies within the Site include a network of drainage ditches (FW4), dystrophic lakes (FL1) and acid oligotrophic lakes (FL2), which has been established by flooding of drainage ditches and cutover bog. Reed and large sedge swamps (FS1) occurs, vegetating some ditches and surrounding some lakes. The hedgerows and treelines within the Site are associated with the agricultural lands in the proposed borrow pit footprint; a linear Scrub (WS1) formation also occurs in association with dystrophic lakes (FL1).

Artificial habitats within the Site include earth banks (BL2), buildings and artificial surfaces (BL3), spoil and bare ground (ED2) and recolonising bare ground (ED3).

The habitats along the proposed grid connection are dominated by linear wooded habitats including hedgerows and treelines, grassy verges and surrounding agricultural habitats dominated by improved agricultural grassland (GA1). The presence of a turlough (FL6) at the Loughans adjacent to the GC is noted. Habitat types at each turbine location and associated hardstanding are presented in Table 6-7 of the Biodiversity Chapter 6 of the EIAR.



1.5 Bat Survey Aims

This bat survey report aims to provide the following information on bat activity in 2023 & 2025 within the survey area:

- Bat species list for the development & surrounding area;
- Location of bat presence within the development;
- Bat activity levels within the development;
- Location of roosts and swarming sites in the surrounding area if present.



2. METHODOLOGY

Bat surveys were conducted by Fehily Timoney and Company at the site over the 2023 and 2025 bat activity seasons to ensure compliance with the most recently published guidelines pertaining to surveying, impact assessment, and mitigation for bats at onshore wind turbines NatureScot (2021).

2.1 Zone of Influence (Zol)

In accordance with NatureScot (2021) a collation of relevant bat information within 10km of the proposed wind energy site was gathered. The data search should be related to the scheme's Zol¹ and consider the core sustenance zone (CSZs) (based on Bat Conservation Trust) of species likely to be present none of which have a CSV larger than 10km.

2.2 Desktop Study

A desktop data search was conducted in January 2026 to collate existing information on bat activity, roosts and landscape features that may be used by bats. The data search comprised the following information sources:

- Collation of known bat records within a 10km radius² of the development site from the National Bat Database held by the National Biodiversity Data Centre (www.biodiversityireland.ie)³;
- Review of Ordnance Survey mapping and aerial photography of the development site boundaries and their environs (i.e. 200 m plus rotor radius of the boundary of each turbine location⁴) and of the other infrastructure areas within the site, Grid Connection Route and Turbine Delivery Route;
- Review of the National Monuments Service (NMS), and National Inventory of Architectural Heritage (NIAH) buildings within the development site boundaries, Grid Connection Route and Turbine Delivery Route;
- Review of the NIEA, Natural Environment Division - guidance on Bat Surveys, Assessment and Mitigation for Onshore Wind Turbine Developments in Northern Ireland.
- Records available on the NPWS and the National Biodiversity Data Centre (NBDC) websites were requested & reviewed, in addition to records of rare/sensitive species within the hectads (10km grid squares) overlapping the Site obtained by request from NPWS (received 12th November 2025). NBDC data for the 1 km grid squares overlapping the GCR and TDR provided desktop information for these locations.
- Records of designated sites within a 10km radius of the development where bats form part or all of the reason for designation (<https://www.npws.ie/protected-sites>);

¹ Zol is defined by CIEEM (2018) as 'the areas/resources that may be affected by the biophysical changes caused by activities associated with a project'.

² A 10km radius search distance was selected to encompass records of bat roosts within Core Sustenance Zones (CSZ) of the study area for Irish species of bat. A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the conservation status of the colony using the roost (Collins, 2023).

³ A specific data request was not made to Bat Conservation Ireland because they regularly update NBDC with their records and it is only judged to provide an additional useful source of data if a location is deemed of high potential for bat roosts.

⁴ As per NatureScot (2021) guidance.



- Collation of data on known underground sites within a 10km radius of the development from the Cave Database for the Republic of Ireland, compiled by Trinity College (http://www.ubss.org.uk/search_irishcaves.php)

2.2.1 Bat Landscapes

Bat Conservation Ireland produced a landscape conservation guide for Irish bat species using their database of species records collated during the 2000-2009 survey seasons on NBDC website. An analysis of the habitat and landscape associations of all bat species deemed resident in Ireland was undertaken and reported in Lundy et al., 2011. The degree of favourability ranges from 0 – 100, with 0 being least favourable and 100 most favourable for bats. The values of the grid squares represent the range of habitat suitability values the bat species can tolerate within each individual square.

A caveat is attached to the model, and it is that the model is based on records held on the Bat Conservation Ireland database, while core areas have been identified, areas outside the core area should not be discounted as unimportant as bats are a landscape species and can travel many kilometres between roosts and foraging areas nightly and seasonally.

2.2.2 Bat Conservation Ireland Data Request

Data on the occurrence of bat species and roosts within 30 km of the site was obtained from Bat Conservation Ireland on 27 November 2023. This dataset was interrogated to assess whether any known bat roosts occur within the potential Zone of Influence (Zoi) of the proposed wind farm, grid connection and turbine delivery route.

2.2.3 Review of Ordnance Survey mapping, Aerial photography & Historical Sites

The desktop study included a review of Ordnance Survey mapping and aerial photography for the development site and its environs (i.e. 200 m plus rotor radius from the boundary of each turbine location), in addition to the Grid Connection Route and Turbine Delivery Route. The imagery was examined to identify habitats with potential suitability for bat foraging and commuting, including woodland and commercial forestry, hedgerows, treelines, scrub, riparian corridors and watercourses. The review also considered landscape connectivity and the presence of linear features which may function as commuting corridors. Furthermore, aerial imagery was assessed to identify structures with potential to support roosting bats, such as buildings, bridges and other built features, which were flagged for verification during field surveys.

A review of records from the National Monuments Service (NMS) and the National Inventory of Architectural Heritage (NIAH) was undertaken to identify buildings and structures within the development site boundaries, Grid Connection Route and Turbine Delivery Route that may offer potential roosting opportunities for bats. This informed the scope and focus of subsequent field assessments.

Walkover surveys were subsequently carried out to ground-truth the findings of the desk-based review. These surveys verified the presence, extent and condition of habitats identified through mapping and aerial imagery and enabled detailed mapping of habitats suitable for bat roosting, foraging and commuting. Field surveys also included inspection of identified structures and trees for potential roosting features, confirming their suitability or otherwise for bats.



2.3 Survey Methodology

All surveys adhered to NatureScot (2021) guidelines at the time of survey. The following is a brief description of main types of surveys completed in 2023 and 2025.

- Static surveys: placement of automated recording devices within the survey area. The units are set up during the daylight hours, commence recording 30 minutes before sunset and stop recording 30 minutes after sunrise.
- Walking transect: bat surveys completed on-foot where the surveyor(s) walk the survey site from sunset to at least 120 minutes after sunset. Spot counts can also be conducted along transect surveys.
- Roost surveys: The methods used in the bat roost survey include desktop searches, visual searches at potential roost structures, passive bat detector monitoring, and a search for Potential Roost Features (PRFs) in trees.
- Emergence surveys: bat surveys completed at dusk where the surveyors stood upstream and downstream of various bridges for 120 minutes after sunset. Methods include visual observations, handheld bat detectors and infrared scope.

2.3.1 Habitat Suitability Assessment

Habitat suitability assessments were undertaken in accordance with Bat Conservation Trust (2020) Core Sustainance Zones (CSZ), Collins (2023) and NatureScot (2021) guidance, including specific habitat requirements for bat species on site with specific walkovers targeting 200m + rotor (81m) of each turbine. An initial desktop survey was completed to identify habitats within and adjacent to the site with potential to support roosting, foraging and commuting bats. This was followed by site walkover surveys to ground-truth the desk study findings and verify habitat suitability and the presence of any potential bat roosting features (PBRFs) or areas of high value habitat.

Where suitable habitat was identified, these areas were considered within the design process and avoided where possible. These habitats can be seen in Figure 6-7 of the Biodiversity Chapter 6 of the EIAR.

The potential of these habitats for bat fauna is considered in this framework also.

- Bats may use trees with heavy ivy growth as occasional roosts. Bats may use mature trees with tree holes etc., as roosting sites all year around. However, in general, there is a paucity of these two types of mature trees within the survey area. They are present in the adjacent landscape or within the blocks of agricultural land enclosed by the survey area.
- Foraging and commuting areas are available to bats adjacent to and within the development areas along scrub habitats, treeline tracks and riparian linear features. There is less foraging and commuting capacity over bare peat and similar low height vegetation habitats. The exception to this is Leisler's bats and Nathusius's pipistrelles, which are bat species that fly high over the landscape. They are not as reliant on linear habitats to traverse through the landscape.

Along the grid route all bridges at river crossing points were inspected for the presence of potential roosting features (PRFs) and signs of occupancy by bats such as staining, droppings and feeding remains. Two of the bridges which were inspected required further surveying and emergence surveys were undertaken. The TDR was also assessed for suitable habitat and presence of potential bat roosting features.



2.3.2 Bat Activity/ Transect Surveys

Under the NatureScot (2021) guidance, the use of transect surveys is discretionary, with survey requirements designed on a site-by-site basis. Transect surveys were undertaken on this proposed wind farm to support the findings of desktop and static deployment data to strengthen the evidence base underpinning the overall assessment. Transects are complementary to data collected from static bat detectors and can aid in identifying commuting and foraging corridors and to help gain understanding of bat abundance within the survey area. Point counts (of a fixed duration) can be incorporated into transects to survey specific features to provide information on comparative density of use.

Transects were completed in each of the three rounds in 2023 with the use of Batlogger M2 bat detector. Survey dates and routes are illustrated in Figure 6-5. Temperature and wind were measured for each transect survey. Batlogger M2 detectors recorded temperature for each transect and weather conditions can be seen below in Table 2-1. Additional walked transects were not undertaken in 2025 due to health and safety constraints arising from the presence of wild horses onsite.

The static detector data collected is considered sufficient to accurately characterise bat activity across the site and as such, transect surveys represent additional survey effort in excess of requirements, providing supplementary information on bat activity. The 2023 transect surveys confirmed the main flightlines and patterns of bat usage within the survey area, which remained consistent with the findings from subsequent static monitoring.

Table 2-1: Summary of transect survey dates, timing & weather conditions for 2023

Date	Start Time	End Time	Survey type	Weather Conditions
25/05/23 (Round 1)	21:29	00:08	Transect survey: Walked transect covering the southern section of the main bog along existing track for 9.7km lasting 2.6h.	Sunset: 21:25 Precipitation: Dry Wind: 16km/h Temperature: 15°C
27/07/23 (Round 2)	21:24	23:20	Transect survey: Walked transect covering the southern section of the main bog along existing track for 7.5km lasting 1.9h.	Sunset: 21:36 Precipitation: Dry Wind: 16km/h Temperature: 15°C
20/09/23 (Round 3)	19:34	21:34	Transect survey: Walked transect covering the southern section of the main bog along existing track for 7.5km lasting 2h.	Sunset: 19:42 Precipitation: Dry Wind: 14km/h Temperature: 14°C

2.3.3 Roost Assessment Surveys

NatureScot (2021) recommends that “features that could support maternity roosts and significant hibernation and/or swarming sites (both of which may attract bats from numerous colonies from a large catchment) within 200m plus rotor radius of the boundary of the proposed development should be subject to further investigation” (300m radius of proposed turbine locations was surveyed, adhering to NatureScot 2021 guidance).



Surveyors utilised the assessment criteria described in Collins (2023) – Page 35, Table 4.1, which provides guidelines for assessing potential suitability of habitat features as bat roosts and for foraging bats. This allows surveyors to assign features a score of ‘negligible’, ‘low’, ‘moderate’ or ‘high’ status in terms of the presence of Potential Roost Features (PRFs) or quality of habitat for commuting and/or foraging. Where a potential roost feature was determined to have greater than negligible suitability, the PRF was subjected to further assessment. Based on the features present and the location of trees and/or other structures, the potential use of the feature can also be considered, and classified (as in Hundt, 2012 and BTHK, 2023).

Surveyors employed non-invasive assessments of trees from ground level (ground level tree assessment/GLTA). All trees to be felled as part of the development were assessed. Additionally, in accordance with (UK Bat Mitigation Guidelines 2025) we adopted a 200m potential zone of influence from construction activities and assessed all trees and structures for roosting suitability within this zone.

A roost survey encompassing assessment of structures and GLTA surveys was also undertaken along the proposed grid connection. Two bridges at river crossing points along the proposed grid connection route were inspected for the presence of potential roosting features (PRFs) and signs of occupancy by bats such as staining, droppings and feeding remains. These locations can be seen in Figure 6-6 of the Biodiversity Chapter 6 of the EIAR.

The TDR was also assessed for the presence of potential bat roosting features. The turbine delivery route will affect immature trees at one location: Node 3 (removal of trees). The affected trees are immature specimens originating from roadside landscaping with no potential bat roosting features. Detailed description of the habitats along the Turbine Delivery Route can be found in the Biodiversity Chapter 6 of the EIAR.

2.3.4 Roost Emergence

Within the study area of the wind farm grid connection route and turbine delivery route, walkover surveys were undertaken to identify potential bat roost features. No potential roost features were observed during these surveys for the wind farm and turbine delivery route.

Based on assessment of bridges along the grid connection route for bat roosting potential, two bridges were identified as requiring emergence surveys (assessed as having low suitability, refer to Table 3-3 for further details). Dusk bat emergence surveys at these locations commenced 15 minutes prior to sunset and concluded 1.5 hours after sunset. Trained observers conducted watches to search for the occurrence of dusk emergences at these potential roosting sites). Surveyors took written notes and used hand-held Batlogger M2 bat detectors, which enabled the collection of geo-referenced records of bat activity. Subsequently, the captured acoustic recordings were subjected to analysis using the BatExplorer software. A summary of the times, weather conditions, and locations for the surveys conducted is provided in Table 2-2 with results from the surveys seen in Section 3.5 below.



Table 2-2: Summary of emergence survey dates, timing & weather conditions for 2025

Location	Date	Start Time	End Time	Survey type	Weather Conditions
Gorteenahilla Stream Bridge ITM 640307, 664969	13/10/25	18:25	20:10	Dusk emergence survey	Sunset: 18:41 Precipitation: Fine light mist Temperature: 13°C Visibility: Very good Wind speed: F2-3
Borrisbeg Stream Bridge (2) ITM 631586, 663278	14/10/25	18:20	20:05	Dusk emergence survey	Sunset: 18:39 Precipitation: Dry Temperature: 12°C Visibility: Excellent Wind speed: F2

2.3.5 Winter Roost Inspections

NatureScot (2021) recommends that winter roost surveys should also be carried out for any potential hibernation roost within 200m plus rotor radius (81m). No potential hibernation roosts were identified within the study area during surveys.

2.3.6 Static Bat Detector Surveys

NatureScot (2021) guidelines require as a minimum three deployments of static detectors aimed at covering spring (April to May), summer (June to mid-August) and autumn (mid-August to October), each with a minimum deployment period of 10 nights (within compliant weather parameters). Compliant weather conditions are defined as: temperatures at $\geq 8^{\circ}\text{C}$ at dusk, maximum ground-level wind speed of 5 m/s, and no, or only very light, periodic rainfall. For the purposes of this report, Spring is designated as Round 1, Summer as Round 2 and Autumn as Round 3.

Passive Static Bat Surveys involve leaving a static bat detector unit (with ultrasonic microphone) in a specific location and set to record for a specified round of time (i.e., a bat detector is left in the field, there is no observer present and bats which pass the monitoring unit are recorded and their calls are stored for analysis post surveying). Statics were placed about 2m above ground to align with the NIEA (2024) guidelines. This results in a far greater sampling effort over a shorter round of time than can be achieved through manual survey.

Song Meter SM4BAT Full spectrum bat recorders use Real Time recording as a technique to record bat echolocation calls and using specific software, the recorded calls are identified. It is these sonograms (2-d sound pictures) that are digitally stored on the SD card (or micro SD cards depending on the model) and downloaded for analysis. Full spectrum bat recorders were utilised for all the static surveys as recommended in the revised (NatureScot, 2021) guidelines. These results are depicted on a graph showing the number of bat passes per species per hour/night. Each bat pass does not correlate to an individual bat but is representative of bat activity levels. Some species such as the pipistrelles will continuously fly around a habitat and therefore it is likely that a series of bat passes within a similar time frame is one individual bat. On the other hand, Leisler's bats tend to travel through an area quickly and therefore an individual sequence or bat pass is more likely to be indicative of individual bats.



Per NatureScot (2021), static units (Song Meter SM4BAT) were programmed to commence half an hour before sunset and finish half an hour after sunrise to ensure that bat species that emerge early in the evening and return to roosts late are recorded. Detectors were left out for a minimum of 10 consecutive nights across three survey rounds: Round 1 spring (April-May), Round 2 summer (June-mid-August) and Round 3 autumn (mid-August-October) during 2023 & 2025. To account for nights with unsuitable weather conditions, detectors were deployed longer than the minimum required 10 consecutive nights (NatureScot, 2021) to ensure that enough data could be gathered during suitable weather conditions. Table 2-3 and Table 2-4 below highlight deployment dates for 2023 and 2025 static detectors respectively highlighting the number of consecutive nights across the three survey rounds of each year.

NatureScot (2021) guidance states that “Detectors should be placed at all known turbine locations at wind farms containing less than ten proposed turbines. Where developments have more than ten turbines, detectors should be placed within the developable area at ten potential turbine locations plus a third of additional potential turbine sites up to a maximum of 40 detectors for the largest developments”.

A total of 11 detectors were deployed to cover all 11 potential turbine locations for all survey rounds in 2023 and 2025. The detectors were placed at or close to proposed turbine locations in analogous habitats (see Figure 6-3 & 6-4 and Table 2-3 & Table 2-4 for distances to turbine locations).

Table 2-3: Static Detector Locations 2023 in Relation to Final Turbine Layout and Rotor Sweep Area

Detector Location	Distance to Turbine (m)	Fossil habitats at deployment locations	Fossil habitats at 2023 turbine location	Dates Deployed
L1	54m	WS1 - Scrub	WS1 - Scrub	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L2	123m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L3	339m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L4	68m	WS1 - Scrub (edge)	WS1 - Scrub	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L5	358m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L6	150m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	WS1 - Scrub	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L7	46m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	PB4 - Cutover bog	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23



Detector Location	Distance to Turbine (m)	Fossit habitats at deployment locations	Fossit habitats at 2023 turbine location	Dates Deployed
L8	266m	PB4 - Cutover bog	WS2 - Immature woodland	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L9	0m	PB4 - Cutover bog WS1 - Edge of Scrub	WS1 - Scrub	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L10	0m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23
L11	71m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	WS2 - Immature woodland	Round 1: 17/05/23 - 13/06/23 Round 2: 27/07/23 - 24/08/23 Round 3: 20/09/23 - 11/10/23

Table 2-4: Static Detector Locations 2025 in Relation to Final Turbine Layout and Rotor Sweep Area

Detector Location	Distance to Turbine (m)	Fossit habitats at deployment location(s)	Fossit habitats at 2025 turbine location	Dates Deployed
LT1	0m	WS1 - Scrub	WS1 - Scrub	Round 1: 20/05/25 - 05/06/25 Round 2: 30/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25
LT2	0m	PB4 - Cutover bog/ WS1 - Scrub (edge)	PB4 - Cutover bog/ WS1 - Scrub (edge)	Round 1: 20/05/25 - 05/06/25 Round 2: 30/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25
LT3	0m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	WS2 - Immature Woodland	Round 1: 19/05/25 - 05/06/25 Round 2: 30/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25
LT4	0m	WS2 - Immature woodland (edge)	WS2 - Immature Woodland	Round 1: 19/05/25 - 05/06/25 Round 2: 24/07/25 - 21/08/25 Round 3: 21/08/25 - 17/09/25
LT5	0m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	Round 1: 19/05/25 - 05/06/25 Round 2: 24/07/25 - 21/08/25 Round 3: 21/08/25 - 17/09/25
LT6	0m	PB4 - Cutover Bog	PB4 - Cutover Bog	Round 1: 19/05/25 - 05/06/25 Round 2: 24/07/25 - 21/08/25 Round 3: 21/08/25 - 17/09/25
LT7	0m	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	PB4 - Cutover Bog/ WS2 - Immature woodland (edge)	Round 1: 19/05/25 - 05/06/25 Round 2: 24/07/25 - 21/08/25 Round 3: 21/08/25 - 17/09/25



Detector Location	Distance to Turbine (m)	Fossil habitats at deployment location(s)	Fossil habitats at 2025 turbine location	Dates Deployed
LT8	146m	PB4 - Cutover bog/ WS1 - Scrub (edge)	WS2 - Immature woodland (edge)	Round 1: 19/05/25 - 05/06/25 Round 2: 24/07/25 - 21/08/25 Round 3: 21/08/25 - 17/09/25
LT9	0m	WS1 - Scrub WS2 - Immature woodland (adjacent)	WS1 - Scrub WS2 - Immature woodland (adjacent)	Round 1: 19/05/25 - 05/06/25 Round 2: 29/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25
LT10	0m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 19/05/25 - 05/06/25 Round 2: 29/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25
LT11	0m	PB4 - Cutover bog	PB4 - Cutover bog	Round 1: 19/05/25 - 05/06/25 Round 2: 29/07/25 - 25/08/25 Round 3: 25/08/25 - 18/09/25

Data Analysis

All recordings were made in full spectrum, retaining all amplitude and harmonic information from the original bat call for subsequent analysis. Bat calls were analysed using Kaleidoscope Pro (5.3.9) Software. All files were split to a maximum duration of 15 seconds and automatically identified to species level, or genus level as appropriate, using auto-ID bat classifiers (Bats of Europe 5.2.1).

Data was manually verified in order to provide an additional layer of quality assurance. All files with auto-ID for *Nathusius's* pipistrelle and brown long eared bat were manually checked, as they are often misidentified by Kaleidoscope Pro (5.3.9) along with all NoID files and a minimum of 10% of each of the other file types.

Bat activity during static detector surveys was measured by the number of bat passes recorded. Bat passes are commonly used as a metric for bat activity and determine species presence (Kerbirou et al., 2019). For our analysis, a bat pass is defined as the detection of sound calls from a single bat species within a 15 second sound file. If several species are detected within the same sound file, Kaleidoscope auto-id will choose as label the most predominant species present in the sound file, while during manual verification, the rarest species recorded in the checked file was chosen as label.

2.3.7 Habitat Assessments at Turbine Locations (+Rotor)

Habitats within a 281 m radius (200 m plus rotor sweep) of each proposed turbine location were classified using relevés to ensure accurate habitat identification. The majority of turbine locations (T01–T06, T10 and T11) are situated predominantly within cutover bog (PB4), frequently characterised by low *Sphagnum* cover (LS1/LS2) and typical communities dominated by *Eriophorum angustifolium* or *Calluna vulgaris*. Several of these areas also include mosaics with bare peat (BP1/BP2) and, in some instances, occur within scrub (WS1) or immature woodland (WS2) clearings. T02 and T04 comprise mosaic habitats of scrub (WS1) or immature woodland (WS2) interspersed with cutover bog. T07 and T08 are located within immature woodland (WS2), while T09 is situated entirely within scrub (WS1). Overall, the habitat assessment indicates a predominance of modified peatland habitats, with localized areas of scrub and immature woodland across the turbine locations. Table 2-5 below shows the habitat classification with more detail shown in the Biodiversity Chapter 6 of the EIAR.



Table 2-5: Habitat at Each Turbine Location

Relevé	Habitat Type
T01 Turbine Location	Cutover bog (PB4), Low Sphagnum (LS2) <i>Eriophorum angustifolium</i> cutover bog type (occurring within open Scrub WS1)
T02 Turbine Location	Mosaic of Scrub (WS1) and Cutover bog (PB4) - Low Sphagnum (LS1) <i>Calluna vulgaris</i> cutover bog type
T03 Turbine Location	Cutover bog (PB4), Bare Peat (BP2) <i>Eriophorum angustifolium</i> cutover bog type (occurring within immature woodland WS2 clearing)
T04 Turbine Location	Mosaic of Immature Woodland (WS2) and Cutover bog (PB4) (occurring within Immature woodland WS2 clearing)
T05 Turbine Location	Cutover bog (PB4) Low sphagnum (LS2) <i>Eriophorum angustifolium</i> cutover bog type
T06 Turbine Location	Cutover bog (PB4), Bare Peat (BP2) <i>Eriophorum angustifolium</i>
T07 Turbine Location	Immature woodland (WS2)
T08 Turbine Location	Immature woodland (WS2)
T09 Turbine Location	Scrub (WS1)
T10 Turbine Location	Cutover Bog (PB4), Bare Peat (BP1) <i>Calluna vulgaris</i> cutover bog type
T11 Turbine Location	Cutover bog (PB4), Bare Peat (BP2) <i>Eriophorum angustifolium</i> —cutover bog type

2.4 Analysis

2.4.1 Ecobat

The nightly number of bat passes recorded per species on the static units were analysed using the website-based tool Ecobat (<http://www.ecobat.org.uk/>) which is designed and managed by the University of Exeter, and is hosted by the Mammal Society UK.

“Acoustic surveys using bat detectors are widely used to determine species’ presence and to quantify the activity of foraging bats as they are cost-effective, can be automated to run for long time periods, and are non-intrusive. Activity levels are dependent on a number of factors including seasonality, weather conditions and location, with the type of bat detector used during the survey also affecting detection rates.

Using bat passes to assess the relative importance of a site for policymakers therefore requires practitioners to account for how these multiple factors may have influenced the number of bat passes recorded at a site. Although professional opinion is valuable, it can often be based on intuition, is context dependent and can vary considerably between practitioners (Hulme, 2014).



It is therefore likely that an assessment of the ecological value of a site (and the impacts of any proposed action) will vary between practitioners based upon their own level of experience and knowledge of the region and/or species.

Ecobat compares surveys submitted by the user with a national reference dataset and objectively quantifies bat activity levels. It offers a web-based interface for depositing data rapidly and securely, automatically generating a numerical indicator of the relative importance of a night's worth of activity, by contrasting with a comparable reference range. The output can be used by ecologists to accurately quantify what bat activity means for use during ecological impact assessments.

Ecobat uses percentiles to provide a numerical representation of activity levels relative to the surrounding landscape for each night of surveying. Percentiles can then be assigned to activity categories (low, moderate, high) to provide a quantifiable measure of bat activity. Percentiles provide a numerical indicator of the relative importance of a nights' worth of bat activity by comparing it with a national database. For example, activity data in the 80th percentile would indicate that the recorded data were in the top 20% of activity for the reference range". (Ecobat, 2020).

The Ecobat analysis was undertaken for each survey period separately. The reference range datasets were stratified to include:

- Only national-level records.
- Records using any make of bat detector.

Categorisation of activity level is based on the following table from NatureScot (2021):

Table 2-6: Percentile Score and Categorised Level of Bat Activity

Percentile	Bat Activity
81 to 100	High
61 to 80	Moderate to High
41 to 60	Moderate
21 to 40	Low to Moderate
0 to 20	Low



2.4.2 Site Risk Assessment & Impact Assessment

According to NatureScot (2021) wind farms can affect bats in the following ways:

1. Collision mortality, barotrauma and other injuries (although it is important to consider these in the context of other forms of anthropogenic mortality)
2. Loss or damage to commuting and foraging habitat, (wind farms may form barriers to commuting or seasonal movements, and can result in severance of foraging habitat);
3. Loss of, or damage to, roosts;
4. Displacement of individuals or populations (due to wind farm construction or because bats avoid the wind farm area).

According to the NatureScot (2021) to ensure that bats are protected by minimising the risk of collision, an assessment of impact at a site requires an appraisal of:

- The level of activity of all bat species recorded at the site assessed both spatially and temporally.
- The risk of turbine-related mortality for all bat species recorded at the site during bat activity surveys.
- The effect on the species' population status if predicted impacts are not mitigated.

In addition, it is recommended to consider the relevant factors in the assessment process:

- Is the bat species at the edge of its range
- Cumulative effects
- Presence of protected sites
- Proximity of maternity roosts
- Key foraging areas
- Key flight lines
- Possible migration routes.

Using the NatureScot (2021) guidelines outlined in Table 3-16, a site risk assessment for the individual turbines in relation to each bat species recorded was completed.

2.5 Calibration and testing of recording equipment

Calibration and testing of recording equipment was carried out in accordance with NatureScot (2021). Checks are logged in excel, providing an audit trail to ensure that all data can be relied upon and form a robust and defensible data set. Unique numbering of static detectors, SD cards and microphones allows for reverse checking, if any issues arise, e.g. following a microphone failure. Checks undertaken include pre-deployment device setting and battery checks, and pre-deployment microphone sensitivity checks



2.6 Limitations

Static detector 8 (L8, LT8) was located 232m from Turbine 8 (T8). While the detector was not positioned immediately adjacent to the turbine location, the surrounding habitat within this distance is comparable to that at the turbine comprising similar scrub and woodland features. As such, the detector location is considered representative of bat activity within the wider area of T8 and does not limit the interpretation of bat use of the local habitat.

Static detector 11 (LT11) did not record data for Round 1 in 2025. However, due to the total number of detectors exceeding minimum requirements (detectors at ten turbine locations plus one third of additional turbine locations for projects with over ten turbines), this does not represent a significant limitation.

Static detector 3 (L3) was not deployed for Round 3 in 2023 due to targeted vandalism of detectors in Rounds 1 and 2 in that year. However, as above, due to the total number of detectors exceeding minimum requirements, this does not represent a significant limitation.

Activity transect surveys were not undertaken in 2025, due to the presence of wild horses onsite restricting nighttime access for health and safety reasons. Considering that transect surveys are discretionary under NatureScot (2021) guidance, and that three rounds of activity surveys providing complementary information in exceedance of requirements were undertaken in 2023, this does not represent a significant limitation.

It is not considered that any of these survey specific constraints represent a significant limitation or data gap to adequately assessing the impacts of the Proposed Development on bat species within and surrounding the site.



3. RESULTS

This section provides the detailed results for bat surveys conducted during the 2023 and 2025 survey periods, as well as habitat assessment surveys conducted in summer 2023 & 2025. Habitat surveys undertaken in 2023 informed the constraints study and assisted in identifying appropriate turbine locations, ensuring that areas of higher quality or sensitive habitat were avoided in the final layout.

3.1 Desktop Survey

There are five 10 km grid squares overlapped by the proposed development (including grid connection and TDR): S25, S26, S36, S46 and S47. The proposed wind farm is mainly encompassed in 10 km grid square S25 and a smaller area of S26 encompasses the northern section of the site. These 10 km grid squares held previous bat records as detailed in Table 3-1 below (NBDC maps, most recent data search 25/11/2025). The data requested from NPWS did not contain any bat species in the requested grid squares.

Records in the NBDC maps reflect survey effort or data input, and do not automatically reflect bat presence in a given area (an area without records may not have been previously surveyed or data may not have been publicly shared).

Table 3-1: Bat records in 10km Grid squares S25, S26, S36, S46 and S47

Species	S25	S26	S36	S46	S47
Brown long-eared bat (<i>Plecotus auritus</i>)	1	0	2	4	1
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	320	7	125	3	8
Nathusius's Pipistrelle (<i>Pipistrellus nathusii</i>)	1	0	0	0	0
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	77	4	18	5	8
<i>Pipistrellus pipistrellus sensu lato</i>	54	1	23	0	1
Daubenton's bat (<i>Myotis daubentonii</i>)	1	2	0	230	110
Leisler's bat (<i>Nyctalus leisleri</i>)	37	7	18	3	7
Natterer's bat (<i>Myotis nattereri</i>)	0	0	1	2	1

It is noted that the high numbers of desktop records for Daubenton's bat in S46 and S47 are associated with the River Nore.



Figure 3-1: Grid squares S25, S26, S36, S46 and S47 overlapping the proposed development (including grid connection and turbine delivery route)

3.1.1 Bat Landscapes

Bat landscapes are plotted in 5 km grid squares, of which five overlap the proposed wind farm and can be seen below in Figure 3-2.

For the southern turbines (T9-T11), the bat landscape association model (Lundy et al., 2011) suggests that the development is part of a landscape that is of moderate suitability for all bats. These southern turbines and their environs are of low suitability for Nathusius's Pipistrelle and Lesser horseshoe bat, of low - moderate suitability for Leisler's bat, Natterer's bat and Whiskered bat, of moderate suitability for Brown long-eared bat, Soprano Pipistrelle and Daubenton's bat, while common pipistrelle has the highest suitability of moderate - high suitability.

The grid square encompassing turbines 1-6 and has an overall moderate suitability for all bats. These turbines and their environs are of low suitability for Nathusius's Pipistrelle and Lesser horseshoe bat, of moderate suitability for Brown long-eared bat, Soprano pipistrelle, Leisler's bat, Daubentons bat, Whiskered bat and Natterer's bat, while common pipistrelle has the highest suitability of moderate - high suitability.



For turbines 7 and 8 the grid square associated with the landscape has an overall moderate suitability for all bats. These turbines and their environs are of low suitability for Nathusius's Pipistrelle and Lesser horseshoe bat, of low-moderate suitability for Daubenton's bat, Whiskered bat and Natterer's bat, of moderate suitability for Brown long-eared bat, Soprano pipistrelle and Leisler's bat and of moderate-high suitability for Common pipistrelle.



Figure 3-2: NBDC Bat Landscape Map of Proposed Wind Farm

3.1.2 Bat Conservation Ireland Data

Examination of BCI data on bat roosts confirmed there are no known roosts present in this dataset in the 1 km grid squares within 300 m of the proposed wind farm and grid connection.

The dataset includes one record of a common pipistrelle roost located in a 1 km grid square c. 120m from the R693/R639 Roundabout TDR node. There are no buildings or potential roosting features at this TDR node which could potentially host bats. The closest building within the relevant 1 km grid square is located 600m away from this TDR node, and proposed works at the TDR node are unlikely to affect landscape-scale connectivity for bats.



3.1.3 Natura 2000 Sites

The only Natura 2000 sites designated for bats in Ireland are for lesser horseshoe bats. The proposed development is not within the potential ZOI of any sites designated for this species and is located outside their established range.

3.1.4 Ordnance Survey mapping, Aerial photography, Underground & Historical Sites

The desk-based review of Ordnance Survey mapping, aerial photography, and records from the National Monuments Service (NMS) and National Inventory of Architectural Heritage (NIAH) did not identify any underground structures, historic buildings, bridges, or other features within the development site or Turbine Delivery Route that would be considered of notable value for roosting bats. No historical structures with suitability for bat roosting were identified within the study areas. Two bridges mentioned above were observed along the Grid Connection Route as potential roost features both of which underwent an emergence survey discussed below.

Walkover surveys confirmed the findings of the desk study. No underground features or historic structures of relevance to bats were recorded on site or along associated routes. Furthermore, no potential roosting features of significance were identified during field inspections.

3.2 **Habitat Suitability Assessment**

All habitats within the site were assessed with regard to their suitability for bats. During the design phase, areas identified as having higher suitability were avoided. Consequently, habitats subject to construction impacts are not considered to be of high suitability for bats.

Within the main development site, habitats to be impacted comprise predominantly bare peat, scrub, and immature woodland of generally low structural diversity. These habitats are assessed as being of low suitability for bat species present or likely to be present in the area. No Potential Roosting Features (PRFs) were identified within the site.

Habitat to be removed within the peat deposition area is comprised of immature non-native eucalyptus plantation with limited suitability for bats. Linear habitats proposed for removal are either of low suitability and/or will be reinstated as part of the replanting proposals outlined in the Biodiversity Enhancement Management Plan (BEMP) (Appendix 6.1). In several locations, removal relates to narrow linear strips of habitat, which will not compromise the integrity of edge habitats or overall landscape connectivity. In areas where removal passes through blocks of habitat, the formation of new linear corridors will maintain connectivity and may provide enhanced foraging opportunities.

Habitat removal associated with the substation will involve the loss of an area of bog woodland established on cutaway bog. This habitat is assessed as being of low suitability for roosting bats, and no PRFs were identified within the affected woodland. Extensive areas of similar woodland and scrub habitat are present within the surrounding landscape, providing alternative opportunities for commuting and foraging bats. In addition, proposed replanting at the substation will reinstate linear features and maintain habitat connectivity in the longer term. As such, impacts to bat habitat at the substation are anticipated to be temporary and short term in nature.



Habitats along the grid connection route are dominated by linear wooded features including hedgerows and treelines, grassy verges, and adjacent agricultural land characterised by improved grassland. Overall habitat suitability for bats along this route is considered to be primarily low, although areas of higher quality landscape are present in parts of the wider hinterland surrounding the grid connection, particularly where woodland and higher quality treelines and hedgerows are present in the surrounding landscape.

All bridge crossings over rivers were inspected. No evidence of bat roosts or Potential Roosting Features (PRFs) was identified at all bridges except the Borrisbeg Stream (2) Bridge, where moderate suitability PRFs with no evidence of occupation by bats were observed. Numerous trees were assessed for PRFs; however, these features are considered to be of low suitability due to limited suitability and small size of PRFs and existing disturbance associated with the busy road corridor. Works along the grid connection route will involve limited vegetation trimming, with no substantive removal of low suitability bat habitat.

Habitats along the turbine delivery route comprise dry meadows and grassy verges, scrub, hedgerows, and recolonising bare ground. These habitats are assessed as being of low suitability for bats.

While small sections of hedgerow and scrub will be removed to facilitate turbine delivery, no PRFs were identified and the habitats affected are considered to be of low suitability for roosting, commuting, or foraging bats.

Overall, habitat within the site and associated routes is assessed as being of low suitability for bats. This is primarily due to the dominance of bare peat and low-quality immature woodland and scrub habitats, which provide limited structural diversity and fewer roosting opportunities. In addition, existing disturbance from adjacent road infrastructure along the grid route and turbine delivery route further reduces the likelihood of significant bat activity within affected areas.

3.3 Bat Activity/Transect Surveys

3.3.1 Bat Activity/Transect Surveys 2023

During the 2023 bat activity season, three dusk transect surveys were completed on the dates detailed in Table 3-2. The transect routes and the spatial distribution of recorded bat activity are illustrated in EIAR Appendix VI (Figures 6-10, 6-11 and 6-12). Total bat passes recorded using Batlogger M2 detectors are summarised in Table 3-2.

The results indicate that foraging bat activity was associated with the linear features surveyed in 2023. The transects included the southern entrance track to Littleton Bog and the entrance to Lanespark Bog, extending along access tracks towards the proposed turbine locations. These surveys were undertaken to supplement and validate data obtained from static bat detectors positioned at the turbine locations. The findings support the conclusion that the access tracks are not located within habitats classified as high-quality or high-value for bats.



Table 3-2: Total bat passes per transect survey

Species	Transect		
	Round 1 - 29/06/23	Round 2 - 27/07/23	Round 3 - 20/09/2023
Common pipistrelle	37	37	3
Soprano pipistrelle	20	36	40
Nathusius's pipistrelle	1	0	3
Leisler's bat	13	18	23
Brown Long-eared bat	2	1	8
Daubenton's bat	1	2	0
Whiskered bat	0	0	0
Natterers bat	0	0	0
Total passes	74	94	77

3.4 Roost Survey Results

3.4.1 Proposed Wind Farm

Surveys of the proposed wind farm study area (300m turbine buffer and 200m access track/infrastructure buffer) determined that potential roosting features are absent as no mature trees with PRFs were observed aside from intermittent mature trees of ash covered in ivy outside of the site boundary but within 200m of the borrow pit construction. These trees were assessed and found to have low potential due to heavily managed hedgerows and the trees being intermittent reducing the quality of the commuting corridor.

3.4.2 Grid Connection & TDR

The connection route and TDR accommodation works locations were assessed for the presence of buildings, bridges and trees which could potentially offer suitable bat roosting habitat. No derelict buildings with bat roosting potential/potential to be affected by the proposed grid connection or TDR were identified. No potential tree roost features were identified within the TDR works ZoI. Several bridges and trees occur along the grid connection route which were assessed as set out hereunder.

3.4.2.1 *Bridges*

The results of bridge assessments/inspections carried out at bridges along the proposed grid connection are detailed below and locations of these bridges can be seen in Figure 6-6 of the Biodiversity Chapter of the EIAR. No reinforcement works are proposed for bridges along the TDR; the proposed grid cable crossing methodology for all bridges is HDD.



Black River (EPA name Drish 16) Bridge

This two-arch concrete bridge did not contain any PRFs. Minor erosion of concrete was noted in some areas but no gaps or cavities providing sufficient shelter for roosting bats are present. As such, this bridge has no roosting potential.



Plate 3-1: Black River Bridge

Goul River Bridge

This double arch bridge has been extended laterally by the addition of two precast pipe culverts on the south-eastern side. The older arches on the north-western side comprise a brick-built arch and an older masonry arch which has been shot-creted and also repaired in some parts with brick. The only cavity recorded was formed between the joint of a cast concrete culvert and brick arch; however, this cavity was extremely wet due to water seepage from above making it unsuitable for bat roosting. As such, this bridge has no roosting potential.



Plate 3-2: Goul River Bridge



Aldreagh Stream Bridge

This stream located within Urlingford Village is crossed by a long culvert where it flows under the main street. The structure is comprised of two low cast concrete arches with no bat roosting potential.



Plate 3-3: Aldreagh Stream Bridge

Borrisbeg Stream Bridge (1)

This crossing structure over this stagnant channel is a low single arch bridge with the invert level being lower than would be typically favoured by bats for bridge roosting. No gaps in the stonework under arch were visible. Some small cracks and ivy cover are present on the parapets, however overall, roosting potential remains negligible.



Plate 3-4: Borrisbeg Stream Bridge (1)



Borrisbeg Stream Bridge (2)

This bridge structure carries the R693 road over the channel draining the adjacent Loughane turlough. As such, it remains dry for long periods, and was dry when surveyed in late September/early October 2025. The structure is a single arch formed by an older masonry barrel vault which has been extended laterally by the addition of a bottomless concrete box culvert on the upstream side.

Numerous gaps are present in the stonework of the barrel arch, and several gaps are also present in the spandrel wall, with the majority of crevices in the barrel arch having some suitability for roosting bats based on their size, accessibility, location and condition. No signs of bat occupancy were recorded during the inspection however. It was noted that very dense tree and bramble cover surrounding the channel up and down-stream may limit access for bats, although some gaps permitting entry are likely to exist.

Based on the presence of PRFs under this bridge it was assessed to have moderate roosting potential and the requirement for an emergence survey was identified.



Plate 3-5: Borrisbeg Stream Bridge (2)

Gorteenahilla Stream Bridge

This single arch bridge has a highly modified channel upstream, with vertical walls comprised of concrete and masonry c. 3-4m high forming the banks. The parapets are concrete on the upstream side, and stone on the downstream side. The arch barrel is masonry. The pointing on the downstream side (parapet & spandrel walls) is in good condition, with no gaps observed. At the downstream arch which forms an opening in a retaining wall running along the southern side of the R693, the Gorteenahilla discharges immediately into the Nuenna River, which is characterised on this section by a riverbed comprised of limestone bedrock, forming a series of cascades and deep pools. As such, no access from either side of the bridge over the Gorteenahilla was possible. No PRFs were visible from vantage points overlooking the bridge. Due to restricted access, an emergence survey was required.



Plate 3-6: Gorteenahilla Stream Bridge (upstream)



Plate 3-7: Gorteenahilla Stream Bridge (downstream)

Bridge over un-named channel

This 2-arch masonry bridge over a drain crossing under the R694 on northern outskirts of Freshford was dry when surveyed. The parapets and spandrel walls had recently been repointed. Dense vegetation obstructs the upstream arches. The arches are not obstructed on the downstream side, but are too low for roosting bats. Both arch barrels have been completely covered in shotcrete. Due to the absence of PRFs and low arches, potential for bat roosting at this bridge is negligible.



Plate 3-8: Bridge over un-named channel on northern outskirts of Freshford

Lismaine Stream Bridge

Both parapets are new, constructed relatively recently of masonry. The entire bridge has been replaced with a modern structure. The bridge arch is formed by a concrete box culvert and retaining walls are present downstream. A such, potential for bat roosting at this bridge is negligible.



Plate 3-9: Lismaine Stream Bridge

Lisdowney Stream Bridge

The entire bridge has been rebuilt and replaced with a modern structure. Some gaps occur between the concrete lintels forming the arch and also where the arch joins the abutments at both ends, but these gaps are too exposed for roosting and the smooth concrete surfaces provide no grip. No signs of occupancy by bats were observed. A such, potential for bat roosting at this bridge is negligible.



Plate 3-10: Lisdowney Stream Bridge

3.4.2.2 *Trees*

The results of ground-level tree assessments (GLTA) carried out along the proposed grid connection are detailed below. No trees with potential for bat roosting are present in areas potentially affected by vegetation trimming associated with the TDR.

While a number of trees with low potential for bat roosting were noted along the grid connection as described below, these are unlikely to be affected by TDR works, and the PRFs present are limited in size, providing space for individual or low numbers of bats only.

Location 1

ITM 629518 663643

Ivy-covered beech tree line; low roosting potential. No PRFs visible but potential for PRFs under ivy. Disturbed location beside busy regional road and lack of roost features observed in mature tree reduces potential suitability for roosting bats. Not subject to effects from grid connection works.

[photograph not available]



Location 2

ITM 629814 663512

Scots pine with knothole; low roosting potential. Knothole is low down and lacks cover and connectivity, reducing suitability for roosting bats. Disturbed location beside busy regional road, lack of connectivity with surrounding landscape and small size of knothole limiting potential roosting space to several bats, indicating low suitability for roosting bats. Not subject to effects from grid connection works.



Plate 3-11: Scots pine at Location 2



Location 3

ITM 629901 663525

Beech tree with knothole in upper limb; low roosting potential. The knothole is tilted upward, reducing shelter. Disturbed location beside busy regional road, limited connectivity with surrounding landscape and orientation of knothole limiting suitability for roosting bats to low. Limb is not over road so PRF not subject to effects from grid connection works.



Plate 3-12: Beech at Location 3



Location 4

ITM 629901 663525

Veteran ash with some small knotholes with low roosting potential. No PRFs over road. Not subject to effects from grid connection works. Disturbed location beside busy regional road and limited space in PRFs limits potential for roosting to individual or low numbers of bats; unlikely to be used regularly due to lack of appropriate conditions.



Plate 3-13: Ash at Location 4



Location 5

ITM 637186 664655

Mature oak; has two knotholes with some potential for use by individual or low numbers of roosting bats but neither is located over the road. The limited roosting space available, in combination with the disturbed location beside a busy regional road reduces potential suitability for roosting bats to low. Not subject to effects from grid connection works.



Plate 3-14: Oak at Location 5



Location 6

ITM 637211 664663

Mature oak with branch partly overhanging road verge which has rot and lifting bark. No PRFs visible but potential for PRFs to occur in this branch. Unlikely to be affected by grid connection works. Disturbed location beside busy regional road and lack of PRFs visible from the ground reduces potential suitability for roosting bats to low. Not subject to effects from grid connection works.



Plate 3-15: Oak at Location 6



Location 7

ITM 640746 666069

Ash tree with dense ivy. No confirmed PRFs visible. Disturbed location beside busy regional road and absence of PRFs visible from ground reduces potential suitability for roosting bats to low. Not subject to effects from grid connection works.

[photograph not available]

Location 8

ITM 642227 667627

Ash tree; has small knothole in branch above road. Knothole is exposed, not deep. Low roosting potential. PRF is located 5m above road. Not affected by grid connection works. Disturbed location along busy regional road and lack of space and shelter reduces potential suitability for roosting bats to low.



Plate 3-16: Ash at Location 8



Location 9

ITM 642241 667697

Mature ash tree with knothole in branch. Knothole is not deep; exposed; low roosting potential. Disturbed location along busy regional road and lack of shelter and space reduces potential suitability for roosting bats to low. Not subject to effects from grid connection works.



Plate 3-17: Ash at Location 9



Location 10

ITM 643515 668606

Mature beech with knotholes and main limb broken off. Knotholes have low-moderate roosting potential. Disturbed location along busy regional road and the disturbed nature of broken limbs on tree reduces potential suitability for roosting bats to low. Not subject to effects from grid connection works.



Plate 3-18: Beech at Location 10

3.5 Roost emergence/ re-entry surveys

The trees within the wind farm roost survey study area are predominantly immature and semi-mature. No potential bat roost features were observed within the wind farm roost survey study area.



No bats were observed emerging from either of the two bridges which required further surveying along the Grid Connection Route. A total of four species, namely Leisler's, brown long-eared, common and soprano pipistrelle bat were active in the locality of the bridges but did not emerge from the bridges (see Table 3-4). While the Borrisbeg Stream Bridge (2) has moderate roosting potential, no signs of occupancy by bats were observed. See Table 3-3 for details relating to both emergence surveys and general observations on the bridges surveyed.

Table 3-3: Emergence survey results

Bridge	Survey Date	Comment	Status
Gorteenahilla Stream Bridge (downstream)	13-10-25	No emergence observed; no bats observed. Bridge was very busy with traffic and excessive lighting from floodlights further downstream. Streetlights along road were not causing excessive light pollution immediately downstream of bridge.	Low potential; no emergence observed.
Gorteenahilla Stream Bridge (upstream)	13-10-25	No emergence observed; several bats observed hunting upstream. Streetlights along road were not causing excessive light pollution immediately upstream of bridge.	Low potential; no emergence observed.
Borrisbeg Stream Bridge (2) (downstream)	14-10-25	No emergence observed; no bats seen along channel on either side. Bats detected flying along tree line outside tree tunnel over the dry river channel. This channel with its small tree tunnel may be too restricted for hunting bats Bridge was inspected before emergence survey, using both infrared scope and torch, all crevices visible with torch; no bats were observed with torch nor heat sources detected with scope. No signs of occupancy by bats.	No emergence observed; no signs of occupancy; not a winter roost.
Borrisbeg Stream Bridge (2) (upstream)	14-10-25	No emergence observed; no bats detected along channel on either side. Bats detected flying along tree line outside tree tunnel over the dry river channel. This channel with its small tree tunnel may be too restricted for hunting bats.	No emergence observed; no signs of occupancy; not a winter roost.

Table 3-4: Summary of species active in surrounding areas during emergence surveys (no emergence recorded)

Species	Borrisbeg Stream Bridge (2) (upstream)	Borrisbeg Stream Bridge (2) (downstream)	Gorteenahilla Stream Bridge (upstream)	Gorteenahilla Stream Bridge (downstream)	Total
Nyctalus leisleri	0	0	3	0	3
Pipistrellus pipistrellus	4	9	4	2	19
Pipistrellus pygmaeus	2	2	10	2	16
Plecotus auritus	5	9	0	0	14
Total	11	20	17	4	52



3.6 Static Detector Surveys

Detector deployment locations can be seen in EIAR Appendix VI Figure 6-3 and 6-4.

3.6.1 2023 Static Surveys

The locations of the 2023 static detectors were chosen to specifically reflect the proposed infrastructure layout during that period. Since the proposed layout has been updated since then through iterative constraints studies to minimise potential effects, the 2023 static detector results are primarily indicative of bat activity at the site scale, rather than the finalised turbine locations. Table 3-5 below summarises the results, in relation to bat species, recorded on the static detectors deployed in 2023. A total of 11 static units were deployed during each survey period. Overall, eight bat species were recorded (common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle, Leisler's bat, brown long-eared bat, Natterer's bat, Daubenton's bat and whiskered bat). Manual verification of acoustic data ensured accurate species identification.

Table 3-5: Summary results of Static Bat Detectors deployed during 2023 survey rounds 1 to 3

Static Detector No.	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
L1	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L2	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L3	<i>Myotis daubentonii</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	N/A (Vandalism)



Static Detector No.	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
L4	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L5	<i>Myotis daubentonii</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L6	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L7	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L8	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>



Static Detector No.	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
L9	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L10	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>
L11	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>	<i>Myotis daubentonii</i> <i>Myotis mystacinus</i> <i>Myotis nattereri</i> <i>Nyctalus leisleri</i> <i>Pipistrellus nathusii</i> <i>Pipistrellus pipistrellus</i> <i>Pipistrellus pygmaeus</i> <i>Plecotus auritus</i>

Common Pipistrelle

The total number of recordings for common pipistrelle at the proposed development during the 2023 survey season was 18762 no. recordings; 44.2% of total recordings for this season. These were recorded over 76 nights which gives an average of 246.87 no. recordings per night.

Soprano Pipistrelle

The total number of recordings for soprano pipistrelle at the proposed development during the 2023 survey season was 14798 no. recordings; 34.86% of total recordings for this season. These were recorded over 76 nights which gives an average of 194.71 no. recordings per night.

Nathusius's Pipistrelle

The total number of recordings for nathusius's pipistrelle at the proposed development during the 2023 survey season was 289 no. recordings; 0.68% of total recordings for this season. These were recorded over 76 nights which gives an average of 3.8 no. recordings per night.



Leislars Bat

The total number of recordings for Leislars bat at the proposed development during the 2023 survey season was 5794 no. recordings; 13.65% of total recordings for this season. These were recorded over 76 nights which gives an average of 76.24 no. recordings per night.

Daubentons Bat

The total number of recordings for Daubentons bat at the proposed development during the 2023 survey season was 1161 no. recordings; 2.74% of total recordings for this season. These were recorded over 76 nights which gives an average of 15.28 no. recordings per night.

Natterers Bat

The total number of recordings for Natterers bat at the proposed development during the 2023 survey season was 464 no. recordings; 1.1% of total recordings for this season. These were recorded over 76 nights which gives an average of 6.12 no. recordings per night.

Whiskered Bat

The total number of recordings for Whiskered bat at the proposed development during the 2023 survey season was 373 no. recordings; 0.88% of total recordings for this season. These were recorded over 76 nights which gives an average of 4.91 no. recordings per night.

Brown Long-eared bat

The total number of recordings for Brown long-eared bat at the proposed development during the 2023 survey season was 808 no. recordings; 1.9% of total recordings for this season. These were recorded over 76 nights which gives an average of 10.63 no. recordings per night.

All Rounds (2023):

As indicated below in Figure 3-3 the highest level of activity was recorded during the spring round observing a total of 24855 bat passes over 27 nights giving an average of 920.56 passes per night, with the highest overall activity recorded at L6, L2 and L1 respectively. Habitats surrounding detectors for turbines 1 and 2 (2023) consist of areas of scrub and cutover bog while turbine 6 (2023) is on the edge of an immature woodland providing a linear corridor for commuting bats hence the highest overall level of bat passes in 2023 with 4254 recordings.

The summer round had a total of 15586 bat passes over 28 nights giving an average of 556.64 passes recorded per night. Within the summer round, the detectors with the highest activity were L1, L10 and L8 (2023) respectively. Habitats surrounding these deployment locations consist of scrub and cutover bog at L1 and L10 while L8 is on the edge of an immature woodland providing a linear corridor for commuting bats.

Autumn had the lowest activity in each detector in comparison to spring and summer with a total of 1972 bat passes recorded giving an average of 93.9 passes recorded per night. Detector L10 (2023) had the highest number of bat passes recorded with 1010 records compared to the next highest which was Detector L11 (2023) with 169 records.

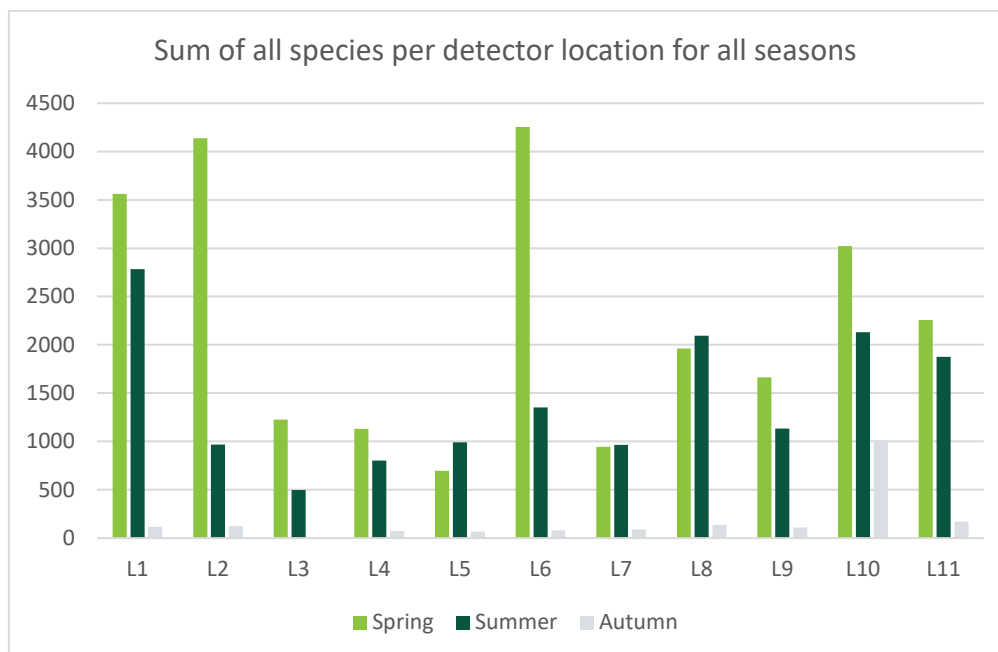


Figure 3-3: Sum of all species passes per detector location for all seasons in 2023

Table 3-6: Sum of all species passes per detector location for all seasons in 2023

Detector Reference	Spring	Summer	Autumn	Total
L1	3563	2782	116	6461
L2	4138	967	124	5229
L3	1228	496	0	1724
L4	1129	801	73	2003
L5	696	990	66	1752
L6	4254	1352	79	5685
L7	945	965	90	2000
L8	1962	2095	135	4192
L9	1663	1134	110	2907
L10	3022	2129	1010	6161
L11	2255	1875	169	4299
Total	24855	15586	1972	42413



3.6.1.1 2023 - Round 1 (Spring)

During the spring deployment there were a total of 24,855 passes recorded across 11 detectors (refer to Table 3-7). Common Pipistrelle account for 56.22% of the passes recorded with 25.85% of spring common pipistrelle calls having been recorded at Detector L6, 15.56% at Detector L1 and 15.09% at Detector L2 (2023). Soprano pipistrelle account for the next highest number of recorded passes with 27.46% followed by Leisler's bat which account for 11.27% of calls recorded. The remaining species collectively account for only 5.05% of the passes recorded. Detectors L6, L2 and L1 (2023) have the three highest number of recordings respectively. The habitats at Detector L6 (2023) consist of cutover bog with scrub and immature woodland in the surrounding areas while Detector L2 (2023) is in cutover bog with small, scattered patches of scrub. Detector L1 (2023) is located within scrub habitat bordered by cutover bog. Figure 3-4 shows a season-wide trend where common pipistrelle, soprano pipistrelle and Leisler's bat activity peaks from 22:00 to 23:00 and decreases from then onwards with a slight increase at 03:00 before decreasing again.

Table 3-7: Total number of passes recorded per species per detector for spring 2023

Detector (2023)	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis mystacinus	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
L1	WS1 - Scrub	41	0	3	108	2175	1067	139	30	3563
L2	PB4 - Cutover bog	31	9	27	77	2108	1837	24	25	4138
L3	PB4 - Cutover bog	19	9	0	47	949	200	0	4	1228
L4	WS1 - Scrub	61	3	3	162	629	263	0	8	1129
L5	PB4 - Cutover bog	19	3	0	187	315	168	0	4	696
L6	WS2 - Immature woodland	58	15	1	229	3612	243	57	39	4254
L7	PB4 - Cutover bog	43	0	9	206	414	253	9	11	945
L8	WS2 - Immature woodland	114	11	23	297	1235	219	14	49	1962
L9	WS1 - Scrub	42	17	6	514	482	579	0	23	1663
L10	PB4 - Cutover bog	74	10	16	591	1279	981	6	65	3022
L11	WS2 - Immature woodland	22	7	4	384	776	1015	15	32	2255
Total		524	84	92	2802	13974	6825	264	290	24855

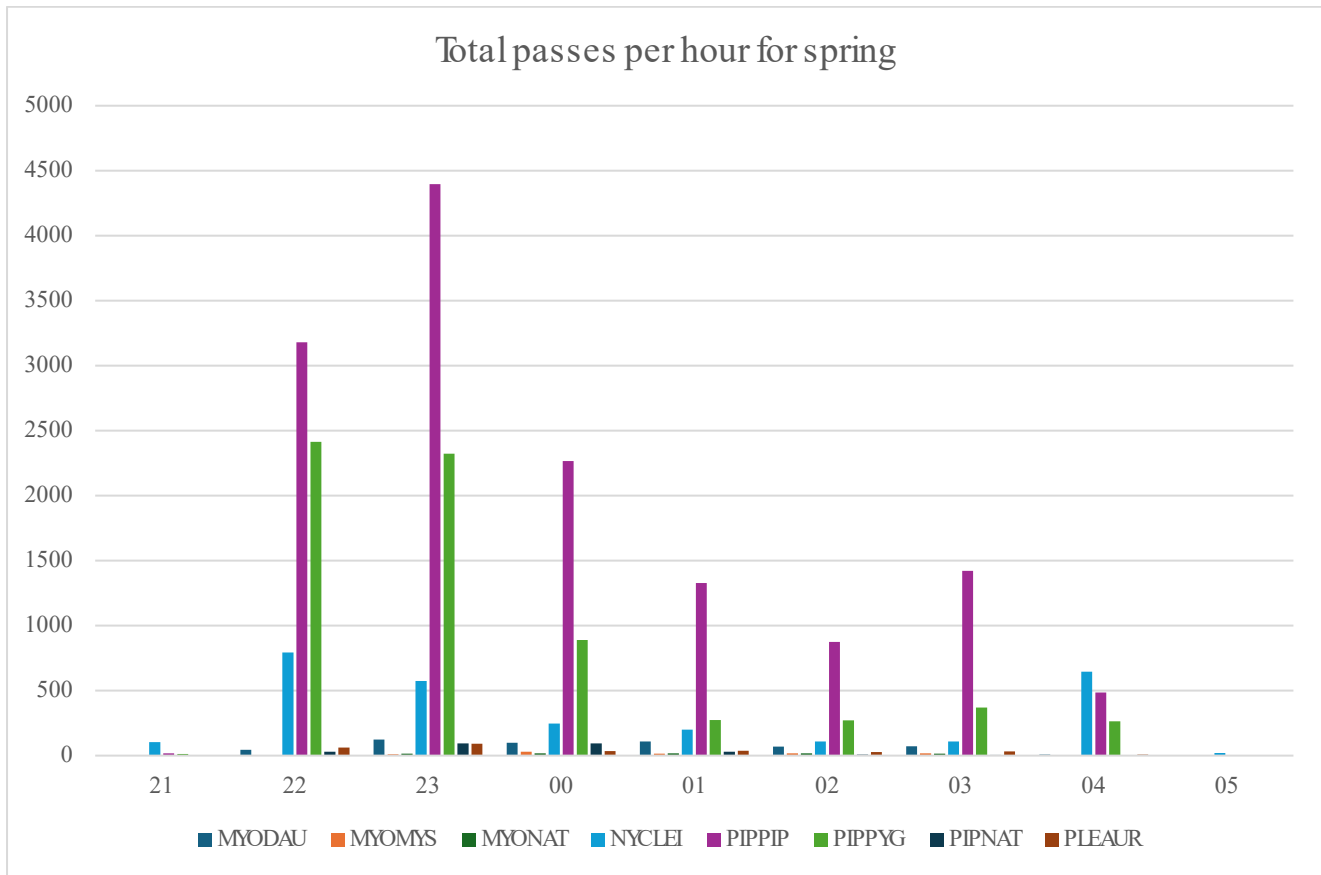


Figure 3-4: Total number of bat passes per hour per species for all 2023 spring detector locations

3.6.1.2 2023 - Round 2 (Summer)

During the summer deployment there were a total of 15,586 passes recorded across 11 detectors (refer to Table 3-8). Soprano Pipistrelle account for 43.88% of the passes recorded with 23.37% of summer soprano pipistrelle calls recorded at L1, 20.84% at L10 and 15.34% at L11 (2023). Common pipistrelle account for the next highest number of recorded passes with 29.73% followed by Leisler's bat which account for 16.83% of calls recorded. The remaining species collectively account for 9.57% of passes recorded. Turbines 1, 10 and 8 (2023) have the three highest number of recordings respectively. Detector L1 (2023) is located within scrub habitat bordered by cutover bog. Detector L10 (2023) is located on cutover bog with scrub adjacent, similarly to Detector L8 (2023) which is near immature woodland providing an edge habitat for commuting bats. Figure 3-5 shows a season-wide trend where common pipistrelle and soprano pipistrelle activity peaks at 22:00 and decreases until 03:00 where it increases until 05:00 before decreasing again. Analysis of bat passes relative to emergence times do not indicate the potential presence of any roosts near the proposed wind farm (see Appendix 2).



Table 3-8: Total number of passes recorded per species per detector for summer 2023

Detector (2023)	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis myotis	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
L1	WS1 - Scrub	51	18	58	221	724	1598	0	112	2782
L2	PB4 - Cutover bog	47	0	0	128	224	548	0	20	967
L3	PB4 - Cutover bog	13	31	8	89	147	198	0	10	496
L4	WS1 - Scrub	25	19	11	194	224	305	0	23	801
L5	PB4 - Cutover bog	30	2	3	231	330	351	0	43	990
L6	WS2 - Immature woodland	54	47	25	367	466	330	0	63	1352
L7	PB4 - Cutover bog	38	4	13	166	302	424	0	18	965
L8	WS2 - Immature woodland	47	5	11	345	1367	269	0	51	2095
L9	WS1 - Scrub	43	106	30	313	220	342	6	74	1134
L10	PB4 - Cutover bog	59	61	41	228	298	1425	0	17	2129
L11	WS2 - Immature woodland	50	23	35	341	331	1049	0	46	1875
Total		457	316	235	2623	4633	6839	6	477	15586

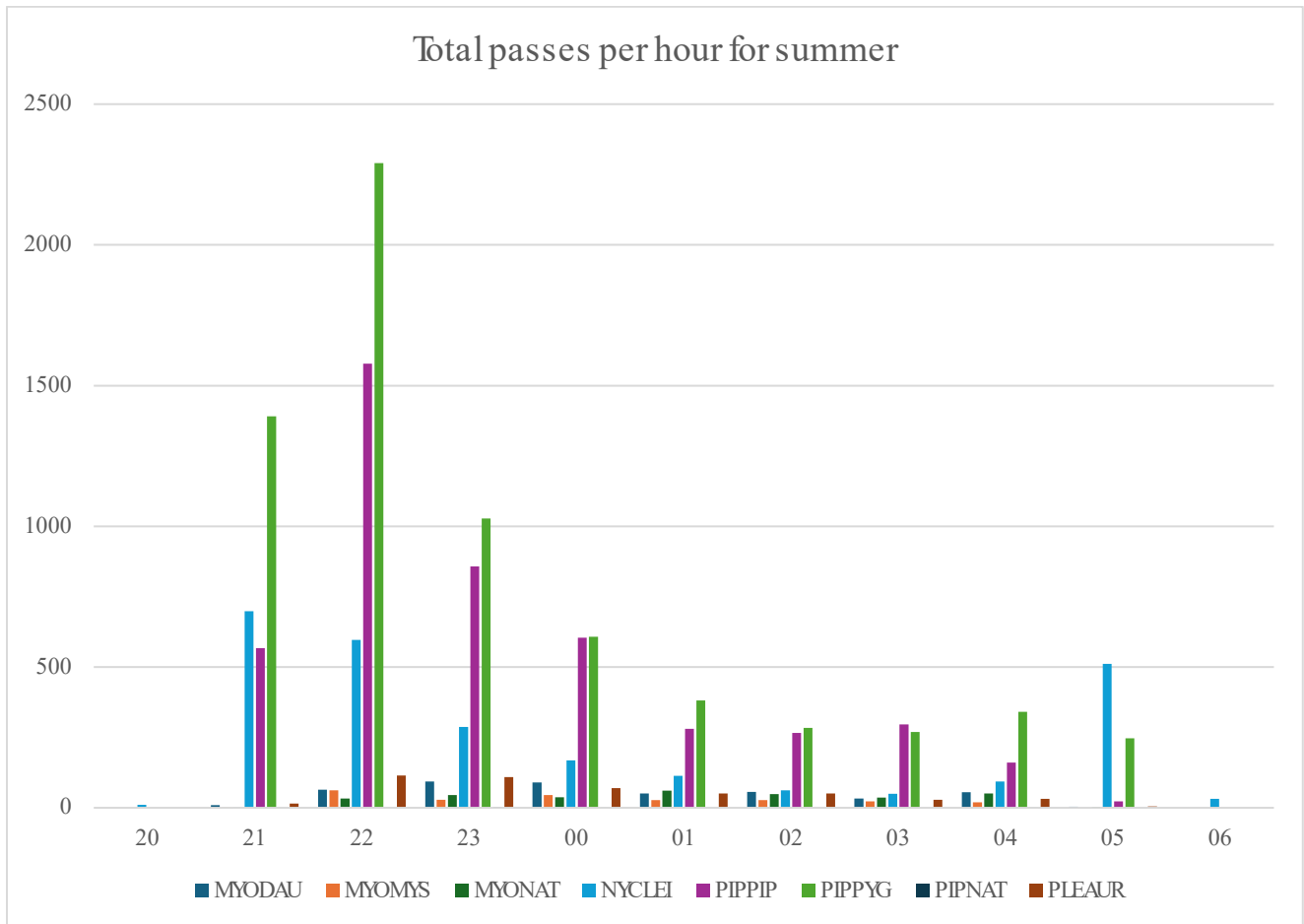


Figure 3-5: Total number of bat passes per hour per species for all 2023 summer detector locations

3.6.1.3 2023 - Round 3 (Autumn)

During the autumn deployment there were a total of 1,972 passes recorded across 11 detectors (refer to Table 3-9). Soprano Pipistrelle account for 57.51% of the passes recorded with 82.45% of autumn soprano pipistrelle calls recorded at L10 and 5.47% at L11. Leisler's bat account for the next highest number of recorded passes with 16.89% followed by Daubenton's bat which account for 9.13% of calls recorded. The remaining species collectively account for 16.48% of passes recorded. Turbines 10, 11 and 8 have the three highest number of recordings respectively. Detectors L10 and L11 (2023) are located on cutover bog adjacent to scrub and immature woodland while Detector T8 is located on cutover bog near immature woodland. Figure 3-6 shows a season-wide trend where Soprano pipistrelle activity peaks at 19:00 while Leisler's bat and common pipistrelle peak at 20:00; all other species peak at 21:00. There is an increase in Leisler's bat activity at 05:00 before it decreases again at 06:00.



Table 3-9: Total number of passes recorded per species per detector for autumn 2023

Row Labels	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis mystacinus	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
L1	WS1 - Scrub	5	1	3	62	12	31	0	2	116
L2	PB4 - Cutover bog	20	4	0	47	10	34	3	6	124
L3	PB4 - Cutover bog	-	-	-	-	-	-	-	-	-
L4	WS1 - Scrub	16	4	13	24	3	10	2	1	73
L5	PB4 - Cutover bog	15	3	0	20	10	12	3	3	66
L6	WS2 - Immature woodland	13	1	2	25	24	8	2	4	79
L7	PB4 - Cutover bog	30	3	3	30	6	8	0	10	90
L8	WS2 - Immature woodland	20	5	2	57	27	15	2	7	135
L9	WS1 - Scrub	14	15	16	27	13	19	2	4	110
L10	PB4 - Cutover bog	20	12	1	22	17	935	1	2	1010
L11	WS2 - Immature woodland	27	16	6	19	33	62	4	2	169
Total		180	64	46	333	155	1134	19	41	1972

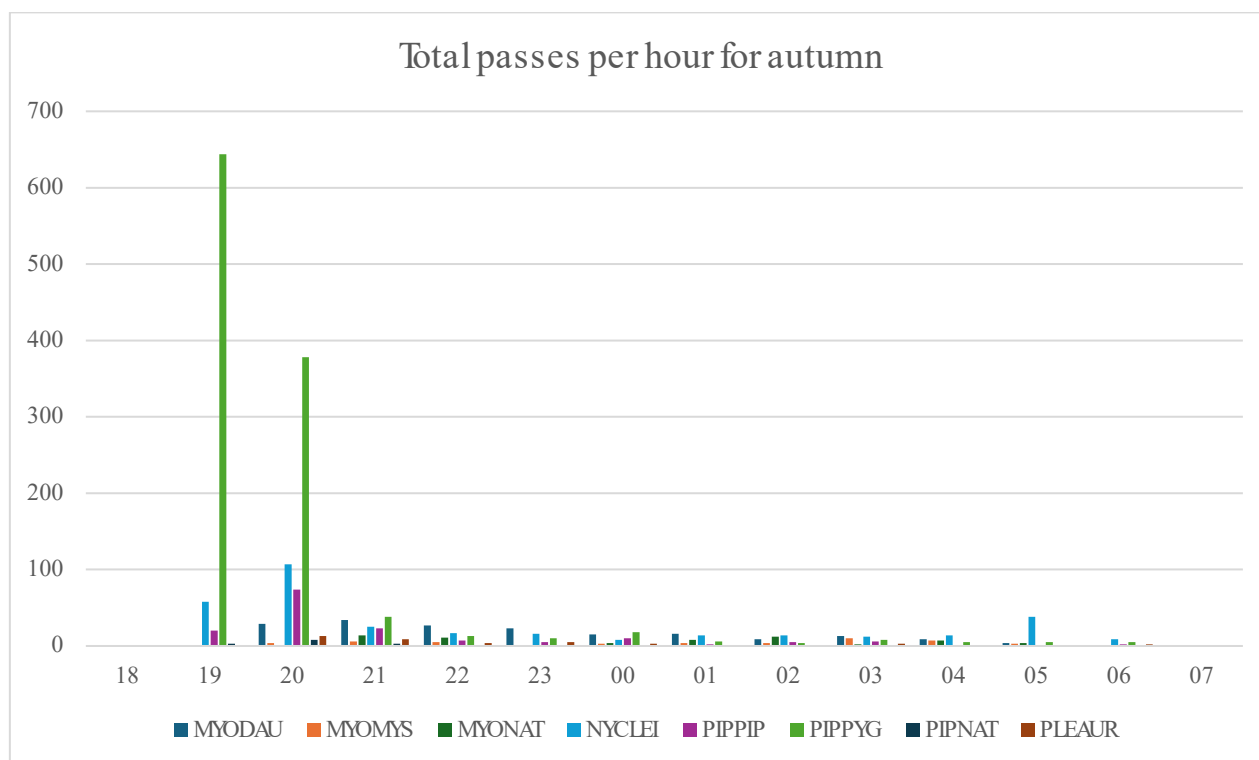


Figure 3-6: Total number of bat passes per hour per species for all 2023 autumn detector locations



3.6.2 2025 Static Surveys

The location of the 2025 statics were chosen specifically to reflect the layout of the proposed infrastructure. This approach ensures the survey data directly informs the placement of turbine infrastructure, helping to minimise potential impacts on important bat habitats. Table 3-10 below summarises the results, in relation to bat species, recorded on the static detectors deployed in 2025. A total of 11 static units were deployed during each survey period. Overall, eight bat species were recorded (common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle, Leisler's bat, brown long-eared bat, Natterer's bat, Daubenton's bat and whiskered bat). Manual verification of acoustic data ensured accurate species identification.

Table 3-10: Summary results of Static Bat Detectors deployed during 2025 survey rounds 1 to 3

Static Detector No. and location habitats	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
LT1	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT2	Myotis daubentonii Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT3	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus



Static Detector No. and location habitats	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
LT4	Myotis daubentonii Myotis mystacinus Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT5	Myotis daubentonii Myotis mystacinus Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT6	Myotis daubentonii Myotis mystacinus Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT7	Myotis daubentonii Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT8	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus



Static Detector No. and location habitats	Species detected during Spring (Round 1)	Species detected during Summer (Round 2)	Species detected during Autumn (Round 3)
LT9	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT10	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus
LT11	N/A (Broken)	Myotis daubentonii Myotis mystacinus Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus	Myotis daubentonii Myotis nattereri Nyctalus leisleri Pipistrellus nathusii Pipistrellus pipistrellus Pipistrellus pygmaeus Plecotus auritus

Common Pipistrelle

The total number of recordings for common pipistrelle at the proposed development was 12747 no. recordings; 31.54% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 123.76 no. recordings per night.

Soprano Pipistrelle

The total number of recordings for soprano pipistrelle at the proposed development was 16980 no. recordings; 42.02% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 164.85 no. recordings per night.

Leisler's Bat

The total number of recordings for Leisler's bat at the proposed development was 7699 no. recordings; 19.05% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 74.75 no. recordings per night.



Brown Long-eared Bat

The total number of recordings for brown long-eared bat at the proposed development was 785 no. recordings; 1.94% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 7.62 no. recordings per night.

Daubenton's Bat

The total number of recordings for Daubenton's bat at the proposed development was 1076 no. recordings; 2.66% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 10.45 no. recordings per night.

Whiskered Bat

The total number of recordings for Whiskered bat at the proposed development was 225 no. recordings; 0.56% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 2.18 no. recordings per night.

Natterer's Bat

The total number of recordings for Natterers bat at the proposed development was 678 no. recordings; 1.68% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 6.58 no. recordings per night.

Nathusius's Pipistrelle

The total number of recordings for nathusius's pipistrelle at the proposed development was 224 no. recordings; 0.55% of total recordings for the 2025 season. These were recorded over 103 nights which gives an average of 2.17 no. recordings per night.

All Rounds:

As indicated below in Table 3-11 the highest level of activity was recorded during the summer 2025 round observing a total of 22281 bat passes over 58 nights giving an average of 384.2 passes per night with the highest activity in summer recorded at Detectors LT11, LT10 and LT1 (2025) respectively. Detector LT1 (2025) is located within scrub bounded by cutover bog but also connected to the wider network of wooded habitats onsite. Detector LT10 (2025) is located in cutover bog with areas of scrub surrounding. Detector LT11 (2025) is located on cutover bog with both scrub and immature woodland nearby with the immature woodland providing a linear corridor for commuting bats.

The spring 2025 round had a total of 11559 bat passes over 17 nights giving an average of 679.9 passes per night with the highest activity of 2025 being observed at LT8 with a total of 3171 passes recorded in spring. The habitat at LT8 is immature woodland; Detector LT8 (2025) was placed to the east of T8 in an area of cutover bog bordered by scrub linked to immature woodland at T8, representative of the interconnected habitat mosaic in which LT8 is located. The wooded edge habitats in this area serve as linear features which may be used by commuting and foraging bats. Detectors LT6 and LT10 (2025) had the next highest numbers of bat passes recorded with 2638 and 1622 respectively. The habitat at LT6 habitat consists of cutover bog; however, there are edge habitats formed by scrub and immature woodland nearby. Detector LT10 (2025) is located within cutover bog, with nearby scrub edges providing commuting routes for bats.

Autumn had the lowest bat activity recorded in 2025 with 6574 bat passes recorded giving an average of 234.79 bat passes recorded per night. Detectors LT8, LT9 and LT1 (2025) had the highest numbers of passes recorded in the autumn round.



For all detectors, with the exception of LT6 and LT8, summer had the highest level of activity.

For LT6 and LT8, spring had the highest level of activity, the habitats surrounding these turbines are cutover bog with immature woodland and scrub.

Summer had consistently high levels of activity throughout all detectors; however, spring and autumn activity levels varied between detectors but a significant gap between these two rounds and summer with the exception of LT6 and LT8.

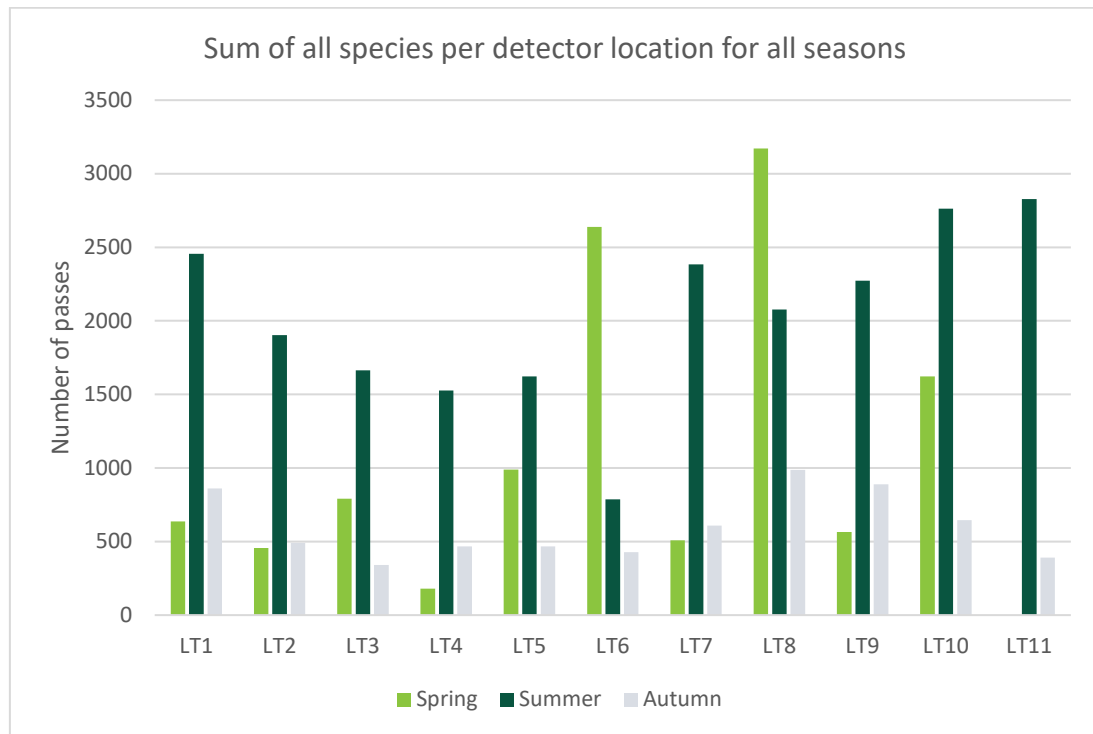


Figure 3-7: Sum of all species per detector location for all seasons in 2025



Table 3-11: Sum of all species per detector location for all seasons in 2025

	Spring	Summer	Autumn	Total
LT1	636	2455	861	3952
LT2	457	1904	491	2852
LT3	791	1664	341	2796
LT4	180	1526	466	2172
LT5	990	1622	467	3079
LT6	2638	786	427	3851
LT7	509	2384	609	3502
LT8	3171	2077	987	6235
LT9	565	2274	890	3729
LT10	1622	2762	645	5029
LT11	0	2827	390	3217
Total	11559	22281	6574	40414

3.6.2.1 2025 - Spring (Round 1)

During the spring deployment there were a total of 11559 passes recorded across 11 detectors (refer to Table 3-12). Common Pipistrelle account for 59.77% of the passes recorded with 36.33% of spring common pipistrelle calls have been recorded at Detector LT8 (2025). Soprano pipistrelle account for the next highest number of recorded passes with 19.59% followed by Leisler's bat which account for 16.43% of calls recorded. The remaining species collectively account for only 4.21% of the passes recorded. Detectors LT6, LT8 and LT10 (2025) have the three highest number of recordings respectively. All of these detectors were located on cutover bog with Detector LT6 (2025) having linear habitats of scrub and immature woodland in the surrounding area while Detector LT10 (2025) has scrub habitat adjacent. Detector LT8 (2025) has scrub adjacent to the deployment location, which is connected to nearby immature woodland. Figure 3-8 shows that shows a season-wide trend where common pipistrelle, soprano pipistrelle and Leisler's bat activity peaks at 23:00 and decreases from then onwards.



Table 3-12: Total number of passes recorded per species per detector for spring 2025

Row Labels	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis mystacinus	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
LT1	WS1 - Scrub	14	2	4	143	306	131	34	2	636
LT2	PB4 - Cutover bog	2	0	0	156	175	114	9	1	457
LT3	PB4 - Cutover bog	16	3	1	92	388	280	7	4	791
LT4	WS1 - Scrub	4	0	3	89	47	32	5	0	180
LT5	PB4 - Cutover bog	6	0	6	796	119	54	6	3	990
LT6	WS2 - Immature woodland	11	0	2	122	1977	443	48	35	2638
LT7	PB4 - Cutover bog	18	0	0	163	211	89	17	11	509
LT8	WS2 - Immature woodland	16	2	0	150	2510	407	66	20	3171
LT9	WS1 - Scrub	12	50	0	56	164	271	1	11	565
LT10	PB4 - Cutover bog	19	1	4	132	1012	443	2	9	1622
LT11	WS2 - Immature woodland	-	-	-	-	-	-	-	-	-
Total		118	58	20	1899	6909	2264	195	96	11559

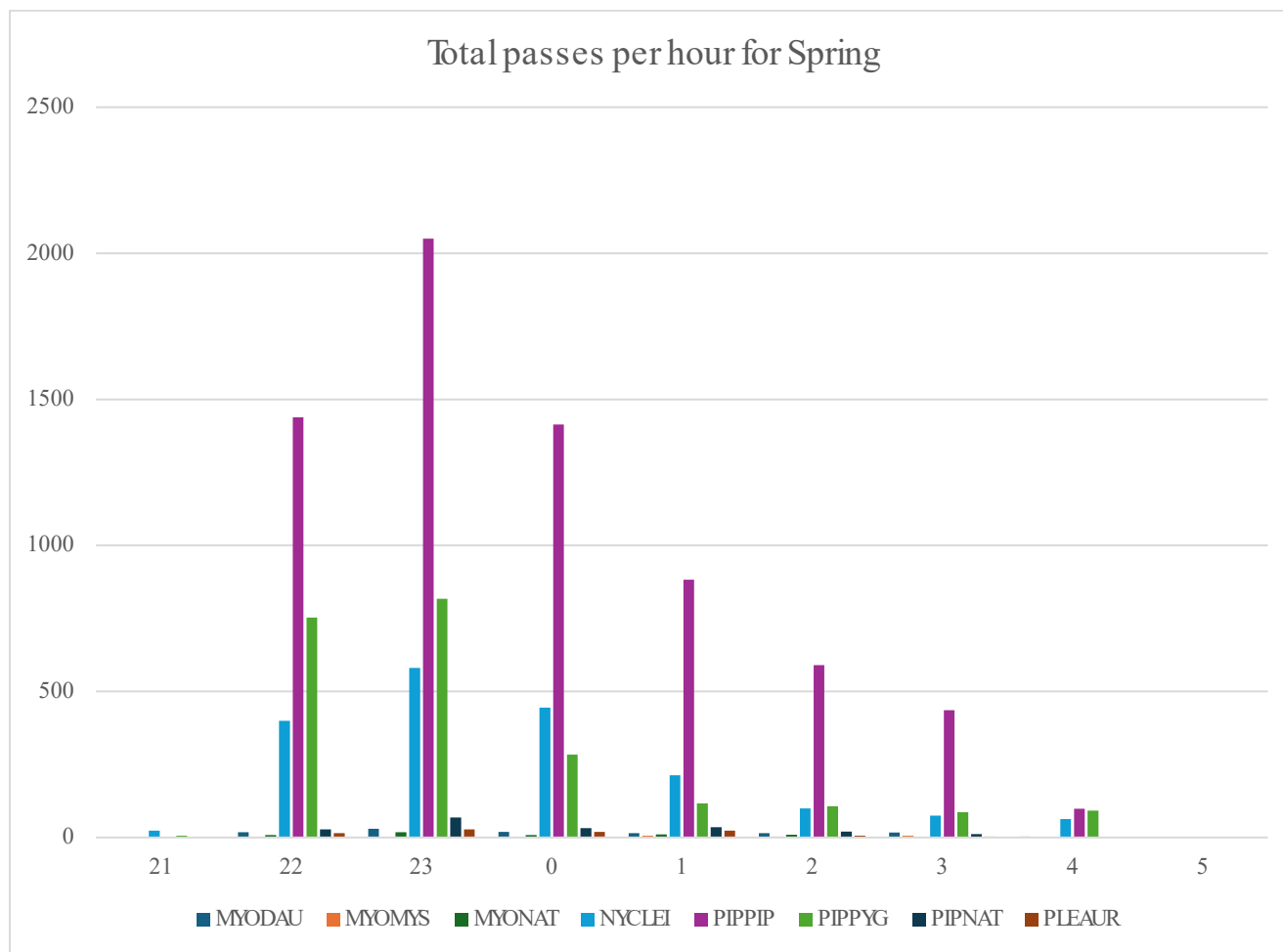


Figure 3-8: Total number of bat passes per hour per species for all 2025 spring detector locations

3.6.2.2 2025 - Summer (Round 2)

During the summer deployment there were a total of 22,281 passes recorded across 11 detectors (refer to Table 3-13). Soprano Pipistrelle account for 53.32% of passes recorded with 16.68% of summer soprano pipistrelle calls recorded at LT10 and 15.97% at LT11. Common Pipistrelle account for the next highest number of recorded passes with 22.26% followed by Leisler's bat which account for 17.71% of the passes recorded. The remaining species collected collectively account for only 6.71% of the passes recorded. Detectors LT11, LT10 and LT1 (2025) have the top three highest number of recordings respectively. Detector LT10 (2025) is located on cutover bog with scrub adjacent, and LT11 (2025) is located on cutover bog with scrub and immature woodland adjacent. Detector LT1 (2025) is located within scrub habitat. Figure 3-9 shows a season-wide trend where common pipistrelle, soprano pipistrelle and Leisler's bat activity peaks at 22:00, decreases until 03:00 and rises slightly for common pipistrelle and Leisler's bat again between 03:00 to 05:00 before almost completely ceasing by 06:00.



Table 3-13: Total number of passes recorded per species per detector for summer 2025

Row Labels	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis mystacinus	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
LT1	WS1 - Scrub	36	4	36	287	601	1468	2	21	2455
LT2	PB4 - Cutover bog	32	17	25	389	450	958	2	31	1904
LT3	PB4 - Cutover bog	66	11	5	347	343	865	0	27	1664
LT4	WS1 - Scrub	28	10	16	414	292	751	0	15	1526
LT5	PB4 - Cutover bog	37	17	11	444	391	670	6	46	1622
LT6	WS2 - Immature woodland	33	11	13	219	217	285	0	8	786
LT7	PB4 - Cutover bog	33	17	16	515	869	880	4	50	2384
LT8	WS2 - Immature woodland	75	20	13	529	451	951	0	38	2077
LT9	WS1 - Scrub	71	177	5	318	485	1173	4	41	2274
LT10	PB4 - Cutover bog	68	35	27	152	477	1982	0	21	2762
LT11	WS2 - Immature woodland	81	52	6	332	383	1897	4	72	2827
Total		560	371	173	3946	4959	11880	22	370	22281

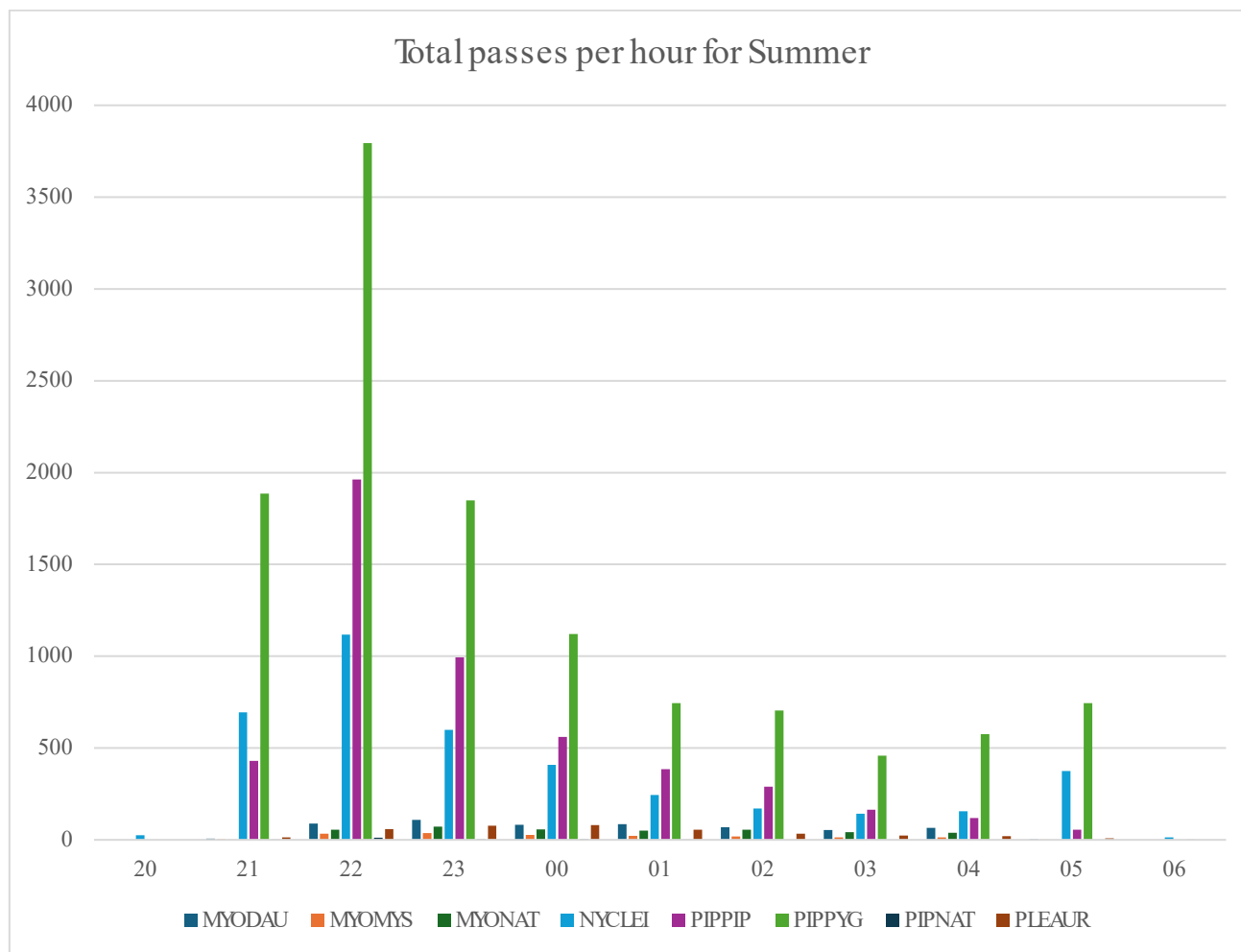


Figure 3-9: Total number of bat passes per hour per species for all 2025 summer detector locations

3.6.2.3 2025 - Autumn (Round 3)

During the autumn deployment there were a total of 6574 passes recorded across 11 detectors (refer to Table 3-14).

Soprano pipistrelle account for 43.14% of passes recorded with 19.57% of autumn soprano pipistrelle calls recorded at Detector LT1 (2025) and 18.58% at LT10. Leisler's bat accounts for the next highest number of recorded passes with 28.2% followed by common pipistrelle which account for 13.37% of the passes recorded. The remaining species collectively account for only 15.29% of recorded passes. Detectors LT8, LT9 and LT1 (2025) have the top three highest number of recordings respectively. Detectors LT9 and LT1 (2025) are located in scrub with immature woodland also adjacent at Detector LT9. The detector LT8 (2025) deployment location is on cutover bog adjacent to scrub connected to nearby immature woodland habitat. Figure 3-10 shows that common pipistrelle, soprano pipistrelle and Leisler's bat activity peaks at 21:00 and decreases until 05:00 where it rises slightly before decreasing again at 06:00.



Table 3-14: Total number of passes recorded per species per detector for autumn 2025

Row Labels	General Location/ Habitat Association	Myotis Daubentonii	Myotis nattereri	Myotis myotis	Nyctalus leisleri	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Pipistrellus nathusii	Plecotus auritus	Total
LT1	WS1 - Scrub	23	5	0	149	106	555	0	23	861
LT2	PB4 - Cutover bog	20	0	0	176	48	242	0	5	491
LT3	PB4 - Cutover bog	11	4	9	114	28	166	0	9	341
LT4	WS1 - Scrub	17	15	0	207	66	126	0	35	466
LT5	PB4 - Cutover bog	12	10	1	208	64	129	1	42	467
LT6	WS2 - Immature woodland	25	10	0	148	77	153	0	14	427
LT7	PB4 - Cutover bog	39	10	0	226	60	250	0	24	609
LT8	WS2 - Immature woodland	20	13	10	450	306	150	0	38	987
LT9	WS1 - Scrub	181	160	9	76	34	326	4	100	890
LT10	PB4 - Cutover bog	20	6	3	27	52	527	0	10	645
LT11	WS2 - Immature woodland	30	16	0	73	38	212	2	19	390
Total		398	249	32	1854	879	2836	7	319	6574

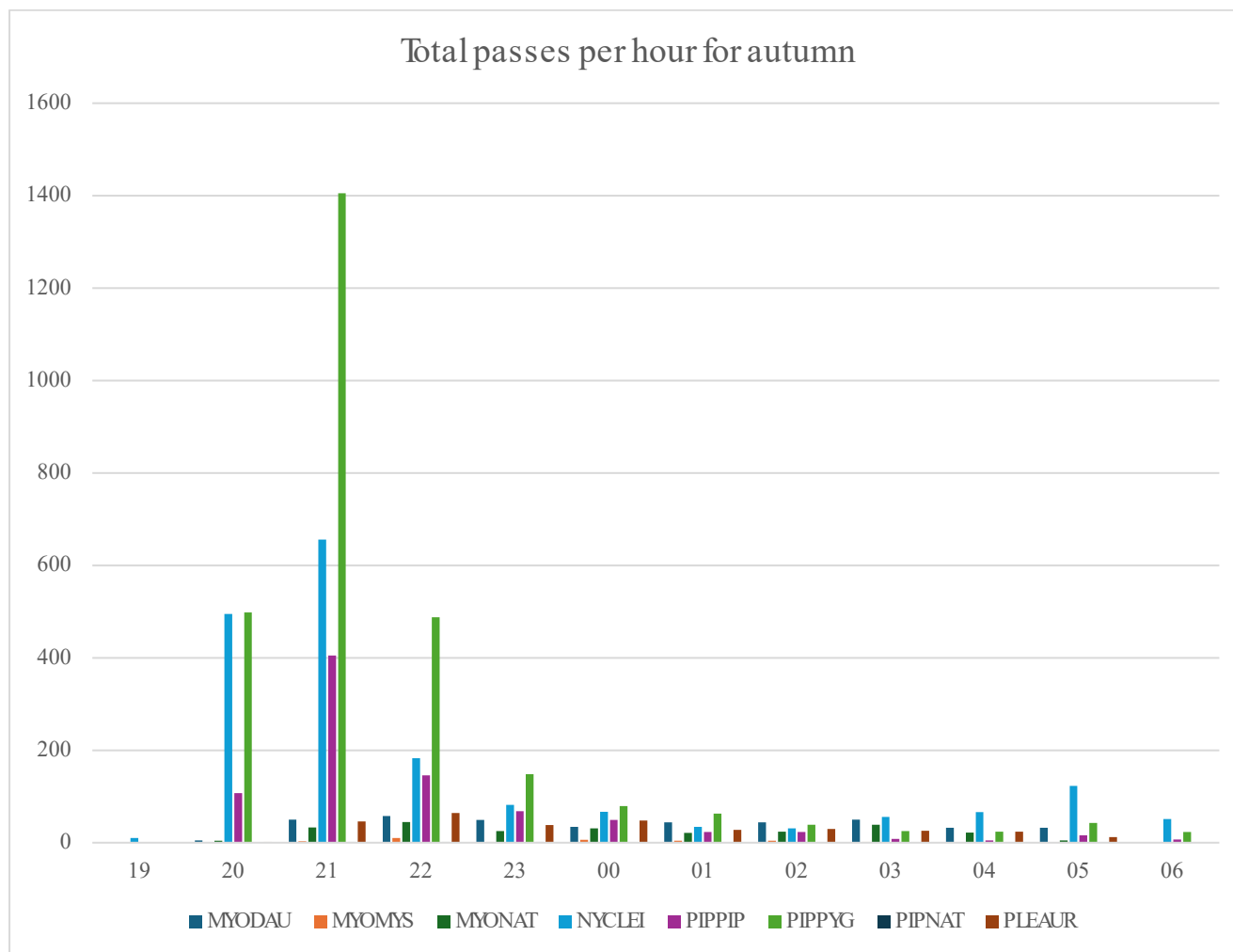


Figure 3-10: Total number of bat passes per hour per species for all 2025 Autumn detector locations

3.6.3 Association of bat activity with habitat features

Table 3-15 identifies the proposed turbine locations and the detector with activity for that location based on habitat type and location within the site. It further identifies if the activity level is accurate (static present at exact location of the turbine) or representative (activity levels within similar habitat within the site) for further NatureScot analysis. This is consistent with NatureScot et al. (2021), which advises that, “Where it is not possible to position static detectors at the exact turbine locations, they should be placed in representative habitats that provide the best indication of bat activity levels likely to occur at the turbine locations”.



Table 3-15: Turbine locations and associated detectors

Proposed Turbine	Detector Location Accurate	Detector Location Representative	Rationale
T01	2025	2023	2025 static detector LT1 was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L1) while not within the precise location of the final turbine layout, is within the same area of scrub providing a reliable indicator of the bat activity in the area
T02	2025	2023	2025 static detector LT2 was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L2) while not within the precise location of the final turbine layout, is within the same area of cutover bog providing a reliable indicator of the bat activity in the area
T03	2025	2023	2025 static detector LT3 was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. Detector L3 (2023) was located on cutover bog close to final turbine layout, representative of the habitat type and general location of the 2023 turbine location.
T04	2025	2023	2025 static detector LT4 was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 L4 while not within the precise location of the final turbine layout, is within the same area of scrub providing a reliable indicator of the bat activity in the area
T05	2025	2023	2025 static detector LT5 was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L5) while not within the precise location of the final turbine layout, is within the same area of cutover bog providing a reliable indicator of the bat activity in the area
T06	2025	2023	2025 static detector (LT6) was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L6) while not within the precise location of the final turbine layout, is within the same area of cutover bog/ immature woodland interface, providing a reliable indicator of the bat activity in the area
T07	2025	2023	2025 static detector (LT7) was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L7) while not within the precise location of the final turbine



Proposed Turbine	Detector Location Accurate	Detector Location Representative	Rationale
			layout, is within the same area of cutover bog along the same edge of woodland providing a reliable indicator of the bat activity in the area.
T08		2023, 2025	Detector LT8 (2025) was placed in cutover bog at the edge of scrub connected to the area of immature woodland area where T8 is proposed to be located; therefore the detector data is representative of the turbine location, and the habitat mosaic present in this part of the site. Similarly, detector L8 (2023) was located in cutover bog at the edge of immature woodland and as such is representative of the habitat type where T8 is proposed to be located.
T09	2023, 2025		The static detectors for 2025 (LT9) and 2023 (L9) were both placed within the turbine location providing an accurate positioning of the detector relative to the turbine location.
T10	2023, 2025		The static detectors for 2025 (LT10) and 2023 (L10) were both placed within the turbine location providing an accurate positioning of the detector relative to the turbine location
T11	2025	2023	2025 static detector (LT11) was placed within the turbine location providing an accurate positioning of the detector relative to the turbine location. 2023 (L7) while not within the precise location of the final turbine layout, is within the same area of cutover bog along the same edge of woodland providing a reliable indicator of the bat activity in the area.

3.6.4 Activity Assessment

Statistical analysis was carried out for the data obtained for each of the years 2023 and 2025 using Ecobat refer to Appendices 1 & 2). Refer to Table 3-17 and Table 3-18 for visualisation of median levels and Appendices 1 and 2 for full breakdown of analyses. As per Table 3-16 below, the colour scheme applies to the following values for each species recorded:

Table 3-16: Bat activity levels categorised by percentile scores



Ecobat Percentile	Bat Activity Level
81 - 100	High
61 - 80	Moderate/High
41 - 60	Moderate
21 - 40	Moderate/Low
0 - 20	Low



Table 3-17: Activity per species and detector (2023)

Activity level classification based on median percentiles categorised as per Table 3-16 above.

			Median Percentiles							
		Location	Myotis daubentonii	Myotis mystacinus	Myotis nattereri	Nyctalus leisleri	Pipistrellus nathusii	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus
2023	Spring	L1	6	2	0	1	37	4	9	4
		L2	6	2	6	1	18	4	11	4
		L3	8	0	6	2	0	2	4	1
		L4	9	2	6	2	0	0	2	1
		L5	1	0	10	2	0	0	1	1
		L6	9	2	15	4	23	8	1	7
		L7	6	2	0	3	11	0	1	4
		L8	14	4	6	6	14	1	1	7
		L9	6	4	13	6	0	0	5	4
		L10	12	4	10	8	8	1	6	13
		L11	9	2	6	6	8	2	15	13
	Summer	L1	11	6	13	4	0	1	13	13
		L2	11	0	0	1	0	0	6	4
		L3	4	6	19	2	0	0	3	5
		L4	2	3	12	4	0	0	2	4
		L5	6	3	6	4	0	0	3	4
		L6	9	6	18	4	0	1	3	13



			Median Percentiles							
		Location	Myotis daubentonii	Myotis mystacinus	Myotis nattereri	Nyctalus leisleri	Pipistrellus nathusii	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus
		L7	6	3	6	2	0	0	3	9
		L8	9	3	6	8	0	2	1	9
		L9	8	4	33	9	8	0	2	15
		L10	11	5	19	5	0	0	12	4
		L11	10	5	12	6	0	0	8	9
	Autumn	L1	11	3	22	3	0	0	0	7
		L2	6	0	5	0	11	0	0	1
		L3	-	-	-	-	-	-	-	-
		L4	5	3	5	0	8	0	0	1
		L5	3	0	5	0	11	0	0	1
		L6	7	3	5	4	11	0	0	4
		L7	11	3	5	4	0	0	0	4
		L8	1	3	22	1	8	0	0	1
		L9	13	3	20	3	11	0	0	1
		L10	5	1	15	0	8	0	12	4
		L11	5	1	12	0	14	0	0	1



Table 3-18: Activity per species and detector (2025)

Activity level classification based on median percentiles categorised as per Table 3-16 above.

			Median Percentiles							
		Location	Myotis daubentonii	Myotis mystacinus	Myotis nattereri	Nyctalus leisleri	Pipistrellus nathusii	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus
2025	Spring	LT1	5	1	5	1	18	0	1	4
		LT2	1	0	0	1	13	0	1	1
		LT3	5	1	5	1	8	0	1	3
		LT4	7	2	0	0	15	0	0	0
		LT5	4	1	0	16	22	0	0	1
		LT6	1	1	0	3	34	4	4	9
		LT7	5	0	0	3	13	1	1	4
		LT8	1	0	5	5	35	8	4	13
		LT9	1	0	19	1	8	0	4	3
		LT10	5	2	5	4	13	2	5	3
		LT11	-	-	-	-	-	-	-	-
	Summer	LT1	6	3	7	5	9	0	13	7
		LT2	6	3	15	10	9	0	9	4
		LT3	9	3	7	9	0	0	8	4
		LT4	6	3	7	7	0	0	6	1
		LT5	6	3	7	10	9	0	4	7



			Median Percentiles							
		Location	Myotis daubentonii	Myotis mystacinus	Myotis nattereri	Nyctalus leisleri	Pipistrellus nathusii	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus
		LT6	9	6	7	7	0	0	3	1
		LT7	6	3	7	9	9	1	7	4
		LT8	9	5	15	12	0	0	9	4
		LT9	11	3	32	6	9	0	9	7
		LT10	12	6	15	3	0	0	16	4
		LT11	14	3	15	9	9	0	14	9
		Autumn	LT1	6	0	7	2	0	0	7
	LT2		6	0	0	5	0	0	3	1
	LT3		2	1	10	2	0	0	1	1
	LT4		2	0	7	3	0	0	0	9
	LT5		2	1	13	3	8	0	0	9
	LT6		6	0	7	4	0	0	1	1
	LT7		7	0	7	5	0	0	2	3
	LT8		2	1	7	9	0	0	1	9
	LT9		21	1	33	2	8	0	2	18
	LT10		6	1	7	0	0	0	3	1
	LT11		6	0	7	1	8	0	2	1



Assessment of Site Risk - Collision Mortality Risk

Based on the two-stage approach assessing potential risk to bats (NatureScot 2021), taking into consideration habitat and development related features (refer to Table 3-19). An overall assessment of risk can then be made by considering the site assessment in relation to the bat activity output from Table 3-17 and Table 3-18 (refer to Table 3-19) and taking into account the relative vulnerability of each species of bat present at the population level based on the NatureScot (2021) receptor evaluation (adapted from Wray et al., 2010) aligned to the Irish context referencing IWM 134 'Bat mitigation Guidelines for Ireland' (Marnell et al., 2022) and Article 17 Reporting/Guidance (refer to Table 3-19).

Eight species of bat were recorded during the 2023 and 2025 bat surveys at the proposed development. Table 3-22 provides an ecological evaluation of each bat species and the collision risk factor in relation to wind farms. Four of the bat species recorded are considered to be high risk, namely Common pipistrelle, Soprano pipistrelle, Nathusius's pipistrelle and Leisler's bat (Table 3-22).

All bats recorded are classified as 'Least Concern' on the Irish Red List (Marnell et al., 2019) and protected under the EU Habitats Directive Annex IV and Wildlife Acts.

Using the NatureScot guidelines outlined in Table 3-19, the following risk assessment for the individual turbines in relation to each bat species recorded was completed using the following values:

Project Size = **Medium** (>10 turbines, other wind energy developments within 10km)

Habitat Risk = **Low** (habitats mainly consist of cutover bog, immature woodland and scrub with low bat activity and no roost features)

Therefore, based on Table 3-19, a Site Risk Assessment score value of 2 was applied to the site as a whole. The impact assessment is determined by multiplying the Site Risk Assessment value (2) by the Ecobat median percentile (most frequent activity category) activity values for each turbine, converted to the activity score as shown in Table 3-21. See Table 3-21 for conversion of median percentiles to Ecobat activity levels (there are 5 ecobat activity levels across the median percentile range of 0-100)

The Impact Assessment is then carried out for the individual turbines using the overall site assessment value (2) and compared to the Risk Assessment Matrix (Table 3-21) in order to determine the level of overall risk to the population.



Table 3-19: Initial site risk assessment NatureScot (2021)

Site Risk Level (1-5)*	Project Size			
		Small	Medium	Large
Habitat Risk	Low	1	2	3
	Moderate	2	3	4
	High	3	4	5
Key: Green (1-2) - low/lowest site risk; Amber (3) - medium site risk; Red (4-5) - high/highest site risk.				
* Some sites could conceivably be assessed as being of no (0) risk to bats. This assessment is only likely to be valid in more extreme environments, such as above the known altitudinal range of bats, or outside the known geographical distribution of any resident British species.				
Habitat Risk	Description			
Low	Small number of potential roost features, of low quality. Low quality foraging habitat that could be used by small numbers of foraging bats. Isolated site not connected to the wider landscape by prominent linear features.			
Moderate	Buildings, trees or other structures with moderate-high potential as roost sites on or near the site. Habitat could be used extensively by foraging bats. Site is connected to the wider landscape by linear features such as scrub, tree lines and streams.			
High	Numerous suitable buildings, trees (particularly mature ancient woodland) or other structures with moderate-high potential as roost sites on or near the site, and/or confirmed roosts present close to or on the site. Extensive and diverse habitat mosaic of high quality for foraging bats. Site is connected to the wider landscape by a network of strong linear features such as rivers, blocks of woodland and mature hedgerows. At/near edge of range and/or on an important flyway. Close to key roost and/or swarming site.			
Project Size	Description			
Small	Small scale development (≤ 10 turbines). No other wind energy developments within 10km. Comprising turbines < 50m in height.			
Medium	Larger developments (between 10 and 40 turbines). May have some other wind developments within 5km. Comprising turbines 50-100m in height.			
Large	Largest developments (> 40 turbines) with other wind energy developments within 5km. Comprising turbines > 100m in height.			



Table 3-20: Stage 1 site risk assessment based on habitat and project size as outlined in NatureScot (2021)

Site Risk Level (1-5)		Project size		
		Small	Medium	Large
Habitat Risk	Low	1	2	3
	Moderate	2	3	4
	High	3	4	5

Table 3-21: Risk assessment matrix

Site Risk	Ecobat activity percentile 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	15	18
Highest (5)	0	5	10	15	20	25

Overall assessment value (i.e Turbine Risk Value) is then compared to the ranges below:

Low Overall Risk (0-4)	Medium Overall Risk (5-12)	High Overall Risk (13-25)
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Table 3-22: Level of potential vulnerability of populations of Irish bats species (NatureScot, 2021; adapted from Wray *et al.*, 2010)

	Low collision risk	Medium collision risk	High collision risk
Common species	N/A	N/A	Common pipistrelle Soprano pipistrelle Leisler's bat
Rare Species	Brown long-eared bat Daubentons bat Natterers bat	N/A	Nathusius's pipistrelle
Rarer Species	Whiskered bat	N/A	N/A

The median percentile activity levels for each of the High Risk (leisler, common pipistrelle, soprano pipistrelle and nathusius's pipistrelle) were averaged across each survey season and converted to the corresponding Ecobat activity category for use in the risk assessment matrix (Table 3-21).



Table 3-23: Risk assessment for each detector location for the four high risk bat species for 2023

			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius's pipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Spring	L1	2	1	2	1	2	1	2	2	4
	L2	2	1	2	1	2	1	2	1	2
	L3	2	1	2	1	2	1	2	0	0
	L4	2	1	2	0	0	1	2	0	0
	L5	2	1	2	0	0	1	2	0	0
	L6	2	1	2	1	2	1	2	2	4
	L7	2	1	2	0	0	1	2	1	2
	L8	2	1	2	1	2	1	2	1	2
	L9	2	1	2	0	0	1	2	0	0
	L10	2	1	2	1	2	1	2	1	2
	L11	2	1	2	1	2	1	2	1	2



			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius's pipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Summer	L1	2	1	2	1	2	1	2	0	0
	L2	2	1	2	0	0	1	2	0	0
	L3	2	1	2	0	0	1	2	0	0
	L4	2	1	2	0	0	1	2	0	0
	L5	2	1	2	0	0	1	2	0	0
	L6	2	1	2	1	2	1	2	0	0
	L7	2	1	2	0	0	1	2	0	0
	L8	2	1	2	1	2	1	2	0	0
	L9	2	1	2	0	0	1	2	1	2
	L10	2	1	2	0	0	1	2	0	0
	L11	2	1	2	0	0	1	2	0	0



			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius's pipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Autumn	L1	2	1	2	0	0	0	0	0	0
	L2	2	0	0	0	0	0	0	1	2
	L3	2	-	-	-	-	-	-	-	-
	L4	2	0	0	0	0	0	0	1	2
	L5	2	0	0	0	0	0	0	1	2
	L6	2	1	2	0	0	0	0	1	2
	L7	2	1	2	0	0	0	0	0	0
	L8	2	1	2	0	0	0	0	1	2
	L9	2	1	2	0	0	0	0	1	2
	L10	2	0	0	0	0	1	2	1	2
	L11	2	0	0	0	0	0	0	1	2



Table 3-24: Risk assessment for each detector location for the four high risk bat species for 2025

			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius's pipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Spring	LT1	2	1	2	0	0	1	2	1	2
	LT2	2	1	2	0	0	1	2	1	2
	LT3	2	1	2	0	0	1	2	1	2
	LT4	2	0	0	0	0	0	0	1	2
	LT5	2	1	2	0	0	0	0	2	4
	LT6	2	1	2	1	2	1	2	2	4
	LT7	2	1	2	1	2	1	2	1	2
	LT8	2	1	2	1	2	1	2	2	4
	LT9	2	1	2	0	0	1	2	1	2
	LT10	2	1	2	1	2	1	2	1	2
	LT11	2	-	-	-	-	-	-	-	-



			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius'spipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Summer	LT1	2	1	2	0	0	1	2	1	2
	LT2	2	1	2	0	0	1	2	1	2
	LT3	2	1	2	0	0	1	2	0	0
	LT4	2	1	2	0	0	1	2	0	0
	LT5	2	1	2	0	0	1	2	1	2
	LT6	2	1	2	0	0	1	2	0	0
	LT7	2	1	2	1	2	1	2	1	2
	LT8	2	1	2	0	0	1	2	0	0
	LT9	2	1	2	0	0	1	2	1	2
	LT10	2	1	2	0	0	1	2	0	0
	LT11	2	1	2	0	0	1	2	1	2



			Leislars bat		Common pipistrelle		Soprano pipistrelle		Nathusius'spipistrelle	
	Detector ID	Site risk value	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)	Ecobat median category	Detector risk (site risk x median category)
Autumn	LT1	2	1	2	0	0	1	2	0	0
	LT2	2	1	2	0	0	1	2	0	0
	LT3	2	1	2	0	0	1	2	0	0
	LT4	2	1	2	0	0	0	0	0	0
	LT5	2	1	2	0	0	0	0	1	2
	LT6	2	1	2	0	0	1	2	0	0
	LT7	2	1	2	0	0	1	2	0	0
	LT8	2	1	2	0	0	1	2	0	0
	LT9	2	1	2	0	0	1	2	1	2
	LT10	2	0	0	0	0	1	2	0	0
	LT11	2	1	2	0	0	1	2	1	2



3.6.4.1 *Summary of Findings*

Across both survey years, activity levels recorded at detector locations were generally low, with most species falling within the lowest Ecobat activity categories.

Eight bat species were recorded during the surveys. In accordance with NatureScot (2021) guidance (adapted to the Irish context), four species are considered high collision risk in relation to wind energy developments: Common pipistrelle, Soprano pipistrelle, Nathusius's pipistrelle and Leisler's bat. All species recorded are listed as 'Least Concern' on the Irish Red List and are protected under the EU Habitats Directive (Annex IV) and the Wildlife Acts.

The site was assessed using the two-stage NatureScot (2021) approach. Given that the project comprises a medium-sized development (>10 turbines) and is located primarily within low-risk habitats (cutover bog, immature woodland and scrub, with no identified roost features and generally low bat activity), an overall Site Risk Level of 2 (Low) was assigned.

Seasonally, slightly higher activity percentiles were observed during summer at some locations, particularly for common and soprano pipistrelle, and Nathusius's pipistrelle. However, these increases did not alter the overall risk classification due to the low site risk score and generally low-to-moderate activity categories.

Overall, the assessment indicates that the proposed development presents a low collision mortality risk to local bat populations, including the four higher-risk species, when considered in the context of habitat suitability, recorded activity levels, and species vulnerability at the population level.



4. DISCUSSION

4.1 Static Detector Analysis

As per SNH (2021) guidance, wind farms present four potential risks to bats (i) Collision mortality, barotrauma and other injuries, (ii) Loss or damage to commuting and foraging habitat, (iii) Loss of, or damage to, roosts (iv) Displacement of individuals or populations

The species considered at highest risk from death by collision or barotrauma at wind developments are Leisler's bat and Nathusius's pipistrelle (SNH, 2021). These species habitually forage and commute in open airspace and at the heights of the rotor swept area of wind turbines. Based on Ecobat analysis (median percentile activity score) of 2023 & 2025 data, Leisler's bat had low activity at all turbine locations. In 2023, Nathusius's pipistrelle activity was low across all turbines, except for L1 and L6 static detectors during Round 1 (Spring), recorded a median percentile of 37 & 23 respectively giving a score of low-moderate (scores between 21-40) compared with the low median percentiles ranging from 0-20 observed on all other detectors that year. Similarly, in 2025, Nathusius's pipistrelle activity remained low across all rounds and locations with exceptions seen during Round 1 (Spring), detectors LT5, LT6, and LT8 giving median percentile scores of 22, 34 & 35 respectively giving a low-moderate level of activity, while all other detectors recorded low activity levels within the 0-20 median percentile.

This slight increase in median percentile while still being low/ low-moderate for Nathusius' pipistrelle is due to Nathusius' pipistrelle being more common in the North of Ireland than in the south where Littleton is located. As such, its core distribution zone does not typically extend into the Littleton area. As a result, Ecobat which compares activity levels only against its national (all-Ireland) dataset rather than region-specific baselines produces a higher score for the species despite the fact that very little Nathusius' pipistrelle activity was recorded on site. The software reflects limitations in the dataset rather than local activity for Nathusius's bat. This pattern mirrors the behaviour of Ecobat percentiles for lesser horseshoe bat, a species whose natural Irish range is confined to the west. When recordings occur outside this typical range, Ecobat again produces misleading percentiles because the comparison pool does not represent the species' true geographical distribution. In both cases, the tool can over-emphasise relative activity; to put this in perspective, Nathusius's bat had the lowest number of recordings of all species across the proposed wind farm.

Based on actual number of recordings (as opposed to Ecobat scores) Nathusius's pipistrelle activity throughout the site was lowest in comparison with all other species present at all turbine locations. Notwithstanding the slightly higher median percentiles for this species at some turbine locations, the impact level associated with turbine risk for Nathusius's pipistrelle remains low at all proposed turbine locations.

Soprano Pipistrelle and Common Pipistrelle are identified as being the next most vulnerable group of bats to collision fatality at wind farms in Ireland (SNH, 2021). These species are widespread and common in Ireland and will generally be recorded at sites throughout the country. Their status as widespread species with a high risk of collision mortality puts them in the category of species with medium population vulnerability to wind farms (SNH, 2021).

During Static Detector surveys in 2023, Common pipistrelle was the most common species recorded with soprano pipistrelle the second most common, while in 2025 soprano pipistrelle was the most common species recorded with common pipistrelle being the second most recorded species. While these species were the species with the highest overall occurrence in 2023 and 2025, Ecobat analysis did not indicate high activity levels for either species. Based on Ecobat analysis (median percentile activity score) of 2023 and 2025, common and soprano pipistrelle had low activity at all turbine locations. As such, the impact level associated with turbine risk for these species remained low at all locations.



Common pipistrelles have been demonstrated to be attracted to wind turbines and occur around wind turbines at higher levels than at control locations nearby (Richardson et al 2021). Therefore, it is assessed that despite the consistently low activity levels indicated for this species by Ecobat analysis, there is potential for common pipistrelle to be affected by the proposed wind farm prior to mitigation.

4.2 Activity Surveys

Activity surveys recorded bat activity from six of the eight species detected by static detectors, with no records of whiskered bat or Natterer's bat during activity surveys. Foraging and commuting activity was observed across all habitat types present within the study area. However, bat activity was not evenly distributed and was most strongly associated with key commuting corridors, particularly along the southern access route into Littleton Bog and the eastern margin of Lanespark Bog (where proposed turbines T9, T10 and T11 are located). Activity was most concentrated along the southern entrance to Littleton bog and entrance to Lanespark bog during survey round 1, while rounds 2 and 3 showed the majority of bat observations occurring along the eastern side of Lanespark Bog with Littleton bog showing much lower levels of activity.

The patterns of activity recorded during the activity surveys closely align with the findings of the static detector surveys, providing complementary information on the spatial distribution of bat activity and habitat usage patterns of the bat species across the site, reinforcing static bat detector results.

4.3 Risk and Impact Assessment

This risk assessment has been prepared in accordance with NatureScot (2021) guidance which identifies the following potential risks to bats associated with windfarms:

- Collision mortality, barotrauma and other injuries
- Loss or degradation of commuting and foraging habitats
- Loss, or damage to roost sites
- Displacement of individuals or populations

Information on bat distribution and activity within the Proposed Wind Farm has been used to assess the potential impacts on bat populations for each of these four risks.

4.3.1 Collision mortality

4.3.1.1 *Assessment of Site Risk*

The likely impact of a proposed development on bats is related to site-based risk factors, including habitat and development features. The site risk assessment as seen in Section 3.2.4 above evaluated site-based risk factors of habitat risk and project site and concluded a final risk assessment of low risk to bats, taking into account the lack of roosts, low habitat value and medium-scale project.



4.3.1.2 *Assessment of Collision Risk*

Four high-risk species were recorded during surveys, as shown in Table 3-21: Leisler's bat, Common pipistrelle, Soprano pipistrelle, and Nathusius's pipistrelle. Collision risk for these species was evaluated using the NatureScot risk assessment matrix presented in Table 3-22. In line with NatureScot guidance, assessments were based on median activity levels to determine overall risk.

Activity levels for all four species were low; therefore, significant collision-related impacts are not anticipated. Activity levels will continue to be monitored during the operational phase, in accordance with best-practice guidance mitigation measures. Additional mitigation will be introduced after Year 1 if required.

All four high risk bat species showed low levels of activity throughout all rounds for 2023 and 2025. Leisler's bat, Common pipistrelle and soprano pipistrelle all had a score of 2 giving them low overall risk for each of the turbine locations in 2023 and 2025. Nathusius's pipistrelle also got a low overall risk score (score of 2 at all locations except for L1 and L6 in 2023 and LT5, LT6 and LT8 in 2025 where it received a score of 4; overall risk scores of 0-4 indicate low risk). Collision Risk Summary

In accordance with NatureScot (2021) guidance and site-specific activity thresholds, the site-level collision risk for all high-risk bat species at the Proposed Wind Farm was assessed as Low. Overall, bat activity levels were consistent with the habitat present across the Littleton Proposed Wind Farm, which primarily comprises cutover bog (PB4), scrub (WS1), and immature woodland (WS2)—all of which provide features suitable for commuting and foraging bats. Both static detector data and manual transect surveys indicated activity levels typical of bog habitats of low suitability, with generally low bat activity recorded throughout the site.

4.3.2 Loss or Damage to Commuting and Foraging Habitat

In the absence of appropriate design measures, the loss or degradation of commuting and foraging habitat could reduce feeding opportunities and/or displace local bat populations. Littleton Bog is predominantly composed of cutover bog, scrub, and immature woodland, with a full description of habitats provided in Section 3.2 above.

Further details on vegetation removal required within and around the development footprint is detailed in Table 6-28 of Chapter 6 of the EIAR. Any tree removal will be undertaken to maintain an appropriate buffer between turbine blade tips and adjacent canopy, in line with current best practice (Natural England, 2014; NatureScot, 2021). As all suitable bat habitat being lost is of low suitability and there is low levels of bat activity throughout the site it is not expected to negatively impact bat populations in the area. The removal of dense areas of immature woodland or scrub may result in a positive effect to bat populations by increasing linear edge habitat which is known to support commuting and foraging activity.

Most turbines have been positioned to avoid key linear habitat features. Where turbine siting necessitates the removal of linear immature woodland or scrub, these areas are of low ecological value and based on results gathered from static detectors and manual transect activity surveys confirm low activity levels for bats in the area. Furthermore, linear planting habitat occurring elsewhere on site to offset this habitat removal which will incorporate native species appropriate to the local area and will aim to strengthen existing habitat connectivity and ecological function. More detail on the replanting scheme can be found in Appendix 6:1 the Biodiversity Enhancement and Management Plan (BEMP) of the Biodiversity Chapter 6 of the EIAR.

Although these measures will maintain and enhance ecological corridors in the long term, a short- to medium-term reduction in connectivity may occur until newly planted or enhanced features become established. Full details of the enhancement planting are provided in the Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4). Following implementation of the replanting measures outlined in the BMEP, no significant effects on bat commuting or foraging habitat are expected.



The proposed substation and temporary construction compound are located within a long linear block of immature woodland and scrub that will be removed during construction. This corridor will be replanted upon completion of works, reinstating bat commuting routes; therefore, only a short-term adverse effect is anticipated. In addition, connectivity on the western side of the woodland block will be maintained by trees retained on the opposite side of the existing rail line. Therefore, only a short-term effect is anticipated.

The peat deposition area will require the clearance of low-quality scrub and associated habitat, which will naturally regenerate over time. Given the low habitat suitability and low bat activity recorded in this area, impacts are expected to be negligible.

The borrow pit is located within agricultural grassland (GA1) bounded by hedgerows (WL1), which will be removed. However, similar commuting habitats are widespread in the surrounding landscape and bat activity levels are low; therefore, the impact on bats is also considered negligible.

The turbine delivery route will affect immature trees at one location: Node 3 (removal of trees) discussed in the Biodiversity Chapter 6 of the EIAR. The affected trees are immature specimens originating from roadside landscaping. Grassy verges along road edges and within roundabout islands will be affected by placement of load bearing material. The remainder of the TDR is within the existing road corridor and as such does not have potential for effects on bat populations.

It is not proposed to fell any trees with potential roosting features. No trees with roosting potential were observed during surveys of the Site and TDR.

Potential effects on trees with PRFs along the grid connection arising from grid connection works are imperceptible due to low suitability and limited size of PRFs (limited to potential to host individual or low numbers of roosting bats), limited landscape connectivity, their disturbed location beside regional roads, and separation from works areas placing them outside the ZoI for direct effects.

Overall, given the large proportion of the site that will remain undisturbed, alongside the targeted retention and enhancement of key habitat features, no significant effects on bat commuting or foraging habitat are predicted as a result of the Proposed Project.

4.3.3 Loss of, or damage to, Roosts

No Potential Roost Features (PRFs) were identified within 300 m of the proposed turbine locations or within 200 m of proposed infrastructure at the wind farm site, and no PRFs were identified in areas potentially affected by the TDR. Roost assessments undertaken along the grid connection route included the inspection of bridges and trees. Examination of bridges identified two structures that required emergence surveys; however, no bat emergence or evidence of roost occupancy was recorded during surveys. Both bridges were assessed as having potential for use as night roosts during the summer period. The proposed HDD crossing methodology for rivers along the GC will avoid both direct effects and disturbance of bats potentially roosting in bridges.

The roost survey of trees along the grid connection identified a number of PRFs; however, these features were assessed as having negligible to low suitability. Given their location along the R693/R694 regional roads reducing roosting suitability due to existing traffic disturbance and the absence of direct effects from grid connection works, potential impacts on these PRFs are considered to be imperceptible.

As such, potential effects in this category are limited to Temporary Imperceptible effects at Local scale.



4.3.4 Displacement of Individuals or Populations

The proposed wind farm is situated within Cutover bog (PB4), Scrub (WS1) and Immature woodland (WS2) with smaller areas all of which are of low suitability for commuting, foraging and roosting bats.

As part of the Proposed Project, a number of linear areas of scrub and immature woodland are located within the bat felling buffers and infrastructure development footprint will require removal or partial clearance. Although these features contribute to the site's overall connectivity and habitat diversity, the majority of linear features within the site will be retained, and habitat fragmentation has been avoided in the layout design.

Mitigation measures to minimise the potential risk of displacement include targeted retention of linear habitat features and implementation of enhancement planting to restore and improve connectivity across the site. These measures are further detailed in the Section 2.1 and the Biodiversity Enhancement and Management Plan (BEMP).

4.4 **Best Practice and Mitigation Measures**

This section outlines the best-practice and site-specific mitigation measures implemented at the proposed development to avoid or minimise the potential for significant impacts on local bat populations.

4.4.1 Standard Best Practice Measures

4.4.1.1 *Noise Restrictions*

During construction, all machinery will be managed to minimise unnecessary noise and emissions. Equipment will be shut down when idle, and all plant used on site will meet the noise control requirements set out in the Construction Plant and Equipment Permissible Noise Levels Regulations (S.I. No. 632 of 2001, as amended).

Given the short duration of the proposed works and the low levels of bat activity in the surrounding area, noise and vibration effects are anticipated to be minimal.

4.4.1.2 *Lighting Restrictions*

In general, artificial light creates a barrier to bats so lighting has been avoided where possible. Construction operations within the wind farm Site will take place during the hours of daylight where possible to minimise disturbances to faunal species at night. Some works along the cable route and wind farm Site may occur at night but the project ecologist/ECOW will limit night-time works to sections of the route / Site which avoid sensitive features (e.g. mature treelines, conifer plantation edge and tracks). Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) will be used to prevent overspill.

This will be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only.

During the operational phase, it appears that the lighting on top of wind turbines may affect the likelihood of bats colliding with turbines. Research on this topic, which is reviewed in Powelsland (2009), indicates that intermittent lighting is less likely to cause species to collide with turbines.

As such, flashing red aviation obstruction lights will be provided on perimeter turbines, subject to approval by the IAA. These will not negatively impact bats (Bennett and Hale 2014).

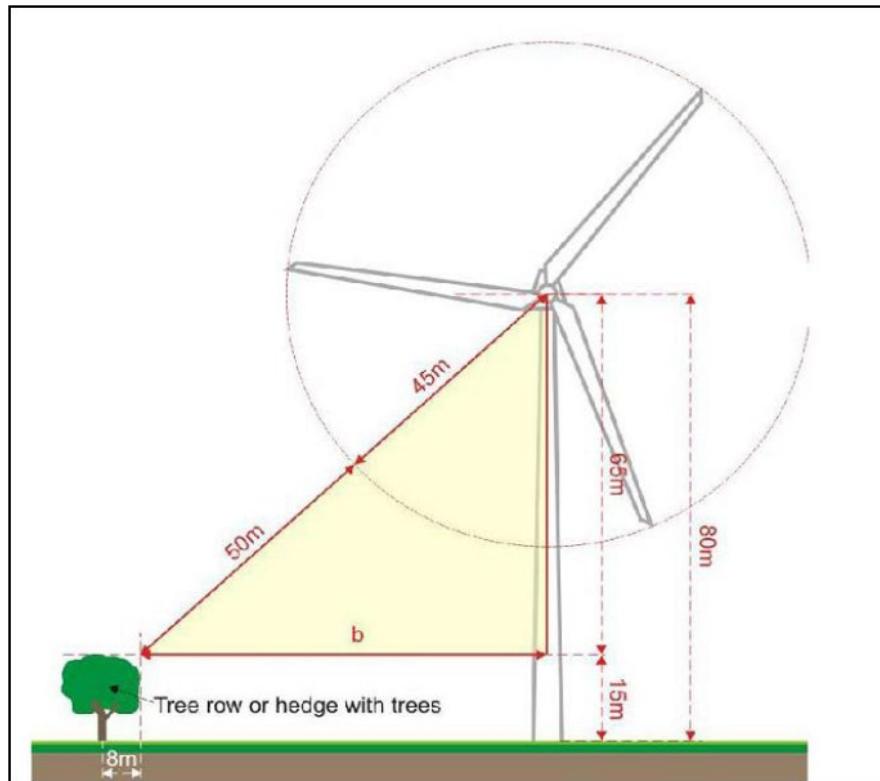


4.4.1.3 Bat Felling Buffers

According to SNH (2021) guidance:

"The Eurobats guidance recommends a 200m buffer around woodland areas. There is, however, currently no scientific evidence to support this distance in the UK and it is recommended that a distance of 50m between turbine blade tip and nearest woodland (or other key habitat features such as wetlands etc.) is adequate mitigation in most, lower risk situations. Exceptionally, larger buffers may be appropriate, e.g. near major swarming and hibernation sites. The longevity of wind farms should also be taken into account and the maximum growth, or management, of woodland and other relevant habitat features considered in their planning. "

These distances were taken into account during the design phase of the development. To minimize risk to bat populations, a vegetation clearance buffer zone will be provided around the turbines. The following formula was used to calculate the required felling buffer for the turbines (with example image taken from Natural England – note not reflective of turbine dimensions the subject of this EIAR). Calculations were run for the proposed turbine dimensions in terms of hub height and blade length, and the bat buffer area is assessed in the Biodiversity Chapter 6 of the EIAR.



$$b \text{ (bat buffer)} = \sqrt{(50 + bl)^2 - (hh - fh)^2}$$

where:

b = the distance on the ground between the edge of the canopy and the turbine (m)

bl = blade length (81m)

hh = hub height (119m)

fh = tree/hedgerow height (12m)

$$b = \sqrt{\{(50 + 81)^2 - (119 - 12)^2\}} = 75.6\text{m}$$

Based on this calculation, a 76m buffer (rounded up from 75.6m) has been adopted for all turbines.

Each of the locations of the eleven turbines was surveyed and the vegetation height informed the application of the dimensions of the blade tip buffer at turbine locations, dependant on the surrounding habitat and turbine specification. Taking projected tree growth based on species and site conditions into consideration, a tree height of 12m was assessed as a suitably precautionary height for calculation of buffer sizes at all proposed turbines.

Existing treelines, hedgerows and scrub within the bat buffers for any proposed turbine locations will be removed (note these habitat have been assessed for suitability to support other flora and fauna and have been determined as having local value – mitigation pertaining to site clearance will be employed at these areas). Buffers will be maintained throughout the lifetime of the wind farm as tree-free areas. This will be achieved through mechanical means only; the use of chemical substances is prohibited.

During the operational phase, the tree-free buffer zones around the turbines will be managed and maintained during the operational life of the development. These will be kept clear by mechanical means only (no chemicals / herbicides) and maintained on an annual basis in the same condition as during first clearance.



The immediate surroundings of individual turbines will be managed and maintained so that they do not attract insects (i.e. the concentration of insects in the wind turbine vicinity should be reduced as much as possible, but not such that insect abundancies affected elsewhere on the Site). This will be achieved through physical management of habitats without the use of toxic substances.

4.4.1.4 *Supervision of Vegetation Clearance*

An ecologist/ECOW will supervise areas where vegetation, scrub and hedgerow removal will occur prior to and during construction as appropriate (e.g., ecologist may be required during some clearance works of areas where vegetation is too dense to check beforehand). This will ensure that any Site-specific issues in relation to wildlife not currently present (e.g., Bat roost locations) on Site will be discovered prior to commencement of works to allow appropriate mitigation measures to be put in place. In the unlikely event that a bat roost is found, the NPWS will be informed, and the relevant guidelines will be implemented as appropriate (e.g. NRA guidelines).

4.4.1.5 *Proposed Habitat Replacement and Enhancement*

A detailed description of the proposed habitat loss, replacement and enhancement can be found in the Biodiversity Enhancement and Management Plan (BEMP) (Appendices 4.1 of the Biodiversity Chapter 6 of the EIAR).

Linear features such as hedgerows and treelines serve as commuting corridors for bats (6.1 of the EIAR) and other wildlife). Vegetation buffer clearance around turbines will alter commuting and foraging routes associated with existing hedgerows and woodland edges to avoid bats entering the rotor sweep zone of turbines. Hedgerow and treeline planting will be carried out for the Proposed Development. This will reinstate or replace linear habitat loss to ensure no net loss of these habitats occurs.

Where hedgerows and treelines are affected by turbine clearance buffers, bats will be directed away from tree-free buffers along an alternative commuting route. Where bat buffers are applied, the surrounding hedgerows and treelines should act as commuting corridors, leading bats away from the turbine location, and these hedgerows should not end abruptly at the bat buffer zones. This will be achieved by planting new pollinator-friendly hedgerows, connecting existing hedgerows onsite, around the bat buffers. Willow and Alder will be included in these hedgerows due to their rapid growth. It is proposed to create double lines of hedgerow, with Willow on one side, and pollinator-friendly hedgerow species listed below on the other. Planting of these species will be staggered to prevent excessive shading and aid establishment of the hedgerows.

To address the loss of scrub and immature woodland within the substation compound footprint, the measures set out in the Biodiversity Enhancement Management Plan will be implemented during construction and post-construction phases. Following completion of works, the area of immature woodland removed will be replanted with downy birch root whips, reflecting the primary pioneer species associated with cutover bog woodland at the Site. In addition, a line of downy birch or other suitable locally native standard trees will be planted along the western boundary adjoining the existing rail line and proposed access track to maintain habitat connectivity for bats while the replanted woodland becomes established. Tree protection measures will be installed to safeguard newly planted trees from grazing during the establishment period.

Peat deposition area will remain available for recolonisation by natural or semi-natural habitats during the operational phase, unlike areas within the permanent infrastructure footprint which will be unavailable for the duration of the development. Following construction, these peat deposit areas will be allowed to regenerate naturally, with surrounding local species facilitating the establishment of grassland and/or heathland habitats in continuity with retained habitats across the Site.



Overall, the proposed planting of new linear habitat, along with broadleaved woodland, will result in a net gain of linear landscape and woodland features within the Site. These measures will enhance both foraging and commuting opportunities for bats that use the area. All planting will consist of species indigenous to the local area.

4.4.1.6 *Blade Feathering*

As per NatureScot 2021 guidelines the turbine blades will be feathered during low wind speeds; the angle of the blades is rotated to present the slimmest profile possible towards the wind, ensuring they do not rotate or 'idle' when not generating power. Turbine blades spinning in low wind can kill bats, however bats cannot be killed by feathered blades which are not spinning (Horn et al., 2008). The reduction in speed resulting from feathering compared with normal idling may reduce fatality rates by up to 50% (NatureScot 2021).

As such, the feathering of blades to prevent 'idling' during low wind speeds will be implemented for all turbines.

4.4.1.7 *Cut-in Speeds/Curtailment*

While bat activity varied by species, no detector/turbine locations had activity for any species higher than low/moderate levels (based on Ecobat median percentile scores).

Therefore, increased cut-in speeds are not required from commencement of operation, but will rather be reserved for implementation where required based on operational monitoring (see Sections 6.10.3.4.3 and 6.10.3.4.4).

Modern, remotely-operated wind turbines as proposed here allow cut-in speeds to be controlled centrally/automatically, facilitating an operation regime designed to minimise harmful effects to bats.

The feathering of turbine blades combined with increased cut-in speeds have been shown to reduce bat fatalities from 30% and up to 90% (Adams et al., 2021, Arnett et al., 2011, 2013; Baerwald et al., 2009). The most recent of studies showed a 63% decrease in fatalities (Adams et al., 2021).

4.4.2 Bat Monitoring Plan

The success of the implemented mitigation measures for bats on the project will be monitored for a period of no less than three years post construction and appropriate measures taken to enhance these if and where required.

4.4.2.1 *Pre Construction Surveys*

If three years lapse from between EIAR/planning-stage surveys and installation of the wind turbines, it will be necessary to repeat one season of surveys during the activity period (EUROBATS, 2014). Future survey work will be completed according to best practice guidelines available (Hundt, 2012; Collins, 2016; NatureScot, 2021; NIEA, 2021) and includes static detector, activity and roost inspection surveys.

It is not proposed to fell any trees with potential roosting features. No trees with roosting potential were observed during surveys of the Site and TDR.

Potential effects on trees with PRFs along the grid connection arising from grid connection works are imperceptible due to the negligible to low suitability of PRFs, their disturbed location beside the R693 regional road, and separation from works areas placing them outside the ZoI for direct effects.



If new bat roosts are present in areas affected by proposed felling, a bat derogation license will be sought from the National Parks and Wildlife Service.

4.4.2.2 *Operational Curtailment*

Monitoring will be carried out for the first three years of operation, and an annual review at the end of each of these years will determine whether increased cut-in speeds should be implemented.

If, following any of the initial three years of post-construction surveys, bat activity increases above the baseline and/or remains consistently high and carcass searches indicate fatalities are occurring (refer below), increased cut-in speeds will be implemented.

Alternatively, if it is found that the results of bat activity surveys and fatality searches reconfirm the level of bat activity at turbine locations remains low or low/moderate then curtailment will not be required.

Bat activity will subsequently be monitored in years 5, 10, 15, 20, 25 and 30 with further review after each monitoring period.

Where post construction acoustic surveys are undertaken, they will utilise full spectrum automatic detectors deployed, as a minimum, for one complete bat activity season.

Acoustic monitoring will be supplemented with thermal imaging cameras etc. to provide more detailed information on bat activity in the vicinity of turbines.

An assessment of static data gathered during operational surveillance will be completed using the online analysis tool Ecobat as recommended by NatureScot (2021) as a minimum, or other equivalent guidance as dictated by up-to date standards and practices.

If the requirement for curtailment is identified following the initial 3-year monitoring period, the following measures will be implemented:

Increasing the cut-in speed above that set by the manufacturer can reduce the potential for bat/turbine collisions. A study by Arnett et al. (2011) showed a 50% decrease in bat fatality can be achieved by increasing the cut-in speed by 1.5 m/s.

Species with elevated risk of collision (Leisler's bat, soprano and common pipistrelle) in particular could benefit from increasing the cut-in speed of turbines, as dictated on a case-by case basis depending on the activity levels recorded at each turbine.

If required based on operational monitoring results, cut-in speeds should be increased to 5.5 m/s during the bat activity season (April-October) or where temperatures are optimal for bat activity, from 30 minutes prior to sunset and to 30 minutes after sunrise at turbines where surveillance shows high bat activity levels for High and Medium-Risk species and/or if bat carcasses are recorded.

The duration required depends on the level of mitigation required for each individual turbine i.e. a full bat activity season or only spring and autumn (duration will be determined by the first year of surveillance).



Cut-in speed restrictions will be operated according to specific weather conditions:

- When the air temperature is above approximately 10°C at nacelle height (as bat activity is reduced below this temperature) and;
- Where the wind speed is above 5 - 6.5m/s at nacelle height. It has been shown that curtailing the operations of wind turbines at low wind speeds can reduce bat mortality dramatically, particularly during late summer and the early autumn months.

Due to the considerable unnecessary down time resulting from the “blanket curtailment” and the advances in smart curtailment a focused curtailment regime is further proposed as an optional means of achieving the level of curtailment indicated as required by operational monitoring.

This will focus on times and dates, corresponding with periods when the highest level of bat activity occur within the Site. This includes the use of the SCADA (Supervisory Control and Data Acquisitions) operating system (or equivalent) to only pause/feather the blades below a specified wind speed and above a specified temperature within specified time periods.

Post-construction surveys will be undertaken for the first three years of operation to confirm if curtailment is required in line with post-construction activity levels. The post construction surveys will be used to update the curtailment regime (blanket curtailment) designed around the values for the key weather parameters and other factors that are known to influence collision risk. This will include all of the following:

- Wind speed in m/s (measured at nacelle height)
- Time after sunset
- Month of the year
- Temperature (°C)
- Precipitation (mm/hr)

4.4.2.2.1 Bat Fatality Monitoring

Whilst no significant residual impacts on bats are predicted, the proposed development could provide an opportunity to gain baseline data on bat/turbine interaction and the scheme will be monitored for bat fatalities for the first three years of operation (post construction surveys) and subsequently in years 5, 7, 10, 15, 20, 25 and 30 as part of the additional monitoring schedule.



The primary components bat mortality study will be as follows (whether curtailment is in place or not):

- a) Carcass removal trials to establish levels of predator removal of possible fatalities. This will be done following best recommended practice and with due cognisance of published effects such as predator swamping, whereby excessive placement of carcasses increases predator presence and consequently skews results. No turbines which are used for carcass removal trials will be used for subsequent fatality monitoring.
- b) Turbine searches for fatalities will be undertaken following best practice in terms of search area (focusing on the hard standing) (NatureScot, 2021) and at intervals selected to effectively sample fatality rates as determined by carcass removal trials in (a) above.
- c) A standardised approach with a possible control group and/or variation in search techniques such as straight line transects/ randomly selected spiral transects/ dog searches will be undertaken. This will provide a means of robustly estimating the post construction collision fatality impact (if any).
- d) Recorded fatalities will be calibrated against known predator removal rates to provide an estimate of overall fatality rates.

4.4.2.3 *Mitigation Measures during Decommissioning*

Mitigation measures for the Proposed Wind Farm that will apply for the decommissioning phase relate to the protection of water quality (as outlined in Chapter 9 of the EIAR - Hydrology and Water Quality). There will be no additional vegetation removal, and infrastructure removal will be of the turbines foundations and hardstand areas left in place and covered with local soil/topsoil to revegetate at the decommissioning stage. It is considered that leaving the turbine foundations, access tracks and hardstand areas in-situ will cause less environmental damage than removing them. Grid connection infrastructure including the on-site substation and ancillary electrical equipment shall form part of the national grid and will be left in situ (as outlined in Chapter 4 of the EIAR – Project Description), therefore no potential impacts during decommissioning stage are likely to occur. Hence no mitigation measures are required for these elements.

4.4.2.4 *Post Construction Surveys*

Monitoring of bat activity at turbine locations using static detectors will take place for at least three years after construction, providing sufficient data to detect any significant change in bat activity relative to pre-construction levels. It will assess changes in bat activity patterns and the efficacy of mitigation to inform any changes to curtailment requirements.

During years one to three of operation bat activity will be measured during monitoring periods between April and mid-October at each turbine location, in combination with carcass surveys. In addition, wind speed and temperature data will be continuously recorded at the nacelle height of each turbine.

4.4.3 Residual Effects

Taking into account the small area of suitable habitat to be lost relative to the area of suitable habitat in the wider landscape and given the standard best practice measures above and adaptive mitigation measures proposed, no significant long-term residual effects on bats are anticipated with regard to:

1. Collision mortality, barotrauma and other injuries,
2. Loss or damage to roosts, and
3. Displacement of individuals or populations.



There is no potential for the construction of the Proposed Development to result in Significant effects on the local bat population at any geographic scale, given the small area of suitable habitat to be lost relative to the area of suitable habitat in the wider landscape and given the standard best practice measures outlined above which will be implemented during construction combined with the purposeful design of the Proposed Development so as to avoid high value bat habitat. Similarly, during operation, the monitoring and mitigation proposed will ensure no significant residual effect on local bat populations.

A residual effect is anticipated in relation to the loss of commuting and foraging habitat, due to the removal of linear habitat required to facilitate construction and bat buffers. While this loss will be offset through a comprehensive habitat enhancement and replanting programme, it will take approximately 3-7 years for new trees to establish and restore full habitat functionality. As such, a Short-term Not-significant effect at Local scale arising from minor changes in ecological connectivity may occur during this period.

4.4.4 Cumulative Effects

The assessment concludes that no significant cumulative impacts on bats are anticipated. Forestry activities in the surrounding area occur at sufficient distance from the Proposed Development and are not expected to result in cumulative pressures on local bat populations. Other wind farms are located over 4 km from the site, and when considered alongside the proposed mitigation measures, no cumulative effects on bats via land or air pathways are likely. Review of EIARs for nearby wind farms further indicates that, with mitigation in place, no cumulative impacts on bats are expected to arise. More information on cumulative impacts is available in Section 6.12 of the Biodiversity Chapter 6 of the EIAR

4.5 Conclusion

Eight bat species were recorded during surveys, all of which are listed as Least Concern on the Irish Red List and are included on Annex IV of the EU Habitats Directive. Bat survey results and Ecobat analysis indicate low to low levels of bat activity across the proposed wind farm. Across all species, low to moderate median percentiles were recorded only for Nathusius's pipistrelle; however, this is indicative of the bias arising from uneven distribution of this species and comparison against the national population without regard to this uneven distribution by Ecobat, rather than actual higher levels of activity for this species. Bat activity within the study area was predominantly associated with linear and edge habitats while open habitats supported lower levels of use. Overall, the proposed wind farm adheres to a precautionary approach in line with NatureScot (2021) guidance and current best practice, ensuring that potential impacts on bats are effectively minimised.



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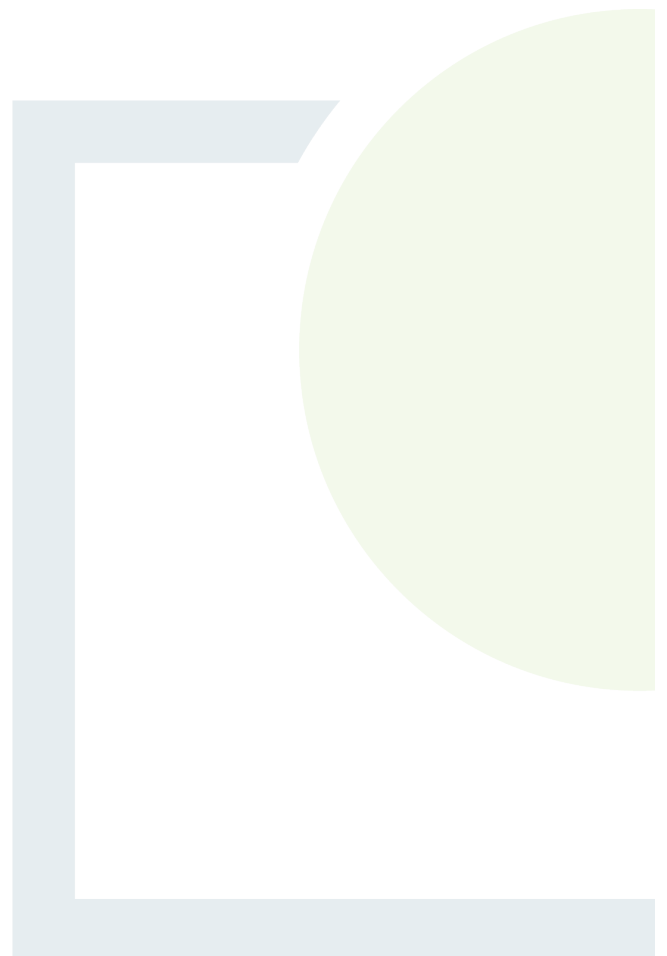
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DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 1

Ecobat Results 2023





Ecobat Report

2025-12-15

Geo filter: all, Time filter: all

Summary

Bats were detected on **27** nights between **17/05/2023** and **12/06/2023**, using **11** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

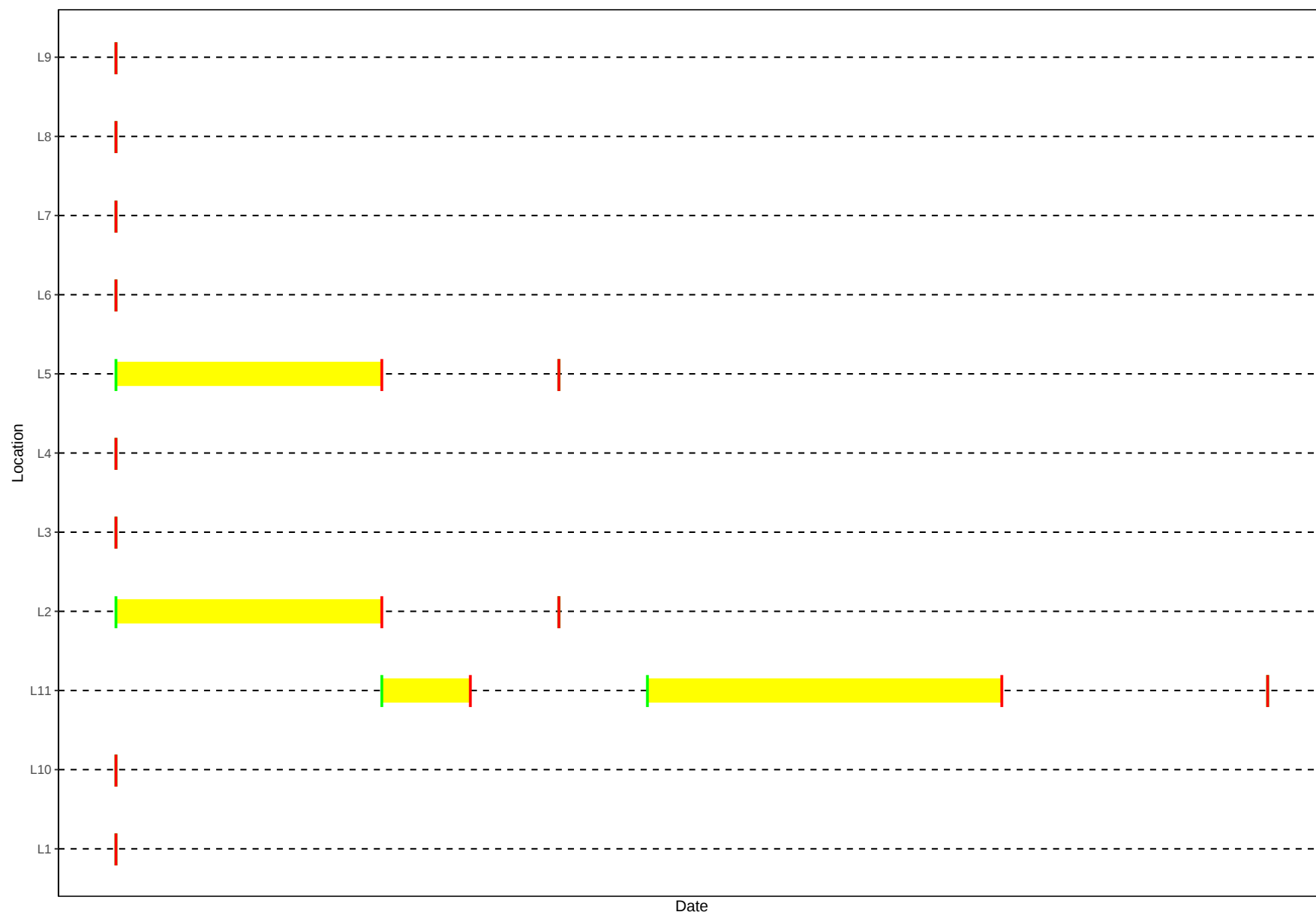
Detector ID	Latitude	Longitude
L1	52.66497	7.644556
L2	52.66041	7.649355
L3	52.65497	7.651278
L4	52.65501	7.659723
L5	52.64908	7.662925
L6	52.64642	7.653317
L7	52.64459	7.668046
L8	52.64051	7.659876
L9	52.61667	7.690955
L10	52.61366	7.686230
L11	52.60997	7.683222

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
L1	27
L10	27
L11	21
L2	23
L3	12
L4	27
L5	26
L6	27
L7	27
L8	27
L9	27

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



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
L1	Myotis daubentonii	0	0	0	0	0	21
L1	Myotis mystacinus	0	0	0	0	0	3
L1	Nyctalus leisleri	0	0	0	0	0	24
L1	Pipistrellus nathusii	0	0	2	4	3	5
L1	Pipistrellus pipistrellus	0	0	0	0	0	27
L1	Pipistrellus pygmaeus	0	0	0	0	0	26
L1	Plecotus auritus	0	0	0	0	1	16
L10	Myotis daubentonii	0	0	0	0	0	21
L10	Myotis mystacinus	0	0	0	0	0	11
L10	Myotis nattereri	0	0	0	0	0	6
L10	Nyctalus leisleri	0	0	0	2	3	22
L10	Pipistrellus nathusii	0	0	0	0	0	5
L10	Pipistrellus pipistrellus	0	0	0	0	0	27
L10	Pipistrellus pygmaeus	0	0	0	0	2	25
L10	Plecotus auritus	0	0	0	1	1	9
L11	Myotis daubentonii	0	0	0	0	0	11
L11	Myotis mystacinus	0	0	0	0	0	3
L11	Myotis nattereri	0	0	0	0	0	6

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
L11	Nyctalus leisleri	0	0	0	0	5	16
L11	Pipistrellus nathusii	0	0	0	0	0	7
L11	Pipistrellus pipistrellus	0	0	0	0	0	18
L11	Pipistrellus pygmaeus	0	0	0	0	2	17
L11	Plecotus auritus	0	0	0	0	0	10
L2	Myotis daubentonii	0	0	0	0	0	17
L2	Myotis mystacinus	0	0	0	0	0	7
L2	Myotis nattereri	0	0	0	0	0	6
L2	Nyctalus leisleri	0	0	0	0	0	22
L2	Pipistrellus nathusii	0	0	0	0	2	4
L2	Pipistrellus pipistrellus	0	0	0	0	0	23
L2	Pipistrellus pygmaeus	0	0	0	0	6	17
L2	Plecotus auritus	0	0	0	0	0	10
L3	Myotis daubentonii	0	0	0	0	0	8
L3	Myotis nattereri	0	0	0	0	1	4
L3	Nyctalus leisleri	0	0	0	0	0	11
L3	Pipistrellus pipistrellus	0	0	0	0	0	12
L3	Pipistrellus pygmaeus	0	0	0	0	0	12
L3	Plecotus auritus	0	0	0	0	0	3
L4	Myotis daubentonii	0	0	0	0	1	22
L4	Myotis mystacinus	0	0	0	0	0	3

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
L4	Myotis nattereri	0	0	0	0	0	3
L4	Nyctalus leisleri	0	0	0	0	0	27
L4	Pipistrellus pipistrellus	0	0	0	0	0	26
L4	Pipistrellus pygmaeus	0	0	0	0	0	25
L4	Plecotus auritus	0	0	0	0	0	6
L5	Myotis daubentonii	0	0	0	0	0	11
L5	Myotis nattereri	0	0	0	0	0	2
L5	Nyctalus leisleri	0	0	0	0	0	25
L5	Pipistrellus pipistrellus	0	0	0	0	0	25
L5	Pipistrellus pygmaeus	0	0	0	0	0	25
L5	Plecotus auritus	0	0	0	0	0	4
L6	Myotis daubentonii	0	0	0	0	0	19
L6	Myotis mystacinus	0	0	0	0	0	1
L6	Myotis nattereri	0	0	0	0	2	2
L6	Nyctalus leisleri	0	0	0	0	0	27
L6	Pipistrellus nathusii	0	0	0	0	8	8
L6	Pipistrellus pipistrellus	0	0	0	0	0	27
L6	Pipistrellus pygmaeus	0	0	0	0	0	26
L6	Plecotus auritus	0	0	0	0	0	16
L7	Myotis daubentonii	0	0	0	0	0	21
L7	Myotis mystacinus	0	0	0	0	0	9
L7	Nyctalus leisleri	0	0	0	0	0	26

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
L7	Pipistrellus nathusii	0	0	0	0	0	8
L7	Pipistrellus pipistrellus	0	0	0	0	0	27
L7	Pipistrellus pygmaeus	0	0	0	0	0	27
L7	Plecotus auritus	0	0	0	0	0	8
L8	Myotis daubentonii	0	0	0	0	2	23
L8	Myotis mystacinus	0	0	0	0	0	15
L8	Myotis nattereri	0	0	0	0	0	9
L8	Nyctalus leisleri	0	0	0	0	0	27
L8	Pipistrellus nathusii	0	0	0	0	0	8
L8	Pipistrellus pipistrellus	0	0	0	0	0	27
L8	Pipistrellus pygmaeus	0	0	0	0	0	26
L8	Plecotus auritus	0	0	0	0	2	20
L9	Myotis daubentonii	0	0	0	0	0	22
L9	Myotis mystacinus	0	0	0	0	0	2
L9	Myotis nattereri	0	0	0	0	1	8
L9	Nyctalus leisleri	0	0	0	2	3	21
L9	Pipistrellus pipistrellus	0	0	0	0	0	27
L9	Pipistrellus pygmaeus	0	0	0	0	0	26
L9	Plecotus auritus	0	0	0	0	0	14

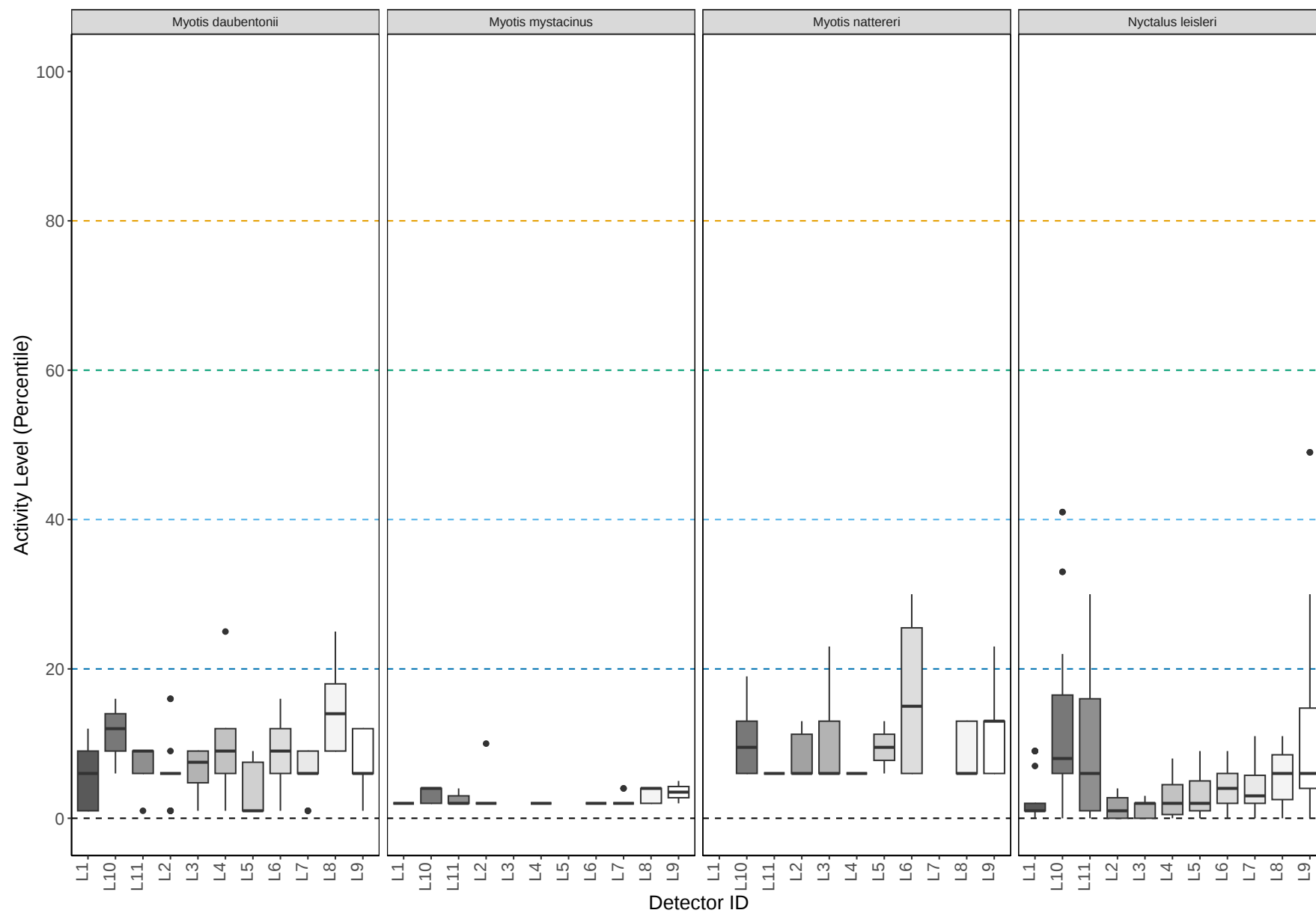
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L1	Myotis daubentonii	6	3.5 - 9	12	21	6850
L1	Myotis mystacinus	2	2 - 2	2	3	2737
L1	Nyctalus leisleri	1	1 - 5	9	24	61799
L1	Pipistrellus nathusii	37	21.5 - 47.5	74	14	3409
L1	Pipistrellus pipistrellus	4	3.5 - 6	9	27	1547099
L1	Pipistrellus pygmaeus	9	8 - 9.5	12	26	411071
L1	Plecotus auritus	4	2.5 - 4	20	17	23389
L10	Myotis daubentonii	12	9 - 13	16	21	6850
L10	Myotis mystacinus	4	3 - 4	4	11	2737
L10	Myotis nattereri	10	6 - 13	19	6	1749
L10	Nyctalus leisleri	8	7.5 - 19	41	27	61799
L10	Pipistrellus nathusii	8	8 - 8	14	5	3409
L10	Pipistrellus pipistrellus	1	1.5 - 3.5	7	27	1547099
L10	Pipistrellus pygmaeus	6	5.5 - 10.5	21	27	411071
L10	Plecotus auritus	13	5 - 21.5	42	11	23389
L11	Myotis daubentonii	9	5 - 9	9	11	6850
L11	Myotis mystacinus	2	2 - 2	4	3	2737
L11	Myotis nattereri	6	6 - 6	6	6	1749
L11	Nyctalus leisleri	6	4.5 - 15.5	30	21	61799
L11	Pipistrellus nathusii	8	8 - 13	18	7	3409
L11	Pipistrellus pipistrellus	2	1.5 - 3	5	18	1547099
L11	Pipistrellus pygmaeus	15	10 - 18	20	19	411071
L11	Plecotus auritus	13	7 - 14	15	10	23389
L2	Myotis daubentonii	6	3.5 - 7.5	16	17	6850
L2	Myotis mystacinus	2	2 - 2	10	7	2737
L2	Myotis nattereri	6	6 - 9.5	13	6	1749
L2	Nyctalus leisleri	1	1.5 - 3.5	4	22	61799
L2	Pipistrellus nathusii	18	8 - 28	38	6	3409
L2	Pipistrellus pipistrellus	4	3 - 9	16	23	1547099
L2	Pipistrellus pygmaeus	11	9 - 19	34	23	411071
L2	Plecotus auritus	4	2.5 - 8	15	10	23389
L3	Myotis daubentonii	8	3.5 - 9	9	8	6850
L3	Myotis nattereri	6	6 - 14.5	23	5	1749

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L3	Nyctalus leisleri	2	1.5 - 3	3	11	61799
L3	Pipistrellus pipistrellus	2	1.5 - 6	10	12	1547099
L3	Pipistrellus pygmaeus	4	2.5 - 5	6	12	411071
L3	Plecotus auritus	1	1 - 1	1	3	23389
L4	Myotis daubentonii	9	6.5 - 10.5	25	23	6850
L4	Myotis mystacinus	2	2 - 2	2	3	2737
L4	Myotis nattereri	6	6 - 6	6	3	1749
L4	Nyctalus leisleri	2	2.5 - 4.5	8	27	61799
L4	Pipistrellus pipistrellus	0	1.5 - 3	4	26	1547099
L4	Pipistrellus pygmaeus	2	2 - 3	4	25	411071
L4	Plecotus auritus	1	1 - 1	9	6	23389
L5	Myotis daubentonii	1	1 - 6	9	11	6850
L5	Myotis nattereri	10	9.5 - 9.5	13	2	1749
L5	Nyctalus leisleri	2	2 - 5	9	25	61799
L5	Pipistrellus pipistrellus	0	0 - 0	1	25	1547099
L5	Pipistrellus pygmaeus	1	1 - 1.5	2	25	411071
L5	Plecotus auritus	1	1 - 1	1	4	23389
L6	Myotis daubentonii	9	7.5 - 12	16	19	6850
L6	Myotis mystacinus	2	0	2	1	2737
L6	Myotis nattereri	15	6 - 24	30	4	1749
L6	Nyctalus leisleri	4	3 - 5.5	9	27	61799
L6	Pipistrellus nathusii	23	14 - 28	35	16	3409
L6	Pipistrellus pipistrellus	8	6.5 - 11	18	27	1547099
L6	Pipistrellus pygmaeus	1	1.5 - 4	6	26	411071
L6	Plecotus auritus	7	2.5 - 9.5	15	16	23389
L7	Myotis daubentonii	6	5 - 7.5	9	21	6850
L7	Myotis mystacinus	2	2 - 3	4	9	2737
L7	Nyctalus leisleri	3	3.5 - 6.5	11	26	61799
L7	Pipistrellus nathusii	11	8 - 14	14	8	3409
L7	Pipistrellus pipistrellus	0	0 - 0	1	27	1547099
L7	Pipistrellus pygmaeus	1	2 - 4	6	27	411071
L7	Plecotus auritus	4	4 - 4	4	8	23389
L8	Myotis daubentonii	14	12.5 - 17	25	25	6850
L8	Myotis mystacinus	4	3 - 4	4	15	2737
L8	Myotis nattereri	6	6 - 9.5	13	9	1749
L8	Nyctalus leisleri	6	4.5 - 7.5	11	27	61799

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L8	Pipistrellus nathusii	14	11 - 16	18	8	3409
L8	Pipistrellus pipistrellus	1	2 - 6.5	11	27	1547099
L8	Pipistrellus pygmaeus	1	1 - 3	5	26	411071
L8	Plecotus auritus	7	4 - 10.5	20	22	23389
L9	Myotis daubentonii	6	6 - 9	12	22	6850
L9	Myotis mystacinus	4	3.5 - 3.5	5	2	2737
L9	Myotis nattereri	13	6 - 16	23	9	1749
L9	Nyctalus leisleri	6	5 - 18	49	26	61799
L9	Pipistrellus pipistrellus	0	1 - 2	3	27	1547099
L9	Pipistrellus pygmaeus	5	4 - 7	13	26	411071
L9	Plecotus auritus	4	2.5 - 7	13	14	23389

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



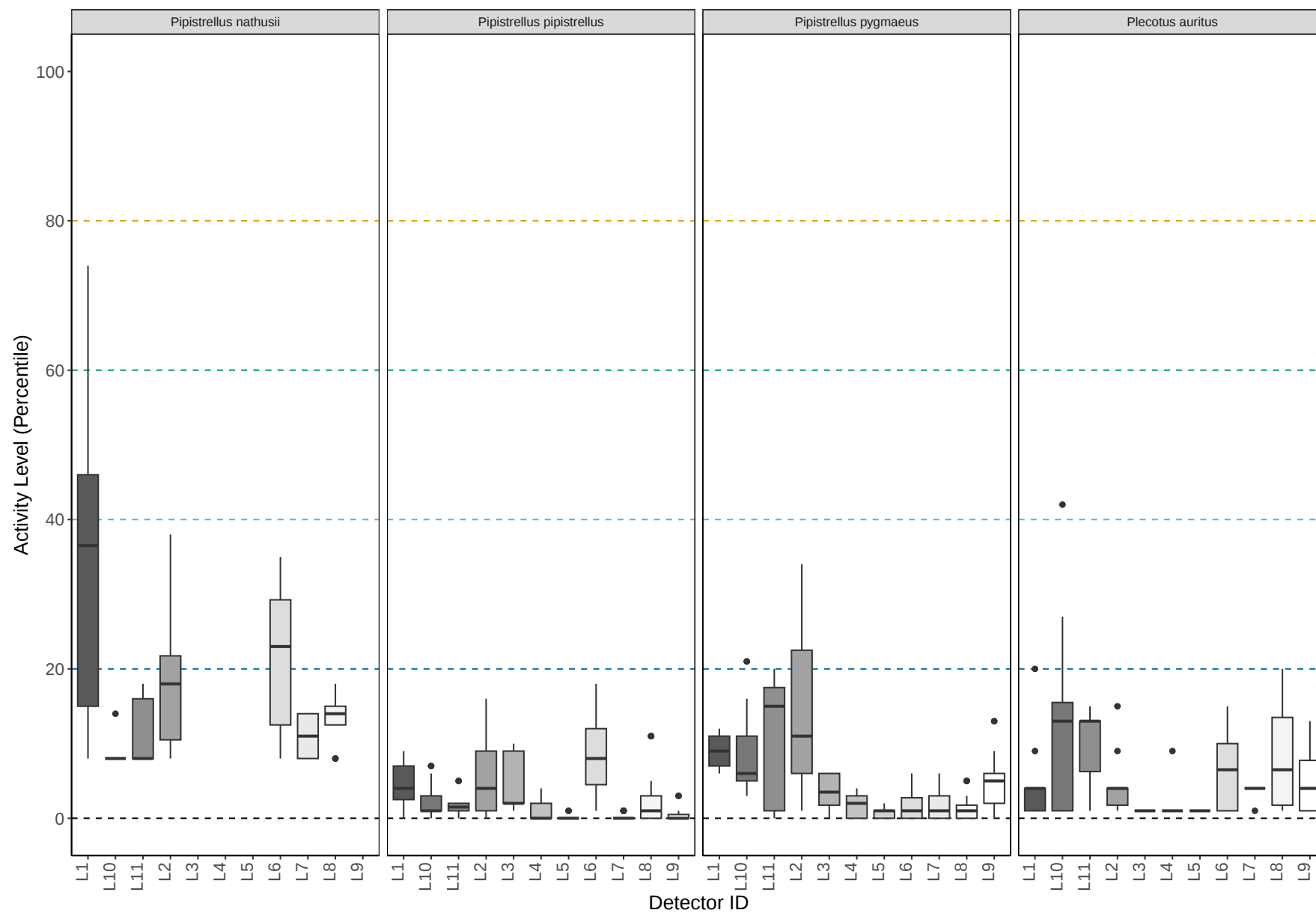
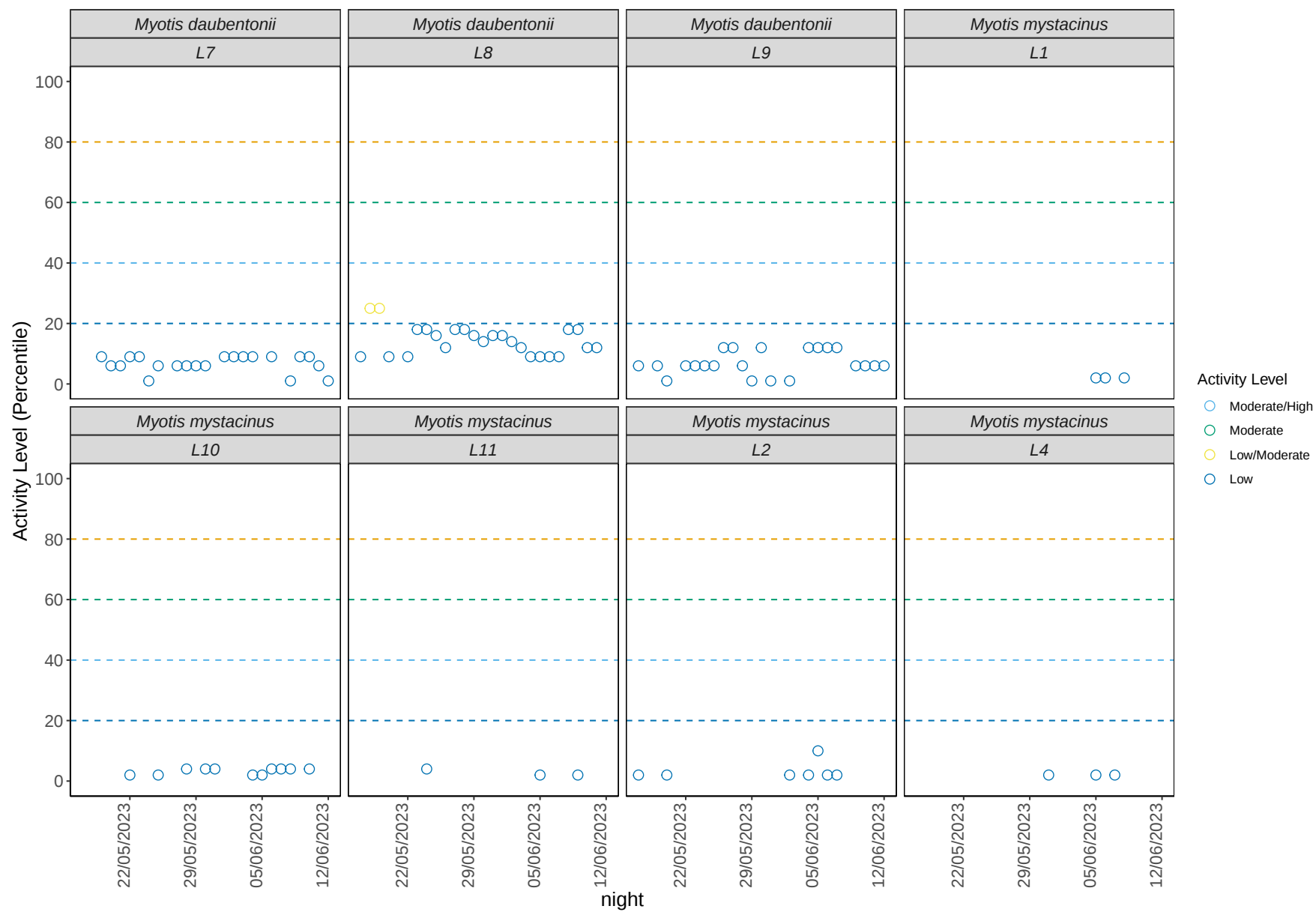
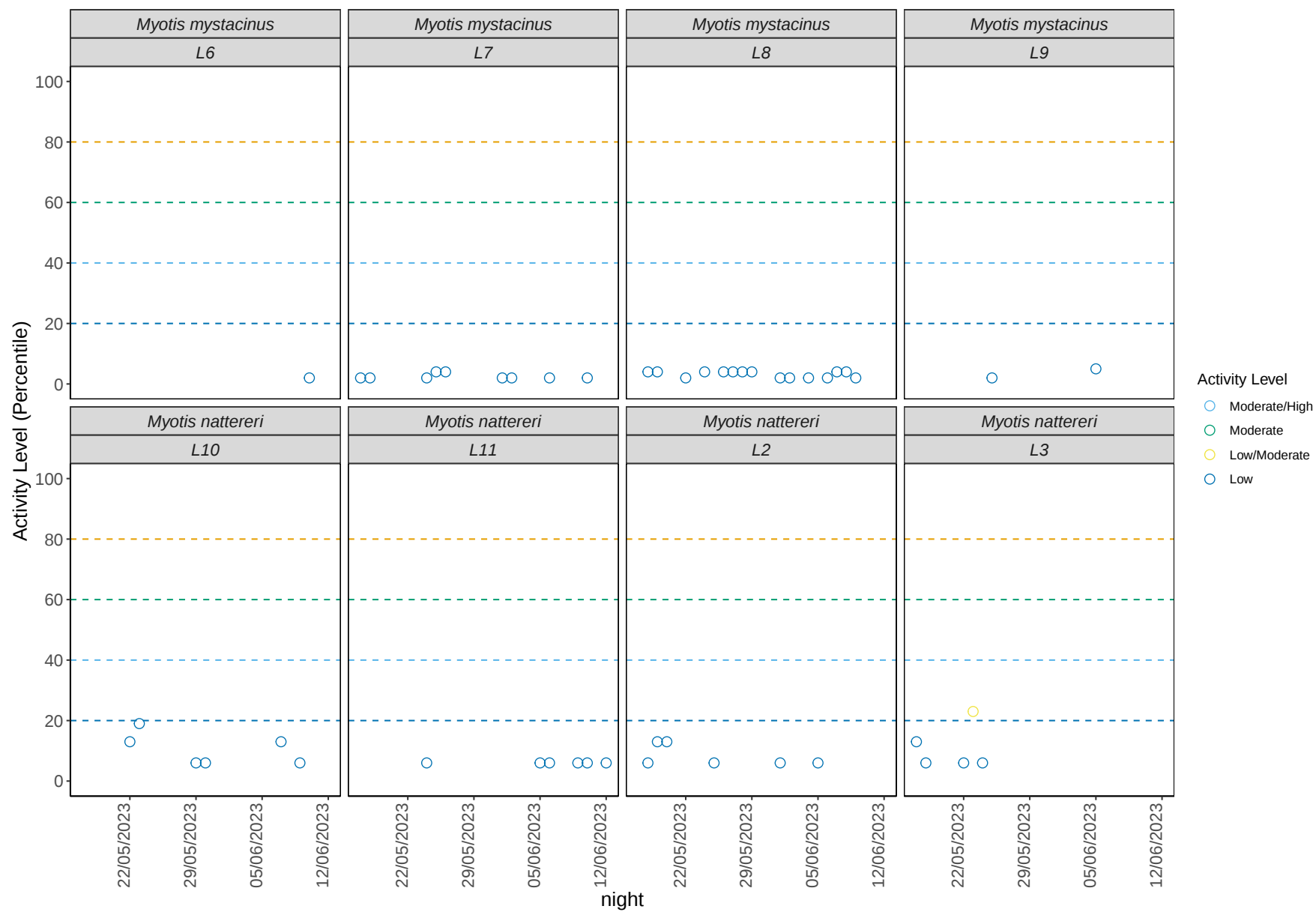
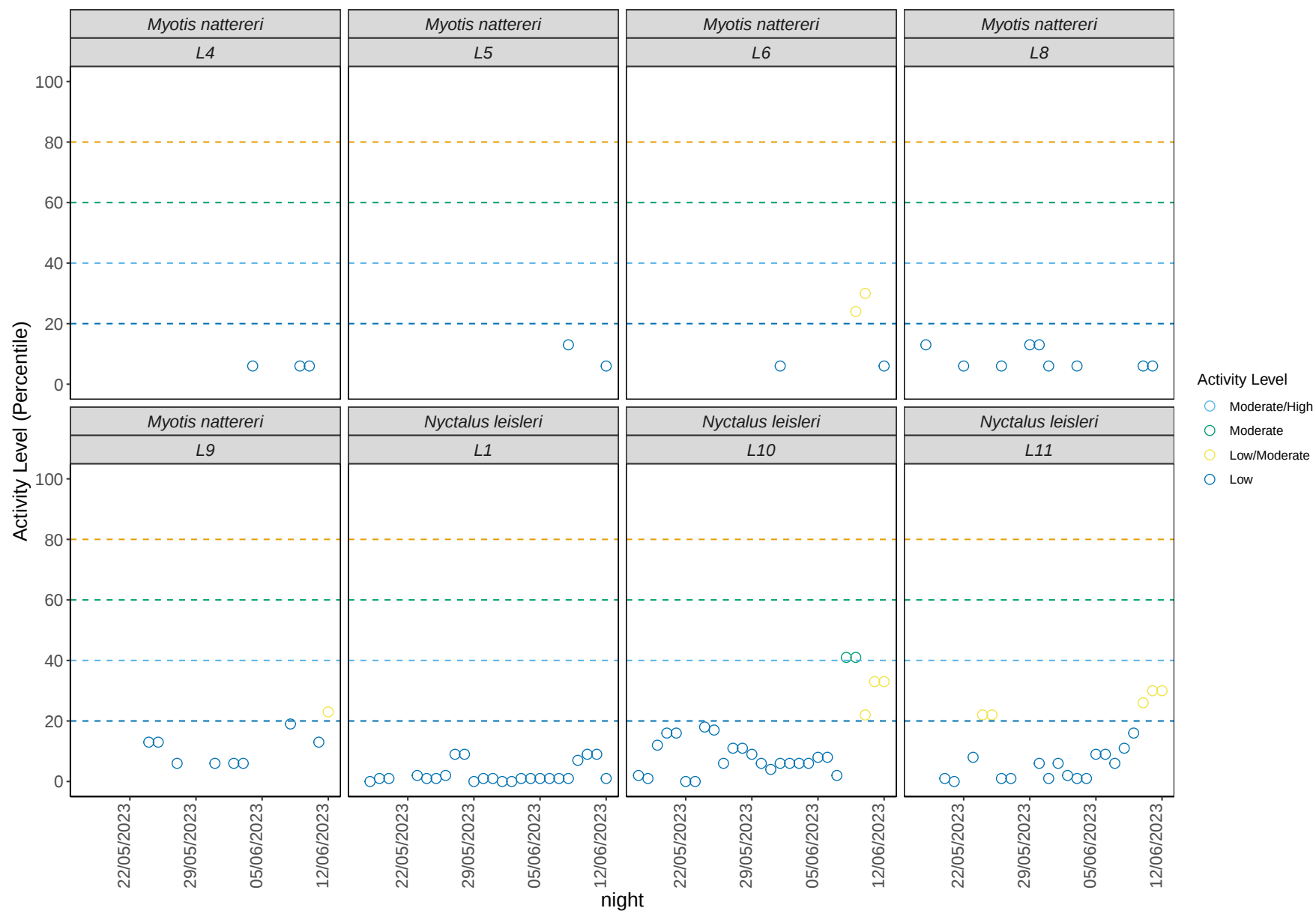
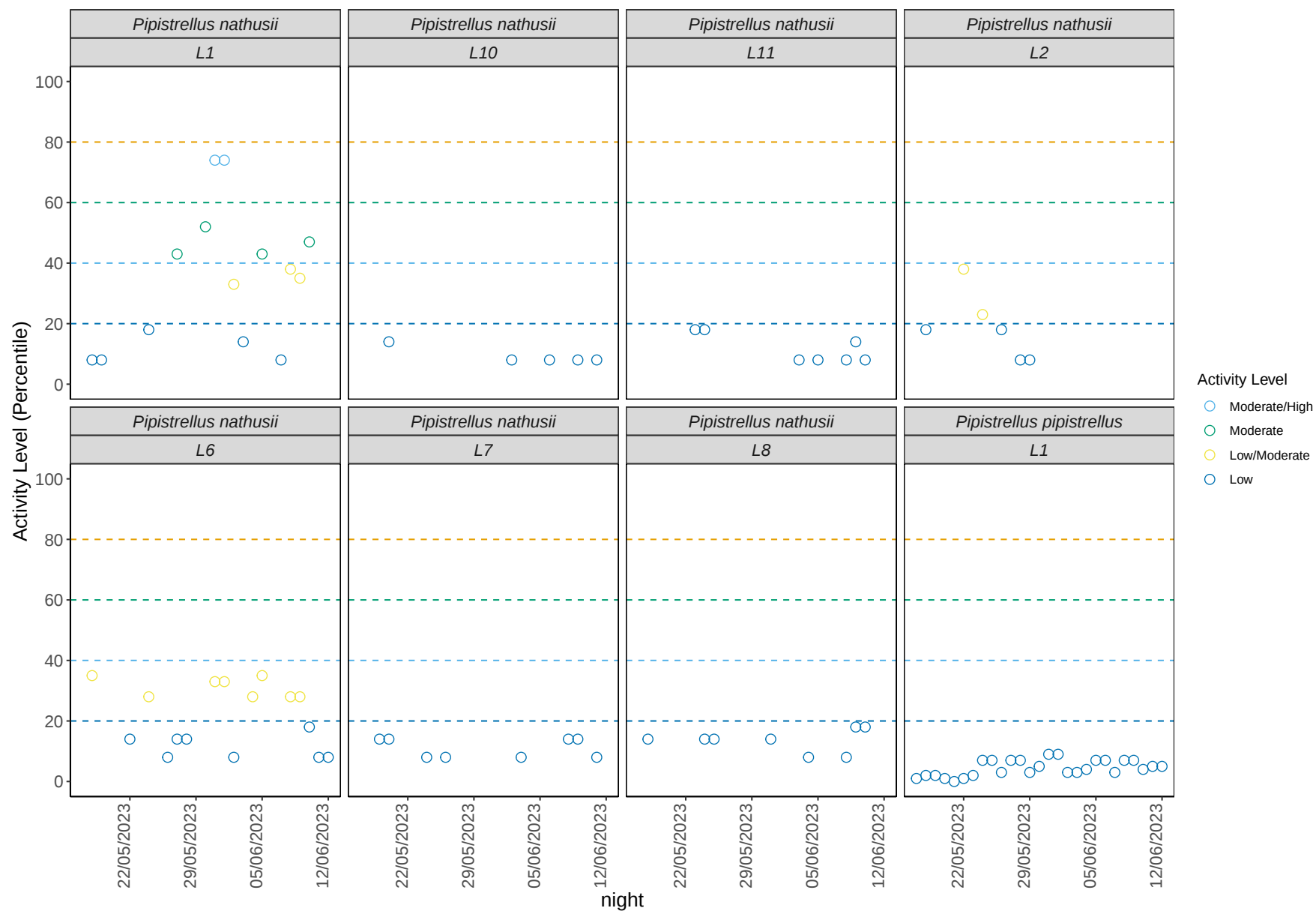


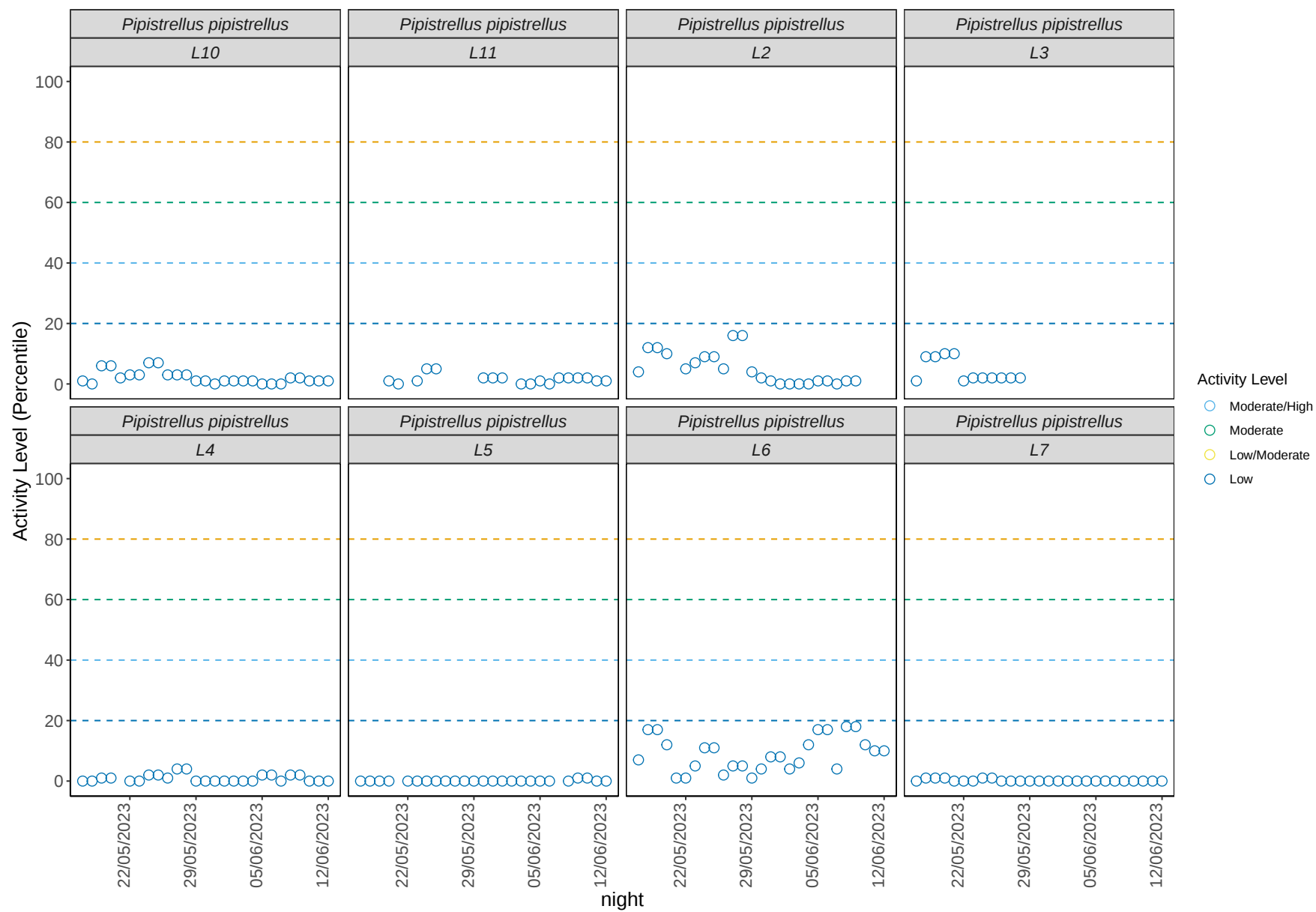
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

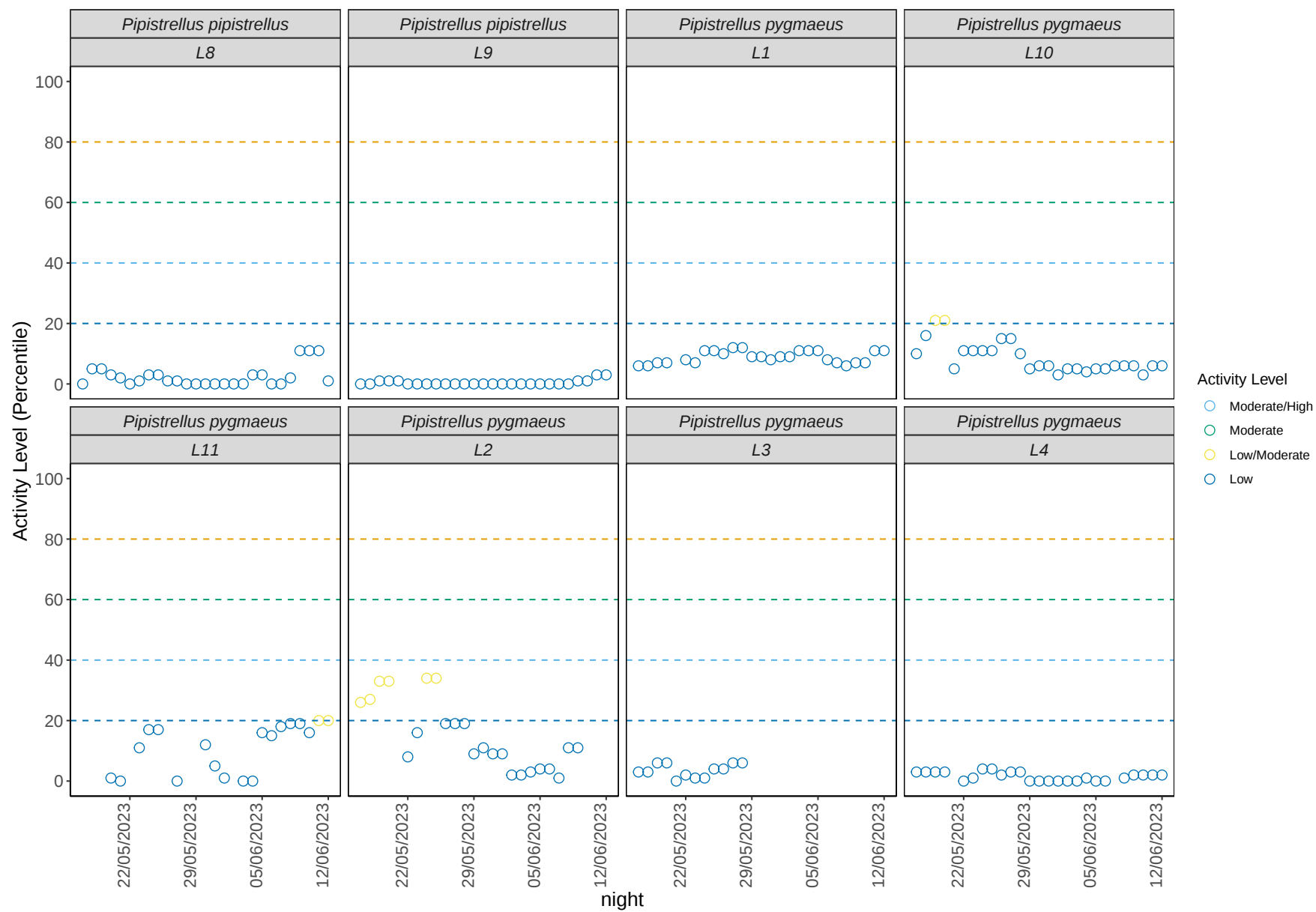


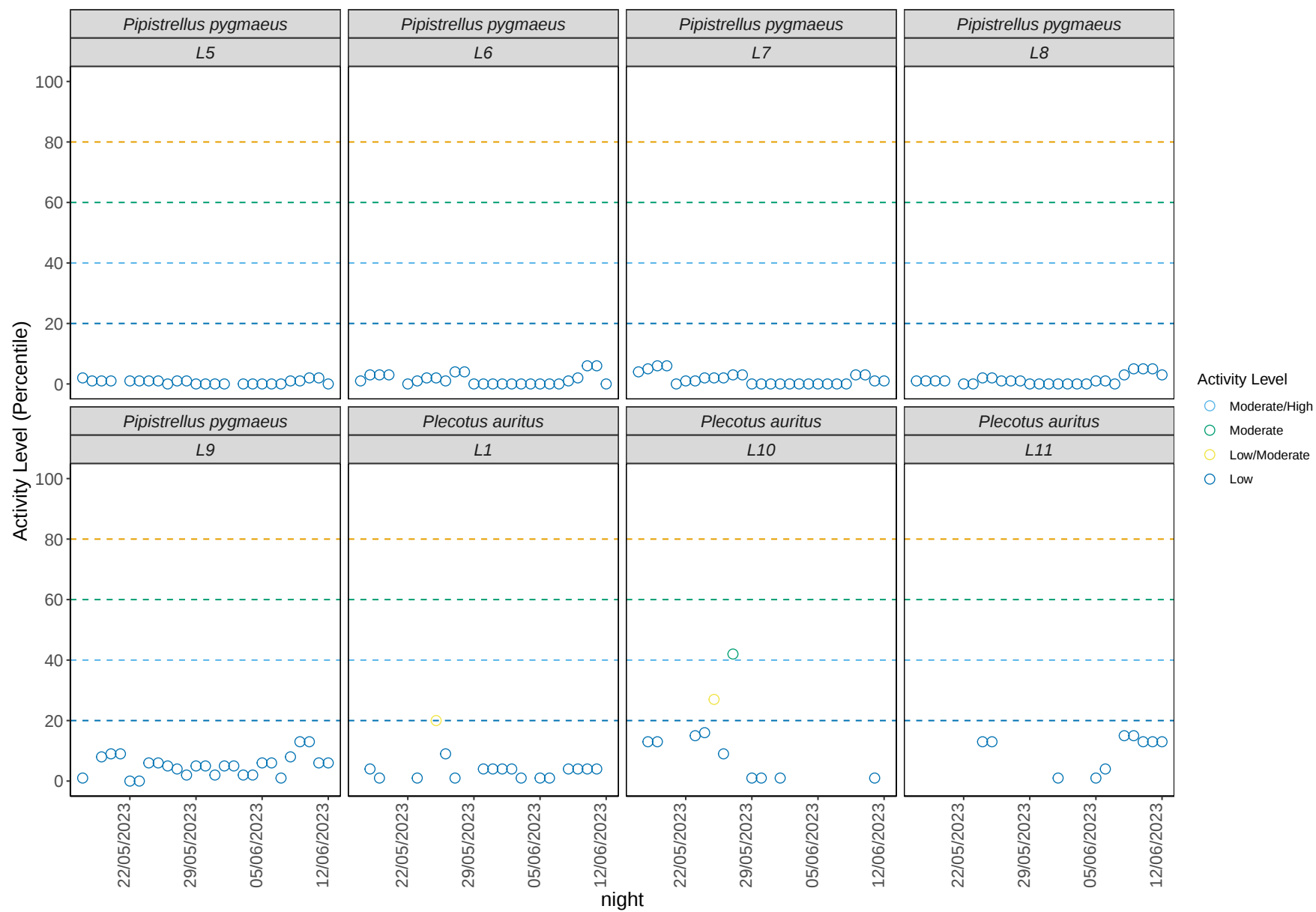


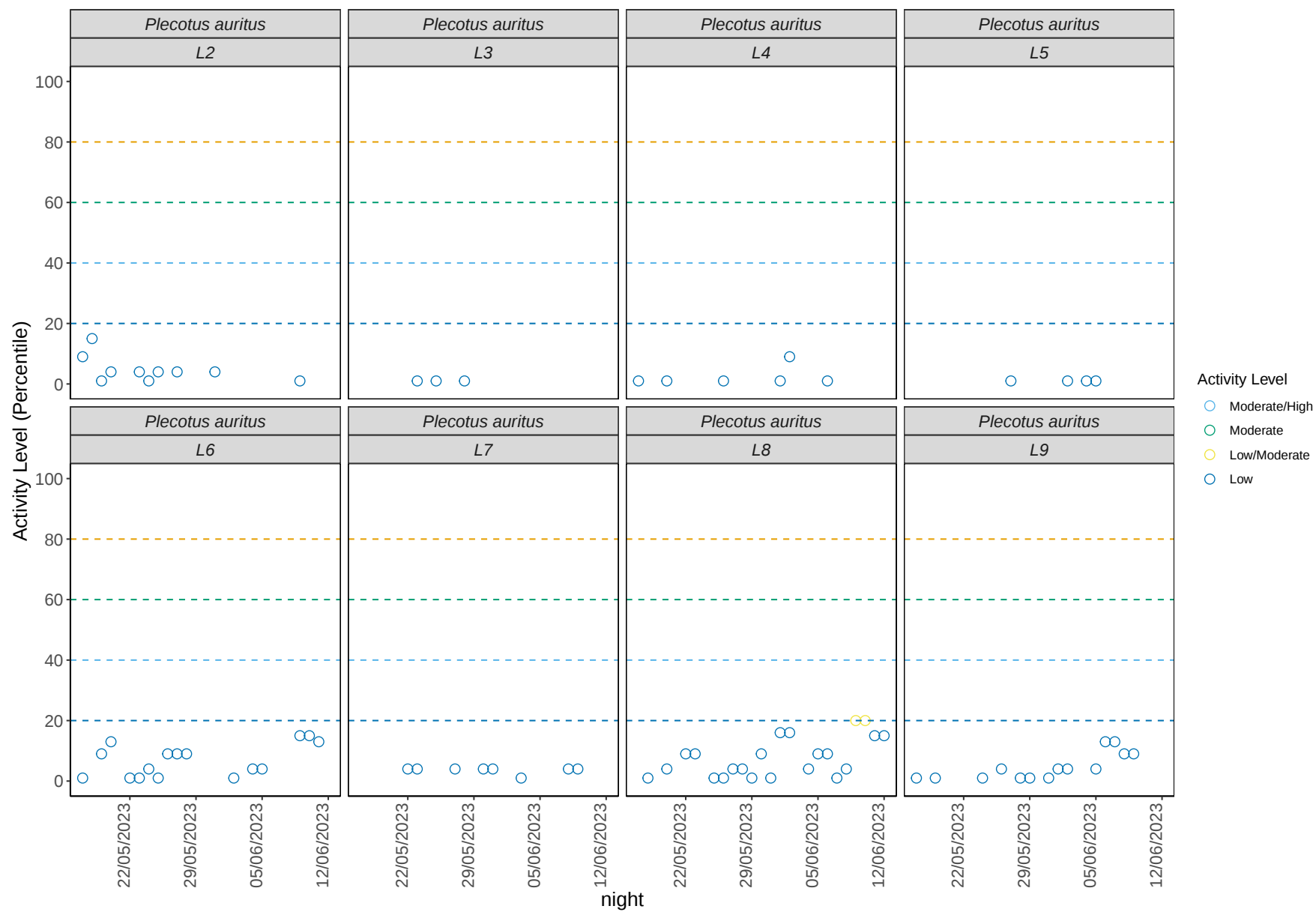












Per Detector, Per Month

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
L1	Myotis daubentonii	May	0	0	0	0	0	11
L1	Myotis daubentonii	Jun	0	0	0	0	0	10
L1	Myotis mystacinus	Jun	0	0	0	0	0	3
L1	Nyctalus leisleri	May	0	0	0	0	0	12
L1	Nyctalus leisleri	Jun	0	0	0	0	0	12
L1	Pipistrellus nathusii	May	0	0	1	2	0	3
L1	Pipistrellus nathusii	Jun	0	0	1	2	3	2
L1	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L1	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L1	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L1	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12
L1	Plecotus auritus	May	0	0	0	0	1	7
L1	Plecotus auritus	Jun	0	0	0	0	0	9
L10	Myotis daubentonii	May	0	0	0	0	0	10
L10	Myotis daubentonii	Jun	0	0	0	0	0	11
L10	Myotis mystacinus	May	0	0	0	0	0	5
L10	Myotis mystacinus	Jun	0	0	0	0	0	6

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
L10	Myotis nattereri	May	0	0	0	0	0	4
L10	Myotis nattereri	Jun	0	0	0	0	0	2
L10	Nyctalus leisleri	May	0	0	0	0	0	15
L10	Nyctalus leisleri	Jun	0	0	0	2	3	7
L10	Pipistrellus nathusii	May	0	0	0	0	0	1
L10	Pipistrellus nathusii	Jun	0	0	0	0	0	4
L10	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L10	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L10	Pipistrellus pygmaeus	May	0	0	0	0	2	13
L10	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12
L10	Plecotus auritus	May	0	0	0	1	1	7
L10	Plecotus auritus	Jun	0	0	0	0	0	2
L11	Myotis daubentonii	May	0	0	0	0	0	2
L11	Myotis daubentonii	Jun	0	0	0	0	0	9
L11	Myotis mystacinus	May	0	0	0	0	0	1
L11	Myotis mystacinus	Jun	0	0	0	0	0	2
L11	Myotis nattereri	May	0	0	0	0	0	1
L11	Myotis nattereri	Jun	0	0	0	0	0	5
L11	Nyctalus leisleri	May	0	0	0	0	2	7
L11	Nyctalus leisleri	Jun	0	0	0	0	3	9
L11	Pipistrellus nathusii	May	0	0	0	0	0	2
L11	Pipistrellus nathusii	Jun	0	0	0	0	0	5

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
L11	Pipistrellus pipistrellus	May	0	0	0	0	0	7
L11	Pipistrellus pipistrellus	Jun	0	0	0	0	0	11
L11	Pipistrellus pygmaeus	May	0	0	0	0	0	8
L11	Pipistrellus pygmaeus	Jun	0	0	0	0	2	9
L11	Plecotus auritus	May	0	0	0	0	0	2
L11	Plecotus auritus	Jun	0	0	0	0	0	8
L2	Myotis daubentonii	May	0	0	0	0	0	9
L2	Myotis daubentonii	Jun	0	0	0	0	0	8
L2	Myotis mystacinus	May	0	0	0	0	0	2
L2	Myotis mystacinus	Jun	0	0	0	0	0	5
L2	Myotis nattereri	May	0	0	0	0	0	4
L2	Myotis nattereri	Jun	0	0	0	0	0	2
L2	Nyctalus leisleri	May	0	0	0	0	0	13
L2	Nyctalus leisleri	Jun	0	0	0	0	0	9
L2	Pipistrellus nathusii	May	0	0	0	0	2	4
L2	Pipistrellus pipistrellus	May	0	0	0	0	0	14
L2	Pipistrellus pipistrellus	Jun	0	0	0	0	0	9
L2	Pipistrellus pygmaeus	May	0	0	0	0	6	8
L2	Pipistrellus pygmaeus	Jun	0	0	0	0	0	9
L2	Plecotus auritus	May	0	0	0	0	0	9
L2	Plecotus auritus	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
L3	Myotis daubentonii	May	0	0	0	0	0	8
L3	Myotis nattereri	May	0	0	0	0	1	4
L3	Nyctalus leisleri	May	0	0	0	0	0	11
L3	Pipistrellus pipistrellus	May	0	0	0	0	0	12
L3	Pipistrellus pygmaeus	May	0	0	0	0	0	12
L3	Plecotus auritus	May	0	0	0	0	0	3
L4	Myotis daubentonii	May	0	0	0	0	1	12
L4	Myotis daubentonii	Jun	0	0	0	0	0	10
L4	Myotis mystacinus	May	0	0	0	0	0	1
L4	Myotis mystacinus	Jun	0	0	0	0	0	2
L4	Myotis nattereri	Jun	0	0	0	0	0	3
L4	Nyctalus leisleri	May	0	0	0	0	0	15
L4	Nyctalus leisleri	Jun	0	0	0	0	0	12
L4	Pipistrellus pipistrellus	May	0	0	0	0	0	14
L4	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L4	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L4	Pipistrellus pygmaeus	Jun	0	0	0	0	0	11
L4	Plecotus auritus	May	0	0	0	0	0	3
L4	Plecotus auritus	Jun	0	0	0	0	0	3
L5	Myotis daubentonii	May	0	0	0	0	0	6
L5	Myotis daubentonii	Jun	0	0	0	0	0	5

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
L5	Myotis nattereri	Jun	0	0	0	0	0	2
L5	Nyctalus leisleri	May	0	0	0	0	0	13
L5	Nyctalus leisleri	Jun	0	0	0	0	0	12
L5	Pipistrellus pipistrellus	May	0	0	0	0	0	14
L5	Pipistrellus pipistrellus	Jun	0	0	0	0	0	11
L5	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L5	Pipistrellus pygmaeus	Jun	0	0	0	0	0	11
L5	Plecotus auritus	May	0	0	0	0	0	1
L5	Plecotus auritus	Jun	0	0	0	0	0	3
L6	Myotis daubentonii	May	0	0	0	0	0	11
L6	Myotis daubentonii	Jun	0	0	0	0	0	8
L6	Myotis mystacinus	Jun	0	0	0	0	0	1
L6	Myotis nattereri	Jun	0	0	0	0	2	2
L6	Nyctalus leisleri	May	0	0	0	0	0	15
L6	Nyctalus leisleri	Jun	0	0	0	0	0	12
L6	Pipistrellus nathusii	May	0	0	0	0	3	4
L6	Pipistrellus nathusii	Jun	0	0	0	0	5	4
L6	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L6	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L6	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L6	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12

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
L6	Plecotus auritus	May	0	0	0	0	0	10
L6	Plecotus auritus	Jun	0	0	0	0	0	6
L7	Myotis daubentonii	May	0	0	0	0	0	11
L7	Myotis daubentonii	Jun	0	0	0	0	0	10
L7	Myotis mystacinus	May	0	0	0	0	0	5
L7	Myotis mystacinus	Jun	0	0	0	0	0	4
L7	Nyctalus leisleri	May	0	0	0	0	0	15
L7	Nyctalus leisleri	Jun	0	0	0	0	0	11
L7	Pipistrellus nathusii	May	0	0	0	0	0	4
L7	Pipistrellus nathusii	Jun	0	0	0	0	0	4
L7	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L7	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L7	Pipistrellus pygmaeus	May	0	0	0	0	0	15
L7	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12
L7	Plecotus auritus	May	0	0	0	0	0	5
L7	Plecotus auritus	Jun	0	0	0	0	0	3
L8	Myotis daubentonii	May	0	0	0	0	2	12
L8	Myotis daubentonii	Jun	0	0	0	0	0	11
L8	Myotis mystacinus	May	0	0	0	0	0	8
L8	Myotis mystacinus	Jun	0	0	0	0	0	7

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
L8	Myotis nattereri	May	0	0	0	0	0	6
L8	Myotis nattereri	Jun	0	0	0	0	0	3
L8	Nyctalus leisleri	May	0	0	0	0	0	15
L8	Nyctalus leisleri	Jun	0	0	0	0	0	12
L8	Pipistrellus nathusii	May	0	0	0	0	0	4
L8	Pipistrellus nathusii	Jun	0	0	0	0	0	4
L8	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L8	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12
L8	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L8	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12
L8	Plecotus auritus	May	0	0	0	0	0	11
L8	Plecotus auritus	Jun	0	0	0	0	2	9
L9	Myotis daubentonii	May	0	0	0	0	0	13
L9	Myotis daubentonii	Jun	0	0	0	0	0	9
L9	Myotis mystacinus	May	0	0	0	0	0	1
L9	Myotis mystacinus	Jun	0	0	0	0	0	1
L9	Myotis nattereri	May	0	0	0	0	0	4
L9	Myotis nattereri	Jun	0	0	0	0	1	4
L9	Nyctalus leisleri	May	0	0	0	0	2	12
L9	Nyctalus leisleri	Jun	0	0	0	2	1	9
L9	Pipistrellus pipistrellus	May	0	0	0	0	0	15
L9	Pipistrellus pipistrellus	Jun	0	0	0	0	0	12

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
L9	Pipistrellus pygmaeus	May	0	0	0	0	0	14
L9	Pipistrellus pygmaeus	Jun	0	0	0	0	0	12
L9	Plecotus auritus	May	0	0	0	0	0	7
L9	Plecotus auritus	Jun	0	0	0	0	0	7

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
L1	Myotis daubentonii	May	6	3.5 - 9	12	11
L1	Myotis daubentonii	Jun	6	3.5 - 9	12	10
L1	Myotis mystacinus	Jun	2	2 - 2	2	3
L1	Nyctalus leisleri	May	1	1 - 5	9	12
L1	Nyctalus leisleri	Jun	1	1 - 5	9	12
L1	Pipistrellus nathusii	May	31	21.5 - 47.5	74	6
L1	Pipistrellus nathusii	Jun	37	21.5 - 47.5	74	8
L1	Pipistrellus pipistrellus	May	3	3.5 - 6	9	15
L1	Pipistrellus pipistrellus	Jun	5	3.5 - 6	9	12
L1	Pipistrellus pygmaeus	May	9	8 - 9.5	12	14
L1	Pipistrellus pygmaeus	Jun	9	8 - 9.5	11	12
L1	Plecotus auritus	May	4	2.5 - 4	20	8
L1	Plecotus auritus	Jun	4	2.5 - 4	4	9
L10	Myotis daubentonii	May	9	9 - 13	14	10
L10	Myotis daubentonii	Jun	14	9 - 13	16	11
L10	Myotis mystacinus	May	4	3 - 4	4	5
L10	Myotis mystacinus	Jun	4	3 - 4	4	6
L10	Myotis nattereri	May	10	6 - 13	19	4
L10	Myotis nattereri	Jun	10	6 - 13	13	2
L10	Nyctalus leisleri	May	9	7.5 - 19	18	15
L10	Nyctalus leisleri	Jun	8	7.5 - 19	41	12
L10	Pipistrellus nathusii	May	14	8 - 8	14	1
L10	Pipistrellus nathusii	Jun	8	8 - 8	8	4
L10	Pipistrellus pipistrellus	May	3	1.5 - 3.5	7	15
L10	Pipistrellus pipistrellus	Jun	1	1.5 - 3.5	2	12
L10	Pipistrellus pygmaeus	May	11	5.5 - 10.5	21	15
L10	Pipistrellus pygmaeus	Jun	5	5.5 - 10.5	6	12
L10	Plecotus auritus	May	13	5 - 21.5	42	9
L10	Plecotus auritus	Jun	1	5 - 21.5	1	2
L11	Myotis daubentonii	May	9	5 - 9	9	2
L11	Myotis daubentonii	Jun	6	5 - 9	9	9
L11	Myotis mystacinus	May	4	2 - 2	4	1
L11	Myotis mystacinus	Jun	2	2 - 2	2	2

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L11	Myotis nattereri	May	6	6 - 6	6	1
L11	Myotis nattereri	Jun	6	6 - 6	6	5
L11	Nyctalus leisleri	May	1	4.5 - 15.5	22	9
L11	Nyctalus leisleri	Jun	9	4.5 - 15.5	30	12
L11	Pipistrellus nathusii	May	18	8 - 13	18	2
L11	Pipistrellus nathusii	Jun	8	8 - 13	14	5
L11	Pipistrellus pipistrellus	May	2	1.5 - 3	5	7
L11	Pipistrellus pipistrellus	Jun	1	1.5 - 3	2	11
L11	Pipistrellus pygmaeus	May	8	10 - 18	17	8
L11	Pipistrellus pygmaeus	Jun	16	10 - 18	20	11
L11	Plecotus auritus	May	13	7 - 14	13	2
L11	Plecotus auritus	Jun	13	7 - 14	15	8
L2	Myotis daubentonii	May	6	3.5 - 7.5	16	9
L2	Myotis daubentonii	Jun	6	3.5 - 7.5	9	8
L2	Myotis mystacinus	May	2	2 - 2	2	2
L2	Myotis mystacinus	Jun	2	2 - 2	10	5
L2	Myotis nattereri	May	10	6 - 9.5	13	4
L2	Myotis nattereri	Jun	6	6 - 9.5	6	2
L2	Nyctalus leisleri	May	2	1.5 - 3.5	4	13
L2	Nyctalus leisleri	Jun	0	1.5 - 3.5	1	9
L2	Pipistrellus nathusii	May	18	8 - 28	38	6
L2	Pipistrellus pipistrellus	May	8	3 - 9	16	14
L2	Pipistrellus pipistrellus	Jun	0	3 - 9	1	9
L2	Pipistrellus pygmaeus	May	19	9 - 19	34	14
L2	Pipistrellus pygmaeus	Jun	4	9 - 19	11	9
L2	Plecotus auritus	May	4	2.5 - 8	15	9
L2	Plecotus auritus	Jun	1	2.5 - 8	1	1
L3	Myotis daubentonii	May	8	3.5 - 9	9	8
L3	Myotis nattereri	May	6	6 - 14.5	23	5
L3	Nyctalus leisleri	May	2	1.5 - 3	3	11
L3	Pipistrellus pipistrellus	May	2	1.5 - 6	10	12
L3	Pipistrellus pygmaeus	May	4	2.5 - 5	6	12
L3	Plecotus auritus	May	1	1 - 1	1	3
L4	Myotis daubentonii	May	12	6.5 - 10.5	25	13
L4	Myotis daubentonii	Jun	6	6.5 - 10.5	12	10
L4	Myotis mystacinus	May	2	2 - 2	2	1

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L4	Myotis mystacinus	Jun	2	2 - 2	2	2
L4	Myotis nattereri	Jun	6	6 - 6	6	3
L4	Nyctalus leisleri	May	3	2.5 - 4.5	8	15
L4	Nyctalus leisleri	Jun	2	2.5 - 4.5	6	12
L4	Pipistrellus pipistrellus	May	1	1.5 - 3	4	14
L4	Pipistrellus pipistrellus	Jun	0	1.5 - 3	2	12
L4	Pipistrellus pygmaeus	May	3	2 - 3	4	14
L4	Pipistrellus pygmaeus	Jun	1	2 - 3	2	11
L4	Plecotus auritus	May	1	1 - 1	1	3
L4	Plecotus auritus	Jun	1	1 - 1	9	3
L5	Myotis daubentonii	May	1	1 - 6	6	6
L5	Myotis daubentonii	Jun	9	1 - 6	9	5
L5	Myotis nattereri	Jun	10	9.5 - 9.5	13	2
L5	Nyctalus leisleri	May	2	2 - 5	9	13
L5	Nyctalus leisleri	Jun	2	2 - 5	9	12
L5	Pipistrellus pipistrellus	May	0	0 - 0	0	14
L5	Pipistrellus pipistrellus	Jun	0	0 - 0	1	11
L5	Pipistrellus pygmaeus	May	1	1 - 1.5	2	14
L5	Pipistrellus pygmaeus	Jun	0	1 - 1.5	2	11
L5	Plecotus auritus	May	1	1 - 1	1	1
L5	Plecotus auritus	Jun	1	1 - 1	1	3
L6	Myotis daubentonii	May	9	7.5 - 12	12	11
L6	Myotis daubentonii	Jun	11	7.5 - 12	16	8
L6	Myotis mystacinus	Jun	2	0	2	1
L6	Myotis nattereri	Jun	15	6 - 24	30	4
L6	Nyctalus leisleri	May	4	3 - 5.5	9	15
L6	Nyctalus leisleri	Jun	4	3 - 5.5	9	12
L6	Pipistrellus nathusii	May	14	14 - 28	35	7
L6	Pipistrellus nathusii	Jun	28	14 - 28	35	9
L6	Pipistrellus pipistrellus	May	5	6.5 - 11	17	15
L6	Pipistrellus pipistrellus	Jun	11	6.5 - 11	18	12
L6	Pipistrellus pygmaeus	May	2	1.5 - 4	4	14
L6	Pipistrellus pygmaeus	Jun	0	1.5 - 4	6	12
L6	Plecotus auritus	May	7	2.5 - 9.5	13	10
L6	Plecotus auritus	Jun	9	2.5 - 9.5	15	6
L7	Myotis daubentonii	May	6	5 - 7.5	9	11

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L7	Myotis daubentonii	Jun	9	5 - 7.5	9	10
L7	Myotis mystacinus	May	2	2 - 3	4	5
L7	Myotis mystacinus	Jun	2	2 - 3	2	4
L7	Nyctalus leisleri	May	4	3.5 - 6.5	11	15
L7	Nyctalus leisleri	Jun	3	3.5 - 6.5	6	11
L7	Pipistrellus nathusii	May	11	8 - 14	14	4
L7	Pipistrellus nathusii	Jun	11	8 - 14	14	4
L7	Pipistrellus pipistrellus	May	0	0 - 0	1	15
L7	Pipistrellus pipistrellus	Jun	0	0 - 0	0	12
L7	Pipistrellus pygmaeus	May	2	2 - 4	6	15
L7	Pipistrellus pygmaeus	Jun	0	2 - 4	3	12
L7	Plecotus auritus	May	4	4 - 4	4	5
L7	Plecotus auritus	Jun	4	4 - 4	4	3
L8	Myotis daubentonii	May	16	12.5 - 17	25	14
L8	Myotis daubentonii	Jun	12	12.5 - 17	18	11
L8	Myotis mystacinus	May	4	3 - 4	4	8
L8	Myotis mystacinus	Jun	2	3 - 4	4	7
L8	Myotis nattereri	May	10	6 - 9.5	13	6
L8	Myotis nattereri	Jun	6	6 - 9.5	6	3
L8	Nyctalus leisleri	May	6	4.5 - 7.5	11	15
L8	Nyctalus leisleri	Jun	5	4.5 - 7.5	11	12
L8	Pipistrellus nathusii	May	14	11 - 16	14	4
L8	Pipistrellus nathusii	Jun	13	11 - 16	18	4
L8	Pipistrellus pipistrellus	May	1	2 - 6.5	5	15
L8	Pipistrellus pipistrellus	Jun	2	2 - 6.5	11	12
L8	Pipistrellus pygmaeus	May	1	1 - 3	2	14
L8	Pipistrellus pygmaeus	Jun	1	1 - 3	5	12
L8	Plecotus auritus	May	4	4 - 10.5	9	11
L8	Plecotus auritus	Jun	15	4 - 10.5	20	11
L9	Myotis daubentonii	May	6	6 - 9	12	13
L9	Myotis daubentonii	Jun	6	6 - 9	12	9
L9	Myotis mystacinus	May	2	3.5 - 3.5	2	1
L9	Myotis mystacinus	Jun	5	3.5 - 3.5	5	1
L9	Myotis nattereri	May	10	6 - 16	13	4
L9	Myotis nattereri	Jun	13	6 - 16	23	5
L9	Nyctalus leisleri	May	6	5 - 18	30	14

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L9	Nyctalus leisleri	Jun	6	5 - 18	49	12
L9	Pipistrellus pipistrellus	May	0	1 - 2	1	15
L9	Pipistrellus pipistrellus	Jun	0	1 - 2	3	12
L9	Pipistrellus pygmaeus	May	5	4 - 7	9	14
L9	Pipistrellus pygmaeus	Jun	6	4 - 7	13	12
L9	Plecotus auritus	May	1	2.5 - 7	4	7
L9	Plecotus auritus	Jun	9	2.5 - 7	13	7

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 daubentonii	0	0	0	0	3	196
Myotis mystacinus	0	0	0	0	0	54
Myotis nattereri	0	0	0	0	4	46
Nyctalus leisleri	0	0	0	4	11	248
Pipistrellus nathusii	0	0	2	4	13	45
Pipistrellus pipistrellus	0	0	0	0	0	266
Pipistrellus pygmaeus	0	0	0	0	10	252
Plecotus auritus	0	0	0	1	4	116

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	9	9 - 13	25	199
Myotis mystacinus	2	3.5 - 3.5	10	54
Myotis nattereri	6	9.5 - 9.5	30	50
Nyctalus leisleri	4	7.5 - 19	49	263
Pipistrellus nathusii	14	8 - 8	74	64
Pipistrellus pipistrellus	1	6.5 - 11	18	266
Pipistrellus pygmaeus	3	9 - 19	34	262
Plecotus auritus	4	7 - 14	42	121

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

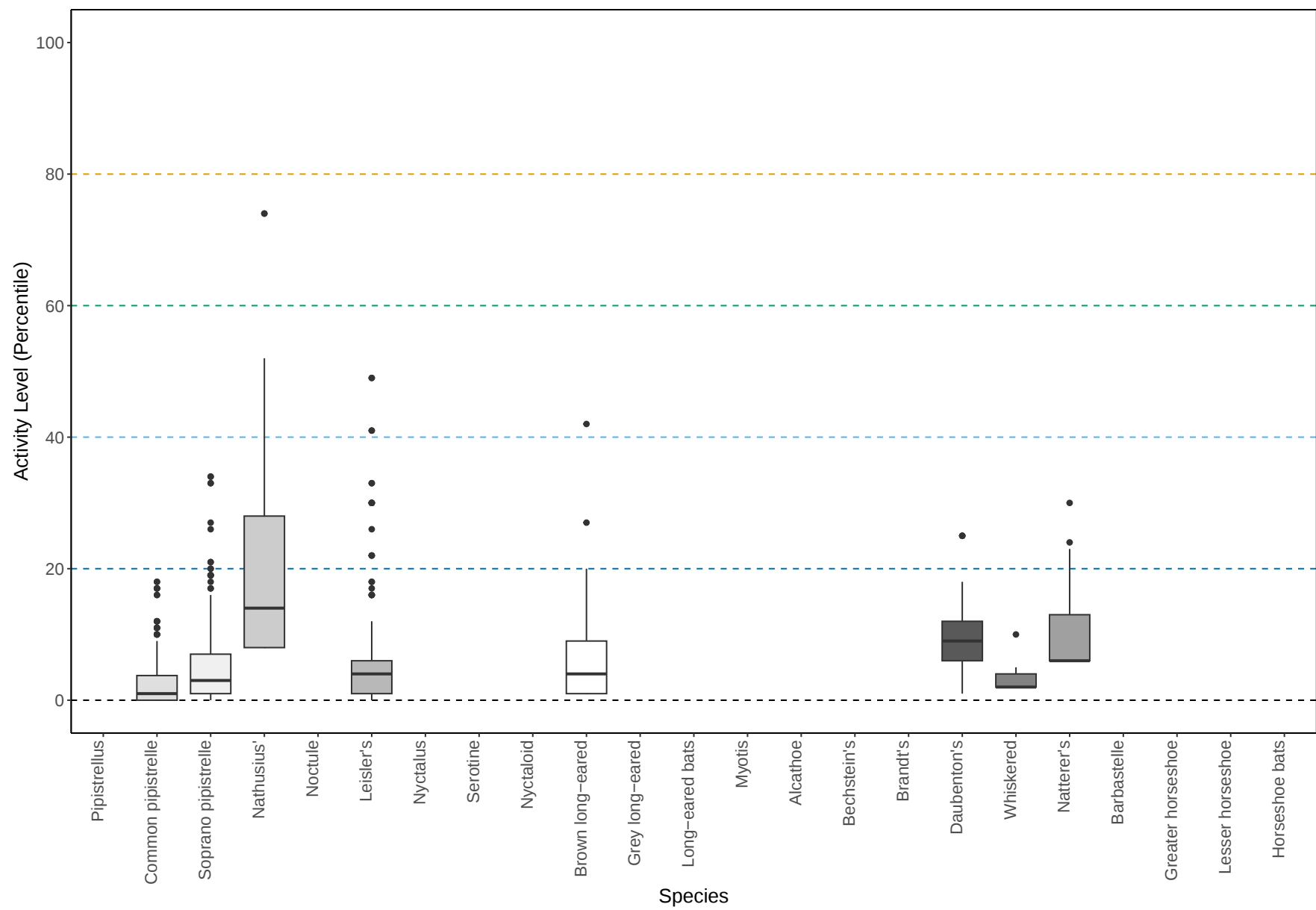
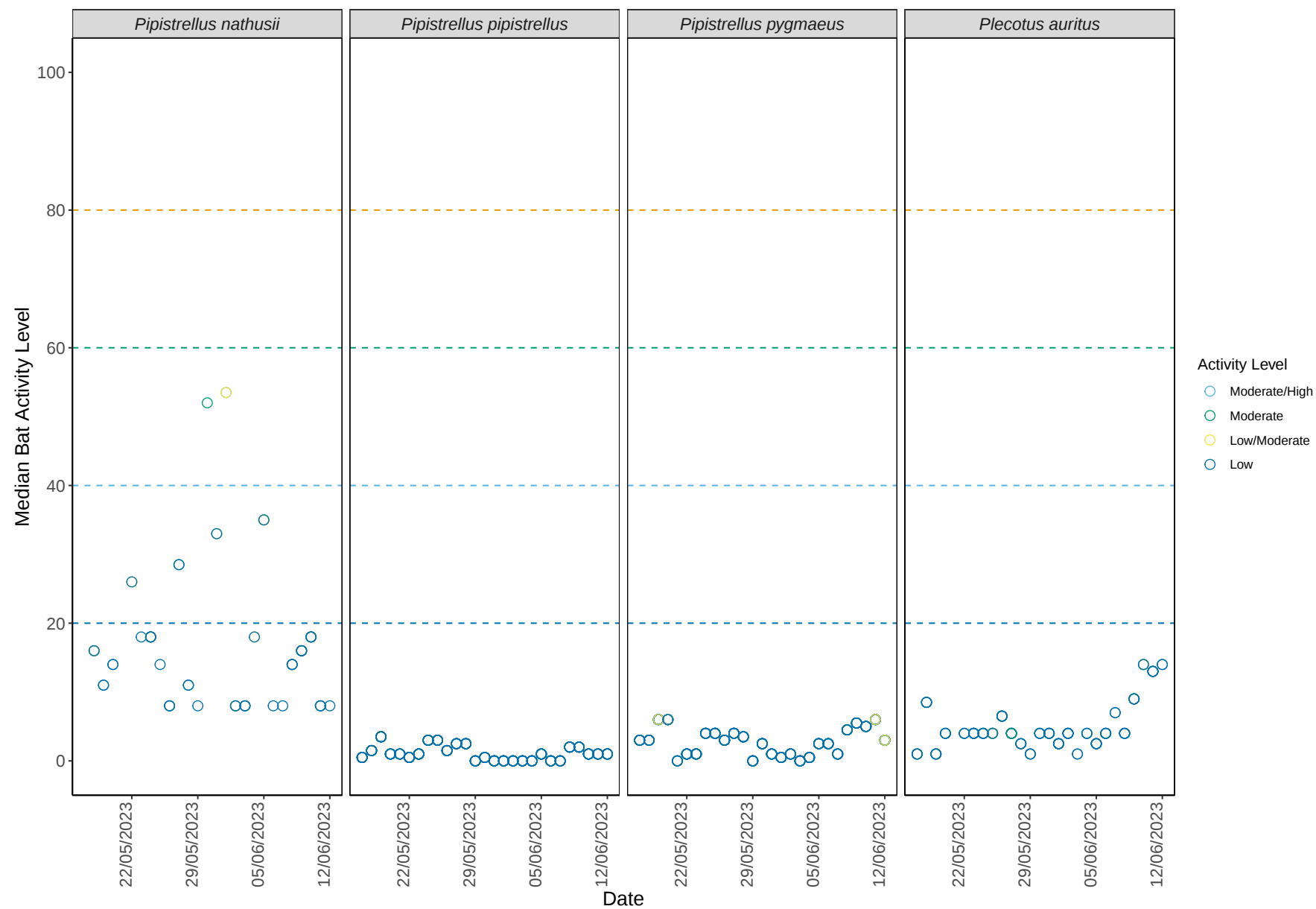


Figure 5. The median activity levels of bats recorded across all detectors each night.



Per Site, Per Month

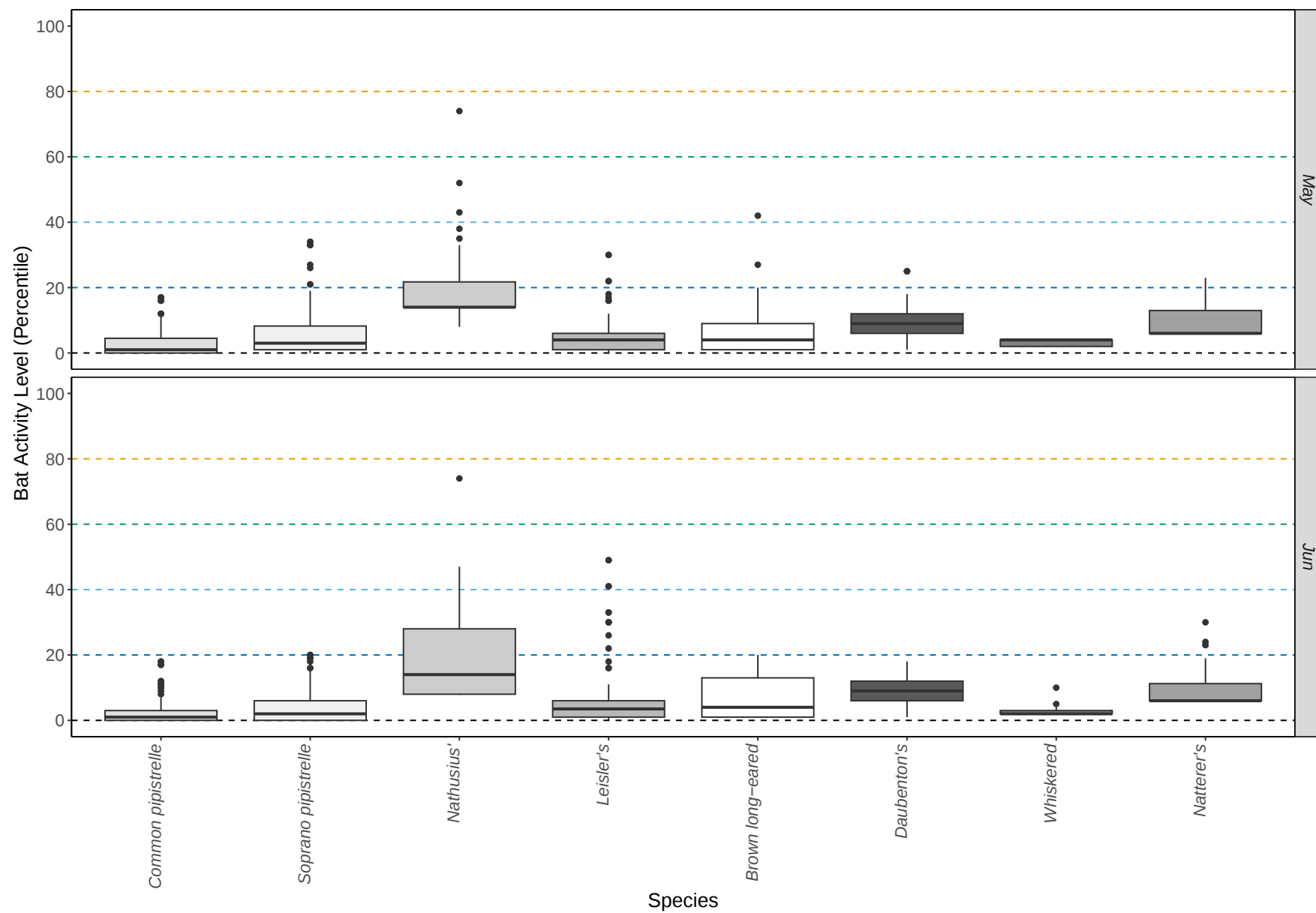
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	May	0	0	0	0	3	105
Myotis daubentonii	Jun	0	0	0	0	0	91
Myotis mystacinus	May	0	0	0	0	0	23
Myotis mystacinus	Jun	0	0	0	0	0	31
Myotis nattereri	May	0	0	0	0	1	23
Myotis nattereri	Jun	0	0	0	0	3	23
Nyctalus leisleri	May	0	0	0	0	4	143
Nyctalus leisleri	Jun	0	0	0	4	7	105
Pipistrellus nathusii	May	0	0	1	2	5	22
Pipistrellus nathusii	Jun	0	0	1	2	8	23
Pipistrellus pipistrellus	May	0	0	0	0	0	151
Pipistrellus pipistrellus	Jun	0	0	0	0	0	115
Pipistrellus pygmaeus	May	0	0	0	0	8	140
Pipistrellus pygmaeus	Jun	0	0	0	0	2	112
Plecotus auritus	May	0	0	0	1	2	65
Plecotus auritus	Jun	0	0	0	0	2	51

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 daubentonii	May	9	9 - 13	25	108
Myotis daubentonii	Jun	9	9 - 13	18	91
Myotis mystacinus	May	4	3.5 - 3.5	4	23
Myotis mystacinus	Jun	2	3.5 - 3.5	10	31
Myotis nattereri	May	6	6 - 9.5	23	24
Myotis nattereri	Jun	6	9.5 - 9.5	30	26
Nyctalus leisleri	May	4	7.5 - 19	30	147
Nyctalus leisleri	Jun	4	7.5 - 19	49	116
Pipistrellus nathusii	May	14	8 - 8	74	30
Pipistrellus nathusii	Jun	14	8 - 8	74	34
Pipistrellus pipistrellus	May	1	6.5 - 11	17	151
Pipistrellus pipistrellus	Jun	1	6.5 - 11	18	115
Pipistrellus pygmaeus	May	3	9 - 19	34	148
Pipistrellus pygmaeus	Jun	2	9 - 19	20	114
Plecotus auritus	May	4	7 - 14	42	68
Plecotus auritus	Jun	4	7 - 14	20	53

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



Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

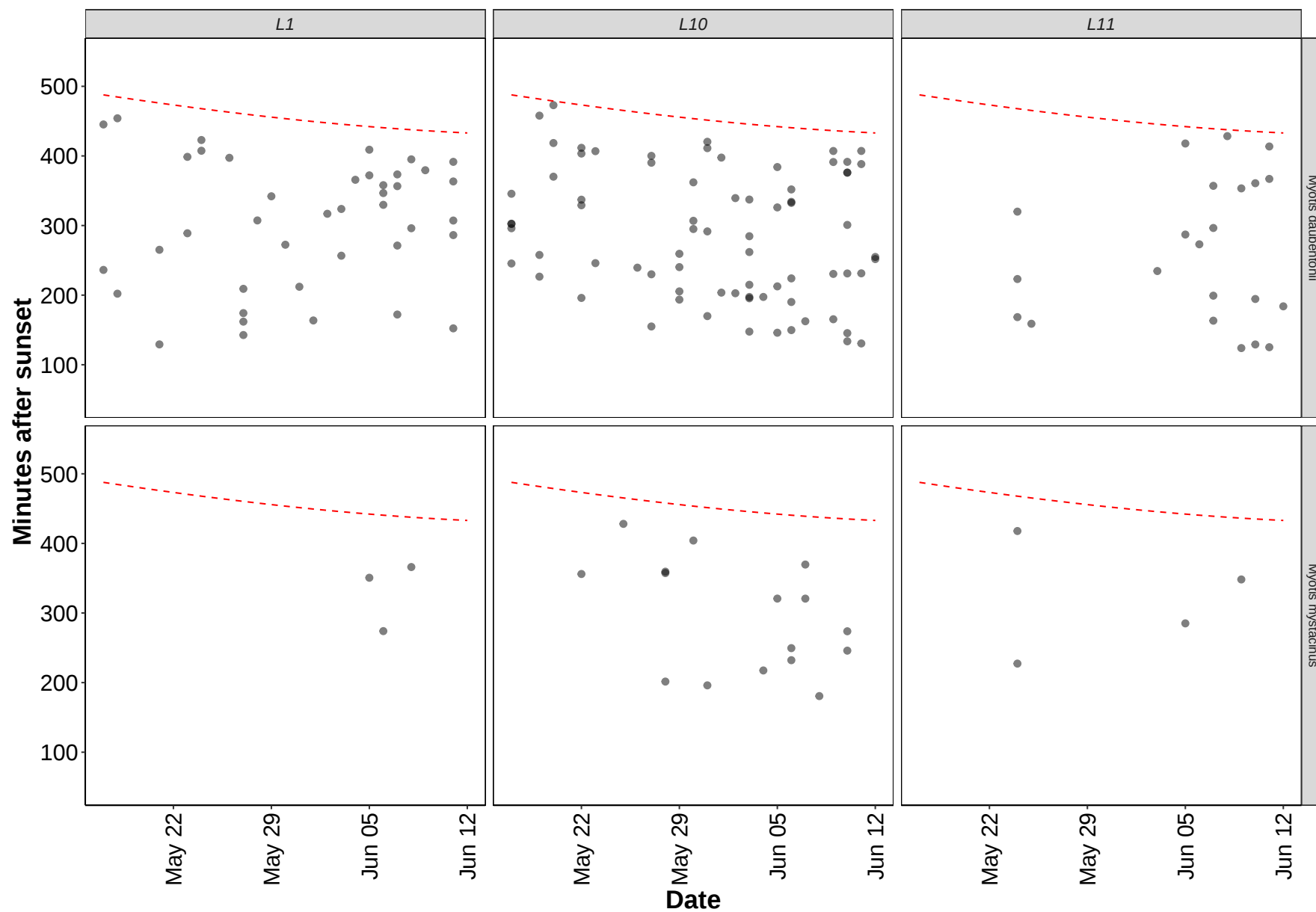
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

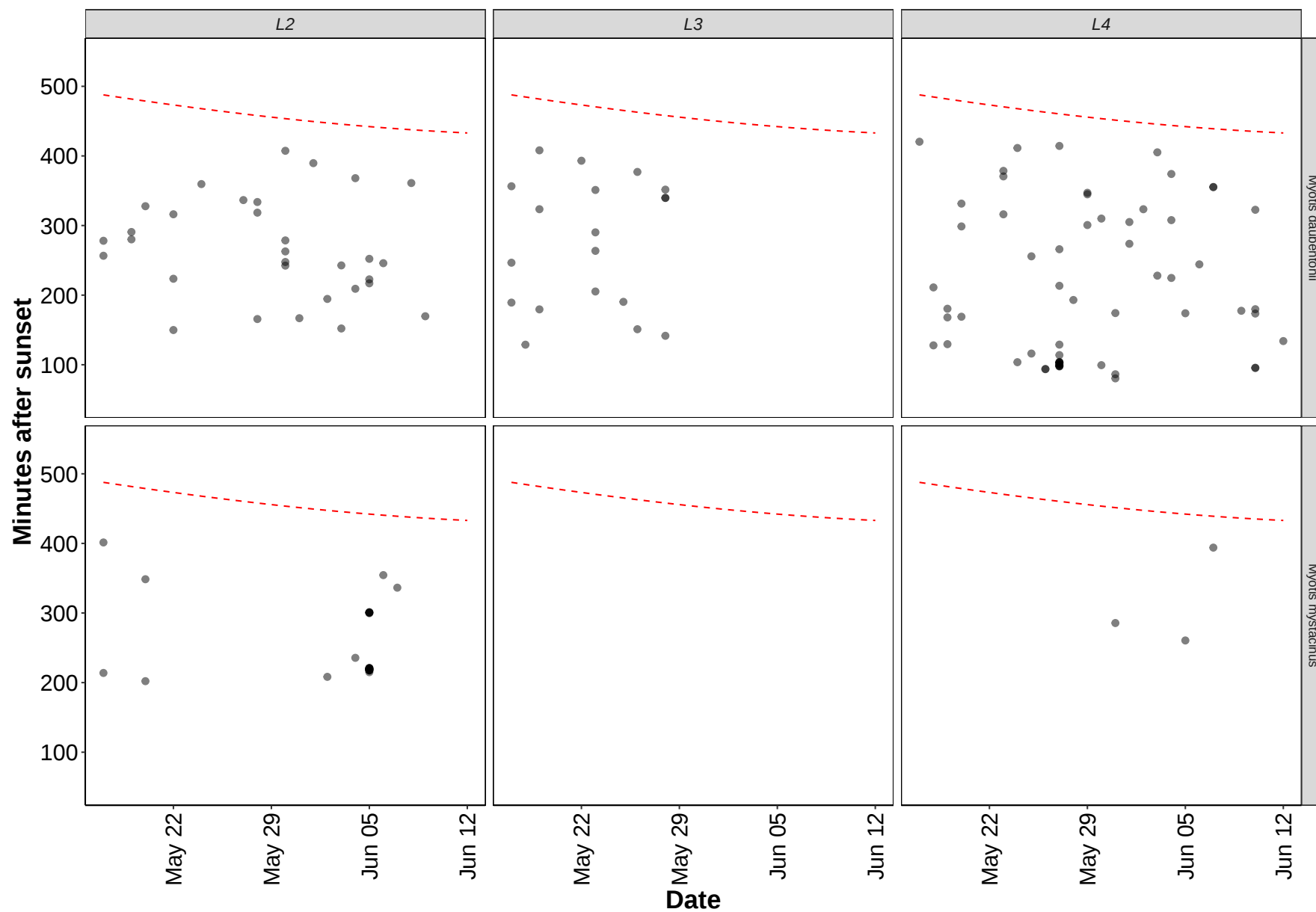
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2023-05-17	20:22	04:30	8.1
2023-05-18	20:24	04:28	8.1
2023-05-19	20:25	04:27	8.0
2023-05-20	20:27	04:26	8.0
2023-05-21	20:28	04:24	7.9
2023-05-22	20:30	04:23	7.9
2023-05-23	20:31	04:22	7.8
2023-05-24	20:33	04:20	7.8
2023-05-25	20:34	04:19	7.8
2023-05-26	20:35	04:18	7.7
2023-05-27	20:37	04:17	7.7
2023-05-28	20:38	04:16	7.6
2023-05-29	20:39	04:15	7.6
2023-05-30	20:41	04:14	7.6
2023-05-31	20:42	04:13	7.5
2023-06-01	20:43	04:12	7.5
2023-06-02	20:44	04:12	7.5
2023-06-03	20:45	04:11	7.4
2023-06-04	20:46	04:10	7.4
2023-06-05	20:47	04:09	7.4
2023-06-06	20:48	04:09	7.3
2023-06-07	20:49	04:08	7.3
2023-06-08	20:50	04:08	7.3
2023-06-09	20:51	04:07	7.3
2023-06-10	20:52	04:07	7.3
2023-06-11	20:53	04:07	7.2
2023-06-12	20:53	04:06	7.2

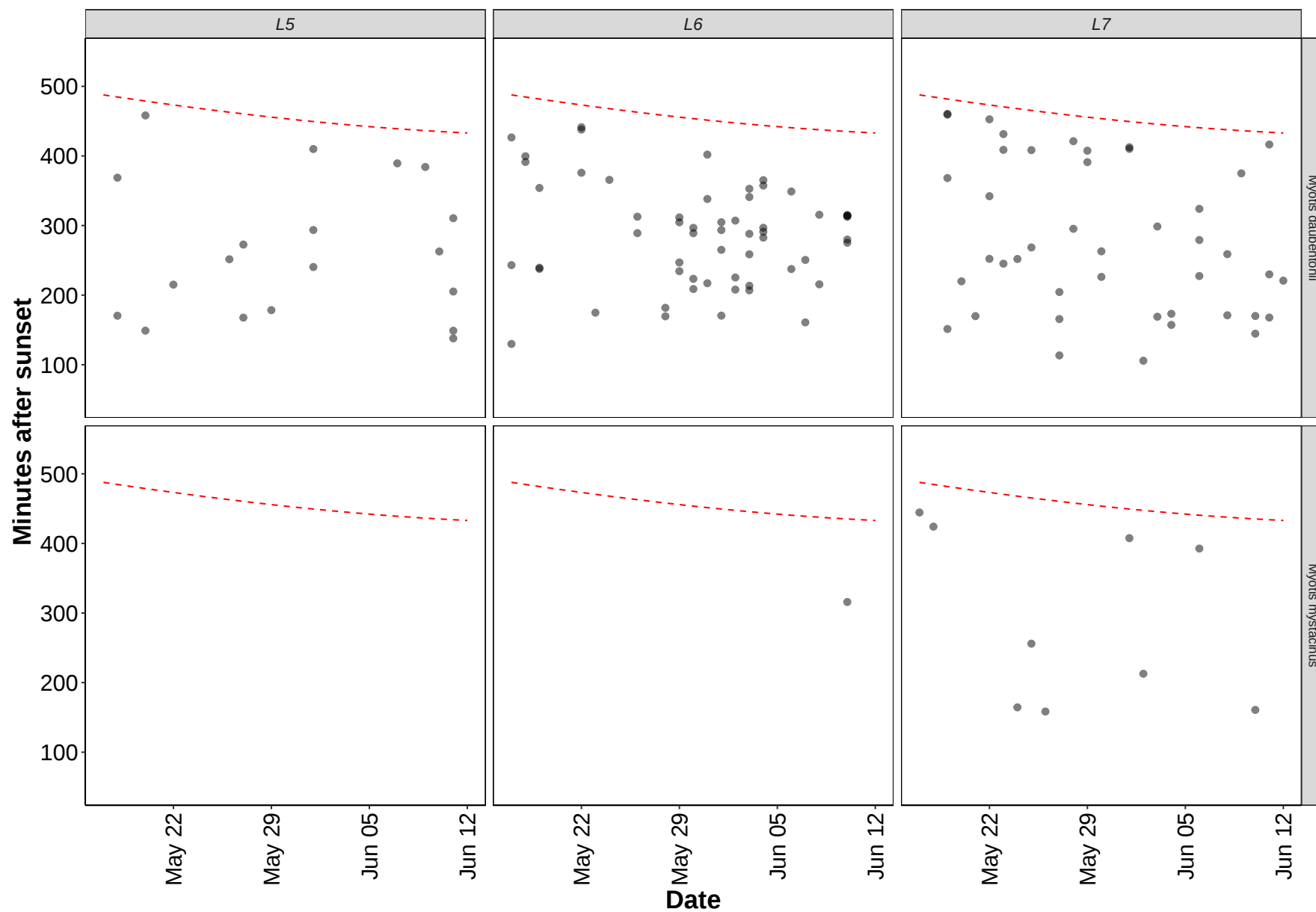
Distribution of Bat Activity Across the Night through Time

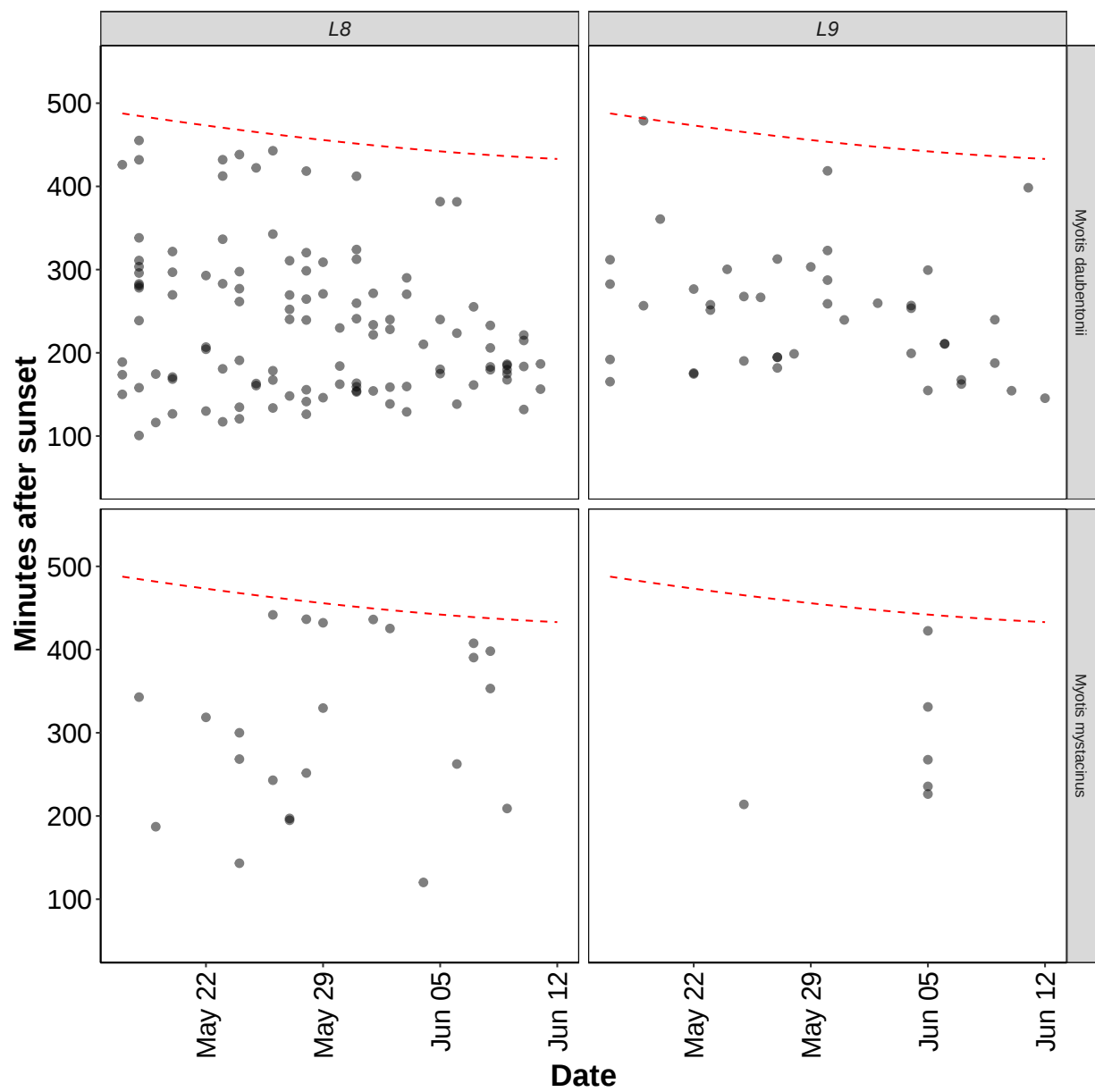
Per Detector

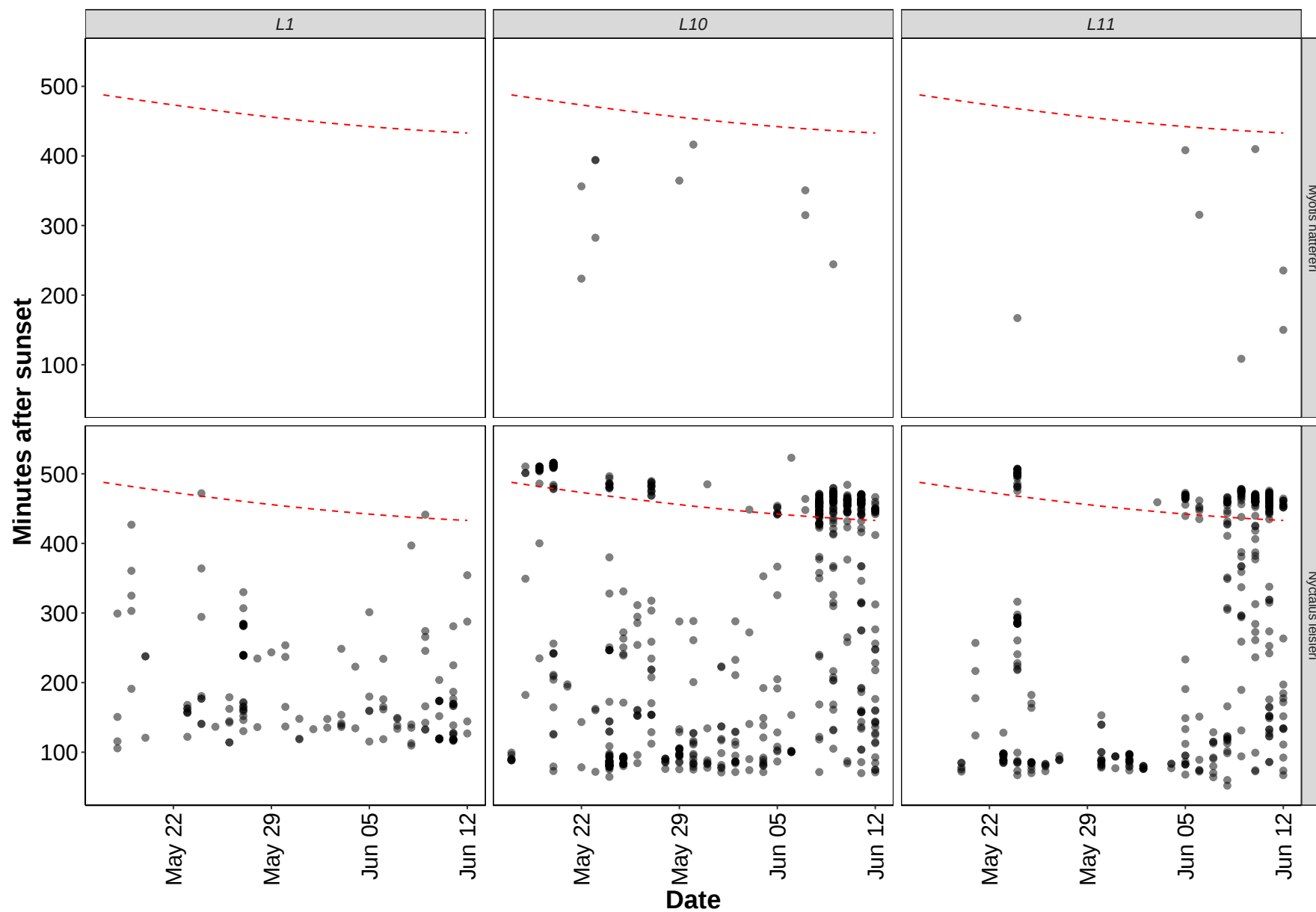
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

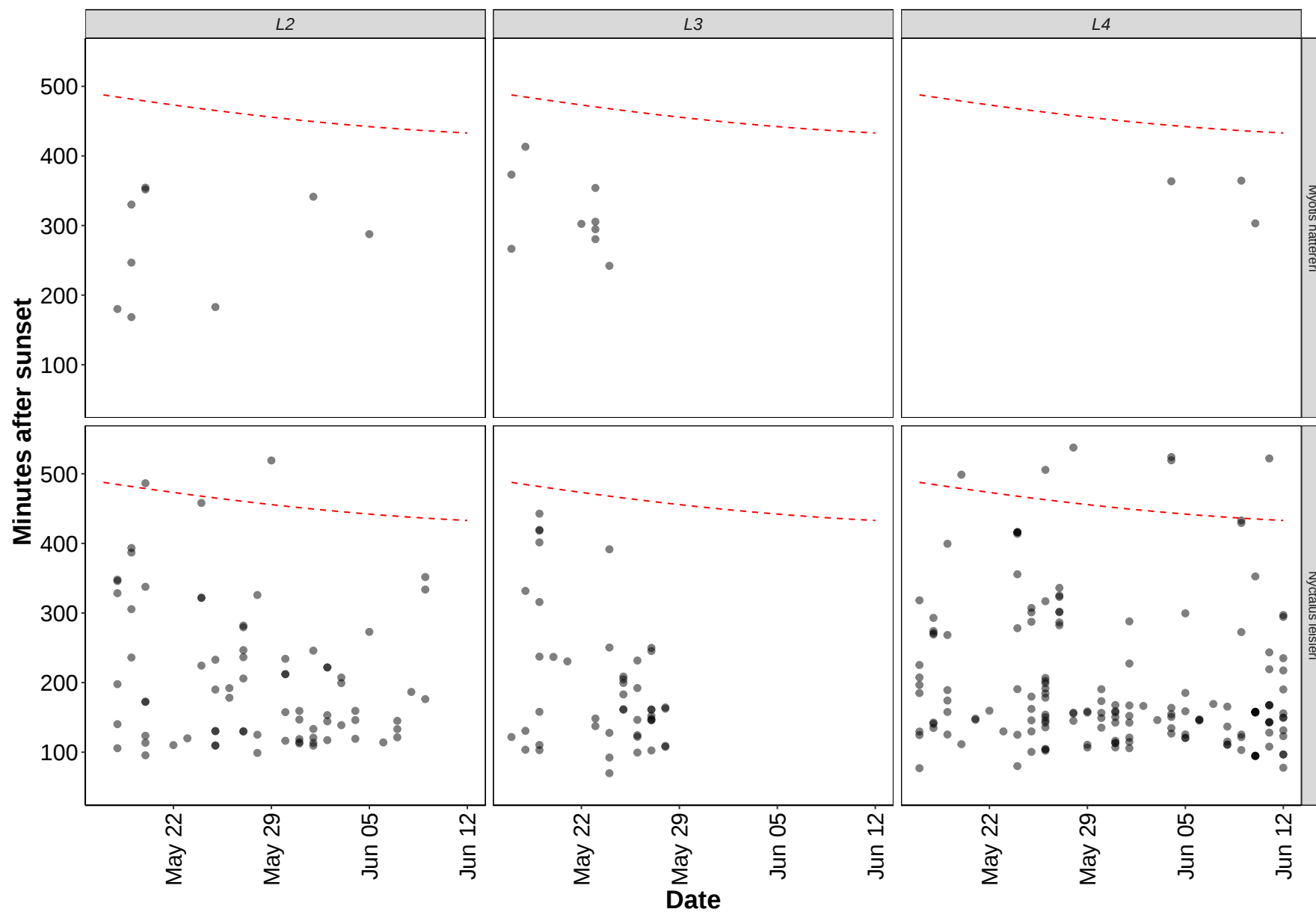


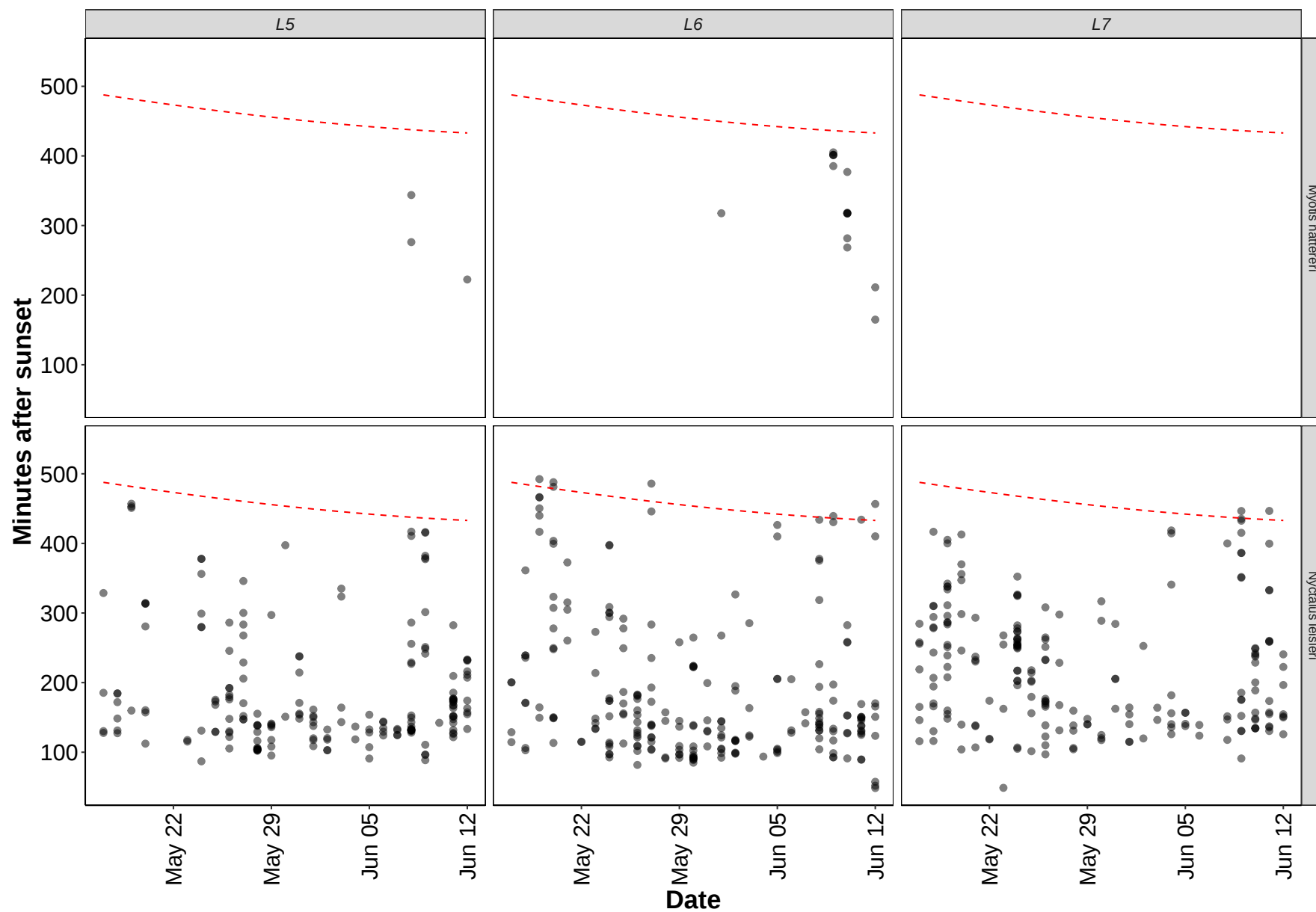


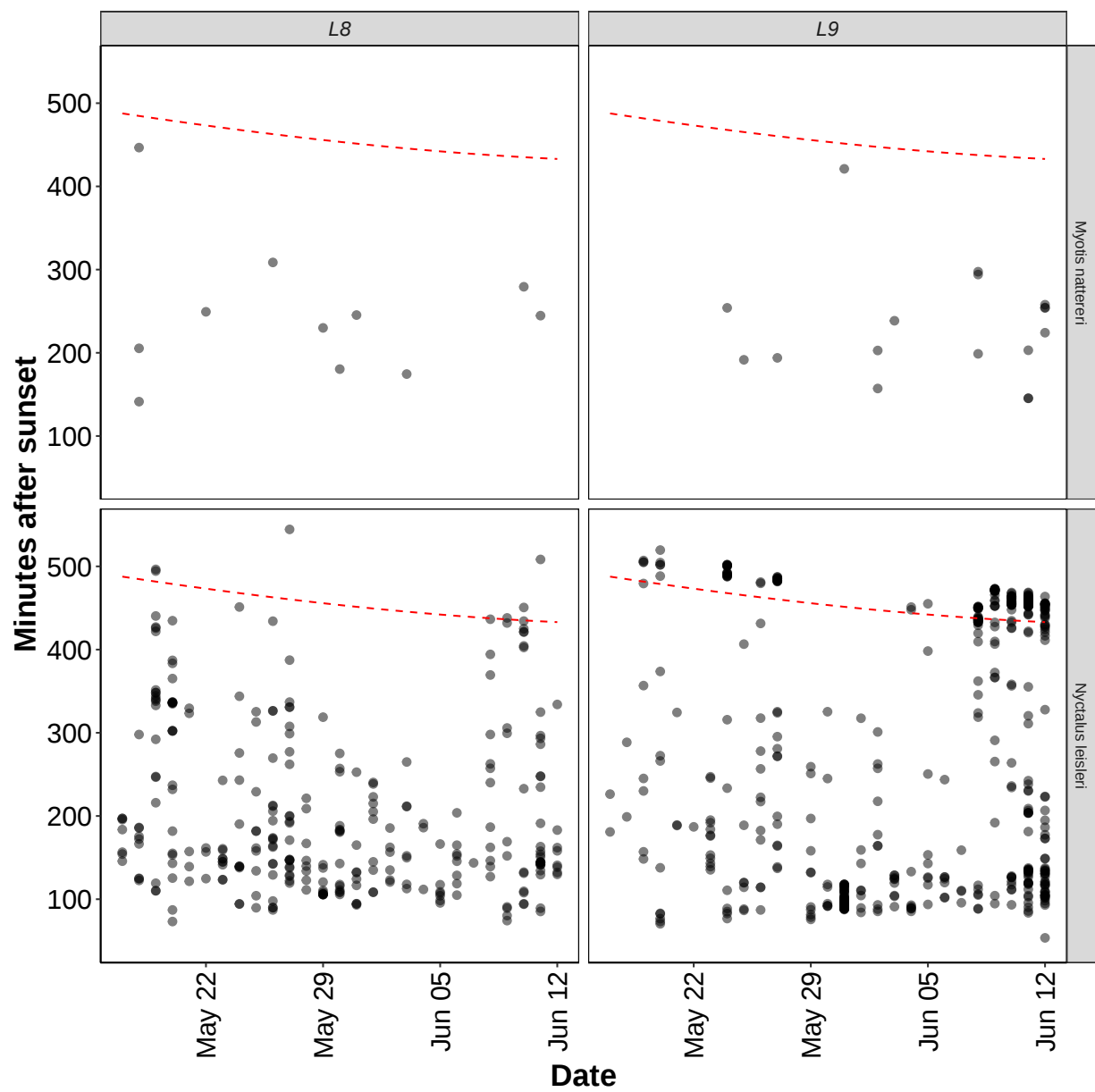


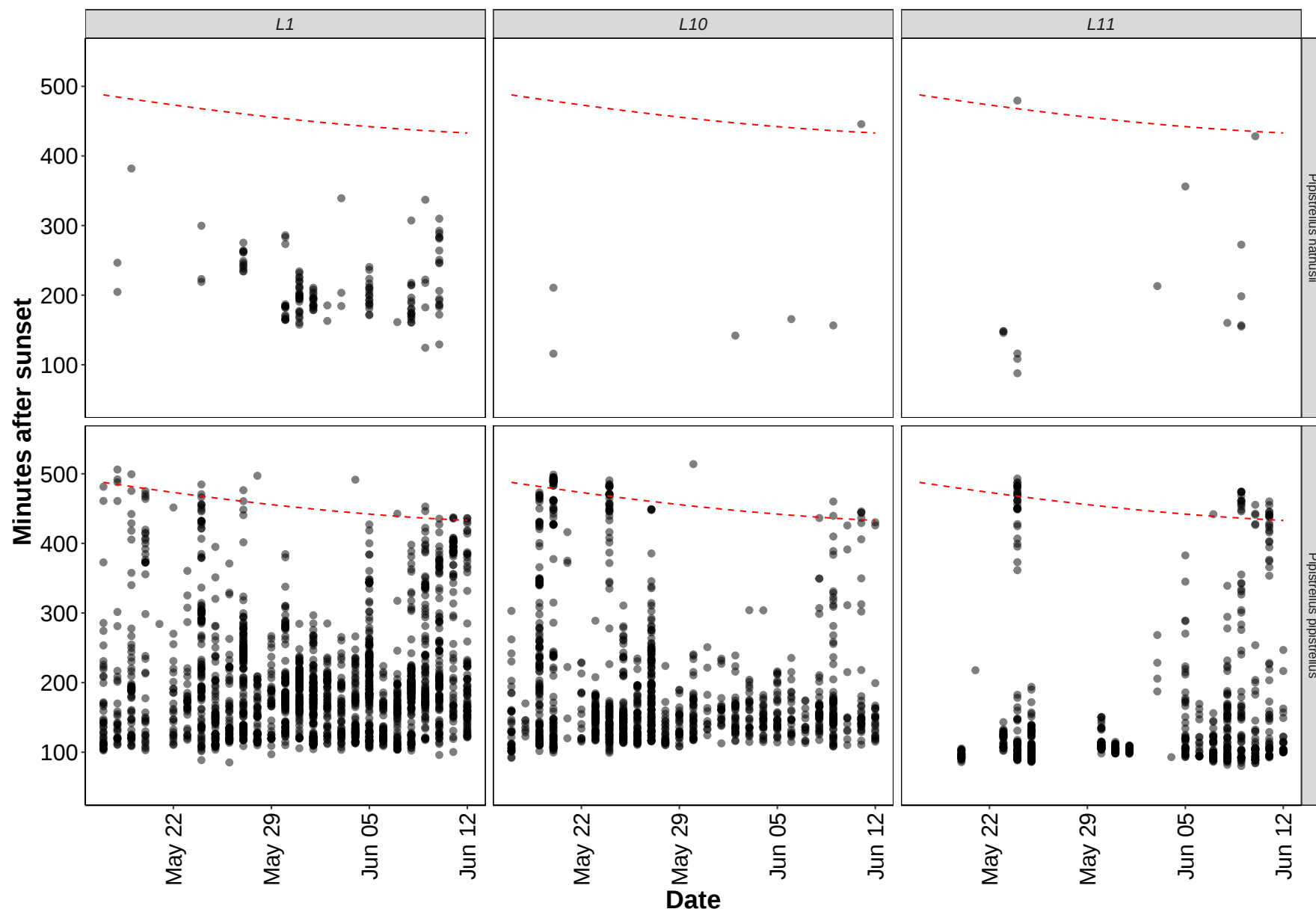


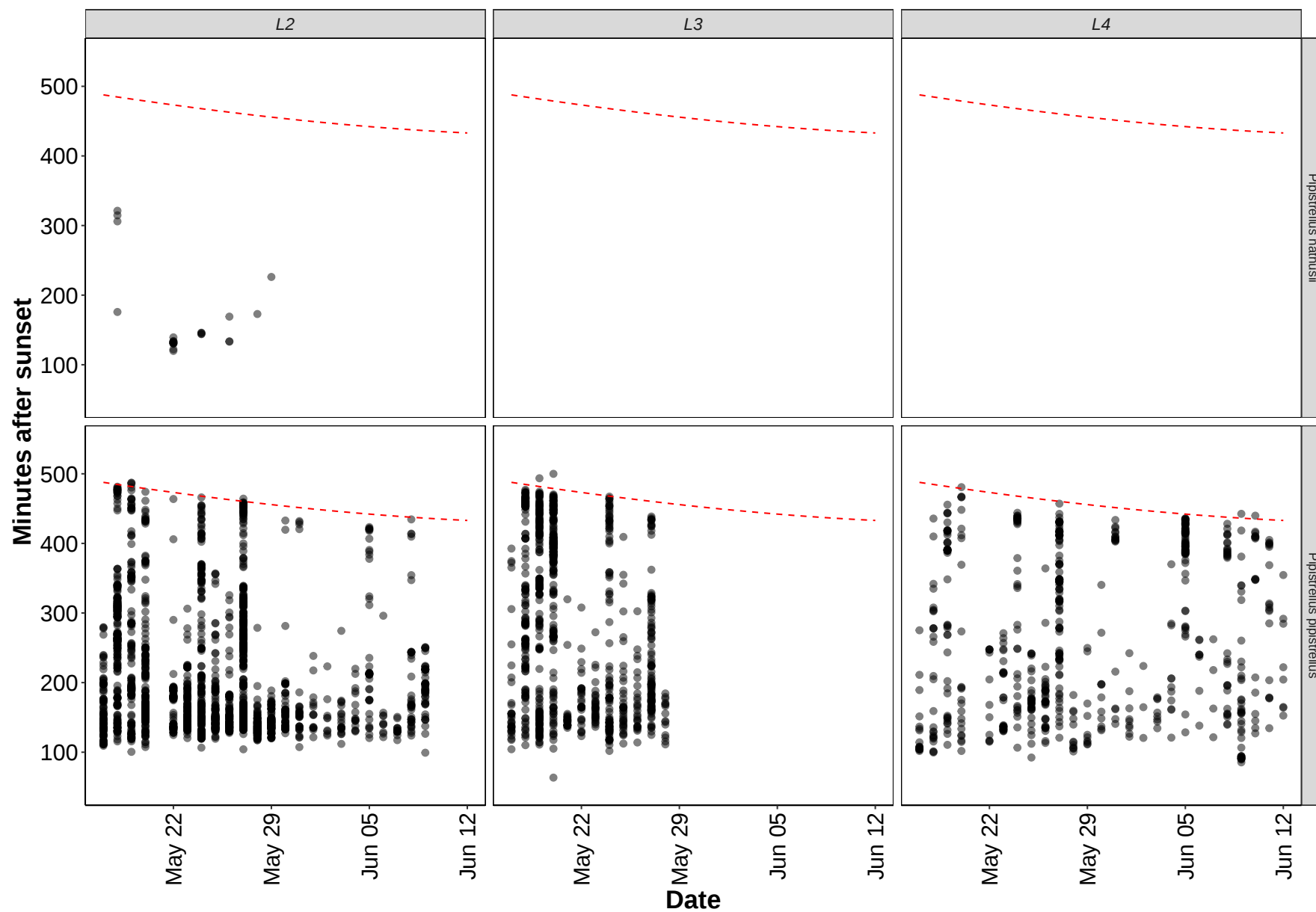


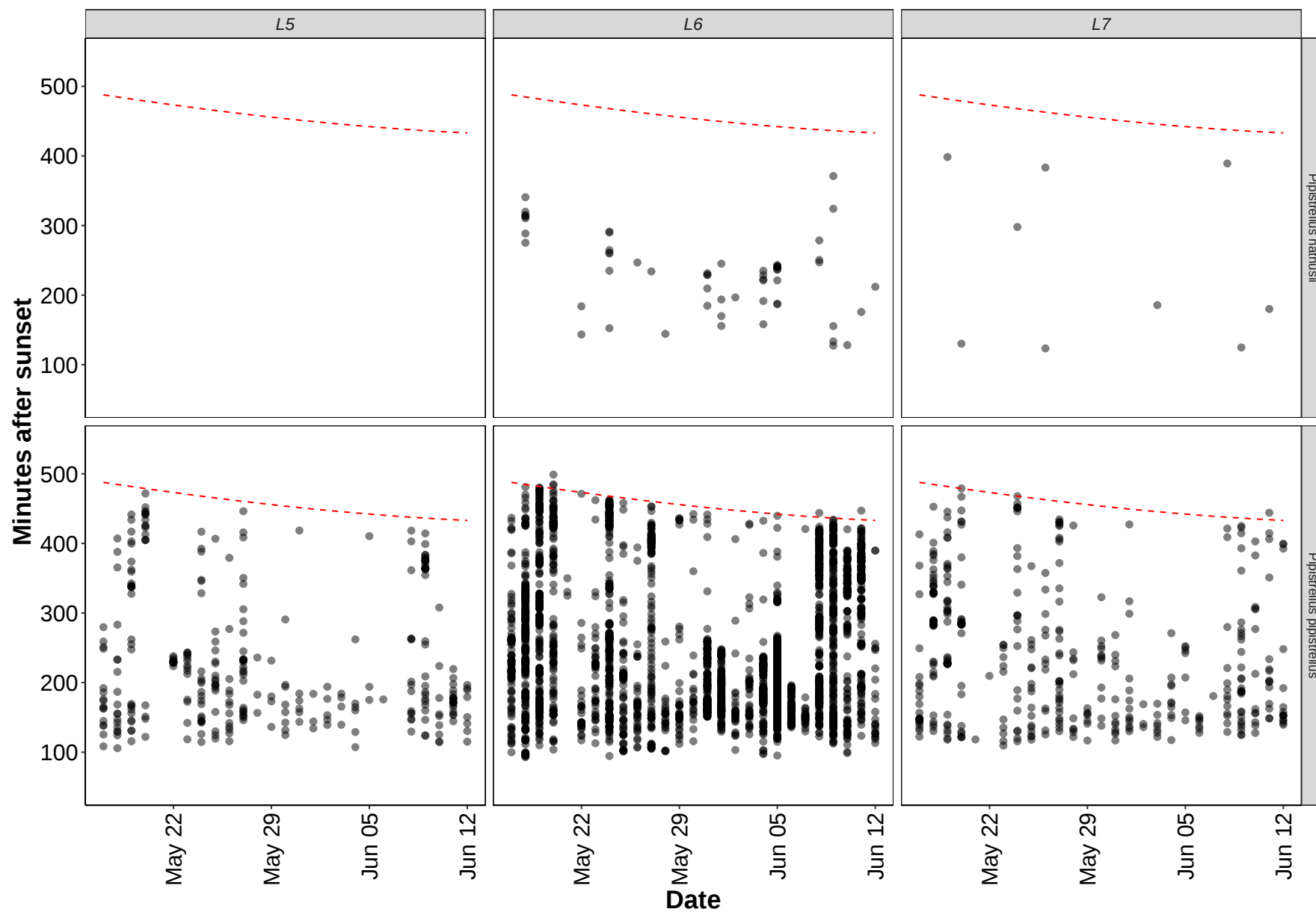


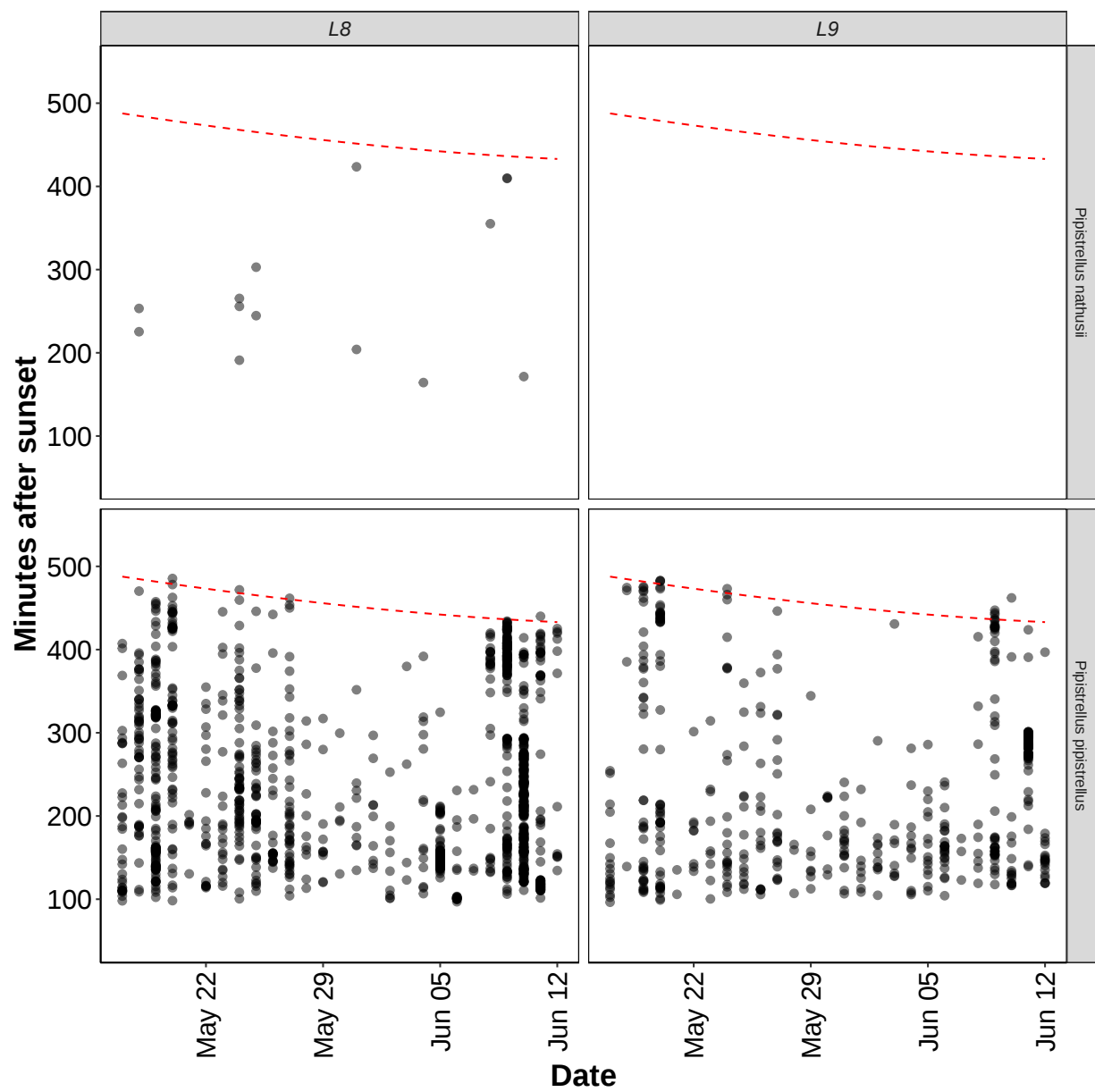


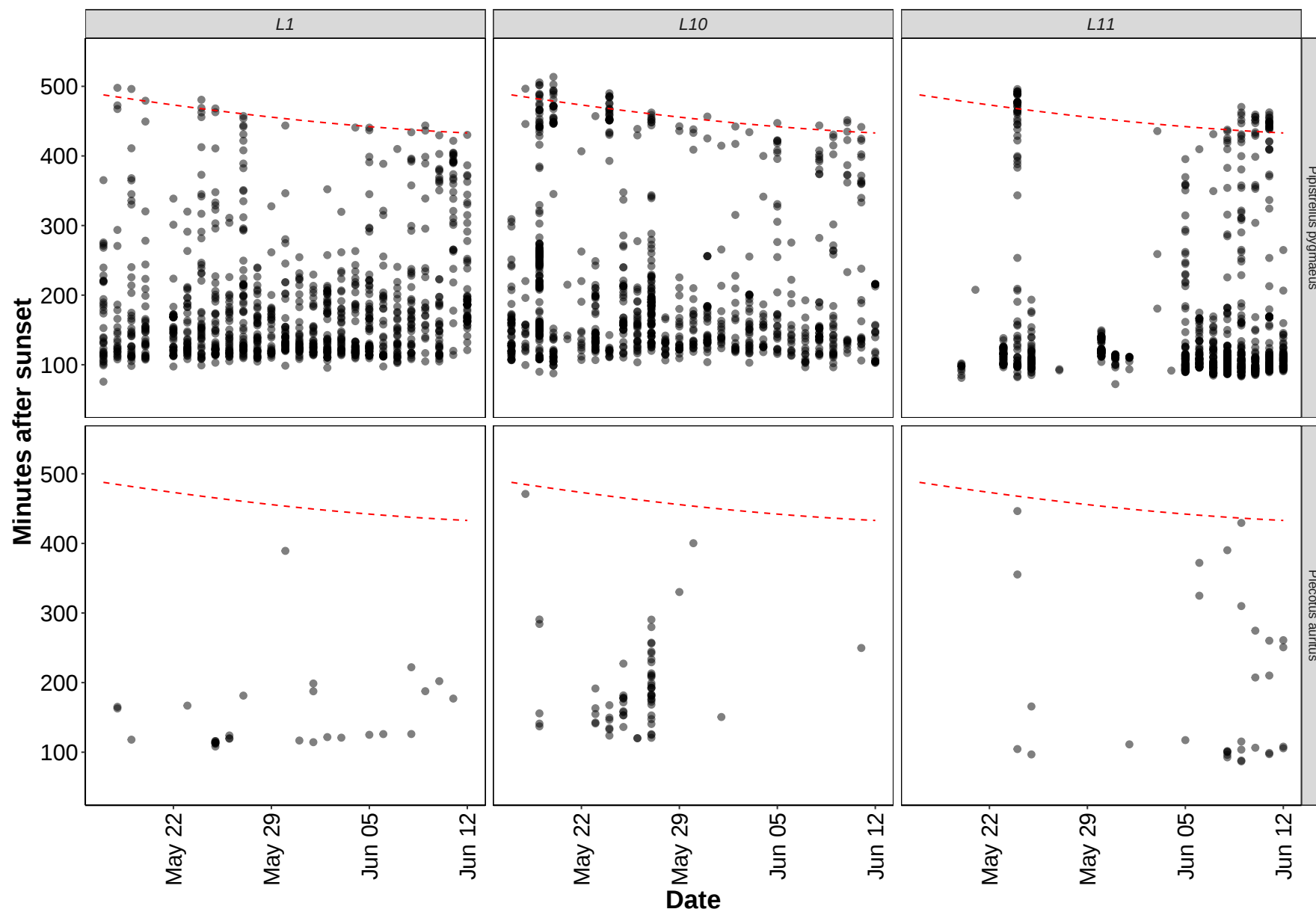


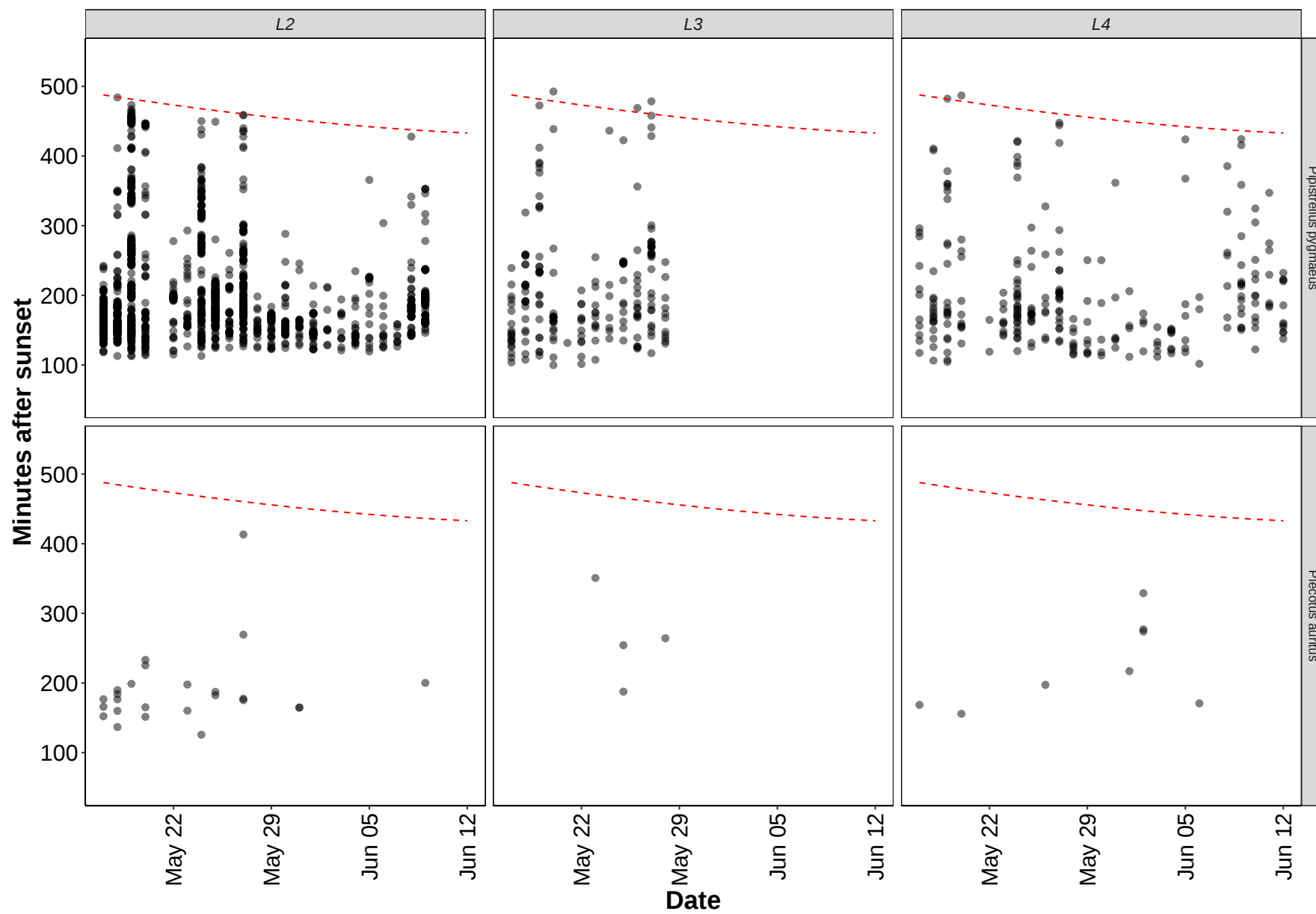












Roost Emergence Time and Bat Observation

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

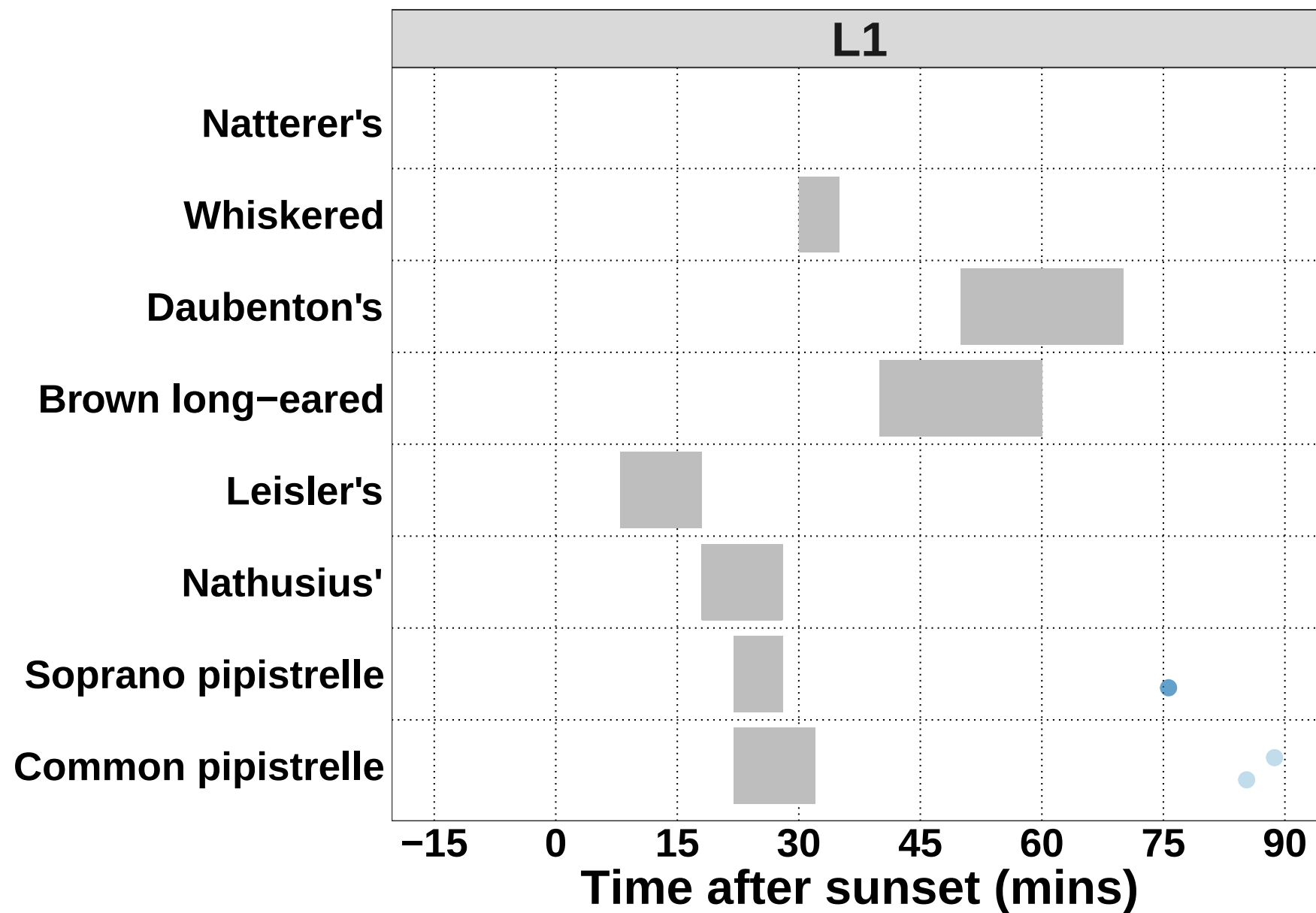
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

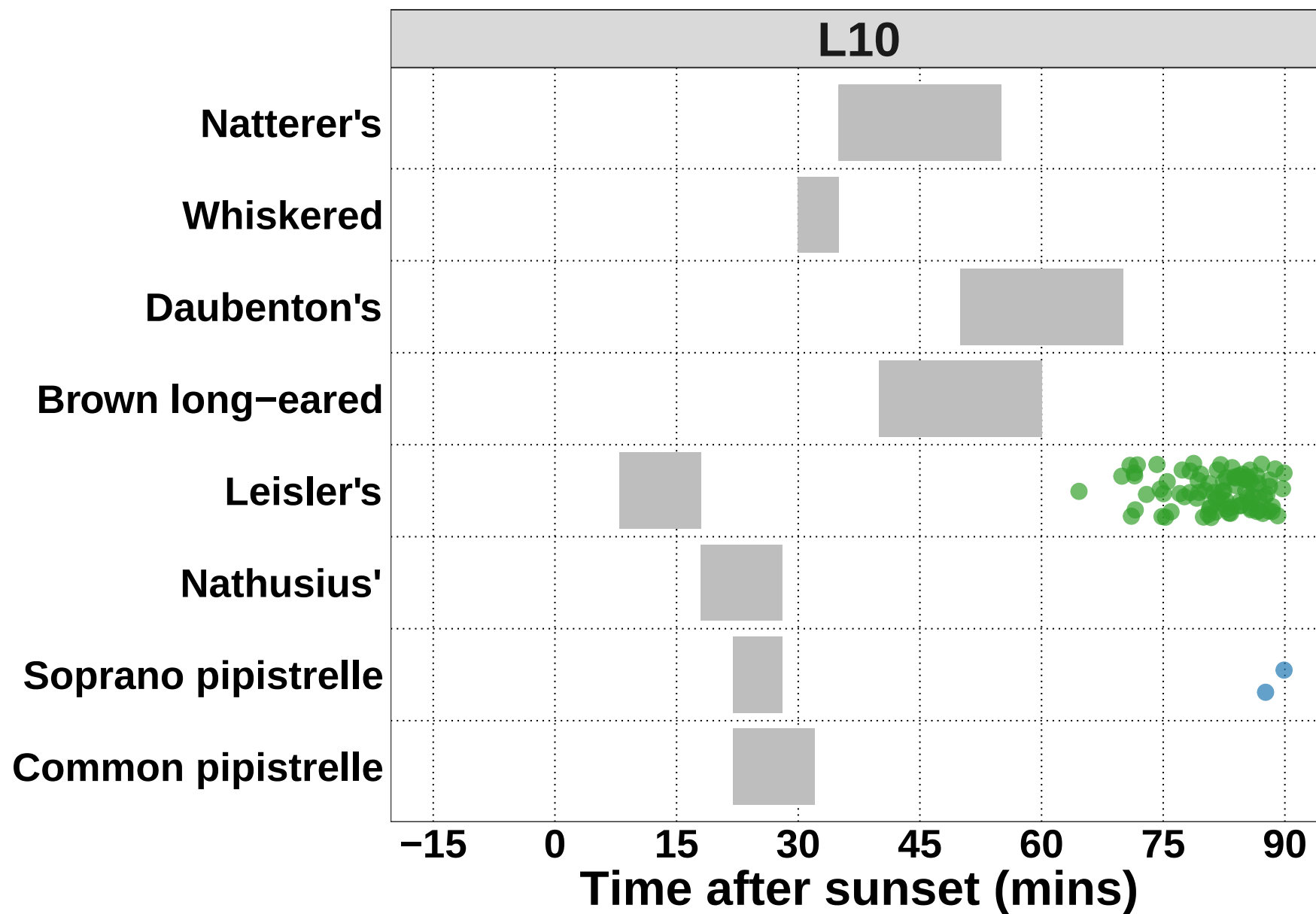
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

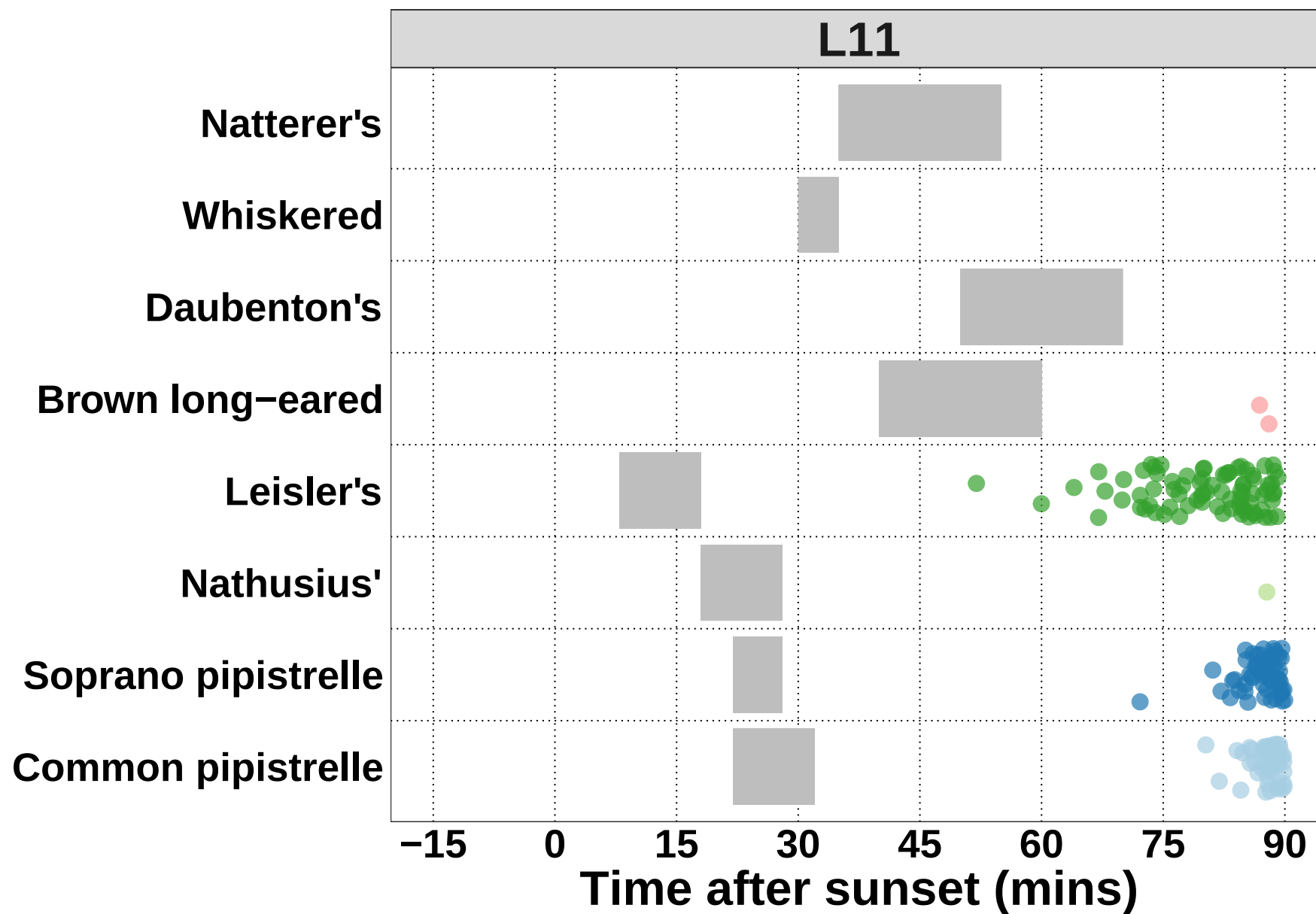
Species	Detector ID
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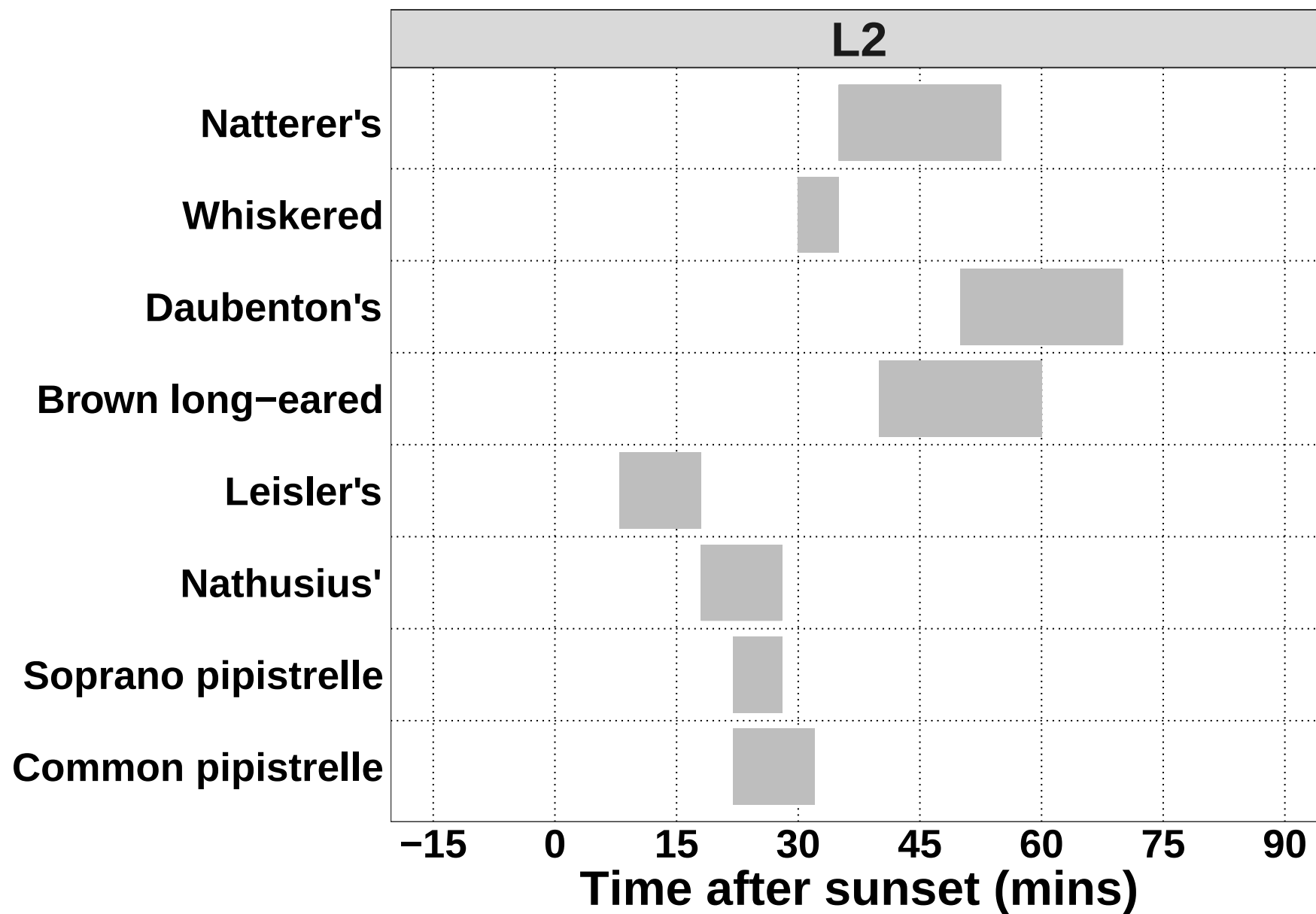
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

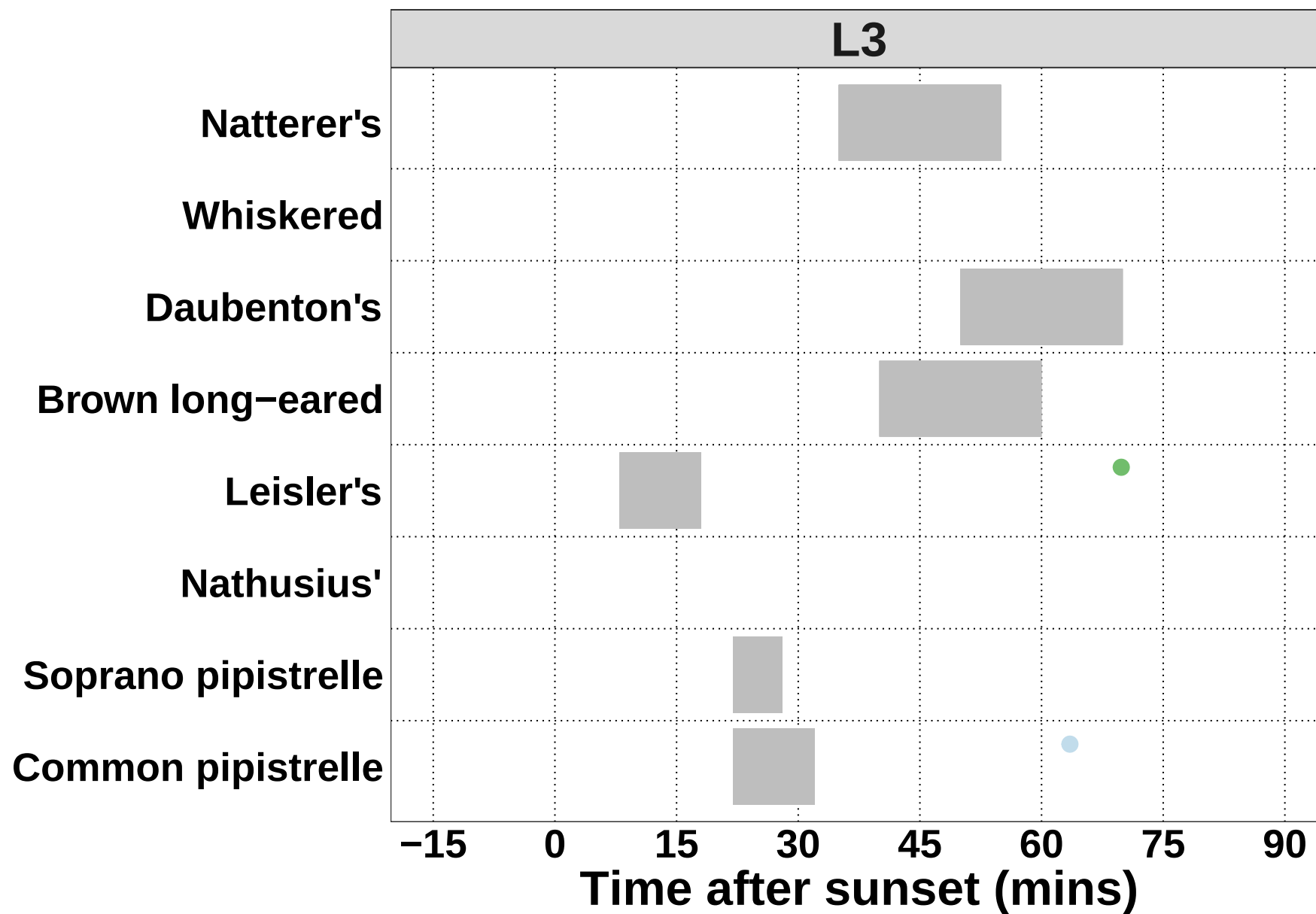
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

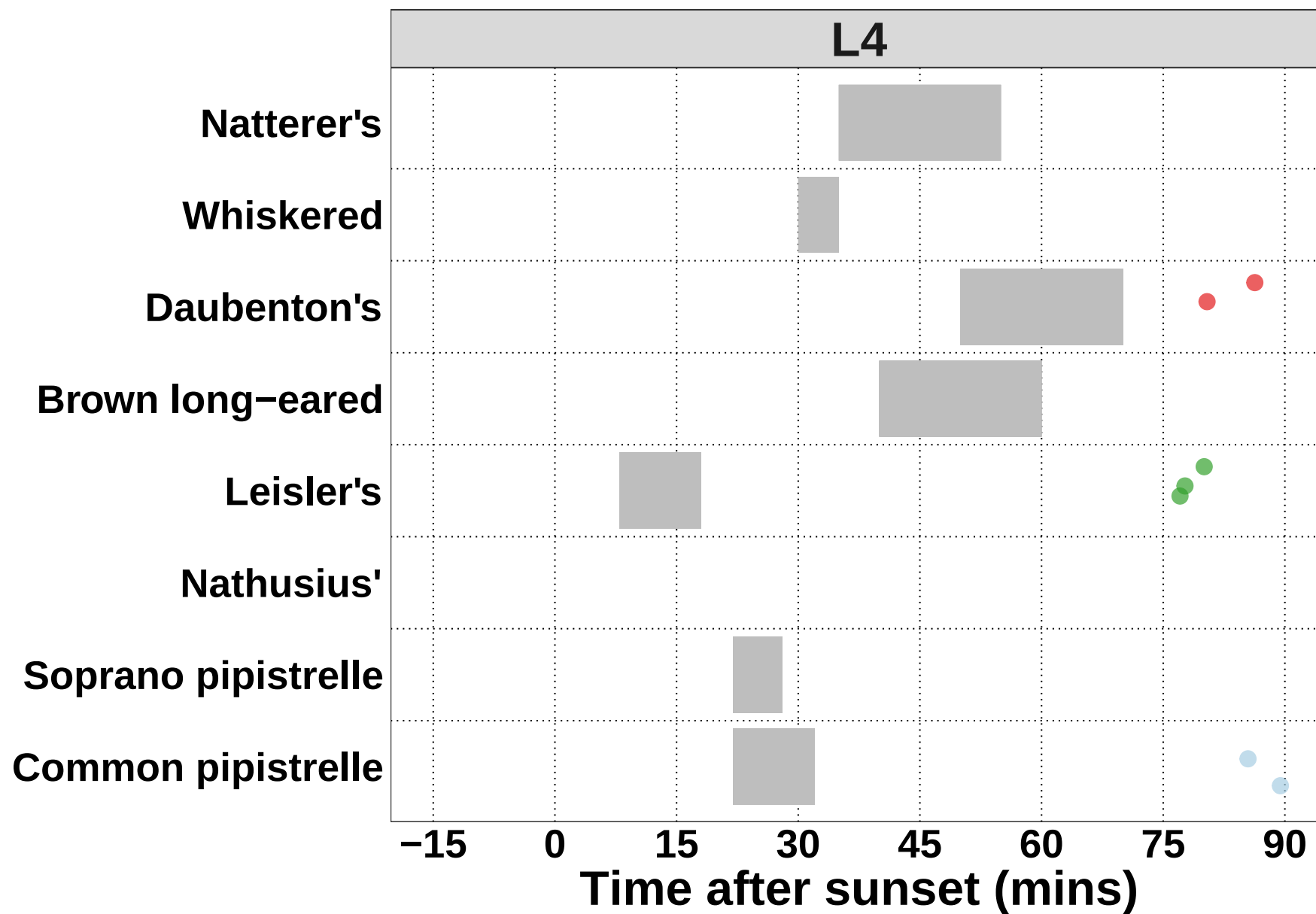


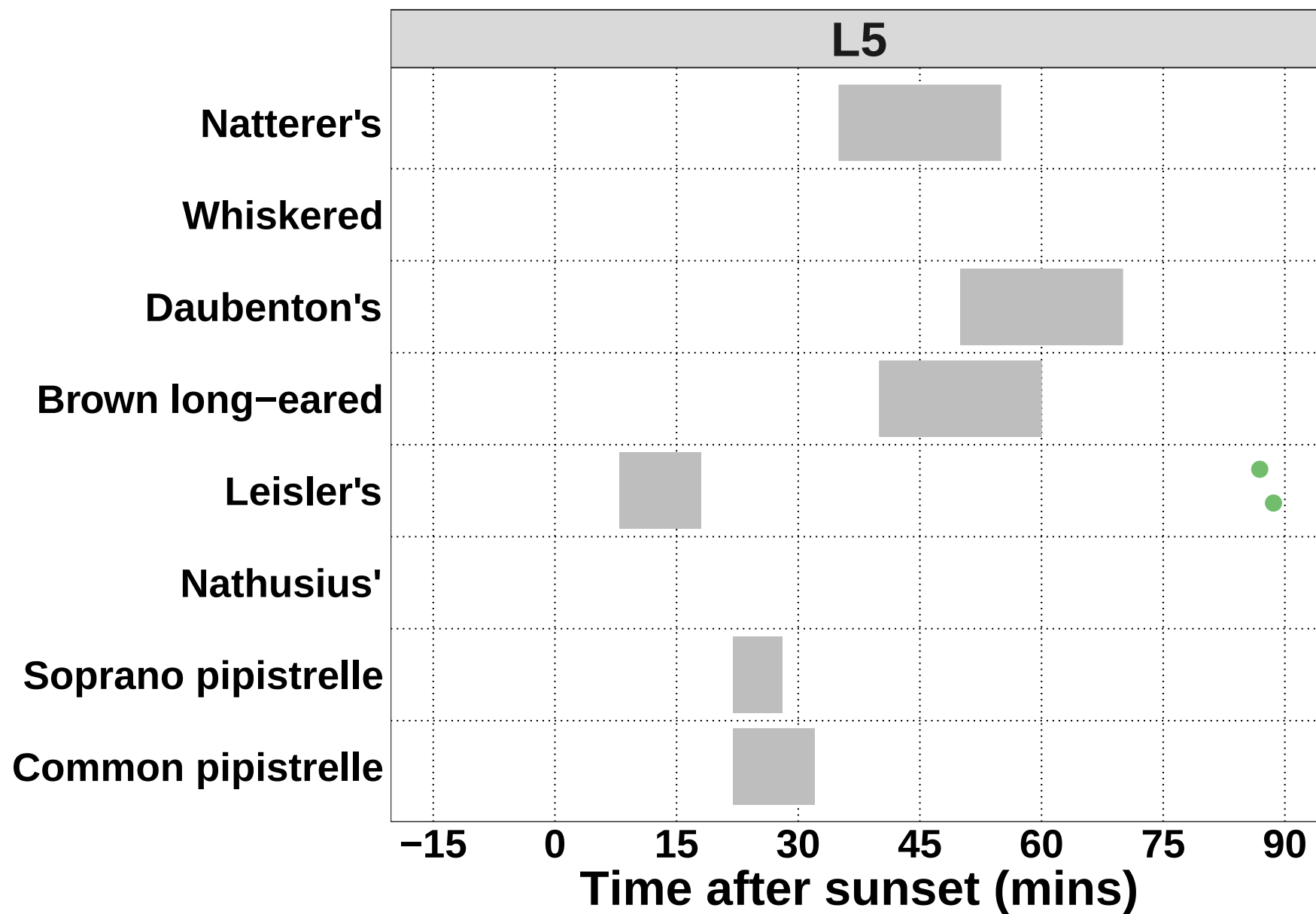


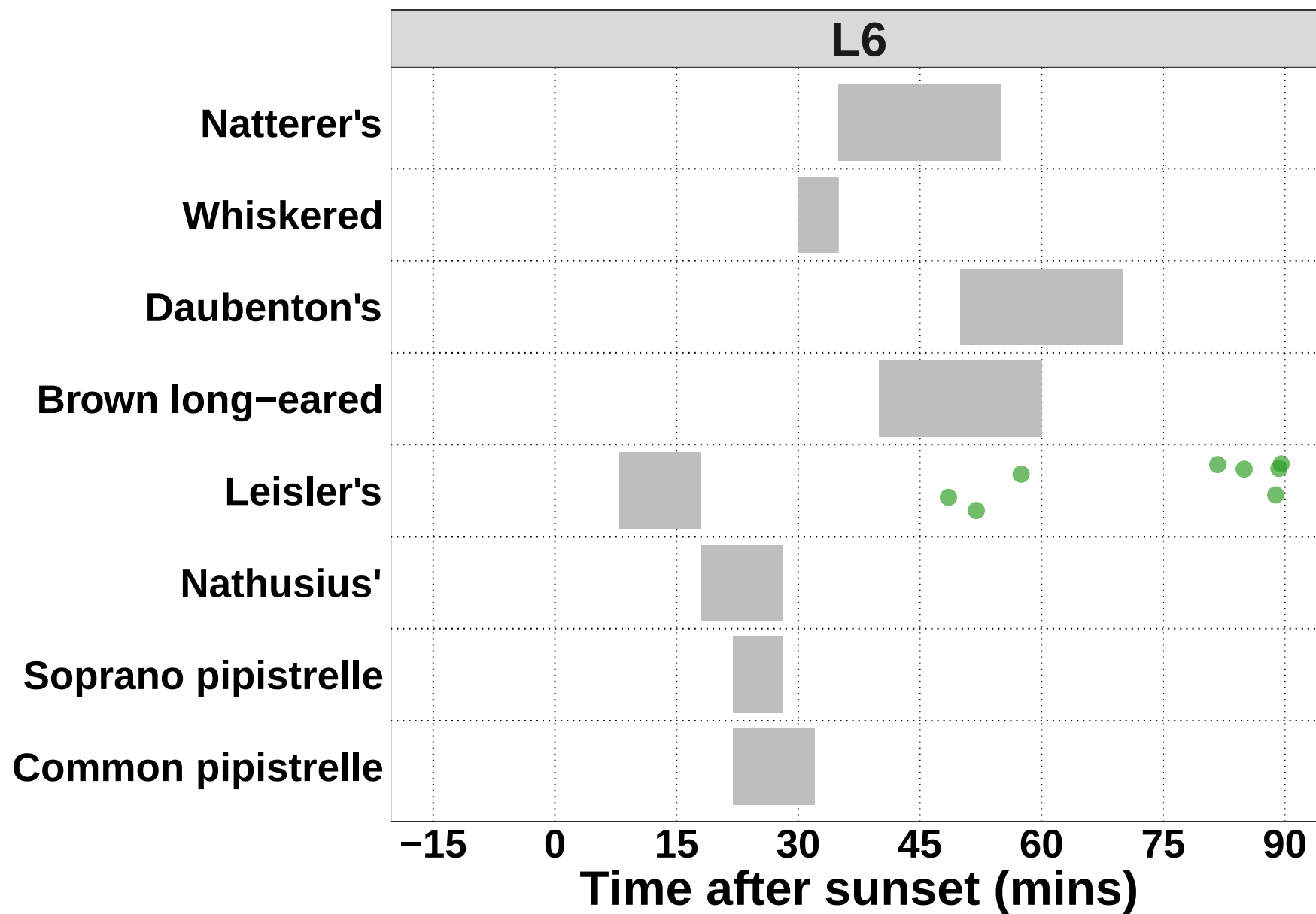


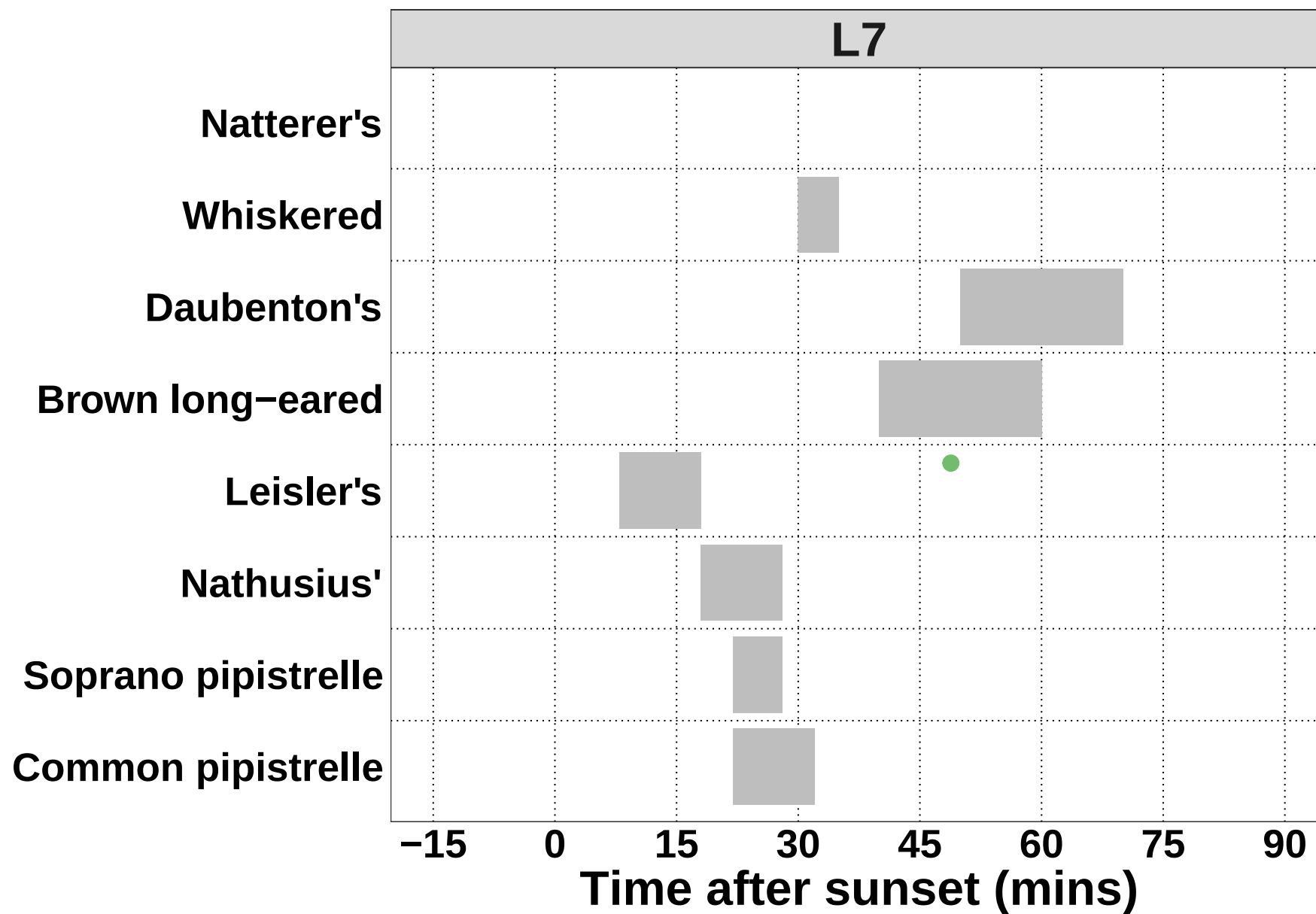


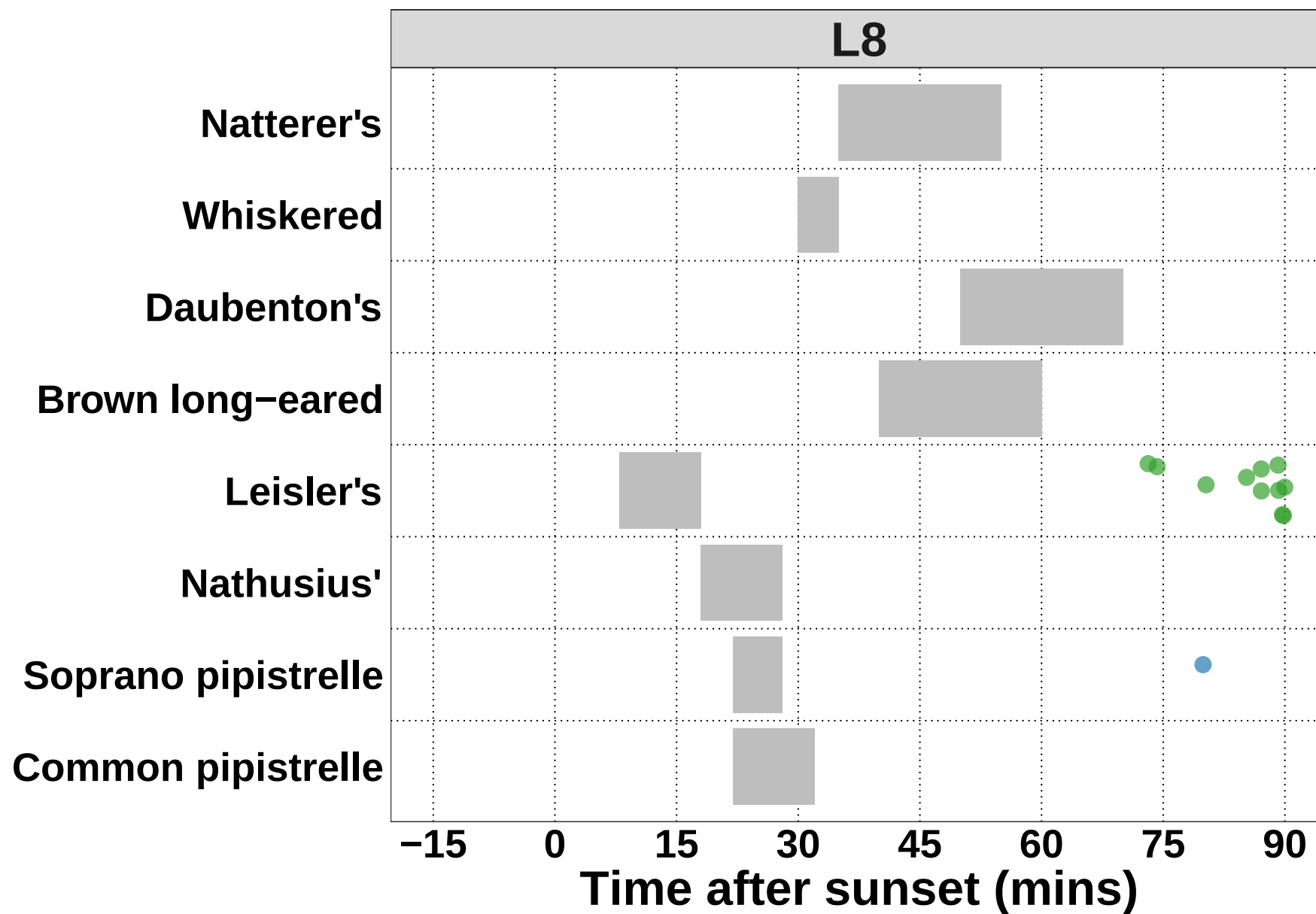


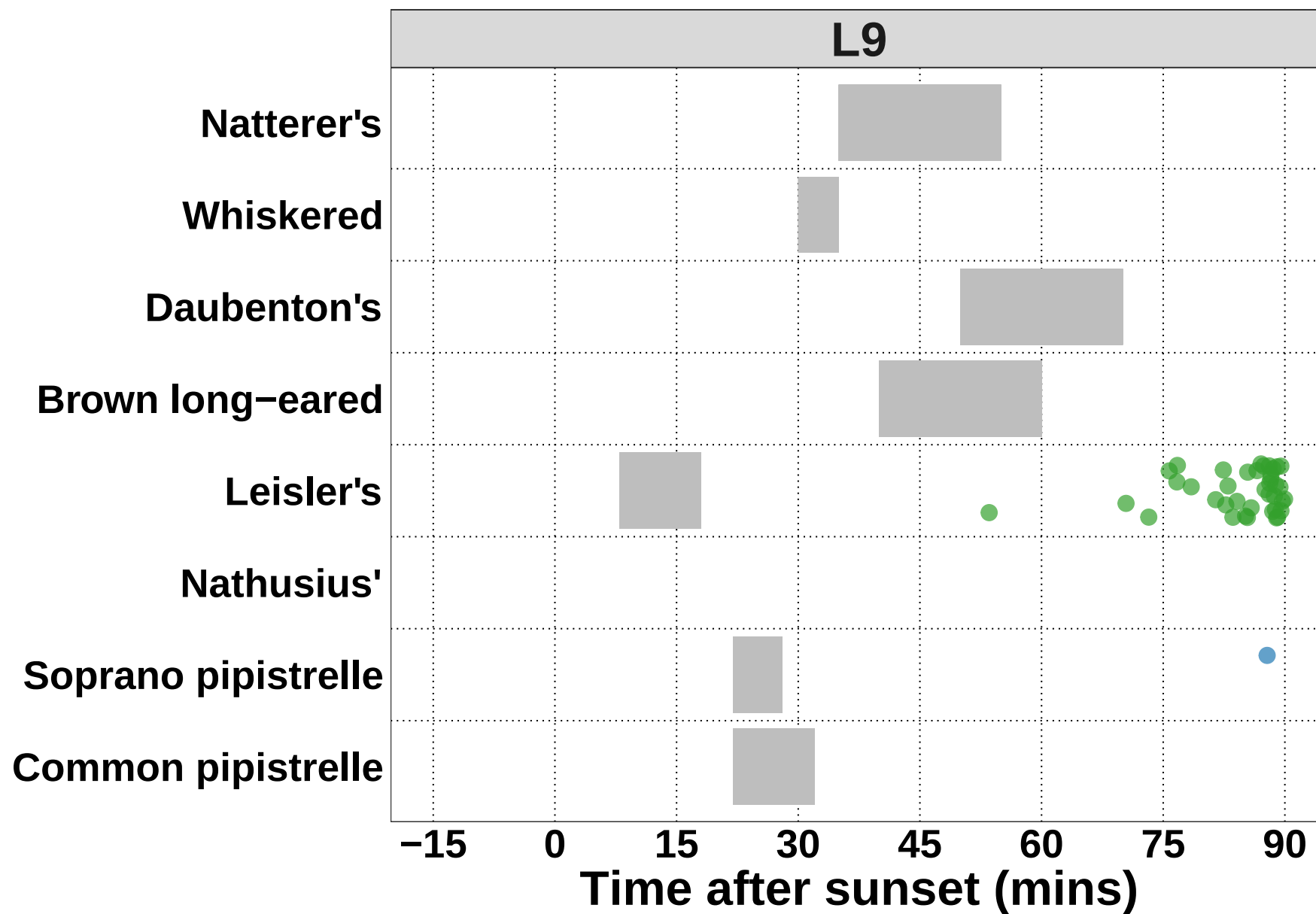












Count of Bat Passes

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 daubentonii	524	2.1
Myotis mystacinus	92	0.4
Myotis nattereri	84	0.3
Nyctalus leisleri	2838	11.4
Pipistrellus nathusii	264	1.1
Pipistrellus pipistrellus	13974	56.1
Pipistrellus pygmaeus	6825	27.4
Plecotus auritus	290	1.2
Total	24891	100.0

Per Detector

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

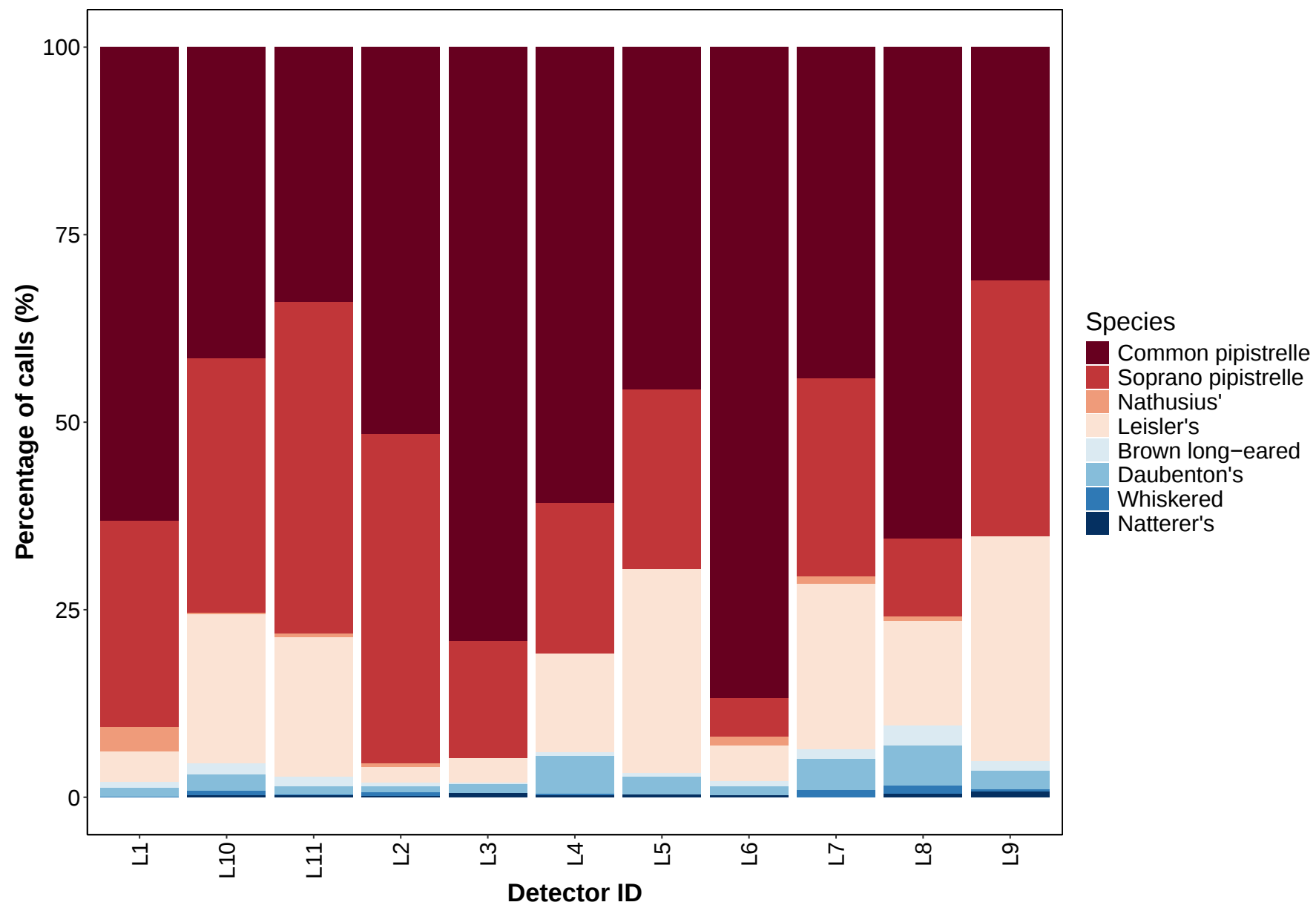
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	L1	2175	60.4334537
Common pipistrelle	L10	1279	42.3229649
Common pipistrelle	L11	776	34.4124169
Common pipistrelle	L2	2108	50.9424843
Common pipistrelle	L3	949	77.2801303
Common pipistrelle	L4	629	55.7130204
Common pipistrelle	L5	315	45.2586207
Common pipistrelle	L6	3612	84.9083216
Common pipistrelle	L7	414	43.8095238
Common pipistrelle	L8	1235	62.9459735
Common pipistrelle	L9	482	28.9837643
Soprano pipistrelle	L1	1067	29.6471242
Soprano pipistrelle	L10	981	32.4619457
Soprano pipistrelle	L11	1015	45.0110865
Soprano pipistrelle	L2	1837	44.3934268
Soprano pipistrelle	L3	200	16.2866450
Soprano pipistrelle	L4	263	23.2949513
Soprano pipistrelle	L5	168	24.1379310
Soprano pipistrelle	L6	243	5.7122708
Soprano pipistrelle	L7	253	26.7724868
Soprano pipistrelle	L8	219	11.1620795
Soprano pipistrelle	L9	579	34.8165965
Nathusius'	L1	139	3.8621839
Nathusius'	L10	6	0.1985440
Nathusius'	L11	15	0.6651885
Nathusius'	L2	24	0.5799903
Nathusius'	L6	57	1.3399154
Nathusius'	L7	9	0.9523810
Nathusius'	L8	14	0.7135576
Leisler's	L1	144	4.0011114
Leisler's	L10	591	19.5565850
Leisler's	L11	384	17.0288248

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	L2	77	1.8608023
Leisler's	L3	47	3.8273616
Leisler's	L4	162	14.3489814
Leisler's	L5	187	26.8678161
Leisler's	L6	229	5.3831688
Leisler's	L7	206	21.7989418
Leisler's	L8	297	15.1376147
Leisler's	L9	514	30.9079976
Brown long-eared	L1	30	0.8335649
Brown long-eared	L10	65	2.1508934
Brown long-eared	L11	32	1.4190687
Brown long-eared	L2	25	0.6041566
Brown long-eared	L3	4	0.3257329
Brown long-eared	L4	8	0.7085917
Brown long-eared	L5	4	0.5747126
Brown long-eared	L6	39	0.9167842
Brown long-eared	L7	11	1.1640212
Brown long-eared	L8	49	2.4974516
Brown long-eared	L9	23	1.3830427
Daubenton's	L1	41	1.1392053
Daubenton's	L10	74	2.4487095
Daubenton's	L11	22	0.9756098
Daubenton's	L2	31	0.7491542
Daubenton's	L3	19	1.5472313
Daubenton's	L4	61	5.4030115
Daubenton's	L5	19	2.7298851
Daubenton's	L6	58	1.3634227
Daubenton's	L7	43	4.5502646
Daubenton's	L8	114	5.8103976
Daubenton's	L9	42	2.5255562
Whiskered	L1	3	0.0833565
Whiskered	L10	16	0.5294507
Whiskered	L11	4	0.1773836
Whiskered	L2	27	0.6524891
Whiskered	L4	3	0.2657219
Whiskered	L6	1	0.0235073

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Whiskered	L7	9	0.9523810
Whiskered	L8	23	1.1722732
Whiskered	L9	6	0.3607937
Natterer's	L10	10	0.3309067
Natterer's	L11	7	0.3104213
Natterer's	L2	9	0.2174964
Natterer's	L3	9	0.7328990
Natterer's	L4	3	0.2657219
Natterer's	L5	3	0.4310345
Natterer's	L6	15	0.3526093
Natterer's	L8	11	0.5606524
Natterer's	L9	17	1.0222489

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	L1	13.4
Common pipistrelle	L10	4.9
Common pipistrelle	L11	6.7
Common pipistrelle	L2	11.9
Common pipistrelle	L3	9.0
Common pipistrelle	L4	2.9
Common pipistrelle	L5	2.2
Common pipistrelle	L6	21.8
Common pipistrelle	L7	2.7
Common pipistrelle	L8	4.6
Common pipistrelle	L9	2.3
Soprano pipistrelle	L1	5.6
Soprano pipistrelle	L10	4.4
Soprano pipistrelle	L11	11.3
Soprano pipistrelle	L2	7.2
Soprano pipistrelle	L3	2.6
Soprano pipistrelle	L4	1.7
Soprano pipistrelle	L5	1.1
Soprano pipistrelle	L6	1.4
Soprano pipistrelle	L7	1.1
Soprano pipistrelle	L8	1.2
Soprano pipistrelle	L9	3.6
Nathusius'	L1	1.3
Nathusius'	L10	0.1
Nathusius'	L11	0.1
Nathusius'	L2	0.4
Nathusius'	L6	0.6
Nathusius'	L7	0.2
Nathusius'	L8	0.3
Leisler's	L1	0.7
Leisler's	L10	2.2
Leisler's	L11	1.9
Leisler's	L2	0.5
Leisler's	L3	0.8
Leisler's	L4	0.9
Leisler's	L5	0.9

Species	Detector ID	Median Pass Rate
Leisler's	L6	1.3
Leisler's	L7	1.1
Leisler's	L8	1.7
Leisler's	L9	1.7
Brown long-eared	L1	0.3
Brown long-eared	L10	0.5
Brown long-eared	L11	0.5
Brown long-eared	L2	0.3
Brown long-eared	L3	0.1
Brown long-eared	L4	0.1
Brown long-eared	L5	0.1
Brown long-eared	L6	0.3
Brown long-eared	L7	0.3
Brown long-eared	L8	0.3
Brown long-eared	L9	0.3
Daubenton's	L1	0.3
Daubenton's	L10	0.5
Daubenton's	L11	0.4
Daubenton's	L2	0.3
Daubenton's	L3	0.3
Daubenton's	L4	0.4
Daubenton's	L5	0.1
Daubenton's	L6	0.4
Daubenton's	L7	0.3
Daubenton's	L8	0.7
Daubenton's	L9	0.3
Whiskered	L1	0.1
Whiskered	L10	0.3
Whiskered	L11	0.1
Whiskered	L2	0.1
Whiskered	L4	0.1
Whiskered	L6	0.1
Whiskered	L7	0.1
Whiskered	L8	0.2
Whiskered	L9	0.4
Natterer's	L10	0.2

Species	Detector ID	Median Pass Rate
Natterer's	L11	0.1
Natterer's	L2	0.1
Natterer's	L3	0.1
Natterer's	L4	0.1
Natterer's	L5	0.2
Natterer's	L6	0.4
Natterer's	L8	0.1
Natterer's	L9	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.

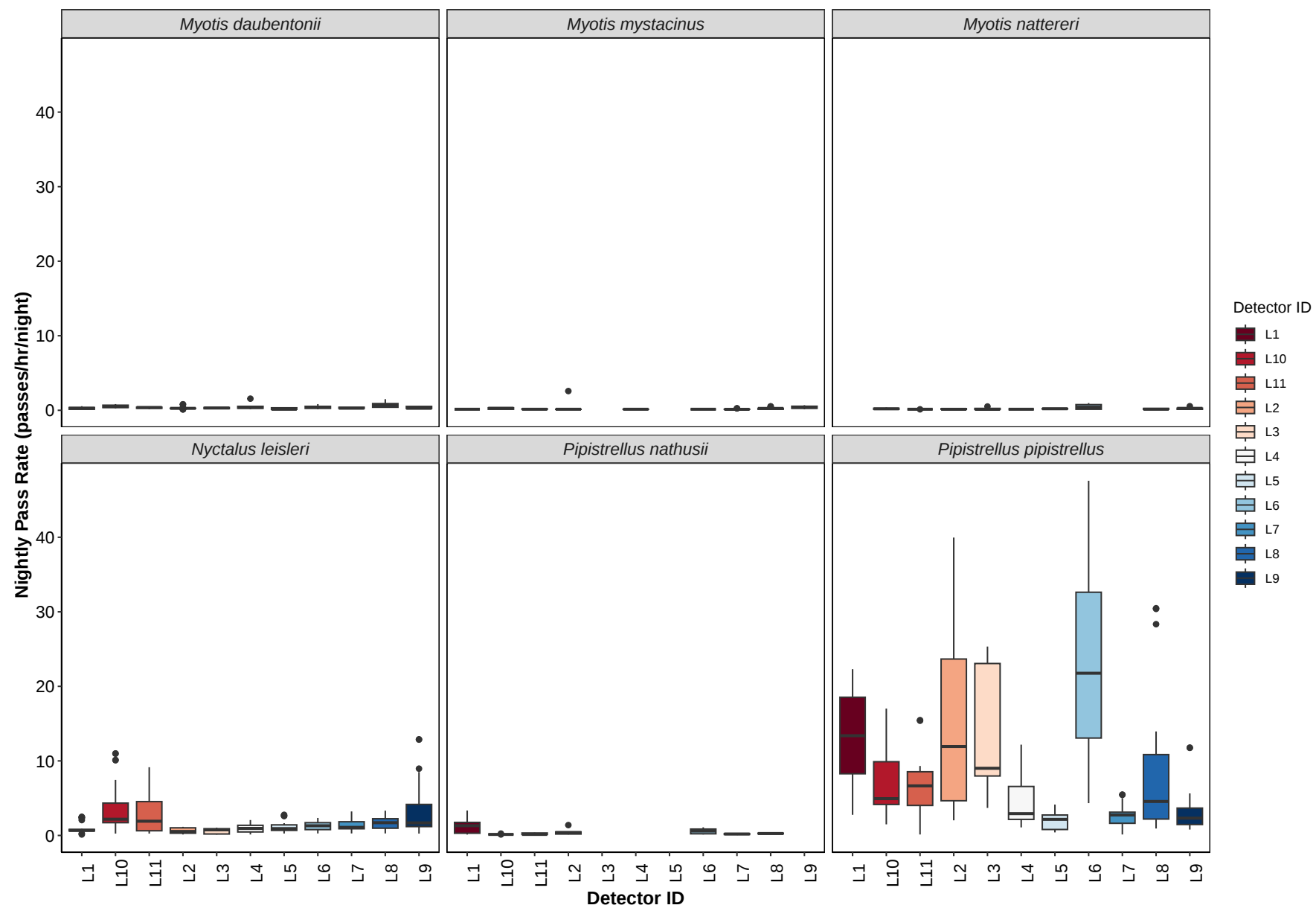
Species	Detector ID	Mean Pass Rate
Common pipistrelle	L1	13.1
Common pipistrelle	L10	7.4
Common pipistrelle	L11	6.5
Common pipistrelle	L2	14.2
Common pipistrelle	L3	13.0
Common pipistrelle	L4	4.6
Common pipistrelle	L5	1.9
Common pipistrelle	L6	23.9
Common pipistrelle	L7	2.5
Common pipistrelle	L8	8.3
Common pipistrelle	L9	3.4
Soprano pipistrelle	L1	5.9
Soprano pipistrelle	L10	6.0
Soprano pipistrelle	L11	8.2
Soprano pipistrelle	L2	12.1
Soprano pipistrelle	L3	2.6
Soprano pipistrelle	L4	1.6
Soprano pipistrelle	L5	1.0
Soprano pipistrelle	L6	1.5
Soprano pipistrelle	L7	1.5
Soprano pipistrelle	L8	1.4
Soprano pipistrelle	L9	3.8
Nathusius'	L1	1.3
Nathusius'	L10	0.2
Nathusius'	L11	0.2
Nathusius'	L2	0.5
Nathusius'	L6	0.6
Nathusius'	L7	0.2
Nathusius'	L8	0.3
Leisler's	L1	1.0

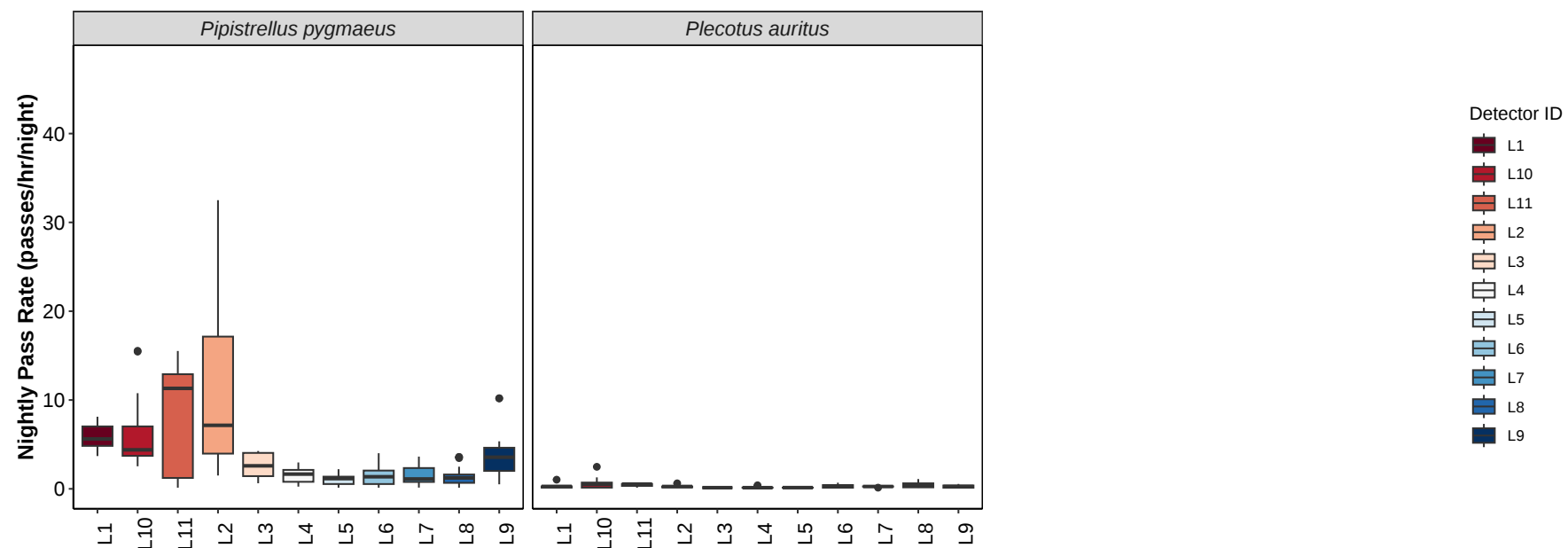
Species	Detector ID	Mean Pass Rate
Leisler's	L10	3.7
Leisler's	L11	3.1
Leisler's	L2	0.6
Leisler's	L3	0.6
Leisler's	L4	0.9
Leisler's	L5	1.2
Leisler's	L6	1.3
Leisler's	L7	1.3
Leisler's	L8	1.8
Leisler's	L9	3.4
Brown long-eared	L1	0.3
Brown long-eared	L10	0.6
Brown long-eared	L11	0.5
Brown long-eared	L2	0.3
Brown long-eared	L3	0.1
Brown long-eared	L4	0.2
Brown long-eared	L5	0.1
Brown long-eared	L6	0.3
Brown long-eared	L7	0.2
Brown long-eared	L8	0.4
Brown long-eared	L9	0.3
Daubenton's	L1	0.3
Daubenton's	L10	0.5
Daubenton's	L11	0.3
Daubenton's	L2	0.3
Daubenton's	L3	0.3
Daubenton's	L4	0.4
Daubenton's	L5	0.2
Daubenton's	L6	0.4
Daubenton's	L7	0.3
Daubenton's	L8	0.7
Daubenton's	L9	0.3
Whiskered	L1	0.1
Whiskered	L10	0.3
Whiskered	L11	0.2
Whiskered	L2	0.5

Species	Detector ID	Mean Pass Rate
Whiskered	L4	0.1
Whiskered	L6	0.1
Whiskered	L7	0.2
Whiskered	L8	0.2
Whiskered	L9	0.4
Natterer's	L10	0.2
Natterer's	L11	0.1
Natterer's	L2	0.2
Natterer's	L3	0.2
Natterer's	L4	0.1
Natterer's	L5	0.2
Natterer's	L6	0.5
Natterer's	L8	0.2
Natterer's	L9	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.





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	May	Jun
Common pipistrelle	L1	1276	1379
Common pipistrelle	L10	1106	434
Common pipistrelle	L11	406	477
Common pipistrelle	L2	2314	229
Common pipistrelle	L3	1238	0
Common pipistrelle	L4	548	354
Common pipistrelle	L5	242	127
Common pipistrelle	L6	2217	2669
Common pipistrelle	L7	358	162
Common pipistrelle	L8	710	983
Common pipistrelle	L9	311	370
Soprano pipistrelle	L1	622	535
Soprano pipistrelle	L10	923	332
Soprano pipistrelle	L11	339	810
Soprano pipistrelle	L2	1915	251
Soprano pipistrelle	L3	245	0
Soprano pipistrelle	L4	202	96
Soprano pipistrelle	L5	115	78
Soprano pipistrelle	L6	184	106
Soprano pipistrelle	L7	228	83
Soprano pipistrelle	L8	114	153
Soprano pipistrelle	L9	343	402
Nathusius'	L1	57	79
Nathusius'	L10	2	4
Nathusius'	L11	6	6
Nathusius'	L2	23	0
Nathusius'	L6	28	39
Nathusius'	L7	6	6
Nathusius'	L8	8	8
Leisler's	L1	84	88
Leisler's	L10	290	450
Leisler's	L11	154	329
Leisler's	L2	77	28
Leisler's	L3	51	0
Leisler's	L4	112	82
Leisler's	L5	123	97

Species	Detector ID	May	Jun
Leisler's	L6	156	109
Leisler's	L7	169	91
Leisler's	L8	220	140
Leisler's	L9	270	385
Brown long-eared	L1	20	15
Brown long-eared	L10	53	2
Brown long-eared	L11	8	26
Brown long-eared	L2	20	1
Brown long-eared	L3	3	0
Brown long-eared	L4	3	5
Brown long-eared	L5	1	3
Brown long-eared	L6	22	19
Brown long-eared	L7	10	5
Brown long-eared	L8	20	49
Brown long-eared	L9	8	20
Daubenton's	L1	24	23
Daubenton's	L10	33	47
Daubenton's	L11	6	21
Daubenton's	L2	24	15
Daubenton's	L3	18	0
Daubenton's	L4	53	22
Daubenton's	L5	8	11
Daubenton's	L6	32	32
Daubenton's	L7	24	25
Daubenton's	L8	88	49
Daubenton's	L9	29	25
Whiskered	L1	0	3
Whiskered	L10	9	12
Whiskered	L11	2	2
Whiskered	L2	2	23
Whiskered	L4	1	2
Whiskered	L6	0	1
Whiskered	L7	7	4
Whiskered	L8	19	9
Whiskered	L9	1	5
Natterer's	L10	7	3

Species	Detector ID	May	Jun
Natterer's	L11	1	5
Natterer's	L2	6	2
Natterer's	L3	9	0
Natterer's	L4	0	3
Natterer's	L5	0	3
Natterer's	L6	0	14
Natterer's	L8	9	3
Natterer's	L9	6	11

Survey Effort

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

month	Detector ID	No. of Survey Nights
May	L1	15
May	L10	15
May	L11	9
May	L2	14
May	L3	12
May	L4	15
May	L5	14
May	L6	15
May	L7	15
May	L8	15
May	L9	15
Jun	L1	12
Jun	L10	12
Jun	L11	12
Jun	L2	9
Jun	L4	12
Jun	L5	12
Jun	L6	12
Jun	L7	12
Jun	L8	12
Jun	L9	12

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	May	Jun
Common pipistrelle	L1	10.5	14.3
Common pipistrelle	L10	9.6	4.2
Common pipistrelle	L11	6.7	6.7
Common pipistrelle	L2	20.9	2.7
Common pipistrelle	L3	9.0	NA
Common pipistrelle	L4	3.9	2.4
Common pipistrelle	L5	2.3	0.7
Common pipistrelle	L6	15.1	29.4
Common pipistrelle	L7	3.1	1.7
Common pipistrelle	L8	4.5	6.3
Common pipistrelle	L9	2.3	3.4
Soprano pipistrelle	L1	5.6	5.6
Soprano pipistrelle	L10	7.0	3.8
Soprano pipistrelle	L11	5.0	12.1
Soprano pipistrelle	L2	14.4	2.9
Soprano pipistrelle	L3	2.6	NA
Soprano pipistrelle	L4	2.1	1.1
Soprano pipistrelle	L5	1.2	0.6
Soprano pipistrelle	L6	1.7	0.6
Soprano pipistrelle	L7	1.8	0.8
Soprano pipistrelle	L8	1.2	1.2
Soprano pipistrelle	L9	3.4	4.2
Nathusius'	L1	1.0	1.3
Nathusius'	L10	0.2	0.1
Nathusius'	L11	0.4	0.1
Nathusius'	L2	0.4	NA
Nathusius'	L6	0.3	0.8
Nathusius'	L7	0.2	0.2
Nathusius'	L8	0.3	0.3
Leisler's	L1	0.7	0.7
Leisler's	L10	2.2	2.2
Leisler's	L11	0.7	2.7
Leisler's	L2	0.9	0.4
Leisler's	L3	0.8	NA
Leisler's	L4	1.0	0.9
Leisler's	L5	0.9	0.8

Species	Detector ID	May	Jun
Leisler's	L6	1.3	1.2
Leisler's	L7	1.1	1.1
Leisler's	L8	1.7	1.5
Leisler's	L9	1.6	1.7
Brown long-eared	L1	0.3	0.3
Brown long-eared	L10	0.5	0.1
Brown long-eared	L11	0.5	0.6
Brown long-eared	L2	0.3	0.1
Brown long-eared	L3	0.1	NA
Brown long-eared	L4	0.1	0.1
Brown long-eared	L5	0.1	0.1
Brown long-eared	L6	0.3	0.4
Brown long-eared	L7	0.3	0.3
Brown long-eared	L8	0.2	0.7
Brown long-eared	L9	0.1	0.4
Daubenton's	L1	0.3	0.3
Daubenton's	L10	0.4	0.7
Daubenton's	L11	0.4	0.3
Daubenton's	L2	0.2	0.3
Daubenton's	L3	0.3	NA
Daubenton's	L4	0.5	0.3
Daubenton's	L5	0.1	0.4
Daubenton's	L6	0.4	0.5
Daubenton's	L7	0.3	0.4
Daubenton's	L8	0.8	0.6
Daubenton's	L9	0.3	0.3
Whiskered	L1	NA	0.1
Whiskered	L10	0.3	0.3
Whiskered	L11	0.3	0.1
Whiskered	L2	0.1	0.1
Whiskered	L4	0.1	0.1
Whiskered	L6	NA	0.1
Whiskered	L7	0.1	0.1
Whiskered	L8	0.3	0.1
Whiskered	L9	0.1	0.7
Natterer's	L10	0.2	0.2

Species	Detector ID	May	Jun
Natterer's	L11	0.1	0.1
Natterer's	L2	0.2	0.1
Natterer's	L3	0.1	NA
Natterer's	L4	NA	0.1
Natterer's	L5	NA	0.2
Natterer's	L6	NA	0.4
Natterer's	L8	0.2	0.1
Natterer's	L9	0.2	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	May	Jun
Common pipistrelle	L1	11.0	15.7
Common pipistrelle	L10	9.4	4.9
Common pipistrelle	L11	7.5	5.9
Common pipistrelle	L2	21.1	3.5
Common pipistrelle	L3	13.0	NA
Common pipistrelle	L4	5.0	4.0
Common pipistrelle	L5	2.2	1.6
Common pipistrelle	L6	18.8	30.4
Common pipistrelle	L7	3.0	1.8
Common pipistrelle	L8	6.0	11.2
Common pipistrelle	L9	2.6	4.2
Soprano pipistrelle	L1	5.7	6.1
Soprano pipistrelle	L10	7.8	3.8
Soprano pipistrelle	L11	5.5	10.1
Soprano pipistrelle	L2	17.4	3.8
Soprano pipistrelle	L3	2.6	NA
Soprano pipistrelle	L4	1.8	1.2
Soprano pipistrelle	L5	1.0	1.0
Soprano pipistrelle	L6	1.7	1.2
Soprano pipistrelle	L7	1.9	0.9
Soprano pipistrelle	L8	1.0	1.8
Soprano pipistrelle	L9	3.1	4.6
Nathusius'	L1	1.2	1.3
Nathusius'	L10	0.2	0.1
Nathusius'	L11	0.4	0.2
Nathusius'	L2	0.5	NA
Nathusius'	L6	0.5	0.6
Nathusius'	L7	0.2	0.2
Nathusius'	L8	0.3	0.3
Leisler's	L1	0.9	1.0

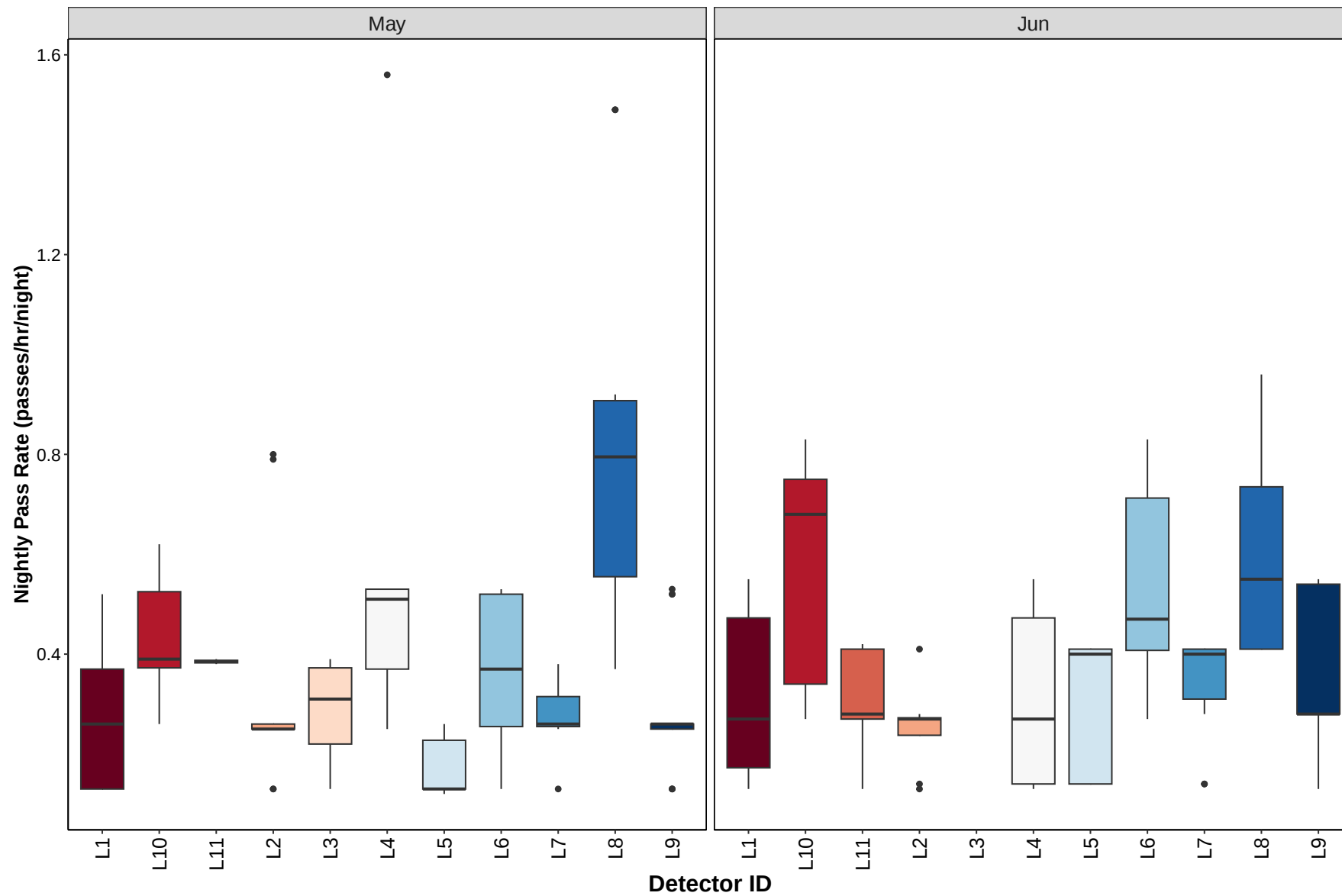
Species	Detector ID	May	Jun
Leisler's	L10	2.5	5.1
Leisler's	L11	2.2	3.8
Leisler's	L2	0.8	0.4
Leisler's	L3	0.6	NA
Leisler's	L4	1.0	0.9
Leisler's	L5	1.2	1.1
Leisler's	L6	1.3	1.2
Leisler's	L7	1.4	1.1
Leisler's	L8	1.9	1.6
Leisler's	L9	2.5	4.4
Brown long-eared	L1	0.3	0.2
Brown long-eared	L10	0.8	0.1
Brown long-eared	L11	0.5	0.4
Brown long-eared	L2	0.3	0.1
Brown long-eared	L3	0.1	NA
Brown long-eared	L4	0.1	0.2
Brown long-eared	L5	0.1	0.1
Brown long-eared	L6	0.3	0.4
Brown long-eared	L7	0.3	0.2
Brown long-eared	L8	0.2	0.6
Brown long-eared	L9	0.1	0.4
Daubenton's	L1	0.3	0.3
Daubenton's	L10	0.4	0.6
Daubenton's	L11	0.4	0.3
Daubenton's	L2	0.3	0.3
Daubenton's	L3	0.3	NA
Daubenton's	L4	0.5	0.3
Daubenton's	L5	0.2	0.3
Daubenton's	L6	0.4	0.5
Daubenton's	L7	0.3	0.3
Daubenton's	L8	0.8	0.6
Daubenton's	L9	0.3	0.4
Whiskered	L1	NA	0.1
Whiskered	L10	0.2	0.3
Whiskered	L11	0.3	0.1
Whiskered	L2	0.1	0.6

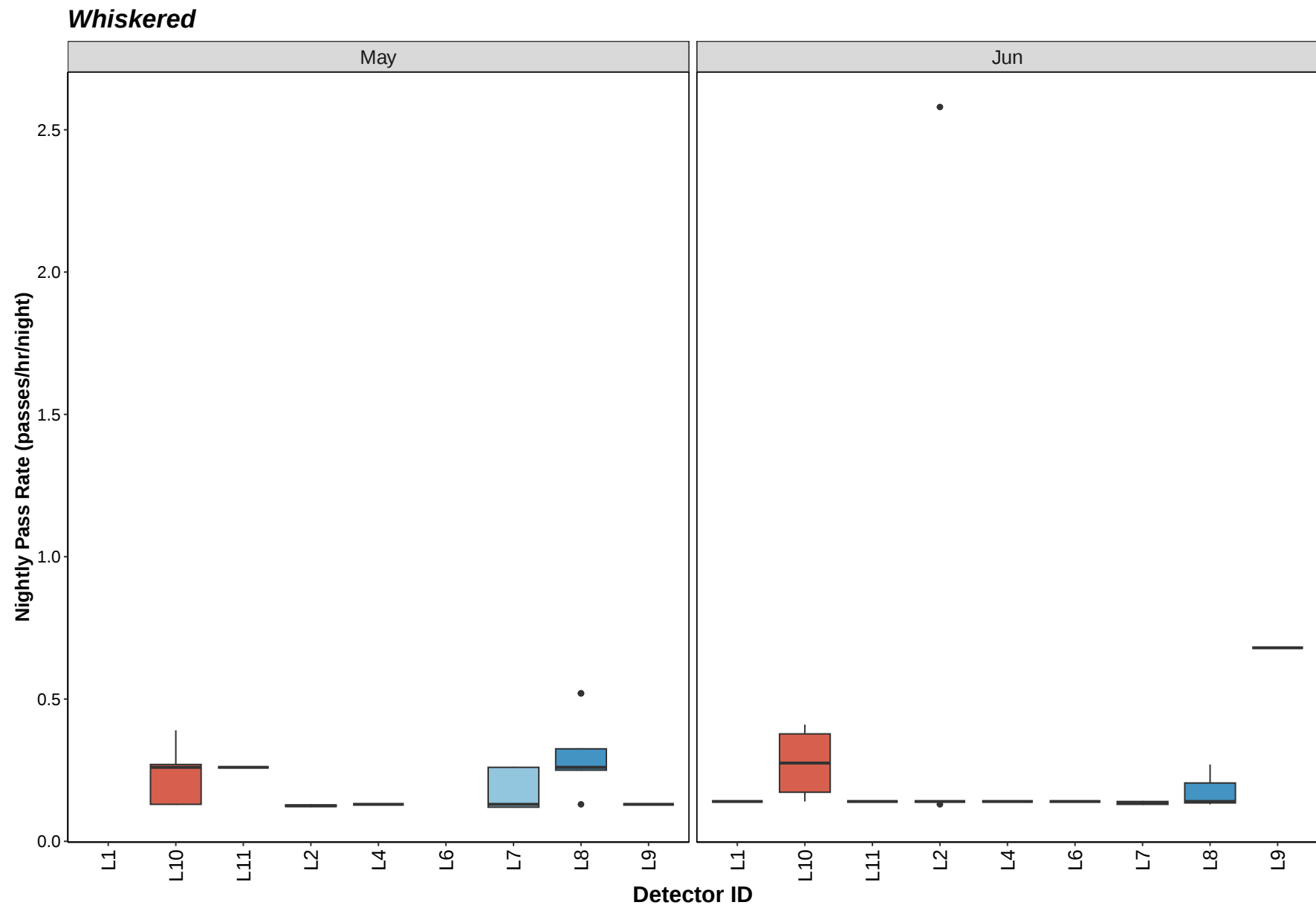
Species	Detector ID	May	Jun
Whiskered	L4	0.1	0.1
Whiskered	L6	NA	0.1
Whiskered	L7	0.2	0.1
Whiskered	L8	0.3	0.2
Whiskered	L9	0.1	0.7
Natterer's	L10	0.2	0.2
Natterer's	L11	0.1	0.1
Natterer's	L2	0.2	0.1
Natterer's	L3	0.2	NA
Natterer's	L4	NA	0.1
Natterer's	L5	NA	0.2
Natterer's	L6	NA	0.5
Natterer's	L8	0.2	0.1
Natterer's	L9	0.2	0.3

Per Detector

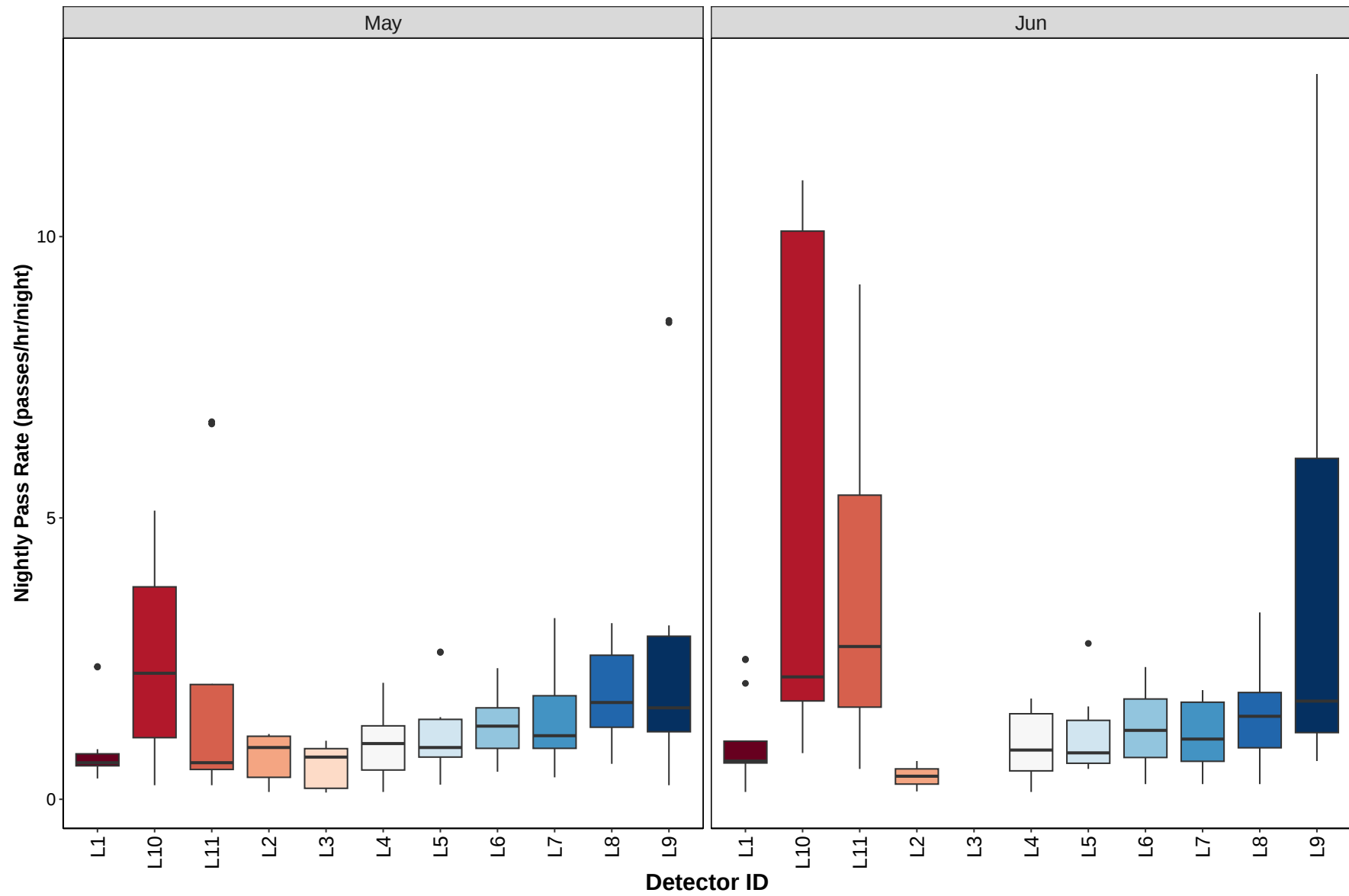
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent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

Daubenton's

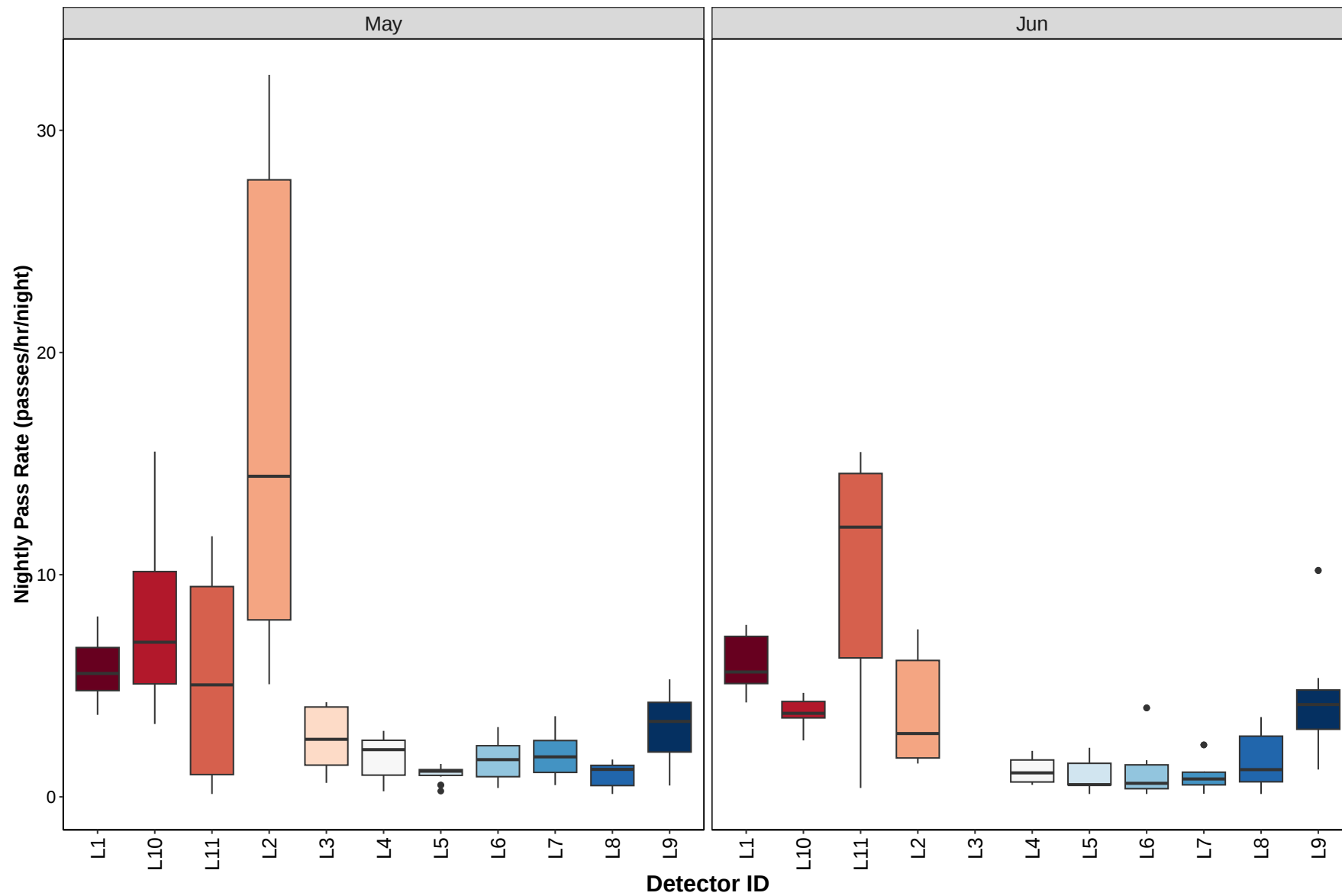




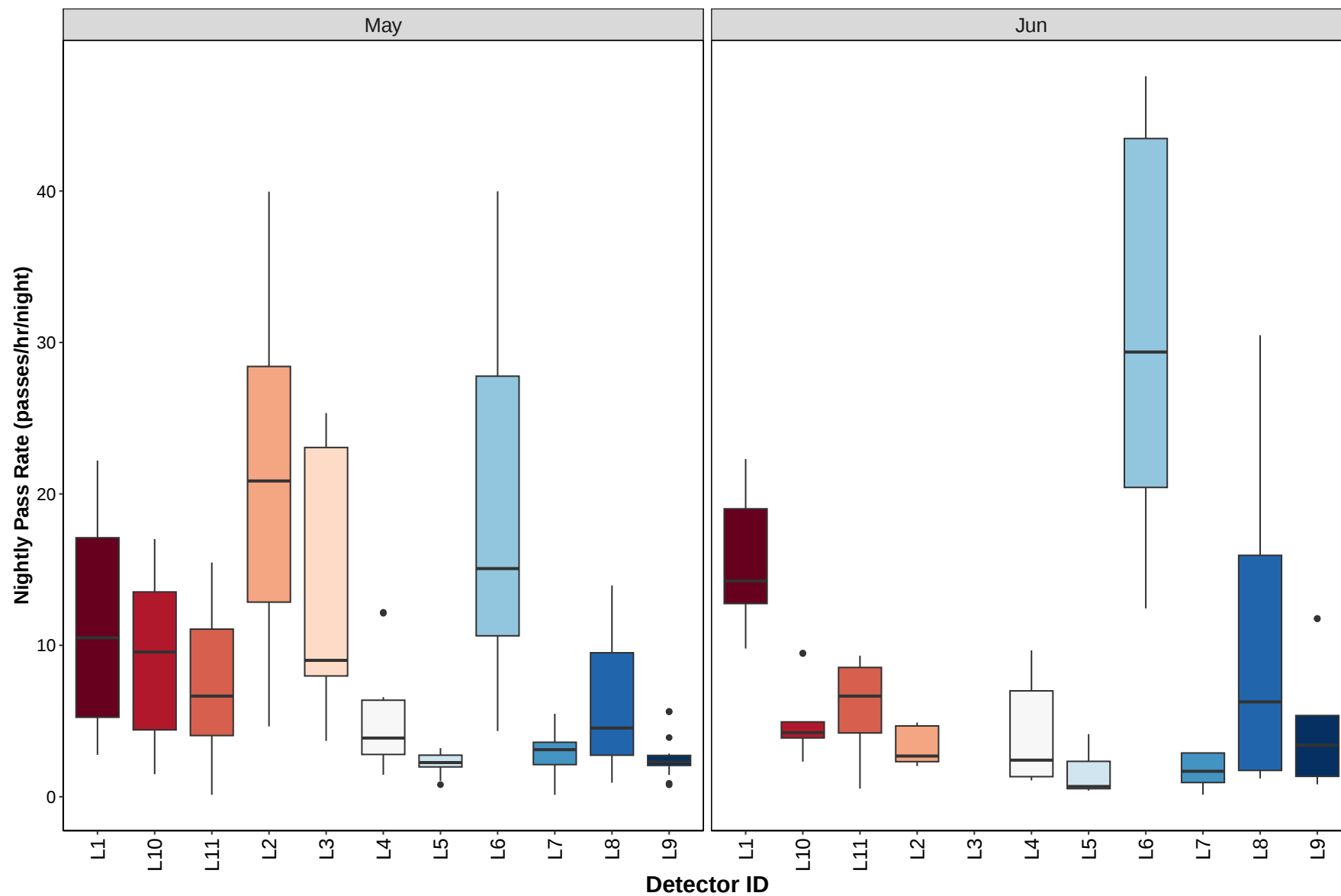
Leisler's



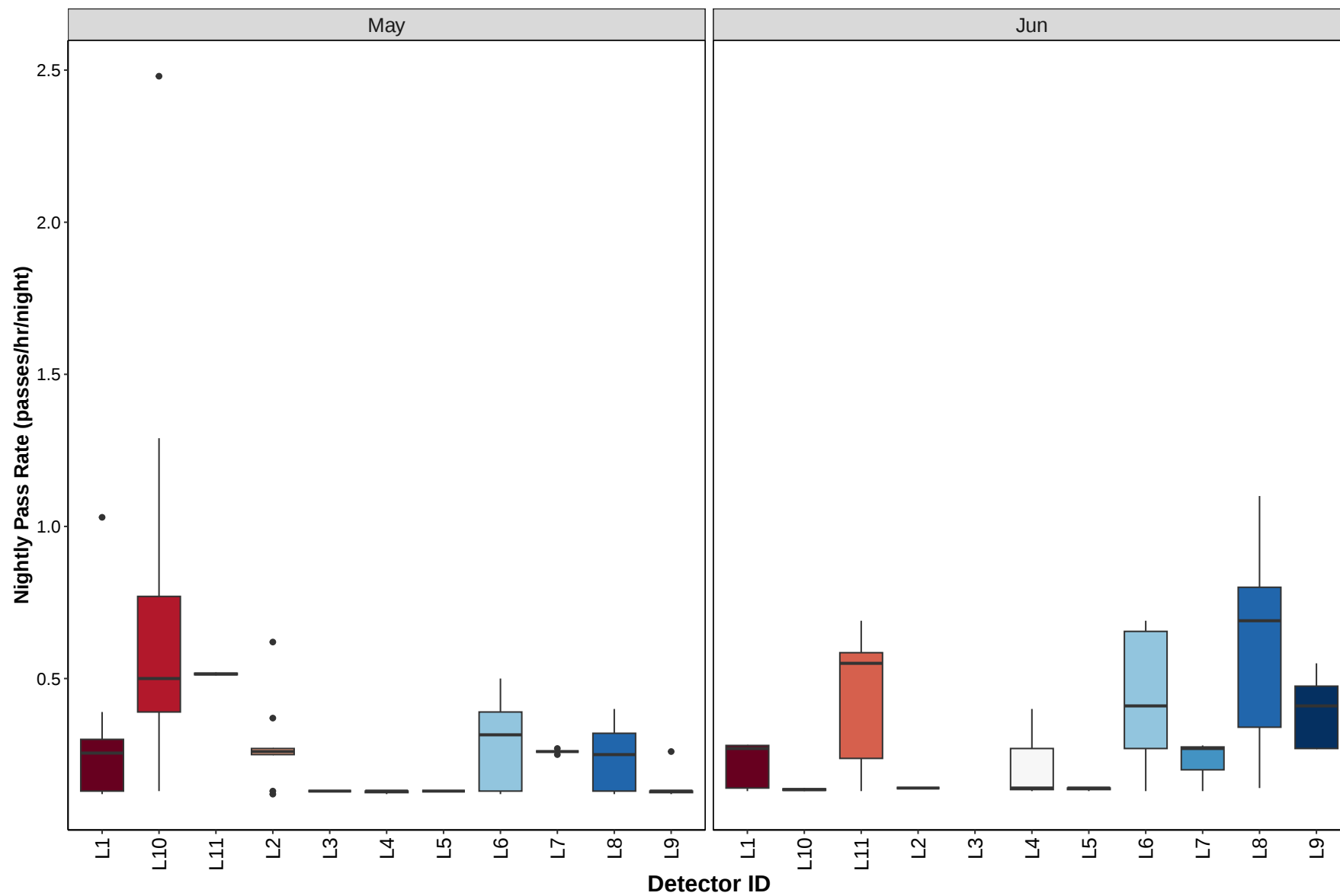
Soprano pipistrelle



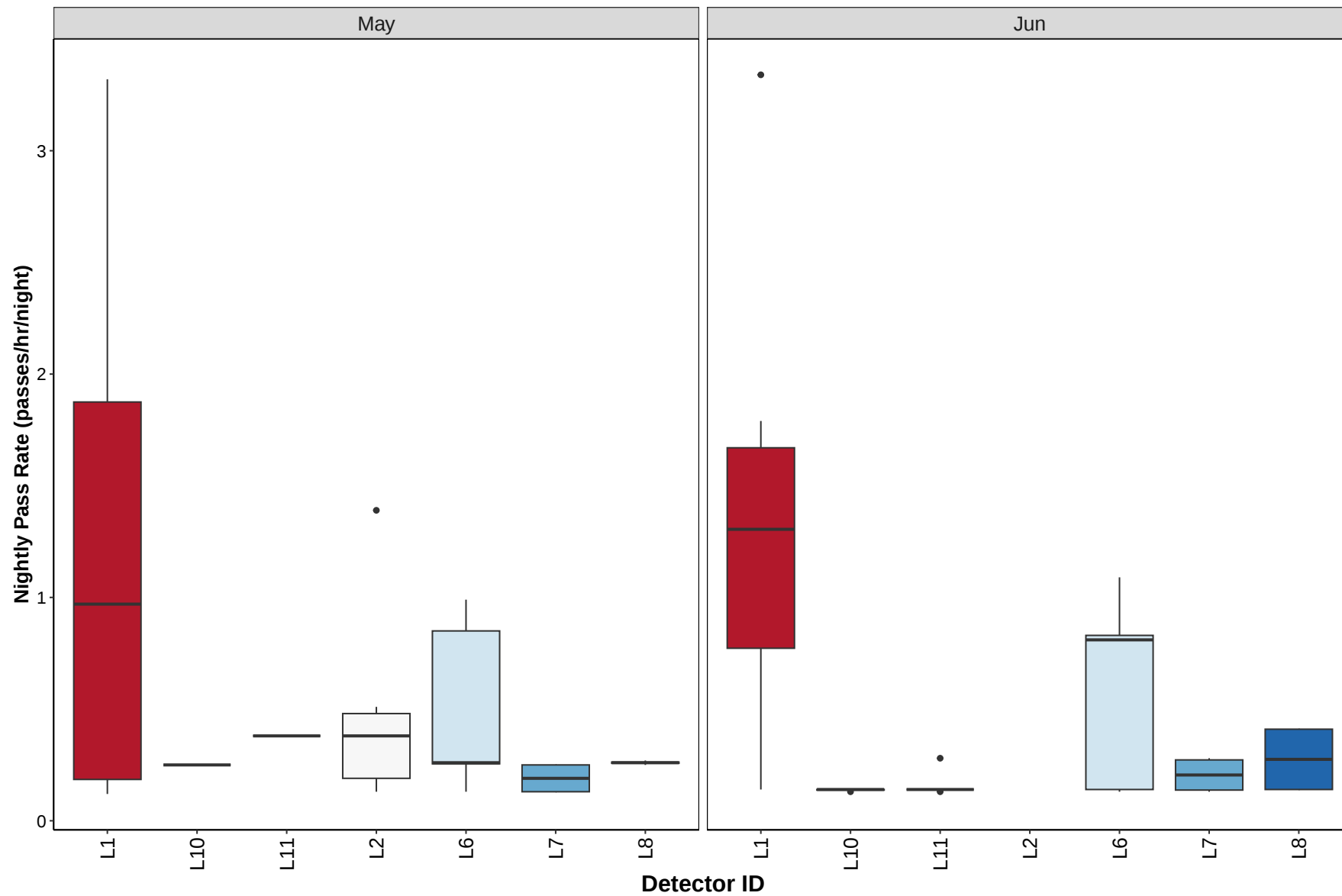
Common pipistrelle



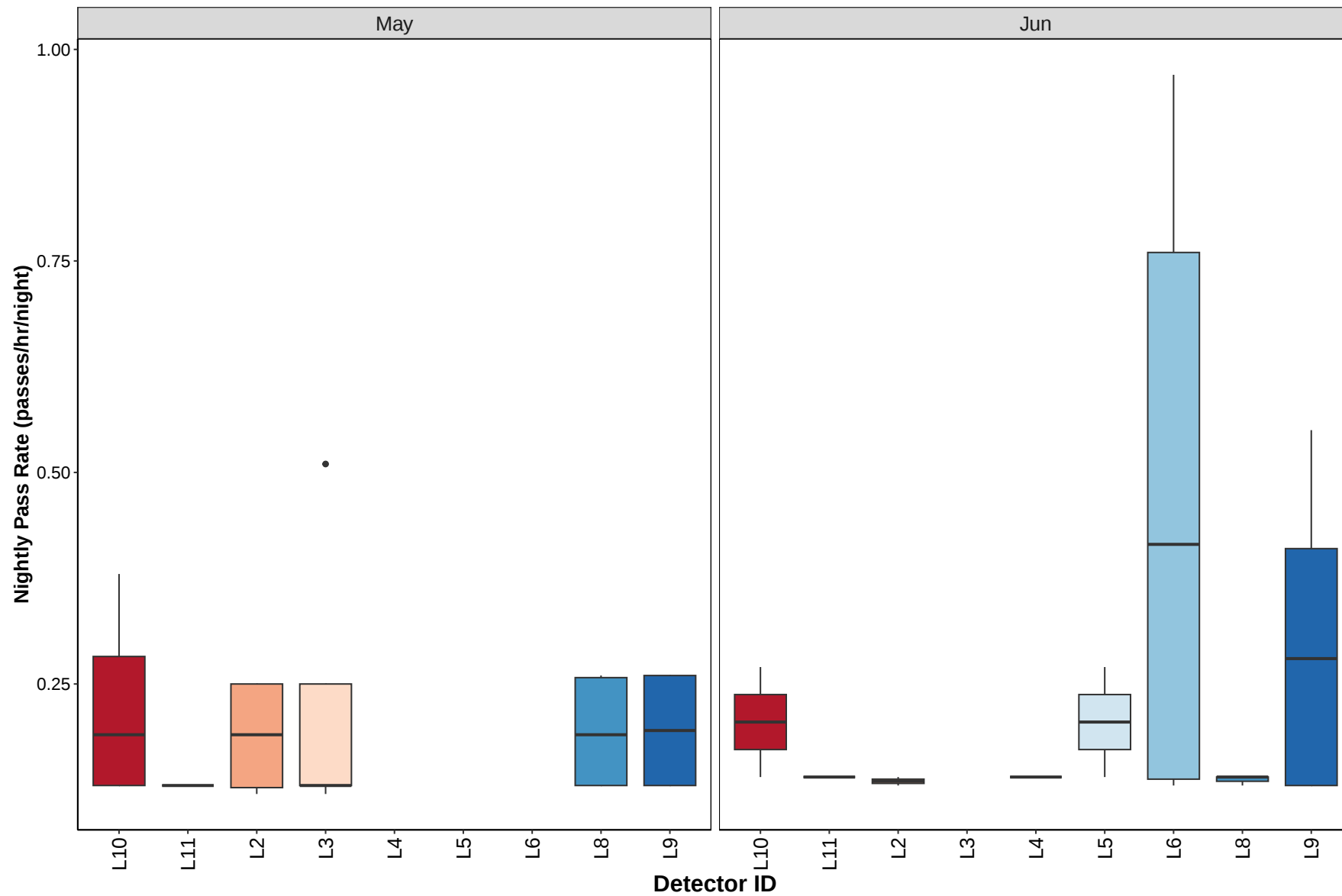
Brown long-eared



Nathusius'



Natterer's



Bat Activity per Detector Location

Figure 13. Detector ID reference:

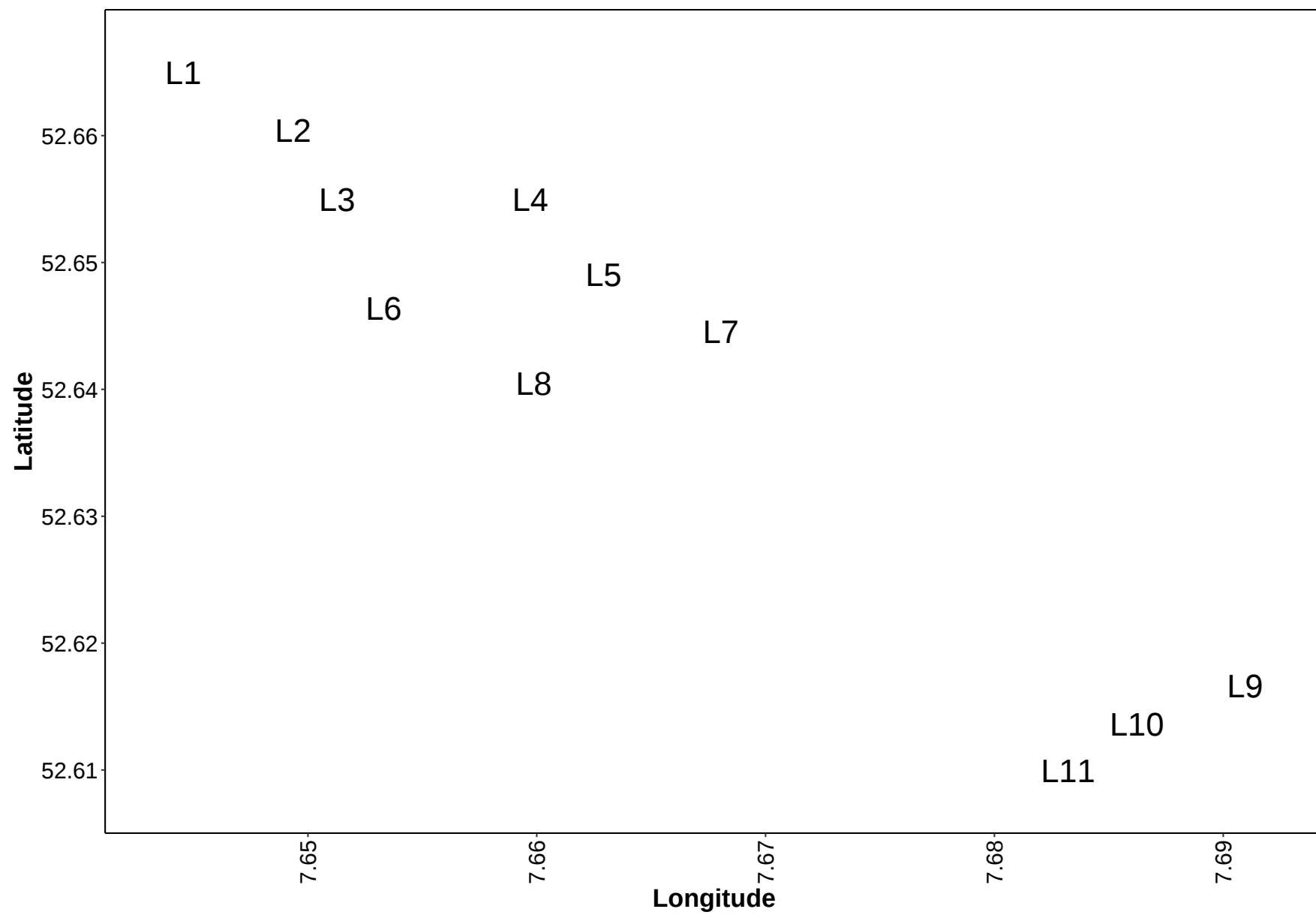
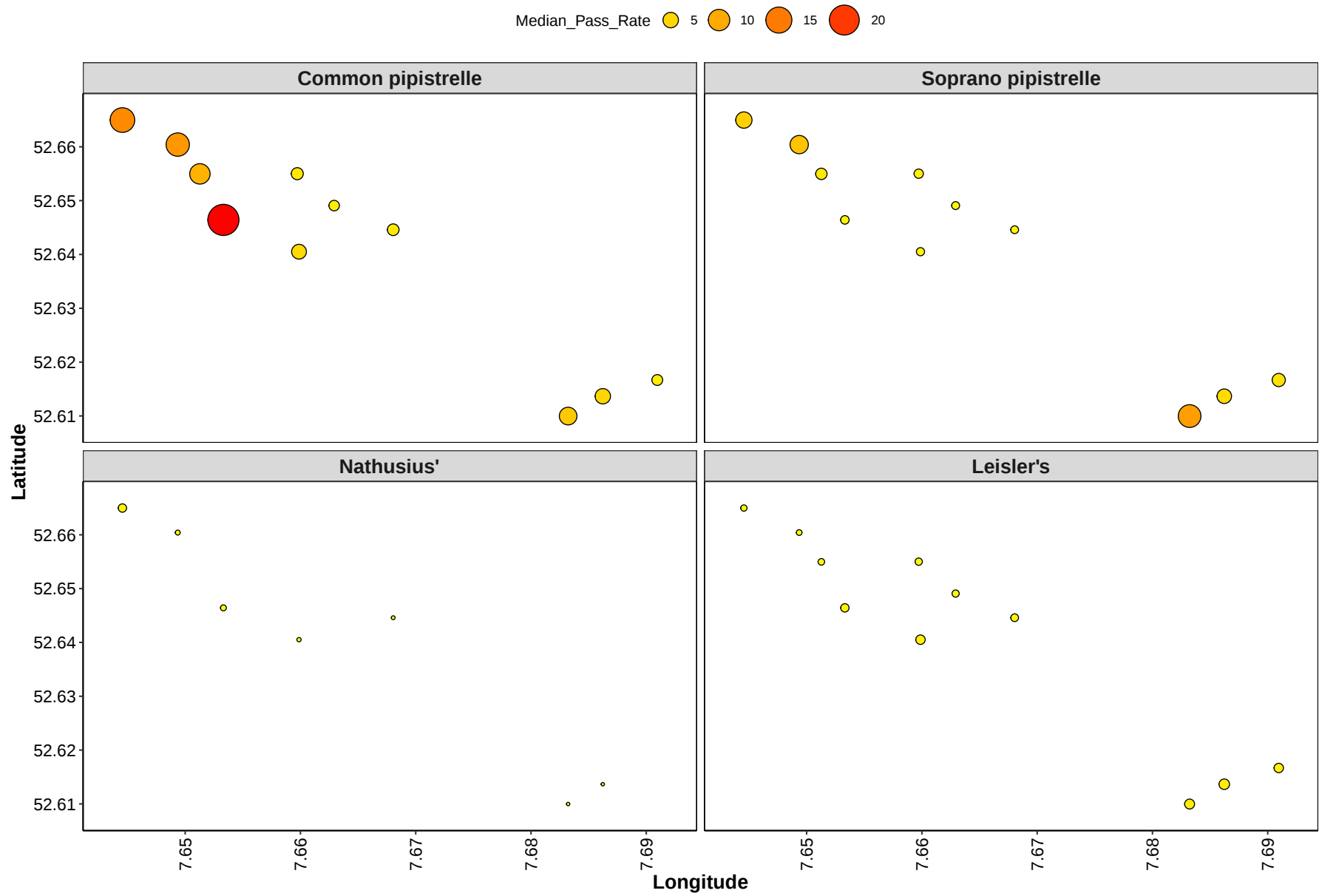


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



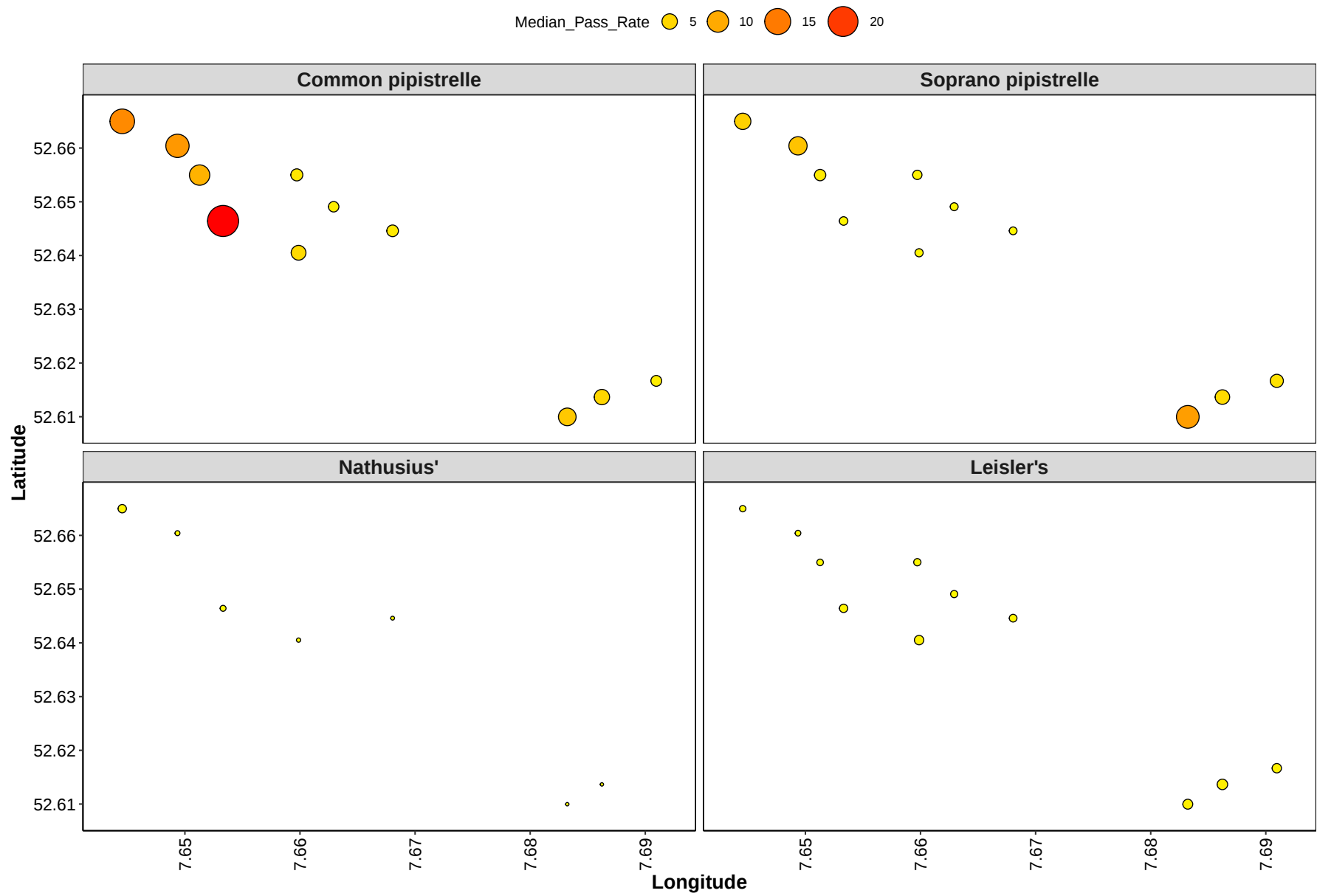
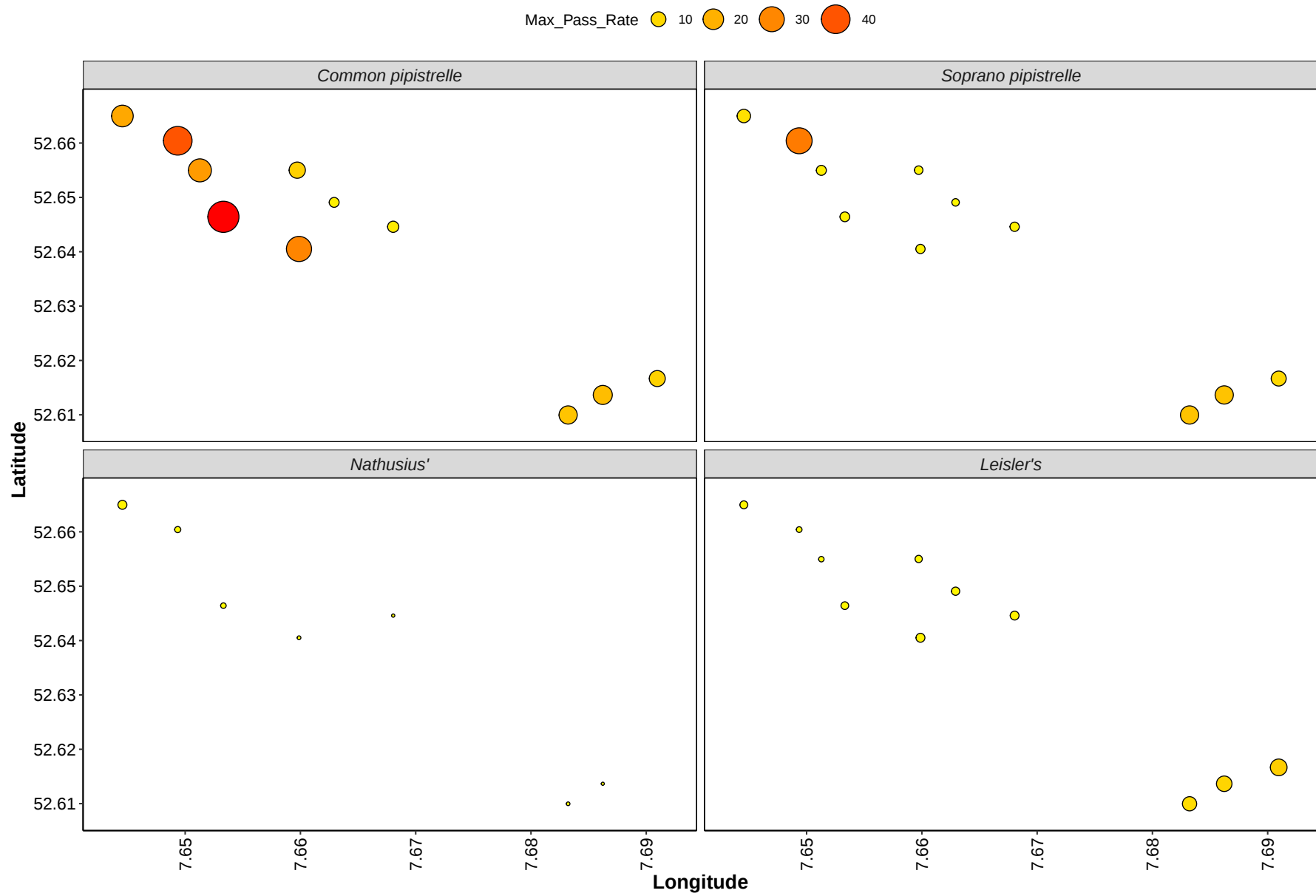
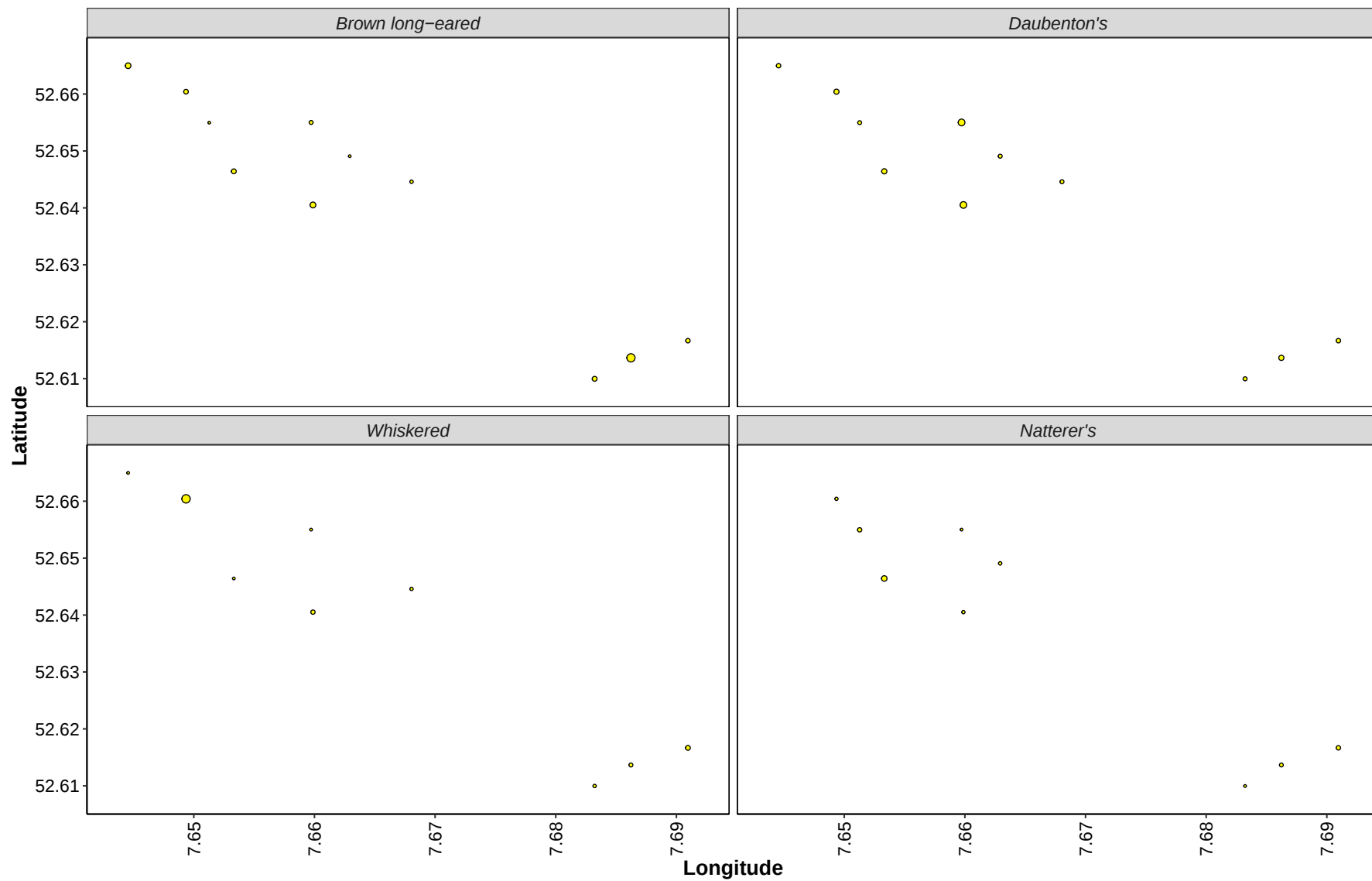


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.



Max_Pass_Rate ● 10 ● 20 ● 30 ● 40



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	L1	0.1
Brown long-eared	L10	0.0
Brown long-eared	L11	0.0
Brown long-eared	L2	0.0
Brown long-eared	L3	0.0
Brown long-eared	L4	0.0
Brown long-eared	L5	0.0
Brown long-eared	L6	0.1
Brown long-eared	L7	0.0
Brown long-eared	L8	0.3
Brown long-eared	L9	0.1
Common pipistrelle	L1	13.4
Common pipistrelle	L10	4.9
Common pipistrelle	L11	6.6
Common pipistrelle	L2	11.9
Common pipistrelle	L3	9.0
Common pipistrelle	L4	2.9
Common pipistrelle	L5	2.1
Common pipistrelle	L6	21.8
Common pipistrelle	L7	2.7
Common pipistrelle	L8	4.6
Common pipistrelle	L9	2.3
Daubenton's	L1	0.3
Daubenton's	L10	0.4
Daubenton's	L11	0.1
Daubenton's	L2	0.2
Daubenton's	L3	0.2
Daubenton's	L4	0.4
Daubenton's	L5	0.0
Daubenton's	L6	0.3
Daubenton's	L7	0.3
Daubenton's	L8	0.7
Daubenton's	L9	0.3
Leisler's	L1	0.7
Leisler's	L10	2.2
Leisler's	L11	1.9

Species	Detector ID	Median Pass Rate
Leisler's	L2	0.5
Leisler's	L3	0.6
Leisler's	L4	0.9
Leisler's	L5	0.9
Leisler's	L6	1.3
Leisler's	L7	1.1
Leisler's	L8	1.7
Leisler's	L9	1.6
Nathusius'	L1	0.1
Nathusius'	L10	0.0
Nathusius'	L11	0.0
Nathusius'	L2	0.0
Nathusius'	L3	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.1
Nathusius'	L7	0.0
Nathusius'	L8	0.0
Nathusius'	L9	0.0
Natterer's	L1	0.0
Natterer's	L10	0.0
Natterer's	L11	0.0
Natterer's	L2	0.0
Natterer's	L3	0.0
Natterer's	L4	0.0
Natterer's	L5	0.0
Natterer's	L6	0.0
Natterer's	L7	0.0
Natterer's	L8	0.0
Natterer's	L9	0.0
Soprano pipistrelle	L1	5.6
Soprano pipistrelle	L10	4.4
Soprano pipistrelle	L11	8.7
Soprano pipistrelle	L2	7.2
Soprano pipistrelle	L3	2.6
Soprano pipistrelle	L4	1.4

Species	Detector ID	Median Pass Rate
Soprano pipistrelle	L5	1.1
Soprano pipistrelle	L6	1.4
Soprano pipistrelle	L7	1.1
Soprano pipistrelle	L8	1.2
Soprano pipistrelle	L9	3.5
Whiskered	L1	0.0
Whiskered	L10	0.0
Whiskered	L11	0.0
Whiskered	L2	0.0
Whiskered	L3	0.0
Whiskered	L4	0.0
Whiskered	L5	0.0
Whiskered	L6	0.0
Whiskered	L7	0.0
Whiskered	L8	0.1
Whiskered	L9	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.

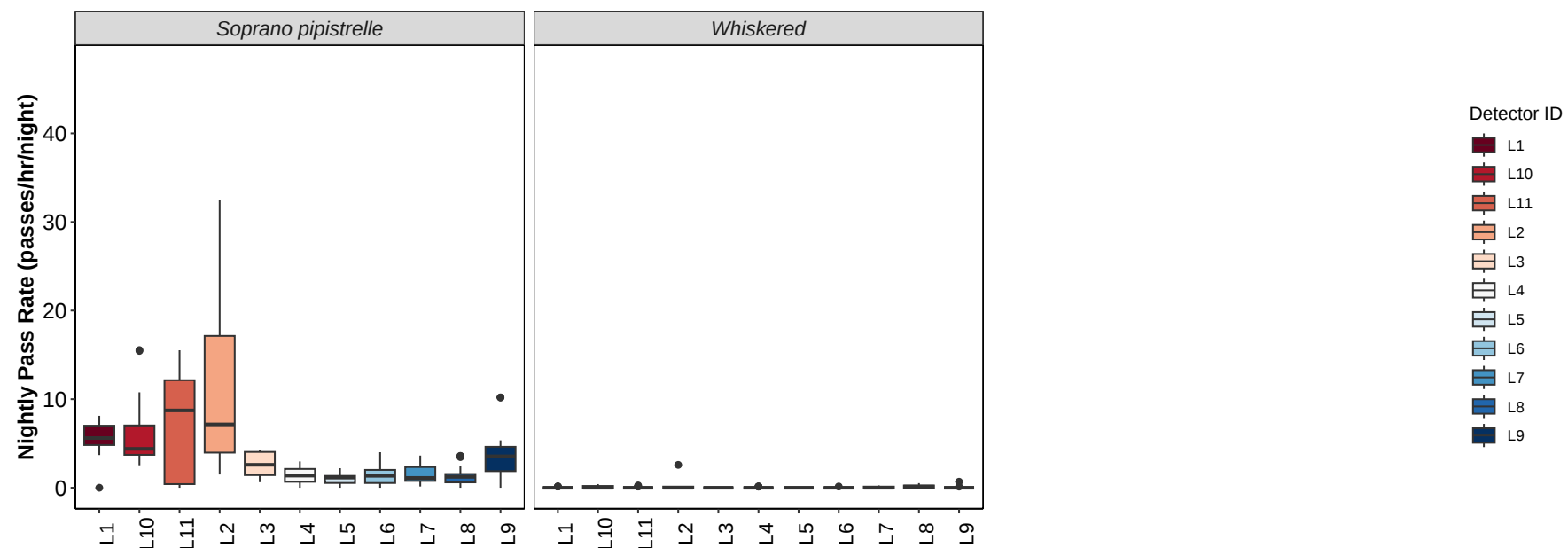
Species	Detector ID	Mean Pass Rate
Brown long-eared	L1	0.2
Brown long-eared	L10	0.3
Brown long-eared	L11	0.2
Brown long-eared	L2	0.1
Brown long-eared	L3	0.0
Brown long-eared	L4	0.0
Brown long-eared	L5	0.0
Brown long-eared	L6	0.2
Brown long-eared	L7	0.1
Brown long-eared	L8	0.3
Brown long-eared	L9	0.1
Common pipistrelle	L1	13.1
Common pipistrelle	L10	7.4
Common pipistrelle	L11	5.6
Common pipistrelle	L2	14.2
Common pipistrelle	L3	13.0
Common pipistrelle	L4	4.4
Common pipistrelle	L5	1.9
Common pipistrelle	L6	23.9
Common pipistrelle	L7	2.5
Common pipistrelle	L8	8.3
Common pipistrelle	L9	3.4
Daubenton's	L1	0.2
Daubenton's	L10	0.4
Daubenton's	L11	0.2
Daubenton's	L2	0.2
Daubenton's	L3	0.2
Daubenton's	L4	0.4
Daubenton's	L5	0.1
Daubenton's	L6	0.3
Daubenton's	L7	0.2
Daubenton's	L8	0.7
Daubenton's	L9	0.3
Leisler's	L1	0.8
Leisler's	L10	3.7
Leisler's	L11	3.1

Species	Detector ID	Mean Pass Rate
Leisler's	L2	0.6
Leisler's	L3	0.5
Leisler's	L4	0.9
Leisler's	L5	1.1
Leisler's	L6	1.3
Leisler's	L7	1.3
Leisler's	L8	1.8
Leisler's	L9	3.3
Nathusius'	L1	0.7
Nathusius'	L10	0.0
Nathusius'	L11	0.1
Nathusius'	L2	0.1
Nathusius'	L3	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.3
Nathusius'	L7	0.1
Nathusius'	L8	0.1
Nathusius'	L9	0.0
Natterer's	L1	0.0
Natterer's	L10	0.0
Natterer's	L11	0.0
Natterer's	L2	0.0
Natterer's	L3	0.1
Natterer's	L4	0.0
Natterer's	L5	0.0
Natterer's	L6	0.1
Natterer's	L7	0.0
Natterer's	L8	0.1
Natterer's	L9	0.1
Soprano pipistrelle	L1	5.7
Soprano pipistrelle	L10	6.0
Soprano pipistrelle	L11	7.4
Soprano pipistrelle	L2	12.1
Soprano pipistrelle	L3	2.6
Soprano pipistrelle	L4	1.4

Species	Detector ID	Mean Pass Rate
Soprano pipistrelle	L5	1.0
Soprano pipistrelle	L6	1.4
Soprano pipistrelle	L7	1.5
Soprano pipistrelle	L8	1.3
Soprano pipistrelle	L9	3.7
Whiskered	L1	0.0
Whiskered	L10	0.1
Whiskered	L11	0.0
Whiskered	L2	0.1
Whiskered	L3	0.0
Whiskered	L4	0.0
Whiskered	L5	0.0
Whiskered	L6	0.0
Whiskered	L7	0.1
Whiskered	L8	0.1
Whiskered	L9	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.



Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
May	L1	15
May	L10	15
May	L11	9
May	L2	14
May	L3	12
May	L4	15
May	L5	14
May	L6	15
May	L7	15
May	L8	15
May	L9	15
Jun	L1	12
Jun	L10	12
Jun	L11	12
Jun	L2	9
Jun	L4	12
Jun	L5	12
Jun	L6	12
Jun	L7	12
Jun	L8	12
Jun	L9	12

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the ‘average’ activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Jun	May
Brown long-eared	L1	0.2	0.1
Brown long-eared	L10	0.0	0.1
Brown long-eared	L11	0.2	0.0
Brown long-eared	L2	0.0	0.2
Brown long-eared	L3	NA	0.0
Brown long-eared	L4	0.0	0.0
Brown long-eared	L5	0.0	0.0
Brown long-eared	L6	0.1	0.1
Brown long-eared	L7	0.0	0.0
Brown long-eared	L8	0.5	0.1
Brown long-eared	L9	0.3	0.0
Common pipistrelle	L1	14.3	10.5
Common pipistrelle	L10	4.2	9.6
Common pipistrelle	L11	6.6	4.1
Common pipistrelle	L2	2.7	20.9
Common pipistrelle	L3	NA	9.0
Common pipistrelle	L4	2.4	3.2
Common pipistrelle	L5	0.7	2.3
Common pipistrelle	L6	29.4	15.1
Common pipistrelle	L7	1.7	3.1
Common pipistrelle	L8	6.3	4.5
Common pipistrelle	L9	3.4	2.3
Daubenton's	L1	0.3	0.1
Daubenton's	L10	0.7	0.4
Daubenton's	L11	0.3	0.0
Daubenton's	L2	0.3	0.2
Daubenton's	L3	NA	0.2
Daubenton's	L4	0.2	0.4
Daubenton's	L5	0.0	0.0
Daubenton's	L6	0.4	0.3
Daubenton's	L7	0.4	0.3
Daubenton's	L8	0.5	0.8
Daubenton's	L9	0.3	0.2
Leisler's	L1	0.7	0.6
Leisler's	L10	2.2	2.2
Leisler's	L11	2.7	0.7

Species	Detector ID	Jun	May
Leisler's	L2	0.4	0.9
Leisler's	L3	NA	0.6
Leisler's	L4	0.9	1.0
Leisler's	L5	0.8	0.9
Leisler's	L6	1.2	1.3
Leisler's	L7	1.0	1.1
Leisler's	L8	1.5	1.7
Leisler's	L9	1.7	1.6
Nathusius'	L1	0.6	0.0
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.0	0.0
Nathusius'	L2	0.0	0.0
Nathusius'	L3	NA	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.3	0.0
Nathusius'	L7	0.0	0.0
Nathusius'	L8	0.0	0.0
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.0	0.0
Natterer's	L10	0.0	0.0
Natterer's	L11	0.0	0.0
Natterer's	L2	0.0	0.0
Natterer's	L3	NA	0.0
Natterer's	L4	0.0	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.0	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.0
Natterer's	L9	0.0	0.0
Soprano pipistrelle	L1	5.6	5.4
Soprano pipistrelle	L10	3.8	7.0
Soprano pipistrelle	L11	12.0	3.3
Soprano pipistrelle	L2	2.9	14.4
Soprano pipistrelle	L3	NA	2.6
Soprano pipistrelle	L4	0.9	2.1

Species	Detector ID	Jun	May
Soprano pipistrelle	L5	0.5	1.2
Soprano pipistrelle	L6	0.6	1.4
Soprano pipistrelle	L7	0.8	1.8
Soprano pipistrelle	L8	1.2	1.2
Soprano pipistrelle	L9	4.2	3.2
Whiskered	L1	0.0	0.0
Whiskered	L10	0.1	0.0
Whiskered	L11	0.0	0.0
Whiskered	L2	0.1	0.0
Whiskered	L3	NA	0.0
Whiskered	L4	0.0	0.0
Whiskered	L5	0.0	0.0
Whiskered	L6	0.0	0.0
Whiskered	L7	0.0	0.0
Whiskered	L8	0.1	0.1
Whiskered	L9	0.0	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	Jun	May
Brown long-eared	L1	0.2	0.2
Brown long-eared	L10	0.0	0.5
Brown long-eared	L11	0.3	0.1
Brown long-eared	L2	0.0	0.2
Brown long-eared	L3	NA	0.0
Brown long-eared	L4	0.1	0.0
Brown long-eared	L5	0.0	0.0
Brown long-eared	L6	0.2	0.2
Brown long-eared	L7	0.1	0.1
Brown long-eared	L8	0.6	0.2
Brown long-eared	L9	0.2	0.1
Common pipistrelle	L1	15.7	11.0
Common pipistrelle	L10	4.9	9.4
Common pipistrelle	L11	5.4	5.8
Common pipistrelle	L2	3.5	21.1
Common pipistrelle	L3	NA	13.0
Common pipistrelle	L4	4.0	4.7
Common pipistrelle	L5	1.5	2.2
Common pipistrelle	L6	30.4	18.8
Common pipistrelle	L7	1.8	3.0
Common pipistrelle	L8	11.2	6.0
Common pipistrelle	L9	4.2	2.6
Daubenton's	L1	0.3	0.2
Daubenton's	L10	0.5	0.3
Daubenton's	L11	0.2	0.1
Daubenton's	L2	0.2	0.2
Daubenton's	L3	NA	0.2
Daubenton's	L4	0.2	0.5
Daubenton's	L5	0.1	0.1
Daubenton's	L6	0.4	0.3
Daubenton's	L7	0.3	0.2
Daubenton's	L8	0.6	0.8
Daubenton's	L9	0.3	0.2
Leisler's	L1	1.0	0.7
Leisler's	L10	5.1	2.5
Leisler's	L11	3.8	2.2

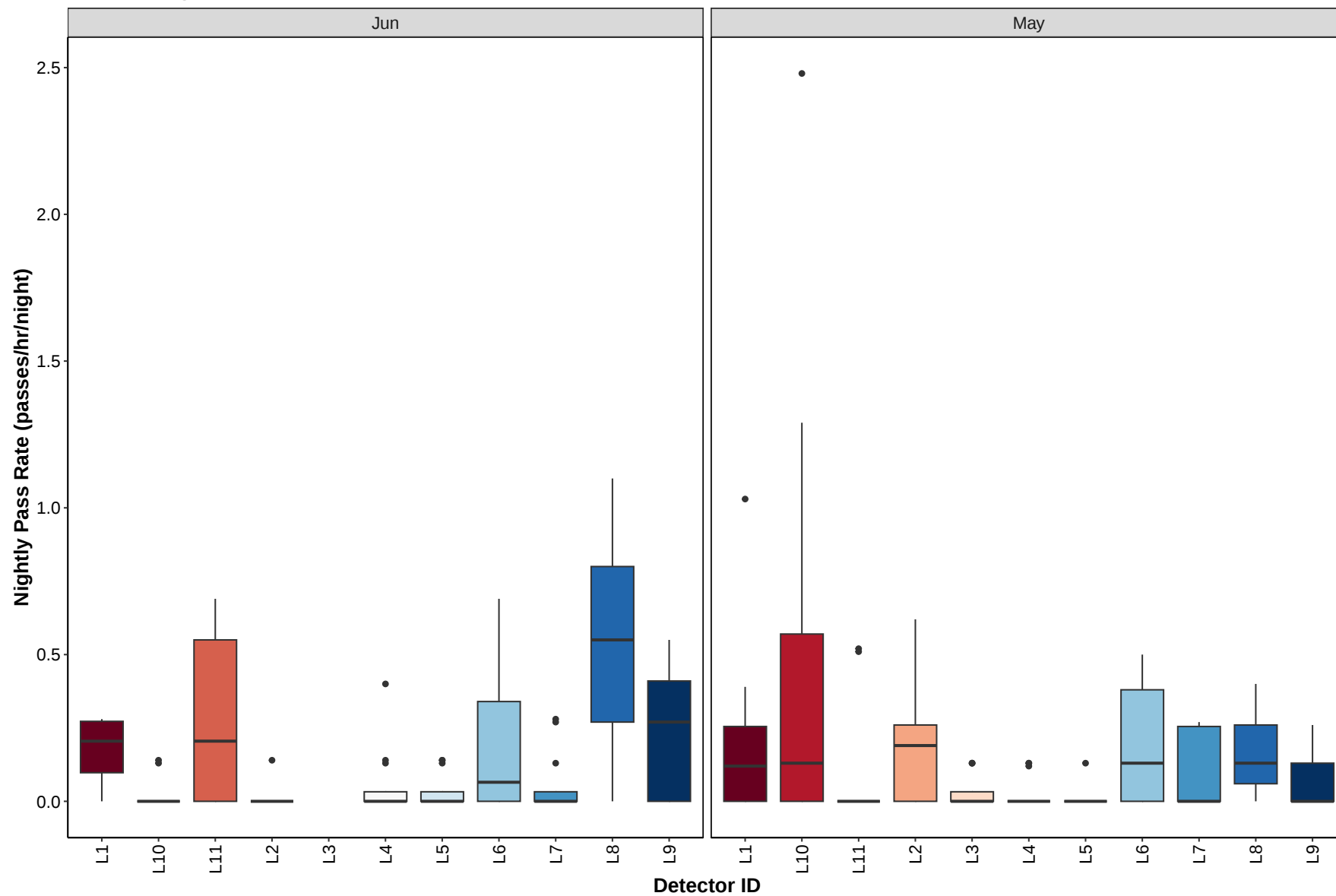
Species	Detector ID	Jun	May
Leisler's	L2	0.4	0.7
Leisler's	L3	NA	0.5
Leisler's	L4	0.9	1.0
Leisler's	L5	1.1	1.1
Leisler's	L6	1.2	1.3
Leisler's	L7	1.0	1.4
Leisler's	L8	1.6	1.9
Leisler's	L9	4.4	2.3
Nathusius'	L1	0.9	0.5
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.1	0.1
Nathusius'	L2	0.0	0.2
Nathusius'	L3	NA	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.4	0.2
Nathusius'	L7	0.1	0.1
Nathusius'	L8	0.1	0.1
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.0	0.0
Natterer's	L10	0.0	0.1
Natterer's	L11	0.1	0.0
Natterer's	L2	0.0	0.1
Natterer's	L3	NA	0.1
Natterer's	L4	0.0	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.2	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.1
Natterer's	L9	0.1	0.1
Soprano pipistrelle	L1	6.1	5.3
Soprano pipistrelle	L10	3.8	7.8
Soprano pipistrelle	L11	9.3	4.9
Soprano pipistrelle	L2	3.8	17.4
Soprano pipistrelle	L3	NA	2.6
Soprano pipistrelle	L4	1.1	1.7

Species	Detector ID	Jun	May
Soprano pipistrelle	L5	0.9	1.0
Soprano pipistrelle	L6	1.2	1.6
Soprano pipistrelle	L7	0.9	1.9
Soprano pipistrelle	L8	1.8	1.0
Soprano pipistrelle	L9	4.6	2.9
Whiskered	L1	0.0	0.0
Whiskered	L10	0.1	0.1
Whiskered	L11	0.0	0.0
Whiskered	L2	0.3	0.0
Whiskered	L3	NA	0.0
Whiskered	L4	0.0	0.0
Whiskered	L5	0.0	0.0
Whiskered	L6	0.0	0.0
Whiskered	L7	0.0	0.1
Whiskered	L8	0.1	0.2
Whiskered	L9	0.1	0.0

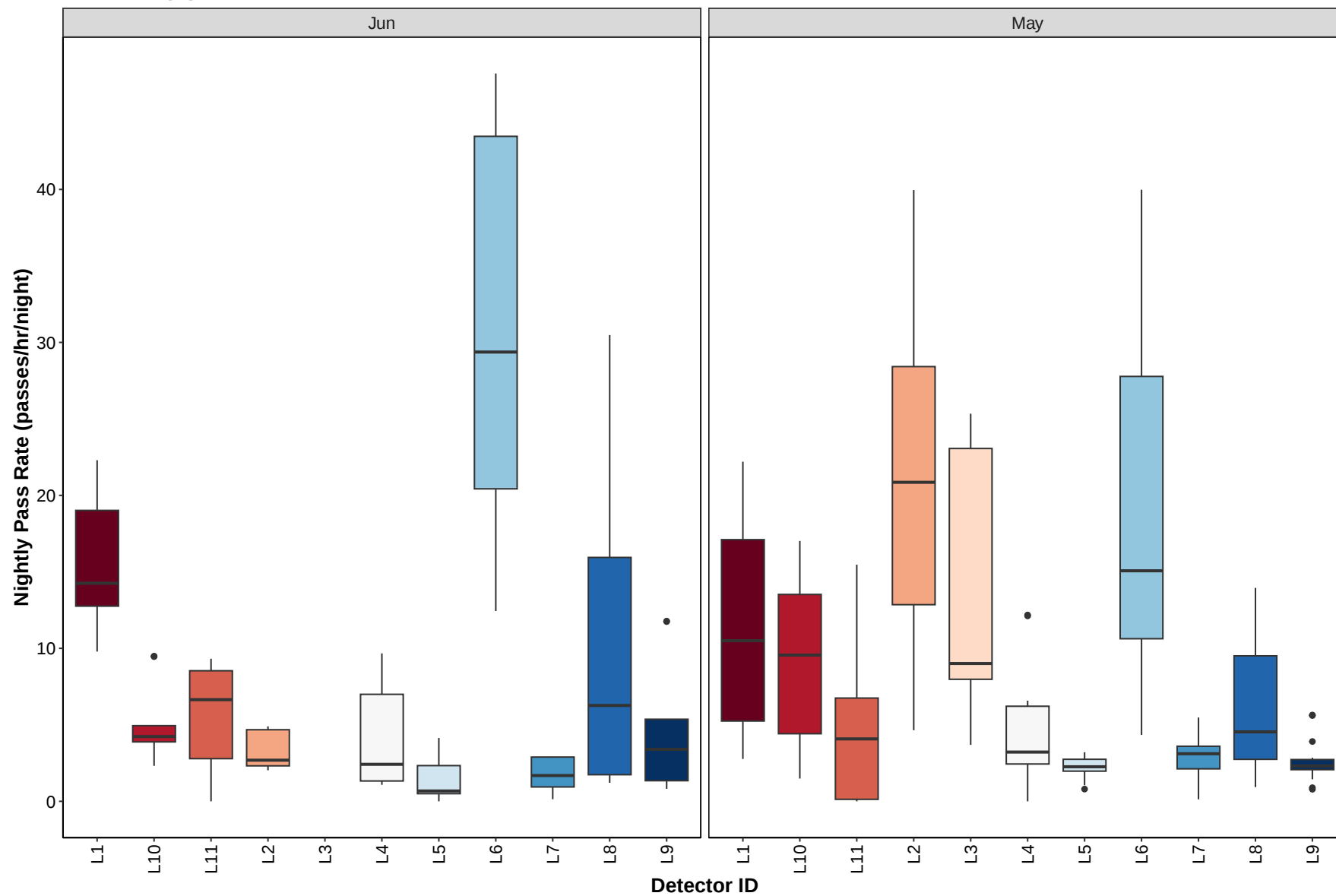
Per Detector

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.

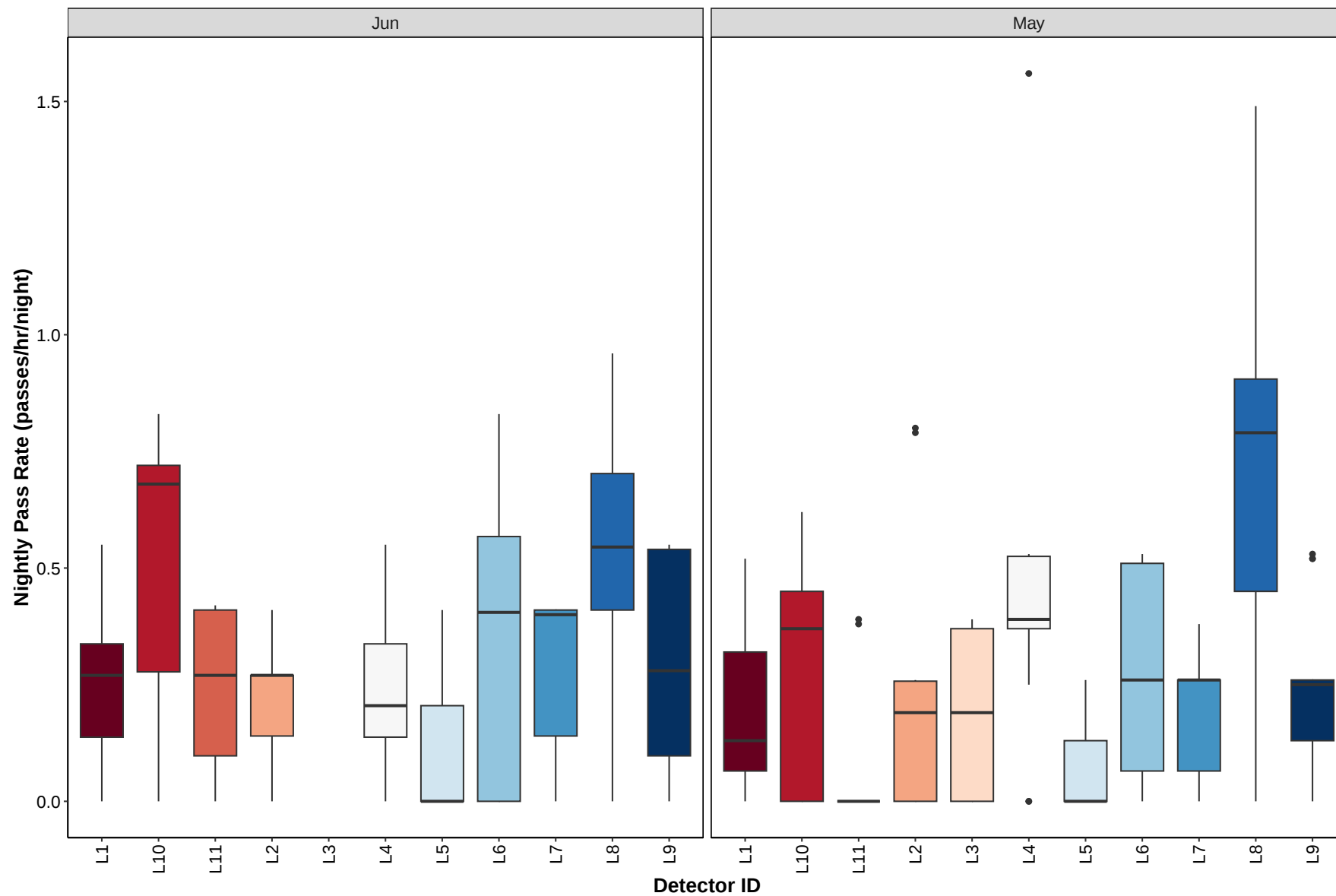
Brown long-eared



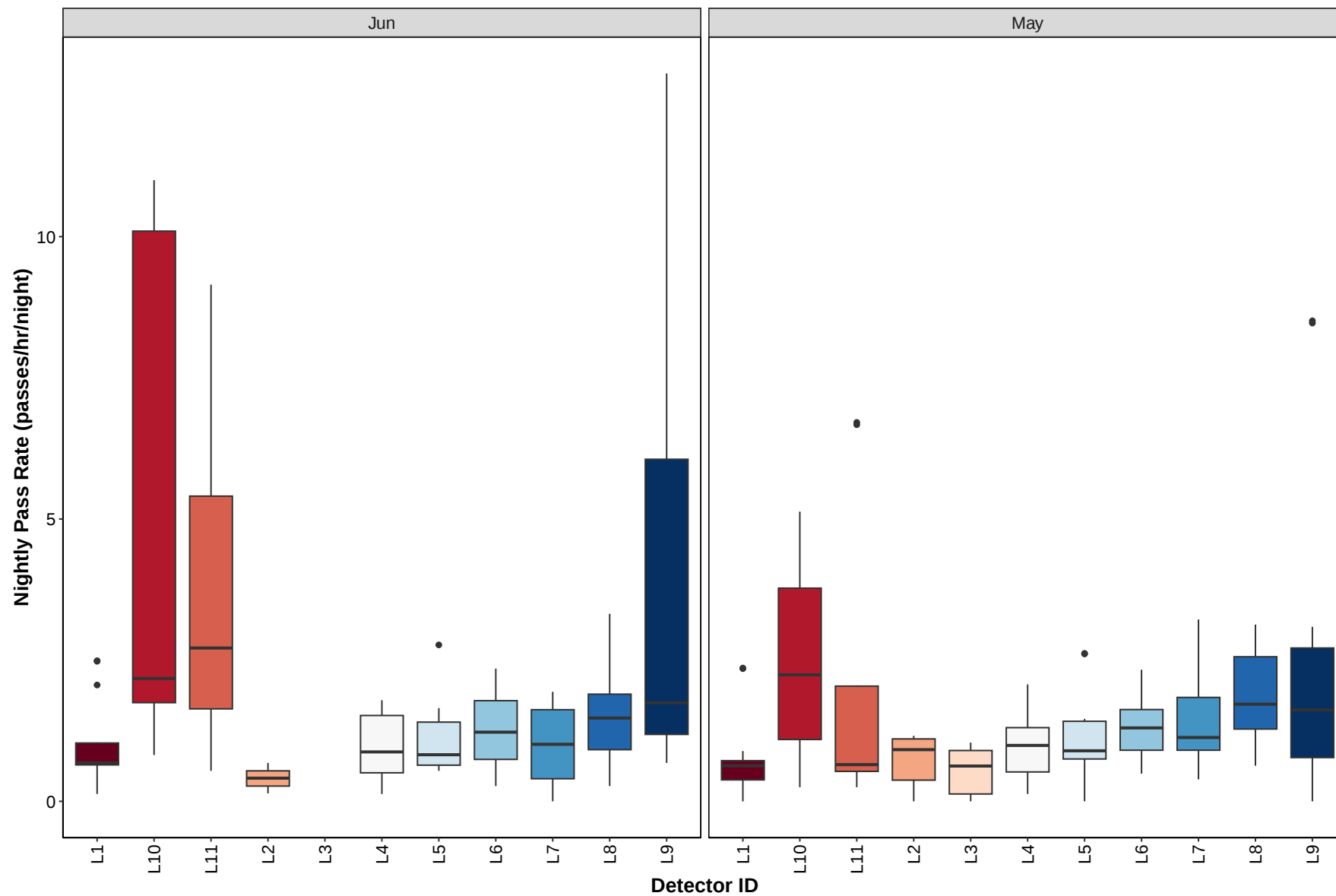
Common pipistrelle



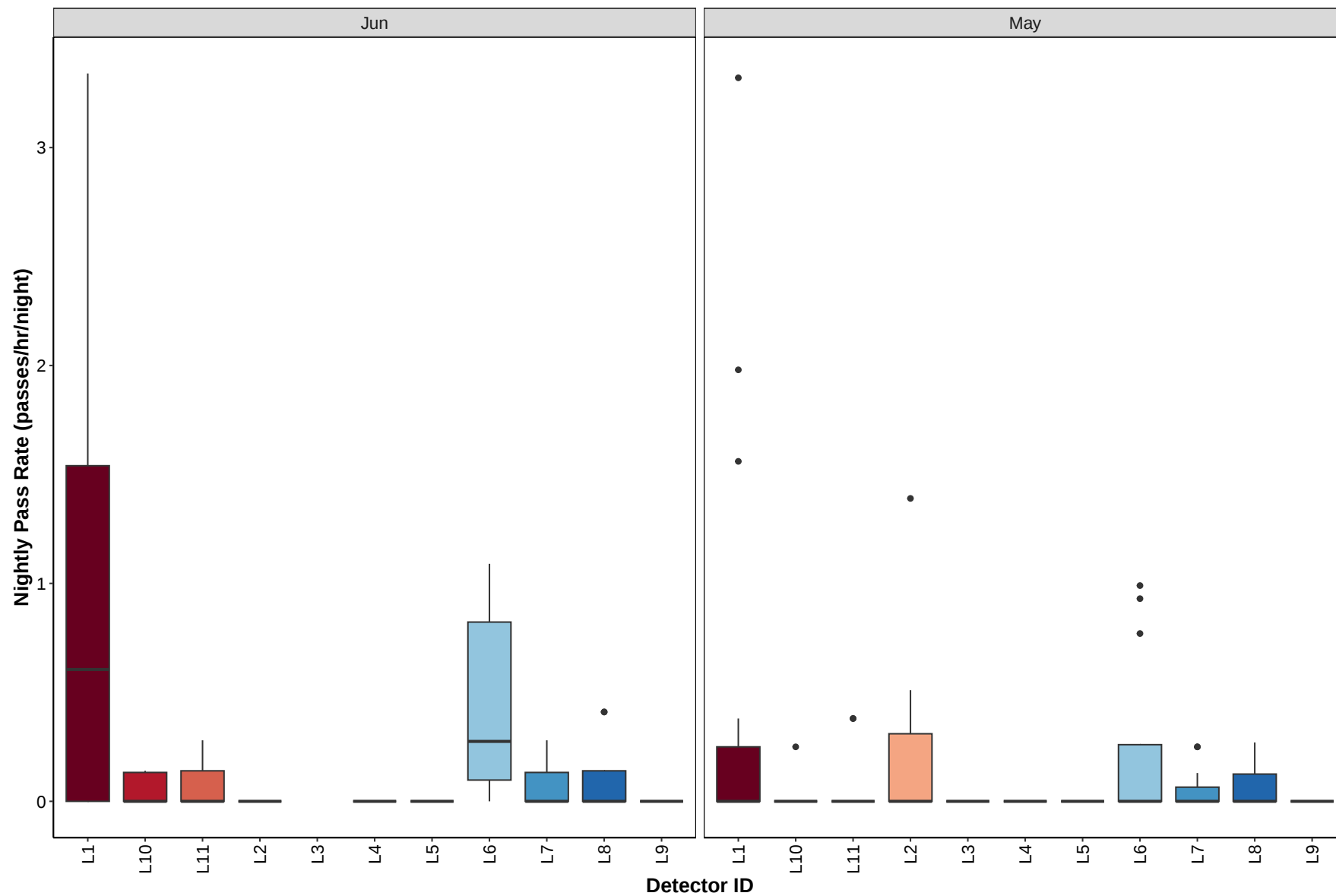
Daubenton's



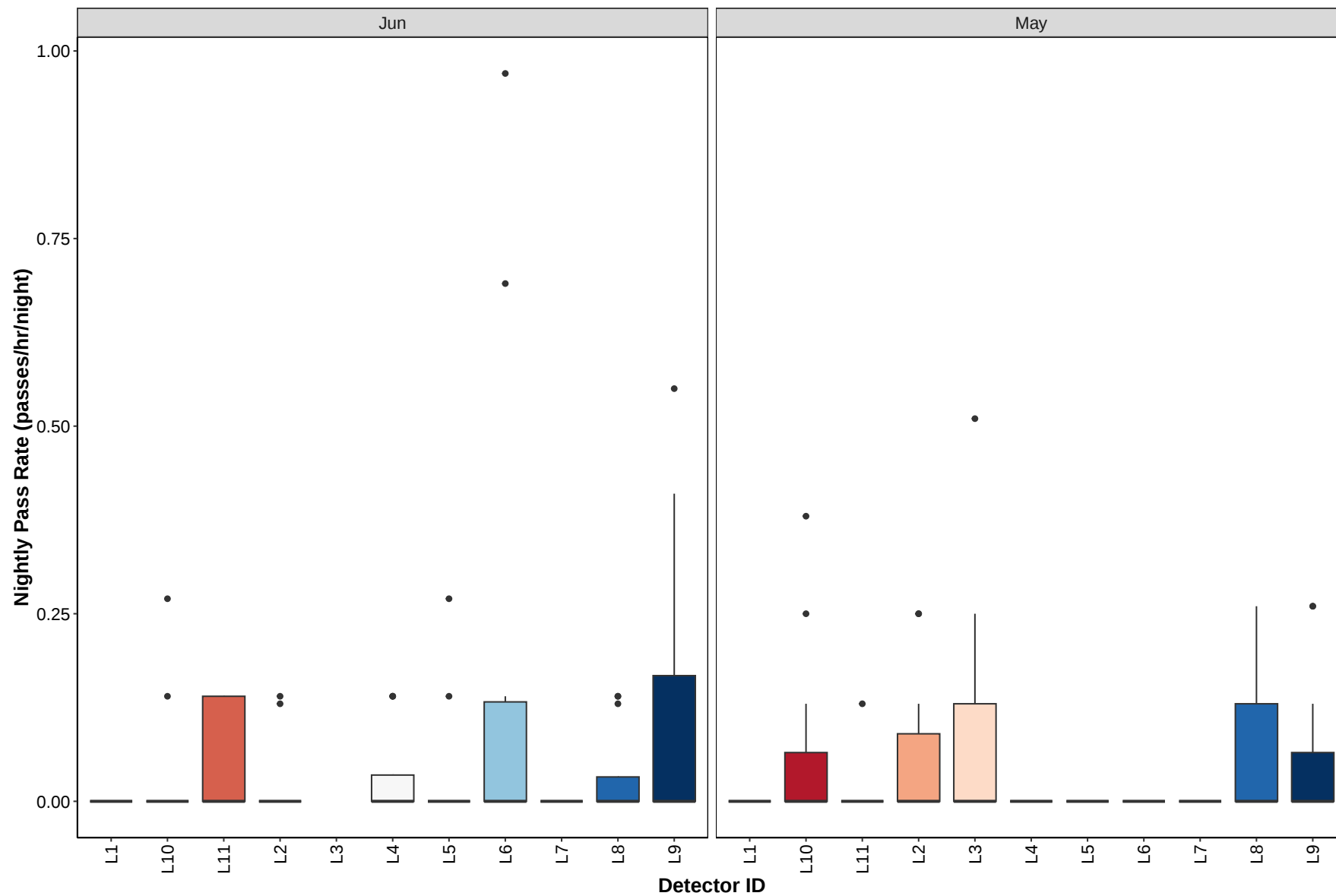
Leisler's



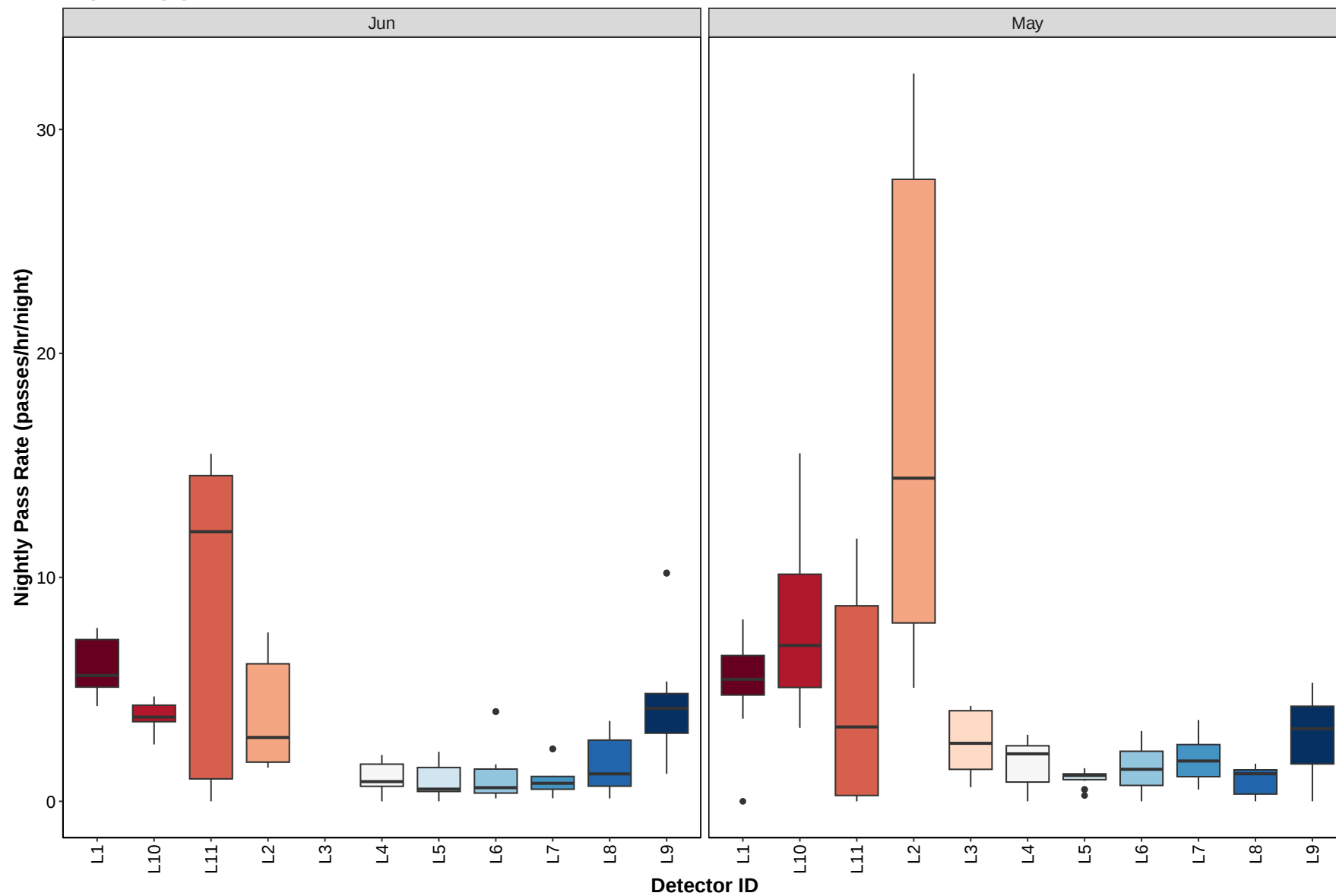
Nathusius'



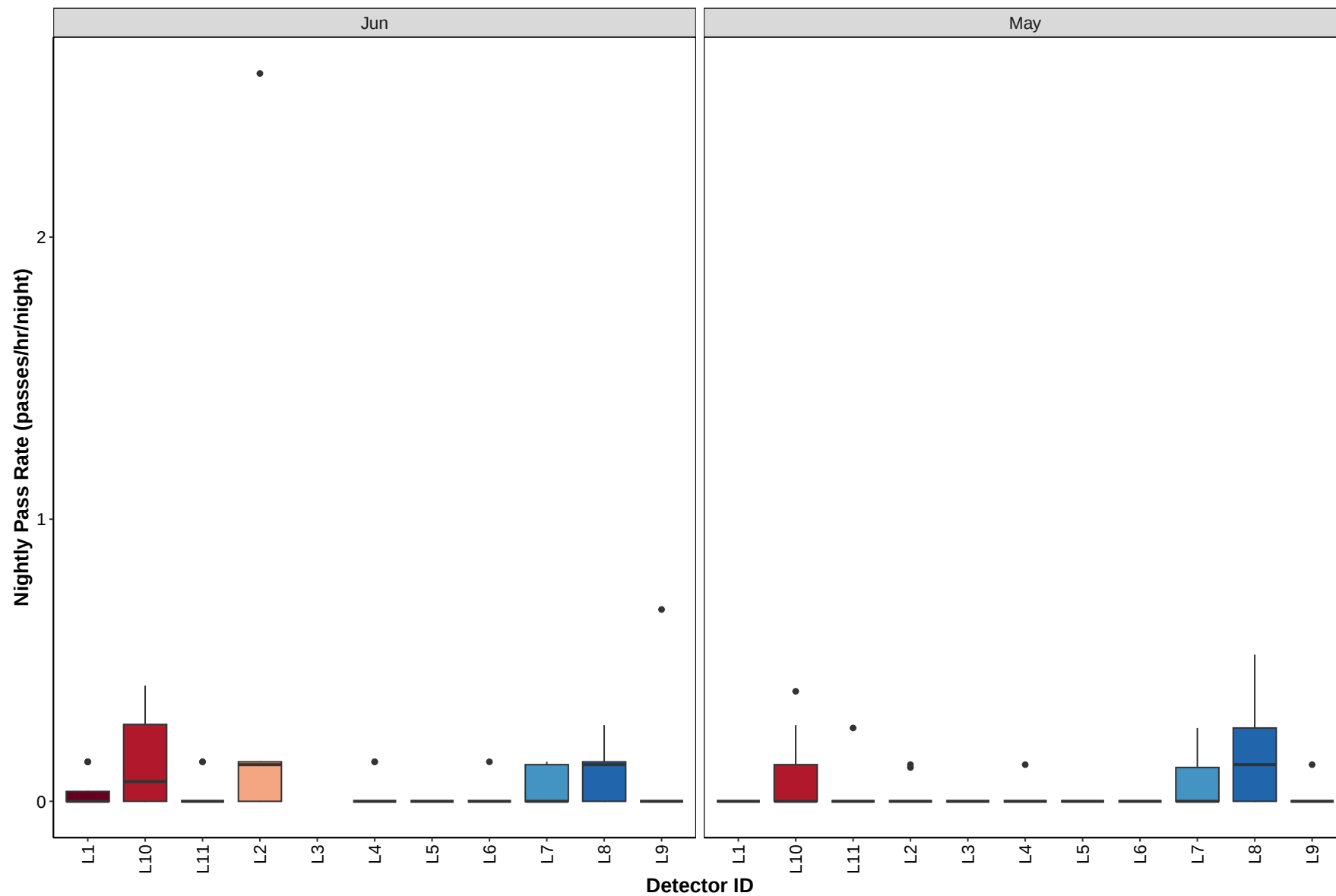
Natterer's



Soprano pipistrelle



Whiskered



Bat Activity per Detector Location

Figure 18. Detector ID reference:

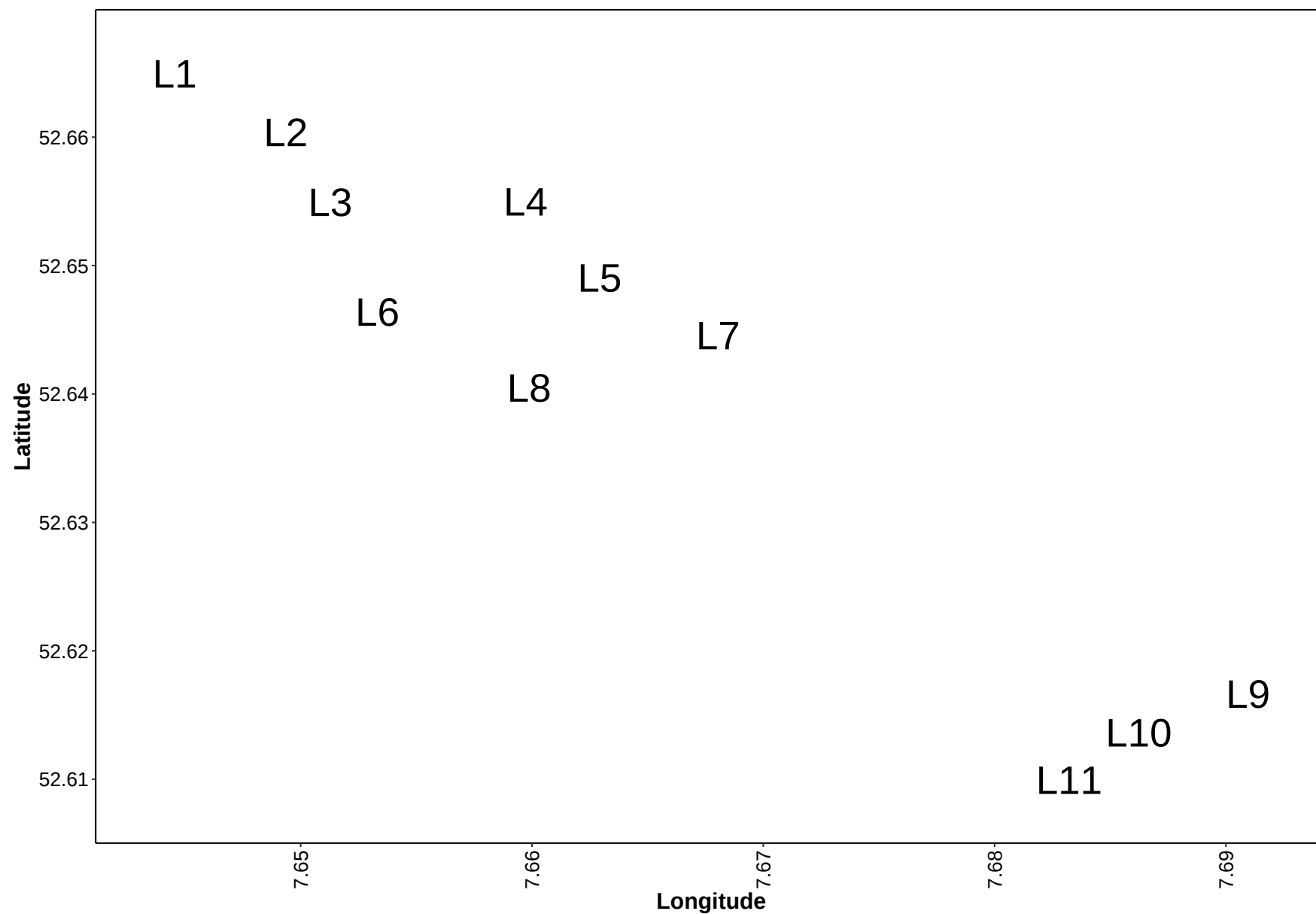
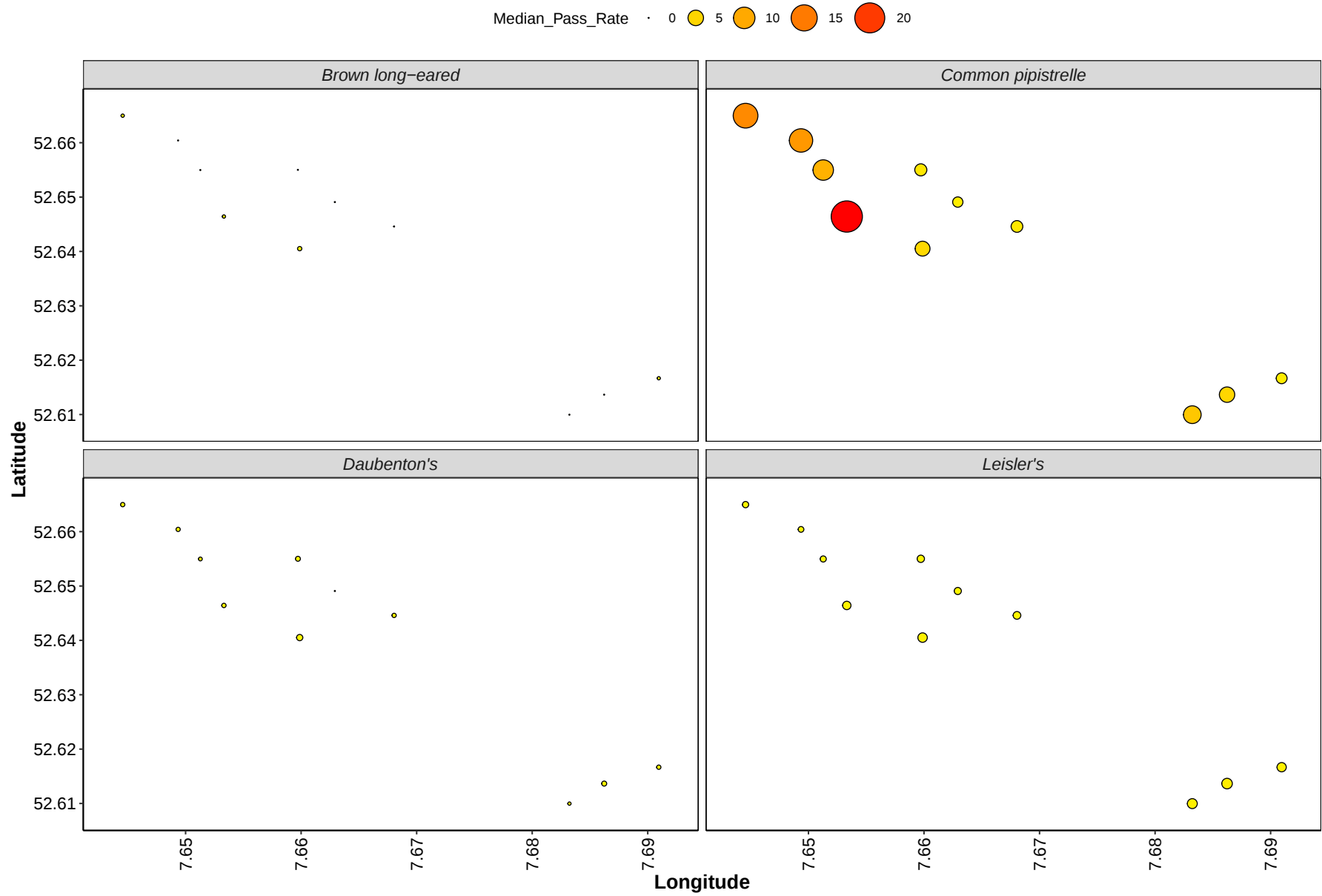


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



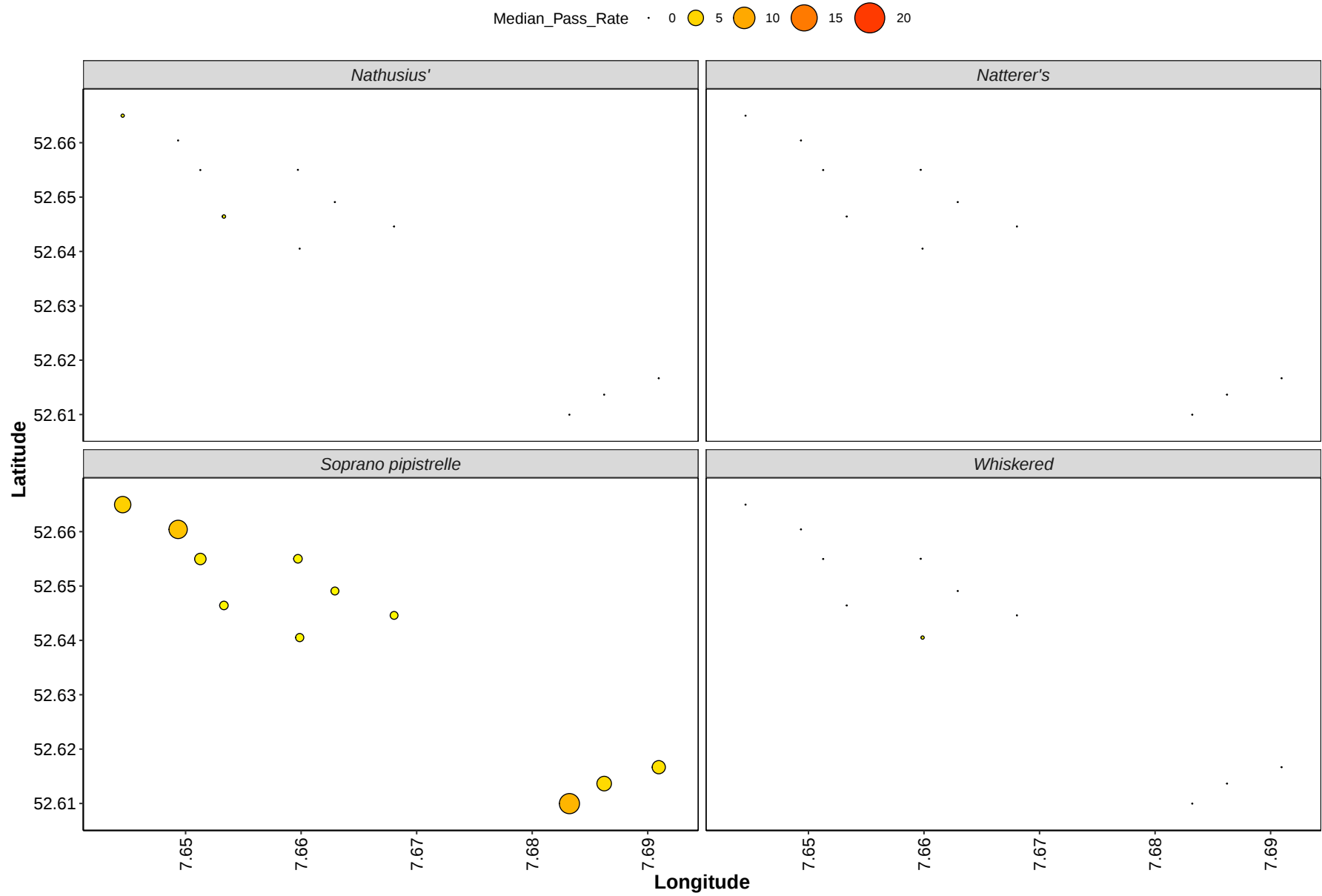
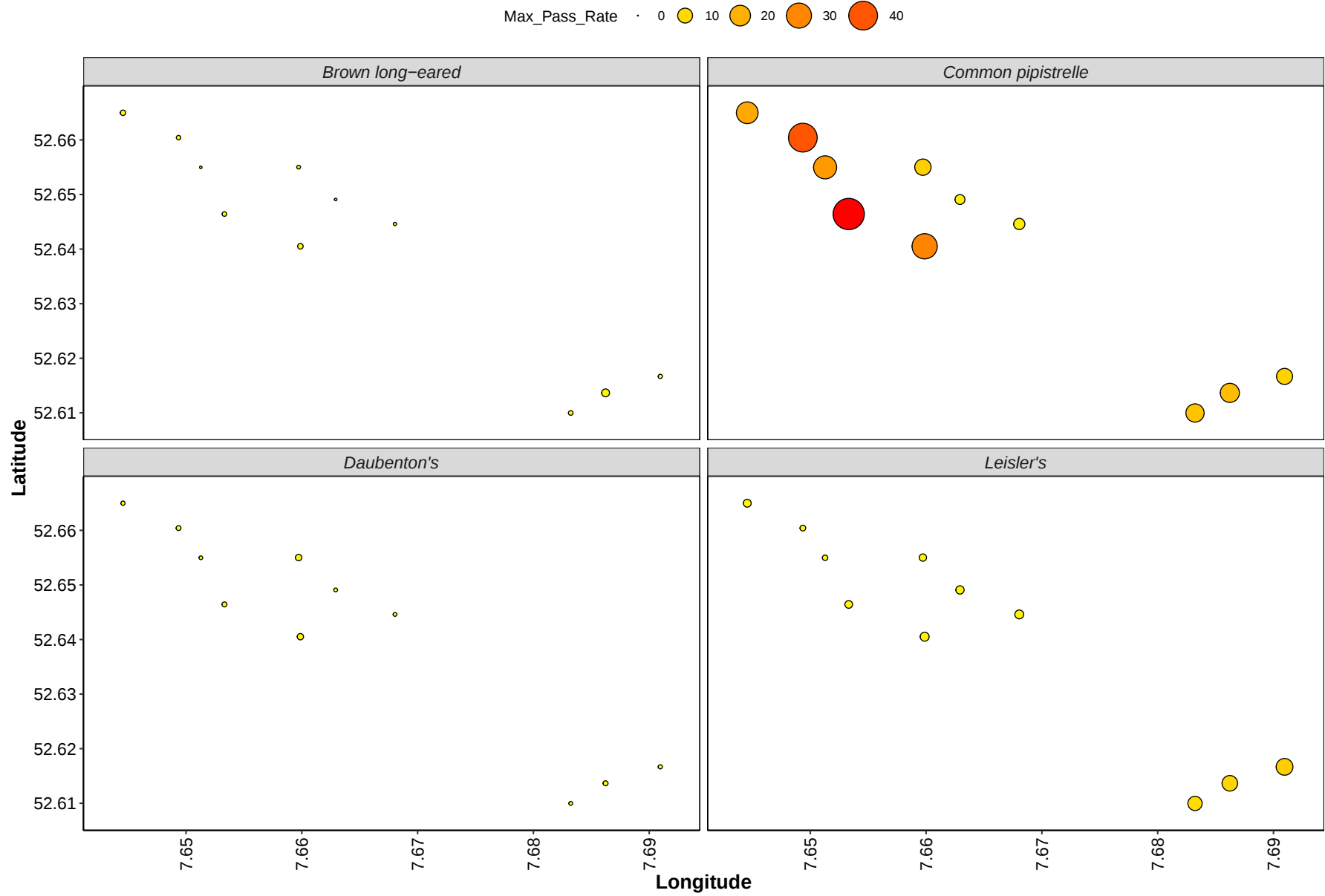
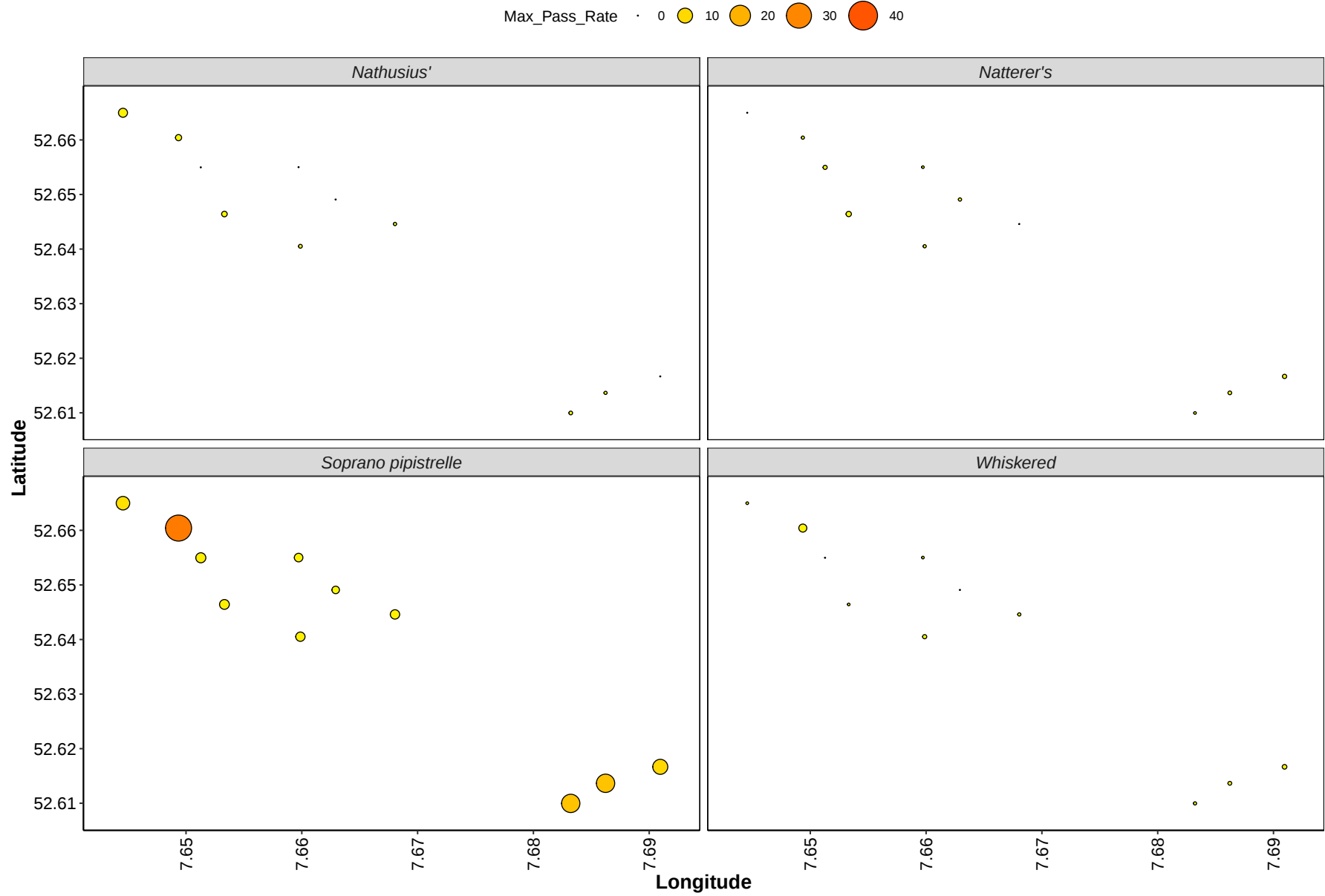


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





Thank you for using Ecobat!



Ecobat Report

2025-12-15

Geo filter: all, Time filter: all

Summary

Bats were detected on **27** nights between **27/07/2023** and **23/08/2023**, using **11** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

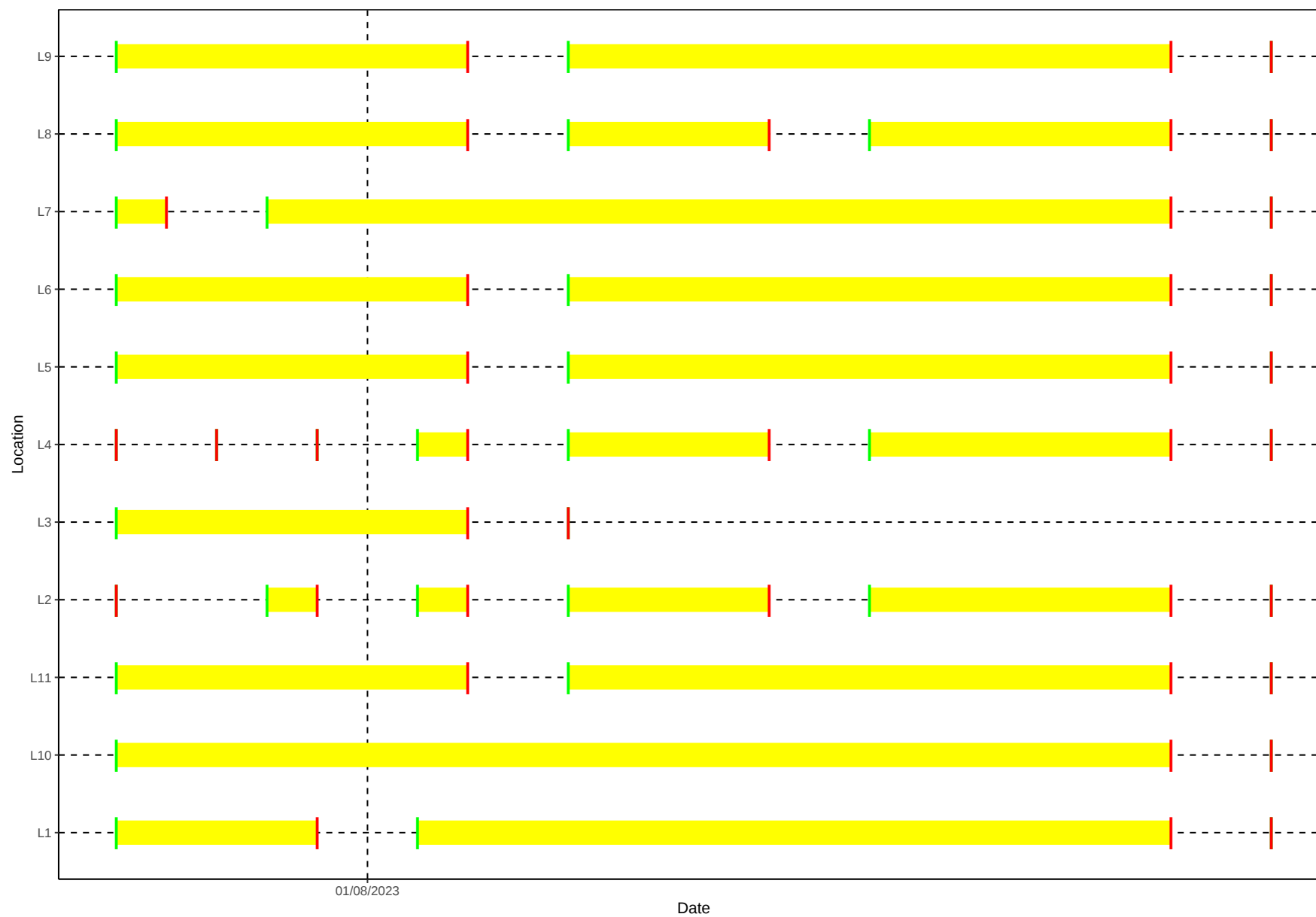
Detector ID	Latitude	Longitude
L1	52.66497	7.644556
L2	52.66041	7.649355
L3	52.65497	7.651278
L4	52.65501	7.659723
L5	52.64908	7.662925
L6	52.64642	7.653317
L7	52.64459	7.668046
L8	52.64051	7.659876
L9	52.61667	7.690955
L10	52.61366	7.686230
L11	52.60997	7.683222

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
L1	26
L10	27
L11	26
L2	22
L3	15
L4	22
L5	26
L6	26
L7	26
L8	25
L9	26

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



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
L1	Myotis daubentonii	0	0	0	0	0	18
L1	Myotis mystacinus	0	0	0	0	0	15
L1	Myotis nattereri	0	0	0	0	2	6
L1	Nyctalus leisleri	0	0	0	0	2	19
L1	Pipistrellus pipistrellus	0	0	0	0	0	22
L1	Pipistrellus pygmaeus	0	0	0	0	4	22
L1	Plecotus auritus	0	0	0	3	2	12
L10	Myotis daubentonii	0	0	0	0	2	15
L10	Myotis mystacinus	0	0	0	0	0	16
L10	Myotis nattereri	0	0	0	0	7	14
L10	Nyctalus leisleri	0	0	0	0	0	26
L10	Pipistrellus pipistrellus	0	0	0	0	0	25
L10	Pipistrellus pygmaeus	0	0	0	0	6	21
L10	Plecotus auritus	0	0	0	0	0	11
L11	Myotis daubentonii	0	0	0	0	1	13
L11	Myotis mystacinus	0	0	0	0	0	11
L11	Myotis nattereri	0	0	0	0	0	13
L11	Nyctalus leisleri	0	0	0	2	0	23
L11	Pipistrellus pipistrellus	0	0	0	0	0	22

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
L11	Pipistrellus pygmaeus	0	0	0	0	2	22
L11	Plecotus auritus	0	0	0	0	2	13
L2	Myotis daubentonii	0	0	0	0	0	14
L2	Nyctalus leisleri	0	0	0	0	0	22
L2	Pipistrellus pipistrellus	0	0	0	0	0	21
L2	Pipistrellus pygmaeus	0	0	0	0	0	22
L2	Plecotus auritus	0	0	0	0	0	11
L3	Myotis daubentonii	0	0	0	0	0	8
L3	Myotis mystacinus	0	0	0	0	0	4
L3	Myotis nattereri	0	0	0	2	1	5
L3	Nyctalus leisleri	0	0	0	0	0	13
L3	Pipistrellus pipistrellus	0	0	0	0	0	12
L3	Pipistrellus pygmaeus	0	0	0	0	0	13
L3	Plecotus auritus	0	0	0	0	0	6
L4	Myotis daubentonii	0	0	0	0	0	14
L4	Myotis mystacinus	0	0	0	0	0	7
L4	Myotis nattereri	0	0	0	0	2	10
L4	Nyctalus leisleri	0	0	0	0	0	21
L4	Pipistrellus pipistrellus	0	0	0	0	0	20
L4	Pipistrellus pygmaeus	0	0	0	0	0	21
L4	Plecotus auritus	0	0	0	0	0	11

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
L5	Myotis daubentonii	0	0	0	0	0	16
L5	Myotis mystacinus	0	0	0	0	0	3
L5	Myotis nattereri	0	0	0	0	0	2
L5	Nyctalus leisleri	0	0	0	0	0	26
L5	Pipistrellus pipistrellus	0	0	0	0	0	23
L5	Pipistrellus pygmaeus	0	0	0	0	0	24
L5	Plecotus auritus	0	0	0	0	0	15
L6	Myotis daubentonii	0	0	0	0	2	15
L6	Myotis mystacinus	0	0	0	0	0	11
L6	Myotis nattereri	0	0	0	0	7	7
L6	Nyctalus leisleri	0	0	0	2	0	24
L6	Pipistrellus pipistrellus	0	0	0	0	0	22
L6	Pipistrellus pygmaeus	0	0	0	0	0	22
L6	Plecotus auritus	0	0	0	0	2	15
L7	Myotis daubentonii	0	0	0	0	0	17
L7	Myotis mystacinus	0	0	0	0	0	7
L7	Myotis nattereri	0	0	0	0	0	4
L7	Nyctalus leisleri	0	0	0	0	0	24
L7	Pipistrellus pipistrellus	0	0	0	0	0	22
L7	Pipistrellus pygmaeus	0	0	0	0	0	22
L7	Plecotus auritus	0	0	0	0	0	9

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
L8	Myotis daubentonii	0	0	0	0	0	15
L8	Myotis mystacinus	0	0	0	0	0	8
L8	Myotis nattereri	0	0	0	0	0	4
L8	Nyctalus leisleri	0	0	0	0	0	24
L8	Pipistrellus pipistrellus	0	0	0	0	0	22
L8	Pipistrellus pygmaeus	0	0	0	0	0	21
L8	Plecotus auritus	0	0	0	0	0	16
L9	Myotis daubentonii	0	0	0	0	0	16
L9	Myotis mystacinus	0	0	0	0	0	14
L9	Myotis nattereri	0	0	0	1	11	1
L9	Nyctalus leisleri	0	0	0	0	0	26
L9	Pipistrellus nathusii	0	0	0	0	0	4
L9	Pipistrellus pipistrellus	0	0	0	0	0	23
L9	Pipistrellus pygmaeus	0	0	0	0	0	25
L9	Plecotus auritus	0	0	0	0	3	14

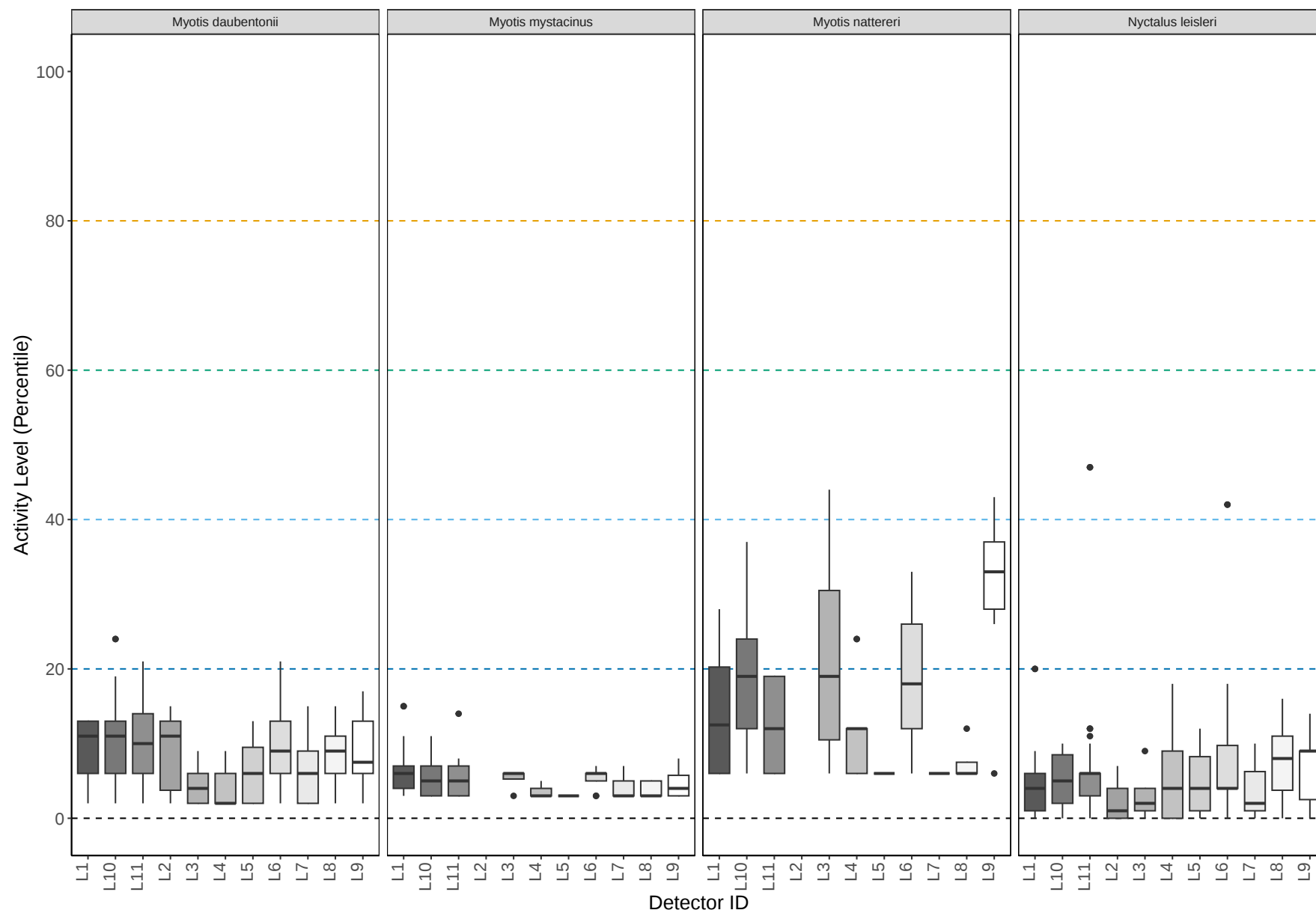
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L1	Myotis daubentonii	11	6.5 - 12	13	18	6783
L1	Myotis mystacinus	6	4.5 - 9	15	15	2880
L1	Myotis nattereri	13	6 - 21.5	28	8	1981
L1	Nyctalus leisleri	4	4 - 10.5	20	21	61584
L1	Pipistrellus pipistrellus	1	1 - 2	3	22	1537758
L1	Pipistrellus pygmaeus	13	12 - 16	23	26	411085
L1	Plecotus auritus	13	9.5 - 28	43	17	23576
L10	Myotis daubentonii	11	7.5 - 15	24	17	6783
L10	Myotis mystacinus	5	4 - 7	11	16	2880
L10	Myotis nattereri	19	12.5 - 24.5	37	21	1981
L10	Nyctalus leisleri	5	4 - 7	10	26	61584
L10	Pipistrellus pipistrellus	0	0 - 0	1	25	1537758
L10	Pipistrellus pygmaeus	12	10 - 16	23	27	411085
L10	Plecotus auritus	4	1 - 6.5	9	11	23576
L11	Myotis daubentonii	10	6 - 13.5	21	14	6783
L11	Myotis mystacinus	5	3 - 8.5	14	11	2880
L11	Myotis nattereri	12	9 - 15.5	19	13	1981
L11	Nyctalus leisleri	6	4.5 - 9	47	25	61584
L11	Pipistrellus pipistrellus	0	0 - 0	1	22	1537758
L11	Pipistrellus pygmaeus	8	7 - 13	27	24	411085
L11	Plecotus auritus	9	4 - 13.5	21	15	23576
L2	Myotis daubentonii	11	5.5 - 13	15	14	6783
L2	Nyctalus leisleri	1	2 - 5	7	22	61584
L2	Pipistrellus pipistrellus	0	0 - 0	0	21	1537758
L2	Pipistrellus pygmaeus	6	4.5 - 7	12	22	411085
L2	Plecotus auritus	4	2.5 - 4	15	11	23576
L3	Myotis daubentonii	4	2 - 6	9	8	6783
L3	Myotis mystacinus	6	6 - 6	6	4	2880
L3	Myotis nattereri	19	9 - 35	44	8	1981
L3	Nyctalus leisleri	2	1.5 - 5	9	13	61584
L3	Pipistrellus pipistrellus	0	0 - 0	1	12	1537758
L3	Pipistrellus pygmaeus	3	3 - 4.5	5	13	411085
L3	Plecotus auritus	5	1 - 11	13	6	23576

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L4	Myotis daubentonii	2	2 - 5.5	9	14	6783
L4	Myotis mystacinus	3	3 - 4	5	7	2880
L4	Myotis nattereri	12	6 - 15	24	12	1981
L4	Nyctalus leisleri	4	6 - 11	18	21	61584
L4	Pipistrellus pipistrellus	0	0 - 0	1	20	1537758
L4	Pipistrellus pygmaeus	2	2.5 - 5	7	21	411085
L4	Plecotus auritus	4	1 - 6.5	9	11	23576
L5	Myotis daubentonii	6	4 - 8.5	13	16	6783
L5	Myotis mystacinus	3	3 - 3	3	3	2880
L5	Myotis nattereri	6	6 - 6	6	2	1981
L5	Nyctalus leisleri	4	3 - 6.5	12	26	61584
L5	Pipistrellus pipistrellus	0	0 - 0	1	23	1537758
L5	Pipistrellus pygmaeus	3	2 - 4	7	24	411085
L5	Plecotus auritus	4	2.5 - 11	18	15	23576
L6	Myotis daubentonii	9	6.5 - 14	21	17	6783
L6	Myotis mystacinus	6	4.5 - 6	7	11	2880
L6	Myotis nattereri	18	12 - 26	33	14	1981
L6	Nyctalus leisleri	4	5 - 11	42	26	61584
L6	Pipistrellus pipistrellus	1	1 - 1	2	22	1537758
L6	Pipistrellus pygmaeus	3	2 - 4	6	22	411085
L6	Plecotus auritus	13	8.5 - 15	21	17	23576
L7	Myotis daubentonii	6	4 - 8.5	15	17	6783
L7	Myotis mystacinus	3	3 - 5	7	7	2880
L7	Myotis nattereri	6	6 - 6	6	4	1981
L7	Nyctalus leisleri	2	2 - 5.5	10	24	61584
L7	Pipistrellus pipistrellus	0	0 - 0	1	22	1537758
L7	Pipistrellus pygmaeus	3	2.5 - 5	9	22	411085
L7	Plecotus auritus	9	4 - 9	9	9	23576
L8	Myotis daubentonii	9	6 - 11	15	15	6783
L8	Myotis mystacinus	3	3 - 4	5	8	2880
L8	Myotis nattereri	6	6 - 6	12	4	1981
L8	Nyctalus leisleri	8	6.5 - 10.5	16	24	61584
L8	Pipistrellus pipistrellus	2	1.5 - 7	12	22	1537758
L8	Pipistrellus pygmaeus	1	1.5 - 4	5	21	411085
L8	Plecotus auritus	9	6.5 - 11	17	16	23576
L9	Myotis daubentonii	8	6 - 11.5	17	16	6783

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L9	Myotis mystacinus	4	3 - 5.5	8	14	2880
L9	Myotis nattereri	33	27 - 36.5	43	13	1981
L9	Nyctalus leisleri	9	5.5 - 9	14	26	61584
L9	Pipistrellus nathusii	8	8 - 8	18	4	3151
L9	Pipistrellus pipistrellus	0	0 - 0	1	23	1537758
L9	Pipistrellus pygmaeus	2	2.5 - 5	6	25	411085
L9	Plecotus auritus	15	9 - 17	24	17	23576

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



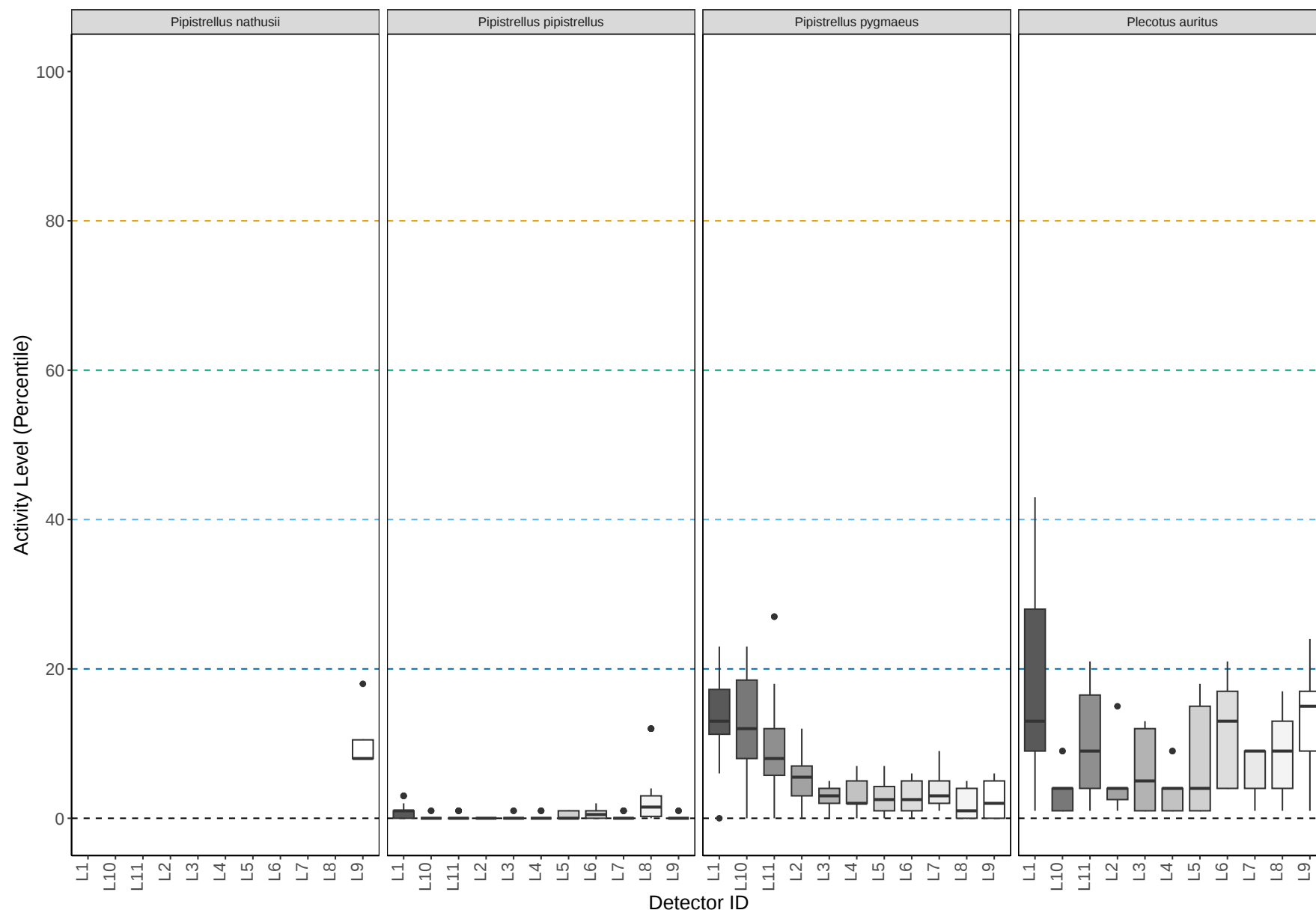
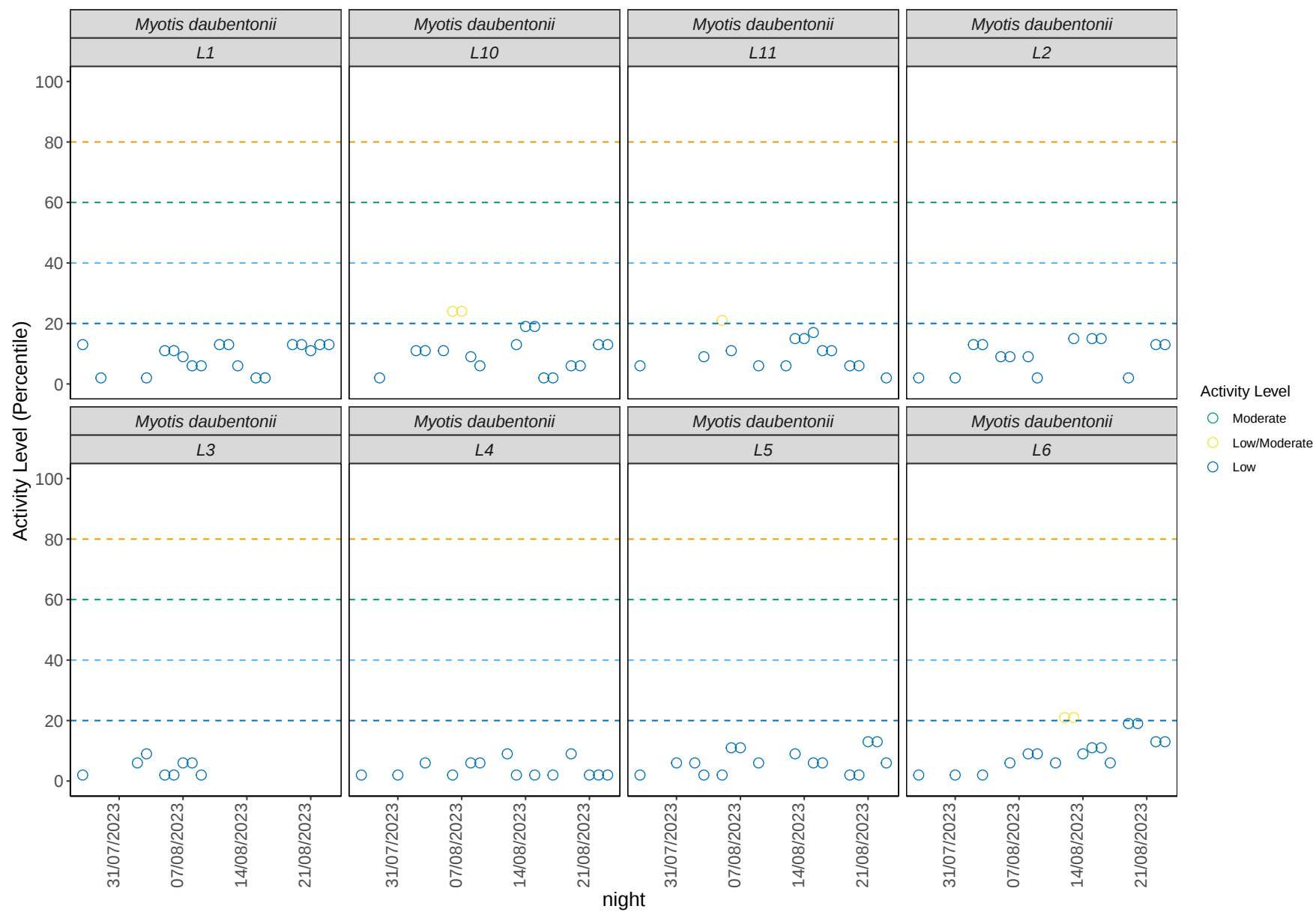
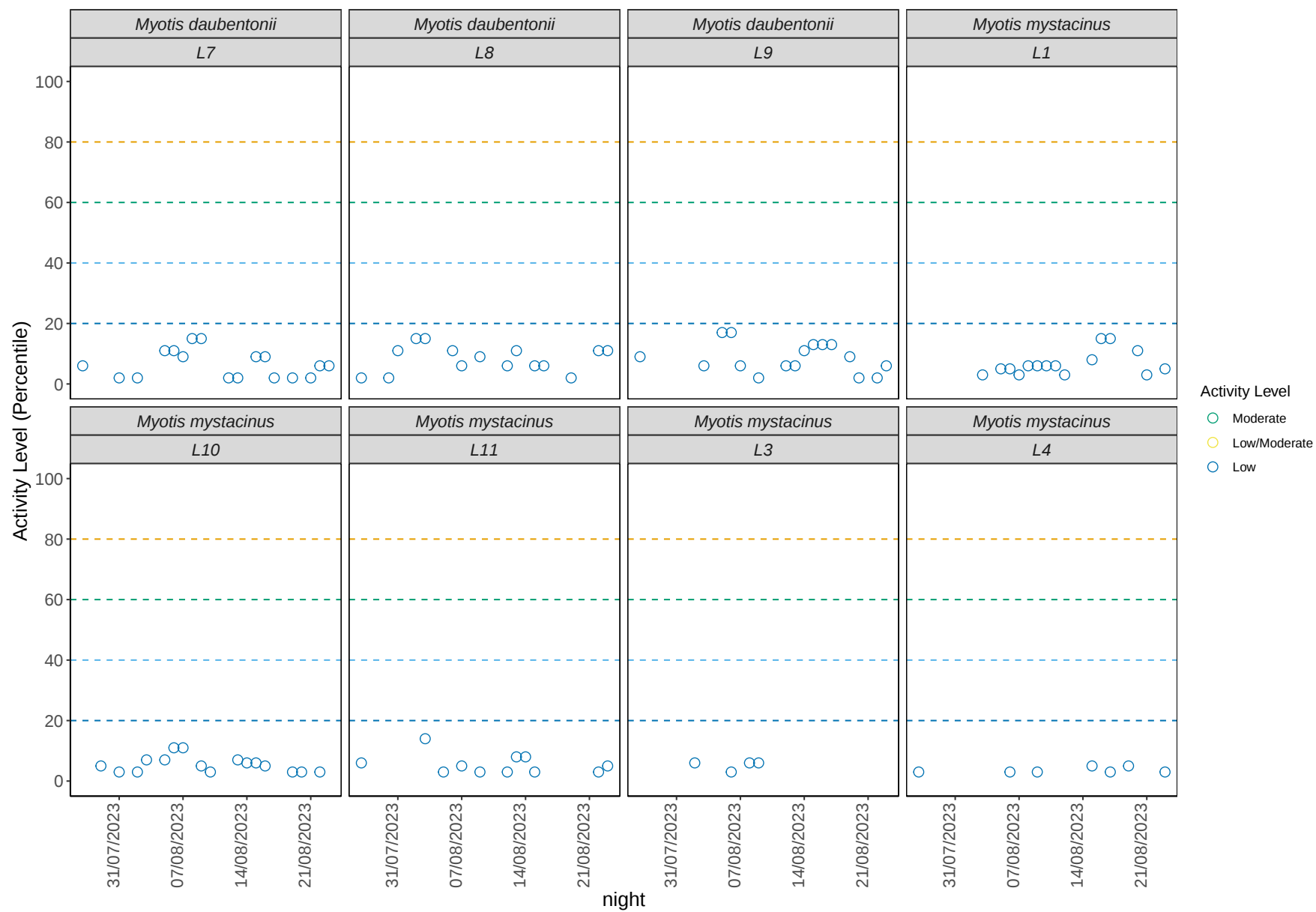
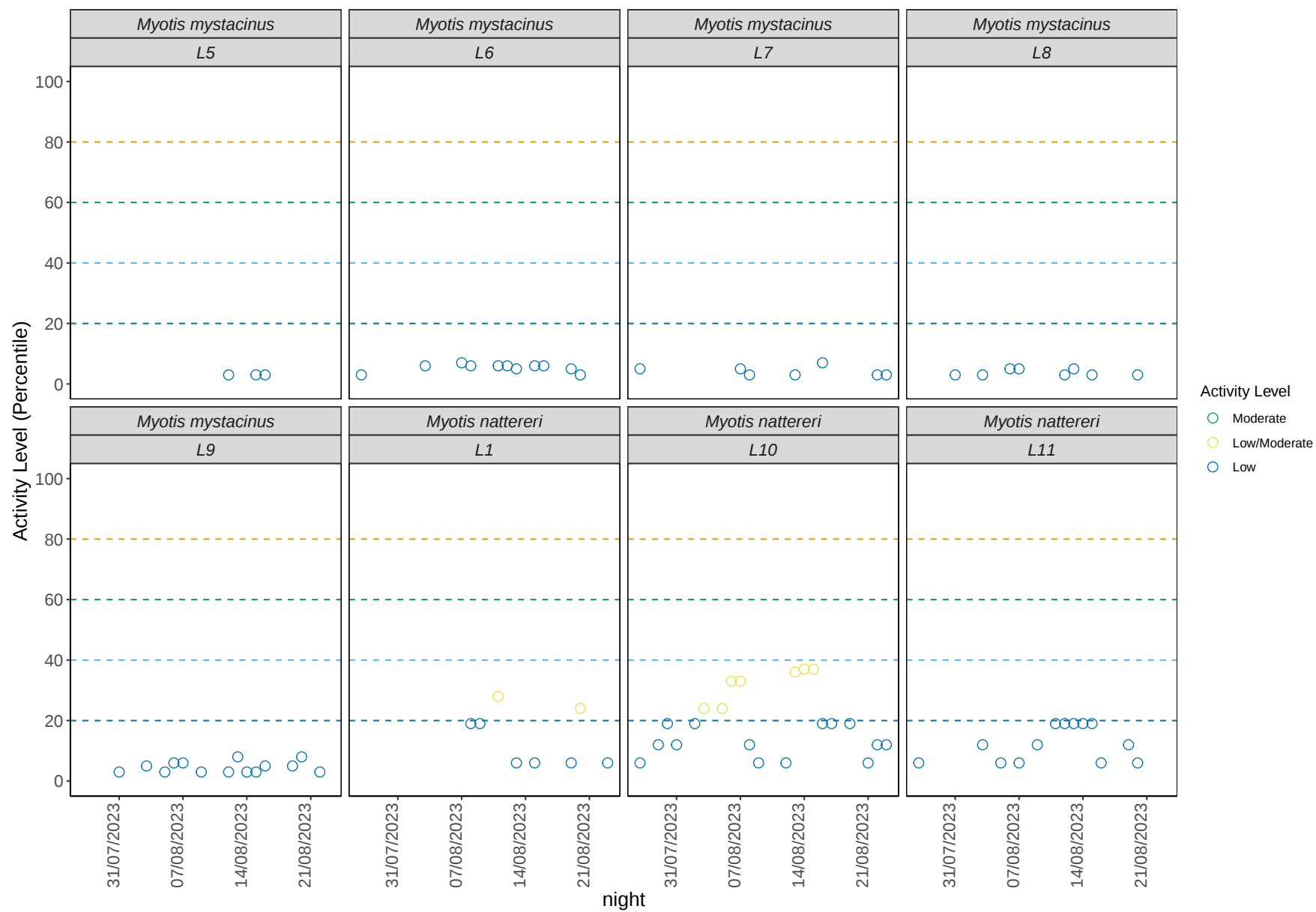
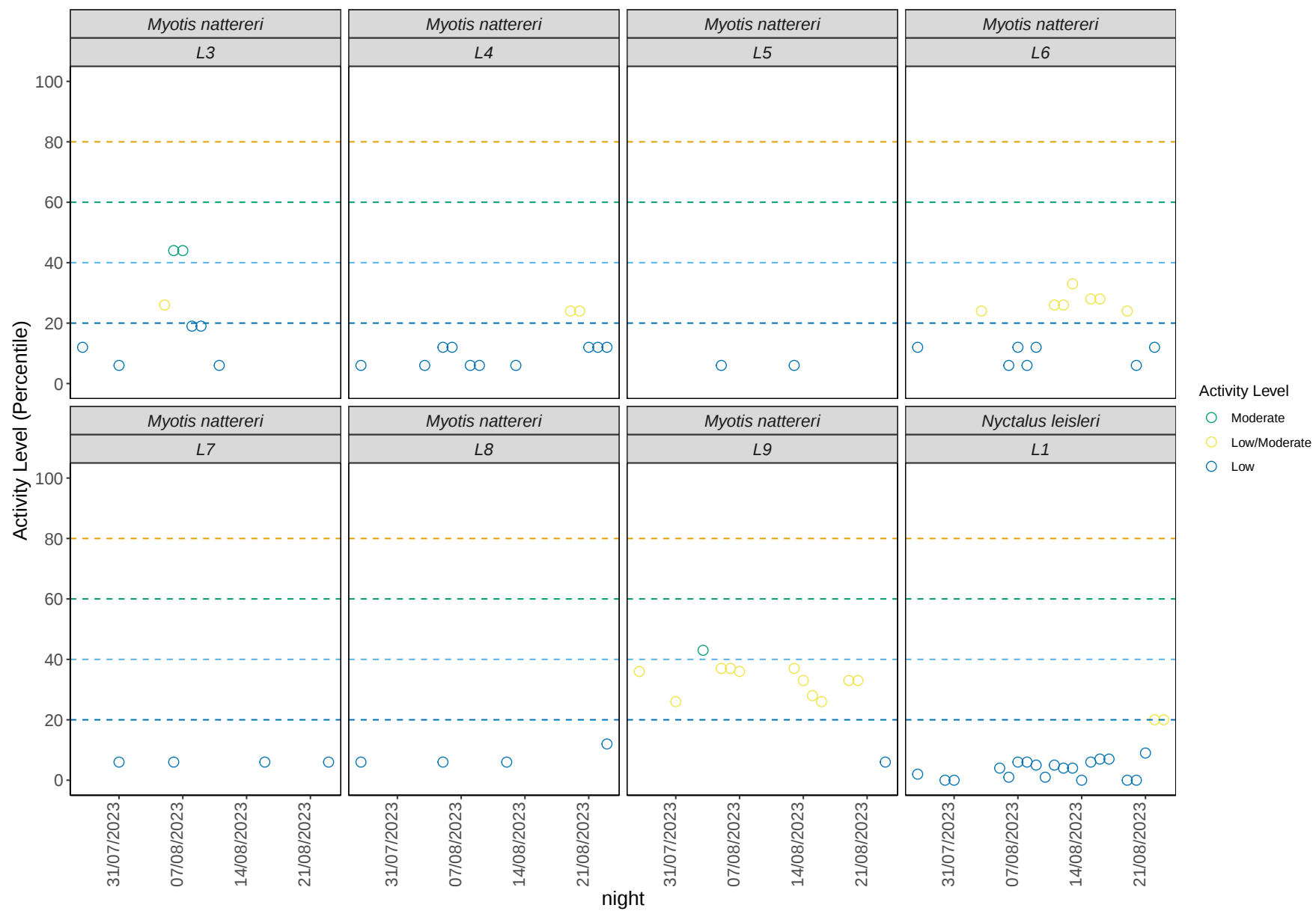


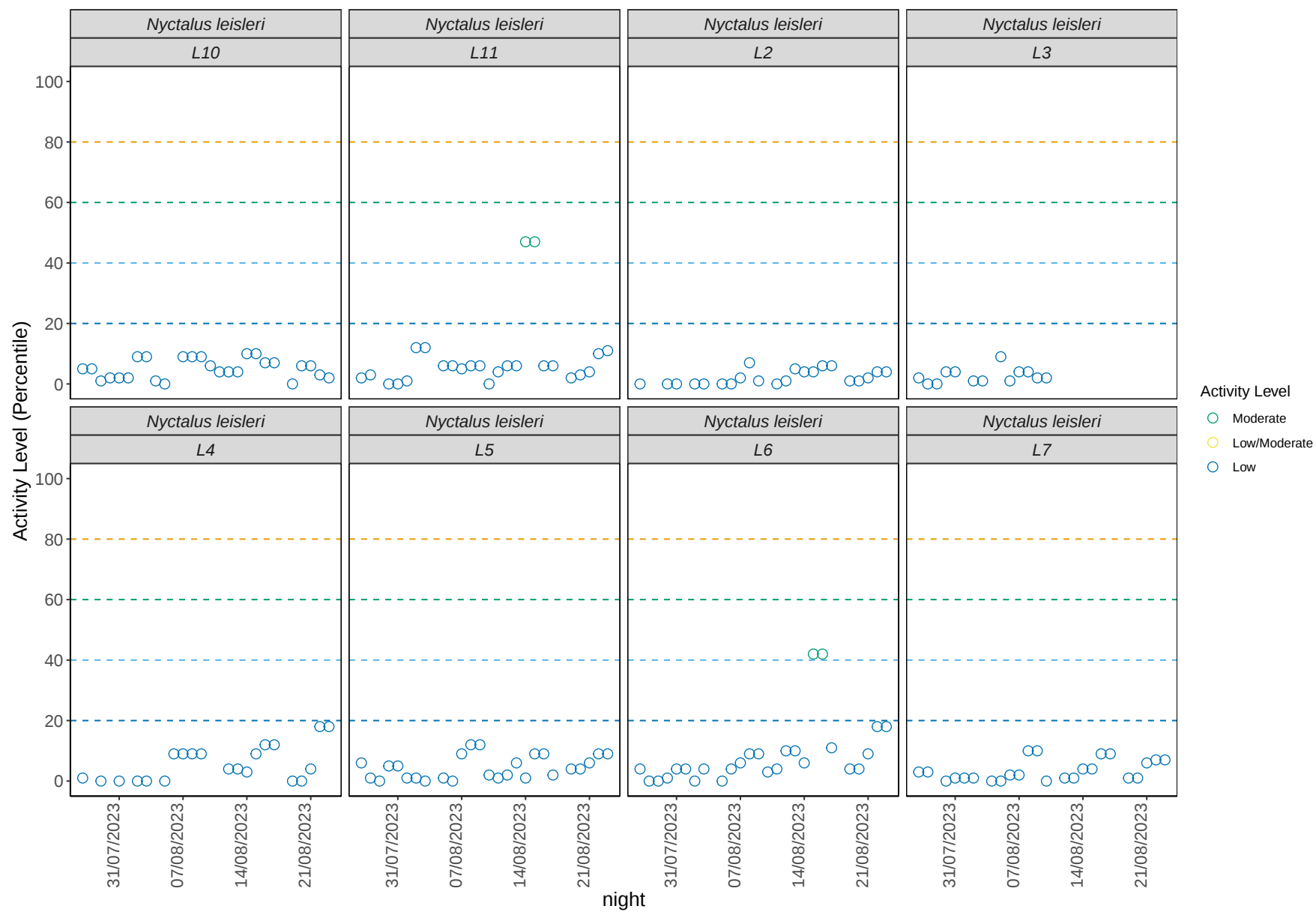
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

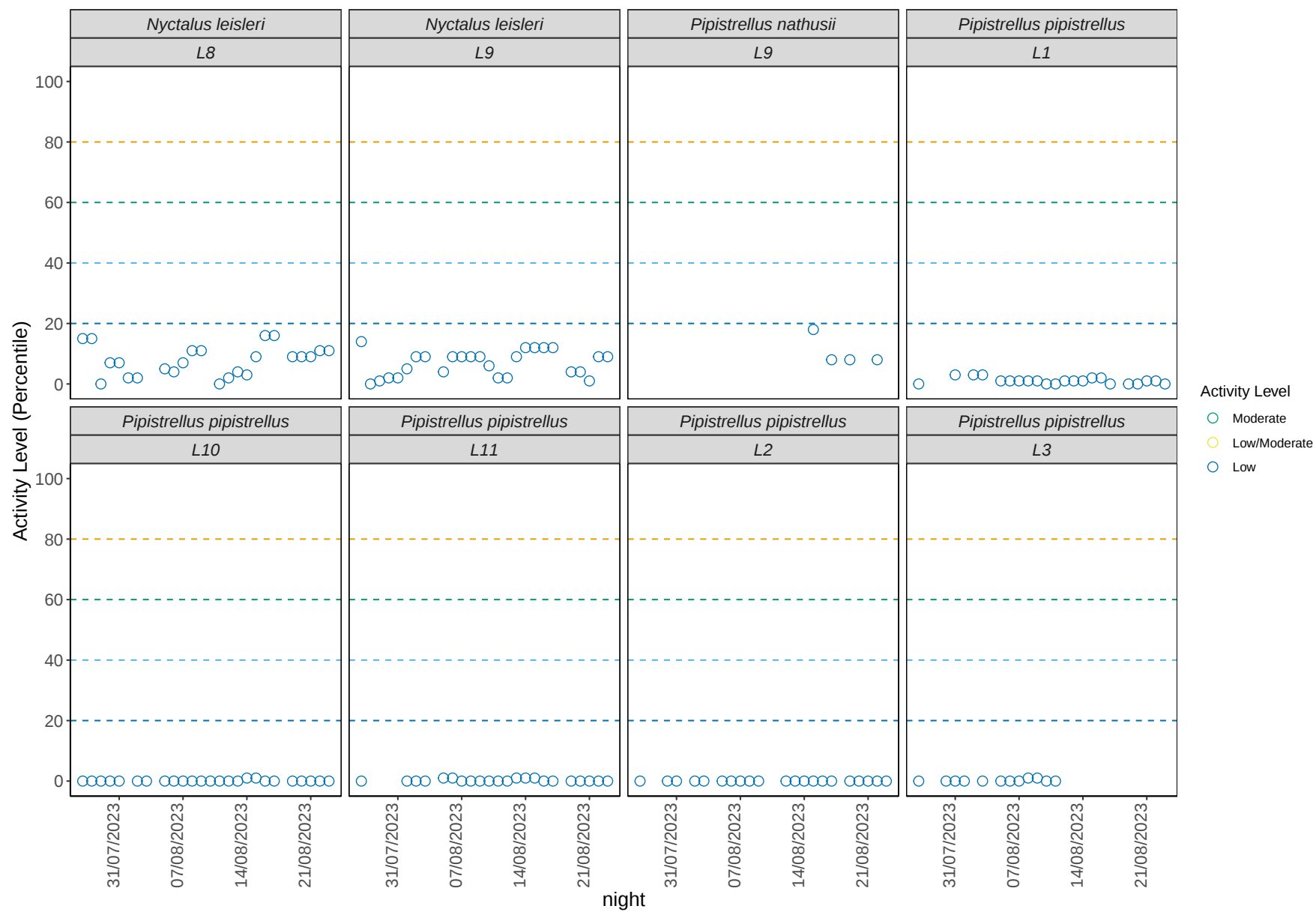


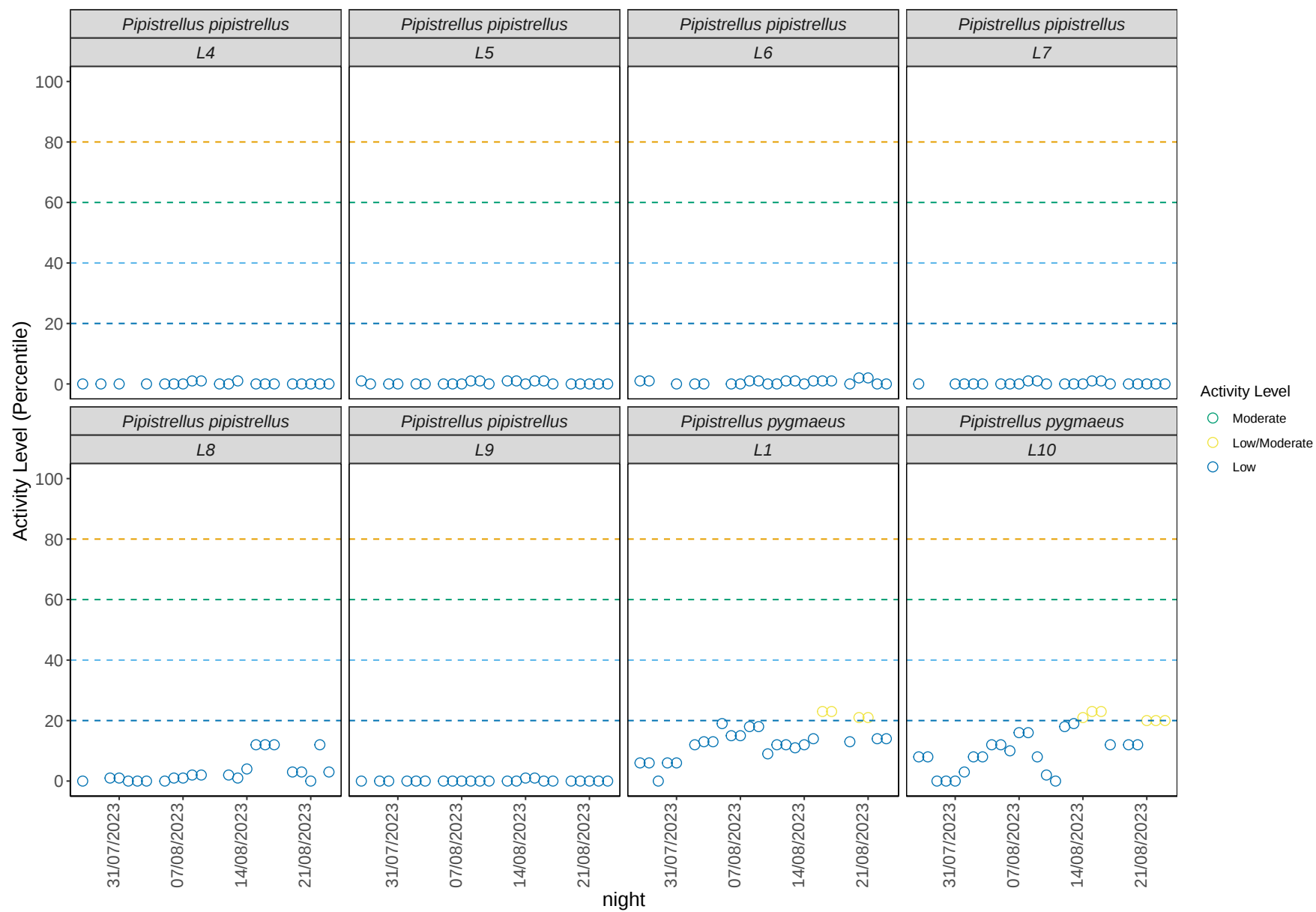


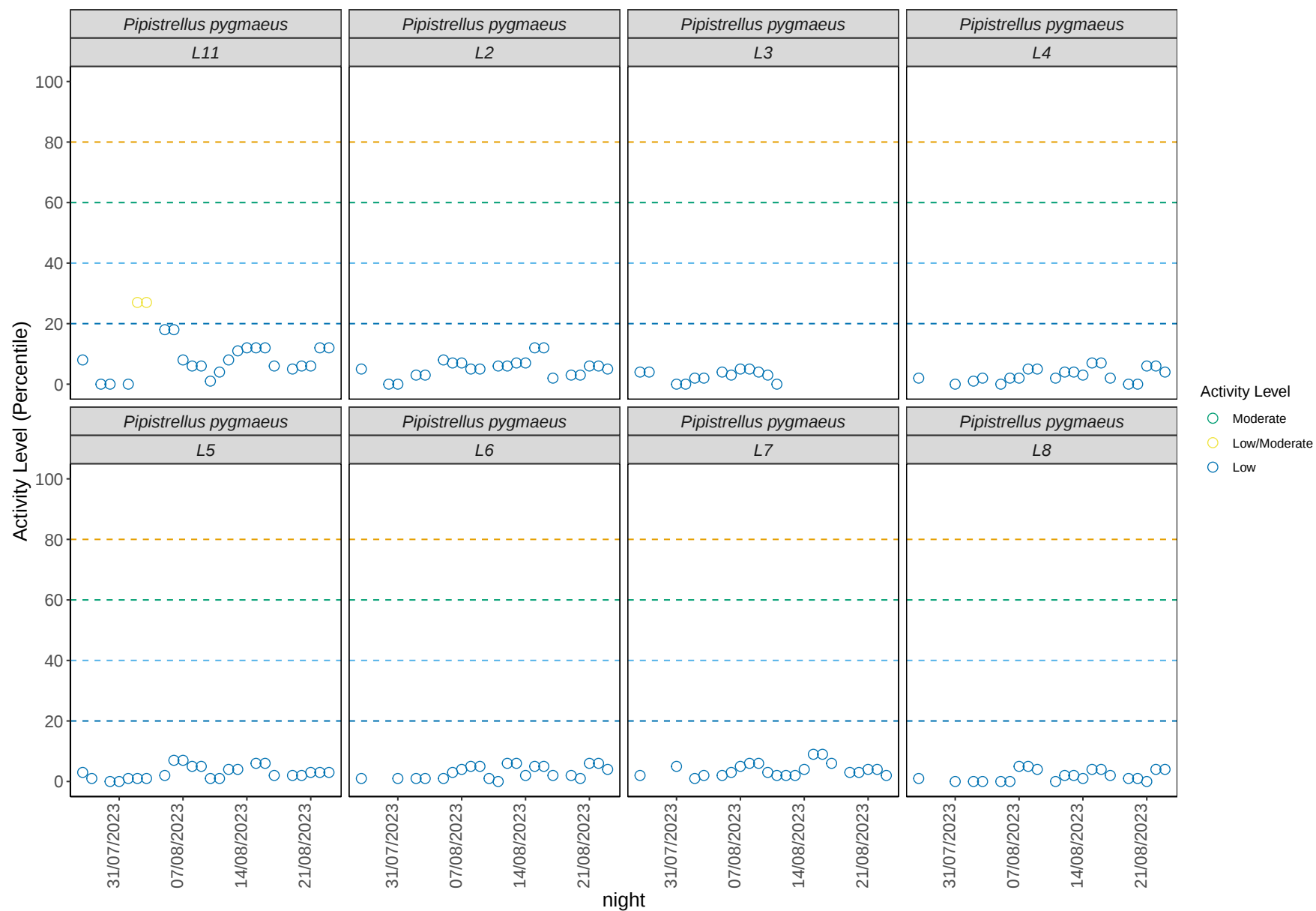


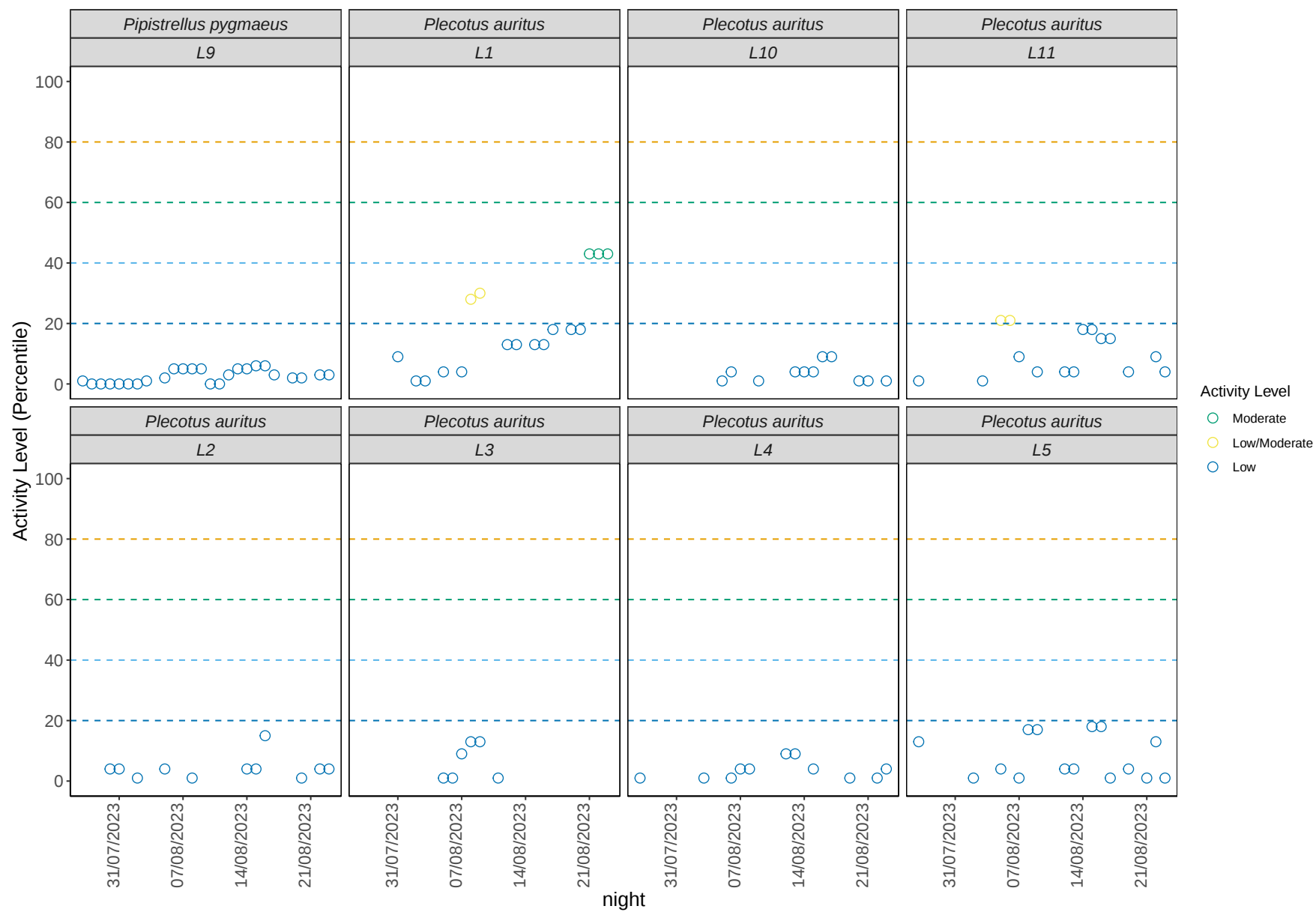


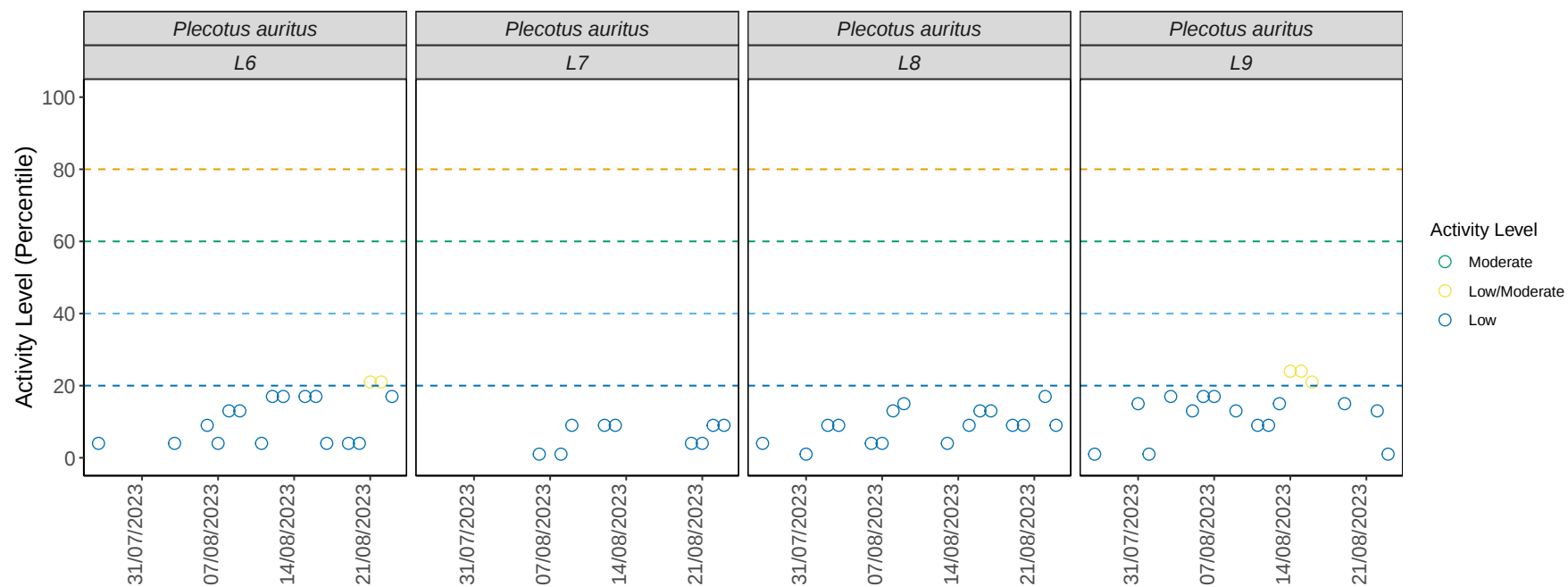












night

Per Detector, Per Month

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

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
L1	Myotis daubentonii	Jul	0	0	0	0	0	2
L1	Myotis daubentonii	Aug	0	0	0	0	0	16
L1	Myotis mystacinus	Aug	0	0	0	0	0	15
L1	Myotis nattereri	Aug	0	0	0	0	2	6
L1	Nyctalus leisleri	Jul	0	0	0	0	0	3
L1	Nyctalus leisleri	Aug	0	0	0	0	2	16
L1	Pipistrellus pipistrellus	Jul	0	0	0	0	0	2
L1	Pipistrellus pipistrellus	Aug	0	0	0	0	0	20
L1	Pipistrellus pygmaeus	Jul	0	0	0	0	0	5
L1	Pipistrellus pygmaeus	Aug	0	0	0	0	4	17
L1	Plecotus auritus	Jul	0	0	0	0	0	1
L1	Plecotus auritus	Aug	0	0	0	3	2	11
L10	Myotis daubentonii	Jul	0	0	0	0	0	1
L10	Myotis daubentonii	Aug	0	0	0	0	2	14
L10	Myotis mystacinus	Jul	0	0	0	0	0	2
L10	Myotis mystacinus	Aug	0	0	0	0	0	14
L10	Myotis nattereri	Jul	0	0	0	0	0	4
L10	Myotis nattereri	Aug	0	0	0	0	7	10
L10	Nyctalus leisleri	Jul	0	0	0	0	0	5

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
L10	Nyctalus leisleri	Aug	0	0	0	0	0	21
L10	Pipistrellus pipistrellus	Jul	0	0	0	0	0	5
L10	Pipistrellus pipistrellus	Aug	0	0	0	0	0	20
L10	Pipistrellus pygmaeus	Jul	0	0	0	0	0	5
L10	Pipistrellus pygmaeus	Aug	0	0	0	0	6	16
L10	Plecotus auritus	Aug	0	0	0	0	0	11
L11	Myotis daubentonii	Jul	0	0	0	0	0	1
L11	Myotis daubentonii	Aug	0	0	0	0	1	12
L11	Myotis mystacinus	Jul	0	0	0	0	0	1
L11	Myotis mystacinus	Aug	0	0	0	0	0	10
L11	Myotis nattereri	Jul	0	0	0	0	0	1
L11	Myotis nattereri	Aug	0	0	0	0	0	12
L11	Nyctalus leisleri	Jul	0	0	0	0	0	4
L11	Nyctalus leisleri	Aug	0	0	0	2	0	19
L11	Pipistrellus pipistrellus	Jul	0	0	0	0	0	1
L11	Pipistrellus pipistrellus	Aug	0	0	0	0	0	21
L11	Pipistrellus pygmaeus	Jul	0	0	0	0	0	3
L11	Pipistrellus pygmaeus	Aug	0	0	0	0	2	19
L11	Plecotus auritus	Jul	0	0	0	0	0	1
L11	Plecotus auritus	Aug	0	0	0	0	2	12
L2	Myotis daubentonii	Jul	0	0	0	0	0	2

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
L2	Myotis daubentonii	Aug	0	0	0	0	0	12
L2	Nyctalus leisleri	Jul	0	0	0	0	0	3
L2	Nyctalus leisleri	Aug	0	0	0	0	0	19
L2	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L2	Pipistrellus pipistrellus	Aug	0	0	0	0	0	18
L2	Pipistrellus pygmaeus	Jul	0	0	0	0	0	3
L2	Pipistrellus pygmaeus	Aug	0	0	0	0	0	19
L2	Plecotus auritus	Jul	0	0	0	0	0	2
L2	Plecotus auritus	Aug	0	0	0	0	0	9
L3	Myotis daubentonii	Jul	0	0	0	0	0	1
L3	Myotis daubentonii	Aug	0	0	0	0	0	7
L3	Myotis mystacinus	Aug	0	0	0	0	0	4
L3	Myotis nattereri	Jul	0	0	0	0	0	2
L3	Myotis nattereri	Aug	0	0	0	2	1	3
L3	Nyctalus leisleri	Jul	0	0	0	0	0	5
L3	Nyctalus leisleri	Aug	0	0	0	0	0	8
L3	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L3	Pipistrellus pipistrellus	Aug	0	0	0	0	0	9
L3	Pipistrellus pygmaeus	Jul	0	0	0	0	0	3
L3	Pipistrellus pygmaeus	Aug	0	0	0	0	0	10
L3	Plecotus auritus	Aug	0	0	0	0	0	6

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
L4	Myotis daubentonii	Jul	0	0	0	0	0	2
L4	Myotis daubentonii	Aug	0	0	0	0	0	12
L4	Myotis mystacinus	Jul	0	0	0	0	0	1
L4	Myotis mystacinus	Aug	0	0	0	0	0	6
L4	Myotis nattereri	Jul	0	0	0	0	0	1
L4	Myotis nattereri	Aug	0	0	0	0	2	9
L4	Nyctalus leisleri	Jul	0	0	0	0	0	3
L4	Nyctalus leisleri	Aug	0	0	0	0	0	18
L4	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L4	Pipistrellus pipistrellus	Aug	0	0	0	0	0	17
L4	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
L4	Pipistrellus pygmaeus	Aug	0	0	0	0	0	19
L4	Plecotus auritus	Jul	0	0	0	0	0	1
L4	Plecotus auritus	Aug	0	0	0	0	0	10
L5	Myotis daubentonii	Jul	0	0	0	0	0	2
L5	Myotis daubentonii	Aug	0	0	0	0	0	14
L5	Myotis mystacinus	Aug	0	0	0	0	0	3
L5	Myotis nattereri	Aug	0	0	0	0	0	2
L5	Nyctalus leisleri	Jul	0	0	0	0	0	5
L5	Nyctalus leisleri	Aug	0	0	0	0	0	21
L5	Pipistrellus pipistrellus	Jul	0	0	0	0	0	4

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
L5	Pipistrellus pipistrellus	Aug	0	0	0	0	0	19
L5	Pipistrellus pygmaeus	Jul	0	0	0	0	0	4
L5	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
L5	Plecotus auritus	Jul	0	0	0	0	0	1
L5	Plecotus auritus	Aug	0	0	0	0	0	14
L6	Myotis daubentonii	Jul	0	0	0	0	0	2
L6	Myotis daubentonii	Aug	0	0	0	0	2	13
L6	Myotis mystacinus	Jul	0	0	0	0	0	1
L6	Myotis mystacinus	Aug	0	0	0	0	0	10
L6	Myotis nattereri	Jul	0	0	0	0	0	1
L6	Myotis nattereri	Aug	0	0	0	0	7	6
L6	Nyctalus leisleri	Jul	0	0	0	0	0	5
L6	Nyctalus leisleri	Aug	0	0	0	2	0	19
L6	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L6	Pipistrellus pipistrellus	Aug	0	0	0	0	0	19
L6	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
L6	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
L6	Plecotus auritus	Jul	0	0	0	0	0	1
L6	Plecotus auritus	Aug	0	0	0	0	2	14
L7	Myotis daubentonii	Jul	0	0	0	0	0	2
L7	Myotis daubentonii	Aug	0	0	0	0	0	15

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
L7	Myotis mystacinus	Jul	0	0	0	0	0	1
L7	Myotis mystacinus	Aug	0	0	0	0	0	6
L7	Myotis nattereri	Jul	0	0	0	0	0	1
L7	Myotis nattereri	Aug	0	0	0	0	0	3
L7	Nyctalus leisleri	Jul	0	0	0	0	0	4
L7	Nyctalus leisleri	Aug	0	0	0	0	0	20
L7	Pipistrellus pipistrellus	Jul	0	0	0	0	0	2
L7	Pipistrellus pipistrellus	Aug	0	0	0	0	0	20
L7	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
L7	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
L7	Plecotus auritus	Aug	0	0	0	0	0	9
L8	Myotis daubentonii	Jul	0	0	0	0	0	3
L8	Myotis daubentonii	Aug	0	0	0	0	0	12
L8	Myotis mystacinus	Jul	0	0	0	0	0	1
L8	Myotis mystacinus	Aug	0	0	0	0	0	7
L8	Myotis nattereri	Jul	0	0	0	0	0	1
L8	Myotis nattereri	Aug	0	0	0	0	0	3
L8	Nyctalus leisleri	Jul	0	0	0	0	0	5
L8	Nyctalus leisleri	Aug	0	0	0	0	0	19
L8	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L8	Pipistrellus pipistrellus	Aug	0	0	0	0	0	19

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
L8	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
L8	Pipistrellus pygmaeus	Aug	0	0	0	0	0	19
L8	Plecotus auritus	Jul	0	0	0	0	0	2
L8	Plecotus auritus	Aug	0	0	0	0	0	14
L9	Myotis daubentonii	Jul	0	0	0	0	0	1
L9	Myotis daubentonii	Aug	0	0	0	0	0	15
L9	Myotis mystacinus	Jul	0	0	0	0	0	1
L9	Myotis mystacinus	Aug	0	0	0	0	0	13
L9	Myotis nattereri	Jul	0	0	0	0	2	0
L9	Myotis nattereri	Aug	0	0	0	1	9	1
L9	Nyctalus leisleri	Jul	0	0	0	0	0	5
L9	Nyctalus leisleri	Aug	0	0	0	0	0	21
L9	Pipistrellus nathusii	Aug	0	0	0	0	0	4
L9	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
L9	Pipistrellus pipistrellus	Aug	0	0	0	0	0	20
L9	Pipistrellus pygmaeus	Jul	0	0	0	0	0	5
L9	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
L9	Plecotus auritus	Jul	0	0	0	0	0	2
L9	Plecotus auritus	Aug	0	0	0	0	3	12

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
L1	Myotis daubentonii	Jul	8	6.5 - 12	13	2
L1	Myotis daubentonii	Aug	11	6.5 - 12	13	16
L1	Myotis mystacinus	Aug	6	4.5 - 9	15	15
L1	Myotis nattereri	Aug	13	6 - 21.5	28	8
L1	Nyctalus leisleri	Jul	0	4 - 10.5	2	3
L1	Nyctalus leisleri	Aug	5	4 - 10.5	20	18
L1	Pipistrellus pipistrellus	Jul	2	1 - 2	3	2
L1	Pipistrellus pipistrellus	Aug	1	1 - 2	3	20
L1	Pipistrellus pygmaeus	Jul	6	12 - 16	6	5
L1	Pipistrellus pygmaeus	Aug	14	12 - 16	23	21
L1	Plecotus auritus	Jul	9	9.5 - 28	9	1
L1	Plecotus auritus	Aug	16	9.5 - 28	43	16
L10	Myotis daubentonii	Jul	2	7.5 - 15	2	1
L10	Myotis daubentonii	Aug	11	7.5 - 15	24	16
L10	Myotis mystacinus	Jul	4	4 - 7	5	2
L10	Myotis mystacinus	Aug	6	4 - 7	11	14
L10	Myotis nattereri	Jul	12	12.5 - 24.5	19	4
L10	Myotis nattereri	Aug	19	12.5 - 24.5	37	17
L10	Nyctalus leisleri	Jul	2	4 - 7	5	5
L10	Nyctalus leisleri	Aug	6	4 - 7	10	21
L10	Pipistrellus pipistrellus	Jul	0	0 - 0	0	5
L10	Pipistrellus pipistrellus	Aug	0	0 - 0	1	20
L10	Pipistrellus pygmaeus	Jul	0	10 - 16	8	5
L10	Pipistrellus pygmaeus	Aug	12	10 - 16	23	22
L10	Plecotus auritus	Aug	4	1 - 6.5	9	11
L11	Myotis daubentonii	Jul	6	6 - 13.5	6	1
L11	Myotis daubentonii	Aug	11	6 - 13.5	21	13
L11	Myotis mystacinus	Jul	6	3 - 8.5	6	1
L11	Myotis mystacinus	Aug	4	3 - 8.5	14	10
L11	Myotis nattereri	Jul	6	9 - 15.5	6	1
L11	Myotis nattereri	Aug	12	9 - 15.5	19	12
L11	Nyctalus leisleri	Jul	1	4.5 - 9	3	4
L11	Nyctalus leisleri	Aug	6	4.5 - 9	47	21

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L11	Pipistrellus pipistrellus	Jul	0	0 - 0	0	1
L11	Pipistrellus pipistrellus	Aug	0	0 - 0	1	21
L11	Pipistrellus pygmaeus	Jul	0	7 - 13	8	3
L11	Pipistrellus pygmaeus	Aug	8	7 - 13	27	21
L11	Plecotus auritus	Jul	1	4 - 13.5	1	1
L11	Plecotus auritus	Aug	9	4 - 13.5	21	14
L2	Myotis daubentonii	Jul	2	5.5 - 13	2	2
L2	Myotis daubentonii	Aug	13	5.5 - 13	15	12
L2	Nyctalus leisleri	Jul	0	2 - 5	0	3
L2	Nyctalus leisleri	Aug	2	2 - 5	7	19
L2	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
L2	Pipistrellus pipistrellus	Aug	0	0 - 0	0	18
L2	Pipistrellus pygmaeus	Jul	0	4.5 - 7	5	3
L2	Pipistrellus pygmaeus	Aug	6	4.5 - 7	12	19
L2	Plecotus auritus	Jul	4	2.5 - 4	4	2
L2	Plecotus auritus	Aug	4	2.5 - 4	15	9
L3	Myotis daubentonii	Jul	2	2 - 6	2	1
L3	Myotis daubentonii	Aug	6	2 - 6	9	7
L3	Myotis mystacinus	Aug	6	6 - 6	6	4
L3	Myotis nattereri	Jul	9	9 - 35	12	2
L3	Myotis nattereri	Aug	23	9 - 35	44	6
L3	Nyctalus leisleri	Jul	2	1.5 - 5	4	5
L3	Nyctalus leisleri	Aug	2	1.5 - 5	9	8
L3	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
L3	Pipistrellus pipistrellus	Aug	0	0 - 0	1	9
L3	Pipistrellus pygmaeus	Jul	4	3 - 4.5	4	3
L3	Pipistrellus pygmaeus	Aug	3	3 - 4.5	5	10
L3	Plecotus auritus	Aug	5	1 - 11	13	6
L4	Myotis daubentonii	Jul	2	2 - 5.5	2	2
L4	Myotis daubentonii	Aug	2	2 - 5.5	9	12
L4	Myotis mystacinus	Jul	3	3 - 4	3	1
L4	Myotis mystacinus	Aug	3	3 - 4	5	6
L4	Myotis nattereri	Jul	6	6 - 15	6	1
L4	Myotis nattereri	Aug	12	6 - 15	24	11
L4	Nyctalus leisleri	Jul	0	6 - 11	1	3
L4	Nyctalus leisleri	Aug	7	6 - 11	18	18

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L4	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
L4	Pipistrellus pipistrellus	Aug	0	0 - 0	1	17
L4	Pipistrellus pygmaeus	Jul	1	2.5 - 5	2	2
L4	Pipistrellus pygmaeus	Aug	3	2.5 - 5	7	19
L4	Plecotus auritus	Jul	1	1 - 6.5	1	1
L4	Plecotus auritus	Aug	4	1 - 6.5	9	10
L5	Myotis daubentonii	Jul	4	4 - 8.5	6	2
L5	Myotis daubentonii	Aug	6	4 - 8.5	13	14
L5	Myotis mystacinus	Aug	3	3 - 3	3	3
L5	Myotis nattereri	Aug	6	6 - 6	6	2
L5	Nyctalus leisleri	Jul	5	3 - 6.5	6	5
L5	Nyctalus leisleri	Aug	4	3 - 6.5	12	21
L5	Pipistrellus pipistrellus	Jul	0	0 - 0	1	4
L5	Pipistrellus pipistrellus	Aug	0	0 - 0	1	19
L5	Pipistrellus pygmaeus	Jul	1	2 - 4	3	4
L5	Pipistrellus pygmaeus	Aug	3	2 - 4	7	20
L5	Plecotus auritus	Jul	13	2.5 - 11	13	1
L5	Plecotus auritus	Aug	4	2.5 - 11	18	14
L6	Myotis daubentonii	Jul	2	6.5 - 14	2	2
L6	Myotis daubentonii	Aug	11	6.5 - 14	21	15
L6	Myotis mystacinus	Jul	3	4.5 - 6	3	1
L6	Myotis mystacinus	Aug	6	4.5 - 6	7	10
L6	Myotis nattereri	Jul	12	12 - 26	12	1
L6	Myotis nattereri	Aug	24	12 - 26	33	13
L6	Nyctalus leisleri	Jul	1	5 - 11	4	5
L6	Nyctalus leisleri	Aug	6	5 - 11	42	21
L6	Pipistrellus pipistrellus	Jul	1	1 - 1	1	3
L6	Pipistrellus pipistrellus	Aug	0	1 - 1	2	19
L6	Pipistrellus pygmaeus	Jul	1	2 - 4	1	2
L6	Pipistrellus pygmaeus	Aug	4	2 - 4	6	20
L6	Plecotus auritus	Jul	4	8.5 - 15	4	1
L6	Plecotus auritus	Aug	13	8.5 - 15	21	16
L7	Myotis daubentonii	Jul	4	4 - 8.5	6	2
L7	Myotis daubentonii	Aug	6	4 - 8.5	15	15
L7	Myotis mystacinus	Jul	5	3 - 5	5	1
L7	Myotis mystacinus	Aug	3	3 - 5	7	6

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L7	Myotis nattereri	Jul	6	6 - 6	6	1
L7	Myotis nattereri	Aug	6	6 - 6	6	3
L7	Nyctalus leisleri	Jul	2	2 - 5.5	3	4
L7	Nyctalus leisleri	Aug	2	2 - 5.5	10	20
L7	Pipistrellus pipistrellus	Jul	0	0 - 0	0	2
L7	Pipistrellus pipistrellus	Aug	0	0 - 0	1	20
L7	Pipistrellus pygmaeus	Jul	4	2.5 - 5	5	2
L7	Pipistrellus pygmaeus	Aug	3	2.5 - 5	9	20
L7	Plecotus auritus	Aug	9	4 - 9	9	9
L8	Myotis daubentonii	Jul	2	6 - 11	11	3
L8	Myotis daubentonii	Aug	10	6 - 11	15	12
L8	Myotis mystacinus	Jul	3	3 - 4	3	1
L8	Myotis mystacinus	Aug	3	3 - 4	5	7
L8	Myotis nattereri	Jul	6	6 - 6	6	1
L8	Myotis nattereri	Aug	6	6 - 6	12	3
L8	Nyctalus leisleri	Jul	7	6.5 - 10.5	15	5
L8	Nyctalus leisleri	Aug	9	6.5 - 10.5	16	19
L8	Pipistrellus pipistrellus	Jul	1	1.5 - 7	1	3
L8	Pipistrellus pipistrellus	Aug	2	1.5 - 7	12	19
L8	Pipistrellus pygmaeus	Jul	1	1.5 - 4	1	2
L8	Pipistrellus pygmaeus	Aug	2	1.5 - 4	5	19
L8	Plecotus auritus	Jul	3	6.5 - 11	4	2
L8	Plecotus auritus	Aug	9	6.5 - 11	17	14
L9	Myotis daubentonii	Jul	9	6 - 11.5	9	1
L9	Myotis daubentonii	Aug	6	6 - 11.5	17	15
L9	Myotis mystacinus	Jul	3	3 - 5.5	3	1
L9	Myotis mystacinus	Aug	5	3 - 5.5	8	13
L9	Myotis nattereri	Jul	31	27 - 36.5	36	2
L9	Myotis nattereri	Aug	33	27 - 36.5	43	11
L9	Nyctalus leisleri	Jul	2	5.5 - 9	14	5
L9	Nyctalus leisleri	Aug	9	5.5 - 9	12	21
L9	Pipistrellus nathusii	Aug	8	8 - 8	18	4
L9	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
L9	Pipistrellus pipistrellus	Aug	0	0 - 0	1	20
L9	Pipistrellus pygmaeus	Jul	0	2.5 - 5	1	5
L9	Pipistrellus pygmaeus	Aug	3	2.5 - 5	6	20

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L9	Plecotus auritus	Jul	8	9 - 17	15	2
L9	Plecotus auritus	Aug	15	9 - 17	24	15

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 daubentonii	0	0	0	0	5	161
Myotis mystacinus	0	0	0	0	0	96
Myotis nattereri	0	0	0	3	30	66
Nyctalus leisleri	0	0	0	4	2	248
Pipistrellus nathusii	0	0	0	0	0	4
Pipistrellus pipistrellus	0	0	0	0	0	234
Pipistrellus pygmaeus	0	0	0	0	12	235
Plecotus auritus	0	0	0	3	9	133

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	6	7.5 - 15	24	166
Myotis mystacinus	5	6 - 6	15	96
Myotis nattereri	12	9 - 35	44	99
Nyctalus leisleri	4	6.5 - 10.5	47	254
Pipistrellus nathusii	8	8 - 8	18	4
Pipistrellus pipistrellus	0	1.5 - 7	12	234
Pipistrellus pygmaeus	4	7 - 13	27	247
Plecotus auritus	9	9.5 - 28	43	145

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

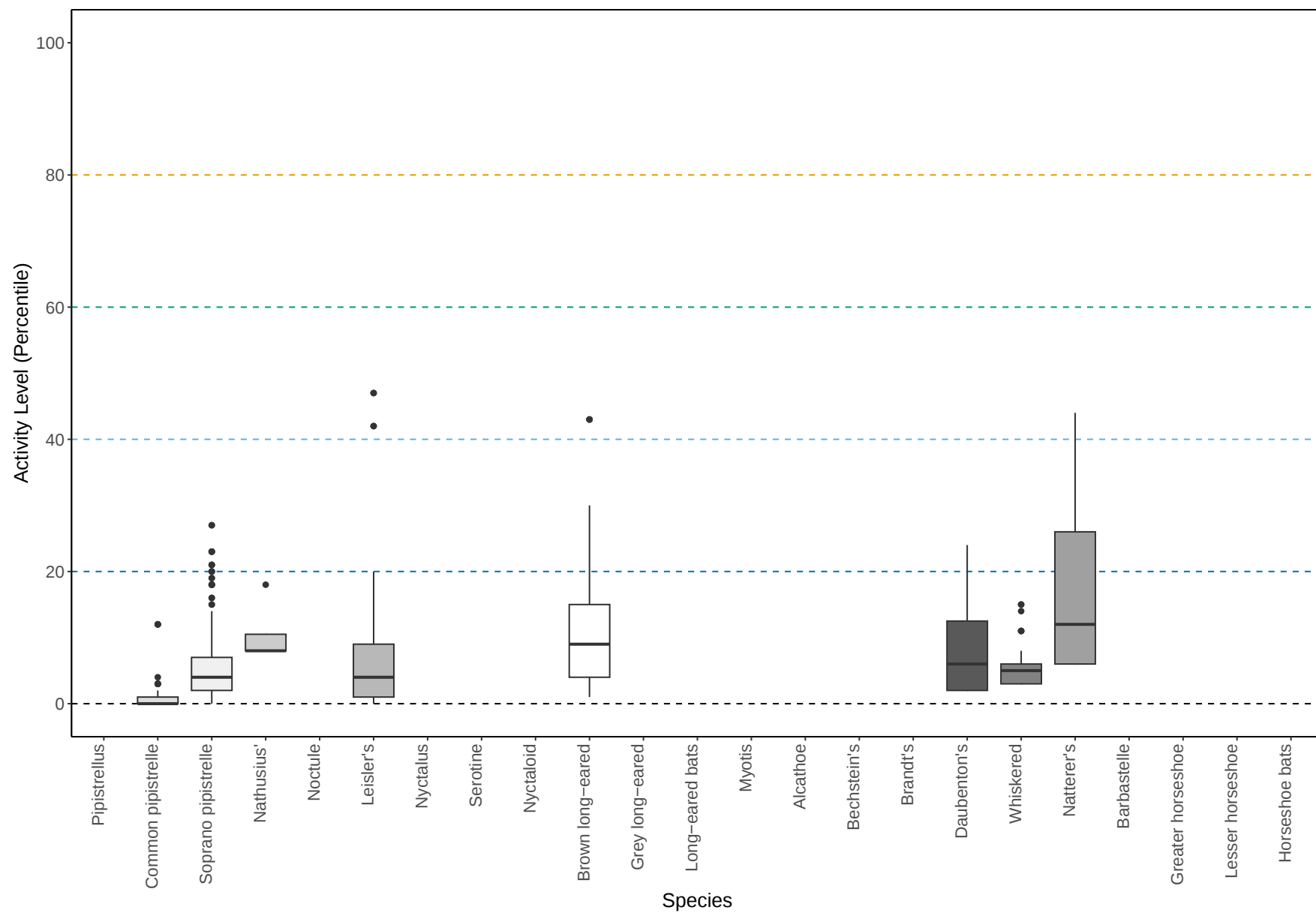
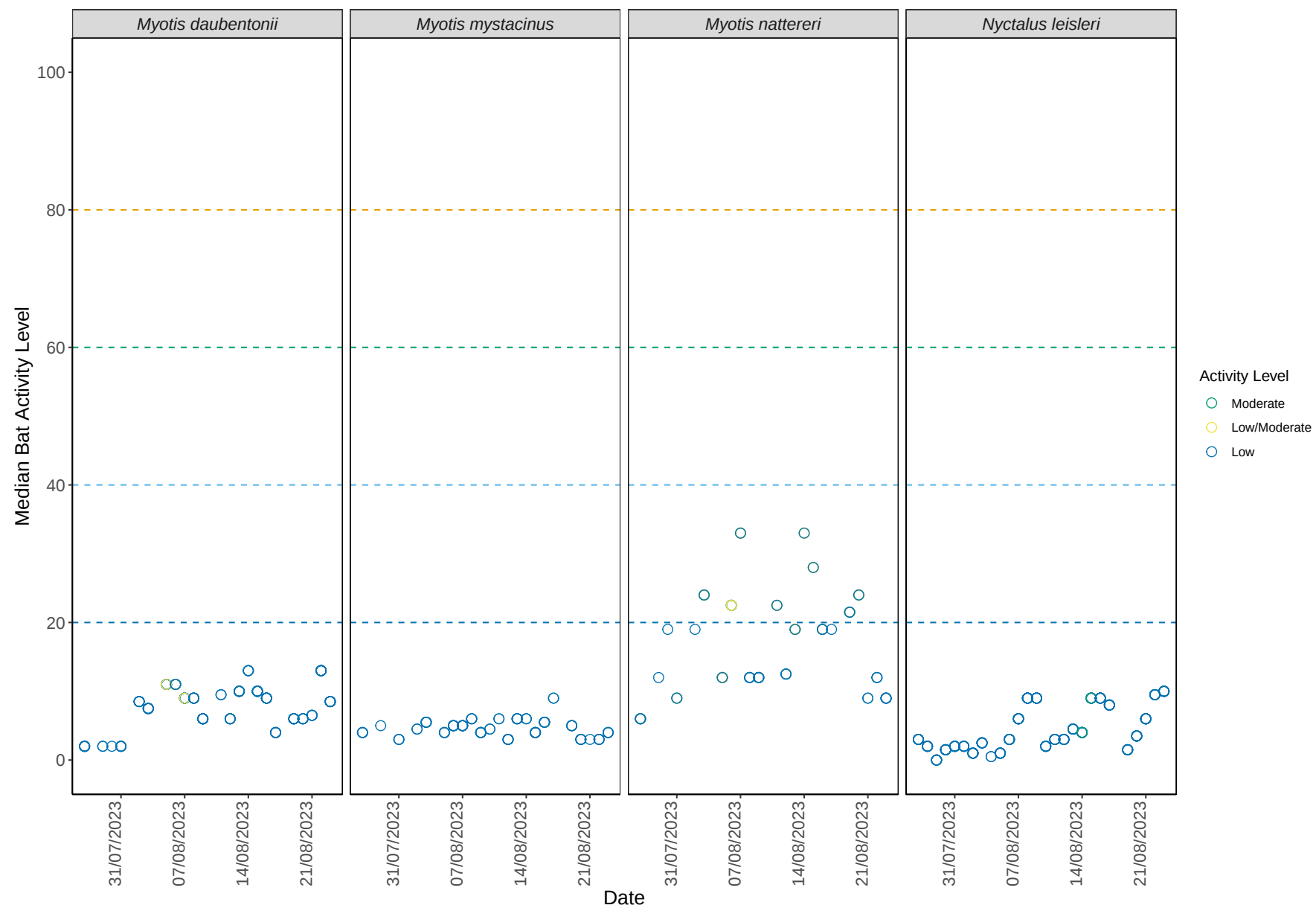
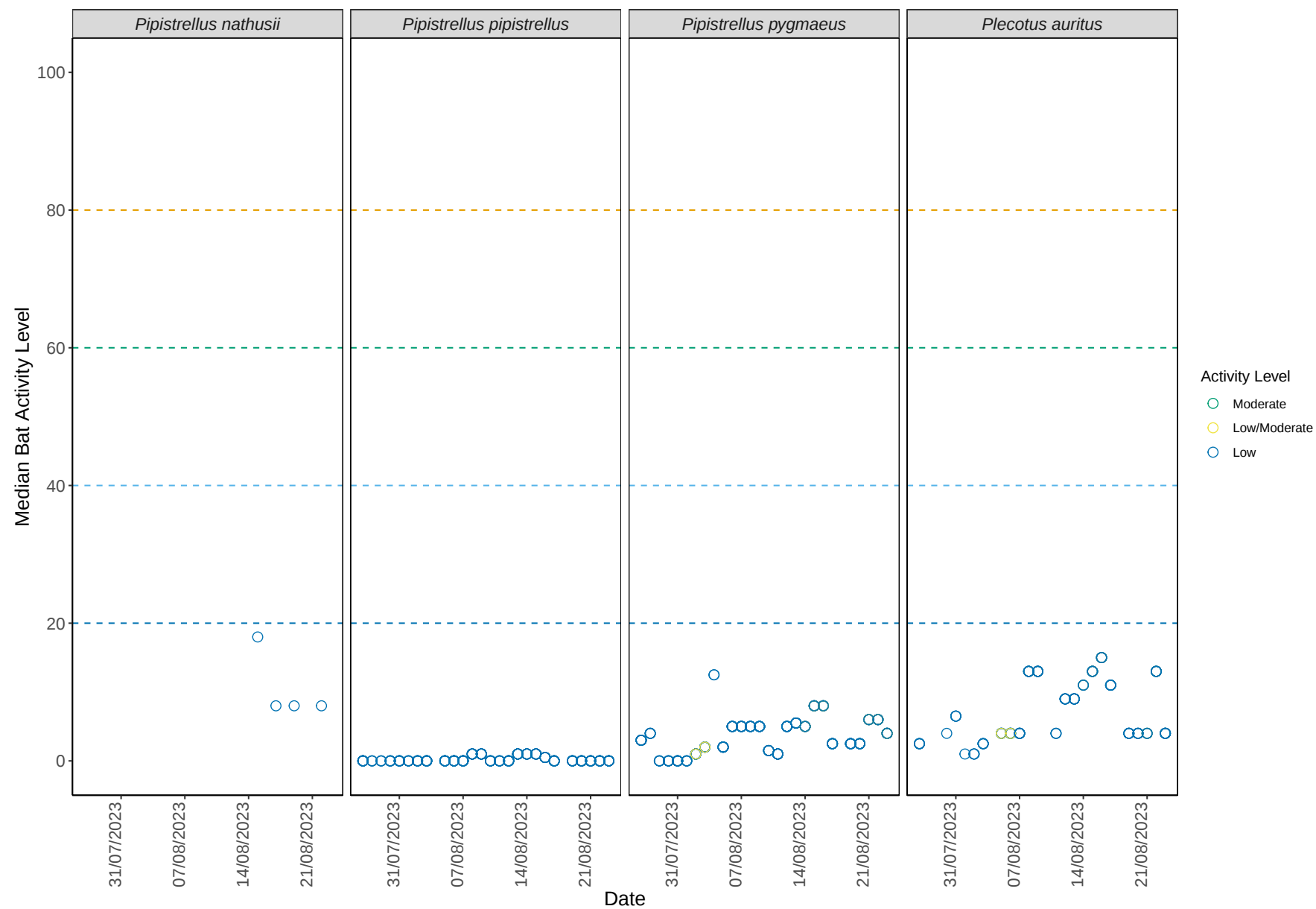


Figure 5. The median activity levels of bats recorded across all detectors each night.





Per Site, Per Month

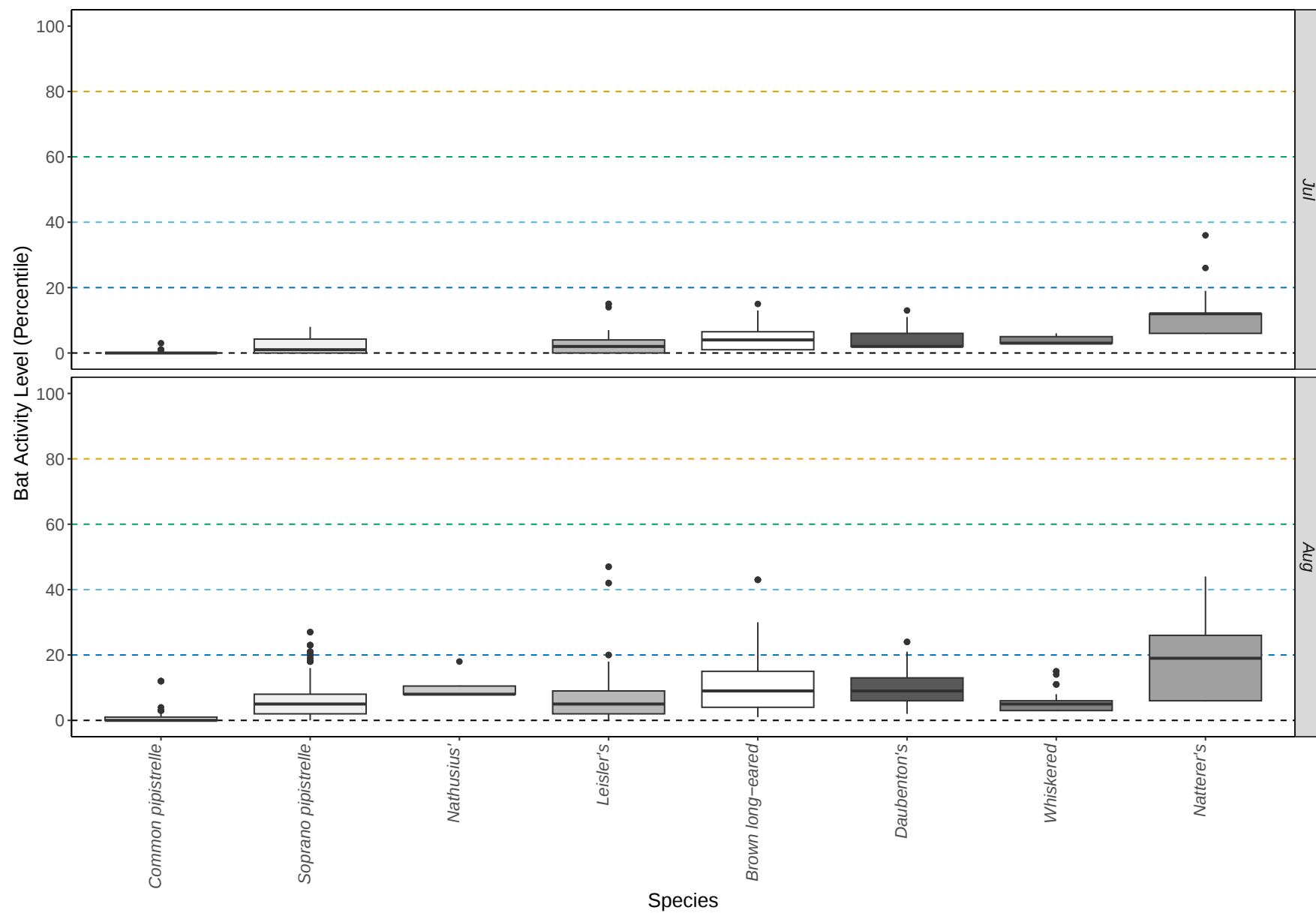
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	Jul	0	0	0	0	0	19
Myotis daubentonii	Aug	0	0	0	0	5	142
Myotis mystacinus	Jul	0	0	0	0	0	8
Myotis mystacinus	Aug	0	0	0	0	0	88
Myotis nattereri	Jul	0	0	0	0	2	11
Myotis nattereri	Aug	0	0	0	3	28	55
Nyctalus leisleri	Jul	0	0	0	0	0	47
Nyctalus leisleri	Aug	0	0	0	4	2	201
Pipistrellus nathusii	Aug	0	0	0	0	0	4
Pipistrellus pipistrellus	Jul	0	0	0	0	0	32
Pipistrellus pipistrellus	Aug	0	0	0	0	0	202
Pipistrellus pygmaeus	Jul	0	0	0	0	0	36
Pipistrellus pygmaeus	Aug	0	0	0	0	12	199
Plecotus auritus	Jul	0	0	0	0	0	11
Plecotus auritus	Aug	0	0	0	3	9	122

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 daubentonii	Jul	2	7.5 - 15	13	19
Myotis daubentonii	Aug	9	7.5 - 15	24	147
Myotis mystacinus	Jul	3	4.5 - 6	6	8
Myotis mystacinus	Aug	5	6 - 6	15	88
Myotis nattereri	Jul	12	9 - 35	36	13
Myotis nattereri	Aug	19	9 - 35	44	86
Nyctalus leisleri	Jul	2	6.5 - 10.5	15	47
Nyctalus leisleri	Aug	5	6.5 - 10.5	47	207
Pipistrellus nathusii	Aug	8	8 - 8	18	4
Pipistrellus pipistrellus	Jul	0	1.5 - 7	3	32
Pipistrellus pipistrellus	Aug	0	1.5 - 7	12	202
Pipistrellus pygmaeus	Jul	1	7 - 13	8	36
Pipistrellus pygmaeus	Aug	5	7 - 13	27	211
Plecotus auritus	Jul	4	9.5 - 28	15	11
Plecotus auritus	Aug	9	9.5 - 28	43	134

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



Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

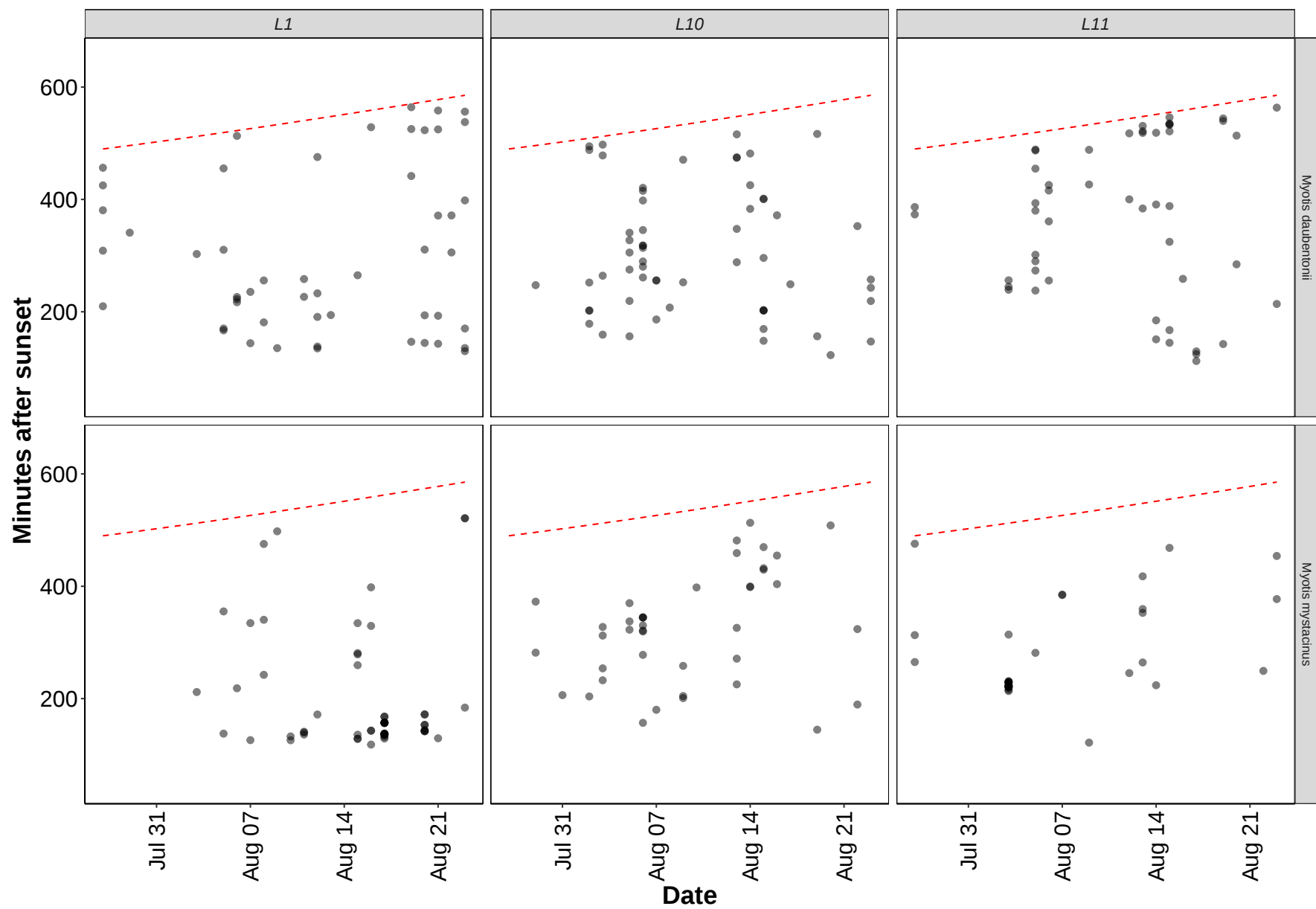
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

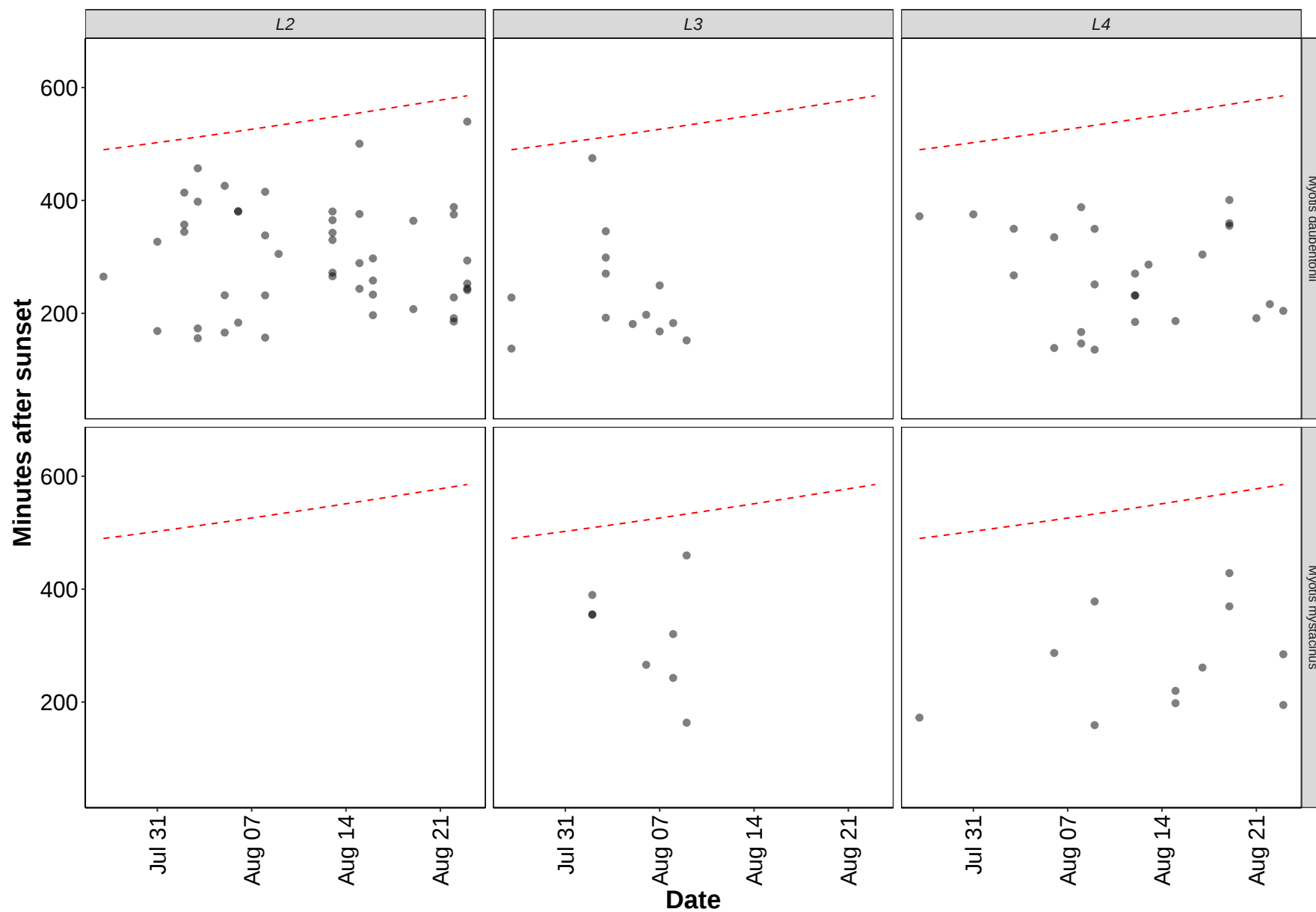
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2023-07-27	20:32	04:42	8.2
2023-07-28	20:31	04:44	8.2
2023-07-29	20:29	04:45	8.3
2023-07-30	20:28	04:47	8.3
2023-07-31	20:26	04:48	8.4
2023-08-01	20:24	04:50	8.4
2023-08-02	20:23	04:52	8.5
2023-08-03	20:21	04:53	8.5
2023-08-04	20:19	04:55	8.6
2023-08-05	20:17	04:57	8.7
2023-08-06	20:16	04:58	8.7
2023-08-07	20:14	05:00	8.8
2023-08-08	20:12	05:02	8.8
2023-08-09	20:10	05:03	8.9
2023-08-10	20:08	05:05	8.9
2023-08-11	20:06	05:07	9.0
2023-08-12	20:04	05:08	9.1
2023-08-13	20:02	05:10	9.1
2023-08-14	20:00	05:12	9.2
2023-08-15	19:58	05:13	9.3
2023-08-16	19:56	05:15	9.3
2023-08-17	19:54	05:17	9.4
2023-08-19	19:50	05:20	9.5
2023-08-20	19:48	05:22	9.6
2023-08-21	19:46	05:23	9.6
2023-08-22	19:43	05:25	9.7
2023-08-23	19:41	05:27	9.8

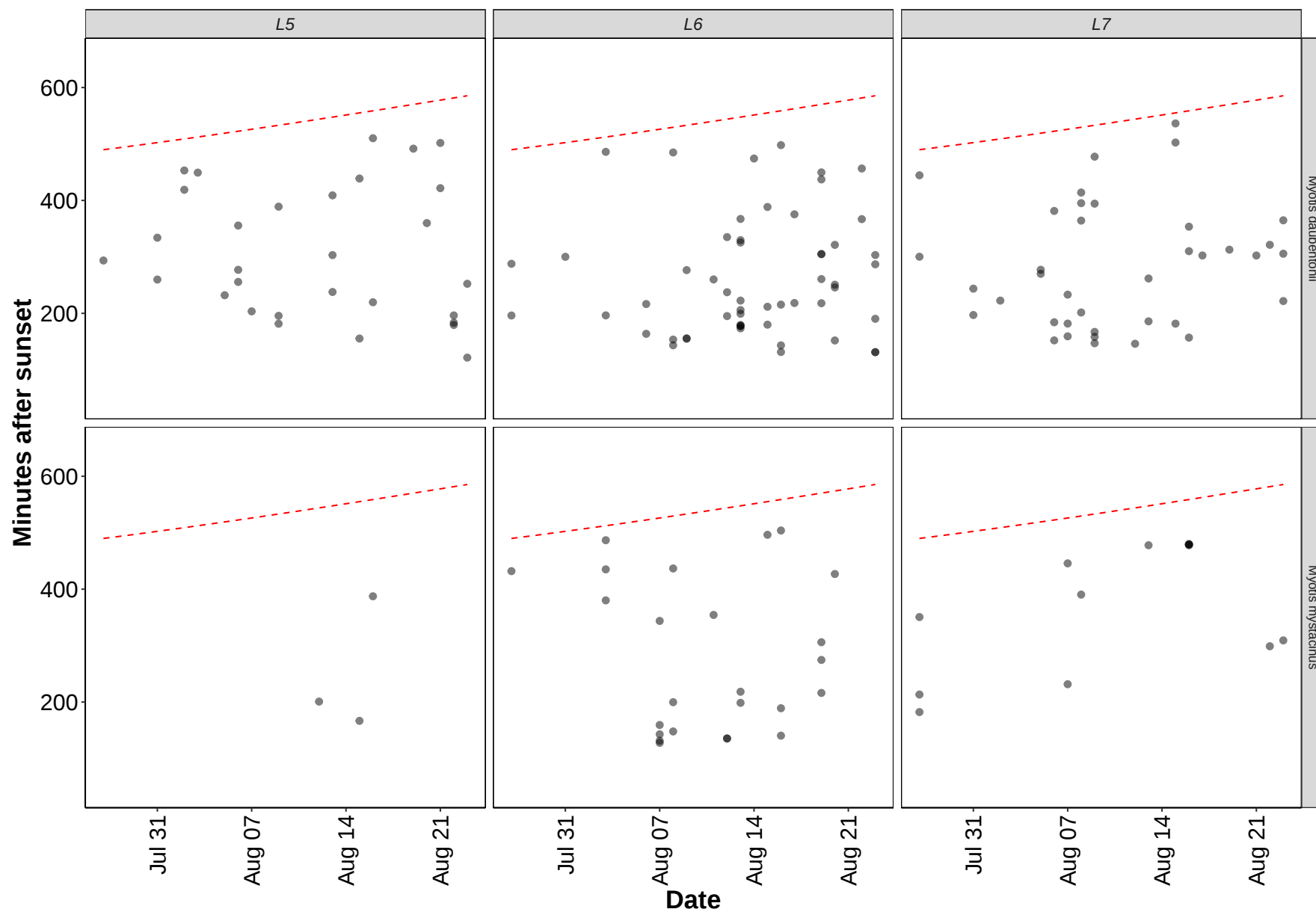
Distribution of Bat Activity Across the Night through Time

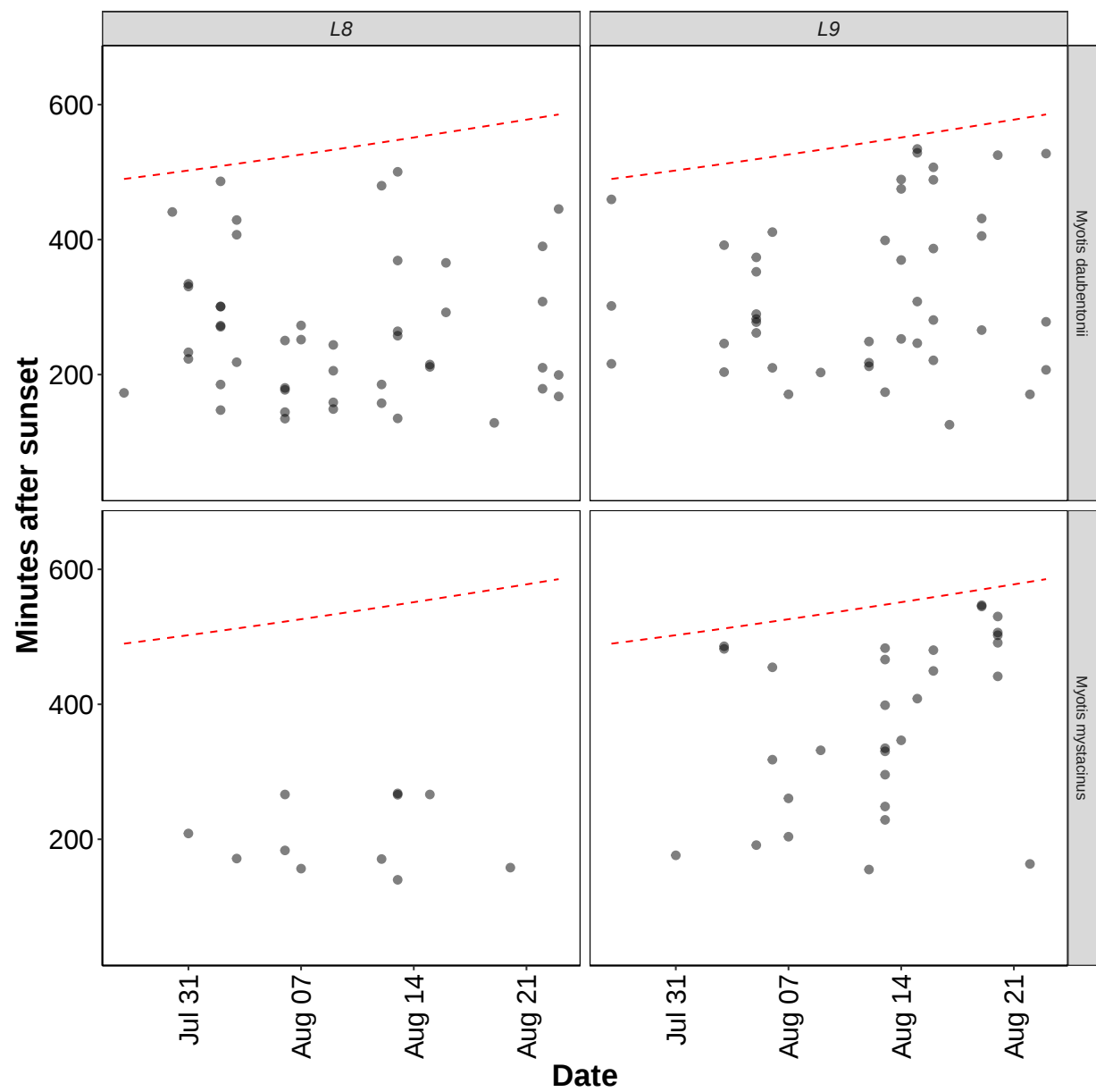
Per Detector

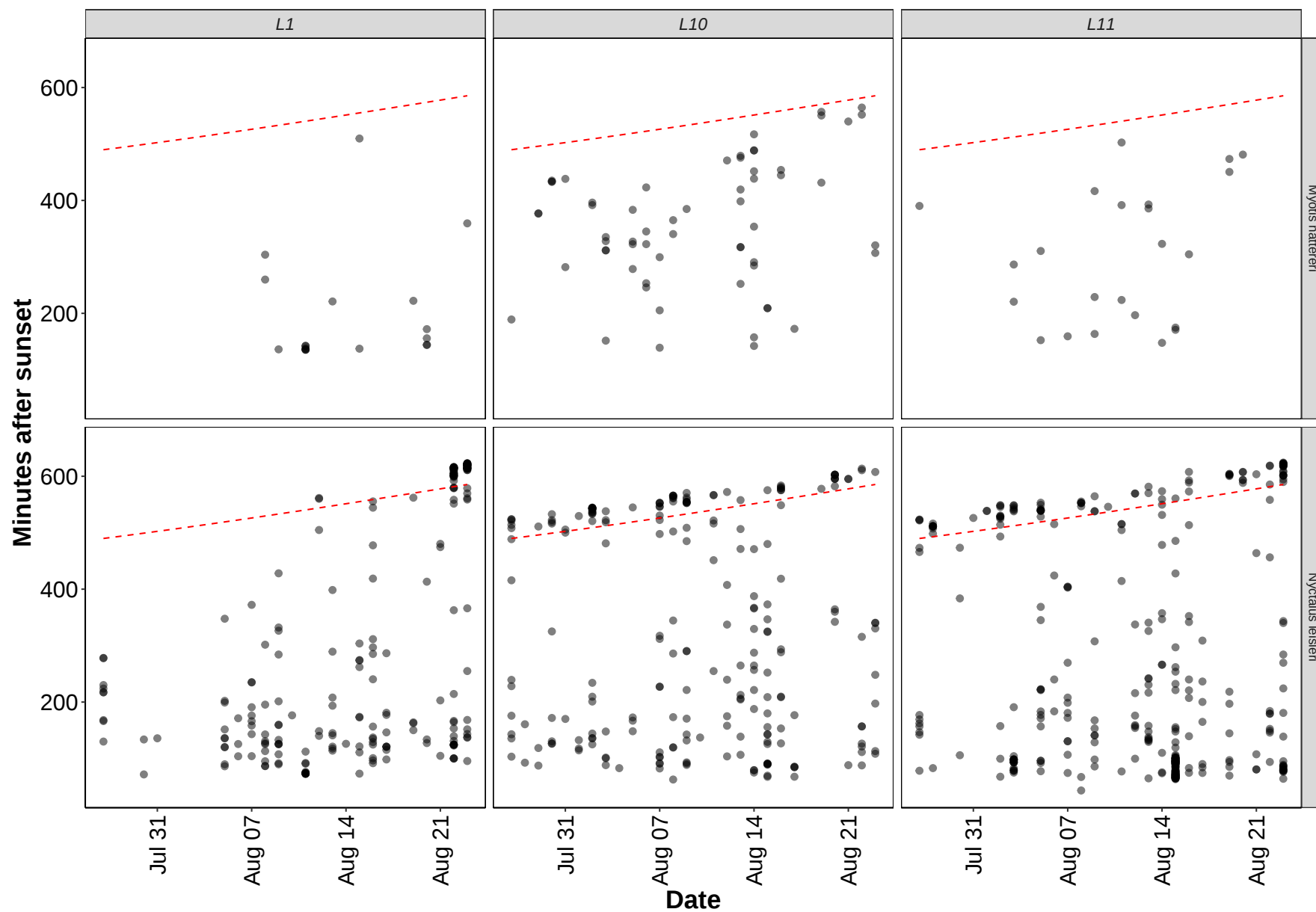
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

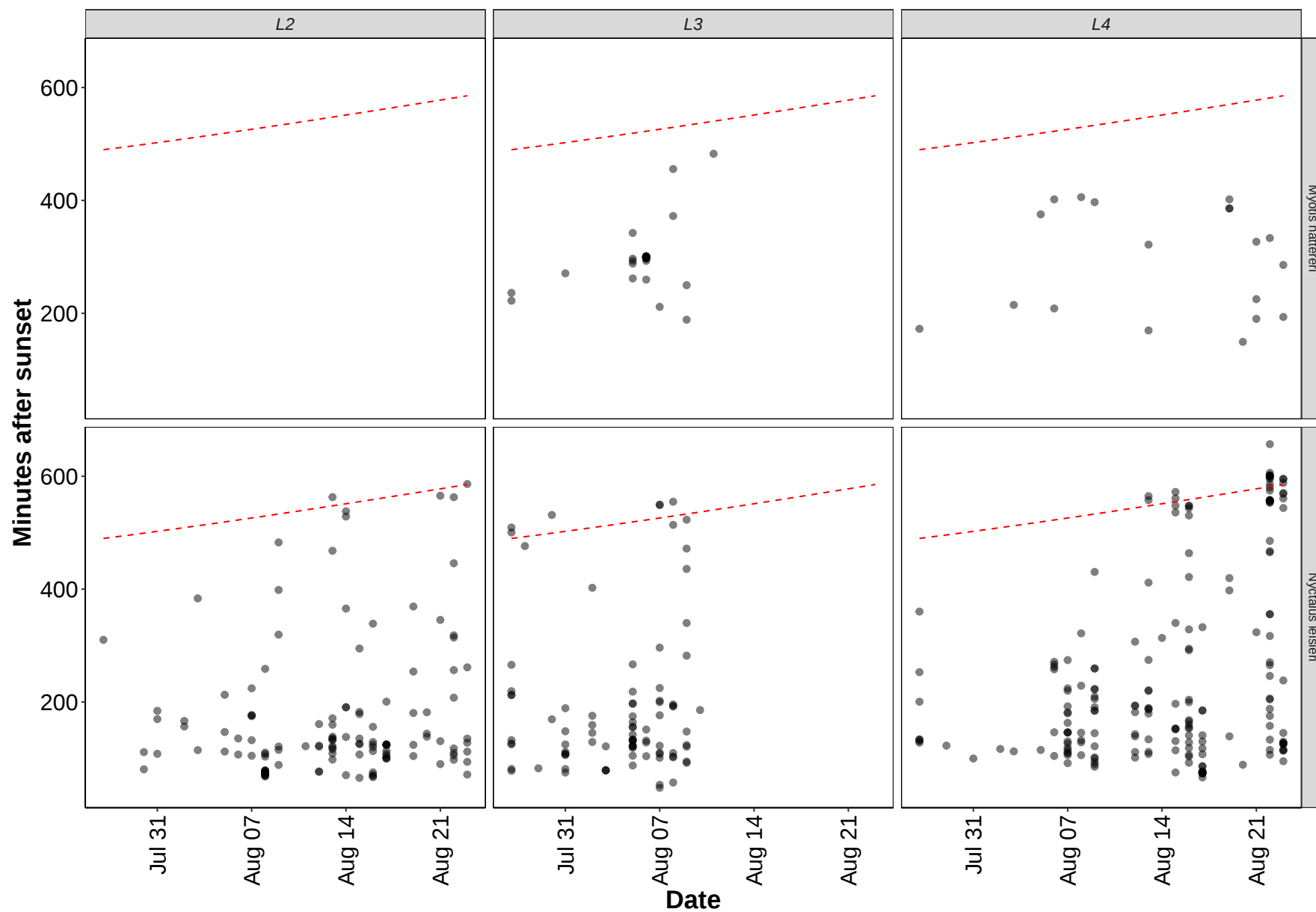


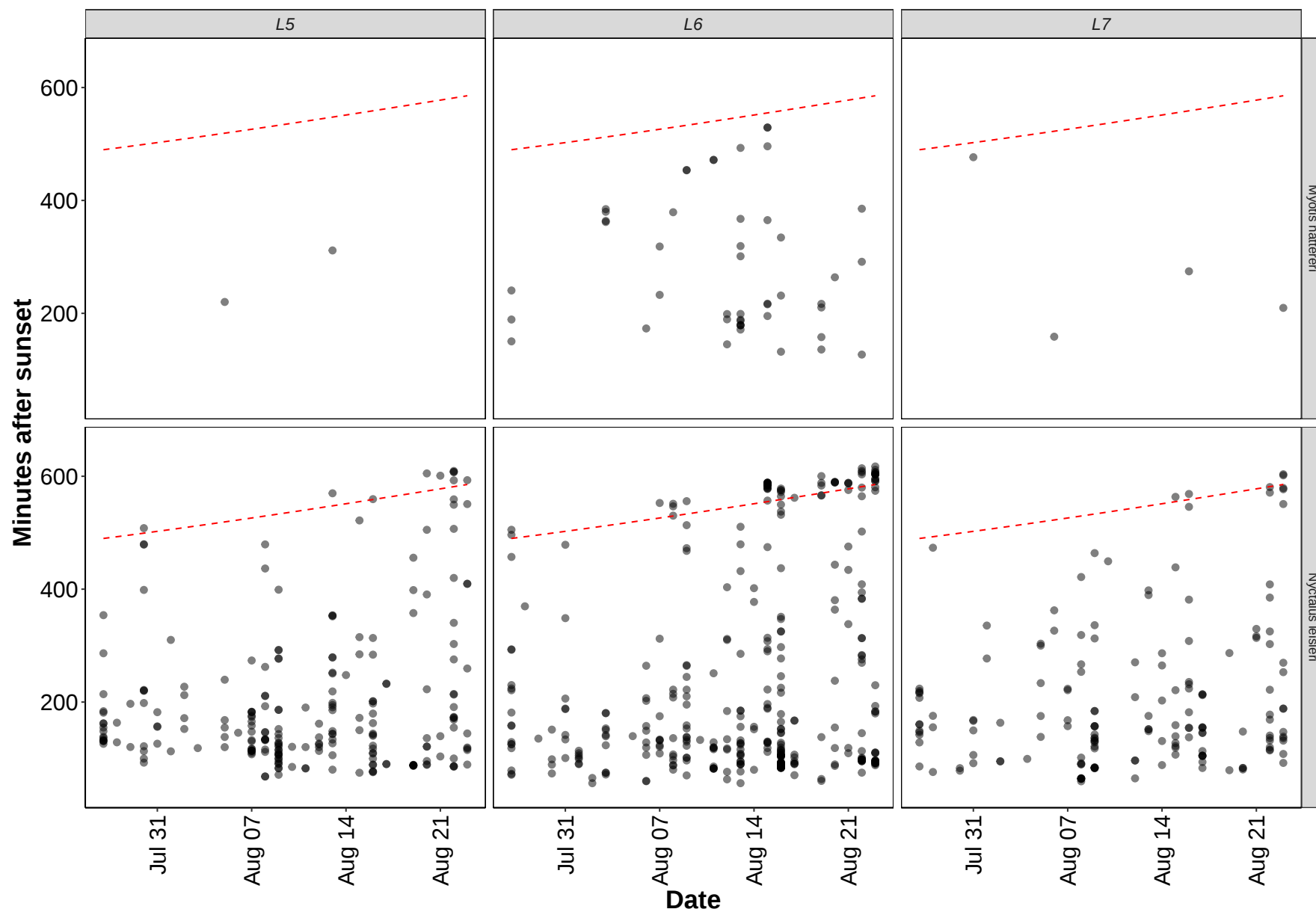


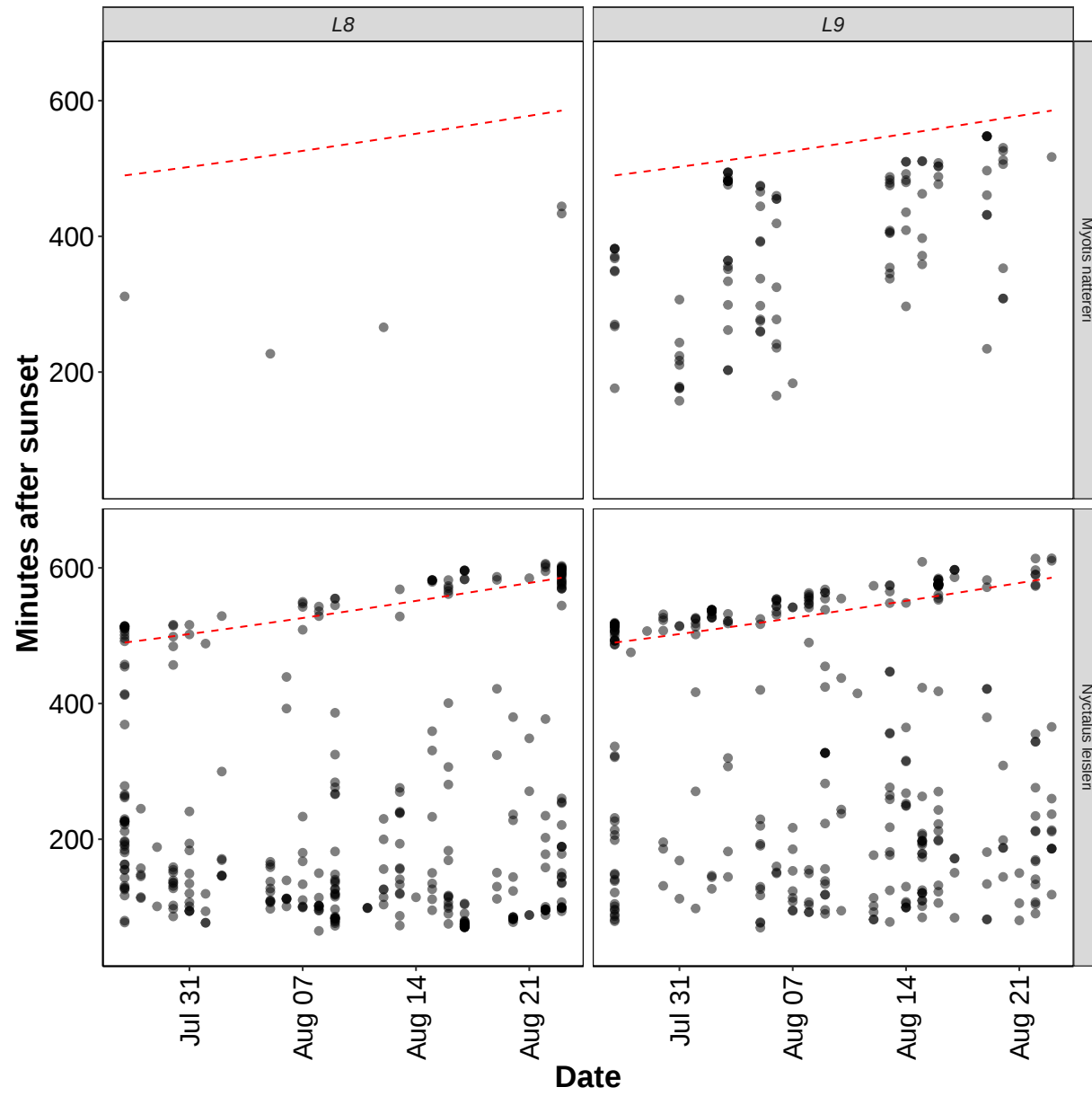


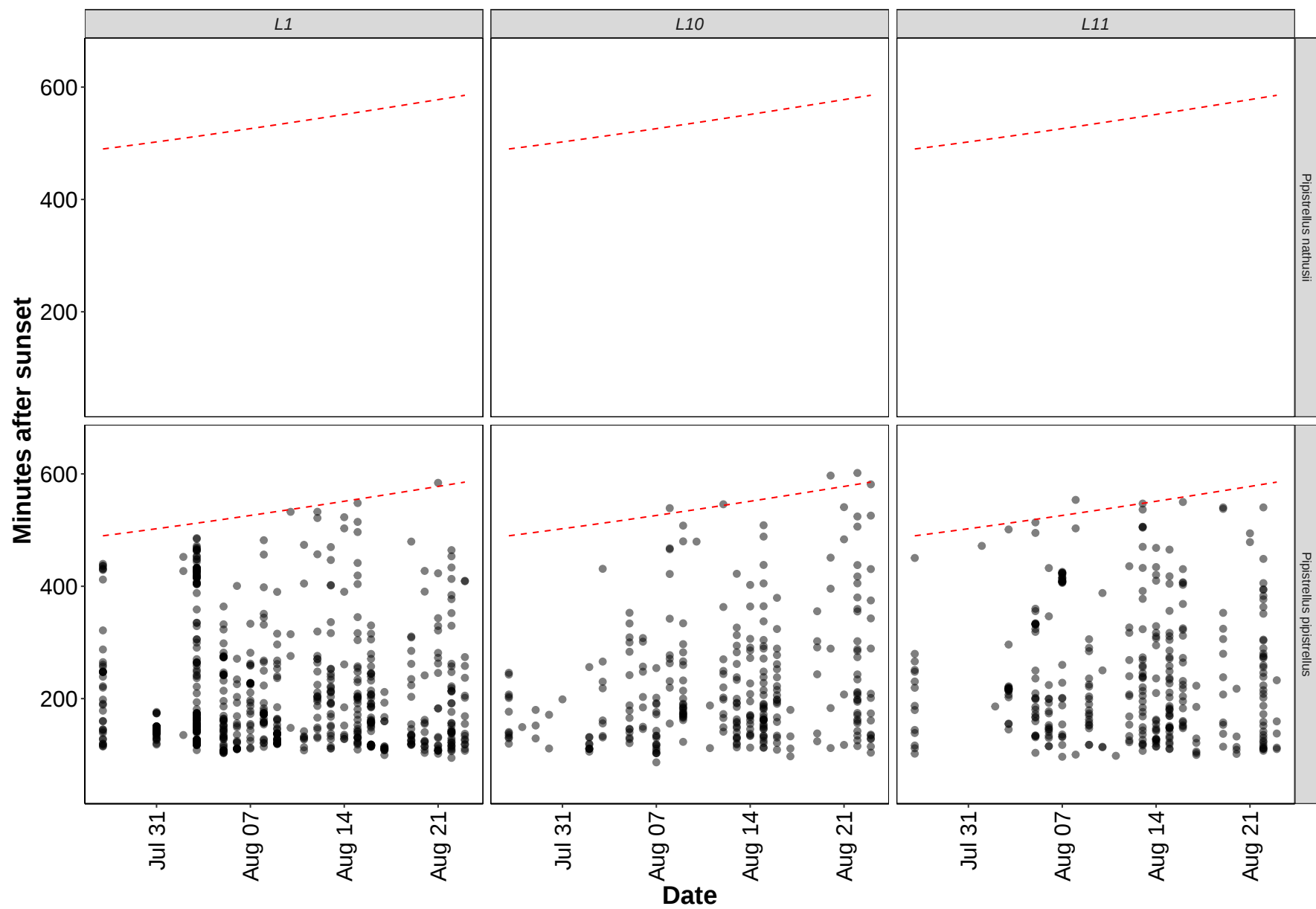


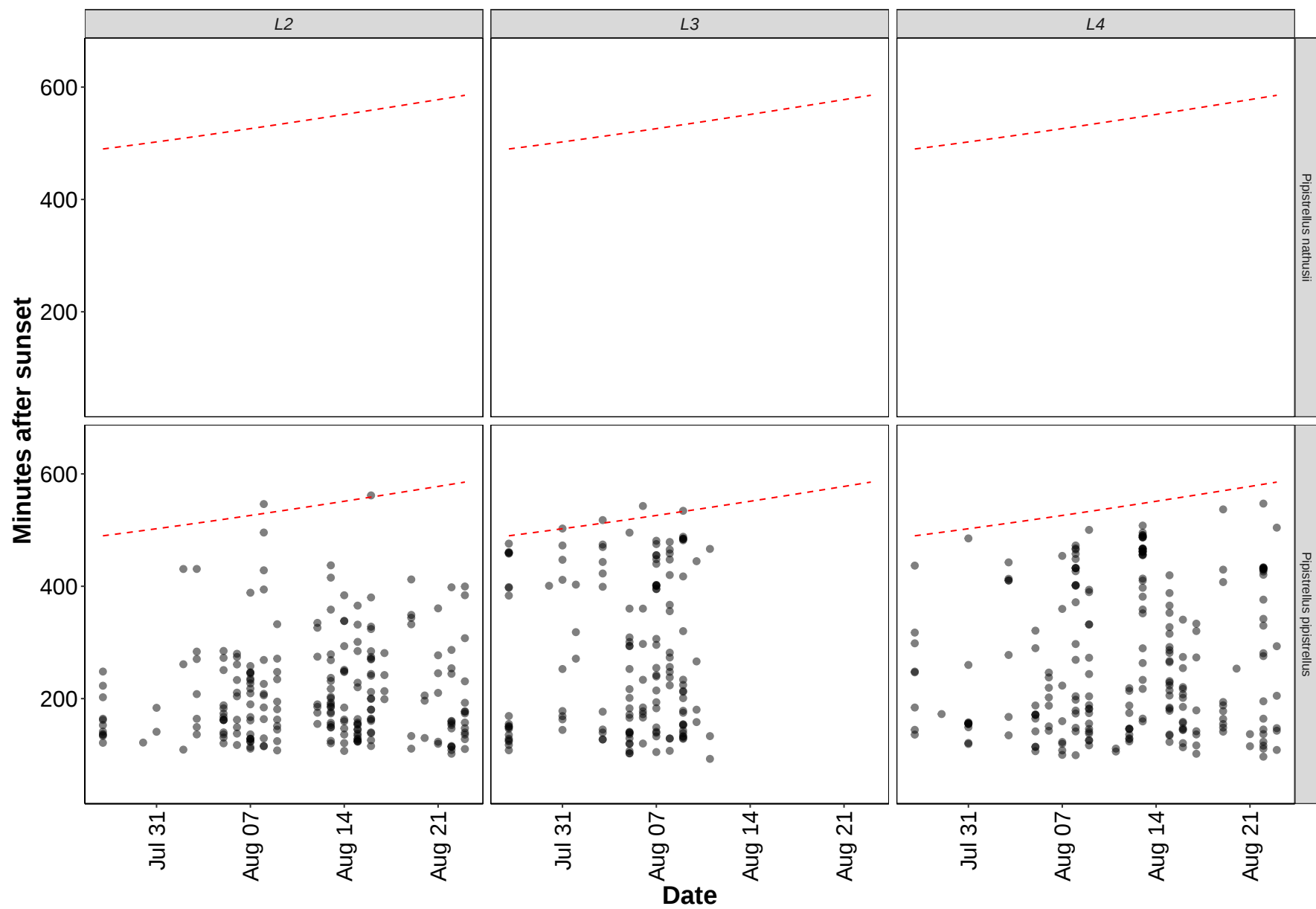


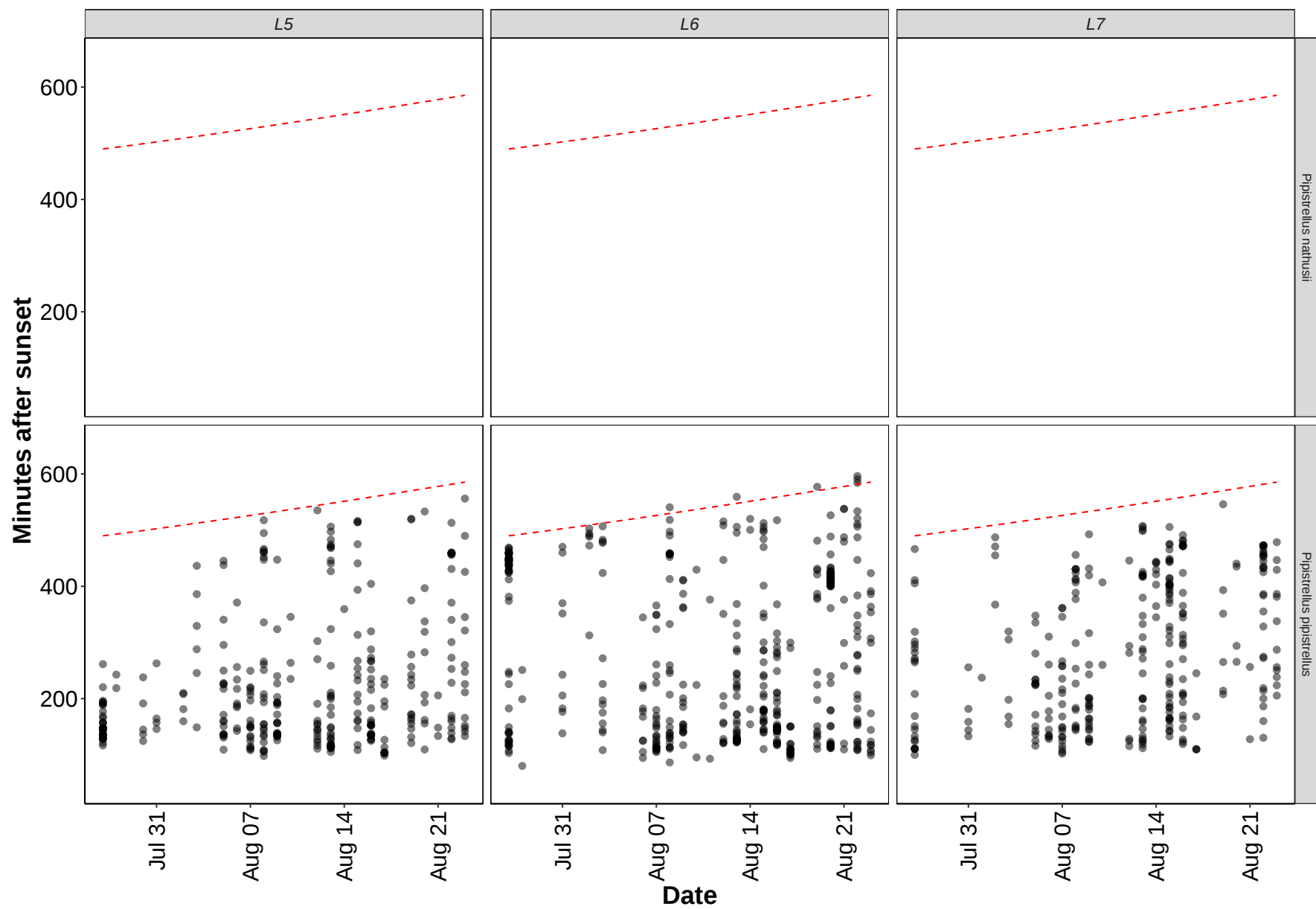


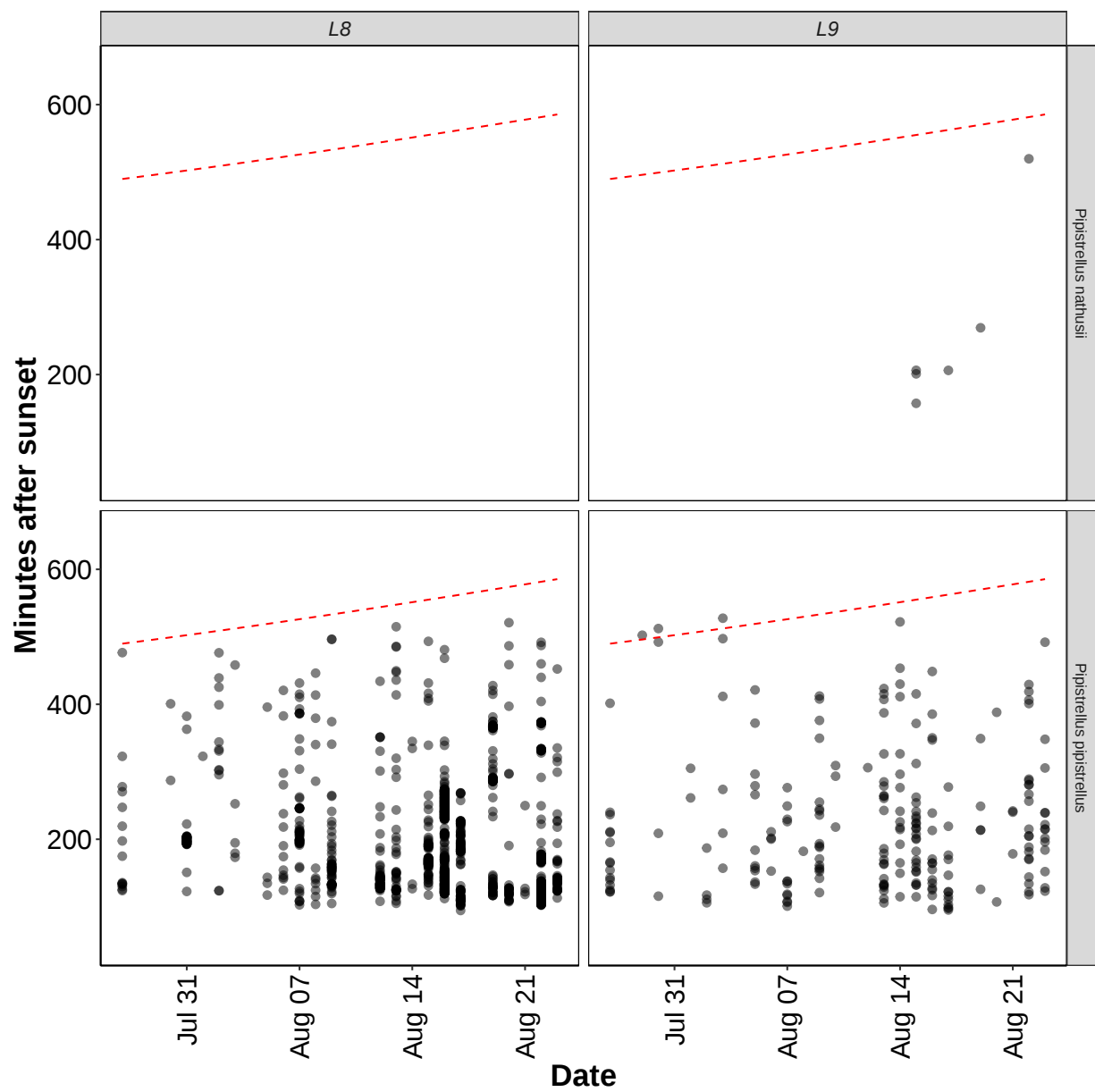


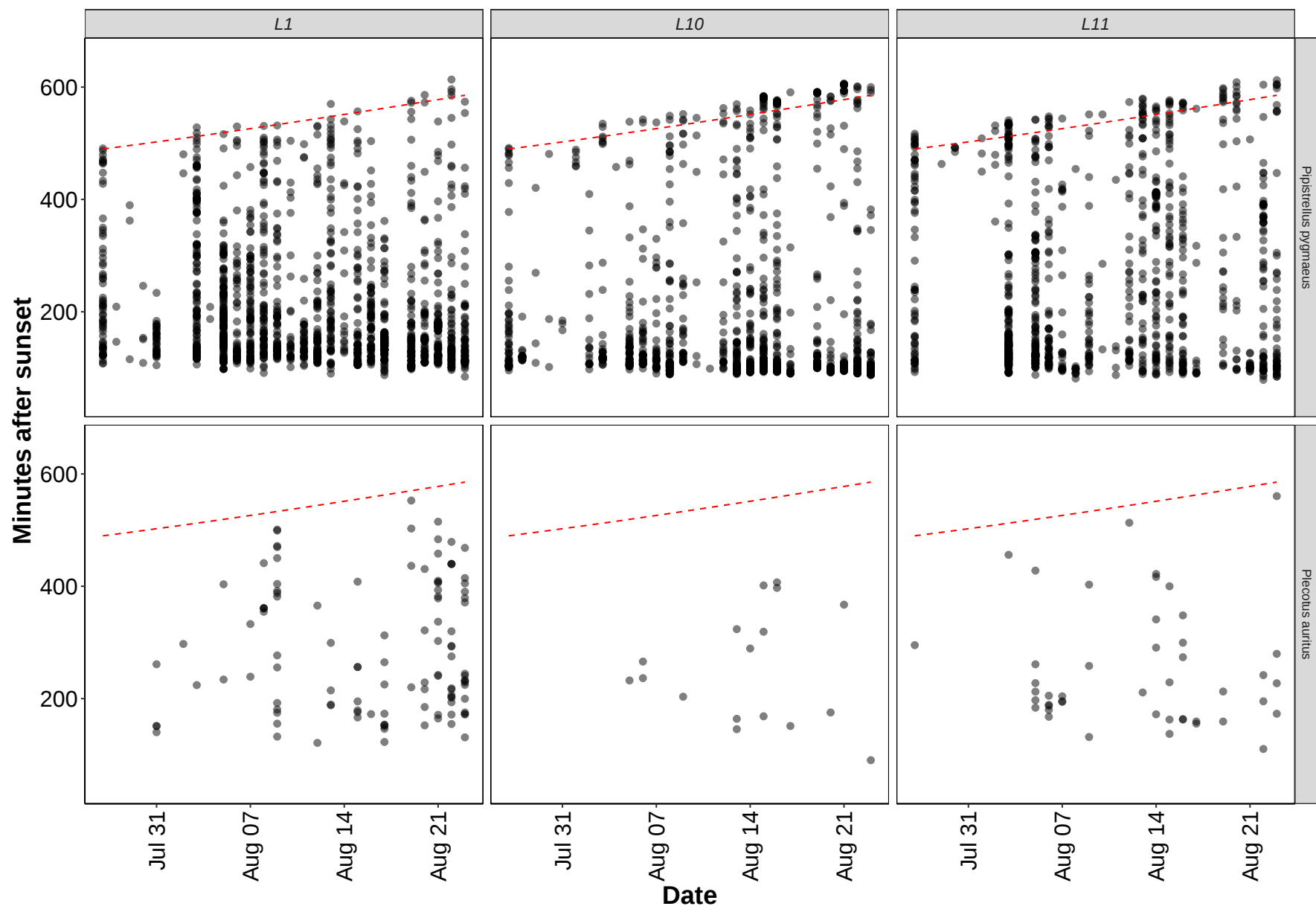












Roost Emergence Time and Bat Observation

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

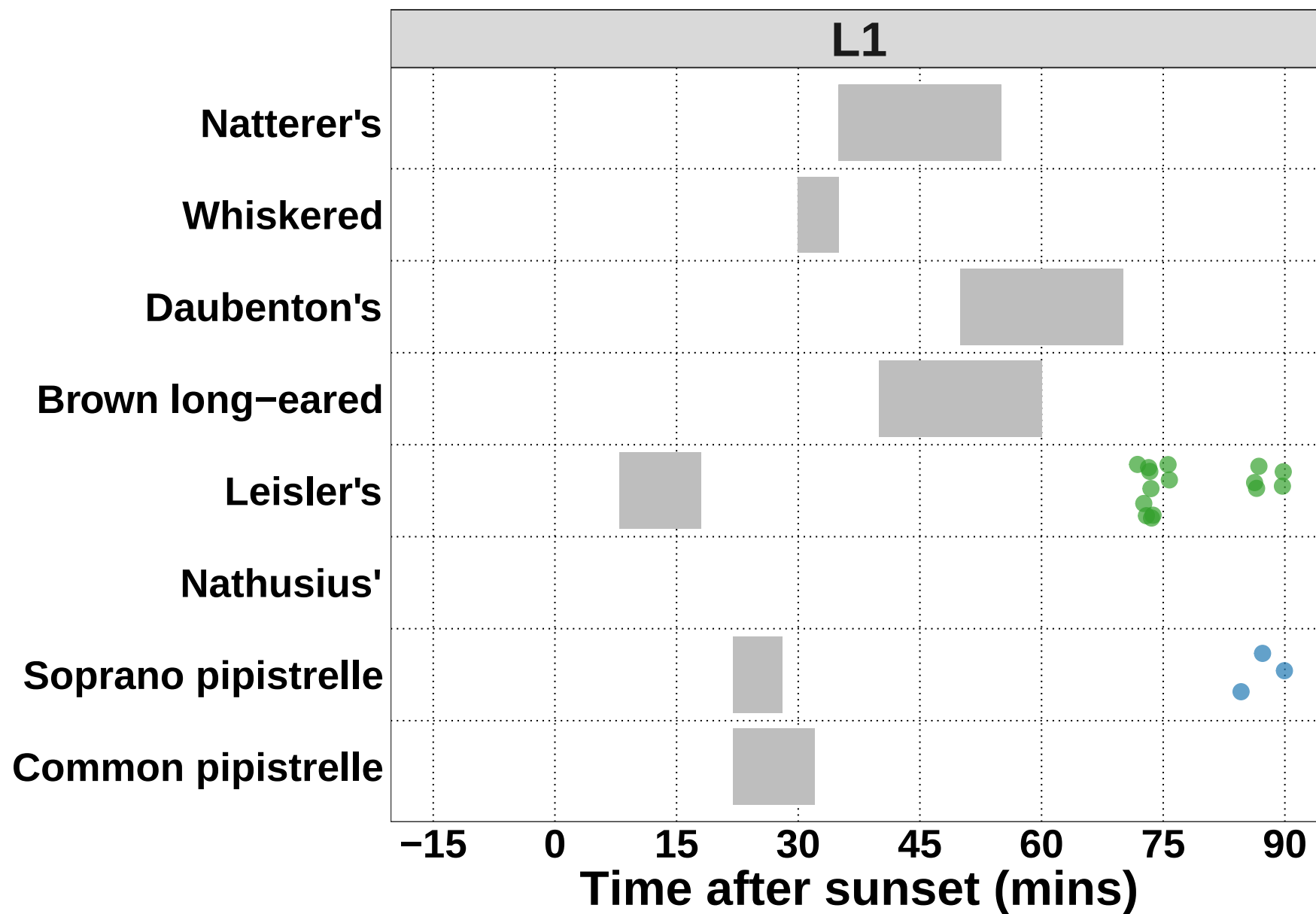
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

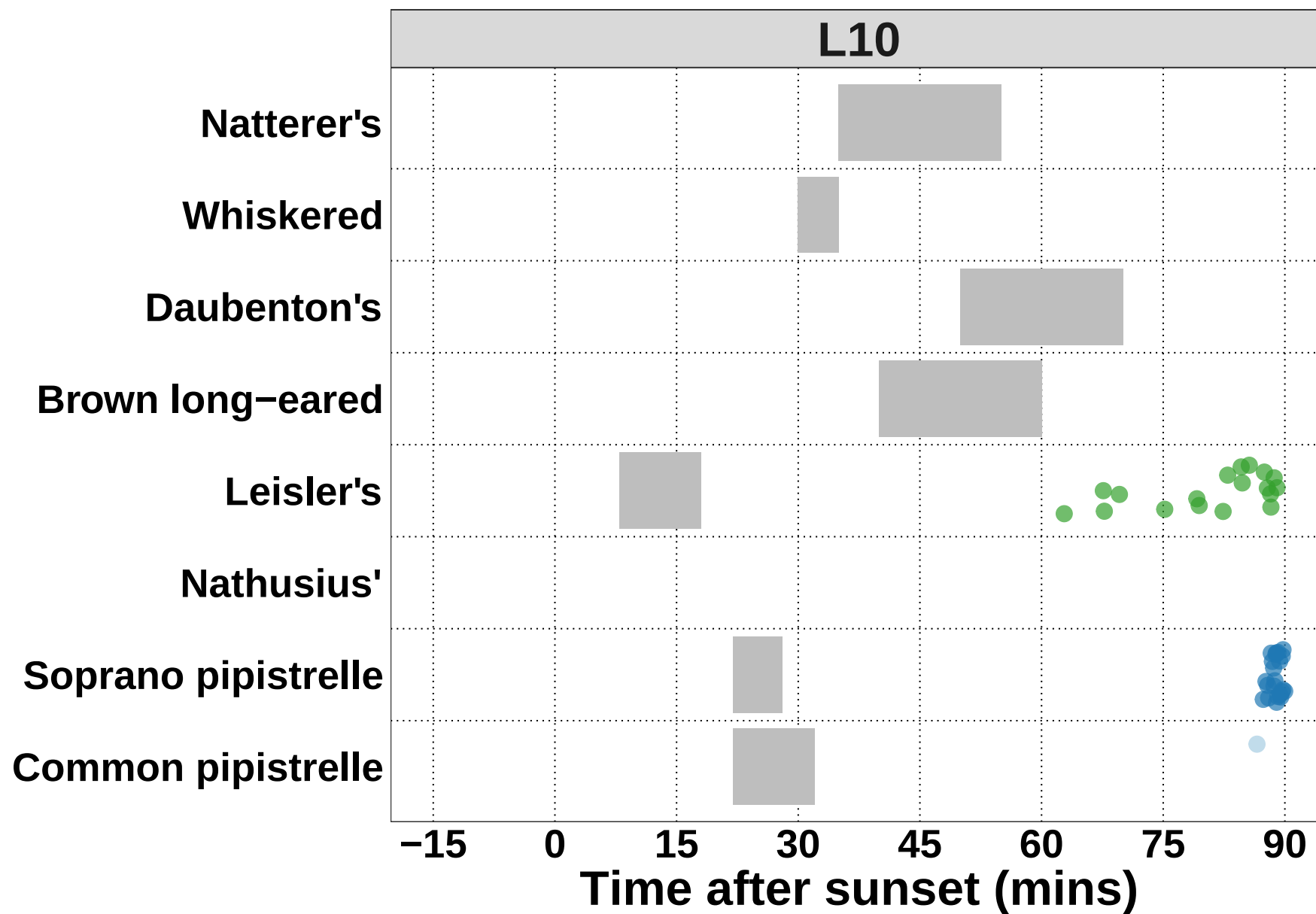
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

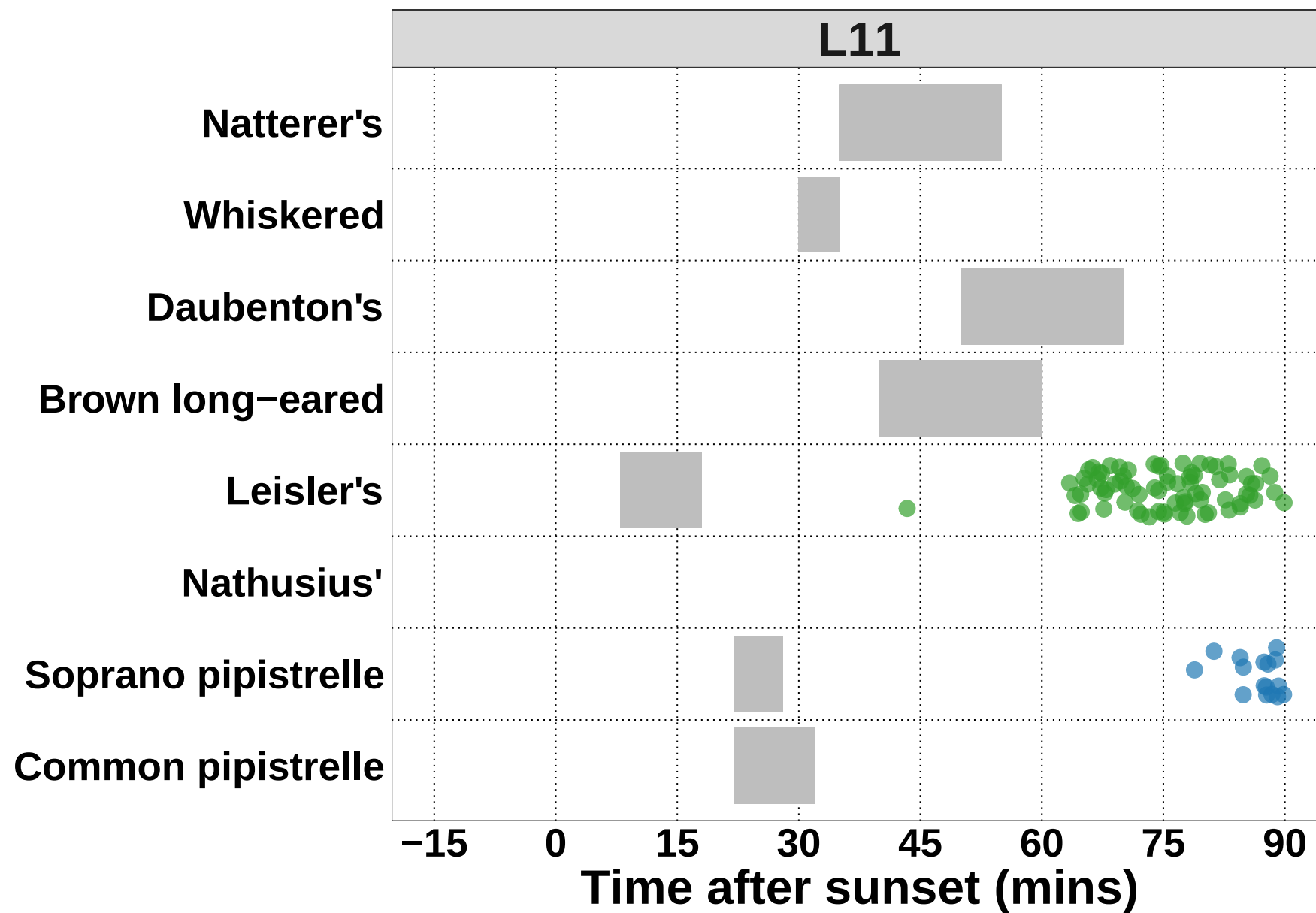
Species	Detector ID
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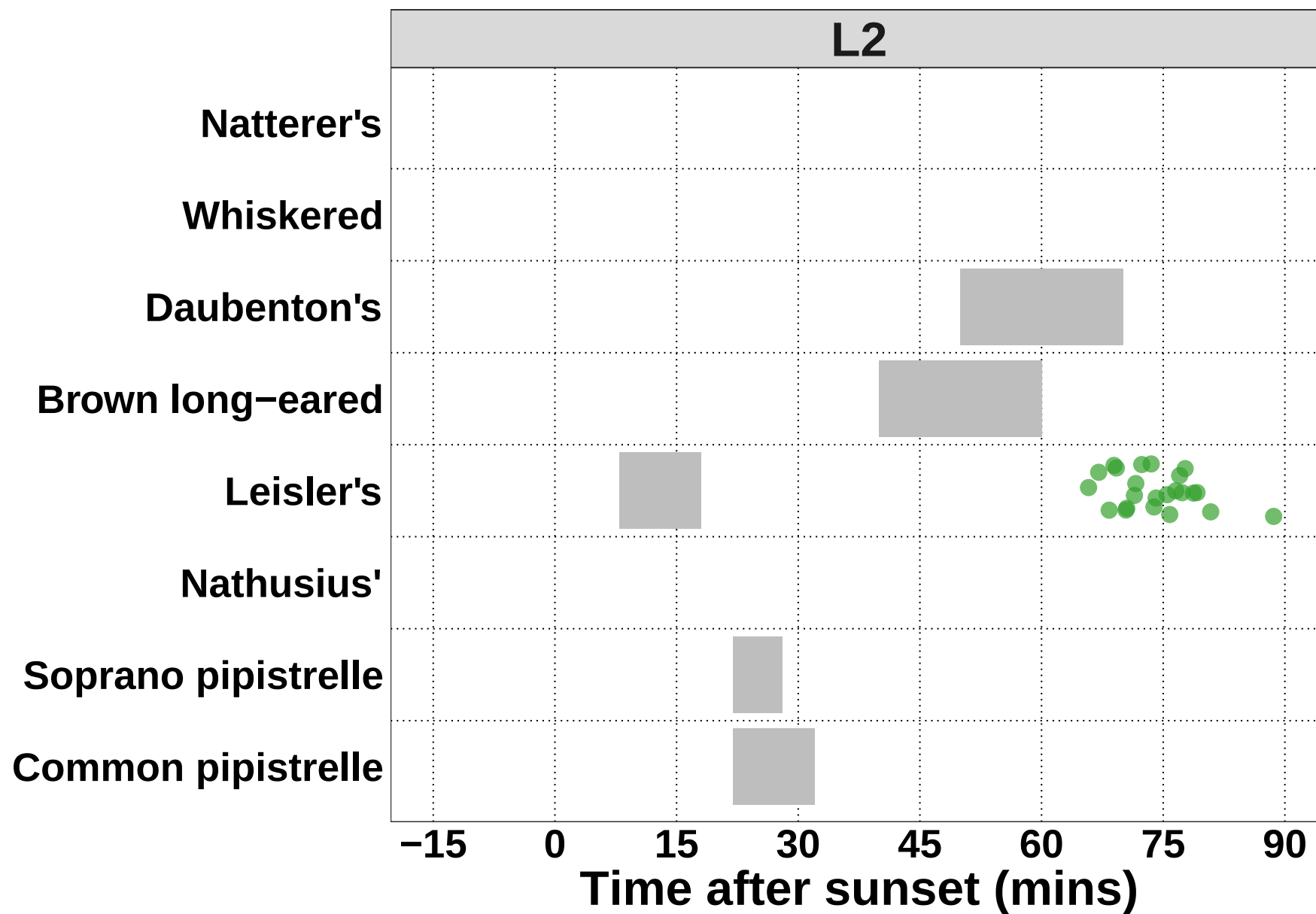
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

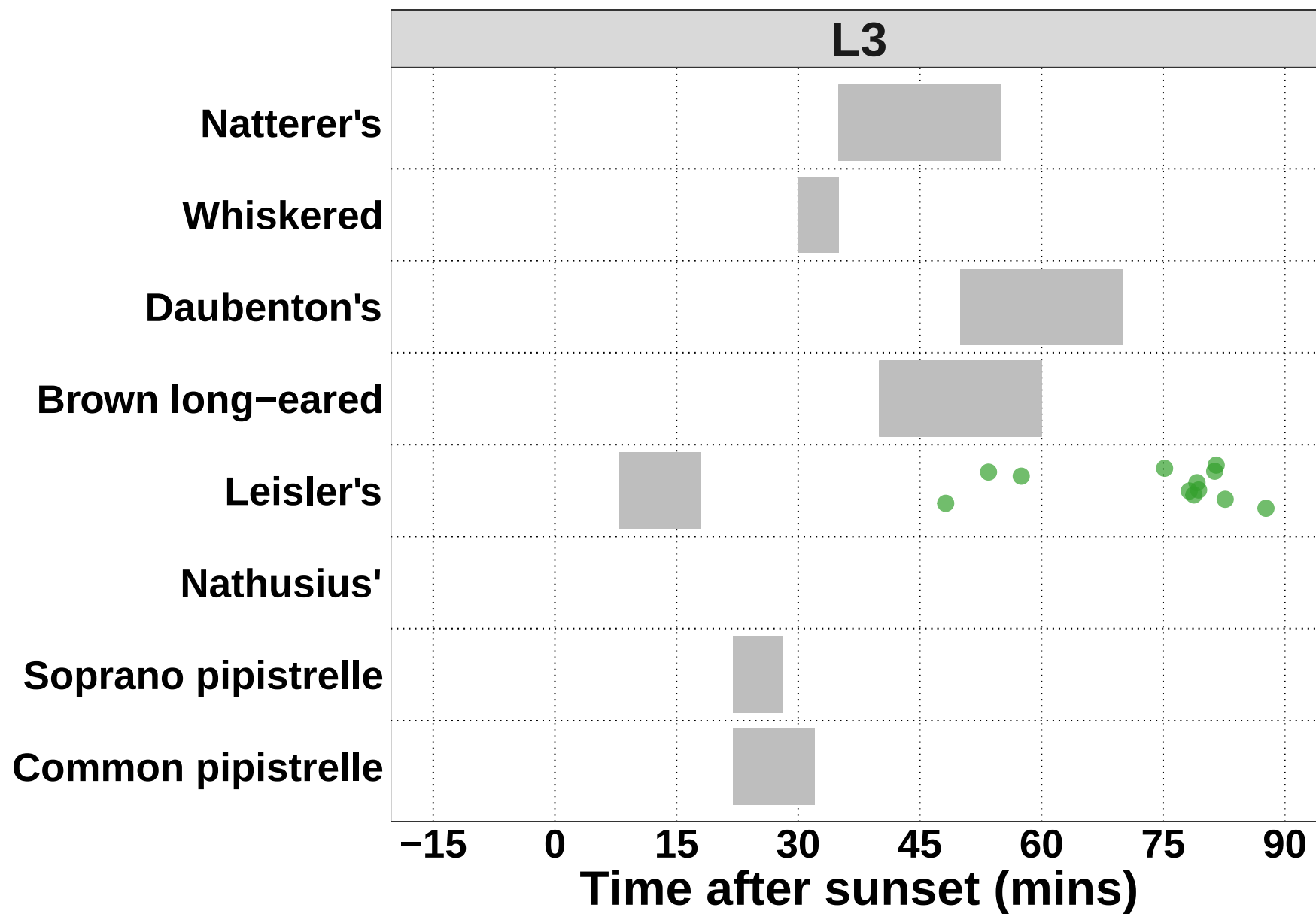
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

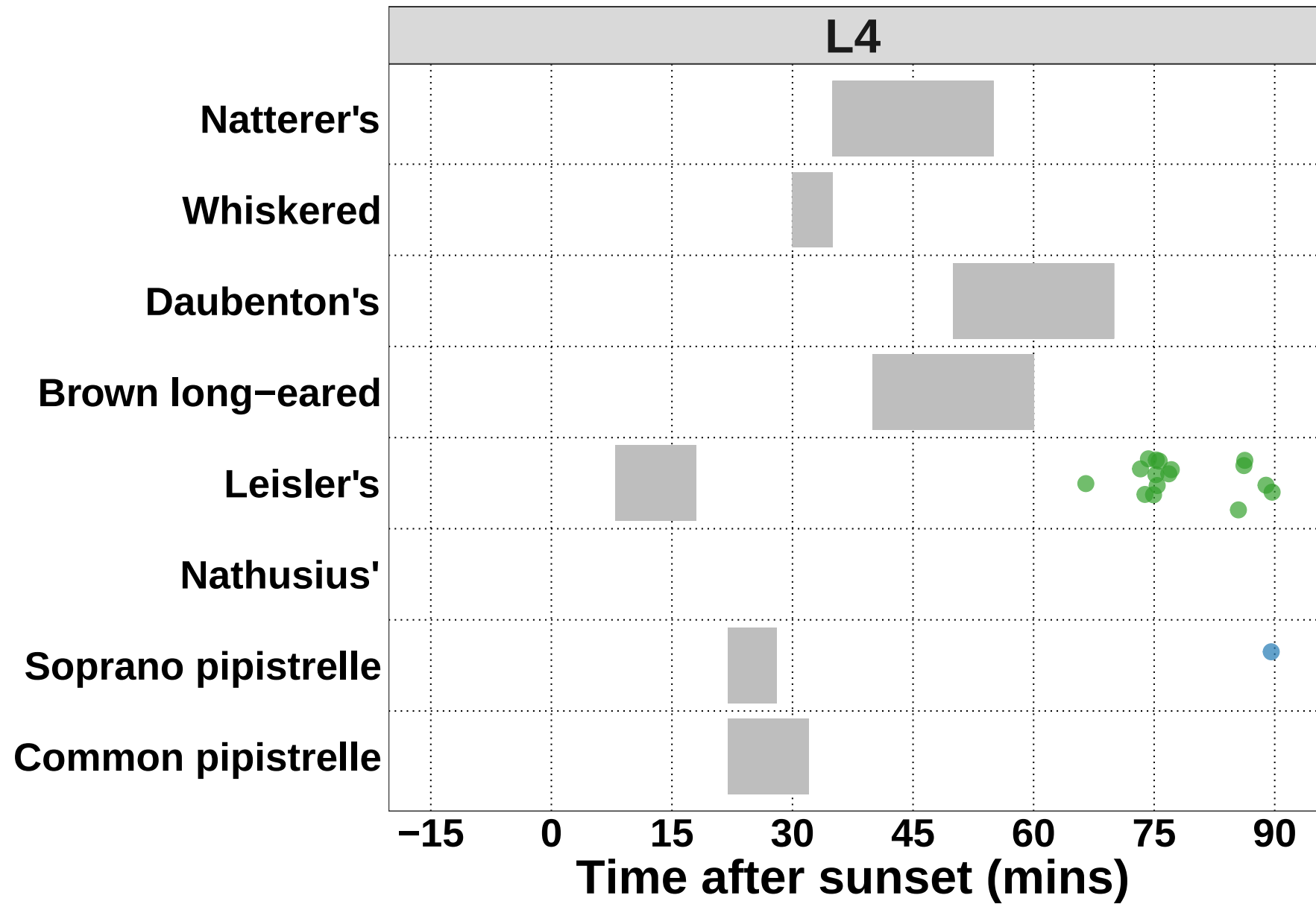


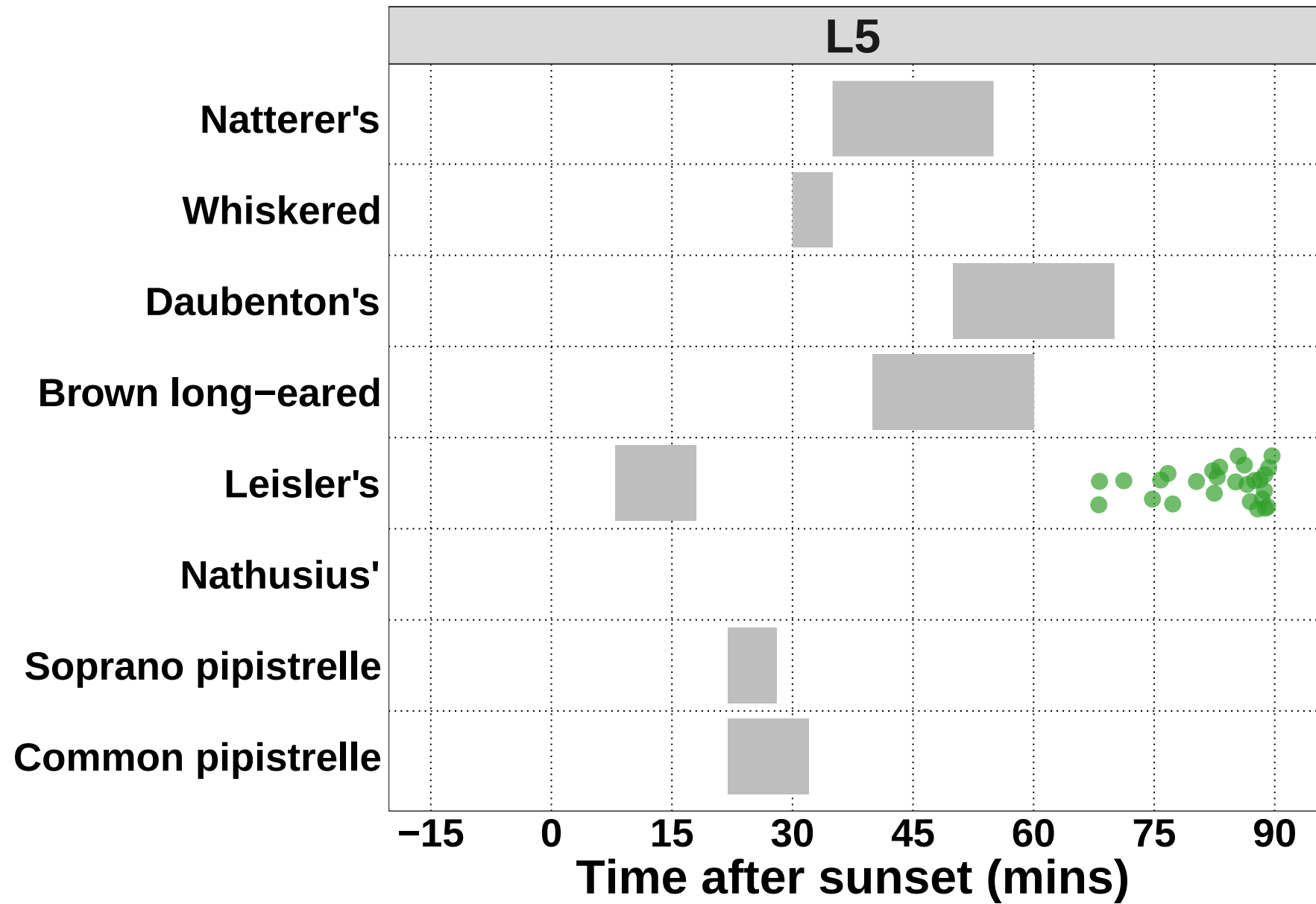


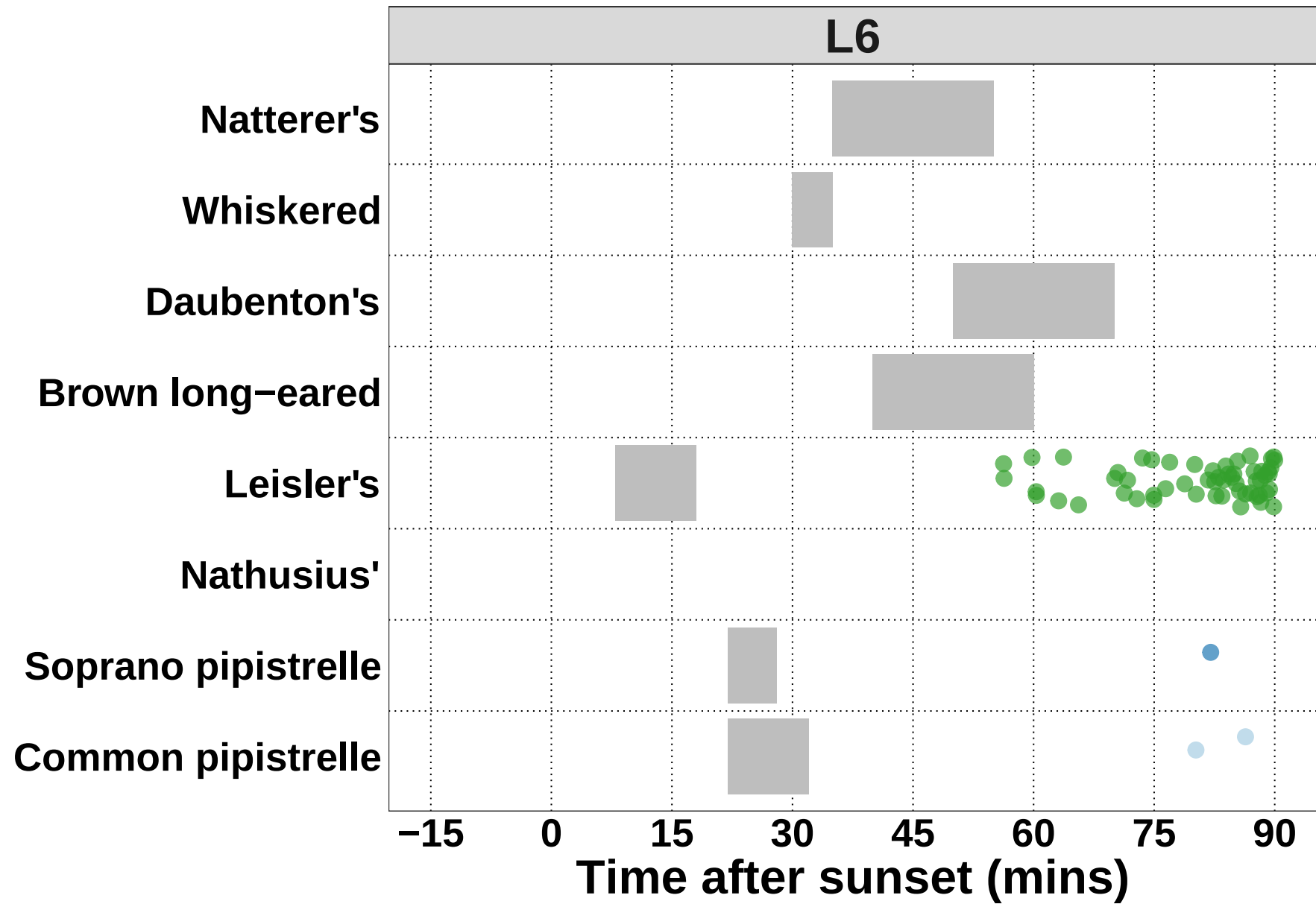


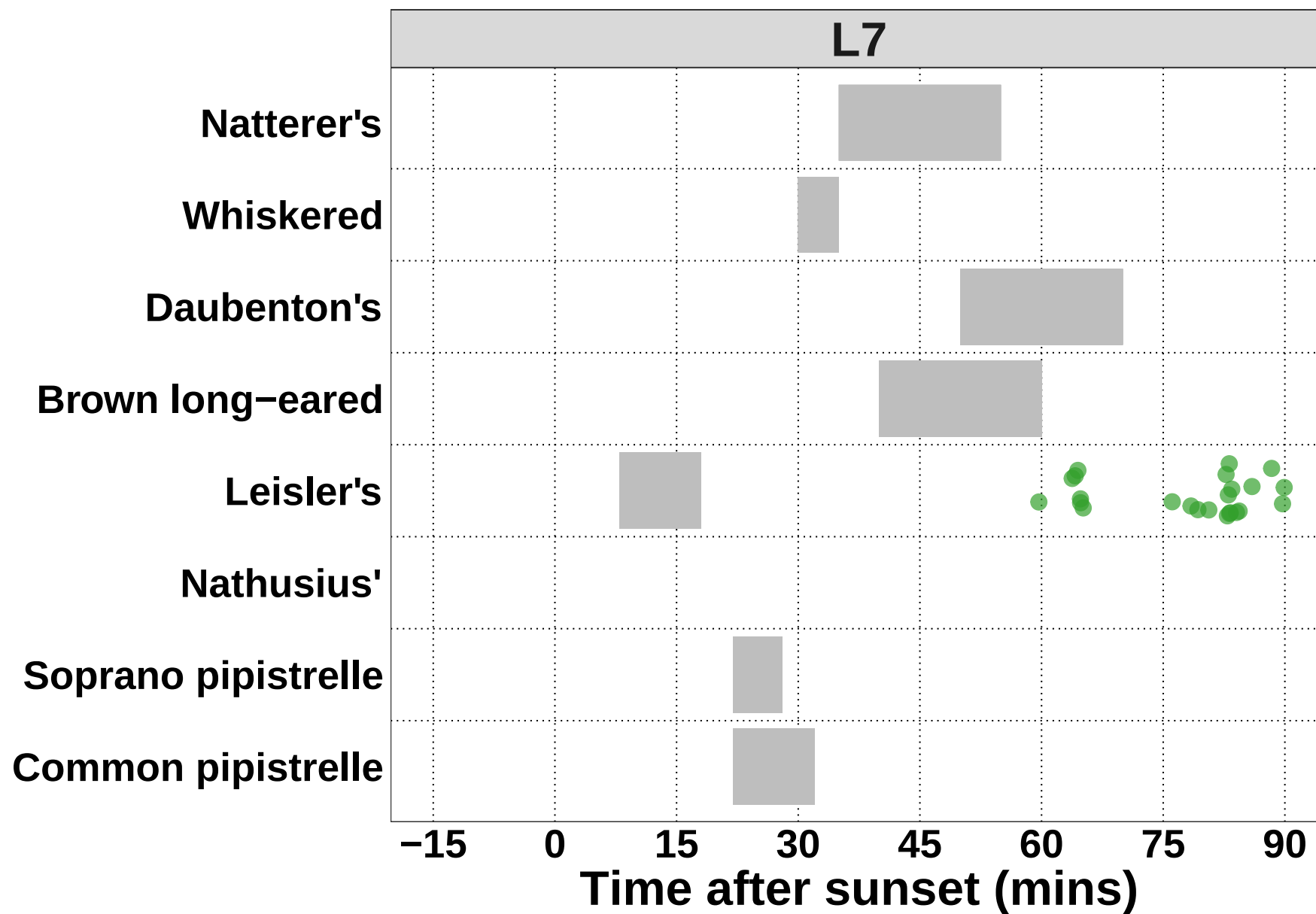


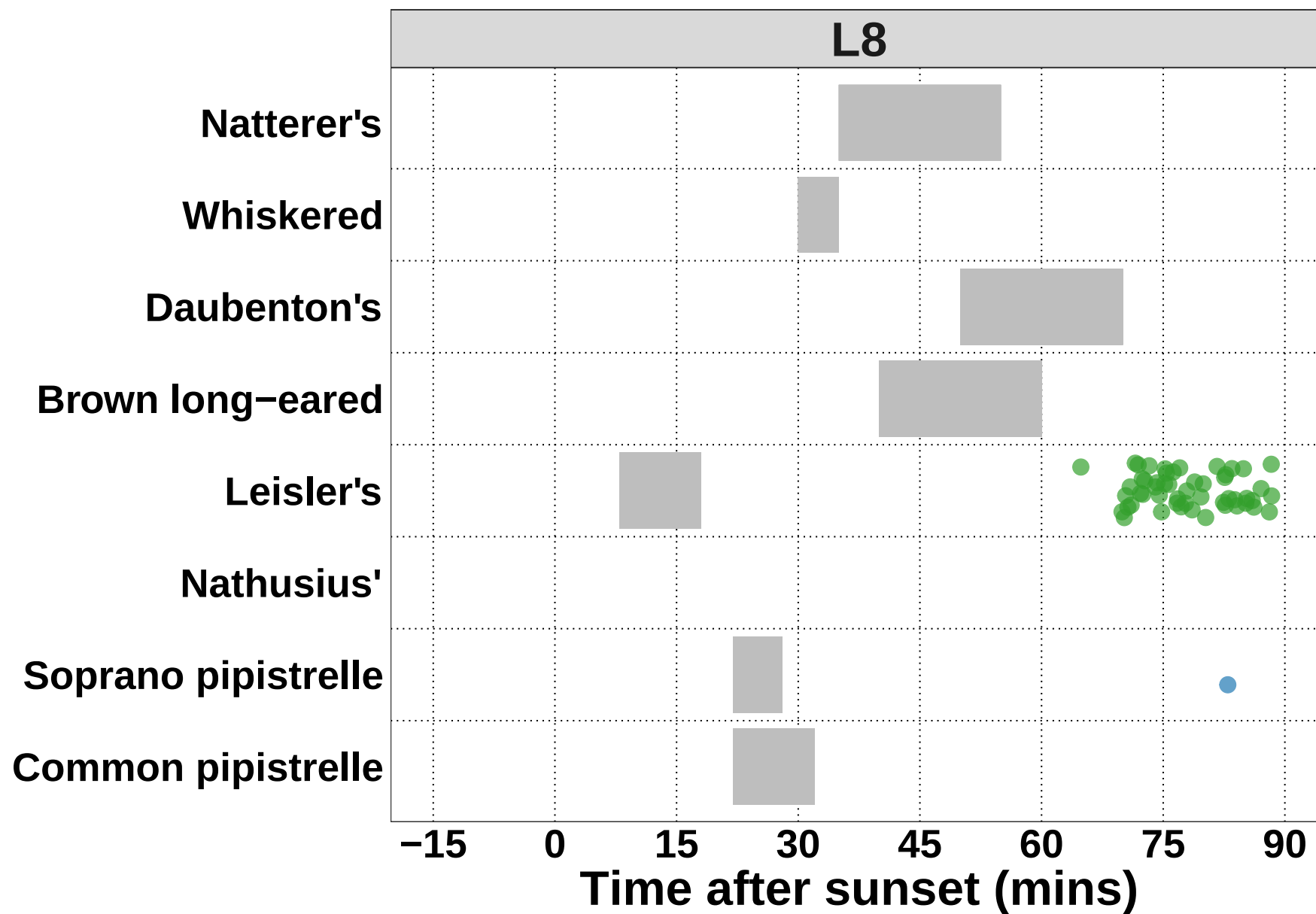


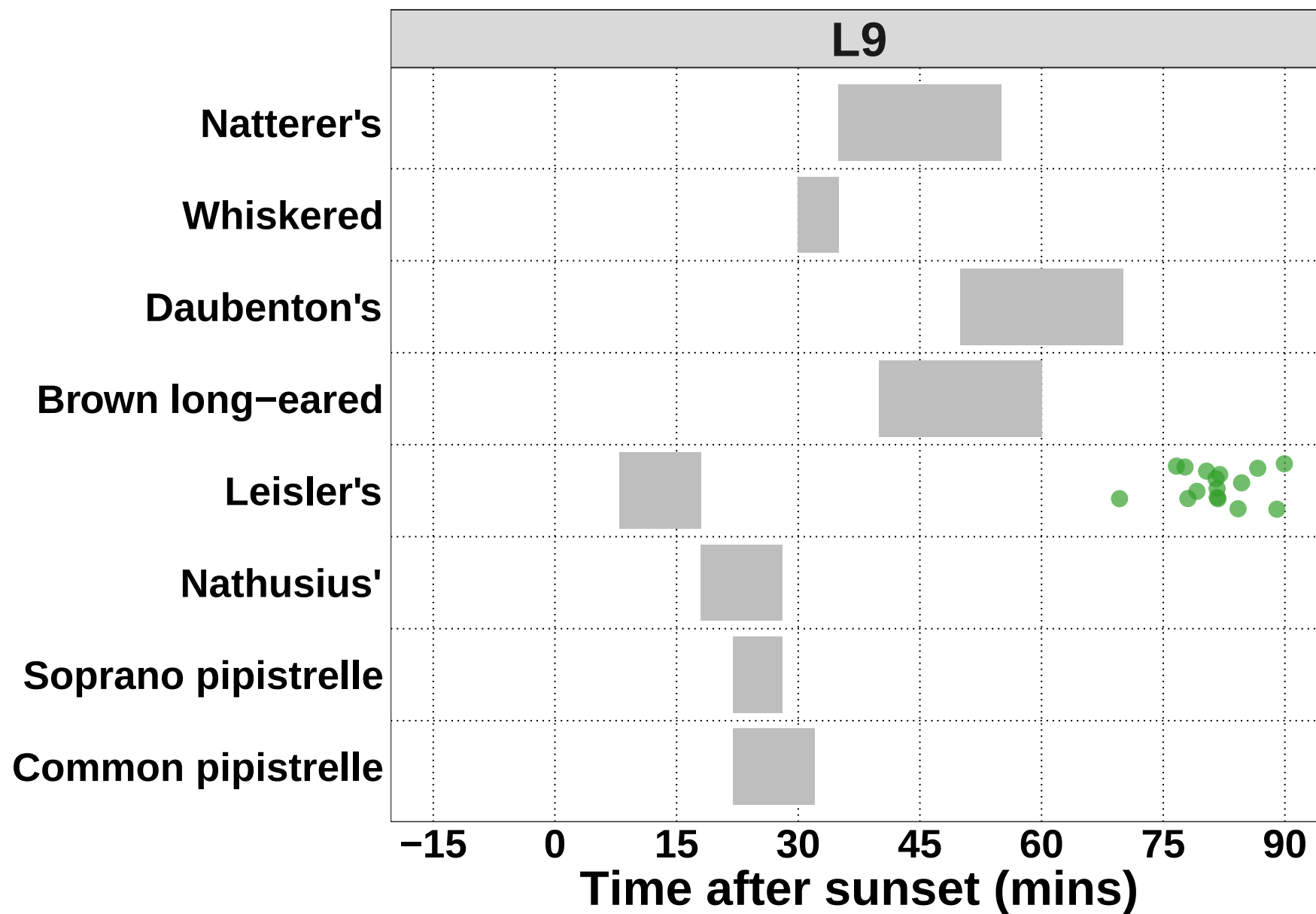








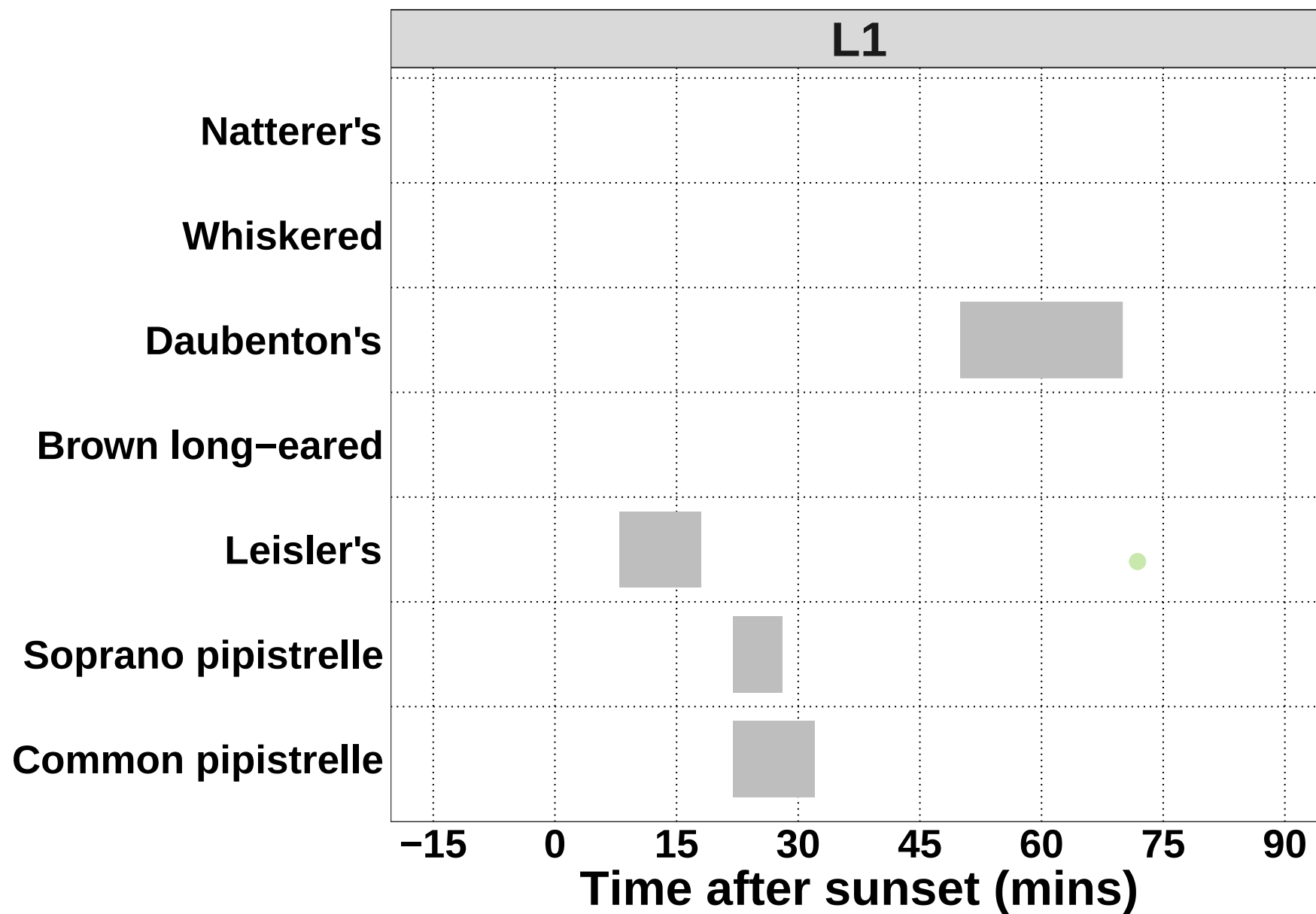


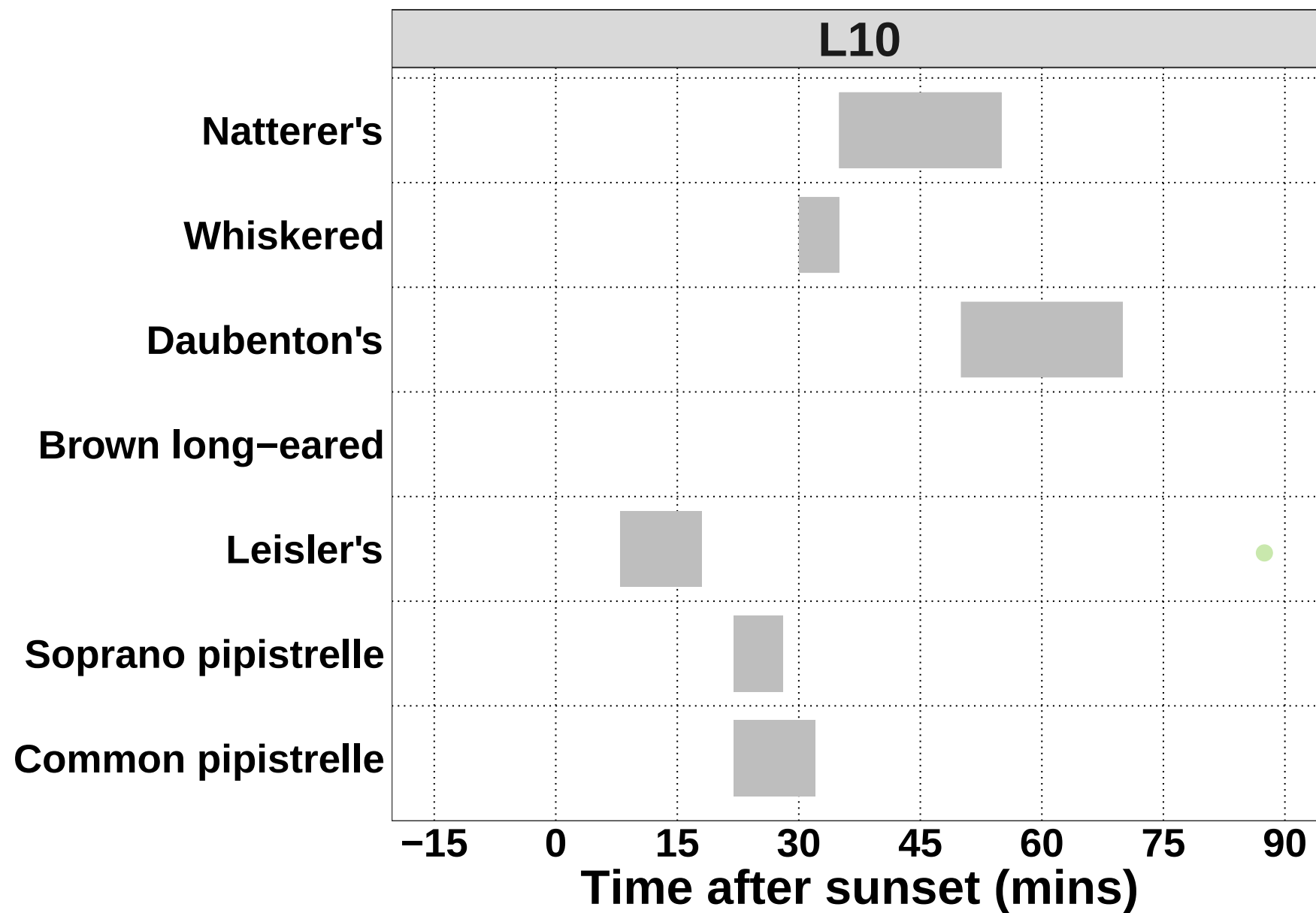


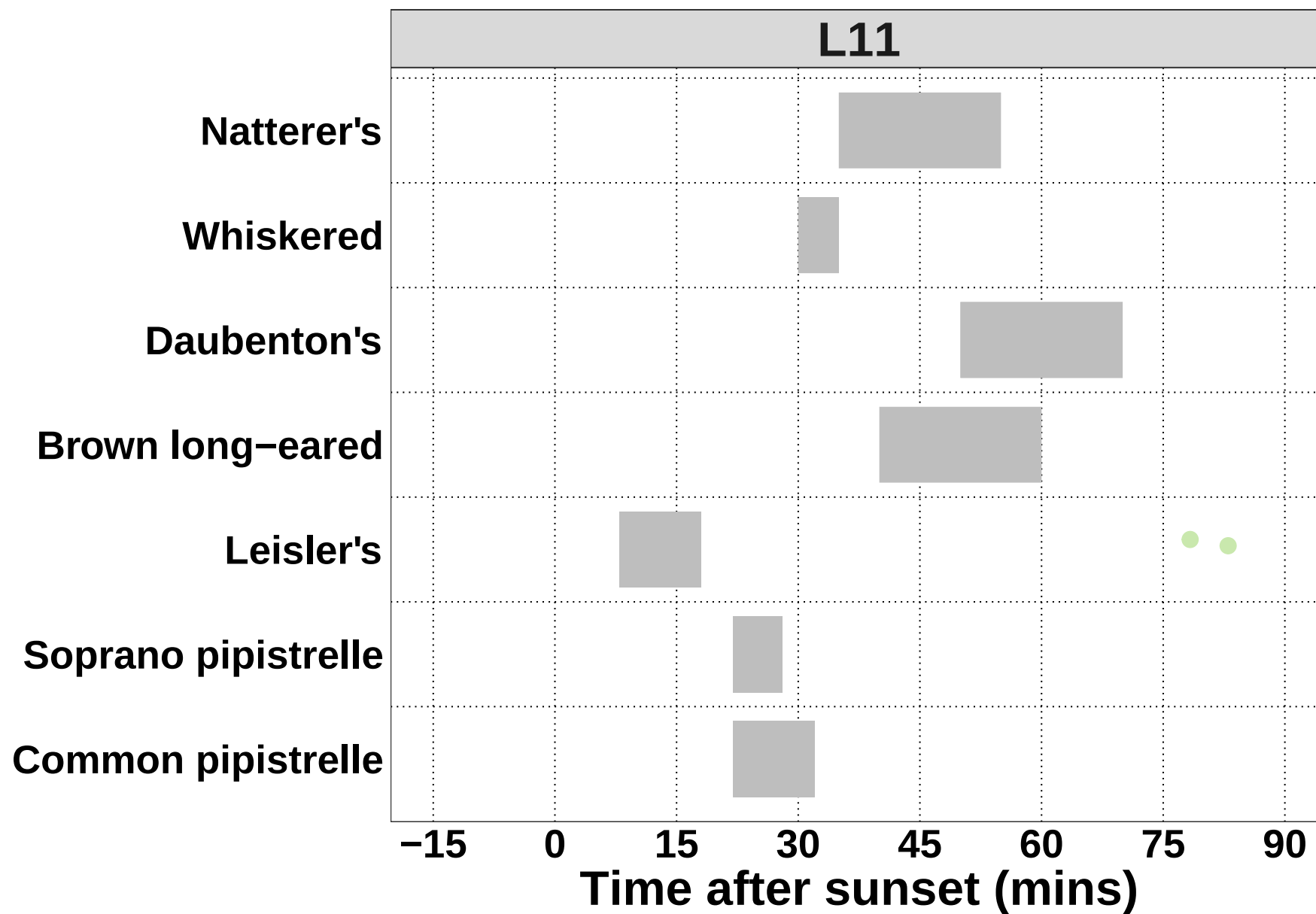
Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - *Maternity period defined as 15th June - 30th July.

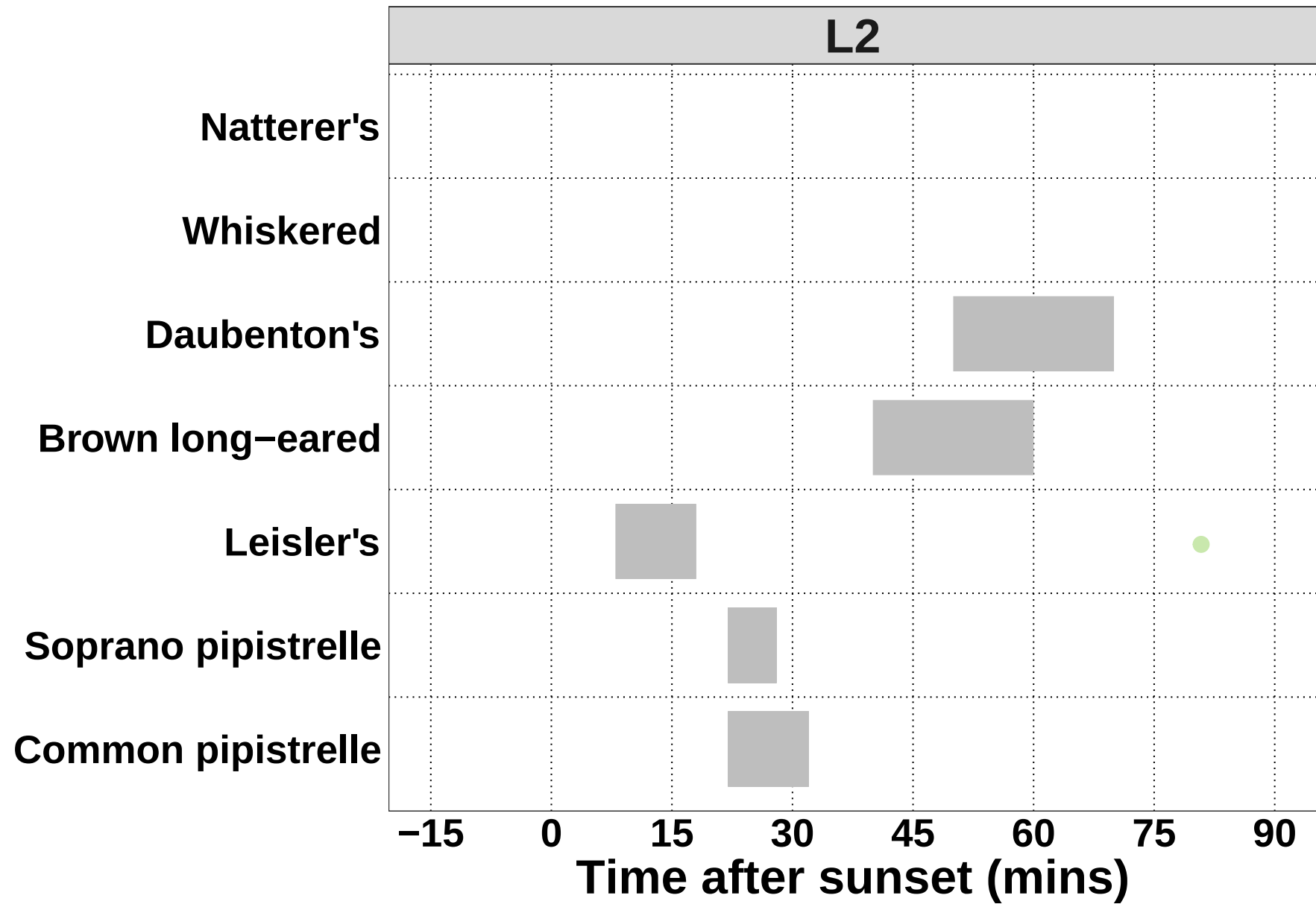
Species	Detector ID
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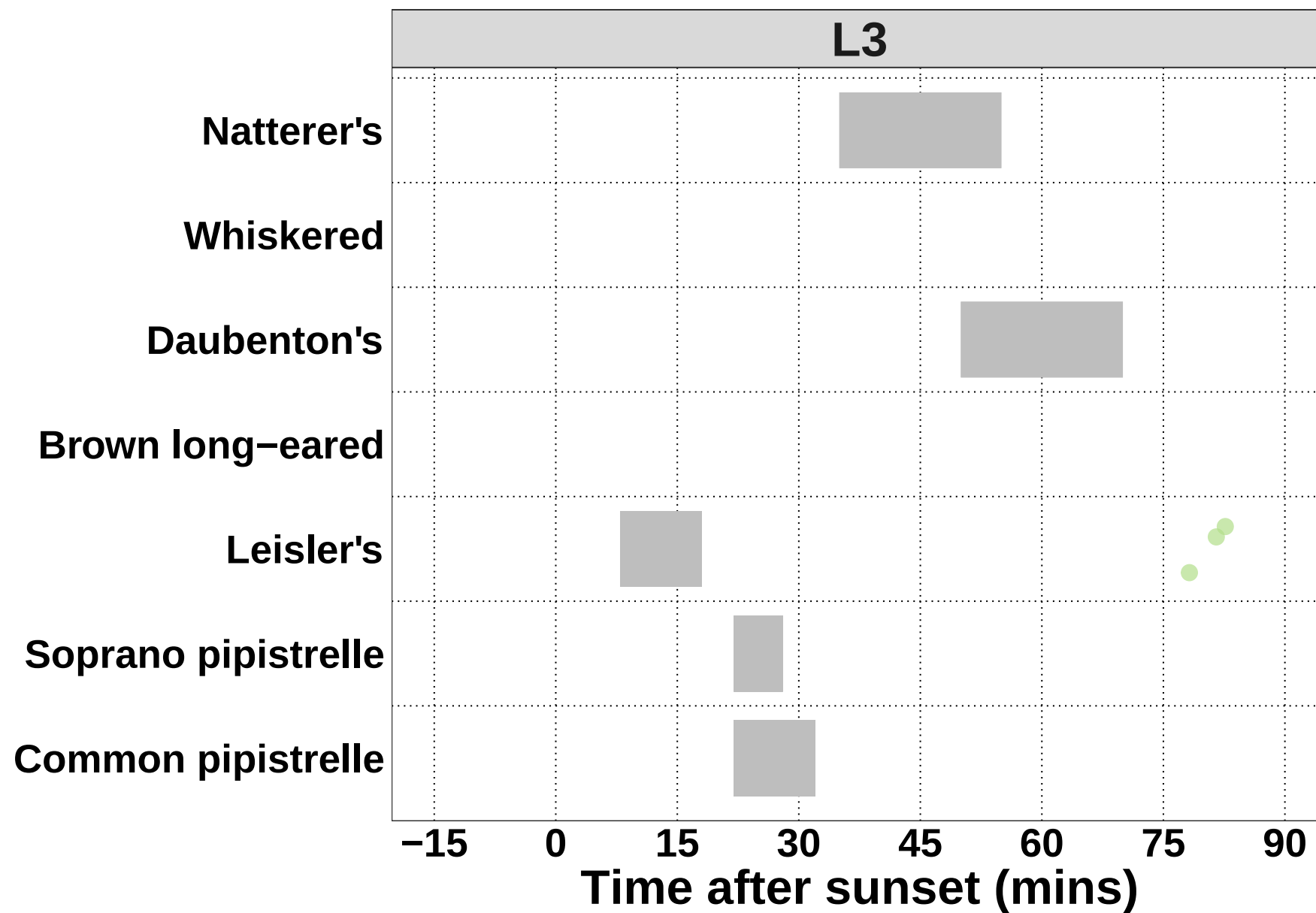
Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - Maternity period defined as 15th June - 30th July.

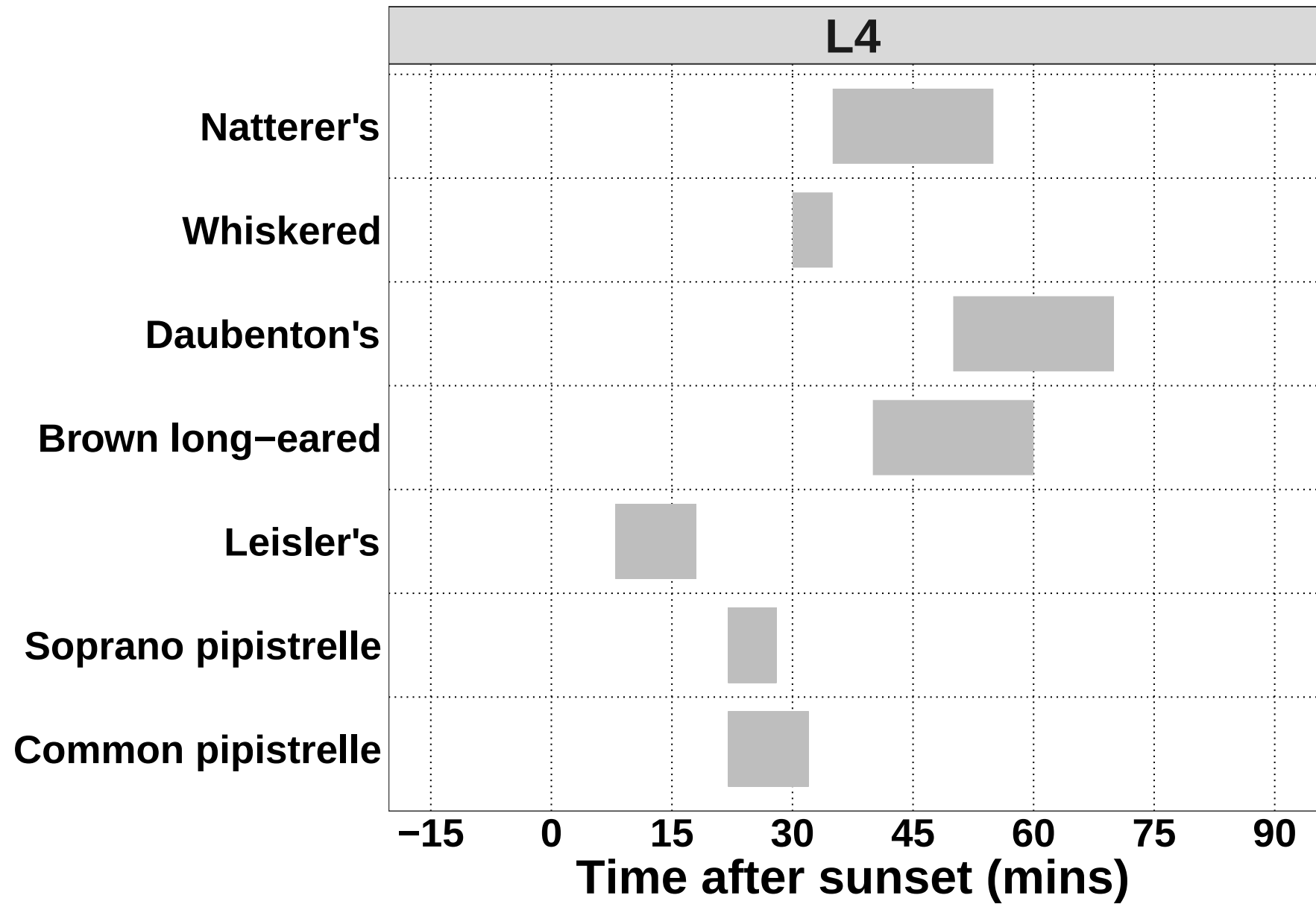


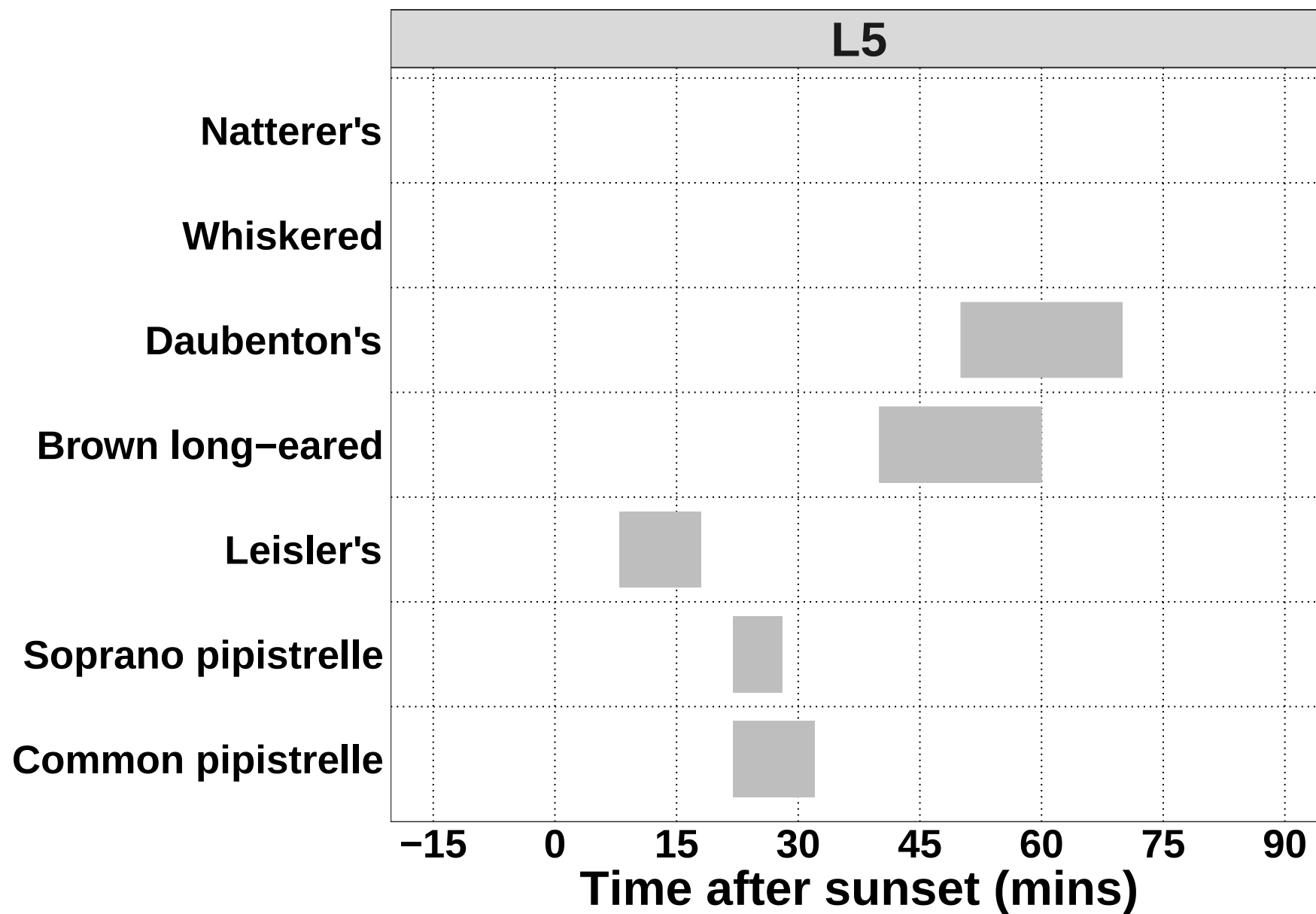


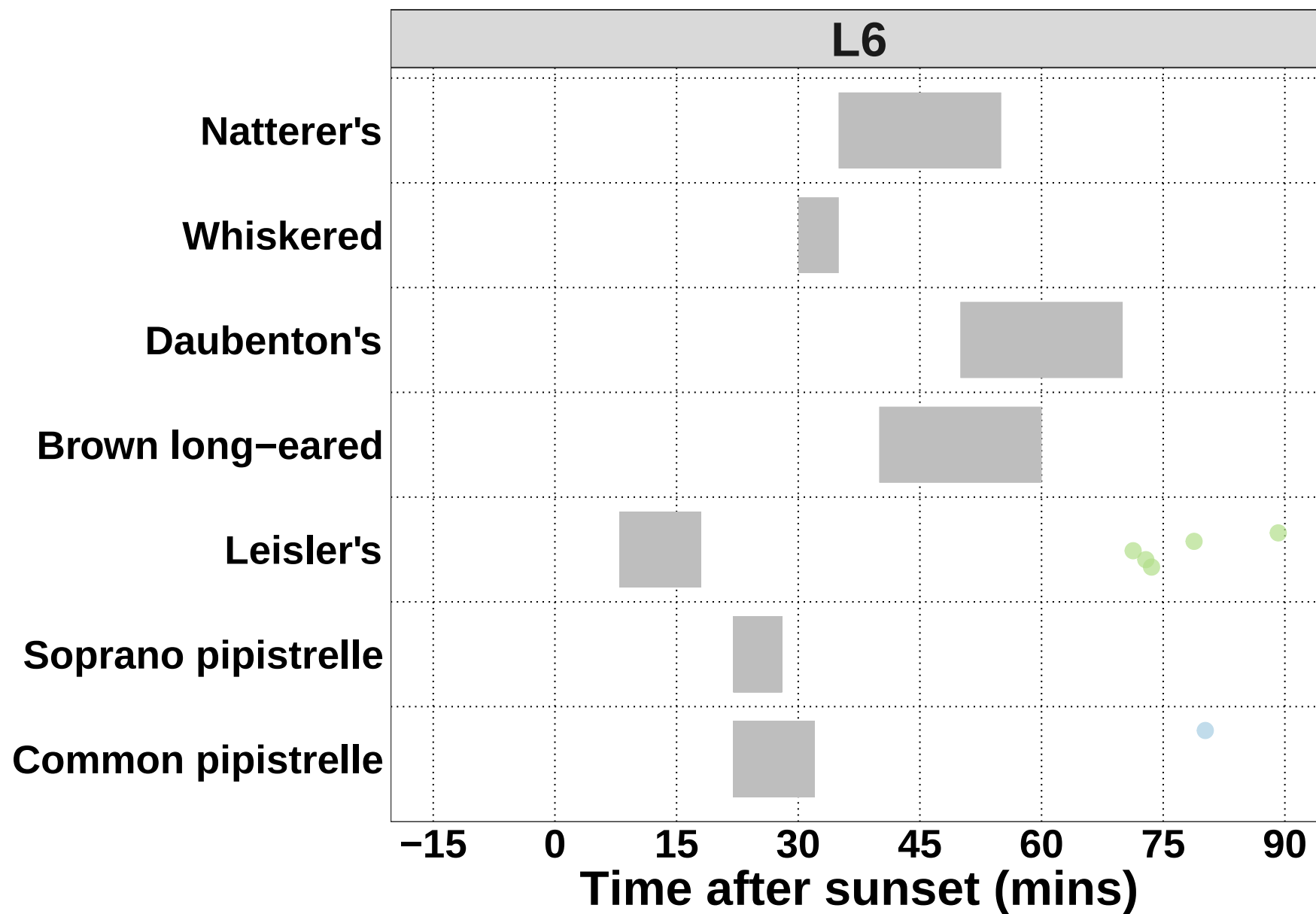


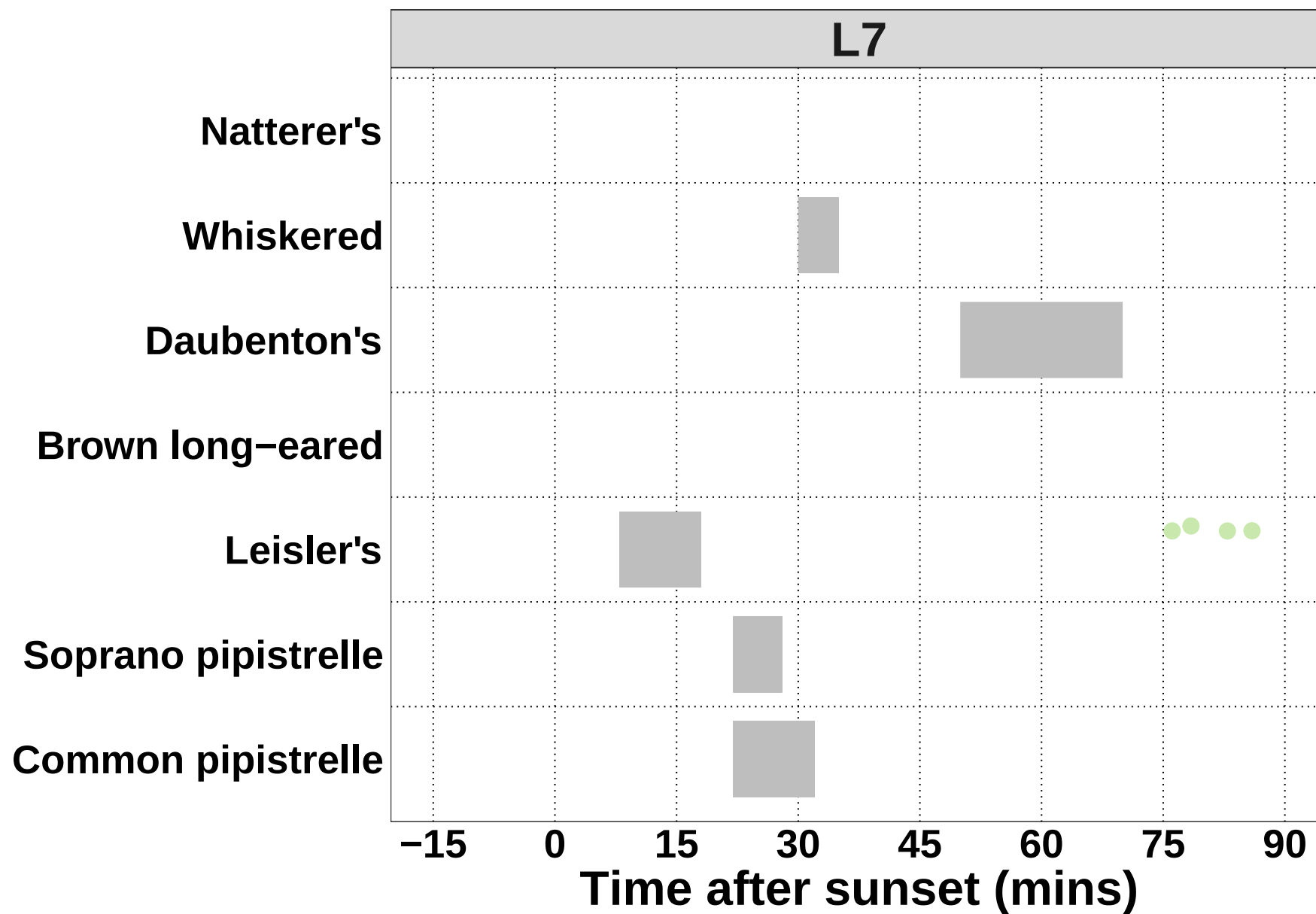


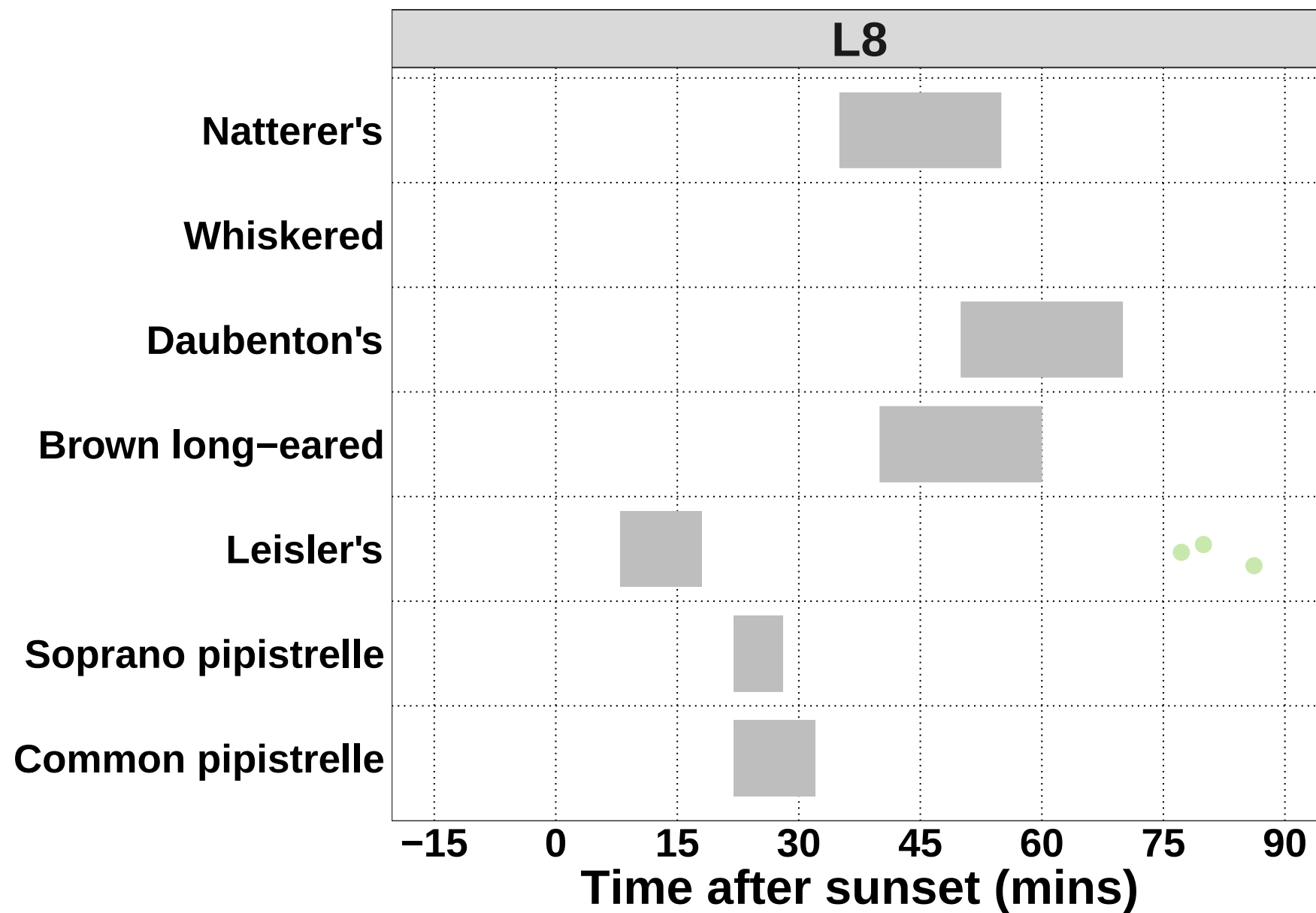


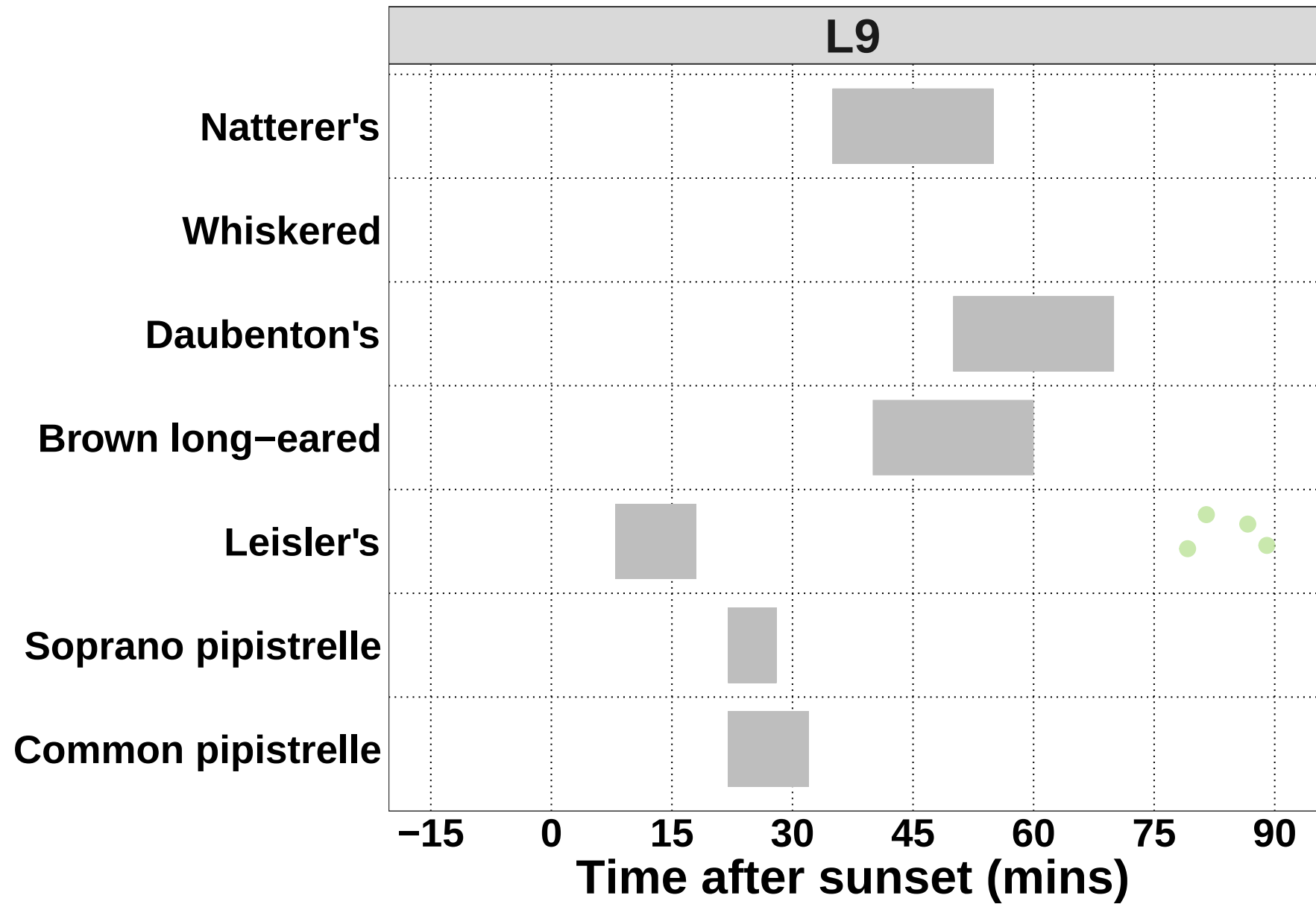












Count of Bat Passes

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 (%)
<i>Myotis daubentonii</i>	457	2.9
<i>Myotis mystacinus</i>	235	1.5
<i>Myotis nattereri</i>	316	2.0
<i>Nyctalus leisleri</i>	2623	16.8
<i>Pipistrellus nathusii</i>	6	0.0
<i>Pipistrellus pipistrellus</i>	4633	29.7
<i>Pipistrellus pygmaeus</i>	6839	43.9
<i>Plecotus auritus</i>	477	3.1
Total	15586	99.9

Per Detector

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

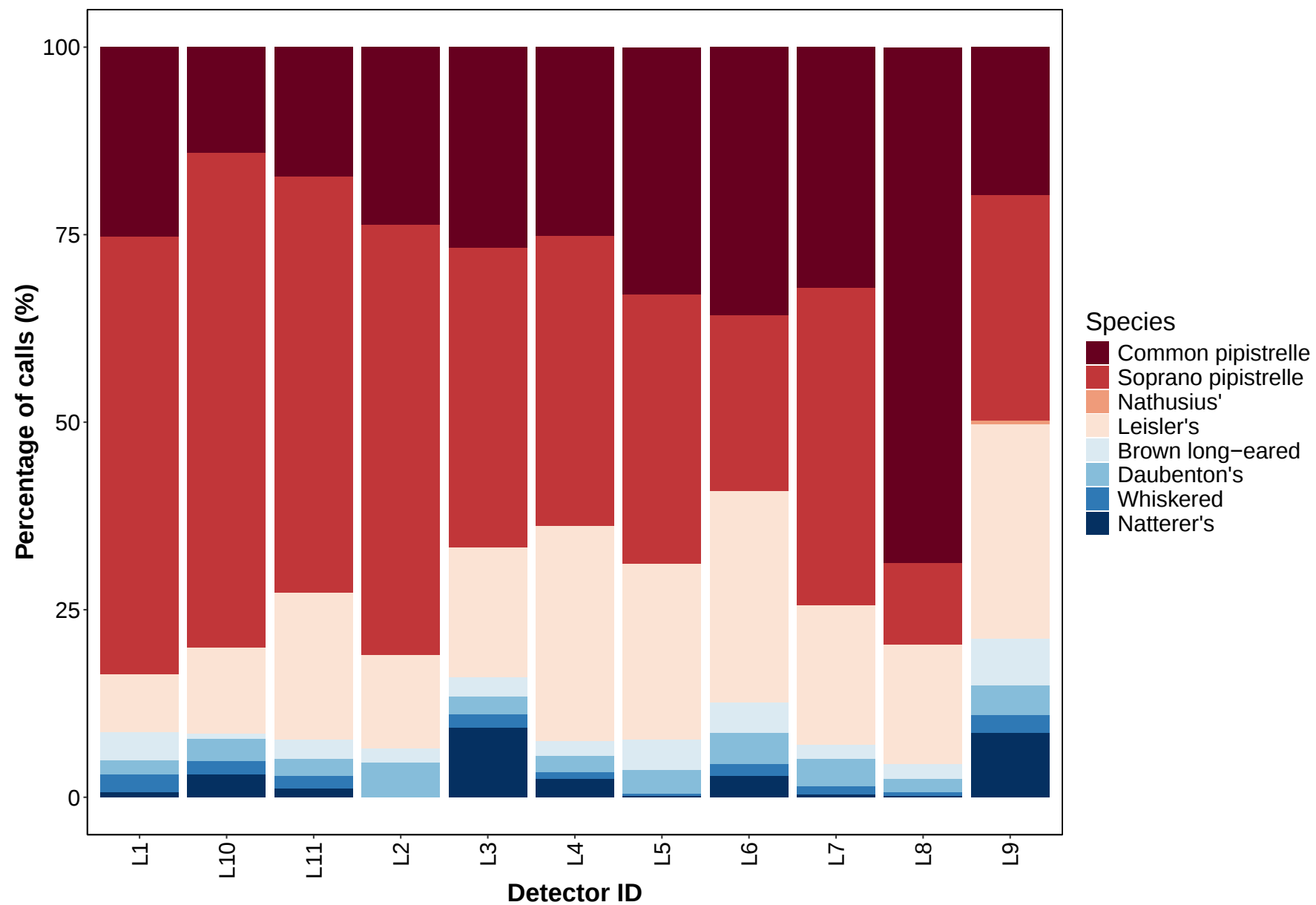
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	L1	724	26.0244428
Common pipistrelle	L10	298	13.9971818
Common pipistrelle	L11	331	17.6533333
Common pipistrelle	L2	224	23.1644261
Common pipistrelle	L3	147	29.6370968
Common pipistrelle	L4	224	27.9650437
Common pipistrelle	L5	330	33.3333333
Common pipistrelle	L6	466	34.4674556
Common pipistrelle	L7	302	31.2953368
Common pipistrelle	L8	1367	65.2505967
Common pipistrelle	L9	220	19.4003527
Soprano pipistrelle	L1	1598	57.4406902
Soprano pipistrelle	L10	1425	66.9328323
Soprano pipistrelle	L11	1049	55.9466667
Soprano pipistrelle	L2	548	56.6701138
Soprano pipistrelle	L3	198	39.9193548
Soprano pipistrelle	L4	305	38.0774032
Soprano pipistrelle	L5	351	35.4545455
Soprano pipistrelle	L6	330	24.4082840
Soprano pipistrelle	L7	424	43.9378238
Soprano pipistrelle	L8	269	12.8400955
Soprano pipistrelle	L9	342	30.1587302
Nathusius'	L9	6	0.5291005
Leisler's	L1	221	7.9439252
Leisler's	L10	228	10.7092532
Leisler's	L11	341	18.1866667
Leisler's	L2	128	13.2368149
Leisler's	L3	89	17.9435484
Leisler's	L4	194	24.2197253
Leisler's	L5	231	23.3333333
Leisler's	L6	367	27.1449704
Leisler's	L7	166	17.2020725

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	L8	345	16.4677804
Leisler's	L9	313	27.6014109
Brown long-eared	L1	112	4.0258807
Brown long-eared	L10	17	0.7984969
Brown long-eared	L11	46	2.4533333
Brown long-eared	L2	20	2.0682523
Brown long-eared	L3	10	2.0161290
Brown long-eared	L4	23	2.8714107
Brown long-eared	L5	43	4.3434343
Brown long-eared	L6	63	4.6597633
Brown long-eared	L7	18	1.8652850
Brown long-eared	L8	51	2.4343675
Brown long-eared	L9	74	6.5255732
Daubenton's	L1	51	1.8332135
Daubenton's	L10	59	2.7712541
Daubenton's	L11	50	2.6666667
Daubenton's	L2	47	4.8603930
Daubenton's	L3	13	2.6209677
Daubenton's	L4	25	3.1210986
Daubenton's	L5	30	3.0303030
Daubenton's	L6	54	3.9940828
Daubenton's	L7	38	3.9378238
Daubenton's	L8	47	2.2434368
Daubenton's	L9	43	3.7918871
Whiskered	L1	58	2.0848311
Whiskered	L10	41	1.9257868
Whiskered	L11	35	1.8666667
Whiskered	L3	8	1.6129032
Whiskered	L4	11	1.3732834
Whiskered	L5	3	0.3030303
Whiskered	L6	25	1.8491124
Whiskered	L7	13	1.3471503
Whiskered	L8	11	0.5250597
Whiskered	L9	30	2.6455026
Natterer's	L1	18	0.6470165
Natterer's	L10	61	2.8651949

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Natterer's	L11	23	1.2266667
Natterer's	L3	31	6.2500000
Natterer's	L4	19	2.3720350
Natterer's	L5	2	0.2020202
Natterer's	L6	47	3.4763314
Natterer's	L7	4	0.4145078
Natterer's	L8	5	0.2386635
Natterer's	L9	106	9.3474427

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	L1	3.9
Common pipistrelle	L10	1.2
Common pipistrelle	L11	2.2
Common pipistrelle	L2	1.4
Common pipistrelle	L3	1.3
Common pipistrelle	L4	1.0
Common pipistrelle	L5	1.9
Common pipistrelle	L6	2.7
Common pipistrelle	L7	1.9
Common pipistrelle	L8	5.1
Common pipistrelle	L9	1.0
Soprano pipistrelle	L1	7.7
Soprano pipistrelle	L10	7.2
Soprano pipistrelle	L11	4.4
Soprano pipistrelle	L2	3.1
Soprano pipistrelle	L3	2.2
Soprano pipistrelle	L4	1.7
Soprano pipistrelle	L5	1.7
Soprano pipistrelle	L6	1.8
Soprano pipistrelle	L7	2.2
Soprano pipistrelle	L8	1.2
Soprano pipistrelle	L9	1.9
Nathusius'	L9	0.1
Leisler's	L1	1.1
Leisler's	L10	1.2
Leisler's	L11	1.4
Leisler's	L2	0.5
Leisler's	L3	0.7
Leisler's	L4	1.1
Leisler's	L5	1.0
Leisler's	L6	1.2
Leisler's	L7	0.7
Leisler's	L8	1.7
Leisler's	L9	1.7
Brown long-eared	L1	0.4
Brown long-eared	L10	0.2

Species	Detector ID	Median Pass Rate
Brown long-eared	L11	0.3
Brown long-eared	L2	0.2
Brown long-eared	L3	0.2
Brown long-eared	L4	0.2
Brown long-eared	L5	0.2
Brown long-eared	L6	0.4
Brown long-eared	L7	0.3
Brown long-eared	L8	0.3
Brown long-eared	L9	0.5
Daubenton's	L1	0.4
Daubenton's	L10	0.5
Daubenton's	L11	0.4
Daubenton's	L2	0.4
Daubenton's	L3	0.2
Daubenton's	L4	0.1
Daubenton's	L5	0.2
Daubenton's	L6	0.3
Daubenton's	L7	0.2
Daubenton's	L8	0.3
Daubenton's	L9	0.3
Whiskered	L1	0.3
Whiskered	L10	0.2
Whiskered	L11	0.2
Whiskered	L3	0.3
Whiskered	L4	0.1
Whiskered	L5	0.1
Whiskered	L6	0.3
Whiskered	L7	0.1
Whiskered	L8	0.1
Whiskered	L9	0.2
Natterer's	L1	0.2
Natterer's	L10	0.3
Natterer's	L11	0.2
Natterer's	L3	0.3
Natterer's	L4	0.2
Natterer's	L5	0.1

Species	Detector ID	Median Pass Rate
Natterer's	L6	0.3
Natterer's	L7	0.1
Natterer's	L8	0.1
Natterer's	L9	0.9

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.

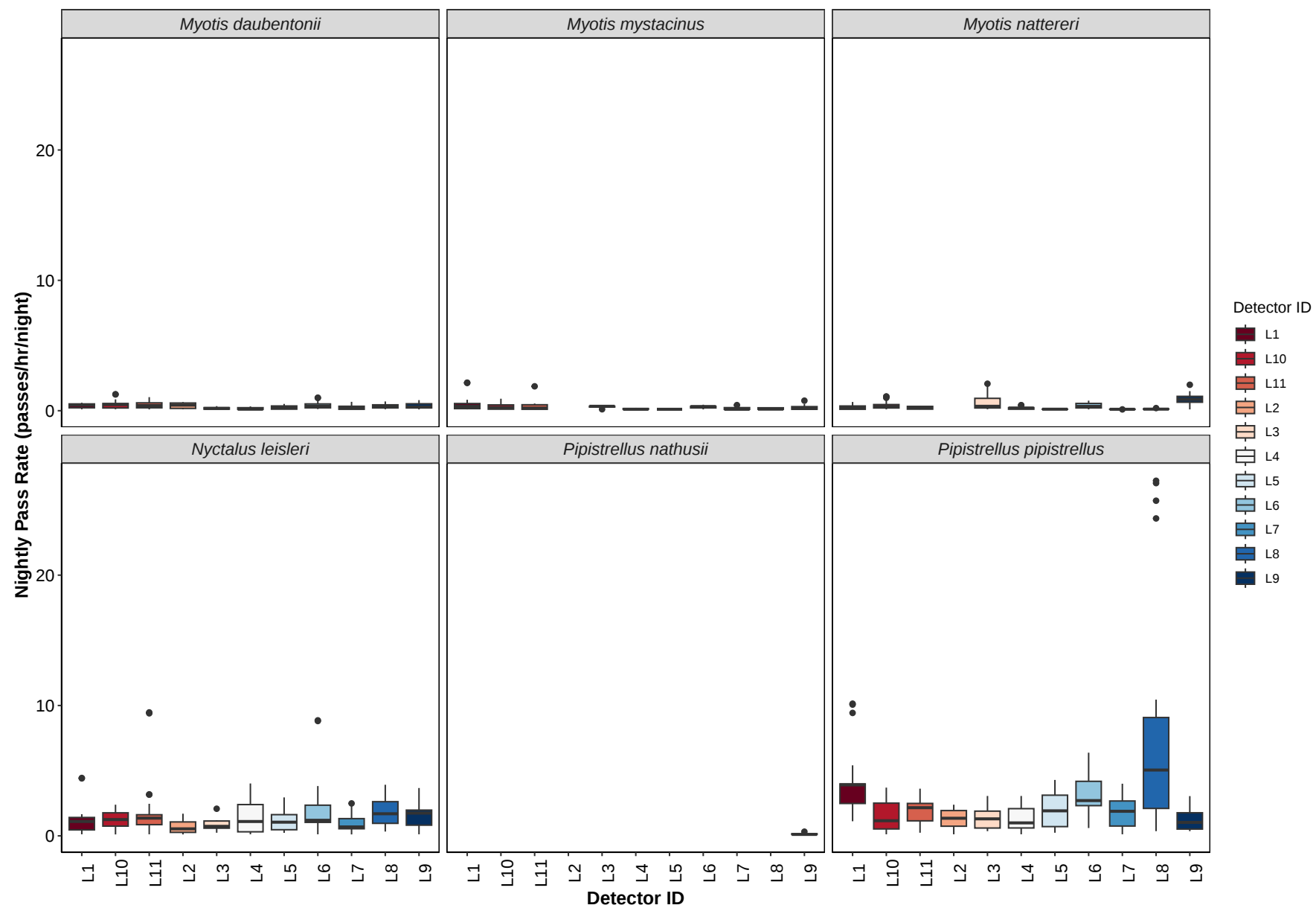
Species	Detector ID	Mean Pass Rate
Common pipistrelle	L1	4.2
Common pipistrelle	L10	1.6
Common pipistrelle	L11	2.0
Common pipistrelle	L2	1.4
Common pipistrelle	L3	1.4
Common pipistrelle	L4	1.3
Common pipistrelle	L5	1.9
Common pipistrelle	L6	3.1
Common pipistrelle	L7	1.8
Common pipistrelle	L8	8.6
Common pipistrelle	L9	1.2
Soprano pipistrelle	L1	8.0
Soprano pipistrelle	L10	7.0
Soprano pipistrelle	L11	5.9
Soprano pipistrelle	L2	3.2
Soprano pipistrelle	L3	2.0
Soprano pipistrelle	L4	2.0
Soprano pipistrelle	L5	2.0
Soprano pipistrelle	L6	2.0
Soprano pipistrelle	L7	2.4
Soprano pipistrelle	L8	1.4
Soprano pipistrelle	L9	1.7
Nathusius'	L9	0.2
Leisler's	L1	1.3
Leisler's	L10	1.3
Leisler's	L11	2.0
Leisler's	L2	0.7
Leisler's	L3	0.9
Leisler's	L4	1.4
Leisler's	L5	1.2

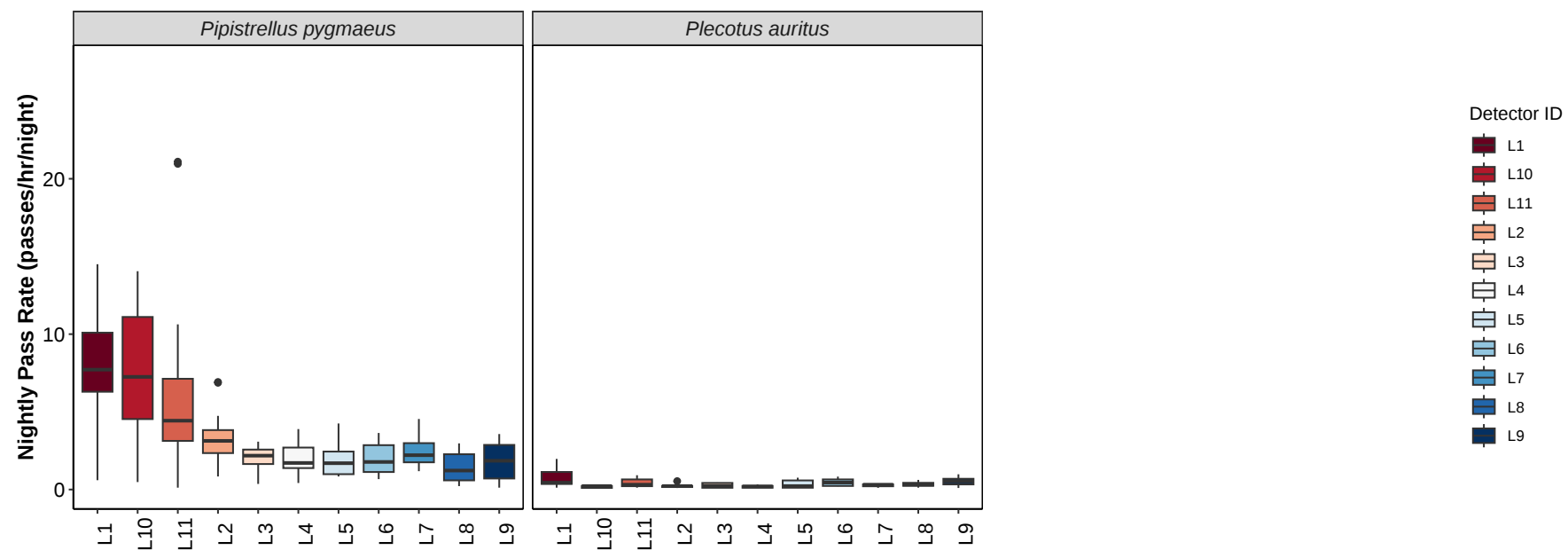
Species	Detector ID	Mean Pass Rate
Leisler's	L6	2.0
Leisler's	L7	1.0
Leisler's	L8	1.9
Leisler's	L9	1.6
Brown long-eared	L1	0.8
Brown long-eared	L10	0.2
Brown long-eared	L11	0.4
Brown long-eared	L2	0.2
Brown long-eared	L3	0.3
Brown long-eared	L4	0.2
Brown long-eared	L5	0.3
Brown long-eared	L6	0.5
Brown long-eared	L7	0.3
Brown long-eared	L8	0.3
Brown long-eared	L9	0.5
Daubenton's	L1	0.4
Daubenton's	L10	0.5
Daubenton's	L11	0.4
Daubenton's	L2	0.4
Daubenton's	L3	0.2
Daubenton's	L4	0.2
Daubenton's	L5	0.3
Daubenton's	L6	0.4
Daubenton's	L7	0.3
Daubenton's	L8	0.3
Daubenton's	L9	0.4
Whiskered	L1	0.6
Whiskered	L10	0.3
Whiskered	L11	0.4
Whiskered	L3	0.3
Whiskered	L4	0.1
Whiskered	L5	0.1
Whiskered	L6	0.3
Whiskered	L7	0.2
Whiskered	L8	0.2
Whiskered	L9	0.2

Species	Detector ID	Mean Pass Rate
Natterer's	L1	0.3
Natterer's	L10	0.4
Natterer's	L11	0.2
Natterer's	L3	0.7
Natterer's	L4	0.2
Natterer's	L5	0.1
Natterer's	L6	0.4
Natterer's	L7	0.1
Natterer's	L8	0.1
Natterer's	L9	1.0

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.





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	Jul	Aug
Common pipistrelle	L1	99	716
Common pipistrelle	L10	19	350
Common pipistrelle	L11	7	388
Common pipistrelle	L2	12	253
Common pipistrelle	L3	22	126
Common pipistrelle	L4	14	230
Common pipistrelle	L5	45	343
Common pipistrelle	L6	85	528
Common pipistrelle	L7	16	350
Common pipistrelle	L8	81	1663
Common pipistrelle	L9	16	241
Soprano pipistrelle	L1	141	1747
Soprano pipistrelle	L10	93	1632
Soprano pipistrelle	L11	43	1226
Soprano pipistrelle	L2	38	606
Soprano pipistrelle	L3	49	171
Soprano pipistrelle	L4	19	355
Soprano pipistrelle	L5	42	380
Soprano pipistrelle	L6	18	385
Soprano pipistrelle	L7	40	443
Soprano pipistrelle	L8	17	259
Soprano pipistrelle	L9	22	369
Nathusius'	L9	0	6
Leisler's	L1	9	238
Leisler's	L10	39	259
Leisler's	L11	18	430
Leisler's	L2	6	133
Leisler's	L3	30	66
Leisler's	L4	7	271
Leisler's	L5	42	233
Leisler's	L6	27	455
Leisler's	L7	23	189
Leisler's	L8	97	305
Leisler's	L9	47	326
Brown long-eared	L1	3	121
Brown long-eared	L10	0	19

Species	Detector ID	Jul	Aug
Brown long-eared	L11	1	57
Brown long-eared	L2	4	18
Brown long-eared	L3	0	14
Brown long-eared	L4	1	18
Brown long-eared	L5	4	43
Brown long-eared	L6	2	69
Brown long-eared	L7	0	21
Brown long-eared	L8	3	47
Brown long-eared	L9	6	74
Daubenton's	L1	6	54
Daubenton's	L10	1	76
Daubenton's	L11	2	52
Daubenton's	L2	2	49
Daubenton's	L3	1	12
Daubenton's	L4	2	19
Daubenton's	L5	3	35
Daubenton's	L6	2	68
Daubenton's	L7	3	39
Daubenton's	L8	6	40
Daubenton's	L9	3	49
Whiskered	L1	0	77
Whiskered	L10	3	43
Whiskered	L11	3	35
Whiskered	L3	0	10
Whiskered	L4	1	8
Whiskered	L5	0	3
Whiskered	L6	1	27
Whiskered	L7	2	10
Whiskered	L8	1	10
Whiskered	L9	1	30
Natterer's	L1	0	20
Natterer's	L10	8	72
Natterer's	L11	1	25
Natterer's	L3	3	48
Natterer's	L4	1	22
Natterer's	L5	0	2

Species	Detector ID	Jul	Aug
Natterer's	L6	2	46
Natterer's	L7	1	3
Natterer's	L8	1	4
Natterer's	L9	14	97

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jul	L1	5
Jul	L10	5
Jul	L11	5
Jul	L2	3
Jul	L3	5
Jul	L4	3
Jul	L5	5
Jul	L6	5
Jul	L7	4
Jul	L8	5
Jul	L9	5
Aug	L1	21
Aug	L10	22
Aug	L11	21
Aug	L2	19
Aug	L3	10
Aug	L4	19
Aug	L5	21
Aug	L6	21
Aug	L7	22
Aug	L8	20
Aug	L9	21

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	Jul	Aug
Common pipistrelle	L1	5.9	3.9
Common pipistrelle	L10	0.4	2.4
Common pipistrelle	L11	0.9	2.2
Common pipistrelle	L2	0.2	1.4
Common pipistrelle	L3	0.6	1.4
Common pipistrelle	L4	0.6	1.0
Common pipistrelle	L5	0.5	2.1
Common pipistrelle	L6	4.9	2.5
Common pipistrelle	L7	1.0	2.0
Common pipistrelle	L8	4.3	5.8
Common pipistrelle	L9	0.4	1.0
Soprano pipistrelle	L1	4.1	8.6
Soprano pipistrelle	L10	0.5	7.4
Soprano pipistrelle	L11	0.5	4.4
Soprano pipistrelle	L2	0.8	3.2
Soprano pipistrelle	L3	2.6	2.1
Soprano pipistrelle	L4	1.2	2.1
Soprano pipistrelle	L5	1.1	1.9
Soprano pipistrelle	L6	1.1	2.0
Soprano pipistrelle	L7	2.4	2.2
Soprano pipistrelle	L8	1.0	1.6
Soprano pipistrelle	L9	0.4	2.0
Nathusius'	L9	NA	0.1
Leisler's	L1	0.2	1.2
Leisler's	L10	0.7	1.2
Leisler's	L11	0.6	1.4
Leisler's	L2	0.2	0.7
Leisler's	L3	0.7	0.7
Leisler's	L4	0.1	1.5
Leisler's	L5	1.3	1.0
Leisler's	L6	0.5	1.4
Leisler's	L7	0.8	0.7
Leisler's	L8	1.8	1.7
Leisler's	L9	0.7	1.8
Brown long-eared	L1	0.4	0.6
Brown long-eared	L10	NA	0.2

Species	Detector ID	Jul	Aug
Brown long-eared	L11	0.1	0.3
Brown long-eared	L2	0.2	0.2
Brown long-eared	L3	NA	0.2
Brown long-eared	L4	0.1	0.2
Brown long-eared	L5	0.5	0.2
Brown long-eared	L6	0.2	0.4
Brown long-eared	L7	NA	0.3
Brown long-eared	L8	0.2	0.3
Brown long-eared	L9	0.4	0.5
Daubenton's	L1	0.4	0.4
Daubenton's	L10	0.1	0.5
Daubenton's	L11	0.2	0.4
Daubenton's	L2	0.1	0.5
Daubenton's	L3	0.1	0.2
Daubenton's	L4	0.1	0.1
Daubenton's	L5	0.2	0.2
Daubenton's	L6	0.1	0.4
Daubenton's	L7	0.2	0.2
Daubenton's	L8	0.1	0.4
Daubenton's	L9	0.4	0.2
Whiskered	L1	NA	0.3
Whiskered	L10	0.2	0.3
Whiskered	L11	0.4	0.2
Whiskered	L3	NA	0.3
Whiskered	L4	0.1	0.1
Whiskered	L5	NA	0.1
Whiskered	L6	0.1	0.3
Whiskered	L7	0.2	0.1
Whiskered	L8	0.1	0.1
Whiskered	L9	0.1	0.2
Natterer's	L1	NA	0.2
Natterer's	L10	0.2	0.3
Natterer's	L11	0.1	0.2
Natterer's	L3	0.2	0.5
Natterer's	L4	0.1	0.2
Natterer's	L5	NA	0.1

Species	Detector ID	Jul	Aug
Natterer's	L6	0.2	0.4
Natterer's	L7	0.1	0.1
Natterer's	L8	0.1	0.1
Natterer's	L9	0.9	0.9

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	Jul	Aug
Common pipistrelle	L1	5.9	4.0
Common pipistrelle	L10	0.5	1.9
Common pipistrelle	L11	0.9	2.0
Common pipistrelle	L2	0.5	1.5
Common pipistrelle	L3	0.9	1.6
Common pipistrelle	L4	0.6	1.5
Common pipistrelle	L5	1.4	2.0
Common pipistrelle	L6	3.5	3.0
Common pipistrelle	L7	1.0	1.9
Common pipistrelle	L8	3.2	9.4
Common pipistrelle	L9	0.6	1.3
Soprano pipistrelle	L1	3.4	9.1
Soprano pipistrelle	L10	2.3	8.1
Soprano pipistrelle	L11	1.8	6.5
Soprano pipistrelle	L2	1.5	3.5
Soprano pipistrelle	L3	2.0	2.0
Soprano pipistrelle	L4	1.2	2.0
Soprano pipistrelle	L5	1.3	2.1
Soprano pipistrelle	L6	1.1	2.1
Soprano pipistrelle	L7	2.4	2.4
Soprano pipistrelle	L8	1.0	1.5
Soprano pipistrelle	L9	0.5	2.0
Nathusius'	L9	NA	0.2
Leisler's	L1	0.4	1.4
Leisler's	L10	0.9	1.4
Leisler's	L11	0.5	2.2
Leisler's	L2	0.2	0.8
Leisler's	L3	0.7	0.9
Leisler's	L4	0.3	1.6
Leisler's	L5	1.0	1.2

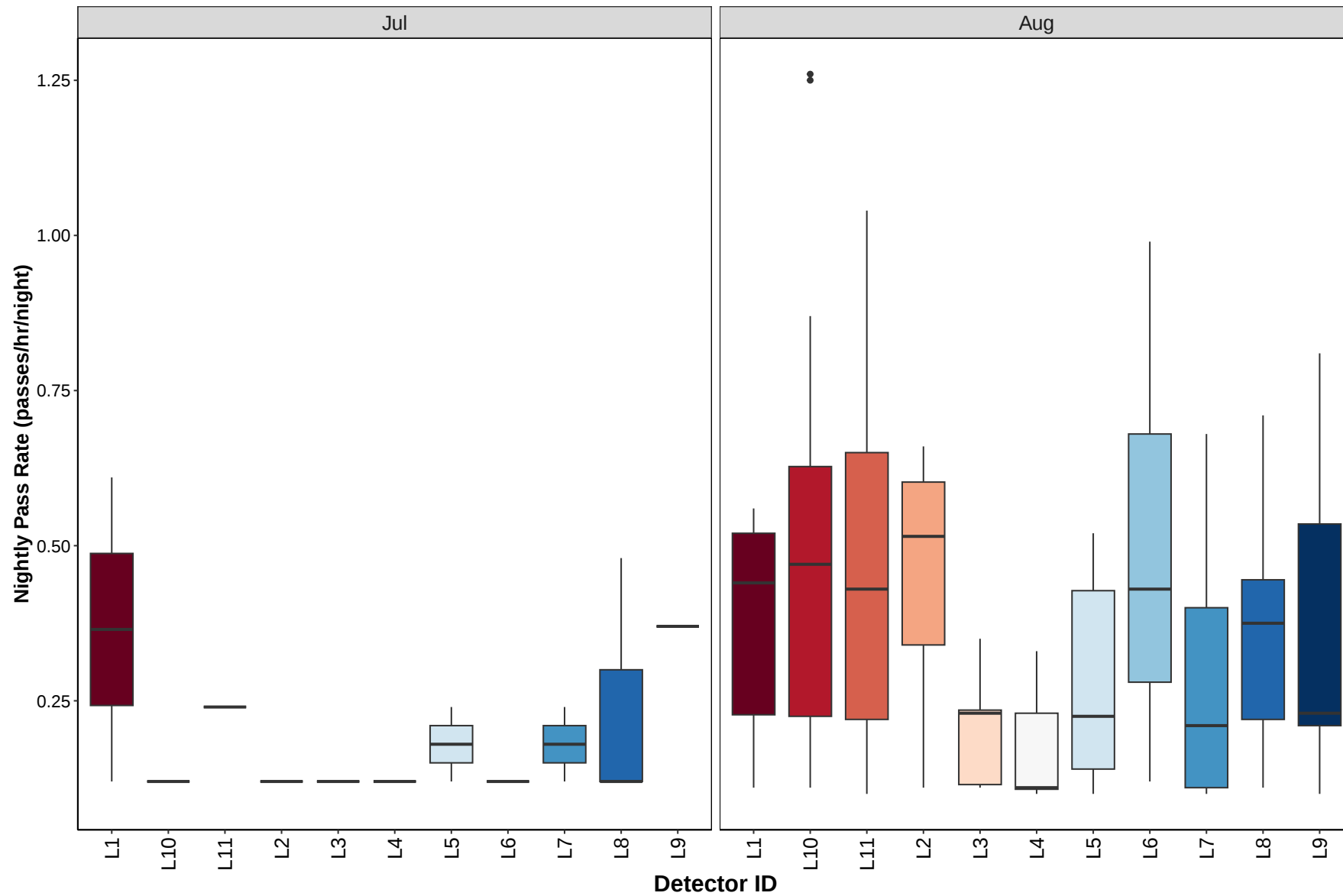
Species	Detector ID	Jul	Aug
Leisler's	L6	0.7	2.3
Leisler's	L7	0.7	1.0
Leisler's	L8	2.4	1.7
Leisler's	L9	1.1	1.7
Brown long-eared	L1	0.4	0.8
Brown long-eared	L10	NA	0.2
Brown long-eared	L11	0.1	0.4
Brown long-eared	L2	0.2	0.2
Brown long-eared	L3	NA	0.3
Brown long-eared	L4	0.1	0.2
Brown long-eared	L5	0.5	0.3
Brown long-eared	L6	0.2	0.5
Brown long-eared	L7	NA	0.3
Brown long-eared	L8	0.2	0.4
Brown long-eared	L9	0.4	0.5
Daubenton's	L1	0.4	0.4
Daubenton's	L10	0.1	0.5
Daubenton's	L11	0.2	0.4
Daubenton's	L2	0.1	0.5
Daubenton's	L3	0.1	0.2
Daubenton's	L4	0.1	0.2
Daubenton's	L5	0.2	0.3
Daubenton's	L6	0.1	0.5
Daubenton's	L7	0.2	0.3
Daubenton's	L8	0.2	0.4
Daubenton's	L9	0.4	0.4
Whiskered	L1	NA	0.6
Whiskered	L10	0.2	0.3
Whiskered	L11	0.4	0.4
Whiskered	L3	NA	0.3
Whiskered	L4	0.1	0.1
Whiskered	L5	NA	0.1
Whiskered	L6	0.1	0.3
Whiskered	L7	0.2	0.2
Whiskered	L8	0.1	0.2
Whiskered	L9	0.1	0.3

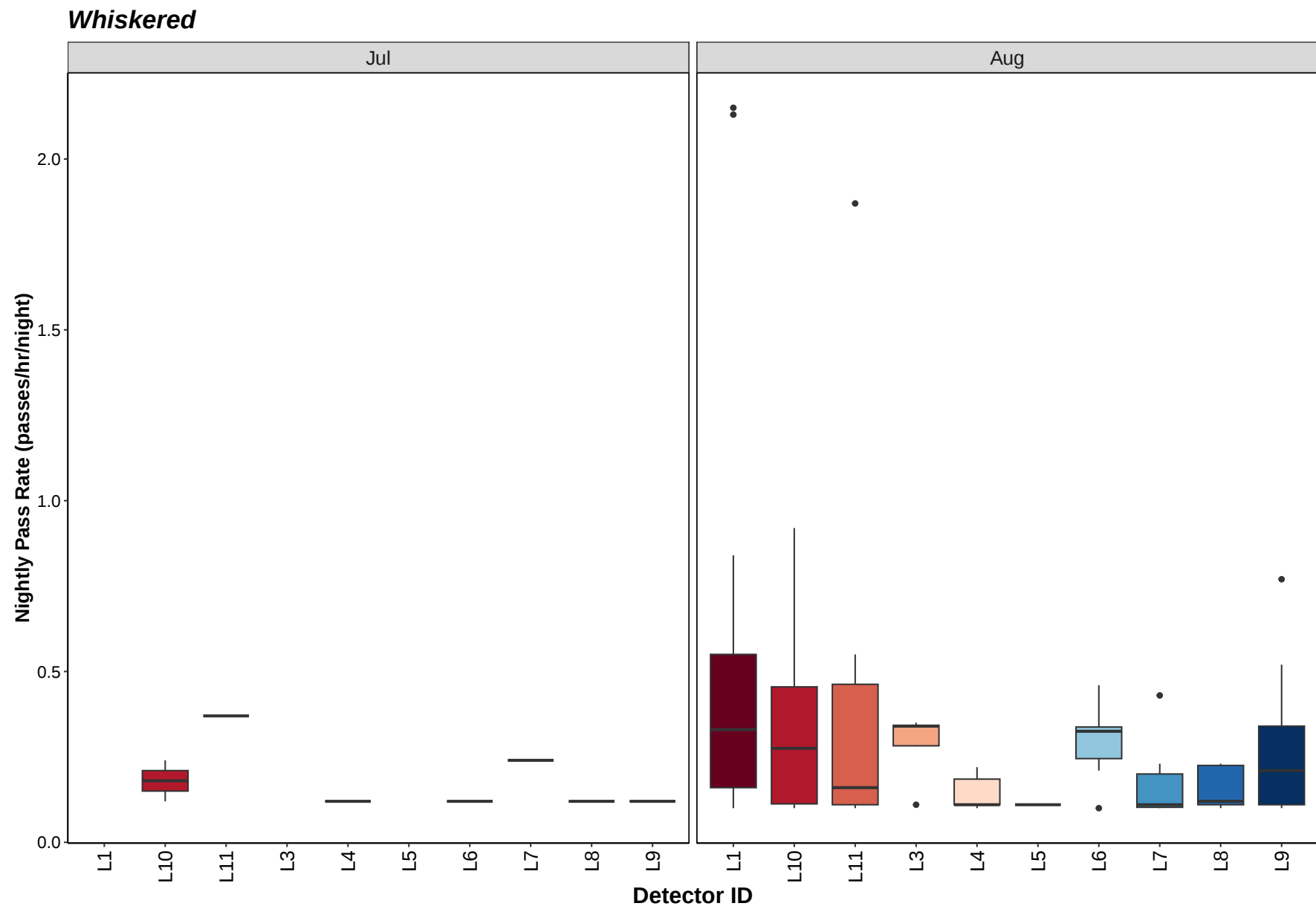
Species	Detector ID	Jul	Aug
Natterer's	L1	NA	0.3
Natterer's	L10	0.2	0.5
Natterer's	L11	0.1	0.2
Natterer's	L3	0.2	0.9
Natterer's	L4	0.1	0.2
Natterer's	L5	NA	0.1
Natterer's	L6	0.2	0.4
Natterer's	L7	0.1	0.1
Natterer's	L8	0.1	0.1
Natterer's	L9	0.9	1.0

Per Detector

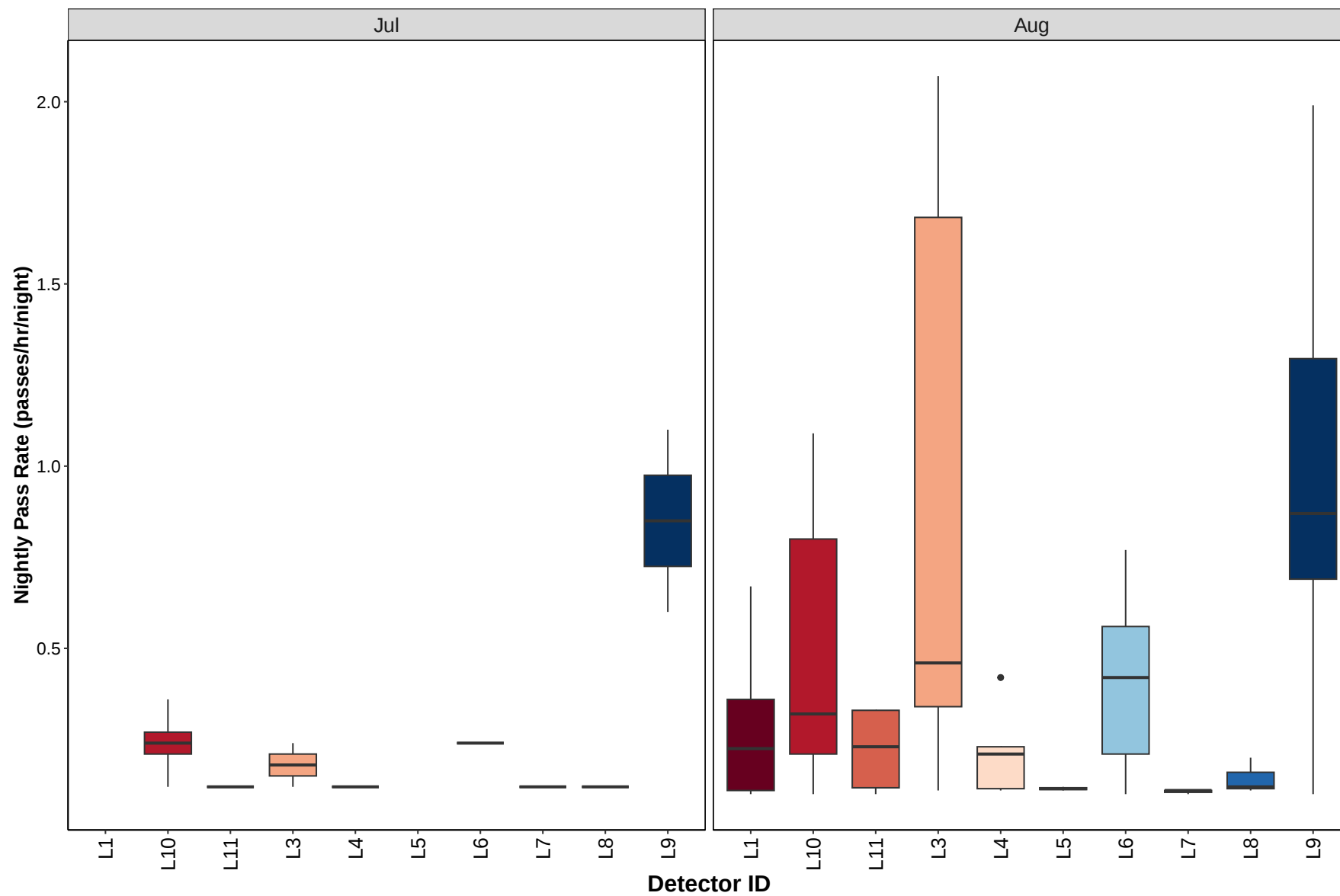
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent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

Daubenton's

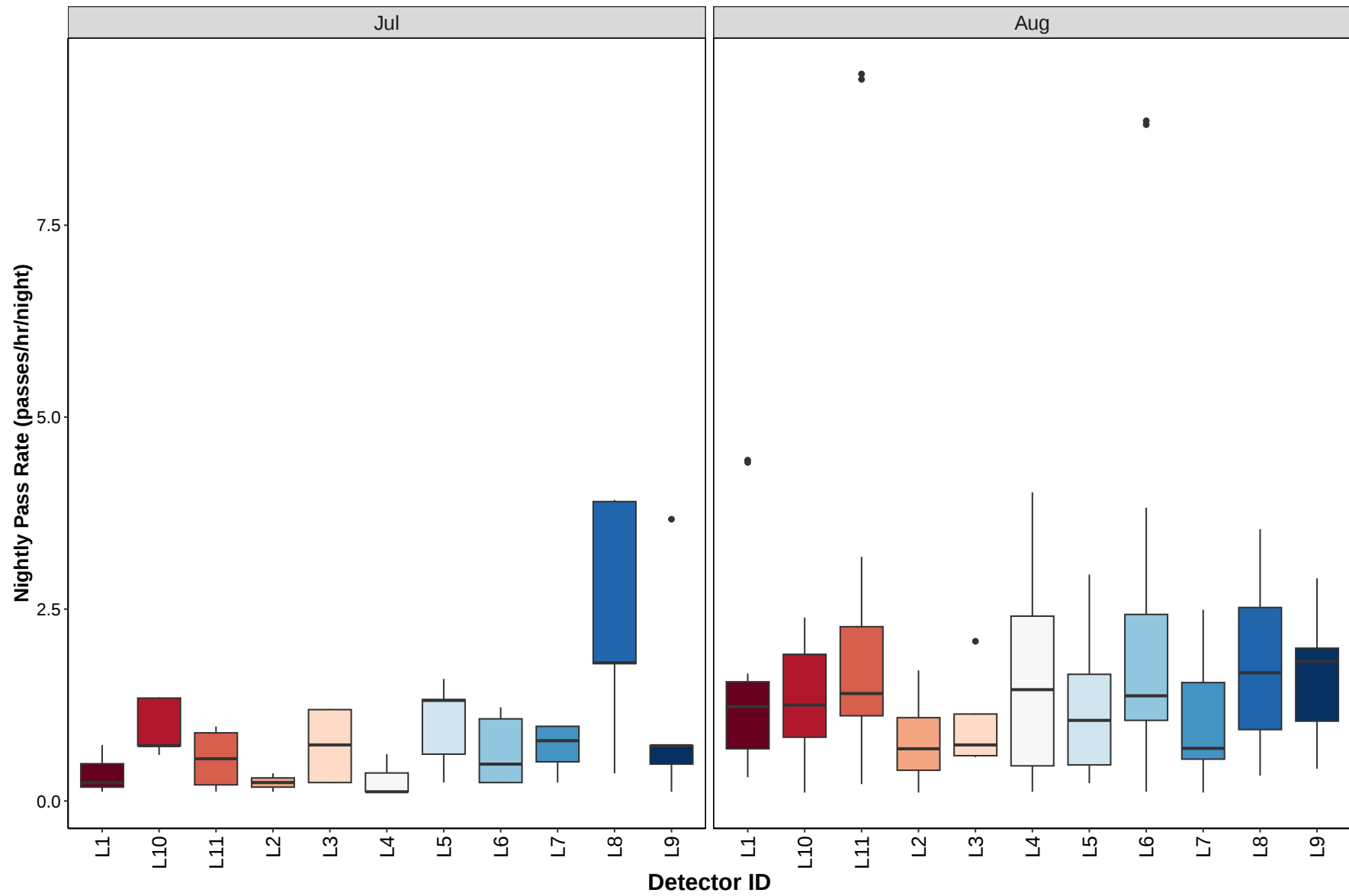




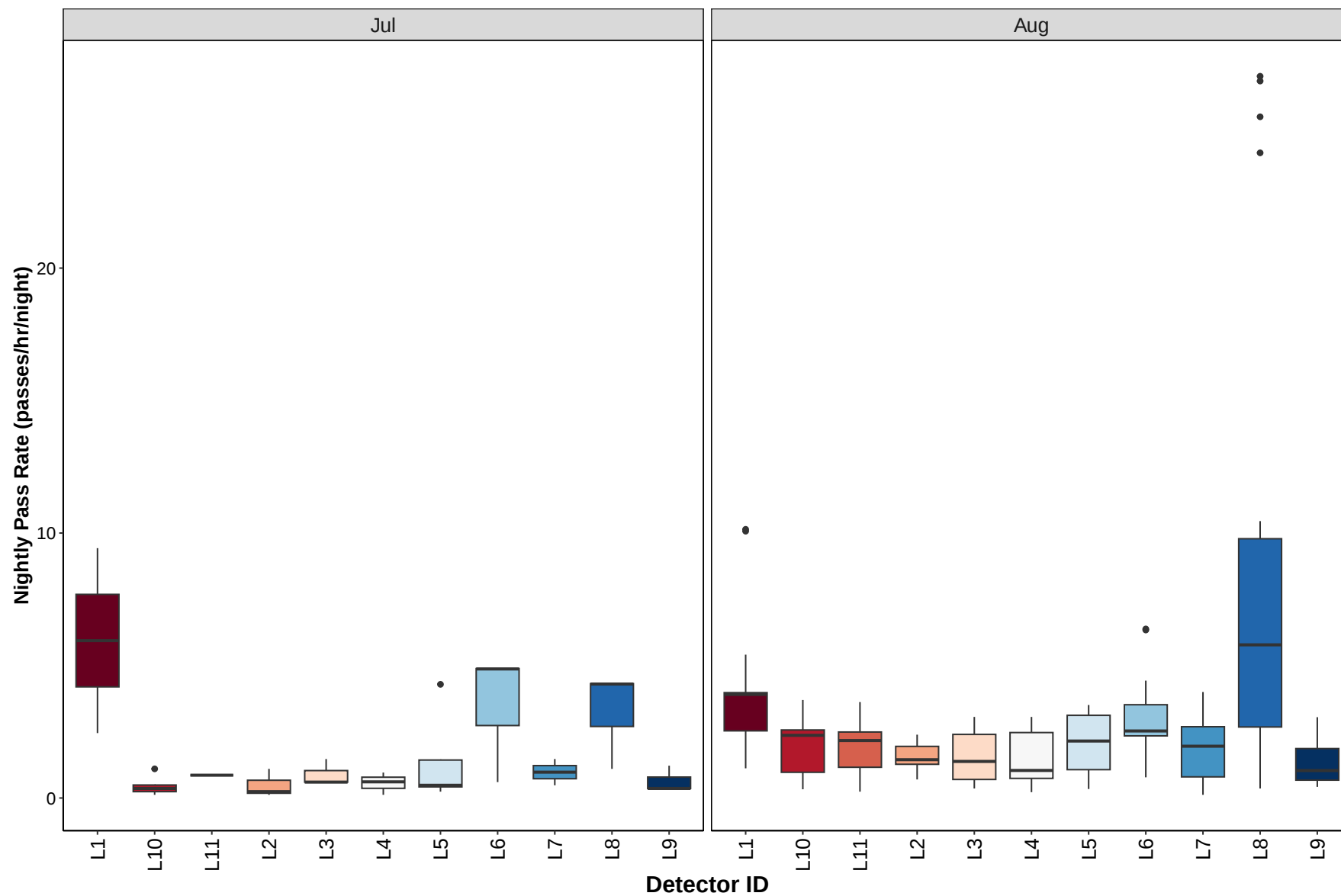
Natterer's



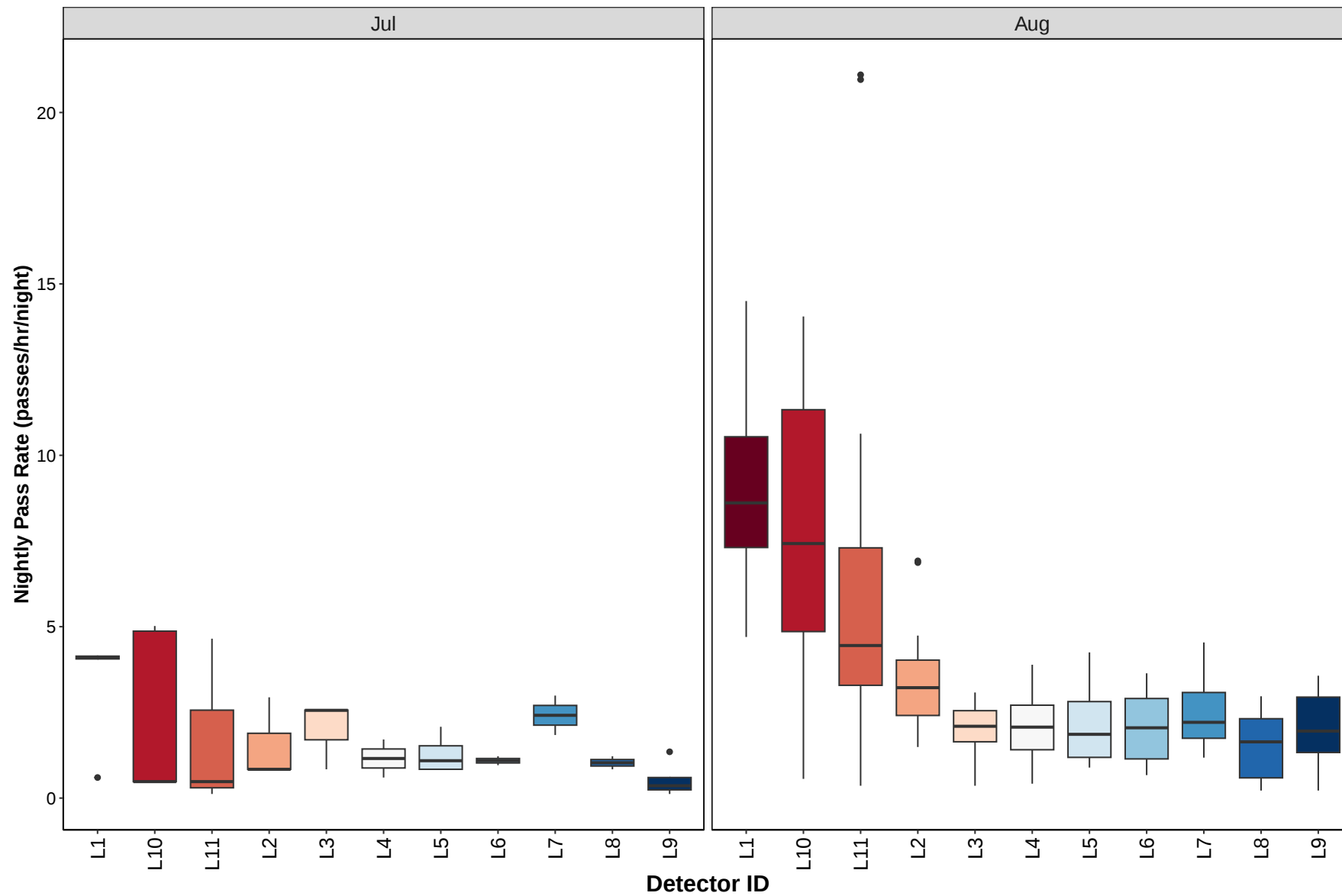
Leisler's



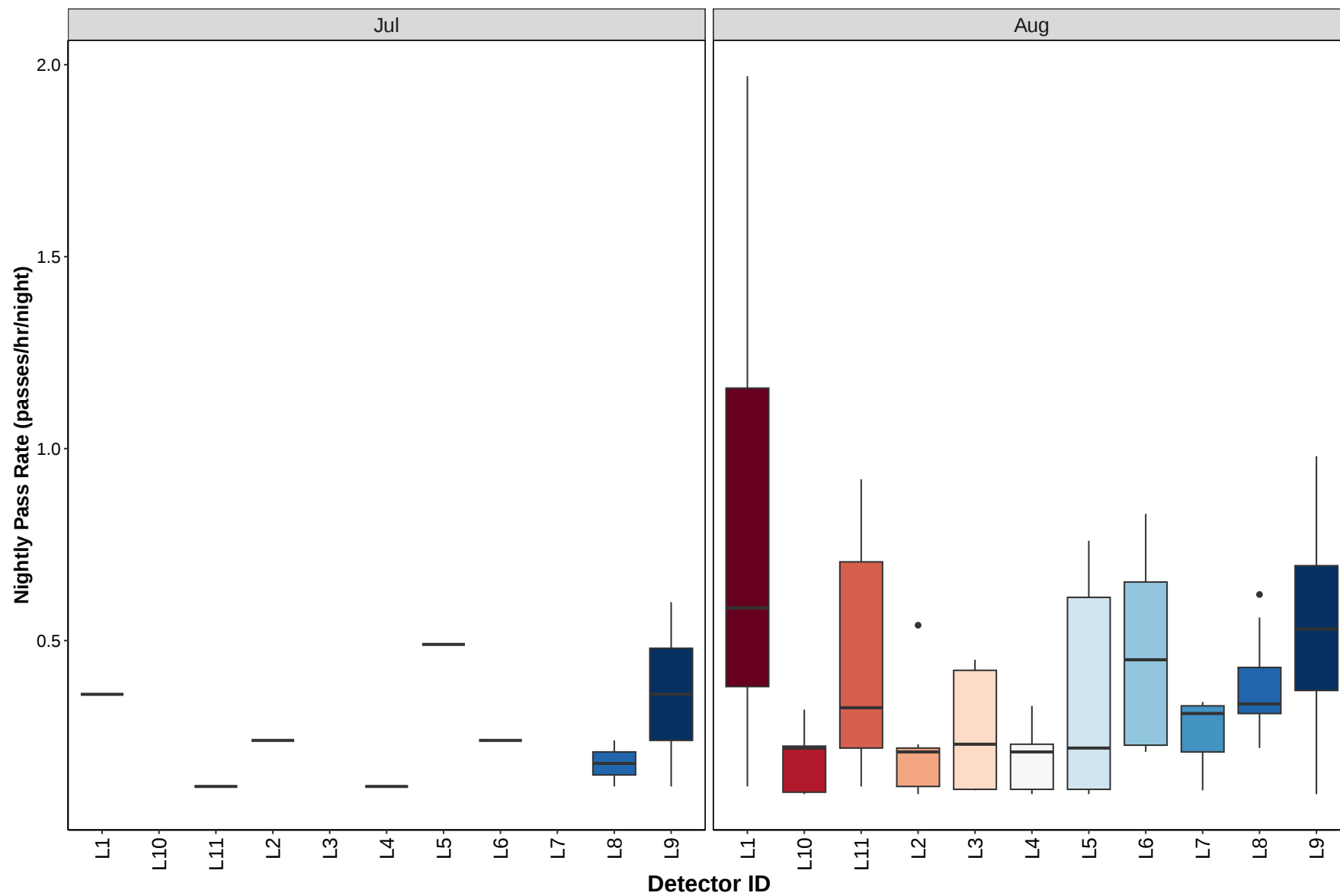
Common pipistrelle



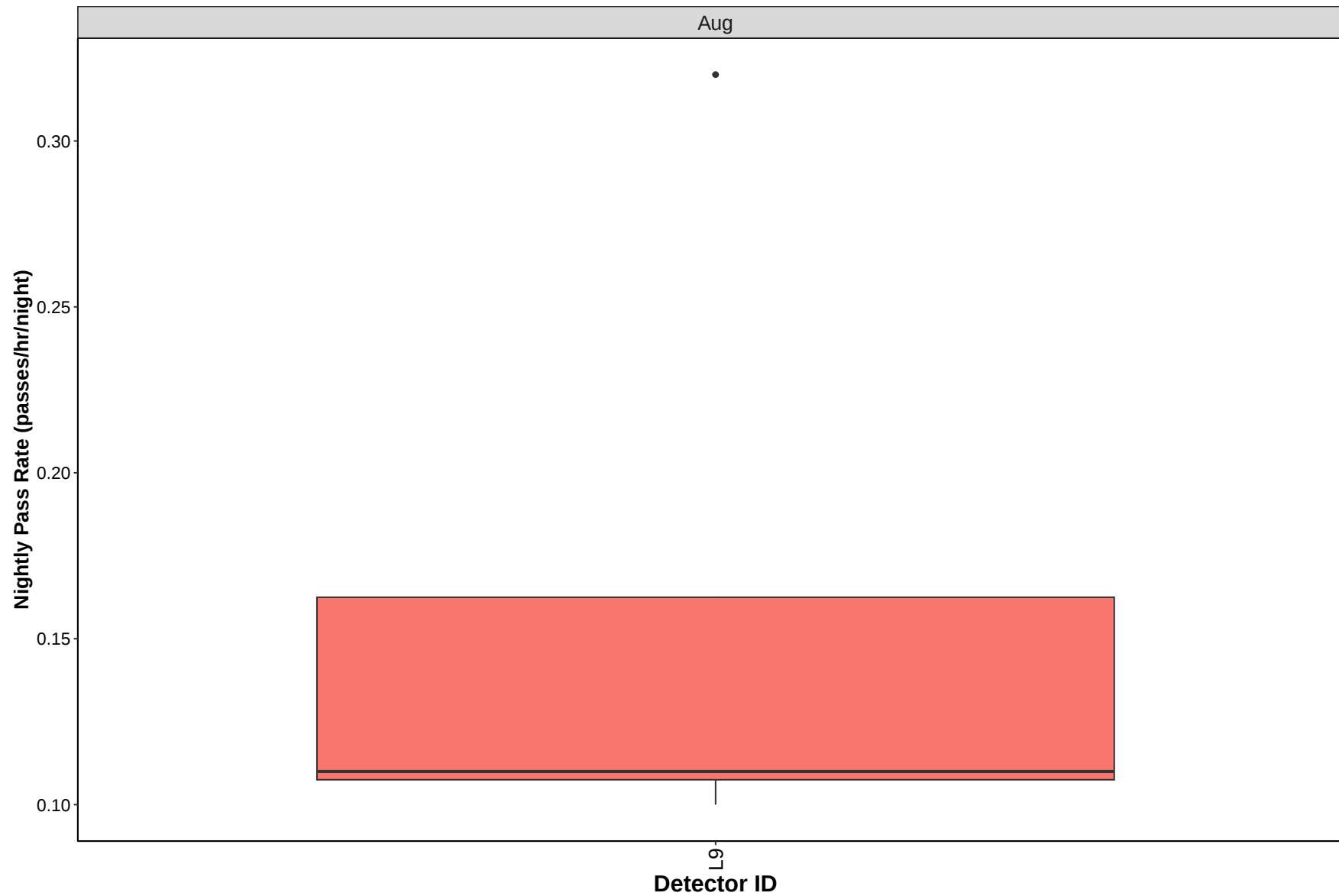
Soprano pipistrelle



Brown long-eared



Nathusius'



Bat Activity per Detector Location

Figure 13. Detector ID reference:

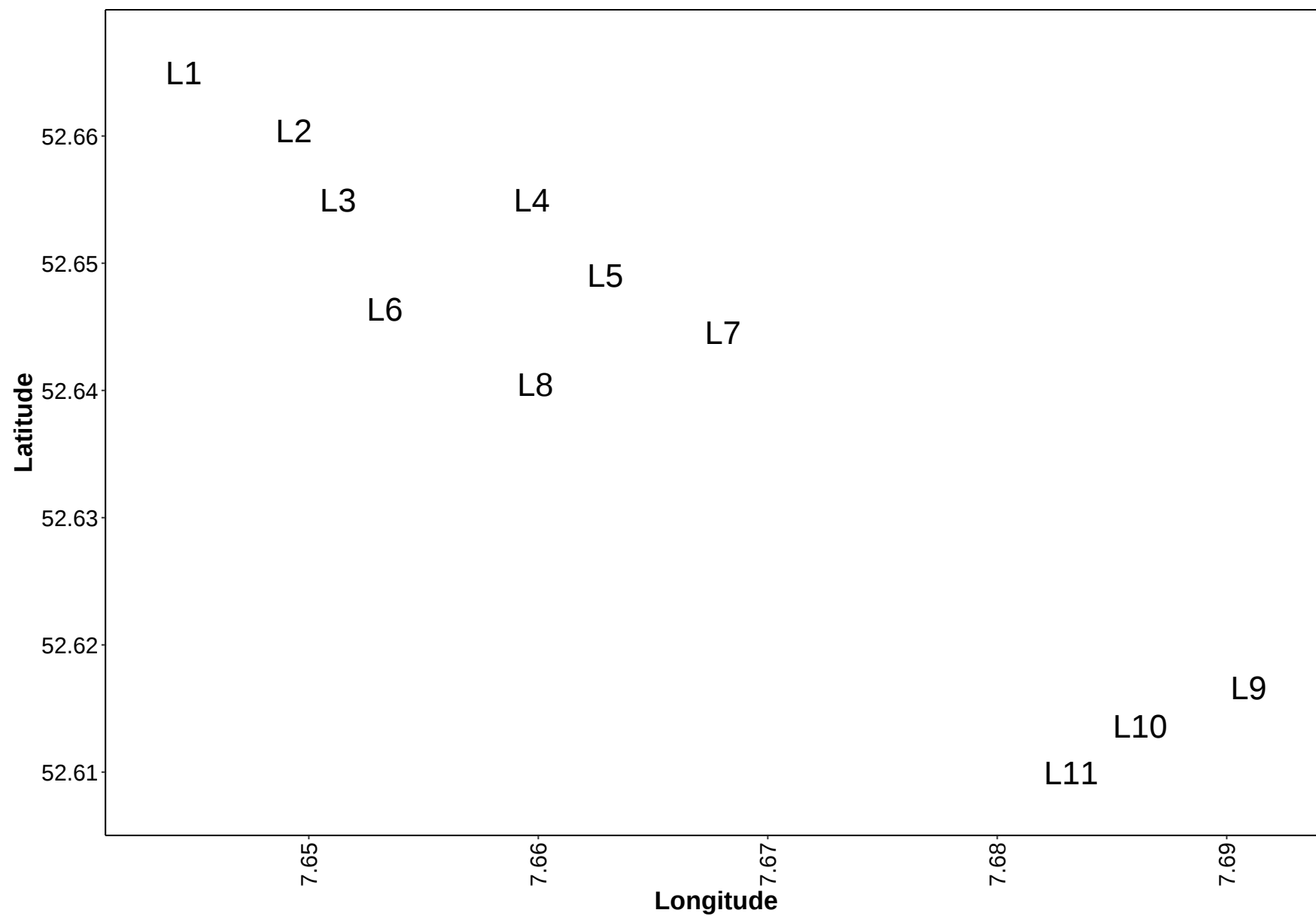
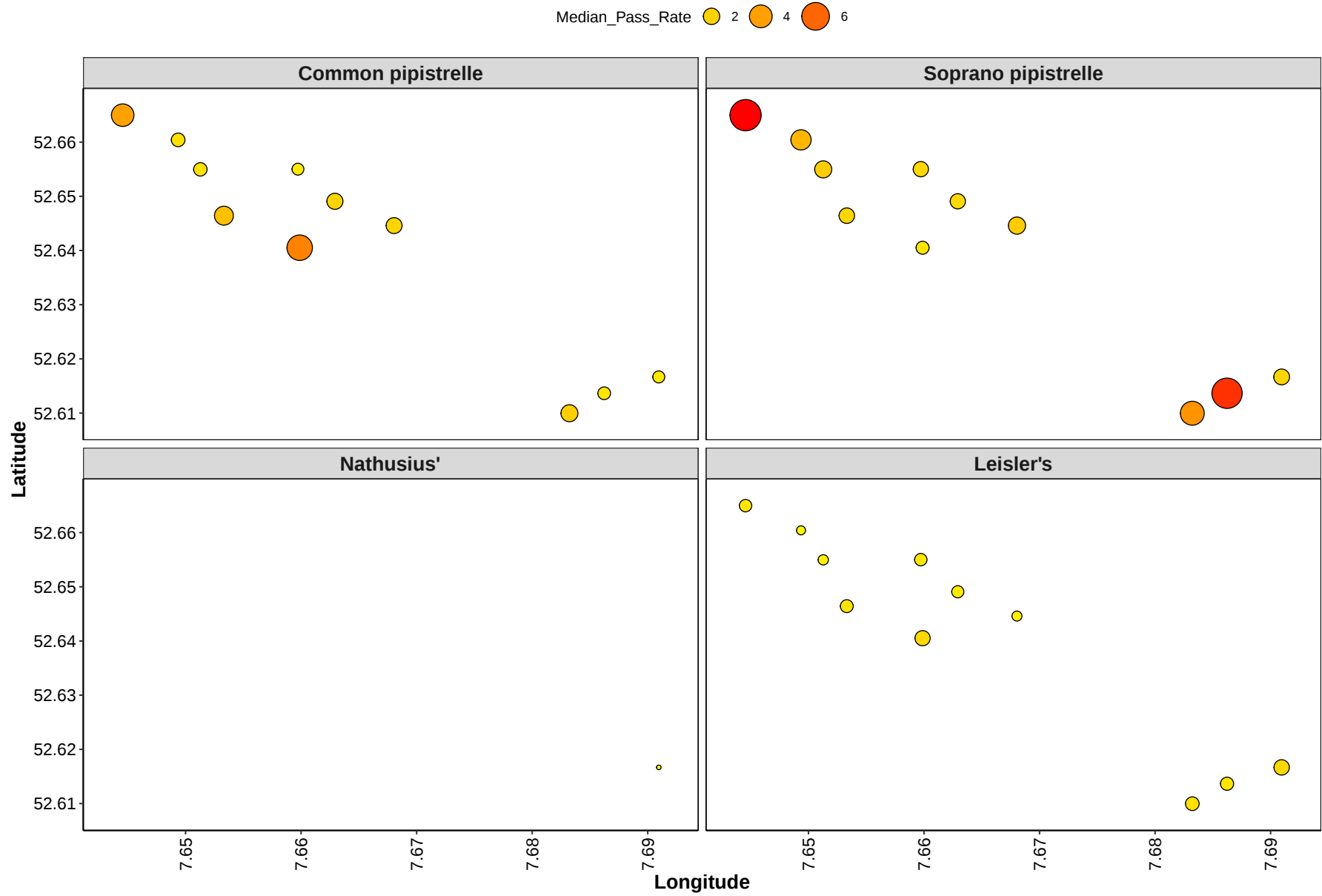


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



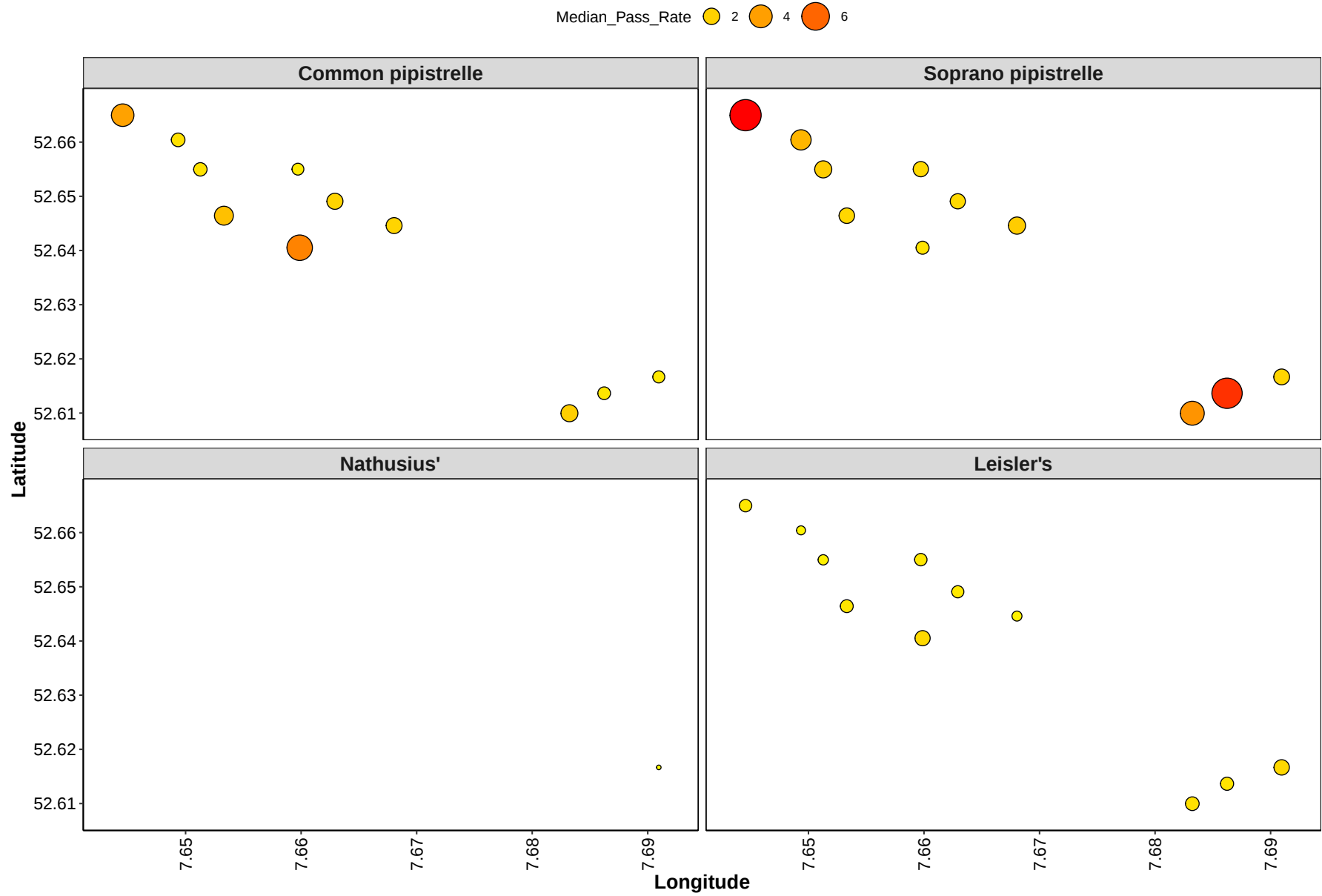
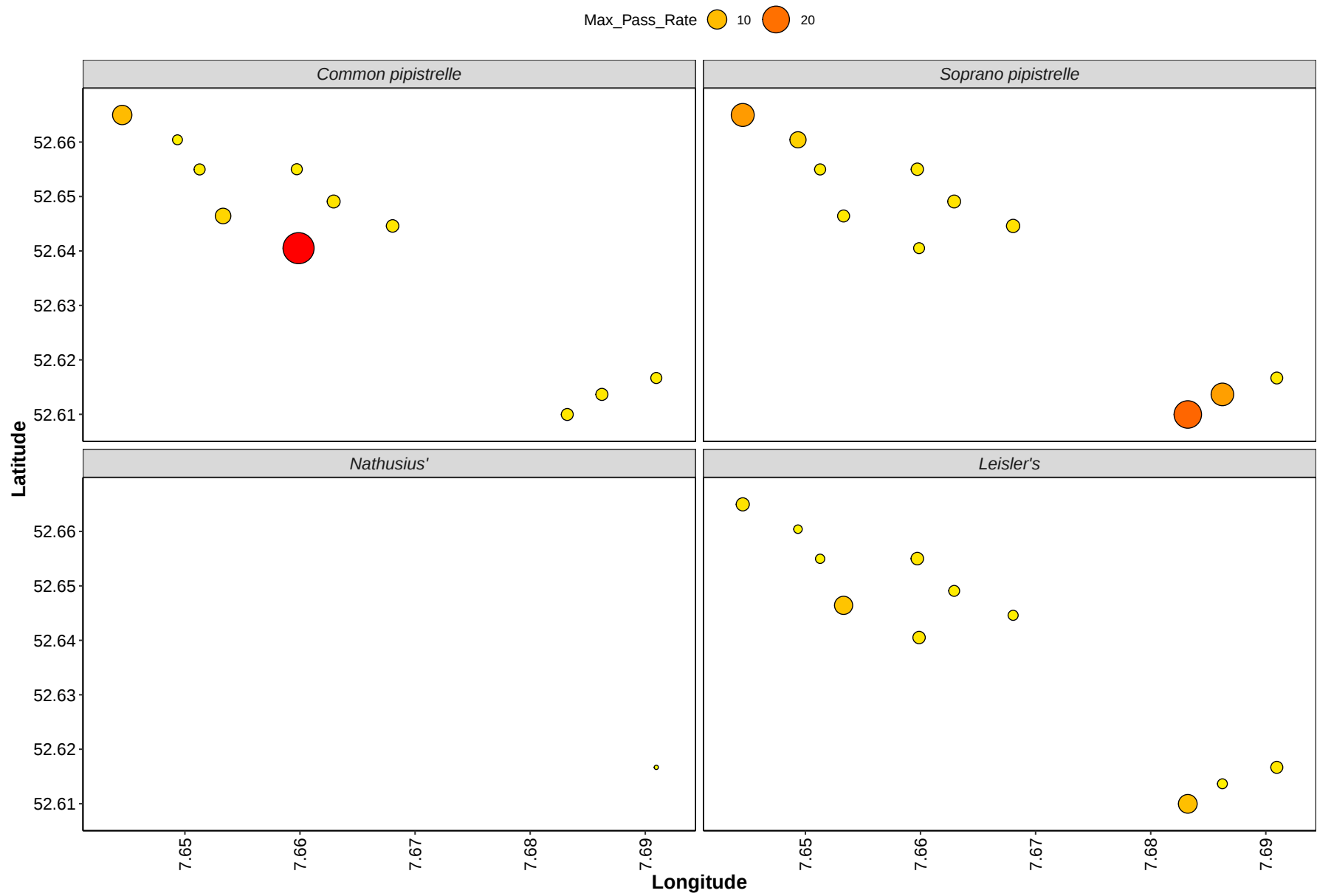
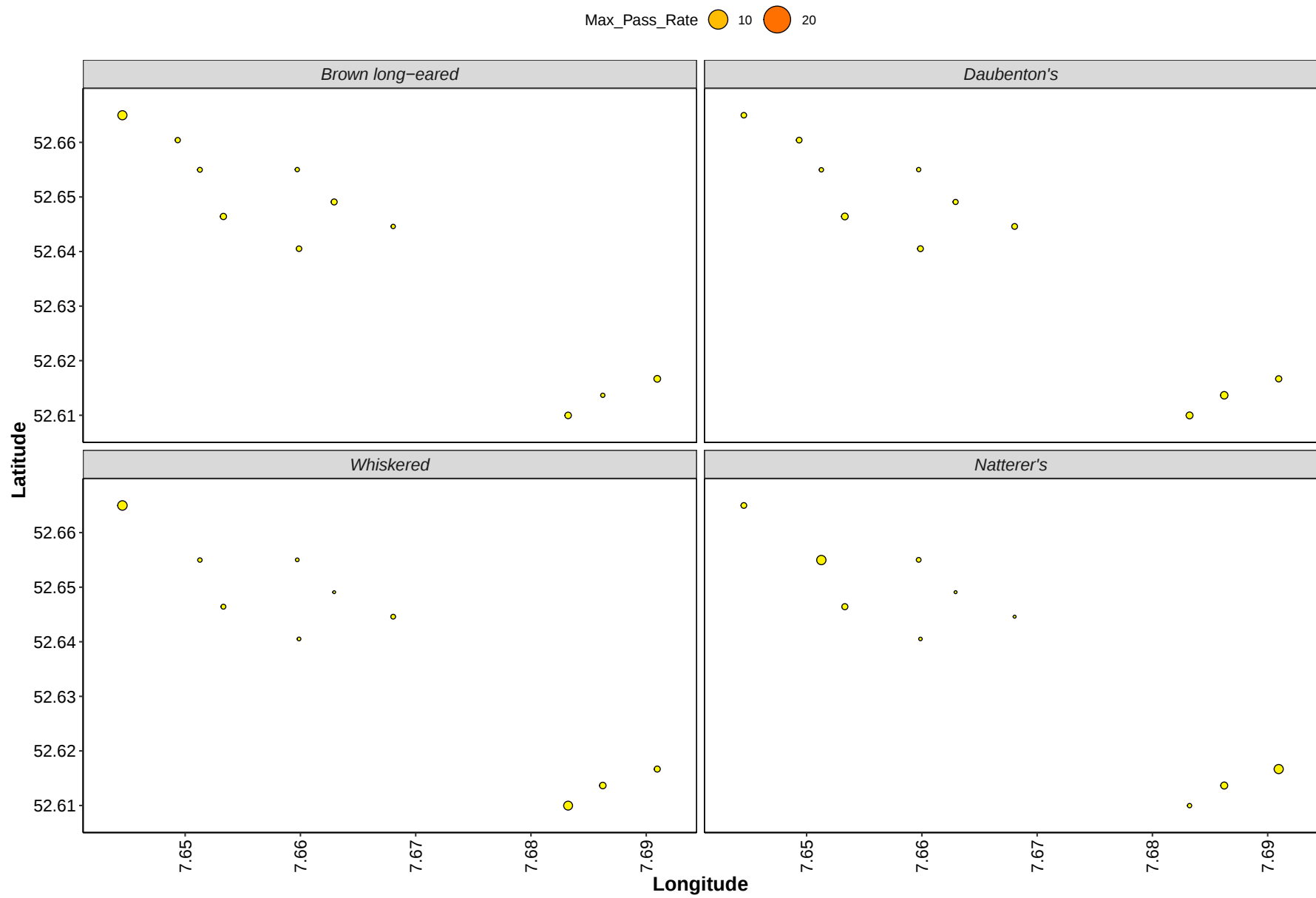


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





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	L1	0.3
Brown long-eared	L10	0.0
Brown long-eared	L11	0.2
Brown long-eared	L2	0.0
Brown long-eared	L3	0.0
Brown long-eared	L4	0.0
Brown long-eared	L5	0.1
Brown long-eared	L6	0.2
Brown long-eared	L7	0.0
Brown long-eared	L8	0.2
Brown long-eared	L9	0.3
Common pipistrelle	L1	3.2
Common pipistrelle	L10	1.1
Common pipistrelle	L11	1.9
Common pipistrelle	L2	1.3
Common pipistrelle	L3	0.7
Common pipistrelle	L4	0.9
Common pipistrelle	L5	1.4
Common pipistrelle	L6	2.5
Common pipistrelle	L7	1.6
Common pipistrelle	L8	4.3
Common pipistrelle	L9	1.0
Daubenton's	L1	0.2
Daubenton's	L10	0.2
Daubenton's	L11	0.2
Daubenton's	L2	0.1
Daubenton's	L3	0.1
Daubenton's	L4	0.1
Daubenton's	L5	0.1
Daubenton's	L6	0.2
Daubenton's	L7	0.1
Daubenton's	L8	0.1
Daubenton's	L9	0.2
Leisler's	L1	0.9
Leisler's	L10	1.2
Leisler's	L11	1.4

Species	Detector ID	Median Pass Rate
Leisler's	L2	0.5
Leisler's	L3	0.7
Leisler's	L4	1.1
Leisler's	L5	1.0
Leisler's	L6	1.2
Leisler's	L7	0.6
Leisler's	L8	1.7
Leisler's	L9	1.7
Nathusius'	L1	0.0
Nathusius'	L10	0.0
Nathusius'	L11	0.0
Nathusius'	L2	0.0
Nathusius'	L3	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.0
Nathusius'	L7	0.0
Nathusius'	L8	0.0
Nathusius'	L9	0.0
Natterer's	L1	0.0
Natterer's	L10	0.2
Natterer's	L11	0.0
Natterer's	L2	0.0
Natterer's	L3	0.1
Natterer's	L4	0.1
Natterer's	L5	0.0
Natterer's	L6	0.1
Natterer's	L7	0.0
Natterer's	L8	0.0
Natterer's	L9	0.0
Soprano pipistrelle	L1	7.7
Soprano pipistrelle	L10	7.2
Soprano pipistrelle	L11	4.0
Soprano pipistrelle	L2	3.1
Soprano pipistrelle	L3	2.0
Soprano pipistrelle	L4	1.7

Species	Detector ID	Median Pass Rate
Soprano pipistrelle	L5	1.6
Soprano pipistrelle	L6	1.4
Soprano pipistrelle	L7	1.8
Soprano pipistrelle	L8	1.1
Soprano pipistrelle	L9	1.7
Whiskered	L1	0.1
Whiskered	L10	0.1
Whiskered	L11	0.0
Whiskered	L2	0.0
Whiskered	L3	0.0
Whiskered	L4	0.0
Whiskered	L5	0.0
Whiskered	L6	0.0
Whiskered	L7	0.0
Whiskered	L8	0.0
Whiskered	L9	0.1

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.

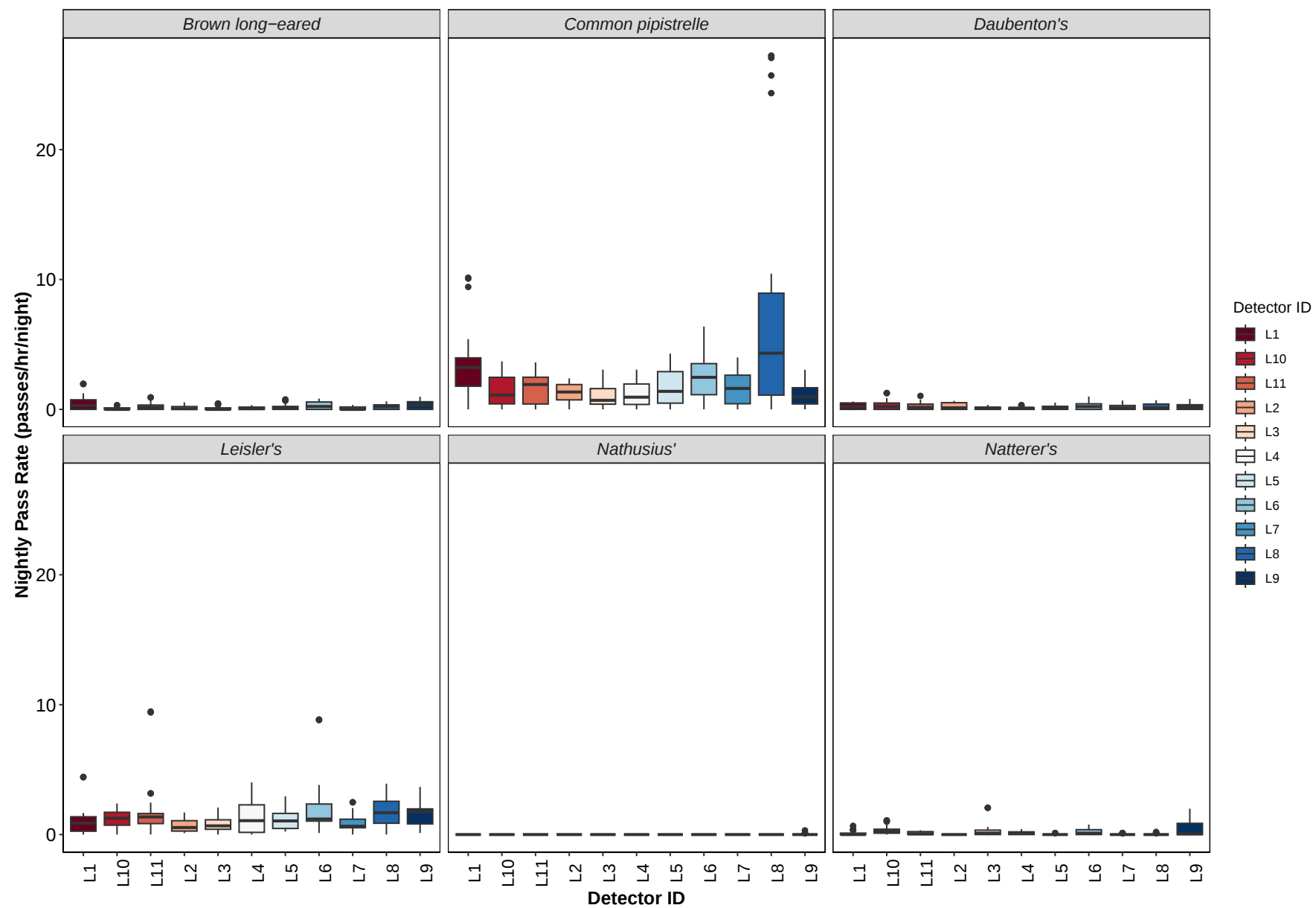
Species	Detector ID	Mean Pass Rate
Brown long-eared	L1	0.5
Brown long-eared	L10	0.1
Brown long-eared	L11	0.2
Brown long-eared	L2	0.1
Brown long-eared	L3	0.1
Brown long-eared	L4	0.1
Brown long-eared	L5	0.2
Brown long-eared	L6	0.3
Brown long-eared	L7	0.1
Brown long-eared	L8	0.2
Brown long-eared	L9	0.3
Common pipistrelle	L1	3.5
Common pipistrelle	L10	1.5
Common pipistrelle	L11	1.7
Common pipistrelle	L2	1.3
Common pipistrelle	L3	1.1
Common pipistrelle	L4	1.2
Common pipistrelle	L5	1.7
Common pipistrelle	L6	2.6
Common pipistrelle	L7	1.5
Common pipistrelle	L8	7.5
Common pipistrelle	L9	1.1
Daubenton's	L1	0.3
Daubenton's	L10	0.3
Daubenton's	L11	0.2
Daubenton's	L2	0.3
Daubenton's	L3	0.1
Daubenton's	L4	0.1
Daubenton's	L5	0.2
Daubenton's	L6	0.3
Daubenton's	L7	0.2
Daubenton's	L8	0.2
Daubenton's	L9	0.2
Leisler's	L1	1.0
Leisler's	L10	1.2
Leisler's	L11	1.9

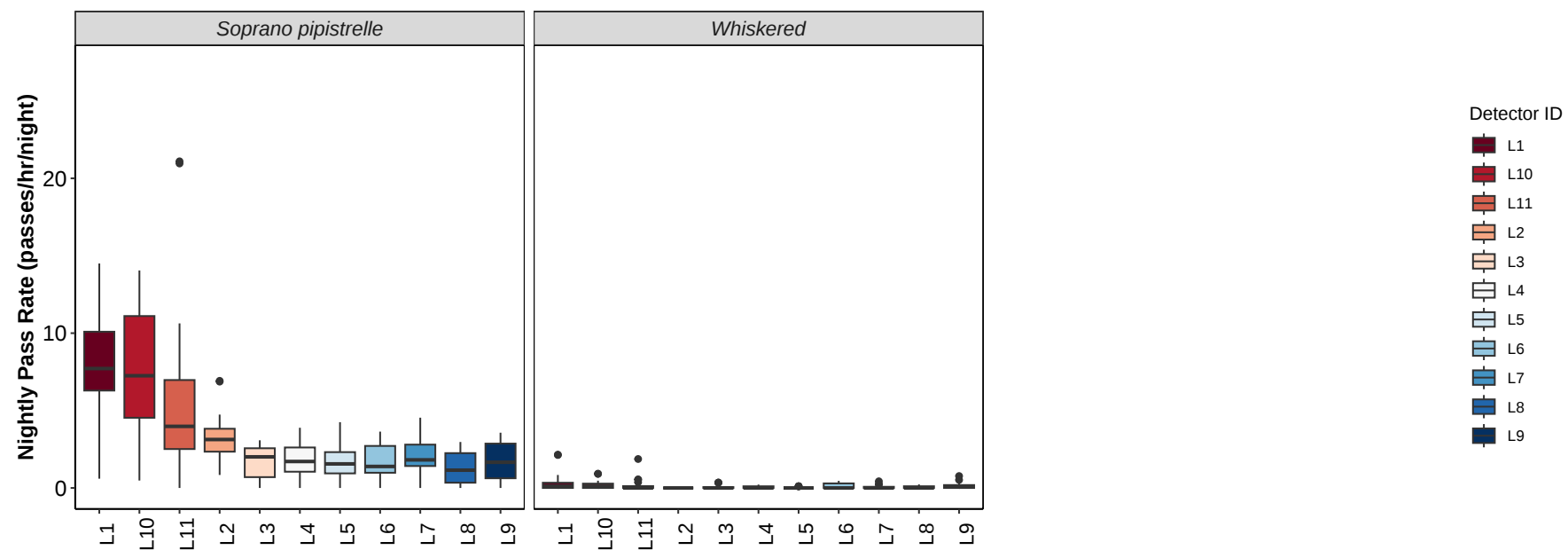
Species	Detector ID	Mean Pass Rate
Leisler's	L2	0.7
Leisler's	L3	0.7
Leisler's	L4	1.4
Leisler's	L5	1.2
Leisler's	L6	2.0
Leisler's	L7	0.9
Leisler's	L8	1.8
Leisler's	L9	1.6
Nathusius'	L1	0.0
Nathusius'	L10	0.0
Nathusius'	L11	0.0
Nathusius'	L2	0.0
Nathusius'	L3	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.0
Nathusius'	L7	0.0
Nathusius'	L8	0.0
Nathusius'	L9	0.0
Natterer's	L1	0.1
Natterer's	L10	0.3
Natterer's	L11	0.1
Natterer's	L2	0.0
Natterer's	L3	0.4
Natterer's	L4	0.1
Natterer's	L5	0.0
Natterer's	L6	0.2
Natterer's	L7	0.0
Natterer's	L8	0.0
Natterer's	L9	0.5
Soprano pipistrelle	L1	8.0
Soprano pipistrelle	L10	7.0
Soprano pipistrelle	L11	5.5
Soprano pipistrelle	L2	3.2
Soprano pipistrelle	L3	1.7
Soprano pipistrelle	L4	1.9

Species	Detector ID	Mean Pass Rate
Soprano pipistrelle	L5	1.8
Soprano pipistrelle	L6	1.7
Soprano pipistrelle	L7	2.1
Soprano pipistrelle	L8	1.2
Soprano pipistrelle	L9	1.7
Whiskered	L1	0.3
Whiskered	L10	0.2
Whiskered	L11	0.2
Whiskered	L2	0.0
Whiskered	L3	0.1
Whiskered	L4	0.0
Whiskered	L5	0.0
Whiskered	L6	0.1
Whiskered	L7	0.1
Whiskered	L8	0.0
Whiskered	L9	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.





Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jul	L1	5
Jul	L10	5
Jul	L11	5
Jul	L2	3
Jul	L3	5
Jul	L4	3
Jul	L5	5
Jul	L6	5
Jul	L7	4
Jul	L8	5
Jul	L9	5
Aug	L1	21
Aug	L10	22
Aug	L11	21
Aug	L2	19
Aug	L3	10
Aug	L4	19
Aug	L5	21
Aug	L6	21
Aug	L7	22
Aug	L8	20
Aug	L9	21

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the ‘average’ activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Aug	Jul
Brown long-eared	L1	0.4	0.0
Brown long-eared	L10	0.0	0.0
Brown long-eared	L11	0.2	0.0
Brown long-eared	L2	0.0	0.2
Brown long-eared	L3	0.1	0.0
Brown long-eared	L4	0.1	0.0
Brown long-eared	L5	0.1	0.0
Brown long-eared	L6	0.2	0.0
Brown long-eared	L7	0.0	0.0
Brown long-eared	L8	0.3	0.0
Brown long-eared	L9	0.4	0.0
Common pipistrelle	L1	3.9	0.0
Common pipistrelle	L10	2.2	0.4
Common pipistrelle	L11	2.2	0.0
Common pipistrelle	L2	1.4	0.2
Common pipistrelle	L3	1.3	0.6
Common pipistrelle	L4	1.0	0.6
Common pipistrelle	L5	1.9	0.5
Common pipistrelle	L6	2.5	0.6
Common pipistrelle	L7	1.9	0.2
Common pipistrelle	L8	5.8	1.1
Common pipistrelle	L9	1.0	0.4
Daubenton's	L1	0.2	0.0
Daubenton's	L10	0.3	0.0
Daubenton's	L11	0.2	0.0
Daubenton's	L2	0.3	0.1
Daubenton's	L3	0.1	0.0
Daubenton's	L4	0.1	0.1
Daubenton's	L5	0.1	0.0
Daubenton's	L6	0.3	0.0
Daubenton's	L7	0.1	0.1
Daubenton's	L8	0.2	0.1
Daubenton's	L9	0.2	0.0
Leisler's	L1	1.1	0.1
Leisler's	L10	1.2	0.7
Leisler's	L11	1.4	0.2

Species	Detector ID	Aug	Jul
Leisler's	L2	0.7	0.2
Leisler's	L3	0.6	0.7
Leisler's	L4	1.1	0.1
Leisler's	L5	1.0	1.3
Leisler's	L6	1.4	0.5
Leisler's	L7	0.6	0.8
Leisler's	L8	1.7	1.8
Leisler's	L9	1.8	0.7
Nathusius'	L1	0.0	0.0
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.0	0.0
Nathusius'	L2	0.0	0.0
Nathusius'	L3	0.0	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.0	0.0
Nathusius'	L7	0.0	0.0
Nathusius'	L8	0.0	0.0
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.0	0.0
Natterer's	L10	0.3	0.2
Natterer's	L11	0.1	0.0
Natterer's	L2	0.0	0.0
Natterer's	L3	0.2	0.0
Natterer's	L4	0.1	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.1	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.0
Natterer's	L9	0.1	0.0
Soprano pipistrelle	L1	8.6	4.1
Soprano pipistrelle	L10	7.4	0.5
Soprano pipistrelle	L11	4.4	0.1
Soprano pipistrelle	L2	3.2	0.8
Soprano pipistrelle	L3	2.1	0.8
Soprano pipistrelle	L4	2.1	0.6

Species	Detector ID	Aug	Jul
Soprano pipistrelle	L5	1.8	0.8
Soprano pipistrelle	L6	2.0	0.0
Soprano pipistrelle	L7	2.0	0.9
Soprano pipistrelle	L8	1.4	0.0
Soprano pipistrelle	L9	2.0	0.4
Whiskered	L1	0.2	0.0
Whiskered	L10	0.1	0.0
Whiskered	L11	0.0	0.0
Whiskered	L2	0.0	0.0
Whiskered	L3	0.0	0.0
Whiskered	L4	0.0	0.0
Whiskered	L5	0.0	0.0
Whiskered	L6	0.0	0.0
Whiskered	L7	0.0	0.0
Whiskered	L8	0.0	0.0
Whiskered	L9	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	Aug	Jul
Brown long-eared	L1	0.6	0.1
Brown long-eared	L10	0.1	0.0
Brown long-eared	L11	0.3	0.0
Brown long-eared	L2	0.1	0.2
Brown long-eared	L3	0.2	0.0
Brown long-eared	L4	0.1	0.0
Brown long-eared	L5	0.2	0.1
Brown long-eared	L6	0.4	0.0
Brown long-eared	L7	0.1	0.0
Brown long-eared	L8	0.3	0.1
Brown long-eared	L9	0.4	0.1
Common pipistrelle	L1	3.8	2.4
Common pipistrelle	L10	1.7	0.5
Common pipistrelle	L11	2.0	0.2
Common pipistrelle	L2	1.5	0.5
Common pipistrelle	L3	1.4	0.5
Common pipistrelle	L4	1.3	0.6
Common pipistrelle	L5	1.8	1.1
Common pipistrelle	L6	2.7	2.1
Common pipistrelle	L7	1.7	0.5
Common pipistrelle	L8	8.9	1.9
Common pipistrelle	L9	1.3	0.4
Daubenton's	L1	0.3	0.1
Daubenton's	L10	0.4	0.0
Daubenton's	L11	0.3	0.0
Daubenton's	L2	0.3	0.1
Daubenton's	L3	0.1	0.0
Daubenton's	L4	0.1	0.1
Daubenton's	L5	0.2	0.1
Daubenton's	L6	0.3	0.0
Daubenton's	L7	0.2	0.1
Daubenton's	L8	0.2	0.1
Daubenton's	L9	0.3	0.1
Leisler's	L1	1.2	0.2
Leisler's	L10	1.3	0.9
Leisler's	L11	2.2	0.4

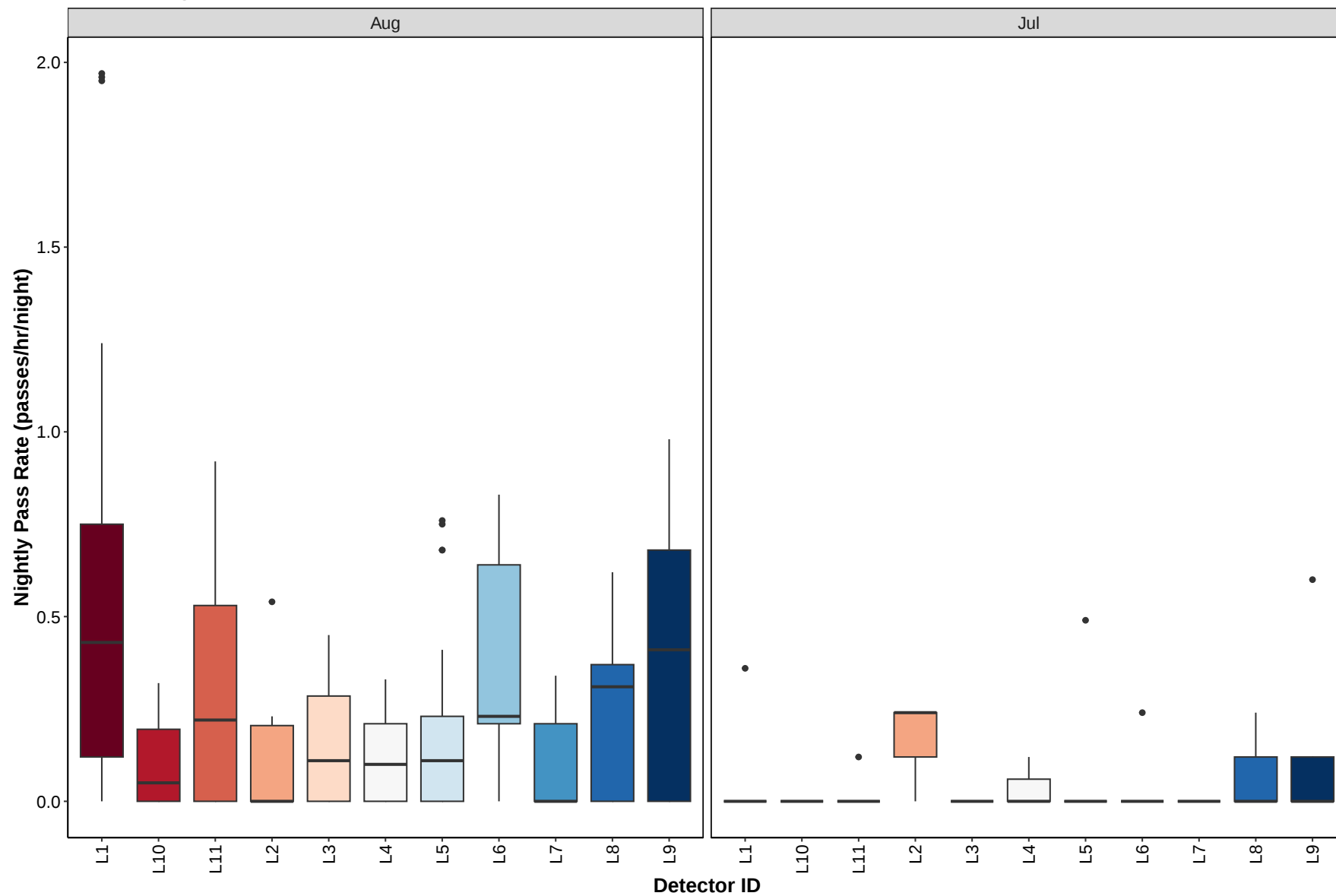
Species	Detector ID	Aug	Jul
Leisler's	L2	0.8	0.2
Leisler's	L3	0.8	0.7
Leisler's	L4	1.5	0.3
Leisler's	L5	1.2	1.0
Leisler's	L6	2.3	0.7
Leisler's	L7	0.9	0.7
Leisler's	L8	1.7	2.4
Leisler's	L9	1.7	1.1
Nathusius'	L1	0.0	0.0
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.0	0.0
Nathusius'	L2	0.0	0.0
Nathusius'	L3	0.0	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.0	0.0
Nathusius'	L7	0.0	0.0
Nathusius'	L8	0.0	0.0
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.1	0.0
Natterer's	L10	0.4	0.2
Natterer's	L11	0.1	0.0
Natterer's	L2	0.0	0.0
Natterer's	L3	0.5	0.1
Natterer's	L4	0.1	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.2	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.0
Natterer's	L9	0.5	0.3
Soprano pipistrelle	L1	9.1	3.4
Soprano pipistrelle	L10	8.1	2.3
Soprano pipistrelle	L11	6.5	1.0
Soprano pipistrelle	L2	3.5	1.5
Soprano pipistrelle	L3	2.0	1.2
Soprano pipistrelle	L4	2.0	0.8

Species	Detector ID	Aug	Jul
Soprano pipistrelle	L5	2.0	1.0
Soprano pipistrelle	L6	2.0	0.4
Soprano pipistrelle	L7	2.2	1.2
Soprano pipistrelle	L8	1.4	0.4
Soprano pipistrelle	L9	1.9	0.5
Whiskered	L1	0.4	0.0
Whiskered	L10	0.2	0.1
Whiskered	L11	0.2	0.1
Whiskered	L2	0.0	0.0
Whiskered	L3	0.1	0.0
Whiskered	L4	0.0	0.0
Whiskered	L5	0.0	0.0
Whiskered	L6	0.1	0.0
Whiskered	L7	0.0	0.1
Whiskered	L8	0.1	0.0
Whiskered	L9	0.2	0.0

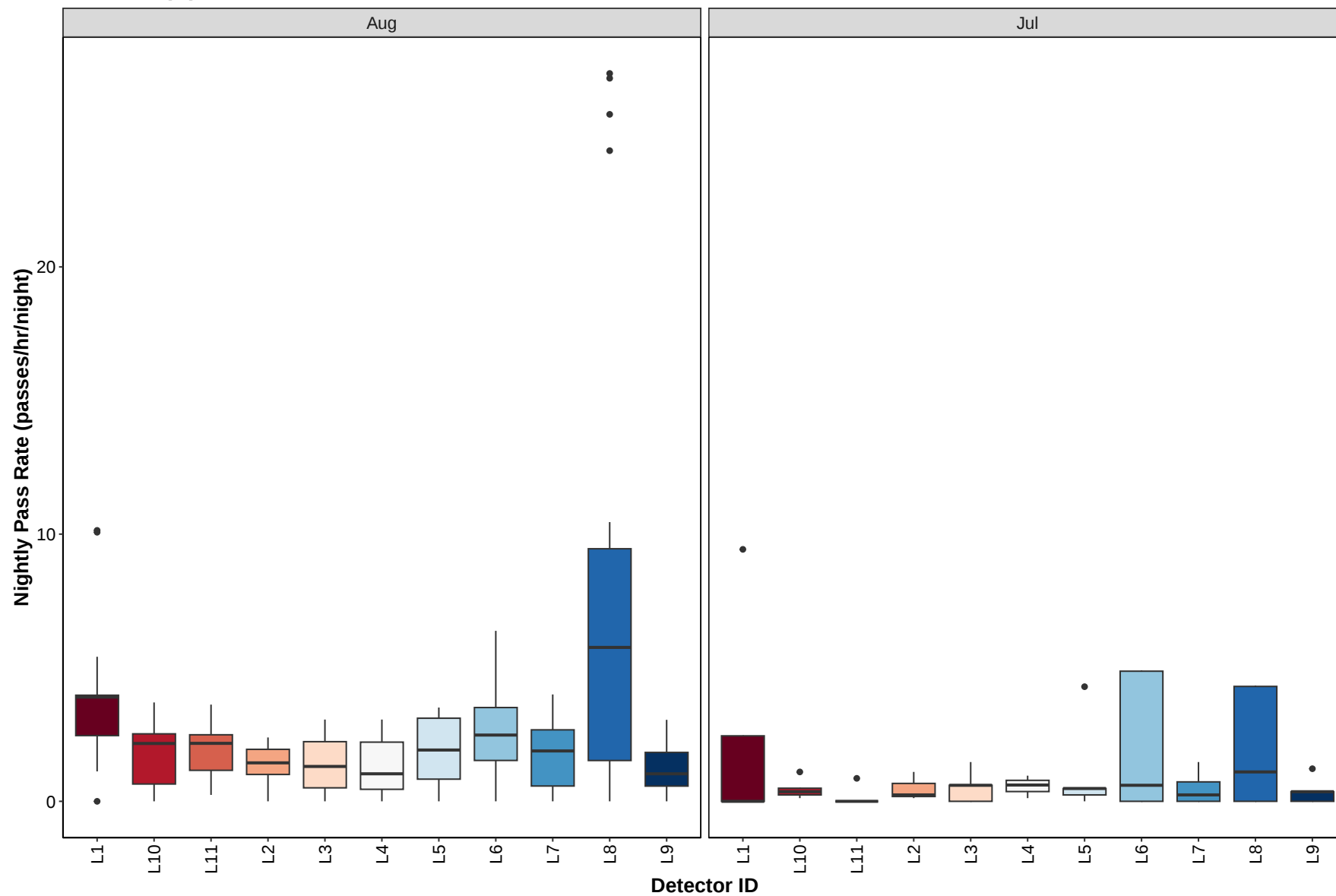
Per Detector

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.

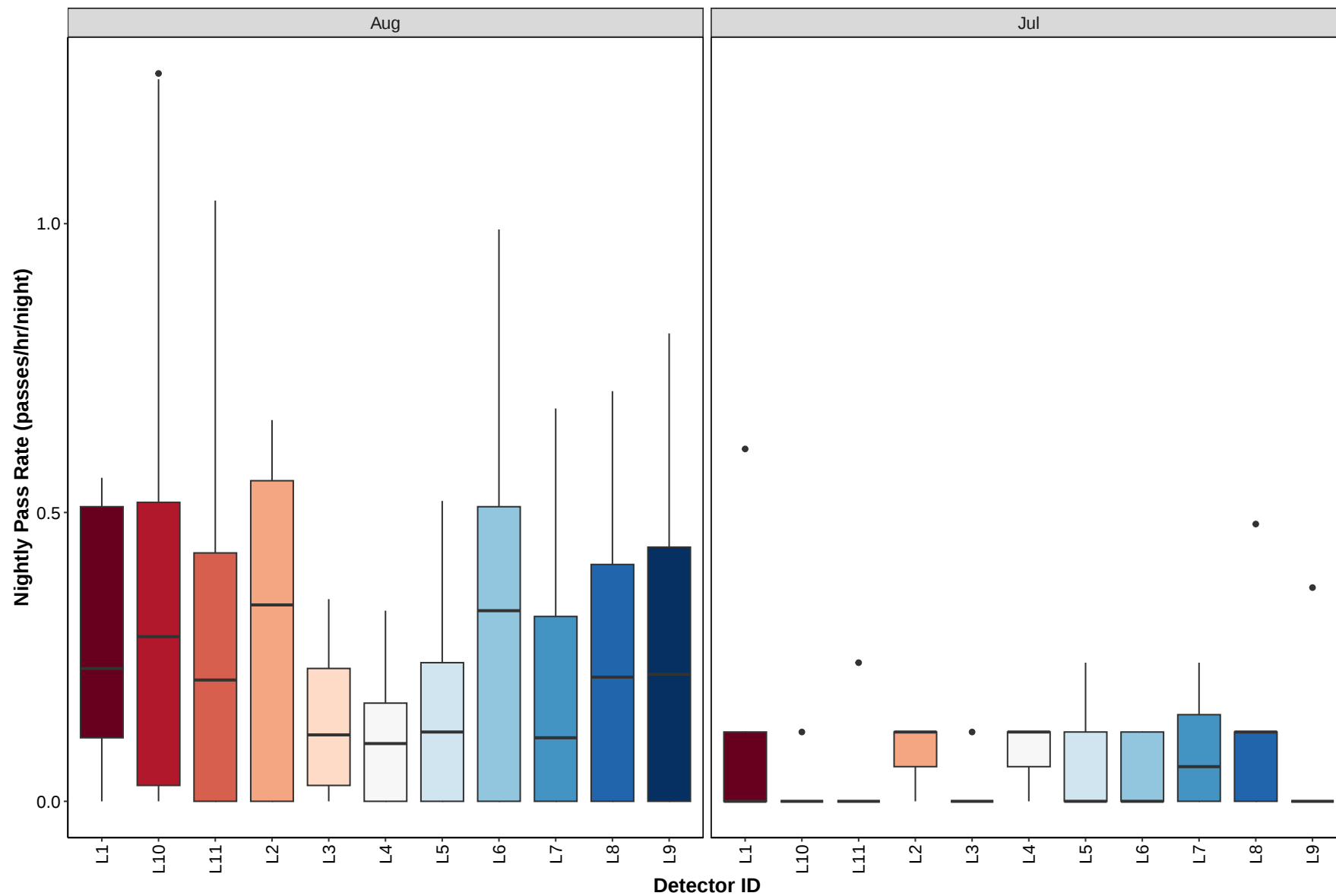
Brown long-eared



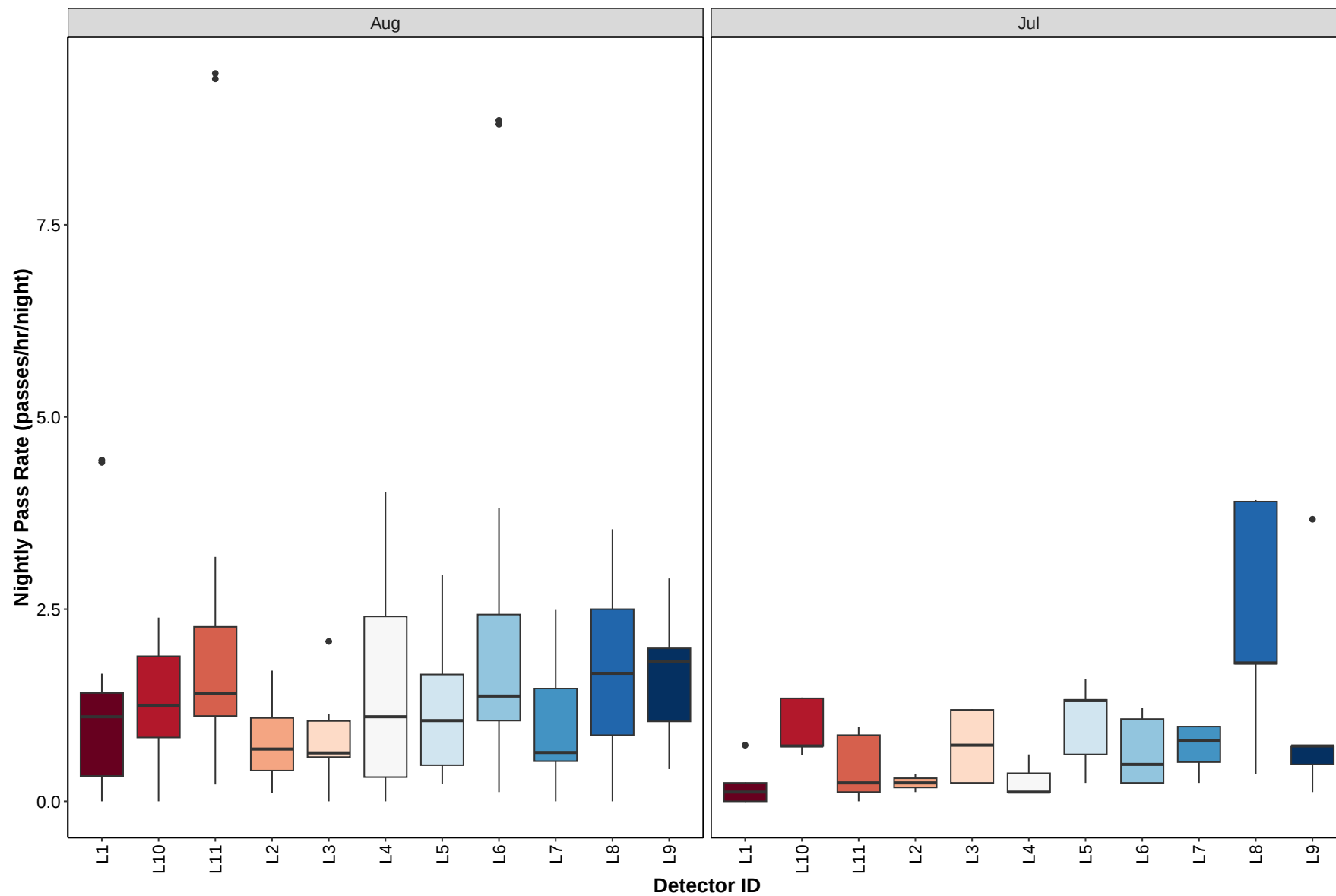
Common pipistrelle



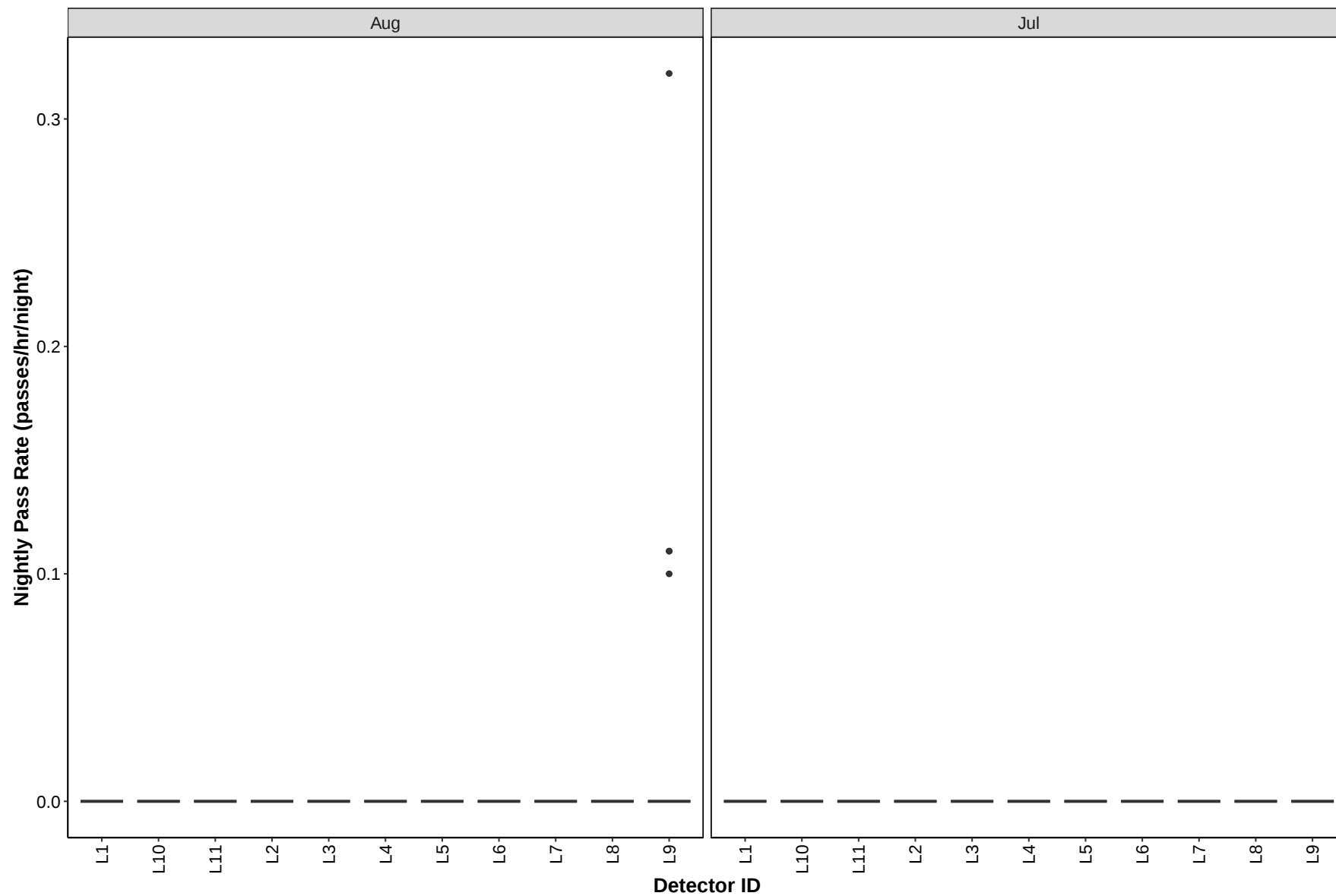
Daubenton's



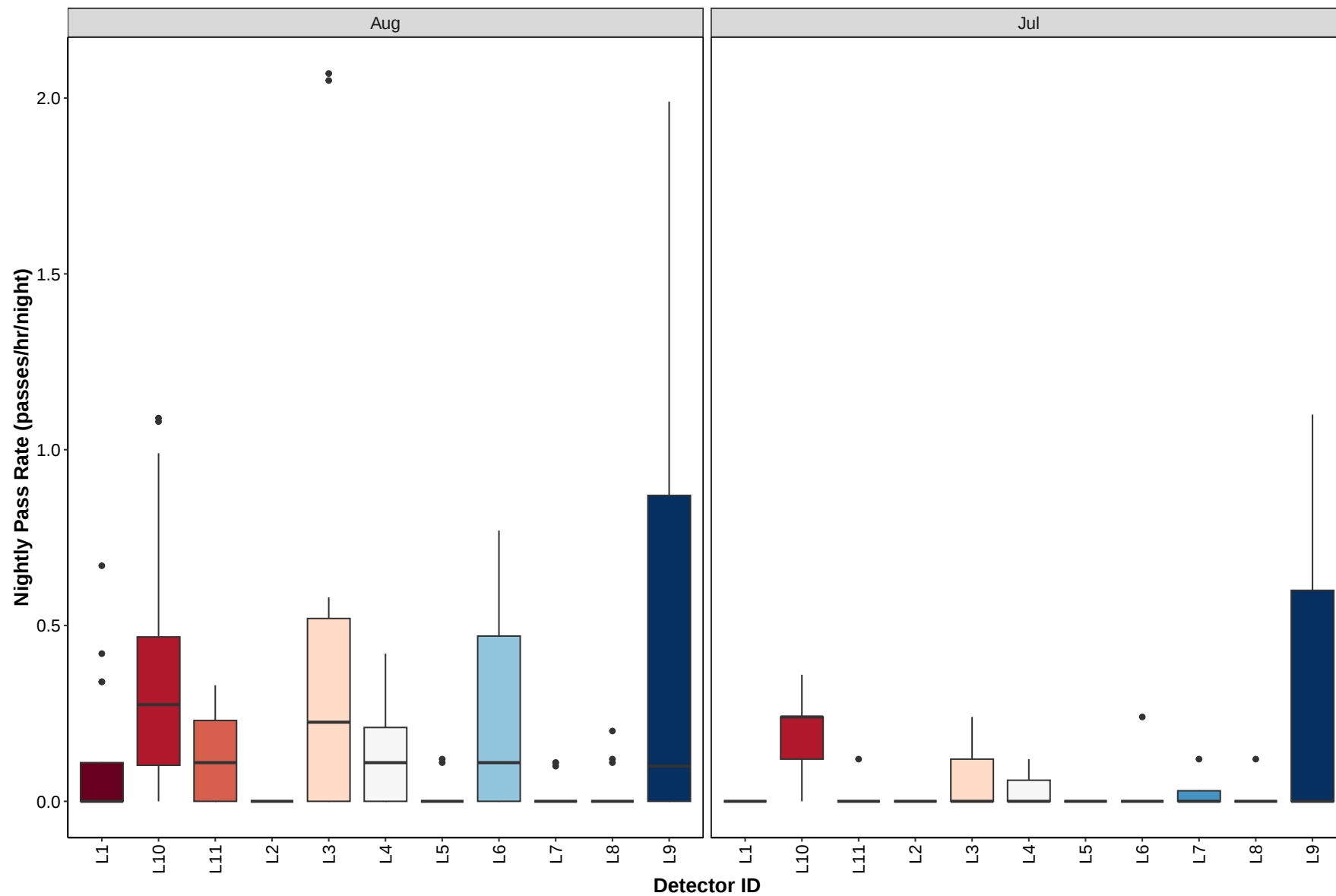
Leisler's



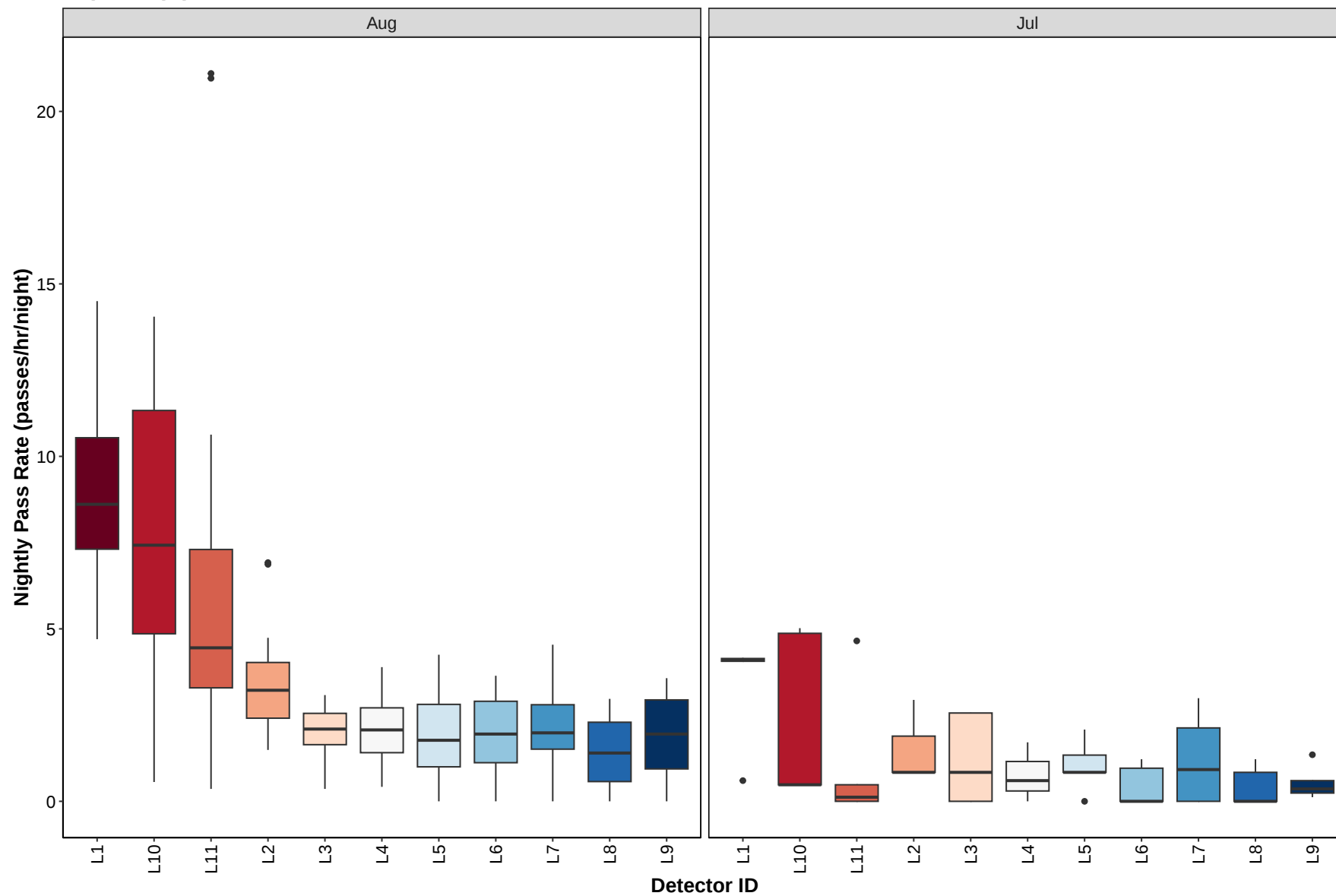
Nathusius'



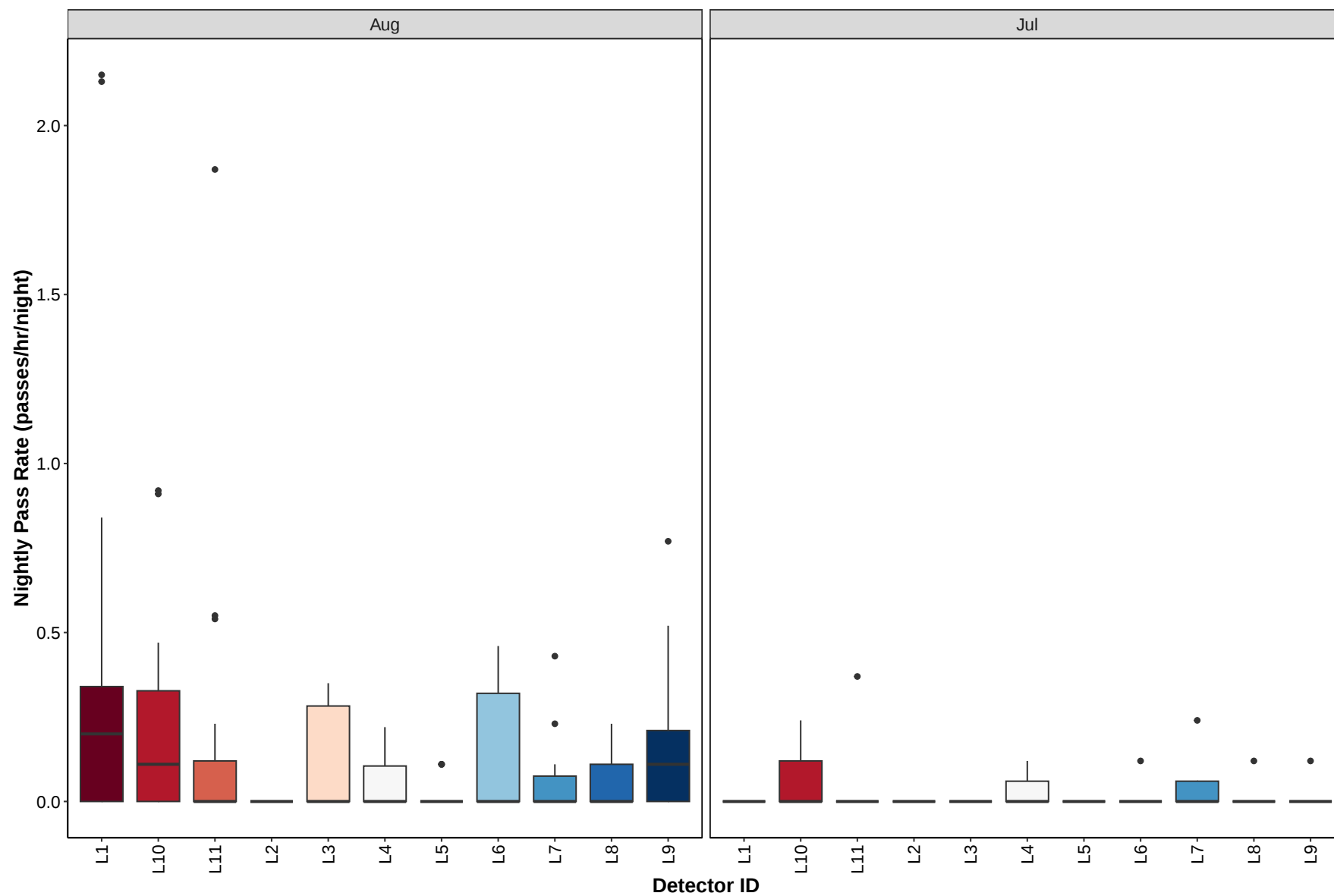
Natterer's



Soprano pipistrelle



Whiskered



Bat Activity per Detector Location

Figure 18. Detector ID reference:

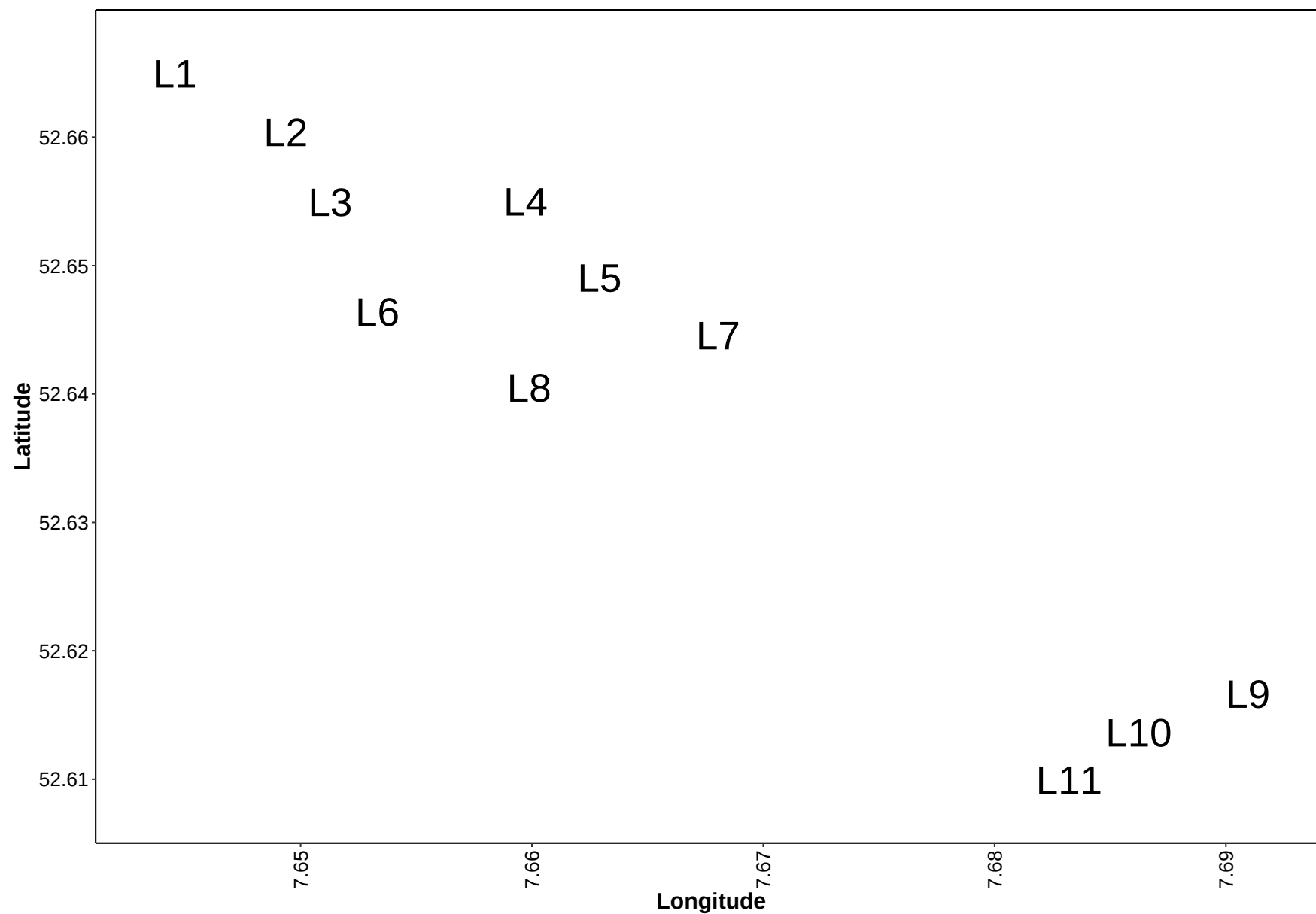
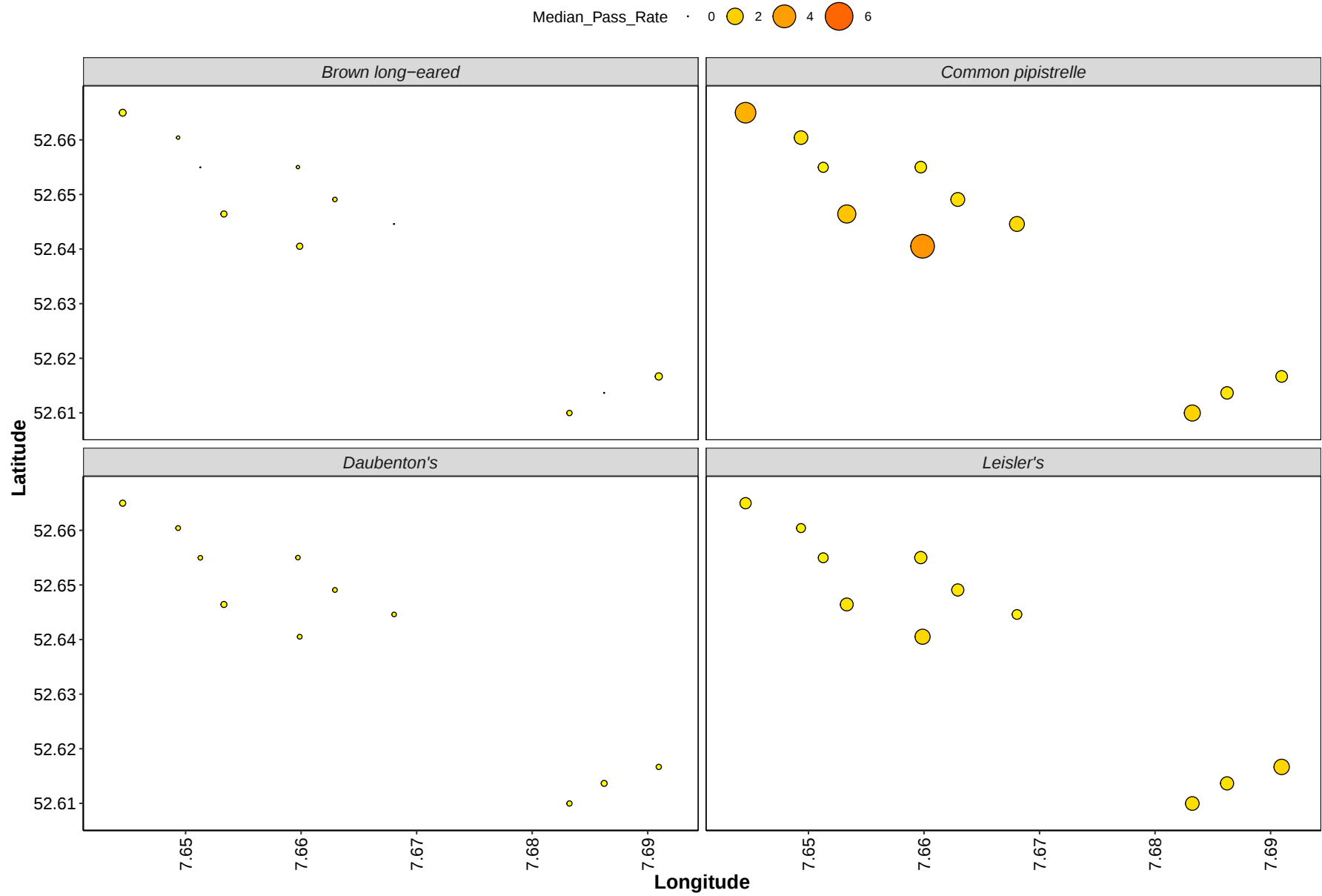


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



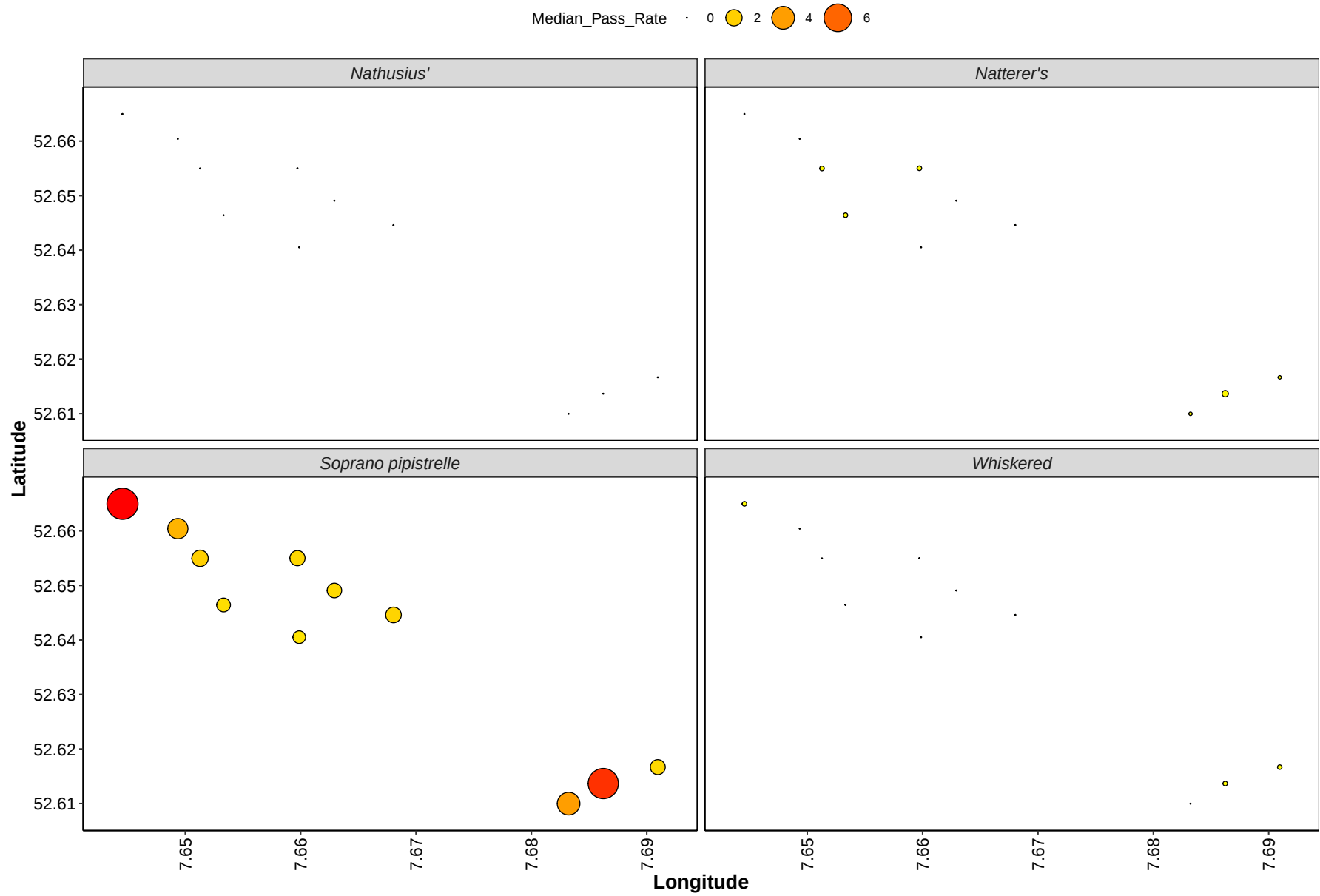
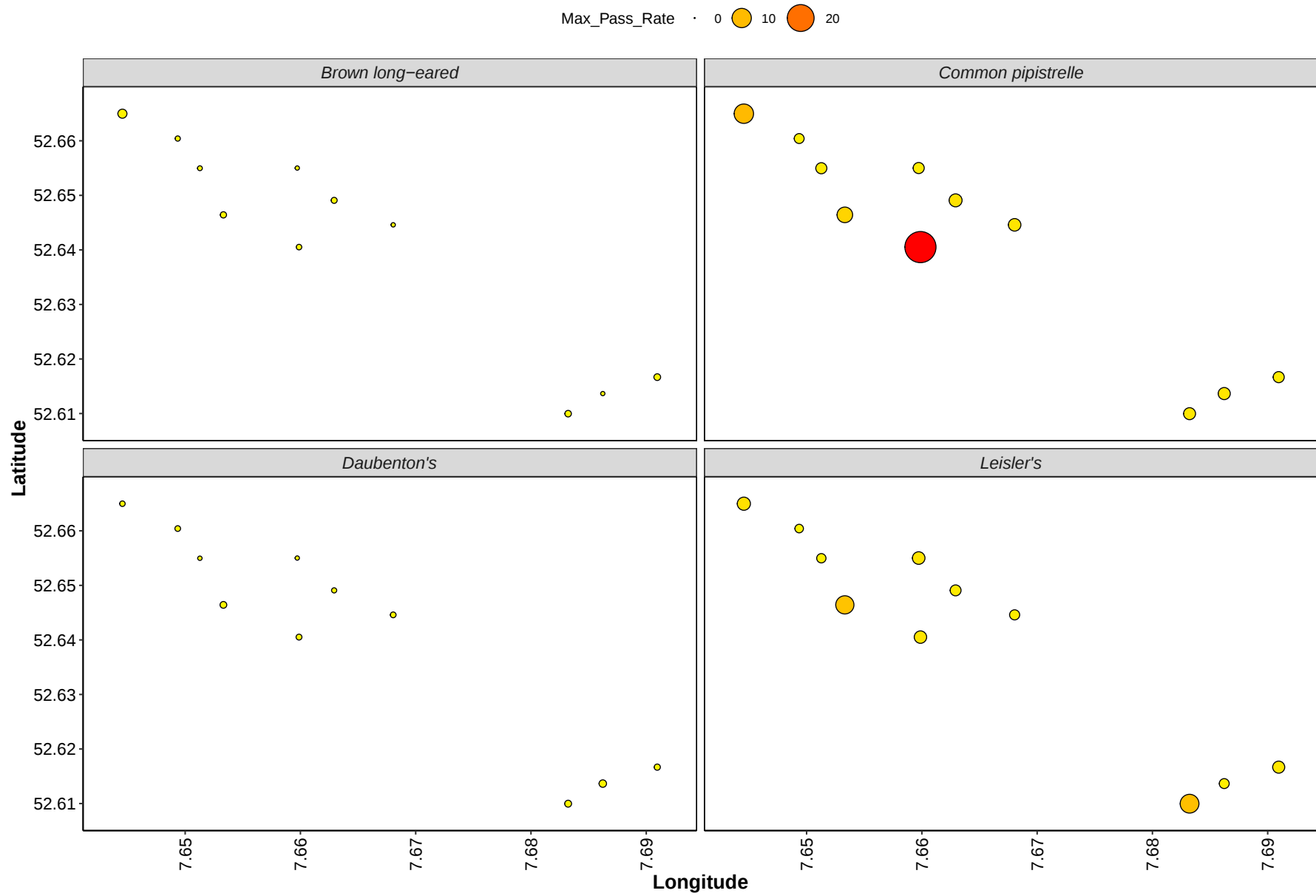
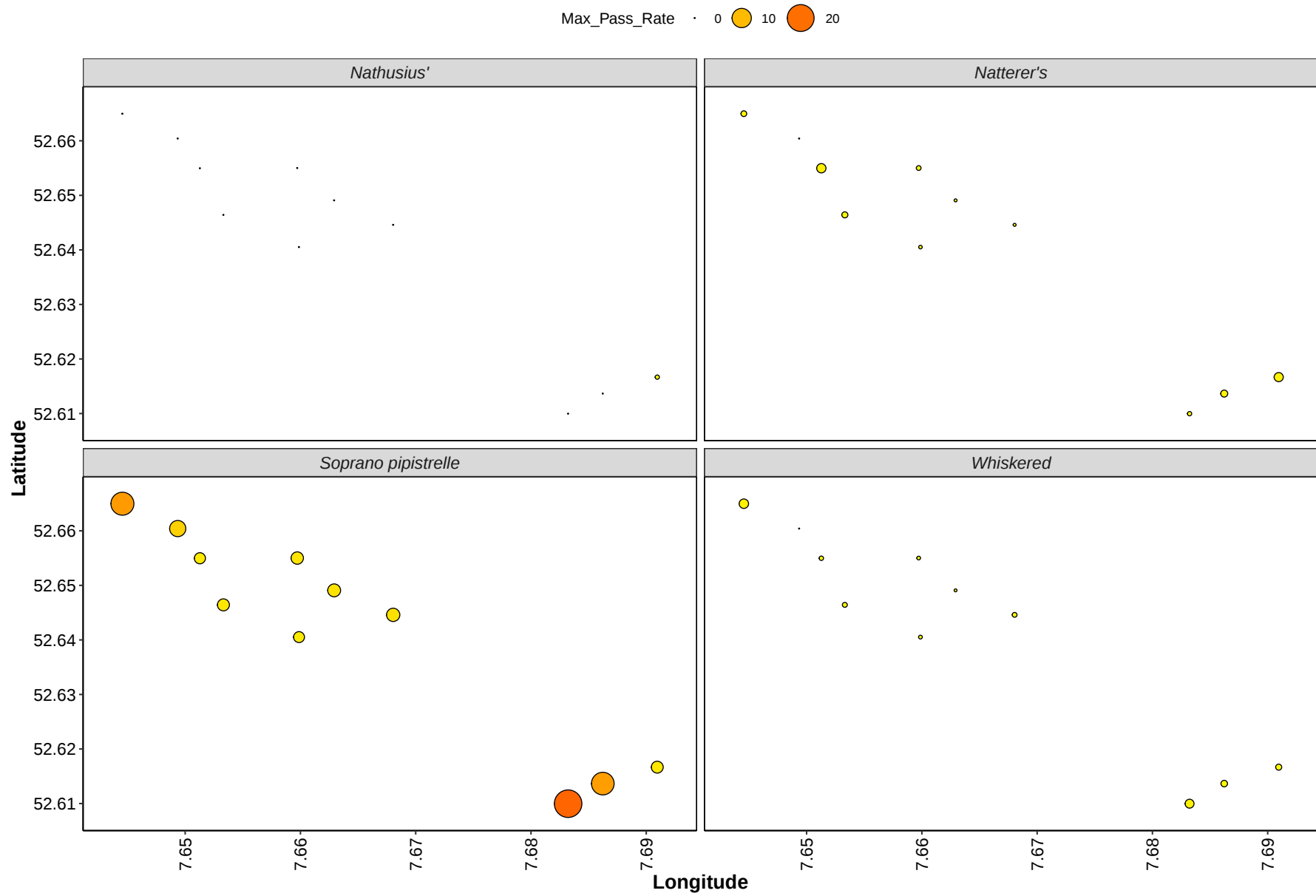


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





Thank you for using Ecobat!



Ecobat Report

2026-01-09

Geo filter: all, Time filter: all

Summary

Bats were detected on **22** nights between **20/09/2023** and **11/10/2023**, using **10** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

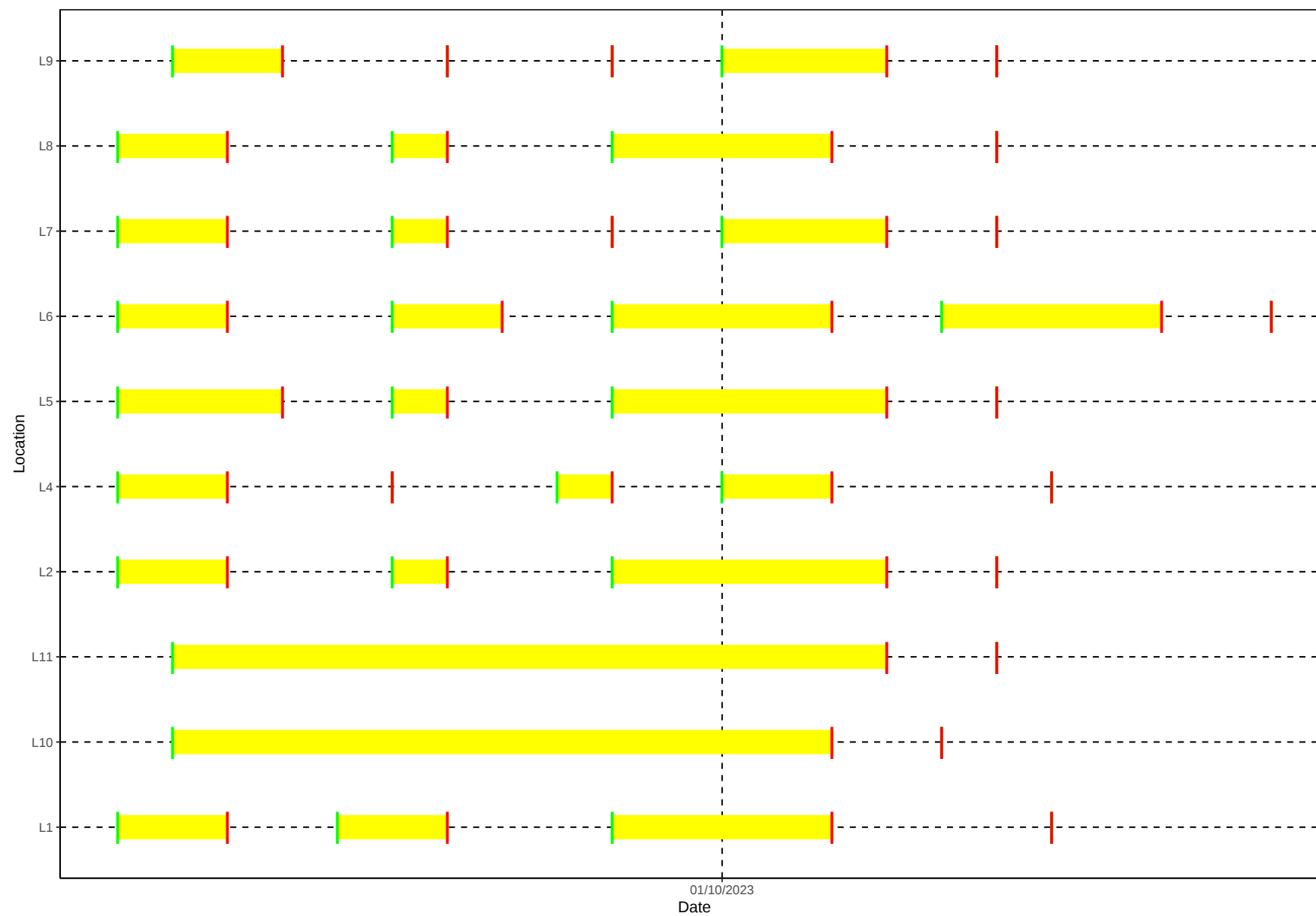
Detector ID	Latitude	Longitude
L1	52.66497	7.644556
L2	52.66041	7.649355
L4	52.65501	7.659723
L5	52.64908	7.662925
L6	52.66497	7.644556
L7	52.66497	7.644556
L8	52.64051	7.659876
L9	52.61667	7.690955
L9	52.66497	7.644556
L10	52.61366	7.686230
L11	52.60997	7.683222
L7	52.64459	7.668046
L6	52.64642	7.653317

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
L1	16
L10	19
L11	20
L2	17
L4	12
L5	18
L6	17
L7	15
L8	16
L9	15

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



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
L1	Myotis daubentonii	0	0	0	0	0	5
L1	Myotis mystacinus	0	0	0	0	0	3
L1	Myotis nattereri	0	0	0	0	1	0
L1	Nyctalus leisleri	0	0	0	0	0	15
L1	Pipistrellus pipistrellus	0	0	0	0	0	7
L1	Pipistrellus pygmaeus	0	0	0	0	0	10
L1	Plecotus auritus	0	0	0	0	0	2
L10	Myotis daubentonii	0	0	0	0	0	10
L10	Myotis mystacinus	0	0	0	0	0	1
L10	Myotis nattereri	0	0	0	0	0	6
L10	Nyctalus leisleri	0	0	0	0	0	11
L10	Pipistrellus nathusii	0	0	0	0	0	1
L10	Pipistrellus pipistrellus	0	0	0	0	0	10
L10	Pipistrellus pygmaeus	0	0	0	0	6	9
L10	Plecotus auritus	0	0	0	0	0	2
L11	Myotis daubentonii	0	0	0	0	0	13
L11	Myotis mystacinus	0	0	0	0	0	5
L11	Myotis nattereri	0	0	0	0	0	8
L11	Nyctalus leisleri	0	0	0	0	0	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
L11	Pipistrellus nathusii	0	0	0	0	0	3
L11	Pipistrellus pipistrellus	0	0	0	0	0	12
L11	Pipistrellus pygmaeus	0	0	0	0	0	17
L11	Plecotus auritus	0	0	0	0	0	2
L2	Myotis daubentonii	0	0	0	0	0	10
L2	Myotis nattereri	0	0	0	0	0	4
L2	Nyctalus leisleri	0	0	0	0	0	14
L2	Pipistrellus nathusii	0	0	0	0	0	2
L2	Pipistrellus pipistrellus	0	0	0	0	0	8
L2	Pipistrellus pygmaeus	0	0	0	0	0	9
L2	Plecotus auritus	0	0	0	0	0	5
L4	Myotis daubentonii	0	0	0	0	0	8
L4	Myotis mystacinus	0	0	0	0	0	5
L4	Myotis nattereri	0	0	0	0	0	3
L4	Nyctalus leisleri	0	0	0	0	0	9
L4	Pipistrellus nathusii	0	0	0	0	0	2
L4	Pipistrellus pipistrellus	0	0	0	0	0	2
L4	Pipistrellus pygmaeus	0	0	0	0	0	6
L4	Plecotus auritus	0	0	0	0	0	1
L5	Myotis daubentonii	0	0	0	0	0	10
L5	Myotis nattereri	0	0	0	0	0	2

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
L5	Nyctalus leisleri	0	0	0	0	0	10
L5	Pipistrellus nathusii	0	0	0	0	0	2
L5	Pipistrellus pipistrellus	0	0	0	0	0	7
L5	Pipistrellus pygmaeus	0	0	0	0	0	7
L5	Plecotus auritus	0	0	0	0	0	3
L6	Myotis daubentonii	0	0	0	0	0	11
L6	Myotis mystacinus	0	0	0	0	0	2
L6	Myotis nattereri	0	0	0	0	0	1
L6	Nyctalus leisleri	0	0	0	0	0	12
L6	Pipistrellus nathusii	0	0	0	0	0	2
L6	Pipistrellus pipistrellus	0	0	0	0	0	11
L6	Pipistrellus pygmaeus	0	0	0	0	0	6
L6	Plecotus auritus	0	0	0	0	0	3
L7	Myotis daubentonii	0	0	0	0	0	12
L7	Myotis mystacinus	0	0	0	0	0	3
L7	Myotis nattereri	0	0	0	0	1	2
L7	Nyctalus leisleri	0	0	0	0	0	10
L7	Pipistrellus pipistrellus	0	0	0	0	0	4
L7	Pipistrellus pygmaeus	0	0	0	0	0	7
L7	Plecotus auritus	0	0	0	0	0	6
L8	Myotis daubentonii	0	0	0	0	0	9

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
L8	Myotis mystacinus	0	0	0	0	0	1
L8	Myotis nattereri	0	0	0	0	2	1
L8	Nyctalus leisleri	0	0	0	0	0	12
L8	Pipistrellus nathusii	0	0	0	0	0	2
L8	Pipistrellus pipistrellus	0	0	0	0	0	11
L8	Pipistrellus pygmaeus	0	0	0	0	0	5
L8	Plecotus auritus	0	0	0	0	0	7
L9	Myotis daubentonii	0	0	0	0	0	8
L9	Myotis mystacinus	0	0	0	0	0	8
L9	Myotis nattereri	0	0	0	0	3	3
L9	Nyctalus leisleri	0	0	0	0	0	10
L9	Pipistrellus nathusii	0	0	0	0	0	2
L9	Pipistrellus pipistrellus	0	0	0	0	0	8
L9	Pipistrellus pygmaeus	0	0	0	0	0	10
L9	Plecotus auritus	0	0	0	0	0	4

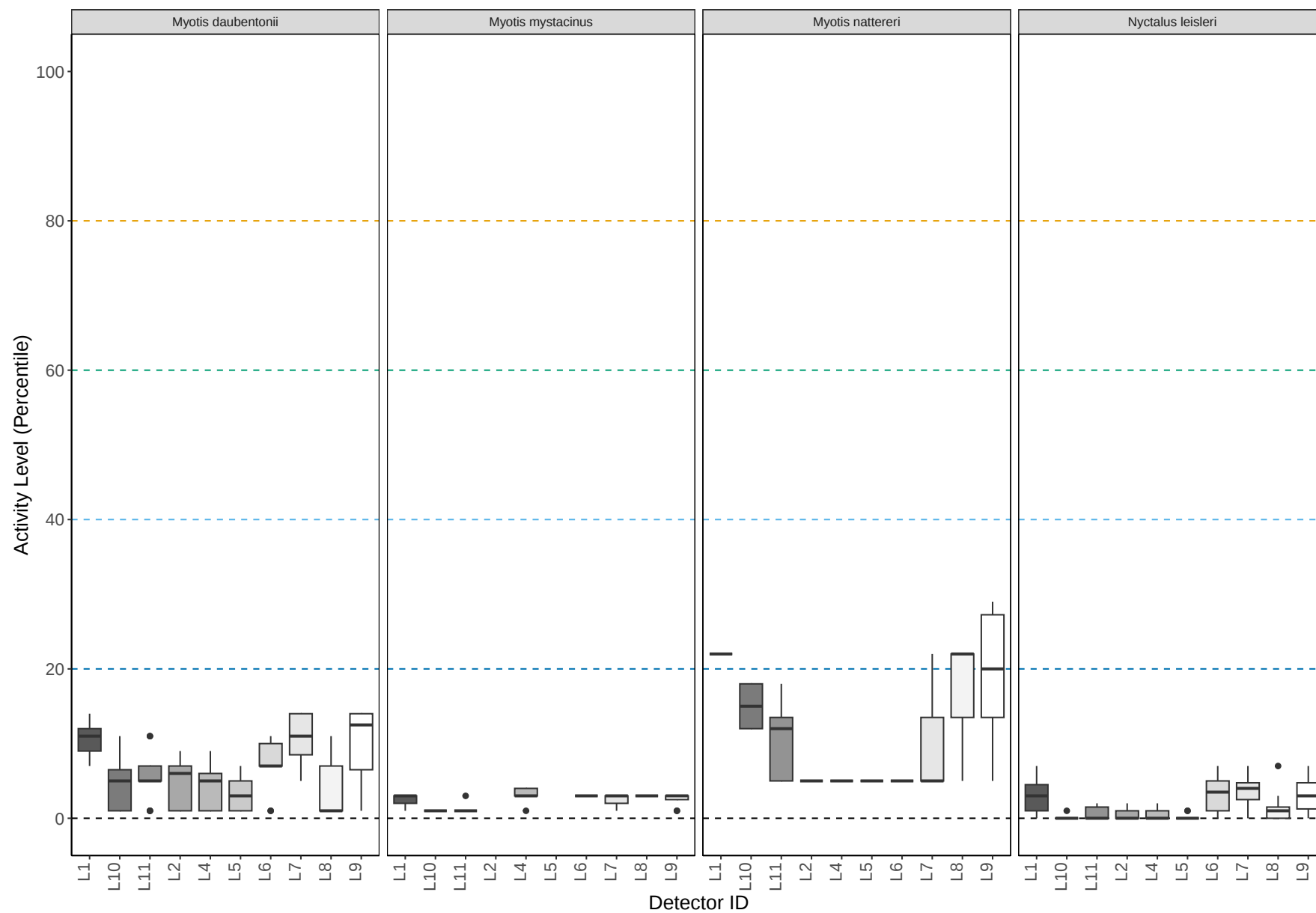
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L1	Myotis daubentonii	11	9 - 12.5	14	5	6506
L1	Myotis mystacinus	3	3 - 3	3	3	2691
L1	Myotis nattereri	22	0	22	1	1729
L1	Nyctalus leisleri	3	2.5 - 4.5	7	15	59294
L1	Pipistrellus pipistrellus	0	0 - 0	0	7	1533280
L1	Pipistrellus pygmaeus	0	0 - 0	1	10	405380
L1	Plecotus auritus	7	6.5 - 6.5	12	2	23140
L10	Myotis daubentonii	5	1 - 7	11	10	6506
L10	Myotis mystacinus	1	0	1	1	2691
L10	Myotis nattereri	15	12 - 18	18	6	1729
L10	Nyctalus leisleri	0	0 - 0	1	11	59294
L10	Pipistrellus nathusii	8	0	8	1	3164
L10	Pipistrellus pipistrellus	0	0 - 0	0	10	1533280
L10	Pipistrellus pygmaeus	12	12.5 - 24	25	15	405380
L10	Plecotus auritus	4	4 - 4	4	2	23140
L11	Myotis daubentonii	5	3 - 8	11	13	6506
L11	Myotis mystacinus	1	1 - 1	3	5	2691
L11	Myotis nattereri	12	5 - 15	18	8	1729
L11	Nyctalus leisleri	0	2 - 2	2	7	59294
L11	Pipistrellus nathusii	14	14 - 14	14	3	3164
L11	Pipistrellus pipistrellus	0	0 - 0	0	12	1533280
L11	Pipistrellus pygmaeus	0	0 - 0	1	17	405380
L11	Plecotus auritus	1	1 - 1	1	2	23140
L2	Myotis daubentonii	6	1 - 8	9	10	6506
L2	Myotis nattereri	5	5 - 5	5	4	1729
L2	Nyctalus leisleri	0	1 - 1.5	2	14	59294
L2	Pipistrellus nathusii	11	11 - 11	14	2	3164
L2	Pipistrellus pipistrellus	0	0 - 0	0	8	1533280
L2	Pipistrellus pygmaeus	0	0 - 0	2	9	405380
L2	Plecotus auritus	1	1 - 2.5	4	5	23140
L4	Myotis daubentonii	5	1 - 7	9	8	6506
L4	Myotis mystacinus	3	2 - 4	4	5	2691
L4	Myotis nattereri	5	5 - 5	5	3	1729

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L4	Nyctalus leisleri	0	1 - 2	2	9	59294
L4	Pipistrellus nathusii	8	8 - 8	8	2	3164
L4	Pipistrellus pipistrellus	0	0 - 0	0	2	1533280
L4	Pipistrellus pygmaeus	0	0 - 0	0	6	405380
L4	Plecotus auritus	1	0	1	1	23140
L5	Myotis daubentonii	3	1 - 5	7	10	6506
L5	Myotis nattereri	5	5 - 5	5	2	1729
L5	Nyctalus leisleri	0	0 - 0	1	10	59294
L5	Pipistrellus nathusii	11	11 - 11	14	2	3164
L5	Pipistrellus pipistrellus	0	0 - 0	0	7	1533280
L5	Pipistrellus pygmaeus	0	0 - 0	0	7	405380
L5	Plecotus auritus	1	1 - 1	1	3	23140
L6	Myotis daubentonii	7	4 - 10	11	11	6506
L6	Myotis mystacinus	3	3 - 3	3	2	2691
L6	Myotis nattereri	5	0	5	1	1729
L6	Nyctalus leisleri	4	2 - 5	7	12	59294
L6	Pipistrellus nathusii	11	11 - 11	14	2	3164
L6	Pipistrellus pipistrellus	0	0 - 0	0	11	1533280
L6	Pipistrellus pygmaeus	0	0 - 0	0	6	405380
L6	Plecotus auritus	4	4 - 4	12	3	23140
L7	Myotis daubentonii	11	8 - 13	14	12	6506
L7	Myotis mystacinus	3	3 - 3	3	3	2691
L7	Myotis nattereri	5	5 - 5	22	3	1729
L7	Nyctalus leisleri	4	2.5 - 5.5	7	10	59294
L7	Pipistrellus pipistrellus	0	0 - 0	0	4	1533280
L7	Pipistrellus pygmaeus	0	0 - 0	1	7	405380
L7	Plecotus auritus	4	2.5 - 12	12	6	23140
L8	Myotis daubentonii	1	1 - 7	11	9	6506
L8	Myotis mystacinus	3	0	3	1	2691
L8	Myotis nattereri	22	22 - 22	22	3	1729
L8	Nyctalus leisleri	1	1 - 4	7	12	59294
L8	Pipistrellus nathusii	8	8 - 8	8	2	3164
L8	Pipistrellus pipistrellus	0	0 - 0	0	11	1533280
L8	Pipistrellus pygmaeus	0	0 - 0	0	5	405380
L8	Plecotus auritus	1	1 - 2.5	4	7	23140
L9	Myotis daubentonii	13	7.5 - 14	14	8	6506

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L9	Myotis mystacinus	3	2 - 3	3	8	2691
L9	Myotis nattereri	20	12 - 25.5	29	6	1729
L9	Nyctalus leisleri	3	2 - 5	7	10	59294
L9	Pipistrellus nathusii	11	11 - 11	14	2	3164
L9	Pipistrellus pipistrellus	0	0 - 0	0	8	1533280
L9	Pipistrellus pygmaeus	0	0 - 0	1	10	405380
L9	Plecotus auritus	1	1 - 1	1	4	23140

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



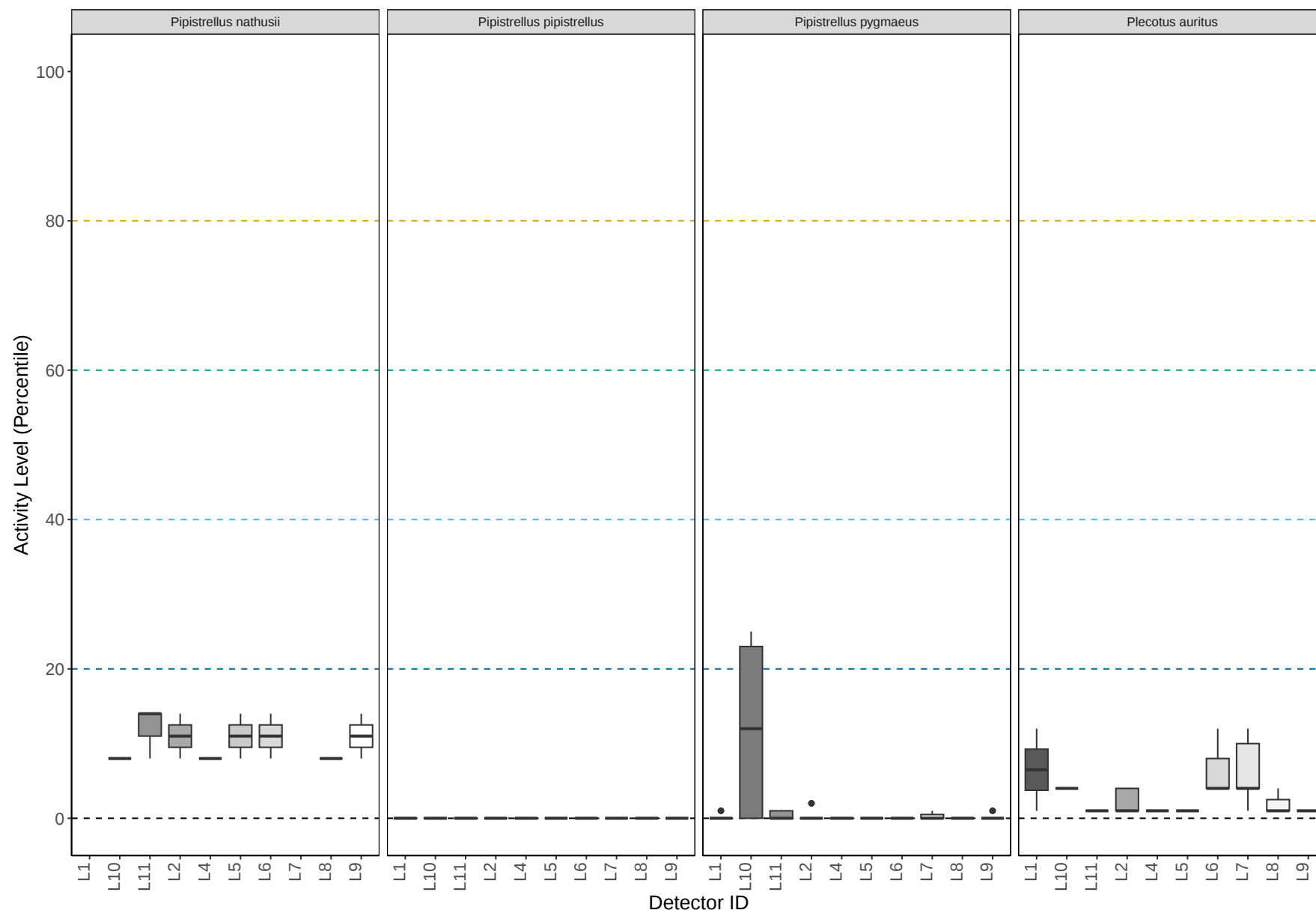
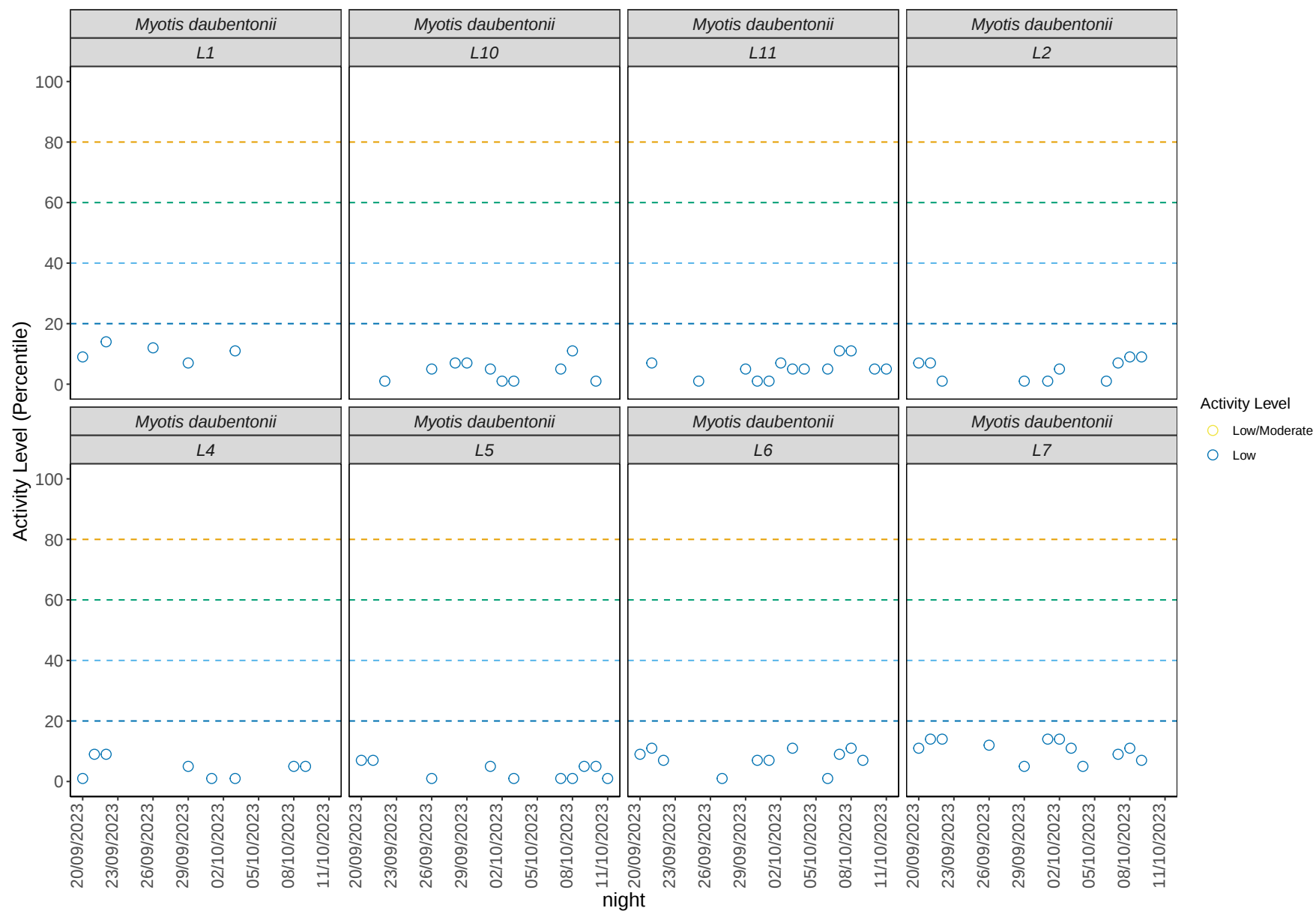
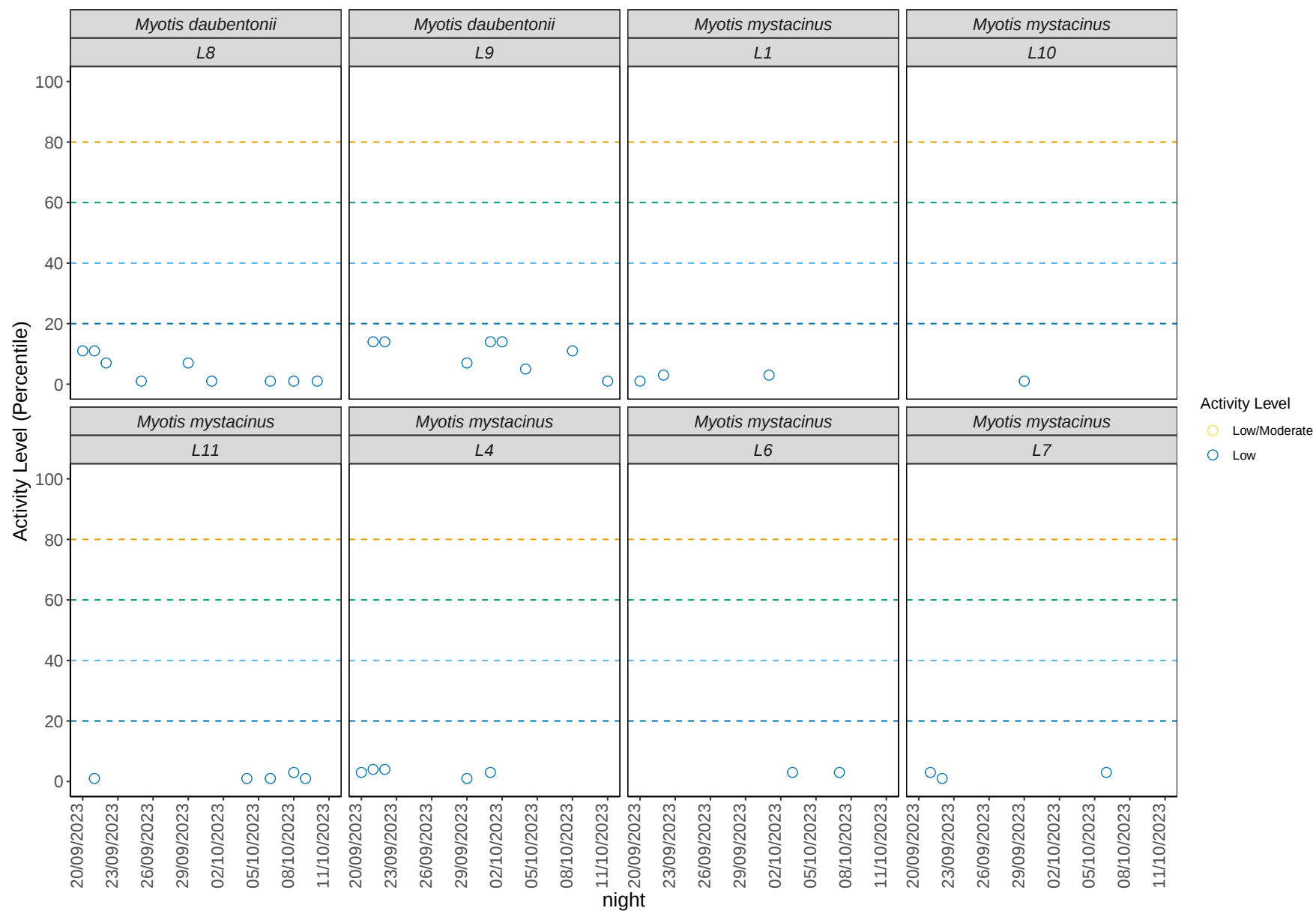
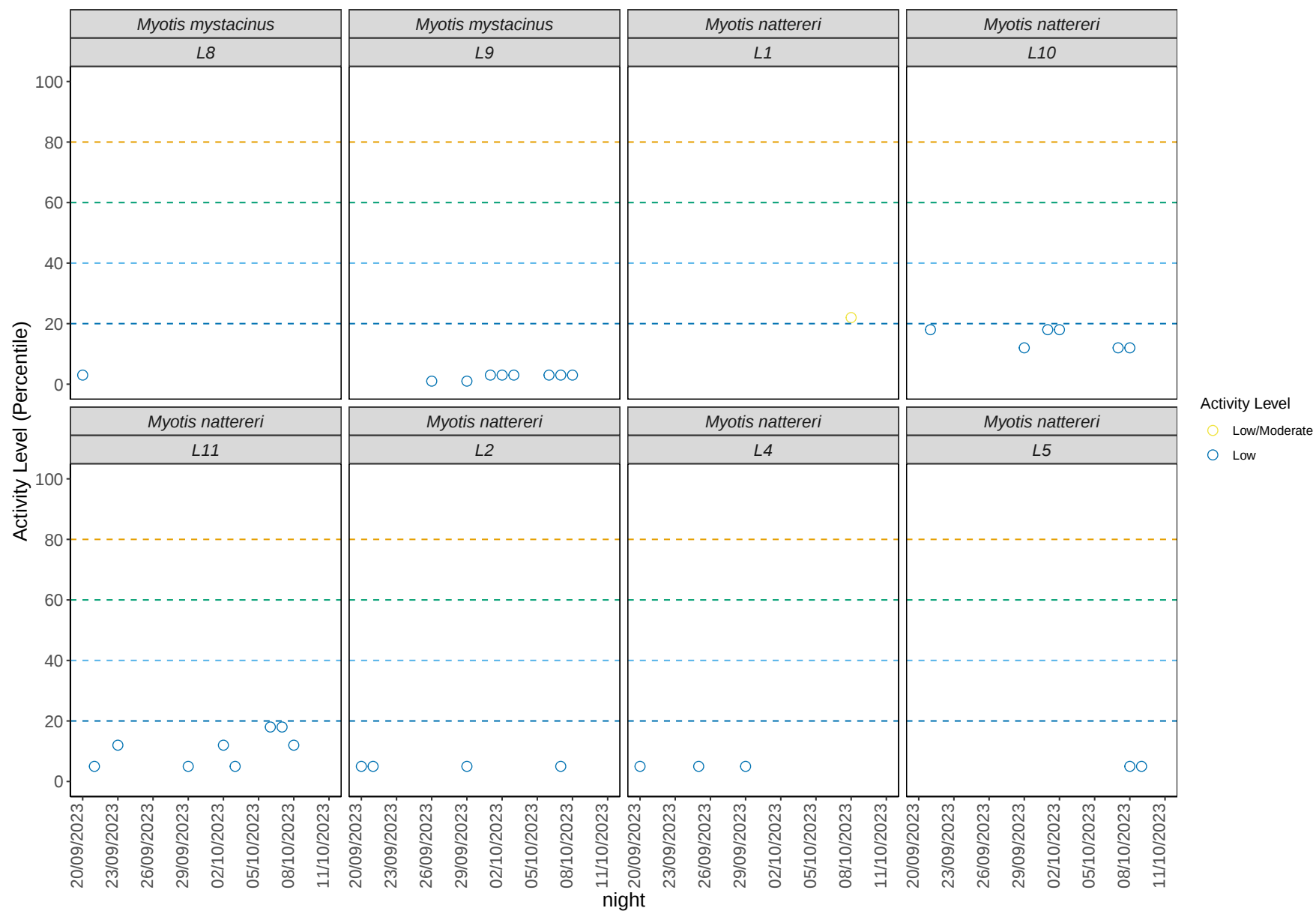
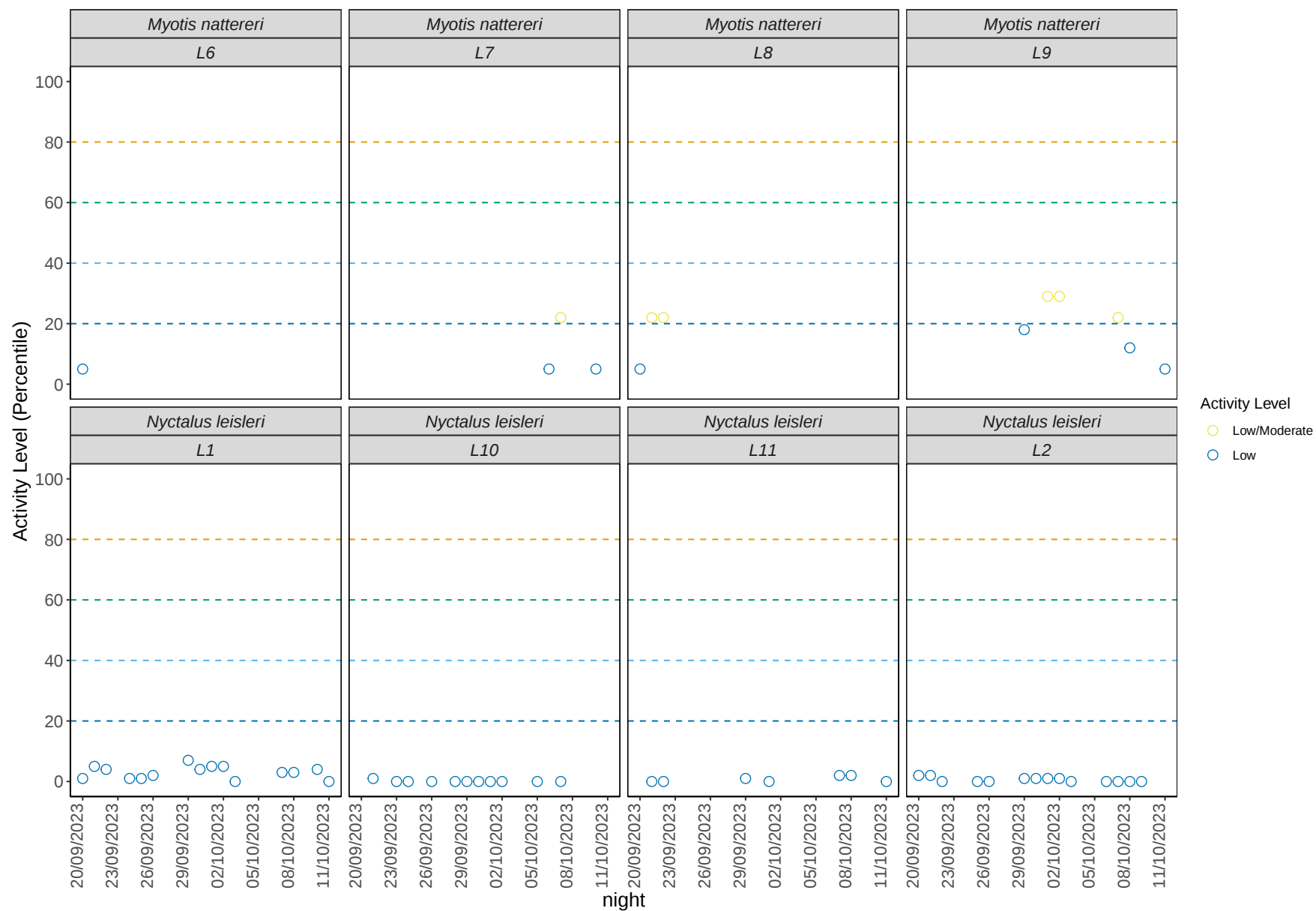


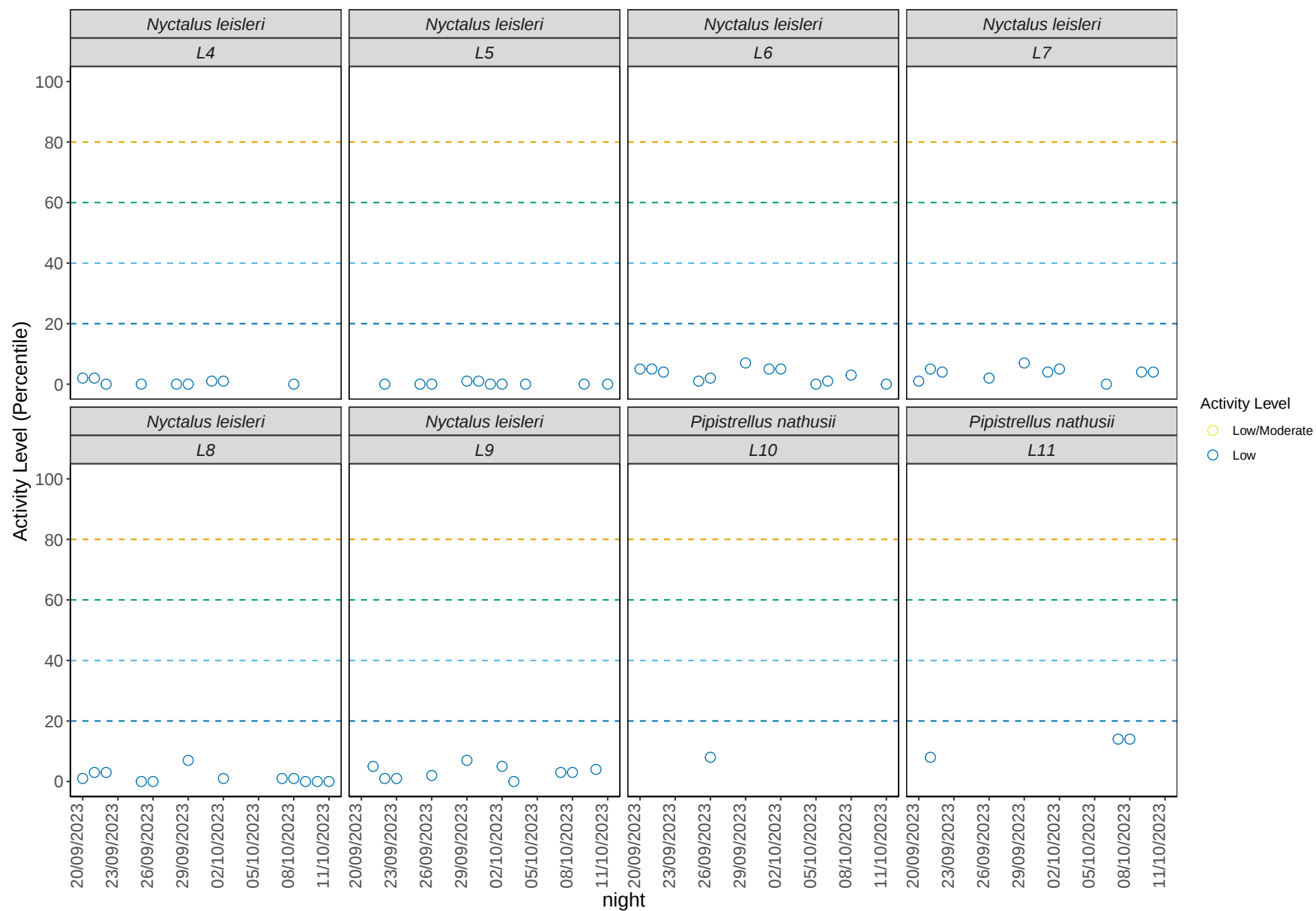
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

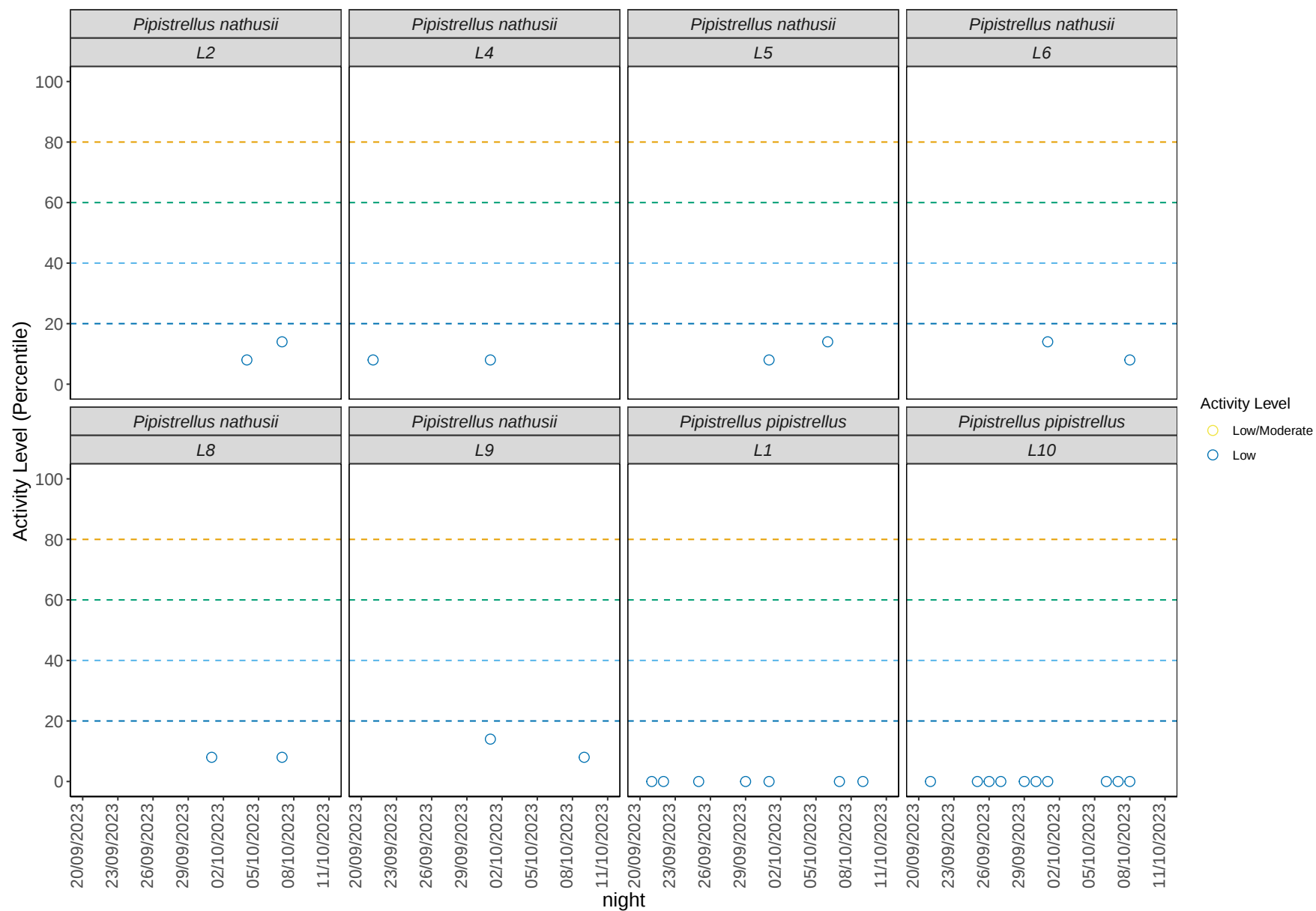


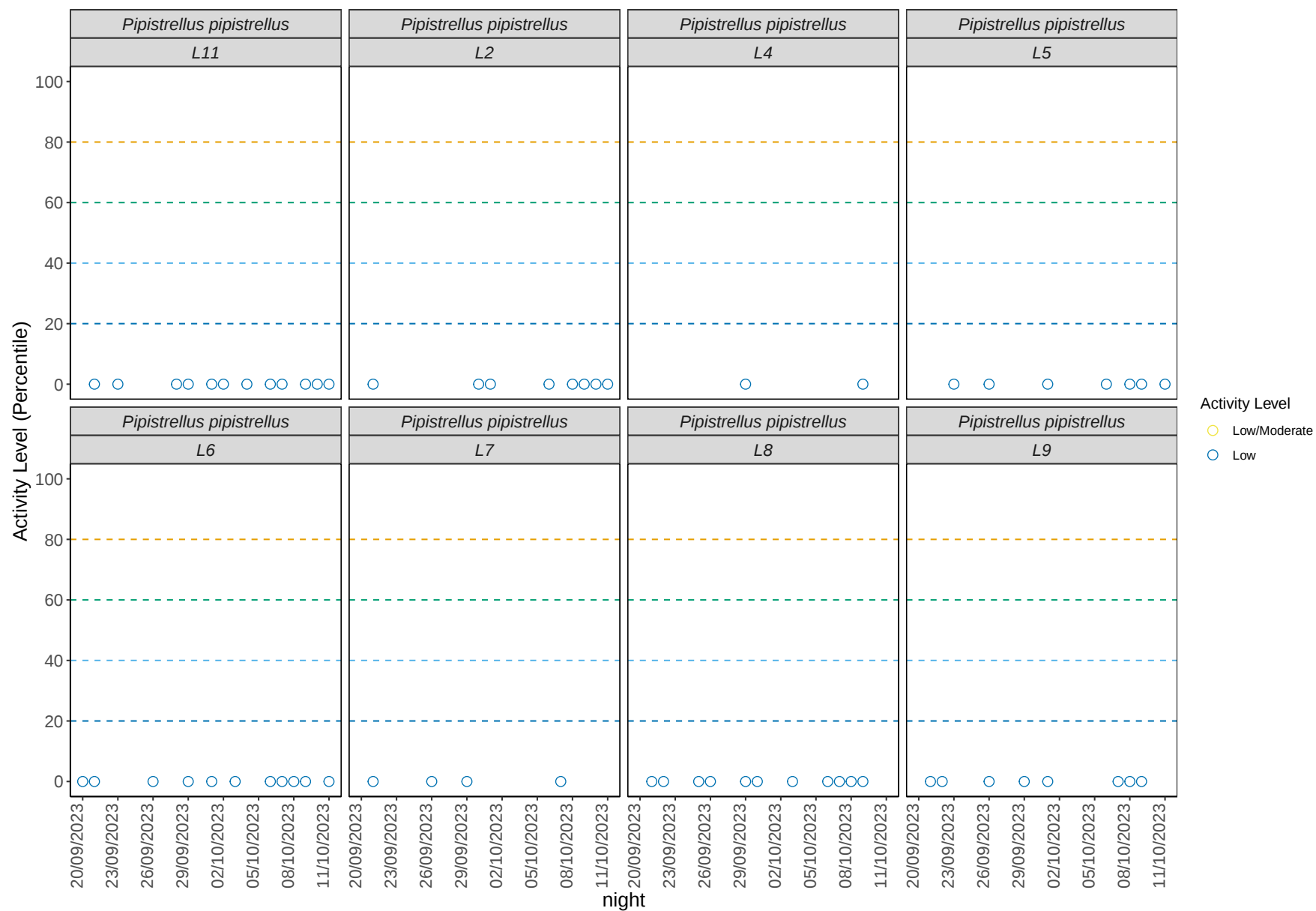


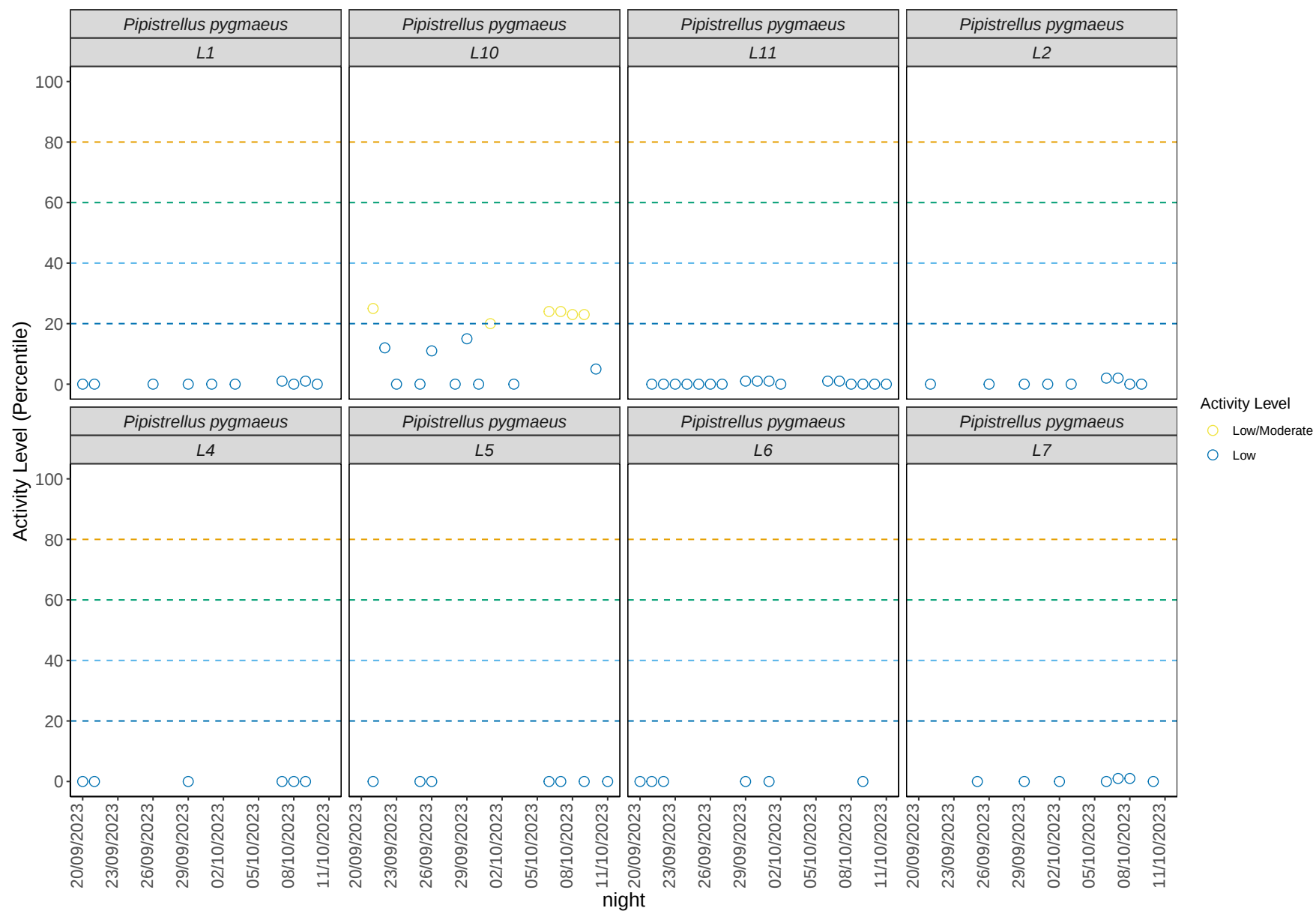


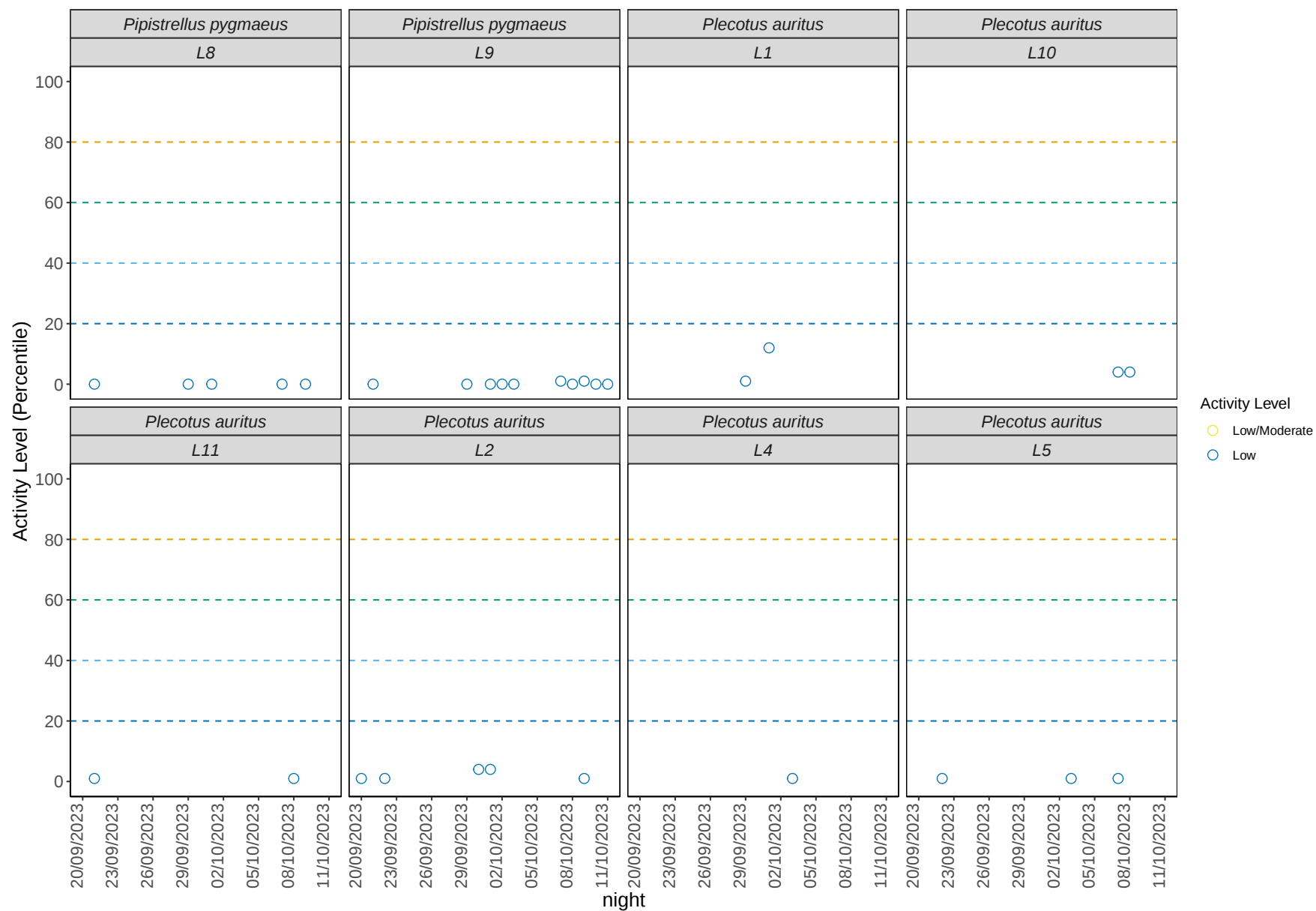


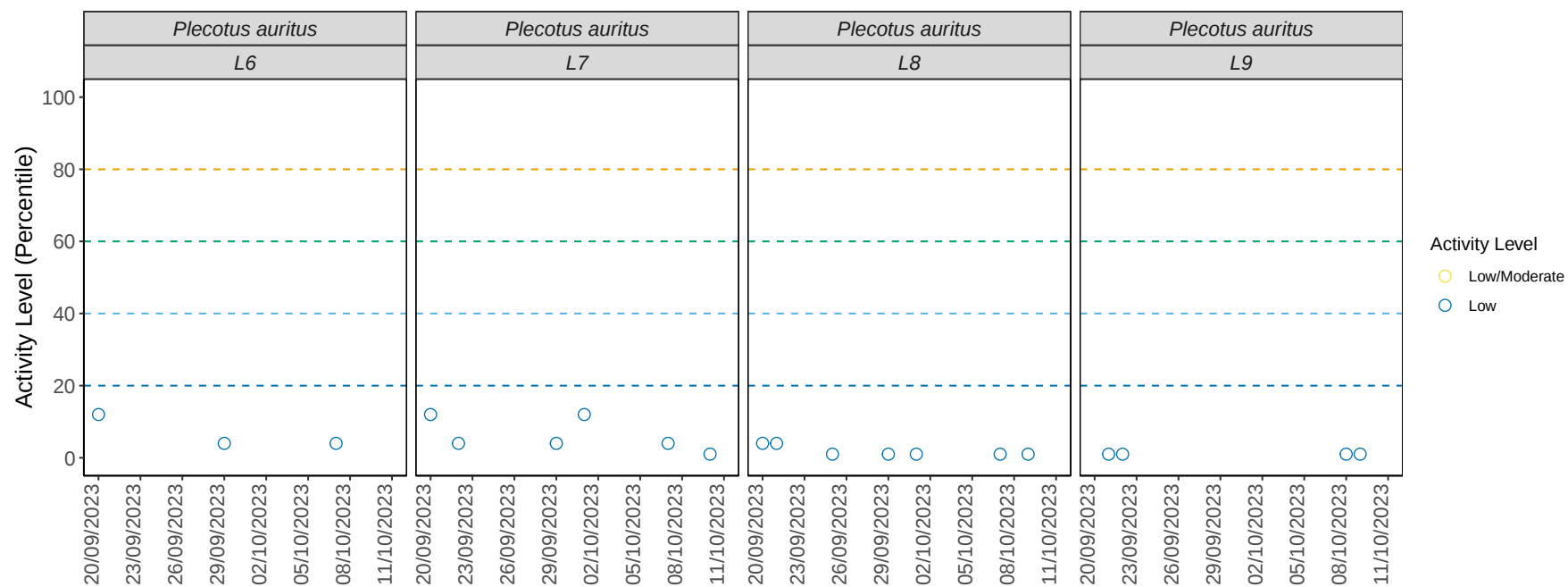












night

Per Detector, Per Month

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

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
L1	Myotis daubentonii	Sep	0	0	0	0	0	4
L1	Myotis daubentonii	Oct	0	0	0	0	0	1
L1	Myotis mystacinus	Sep	0	0	0	0	0	2
L1	Myotis mystacinus	Oct	0	0	0	0	0	1
L1	Myotis nattereri	Oct	0	0	0	0	1	0
L1	Nyctalus leisleri	Sep	0	0	0	0	0	8
L1	Nyctalus leisleri	Oct	0	0	0	0	0	7
L1	Pipistrellus pipistrellus	Sep	0	0	0	0	0	4
L1	Pipistrellus pipistrellus	Oct	0	0	0	0	0	3
L1	Pipistrellus pygmaeus	Sep	0	0	0	0	0	4
L1	Pipistrellus pygmaeus	Oct	0	0	0	0	0	6
L1	Plecotus auritus	Sep	0	0	0	0	0	1
L1	Plecotus auritus	Oct	0	0	0	0	0	1
L10	Myotis daubentonii	Sep	0	0	0	0	0	4
L10	Myotis daubentonii	Oct	0	0	0	0	0	6
L10	Myotis mystacinus	Sep	0	0	0	0	0	1
L10	Myotis nattereri	Sep	0	0	0	0	0	2
L10	Myotis nattereri	Oct	0	0	0	0	0	4
L10	Nyctalus leisleri	Sep	0	0	0	0	0	7

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
L10	Nyctalus leisleri	Oct	0	0	0	0	0	4
L10	Pipistrellus nathusii	Sep	0	0	0	0	0	1
L10	Pipistrellus pipistrellus	Sep	0	0	0	0	0	6
L10	Pipistrellus pipistrellus	Oct	0	0	0	0	0	4
L10	Pipistrellus pygmaeus	Sep	0	0	0	0	1	7
L10	Pipistrellus pygmaeus	Oct	0	0	0	0	5	2
L10	Plecotus auritus	Oct	0	0	0	0	0	2
L11	Myotis daubentonii	Sep	0	0	0	0	0	4
L11	Myotis daubentonii	Oct	0	0	0	0	0	9
L11	Myotis mystacinus	Sep	0	0	0	0	0	1
L11	Myotis mystacinus	Oct	0	0	0	0	0	4
L11	Myotis nattereri	Sep	0	0	0	0	0	3
L11	Myotis nattereri	Oct	0	0	0	0	0	5
L11	Nyctalus leisleri	Sep	0	0	0	0	0	3
L11	Nyctalus leisleri	Oct	0	0	0	0	0	4
L11	Pipistrellus nathusii	Sep	0	0	0	0	0	1
L11	Pipistrellus nathusii	Oct	0	0	0	0	0	2
L11	Pipistrellus pipistrellus	Sep	0	0	0	0	0	4
L11	Pipistrellus pipistrellus	Oct	0	0	0	0	0	8
L11	Pipistrellus pygmaeus	Sep	0	0	0	0	0	9

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
L11	Pipistrellus pygmaeus	Oct	0	0	0	0	0	8
L11	Plecotus auritus	Sep	0	0	0	0	0	1
L11	Plecotus auritus	Oct	0	0	0	0	0	1
L2	Myotis daubentonii	Sep	0	0	0	0	0	4
L2	Myotis daubentonii	Oct	0	0	0	0	0	6
L2	Myotis nattereri	Sep	0	0	0	0	0	3
L2	Myotis nattereri	Oct	0	0	0	0	0	1
L2	Nyctalus leisleri	Sep	0	0	0	0	0	7
L2	Nyctalus leisleri	Oct	0	0	0	0	0	7
L2	Pipistrellus nathusii	Oct	0	0	0	0	0	2
L2	Pipistrellus pipistrellus	Sep	0	0	0	0	0	2
L2	Pipistrellus pipistrellus	Oct	0	0	0	0	0	6
L2	Pipistrellus pygmaeus	Sep	0	0	0	0	0	3
L2	Pipistrellus pygmaeus	Oct	0	0	0	0	0	6
L2	Plecotus auritus	Sep	0	0	0	0	0	3
L2	Plecotus auritus	Oct	0	0	0	0	0	2
L4	Myotis daubentonii	Sep	0	0	0	0	0	4
L4	Myotis daubentonii	Oct	0	0	0	0	0	4
L4	Myotis mystacinus	Sep	0	0	0	0	0	4
L4	Myotis mystacinus	Oct	0	0	0	0	0	1
L4	Myotis nattereri	Sep	0	0	0	0	0	3
L4	Nyctalus leisleri	Sep	0	0	0	0	0	6

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
L4	Nyctalus leisleri	Oct	0	0	0	0	0	3
L4	Pipistrellus nathusii	Sep	0	0	0	0	0	1
L4	Pipistrellus nathusii	Oct	0	0	0	0	0	1
L4	Pipistrellus pipistrellus	Sep	0	0	0	0	0	1
L4	Pipistrellus pipistrellus	Oct	0	0	0	0	0	1
L4	Pipistrellus pygmaeus	Sep	0	0	0	0	0	3
L4	Pipistrellus pygmaeus	Oct	0	0	0	0	0	3
L4	Plecotus auritus	Oct	0	0	0	0	0	1
L5	Myotis daubentonii	Sep	0	0	0	0	0	3
L5	Myotis daubentonii	Oct	0	0	0	0	0	7
L5	Myotis nattereri	Oct	0	0	0	0	0	2
L5	Nyctalus leisleri	Sep	0	0	0	0	0	5
L5	Nyctalus leisleri	Oct	0	0	0	0	0	5
L5	Pipistrellus nathusii	Oct	0	0	0	0	0	2
L5	Pipistrellus pipistrellus	Sep	0	0	0	0	0	2
L5	Pipistrellus pipistrellus	Oct	0	0	0	0	0	5
L5	Pipistrellus pygmaeus	Sep	0	0	0	0	0	3
L5	Pipistrellus pygmaeus	Oct	0	0	0	0	0	4
L5	Plecotus auritus	Sep	0	0	0	0	0	1
L5	Plecotus auritus	Oct	0	0	0	0	0	2

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
L6	Myotis daubentonii	Sep	0	0	0	0	0	5
L6	Myotis daubentonii	Oct	0	0	0	0	0	6
L6	Myotis mystacinus	Oct	0	0	0	0	0	2
L6	Myotis nattereri	Sep	0	0	0	0	0	1
L6	Nyctalus leisleri	Sep	0	0	0	0	0	6
L6	Nyctalus leisleri	Oct	0	0	0	0	0	6
L6	Pipistrellus nathusii	Oct	0	0	0	0	0	2
L6	Pipistrellus pipistrellus	Sep	0	0	0	0	0	4
L6	Pipistrellus pipistrellus	Oct	0	0	0	0	0	7
L6	Pipistrellus pygmaeus	Sep	0	0	0	0	0	4
L6	Pipistrellus pygmaeus	Oct	0	0	0	0	0	2
L6	Plecotus auritus	Sep	0	0	0	0	0	2
L6	Plecotus auritus	Oct	0	0	0	0	0	1
L7	Myotis daubentonii	Sep	0	0	0	0	0	5
L7	Myotis daubentonii	Oct	0	0	0	0	0	7
L7	Myotis mystacinus	Sep	0	0	0	0	0	2
L7	Myotis mystacinus	Oct	0	0	0	0	0	1
L7	Myotis nattereri	Oct	0	0	0	0	1	2
L7	Nyctalus leisleri	Sep	0	0	0	0	0	5
L7	Nyctalus leisleri	Oct	0	0	0	0	0	5
L7	Pipistrellus pipistrellus	Sep	0	0	0	0	0	3

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
L7	Pipistrellus	Oct	0	0	0	0	0	1
	pipistrellus							
L7	Pipistrellus	Sep	0	0	0	0	0	2
	pygmaeus							
L7	Pipistrellus	Oct	0	0	0	0	0	5
	pygmaeus							
L7	Plecotus auritus	Sep	0	0	0	0	0	3
L7	Plecotus auritus	Oct	0	0	0	0	0	3
L8	Myotis	Sep	0	0	0	0	0	5
	daubentonii							
L8	Myotis	Oct	0	0	0	0	0	4
	daubentonii							
L8	Myotis	Sep	0	0	0	0	0	1
	mystacinus							
L8	Myotis nattereri	Sep	0	0	0	0	2	1
L8	Nyctalus leisleri	Sep	0	0	0	0	0	6
L8	Nyctalus leisleri	Oct	0	0	0	0	0	6
L8	Pipistrellus	Oct	0	0	0	0	0	2
	nathusii							
L8	Pipistrellus	Sep	0	0	0	0	0	6
	pipistrellus							
L8	Pipistrellus	Oct	0	0	0	0	0	5
	pipistrellus							
L8	Pipistrellus	Sep	0	0	0	0	0	2
	pygmaeus							
L8	Pipistrellus	Oct	0	0	0	0	0	3
	pygmaeus							
L8	Plecotus auritus	Sep	0	0	0	0	0	4
L8	Plecotus auritus	Oct	0	0	0	0	0	3
L9	Myotis	Sep	0	0	0	0	0	3
	daubentonii							
L9	Myotis	Oct	0	0	0	0	0	5
	daubentonii							

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
L9	Myotis mystacinus	Sep	0	0	0	0	0	2
L9	Myotis mystacinus	Oct	0	0	0	0	0	6
L9	Myotis nattereri	Sep	0	0	0	0	0	1
L9	Myotis nattereri	Oct	0	0	0	0	3	2
L9	Nyctalus leisleri	Sep	0	0	0	0	0	5
L9	Nyctalus leisleri	Oct	0	0	0	0	0	5
L9	Pipistrellus nathusii	Oct	0	0	0	0	0	2
L9	Pipistrellus pipistrellus	Sep	0	0	0	0	0	4
L9	Pipistrellus pipistrellus	Oct	0	0	0	0	0	4
L9	Pipistrellus pygmaeus	Sep	0	0	0	0	0	2
L9	Pipistrellus pygmaeus	Oct	0	0	0	0	0	8
L9	Plecotus auritus	Sep	0	0	0	0	0	2
L9	Plecotus auritus	Oct	0	0	0	0	0	2

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
L1	Myotis daubentonii	Sep	11	9 - 12.5	14	4
L1	Myotis daubentonii	Oct	11	9 - 12.5	11	1
L1	Myotis mystacinus	Sep	2	3 - 3	3	2
L1	Myotis mystacinus	Oct	3	3 - 3	3	1
L1	Myotis nattereri	Oct	22	0	22	1
L1	Nyctalus leisleri	Sep	3	2.5 - 4.5	7	8
L1	Nyctalus leisleri	Oct	3	2.5 - 4.5	5	7
L1	Pipistrellus pipistrellus	Sep	0	0 - 0	0	4
L1	Pipistrellus pipistrellus	Oct	0	0 - 0	0	3
L1	Pipistrellus pygmaeus	Sep	0	0 - 0	0	4
L1	Pipistrellus pygmaeus	Oct	0	0 - 0	1	6
L1	Plecotus auritus	Sep	1	6.5 - 6.5	1	1
L1	Plecotus auritus	Oct	12	6.5 - 6.5	12	1
L10	Myotis daubentonii	Sep	6	1 - 7	7	4
L10	Myotis daubentonii	Oct	3	1 - 7	11	6
L10	Myotis mystacinus	Sep	1	0	1	1
L10	Myotis nattereri	Sep	15	12 - 18	18	2
L10	Myotis nattereri	Oct	15	12 - 18	18	4
L10	Nyctalus leisleri	Sep	0	0 - 0	1	7
L10	Nyctalus leisleri	Oct	0	0 - 0	0	4
L10	Pipistrellus nathusii	Sep	8	0	8	1
L10	Pipistrellus pipistrellus	Sep	0	0 - 0	0	6
L10	Pipistrellus pipistrellus	Oct	0	0 - 0	0	4
L10	Pipistrellus pygmaeus	Sep	6	12.5 - 24	25	8
L10	Pipistrellus pygmaeus	Oct	23	12.5 - 24	24	7
L10	Plecotus auritus	Oct	4	4 - 4	4	2
L11	Myotis daubentonii	Sep	3	3 - 8	7	4
L11	Myotis daubentonii	Oct	5	3 - 8	11	9
L11	Myotis mystacinus	Sep	1	1 - 1	1	1
L11	Myotis mystacinus	Oct	1	1 - 1	3	4
L11	Myotis nattereri	Sep	5	5 - 15	12	3
L11	Myotis nattereri	Oct	12	5 - 15	18	5
L11	Nyctalus leisleri	Sep	0	2 - 2	1	3

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L11	Nyctalus leisleri	Oct	1	2 - 2	2	4
L11	Pipistrellus nathusii	Sep	8	14 - 14	8	1
L11	Pipistrellus nathusii	Oct	14	14 - 14	14	2
L11	Pipistrellus pipistrellus	Sep	0	0 - 0	0	4
L11	Pipistrellus pipistrellus	Oct	0	0 - 0	0	8
L11	Pipistrellus pygmaeus	Sep	0	0 - 0	1	9
L11	Pipistrellus pygmaeus	Oct	0	0 - 0	1	8
L11	Plecotus auritus	Sep	1	1 - 1	1	1
L11	Plecotus auritus	Oct	1	1 - 1	1	1
L2	Myotis daubentonii	Sep	4	1 - 8	7	4
L2	Myotis daubentonii	Oct	6	1 - 8	9	6
L2	Myotis nattereri	Sep	5	5 - 5	5	3
L2	Myotis nattereri	Oct	5	5 - 5	5	1
L2	Nyctalus leisleri	Sep	1	1 - 1.5	2	7
L2	Nyctalus leisleri	Oct	0	1 - 1.5	1	7
L2	Pipistrellus nathusii	Oct	11	11 - 11	14	2
L2	Pipistrellus pipistrellus	Sep	0	0 - 0	0	2
L2	Pipistrellus pipistrellus	Oct	0	0 - 0	0	6
L2	Pipistrellus pygmaeus	Sep	0	0 - 0	0	3
L2	Pipistrellus pygmaeus	Oct	0	0 - 0	2	6
L2	Plecotus auritus	Sep	1	1 - 2.5	4	3
L2	Plecotus auritus	Oct	3	1 - 2.5	4	2
L4	Myotis daubentonii	Sep	7	1 - 7	9	4
L4	Myotis daubentonii	Oct	3	1 - 7	5	4
L4	Myotis mystacinus	Sep	4	2 - 4	4	4
L4	Myotis mystacinus	Oct	3	2 - 4	3	1
L4	Myotis nattereri	Sep	5	5 - 5	5	3
L4	Nyctalus leisleri	Sep	0	1 - 2	2	6
L4	Nyctalus leisleri	Oct	1	1 - 2	1	3
L4	Pipistrellus nathusii	Sep	8	8 - 8	8	1
L4	Pipistrellus nathusii	Oct	8	8 - 8	8	1
L4	Pipistrellus pipistrellus	Sep	0	0 - 0	0	1
L4	Pipistrellus pipistrellus	Oct	0	0 - 0	0	1
L4	Pipistrellus pygmaeus	Sep	0	0 - 0	0	3
L4	Pipistrellus pygmaeus	Oct	0	0 - 0	0	3
L4	Plecotus auritus	Oct	1	0	1	1

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L5	Myotis daubentonii	Sep	7	1 - 5	7	3
L5	Myotis daubentonii	Oct	1	1 - 5	5	7
L5	Myotis nattereri	Oct	5	5 - 5	5	2
L5	Nyctalus leisleri	Sep	0	0 - 0	1	5
L5	Nyctalus leisleri	Oct	0	0 - 0	0	5
L5	Pipistrellus nathusii	Oct	11	11 - 11	14	2
L5	Pipistrellus pipistrellus	Sep	0	0 - 0	0	2
L5	Pipistrellus pipistrellus	Oct	0	0 - 0	0	5
L5	Pipistrellus pygmaeus	Sep	0	0 - 0	0	3
L5	Pipistrellus pygmaeus	Oct	0	0 - 0	0	4
L5	Plecotus auritus	Sep	1	1 - 1	1	1
L5	Plecotus auritus	Oct	1	1 - 1	1	2
L6	Myotis daubentonii	Sep	7	4 - 10	11	5
L6	Myotis daubentonii	Oct	8	4 - 10	11	6
L6	Myotis mystacinus	Oct	3	3 - 3	3	2
L6	Myotis nattereri	Sep	5	0	5	1
L6	Nyctalus leisleri	Sep	5	2 - 5	7	6
L6	Nyctalus leisleri	Oct	2	2 - 5	5	6
L6	Pipistrellus nathusii	Oct	11	11 - 11	14	2
L6	Pipistrellus pipistrellus	Sep	0	0 - 0	0	4
L6	Pipistrellus pipistrellus	Oct	0	0 - 0	0	7
L6	Pipistrellus pygmaeus	Sep	0	0 - 0	0	4
L6	Pipistrellus pygmaeus	Oct	0	0 - 0	0	2
L6	Plecotus auritus	Sep	8	4 - 4	12	2
L6	Plecotus auritus	Oct	4	4 - 4	4	1
L7	Myotis daubentonii	Sep	12	8 - 13	14	5
L7	Myotis daubentonii	Oct	11	8 - 13	14	7
L7	Myotis mystacinus	Sep	2	3 - 3	3	2
L7	Myotis mystacinus	Oct	3	3 - 3	3	1
L7	Myotis nattereri	Oct	5	5 - 5	22	3
L7	Nyctalus leisleri	Sep	4	2.5 - 5.5	7	5
L7	Nyctalus leisleri	Oct	4	2.5 - 5.5	5	5
L7	Pipistrellus pipistrellus	Sep	0	0 - 0	0	3
L7	Pipistrellus pipistrellus	Oct	0	0 - 0	0	1
L7	Pipistrellus pygmaeus	Sep	0	0 - 0	0	2
L7	Pipistrellus pygmaeus	Oct	0	0 - 0	1	5

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
L7	Plecotus auritus	Sep	4	2.5 - 12	12	3
L7	Plecotus auritus	Oct	4	2.5 - 12	12	3
L8	Myotis daubentonii	Sep	7	1 - 7	11	5
L8	Myotis daubentonii	Oct	1	1 - 7	1	4
L8	Myotis mystacinus	Sep	3	0	3	1
L8	Myotis nattereri	Sep	22	22 - 22	22	3
L8	Nyctalus leisleri	Sep	2	1 - 4	7	6
L8	Nyctalus leisleri	Oct	1	1 - 4	1	6
L8	Pipistrellus nathusii	Oct	8	8 - 8	8	2
L8	Pipistrellus pipistrellus	Sep	0	0 - 0	0	6
L8	Pipistrellus pipistrellus	Oct	0	0 - 0	0	5
L8	Pipistrellus pygmaeus	Sep	0	0 - 0	0	2
L8	Pipistrellus pygmaeus	Oct	0	0 - 0	0	3
L8	Plecotus auritus	Sep	3	1 - 2.5	4	4
L8	Plecotus auritus	Oct	1	1 - 2.5	1	3
L9	Myotis daubentonii	Sep	14	7.5 - 14	14	3
L9	Myotis daubentonii	Oct	11	7.5 - 14	14	5
L9	Myotis mystacinus	Sep	1	2 - 3	1	2
L9	Myotis mystacinus	Oct	3	2 - 3	3	6
L9	Myotis nattereri	Sep	18	12 - 25.5	18	1
L9	Myotis nattereri	Oct	22	12 - 25.5	29	5
L9	Nyctalus leisleri	Sep	2	2 - 5	7	5
L9	Nyctalus leisleri	Oct	3	2 - 5	5	5
L9	Pipistrellus nathusii	Oct	11	11 - 11	14	2
L9	Pipistrellus pipistrellus	Sep	0	0 - 0	0	4
L9	Pipistrellus pipistrellus	Oct	0	0 - 0	0	4
L9	Pipistrellus pygmaeus	Sep	0	0 - 0	0	2
L9	Pipistrellus pygmaeus	Oct	0	0 - 0	1	8
L9	Plecotus auritus	Sep	1	1 - 1	1	2
L9	Plecotus auritus	Oct	1	1 - 1	1	2

Per Site

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

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

Species/Species Group	Nights of 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 daubentonii	0	0	0	0	0	96
Myotis mystacinus	0	0	0	0	0	28
Myotis nattereri	0	0	0	0	7	30
Nyctalus leisleri	0	0	0	0	0	110
Pipistrellus nathusii	0	0	0	0	0	16
Pipistrellus pipistrellus	0	0	0	0	0	80
Pipistrellus pygmaeus	0	0	0	0	6	86
Plecotus auritus	0	0	0	0	0	35

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	7	9 - 12.5	14	96
Myotis mystacinus	3	3 - 3	4	28
Myotis nattereri	12	5 - 5	29	37
Nyctalus leisleri	1	2.5 - 5.5	7	110
Pipistrellus nathusii	8	8 - 8	14	16
Pipistrellus pipistrellus	0	0 - 0	0	80
Pipistrellus pygmaeus	0	12.5 - 24	25	92
Plecotus auritus	1	6.5 - 6.5	12	35

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

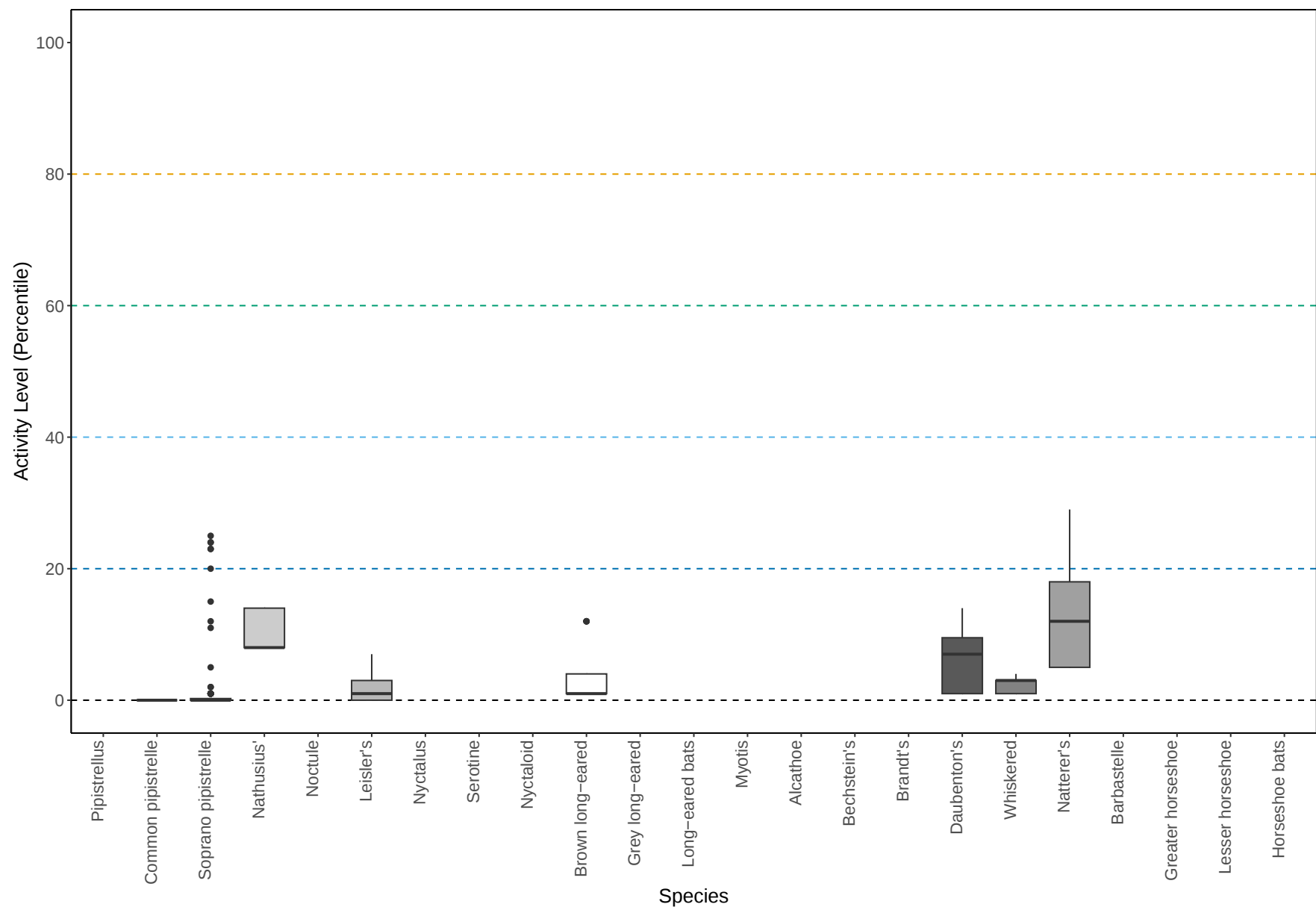


Figure 5. The median activity levels of bats recorded across all detectors each night.

Per Site, Per Month

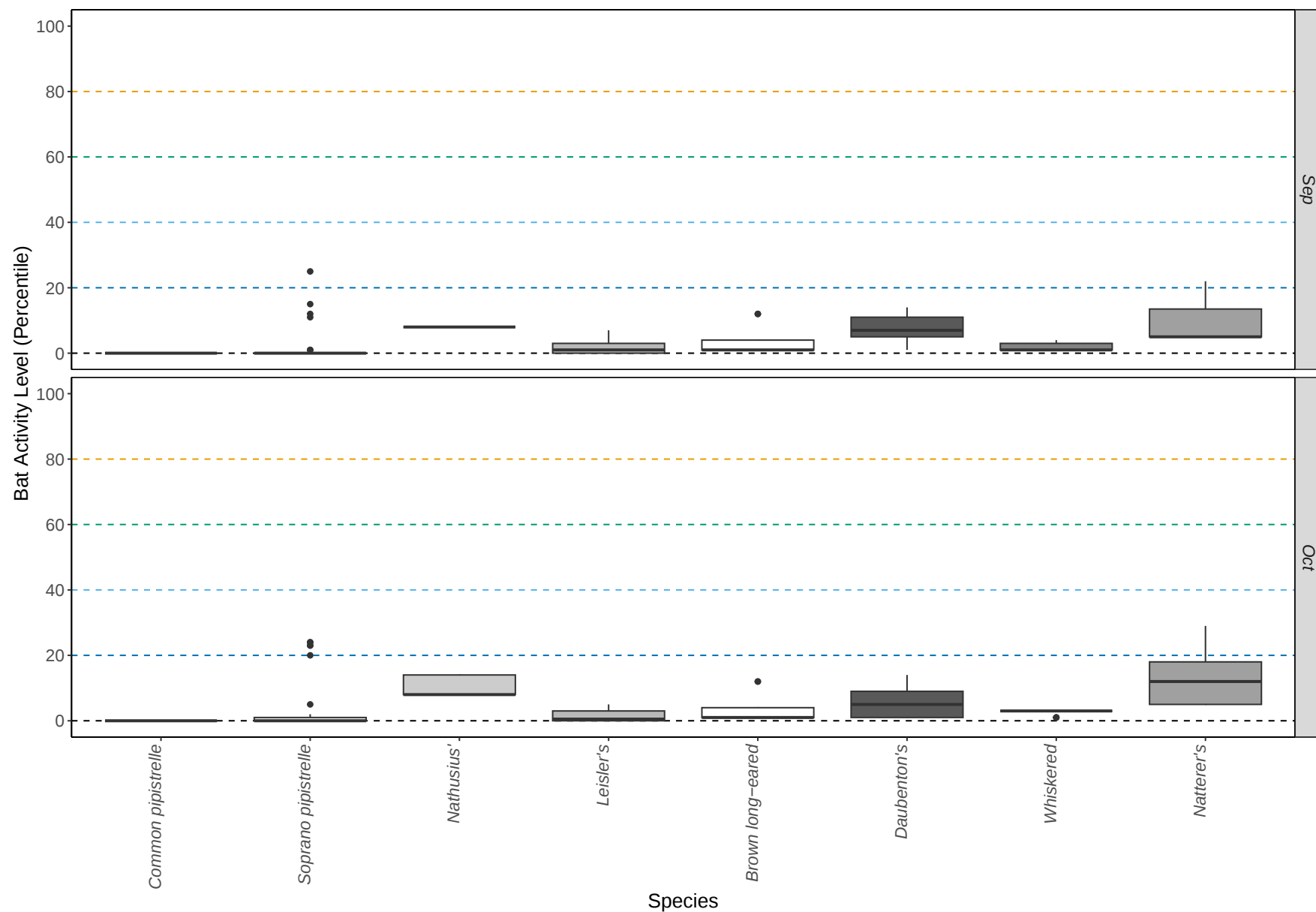
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	Sep	0	0	0	0	0	41
Myotis daubentonii	Oct	0	0	0	0	0	55
Myotis mystacinus	Sep	0	0	0	0	0	13
Myotis mystacinus	Oct	0	0	0	0	0	15
Myotis nattereri	Sep	0	0	0	0	2	14
Myotis nattereri	Oct	0	0	0	0	5	16
Nyctalus leisleri	Sep	0	0	0	0	0	58
Nyctalus leisleri	Oct	0	0	0	0	0	52
Pipistrellus nathusii	Sep	0	0	0	0	0	3
Pipistrellus nathusii	Oct	0	0	0	0	0	13
Pipistrellus pipistrellus	Sep	0	0	0	0	0	36
Pipistrellus pipistrellus	Oct	0	0	0	0	0	44
Pipistrellus pygmaeus	Sep	0	0	0	0	1	39
Pipistrellus pygmaeus	Oct	0	0	0	0	5	47
Plecotus auritus	Sep	0	0	0	0	0	17
Plecotus auritus	Oct	0	0	0	0	0	18

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 daubentonii	Sep	7	9 - 12.5	14	41
Myotis daubentonii	Oct	5	9 - 12.5	14	55
Myotis mystacinus	Sep	1	3 - 3	4	13
Myotis mystacinus	Oct	3	3 - 3	3	15
Myotis nattereri	Sep	5	5 - 5	22	16
Myotis nattereri	Oct	12	5 - 5	29	21
Nyctalus leisleri	Sep	1	2.5 - 5.5	7	58
Nyctalus leisleri	Oct	1	2.5 - 5.5	5	52
Pipistrellus nathusii	Sep	8	8 - 8	8	3
Pipistrellus nathusii	Oct	8	8 - 8	14	13
Pipistrellus pipistrellus	Sep	0	0 - 0	0	36
Pipistrellus pipistrellus	Oct	0	0 - 0	0	44
Pipistrellus pygmaeus	Sep	0	12.5 - 24	25	40
Pipistrellus pygmaeus	Oct	0	12.5 - 24	24	52
Plecotus auritus	Sep	1	6.5 - 6.5	12	17
Plecotus auritus	Oct	1	6.5 - 6.5	12	18

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



Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

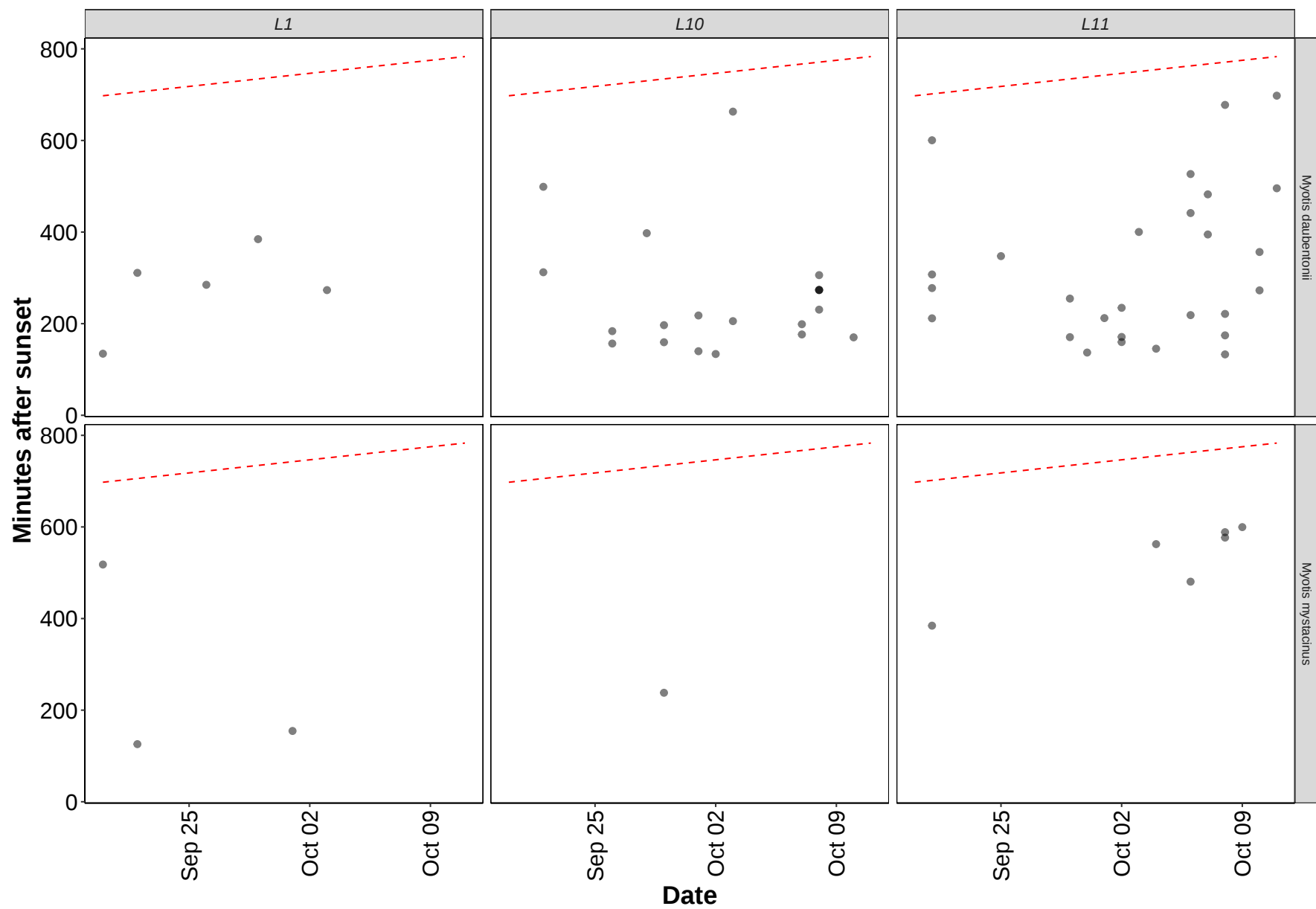
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

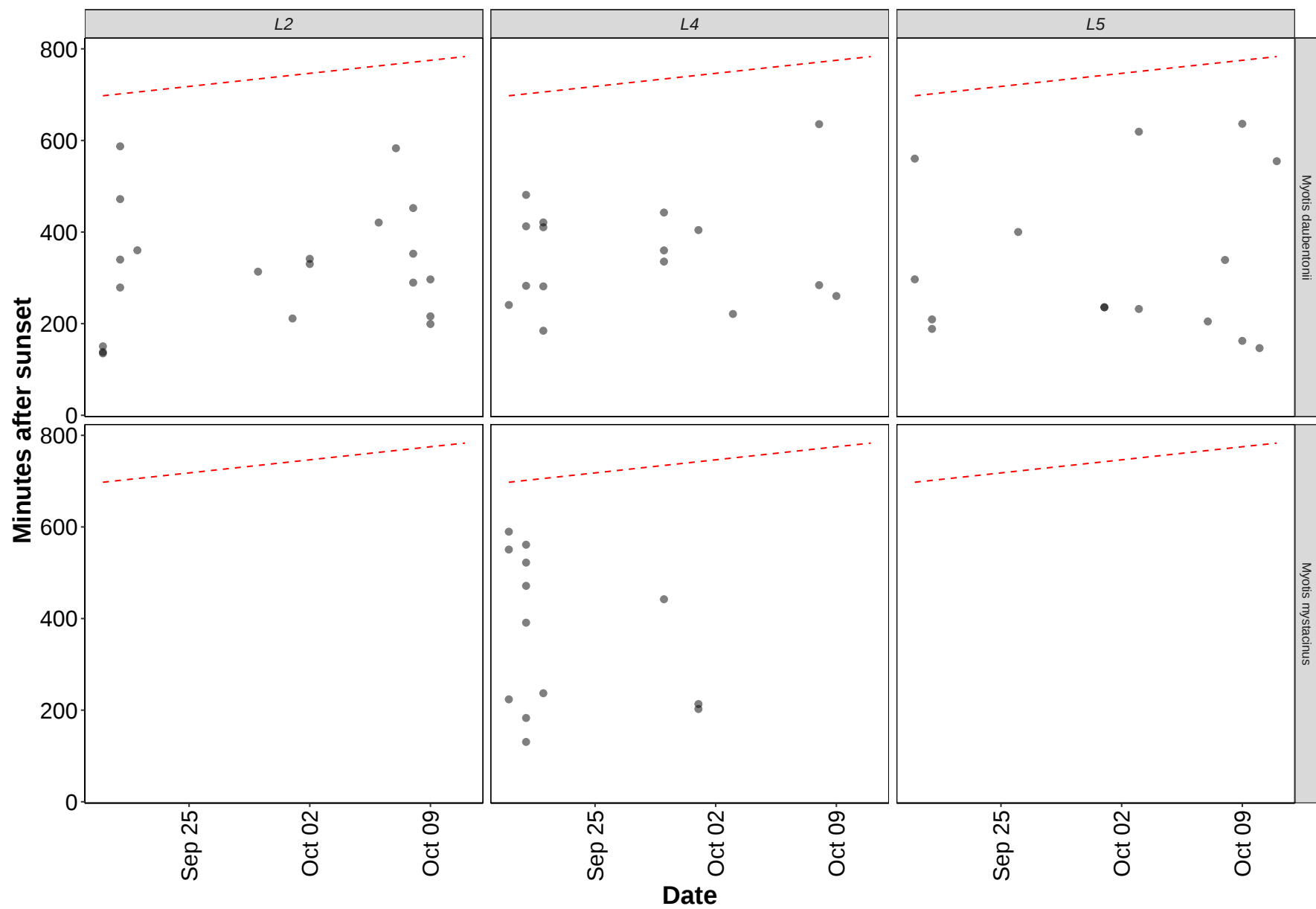
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2023-09-20	18:36	06:13	11.6
2023-09-21	18:33	06:15	11.7
2023-09-22	18:31	06:17	11.8
2023-09-23	18:29	06:18	11.8
2023-09-24	18:26	06:20	11.9
2023-09-25	18:24	06:22	12.0
2023-09-26	18:21	06:23	12.0
2023-09-27	18:19	06:25	12.1
2023-09-28	18:17	06:27	12.2
2023-09-29	18:14	06:28	12.2
2023-09-30	18:12	06:30	12.3
2023-10-01	18:09	06:32	12.4
2023-10-02	18:07	06:34	12.4
2023-10-03	18:05	06:35	12.5
2023-10-04	18:02	06:37	12.6
2023-10-05	18:00	06:39	12.6
2023-10-06	17:58	06:40	12.7
2023-10-07	17:55	06:42	12.8
2023-10-08	17:53	06:44	12.8
2023-10-09	17:51	06:46	12.9
2023-10-10	17:48	06:47	13.0
2023-10-11	17:46	06:49	13.1

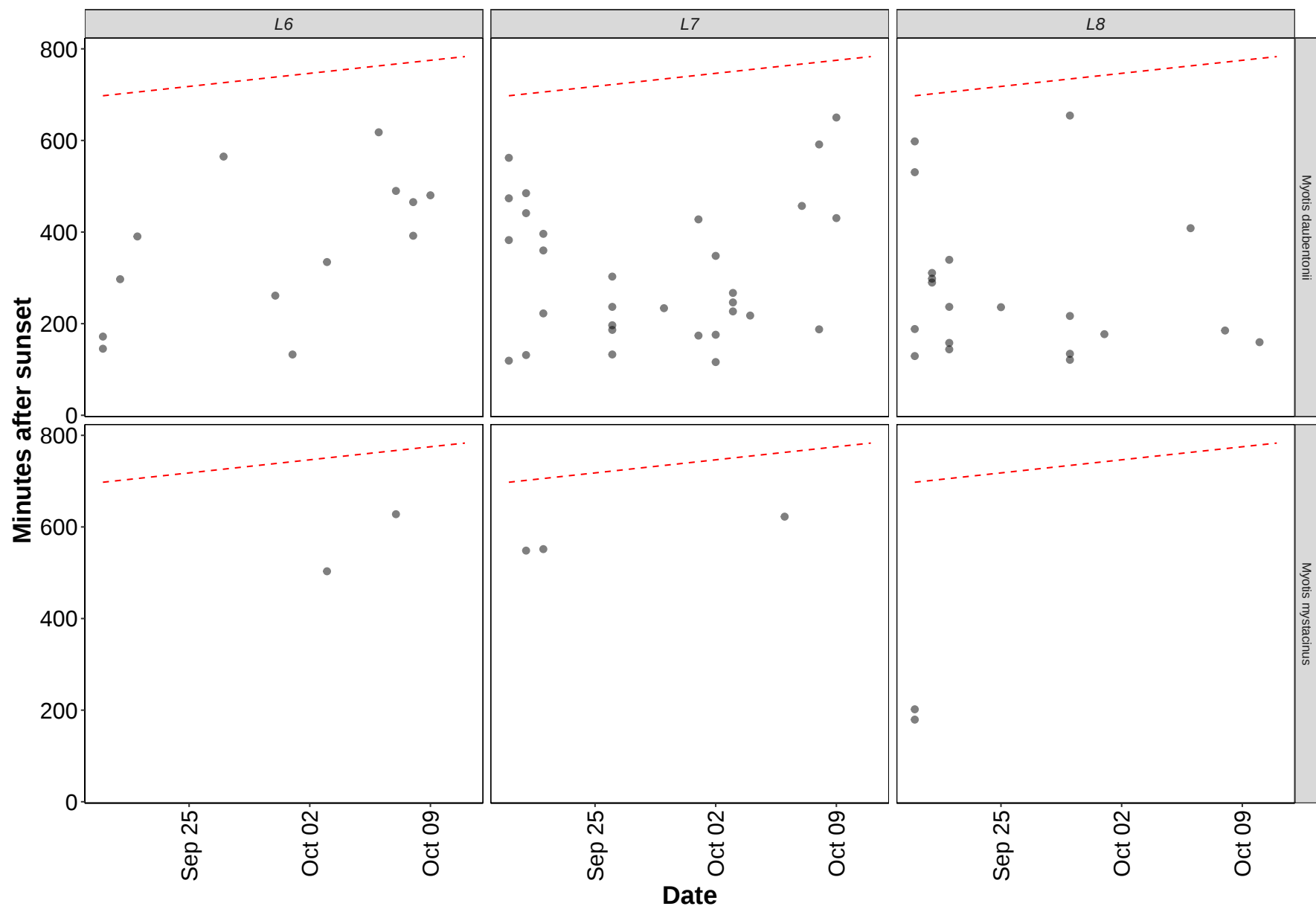
Distribution of Bat Activity Across the Night through Time

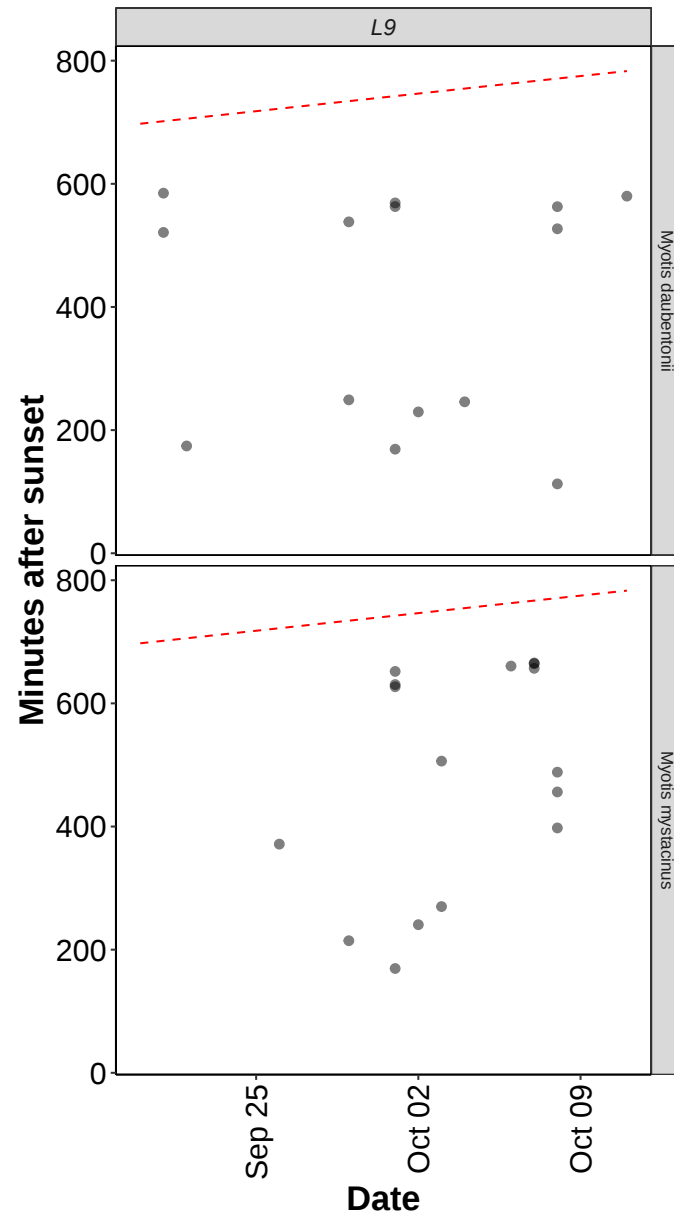
Per Detector

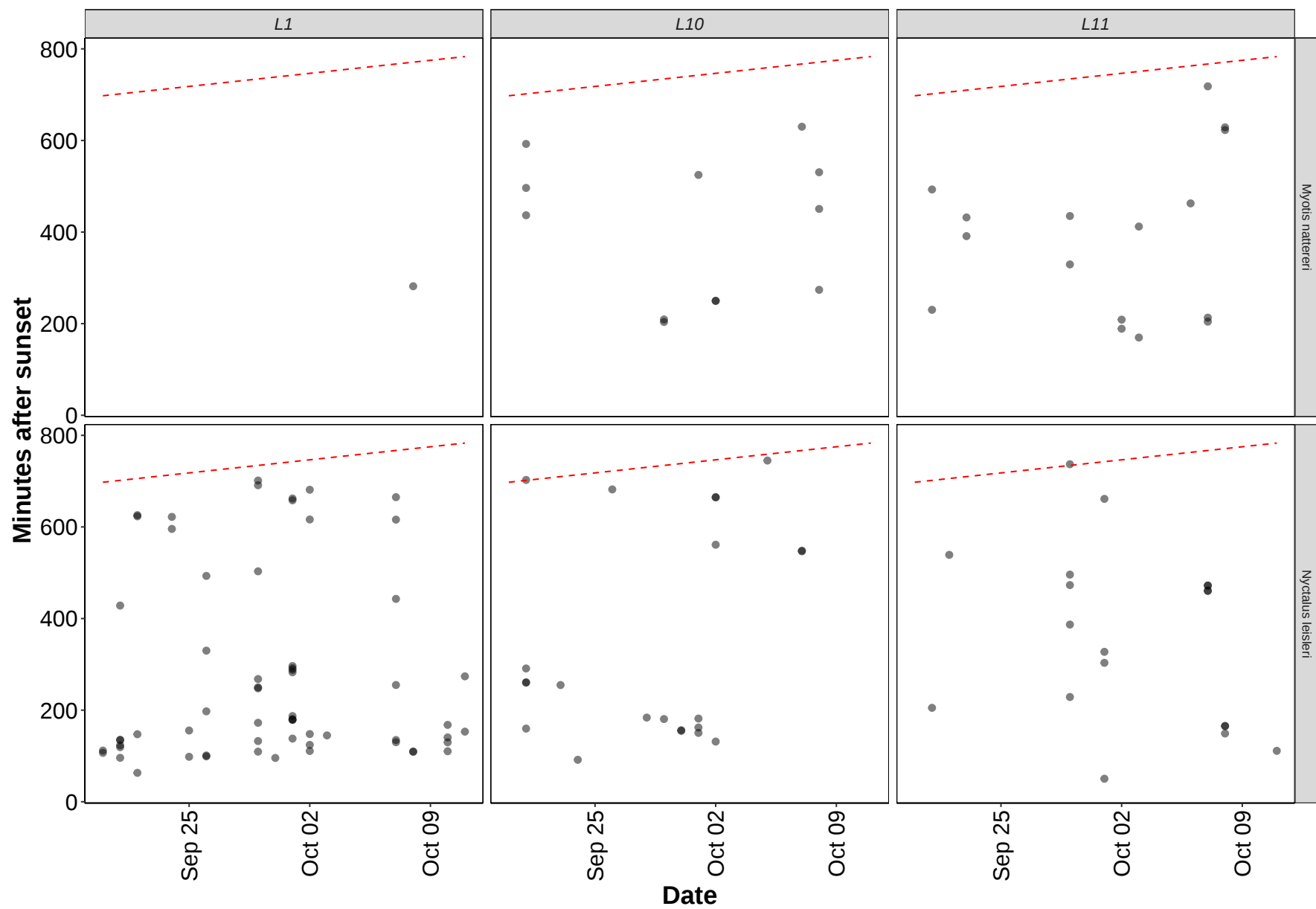
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

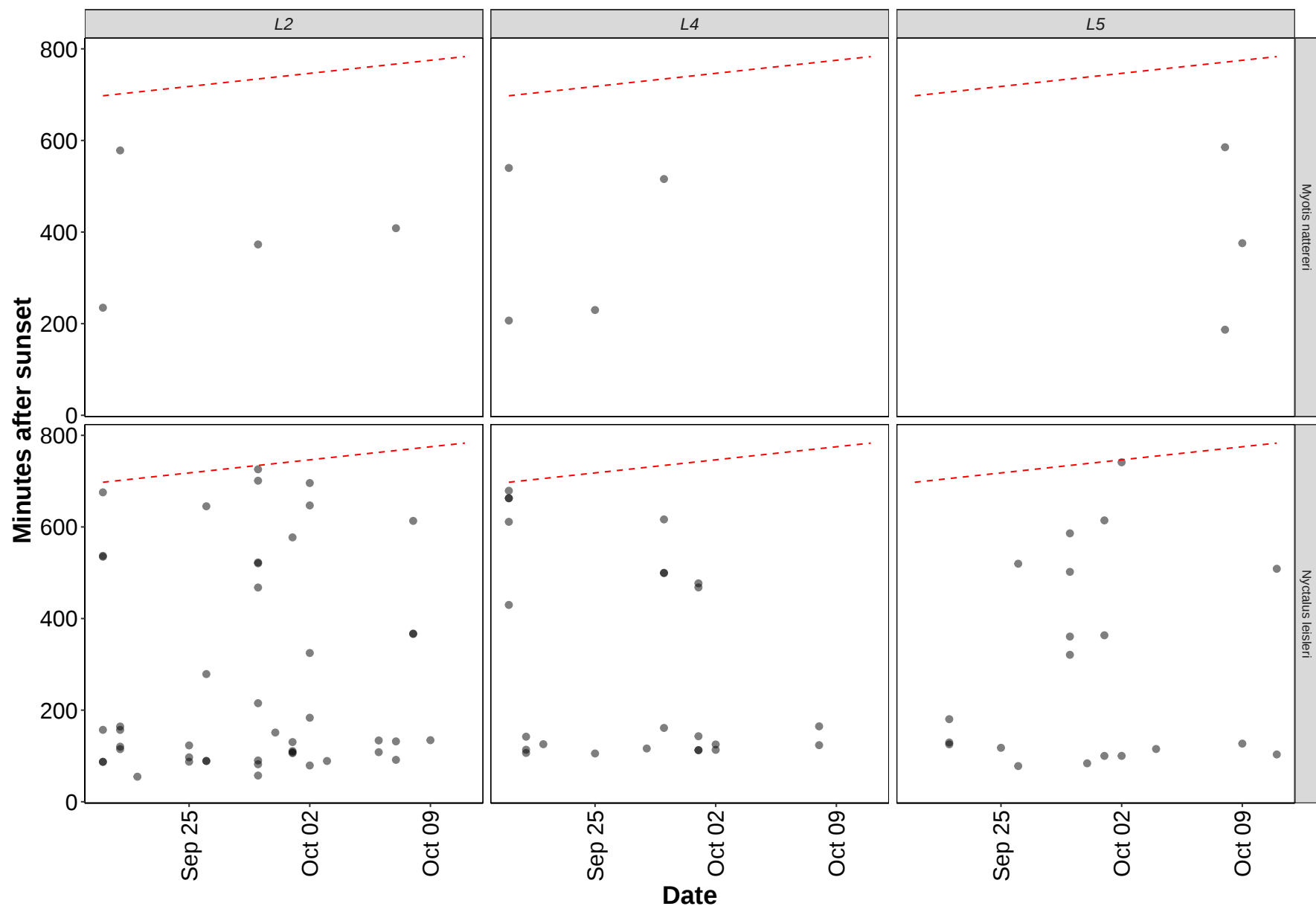


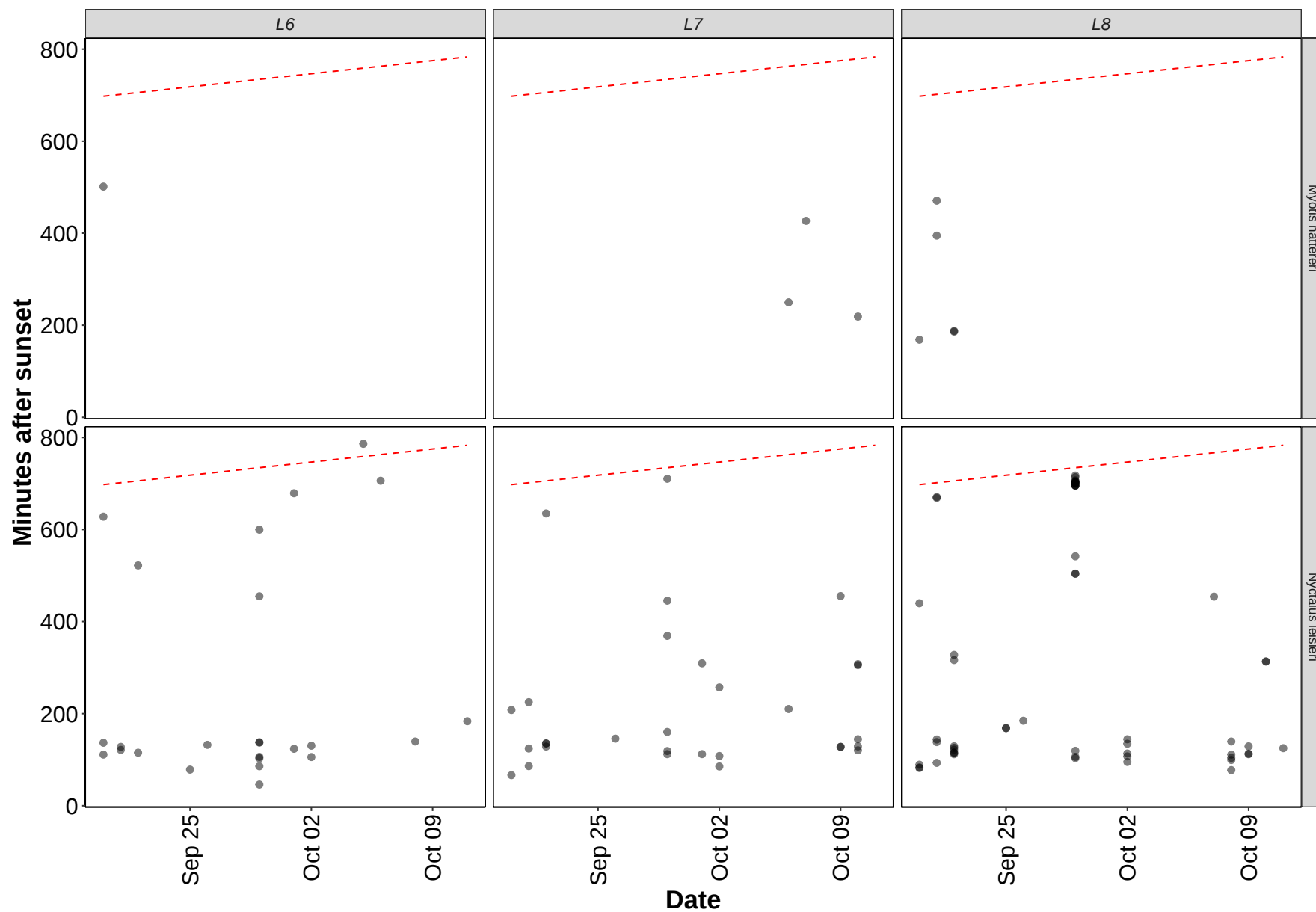


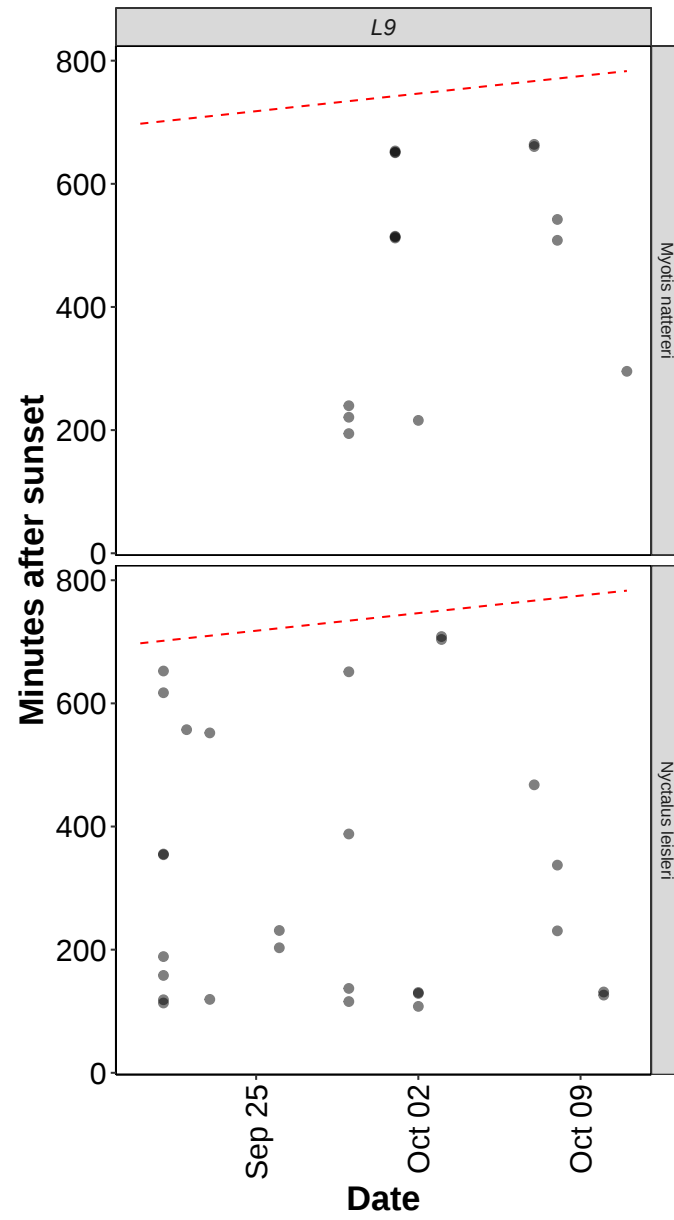


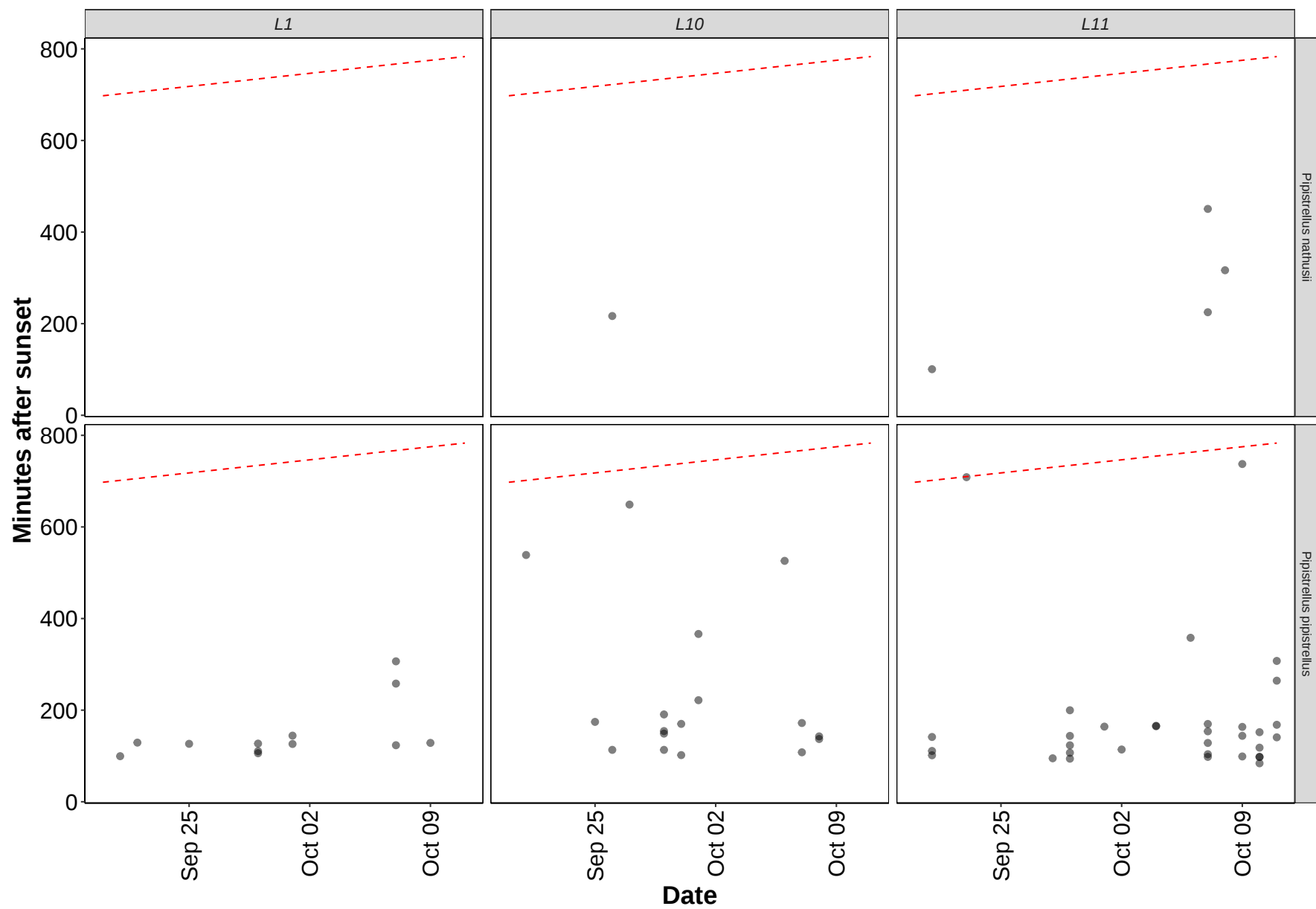


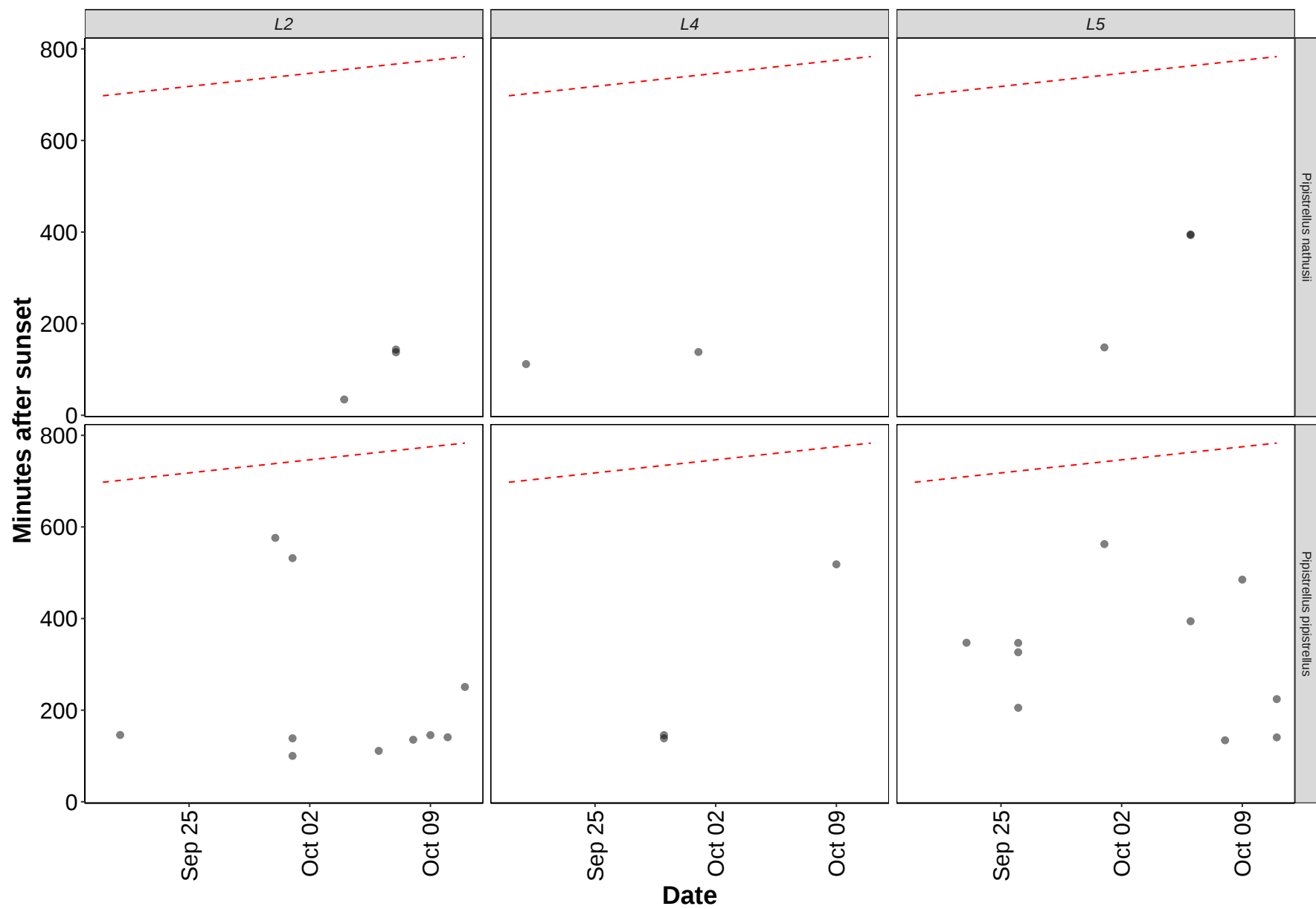


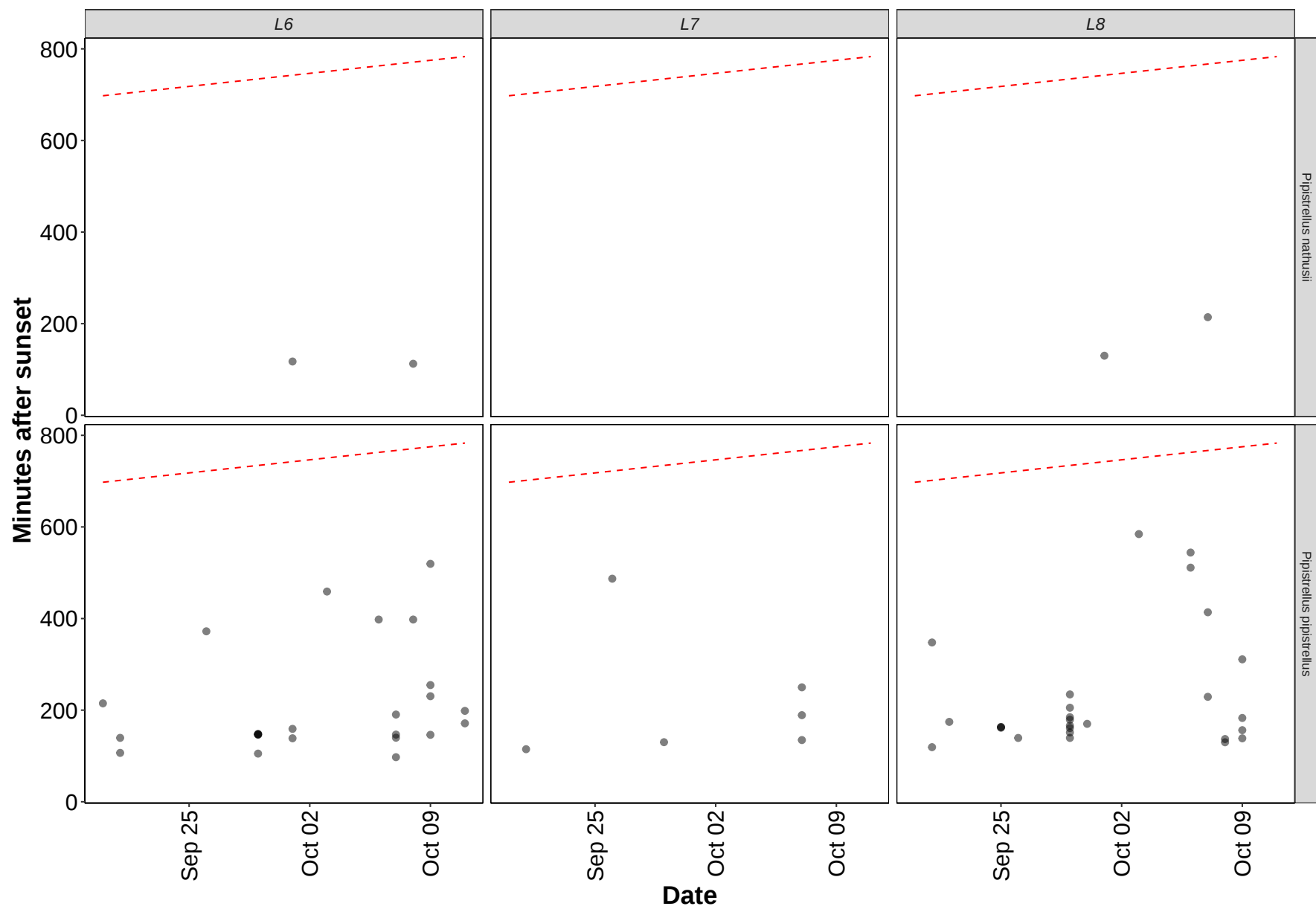


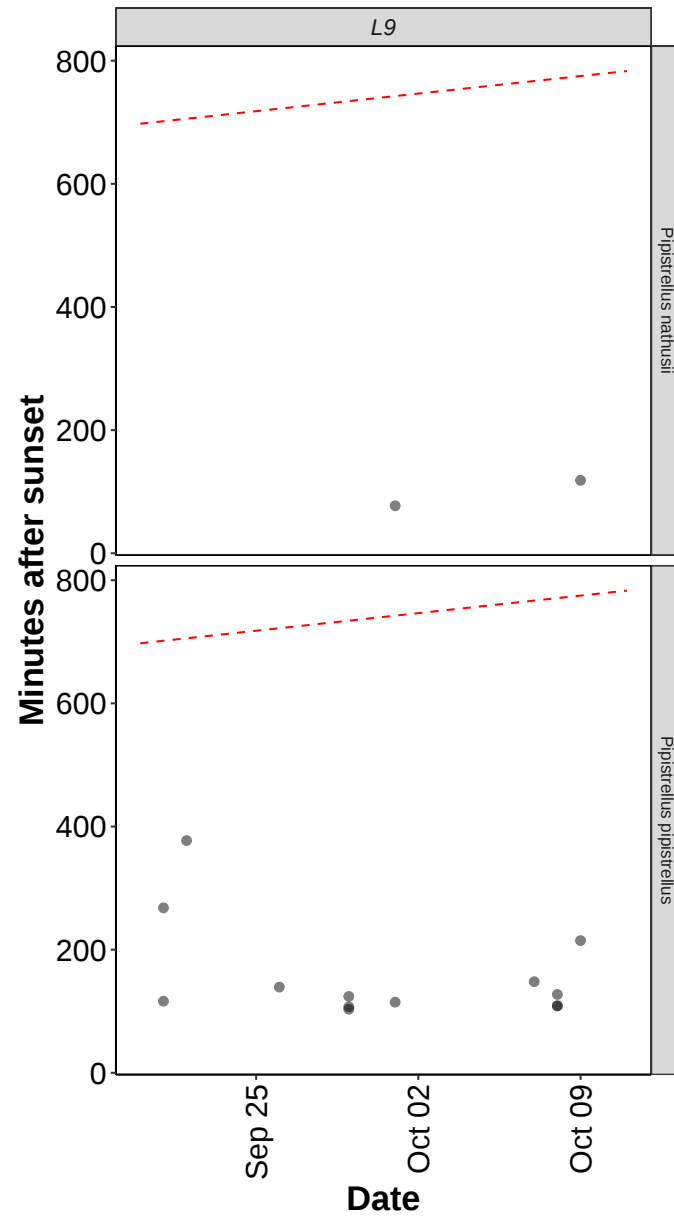


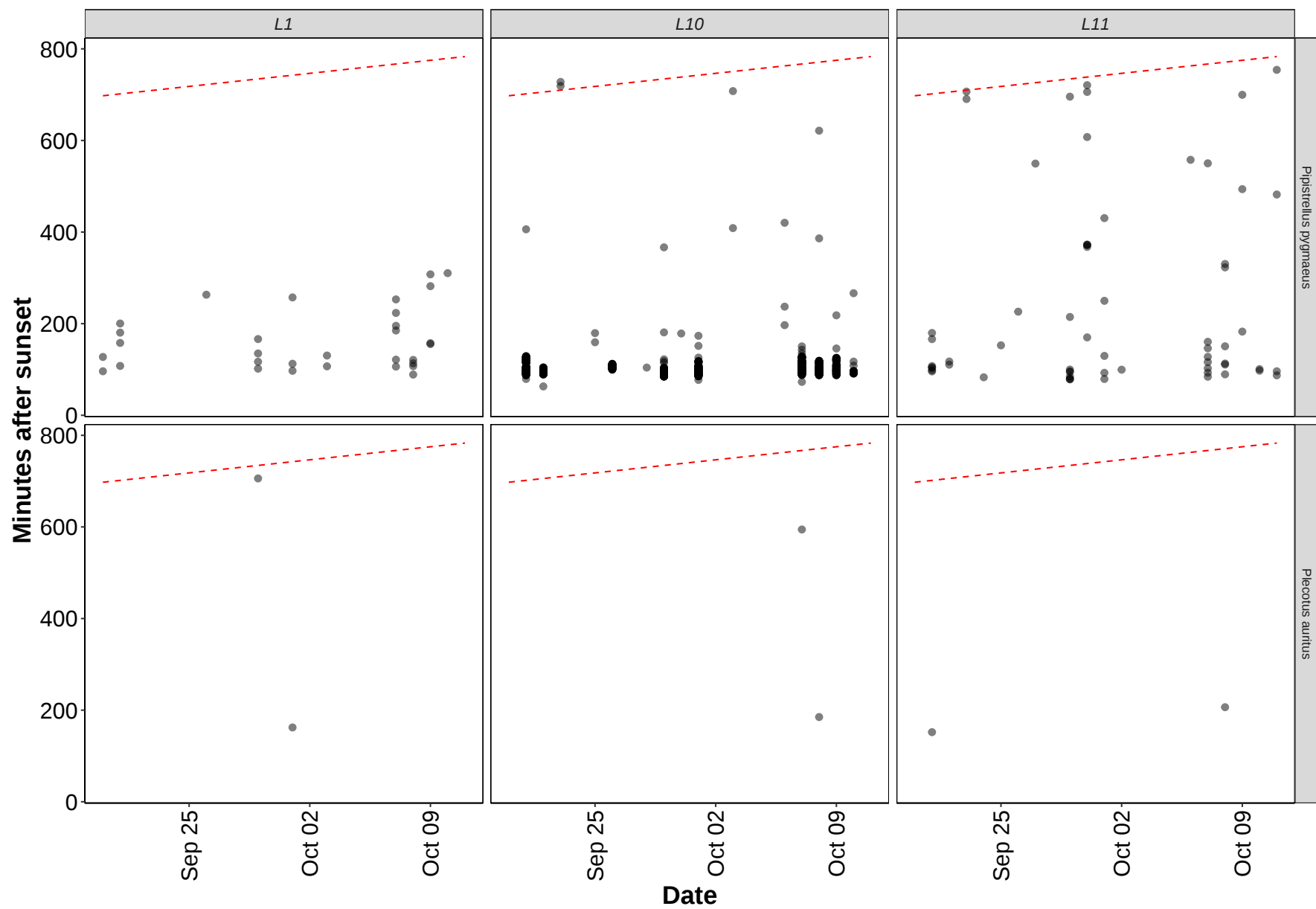












Roost Emergence Time and Bat Observation

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

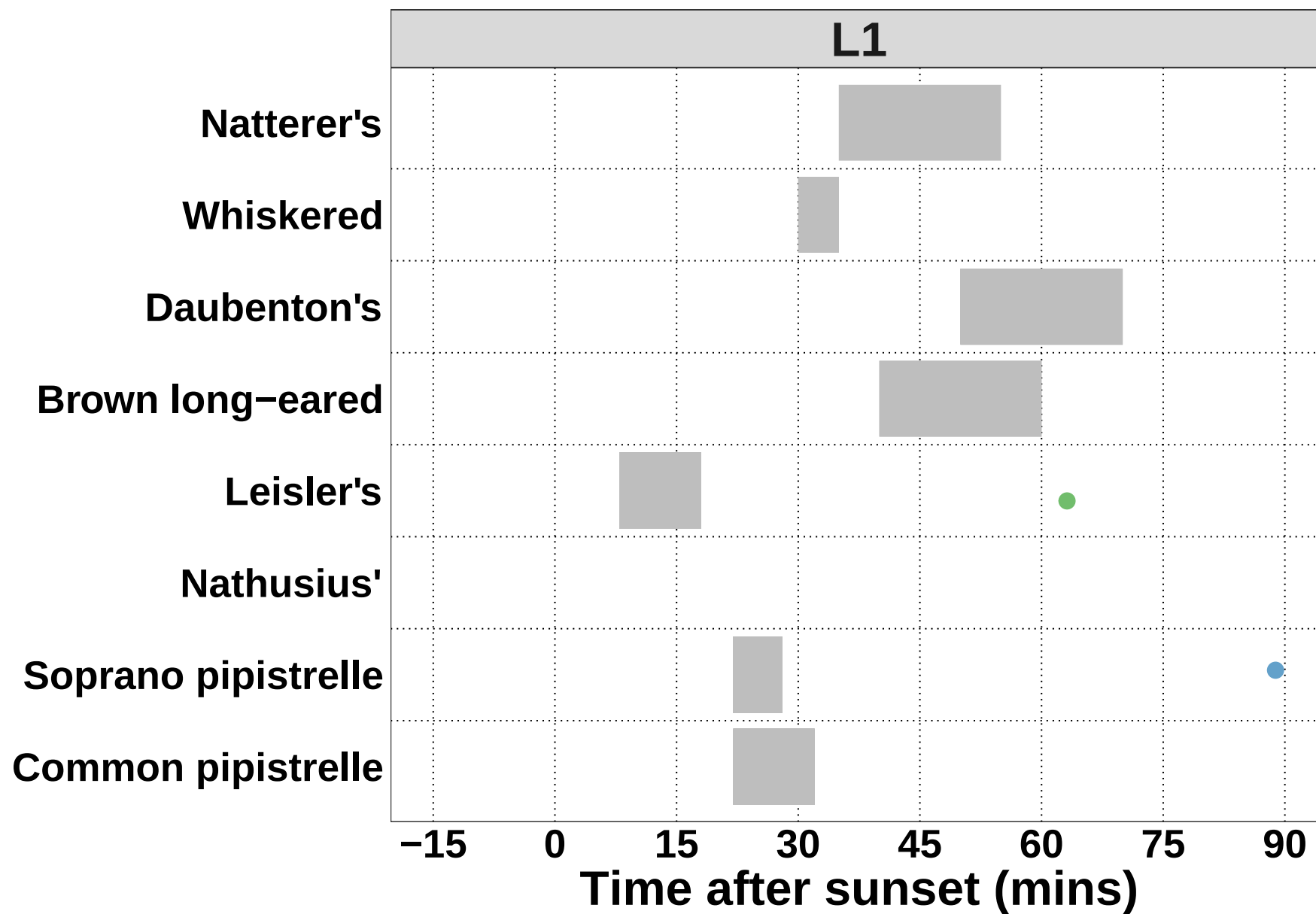
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

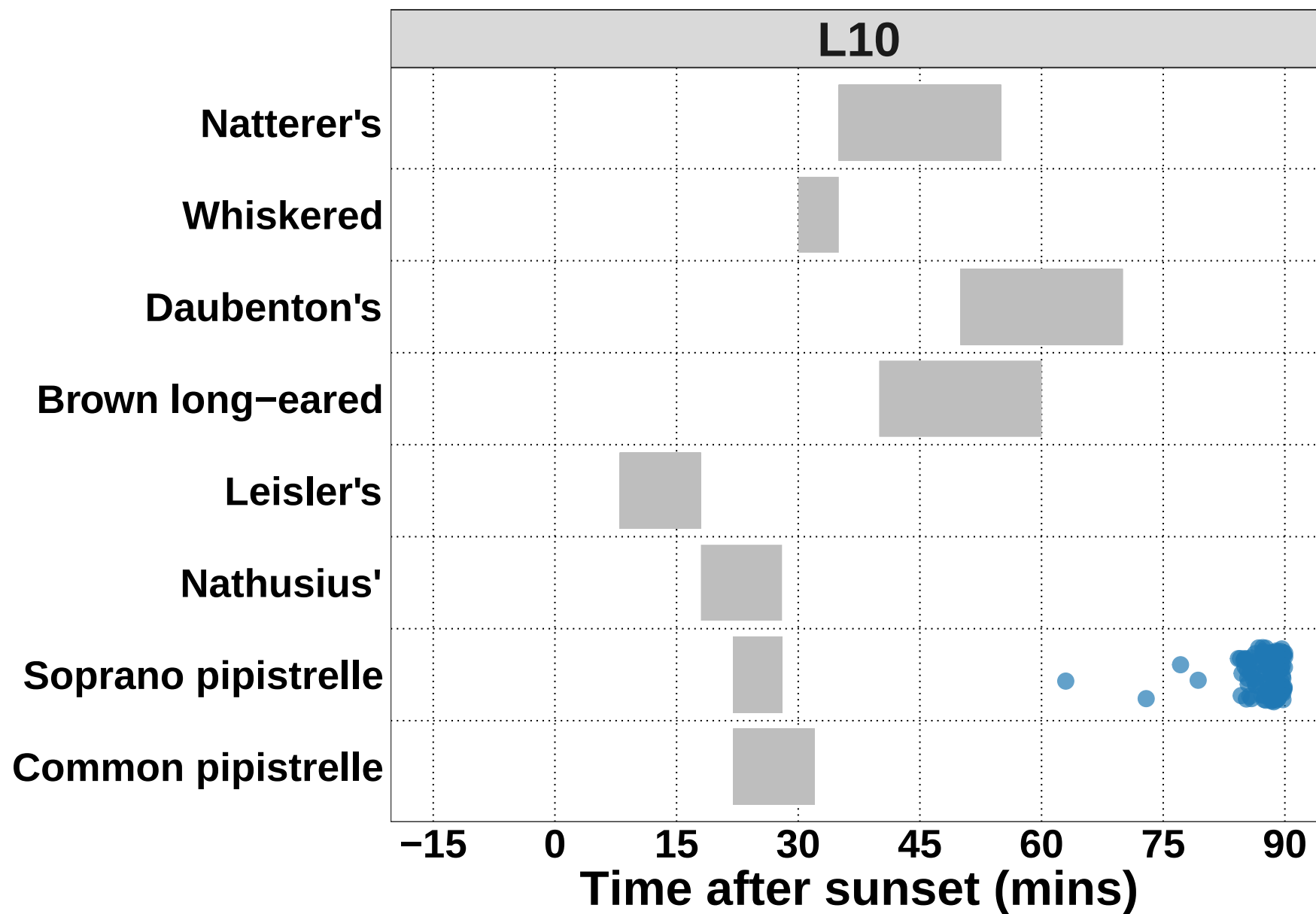
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

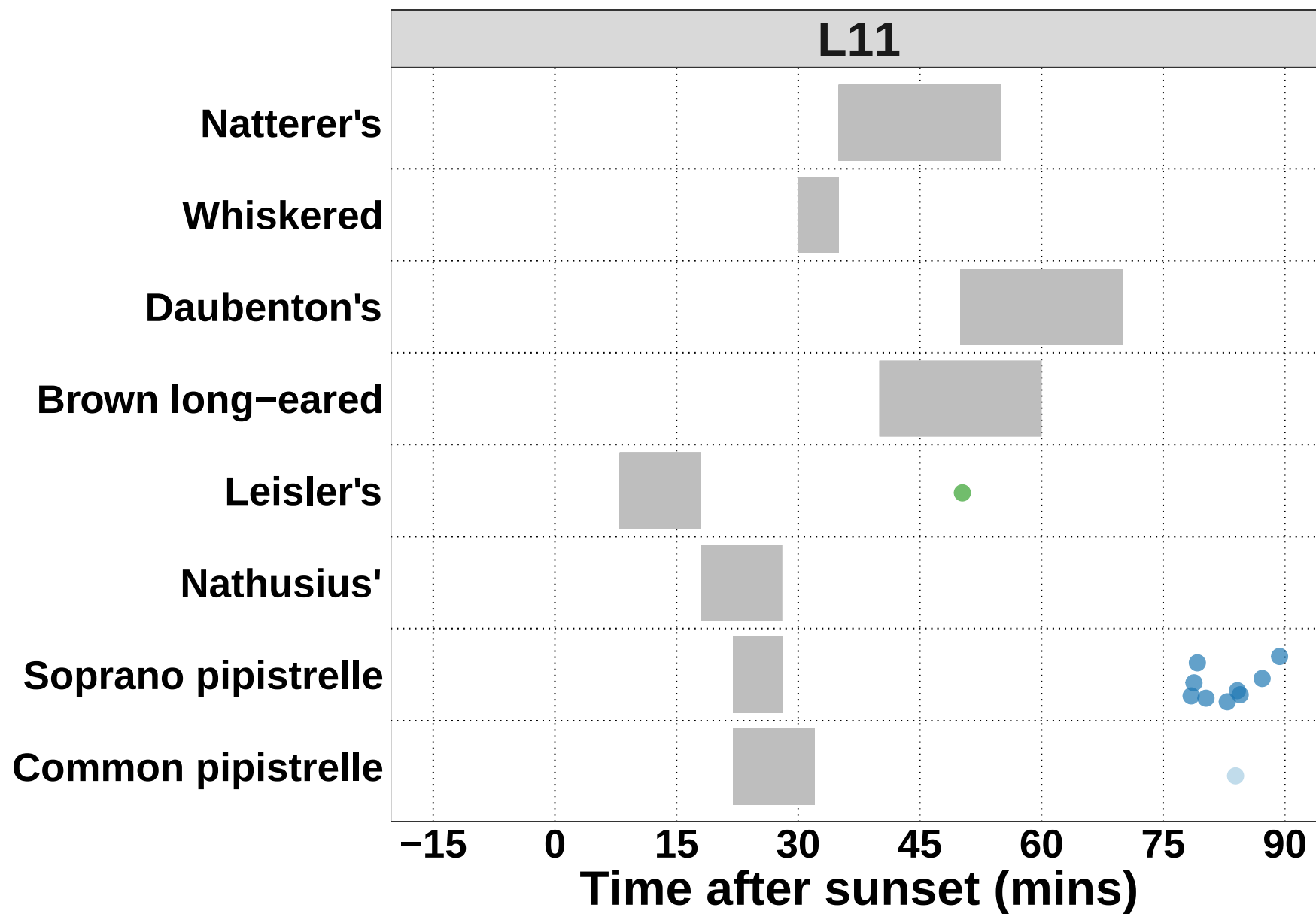
Species	Detector ID
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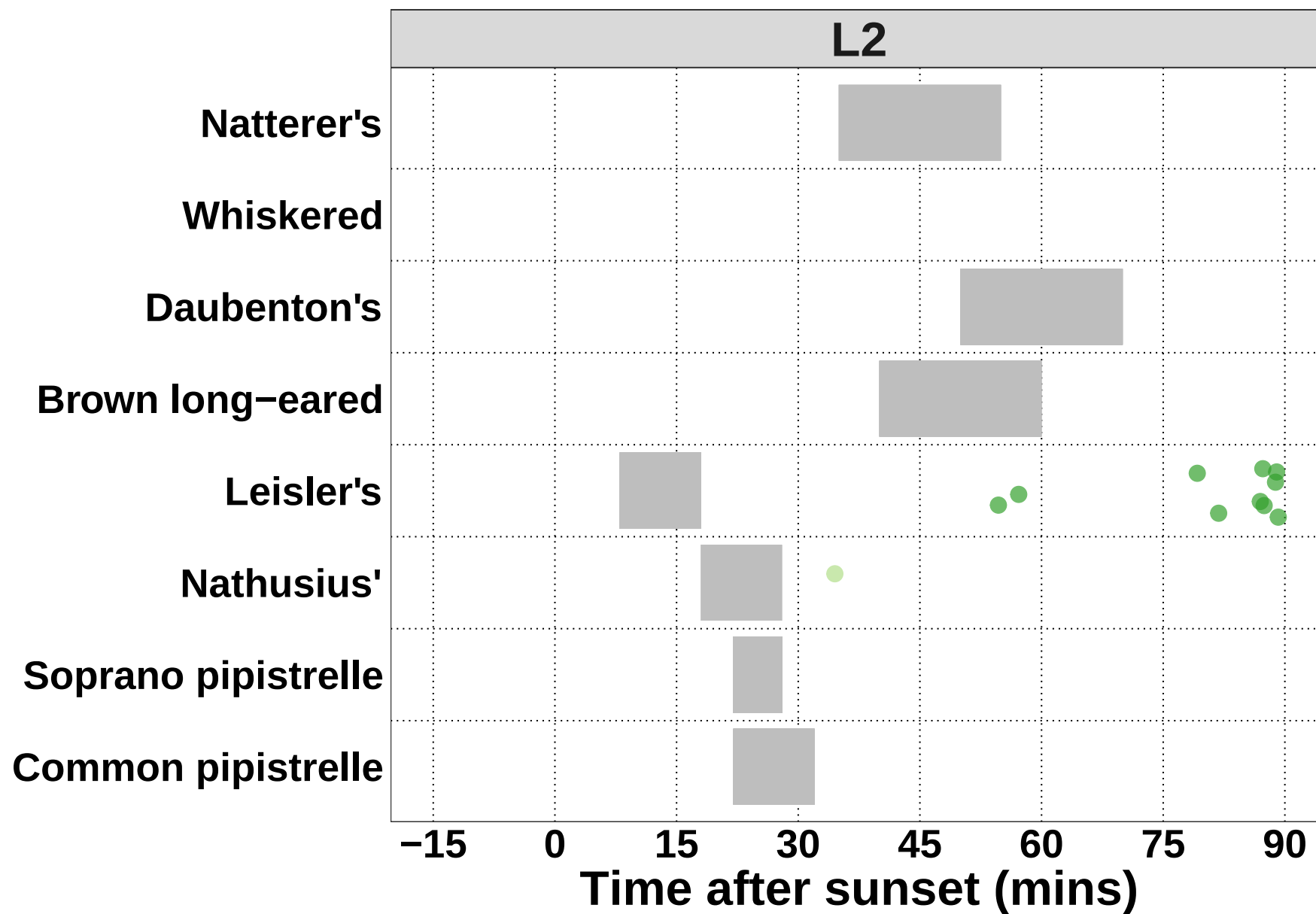
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

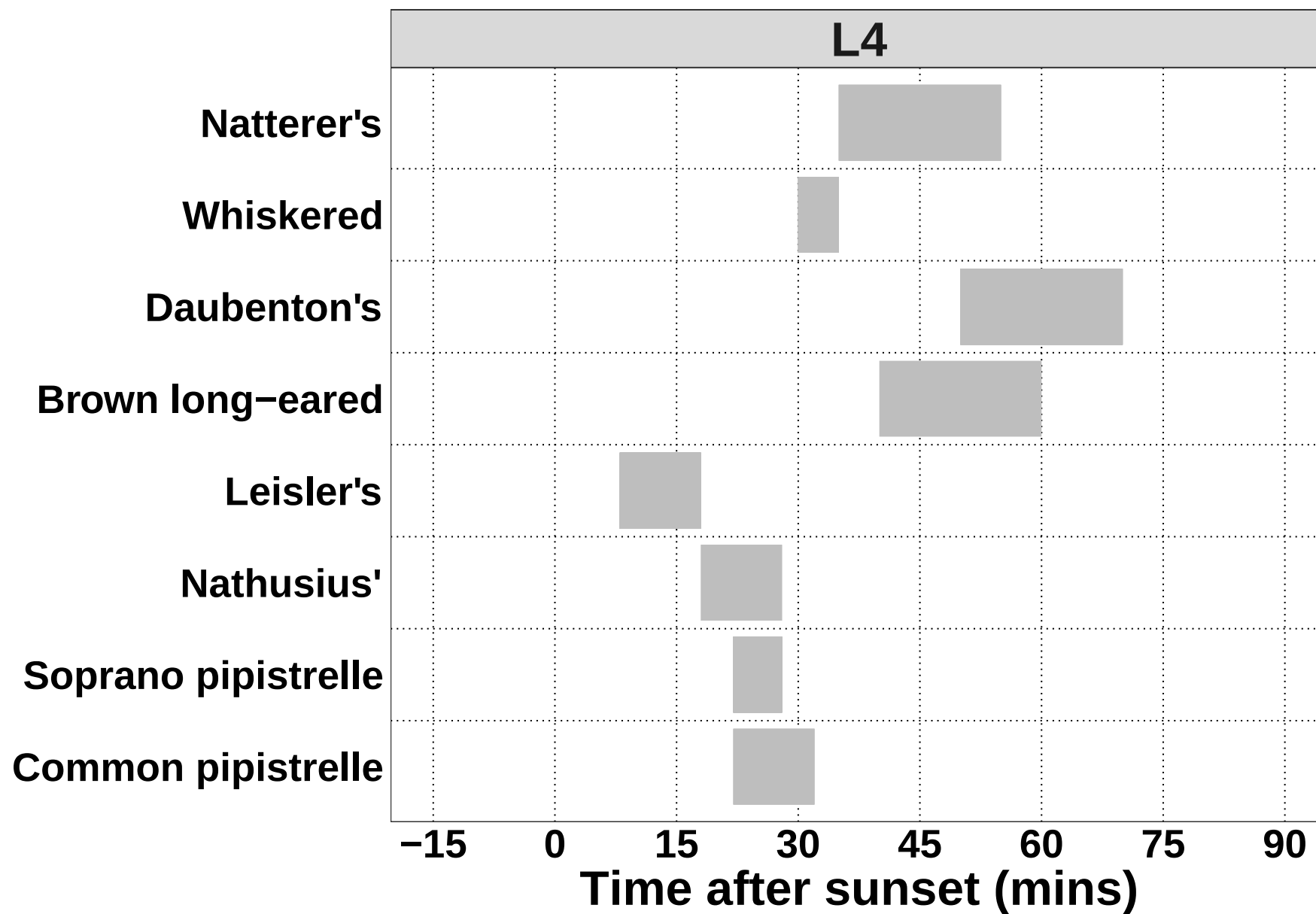
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

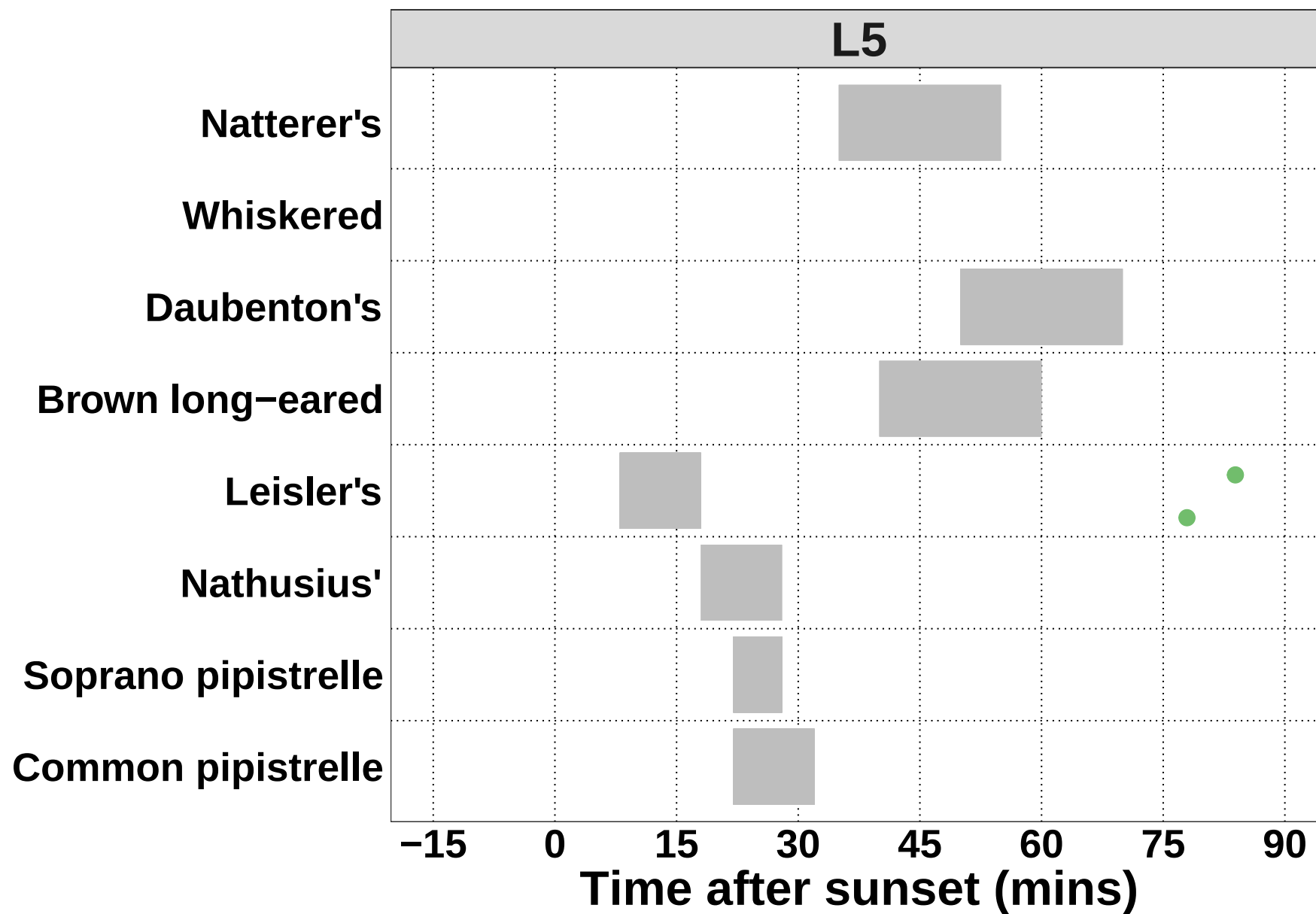


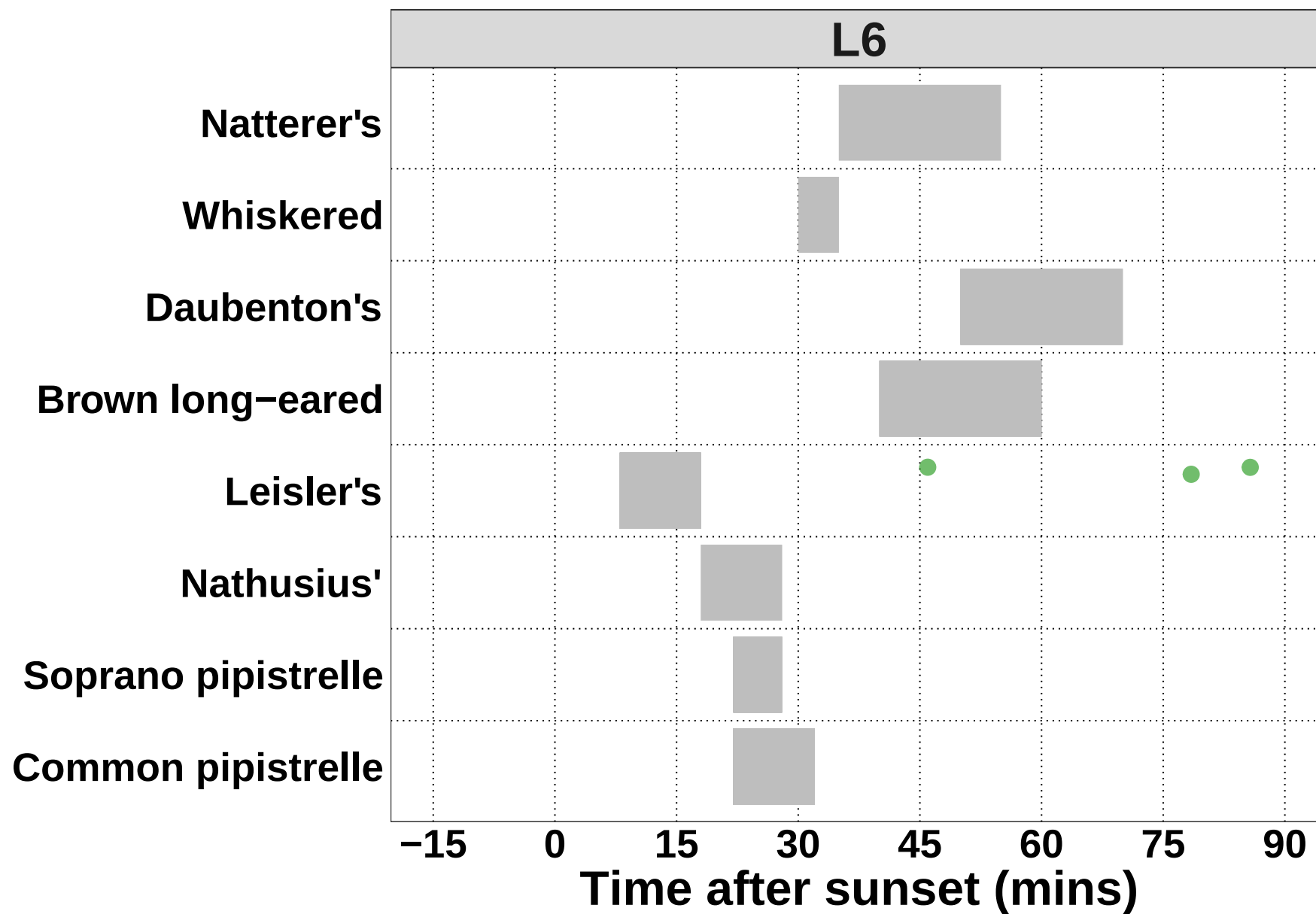


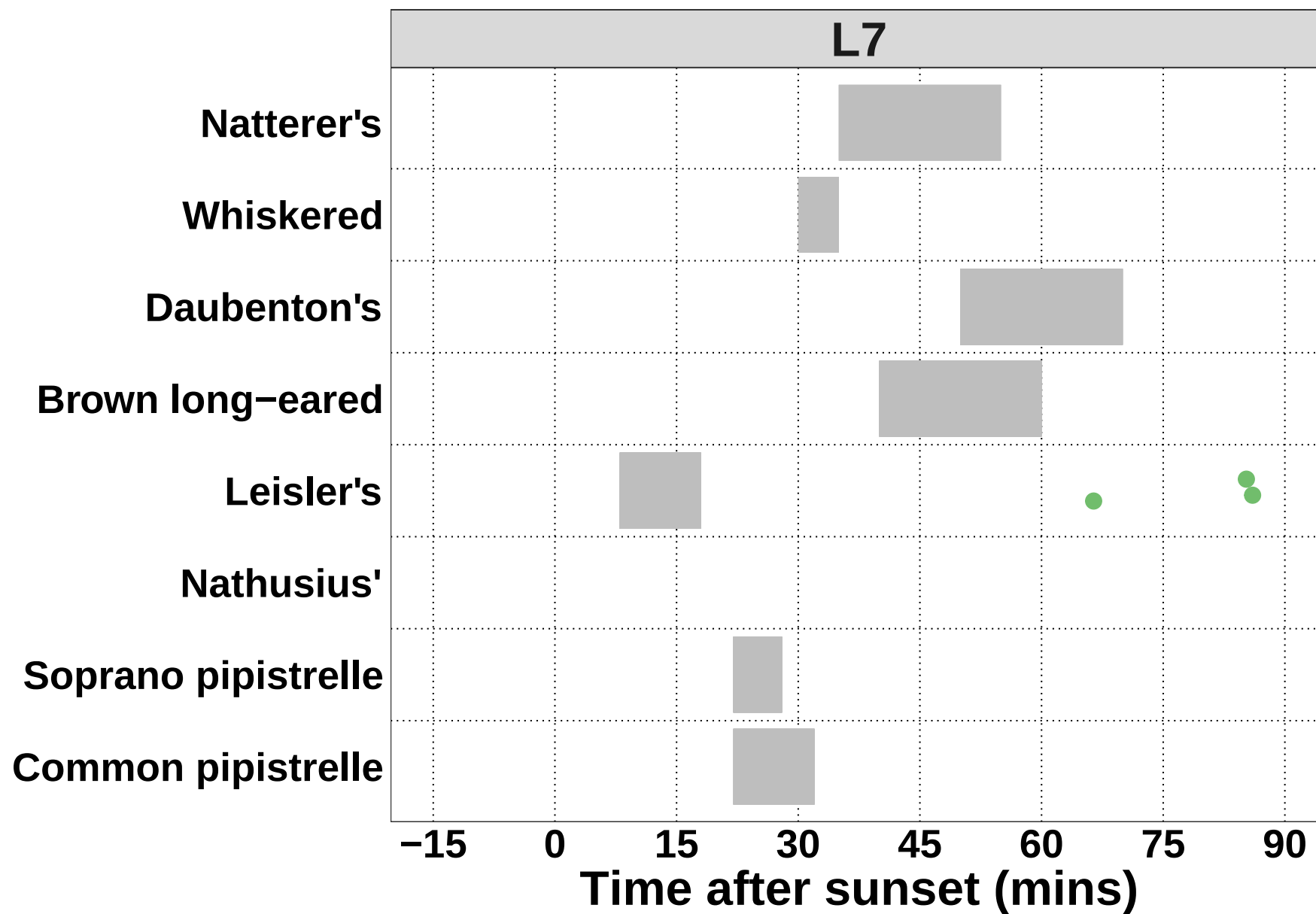


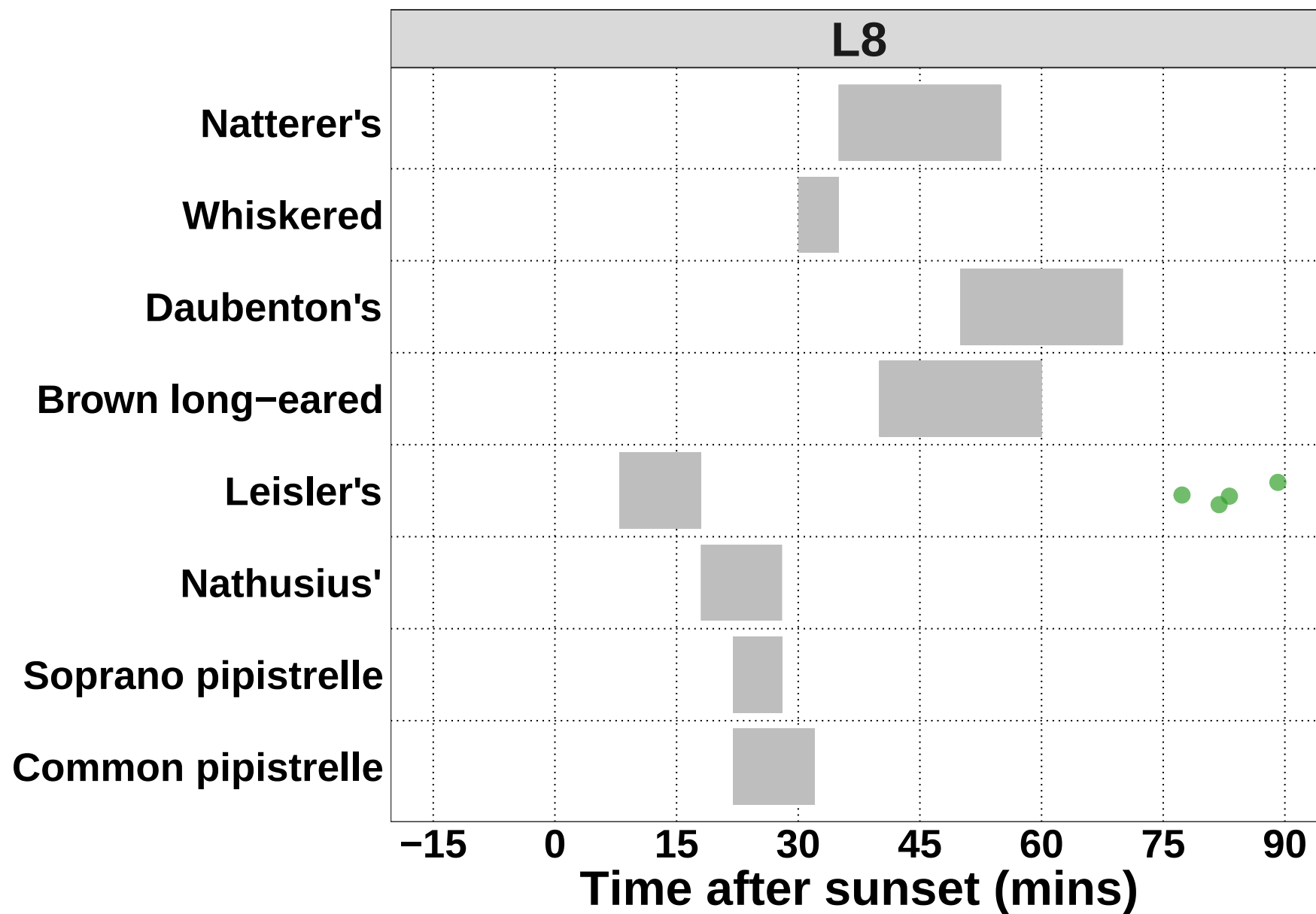


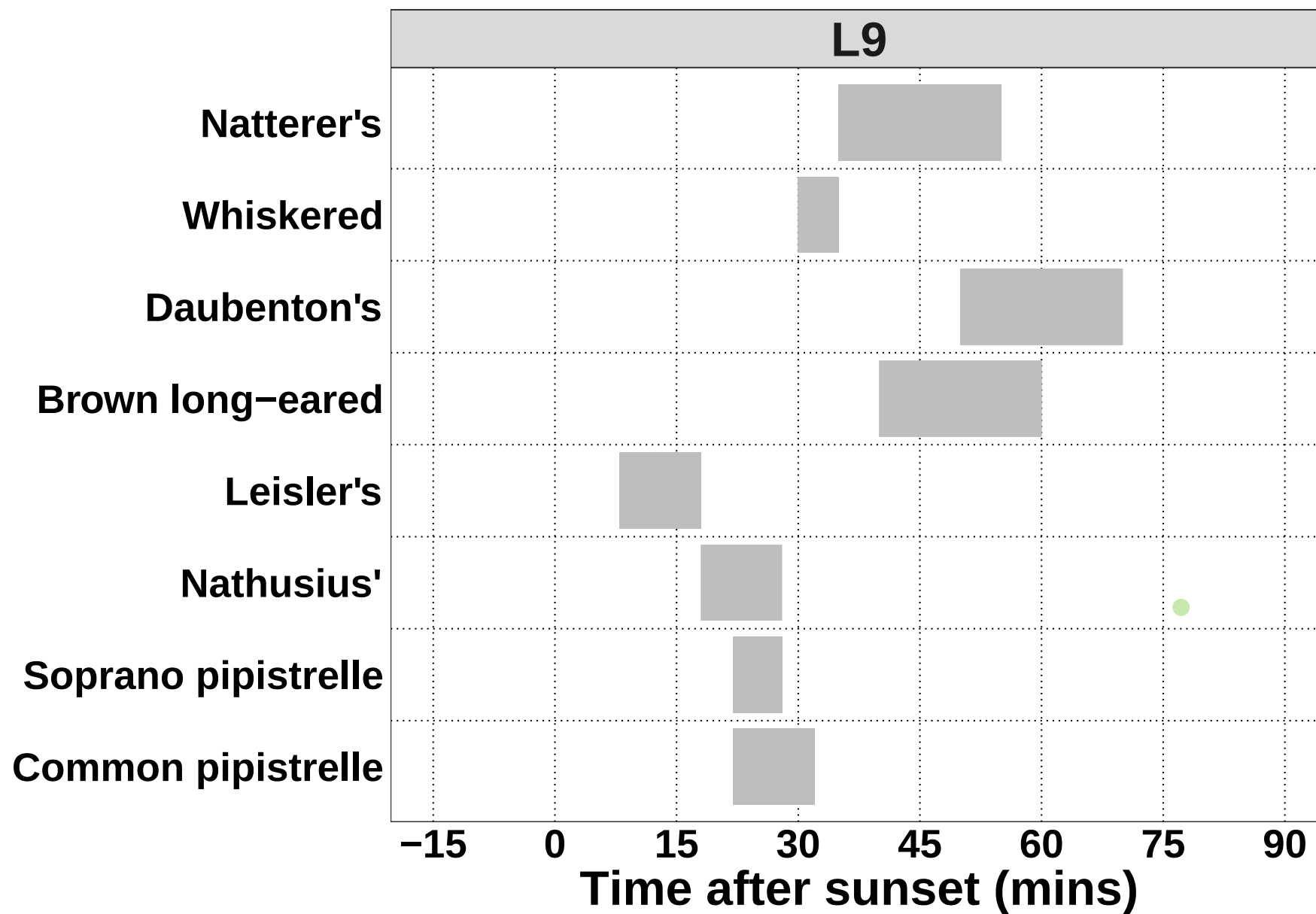












Count of Bat Passes

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 daubentonii	180	9.1
Myotis mystacinus	46	2.3
Myotis nattereri	64	3.2
Nyctalus leisleri	333	16.9
Pipistrellus nathusii	19	1.0
Pipistrellus pipistrellus	155	7.9
Pipistrellus pygmaeus	1134	57.5
Plecotus auritus	41	2.1
Total	1972	100.0

Per Detector

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

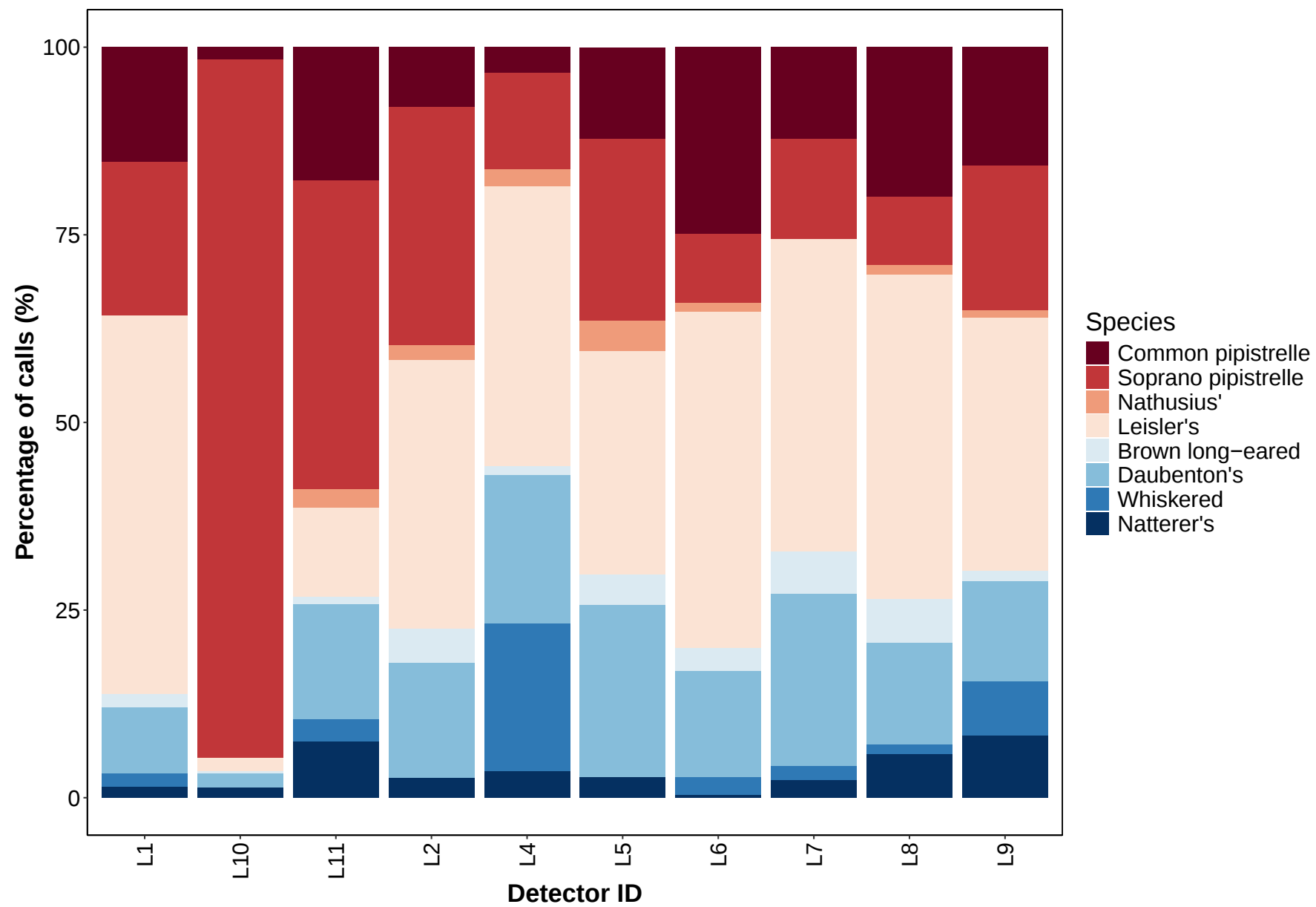
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	L1	12	10.3448276
Common pipistrelle	L10	17	1.6831683
Common pipistrelle	L11	33	19.5266272
Common pipistrelle	L2	10	8.0645161
Common pipistrelle	L4	3	4.1095890
Common pipistrelle	L5	10	15.1515152
Common pipistrelle	L6	24	30.3797468
Common pipistrelle	L7	6	6.6666667
Common pipistrelle	L8	27	20.0000000
Common pipistrelle	L9	13	11.8181818
Soprano pipistrelle	L1	31	26.7241379
Soprano pipistrelle	L10	935	92.5742574
Soprano pipistrelle	L11	62	36.6863905
Soprano pipistrelle	L2	34	27.4193548
Soprano pipistrelle	L4	10	13.6986301
Soprano pipistrelle	L5	12	18.1818182
Soprano pipistrelle	L6	8	10.1265823
Soprano pipistrelle	L7	8	8.8888889
Soprano pipistrelle	L8	15	11.1111111
Soprano pipistrelle	L9	19	17.2727273
Nathusius'	L10	1	0.0990099
Nathusius'	L11	4	2.3668639
Nathusius'	L2	3	2.4193548
Nathusius'	L4	2	2.7397260
Nathusius'	L5	3	4.5454545
Nathusius'	L6	2	2.5316456
Nathusius'	L8	2	1.4814815
Nathusius'	L9	2	1.8181818
Leisler's	L1	62	53.4482759
Leisler's	L10	22	2.1782178
Leisler's	L11	19	11.2426036
Leisler's	L2	47	37.9032258

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	L4	24	32.8767123
Leisler's	L5	20	30.3030303
Leisler's	L6	25	31.6455696
Leisler's	L7	30	33.3333333
Leisler's	L8	57	42.2222222
Leisler's	L9	27	24.5454545
Brown long-eared	L1	2	1.7241379
Brown long-eared	L10	2	0.1980198
Brown long-eared	L11	2	1.1834320
Brown long-eared	L2	6	4.8387097
Brown long-eared	L4	1	1.3698630
Brown long-eared	L5	3	4.5454545
Brown long-eared	L6	4	5.0632911
Brown long-eared	L7	10	11.1111111
Brown long-eared	L8	7	5.1851852
Brown long-eared	L9	4	3.6363636
Daubenton's	L1	5	4.3103448
Daubenton's	L10	20	1.9801980
Daubenton's	L11	27	15.9763314
Daubenton's	L2	20	16.1290323
Daubenton's	L4	16	21.9178082
Daubenton's	L5	15	22.7272727
Daubenton's	L6	13	16.4556962
Daubenton's	L7	30	33.3333333
Daubenton's	L8	20	14.8148148
Daubenton's	L9	14	12.7272727
Whiskered	L1	3	2.5862069
Whiskered	L10	1	0.0990099
Whiskered	L11	6	3.5502959
Whiskered	L4	13	17.8082192
Whiskered	L6	2	2.5316456
Whiskered	L7	3	3.3333333
Whiskered	L8	2	1.4814815
Whiskered	L9	16	14.5454545
Natterer's	L1	1	0.8620690
Natterer's	L10	12	1.1881188

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Natterer's	L11	16	9.4674556
Natterer's	L2	4	3.2258065
Natterer's	L4	4	5.4794521
Natterer's	L5	3	4.5454545
Natterer's	L6	1	1.2658228
Natterer's	L7	3	3.3333333
Natterer's	L8	5	3.7037037
Natterer's	L9	15	13.6363636

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	L1	0.5
Common pipistrelle	L10	0.1
Common pipistrelle	L11	0.2
Common pipistrelle	L2	0.1
Common pipistrelle	L4	0.1
Common pipistrelle	L5	0.1
Common pipistrelle	L6	0.5
Common pipistrelle	L7	0.7
Common pipistrelle	L8	0.2
Common pipistrelle	L9	0.4
Soprano pipistrelle	L1	0.5
Soprano pipistrelle	L10	6.0
Soprano pipistrelle	L11	0.3
Soprano pipistrelle	L2	0.2
Soprano pipistrelle	L4	0.2
Soprano pipistrelle	L5	0.2
Soprano pipistrelle	L6	0.4
Soprano pipistrelle	L7	0.4
Soprano pipistrelle	L8	0.3
Soprano pipistrelle	L9	0.5
Nathusius'	L10	0.1
Nathusius'	L11	0.2
Nathusius'	L2	0.1
Nathusius'	L4	0.1
Nathusius'	L5	0.1
Nathusius'	L6	0.1
Nathusius'	L8	0.1
Nathusius'	L9	0.1
Leisler's	L1	0.7
Leisler's	L10	0.1
Leisler's	L11	0.2
Leisler's	L2	0.2
Leisler's	L4	0.2
Leisler's	L5	0.2
Leisler's	L6	0.8
Leisler's	L7	0.9

Species	Detector ID	Median Pass Rate
Leisler's	L8	0.4
Leisler's	L9	0.7
Brown long-eared	L1	0.2
Brown long-eared	L10	0.2
Brown long-eared	L11	0.1
Brown long-eared	L2	0.1
Brown long-eared	L4	0.1
Brown long-eared	L5	0.1
Brown long-eared	L6	0.2
Brown long-eared	L7	0.2
Brown long-eared	L8	0.1
Brown long-eared	L9	0.1
Daubenton's	L1	0.4
Daubenton's	L10	0.2
Daubenton's	L11	0.2
Daubenton's	L2	0.2
Daubenton's	L4	0.2
Daubenton's	L5	0.1
Daubenton's	L6	0.3
Daubenton's	L7	0.4
Daubenton's	L8	0.1
Daubenton's	L9	0.5
Whiskered	L1	0.2
Whiskered	L10	0.1
Whiskered	L11	0.1
Whiskered	L4	0.3
Whiskered	L6	0.2
Whiskered	L7	0.2
Whiskered	L8	0.2
Whiskered	L9	0.2
Natterer's	L1	0.3
Natterer's	L10	0.2
Natterer's	L11	0.2
Natterer's	L2	0.1
Natterer's	L4	0.1
Natterer's	L5	0.1

Species	Detector ID	Median Pass Rate
Natterer's	L6	0.1
Natterer's	L7	0.1
Natterer's	L8	0.3
Natterer's	L9	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.

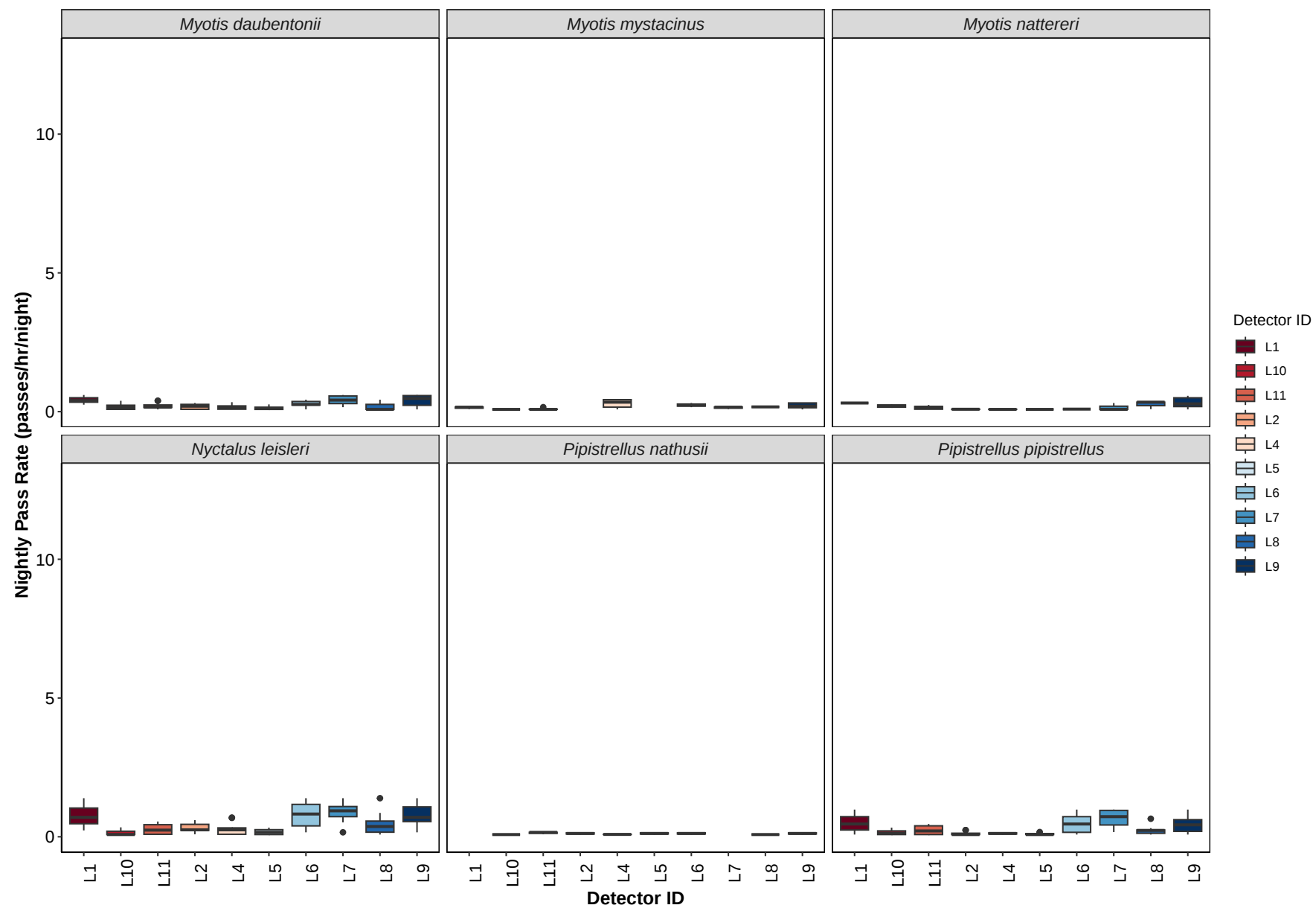
Species	Detector ID	Mean Pass Rate
Common pipistrelle	L1	0.5
Common pipistrelle	L10	0.2
Common pipistrelle	L11	0.2
Common pipistrelle	L2	0.1
Common pipistrelle	L4	0.1
Common pipistrelle	L5	0.1
Common pipistrelle	L6	0.5
Common pipistrelle	L7	0.7
Common pipistrelle	L8	0.2
Common pipistrelle	L9	0.5
Soprano pipistrelle	L1	0.5
Soprano pipistrelle	L10	5.8
Soprano pipistrelle	L11	0.4
Soprano pipistrelle	L2	0.4
Soprano pipistrelle	L4	0.2
Soprano pipistrelle	L5	0.2
Soprano pipistrelle	L6	0.3
Soprano pipistrelle	L7	0.4
Soprano pipistrelle	L8	0.2
Soprano pipistrelle	L9	0.4
Nathusius'	L10	0.1
Nathusius'	L11	0.1
Nathusius'	L2	0.1
Nathusius'	L4	0.1
Nathusius'	L5	0.1
Nathusius'	L6	0.1
Nathusius'	L8	0.1
Nathusius'	L9	0.1
Leisler's	L1	0.8
Leisler's	L10	0.1

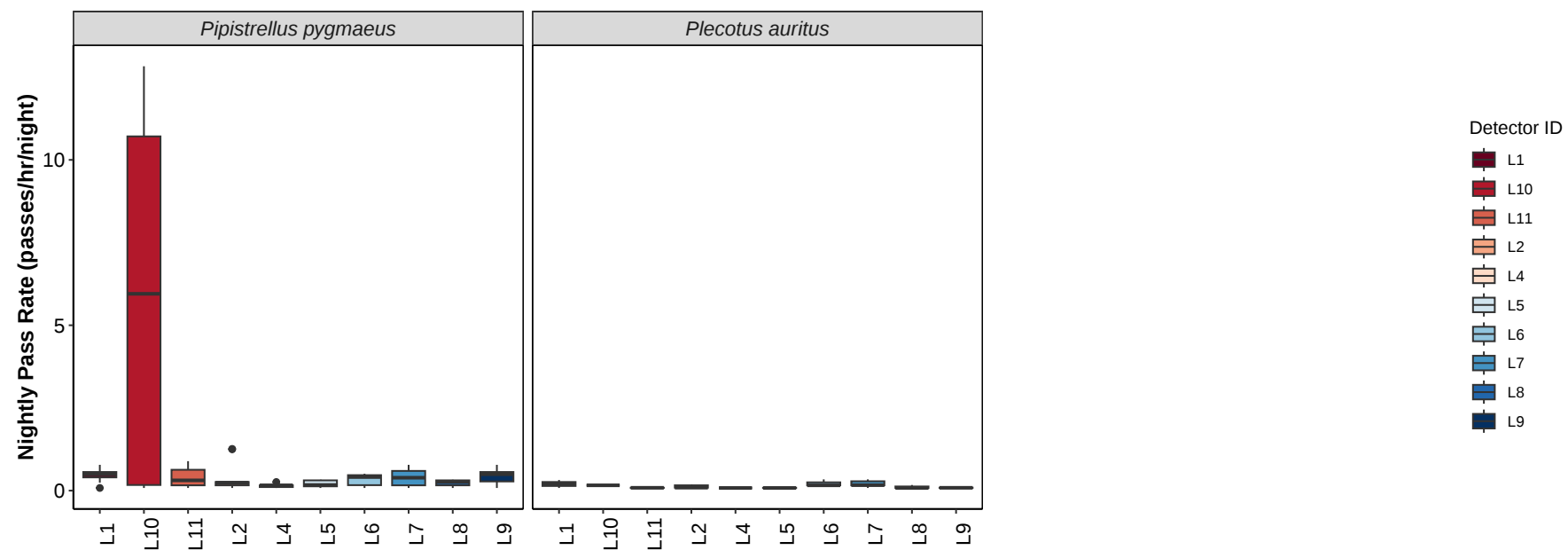
Species	Detector ID	Mean Pass Rate
Leisler's	L11	0.3
Leisler's	L2	0.3
Leisler's	L4	0.3
Leisler's	L5	0.2
Leisler's	L6	0.8
Leisler's	L7	0.9
Leisler's	L8	0.5
Leisler's	L9	0.8
Brown long-eared	L1	0.2
Brown long-eared	L10	0.2
Brown long-eared	L11	0.1
Brown long-eared	L2	0.1
Brown long-eared	L4	0.1
Brown long-eared	L5	0.1
Brown long-eared	L6	0.2
Brown long-eared	L7	0.2
Brown long-eared	L8	0.1
Brown long-eared	L9	0.1
Daubenton's	L1	0.4
Daubenton's	L10	0.2
Daubenton's	L11	0.2
Daubenton's	L2	0.2
Daubenton's	L4	0.2
Daubenton's	L5	0.1
Daubenton's	L6	0.3
Daubenton's	L7	0.4
Daubenton's	L8	0.2
Daubenton's	L9	0.4
Whiskered	L1	0.1
Whiskered	L10	0.1
Whiskered	L11	0.1
Whiskered	L4	0.3
Whiskered	L6	0.2
Whiskered	L7	0.1
Whiskered	L8	0.2
Whiskered	L9	0.2

Species	Detector ID	Mean Pass Rate
Natterer's	L1	0.3
Natterer's	L10	0.2
Natterer's	L11	0.2
Natterer's	L2	0.1
Natterer's	L4	0.1
Natterer's	L5	0.1
Natterer's	L6	0.1
Natterer's	L7	0.2
Natterer's	L8	0.3
Natterer's	L9	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.





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
Common pipistrelle	L1	20	23
Common pipistrelle	L10	10	9
Common pipistrelle	L11	10	26
Common pipistrelle	L2	4	8
Common pipistrelle	L4	2	1
Common pipistrelle	L5	3	6
Common pipistrelle	L6	21	44
Common pipistrelle	L7	20	12
Common pipistrelle	L8	17	14
Common pipistrelle	L9	20	26
Soprano pipistrelle	L1	19	39
Soprano pipistrelle	L10	371	712
Soprano pipistrelle	L11	37	46
Soprano pipistrelle	L2	7	41
Soprano pipistrelle	L4	6	5
Soprano pipistrelle	L5	5	13
Soprano pipistrelle	L6	13	11
Soprano pipistrelle	L7	8	27
Soprano pipistrelle	L8	7	7
Soprano pipistrelle	L9	13	43
Nathusius'	L10	1	0
Nathusius'	L11	1	4
Nathusius'	L2	0	3
Nathusius'	L4	1	1
Nathusius'	L5	0	3
Nathusius'	L6	0	3
Nathusius'	L8	0	2
Nathusius'	L9	0	3
Leisler's	L1	78	64
Leisler's	L10	11	9
Leisler's	L11	6	18
Leisler's	L2	33	21
Leisler's	L4	22	10
Leisler's	L5	13	9
Leisler's	L6	71	46
Leisler's	L7	57	52

Species	Detector ID	Sep	Oct
Leisler's	L8	44	23
Leisler's	L9	52	46
Brown long-eared	L1	1	4
Brown long-eared	L10	0	4
Brown long-eared	L11	1	1
Brown long-eared	L2	4	3
Brown long-eared	L4	0	1
Brown long-eared	L5	1	2
Brown long-eared	L6	6	2
Brown long-eared	L7	8	7
Brown long-eared	L8	6	3
Brown long-eared	L9	2	2
Daubenton's	L1	20	5
Daubenton's	L10	9	12
Daubenton's	L11	7	24
Daubenton's	L2	8	15
Daubenton's	L4	11	6
Daubenton's	L5	7	10
Daubenton's	L6	16	21
Daubenton's	L7	27	33
Daubenton's	L8	17	4
Daubenton's	L9	17	22
Whiskered	L1	3	2
Whiskered	L10	1	0
Whiskered	L11	1	5
Whiskered	L4	15	2
Whiskered	L6	0	6
Whiskered	L7	3	2
Whiskered	L8	2	0
Whiskered	L9	2	19
Natterer's	L1	0	4
Natterer's	L10	5	10
Natterer's	L11	4	11
Natterer's	L2	3	1
Natterer's	L4	3	0
Natterer's	L5	0	2

Species	Detector ID	Sep	Oct
Natterer's	L6	1	0
Natterer's	L7	0	6
Natterer's	L8	9	0
Natterer's	L9	3	21

Survey Effort

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

month	Detector ID	No. of Survey Nights
Sep	L1	8
Sep	L10	10
Sep	L11	10
Sep	L2	7
Sep	L4	6
Sep	L5	8
Sep	L6	8
Sep	L7	6
Sep	L8	7
Sep	L9	5
Oct	L1	8
Oct	L10	9
Oct	L11	10
Oct	L2	10
Oct	L4	6
Oct	L5	10
Oct	L6	9
Oct	L7	9
Oct	L8	9
Oct	L9	10

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
Common pipistrelle	L1	0.3	0.5
Common pipistrelle	L10	0.1	0.2
Common pipistrelle	L11	0.2	0.2
Common pipistrelle	L2	0.2	0.1
Common pipistrelle	L4	0.2	0.1
Common pipistrelle	L5	0.1	0.1
Common pipistrelle	L6	0.3	0.5
Common pipistrelle	L7	0.5	0.9
Common pipistrelle	L8	0.2	0.2
Common pipistrelle	L9	0.3	0.4
Soprano pipistrelle	L1	0.5	0.5
Soprano pipistrelle	L10	2.5	10.7
Soprano pipistrelle	L11	0.2	0.4
Soprano pipistrelle	L2	0.2	0.2
Soprano pipistrelle	L4	0.2	0.2
Soprano pipistrelle	L5	0.2	0.3
Soprano pipistrelle	L6	0.3	0.4
Soprano pipistrelle	L7	0.3	0.4
Soprano pipistrelle	L8	0.3	0.2
Soprano pipistrelle	L9	0.5	0.4
Nathusius'	L10	0.1	NA
Nathusius'	L11	0.1	0.2
Nathusius'	L2	NA	0.1
Nathusius'	L4	0.1	0.1
Nathusius'	L5	NA	0.1
Nathusius'	L6	NA	0.1
Nathusius'	L8	NA	0.1
Nathusius'	L9	NA	0.1
Leisler's	L1	0.8	0.7
Leisler's	L10	0.1	0.2
Leisler's	L11	0.1	0.4
Leisler's	L2	0.5	0.2
Leisler's	L4	0.2	0.3
Leisler's	L5	0.3	0.1
Leisler's	L6	1.1	0.5
Leisler's	L7	0.9	0.9

Species	Detector ID	Sep	Oct
Leisler's	L8	0.6	0.3
Leisler's	L9	0.7	0.7
Brown long-eared	L1	0.1	0.3
Brown long-eared	L10	NA	0.2
Brown long-eared	L11	0.1	0.1
Brown long-eared	L2	0.1	0.1
Brown long-eared	L4	NA	0.1
Brown long-eared	L5	0.1	0.1
Brown long-eared	L6	0.2	0.2
Brown long-eared	L7	0.2	0.2
Brown long-eared	L8	0.1	0.1
Brown long-eared	L9	0.1	0.1
Daubenton's	L1	0.4	0.4
Daubenton's	L10	0.2	0.1
Daubenton's	L11	0.1	0.2
Daubenton's	L2	0.2	0.2
Daubenton's	L4	0.2	0.1
Daubenton's	L5	0.3	0.1
Daubenton's	L6	0.3	0.3
Daubenton's	L7	0.5	0.4
Daubenton's	L8	0.3	0.1
Daubenton's	L9	0.6	0.4
Whiskered	L1	0.1	0.2
Whiskered	L10	0.1	NA
Whiskered	L11	0.1	0.1
Whiskered	L4	0.4	0.2
Whiskered	L6	NA	0.2
Whiskered	L7	0.1	0.2
Whiskered	L8	0.2	NA
Whiskered	L9	0.1	0.3
Natterer's	L1	NA	0.3
Natterer's	L10	0.2	0.2
Natterer's	L11	0.1	0.2
Natterer's	L2	0.1	0.1
Natterer's	L4	0.1	NA
Natterer's	L5	NA	0.1

Species	Detector ID	Sep	Oct
Natterer's	L6	0.1	NA
Natterer's	L7	NA	0.1
Natterer's	L8	0.3	NA
Natterer's	L9	0.2	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	Sep	Oct
Common pipistrelle	L1	0.4	0.6
Common pipistrelle	L10	0.1	0.2
Common pipistrelle	L11	0.2	0.3
Common pipistrelle	L2	0.2	0.1
Common pipistrelle	L4	0.2	0.1
Common pipistrelle	L5	0.1	0.1
Common pipistrelle	L6	0.4	0.5
Common pipistrelle	L7	0.6	0.9
Common pipistrelle	L8	0.2	0.2
Common pipistrelle	L9	0.4	0.5
Soprano pipistrelle	L1	0.4	0.5
Soprano pipistrelle	L10	3.9	8.0
Soprano pipistrelle	L11	0.3	0.5
Soprano pipistrelle	L2	0.2	0.5
Soprano pipistrelle	L4	0.2	0.1
Soprano pipistrelle	L5	0.1	0.3
Soprano pipistrelle	L6	0.3	0.4
Soprano pipistrelle	L7	0.3	0.4
Soprano pipistrelle	L8	0.3	0.2
Soprano pipistrelle	L9	0.5	0.4
Nathusius'	L10	0.1	NA
Nathusius'	L11	0.1	0.2
Nathusius'	L2	NA	0.1
Nathusius'	L4	0.1	0.1
Nathusius'	L5	NA	0.1
Nathusius'	L6	NA	0.1
Nathusius'	L8	NA	0.1
Nathusius'	L9	NA	0.1
Leisler's	L1	0.8	0.7
Leisler's	L10	0.1	0.2

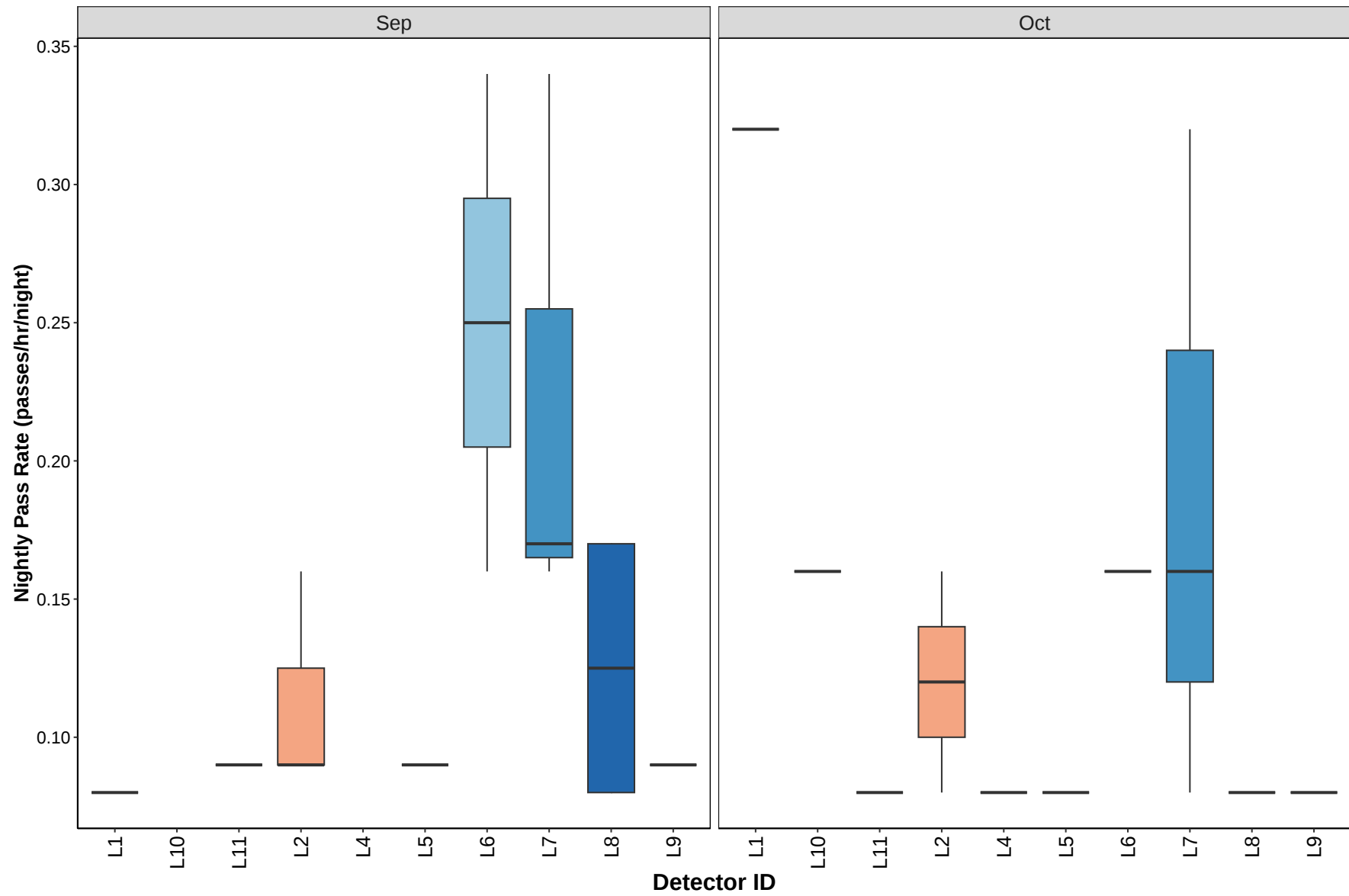
Species	Detector ID	Sep	Oct
Leisler's	L11	0.2	0.4
Leisler's	L2	0.4	0.2
Leisler's	L4	0.3	0.3
Leisler's	L5	0.2	0.1
Leisler's	L6	1.0	0.6
Leisler's	L7	1.0	0.8
Leisler's	L8	0.6	0.3
Leisler's	L9	0.9	0.7
Brown long-eared	L1	0.1	0.3
Brown long-eared	L10	NA	0.2
Brown long-eared	L11	0.1	0.1
Brown long-eared	L2	0.1	0.1
Brown long-eared	L4	NA	0.1
Brown long-eared	L5	0.1	0.1
Brown long-eared	L6	0.2	0.2
Brown long-eared	L7	0.2	0.2
Brown long-eared	L8	0.1	0.1
Brown long-eared	L9	0.1	0.1
Daubenton's	L1	0.4	0.4
Daubenton's	L10	0.2	0.2
Daubenton's	L11	0.1	0.2
Daubenton's	L2	0.2	0.2
Daubenton's	L4	0.2	0.1
Daubenton's	L5	0.2	0.1
Daubenton's	L6	0.3	0.3
Daubenton's	L7	0.5	0.4
Daubenton's	L8	0.3	0.1
Daubenton's	L9	0.5	0.4
Whiskered	L1	0.1	0.2
Whiskered	L10	0.1	NA
Whiskered	L11	0.1	0.1
Whiskered	L4	0.3	0.2
Whiskered	L6	NA	0.2
Whiskered	L7	0.1	0.2
Whiskered	L8	0.2	NA
Whiskered	L9	0.1	0.2

Species	Detector ID	Sep	Oct
Natterer's	L1	NA	0.3
Natterer's	L10	0.2	0.2
Natterer's	L11	0.1	0.2
Natterer's	L2	0.1	0.1
Natterer's	L4	0.1	NA
Natterer's	L5	NA	0.1
Natterer's	L6	0.1	NA
Natterer's	L7	NA	0.2
Natterer's	L8	0.3	NA
Natterer's	L9	0.2	0.3

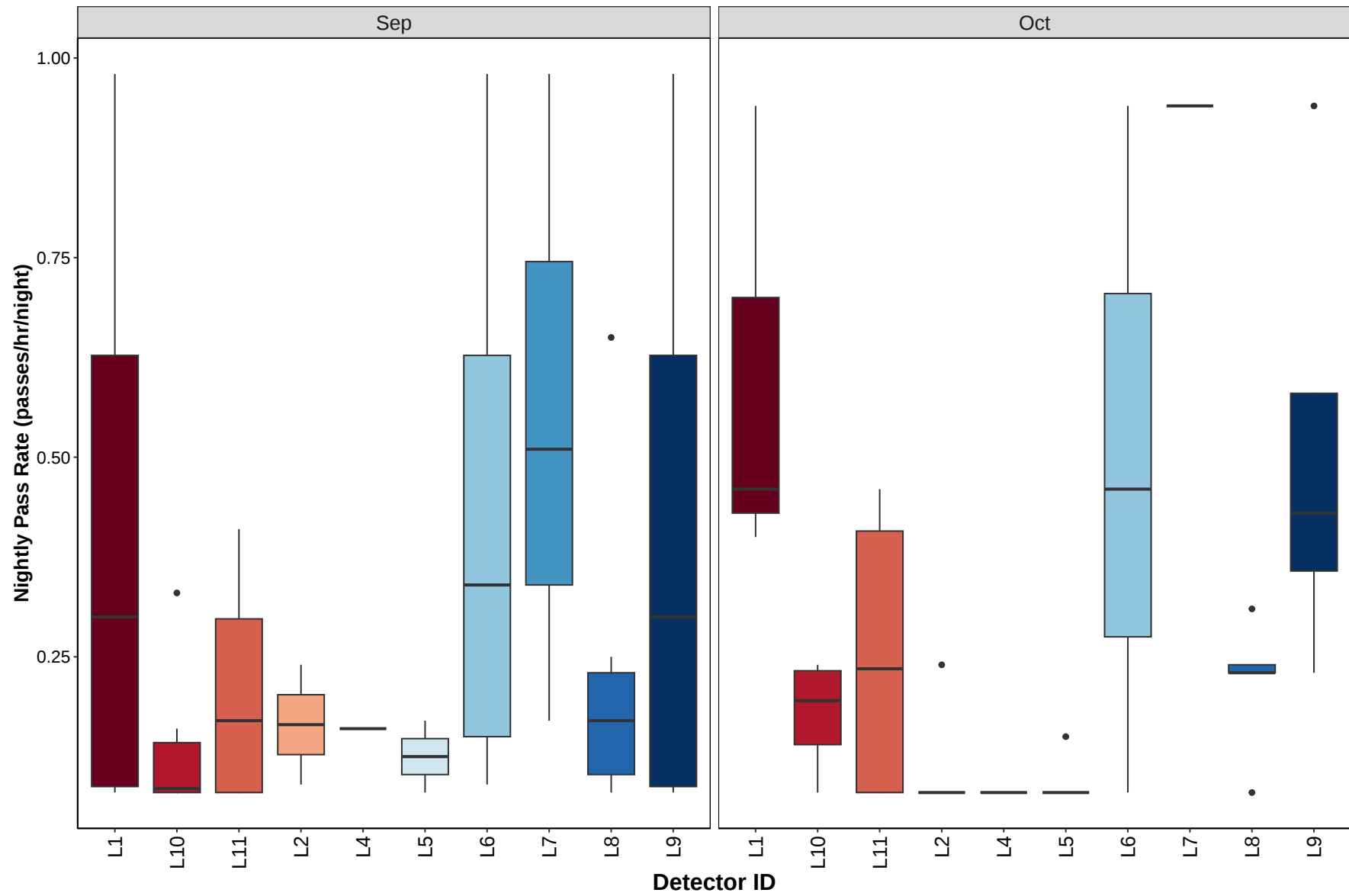
Per Detector

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.

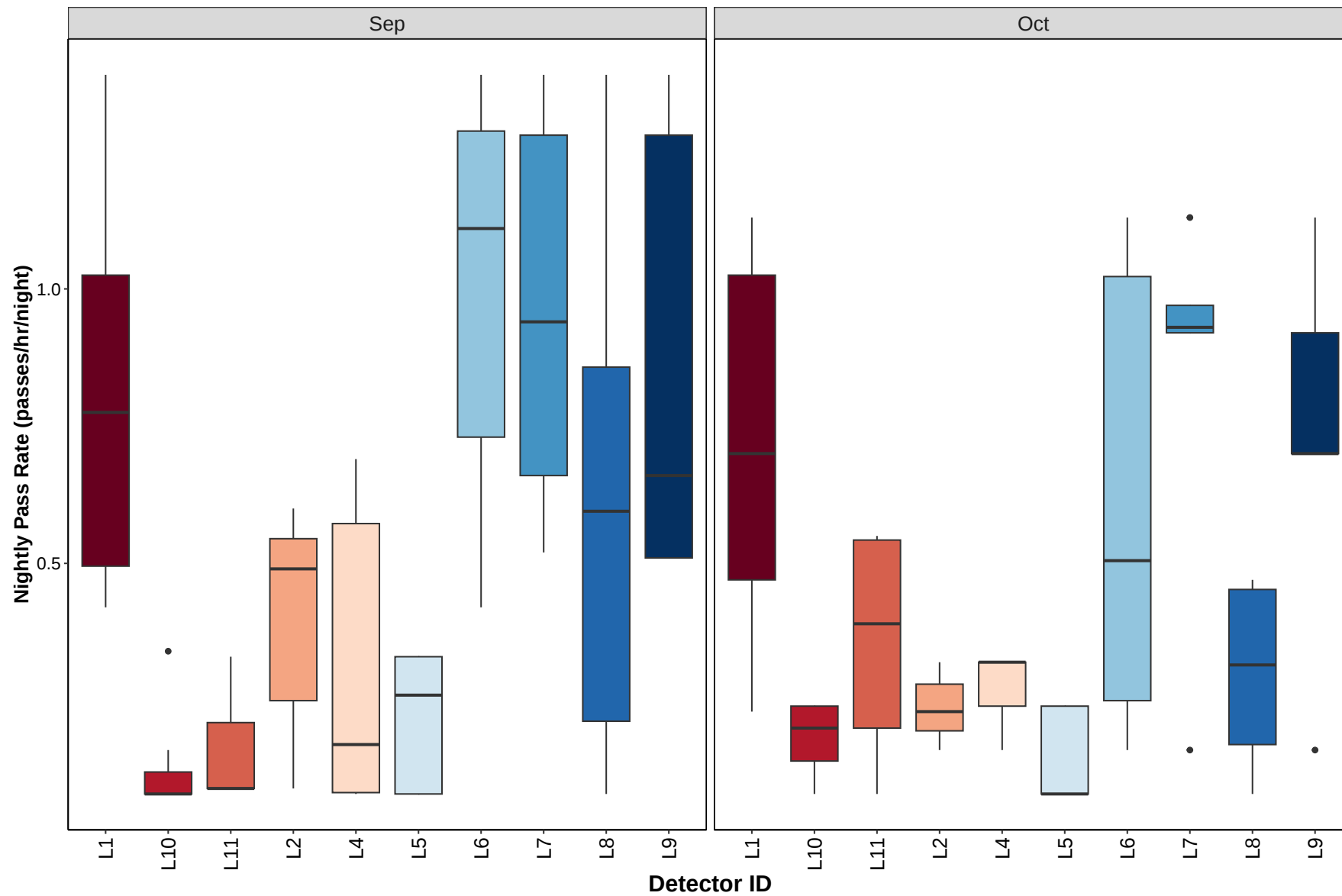
Brown long-eared

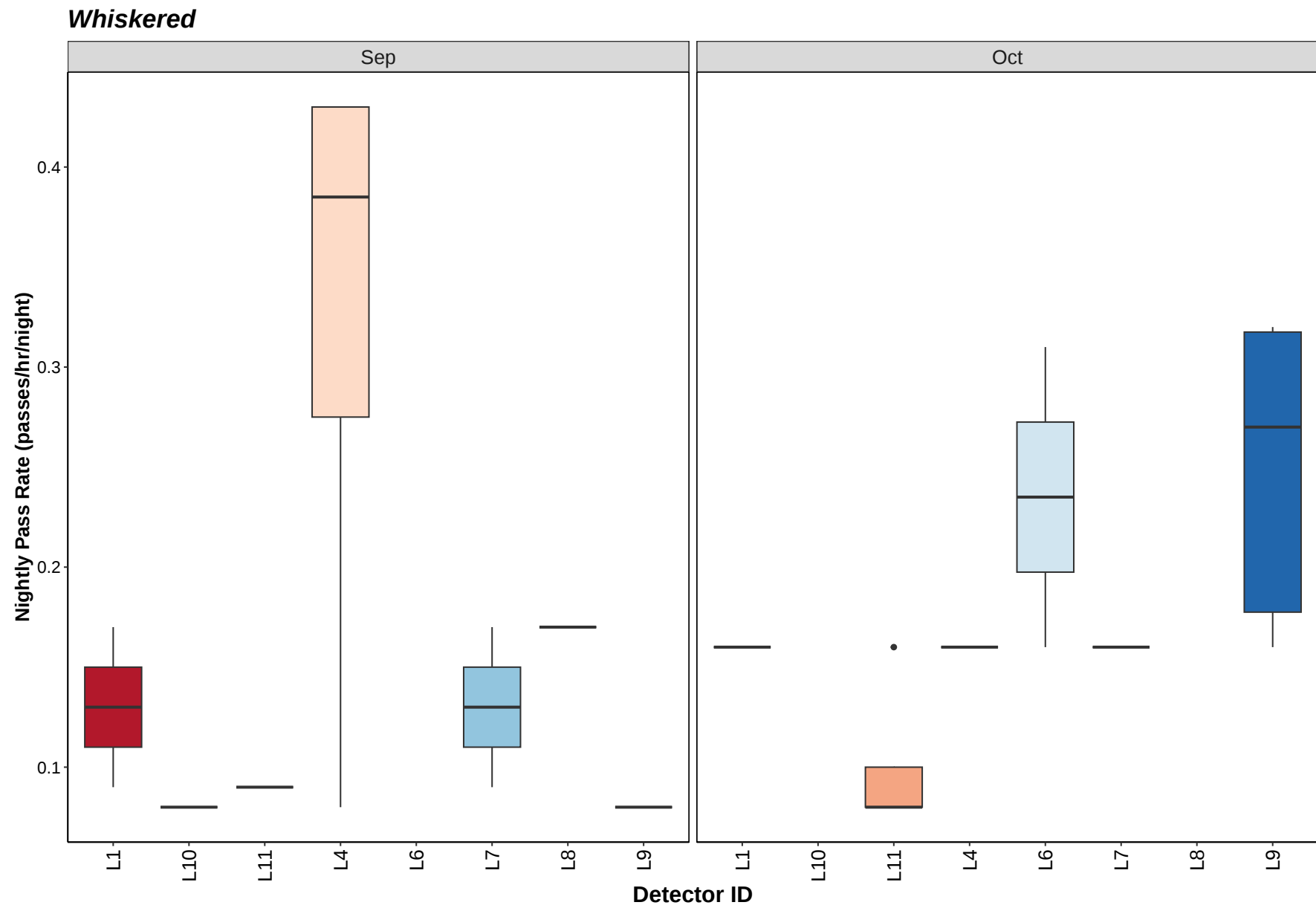


Common pipistrelle

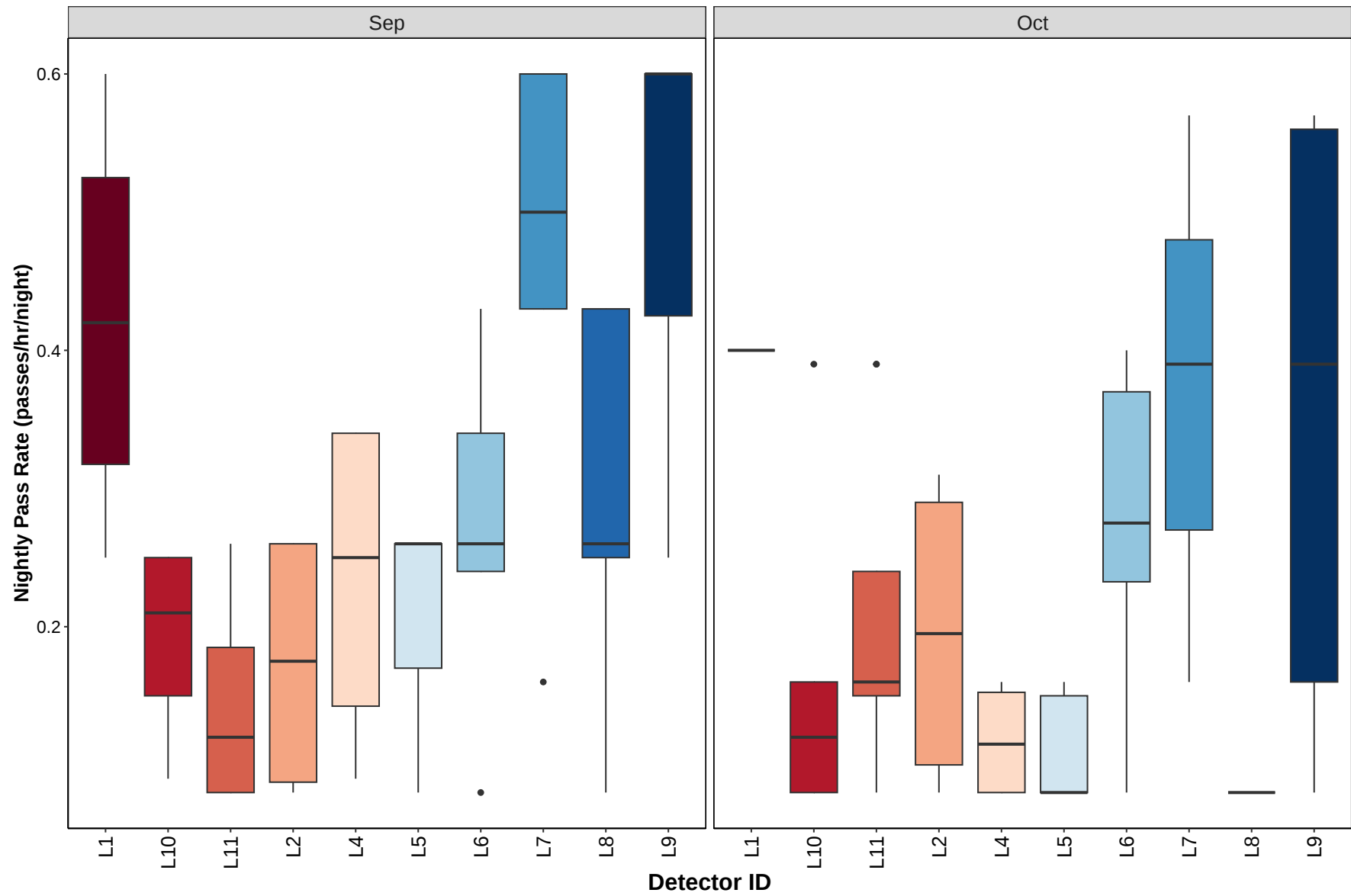


Leisler's

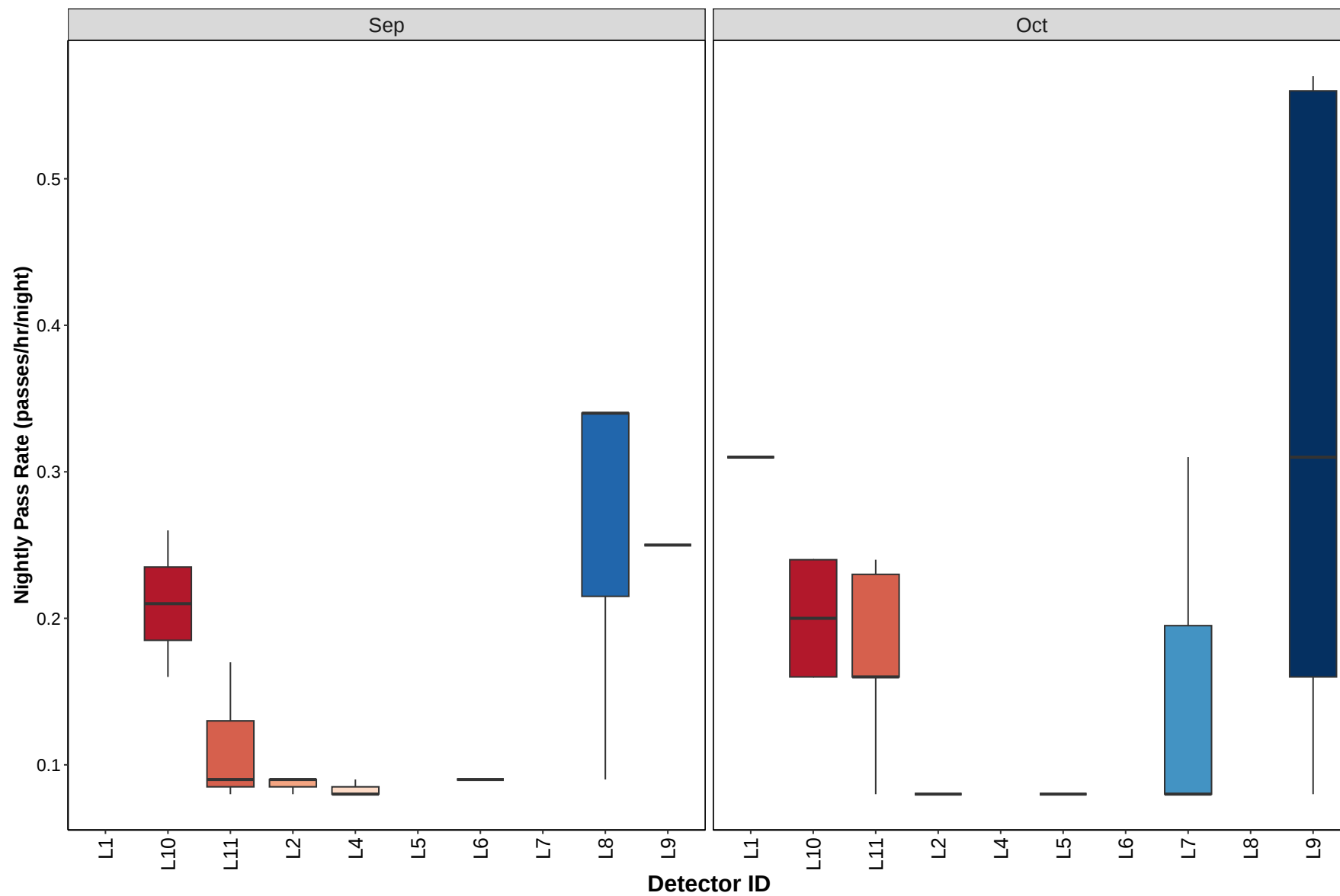




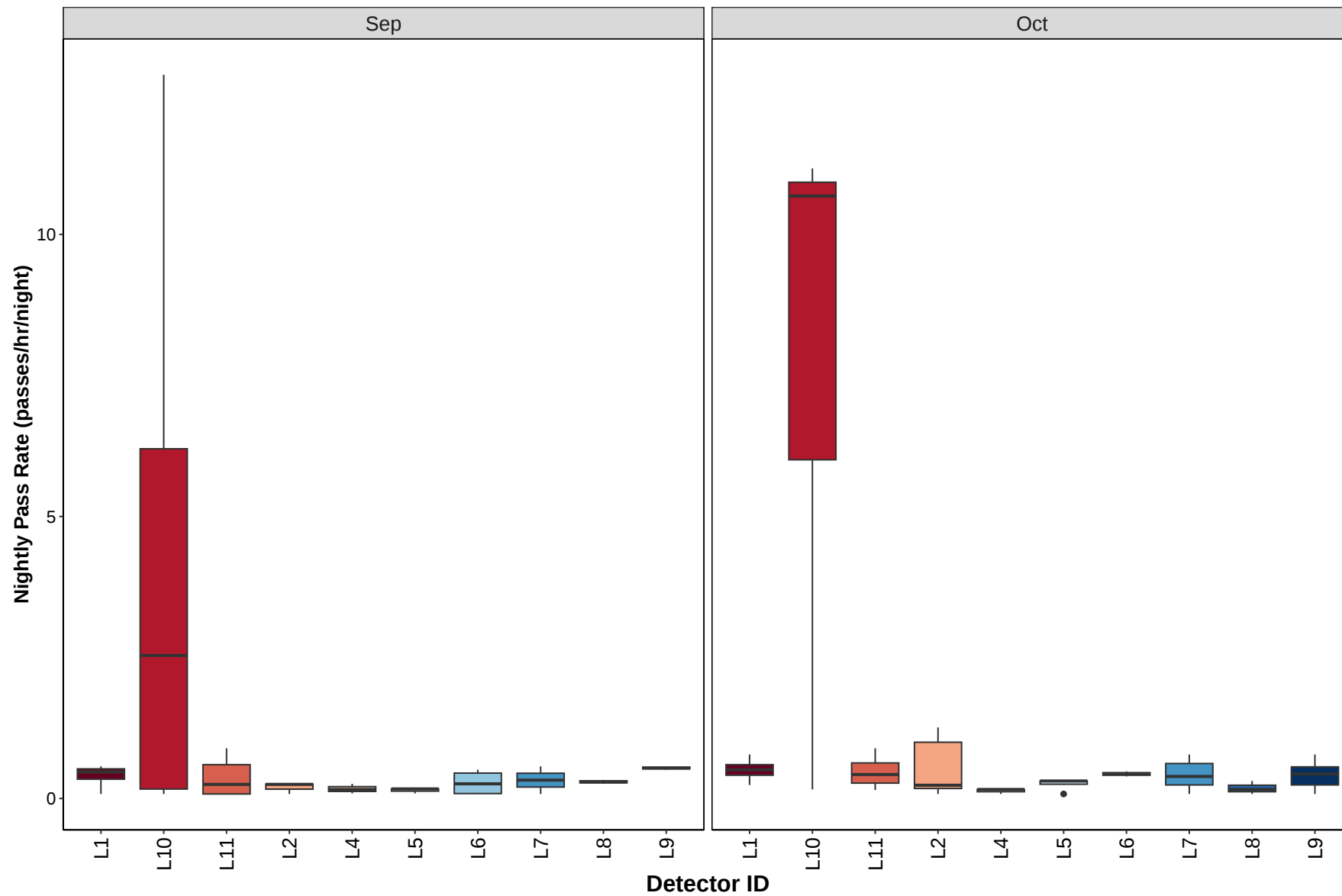
Daubenton's



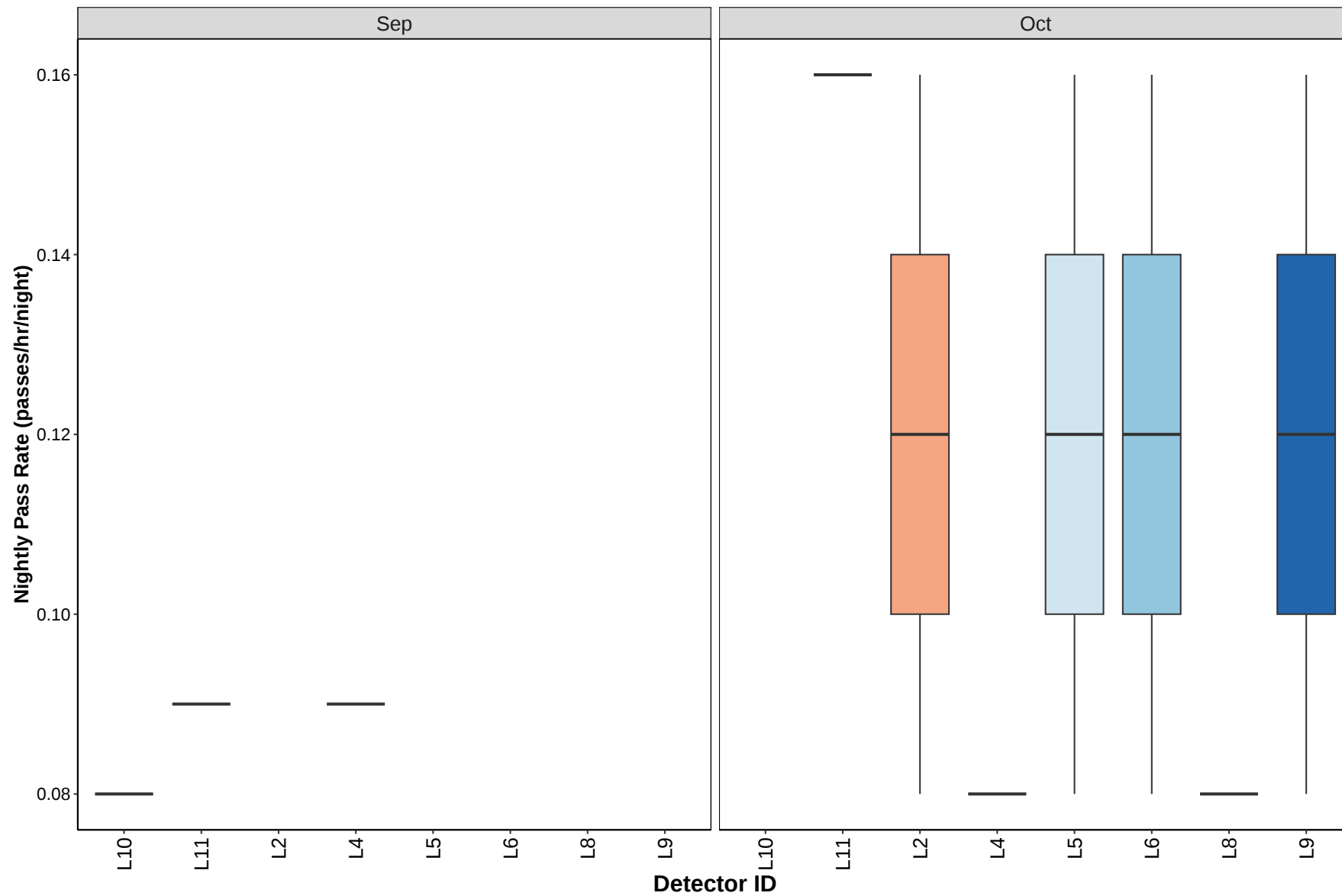
Natterer's



Soprano pipistrelle



Nathusius'



Bat Activity per Detector Location

Figure 13. Detector ID reference:

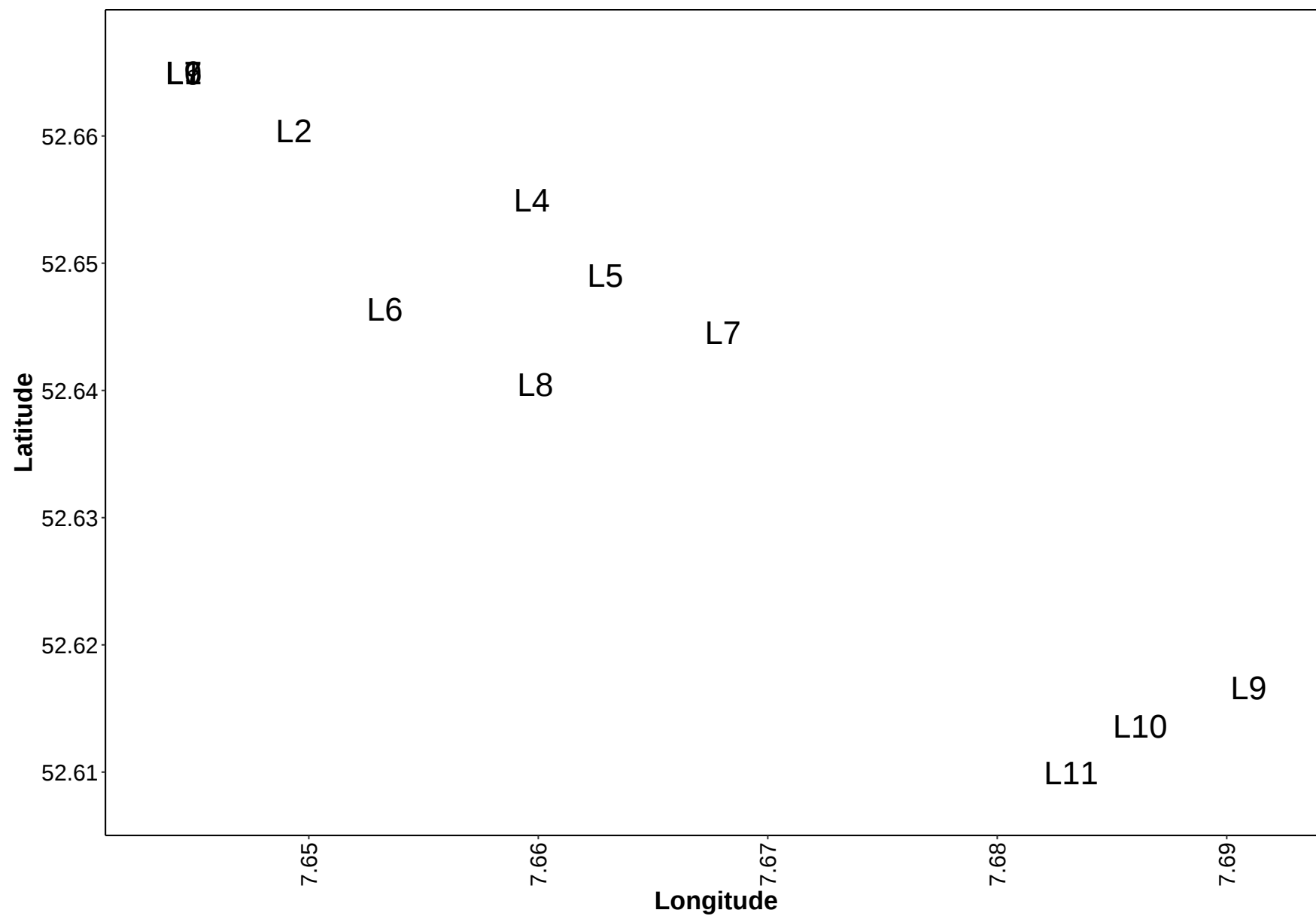
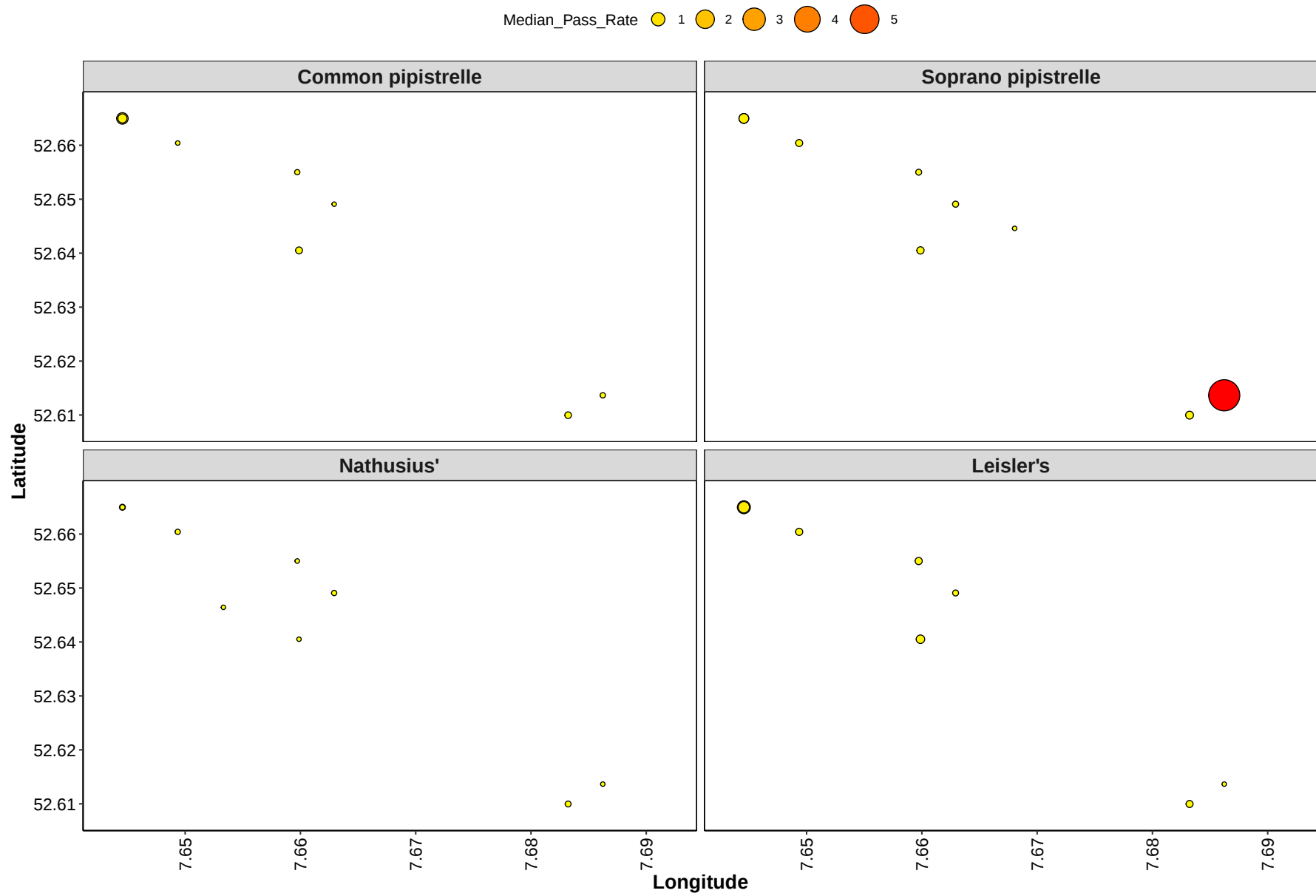


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



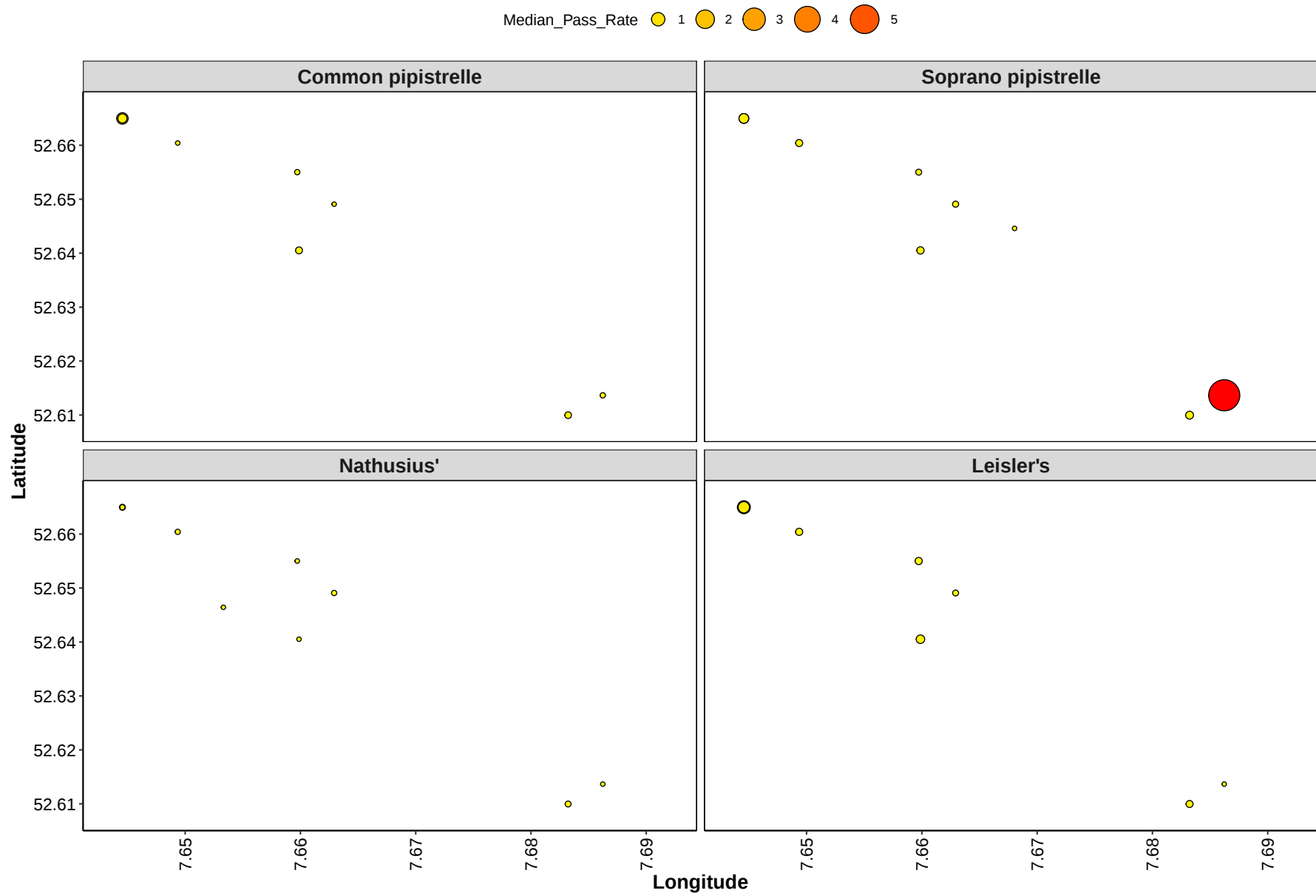
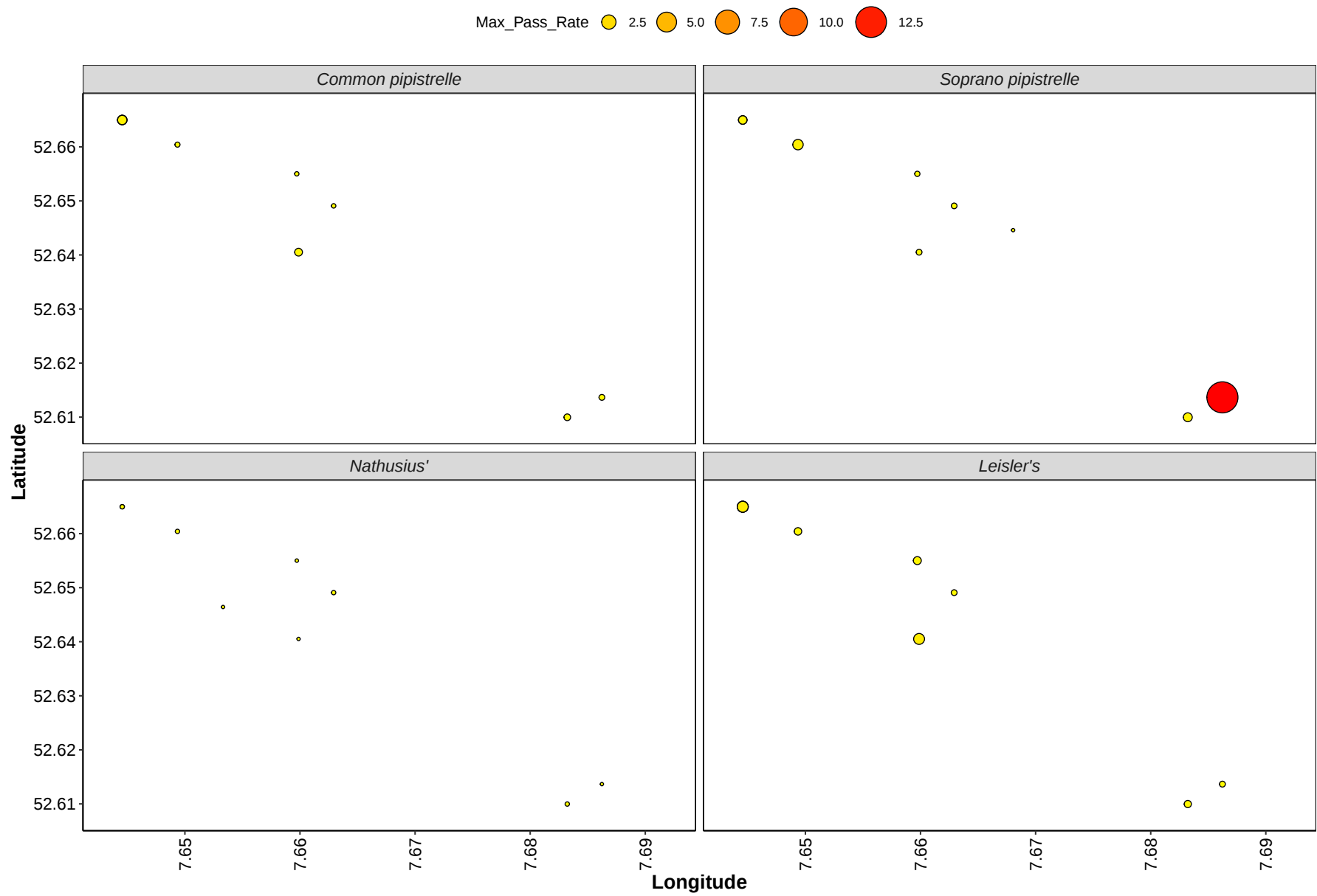
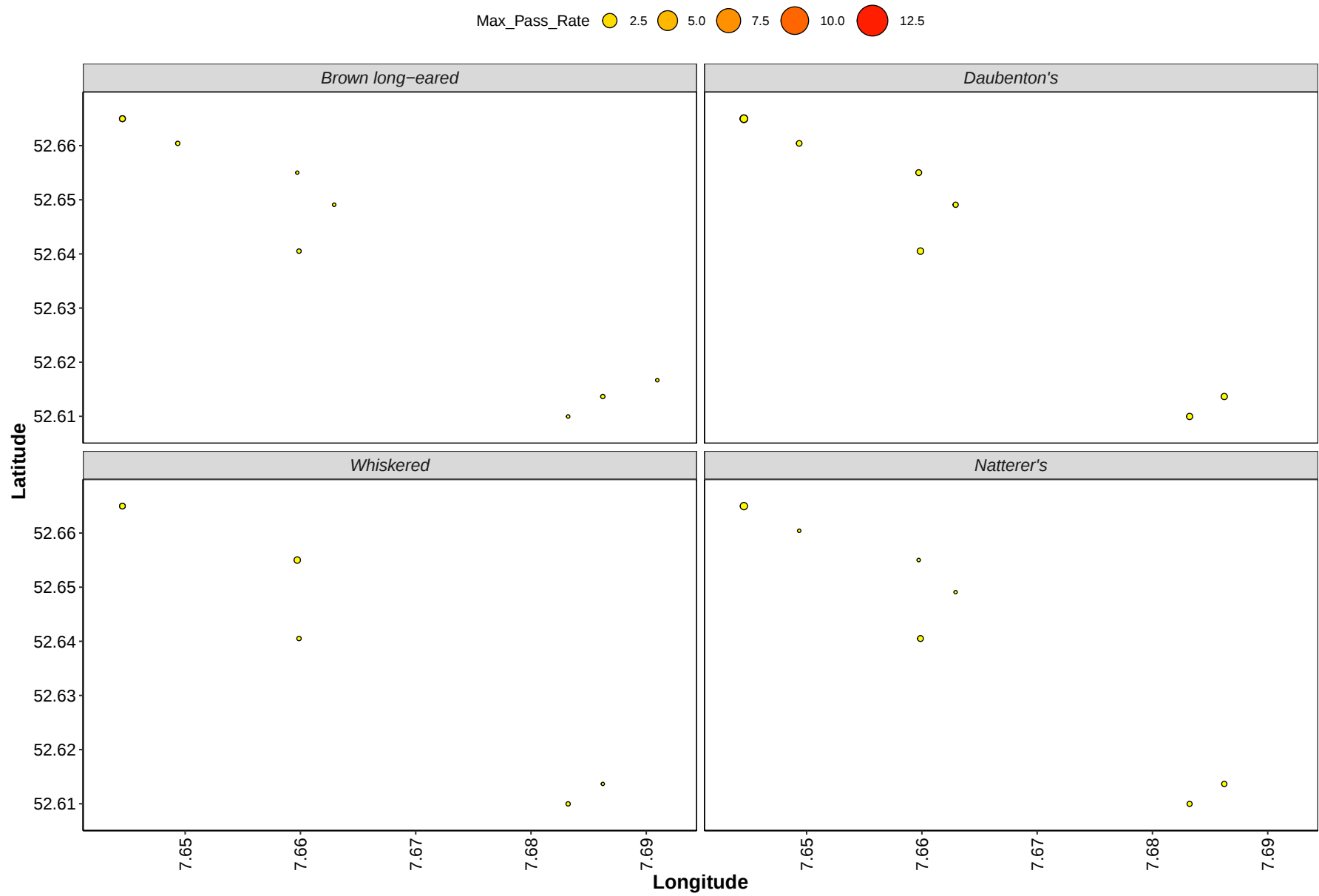


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





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	L1	0.0
Brown long-eared	L10	0.0
Brown long-eared	L11	0.0
Brown long-eared	L2	0.0
Brown long-eared	L4	0.0
Brown long-eared	L5	0.0
Brown long-eared	L6	0.0
Brown long-eared	L7	0.0
Brown long-eared	L8	0.0
Brown long-eared	L9	0.0
Common pipistrelle	L1	0.0
Common pipistrelle	L10	0.1
Common pipistrelle	L11	0.1
Common pipistrelle	L2	0.0
Common pipistrelle	L4	0.0
Common pipistrelle	L5	0.0
Common pipistrelle	L6	0.1
Common pipistrelle	L7	0.0
Common pipistrelle	L8	0.1
Common pipistrelle	L9	0.0
Daubenton's	L1	0.0
Daubenton's	L10	0.1
Daubenton's	L11	0.1
Daubenton's	L2	0.1
Daubenton's	L4	0.1
Daubenton's	L5	0.1
Daubenton's	L6	0.2
Daubenton's	L7	0.3
Daubenton's	L8	0.1
Daubenton's	L9	0.0
Leisler's	L1	0.7
Leisler's	L10	0.1
Leisler's	L11	0.0
Leisler's	L2	0.2
Leisler's	L4	0.1
Leisler's	L5	0.1

Species	Detector ID	Median Pass Rate
Leisler's	L6	0.4
Leisler's	L7	0.6
Leisler's	L8	0.2
Leisler's	L9	0.5
Nathusius'	L1	0.0
Nathusius'	L10	0.0
Nathusius'	L11	0.0
Nathusius'	L2	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.0
Nathusius'	L7	0.0
Nathusius'	L8	0.0
Nathusius'	L9	0.0
Natterer's	L1	0.0
Natterer's	L10	0.0
Natterer's	L11	0.0
Natterer's	L2	0.0
Natterer's	L4	0.0
Natterer's	L5	0.0
Natterer's	L6	0.0
Natterer's	L7	0.0
Natterer's	L8	0.0
Natterer's	L9	0.0
Soprano pipistrelle	L1	0.3
Soprano pipistrelle	L10	2.2
Soprano pipistrelle	L11	0.2
Soprano pipistrelle	L2	0.1
Soprano pipistrelle	L4	0.0
Soprano pipistrelle	L5	0.0
Soprano pipistrelle	L6	0.0
Soprano pipistrelle	L7	0.0
Soprano pipistrelle	L8	0.0
Soprano pipistrelle	L9	0.2
Whiskered	L1	0.0
Whiskered	L10	0.0

Species	Detector ID	Median Pass Rate
Whiskered	L11	0.0
Whiskered	L2	0.0
Whiskered	L4	0.0
Whiskered	L5	0.0
Whiskered	L6	0.0
Whiskered	L7	0.0
Whiskered	L8	0.0
Whiskered	L9	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.

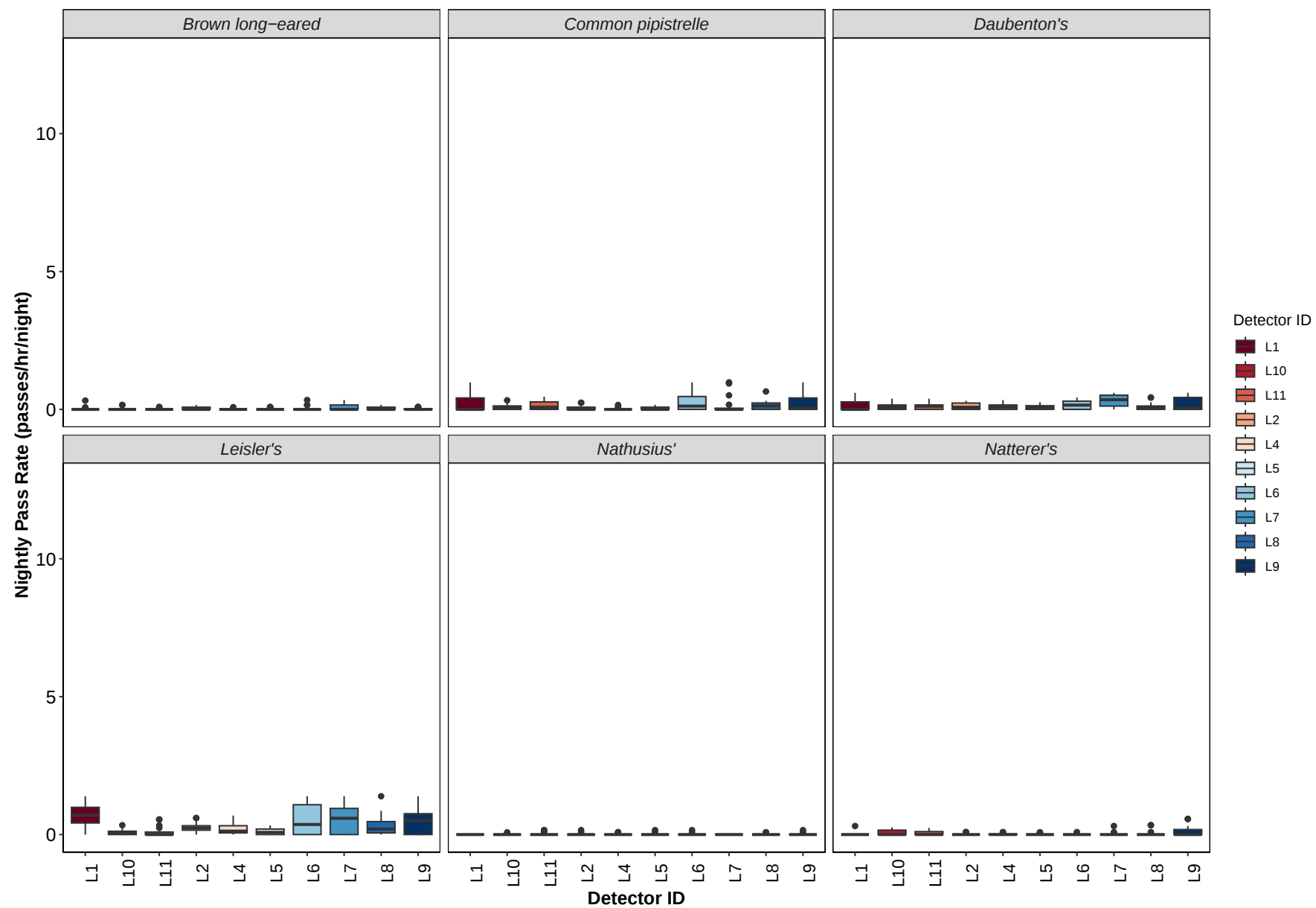
Species	Detector ID	Mean Pass Rate
Brown long-eared	L1	0.0
Brown long-eared	L10	0.0
Brown long-eared	L11	0.0
Brown long-eared	L2	0.0
Brown long-eared	L4	0.0
Brown long-eared	L5	0.0
Brown long-eared	L6	0.0
Brown long-eared	L7	0.1
Brown long-eared	L8	0.0
Brown long-eared	L9	0.0
Common pipistrelle	L1	0.2
Common pipistrelle	L10	0.1
Common pipistrelle	L11	0.1
Common pipistrelle	L2	0.1
Common pipistrelle	L4	0.0
Common pipistrelle	L5	0.0
Common pipistrelle	L6	0.3
Common pipistrelle	L7	0.2
Common pipistrelle	L8	0.2
Common pipistrelle	L9	0.2
Daubenton's	L1	0.1
Daubenton's	L10	0.1
Daubenton's	L11	0.1
Daubenton's	L2	0.1
Daubenton's	L4	0.1
Daubenton's	L5	0.1
Daubenton's	L6	0.2
Daubenton's	L7	0.3
Daubenton's	L8	0.1
Daubenton's	L9	0.2
Leisler's	L1	0.7
Leisler's	L10	0.1
Leisler's	L11	0.1
Leisler's	L2	0.3
Leisler's	L4	0.2
Leisler's	L5	0.1

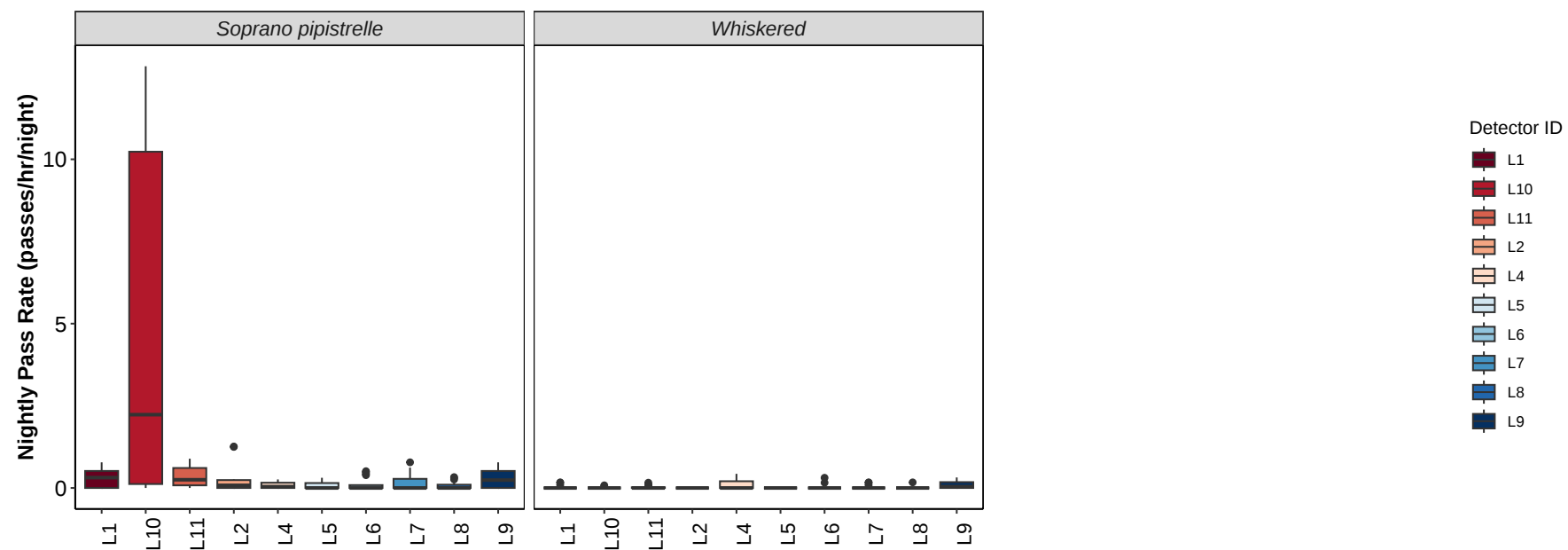
Species	Detector ID	Mean Pass Rate
Leisler's	L6	0.5
Leisler's	L7	0.6
Leisler's	L8	0.3
Leisler's	L9	0.5
Nathusius'	L1	0.0
Nathusius'	L10	0.0
Nathusius'	L11	0.0
Nathusius'	L2	0.0
Nathusius'	L4	0.0
Nathusius'	L5	0.0
Nathusius'	L6	0.0
Nathusius'	L7	0.0
Nathusius'	L8	0.0
Nathusius'	L9	0.0
Natterer's	L1	0.0
Natterer's	L10	0.1
Natterer's	L11	0.1
Natterer's	L2	0.0
Natterer's	L4	0.0
Natterer's	L5	0.0
Natterer's	L6	0.0
Natterer's	L7	0.0
Natterer's	L8	0.0
Natterer's	L9	0.1
Soprano pipistrelle	L1	0.3
Soprano pipistrelle	L10	4.6
Soprano pipistrelle	L11	0.3
Soprano pipistrelle	L2	0.2
Soprano pipistrelle	L4	0.1
Soprano pipistrelle	L5	0.1
Soprano pipistrelle	L6	0.1
Soprano pipistrelle	L7	0.2
Soprano pipistrelle	L8	0.1
Soprano pipistrelle	L9	0.3
Whiskered	L1	0.0
Whiskered	L10	0.0

Species	Detector ID	Mean Pass Rate
Whiskered	L11	0.0
Whiskered	L2	0.0
Whiskered	L4	0.1
Whiskered	L5	0.0
Whiskered	L6	0.0
Whiskered	L7	0.0
Whiskered	L8	0.0
Whiskered	L9	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.





Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
Sep	L1	8
Sep	L10	10
Sep	L11	10
Sep	L2	7
Sep	L4	6
Sep	L5	8
Sep	L6	8
Sep	L7	6
Sep	L8	7
Sep	L9	5
Oct	L1	8
Oct	L10	9
Oct	L11	10
Oct	L2	10
Oct	L4	6
Oct	L5	10
Oct	L6	9
Oct	L7	9
Oct	L8	9
Oct	L9	10

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the ‘average’ activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Oct	Sep
Brown long-eared	L1	0.0	0.0
Brown long-eared	L10	0.0	0.0
Brown long-eared	L11	0.0	0.0
Brown long-eared	L2	0.0	0.0
Brown long-eared	L4	0.0	0.0
Brown long-eared	L5	0.0	0.0
Brown long-eared	L6	0.0	0.0
Brown long-eared	L7	0.0	0.1
Brown long-eared	L8	0.0	0.1
Brown long-eared	L9	0.0	0.0
Common pipistrelle	L1	0.0	0.0
Common pipistrelle	L10	0.0	0.1
Common pipistrelle	L11	0.1	0.0
Common pipistrelle	L2	0.1	0.0
Common pipistrelle	L4	0.0	0.0
Common pipistrelle	L5	0.0	0.0
Common pipistrelle	L6	0.3	0.0
Common pipistrelle	L7	0.0	0.1
Common pipistrelle	L8	0.1	0.2
Common pipistrelle	L9	0.0	0.1
Daubenton's	L1	0.0	0.1
Daubenton's	L10	0.1	0.0
Daubenton's	L11	0.2	0.0
Daubenton's	L2	0.1	0.1
Daubenton's	L4	0.1	0.1
Daubenton's	L5	0.1	0.0
Daubenton's	L6	0.2	0.2
Daubenton's	L7	0.3	0.5
Daubenton's	L8	0.0	0.2
Daubenton's	L9	0.0	0.1
Leisler's	L1	0.7	0.8
Leisler's	L10	0.0	0.1
Leisler's	L11	0.0	0.0
Leisler's	L2	0.2	0.5
Leisler's	L4	0.1	0.2
Leisler's	L5	0.0	0.1

Species	Detector ID	Oct	Sep
Leisler's	L6	0.2	0.8
Leisler's	L7	0.1	0.8
Leisler's	L8	0.1	0.3
Leisler's	L9	0.1	0.6
Nathusius'	L1	0.0	0.0
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.0	0.0
Nathusius'	L2	0.0	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.0	0.0
Nathusius'	L7	0.0	0.0
Nathusius'	L8	0.0	0.0
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.0	0.0
Natterer's	L10	0.0	0.0
Natterer's	L11	0.0	0.0
Natterer's	L2	0.0	0.0
Natterer's	L4	0.0	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.0	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.0
Natterer's	L9	0.0	0.0
Soprano pipistrelle	L1	0.4	0.0
Soprano pipistrelle	L10	9.8	0.2
Soprano pipistrelle	L11	0.3	0.2
Soprano pipistrelle	L2	0.1	0.0
Soprano pipistrelle	L4	0.0	0.0
Soprano pipistrelle	L5	0.0	0.0
Soprano pipistrelle	L6	0.0	0.0
Soprano pipistrelle	L7	0.0	0.0
Soprano pipistrelle	L8	0.0	0.0
Soprano pipistrelle	L9	0.3	0.0
Whiskered	L1	0.0	0.0
Whiskered	L10	0.0	0.0

Species	Detector ID	Oct	Sep
Whiskered	L11	0.0	0.0
Whiskered	L2	0.0	0.0
Whiskered	L4	0.0	0.2
Whiskered	L5	0.0	0.0
Whiskered	L6	0.0	0.0
Whiskered	L7	0.0	0.0
Whiskered	L8	0.0	0.0
Whiskered	L9	0.2	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	L1	0.0	0.0
Brown long-eared	L10	0.0	0.0
Brown long-eared	L11	0.0	0.0
Brown long-eared	L2	0.0	0.0
Brown long-eared	L4	0.0	0.0
Brown long-eared	L5	0.0	0.0
Brown long-eared	L6	0.0	0.1
Brown long-eared	L7	0.1	0.1
Brown long-eared	L8	0.0	0.1
Brown long-eared	L9	0.0	0.0
Common pipistrelle	L1	0.2	0.2
Common pipistrelle	L10	0.1	0.1
Common pipistrelle	L11	0.2	0.1
Common pipistrelle	L2	0.1	0.0
Common pipistrelle	L4	0.0	0.0
Common pipistrelle	L5	0.0	0.0
Common pipistrelle	L6	0.3	0.2
Common pipistrelle	L7	0.1	0.3
Common pipistrelle	L8	0.1	0.2
Common pipistrelle	L9	0.2	0.3
Daubenton's	L1	0.0	0.2
Daubenton's	L10	0.1	0.1
Daubenton's	L11	0.2	0.1
Daubenton's	L2	0.1	0.1
Daubenton's	L4	0.1	0.2
Daubenton's	L5	0.1	0.1
Daubenton's	L6	0.2	0.2
Daubenton's	L7	0.3	0.4
Daubenton's	L8	0.0	0.2
Daubenton's	L9	0.2	0.2
Leisler's	L1	0.6	0.8
Leisler's	L10	0.1	0.1
Leisler's	L11	0.1	0.1
Leisler's	L2	0.2	0.4
Leisler's	L4	0.1	0.3
Leisler's	L5	0.1	0.1

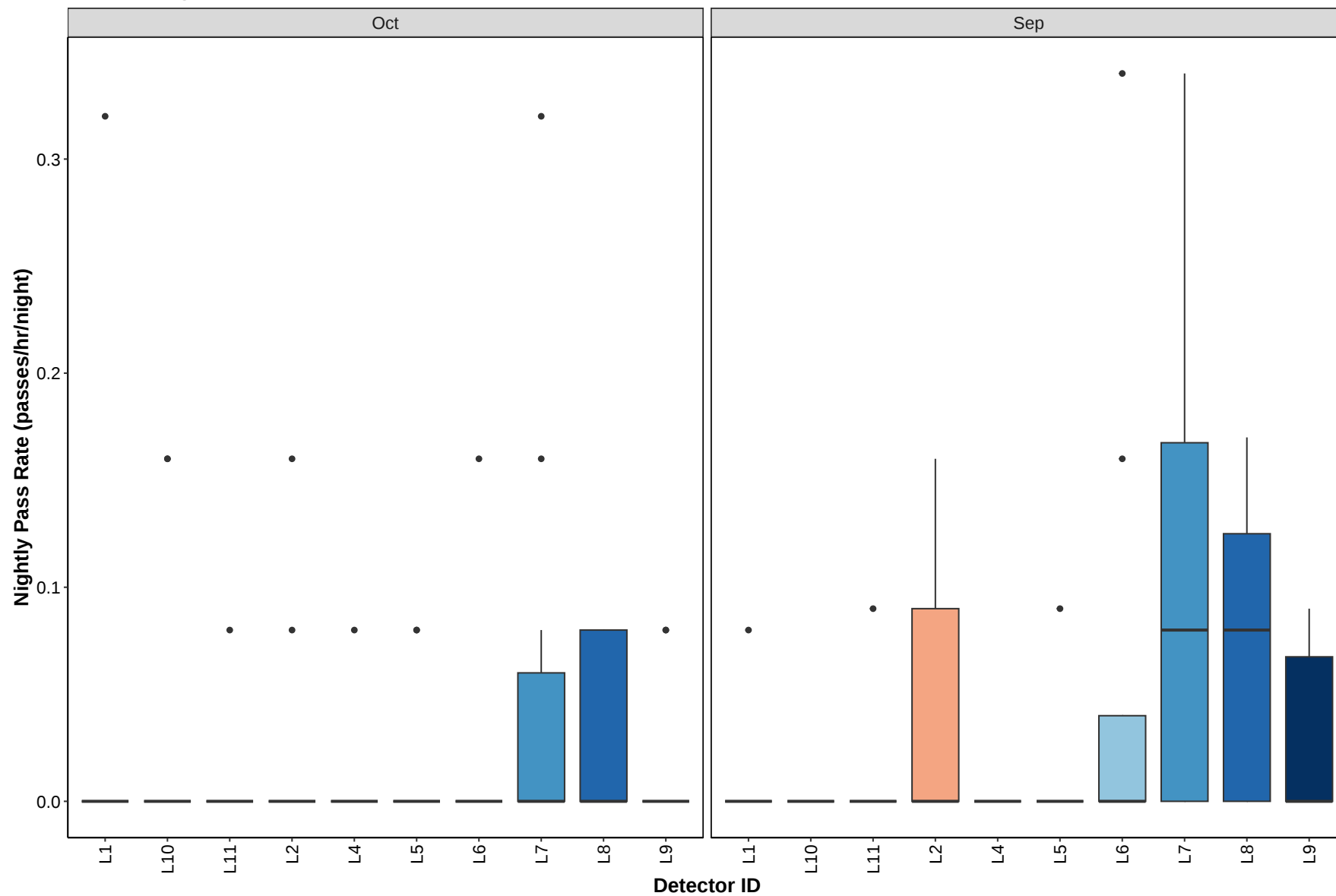
Species	Detector ID	Oct	Sep
Leisler's	L6	0.4	0.7
Leisler's	L7	0.4	0.8
Leisler's	L8	0.2	0.5
Leisler's	L9	0.4	0.7
Nathusius'	L1	0.0	0.0
Nathusius'	L10	0.0	0.0
Nathusius'	L11	0.0	0.0
Nathusius'	L2	0.0	0.0
Nathusius'	L4	0.0	0.0
Nathusius'	L5	0.0	0.0
Nathusius'	L6	0.0	0.0
Nathusius'	L7	0.0	0.0
Nathusius'	L8	0.0	0.0
Nathusius'	L9	0.0	0.0
Natterer's	L1	0.0	0.0
Natterer's	L10	0.1	0.0
Natterer's	L11	0.1	0.0
Natterer's	L2	0.0	0.0
Natterer's	L4	0.0	0.0
Natterer's	L5	0.0	0.0
Natterer's	L6	0.0	0.0
Natterer's	L7	0.0	0.0
Natterer's	L8	0.0	0.1
Natterer's	L9	0.2	0.0
Soprano pipistrelle	L1	0.4	0.2
Soprano pipistrelle	L10	6.2	3.1
Soprano pipistrelle	L11	0.4	0.3
Soprano pipistrelle	L2	0.3	0.1
Soprano pipistrelle	L4	0.1	0.1
Soprano pipistrelle	L5	0.1	0.1
Soprano pipistrelle	L6	0.1	0.1
Soprano pipistrelle	L7	0.2	0.1
Soprano pipistrelle	L8	0.1	0.1
Soprano pipistrelle	L9	0.3	0.2
Whiskered	L1	0.0	0.0
Whiskered	L10	0.0	0.0

Species	Detector ID	Oct	Sep
Whiskered	L11	0.0	0.0
Whiskered	L2	0.0	0.0
Whiskered	L4	0.0	0.2
Whiskered	L5	0.0	0.0
Whiskered	L6	0.0	0.0
Whiskered	L7	0.0	0.0
Whiskered	L8	0.0	0.0
Whiskered	L9	0.1	0.0

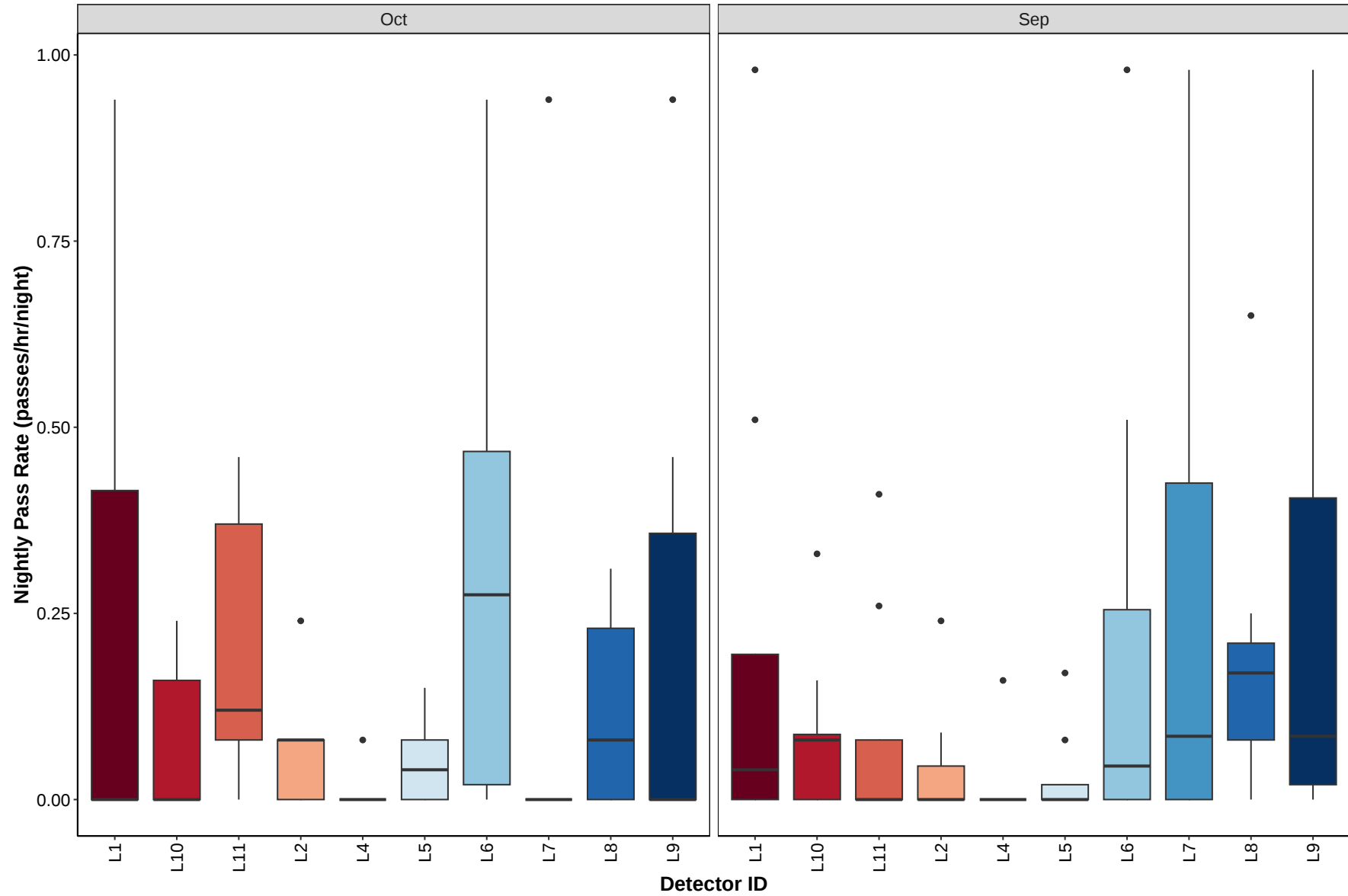
Per Detector

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.

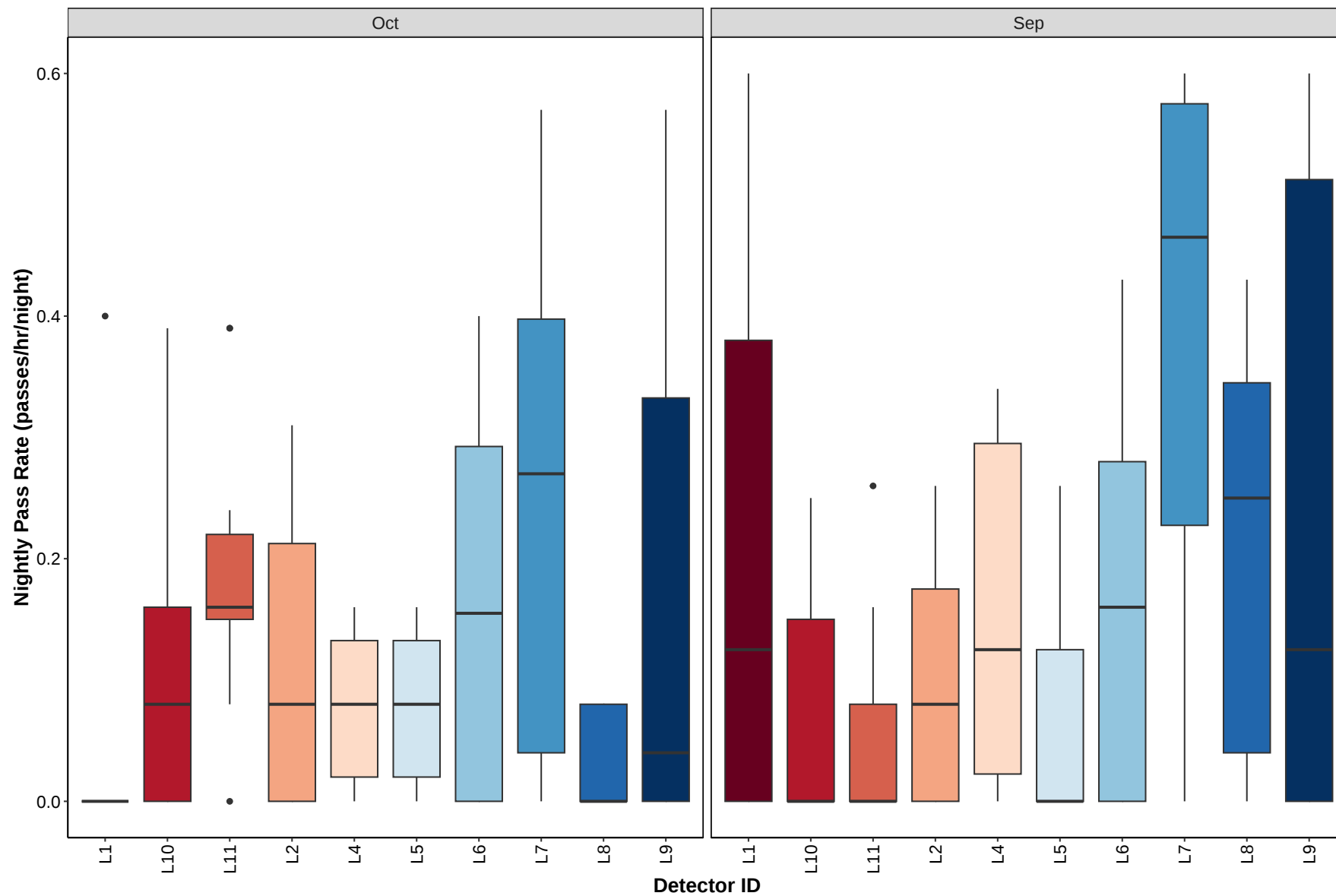
Brown long-eared



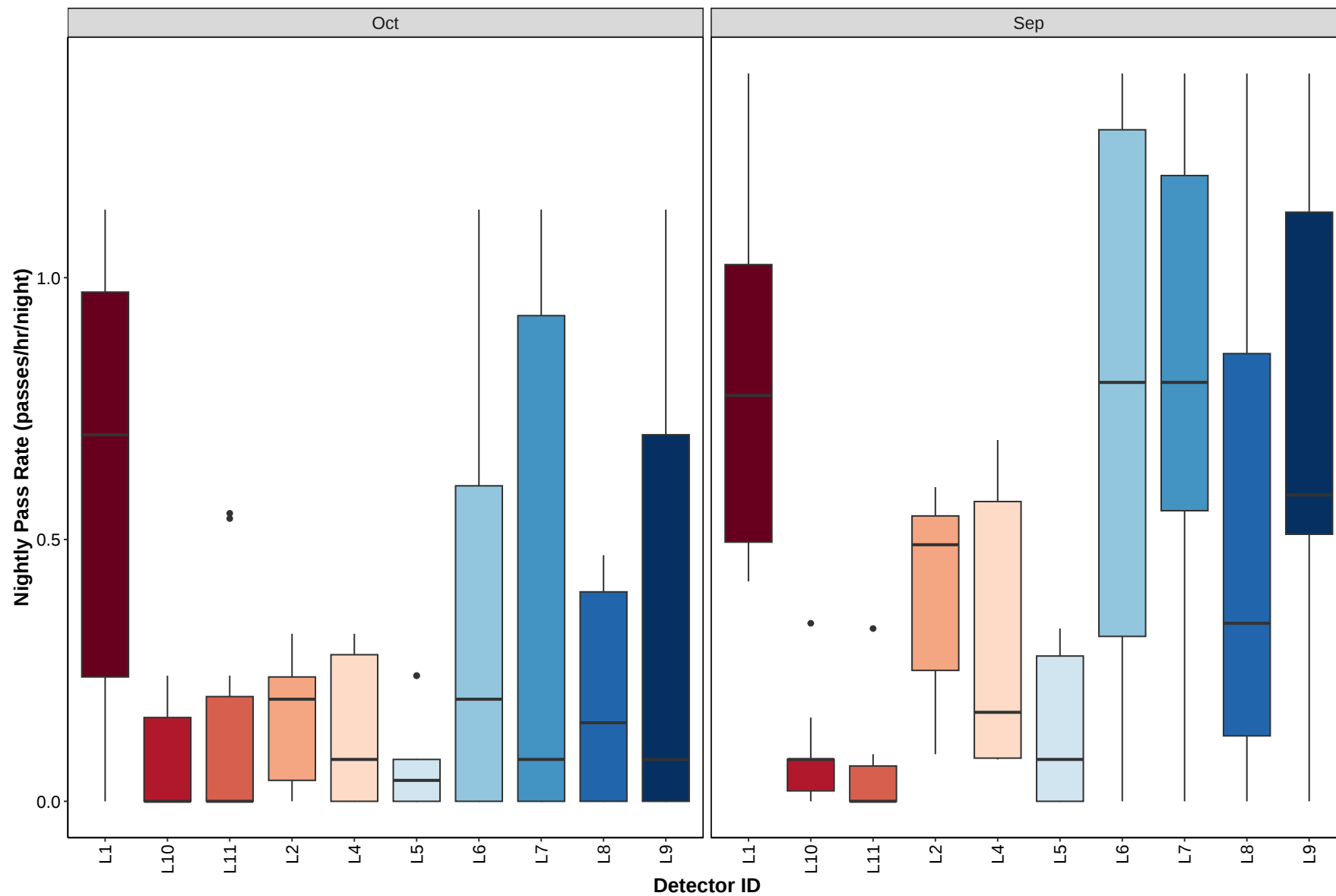
Common pipistrelle



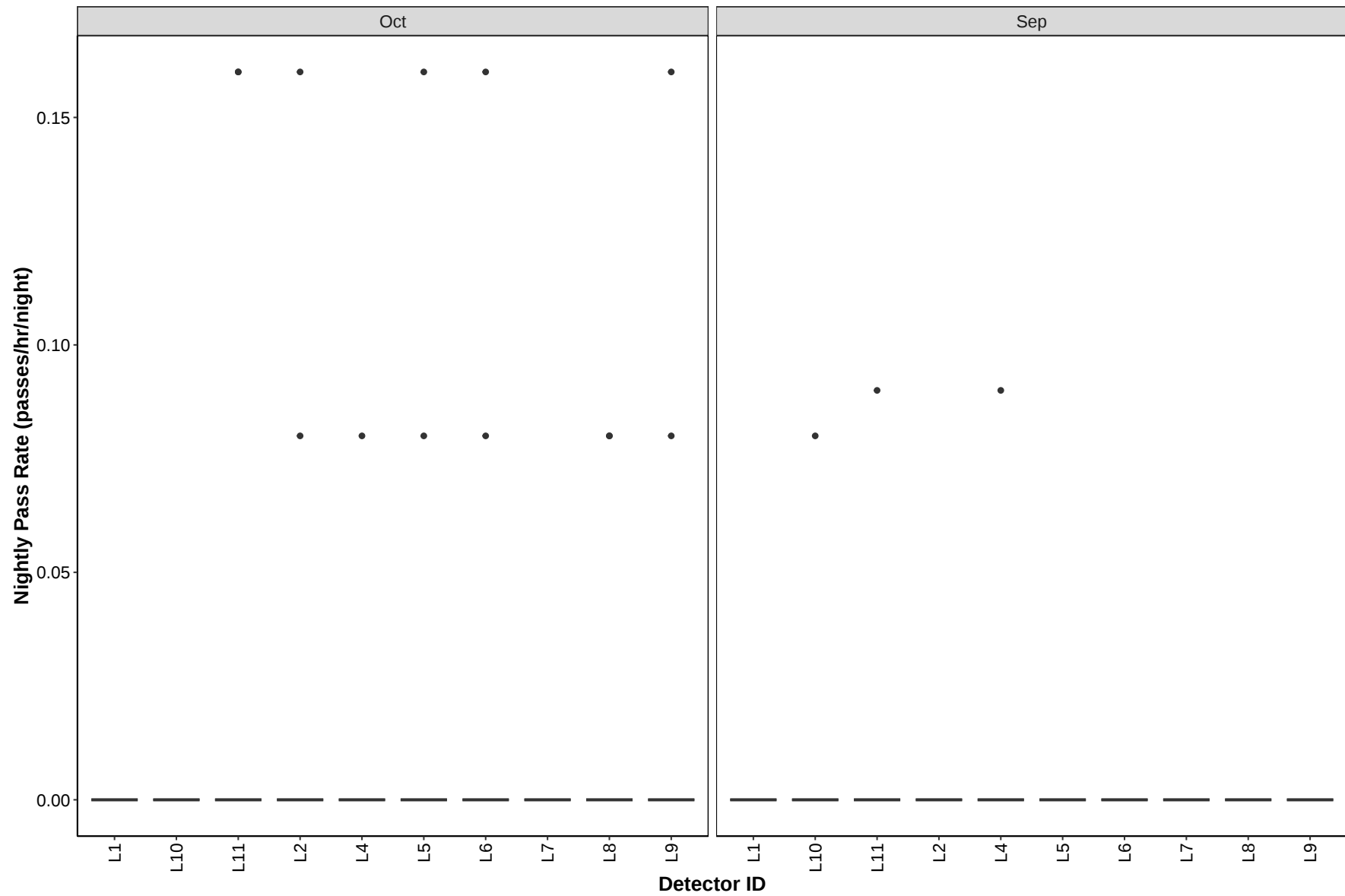
Daubenton's



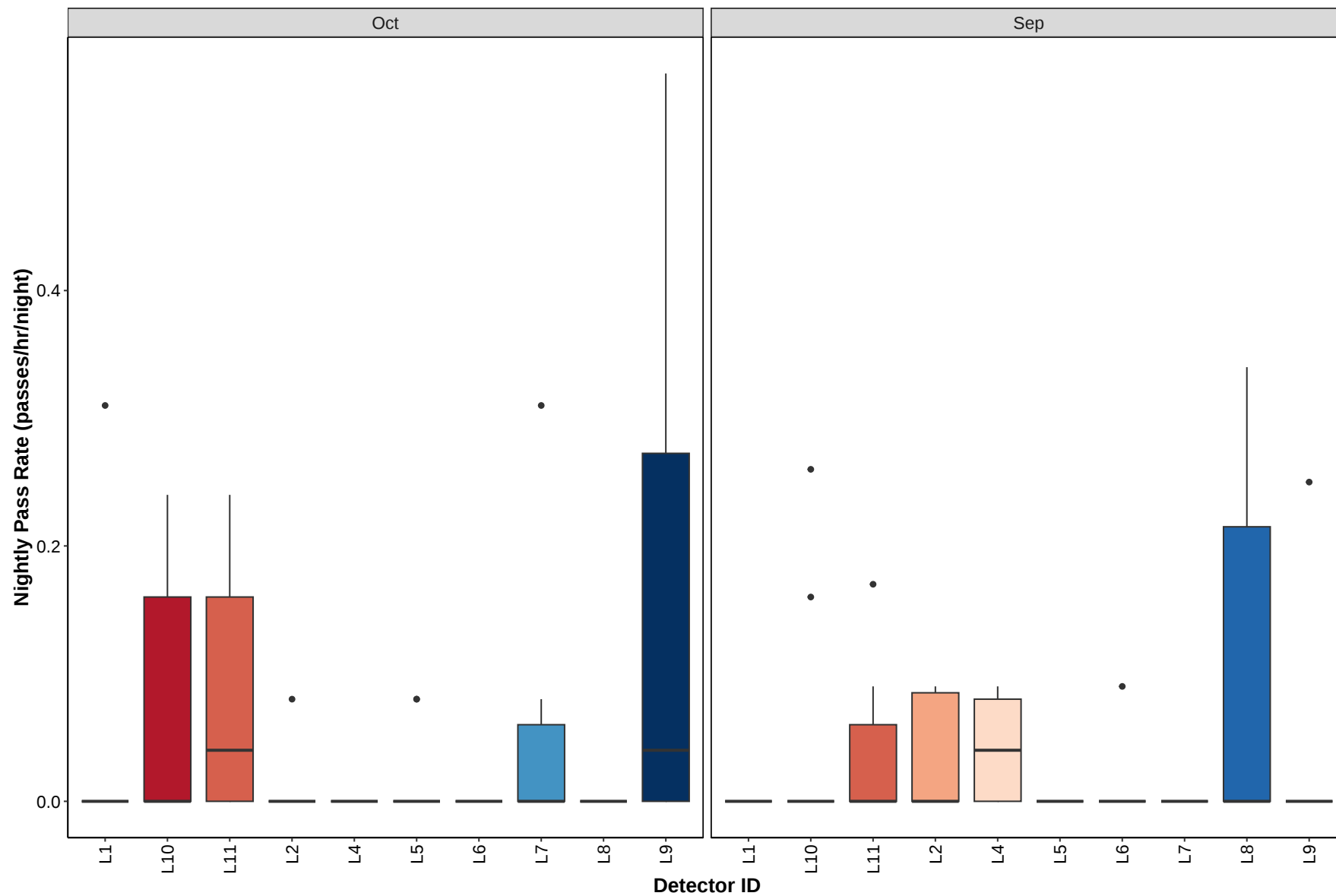
Leisler's



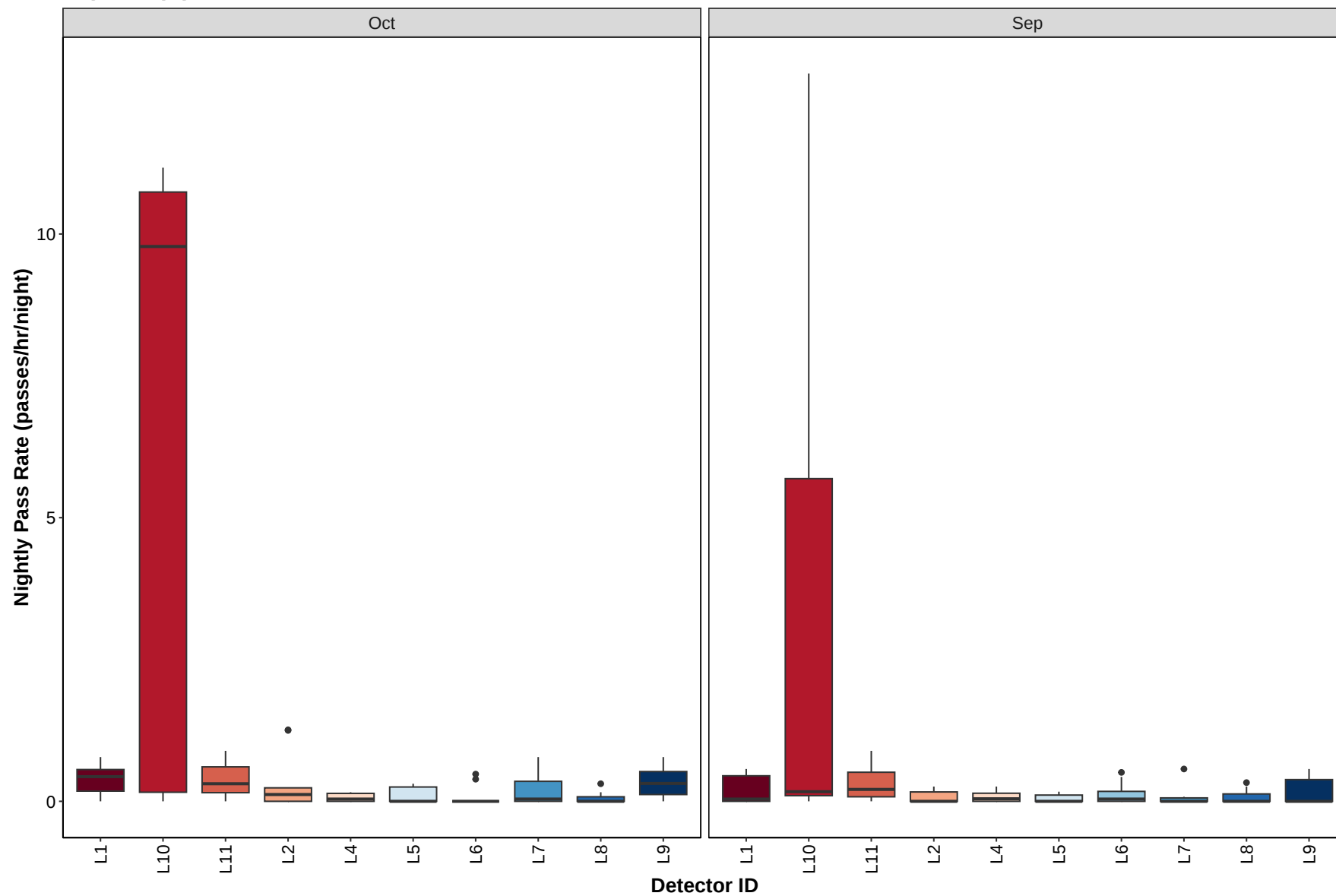
Nathusius'

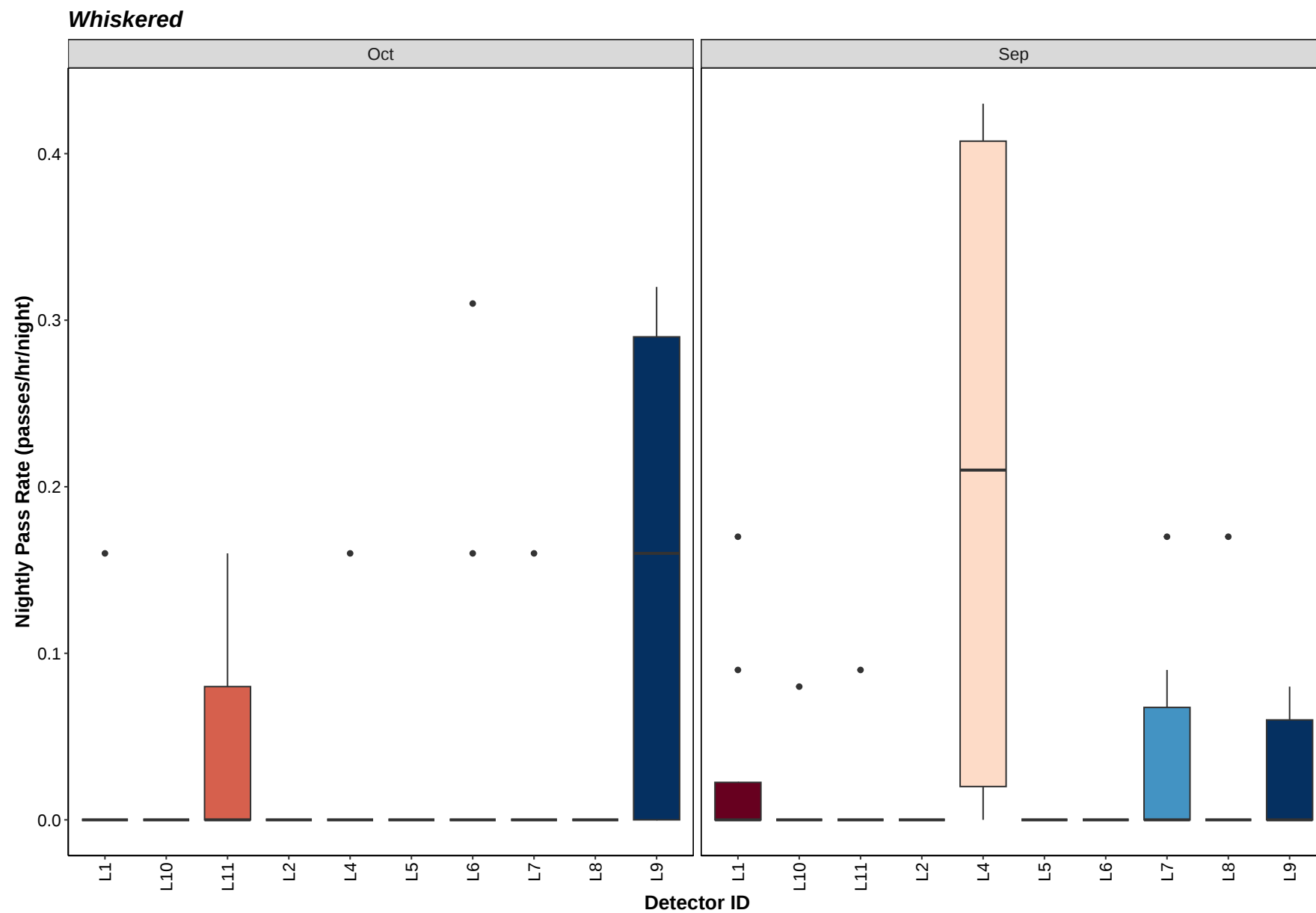


Natterer's



Soprano pipistrelle





Bat Activity per Detector Location

Figure 18. Detector ID reference:

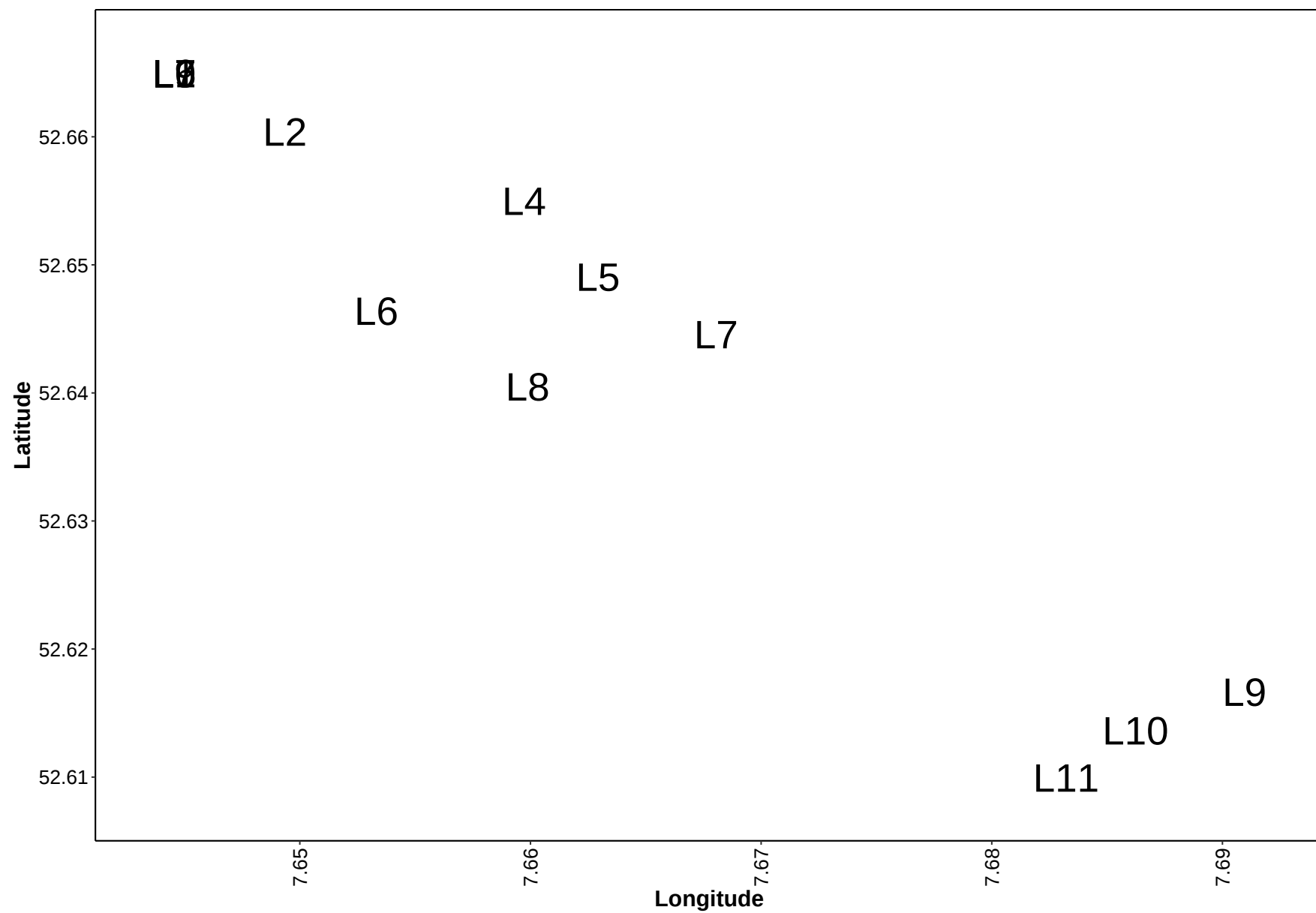
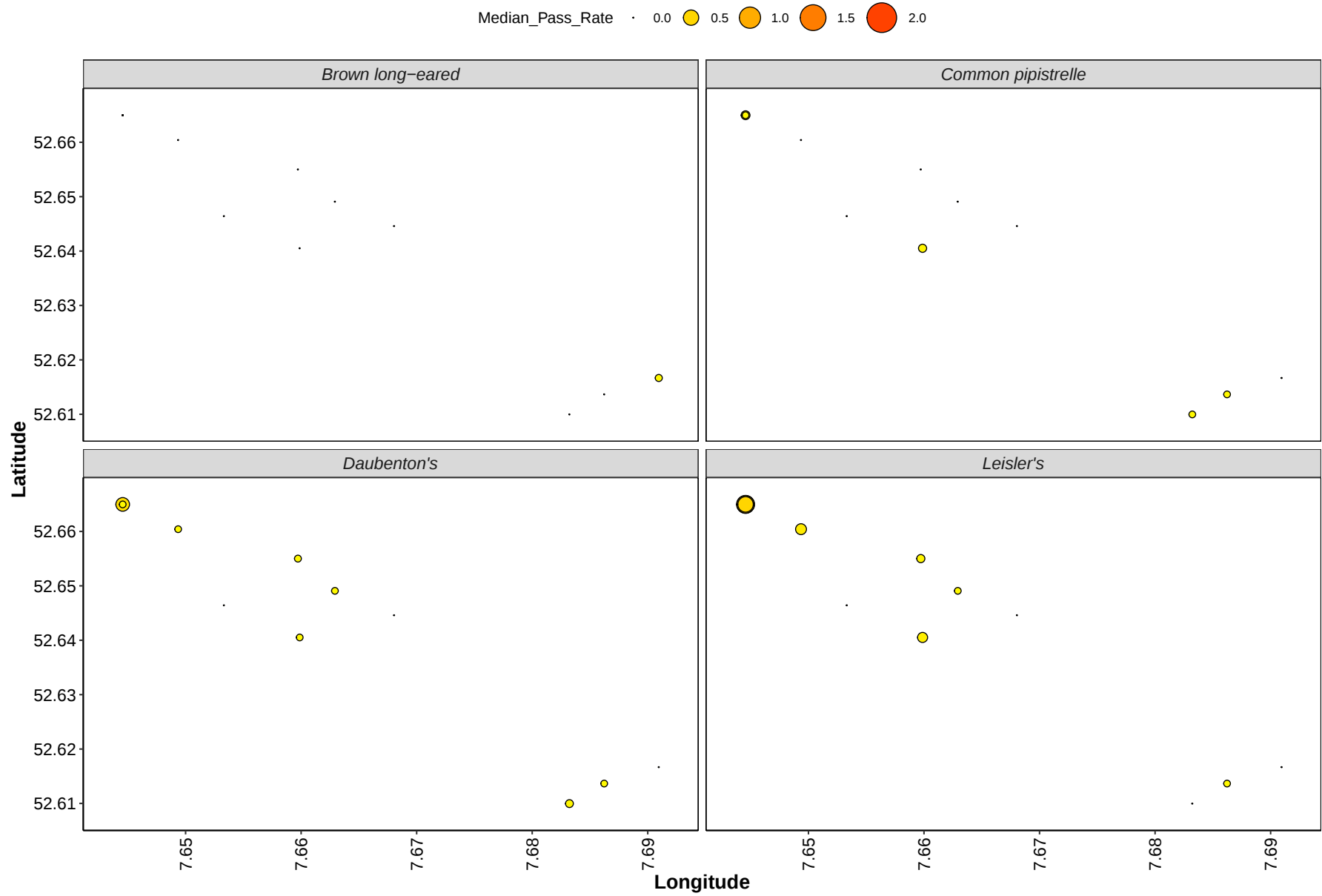


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



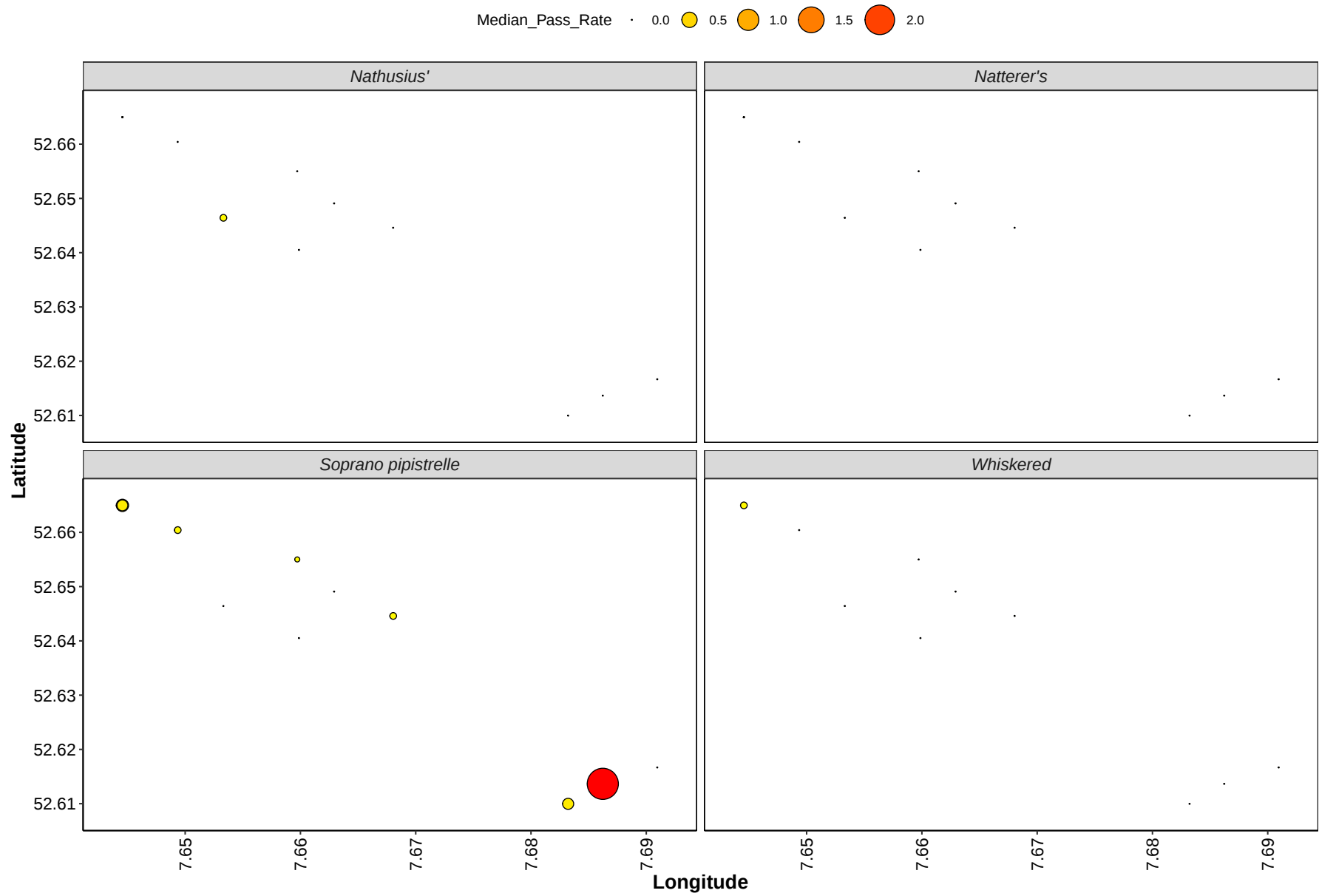
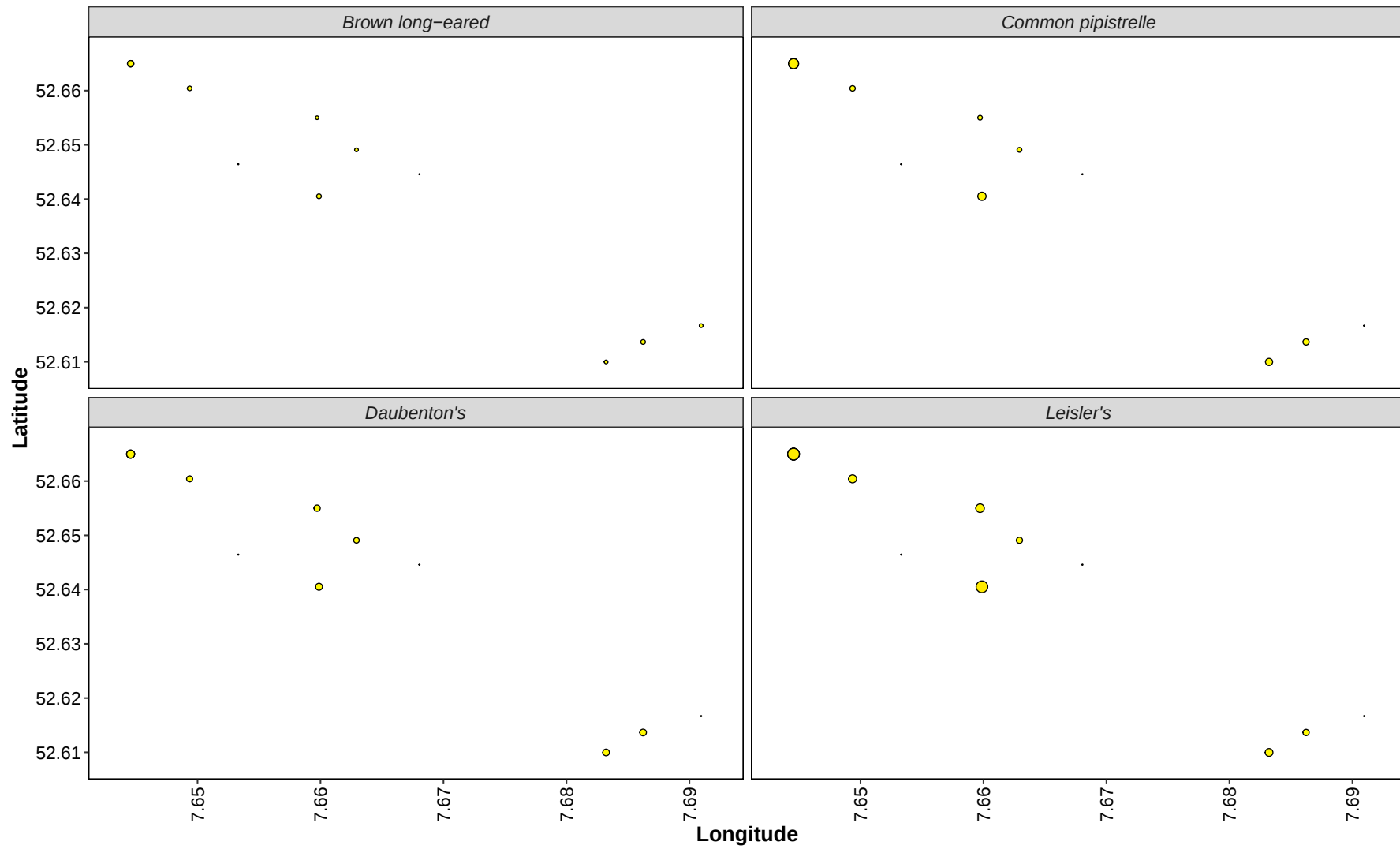
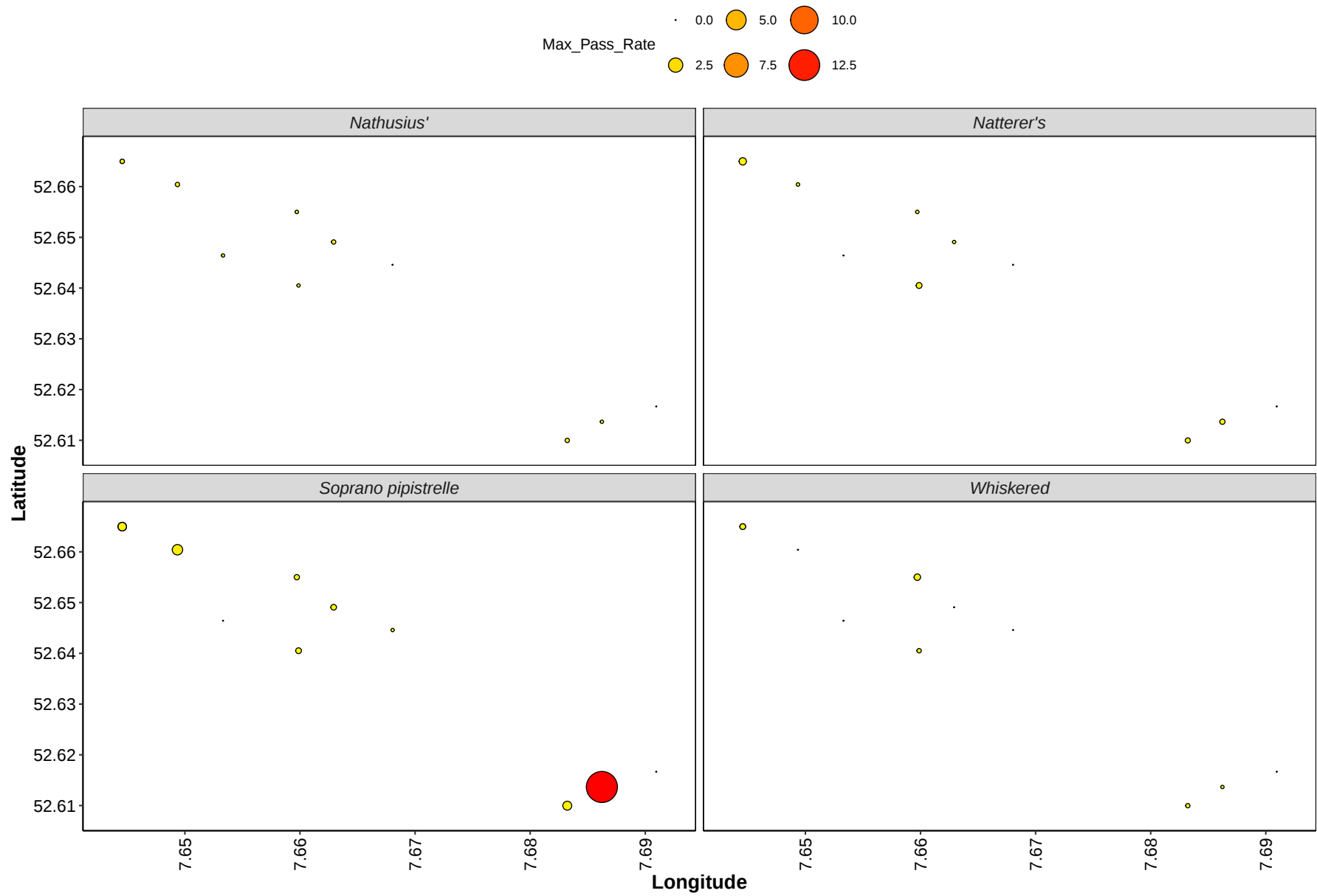


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





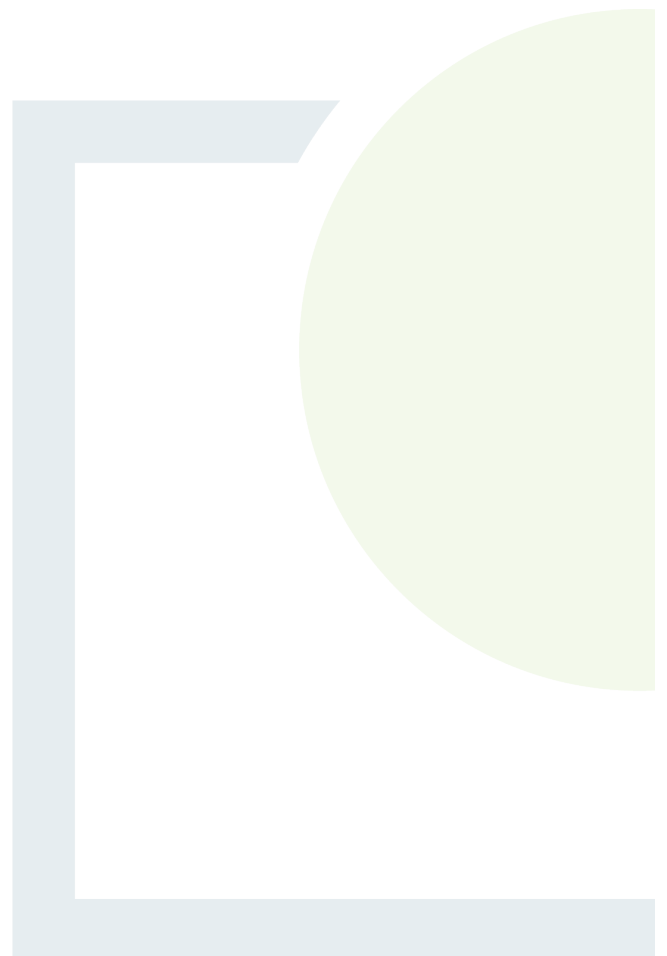
Thank you for using Ecobat!



DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 2

Ecobat Results 2025





Ecobat Report

2025-11-07

Geo filter: all, Time filter: all

Summary

Bats were detected on **17** nights between **19/05/2025** and **04/06/2025**, using **10** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

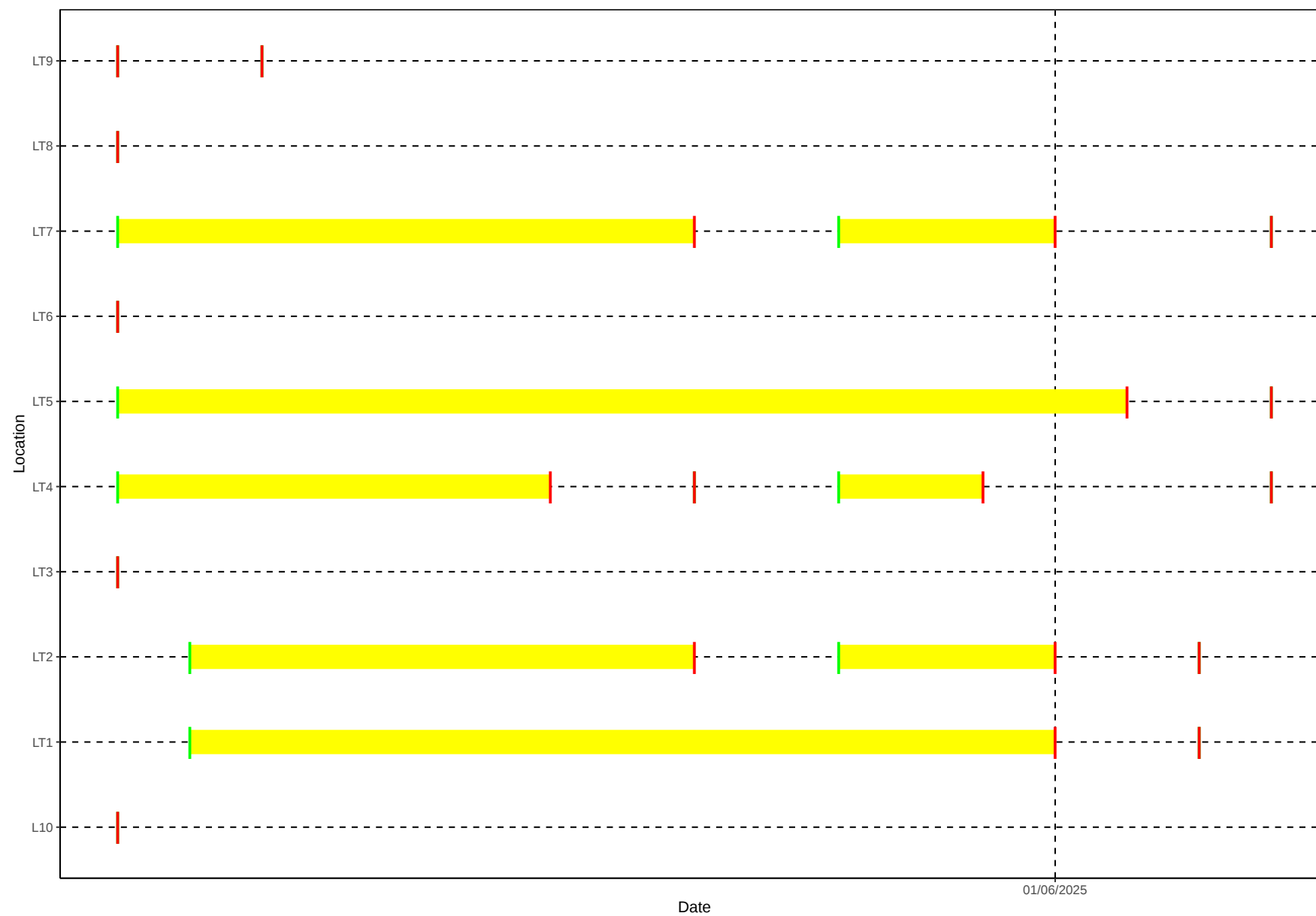
Detector ID	Latitude	Longitude
LT1	52.66497	7.644556
LT2	52.66041	7.649355
LT3	52.65497	7.651278
LT4	52.65501	7.659723
LT5	52.64908	7.662925
LT6	52.64642	7.653317
LT7	52.64459	7.668046
LT8	52.64051	7.659876
LT9	52.61667	7.690955
L10	52.61366	7.686229

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
L10	17
LT1	15
LT2	14
LT3	17
LT4	12
LT5	16
LT6	17
LT7	14
LT8	17
LT9	16

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



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
L10	Myotis daubentonii	0	0	0	0	0	10
L10	Myotis mystacinus	0	0	0	0	0	2
L10	Myotis nattereri	0	0	0	0	0	1
L10	Nyctalus leisleri	0	0	0	0	0	15
L10	Pipistrellus nathusii	0	0	0	0	0	2
L10	Pipistrellus pipistrellus	0	0	0	0	0	15
L10	Pipistrellus pygmaeus	0	0	0	0	0	16
L10	Plecotus auritus	0	0	0	0	0	6
LT1	Myotis daubentonii	0	0	0	0	0	7
LT1	Myotis mystacinus	0	0	0	0	0	3
LT1	Myotis nattereri	0	0	0	0	0	2
LT1	Nyctalus leisleri	0	0	0	0	0	13
LT1	Pipistrellus nathusii	0	0	0	0	4	5
LT1	Pipistrellus pipistrellus	0	0	0	0	0	14
LT1	Pipistrellus pygmaeus	0	0	0	0	0	14
LT1	Plecotus auritus	0	0	0	0	0	1
LT2	Myotis daubentonii	0	0	0	0	0	1
LT2	Nyctalus leisleri	0	0	0	0	2	10

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
LT2	Pipistrellus nathusii	0	0	0	0	1	2
LT2	Pipistrellus pipistrellus	0	0	0	0	0	13
LT2	Pipistrellus pygmaeus	0	0	0	0	0	13
LT2	Plecotus auritus	0	0	0	0	0	1
LT3	Myotis daubentonii	0	0	0	0	0	10
LT3	Myotis mystacinus	0	0	0	0	0	1
LT3	Myotis nattereri	0	0	0	0	0	3
LT3	Nyctalus leisleri	0	0	0	0	0	13
LT3	Pipistrellus nathusii	0	0	0	0	1	2
LT3	Pipistrellus pipistrellus	0	0	0	0	0	14
LT3	Pipistrellus pygmaeus	0	0	0	0	0	15
LT3	Plecotus auritus	0	0	0	0	0	4
LT4	Myotis daubentonii	0	0	0	0	0	2
LT4	Myotis mystacinus	0	0	0	0	0	2
LT4	Nyctalus leisleri	0	0	0	0	0	11
LT4	Pipistrellus nathusii	0	0	0	0	1	1
LT4	Pipistrellus pipistrellus	0	0	0	0	0	6
LT4	Pipistrellus pygmaeus	0	0	0	0	0	8
LT5	Myotis daubentonii	0	0	0	0	0	4

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
LT5	Myotis mystacinus	0	0	0	0	0	5
LT5	Nyctalus leisleri	0	2	3	0	1	10
LT5	Pipistrellus nathusii	0	0	0	0	2	1
LT5	Pipistrellus pipistrellus	0	0	0	0	0	11
LT5	Pipistrellus pygmaeus	0	0	0	0	0	11
LT5	Plecotus auritus	0	0	0	0	0	3
LT6	Myotis daubentonii	0	0	0	0	0	7
LT6	Myotis mystacinus	0	0	0	0	0	2
LT6	Nyctalus leisleri	0	0	0	0	0	14
LT6	Pipistrellus nathusii	0	0	0	2	5	1
LT6	Pipistrellus pipistrellus	0	0	0	0	2	14
LT6	Pipistrellus pygmaeus	0	0	0	0	2	13
LT6	Plecotus auritus	0	0	0	2	0	4
LT7	Myotis daubentonii	0	0	0	0	0	8
LT7	Nyctalus leisleri	0	0	0	0	0	13
LT7	Pipistrellus nathusii	0	0	0	1	0	3
LT7	Pipistrellus pipistrellus	0	0	0	0	0	8
LT7	Pipistrellus pygmaeus	0	0	0	0	0	11
LT7	Plecotus auritus	0	0	0	0	0	5
LT8	Myotis daubentonii	0	0	0	0	0	8

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
LT8	Myotis nattereri	0	0	0	0	0	2
LT8	Nyctalus leisleri	0	0	0	0	0	14
LT8	Pipistrellus nathusii	0	0	2	0	4	2
LT8	Pipistrellus pipistrellus	0	0	0	0	4	12
LT8	Pipistrellus pygmaeus	0	0	0	0	0	16
LT8	Plecotus auritus	0	0	0	0	0	6
LT9	Myotis daubentonii	0	0	0	0	0	7
LT9	Myotis nattereri	0	0	0	0	5	5
LT9	Nyctalus leisleri	0	0	0	0	0	12
LT9	Pipistrellus nathusii	0	0	0	0	0	1
LT9	Pipistrellus pipistrellus	0	0	0	0	0	15
LT9	Pipistrellus pygmaeus	0	0	0	0	0	15
LT9	Plecotus auritus	0	0	0	0	0	6

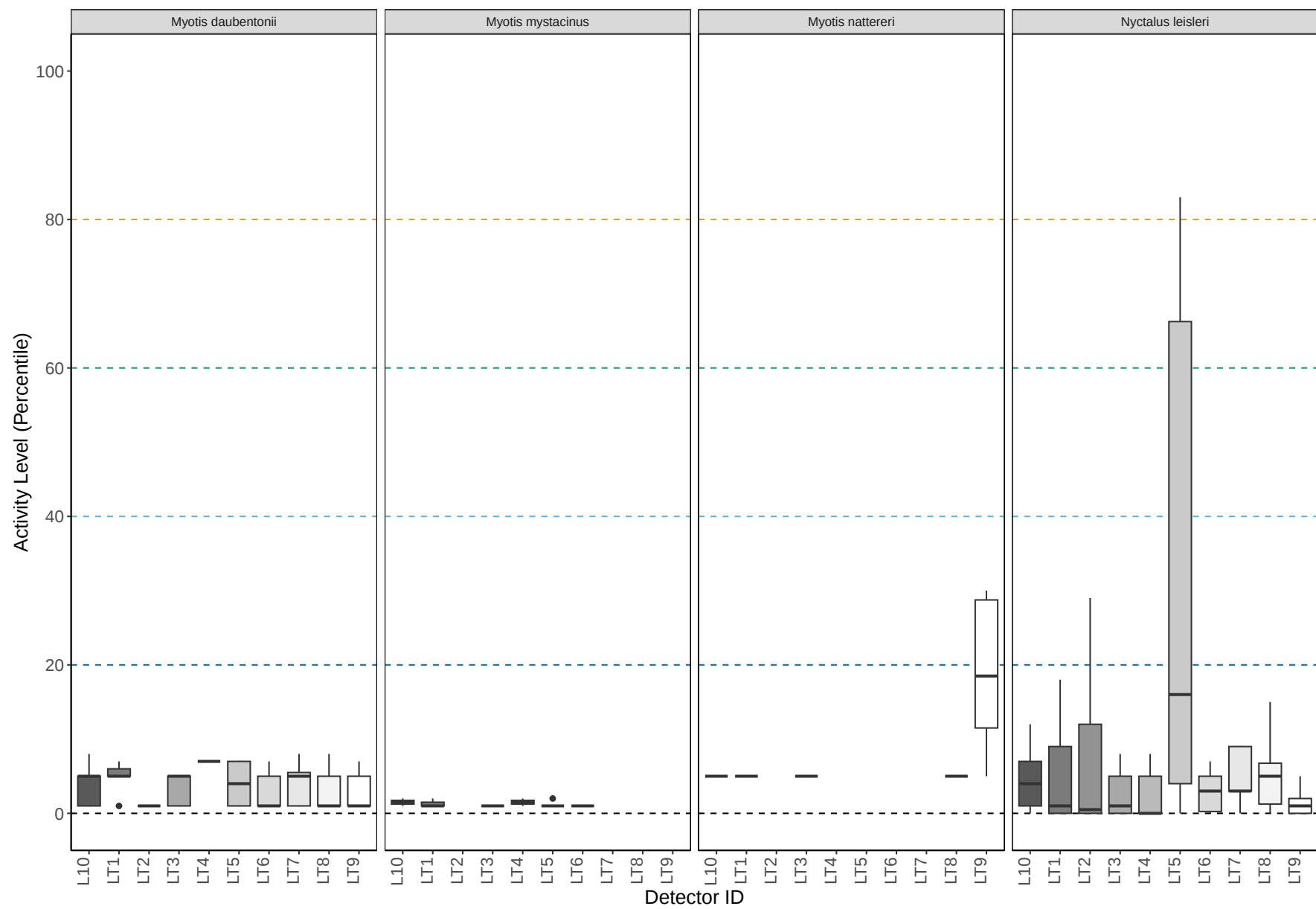
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
L10	Myotis daubentonii	5	1 - 5	8	10	6444
L10	Myotis mystacinus	2	1.5 - 1.5	2	2	2665
L10	Myotis nattereri	5	0	5	1	1723
L10	Nyctalus leisleri	4	2.5 - 7	12	15	60860
L10	Pipistrellus nathusii	13	13 - 13	13	2	3340
L10	Pipistrellus pipistrellus	2	2 - 5.5	9	15	1540034
L10	Pipistrellus pygmaeus	5	4 - 8	13	16	406510
L10	Plecotus auritus	3	1 - 6.5	9	6	23195
LT1	Myotis daubentonii	5	3 - 7	7	7	6444
LT1	Myotis mystacinus	1	1 - 1	2	3	2665
LT1	Myotis nattereri	5	5 - 5	5	2	1723
LT1	Nyctalus leisleri	1	1.5 - 13.5	18	13	60860
LT1	Pipistrellus nathusii	18	8 - 36	37	9	3340
LT1	Pipistrellus pipistrellus	0	1 - 2	2	14	1540034
LT1	Pipistrellus pygmaeus	1	1 - 4	7	14	406510
LT1	Plecotus auritus	4	0	4	1	23195
LT2	Myotis daubentonii	1	0	1	1	6444
LT2	Nyctalus leisleri	1	1 - 29	29	12	60860
LT2	Pipistrellus nathusii	13	8 - 28	28	3	3340
LT2	Pipistrellus pipistrellus	0	0 - 0	1	13	1540034
LT2	Pipistrellus pygmaeus	1	1.5 - 2.5	3	13	406510
LT2	Plecotus auritus	1	0	1	1	23195
LT3	Myotis daubentonii	5	3 - 5	5	10	6444
LT3	Myotis mystacinus	1	0	1	1	2665
LT3	Myotis nattereri	5	5 - 5	5	3	1723
LT3	Nyctalus leisleri	1	1 - 6.5	8	13	60860
LT3	Pipistrellus nathusii	8	8 - 8	24	3	3340
LT3	Pipistrellus pipistrellus	0	1 - 4	4	14	1540034
LT3	Pipistrellus pygmaeus	1	1 - 7	10	15	406510
LT3	Plecotus auritus	3	1 - 4	4	4	23195
LT4	Myotis daubentonii	7	7 - 7	7	2	6444
LT4	Myotis mystacinus	2	1.5 - 1.5	2	2	2665
LT4	Nyctalus leisleri	0	1 - 8	8	11	60860

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT4	Pipistrellus nathusii	15	15 - 15	22	2	3340
LT4	Pipistrellus pipistrellus	0	0 - 0	0	6	1540034
LT4	Pipistrellus pygmaeus	0	0 - 0	1	8	406510
LT5	Myotis daubentonii	4	1 - 7	7	4	6444
LT5	Myotis mystacinus	1	1 - 1	2	5	2665
LT5	Nyctalus leisleri	16	8.5 - 46.5	83	16	60860
LT5	Pipistrellus nathusii	22	22 - 22	22	3	3340
LT5	Pipistrellus pipistrellus	0	0 - 0	1	11	1540034
LT5	Pipistrellus pygmaeus	0	0 - 0	1	11	406510
LT5	Plecotus auritus	1	1 - 1	1	3	23195
LT6	Myotis daubentonii	1	1 - 4	7	7	6444
LT6	Myotis mystacinus	1	1 - 1	1	2	2665
LT6	Nyctalus leisleri	3	2.5 - 6	7	14	60860
LT6	Pipistrellus nathusii	34	23 - 40.5	46	8	3340
LT6	Pipistrellus pipistrellus	4	3.5 - 19.5	36	16	1540034
LT6	Pipistrellus pygmaeus	4	3.5 - 16	26	15	406510
LT6	Plecotus auritus	9	2.5 - 42	42	6	23195
LT7	Myotis daubentonii	5	1 - 6.5	8	8	6444
LT7	Nyctalus leisleri	3	3 - 8.5	9	13	60860
LT7	Pipistrellus nathusii	13	10.5 - 30.5	48	4	3340
LT7	Pipistrellus pipistrellus	1	1 - 2	2	8	1540034
LT7	Pipistrellus pygmaeus	1	1 - 1.5	5	11	406510
LT7	Plecotus auritus	4	1 - 17	17	5	23195
LT8	Myotis daubentonii	1	1 - 4.5	8	8	6444
LT8	Myotis nattereri	5	5 - 5	5	2	1723
LT8	Nyctalus leisleri	5	3 - 8	15	14	60860
LT8	Pipistrellus nathusii	35	18.5 - 55	75	8	3340
LT8	Pipistrellus pipistrellus	8	7 - 21.5	35	16	1540034
LT8	Pipistrellus pygmaeus	4	4 - 12.5	16	16	406510
LT8	Plecotus auritus	13	6.5 - 15	16	6	23195
LT9	Myotis daubentonii	1	1 - 4	7	7	6444
LT9	Myotis nattereri	19	10.5 - 29	30	10	1723
LT9	Nyctalus leisleri	1	1 - 3.5	5	12	60860
LT9	Pipistrellus nathusii	8	0	8	1	3340
LT9	Pipistrellus pipistrellus	0	0 - 0	2	15	1540034
LT9	Pipistrellus pygmaeus	4	3.5 - 7	9	15	406510

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT9	Plecotus auritus	3	1 - 5	9	6	23195

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



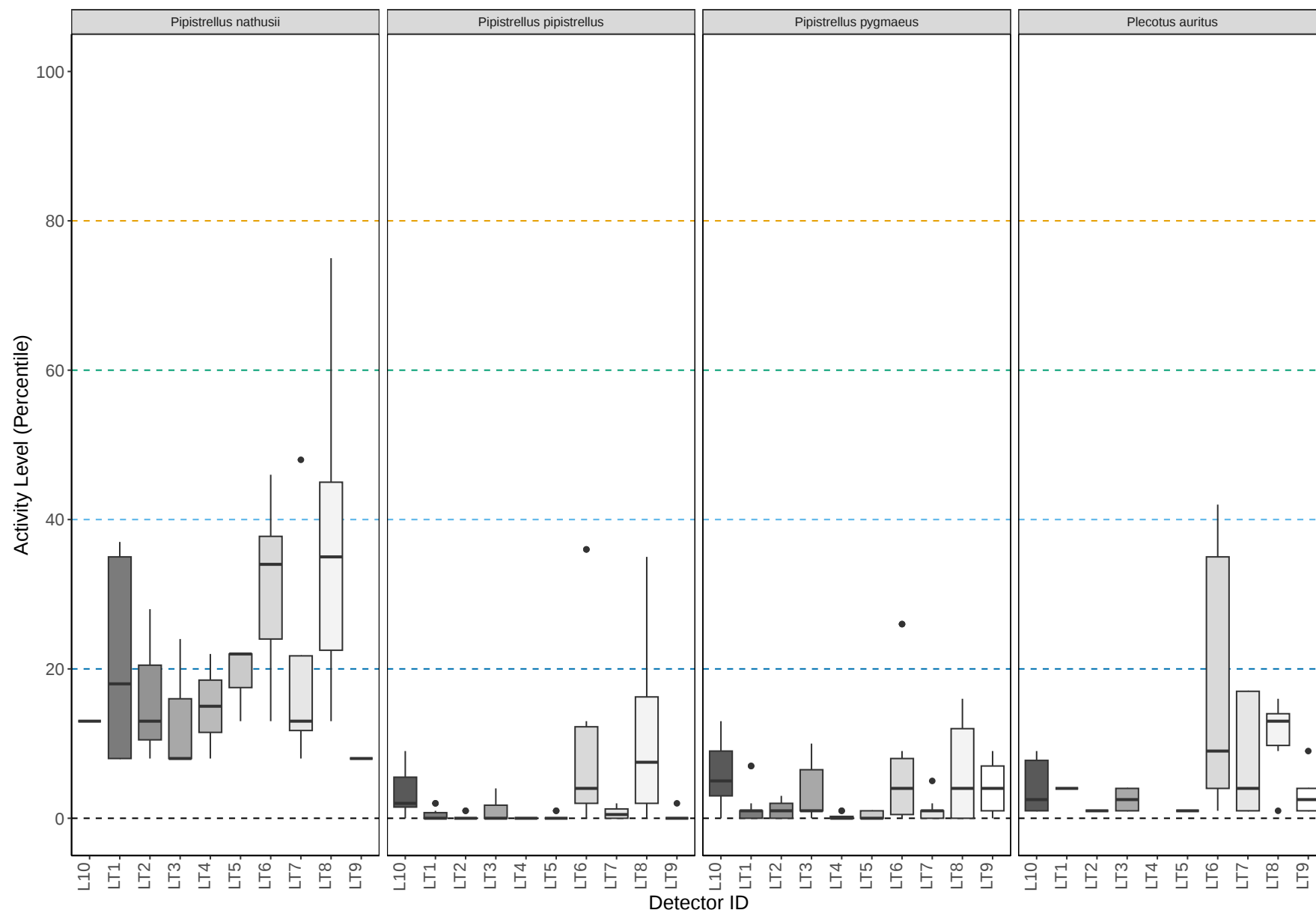
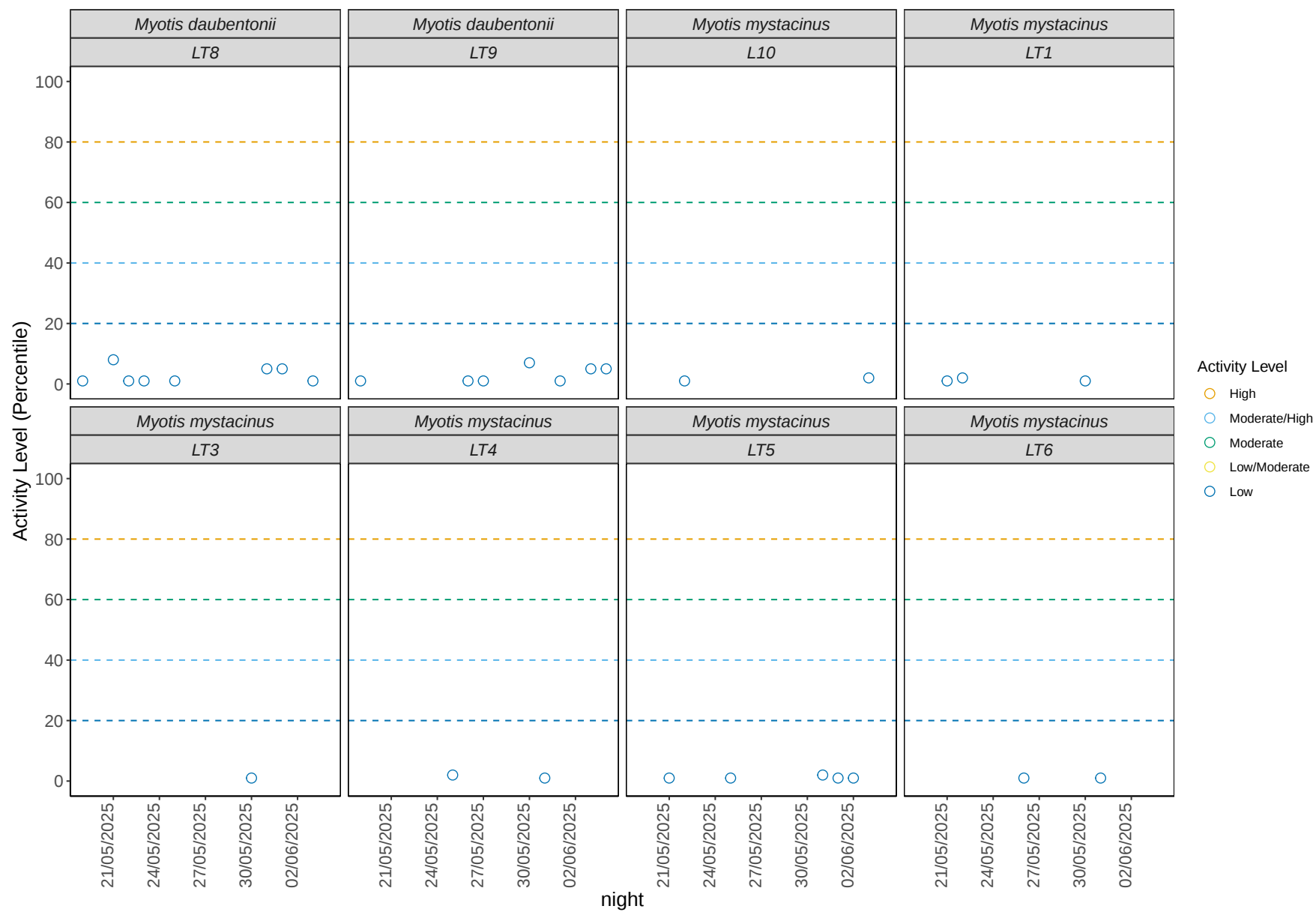
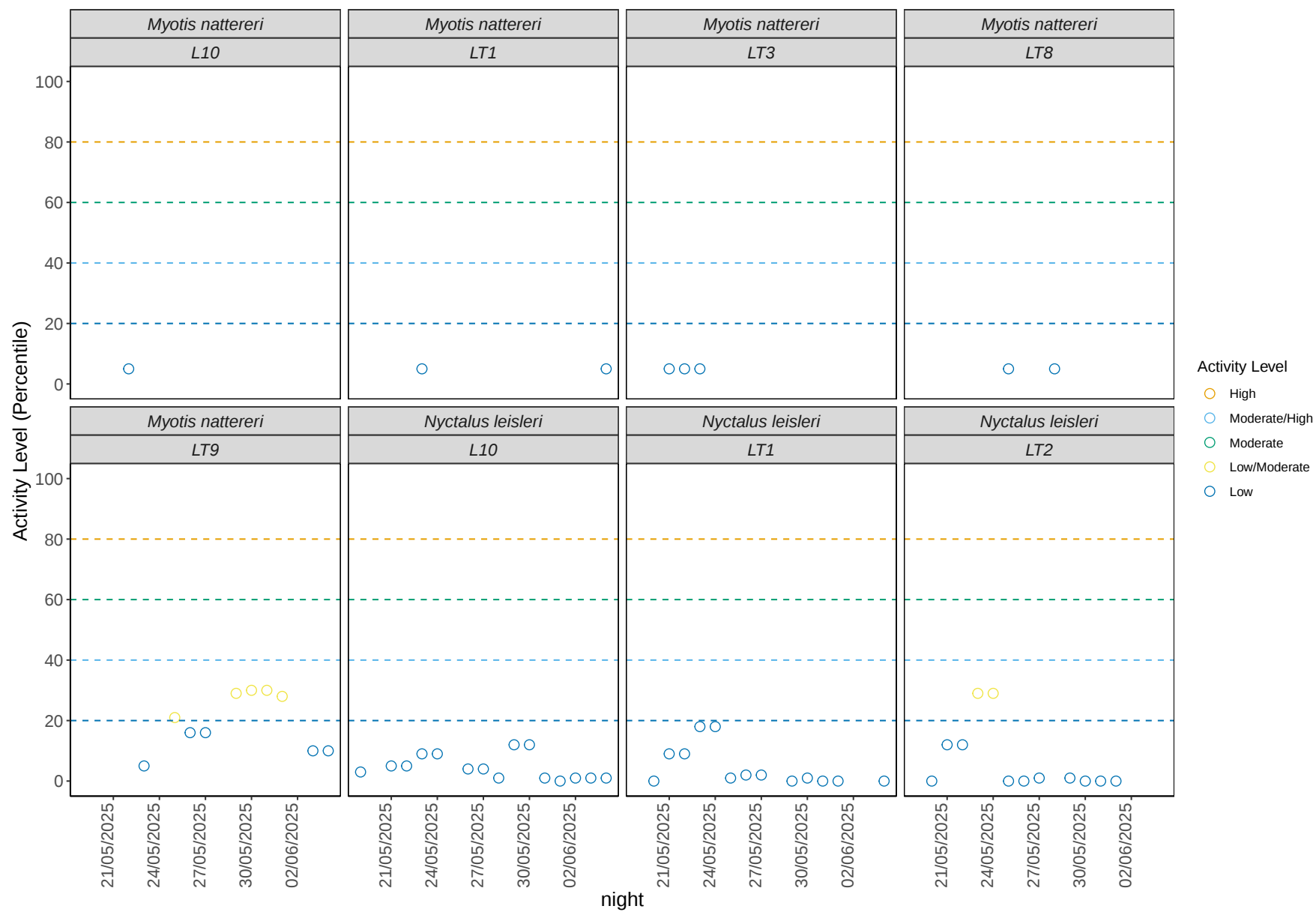
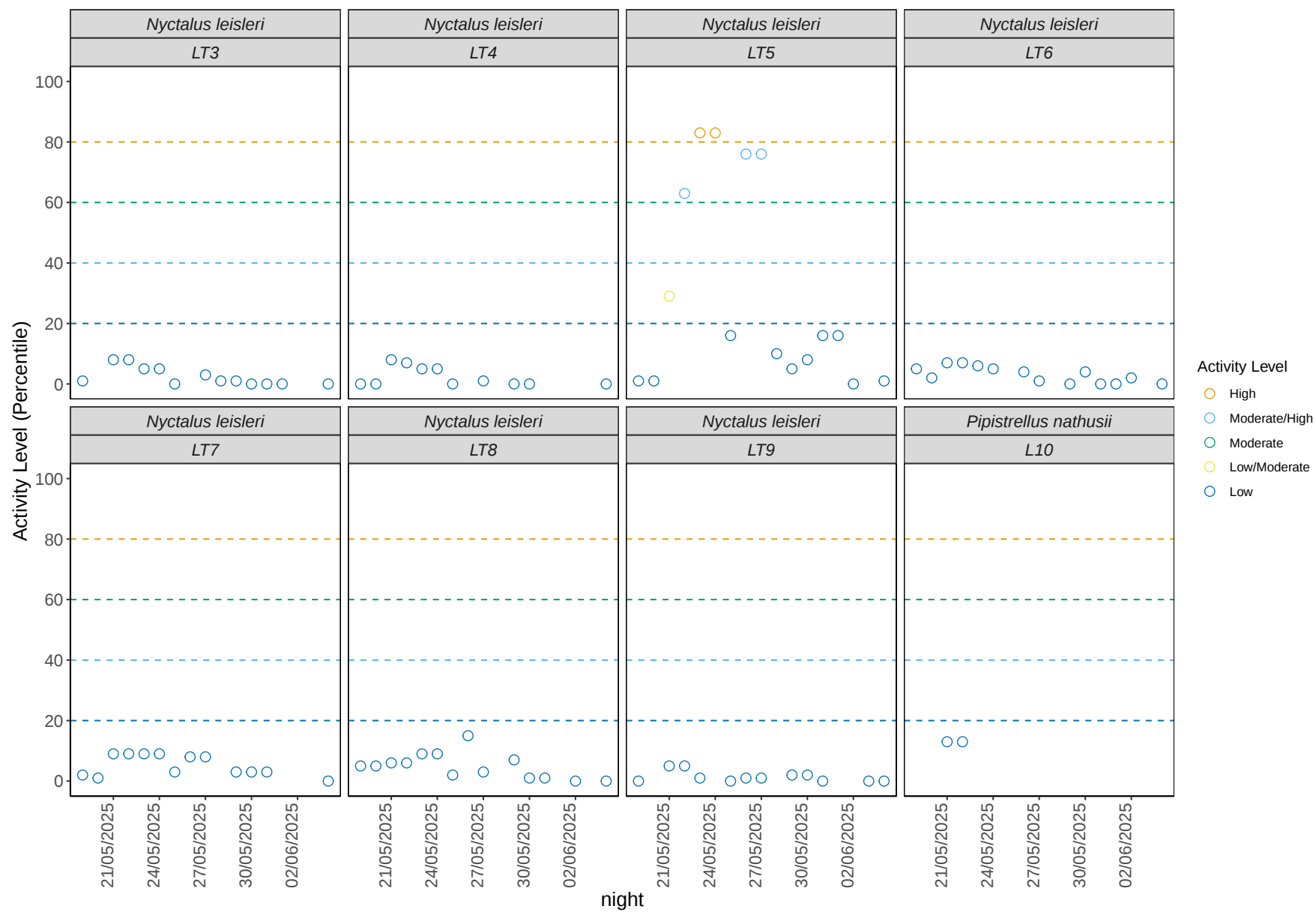
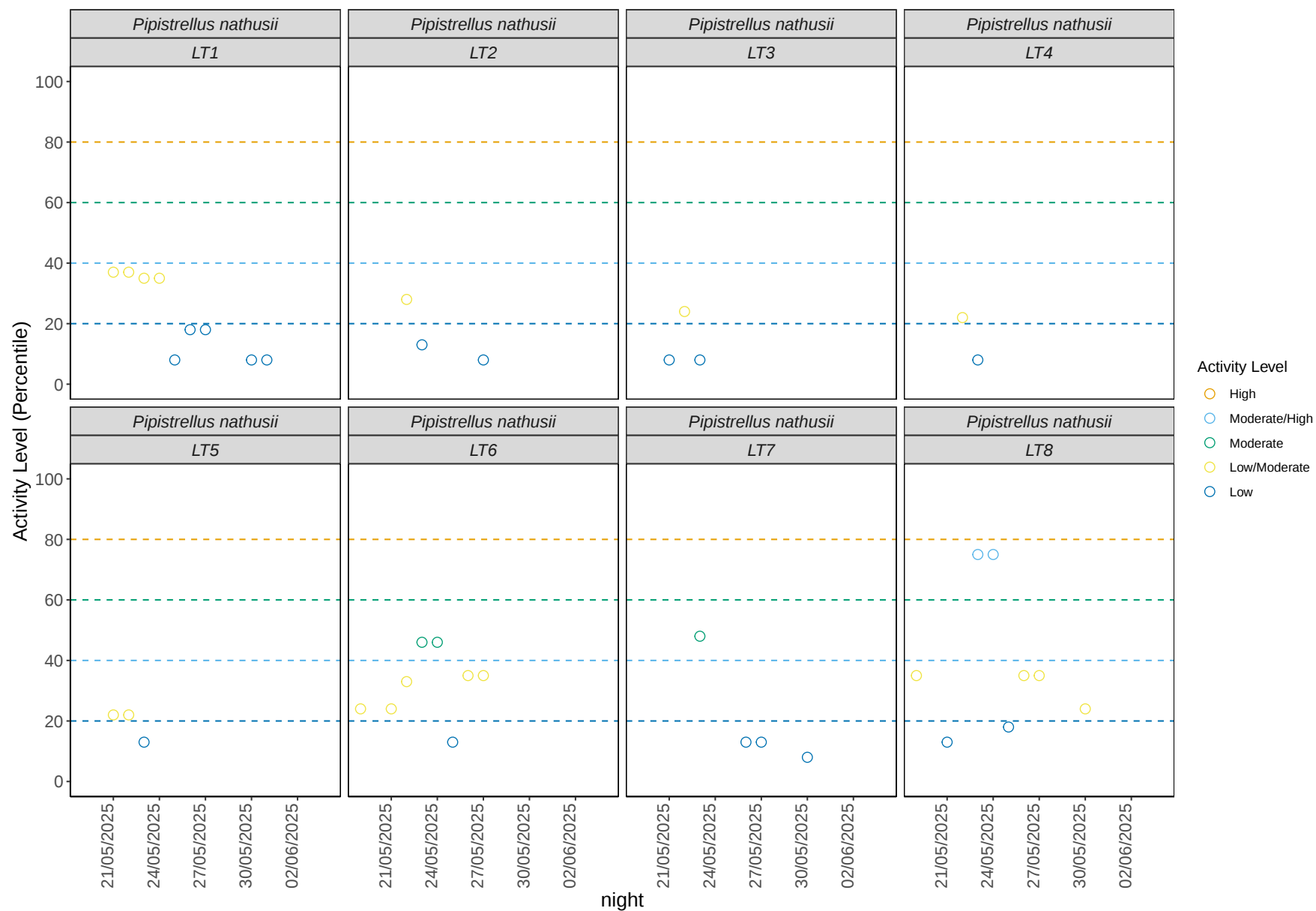


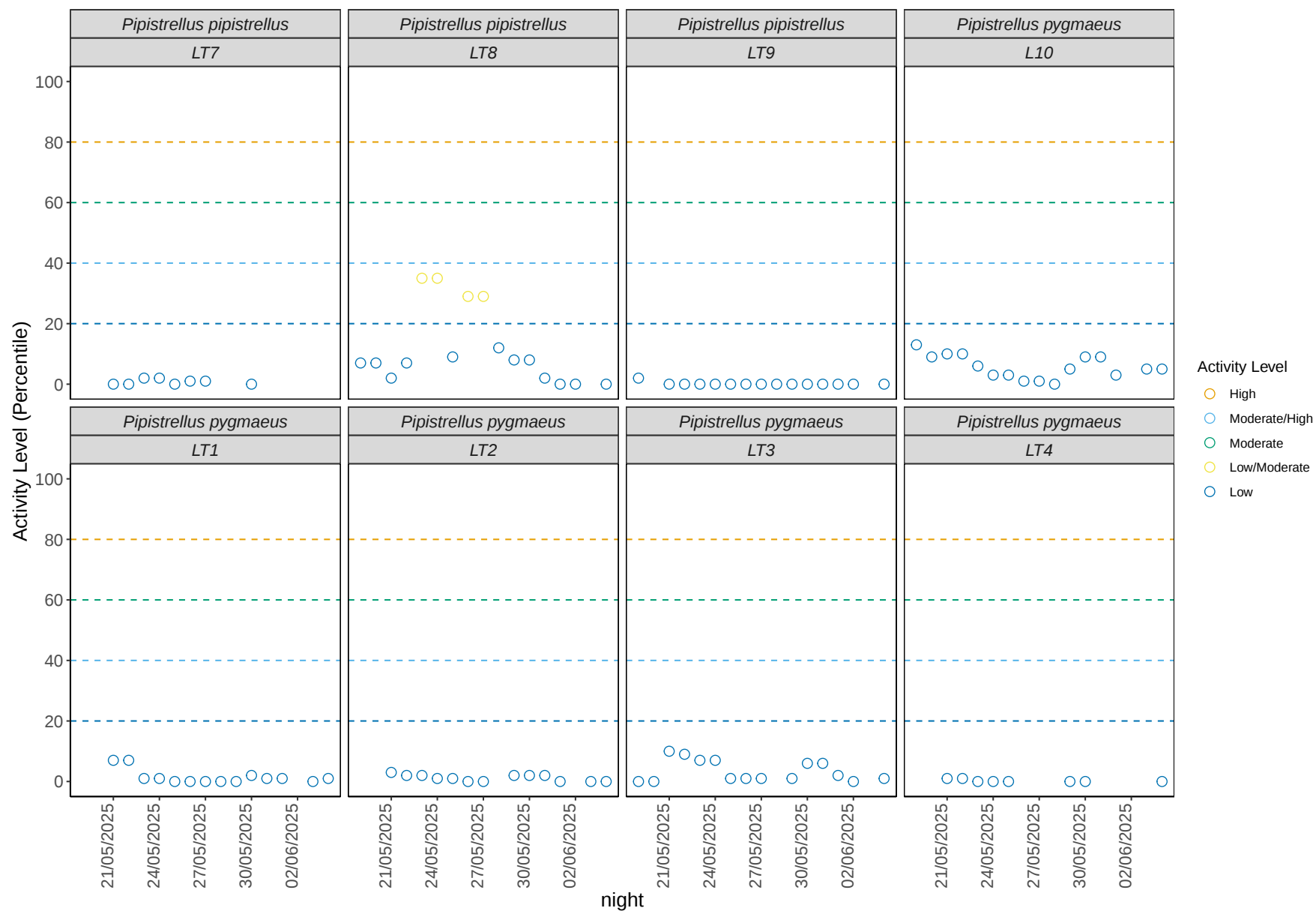
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

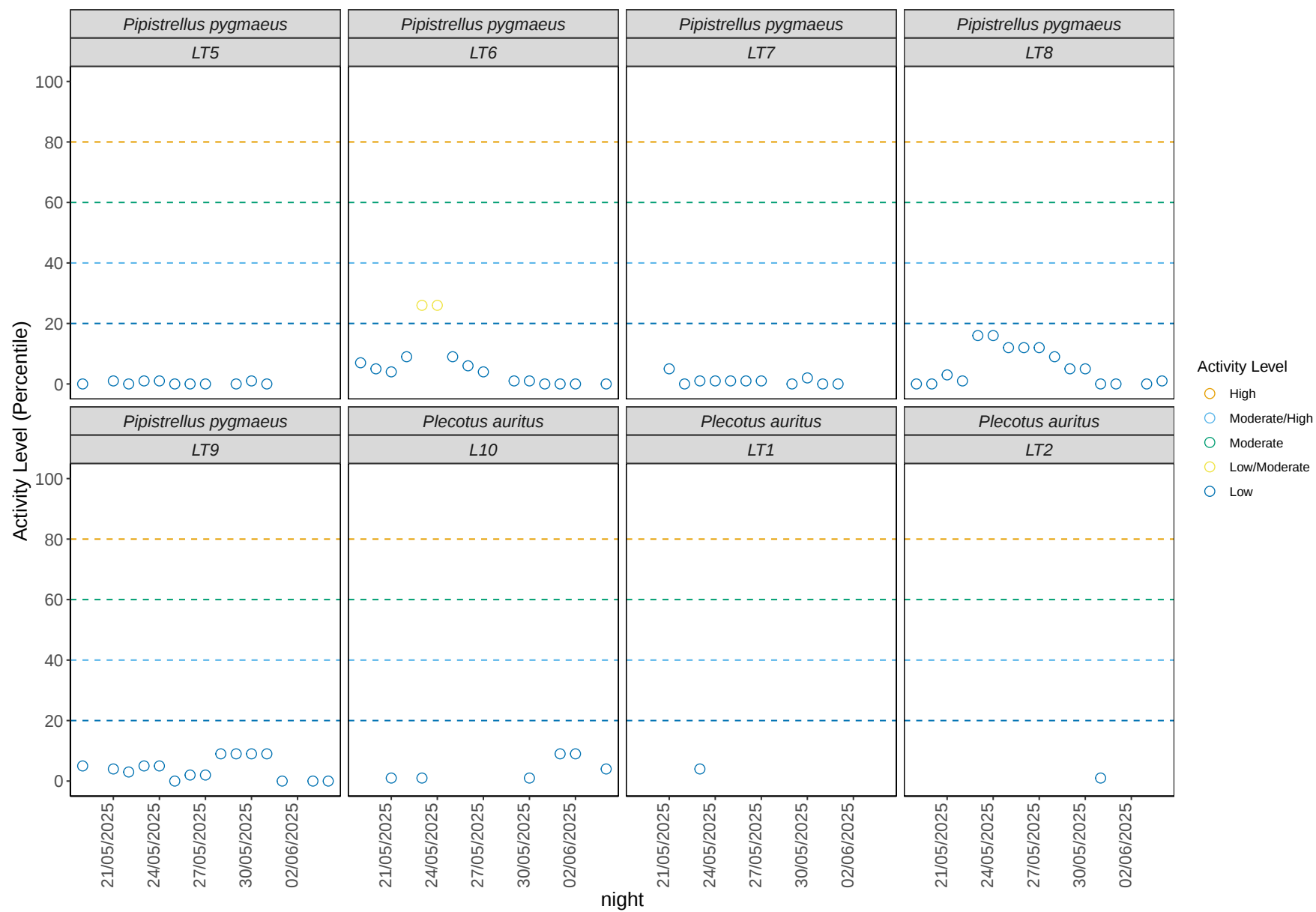


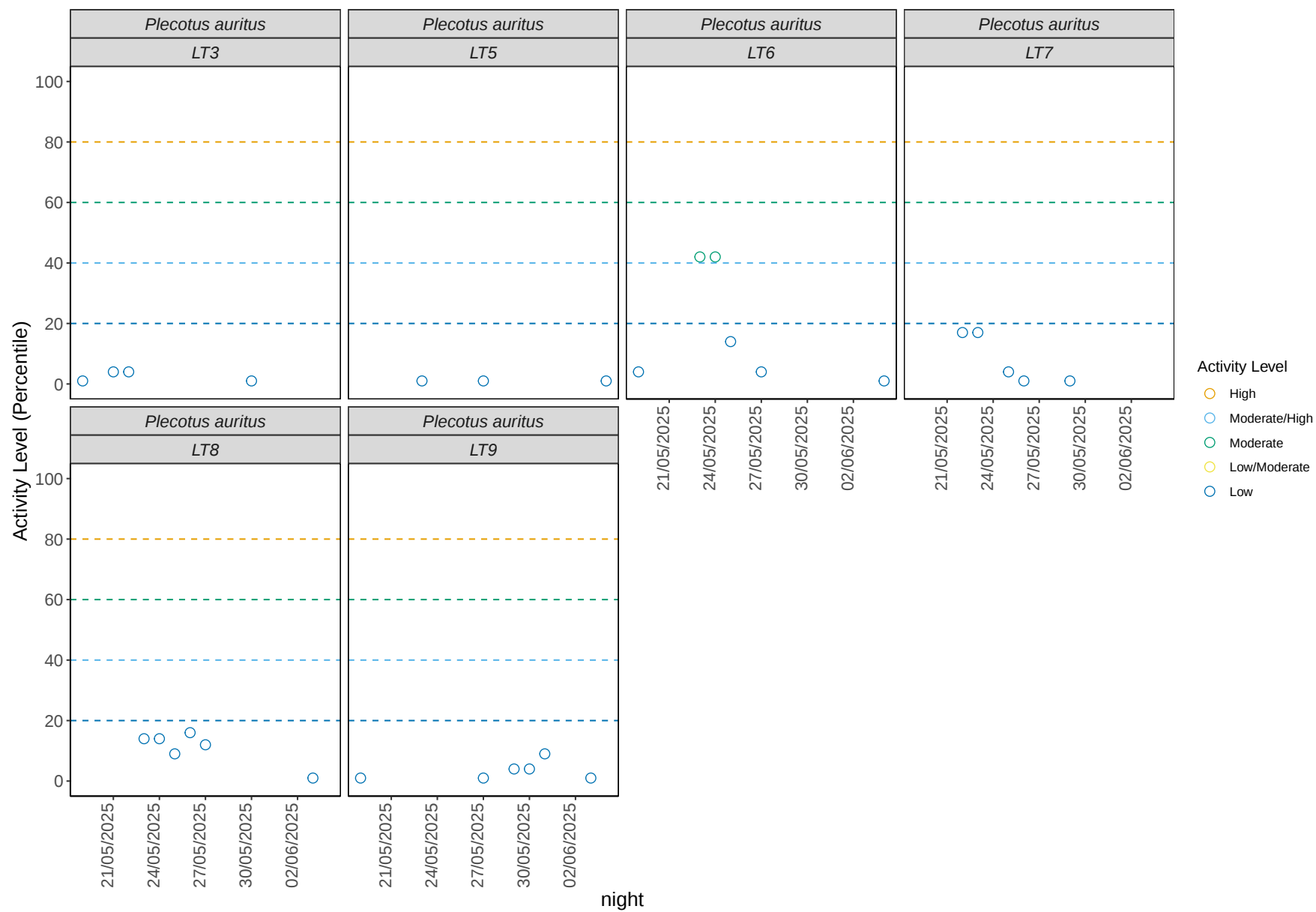












Per Detector, Per Month

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
L10	Myotis daubentonii	May	0	0	0	0	0	7
L10	Myotis daubentonii	Jun	0	0	0	0	0	3
L10	Myotis mystacinus	May	0	0	0	0	0	1
L10	Myotis mystacinus	Jun	0	0	0	0	0	1
L10	Myotis nattereri	May	0	0	0	0	0	1
L10	Nyctalus leisleri	May	0	0	0	0	0	11
L10	Nyctalus leisleri	Jun	0	0	0	0	0	4
L10	Pipistrellus nathusii	May	0	0	0	0	0	2
L10	Pipistrellus pipistrellus	May	0	0	0	0	0	12
L10	Pipistrellus pipistrellus	Jun	0	0	0	0	0	3
L10	Pipistrellus pygmaeus	May	0	0	0	0	0	13
L10	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3
L10	Plecotus auritus	May	0	0	0	0	0	3
L10	Plecotus auritus	Jun	0	0	0	0	0	3
LT1	Myotis daubentonii	May	0	0	0	0	0	5
LT1	Myotis daubentonii	Jun	0	0	0	0	0	2
LT1	Myotis mystacinus	May	0	0	0	0	0	3
LT1	Myotis nattereri	May	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
LT1	Myotis nattereri	Jun	0	0	0	0	0	1
LT1	Nyctalus leisleri	May	0	0	0	0	0	11
LT1	Nyctalus leisleri	Jun	0	0	0	0	0	2
LT1	Pipistrellus nathusii	May	0	0	0	0	4	5
LT1	Pipistrellus pipistrellus	May	0	0	0	0	0	11
LT1	Pipistrellus pipistrellus	Jun	0	0	0	0	0	3
LT1	Pipistrellus pygmaeus	May	0	0	0	0	0	11
LT1	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3
LT1	Plecotus auritus	May	0	0	0	0	0	1
LT2	Myotis daubentonii	May	0	0	0	0	0	1
LT2	Nyctalus leisleri	May	0	0	0	0	2	9
LT2	Nyctalus leisleri	Jun	0	0	0	0	0	1
LT2	Pipistrellus nathusii	May	0	0	0	0	1	2
LT2	Pipistrellus pipistrellus	May	0	0	0	0	0	11
LT2	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
LT2	Pipistrellus pygmaeus	May	0	0	0	0	0	10
LT2	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3
LT2	Plecotus auritus	May	0	0	0	0	0	1
LT3	Myotis daubentonii	May	0	0	0	0	0	7
LT3	Myotis daubentonii	Jun	0	0	0	0	0	3

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
LT3	Myotis mystacinus	May	0	0	0	0	0	1
LT3	Myotis nattereri	May	0	0	0	0	0	3
LT3	Nyctalus leisleri	May	0	0	0	0	0	11
LT3	Nyctalus leisleri	Jun	0	0	0	0	0	2
LT3	Pipistrellus nathusii	May	0	0	0	0	1	2
LT3	Pipistrellus pipistrellus	May	0	0	0	0	0	12
LT3	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
LT3	Pipistrellus pygmaeus	May	0	0	0	0	0	12
LT3	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3
LT3	Plecotus auritus	May	0	0	0	0	0	4
LT4	Myotis daubentonii	May	0	0	0	0	0	2
LT4	Myotis mystacinus	May	0	0	0	0	0	2
LT4	Nyctalus leisleri	May	0	0	0	0	0	10
LT4	Nyctalus leisleri	Jun	0	0	0	0	0	1
LT4	Pipistrellus nathusii	May	0	0	0	0	1	1
LT4	Pipistrellus pipistrellus	May	0	0	0	0	0	6
LT4	Pipistrellus pygmaeus	May	0	0	0	0	0	7
LT4	Pipistrellus pygmaeus	Jun	0	0	0	0	0	1
LT5	Myotis daubentonii	May	0	0	0	0	0	3
LT5	Myotis daubentonii	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
LT5	Myotis mystacinus	May	0	0	0	0	0	3
LT5	Myotis mystacinus	Jun	0	0	0	0	0	2
LT5	Nyctalus leisleri	May	0	2	3	0	1	7
LT5	Nyctalus leisleri	Jun	0	0	0	0	0	3
LT5	Pipistrellus nathusii	May	0	0	0	0	2	1
LT5	Pipistrellus pipistrellus	May	0	0	0	0	0	9
LT5	Pipistrellus pipistrellus	Jun	0	0	0	0	0	2
LT5	Pipistrellus pygmaeus	May	0	0	0	0	0	11
LT5	Plecotus auritus	May	0	0	0	0	0	2
LT5	Plecotus auritus	Jun	0	0	0	0	0	1
LT6	Myotis daubentonii	May	0	0	0	0	0	5
LT6	Myotis daubentonii	Jun	0	0	0	0	0	2
LT6	Myotis mystacinus	May	0	0	0	0	0	2
LT6	Nyctalus leisleri	May	0	0	0	0	0	11
LT6	Nyctalus leisleri	Jun	0	0	0	0	0	3
LT6	Pipistrellus nathusii	May	0	0	0	2	5	1
LT6	Pipistrellus pipistrellus	May	0	0	0	0	2	11
LT6	Pipistrellus pipistrellus	Jun	0	0	0	0	0	3
LT6	Pipistrellus pygmaeus	May	0	0	0	0	2	10
LT6	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3

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
LT6	Plecotus auritus	May	0	0	0	2	0	3
LT6	Plecotus auritus	Jun	0	0	0	0	0	1
LT7	Myotis daubentonii	May	0	0	0	0	0	7
LT7	Myotis daubentonii	Jun	0	0	0	0	0	1
LT7	Nyctalus leisleri	May	0	0	0	0	0	12
LT7	Nyctalus leisleri	Jun	0	0	0	0	0	1
LT7	Pipistrellus nathusii	May	0	0	0	1	0	3
LT7	Pipistrellus pipistrellus	May	0	0	0	0	0	8
LT7	Pipistrellus pygmaeus	May	0	0	0	0	0	10
LT7	Pipistrellus pygmaeus	Jun	0	0	0	0	0	1
LT7	Plecotus auritus	May	0	0	0	0	0	5
LT8	Myotis daubentonii	May	0	0	0	0	0	6
LT8	Myotis daubentonii	Jun	0	0	0	0	0	2
LT8	Myotis nattereri	May	0	0	0	0	0	2
LT8	Nyctalus leisleri	May	0	0	0	0	0	12
LT8	Nyctalus leisleri	Jun	0	0	0	0	0	2
LT8	Pipistrellus nathusii	May	0	0	2	0	4	2
LT8	Pipistrellus pipistrellus	May	0	0	0	0	4	9
LT8	Pipistrellus pipistrellus	Jun	0	0	0	0	0	3
LT8	Pipistrellus pygmaeus	May	0	0	0	0	0	13
LT8	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3

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
LT8	Plecotus auritus	May	0	0	0	0	0	5
LT8	Plecotus auritus	Jun	0	0	0	0	0	1
LT9	Myotis daubentonii	May	0	0	0	0	0	4
LT9	Myotis daubentonii	Jun	0	0	0	0	0	3
LT9	Myotis nattereri	May	0	0	0	0	4	3
LT9	Myotis nattereri	Jun	0	0	0	0	1	2
LT9	Nyctalus leisleri	May	0	0	0	0	0	10
LT9	Nyctalus leisleri	Jun	0	0	0	0	0	2
LT9	Pipistrellus nathusii	May	0	0	0	0	0	1
LT9	Pipistrellus pipistrellus	May	0	0	0	0	0	12
LT9	Pipistrellus pipistrellus	Jun	0	0	0	0	0	3
LT9	Pipistrellus pygmaeus	May	0	0	0	0	0	12
LT9	Pipistrellus pygmaeus	Jun	0	0	0	0	0	3
LT9	Plecotus auritus	May	0	0	0	0	0	5
LT9	Plecotus auritus	Jun	0	0	0	0	0	1

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
L10	Myotis daubentonii	May	5	1 - 5	8	7
L10	Myotis daubentonii	Jun	5	1 - 5	5	3
L10	Myotis mystacinus	May	1	1.5 - 1.5	1	1
L10	Myotis mystacinus	Jun	2	1.5 - 1.5	2	1
L10	Myotis nattereri	May	5	0	5	1
L10	Nyctalus leisleri	May	5	2.5 - 7	12	11
L10	Nyctalus leisleri	Jun	1	2.5 - 7	1	4
L10	Pipistrellus nathusii	May	13	13 - 13	13	2
L10	Pipistrellus pipistrellus	May	2	2 - 5.5	9	12
L10	Pipistrellus pipistrellus	Jun	6	2 - 5.5	6	3
L10	Pipistrellus pygmaeus	May	6	4 - 8	13	13
L10	Pipistrellus pygmaeus	Jun	5	4 - 8	5	3
L10	Plecotus auritus	May	1	1 - 6.5	1	3
L10	Plecotus auritus	Jun	9	1 - 6.5	9	3
LT1	Myotis daubentonii	May	5	3 - 7	7	5
LT1	Myotis daubentonii	Jun	5	3 - 7	5	2
LT1	Myotis mystacinus	May	1	1 - 1	2	3
LT1	Myotis nattereri	May	5	5 - 5	5	1
LT1	Myotis nattereri	Jun	5	5 - 5	5	1
LT1	Nyctalus leisleri	May	2	1.5 - 13.5	18	11
LT1	Nyctalus leisleri	Jun	0	1.5 - 13.5	0	2
LT1	Pipistrellus nathusii	May	18	8 - 36	37	9
LT1	Pipistrellus pipistrellus	May	0	1 - 2	2	11
LT1	Pipistrellus pipistrellus	Jun	0	1 - 2	0	3
LT1	Pipistrellus pygmaeus	May	1	1 - 4	7	11
LT1	Pipistrellus pygmaeus	Jun	1	1 - 4	1	3
LT1	Plecotus auritus	May	4	0	4	1
LT2	Myotis daubentonii	May	1	0	1	1
LT2	Nyctalus leisleri	May	1	1 - 29	29	11
LT2	Nyctalus leisleri	Jun	0	1 - 29	0	1
LT2	Pipistrellus nathusii	May	13	8 - 28	28	3
LT2	Pipistrellus pipistrellus	May	0	0 - 0	1	11
LT2	Pipistrellus pipistrellus	Jun	0	0 - 0	0	2

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT2	Pipistrellus pygmaeus	May	2	1.5 - 2.5	3	10
LT2	Pipistrellus pygmaeus	Jun	0	1.5 - 2.5	0	3
LT2	Plecotus auritus	May	1	0	1	1
LT3	Myotis daubentonii	May	5	3 - 5	5	7
LT3	Myotis daubentonii	Jun	1	3 - 5	5	3
LT3	Myotis mystacinus	May	1	0	1	1
LT3	Myotis nattereri	May	5	5 - 5	5	3
LT3	Nyctalus leisleri	May	1	1 - 6.5	8	11
LT3	Nyctalus leisleri	Jun	0	1 - 6.5	0	2
LT3	Pipistrellus nathusii	May	8	8 - 8	24	3
LT3	Pipistrellus pipistrellus	May	1	1 - 4	4	12
LT3	Pipistrellus pipistrellus	Jun	0	1 - 4	0	2
LT3	Pipistrellus pygmaeus	May	4	1 - 7	10	12
LT3	Pipistrellus pygmaeus	Jun	1	1 - 7	2	3
LT3	Plecotus auritus	May	3	1 - 4	4	4
LT4	Myotis daubentonii	May	7	7 - 7	7	2
LT4	Myotis mystacinus	May	2	1.5 - 1.5	2	2
LT4	Nyctalus leisleri	May	1	1 - 8	8	10
LT4	Nyctalus leisleri	Jun	0	1 - 8	0	1
LT4	Pipistrellus nathusii	May	15	15 - 15	22	2
LT4	Pipistrellus pipistrellus	May	0	0 - 0	0	6
LT4	Pipistrellus pygmaeus	May	0	0 - 0	1	7
LT4	Pipistrellus pygmaeus	Jun	0	0 - 0	0	1
LT5	Myotis daubentonii	May	1	1 - 7	7	3
LT5	Myotis daubentonii	Jun	7	1 - 7	7	1
LT5	Myotis mystacinus	May	1	1 - 1	2	3
LT5	Myotis mystacinus	Jun	1	1 - 1	1	2
LT5	Nyctalus leisleri	May	16	8.5 - 46.5	83	13
LT5	Nyctalus leisleri	Jun	1	8.5 - 46.5	16	3
LT5	Pipistrellus nathusii	May	22	22 - 22	22	3
LT5	Pipistrellus pipistrellus	May	0	0 - 0	1	9
LT5	Pipistrellus pipistrellus	Jun	0	0 - 0	0	2
LT5	Pipistrellus pygmaeus	May	0	0 - 0	1	11
LT5	Plecotus auritus	May	1	1 - 1	1	2
LT5	Plecotus auritus	Jun	1	1 - 1	1	1
LT6	Myotis daubentonii	May	1	1 - 4	5	5

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT6	Myotis daubentonii	Jun	4	1 - 4	7	2
LT6	Myotis mystacinus	May	1	1 - 1	1	2
LT6	Nyctalus leisleri	May	4	2.5 - 6	7	11
LT6	Nyctalus leisleri	Jun	0	2.5 - 6	2	3
LT6	Pipistrellus nathusii	May	34	23 - 40.5	46	8
LT6	Pipistrellus pipistrellus	May	5	3.5 - 19.5	36	13
LT6	Pipistrellus pipistrellus	Jun	0	3.5 - 19.5	0	3
LT6	Pipistrellus pygmaeus	May	6	3.5 - 16	26	12
LT6	Pipistrellus pygmaeus	Jun	0	3.5 - 16	0	3
LT6	Plecotus auritus	May	14	2.5 - 42	42	5
LT6	Plecotus auritus	Jun	1	2.5 - 42	1	1
LT7	Myotis daubentonii	May	5	1 - 6.5	7	7
LT7	Myotis daubentonii	Jun	8	1 - 6.5	8	1
LT7	Nyctalus leisleri	May	6	3 - 8.5	9	12
LT7	Nyctalus leisleri	Jun	0	3 - 8.5	0	1
LT7	Pipistrellus nathusii	May	13	10.5 - 30.5	48	4
LT7	Pipistrellus pipistrellus	May	1	1 - 2	2	8
LT7	Pipistrellus pygmaeus	May	1	1 - 1.5	5	10
LT7	Pipistrellus pygmaeus	Jun	0	1 - 1.5	0	1
LT7	Plecotus auritus	May	4	1 - 17	17	5
LT8	Myotis daubentonii	May	1	1 - 4.5	8	6
LT8	Myotis daubentonii	Jun	3	1 - 4.5	5	2
LT8	Myotis nattereri	May	5	5 - 5	5	2
LT8	Nyctalus leisleri	May	6	3 - 8	15	12
LT8	Nyctalus leisleri	Jun	0	3 - 8	0	2
LT8	Pipistrellus nathusii	May	35	18.5 - 55	75	8
LT8	Pipistrellus pipistrellus	May	8	7 - 21.5	35	13
LT8	Pipistrellus pipistrellus	Jun	0	7 - 21.5	0	3
LT8	Pipistrellus pygmaeus	May	5	4 - 12.5	16	13
LT8	Pipistrellus pygmaeus	Jun	0	4 - 12.5	1	3
LT8	Plecotus auritus	May	14	6.5 - 15	16	5
LT8	Plecotus auritus	Jun	1	6.5 - 15	1	1
LT9	Myotis daubentonii	May	1	1 - 4	7	4
LT9	Myotis daubentonii	Jun	5	1 - 4	5	3
LT9	Myotis nattereri	May	21	10.5 - 29	30	7
LT9	Myotis nattereri	Jun	10	10.5 - 29	28	3

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT9	Nyctalus leisleri	May	1	1 - 3.5	5	10
LT9	Nyctalus leisleri	Jun	0	1 - 3.5	0	2
LT9	Pipistrellus nathusii	May	8	0	8	1
LT9	Pipistrellus pipistrellus	May	0	0 - 0	2	12
LT9	Pipistrellus pipistrellus	Jun	0	0 - 0	0	3
LT9	Pipistrellus pygmaeus	May	5	3.5 - 7	9	12
LT9	Pipistrellus pygmaeus	Jun	0	3.5 - 7	0	3
LT9	Plecotus auritus	May	4	1 - 5	9	5
LT9	Plecotus auritus	Jun	1	1 - 5	1	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 daubentonii	0	0	0	0	0	64
Myotis mystacinus	0	0	0	0	0	15
Myotis nattereri	0	0	0	0	5	13
Nyctalus leisleri	0	2	3	0	3	125
Pipistrellus nathusii	0	0	2	3	18	20
Pipistrellus pipistrellus	0	0	0	0	6	122
Pipistrellus pygmaeus	0	0	0	0	2	132
Plecotus auritus	0	0	0	2	0	36

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	5	7 - 7	8	64
Myotis mystacinus	1	1.5 - 1.5	2	15
Myotis nattereri	8	5 - 5	30	18
Nyctalus leisleri	2	8.5 - 46.5	83	133
Pipistrellus nathusii	22	8 - 8	75	43
Pipistrellus pipistrellus	0	7 - 21.5	36	128
Pipistrellus pygmaeus	1	4 - 8	26	134
Plecotus auritus	4	6.5 - 15	42	38

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

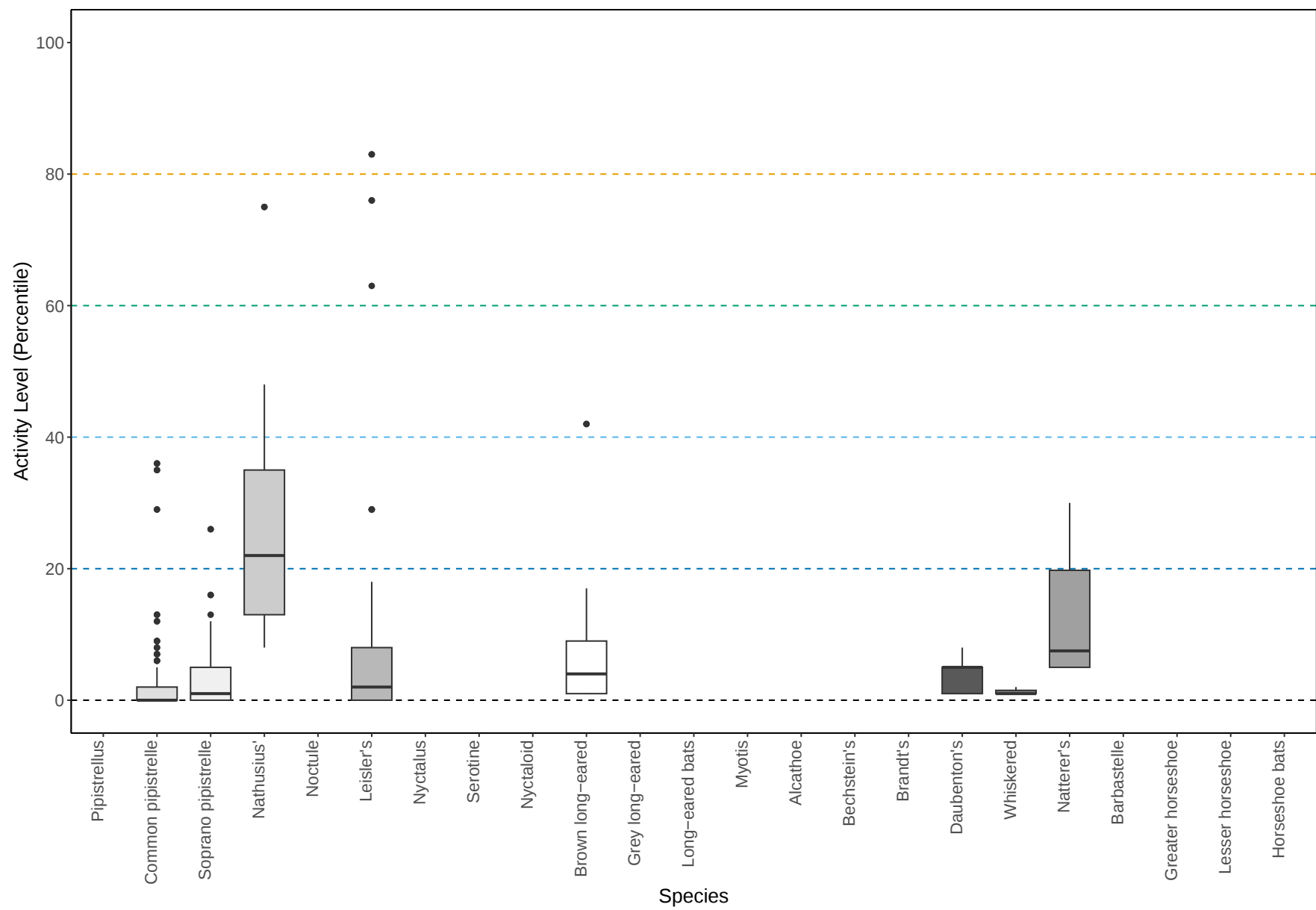


Figure 5. The median activity levels of bats recorded across all detectors each night.

Per Site, Per Month

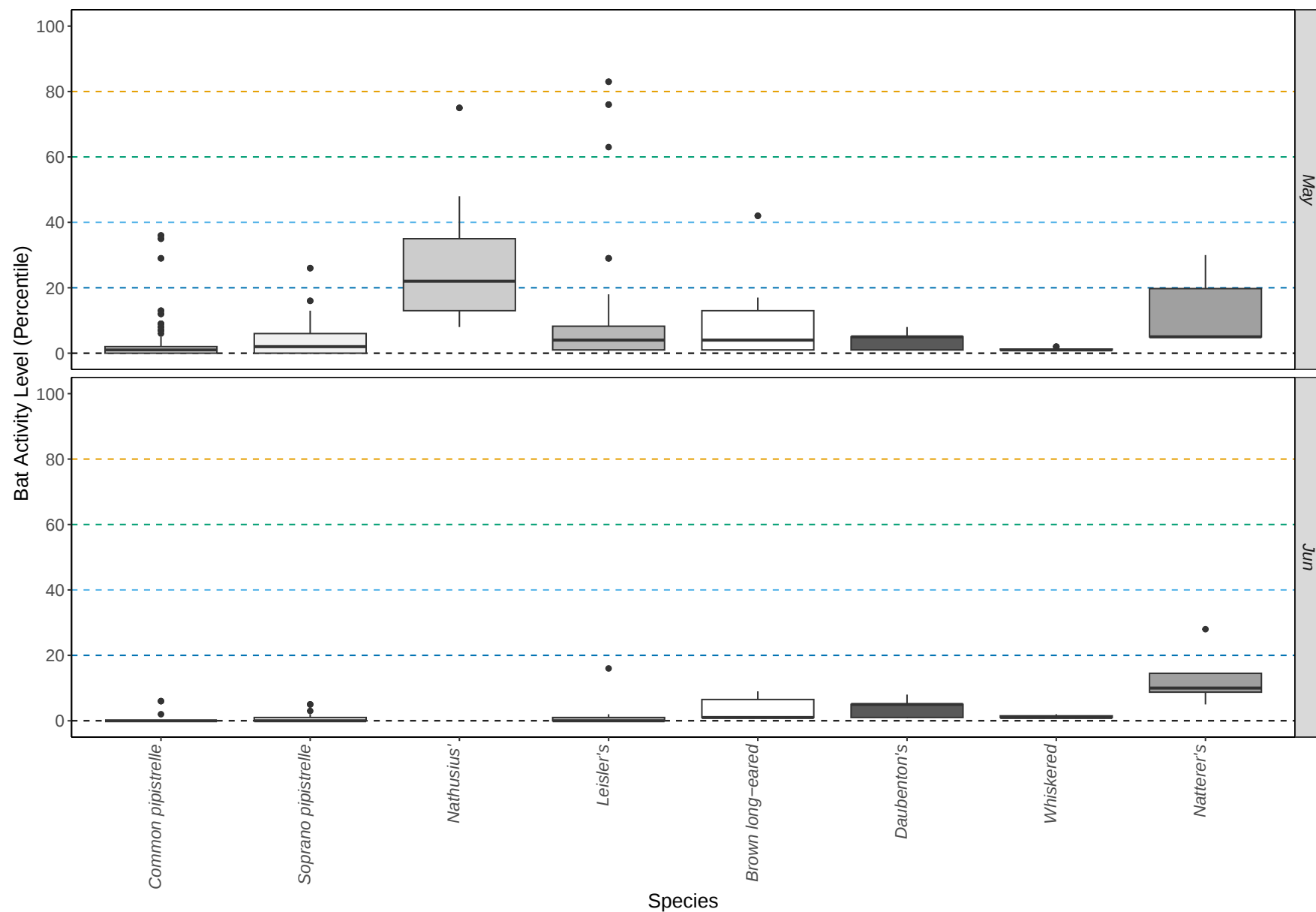
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	May	0	0	0	0	0	47
Myotis daubentonii	Jun	0	0	0	0	0	17
Myotis mystacinus	May	0	0	0	0	0	12
Myotis mystacinus	Jun	0	0	0	0	0	3
Myotis nattereri	May	0	0	0	0	4	10
Myotis nattereri	Jun	0	0	0	0	1	3
Nyctalus leisleri	May	0	2	3	0	3	104
Nyctalus leisleri	Jun	0	0	0	0	0	21
Pipistrellus nathusii	May	0	0	2	3	18	20
Pipistrellus pipistrellus	May	0	0	0	0	6	101
Pipistrellus pipistrellus	Jun	0	0	0	0	0	21
Pipistrellus pygmaeus	May	0	0	0	0	2	109
Pipistrellus pygmaeus	Jun	0	0	0	0	0	23
Plecotus auritus	May	0	0	0	2	0	29
Plecotus auritus	Jun	0	0	0	0	0	7

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 daubentonii	May	5	7 - 7	8	47
Myotis daubentonii	Jun	5	3 - 7	8	17
Myotis mystacinus	May	1	1.5 - 1.5	2	12
Myotis mystacinus	Jun	1	1.5 - 1.5	2	3
Myotis nattereri	May	5	5 - 5	30	14
Myotis nattereri	Jun	10	5 - 5	28	4
Nyctalus leisleri	May	4	8.5 - 46.5	83	112
Nyctalus leisleri	Jun	0	8.5 - 46.5	16	21
Pipistrellus nathusii	May	22	8 - 8	75	43
Pipistrellus pipistrellus	May	1	7 - 21.5	36	107
Pipistrellus pipistrellus	Jun	0	7 - 21.5	6	21
Pipistrellus pygmaeus	May	2	4 - 8	26	111
Pipistrellus pygmaeus	Jun	0	4 - 8	5	23
Plecotus auritus	May	4	6.5 - 15	42	31
Plecotus auritus	Jun	1	6.5 - 15	9	7

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



Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

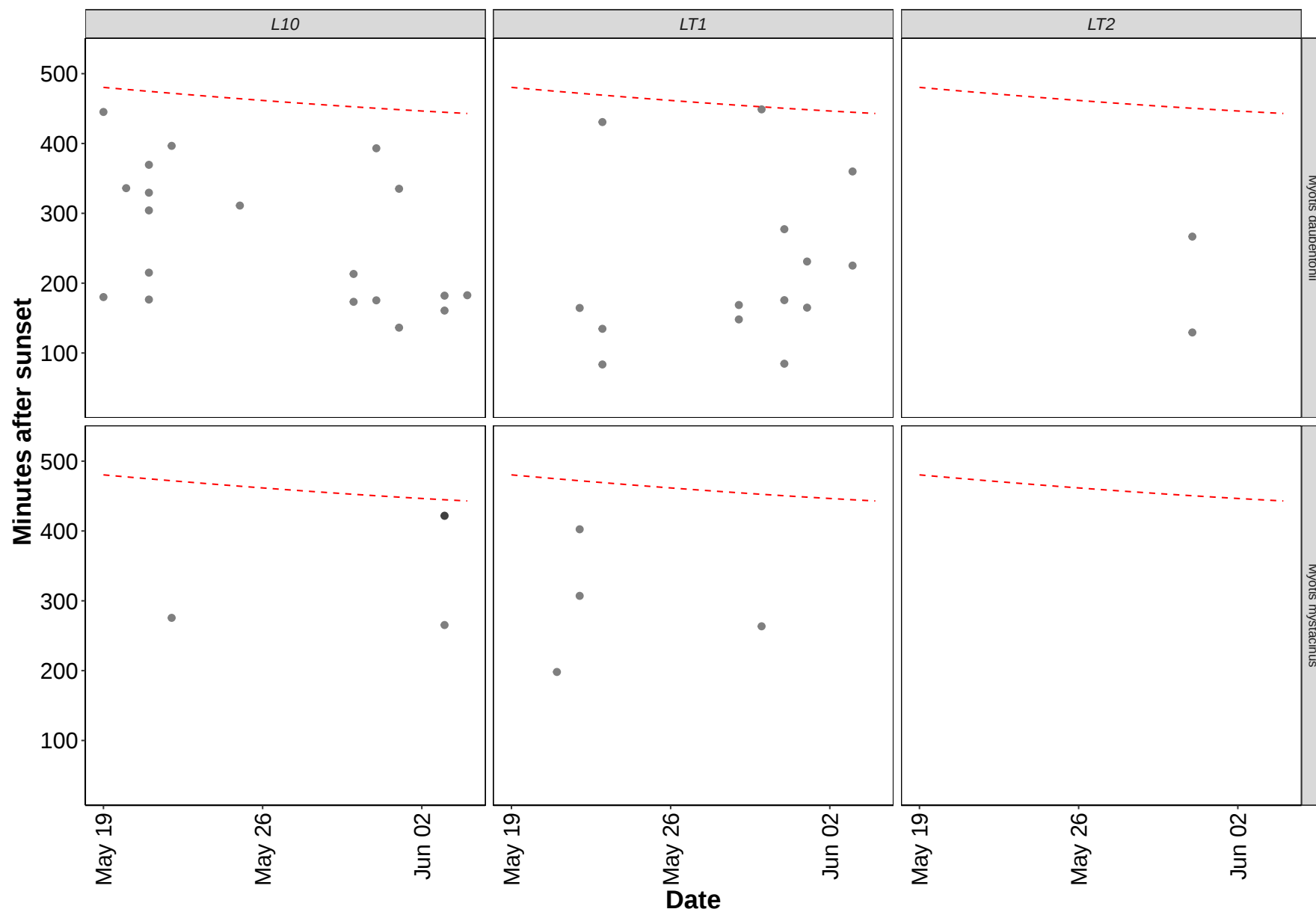
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

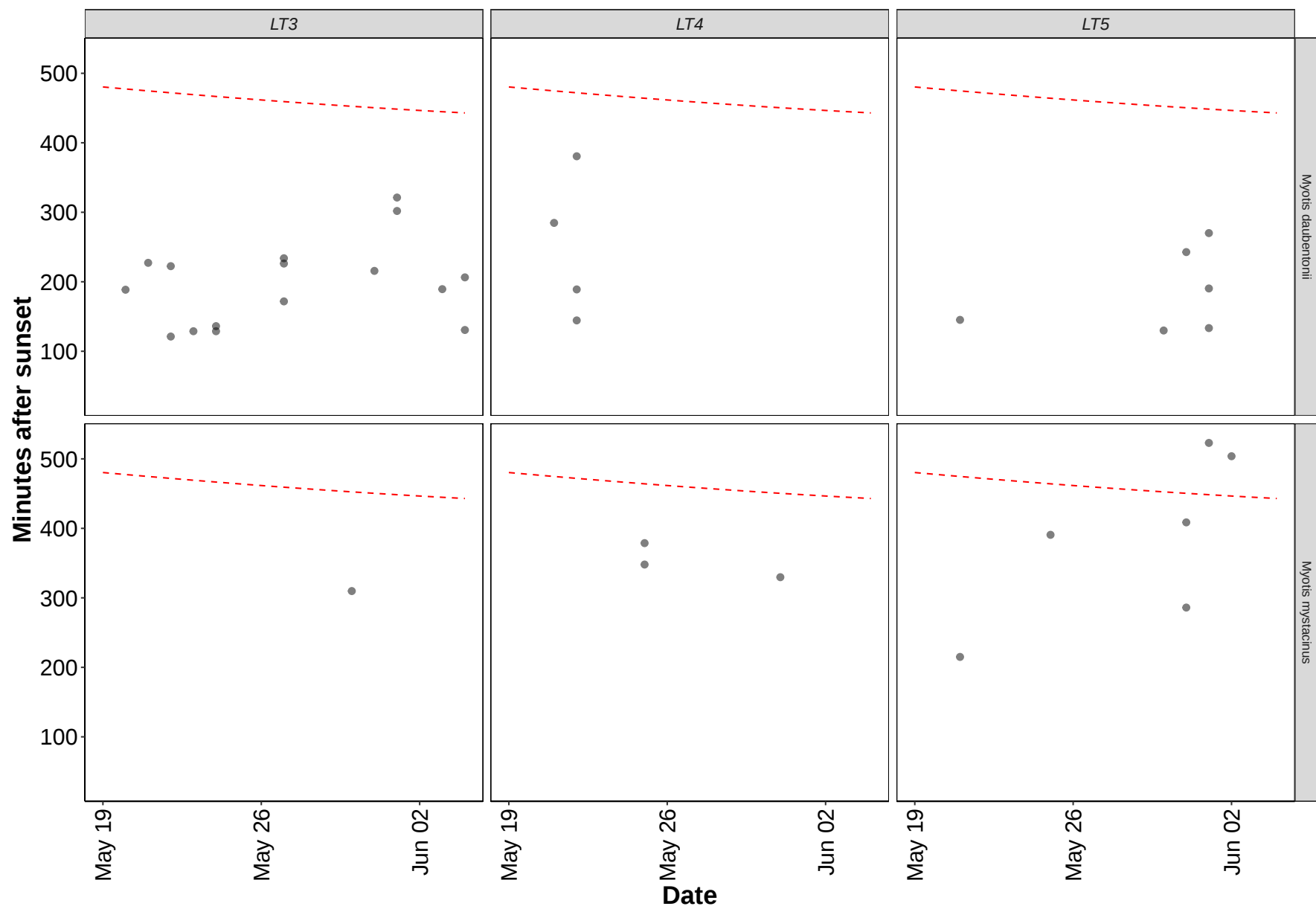
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2025-05-19	20:26	04:26	8.0
2025-05-20	20:27	04:25	8.0
2025-05-21	20:29	04:24	7.9
2025-05-22	20:30	04:22	7.9
2025-05-23	20:32	04:21	7.8
2025-05-24	20:33	04:20	7.8
2025-05-25	20:35	04:19	7.7
2025-05-26	20:36	04:18	7.7
2025-05-27	20:37	04:17	7.7
2025-05-28	20:39	04:16	7.6
2025-05-29	20:40	04:15	7.6
2025-05-30	20:41	04:14	7.5
2025-05-31	20:42	04:13	7.5
2025-06-01	20:44	04:12	7.5
2025-06-02	20:45	04:11	7.4
2025-06-03	20:46	04:10	7.4
2025-06-04	20:47	04:10	7.4

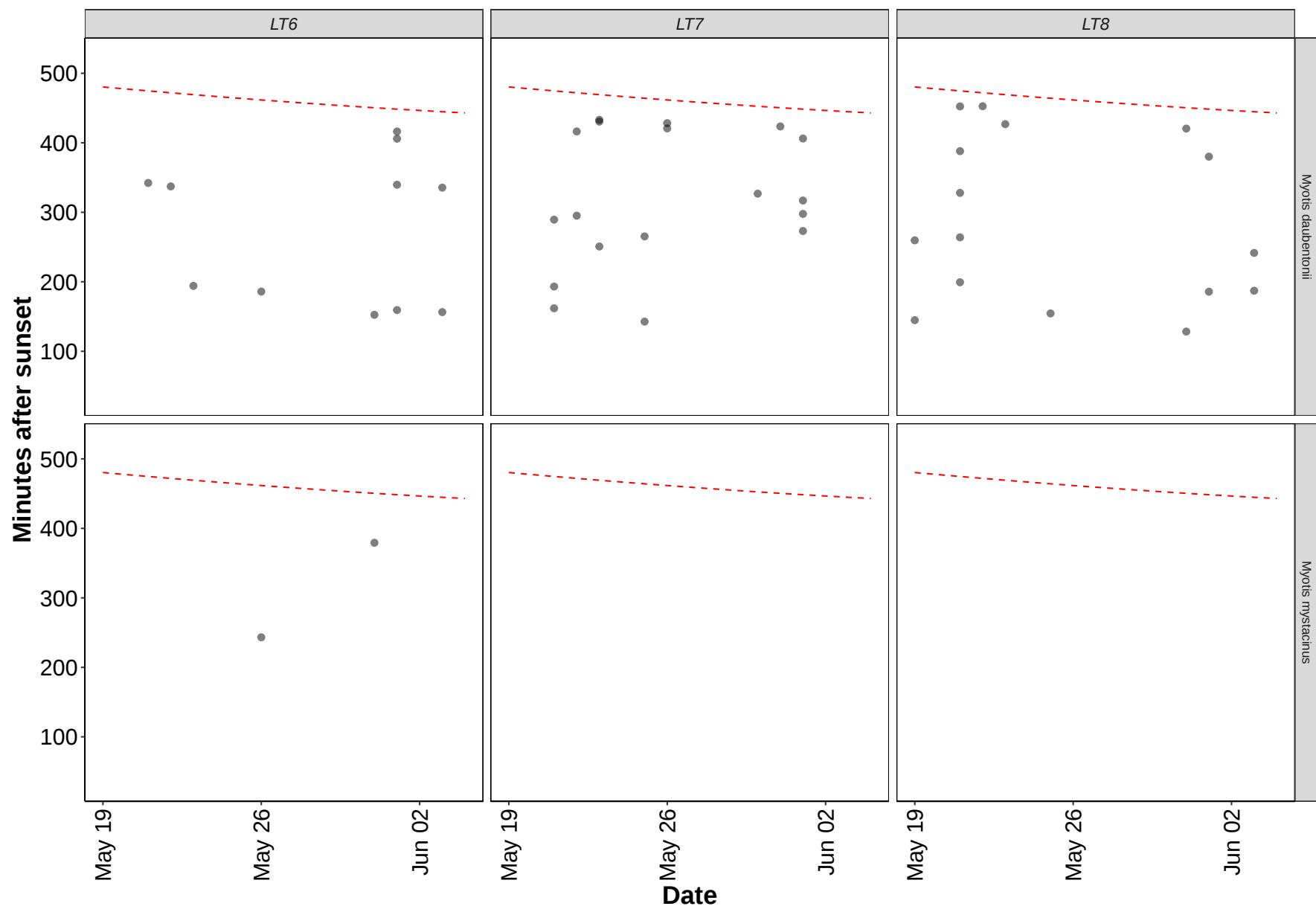
Distribution of Bat Activity Across the Night through Time

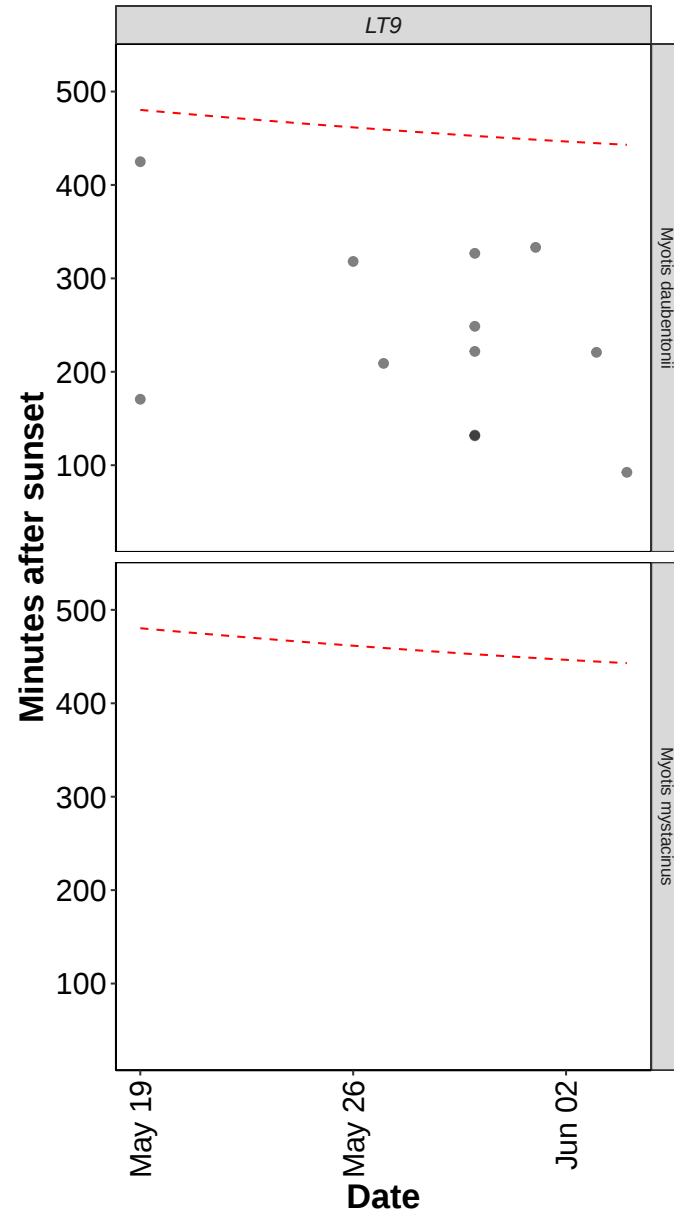
Per Detector

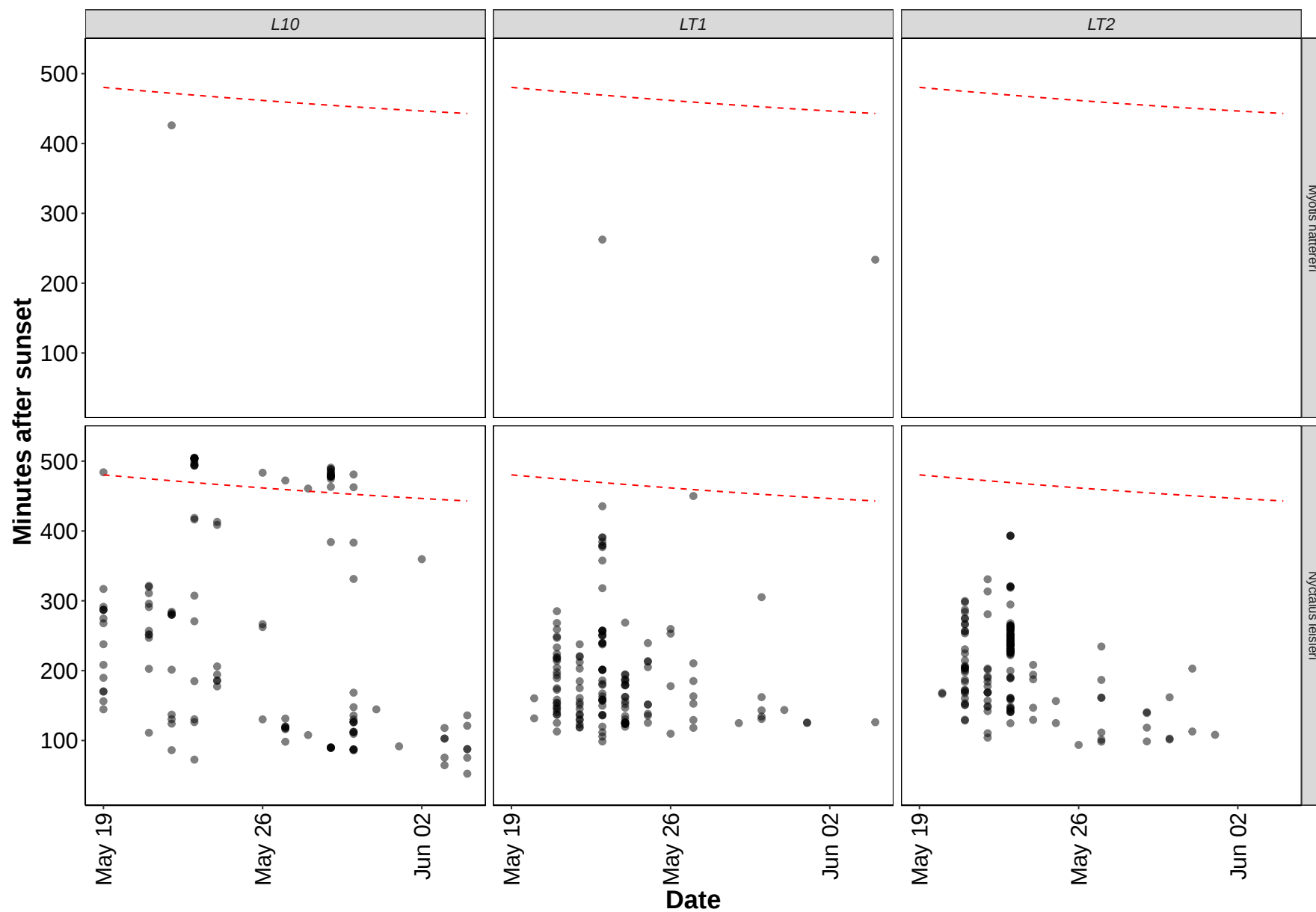
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

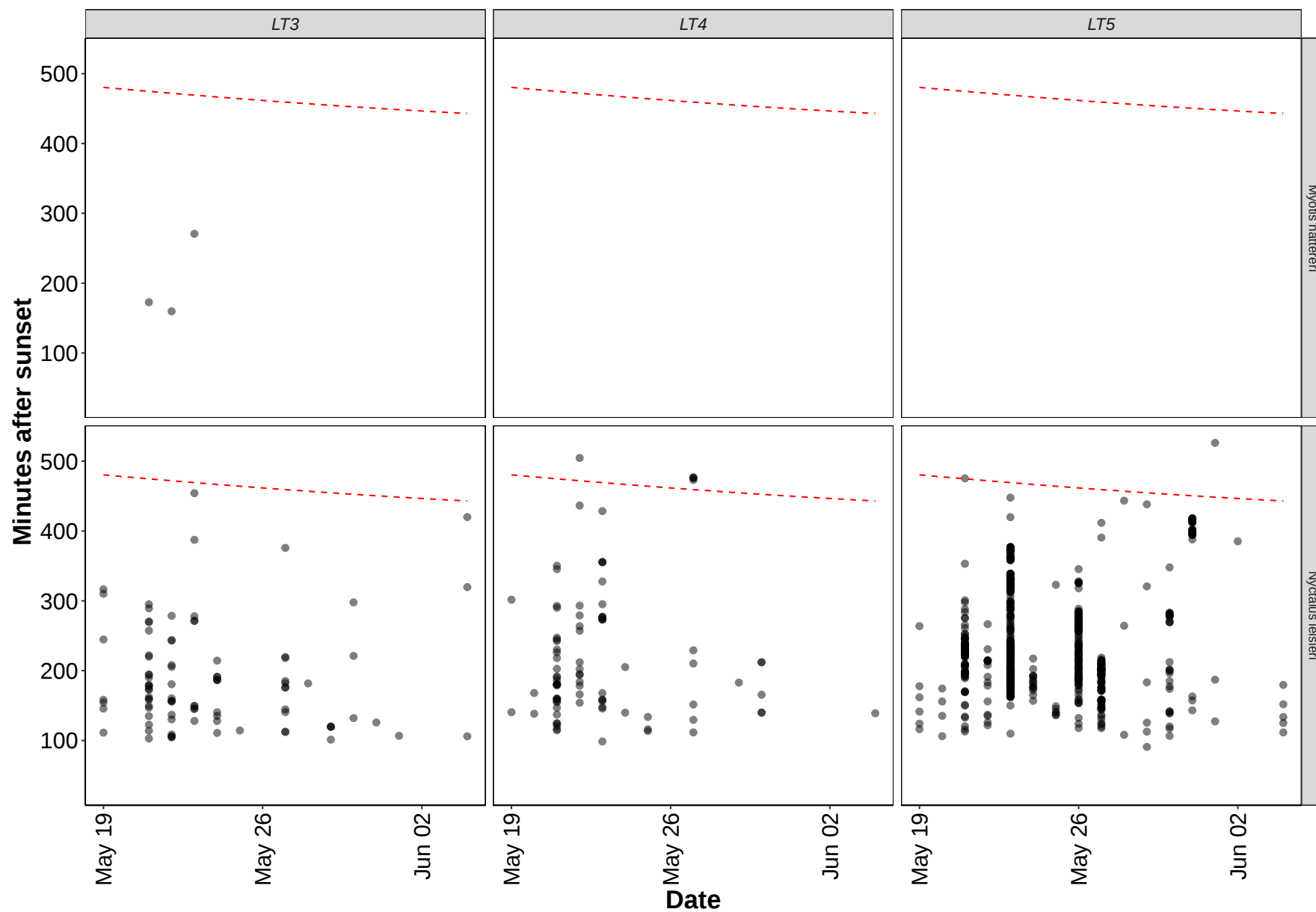


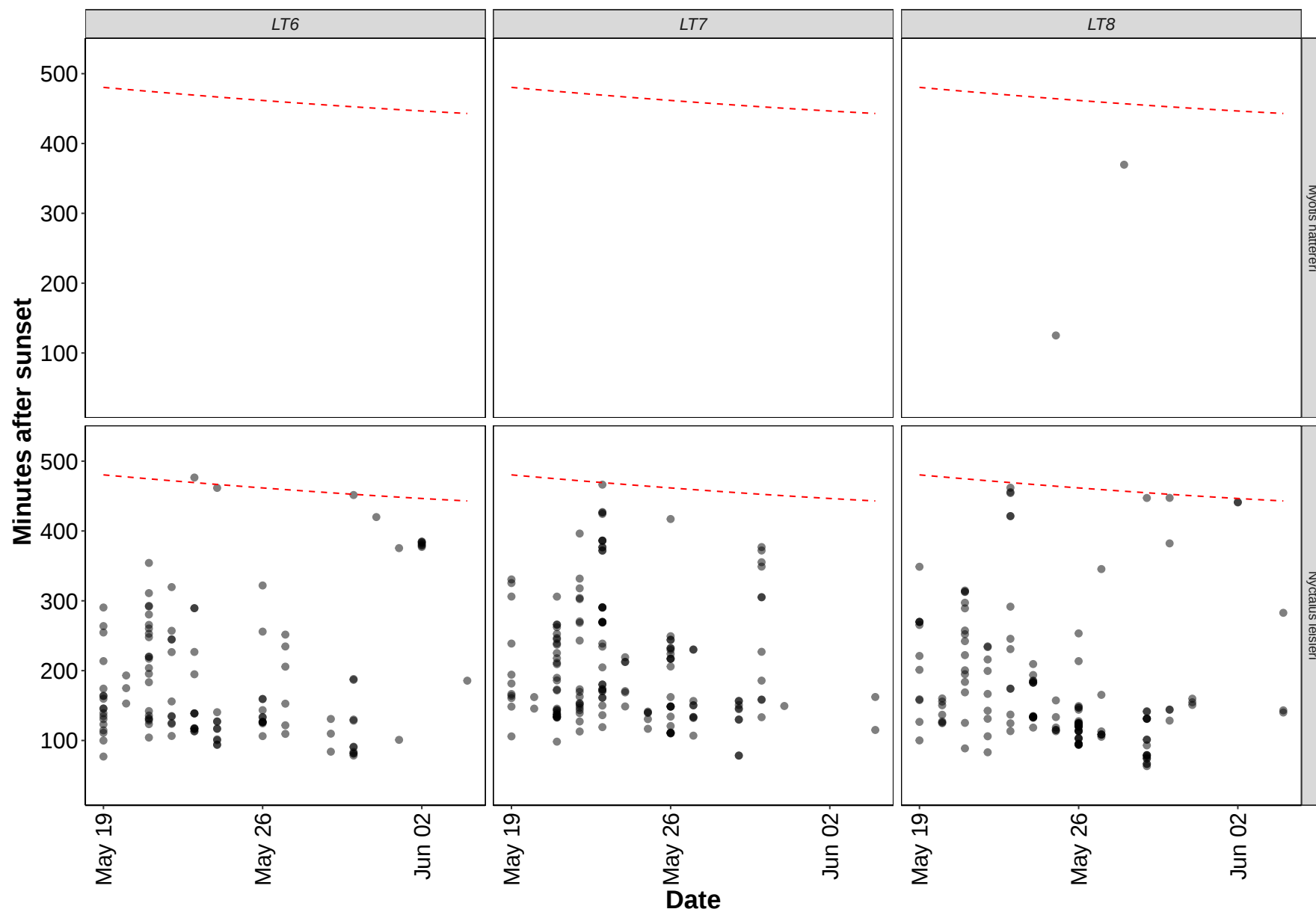


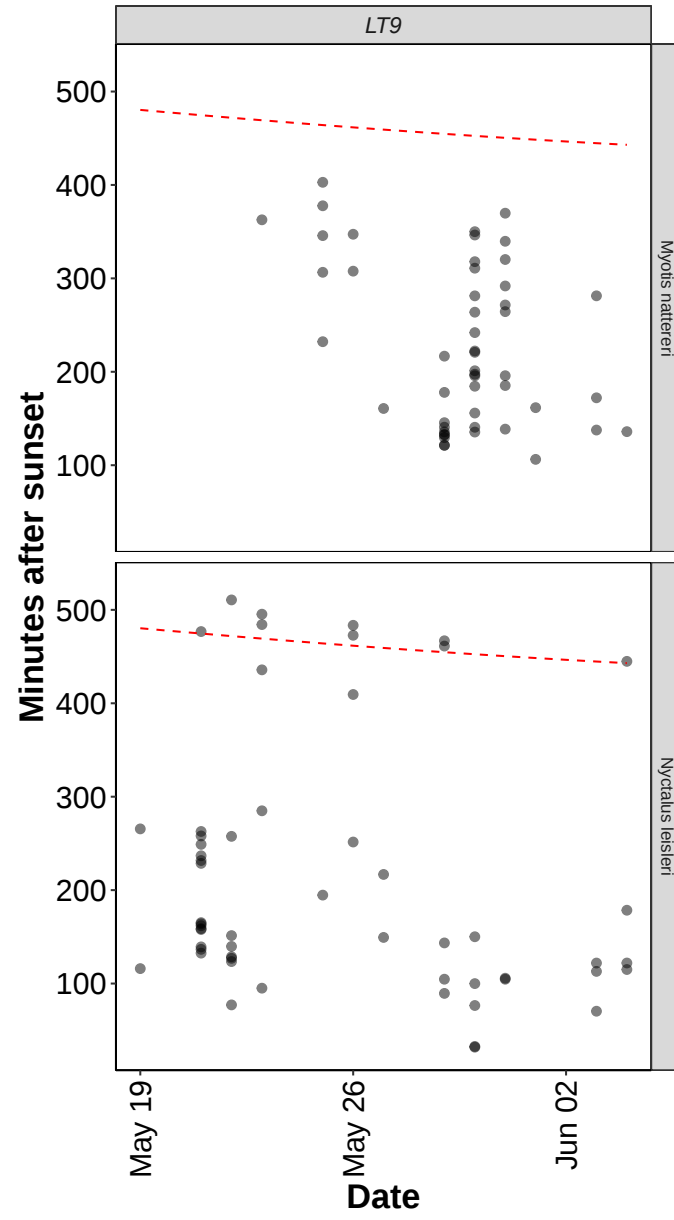


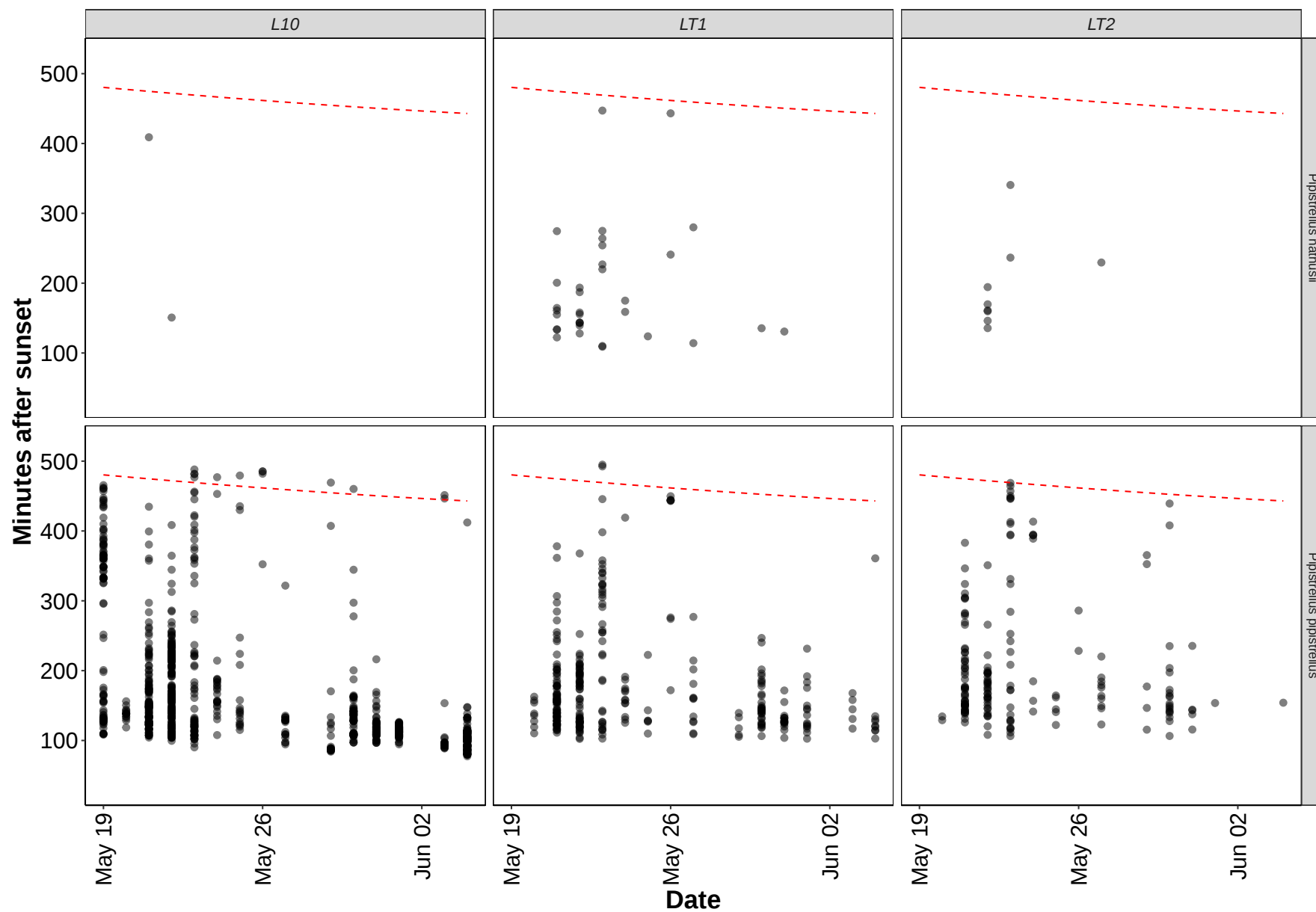


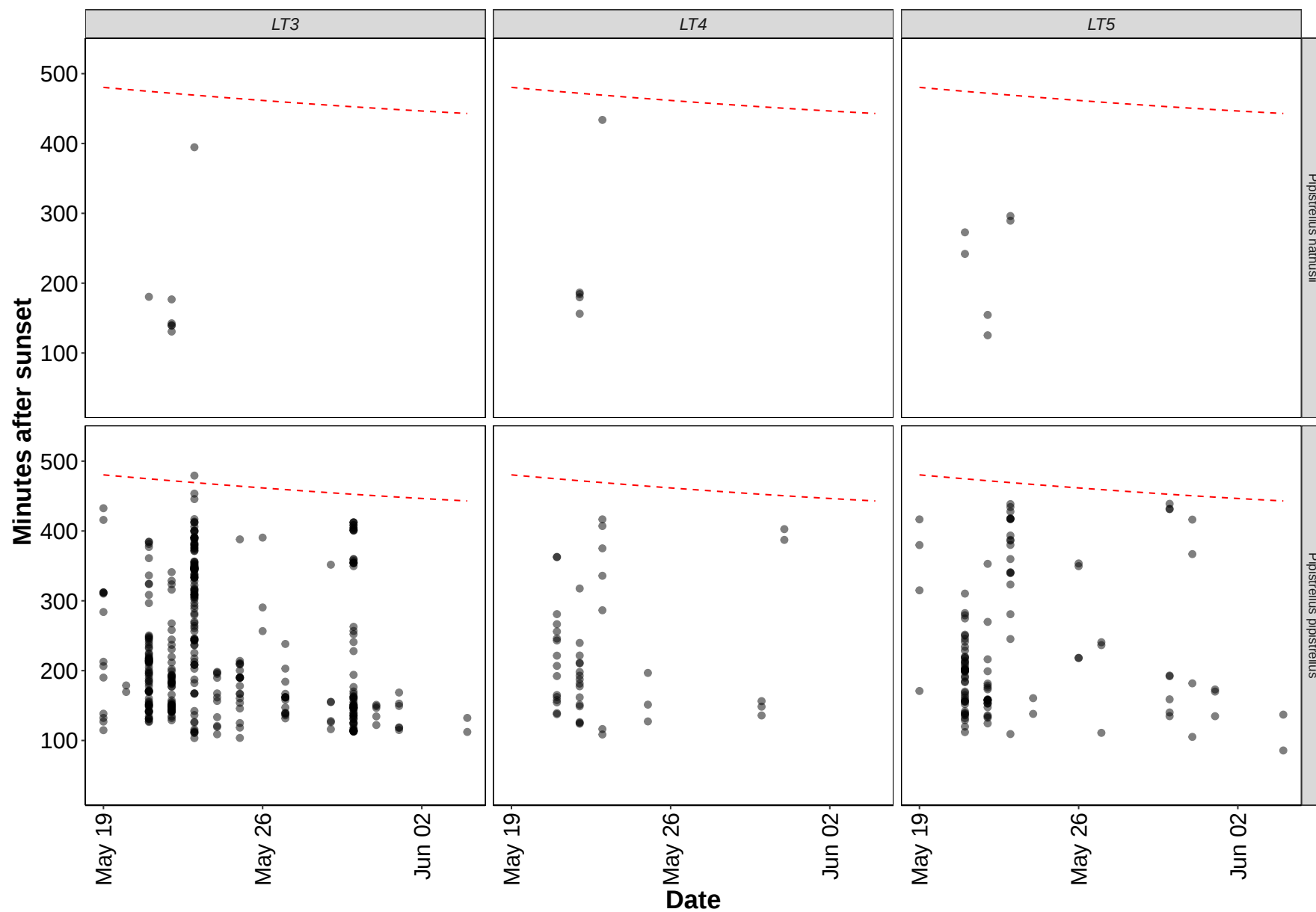


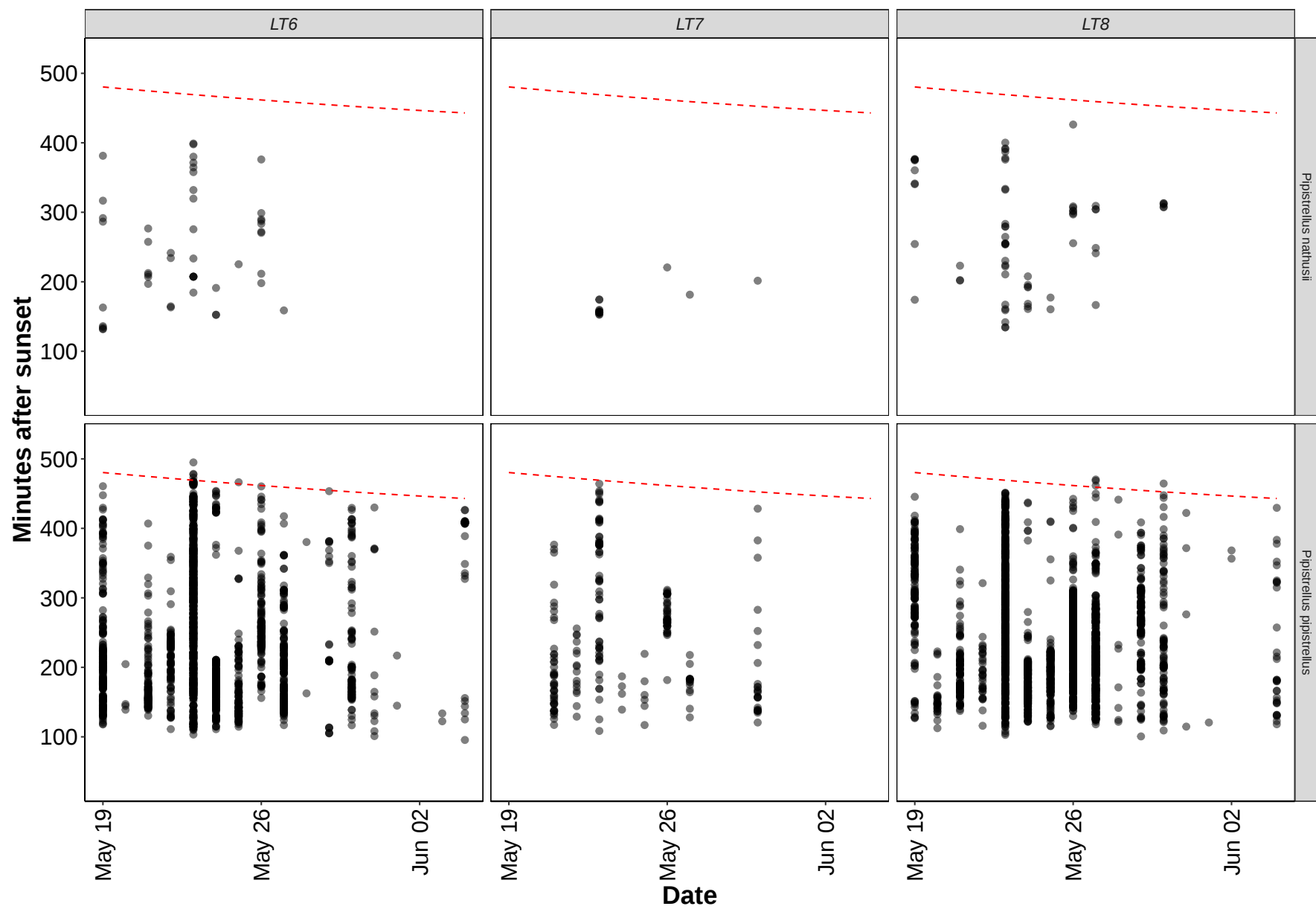


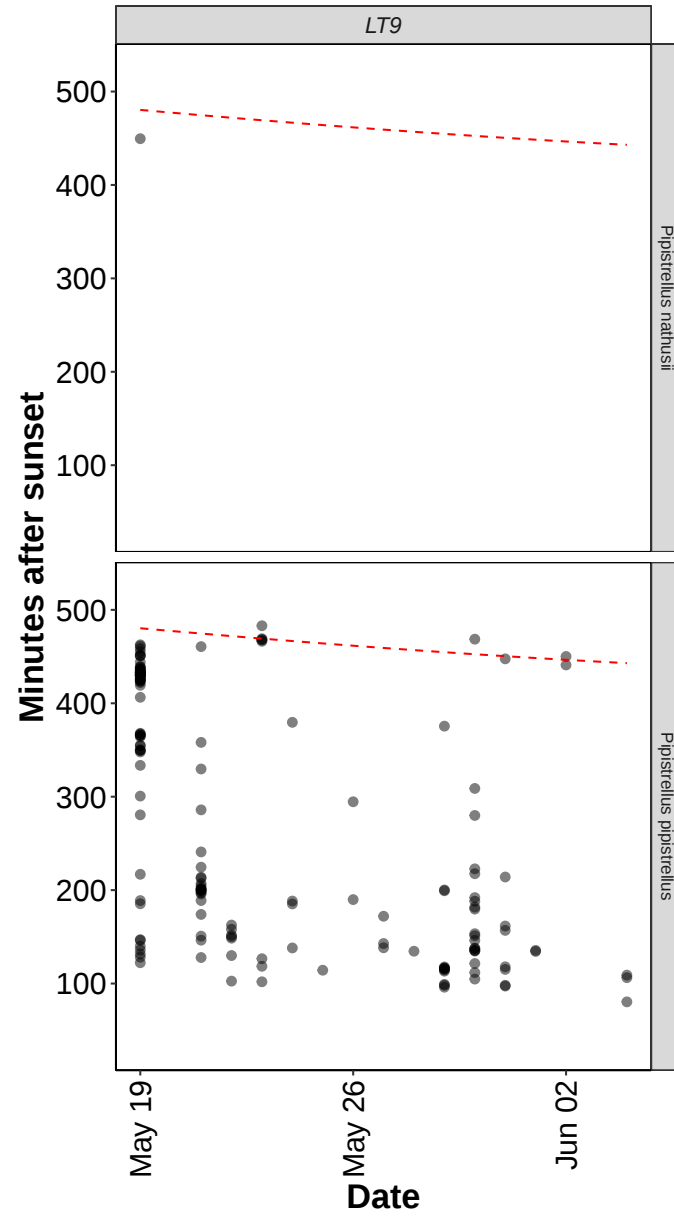












Roost Emergence Time and Bat Observation

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

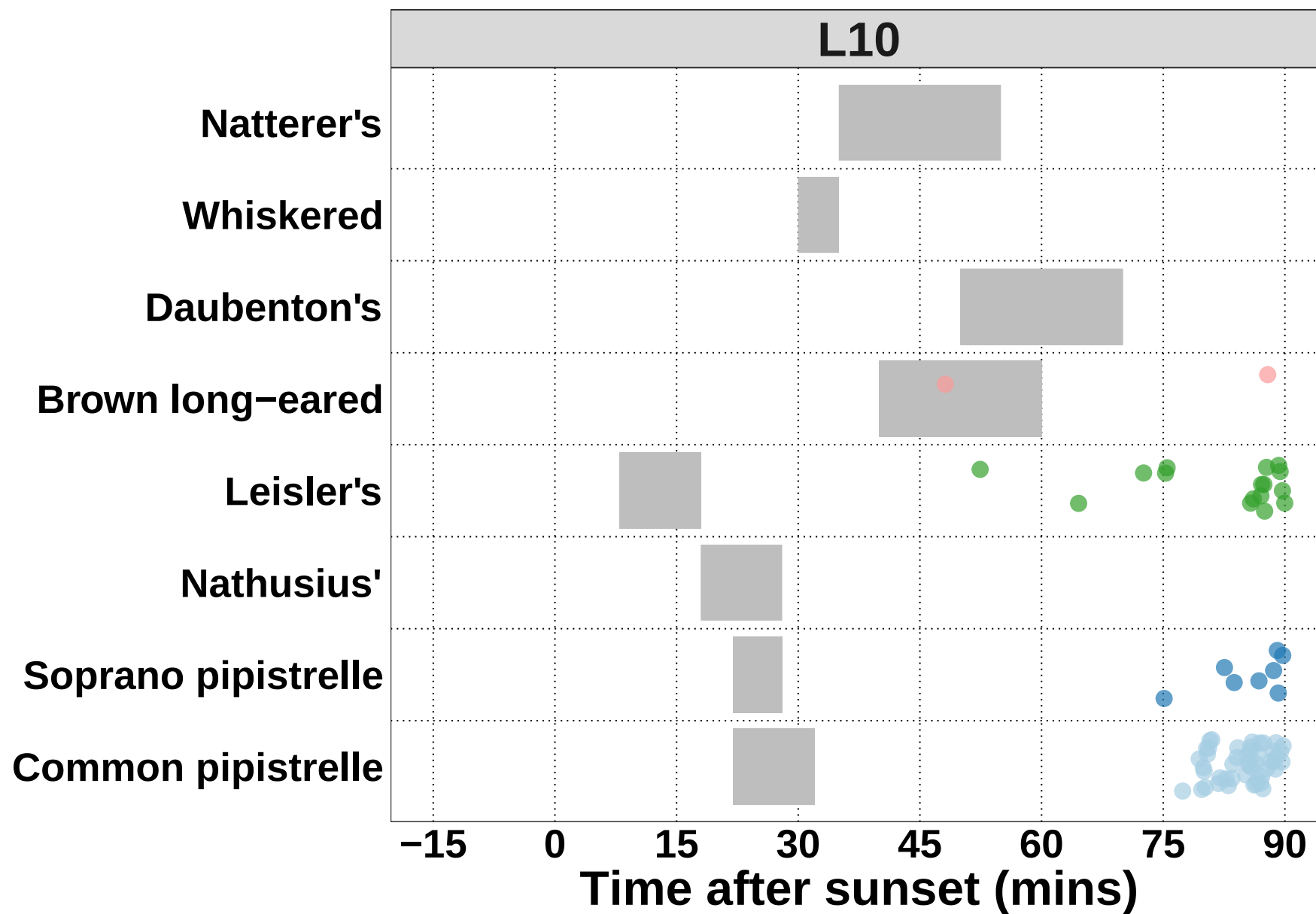
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

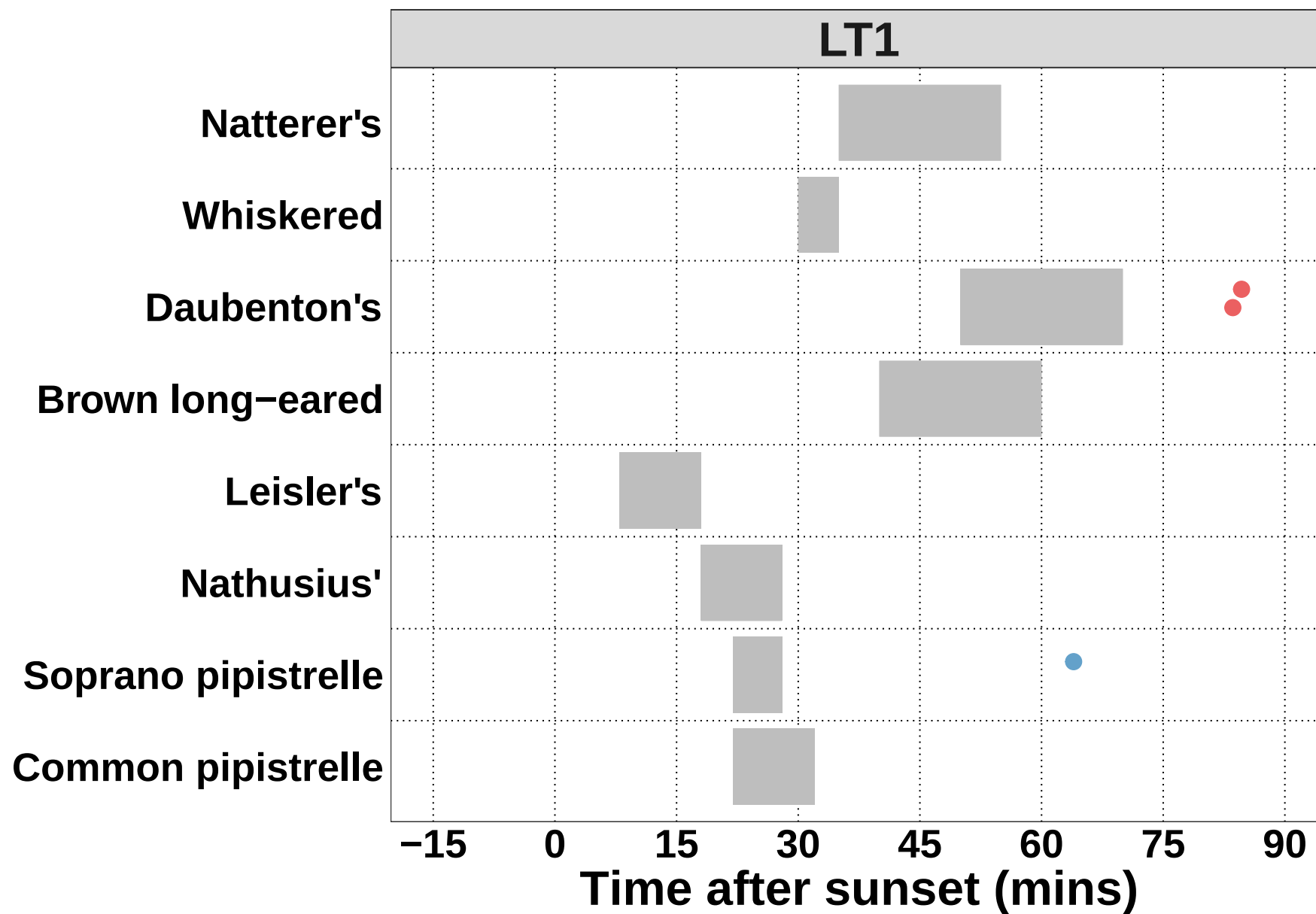
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

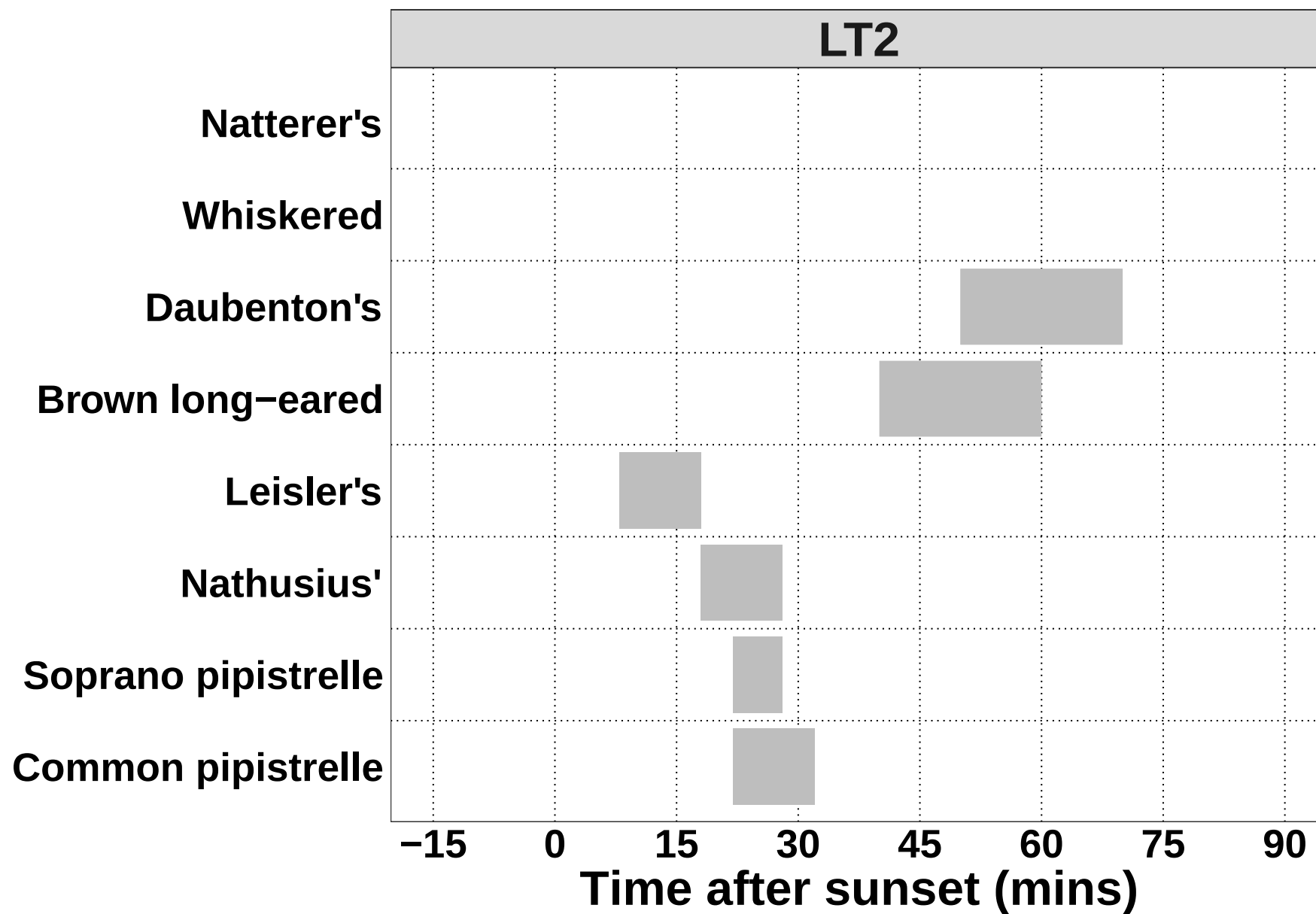
Species	Detector ID	2025-06-02
Brown long-eared	L10	1

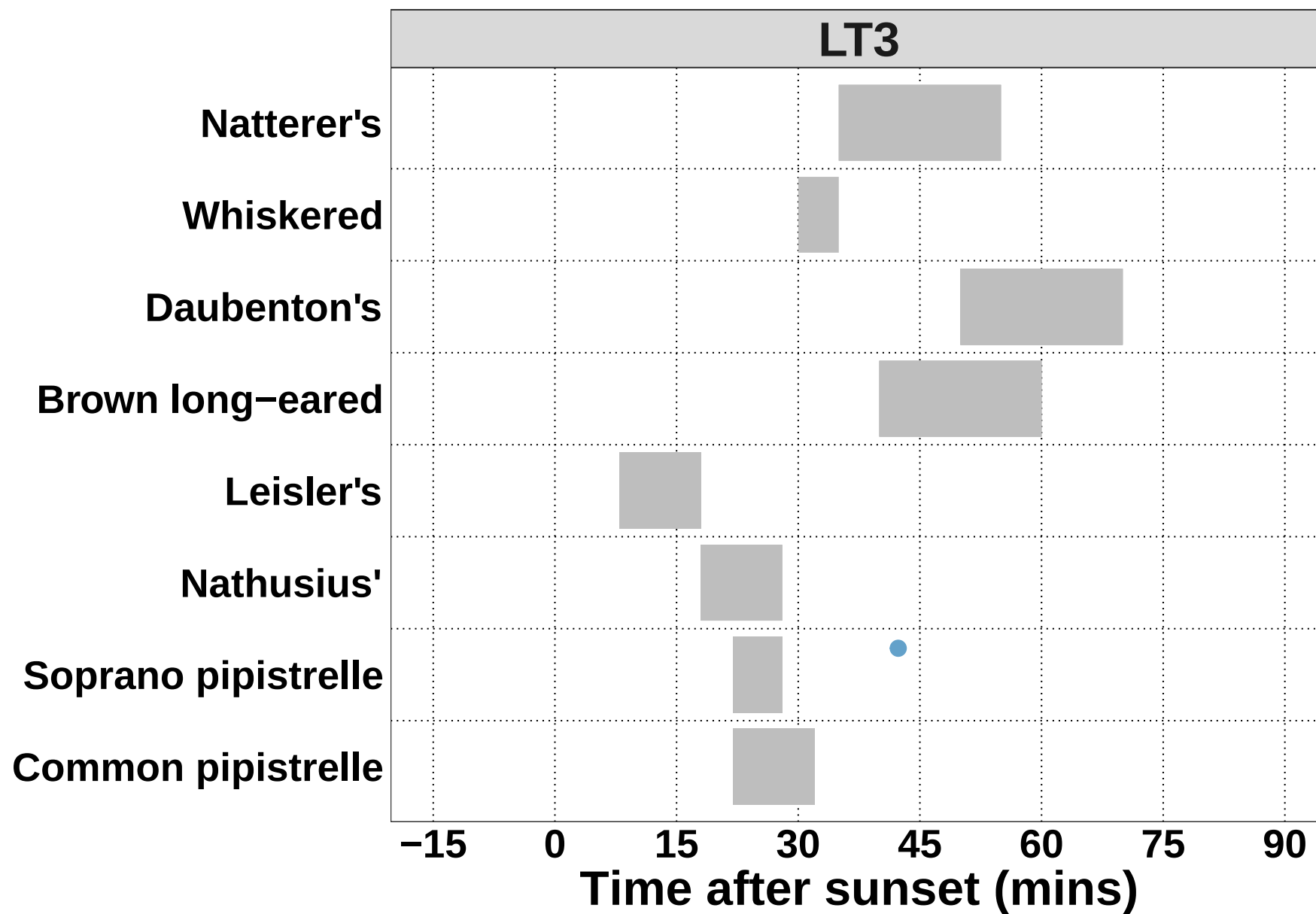
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

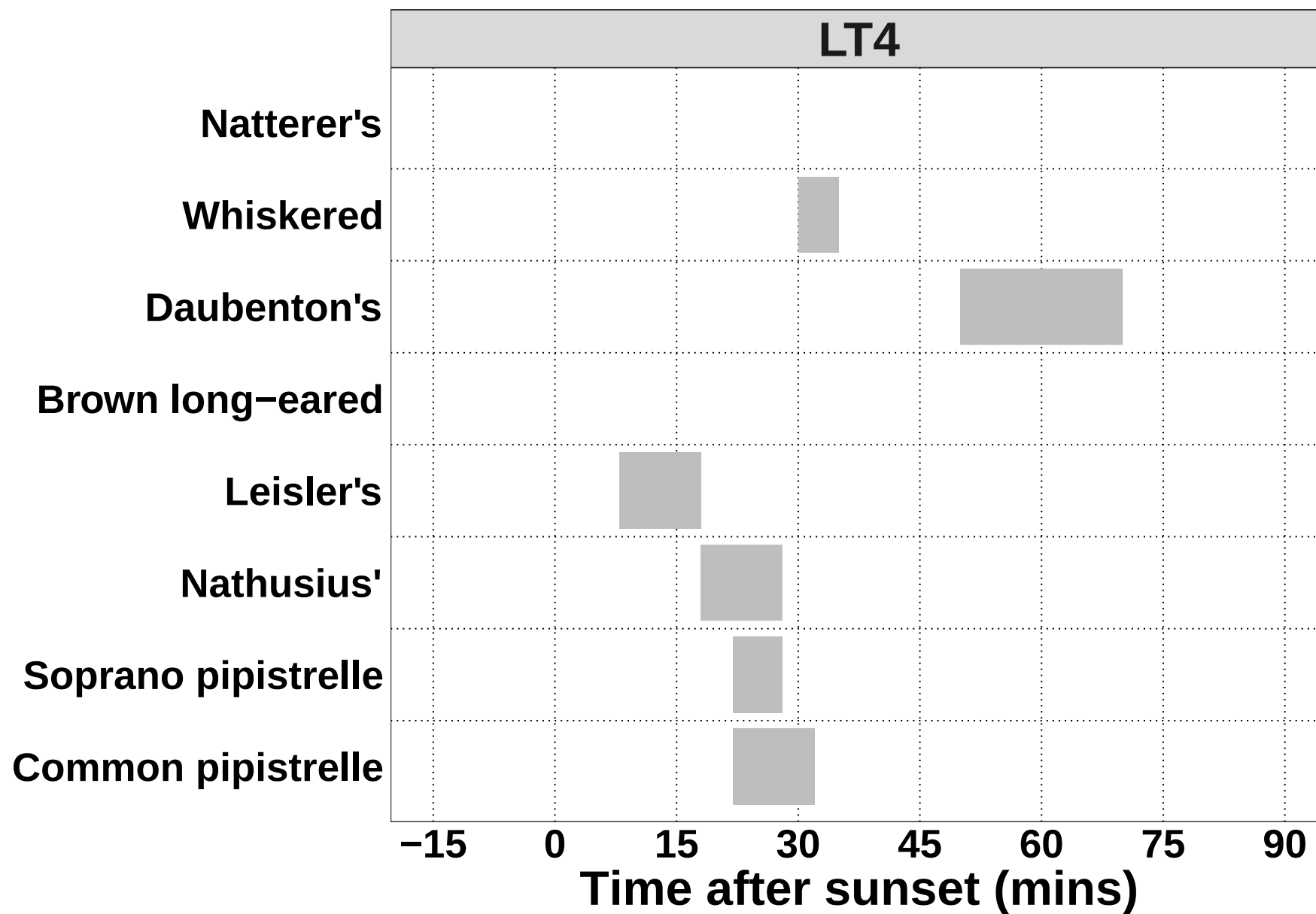
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

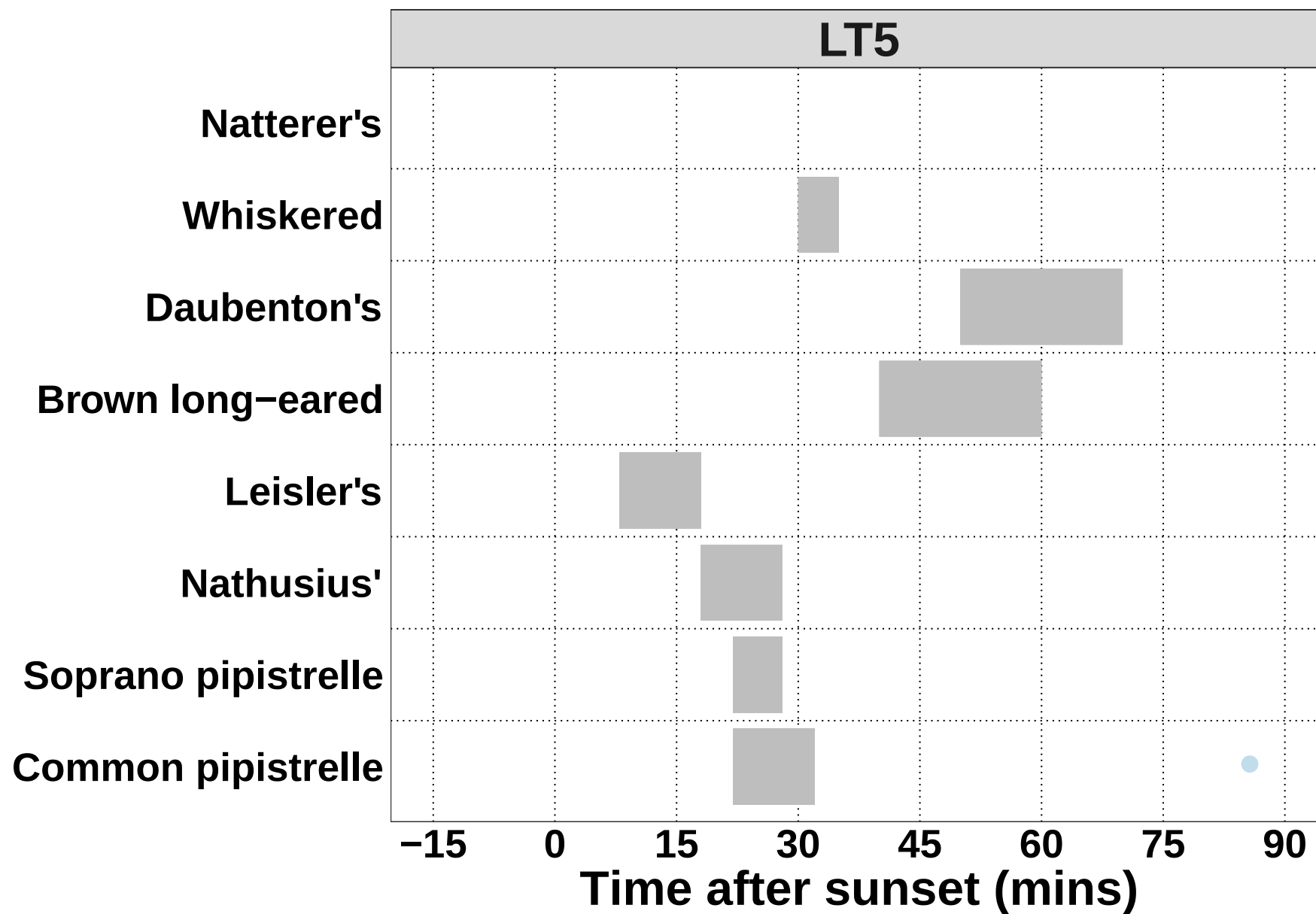


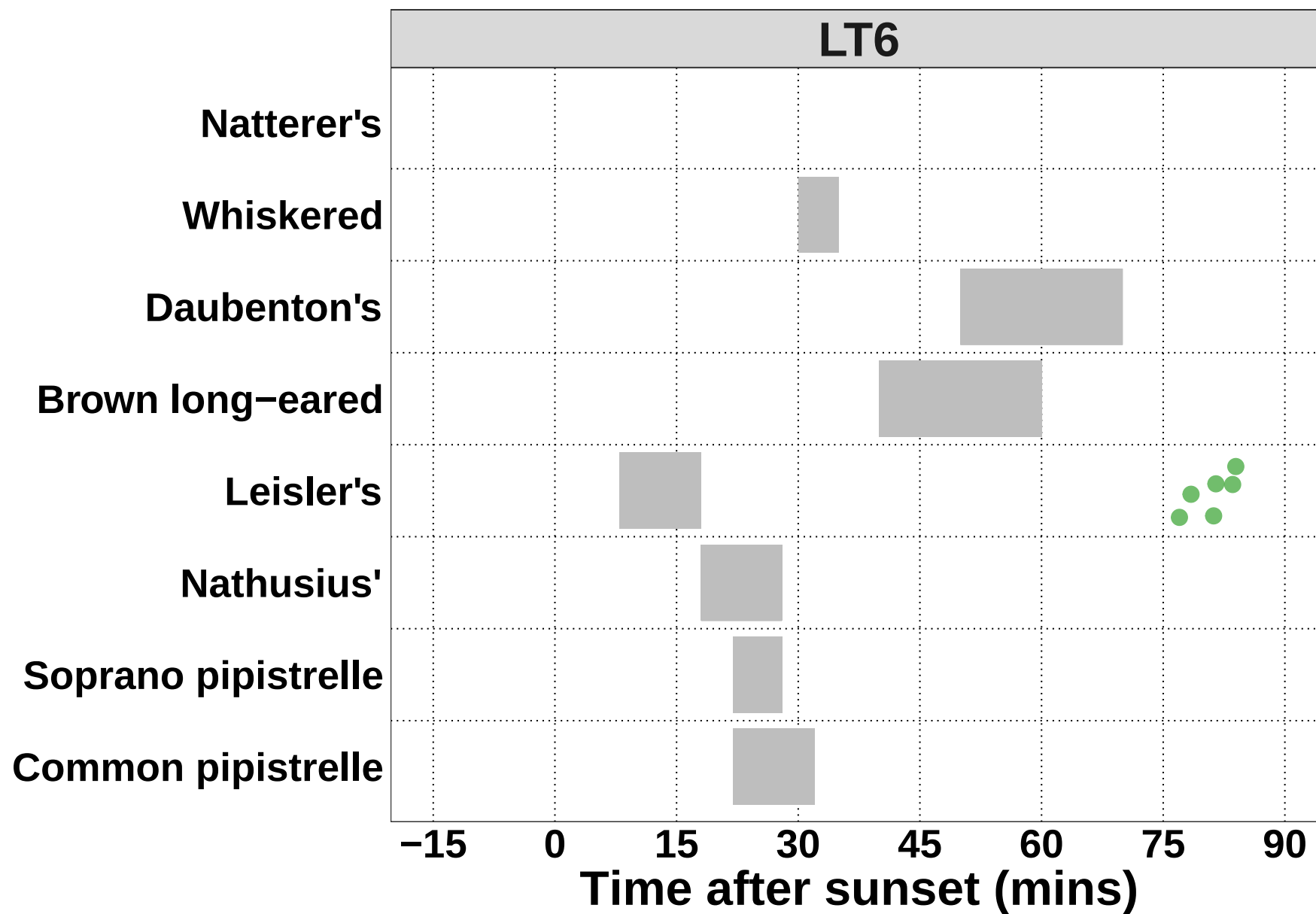


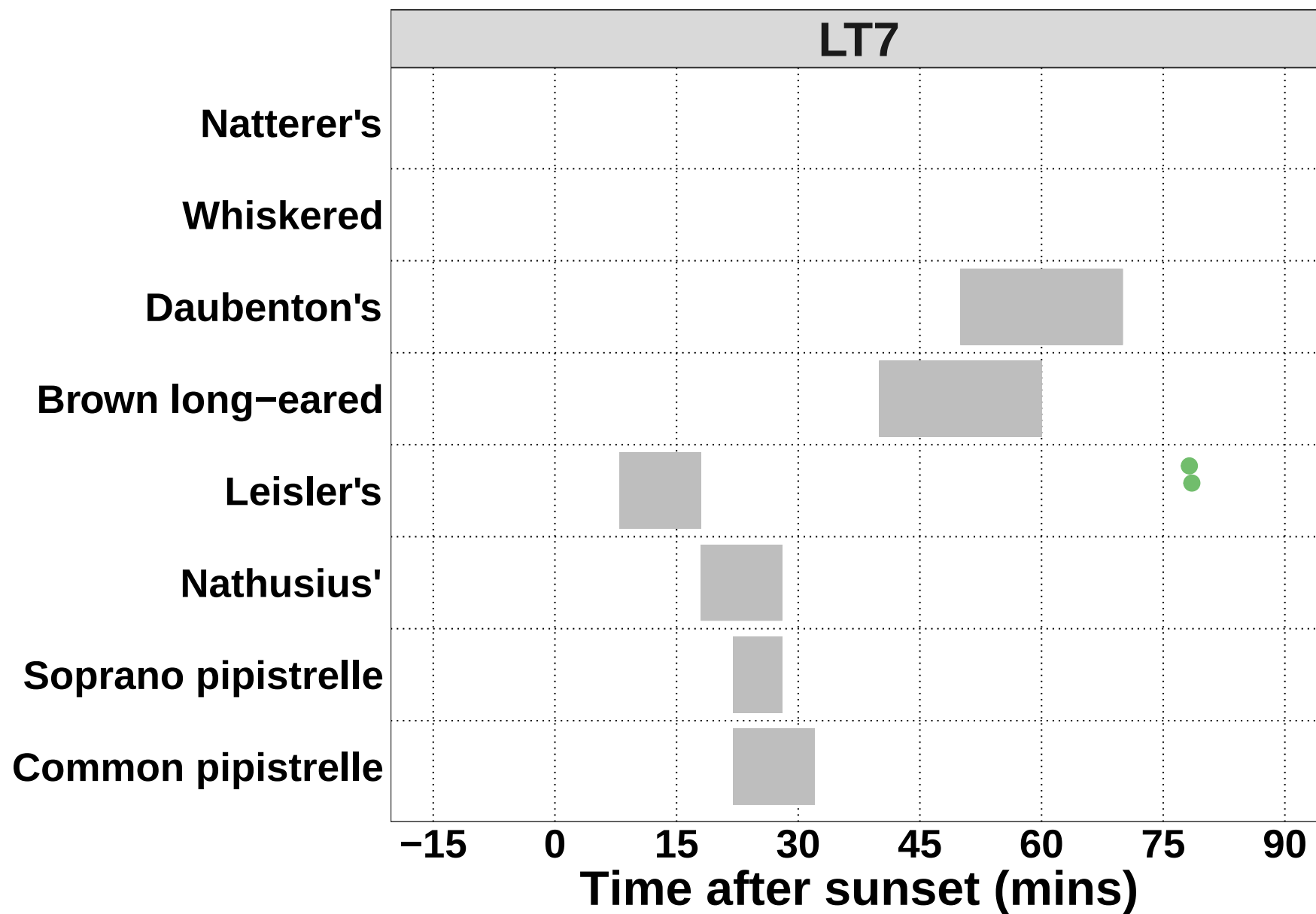


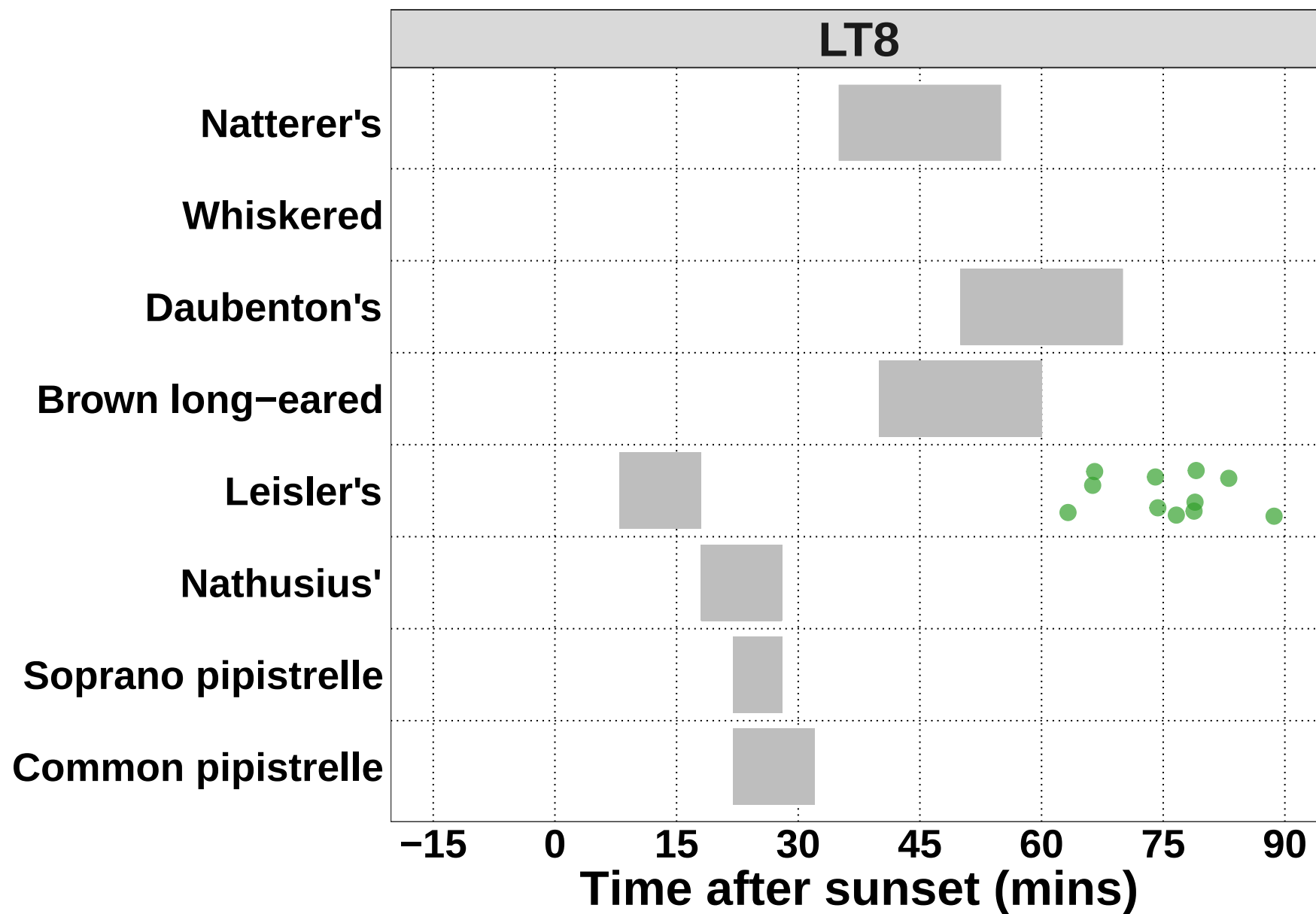


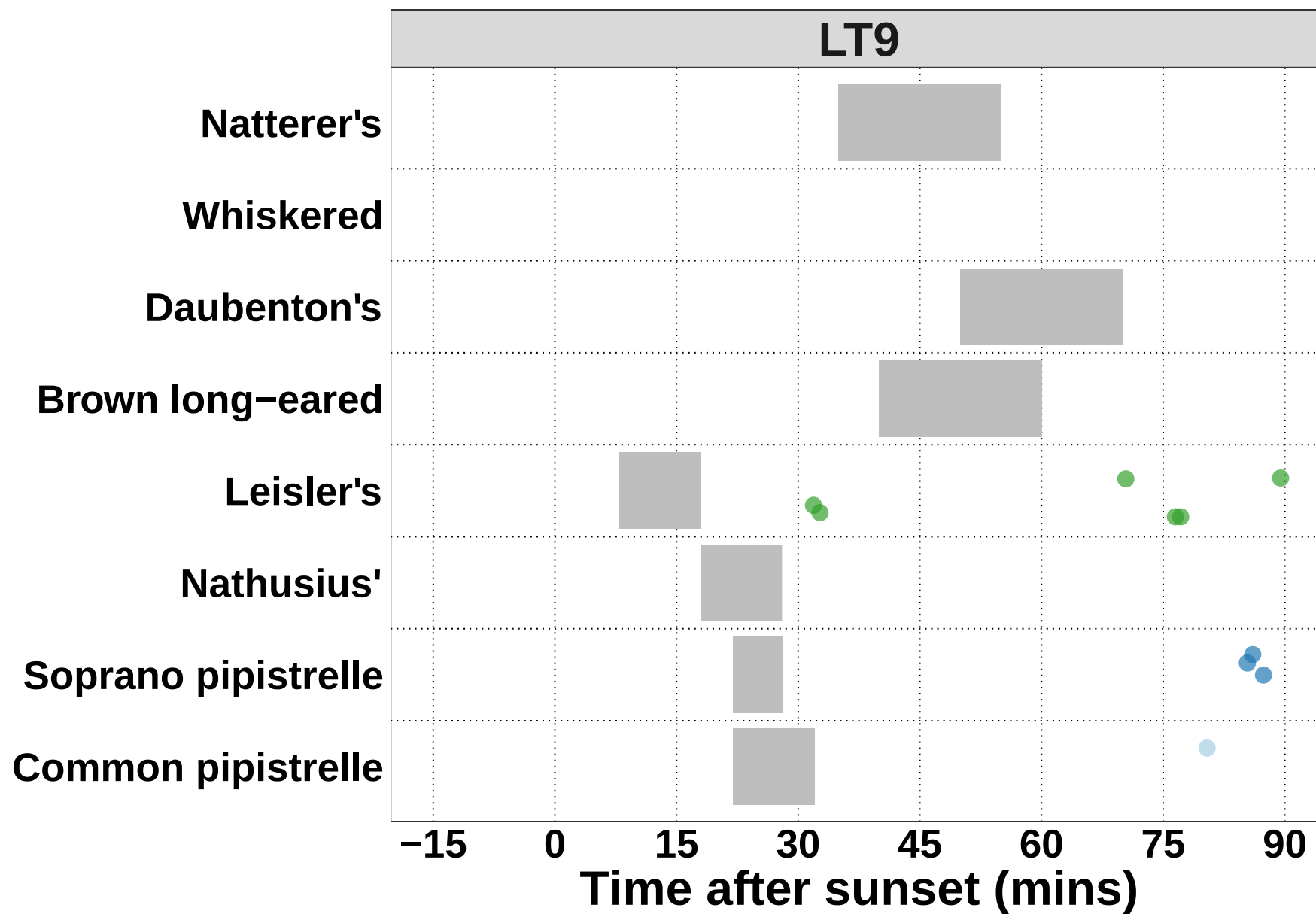












Count of Bat Passes

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 daubentonii	118	1.0
Myotis mystacinus	20	0.2
Myotis nattereri	58	0.5
Nyctalus leisleri	1899	16.4
Pipistrellus nathusii	195	1.7
Pipistrellus pipistrellus	6909	59.8
Pipistrellus pygmaeus	2264	19.6
Plecotus auritus	96	0.8
Total	11559	100.0

Per Detector

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

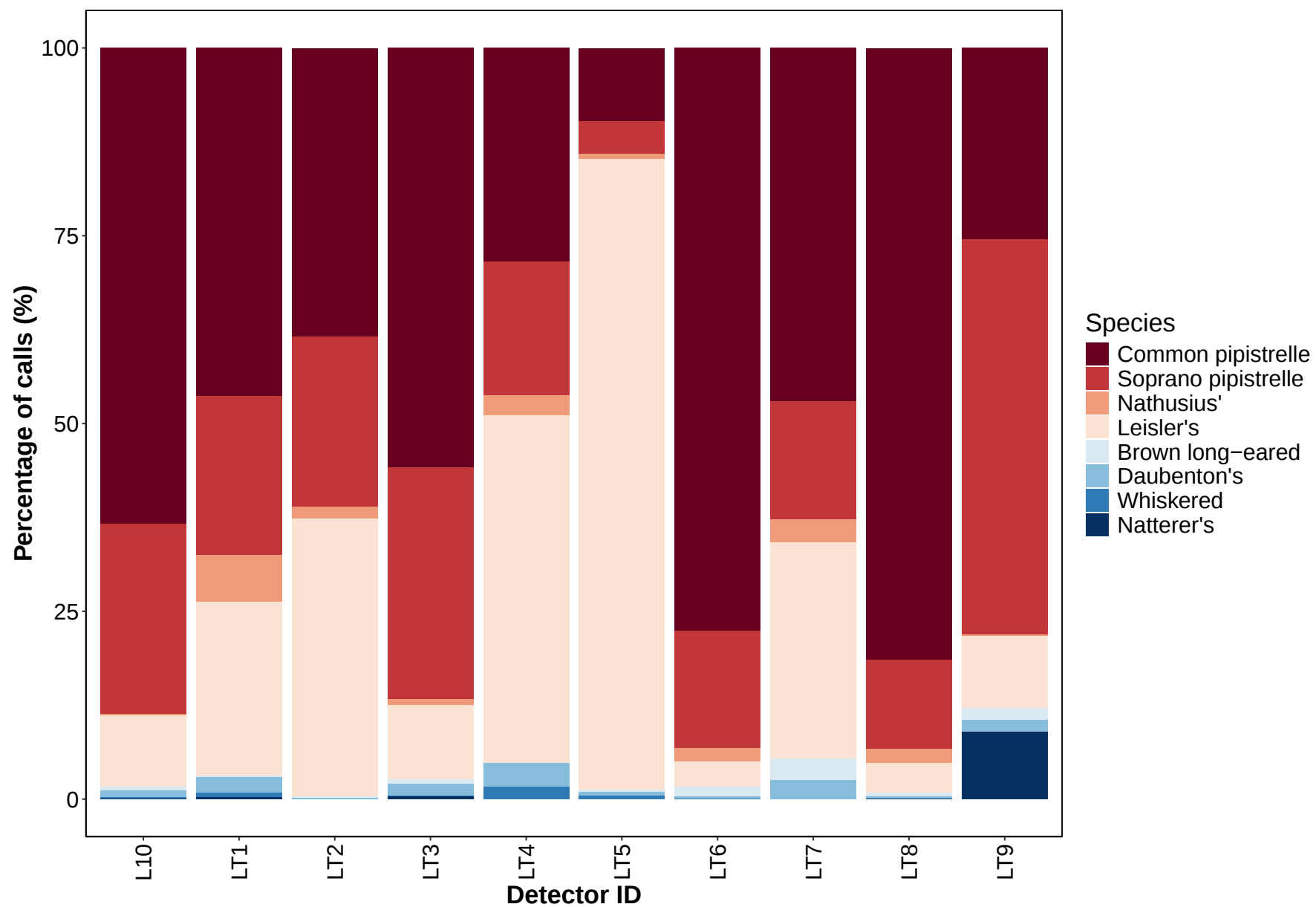
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	L10	1012	62.3921085
Common pipistrelle	LT1	306	48.1132075
Common pipistrelle	LT2	175	38.2932166
Common pipistrelle	LT3	388	49.0518331
Common pipistrelle	LT4	47	26.1111111
Common pipistrelle	LT5	119	12.0202020
Common pipistrelle	LT6	1977	74.9431387
Common pipistrelle	LT7	211	41.4538310
Common pipistrelle	LT8	2510	79.1548407
Common pipistrelle	LT9	164	29.0265487
Soprano pipistrelle	L10	443	27.3119605
Soprano pipistrelle	LT1	131	20.5974843
Soprano pipistrelle	LT2	114	24.9452954
Soprano pipistrelle	LT3	280	35.3982301
Soprano pipistrelle	LT4	32	17.7777778
Soprano pipistrelle	LT5	54	5.4545455
Soprano pipistrelle	LT6	443	16.7930250
Soprano pipistrelle	LT7	89	17.4852652
Soprano pipistrelle	LT8	407	12.8350678
Soprano pipistrelle	LT9	271	47.9646018
Nathusius'	L10	2	0.1233046
Nathusius'	LT1	34	5.3459119
Nathusius'	LT2	9	1.9693654
Nathusius'	LT3	7	0.8849558
Nathusius'	LT4	5	2.7777778
Nathusius'	LT5	6	0.6060606
Nathusius'	LT6	48	1.8195603
Nathusius'	LT7	17	3.3398821
Nathusius'	LT8	66	2.0813623
Nathusius'	LT9	1	0.1769912
Leisler's	L10	132	8.1381011
Leisler's	LT1	143	22.4842767

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	LT2	156	34.1356674
Leisler's	LT3	92	11.6308470
Leisler's	LT4	89	49.4444444
Leisler's	LT5	796	80.4040404
Leisler's	LT6	122	4.6247157
Leisler's	LT7	163	32.0235756
Leisler's	LT8	150	4.7303690
Leisler's	LT9	56	9.9115044
Brown long-eared	L10	9	0.5548705
Brown long-eared	LT1	2	0.3144654
Brown long-eared	LT2	1	0.2188184
Brown long-eared	LT3	4	0.5056890
Brown long-eared	LT5	3	0.3030303
Brown long-eared	LT6	35	1.3267627
Brown long-eared	LT7	11	2.1611002
Brown long-eared	LT8	20	0.6307159
Brown long-eared	LT9	11	1.9469027
Daubenton's	L10	19	1.1713933
Daubenton's	LT1	14	2.2012579
Daubenton's	LT2	2	0.4376368
Daubenton's	LT3	16	2.0227560
Daubenton's	LT4	4	2.2222222
Daubenton's	LT5	6	0.6060606
Daubenton's	LT6	11	0.4169826
Daubenton's	LT7	18	3.5363458
Daubenton's	LT8	16	0.5045727
Daubenton's	LT9	12	2.1238938
Whiskered	L10	4	0.2466091
Whiskered	LT1	4	0.6289308
Whiskered	LT3	1	0.1264223
Whiskered	LT4	3	1.6666667
Whiskered	LT5	6	0.6060606
Whiskered	LT6	2	0.0758150
Natterer's	L10	1	0.0616523
Natterer's	LT1	2	0.3144654
Natterer's	LT3	3	0.3792668

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Natterer's	LT8	2	0.0630716
Natterer's	LT9	50	8.8495575

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	L10	9.6
Common pipistrelle	LT1	2.2
Common pipistrelle	LT2	1.4
Common pipistrelle	LT3	3.0
Common pipistrelle	LT4	0.7
Common pipistrelle	LT5	0.7
Common pipistrelle	LT6	12.2
Common pipistrelle	LT7	5.3
Common pipistrelle	LT8	20.3
Common pipistrelle	LT9	1.0
Soprano pipistrelle	L10	3.7
Soprano pipistrelle	LT1	1.1
Soprano pipistrelle	LT2	1.3
Soprano pipistrelle	LT3	1.4
Soprano pipistrelle	LT4	0.4
Soprano pipistrelle	LT5	0.7
Soprano pipistrelle	LT6	3.1
Soprano pipistrelle	LT7	1.3
Soprano pipistrelle	LT8	2.8
Soprano pipistrelle	LT9	2.9
Nathusius'	L10	0.2
Nathusius'	LT1	0.4
Nathusius'	LT2	0.3
Nathusius'	LT3	0.1
Nathusius'	LT4	0.3
Nathusius'	LT5	0.5
Nathusius'	LT6	1.0
Nathusius'	LT7	0.3
Nathusius'	LT8	1.1
Nathusius'	LT9	0.1
Leisler's	L10	1.3
Leisler's	LT1	0.8
Leisler's	LT2	0.5
Leisler's	LT3	0.5
Leisler's	LT4	0.4
Leisler's	LT5	5.0

Species	Detector ID	Median Pass Rate
Leisler's	LT6	1.1
Leisler's	LT7	1.2
Leisler's	LT8	1.6
Leisler's	LT9	0.6
Brown long-eared	L10	0.2
Brown long-eared	LT1	0.3
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.2
Brown long-eared	LT5	0.1
Brown long-eared	LT6	0.5
Brown long-eared	LT7	0.3
Brown long-eared	LT8	0.6
Brown long-eared	LT9	0.2
Daubenton's	L10	0.3
Daubenton's	LT1	0.3
Daubenton's	LT2	0.1
Daubenton's	LT3	0.2
Daubenton's	LT4	0.4
Daubenton's	LT5	0.3
Daubenton's	LT6	0.1
Daubenton's	LT7	0.2
Daubenton's	LT8	0.1
Daubenton's	LT9	0.1
Whiskered	L10	0.3
Whiskered	LT1	0.1
Whiskered	LT3	0.1
Whiskered	LT4	0.2
Whiskered	LT5	0.1
Whiskered	LT6	0.1
Natterer's	L10	0.1
Natterer's	LT1	0.1
Natterer's	LT3	0.1
Natterer's	LT8	0.1
Natterer's	LT9	0.5

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.

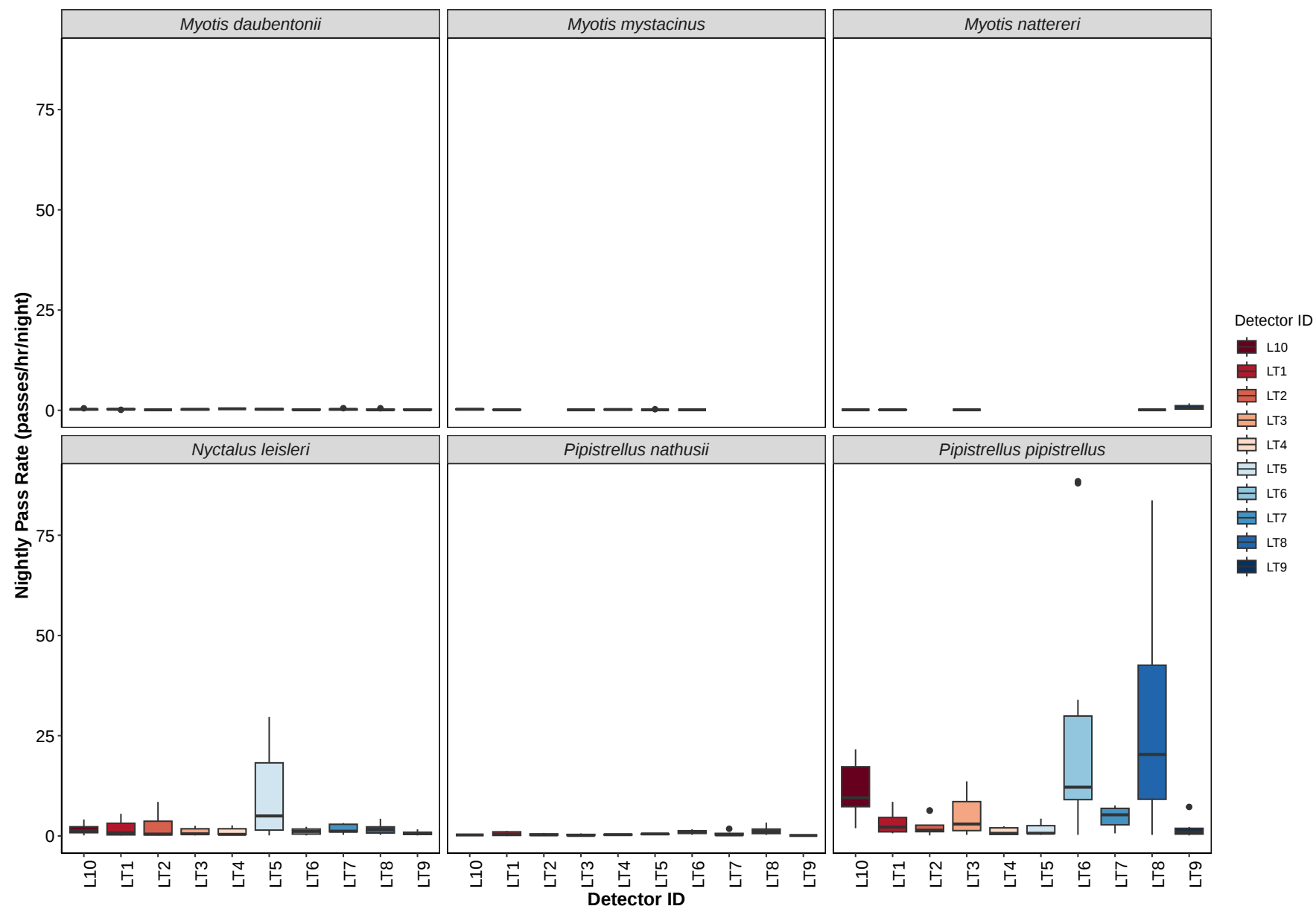
Species	Detector ID	Mean Pass Rate
Common pipistrelle	L10	11.2
Common pipistrelle	LT1	3.1
Common pipistrelle	LT2	2.2
Common pipistrelle	LT3	5.1
Common pipistrelle	LT4	1.1
Common pipistrelle	LT5	1.6
Common pipistrelle	LT6	23.2
Common pipistrelle	LT7	4.8
Common pipistrelle	LT8	30.4
Common pipistrelle	LT9	1.4
Soprano pipistrelle	L10	4.2
Soprano pipistrelle	LT1	1.4
Soprano pipistrelle	LT2	1.3
Soprano pipistrelle	LT3	2.7
Soprano pipistrelle	LT4	0.5
Soprano pipistrelle	LT5	0.7
Soprano pipistrelle	LT6	5.0
Soprano pipistrelle	LT7	1.2
Soprano pipistrelle	LT8	4.4
Soprano pipistrelle	LT9	3.0
Nathusius'	L10	0.2
Nathusius'	LT1	0.6
Nathusius'	LT2	0.4
Nathusius'	LT3	0.3
Nathusius'	LT4	0.3
Nathusius'	LT5	0.4
Nathusius'	LT6	1.0
Nathusius'	LT7	0.6
Nathusius'	LT8	1.4
Nathusius'	LT9	0.1

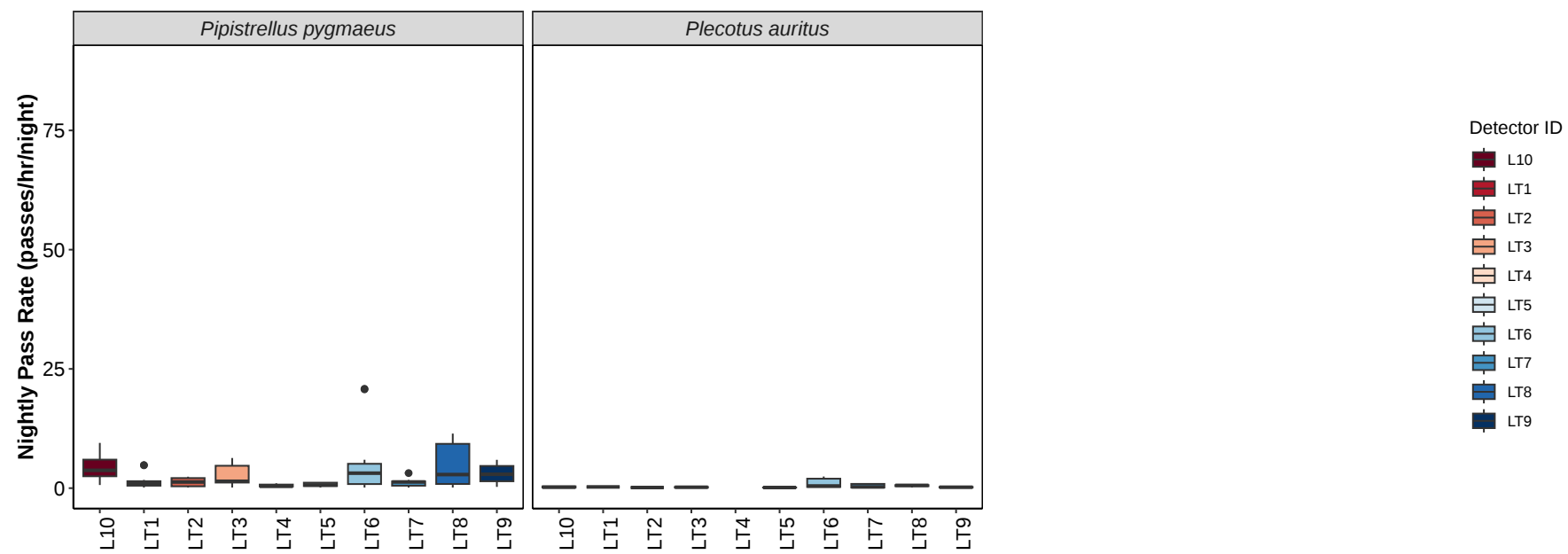
Species	Detector ID	Mean Pass Rate
Leisler's	L10	1.7
Leisler's	LT1	1.7
Leisler's	LT2	2.3
Leisler's	LT3	1.0
Leisler's	LT4	1.0
Leisler's	LT5	9.6
Leisler's	LT6	1.2
Leisler's	LT7	1.8
Leisler's	LT8	1.7
Leisler's	LT9	0.7
Brown long-eared	L10	0.2
Brown long-eared	LT1	0.3
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.2
Brown long-eared	LT5	0.1
Brown long-eared	LT6	1.0
Brown long-eared	LT7	0.5
Brown long-eared	LT8	0.5
Brown long-eared	LT9	0.2
Daubenton's	L10	0.2
Daubenton's	LT1	0.3
Daubenton's	LT2	0.1
Daubenton's	LT3	0.2
Daubenton's	LT4	0.4
Daubenton's	LT5	0.3
Daubenton's	LT6	0.2
Daubenton's	LT7	0.3
Daubenton's	LT8	0.2
Daubenton's	LT9	0.2
Whiskered	L10	0.3
Whiskered	LT1	0.2
Whiskered	LT3	0.1
Whiskered	LT4	0.2
Whiskered	LT5	0.2
Whiskered	LT6	0.1
Natterer's	L10	0.1

Species	Detector ID	Mean Pass Rate
Natterer's	LT1	0.1
Natterer's	LT3	0.1
Natterer's	LT8	0.1
Natterer's	LT9	0.8

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.





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	May	Jun
Common pipistrelle	L10	937	355
Common pipistrelle	LT1	310	27
Common pipistrelle	LT2	218	3
Common pipistrelle	LT3	548	8
Common pipistrelle	LT4	53	0
Common pipistrelle	LT5	131	7
Common pipistrelle	LT6	2853	31
Common pipistrelle	LT7	297	0
Common pipistrelle	LT8	3735	24
Common pipistrelle	LT9	160	9
Soprano pipistrelle	L10	447	69
Soprano pipistrelle	LT1	133	20
Soprano pipistrelle	LT2	123	8
Soprano pipistrelle	LT3	285	23
Soprano pipistrelle	LT4	32	1
Soprano pipistrelle	LT5	61	0
Soprano pipistrelle	LT6	581	3
Soprano pipistrelle	LT7	99	1
Soprano pipistrelle	LT8	535	12
Soprano pipistrelle	LT9	337	11
Nathusius'	L10	4	0
Nathusius'	LT1	45	0
Nathusius'	LT2	9	0
Nathusius'	LT3	7	0
Nathusius'	LT4	5	0
Nathusius'	LT5	10	0
Nathusius'	LT6	63	0
Nathusius'	LT7	19	0
Nathusius'	LT8	88	0
Nathusius'	LT9	1	0
Leisler's	L10	174	19
Leisler's	LT1	165	3
Leisler's	LT2	211	2
Leisler's	LT3	96	3
Leisler's	LT4	85	1
Leisler's	LT5	1139	45

Species	Detector ID	May	Jun
Leisler's	LT6	116	10
Leisler's	LT7	180	2
Leisler's	LT8	176	4
Leisler's	LT9	58	6
Brown long-eared	L10	3	8
Brown long-eared	LT1	2	0
Brown long-eared	LT2	1	0
Brown long-eared	LT3	6	0
Brown long-eared	LT5	2	1
Brown long-eared	LT6	47	1
Brown long-eared	LT7	18	0
Brown long-eared	LT8	23	1
Brown long-eared	LT9	9	1
Daubenton's	L10	13	5
Daubenton's	LT1	11	4
Daubenton's	LT2	1	0
Daubenton's	LT3	12	4
Daubenton's	LT4	6	0
Daubenton's	LT5	5	3
Daubenton's	LT6	7	4
Daubenton's	LT7	12	4
Daubenton's	LT8	10	3
Daubenton's	LT9	6	5
Whiskered	L10	1	3
Whiskered	LT1	4	0
Whiskered	LT3	1	0
Whiskered	LT4	3	0
Whiskered	LT5	4	2
Whiskered	LT6	2	0
Natterer's	L10	1	0
Natterer's	LT1	1	1
Natterer's	LT3	3	0
Natterer's	LT8	2	0
Natterer's	LT9	47	12

Survey Effort

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

month	Detector ID	No. of Survey Nights
May	L10	13
May	LT1	12
May	LT2	11
May	LT3	13
May	LT4	11
May	LT5	13
May	LT6	13
May	LT7	12
May	LT8	13
May	LT9	12
Jun	L10	4
Jun	LT1	3
Jun	LT2	3
Jun	LT3	4
Jun	LT4	1
Jun	LT5	3
Jun	LT6	4
Jun	LT7	2
Jun	LT8	4
Jun	LT9	4

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	May	Jun
Common pipistrelle	L10	9.5	19.2
Common pipistrelle	LT1	2.4	1.1
Common pipistrelle	LT2	2.2	0.2
Common pipistrelle	LT3	5.0	0.5
Common pipistrelle	LT4	0.7	NA
Common pipistrelle	LT5	0.7	0.5
Common pipistrelle	LT6	15.0	0.8
Common pipistrelle	LT7	5.3	NA
Common pipistrelle	LT8	21.8	0.5
Common pipistrelle	LT9	1.2	0.4
Soprano pipistrelle	L10	4.5	3.5
Soprano pipistrelle	LT1	1.0	1.1
Soprano pipistrelle	LT2	1.9	0.1
Soprano pipistrelle	LT3	2.9	1.2
Soprano pipistrelle	LT4	0.4	0.1
Soprano pipistrelle	LT5	0.7	NA
Soprano pipistrelle	LT6	4.0	0.1
Soprano pipistrelle	LT7	1.3	0.1
Soprano pipistrelle	LT8	3.3	0.1
Soprano pipistrelle	LT9	3.4	0.3
Nathusius'	L10	0.2	NA
Nathusius'	LT1	0.4	NA
Nathusius'	LT2	0.3	NA
Nathusius'	LT3	0.1	NA
Nathusius'	LT4	0.3	NA
Nathusius'	LT5	0.5	NA
Nathusius'	LT6	1.0	NA
Nathusius'	LT7	0.3	NA
Nathusius'	LT8	1.1	NA
Nathusius'	LT9	0.1	NA
Leisler's	L10	1.8	0.8
Leisler's	LT1	0.9	0.2
Leisler's	LT2	0.5	0.3
Leisler's	LT3	0.5	0.2
Leisler's	LT4	0.6	0.1
Leisler's	LT5	5.2	0.7

Species	Detector ID	May	Jun
Leisler's	LT6	1.4	0.3
Leisler's	LT7	1.8	0.3
Leisler's	LT8	1.8	0.3
Leisler's	LT9	0.7	0.4
Brown long-eared	L10	0.1	0.4
Brown long-eared	LT1	0.3	NA
Brown long-eared	LT2	0.1	NA
Brown long-eared	LT3	0.2	NA
Brown long-eared	LT5	0.1	0.1
Brown long-eared	LT6	0.7	0.1
Brown long-eared	LT7	0.3	NA
Brown long-eared	LT8	0.6	0.1
Brown long-eared	LT9	0.3	0.1
Daubenton's	L10	0.2	0.3
Daubenton's	LT1	0.3	0.3
Daubenton's	LT2	0.1	NA
Daubenton's	LT3	0.2	0.1
Daubenton's	LT4	0.4	NA
Daubenton's	LT5	0.1	0.4
Daubenton's	LT6	0.1	0.3
Daubenton's	LT7	0.2	0.5
Daubenton's	LT8	0.1	0.2
Daubenton's	LT9	0.1	0.3
Whiskered	L10	0.1	0.4
Whiskered	LT1	0.1	NA
Whiskered	LT3	0.1	NA
Whiskered	LT4	0.2	NA
Whiskered	LT5	0.1	0.1
Whiskered	LT6	0.1	NA
Natterer's	L10	0.1	NA
Natterer's	LT1	0.1	0.1
Natterer's	LT3	0.1	NA
Natterer's	LT8	0.1	NA
Natterer's	LT9	0.7	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	May	Jun
Common pipistrelle	L10	10.0	16.0
Common pipistrelle	LT1	3.6	1.2
Common pipistrelle	LT2	2.5	0.2
Common pipistrelle	LT3	5.9	0.5
Common pipistrelle	LT4	1.1	NA
Common pipistrelle	LT5	1.9	0.5
Common pipistrelle	LT6	28.2	1.4
Common pipistrelle	LT7	4.8	NA
Common pipistrelle	LT8	37.1	1.1
Common pipistrelle	LT9	1.7	0.4
Soprano pipistrelle	L10	4.4	3.1
Soprano pipistrelle	LT1	1.6	0.9
Soprano pipistrelle	LT2	1.6	0.4
Soprano pipistrelle	LT3	3.1	1.0
Soprano pipistrelle	LT4	0.6	0.1
Soprano pipistrelle	LT5	0.7	NA
Soprano pipistrelle	LT6	6.2	0.1
Soprano pipistrelle	LT7	1.3	0.1
Soprano pipistrelle	LT8	5.3	0.5
Soprano pipistrelle	LT9	3.7	0.5
Nathusius'	L10	0.2	NA
Nathusius'	LT1	0.6	NA
Nathusius'	LT2	0.4	NA
Nathusius'	LT3	0.3	NA
Nathusius'	LT4	0.3	NA
Nathusius'	LT5	0.4	NA
Nathusius'	LT6	1.0	NA
Nathusius'	LT7	0.6	NA
Nathusius'	LT8	1.4	NA
Nathusius'	LT9	0.1	NA

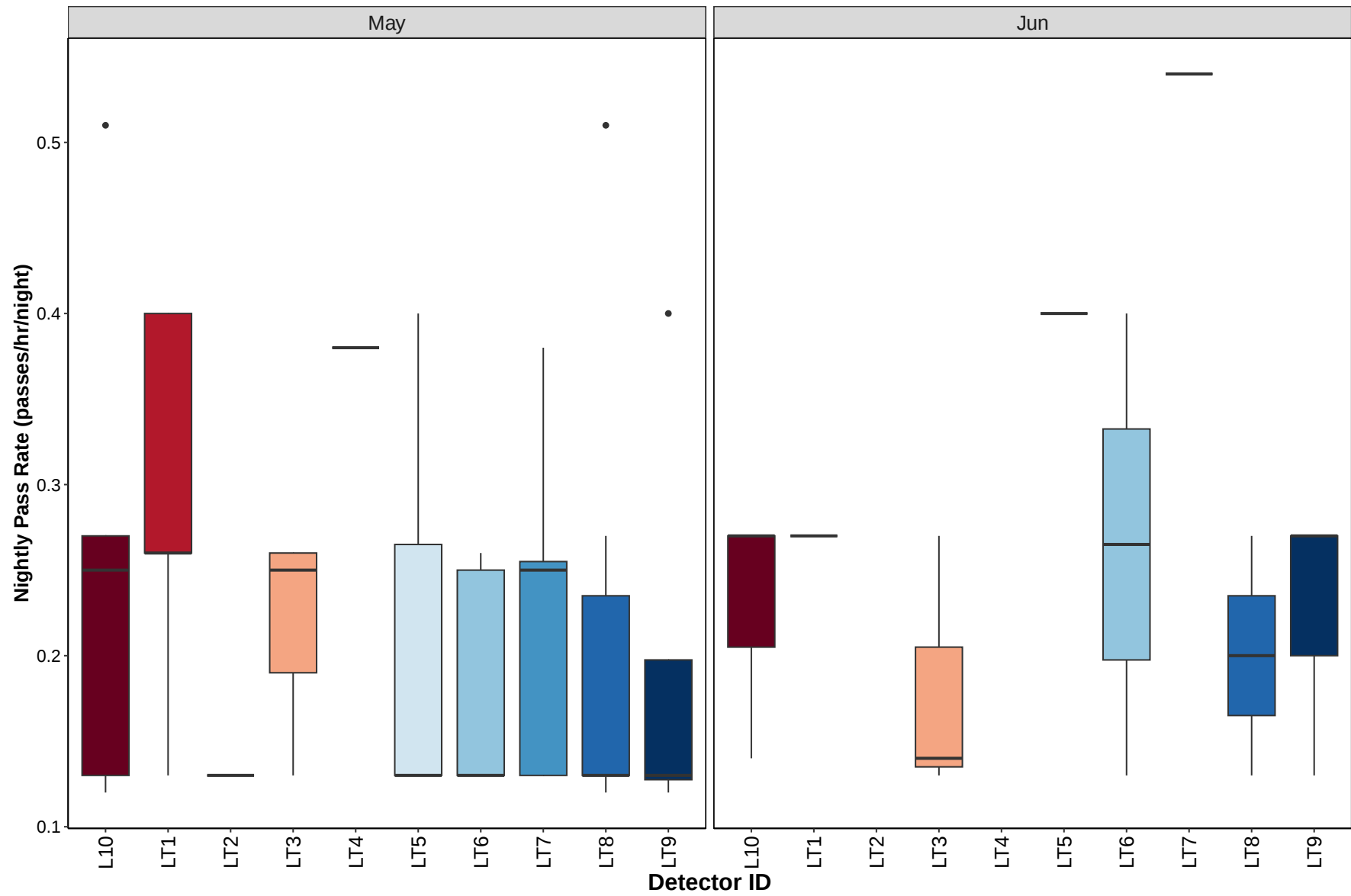
Species	Detector ID	May	Jun
Leisler's	L10	2.1	0.6
Leisler's	LT1	1.9	0.2
Leisler's	LT2	2.5	0.3
Leisler's	LT3	1.1	0.2
Leisler's	LT4	1.1	0.1
Leisler's	LT5	11.3	2.0
Leisler's	LT6	1.4	0.4
Leisler's	LT7	1.9	0.3
Leisler's	LT8	1.9	0.3
Leisler's	LT9	0.7	0.4
Brown long-eared	L10	0.1	0.4
Brown long-eared	LT1	0.3	NA
Brown long-eared	LT2	0.1	NA
Brown long-eared	LT3	0.2	NA
Brown long-eared	LT5	0.1	0.1
Brown long-eared	LT6	1.2	0.1
Brown long-eared	LT7	0.5	NA
Brown long-eared	LT8	0.6	0.1
Brown long-eared	LT9	0.2	0.1
Daubenton's	L10	0.2	0.2
Daubenton's	LT1	0.3	0.3
Daubenton's	LT2	0.1	NA
Daubenton's	LT3	0.2	0.2
Daubenton's	LT4	0.4	NA
Daubenton's	LT5	0.2	0.4
Daubenton's	LT6	0.2	0.3
Daubenton's	LT7	0.2	0.5
Daubenton's	LT8	0.2	0.2
Daubenton's	LT9	0.2	0.2
Whiskered	L10	0.1	0.4
Whiskered	LT1	0.2	NA
Whiskered	LT3	0.1	NA
Whiskered	LT4	0.2	NA
Whiskered	LT5	0.2	0.1
Whiskered	LT6	0.1	NA
Natterer's	L10	0.1	NA

Species	Detector ID	May	Jun
Natterer's	LT1	0.1	0.1
Natterer's	LT3	0.1	NA
Natterer's	LT8	0.1	NA
Natterer's	LT9	0.9	0.5

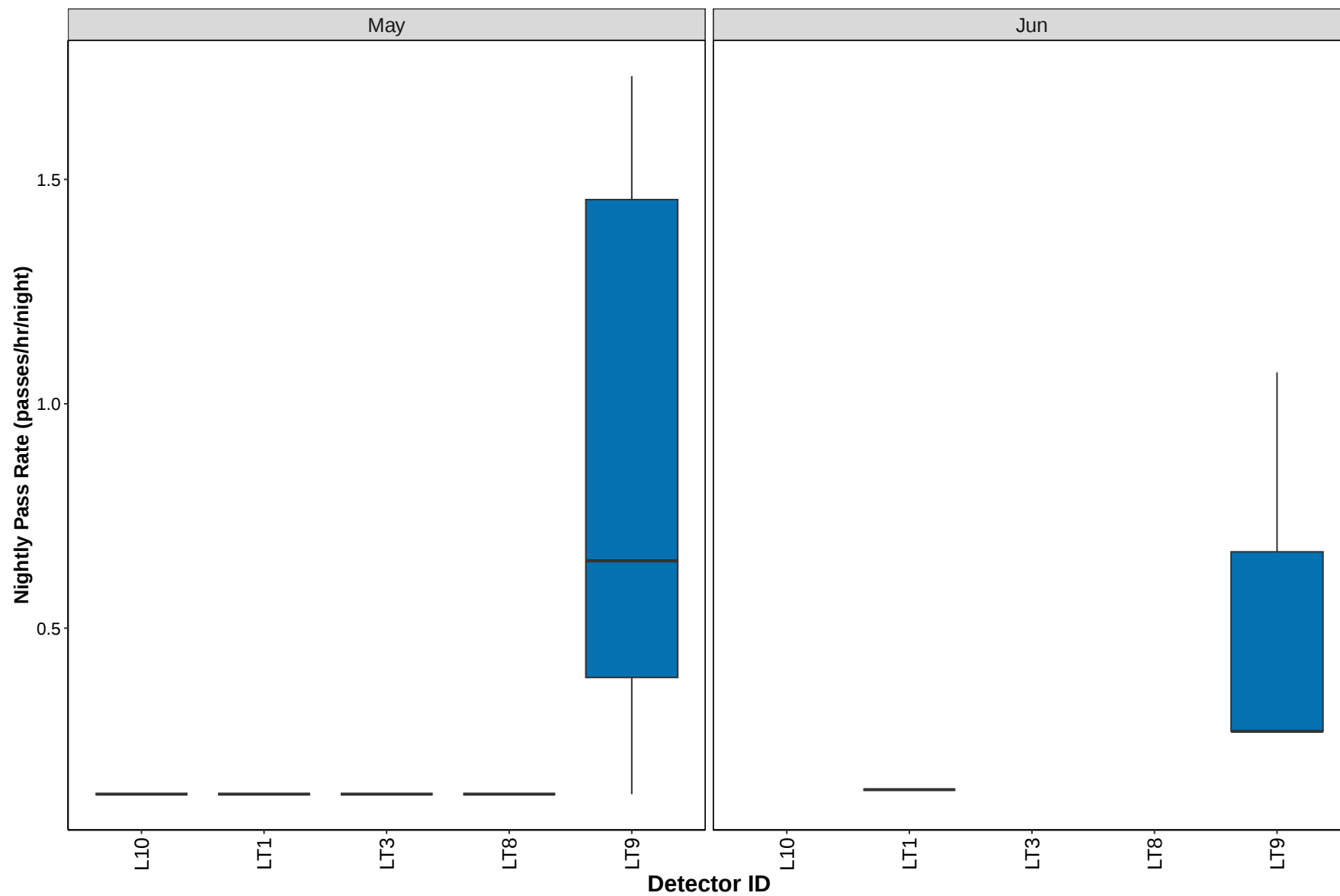
Per Detector

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.

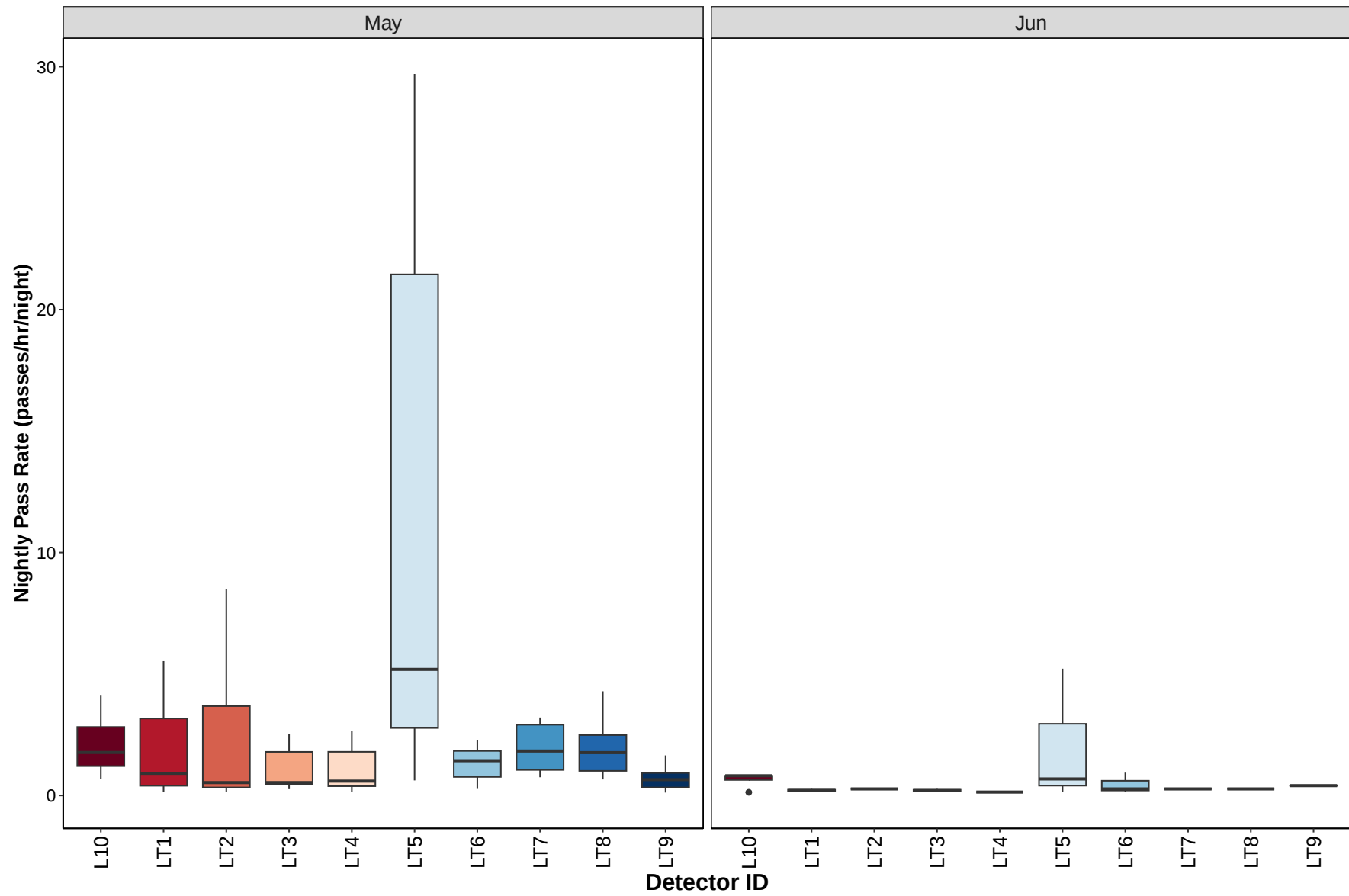
Daubenton's



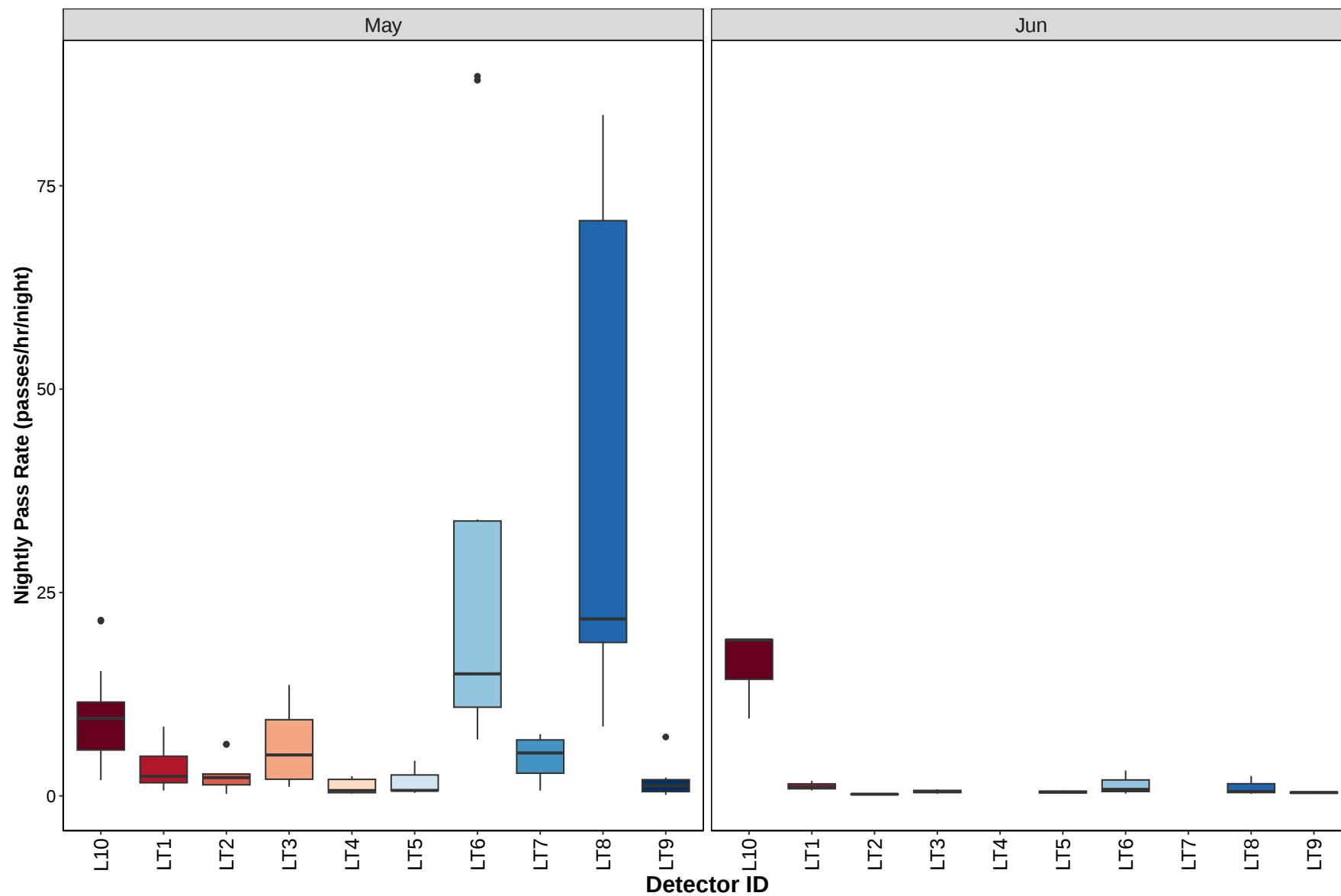
Natterer's



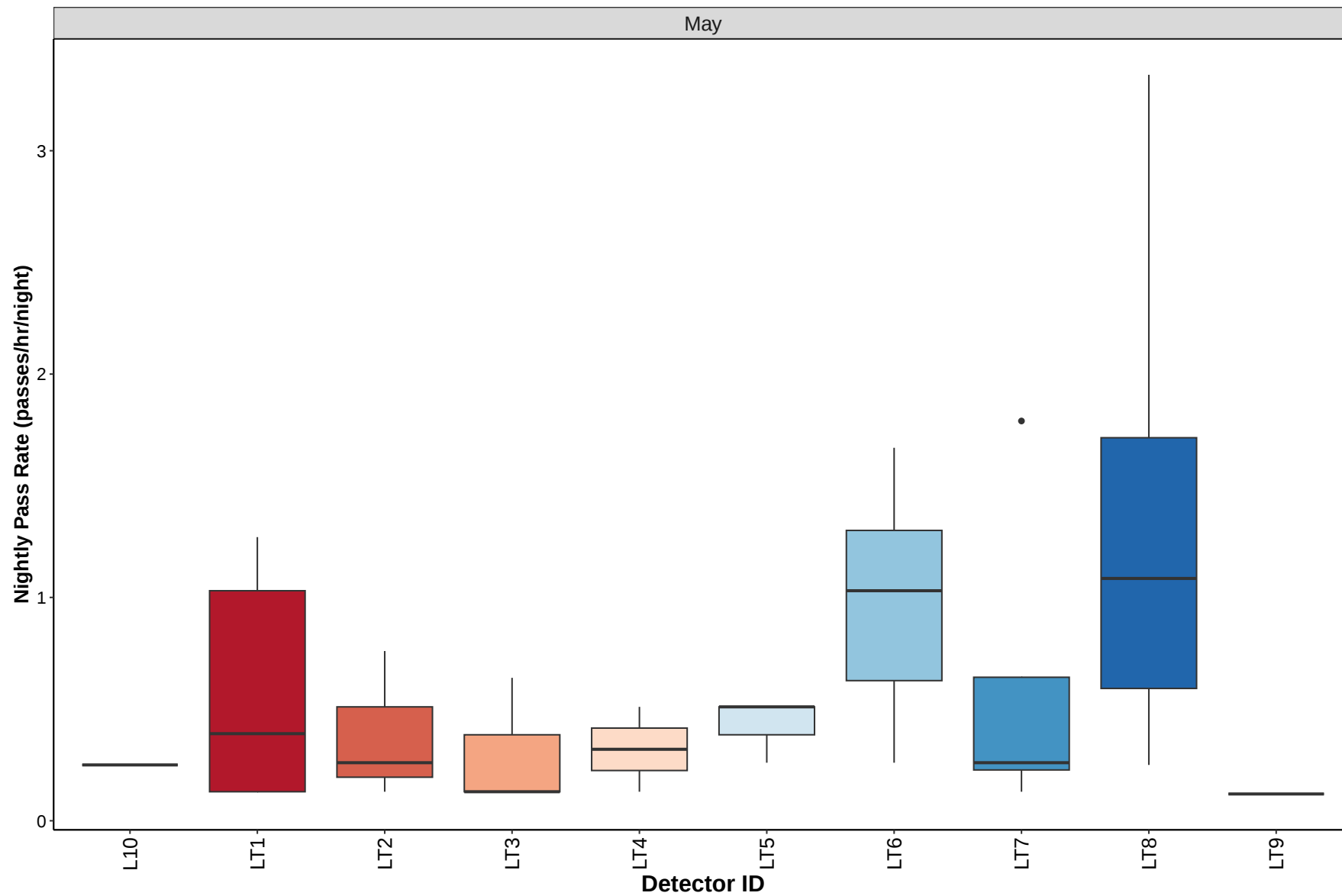
Leisler's

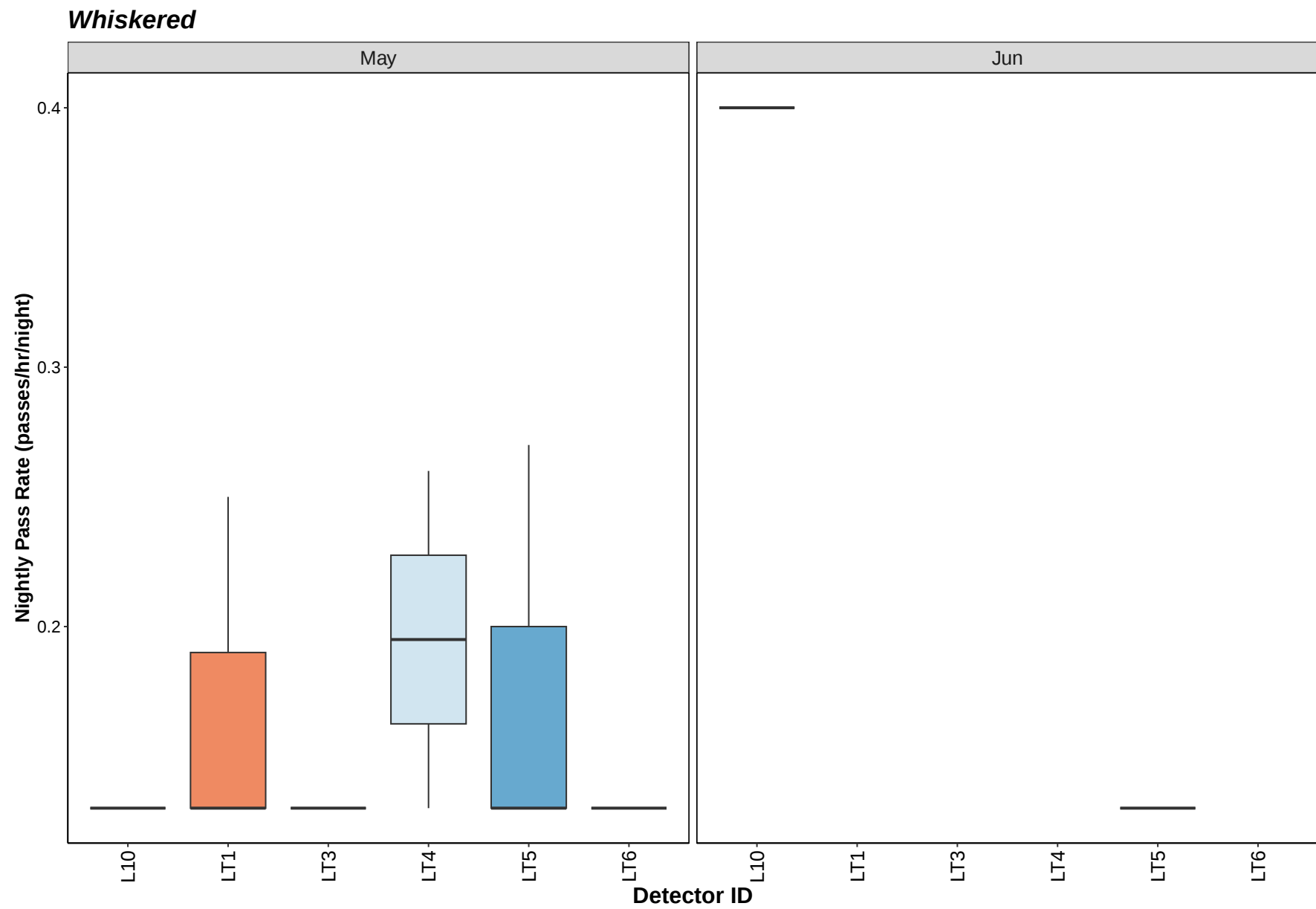


Common pipistrelle

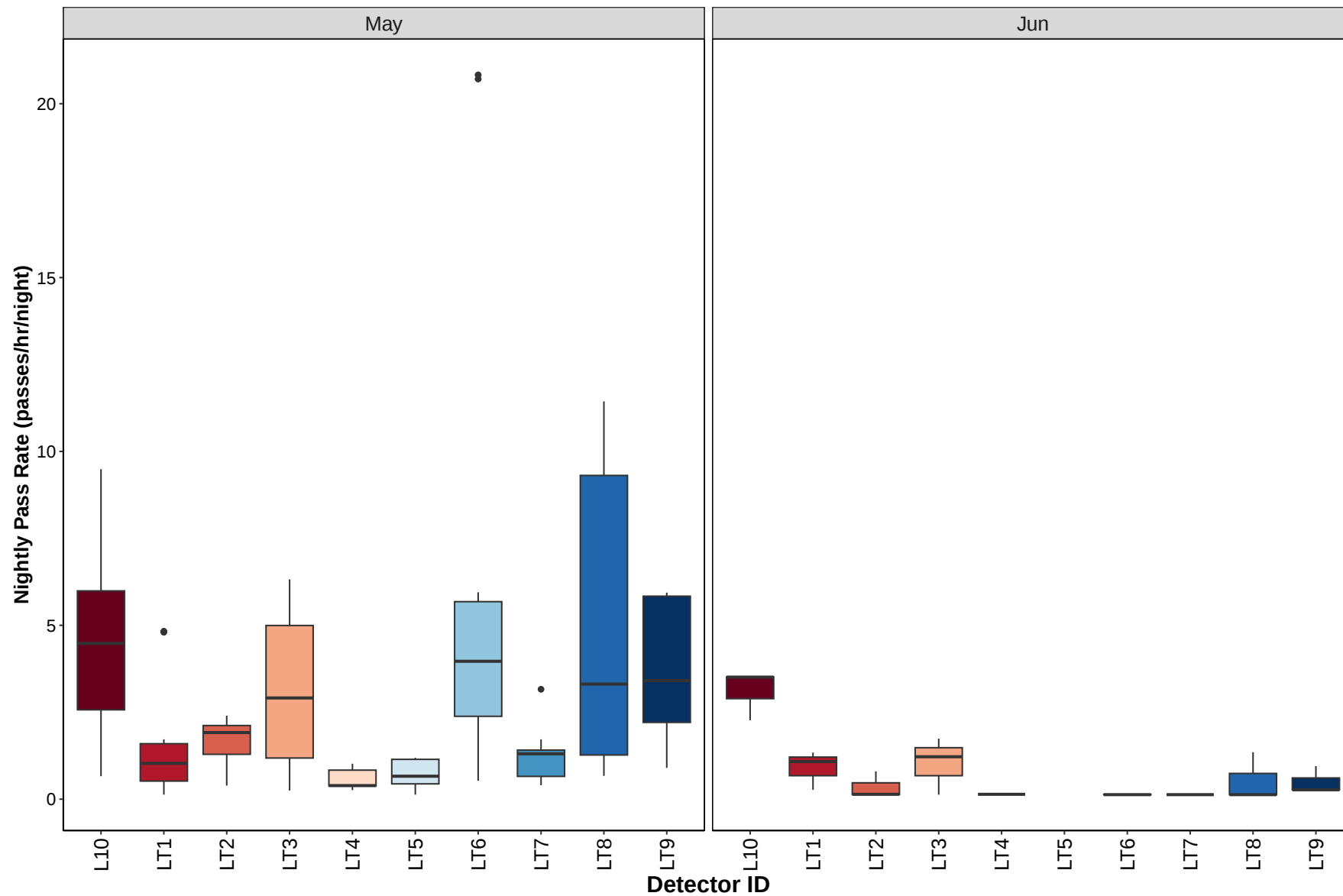


Nathusius'

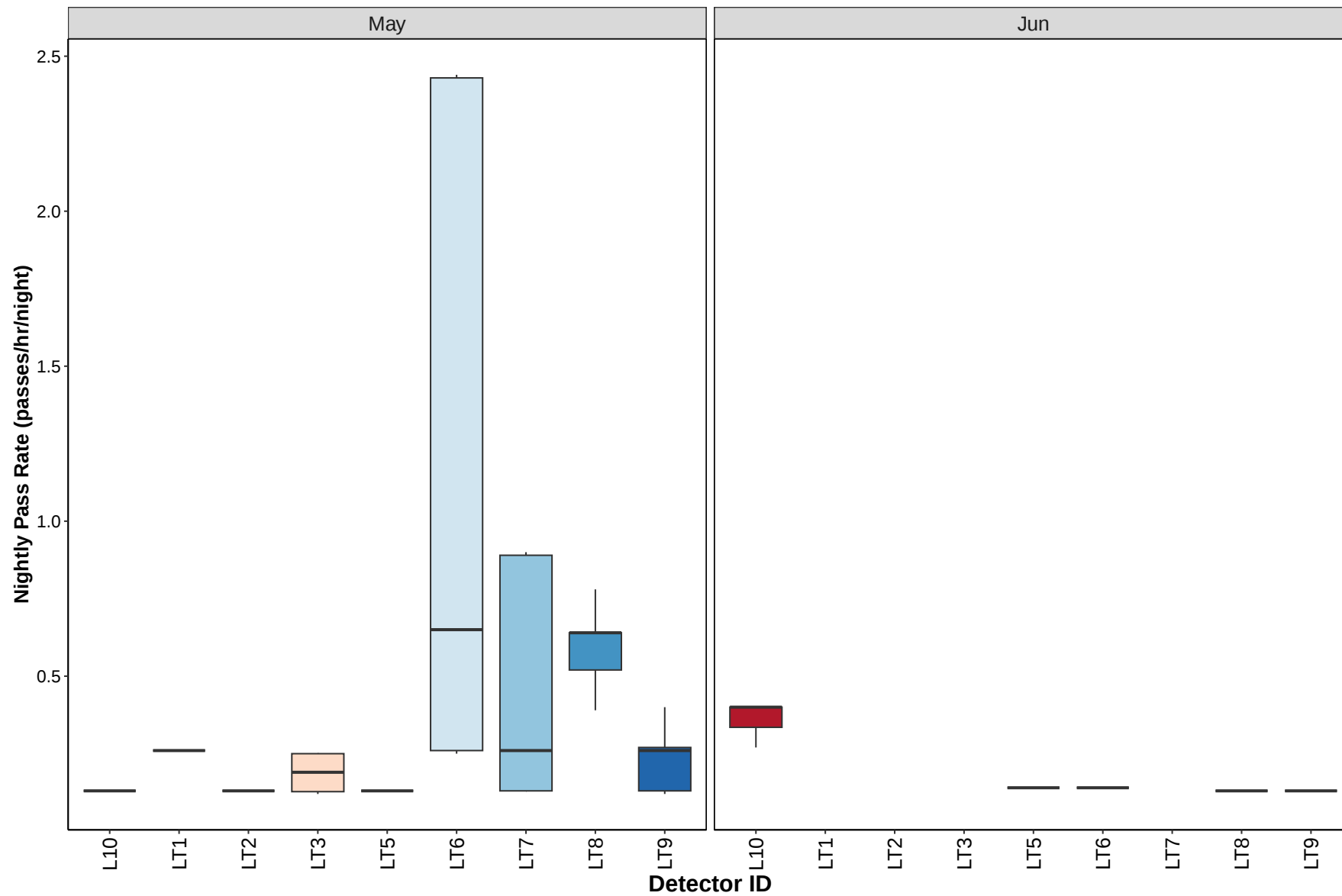




Soprano pipistrelle



Brown long-eared



Bat Activity per Detector Location

Figure 13. Detector ID reference:

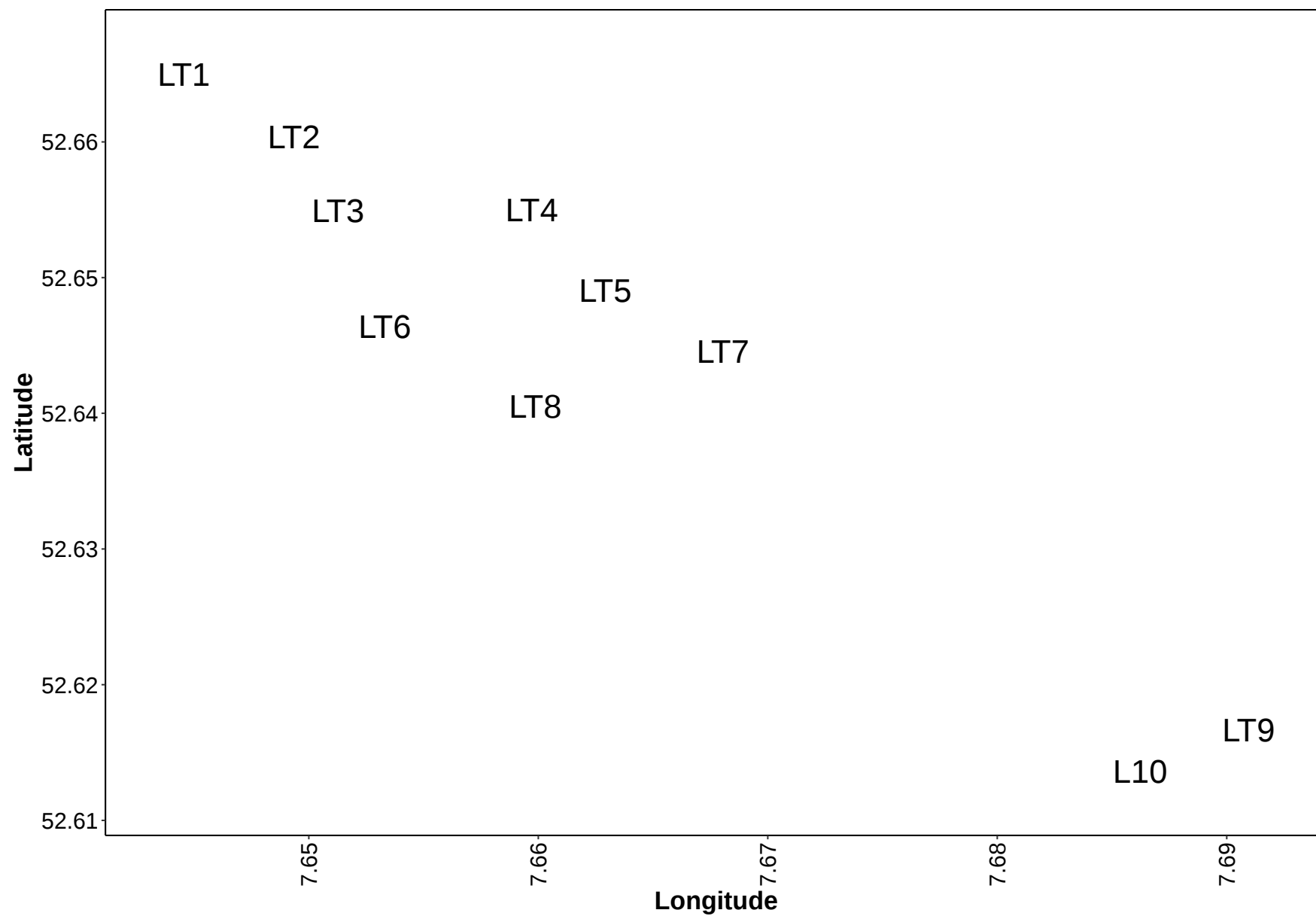
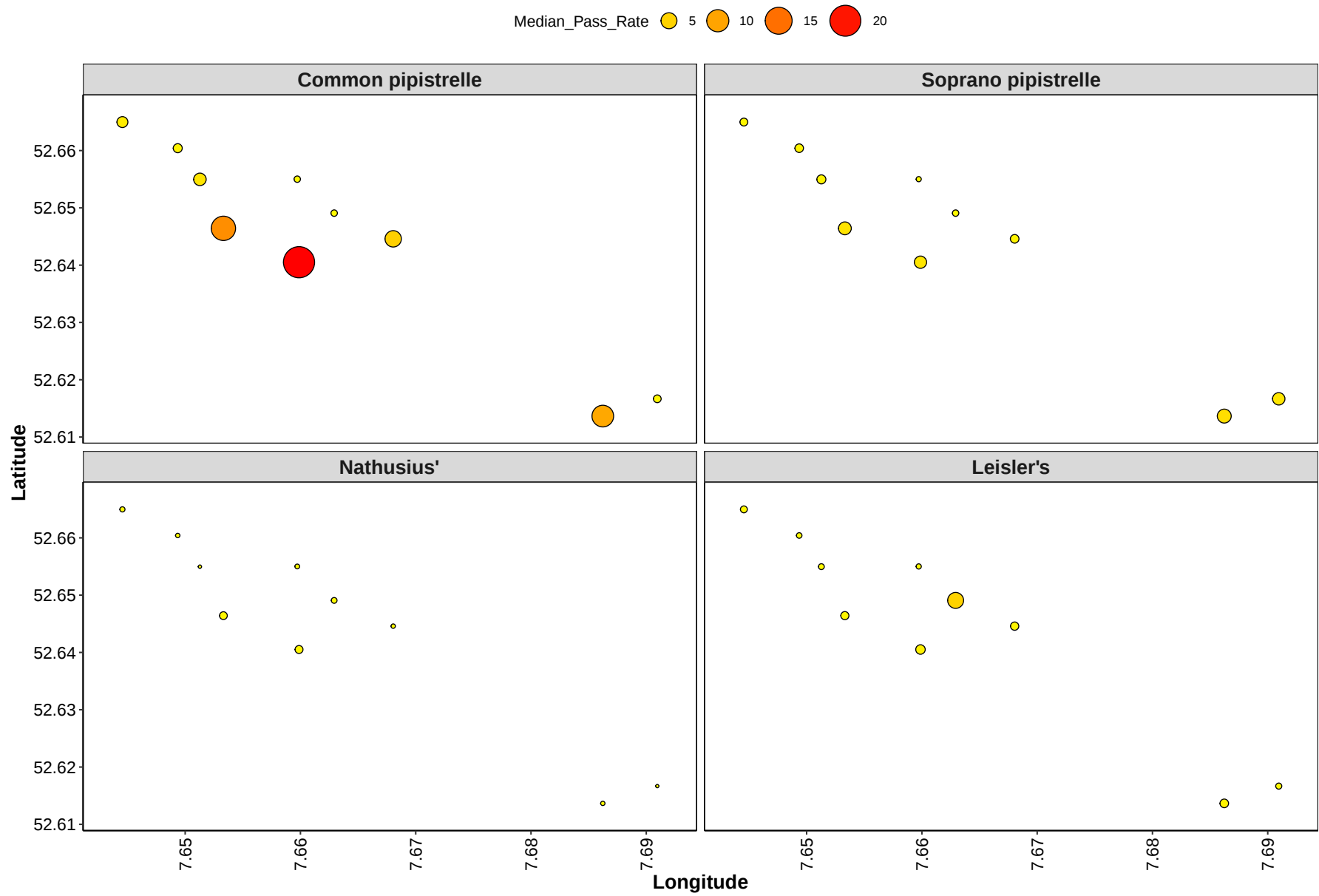


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



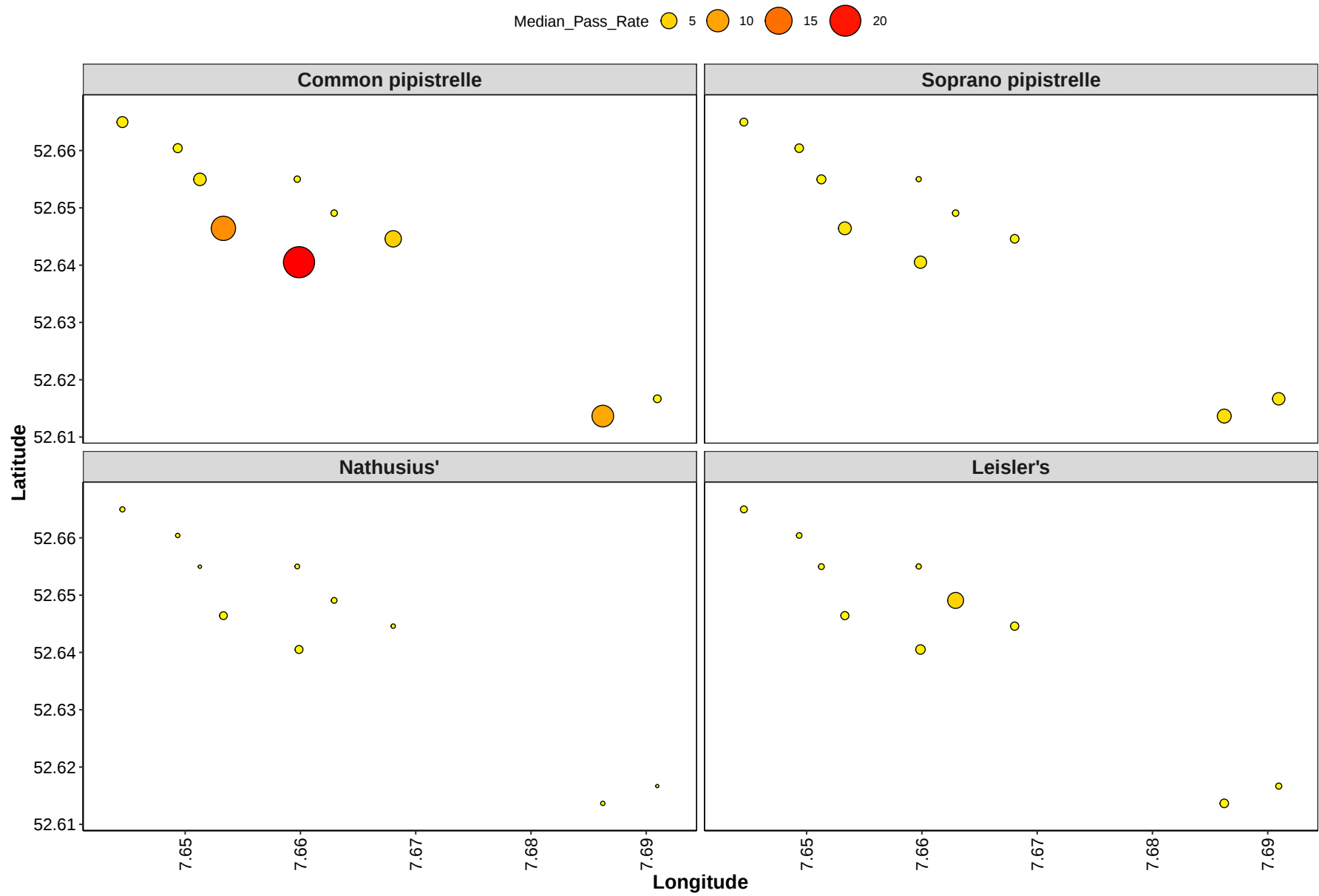
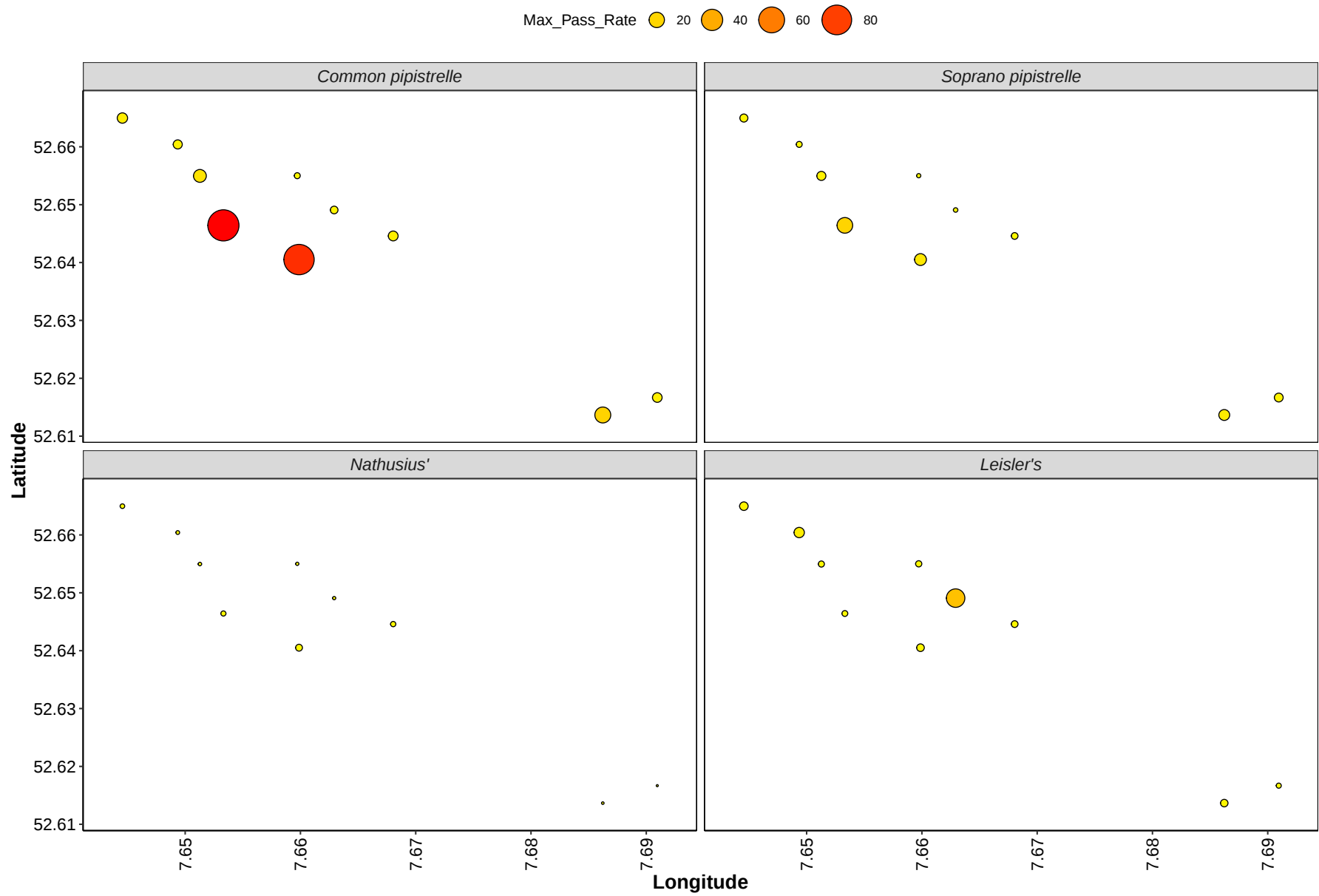
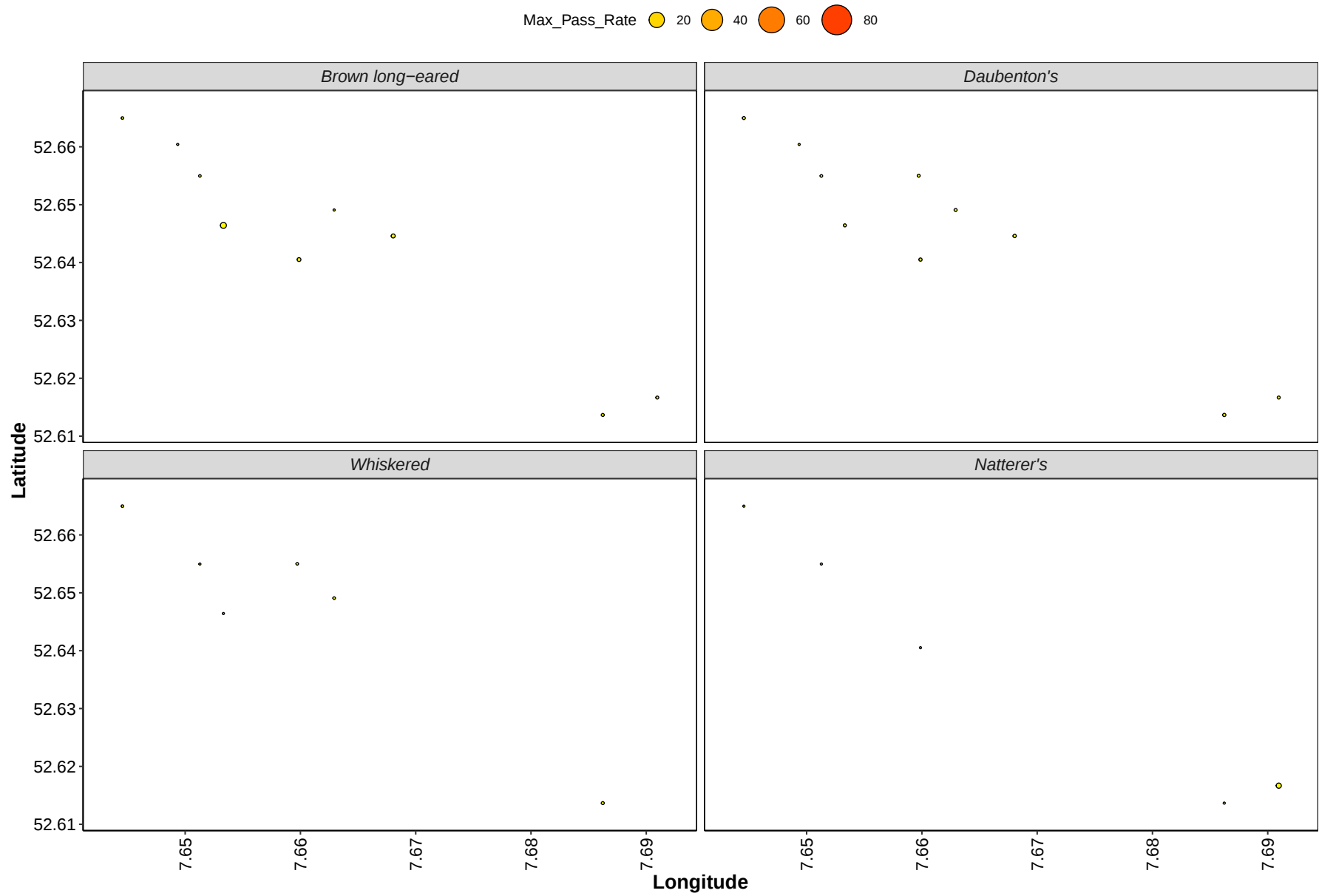


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





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	L10	0.0
Brown long-eared	LT1	0.0
Brown long-eared	LT2	0.0
Brown long-eared	LT3	0.0
Brown long-eared	LT4	0.0
Brown long-eared	LT5	0.0
Brown long-eared	LT6	0.0
Brown long-eared	LT7	0.0
Brown long-eared	LT8	0.0
Brown long-eared	LT9	0.0
Common pipistrelle	L10	9.5
Common pipistrelle	LT1	2.2
Common pipistrelle	LT2	1.4
Common pipistrelle	LT3	2.1
Common pipistrelle	LT4	0.1
Common pipistrelle	LT5	0.7
Common pipistrelle	LT6	12.1
Common pipistrelle	LT7	1.5
Common pipistrelle	LT8	19.0
Common pipistrelle	LT9	0.8
Daubenton's	L10	0.1
Daubenton's	LT1	0.0
Daubenton's	LT2	0.0
Daubenton's	LT3	0.1
Daubenton's	LT4	0.0
Daubenton's	LT5	0.0
Daubenton's	LT6	0.0
Daubenton's	LT7	0.1
Daubenton's	LT8	0.0
Daubenton's	LT9	0.0
Leisler's	L10	1.1
Leisler's	LT1	0.5
Leisler's	LT2	0.4
Leisler's	LT3	0.4
Leisler's	LT4	0.4
Leisler's	LT5	5.0

Species	Detector ID	Median Pass Rate
Leisler's	LT6	0.9
Leisler's	LT7	1.1
Leisler's	LT8	1.0
Leisler's	LT9	0.4
Nathusius'	L10	0.0
Nathusius'	LT1	0.1
Nathusius'	LT2	0.0
Nathusius'	LT3	0.0
Nathusius'	LT4	0.0
Nathusius'	LT5	0.0
Nathusius'	LT6	0.0
Nathusius'	LT7	0.0
Nathusius'	LT8	0.0
Nathusius'	LT9	0.0
Natterer's	L10	0.0
Natterer's	LT1	0.0
Natterer's	LT2	0.0
Natterer's	LT3	0.0
Natterer's	LT4	0.0
Natterer's	LT5	0.0
Natterer's	LT6	0.0
Natterer's	LT7	0.0
Natterer's	LT8	0.0
Natterer's	LT9	0.3
Soprano pipistrelle	L10	3.5
Soprano pipistrelle	LT1	1.0
Soprano pipistrelle	LT2	1.3
Soprano pipistrelle	LT3	1.4
Soprano pipistrelle	LT4	0.3
Soprano pipistrelle	LT5	0.4
Soprano pipistrelle	LT6	2.8
Soprano pipistrelle	LT7	0.8
Soprano pipistrelle	LT8	2.4
Soprano pipistrelle	LT9	2.6
Whiskered	L10	0.0
Whiskered	LT1	0.0

Species	Detector ID	Median Pass Rate
Whiskered	LT2	0.0
Whiskered	LT3	0.0
Whiskered	LT4	0.0
Whiskered	LT5	0.0
Whiskered	LT6	0.0
Whiskered	LT7	0.0
Whiskered	LT8	0.0
Whiskered	LT9	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.

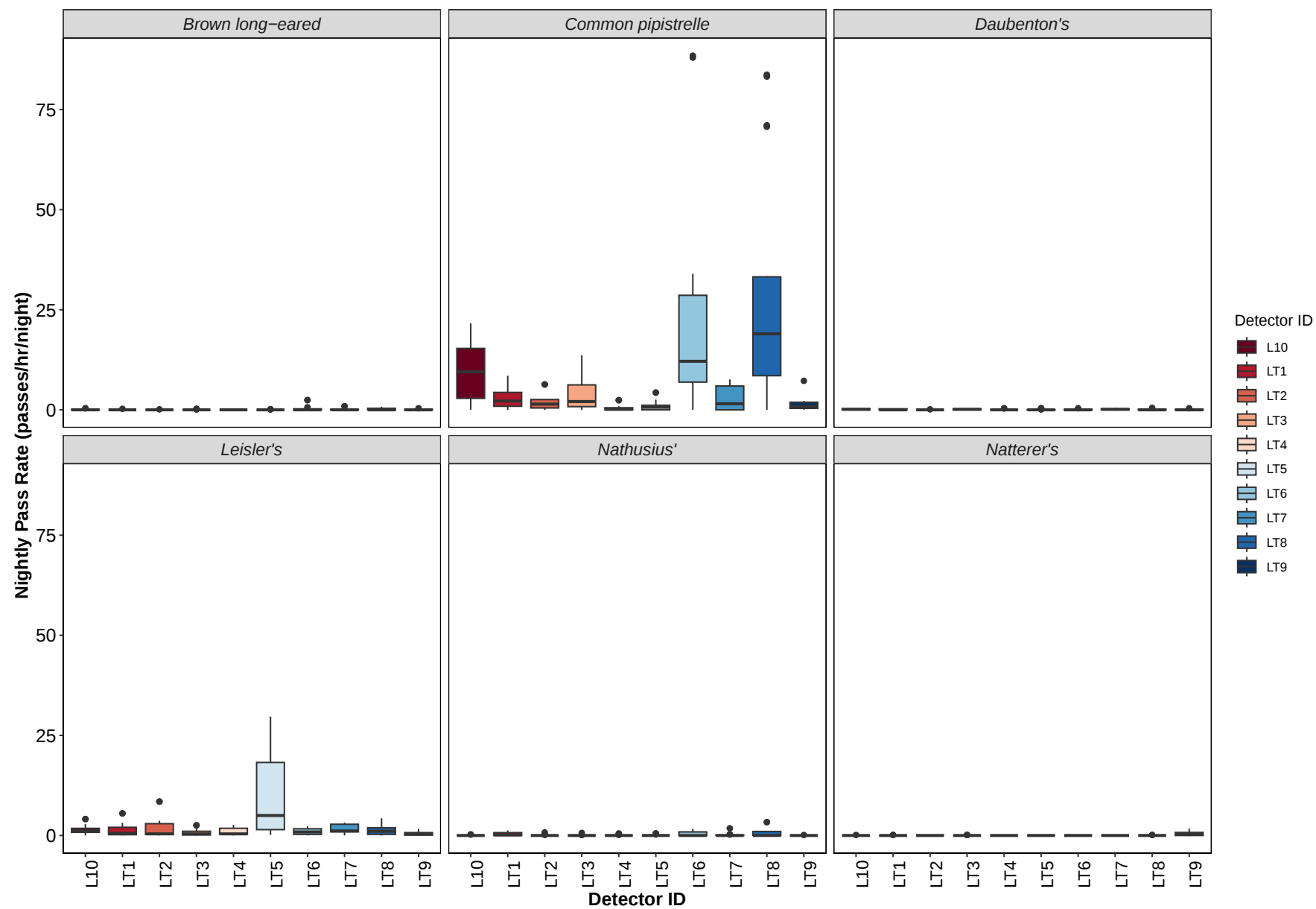
Species	Detector ID	Mean Pass Rate
Brown long-eared	L10	0.1
Brown long-eared	LT1	0.0
Brown long-eared	LT2	0.0
Brown long-eared	LT3	0.0
Brown long-eared	LT4	0.0
Brown long-eared	LT5	0.0
Brown long-eared	LT6	0.4
Brown long-eared	LT7	0.2
Brown long-eared	LT8	0.2
Brown long-eared	LT9	0.1
Common pipistrelle	L10	9.9
Common pipistrelle	LT1	2.9
Common pipistrelle	LT2	2.0
Common pipistrelle	LT3	4.2
Common pipistrelle	LT4	0.6
Common pipistrelle	LT5	1.1
Common pipistrelle	LT6	21.8
Common pipistrelle	LT7	2.7
Common pipistrelle	LT8	28.6
Common pipistrelle	LT9	1.4
Daubenton's	L10	0.1
Daubenton's	LT1	0.1
Daubenton's	LT2	0.0
Daubenton's	LT3	0.1
Daubenton's	LT4	0.1
Daubenton's	LT5	0.1
Daubenton's	LT6	0.1
Daubenton's	LT7	0.1
Daubenton's	LT8	0.1
Daubenton's	LT9	0.1
Leisler's	L10	1.5
Leisler's	LT1	1.4
Leisler's	LT2	2.0
Leisler's	LT3	0.7
Leisler's	LT4	0.9
Leisler's	LT5	9.6

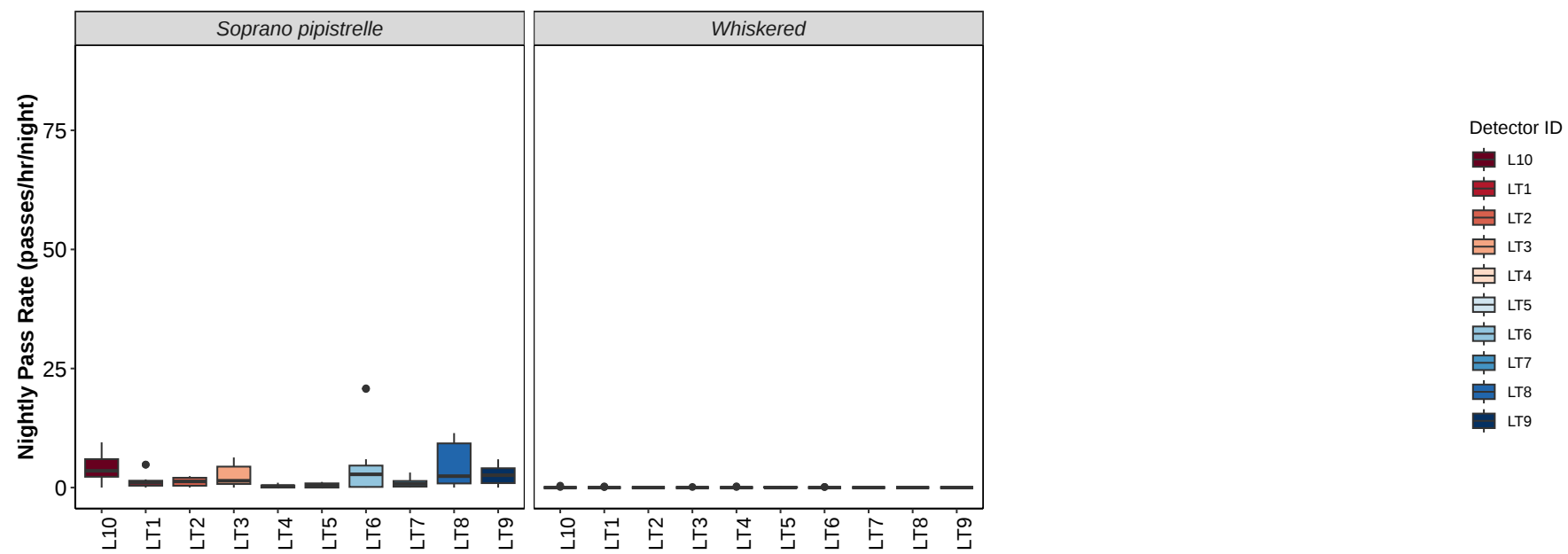
Species	Detector ID	Mean Pass Rate
Leisler's	LT6	1.0
Leisler's	LT7	1.7
Leisler's	LT8	1.4
Leisler's	LT9	0.5
Nathusius'	L10	0.0
Nathusius'	LT1	0.4
Nathusius'	LT2	0.1
Nathusius'	LT3	0.1
Nathusius'	LT4	0.1
Nathusius'	LT5	0.1
Nathusius'	LT6	0.5
Nathusius'	LT7	0.2
Nathusius'	LT8	0.7
Nathusius'	LT9	0.0
Natterer's	L10	0.0
Natterer's	LT1	0.0
Natterer's	LT2	0.0
Natterer's	LT3	0.0
Natterer's	LT4	0.0
Natterer's	LT5	0.0
Natterer's	LT6	0.0
Natterer's	LT7	0.0
Natterer's	LT8	0.0
Natterer's	LT9	0.5
Soprano pipistrelle	L10	3.9
Soprano pipistrelle	LT1	1.3
Soprano pipistrelle	LT2	1.2
Soprano pipistrelle	LT3	2.3
Soprano pipistrelle	LT4	0.4
Soprano pipistrelle	LT5	0.5
Soprano pipistrelle	LT6	4.4
Soprano pipistrelle	LT7	0.9
Soprano pipistrelle	LT8	4.2
Soprano pipistrelle	LT9	2.8
Whiskered	L10	0.0
Whiskered	LT1	0.0

Species	Detector ID	Mean Pass Rate
Whiskered	LT2	0.0
Whiskered	LT3	0.0
Whiskered	LT4	0.0
Whiskered	LT5	0.0
Whiskered	LT6	0.0
Whiskered	LT7	0.0
Whiskered	LT8	0.0
Whiskered	LT9	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.





Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
May	L10	13
May	LT1	12
May	LT2	11
May	LT3	13
May	LT4	11
May	LT5	13
May	LT6	13
May	LT7	12
May	LT8	13
May	LT9	12
Jun	L10	4
Jun	LT1	3
Jun	LT2	3
Jun	LT3	4
Jun	LT4	1
Jun	LT5	3
Jun	LT6	4
Jun	LT7	2
Jun	LT8	4
Jun	LT9	4

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the ‘average’ activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Jun	May
Brown long-eared	L10	0.3	0.0
Brown long-eared	LT1	0.0	0.0
Brown long-eared	LT2	0.0	0.0
Brown long-eared	LT3	0.0	0.0
Brown long-eared	LT4	0.0	0.0
Brown long-eared	LT5	0.0	0.0
Brown long-eared	LT6	0.0	0.0
Brown long-eared	LT7	0.0	0.0
Brown long-eared	LT8	0.0	0.0
Brown long-eared	LT9	0.0	0.0
Common pipistrelle	L10	14.3	9.5
Common pipistrelle	LT1	1.1	2.3
Common pipistrelle	LT2	0.1	2.2
Common pipistrelle	LT3	0.1	3.9
Common pipistrelle	LT4	0.0	0.3
Common pipistrelle	LT5	0.3	0.7
Common pipistrelle	LT6	0.5	15.0
Common pipistrelle	LT7	0.0	2.7
Common pipistrelle	LT8	0.4	21.8
Common pipistrelle	LT9	0.3	1.2
Daubenton's	L10	0.2	0.1
Daubenton's	LT1	0.3	0.0
Daubenton's	LT2	0.0	0.0
Daubenton's	LT3	0.1	0.1
Daubenton's	LT4	0.0	0.0
Daubenton's	LT5	0.0	0.0
Daubenton's	LT6	0.1	0.0
Daubenton's	LT7	0.3	0.1
Daubenton's	LT8	0.1	0.0
Daubenton's	LT9	0.2	0.0
Leisler's	L10	0.8	1.3
Leisler's	LT1	0.1	0.8
Leisler's	LT2	0.0	0.5
Leisler's	LT3	0.1	0.5
Leisler's	LT4	0.1	0.4
Leisler's	LT5	0.7	5.2

Species	Detector ID	Jun	May
Leisler's	LT6	0.2	1.3
Leisler's	LT7	0.1	1.8
Leisler's	LT8	0.1	1.6
Leisler's	LT9	0.2	0.6
Nathusius'	L10	0.0	0.0
Nathusius'	LT1	0.0	0.3
Nathusius'	LT2	0.0	0.0
Nathusius'	LT3	0.0	0.0
Nathusius'	LT4	0.0	0.0
Nathusius'	LT5	0.0	0.0
Nathusius'	LT6	0.0	0.6
Nathusius'	LT7	0.0	0.0
Nathusius'	LT8	0.0	0.4
Nathusius'	LT9	0.0	0.0
Natterer's	L10	0.0	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT2	0.0	0.0
Natterer's	LT3	0.0	0.0
Natterer's	LT4	0.0	0.0
Natterer's	LT5	0.0	0.0
Natterer's	LT6	0.0	0.0
Natterer's	LT7	0.0	0.0
Natterer's	LT8	0.0	0.0
Natterer's	LT9	0.3	0.3
Soprano pipistrelle	L10	2.9	4.5
Soprano pipistrelle	LT1	1.1	0.8
Soprano pipistrelle	LT2	0.1	1.9
Soprano pipistrelle	LT3	0.7	1.4
Soprano pipistrelle	LT4	0.1	0.4
Soprano pipistrelle	LT5	0.0	0.5
Soprano pipistrelle	LT6	0.1	3.8
Soprano pipistrelle	LT7	0.1	1.2
Soprano pipistrelle	LT8	0.1	3.3
Soprano pipistrelle	LT9	0.3	3.4
Whiskered	L10	0.0	0.0
Whiskered	LT1	0.0	0.0

Species	Detector ID	Jun	May
Whiskered	LT2	0.0	0.0
Whiskered	LT3	0.0	0.0
Whiskered	LT4	0.0	0.0
Whiskered	LT5	0.1	0.0
Whiskered	LT6	0.0	0.0
Whiskered	LT7	0.0	0.0
Whiskered	LT8	0.0	0.0
Whiskered	LT9	0.0	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	Jun	May
Brown long-eared	L10	0.3	0.0
Brown long-eared	LT1	0.0	0.0
Brown long-eared	LT2	0.0	0.0
Brown long-eared	LT3	0.0	0.1
Brown long-eared	LT4	0.0	0.0
Brown long-eared	LT5	0.0	0.0
Brown long-eared	LT6	0.0	0.5
Brown long-eared	LT7	0.0	0.2
Brown long-eared	LT8	0.0	0.2
Brown long-eared	LT9	0.0	0.1
Common pipistrelle	L10	12.0	9.2
Common pipistrelle	LT1	1.2	3.3
Common pipistrelle	LT2	0.1	2.5
Common pipistrelle	LT3	0.3	5.4
Common pipistrelle	LT4	0.0	0.6
Common pipistrelle	LT5	0.3	1.3
Common pipistrelle	LT6	1.0	28.2
Common pipistrelle	LT7	0.0	3.2
Common pipistrelle	LT8	0.8	37.1
Common pipistrelle	LT9	0.3	1.7
Daubenton's	L10	0.2	0.1
Daubenton's	LT1	0.2	0.1
Daubenton's	LT2	0.0	0.0
Daubenton's	LT3	0.1	0.1
Daubenton's	LT4	0.0	0.1
Daubenton's	LT5	0.1	0.1
Daubenton's	LT6	0.1	0.1
Daubenton's	LT7	0.3	0.1
Daubenton's	LT8	0.1	0.1
Daubenton's	LT9	0.2	0.1
Leisler's	L10	0.6	1.7
Leisler's	LT1	0.1	1.8
Leisler's	LT2	0.1	2.5
Leisler's	LT3	0.1	0.9
Leisler's	LT4	0.1	1.0
Leisler's	LT5	2.0	11.3

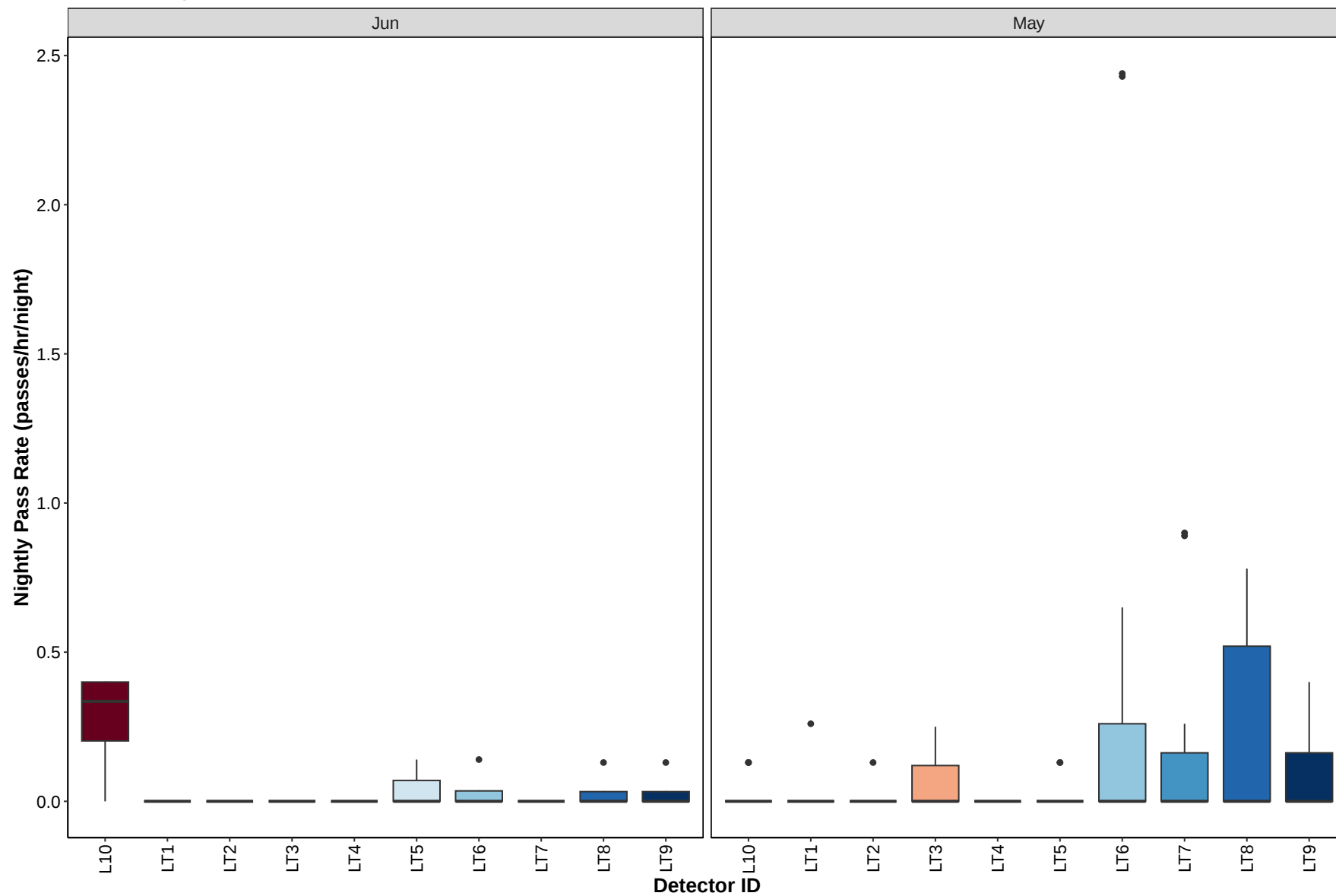
Species	Detector ID	Jun	May
Leisler's	LT6	0.3	1.1
Leisler's	LT7	0.1	1.9
Leisler's	LT8	0.1	1.7
Leisler's	LT9	0.2	0.6
Nathusius'	L10	0.0	0.0
Nathusius'	LT1	0.0	0.5
Nathusius'	LT2	0.0	0.1
Nathusius'	LT3	0.0	0.1
Nathusius'	LT4	0.0	0.1
Nathusius'	LT5	0.0	0.1
Nathusius'	LT6	0.0	0.6
Nathusius'	LT7	0.0	0.2
Nathusius'	LT8	0.0	0.9
Nathusius'	LT9	0.0	0.0
Natterer's	L10	0.0	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT2	0.0	0.0
Natterer's	LT3	0.0	0.0
Natterer's	LT4	0.0	0.0
Natterer's	LT5	0.0	0.0
Natterer's	LT6	0.0	0.0
Natterer's	LT7	0.0	0.0
Natterer's	LT8	0.0	0.0
Natterer's	LT9	0.4	0.5
Soprano pipistrelle	L10	2.3	4.4
Soprano pipistrelle	LT1	0.9	1.4
Soprano pipistrelle	LT2	0.4	1.4
Soprano pipistrelle	LT3	0.8	2.8
Soprano pipistrelle	LT4	0.1	0.4
Soprano pipistrelle	LT5	0.0	0.6
Soprano pipistrelle	LT6	0.1	5.7
Soprano pipistrelle	LT7	0.1	1.1
Soprano pipistrelle	LT8	0.4	5.3
Soprano pipistrelle	LT9	0.4	3.7
Whiskered	L10	0.1	0.0
Whiskered	LT1	0.0	0.0

Species	Detector ID	Jun	May
Whiskered	LT2	0.0	0.0
Whiskered	LT3	0.0	0.0
Whiskered	LT4	0.0	0.0
Whiskered	LT5	0.1	0.0
Whiskered	LT6	0.0	0.0
Whiskered	LT7	0.0	0.0
Whiskered	LT8	0.0	0.0
Whiskered	LT9	0.0	0.0

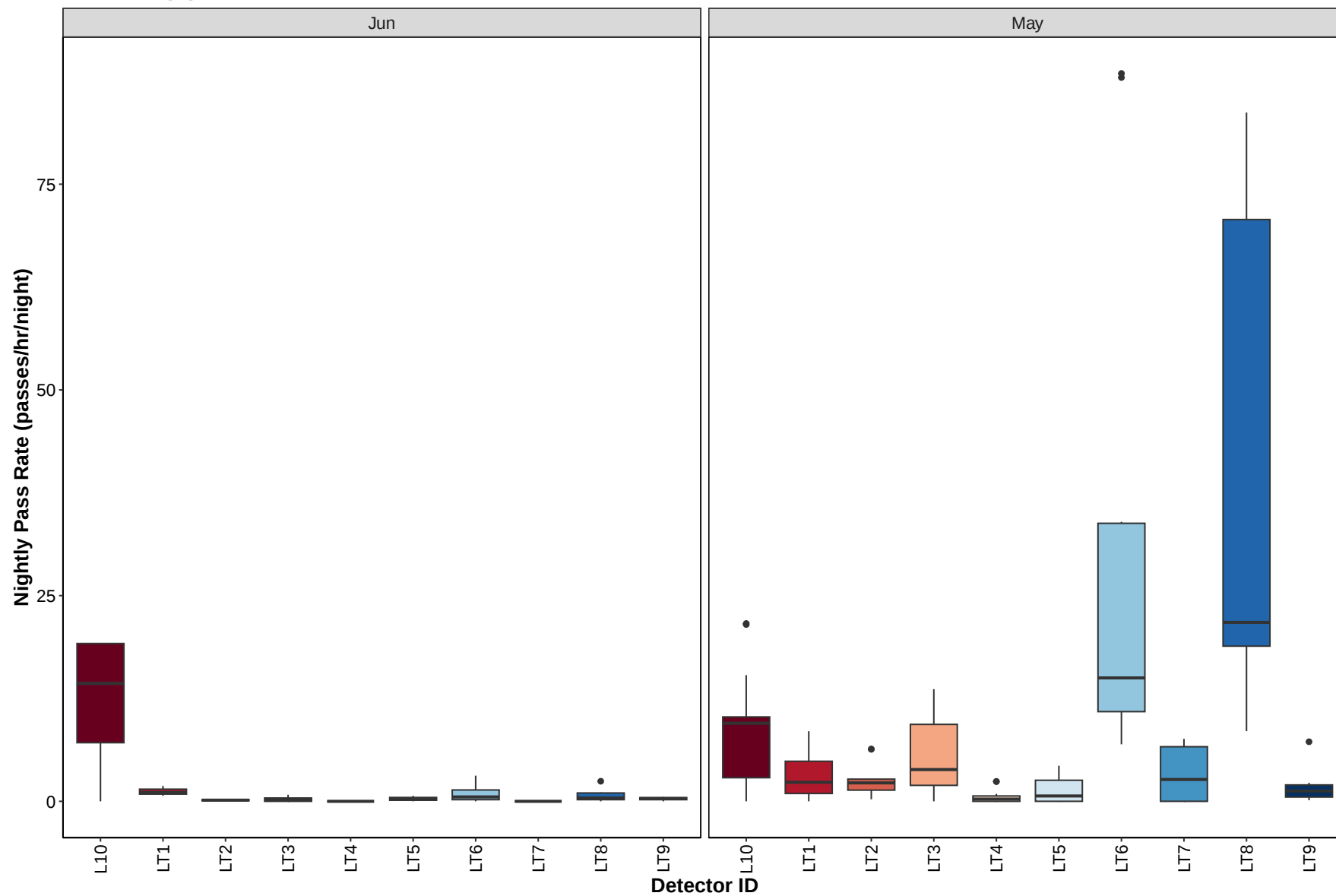
Per Detector

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.

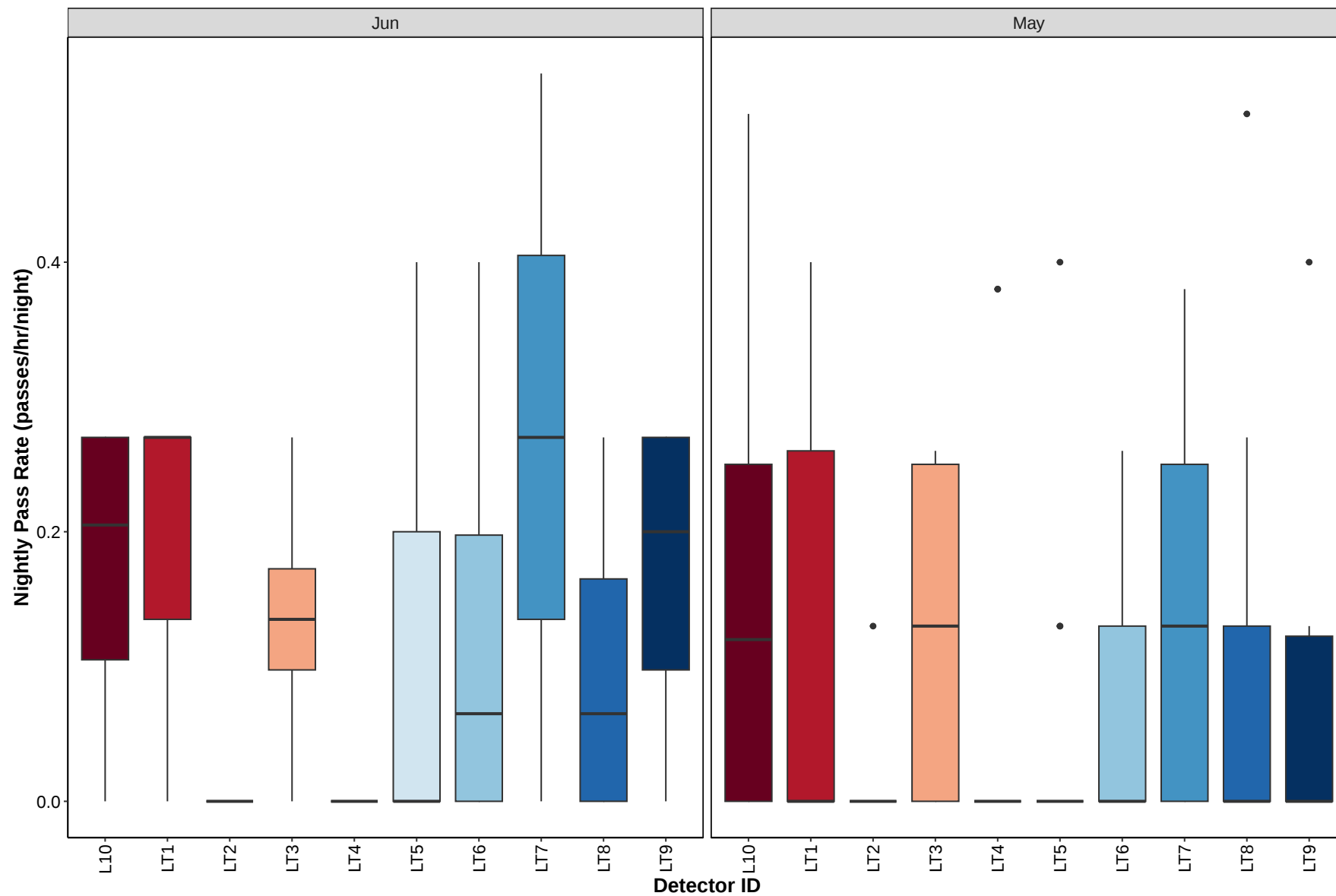
Brown long-eared



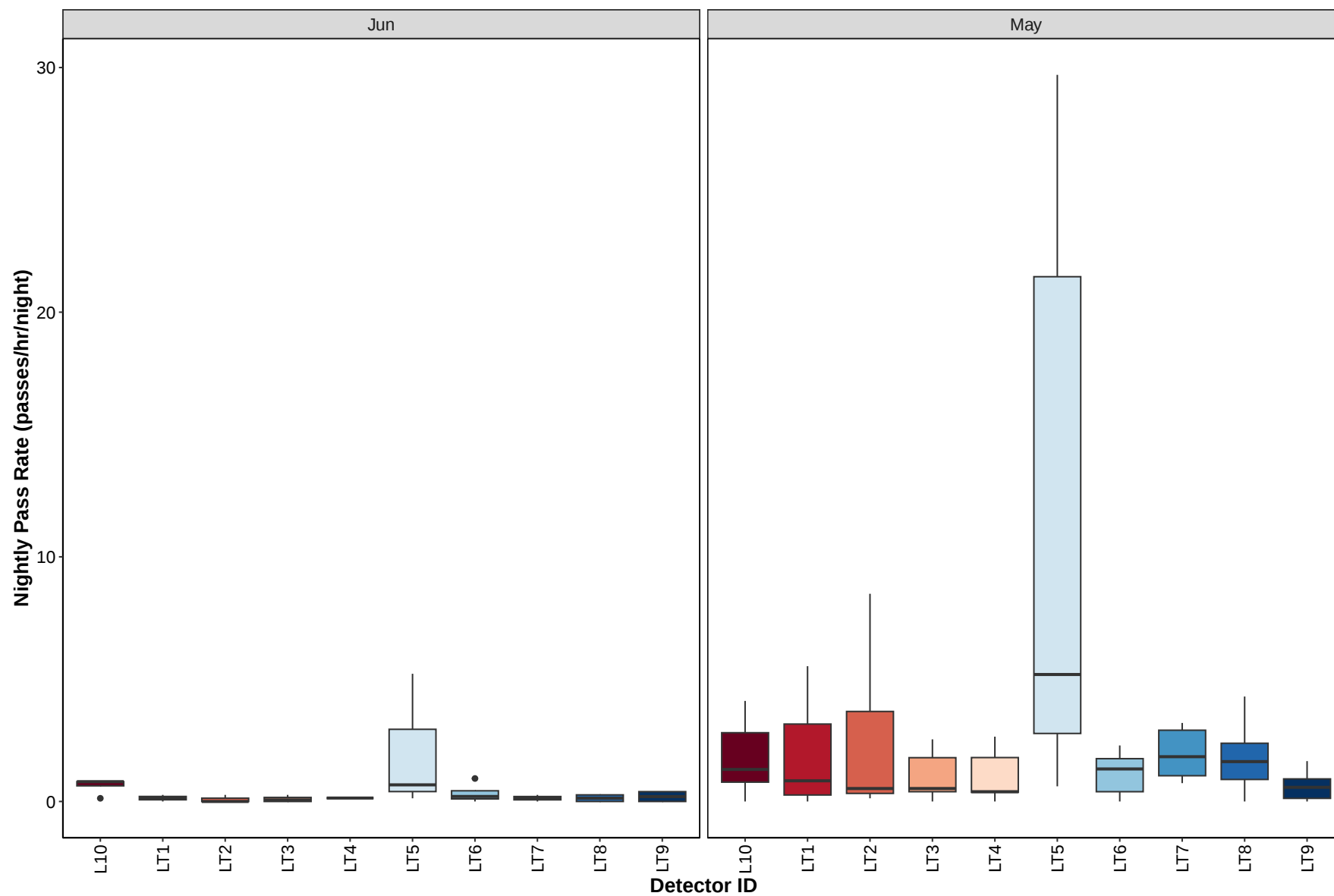
Common pipistrelle



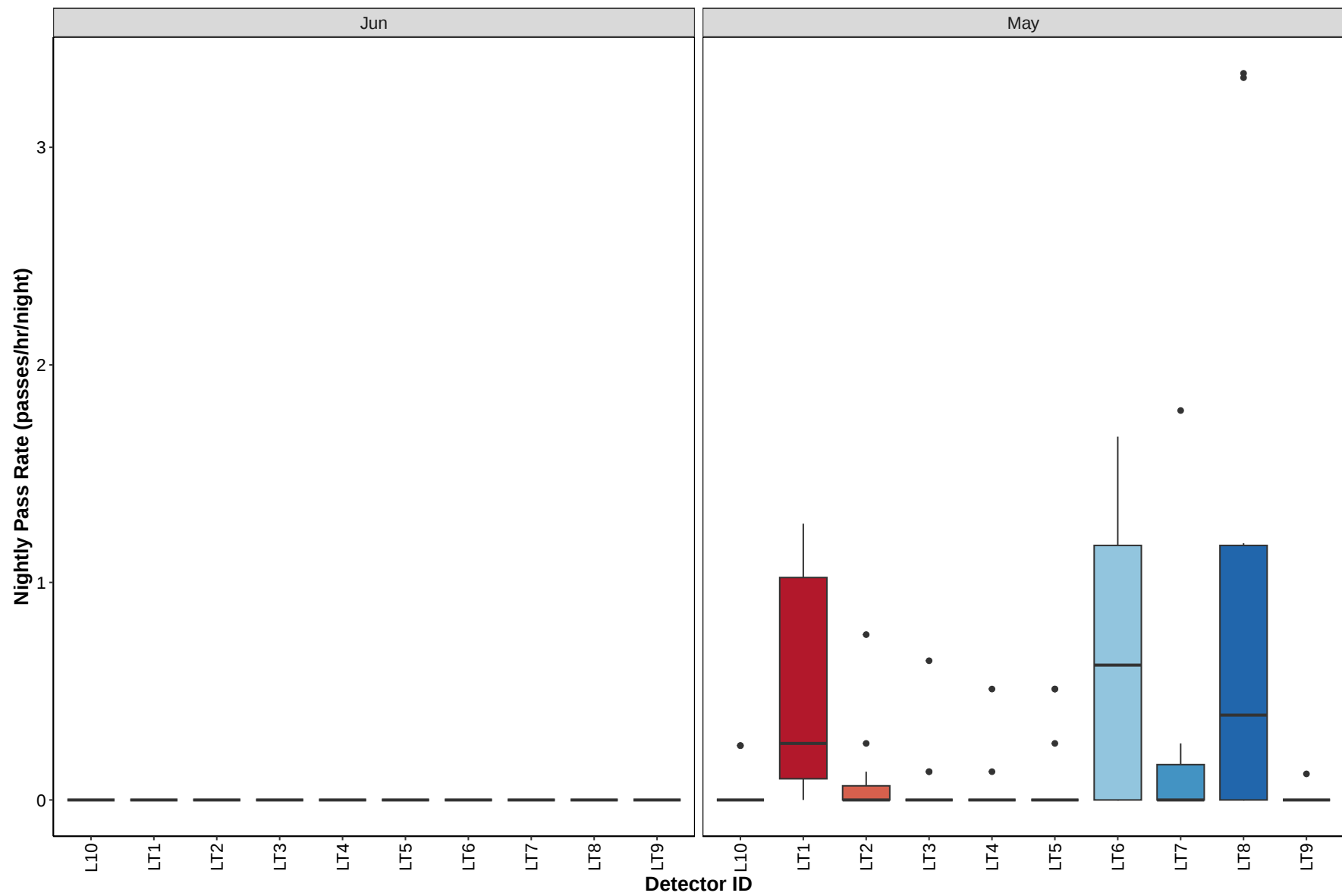
Daubenton's



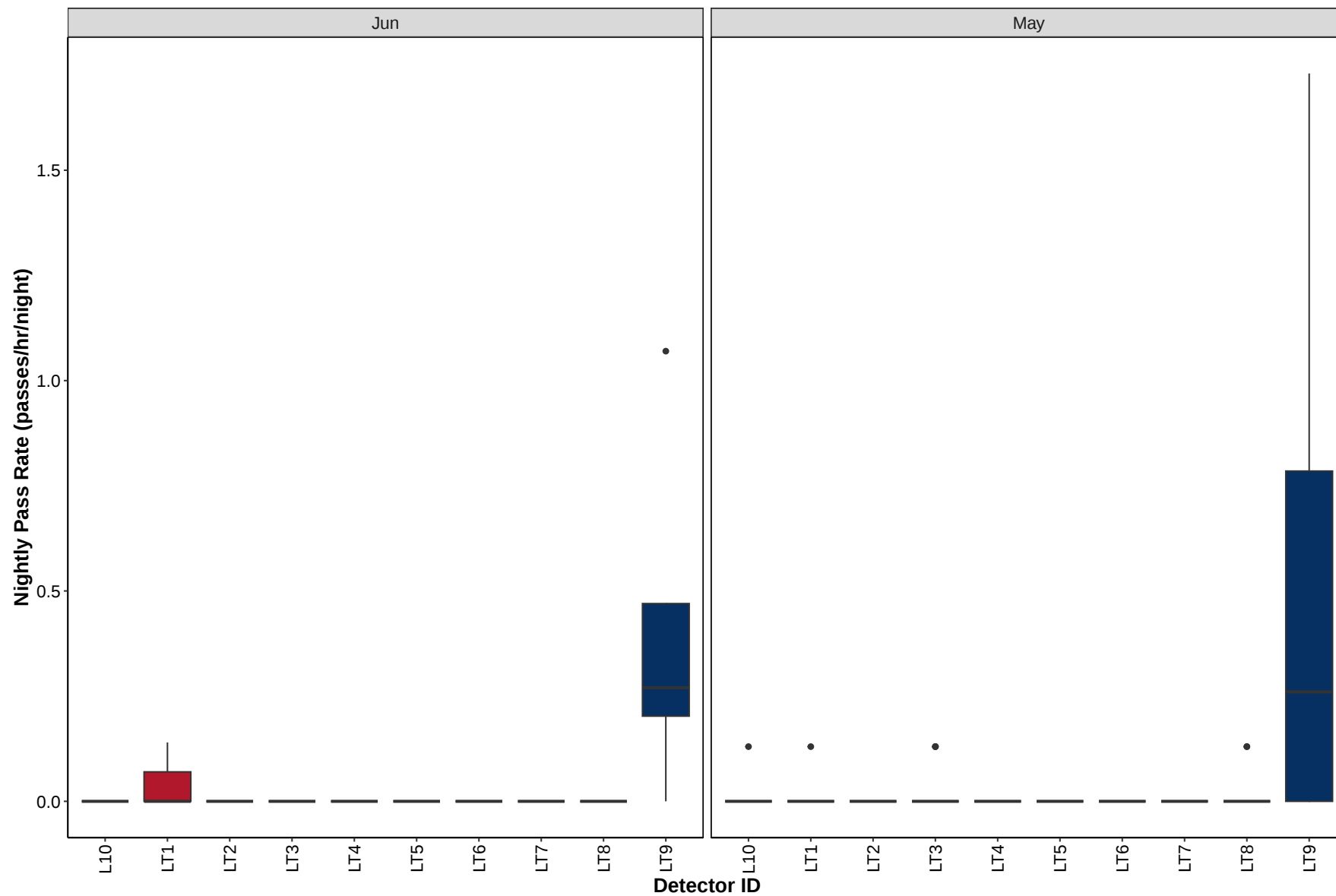
Leisler's



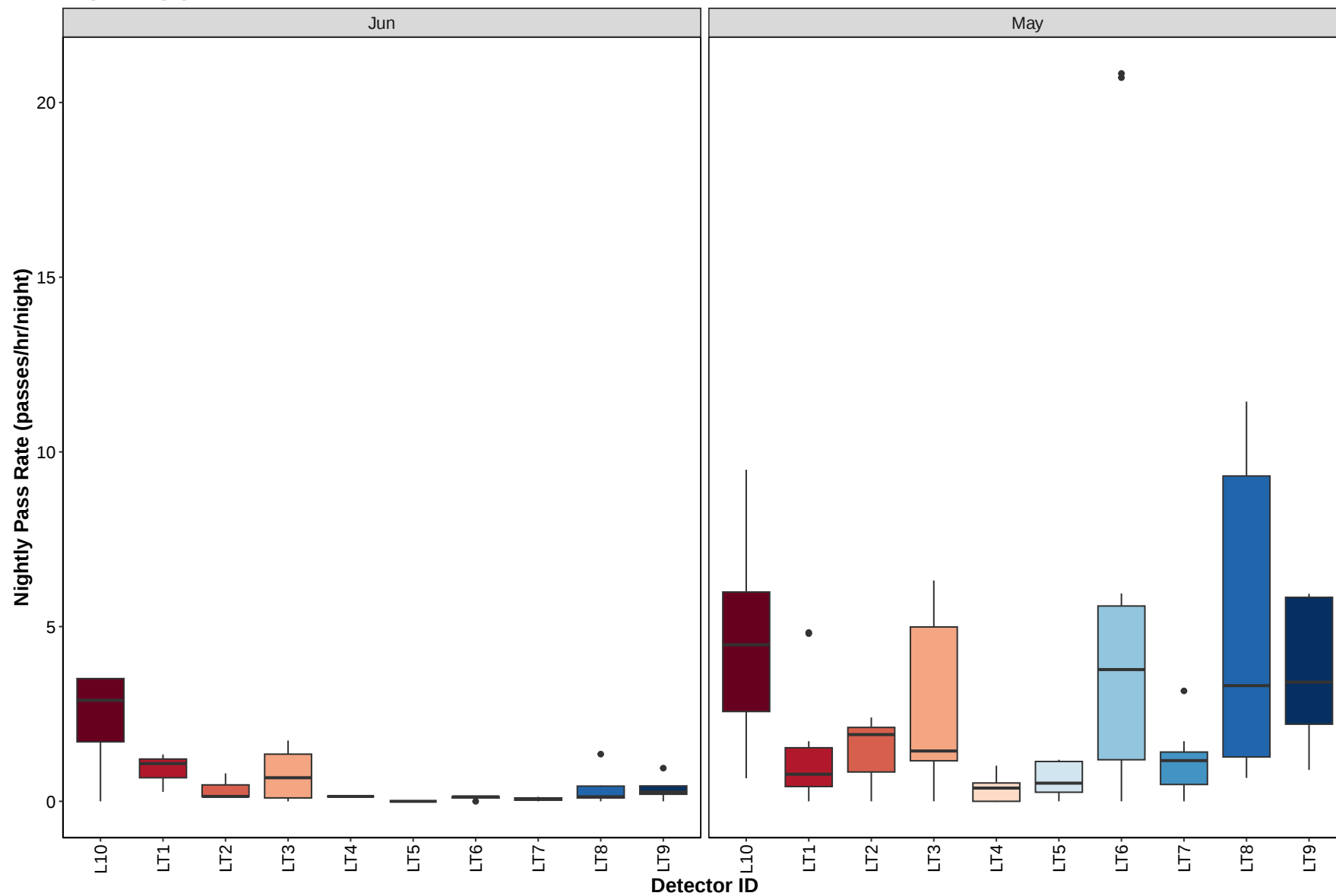
Nathusius'

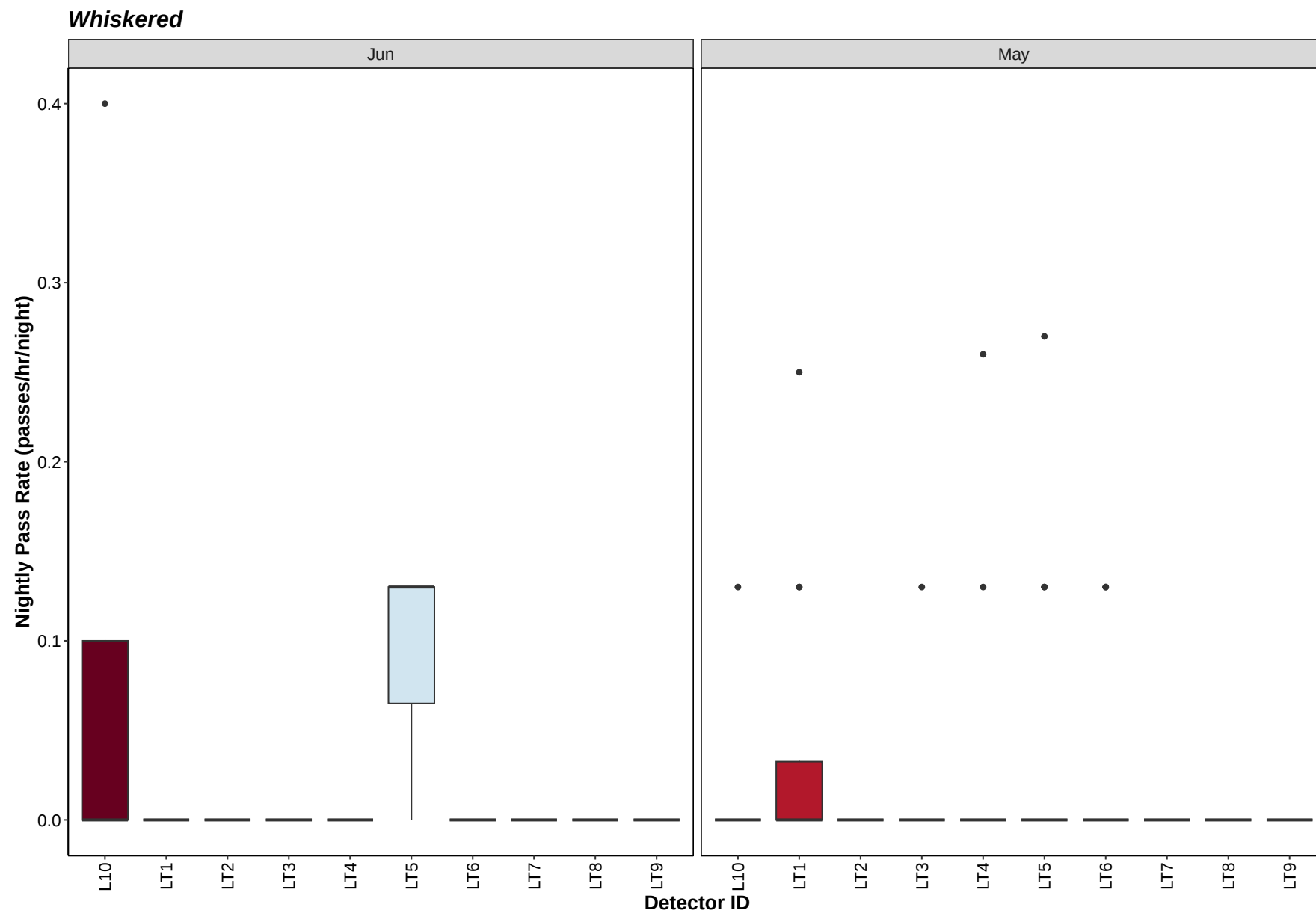


Natterer's



Soprano pipistrelle





Bat Activity per Detector Location

Figure 18. Detector ID reference:

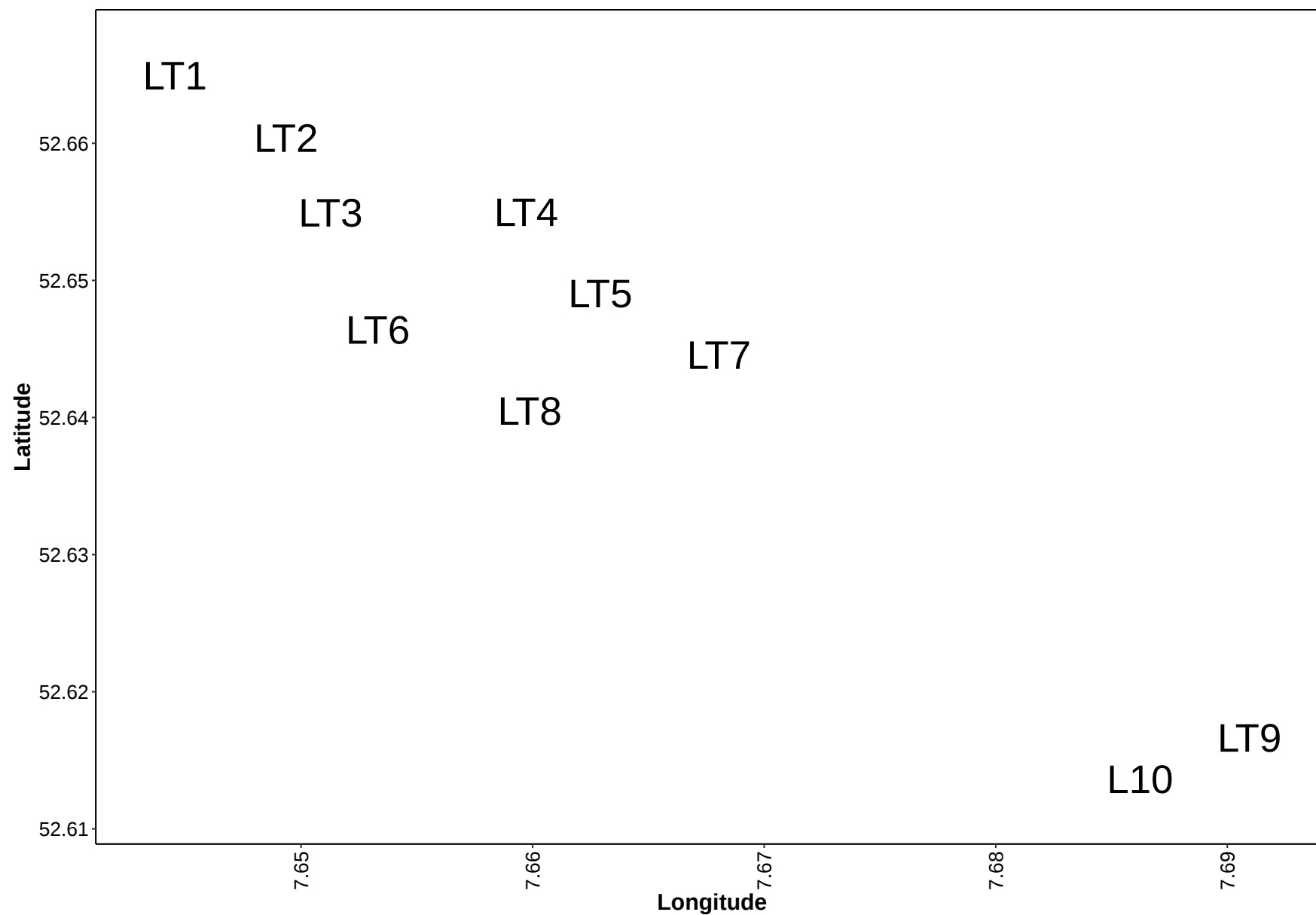
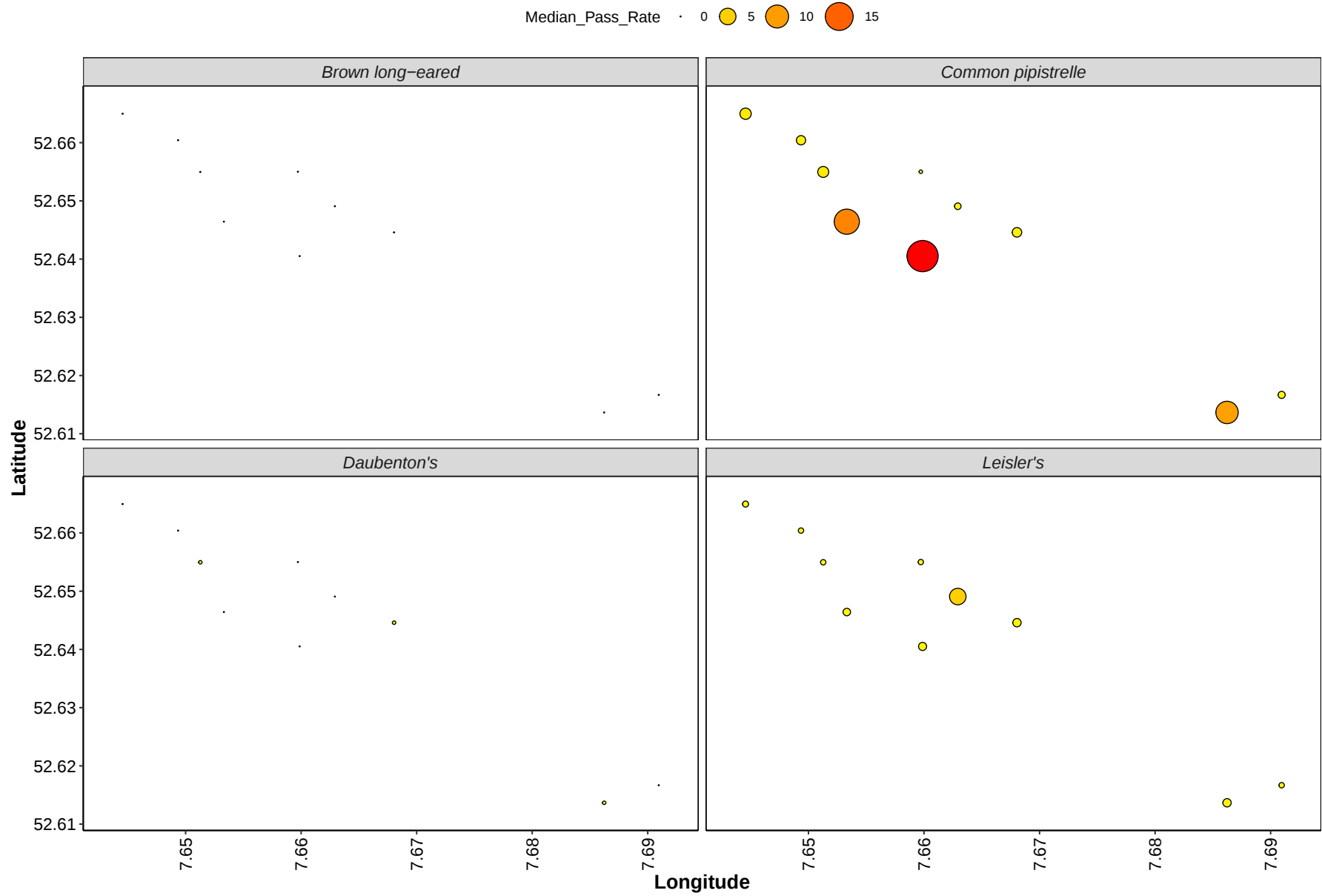


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



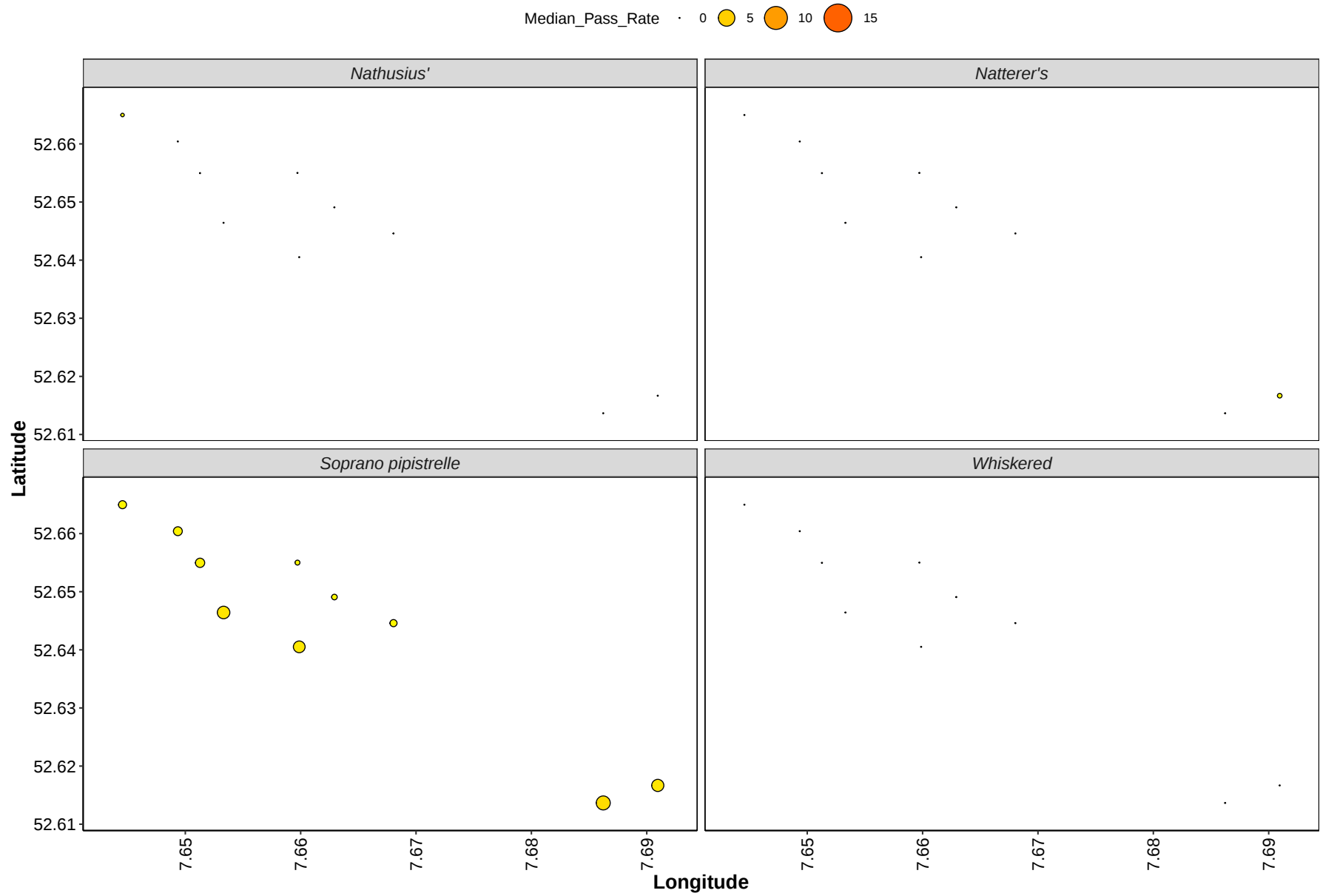
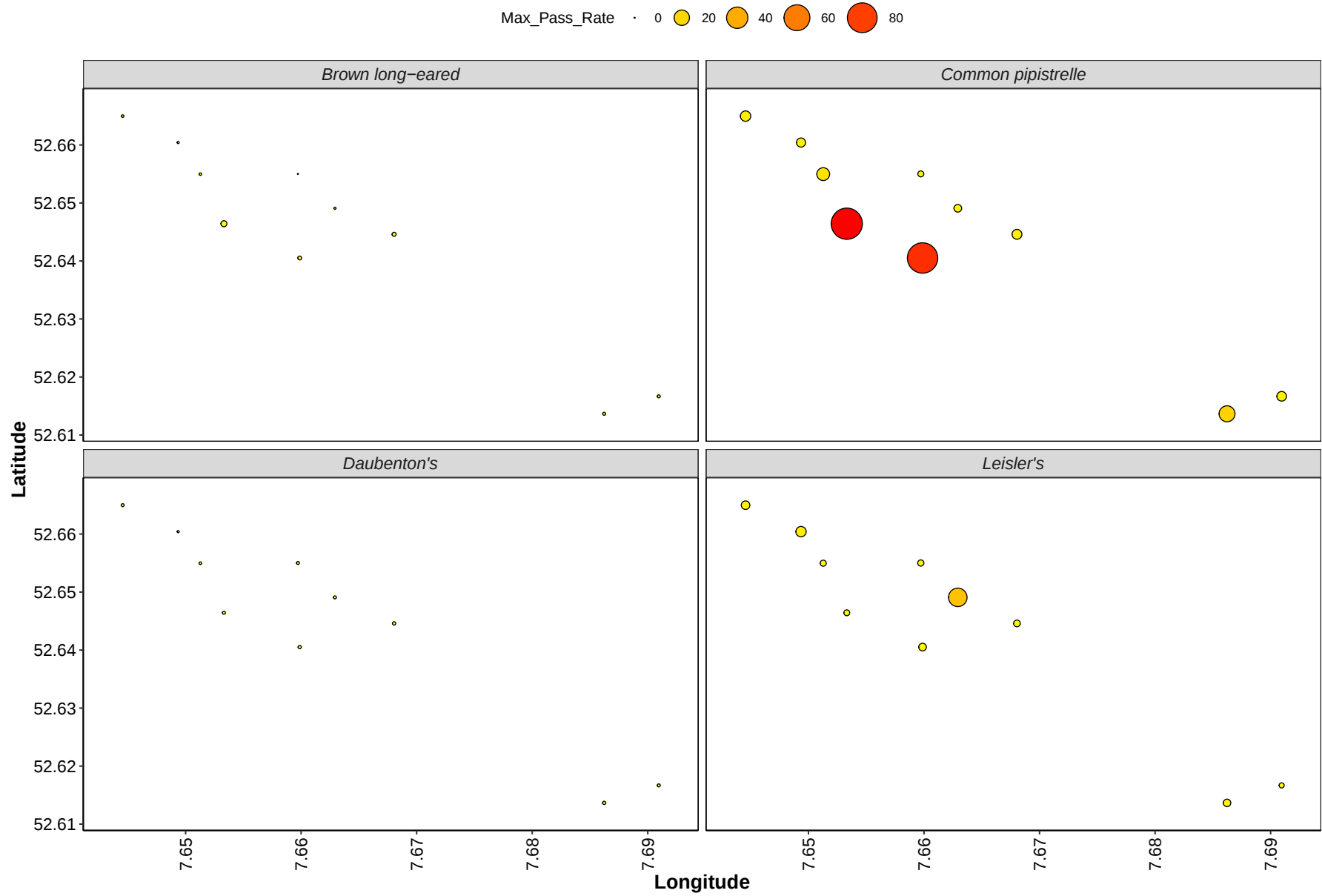
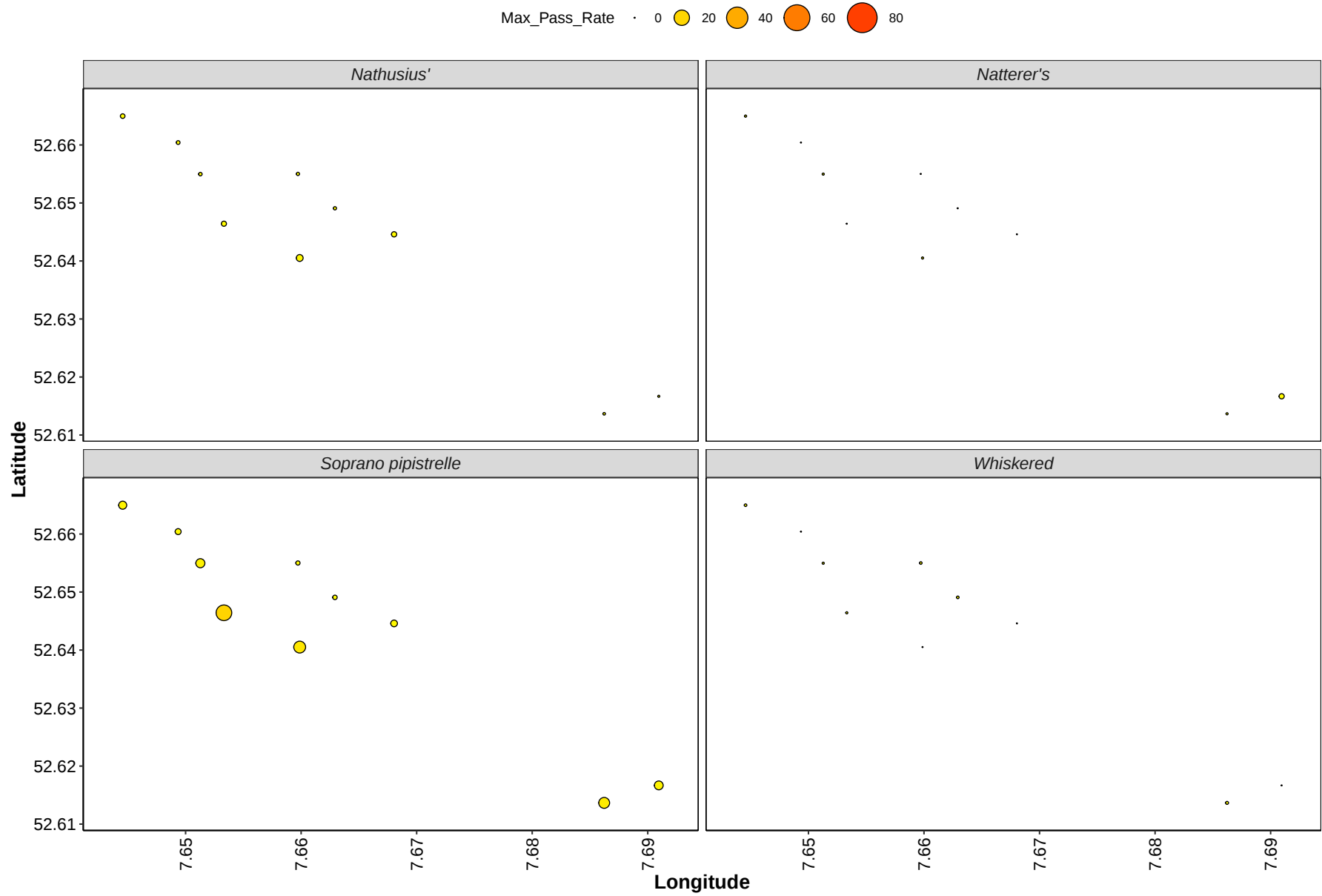


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





Thank you for using Ecobat!



Ecobat Report

2026-01-19

Geo filter: all, Time filter: all

Summary

Bats were detected on **58** nights between **24/07/2025** and **24/08/2026**, using **11** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

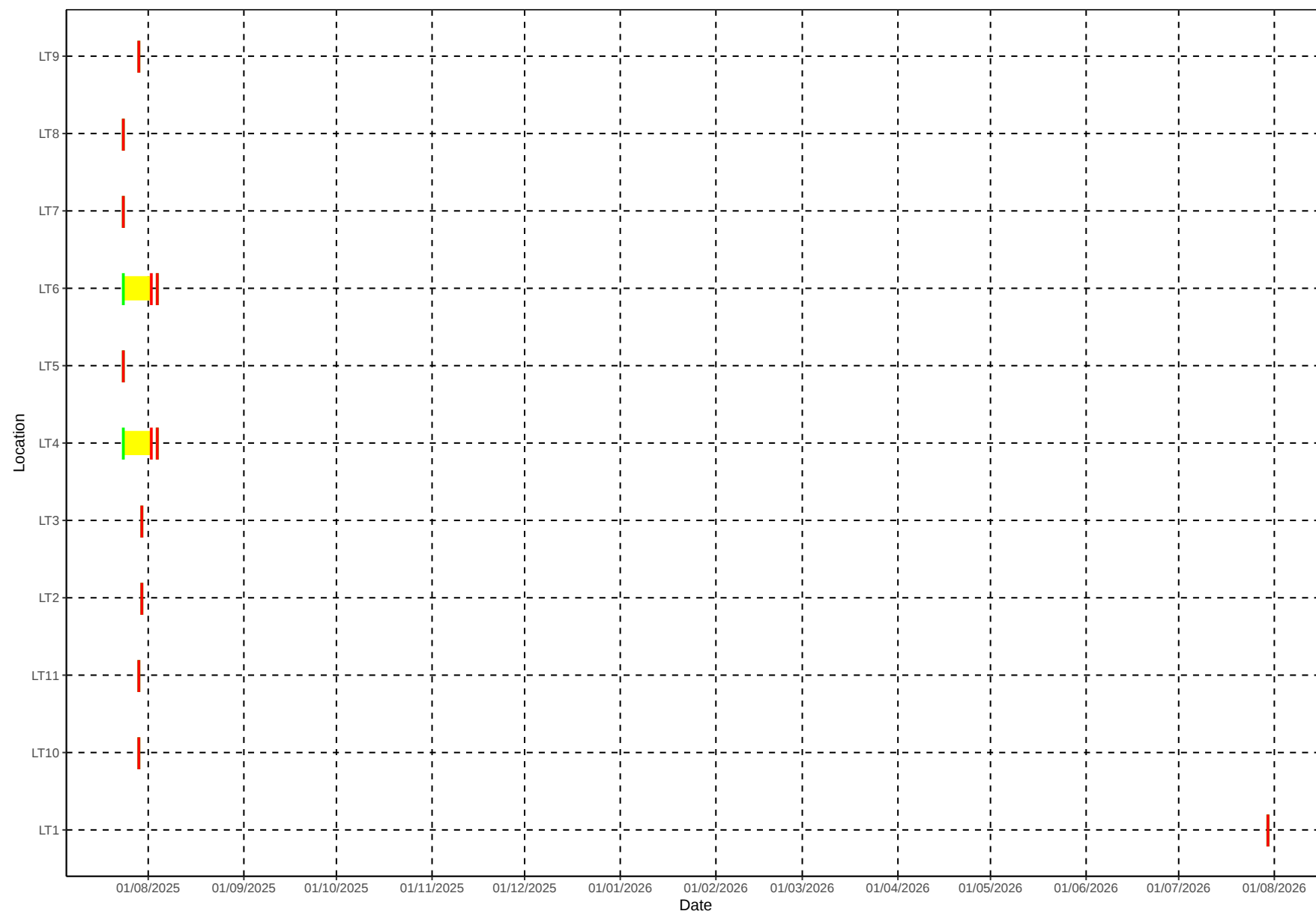
Detector ID	Latitude	Longitude
LT1	52.66497	7.644556
LT2	52.66041	7.649355
LT3	52.65497	7.651278
LT4	52.65501	7.659723
LT5	52.64908	7.662925
LT6	52.64642	7.653317
LT7	52.64459	7.668046
LT8	52.64051	7.659876
LT9	52.61667	7.690955
LT10	52.61366	7.686230
LT11	52.60997	7.683222

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
LT1	26
LT10	27
LT11	27
LT2	26
LT3	26
LT4	27
LT5	28
LT6	21
LT7	28
LT8	28
LT9	27

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



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
LT1	Myotis daubentonii	0	0	0	0	0	21
LT1	Myotis mystacinus	0	0	0	0	0	15
LT1	Myotis nattereri	0	0	0	0	0	3
LT1	Nyctalus leisleri	0	0	0	0	0	26
LT1	Pipistrellus nathusii	0	0	0	0	0	1
LT1	Pipistrellus pipistrellus	0	0	0	0	0	26
LT1	Pipistrellus pygmaeus	0	0	0	0	0	26
LT1	Plecotus auritus	0	0	0	0	0	12
LT10	Myotis daubentonii	0	0	0	0	0	21
LT10	Myotis mystacinus	0	0	0	0	0	13
LT10	Myotis nattereri	0	0	0	0	2	14
LT10	Nyctalus leisleri	0	0	0	0	0	25
LT10	Pipistrellus pipistrellus	0	0	0	0	0	24
LT10	Pipistrellus pygmaeus	0	0	0	0	10	17
LT10	Plecotus auritus	0	0	0	0	0	12
LT11	Myotis daubentonii	0	0	0	0	2	23
LT11	Myotis mystacinus	0	0	0	0	0	6
LT11	Myotis nattereri	0	0	0	0	10	12
LT11	Nyctalus leisleri	0	0	0	0	0	27

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
LT11	Pipistrellus nathusii	0	0	0	0	0	4
LT11	Pipistrellus pipistrellus	0	0	0	0	0	26
LT11	Pipistrellus pygmaeus	0	0	0	0	9	18
LT11	Plecotus auritus	0	0	0	0	1	23
LT2	Myotis daubentonii	0	0	0	0	0	15
LT2	Myotis mystacinus	0	0	0	0	0	14
LT2	Myotis nattereri	0	0	0	0	3	7
LT2	Nyctalus leisleri	0	0	0	0	2	24
LT2	Pipistrellus nathusii	0	0	0	0	0	2
LT2	Pipistrellus pipistrellus	0	0	0	0	0	25
LT2	Pipistrellus pygmaeus	0	0	0	0	0	26
LT2	Plecotus auritus	0	0	0	0	0	17
LT3	Myotis daubentonii	0	0	0	0	0	24
LT3	Myotis mystacinus	0	0	0	0	0	5
LT3	Myotis nattereri	0	0	0	0	0	9
LT3	Nyctalus leisleri	0	0	0	0	0	26
LT3	Pipistrellus pipistrellus	0	0	0	0	0	26
LT3	Pipistrellus pygmaeus	0	0	0	0	0	26
LT3	Plecotus auritus	0	0	0	0	0	13
LT4	Myotis daubentonii	0	0	0	0	0	15

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
LT4	Myotis mystacinus	0	0	0	0	0	12
LT4	Myotis nattereri	0	0	0	0	0	7
LT4	Nyctalus leisleri	0	0	0	0	2	25
LT4	Pipistrellus pipistrellus	0	0	0	0	0	25
LT4	Pipistrellus pygmaeus	0	0	0	0	0	27
LT4	Plecotus auritus	0	0	0	0	0	9
LT5	Myotis daubentonii	0	0	0	0	0	18
LT5	Myotis mystacinus	0	0	0	0	0	10
LT5	Myotis nattereri	0	0	0	0	0	14
LT5	Nyctalus leisleri	0	0	0	0	0	28
LT5	Pipistrellus nathusii	0	0	0	0	0	6
LT5	Pipistrellus pipistrellus	0	0	0	0	0	27
LT5	Pipistrellus pygmaeus	0	0	0	0	0	27
LT5	Plecotus auritus	0	0	0	0	0	18
LT6	Myotis daubentonii	0	0	0	0	0	13
LT6	Myotis mystacinus	0	0	0	0	0	8
LT6	Myotis nattereri	0	0	0	0	0	9
LT6	Nyctalus leisleri	0	0	0	0	0	19
LT6	Pipistrellus pipistrellus	0	0	0	0	0	18
LT6	Pipistrellus pygmaeus	0	0	0	0	0	20
LT6	Plecotus auritus	0	0	0	0	0	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
LT7	Myotis daubentonii	0	0	0	0	0	17
LT7	Myotis mystacinus	0	0	0	0	0	10
LT7	Myotis nattereri	0	0	0	0	0	13
LT7	Nyctalus leisleri	0	0	0	0	2	26
LT7	Pipistrellus nathusii	0	0	0	0	0	4
LT7	Pipistrellus pipistrellus	0	0	0	0	0	28
LT7	Pipistrellus pygmaeus	0	0	0	0	2	26
LT7	Plecotus auritus	0	0	0	0	0	24
LT8	Myotis daubentonii	0	0	0	0	0	25
LT8	Myotis mystacinus	0	0	0	0	0	8
LT8	Myotis nattereri	0	0	0	0	4	10
LT8	Nyctalus leisleri	0	0	0	0	2	26
LT8	Pipistrellus pipistrellus	0	0	0	0	0	26
LT8	Pipistrellus pygmaeus	0	0	0	0	0	28
LT8	Plecotus auritus	0	0	0	0	0	19
LT9	Myotis daubentonii	0	0	0	0	2	18
LT9	Myotis mystacinus	0	0	0	0	0	3
LT9	Myotis nattereri	0	0	2	2	19	1
LT9	Nyctalus leisleri	0	0	0	0	0	26
LT9	Pipistrellus nathusii	0	0	0	0	0	4
LT9	Pipistrellus pipistrellus	0	0	0	0	0	27

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
LT9	Pipistrellus pygmaeus	0	0	0	0	2	25
LT9	Plecotus auritus	0	0	0	0	2	16

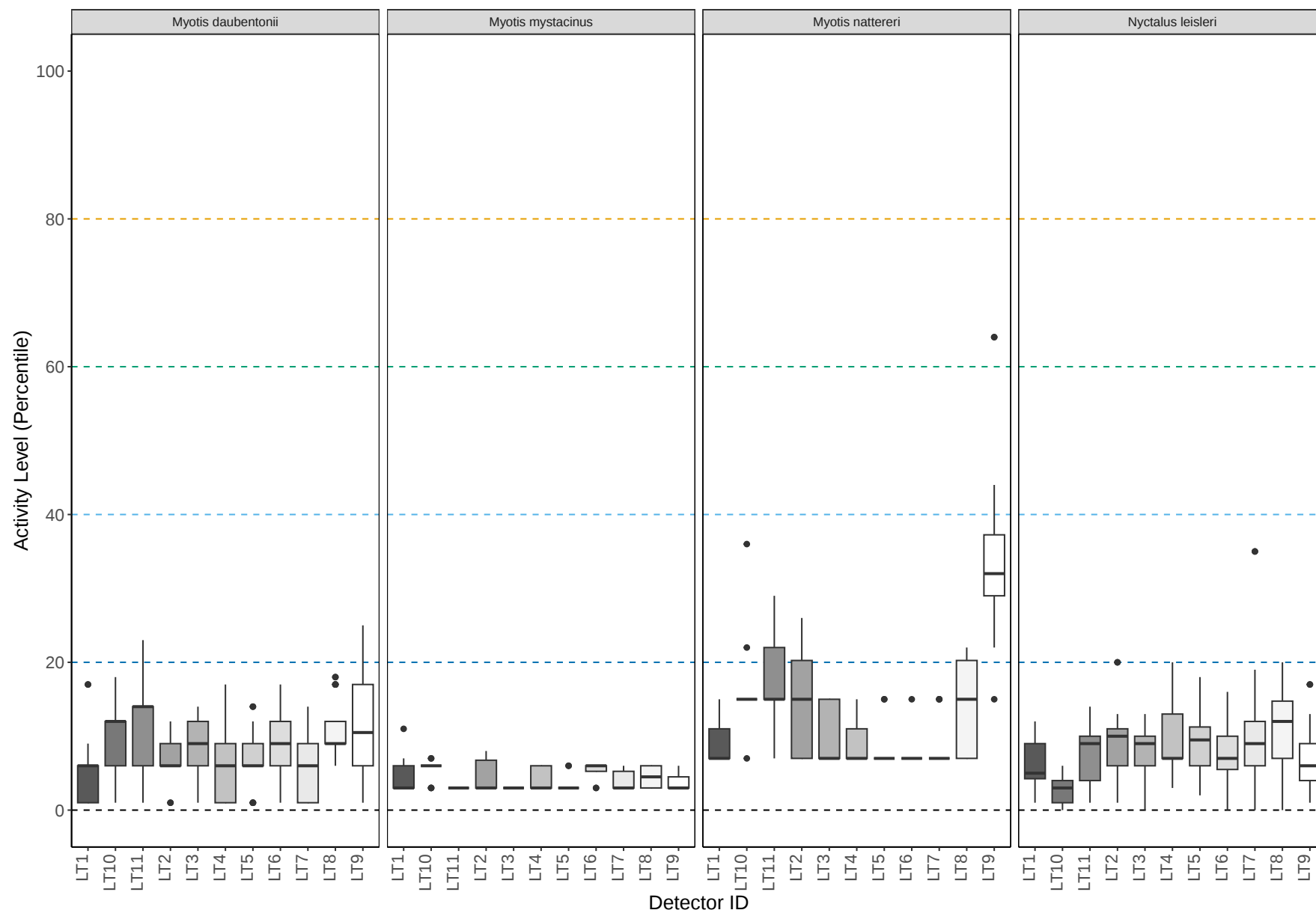
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT1	Myotis daubentonii	6	3.5 - 7.5	17	21	6886
LT1	Myotis mystacinus	3	3 - 6	11	15	2818
LT1	Myotis nattereri	7	7 - 7	15	3	2036
LT1	Nyctalus leisleri	5	5 - 7.5	12	26	62907
LT1	Pipistrellus nathusii	9	0	9	1	3167
LT1	Pipistrellus pipistrellus	0	1 - 1	2	26	1538084
LT1	Pipistrellus pygmaeus	13	11.5 - 13.5	19	26	416126
LT1	Plecotus auritus	7	2.5 - 9	13	12	23469
LT10	Myotis daubentonii	12	6.5 - 12	18	21	6886
LT10	Myotis mystacinus	6	4.5 - 6.5	7	13	2818
LT10	Myotis nattereri	15	15 - 15	36	16	2036
LT10	Nyctalus leisleri	3	2 - 3.5	6	25	62907
LT10	Pipistrellus pipistrellus	0	0 - 0	1	24	1538084
LT10	Pipistrellus pygmaeus	16	15 - 19	26	27	416126
LT10	Plecotus auritus	4	1 - 4	17	12	23469
LT11	Myotis daubentonii	14	10 - 14	23	25	6886
LT11	Myotis mystacinus	3	3 - 3	3	6	2818
LT11	Myotis nattereri	15	14.5 - 22	29	22	2036
LT11	Nyctalus leisleri	9	5.5 - 9	14	27	62907
LT11	Pipistrellus nathusii	9	9 - 9	9	4	3167
LT11	Pipistrellus pipistrellus	0	0 - 0	1	26	1538084
LT11	Pipistrellus pygmaeus	14	12.5 - 18.5	32	27	416126
LT11	Plecotus auritus	9	8 - 12	23	24	23469
LT2	Myotis daubentonii	6	6 - 9	12	15	6886
LT2	Myotis mystacinus	3	3 - 5.5	8	14	2818
LT2	Myotis nattereri	15	7 - 20.5	26	10	2036
LT2	Nyctalus leisleri	10	7.5 - 11	20	26	62907
LT2	Pipistrellus nathusii	9	9 - 9	9	2	3167
LT2	Pipistrellus pipistrellus	0	1 - 1.5	2	25	1538084
LT2	Pipistrellus pygmaeus	9	7.5 - 10	12	26	416126
LT2	Plecotus auritus	4	2.5 - 6.5	9	17	23469
LT3	Myotis daubentonii	9	7.5 - 10.5	14	24	6886
LT3	Myotis mystacinus	3	3 - 3	3	5	2818

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT3	Myotis nattereri	7	7 - 11	15	9	2036
LT3	Nyctalus leisleri	9	7.5 - 10	13	26	62907
LT3	Pipistrellus pipistrellus	0	0 - 0	1	26	1538084
LT3	Pipistrellus pygmaeus	8	6.5 - 8.5	16	26	416126
LT3	Plecotus auritus	4	2.5 - 6.5	9	13	23469
LT4	Myotis daubentonii	6	1 - 9	17	15	6886
LT4	Myotis mystacinus	3	3 - 4.5	6	12	2818
LT4	Myotis nattereri	7	7 - 11	15	7	2036
LT4	Nyctalus leisleri	7	7 - 11.5	20	27	62907
LT4	Pipistrellus pipistrellus	0	0 - 0	1	25	1538084
LT4	Pipistrellus pygmaeus	6	5.5 - 7.5	11	27	416126
LT4	Plecotus auritus	1	1 - 7	13	9	23469
LT5	Myotis daubentonii	6	3.5 - 9	14	18	6886
LT5	Myotis mystacinus	3	3 - 3	6	10	2818
LT5	Myotis nattereri	7	7 - 7	15	14	2036
LT5	Nyctalus leisleri	10	7 - 11	18	28	62907
LT5	Pipistrellus nathusii	9	9 - 9	9	6	3167
LT5	Pipistrellus pipistrellus	0	0 - 0	1	27	1538084
LT5	Pipistrellus pygmaeus	4	3.5 - 7	17	27	416126
LT5	Plecotus auritus	7	2.5 - 11	18	18	23469
LT6	Myotis daubentonii	9	6 - 12	17	13	6886
LT6	Myotis mystacinus	6	4.5 - 6	6	8	2818
LT6	Myotis nattereri	7	7 - 7	15	9	2036
LT6	Nyctalus leisleri	7	5.5 - 9.5	16	19	62907
LT6	Pipistrellus pipistrellus	0	0 - 0	1	18	1538084
LT6	Pipistrellus pygmaeus	3	2 - 4	6	20	416126
LT6	Plecotus auritus	1	1 - 5	9	7	23469
LT7	Myotis daubentonii	6	3.5 - 9	14	17	6886
LT7	Myotis mystacinus	3	3 - 4.5	6	10	2818
LT7	Myotis nattereri	7	7 - 11	15	13	2036
LT7	Nyctalus leisleri	9	7.5 - 12.5	35	28	62907
LT7	Pipistrellus nathusii	9	9 - 9	9	4	3167
LT7	Pipistrellus pipistrellus	1	1 - 3	7	28	1538084
LT7	Pipistrellus pygmaeus	7	5 - 9	20	28	416126
LT7	Plecotus auritus	4	4 - 8.5	13	24	23469
LT8	Myotis daubentonii	9	9 - 13	18	25	6886

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT8	Myotis mystacinus	5	3 - 6	6	8	2818
LT8	Myotis nattereri	15	11 - 18.5	22	14	2036
LT8	Nyctalus leisleri	12	9.5 - 14	20	28	62907
LT8	Pipistrellus pipistrellus	0	1 - 1	2	26	1538084
LT8	Pipistrellus pygmaeus	9	6.5 - 9.5	13	28	416126
LT8	Plecotus auritus	4	2.5 - 8	15	19	23469
LT9	Myotis daubentonii	11	7.5 - 15.5	25	20	6886
LT9	Myotis mystacinus	3	3 - 3	6	3	2818
LT9	Myotis nattereri	32	30.5 - 37.5	64	24	2036
LT9	Nyctalus leisleri	6	4.5 - 8	17	26	62907
LT9	Pipistrellus nathusii	9	9 - 9	9	4	3167
LT9	Pipistrellus pipistrellus	0	1 - 2	2	27	1538084
LT9	Pipistrellus pygmaeus	9	7.5 - 11.5	27	27	416126
LT9	Plecotus auritus	7	4 - 12	28	18	23469

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



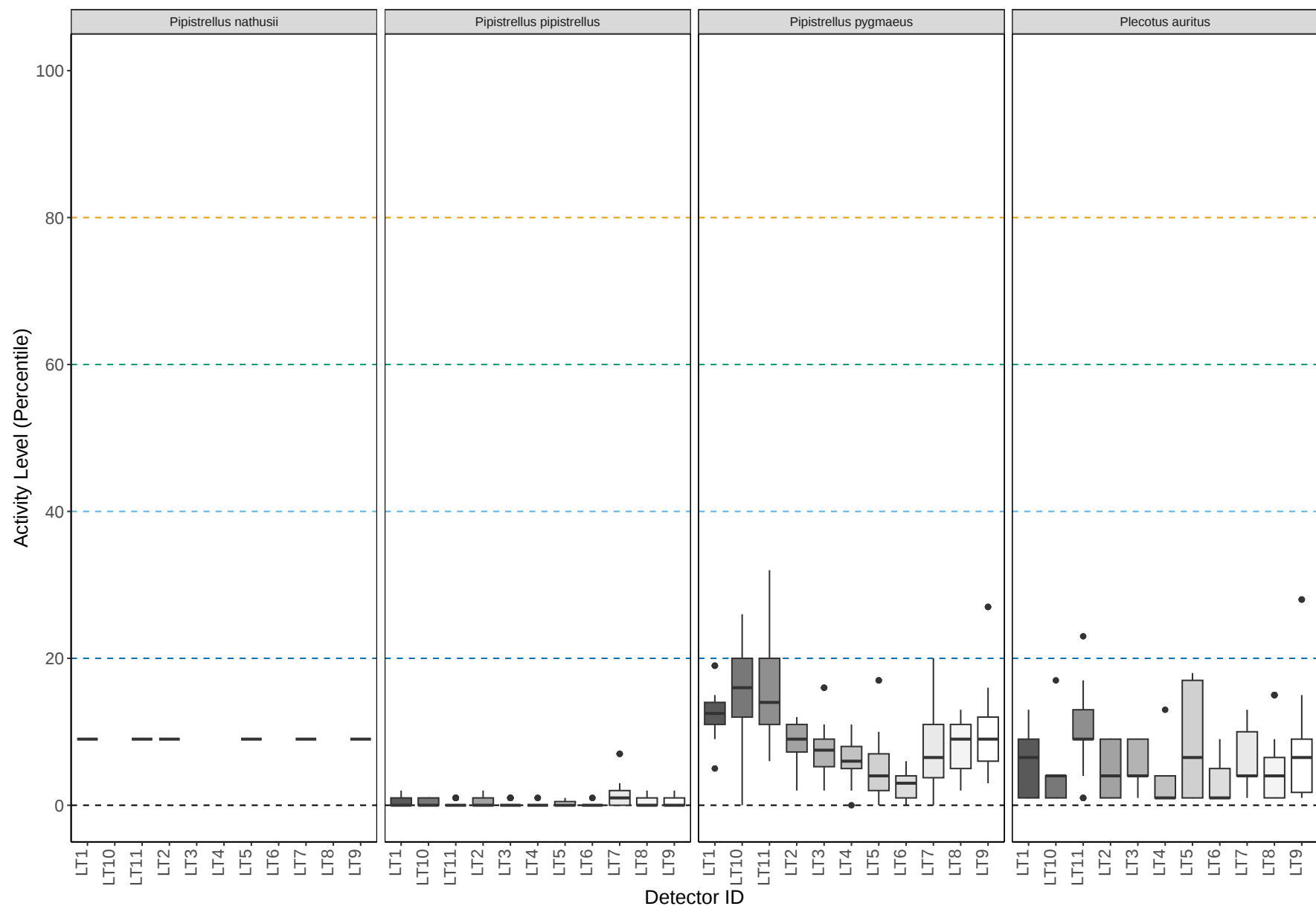
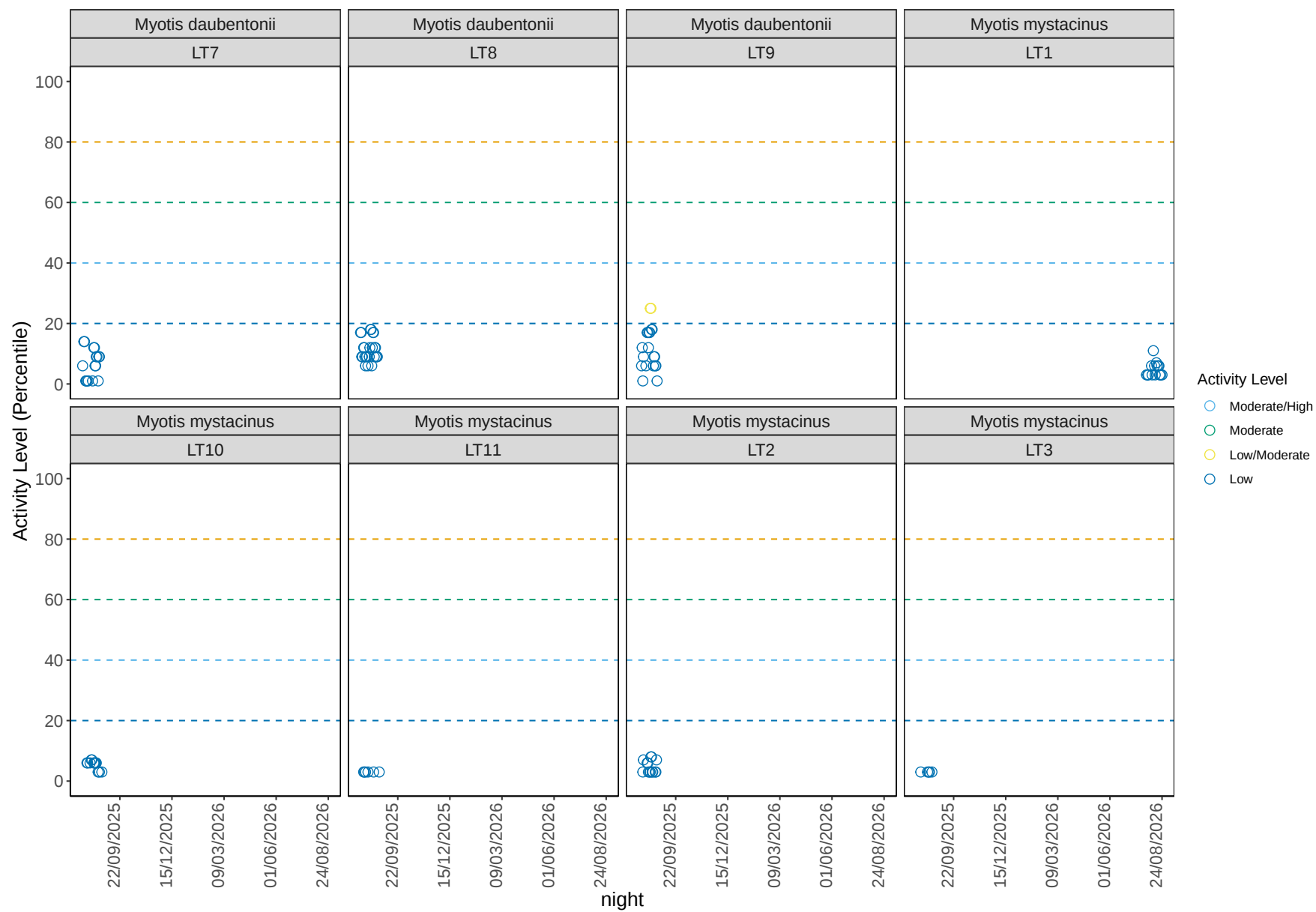
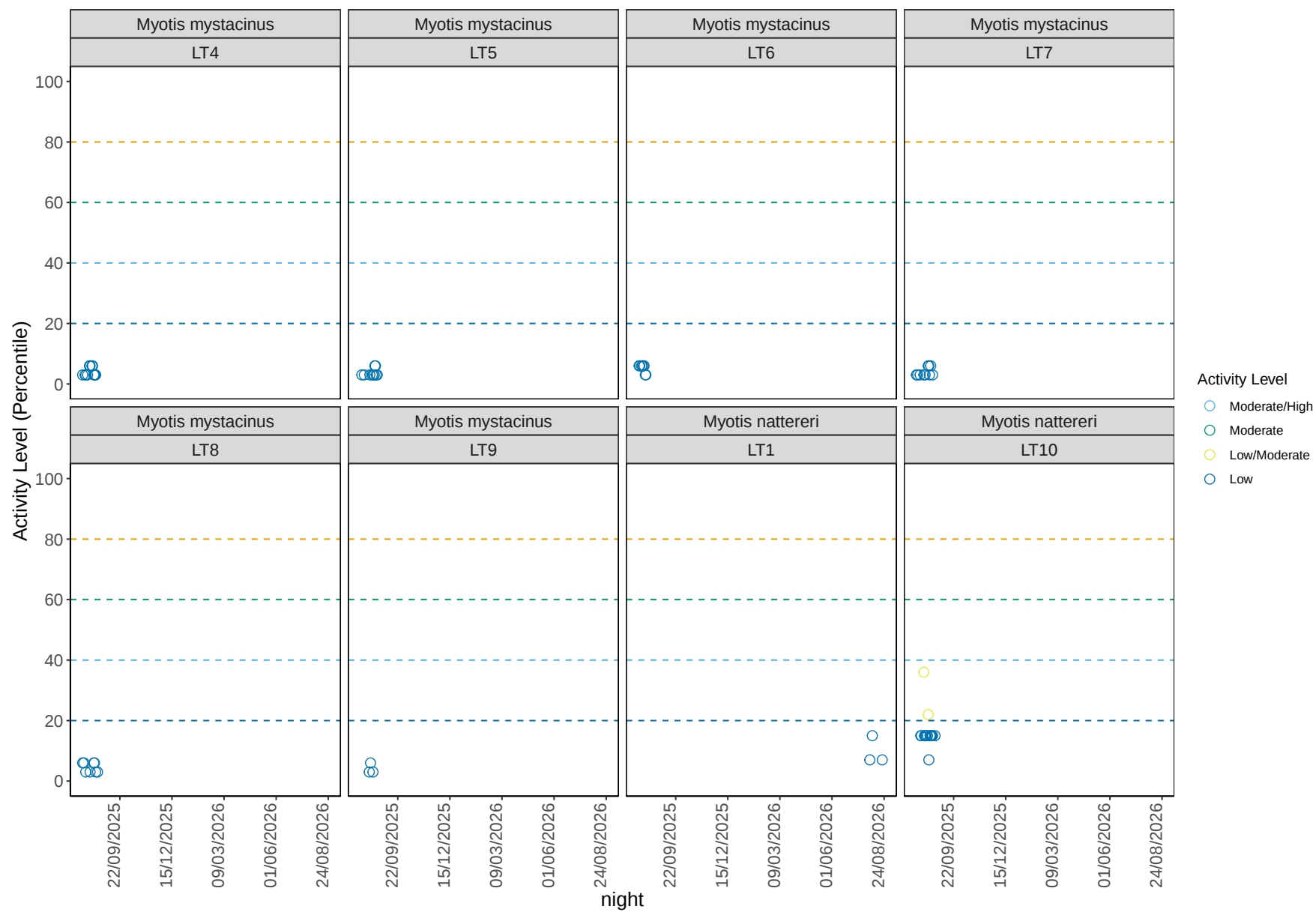
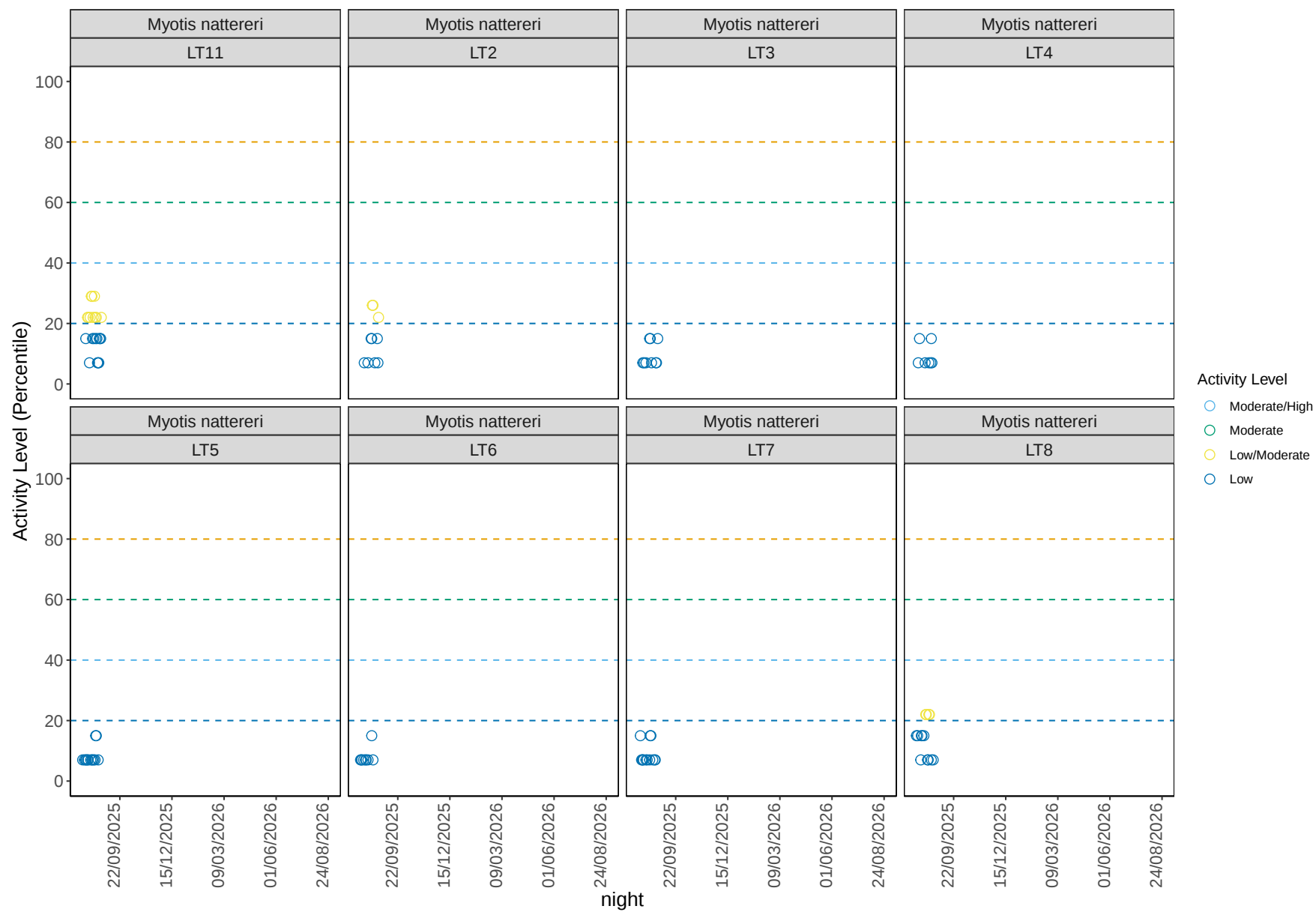
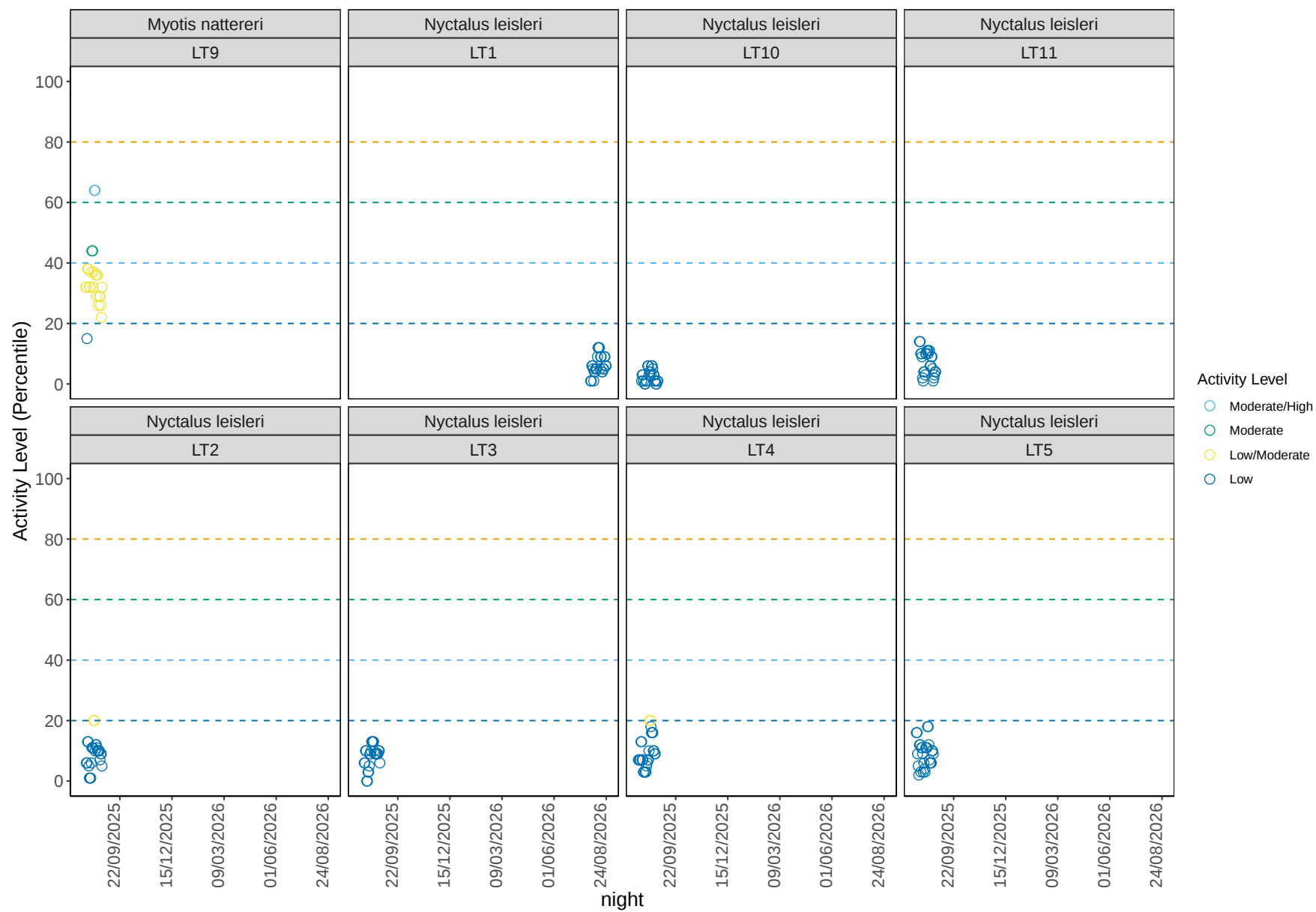


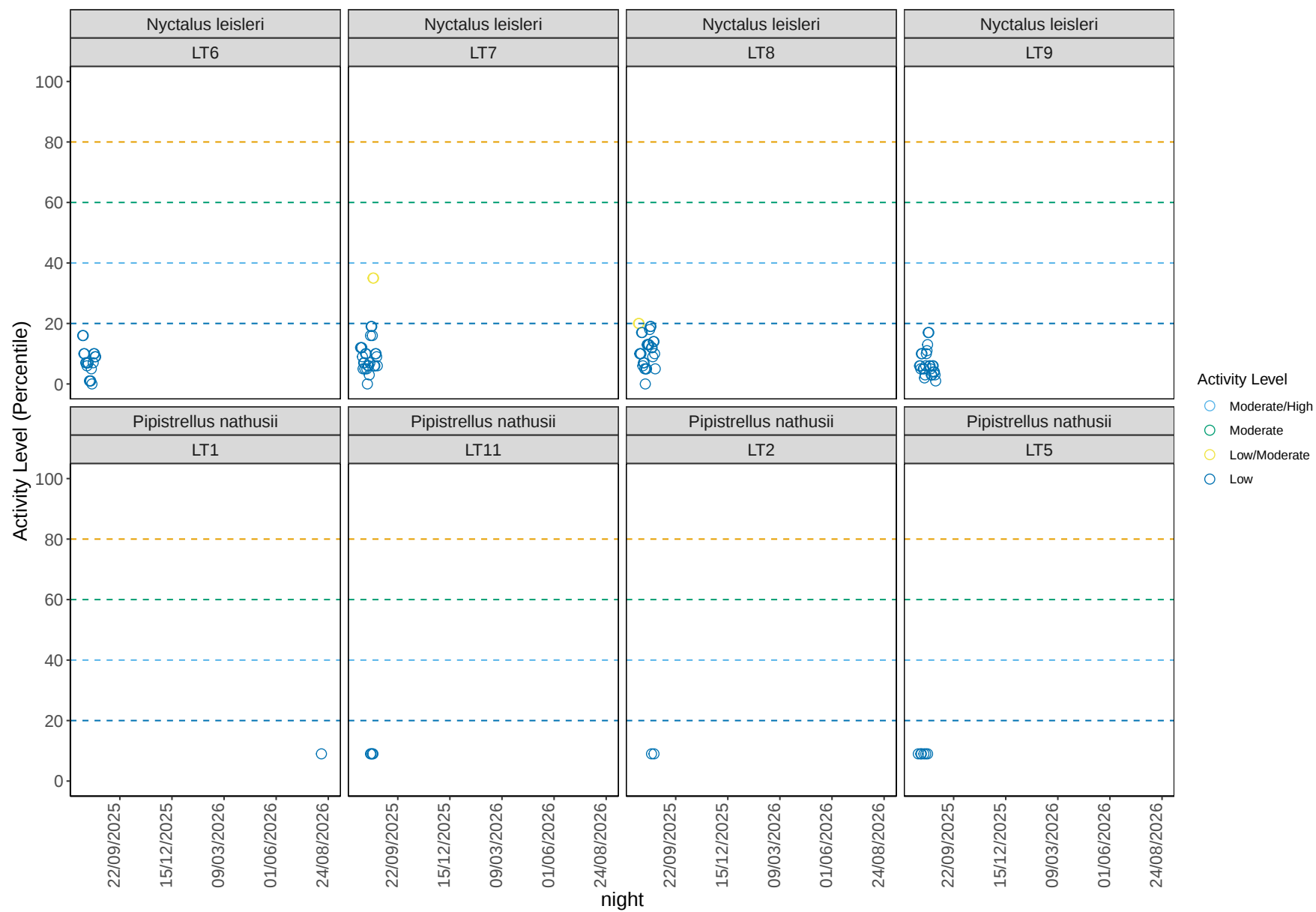
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

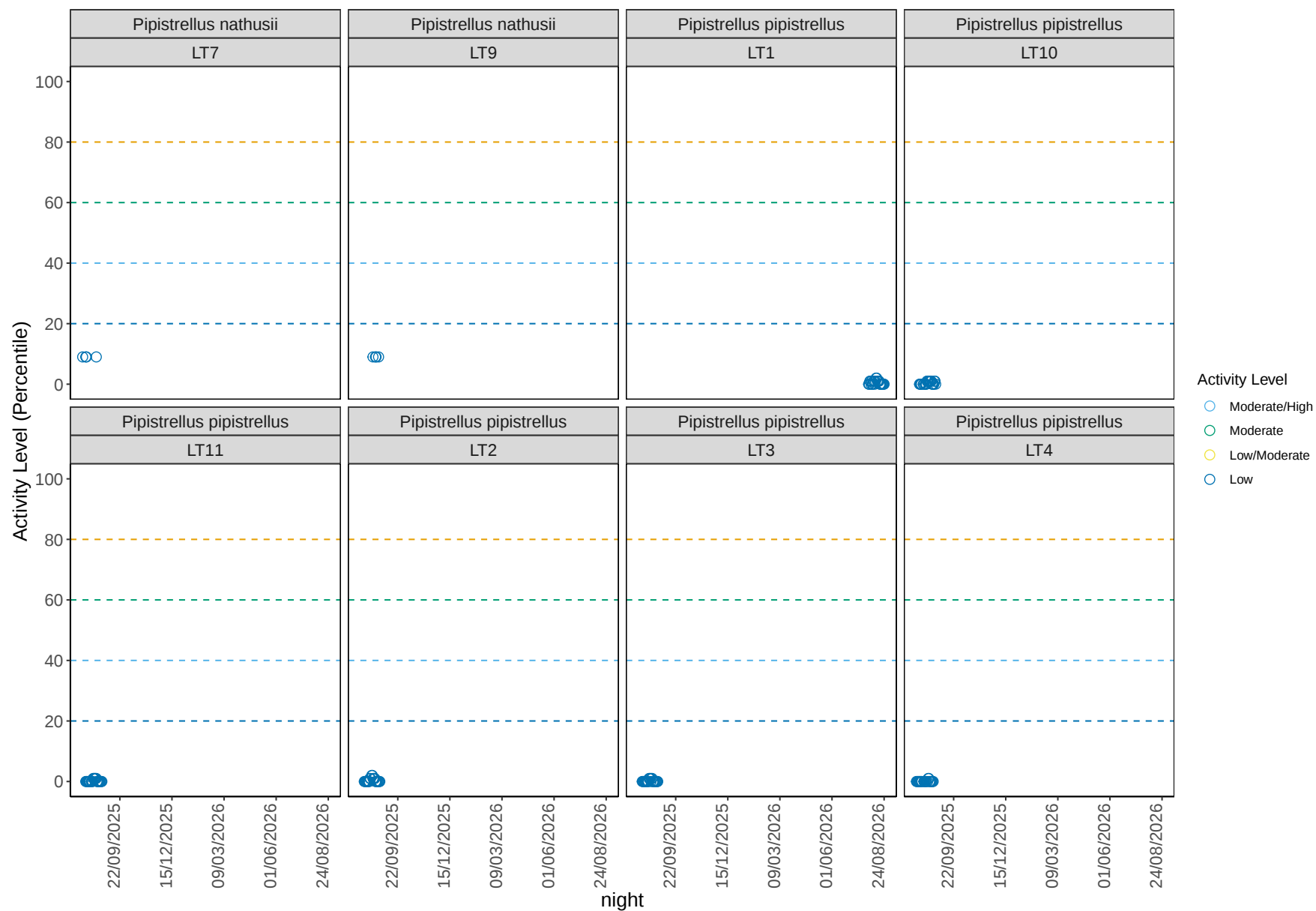


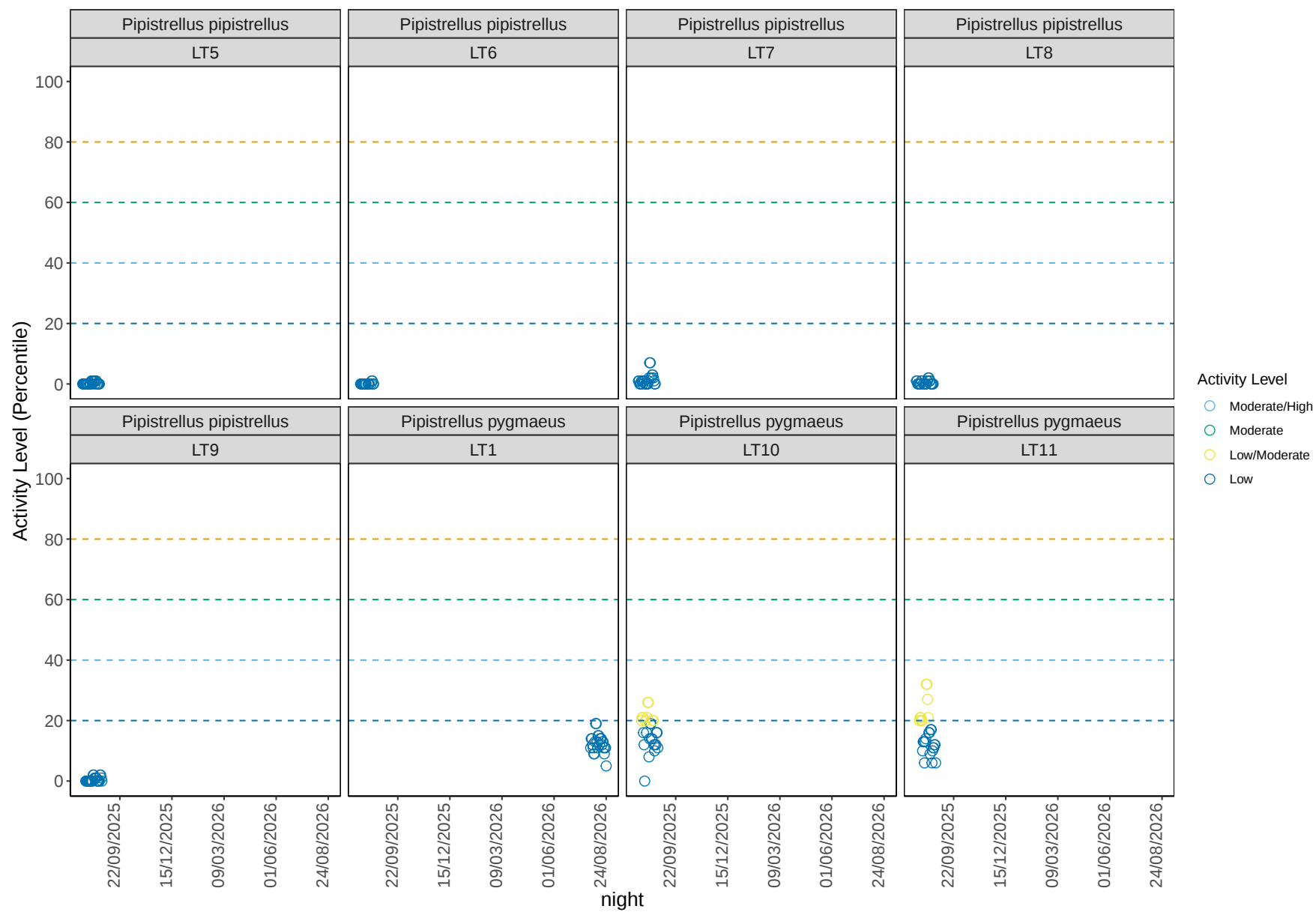


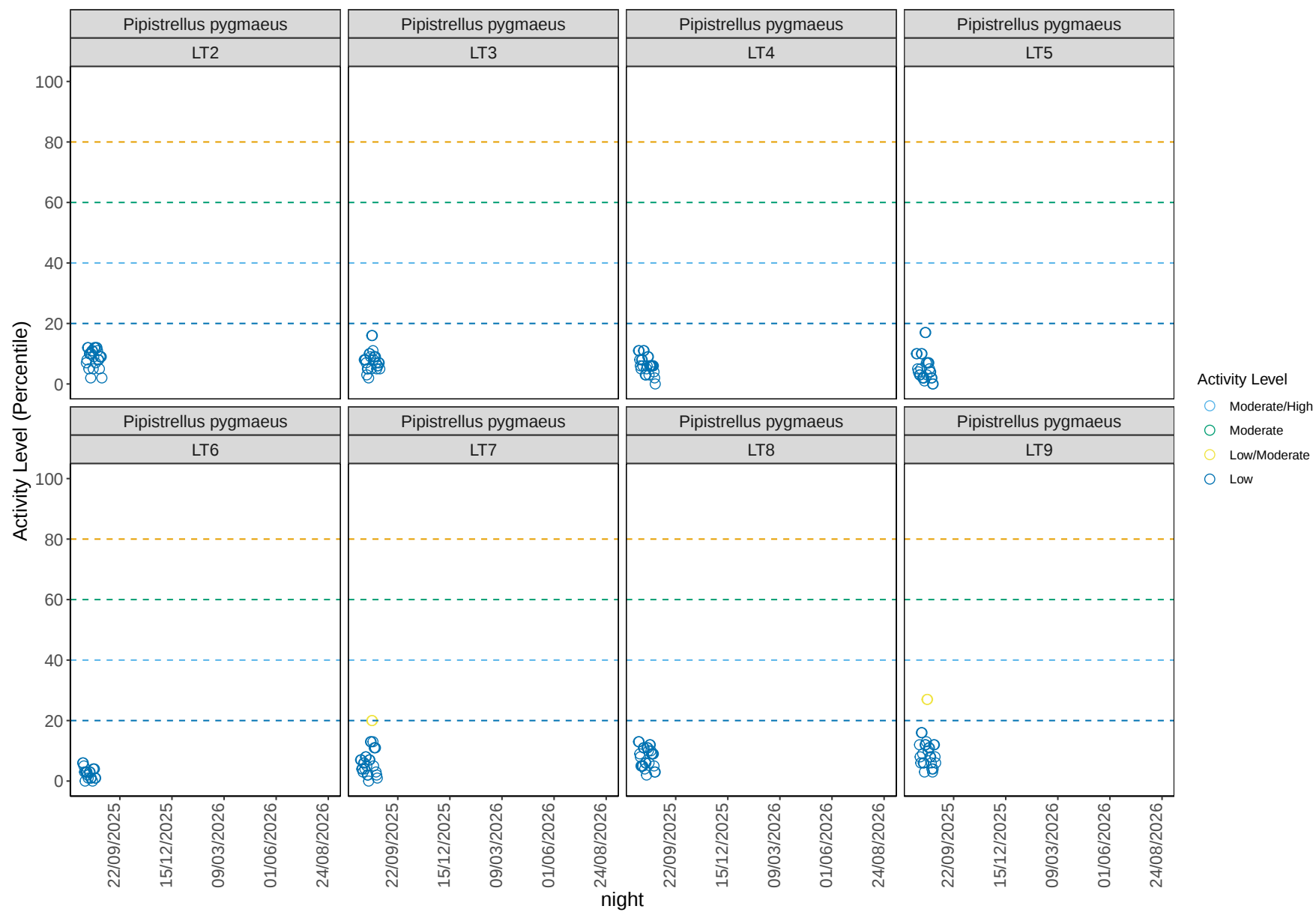


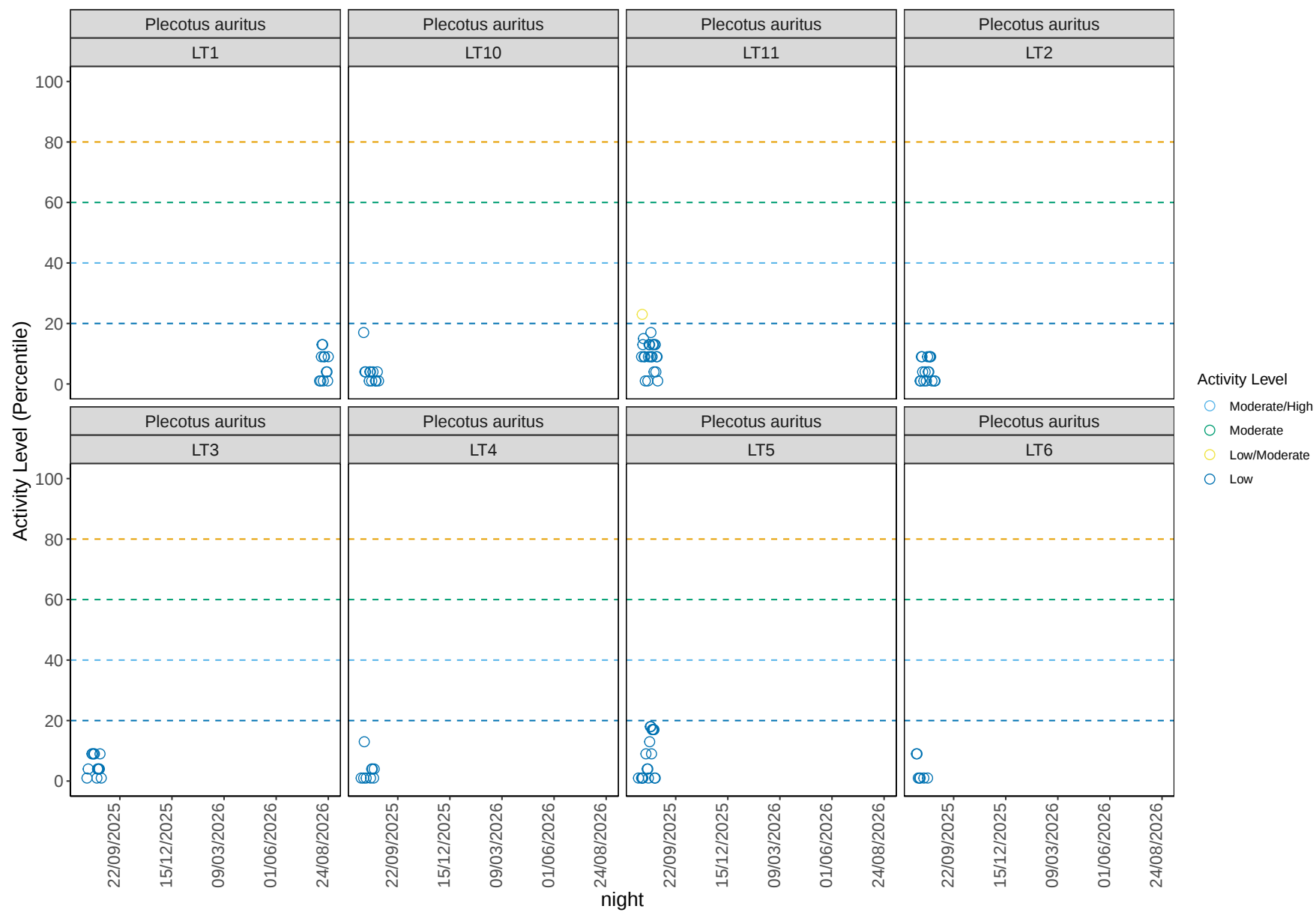


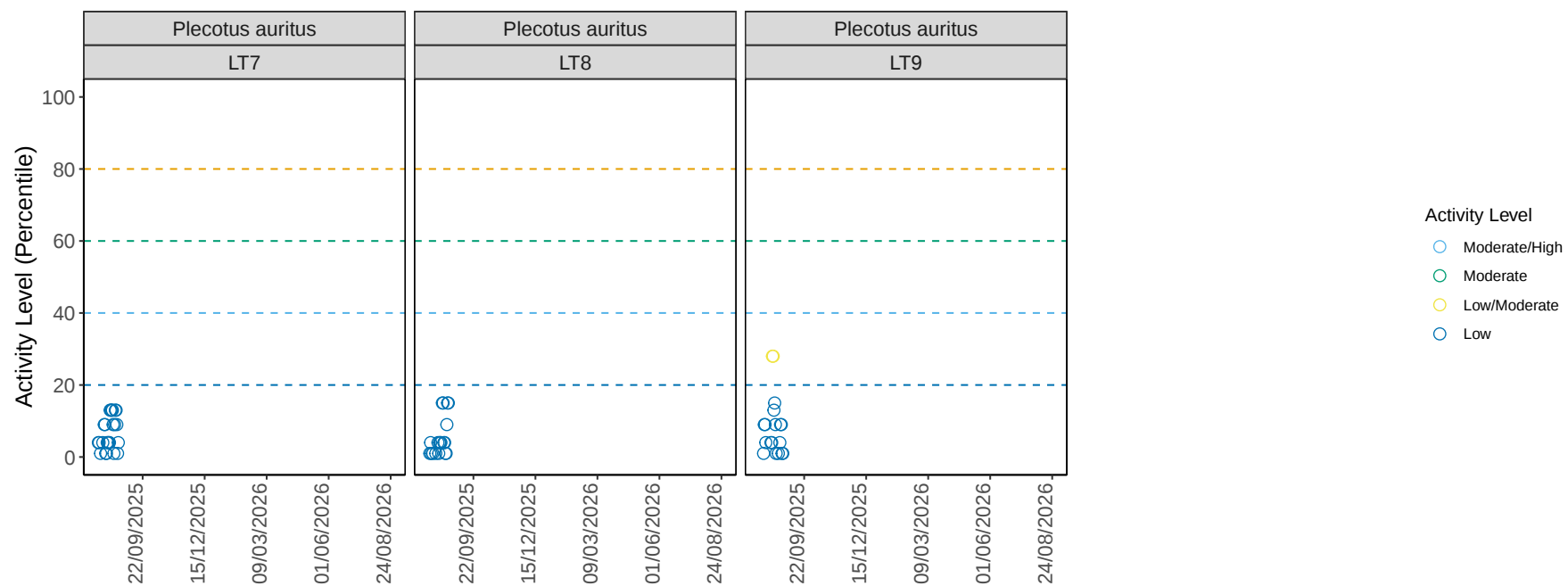












night

Per Detector, Per Month

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

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
LT1	Myotis daubentonii	Jul	0	0	0	0	0	2
LT1	Myotis daubentonii	Aug	0	0	0	0	0	19
LT1	Myotis mystacinus	Jul	0	0	0	0	0	1
LT1	Myotis mystacinus	Aug	0	0	0	0	0	14
LT1	Myotis nattereri	Aug	0	0	0	0	0	3
LT1	Nyctalus leisleri	Jul	0	0	0	0	0	2
LT1	Nyctalus leisleri	Aug	0	0	0	0	0	24
LT1	Pipistrellus nathusii	Aug	0	0	0	0	0	1
LT1	Pipistrellus pipistrellus	Jul	0	0	0	0	0	2
LT1	Pipistrellus pipistrellus	Aug	0	0	0	0	0	24
LT1	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
LT1	Pipistrellus pygmaeus	Aug	0	0	0	0	0	24
LT1	Plecotus auritus	Aug	0	0	0	0	0	12
LT10	Myotis daubentonii	Jul	0	0	0	0	0	3
LT10	Myotis daubentonii	Aug	0	0	0	0	0	18
LT10	Myotis mystacinus	Jul	0	0	0	0	0	1
LT10	Myotis mystacinus	Aug	0	0	0	0	0	12

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
LT10	Myotis nattereri	Jul	0	0	0	0	0	1
LT10	Myotis nattereri	Aug	0	0	0	0	2	13
LT10	Nyctalus leisleri	Jul	0	0	0	0	0	3
LT10	Nyctalus leisleri	Aug	0	0	0	0	0	22
LT10	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
LT10	Pipistrellus pipistrellus	Aug	0	0	0	0	0	21
LT10	Pipistrellus pygmaeus	Jul	0	0	0	0	3	0
LT10	Pipistrellus pygmaeus	Aug	0	0	0	0	7	17
LT10	Plecotus auritus	Jul	0	0	0	0	0	2
LT10	Plecotus auritus	Aug	0	0	0	0	0	10
LT11	Myotis daubentonii	Jul	0	0	0	0	0	3
LT11	Myotis daubentonii	Aug	0	0	0	0	2	20
LT11	Myotis mystacinus	Jul	0	0	0	0	0	2
LT11	Myotis mystacinus	Aug	0	0	0	0	0	4
LT11	Myotis nattereri	Jul	0	0	0	0	0	1
LT11	Myotis nattereri	Aug	0	0	0	0	10	11
LT11	Nyctalus leisleri	Jul	0	0	0	0	0	3
LT11	Nyctalus leisleri	Aug	0	0	0	0	0	24
LT11	Pipistrellus nathusii	Aug	0	0	0	0	0	4
LT11	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
LT11	Pipistrellus pipistrellus	Aug	0	0	0	0	0	23
LT11	Pipistrellus pygmaeus	Jul	0	0	0	0	3	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
LT11	Pipistrellus pygmaeus	Aug	0	0	0	0	6	18
LT11	Plecotus auritus	Jul	0	0	0	0	1	2
LT11	Plecotus auritus	Aug	0	0	0	0	0	21
LT2	Myotis daubentonii	Aug	0	0	0	0	0	15
LT2	Myotis mystacinus	Jul	0	0	0	0	0	1
LT2	Myotis mystacinus	Aug	0	0	0	0	0	13
LT2	Myotis nattereri	Jul	0	0	0	0	0	1
LT2	Myotis nattereri	Aug	0	0	0	0	3	6
LT2	Nyctalus leisleri	Jul	0	0	0	0	0	2
LT2	Nyctalus leisleri	Aug	0	0	0	0	2	22
LT2	Pipistrellus nathusii	Aug	0	0	0	0	0	2
LT2	Pipistrellus pipistrellus	Jul	0	0	0	0	0	2
LT2	Pipistrellus pipistrellus	Aug	0	0	0	0	0	23
LT2	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
LT2	Pipistrellus pygmaeus	Aug	0	0	0	0	0	24
LT2	Plecotus auritus	Jul	0	0	0	0	0	2
LT2	Plecotus auritus	Aug	0	0	0	0	0	15
LT3	Myotis daubentonii	Jul	0	0	0	0	0	2
LT3	Myotis daubentonii	Aug	0	0	0	0	0	22
LT3	Myotis mystacinus	Jul	0	0	0	0	0	1
LT3	Myotis mystacinus	Aug	0	0	0	0	0	4

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
LT3	Myotis nattereri	Jul	0	0	0	0	0	1
LT3	Myotis nattereri	Aug	0	0	0	0	0	8
LT3	Nyctalus leisleri	Jul	0	0	0	0	0	2
LT3	Nyctalus leisleri	Aug	0	0	0	0	0	24
LT3	Pipistrellus pipistrellus	Jul	0	0	0	0	0	2
LT3	Pipistrellus pipistrellus	Aug	0	0	0	0	0	24
LT3	Pipistrellus pygmaeus	Jul	0	0	0	0	0	2
LT3	Pipistrellus pygmaeus	Aug	0	0	0	0	0	24
LT3	Plecotus auritus	Jul	0	0	0	0	0	1
LT3	Plecotus auritus	Aug	0	0	0	0	0	12
LT4	Myotis daubentonii	Jul	0	0	0	0	0	5
LT4	Myotis daubentonii	Aug	0	0	0	0	0	10
LT4	Myotis mystacinus	Jul	0	0	0	0	0	3
LT4	Myotis mystacinus	Aug	0	0	0	0	0	9
LT4	Myotis nattereri	Jul	0	0	0	0	0	2
LT4	Myotis nattereri	Aug	0	0	0	0	0	5
LT4	Nyctalus leisleri	Jul	0	0	0	0	0	8
LT4	Nyctalus leisleri	Aug	0	0	0	0	2	17
LT4	Pipistrellus pipistrellus	Jul	0	0	0	0	0	8
LT4	Pipistrellus pipistrellus	Aug	0	0	0	0	0	17
LT4	Pipistrellus pygmaeus	Jul	0	0	0	0	0	8
LT4	Pipistrellus pygmaeus	Aug	0	0	0	0	0	19

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
LT4	Plecotus auritus	Jul	0	0	0	0	0	3
LT4	Plecotus auritus	Aug	0	0	0	0	0	6
LT5	Myotis daubentonii	Jul	0	0	0	0	0	6
LT5	Myotis daubentonii	Aug	0	0	0	0	0	12
LT5	Myotis mystacinus	Jul	0	0	0	0	0	2
LT5	Myotis mystacinus	Aug	0	0	0	0	0	8
LT5	Myotis nattereri	Jul	0	0	0	0	0	4
LT5	Myotis nattereri	Aug	0	0	0	0	0	10
LT5	Nyctalus leisleri	Jul	0	0	0	0	0	8
LT5	Nyctalus leisleri	Aug	0	0	0	0	0	20
LT5	Pipistrellus nathusii	Jul	0	0	0	0	0	2
LT5	Pipistrellus nathusii	Aug	0	0	0	0	0	4
LT5	Pipistrellus pipistrellus	Jul	0	0	0	0	0	8
LT5	Pipistrellus pipistrellus	Aug	0	0	0	0	0	19
LT5	Pipistrellus pygmaeus	Jul	0	0	0	0	0	7
LT5	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
LT5	Plecotus auritus	Jul	0	0	0	0	0	4
LT5	Plecotus auritus	Aug	0	0	0	0	0	14
LT6	Myotis daubentonii	Jul	0	0	0	0	0	6
LT6	Myotis daubentonii	Aug	0	0	0	0	0	7
LT6	Myotis mystacinus	Jul	0	0	0	0	0	4

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
LT6	Myotis mystacinus	Aug	0	0	0	0	0	4
LT6	Myotis nattereri	Jul	0	0	0	0	0	4
LT6	Myotis nattereri	Aug	0	0	0	0	0	5
LT6	Nyctalus leisleri	Jul	0	0	0	0	0	7
LT6	Nyctalus leisleri	Aug	0	0	0	0	0	12
LT6	Pipistrellus pipistrellus	Jul	0	0	0	0	0	8
LT6	Pipistrellus pipistrellus	Aug	0	0	0	0	0	10
LT6	Pipistrellus pygmaeus	Jul	0	0	0	0	0	8
LT6	Pipistrellus pygmaeus	Aug	0	0	0	0	0	12
LT6	Plecotus auritus	Jul	0	0	0	0	0	5
LT6	Plecotus auritus	Aug	0	0	0	0	0	2
LT7	Myotis daubentonii	Jul	0	0	0	0	0	6
LT7	Myotis daubentonii	Aug	0	0	0	0	0	11
LT7	Myotis mystacinus	Jul	0	0	0	0	0	3
LT7	Myotis mystacinus	Aug	0	0	0	0	0	7
LT7	Myotis nattereri	Jul	0	0	0	0	0	4
LT7	Myotis nattereri	Aug	0	0	0	0	0	9
LT7	Nyctalus leisleri	Jul	0	0	0	0	0	8
LT7	Nyctalus leisleri	Aug	0	0	0	0	2	18
LT7	Pipistrellus nathusii	Jul	0	0	0	0	0	3
LT7	Pipistrellus nathusii	Aug	0	0	0	0	0	1
LT7	Pipistrellus pipistrellus	Jul	0	0	0	0	0	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
LT7	Pipistrellus pipistrellus	Aug	0	0	0	0	0	20
LT7	Pipistrellus pygmaeus	Jul	0	0	0	0	0	8
LT7	Pipistrellus pygmaeus	Aug	0	0	0	0	2	18
LT7	Plecotus auritus	Jul	0	0	0	0	0	4
LT7	Plecotus auritus	Aug	0	0	0	0	0	20
LT8	Myotis daubentonii	Jul	0	0	0	0	0	7
LT8	Myotis daubentonii	Aug	0	0	0	0	0	18
LT8	Myotis mystacinus	Jul	0	0	0	0	0	3
LT8	Myotis mystacinus	Aug	0	0	0	0	0	5
LT8	Myotis nattereri	Jul	0	0	0	0	0	3
LT8	Myotis nattereri	Aug	0	0	0	0	4	7
LT8	Nyctalus leisleri	Jul	0	0	0	0	2	6
LT8	Nyctalus leisleri	Aug	0	0	0	0	0	20
LT8	Pipistrellus pipistrellus	Jul	0	0	0	0	0	8
LT8	Pipistrellus pipistrellus	Aug	0	0	0	0	0	18
LT8	Pipistrellus pygmaeus	Jul	0	0	0	0	0	8
LT8	Pipistrellus pygmaeus	Aug	0	0	0	0	0	20
LT8	Plecotus auritus	Jul	0	0	0	0	0	4
LT8	Plecotus auritus	Aug	0	0	0	0	0	15
LT9	Myotis daubentonii	Jul	0	0	0	0	0	3
LT9	Myotis daubentonii	Aug	0	0	0	0	2	15

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
LT9	Myotis mystacinus	Aug	0	0	0	0	0	3
LT9	Myotis nattereri	Jul	0	0	0	0	2	1
LT9	Myotis nattereri	Aug	0	0	2	2	17	0
LT9	Nyctalus leisleri	Jul	0	0	0	0	0	3
LT9	Nyctalus leisleri	Aug	0	0	0	0	0	23
LT9	Pipistrellus nathusii	Aug	0	0	0	0	0	4
LT9	Pipistrellus pipistrellus	Jul	0	0	0	0	0	3
LT9	Pipistrellus pipistrellus	Aug	0	0	0	0	0	24
LT9	Pipistrellus pygmaeus	Jul	0	0	0	0	0	3
LT9	Pipistrellus pygmaeus	Aug	0	0	0	0	2	22
LT9	Plecotus auritus	Jul	0	0	0	0	0	3
LT9	Plecotus auritus	Aug	0	0	0	0	2	13

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
LT1	Myotis daubentonii	Jul	4	3.5 - 7.5	6	2
LT1	Myotis daubentonii	Aug	6	3.5 - 7.5	17	19
LT1	Myotis mystacinus	Jul	3	3 - 6	3	1
LT1	Myotis mystacinus	Aug	5	3 - 6	11	14
LT1	Myotis nattereri	Aug	7	7 - 7	15	3
LT1	Nyctalus leisleri	Jul	1	5 - 7.5	1	2
LT1	Nyctalus leisleri	Aug	6	5 - 7.5	12	24
LT1	Pipistrellus nathusii	Aug	9	0	9	1
LT1	Pipistrellus pipistrellus	Jul	0	1 - 1	0	2
LT1	Pipistrellus pipistrellus	Aug	1	1 - 1	2	24
LT1	Pipistrellus pygmaeus	Jul	13	11.5 - 13.5	14	2
LT1	Pipistrellus pygmaeus	Aug	13	11.5 - 13.5	19	24
LT1	Plecotus auritus	Aug	7	2.5 - 9	13	12
LT10	Myotis daubentonii	Jul	9	6.5 - 12	14	3
LT10	Myotis daubentonii	Aug	12	6.5 - 12	18	18
LT10	Myotis mystacinus	Jul	6	4.5 - 6.5	6	1
LT10	Myotis mystacinus	Aug	6	4.5 - 6.5	7	12
LT10	Myotis nattereri	Jul	15	15 - 15	15	1
LT10	Myotis nattereri	Aug	15	15 - 15	36	15
LT10	Nyctalus leisleri	Jul	3	2 - 3.5	3	3
LT10	Nyctalus leisleri	Aug	2	2 - 3.5	6	22
LT10	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
LT10	Pipistrellus pipistrellus	Aug	0	0 - 0	1	21
LT10	Pipistrellus pygmaeus	Jul	21	15 - 19	21	3
LT10	Pipistrellus pygmaeus	Aug	16	15 - 19	26	24
LT10	Plecotus auritus	Jul	11	1 - 4	17	2
LT10	Plecotus auritus	Aug	3	1 - 4	4	10
LT11	Myotis daubentonii	Jul	6	10 - 14	9	3
LT11	Myotis daubentonii	Aug	14	10 - 14	23	22
LT11	Myotis mystacinus	Jul	3	3 - 3	3	2
LT11	Myotis mystacinus	Aug	3	3 - 3	3	4
LT11	Myotis nattereri	Jul	15	14.5 - 22	15	1
LT11	Myotis nattereri	Aug	15	14.5 - 22	29	21

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT11	Nyctalus leisleri	Jul	14	5.5 - 9	14	3
LT11	Nyctalus leisleri	Aug	6	5.5 - 9	11	24
LT11	Pipistrellus nathusii	Aug	9	9 - 9	9	4
LT11	Pipistrellus pipistrellus	Jul	0	0 - 0	0	3
LT11	Pipistrellus pipistrellus	Aug	0	0 - 0	1	23
LT11	Pipistrellus pygmaeus	Jul	21	12.5 - 18.5	21	3
LT11	Pipistrellus pygmaeus	Aug	13	12.5 - 18.5	32	24
LT11	Plecotus auritus	Jul	13	8 - 12	23	3
LT11	Plecotus auritus	Aug	9	8 - 12	17	21
LT2	Myotis daubentonii	Aug	6	6 - 9	12	15
LT2	Myotis mystacinus	Jul	3	3 - 5.5	3	1
LT2	Myotis mystacinus	Aug	3	3 - 5.5	8	13
LT2	Myotis nattereri	Jul	7	7 - 20.5	7	1
LT2	Myotis nattereri	Aug	15	7 - 20.5	26	9
LT2	Nyctalus leisleri	Jul	6	7.5 - 11	6	2
LT2	Nyctalus leisleri	Aug	10	7.5 - 11	20	24
LT2	Pipistrellus nathusii	Aug	9	9 - 9	9	2
LT2	Pipistrellus pipistrellus	Jul	0	1 - 1.5	0	2
LT2	Pipistrellus pipistrellus	Aug	0	1 - 1.5	2	23
LT2	Pipistrellus pygmaeus	Jul	8	7.5 - 10	8	2
LT2	Pipistrellus pygmaeus	Aug	10	7.5 - 10	12	24
LT2	Plecotus auritus	Jul	1	2.5 - 6.5	1	2
LT2	Plecotus auritus	Aug	4	2.5 - 6.5	9	15
LT3	Myotis daubentonii	Jul	6	7.5 - 10.5	6	2
LT3	Myotis daubentonii	Aug	9	7.5 - 10.5	14	22
LT3	Myotis mystacinus	Jul	3	3 - 3	3	1
LT3	Myotis mystacinus	Aug	3	3 - 3	3	4
LT3	Myotis nattereri	Jul	7	7 - 11	7	1
LT3	Myotis nattereri	Aug	7	7 - 11	15	8
LT3	Nyctalus leisleri	Jul	6	7.5 - 10	6	2
LT3	Nyctalus leisleri	Aug	9	7.5 - 10	13	24
LT3	Pipistrellus pipistrellus	Jul	0	0 - 0	0	2
LT3	Pipistrellus pipistrellus	Aug	0	0 - 0	1	24
LT3	Pipistrellus pygmaeus	Jul	8	6.5 - 8.5	8	2
LT3	Pipistrellus pygmaeus	Aug	7	6.5 - 8.5	16	24
LT3	Plecotus auritus	Jul	1	2.5 - 6.5	1	1

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT3	Plecotus auritus	Aug	4	2.5 - 6.5	9	12
LT4	Myotis daubentonii	Jul	1	1 - 9	9	5
LT4	Myotis daubentonii	Aug	6	1 - 9	17	10
LT4	Myotis mystacinus	Jul	3	3 - 4.5	3	3
LT4	Myotis mystacinus	Aug	3	3 - 4.5	6	9
LT4	Myotis nattereri	Jul	11	7 - 11	15	2
LT4	Myotis nattereri	Aug	7	7 - 11	15	5
LT4	Nyctalus leisleri	Jul	7	7 - 11.5	13	8
LT4	Nyctalus leisleri	Aug	9	7 - 11.5	20	19
LT4	Pipistrellus pipistrellus	Jul	0	0 - 0	0	8
LT4	Pipistrellus pipistrellus	Aug	0	0 - 0	1	17
LT4	Pipistrellus pygmaeus	Jul	8	5.5 - 7.5	11	8
LT4	Pipistrellus pygmaeus	Aug	6	5.5 - 7.5	11	19
LT4	Plecotus auritus	Jul	1	1 - 7	13	3
LT4	Plecotus auritus	Aug	3	1 - 7	4	6
LT5	Myotis daubentonii	Jul	8	3.5 - 9	14	6
LT5	Myotis daubentonii	Aug	6	3.5 - 9	12	12
LT5	Myotis mystacinus	Jul	3	3 - 3	3	2
LT5	Myotis mystacinus	Aug	3	3 - 3	6	8
LT5	Myotis nattereri	Jul	7	7 - 7	7	4
LT5	Myotis nattereri	Aug	7	7 - 7	15	10
LT5	Nyctalus leisleri	Jul	11	7 - 11	16	8
LT5	Nyctalus leisleri	Aug	10	7 - 11	18	20
LT5	Pipistrellus nathusii	Jul	9	9 - 9	9	2
LT5	Pipistrellus nathusii	Aug	9	9 - 9	9	4
LT5	Pipistrellus pipistrellus	Jul	0	0 - 0	0	8
LT5	Pipistrellus pipistrellus	Aug	0	0 - 0	1	19
LT5	Pipistrellus pygmaeus	Jul	5	3.5 - 7	10	7
LT5	Pipistrellus pygmaeus	Aug	4	3.5 - 7	17	20
LT5	Plecotus auritus	Jul	1	2.5 - 11	1	4
LT5	Plecotus auritus	Aug	11	2.5 - 11	18	14
LT6	Myotis daubentonii	Jul	9	6 - 12	12	6
LT6	Myotis daubentonii	Aug	9	6 - 12	17	7
LT6	Myotis mystacinus	Jul	6	4.5 - 6	6	4
LT6	Myotis mystacinus	Aug	5	4.5 - 6	6	4
LT6	Myotis nattereri	Jul	7	7 - 7	7	4

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT6	Myotis nattereri	Aug	7	7 - 7	15	5
LT6	Nyctalus leisleri	Jul	10	5.5 - 9.5	16	7
LT6	Nyctalus leisleri	Aug	7	5.5 - 9.5	10	12
LT6	Pipistrellus pipistrellus	Jul	0	0 - 0	0	8
LT6	Pipistrellus pipistrellus	Aug	0	0 - 0	1	10
LT6	Pipistrellus pygmaeus	Jul	3	2 - 4	6	8
LT6	Pipistrellus pygmaeus	Aug	2	2 - 4	4	12
LT6	Plecotus auritus	Jul	1	1 - 5	9	5
LT6	Plecotus auritus	Aug	1	1 - 5	1	2
LT7	Myotis daubentonii	Jul	4	3.5 - 9	14	6
LT7	Myotis daubentonii	Aug	9	3.5 - 9	12	11
LT7	Myotis mystacinus	Jul	3	3 - 4.5	3	3
LT7	Myotis mystacinus	Aug	3	3 - 4.5	6	7
LT7	Myotis nattereri	Jul	7	7 - 11	15	4
LT7	Myotis nattereri	Aug	7	7 - 11	15	9
LT7	Nyctalus leisleri	Jul	8	7.5 - 12.5	12	8
LT7	Nyctalus leisleri	Aug	10	7.5 - 12.5	35	20
LT7	Pipistrellus nathusii	Jul	9	9 - 9	9	3
LT7	Pipistrellus nathusii	Aug	9	9 - 9	9	1
LT7	Pipistrellus pipistrellus	Jul	1	1 - 3	1	8
LT7	Pipistrellus pipistrellus	Aug	1	1 - 3	7	20
LT7	Pipistrellus pygmaeus	Jul	5	5 - 9	7	8
LT7	Pipistrellus pygmaeus	Aug	8	5 - 9	20	20
LT7	Plecotus auritus	Jul	4	4 - 8.5	4	4
LT7	Plecotus auritus	Aug	9	4 - 8.5	13	20
LT8	Myotis daubentonii	Jul	12	9 - 13	17	7
LT8	Myotis daubentonii	Aug	9	9 - 13	18	18
LT8	Myotis mystacinus	Jul	6	3 - 6	6	3
LT8	Myotis mystacinus	Aug	3	3 - 6	6	5
LT8	Myotis nattereri	Jul	15	11 - 18.5	15	3
LT8	Myotis nattereri	Aug	15	11 - 18.5	22	11
LT8	Nyctalus leisleri	Jul	14	9.5 - 14	20	8
LT8	Nyctalus leisleri	Aug	12	9.5 - 14	19	20
LT8	Pipistrellus pipistrellus	Jul	0	1 - 1	1	8
LT8	Pipistrellus pipistrellus	Aug	0	1 - 1	2	18
LT8	Pipistrellus pygmaeus	Jul	7	6.5 - 9.5	13	8

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT8	Pipistrellus pygmaeus	Aug	9	6.5 - 9.5	12	20
LT8	Plecotus auritus	Jul	1	2.5 - 8	4	4
LT8	Plecotus auritus	Aug	4	2.5 - 8	15	15
LT9	Myotis daubentonii	Jul	6	7.5 - 15.5	12	3
LT9	Myotis daubentonii	Aug	12	7.5 - 15.5	25	17
LT9	Myotis mystacinus	Aug	3	3 - 3	6	3
LT9	Myotis nattereri	Jul	32	30.5 - 37.5	32	3
LT9	Myotis nattereri	Aug	36	30.5 - 37.5	64	21
LT9	Nyctalus leisleri	Jul	6	4.5 - 8	6	3
LT9	Nyctalus leisleri	Aug	6	4.5 - 8	17	23
LT9	Pipistrellus nathusii	Aug	9	9 - 9	9	4
LT9	Pipistrellus pipistrellus	Jul	0	1 - 2	0	3
LT9	Pipistrellus pipistrellus	Aug	0	1 - 2	2	24
LT9	Pipistrellus pygmaeus	Jul	8	7.5 - 11.5	12	3
LT9	Pipistrellus pygmaeus	Aug	10	7.5 - 11.5	27	24
LT9	Plecotus auritus	Jul	9	4 - 12	9	3
LT9	Plecotus auritus	Aug	4	4 - 12	28	15

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 daubentonii	0	0	0	0	4	210
Myotis mystacinus	0	0	0	0	0	104
Myotis nattereri	0	0	2	2	38	99
Nyctalus leisleri	0	0	0	0	8	278
Pipistrellus nathusii	0	0	0	0	0	21
Pipistrellus pipistrellus	0	0	0	0	0	278
Pipistrellus pygmaeus	0	0	0	0	23	266
Plecotus auritus	0	0	0	0	3	170

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	9	9 - 13	25	214
Myotis mystacinus	3	4.5 - 6.5	11	104
Myotis nattereri	15	7 - 7	64	141
Nyctalus leisleri	7	9.5 - 14	35	286
Pipistrellus nathusii	9	9 - 9	9	21
Pipistrellus pipistrellus	0	1 - 3	7	278
Pipistrellus pygmaeus	9	7.5 - 11.5	32	289
Plecotus auritus	4	8 - 12	28	173

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

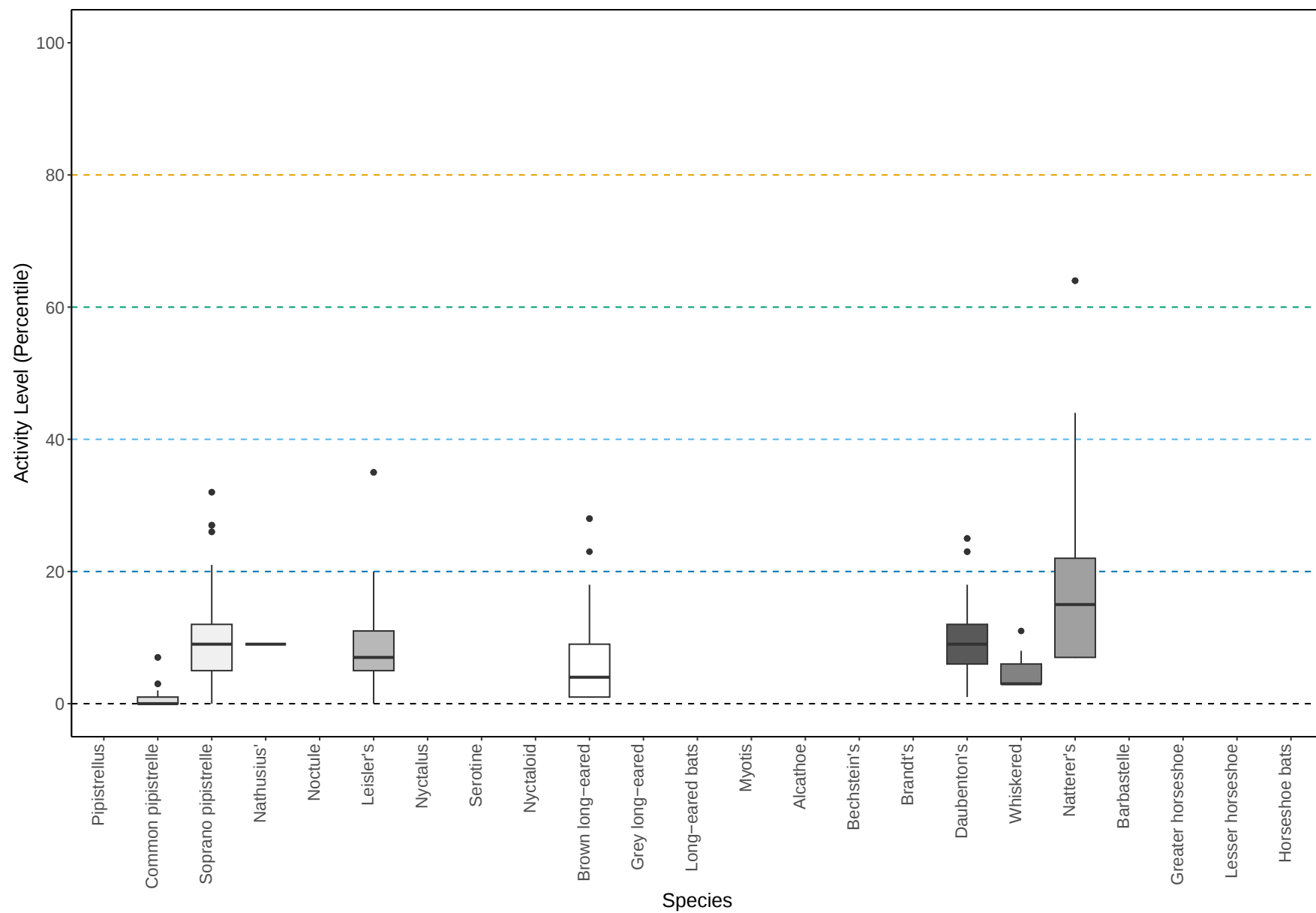
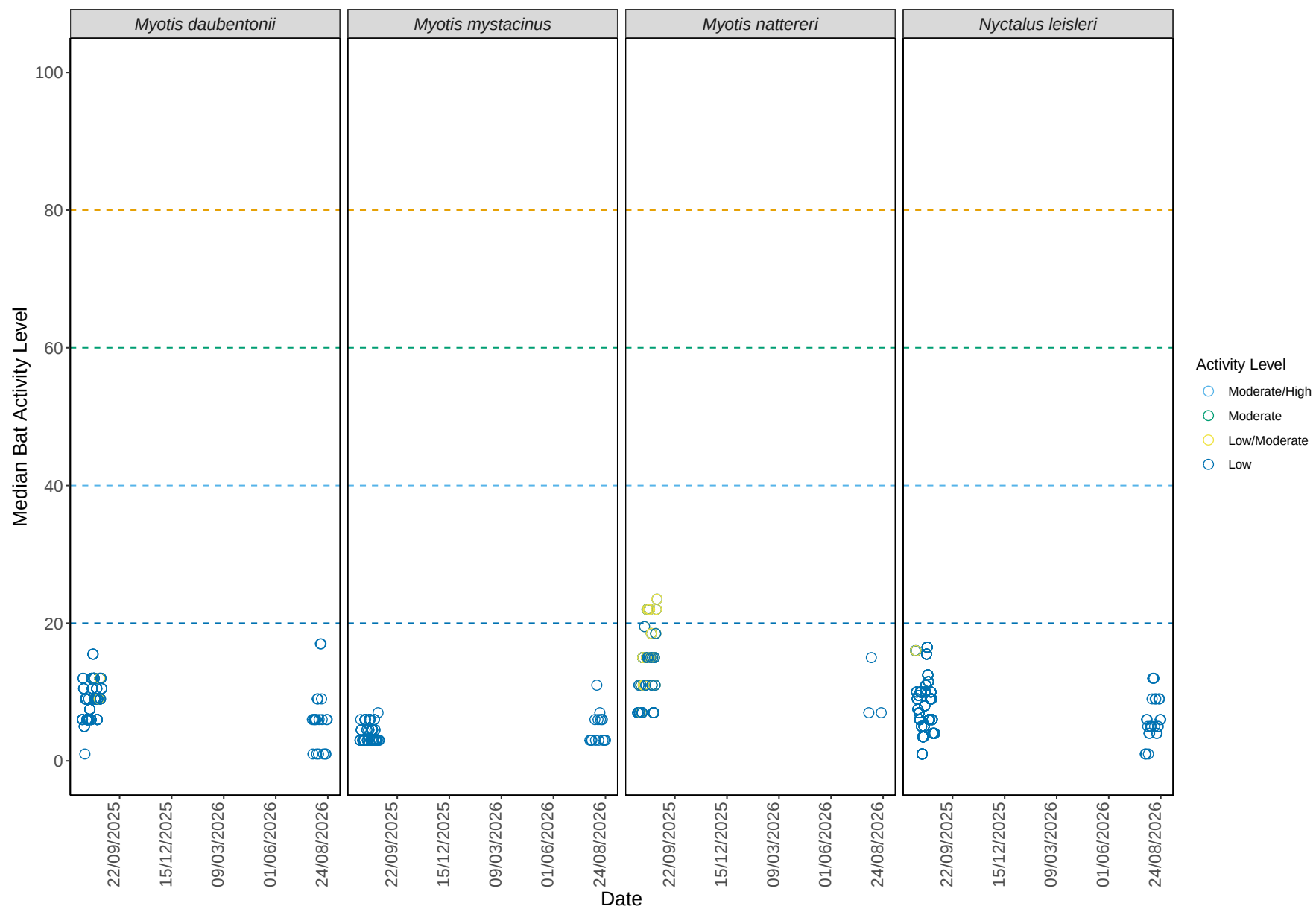
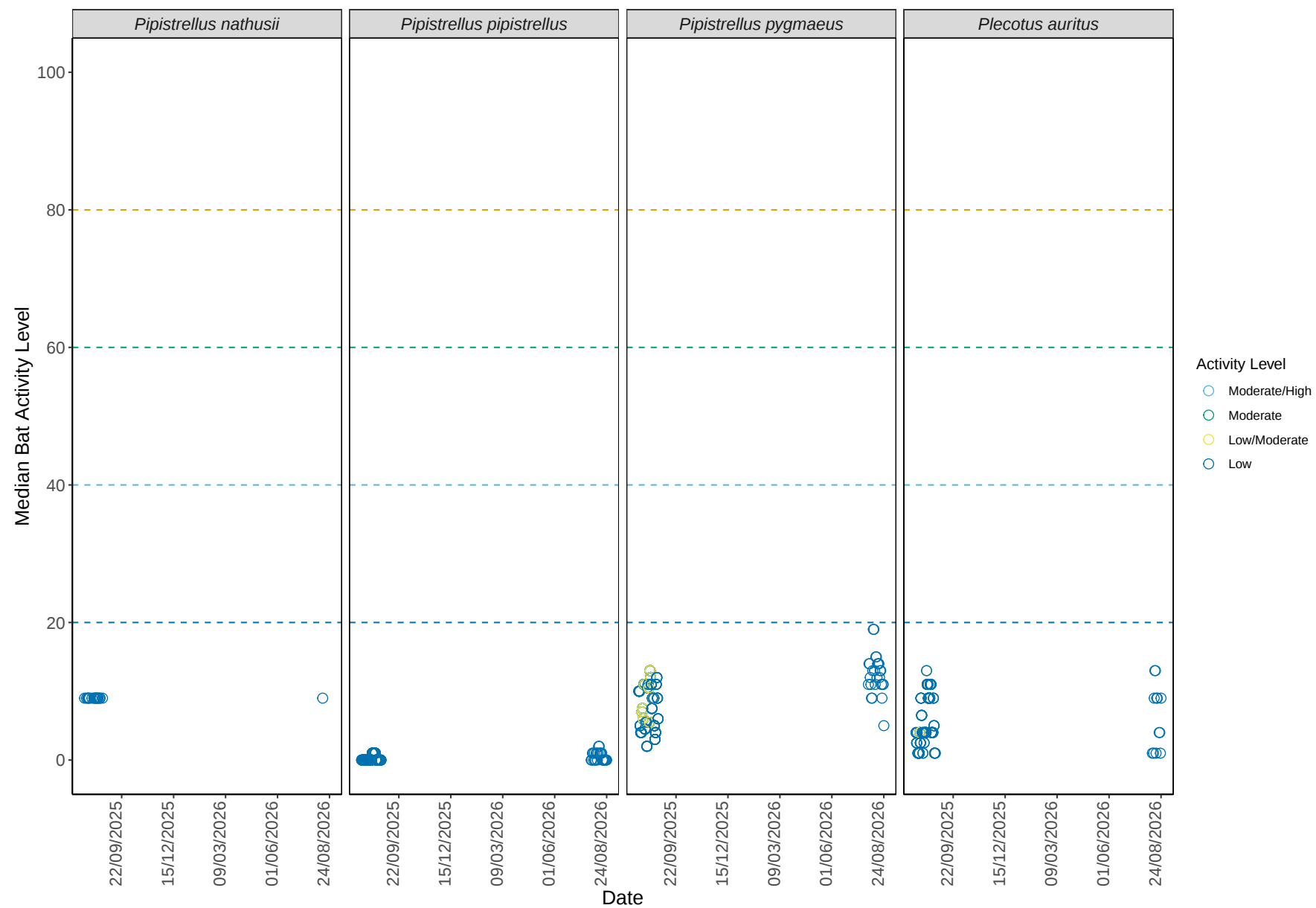


Figure 5. The median activity levels of bats recorded across all detectors each night.





Per Site, Per Month

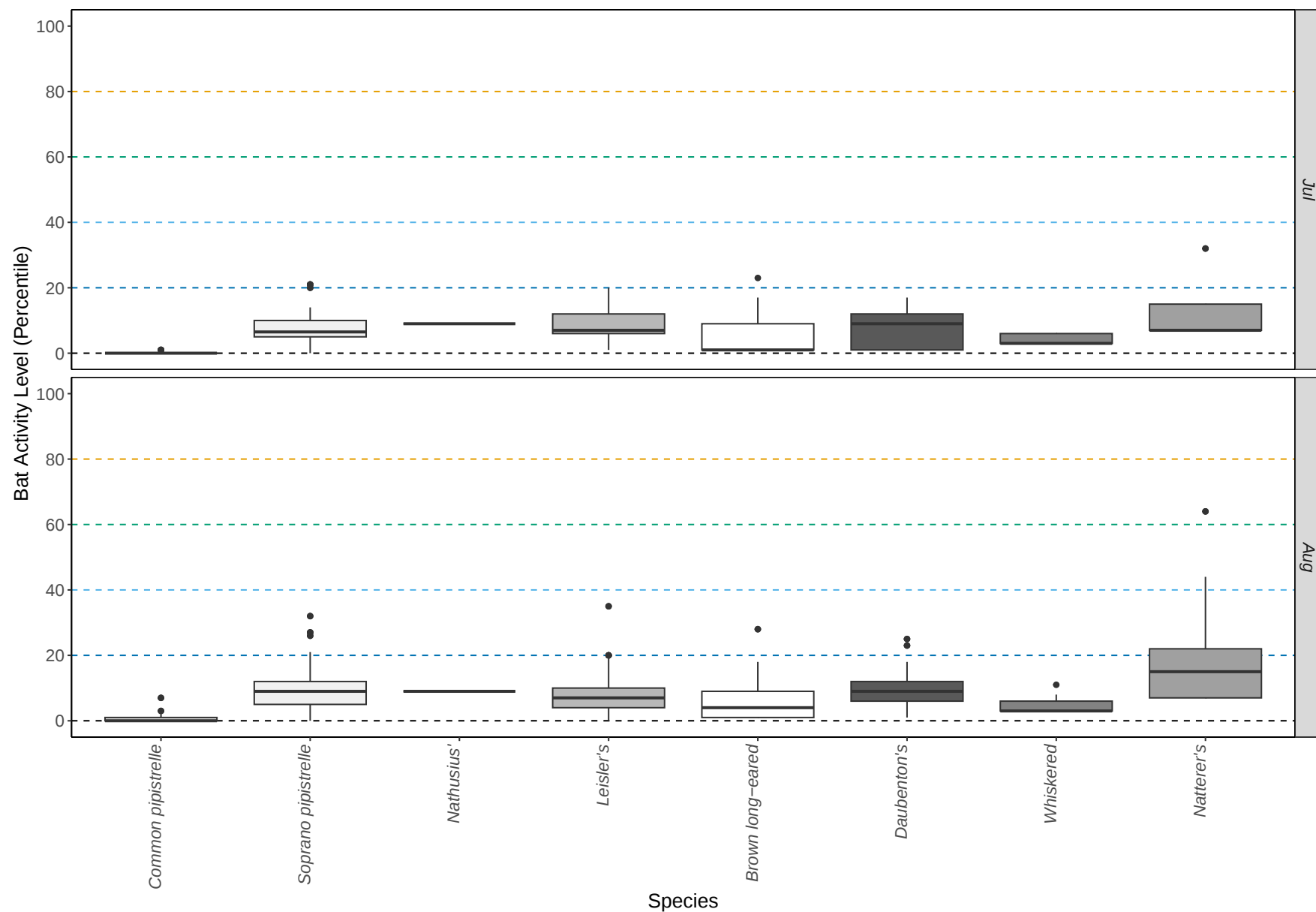
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	Jul	0	0	0	0	0	43
Myotis daubentonii	Aug	0	0	0	0	4	167
Myotis mystacinus	Jul	0	0	0	0	0	21
Myotis mystacinus	Aug	0	0	0	0	0	83
Myotis nattereri	Jul	0	0	0	0	2	22
Myotis nattereri	Aug	0	0	2	2	36	77
Nyctalus leisleri	Jul	0	0	0	0	2	52
Nyctalus leisleri	Aug	0	0	0	0	6	226
Pipistrellus nathusii	Jul	0	0	0	0	0	5
Pipistrellus nathusii	Aug	0	0	0	0	0	16
Pipistrellus pipistrellus	Jul	0	0	0	0	0	55
Pipistrellus pipistrellus	Aug	0	0	0	0	0	223
Pipistrellus pygmaeus	Jul	0	0	0	0	6	48
Pipistrellus pygmaeus	Aug	0	0	0	0	17	218
Plecotus auritus	Jul	0	0	0	0	1	30
Plecotus auritus	Aug	0	0	0	0	2	140

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 daubentonii	Jul	9	9 - 13	17	43
Myotis daubentonii	Aug	9	9 - 13	25	171
Myotis mystacinus	Jul	3	4.5 - 6.5	6	21
Myotis mystacinus	Aug	3	4.5 - 6.5	11	83
Myotis nattereri	Jul	7	7 - 7	32	24
Myotis nattereri	Aug	15	7 - 7	64	117
Nyctalus leisleri	Jul	7	9.5 - 14	20	54
Nyctalus leisleri	Aug	7	9.5 - 14	35	232
Pipistrellus nathusii	Jul	9	9 - 9	9	5
Pipistrellus nathusii	Aug	9	9 - 9	9	16
Pipistrellus pipistrellus	Jul	0	1 - 3	1	55
Pipistrellus pipistrellus	Aug	0	1 - 3	7	223
Pipistrellus pygmaeus	Jul	7	7.5 - 11.5	21	54
Pipistrellus pygmaeus	Aug	9	7.5 - 11.5	32	235
Plecotus auritus	Jul	1	8 - 12	23	31
Plecotus auritus	Aug	4	8 - 12	28	142

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



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.

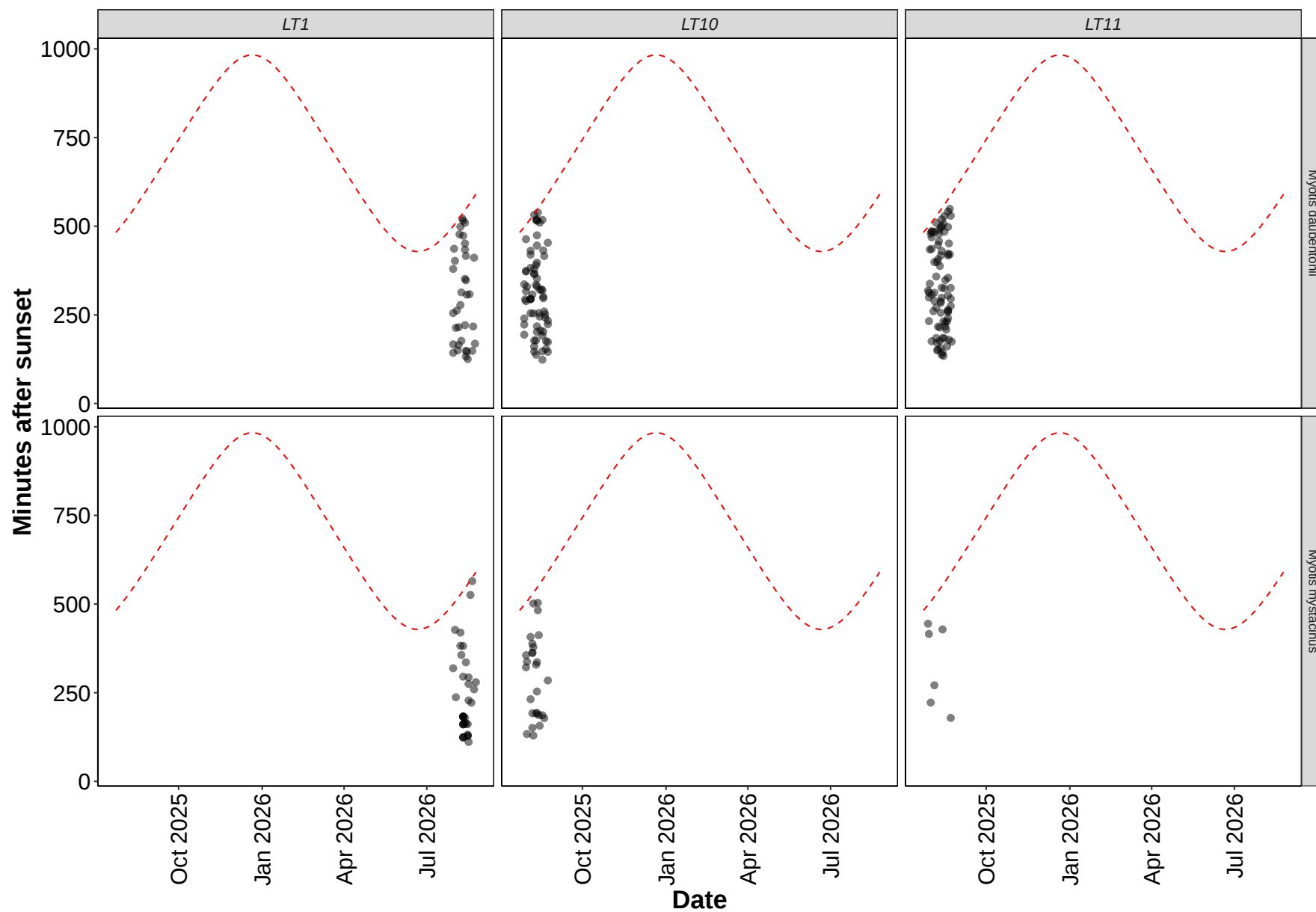
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2025-07-24	20:36	04:38	8.0
2025-07-25	20:35	04:40	8.1
2025-07-26	20:33	04:41	8.1
2025-07-27	20:32	04:43	8.2
2025-07-28	20:30	04:45	8.2
2025-07-29	20:29	04:46	8.3
2025-07-30	20:27	04:48	8.3
2025-07-31	20:25	04:49	8.4
2025-08-01	20:24	04:51	8.5
2025-08-02	20:22	04:52	8.5
2025-08-03	20:20	04:54	8.6
2025-08-04	20:18	04:56	8.6
2025-08-05	20:17	04:57	8.7
2025-08-06	20:15	04:59	8.7
2025-08-07	20:13	05:01	8.8
2025-08-08	20:11	05:02	8.9
2025-08-09	20:09	05:04	8.9
2025-08-10	20:07	05:06	9.0
2025-08-11	20:05	05:07	9.0
2025-08-12	20:03	05:09	9.1
2025-08-13	20:01	05:11	9.2
2025-08-14	19:59	05:12	9.2
2025-08-15	19:57	05:14	9.3
2025-08-16	19:55	05:16	9.3
2025-08-17	19:53	05:17	9.4
2025-08-18	19:51	05:19	9.5
2025-08-19	19:49	05:21	9.5
2025-08-20	19:47	05:22	9.6

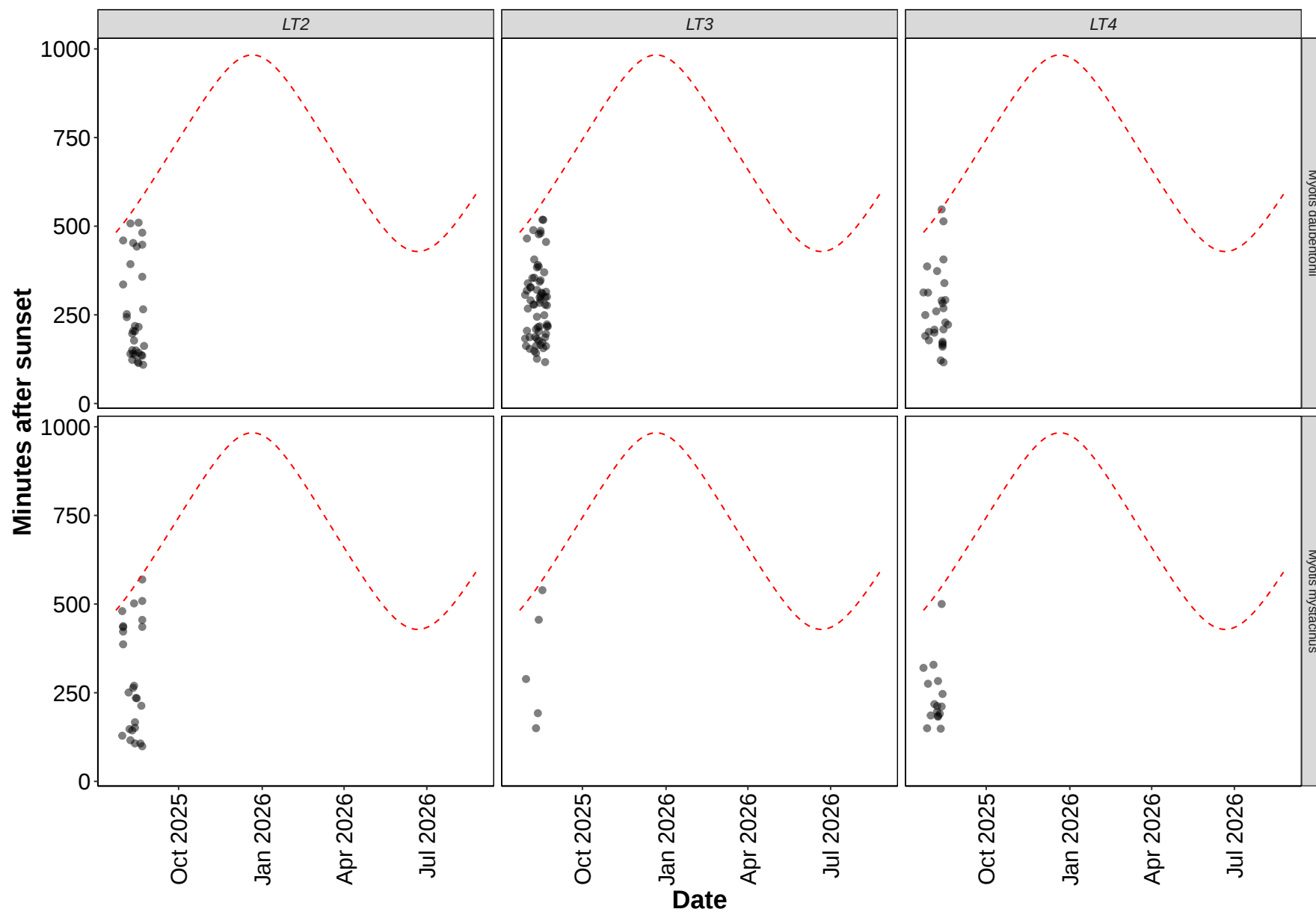
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2025-08-21	19:45	05:24	9.7
2025-08-22	19:42	05:26	9.7
2025-08-23	19:40	05:27	9.8
2025-08-24	19:38	05:29	9.9
2026-07-30	20:27	04:47	8.3
2026-07-31	20:26	04:49	8.4
2026-08-01	20:24	04:50	8.4
2026-08-02	20:22	04:52	8.5
2026-08-03	20:21	04:54	8.6
2026-08-04	20:19	04:55	8.6
2026-08-05	20:17	04:57	8.7
2026-08-06	20:15	04:59	8.7
2026-08-07	20:13	05:00	8.8
2026-08-08	20:11	05:02	8.8
2026-08-09	20:10	05:04	8.9
2026-08-10	20:08	05:05	9.0
2026-08-11	20:06	05:07	9.0
2026-08-12	20:04	05:09	9.1
2026-08-13	20:02	05:10	9.1
2026-08-14	20:00	05:12	9.2
2026-08-15	19:58	05:14	9.3
2026-08-16	19:56	05:15	9.3
2026-08-17	19:54	05:17	9.4
2026-08-18	19:51	05:19	9.5
2026-08-19	19:49	05:20	9.5
2026-08-20	19:47	05:22	9.6
2026-08-21	19:45	05:24	9.6
2026-08-22	19:43	05:25	9.7
2026-08-23	19:41	05:27	9.8
2026-08-24	19:39	05:29	9.8

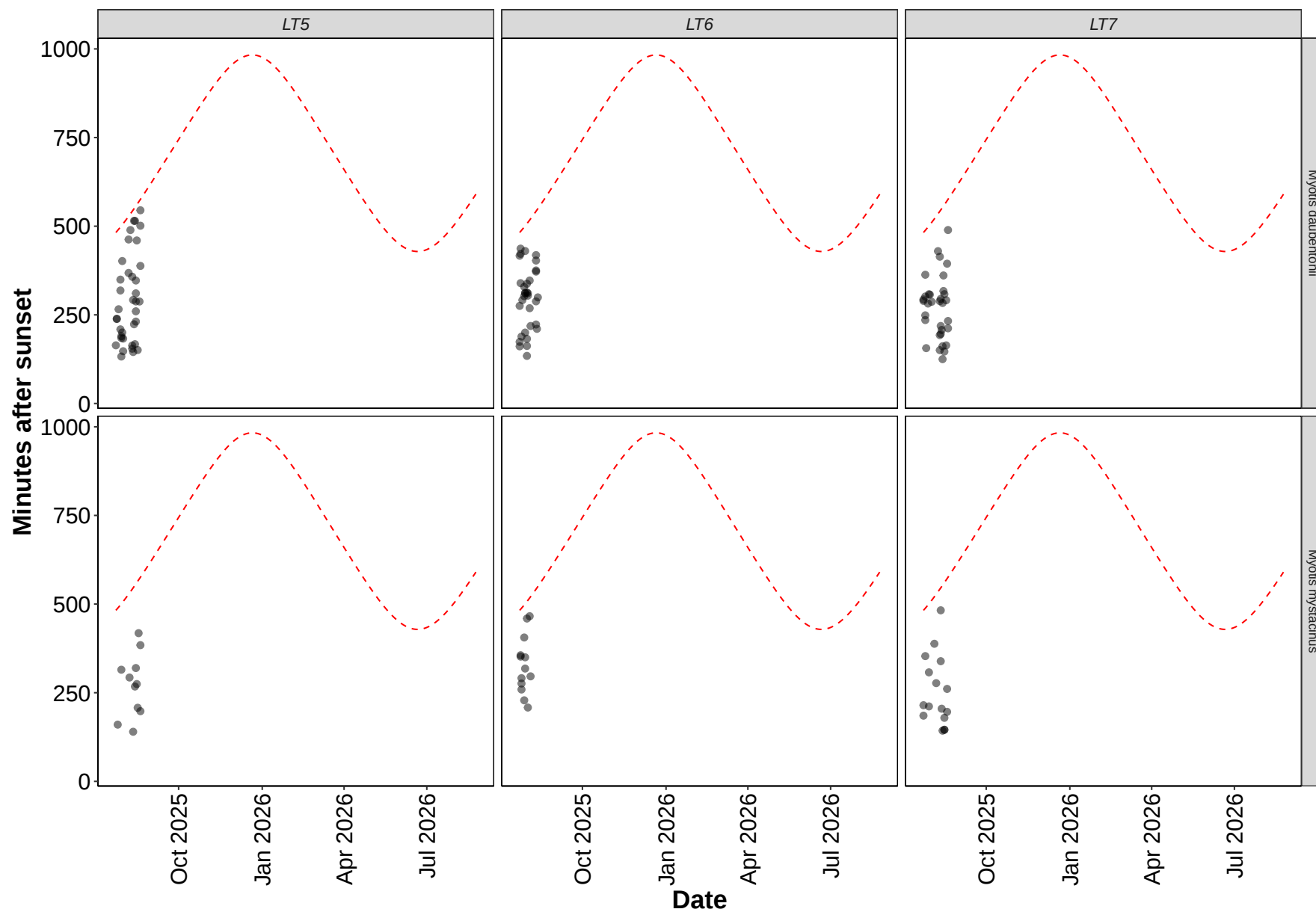
Distribution of Bat Activity Across the Night through Time

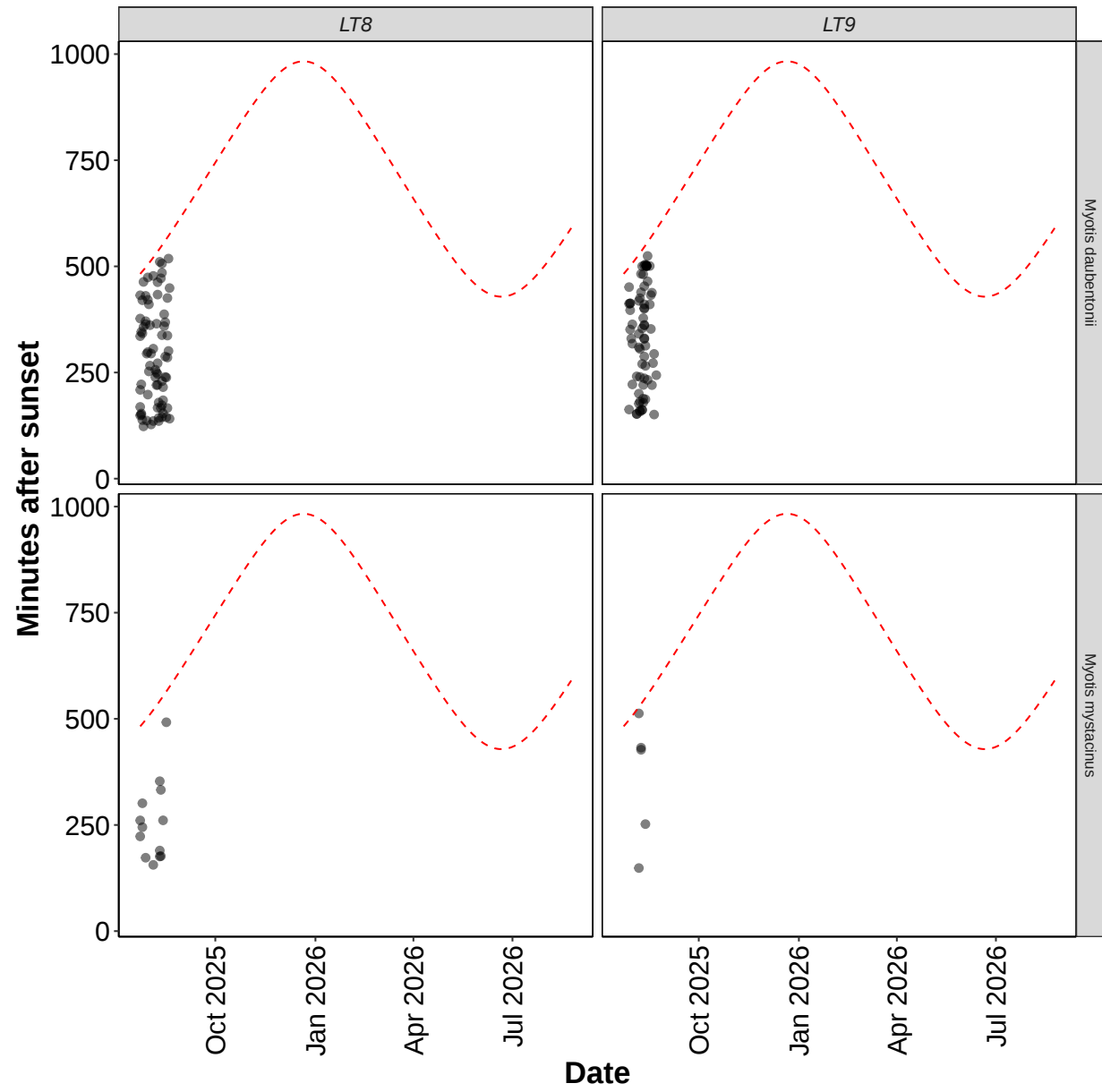
Per Detector

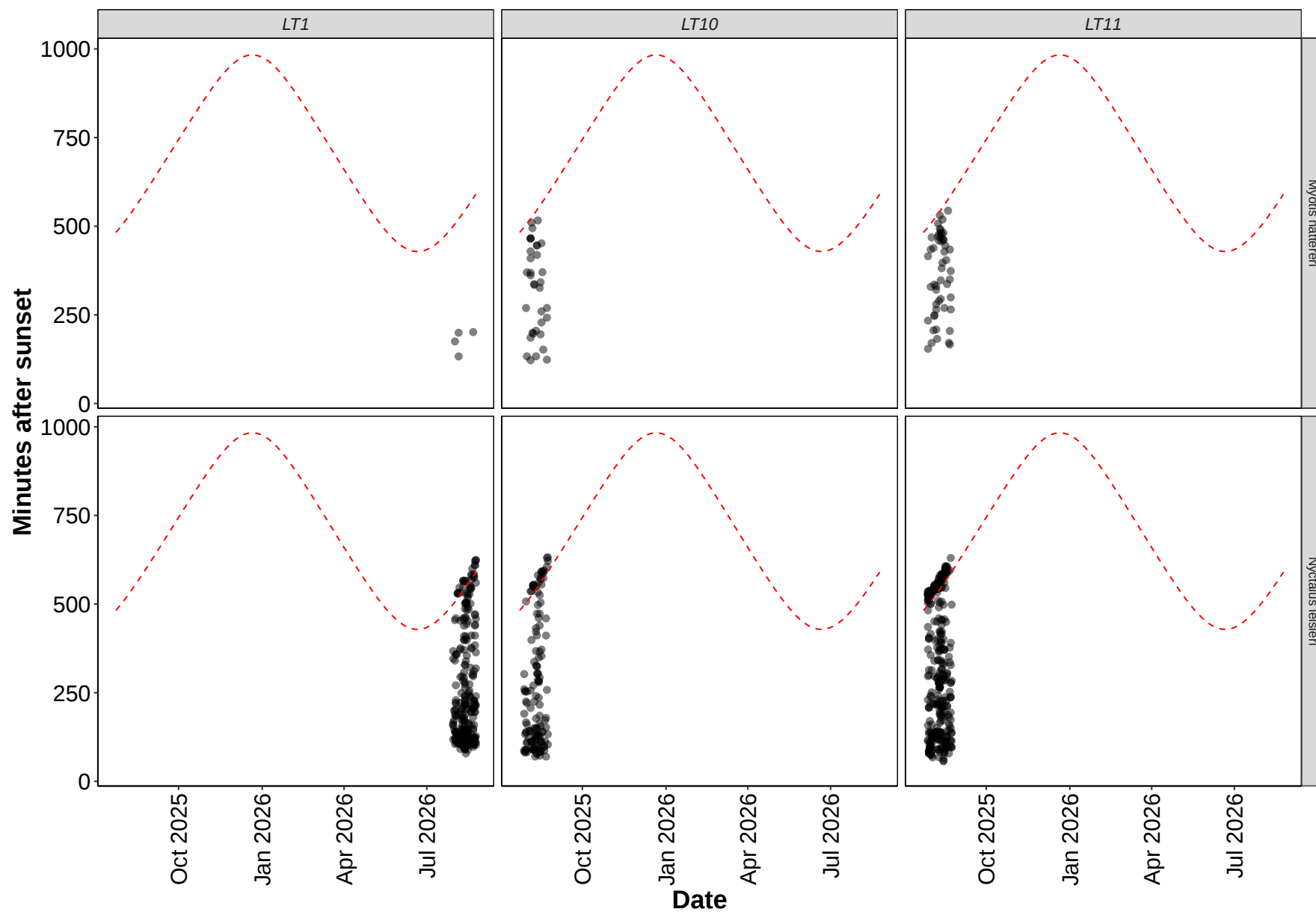
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

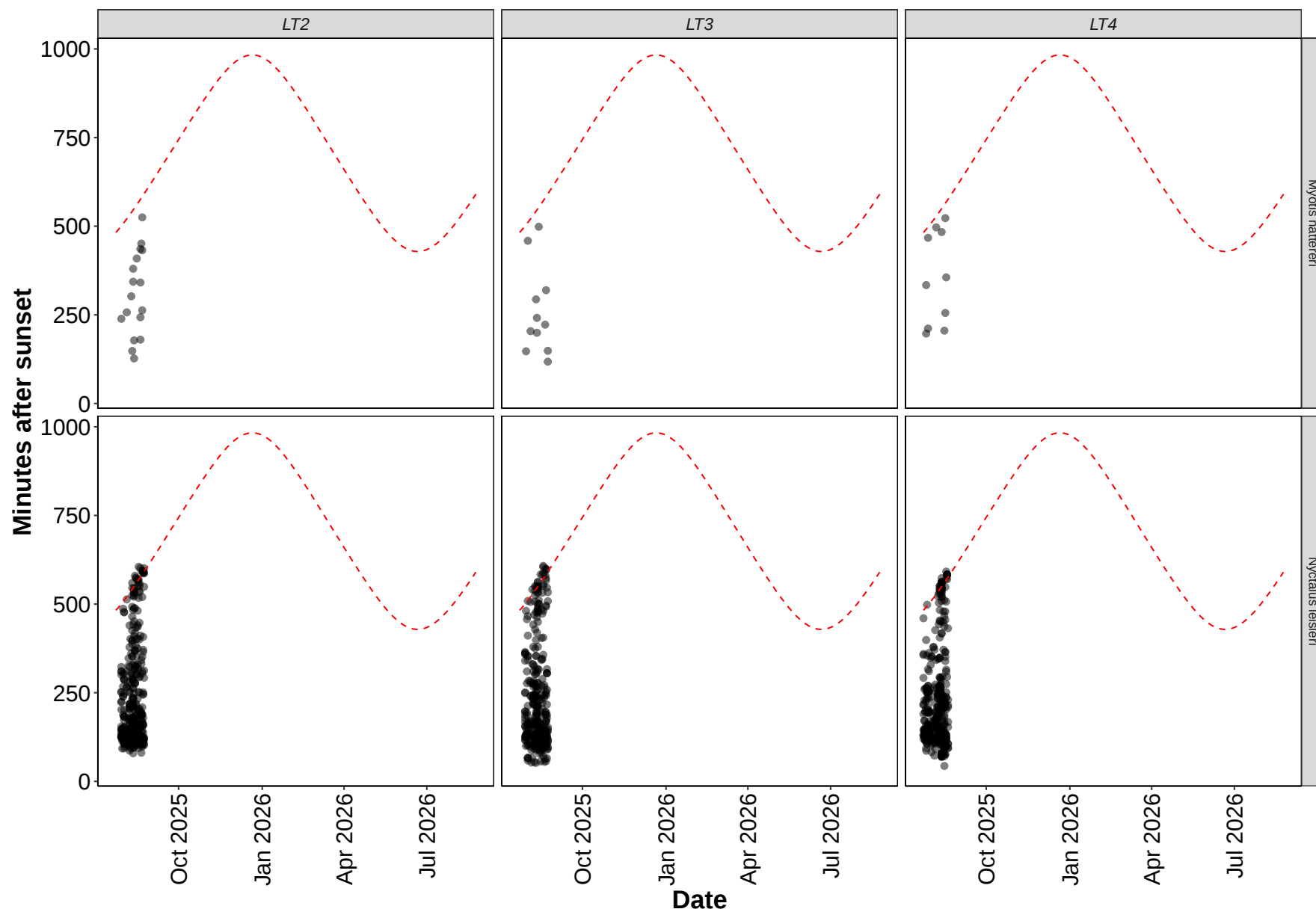


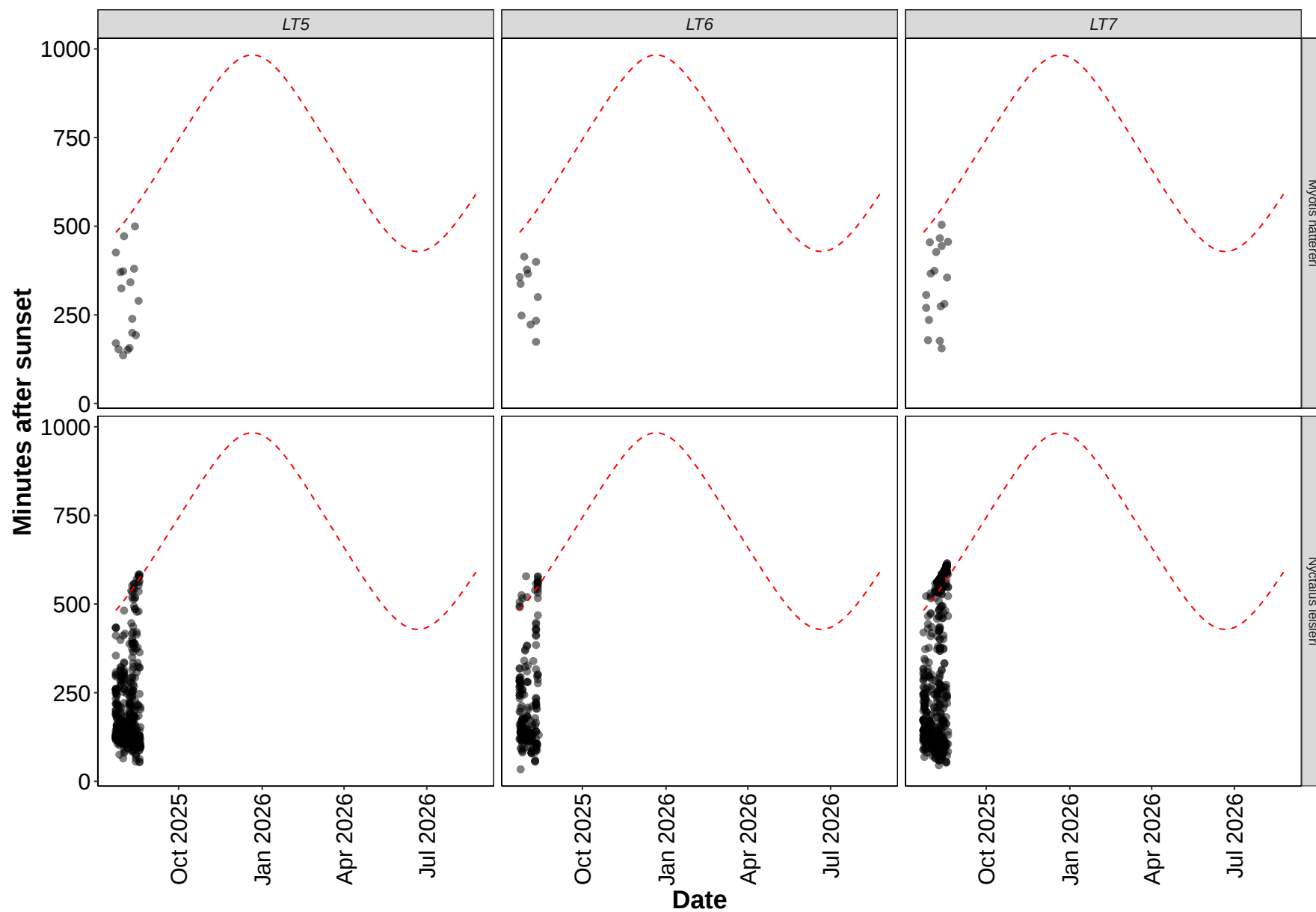


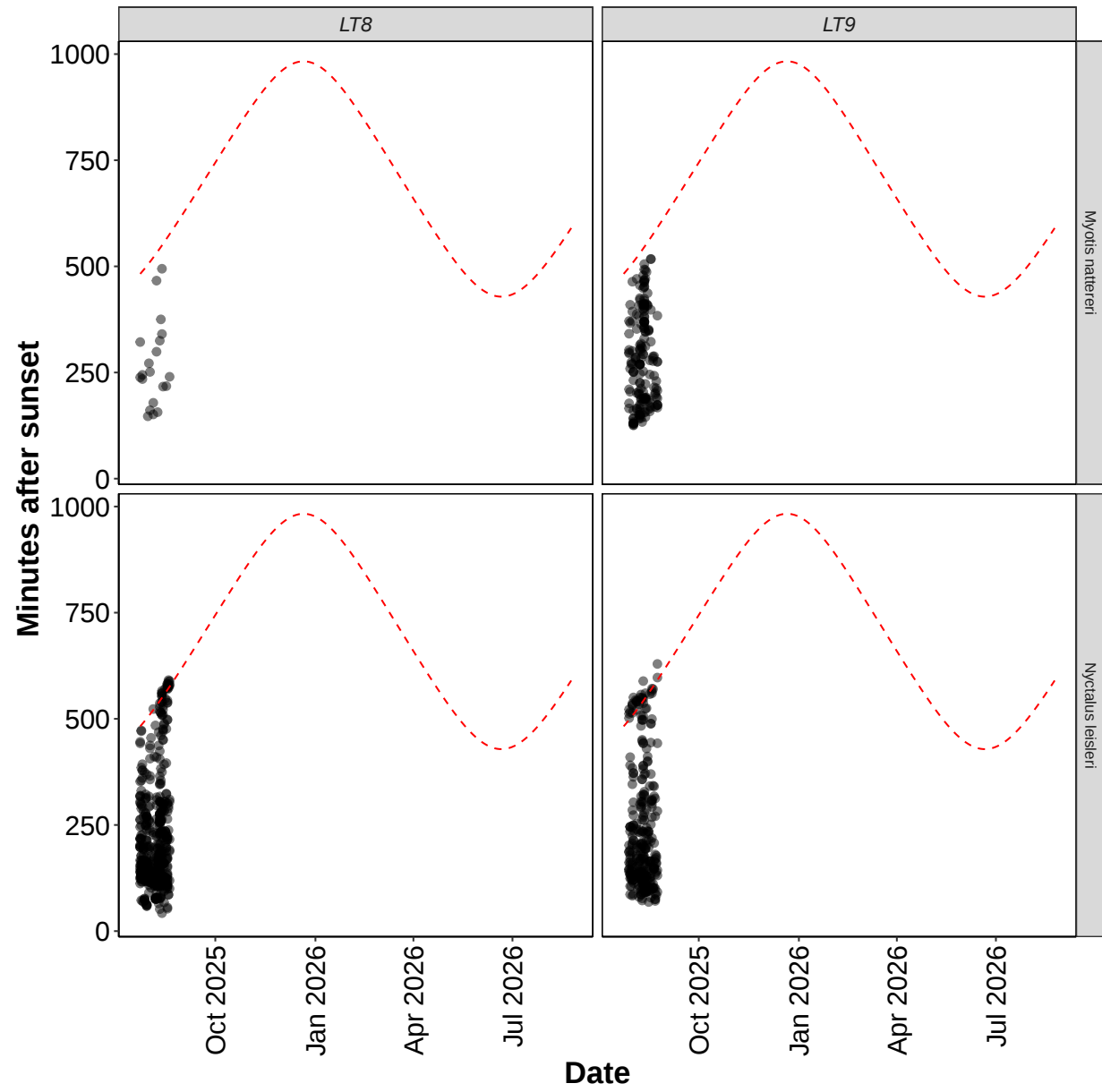


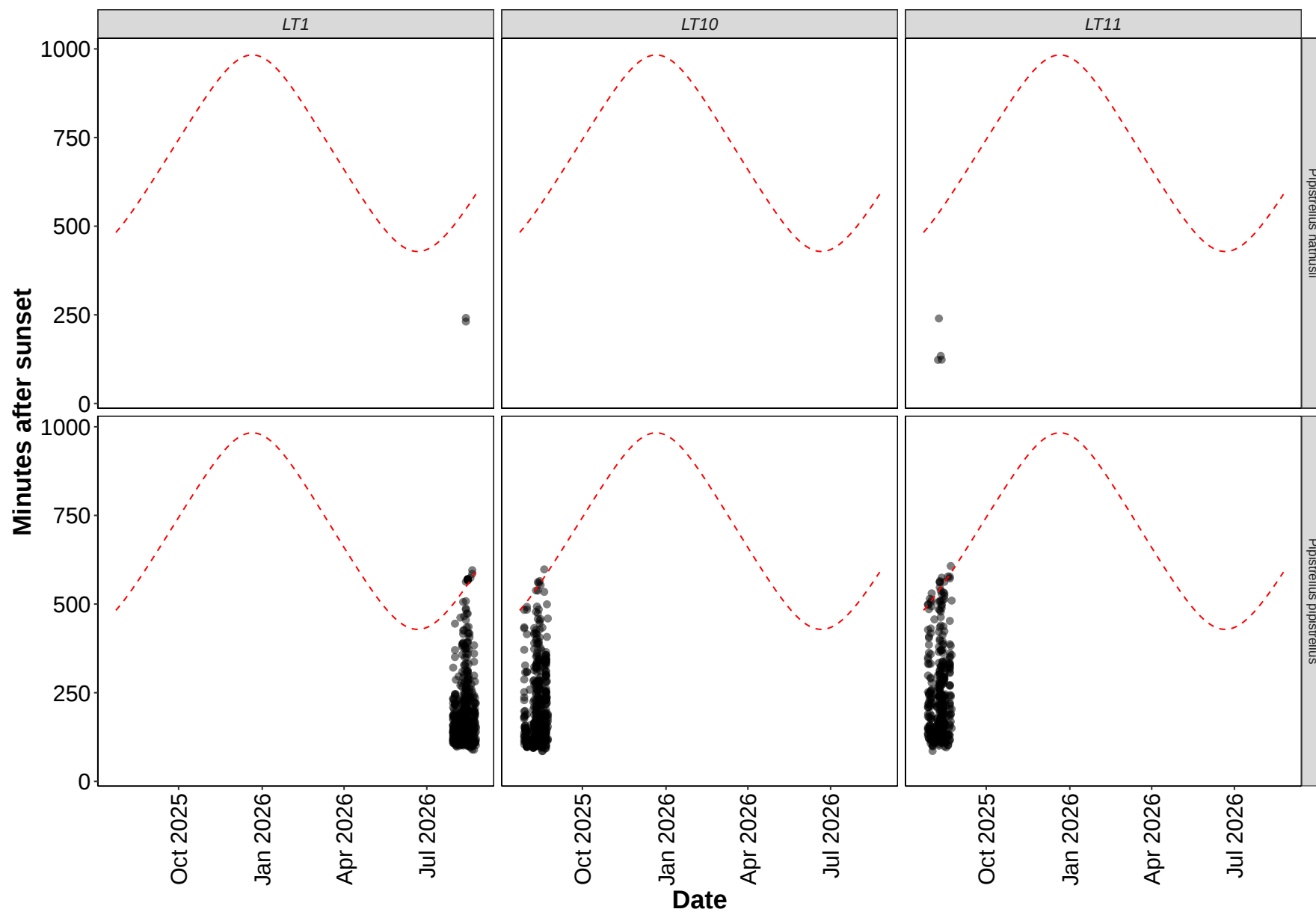


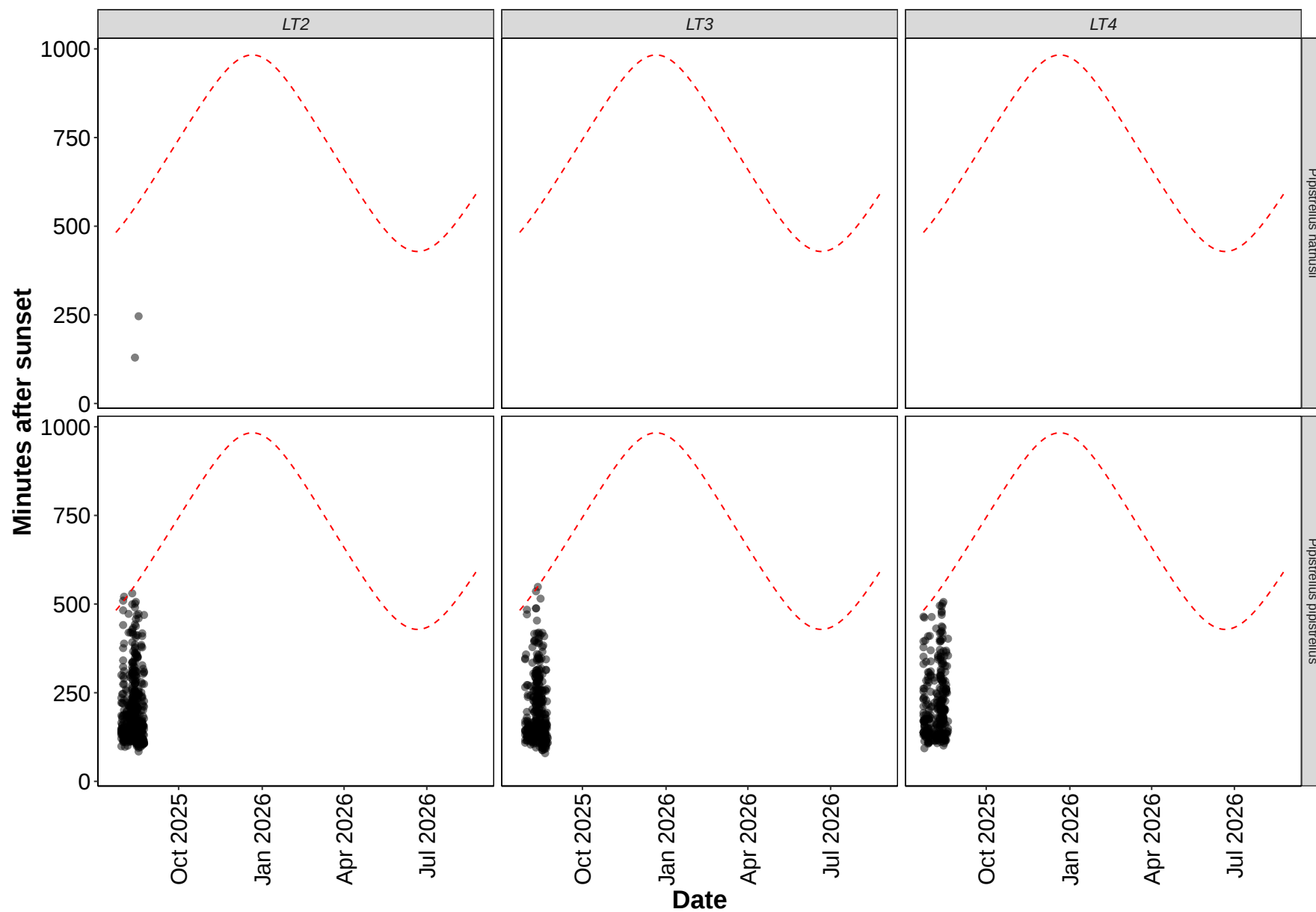


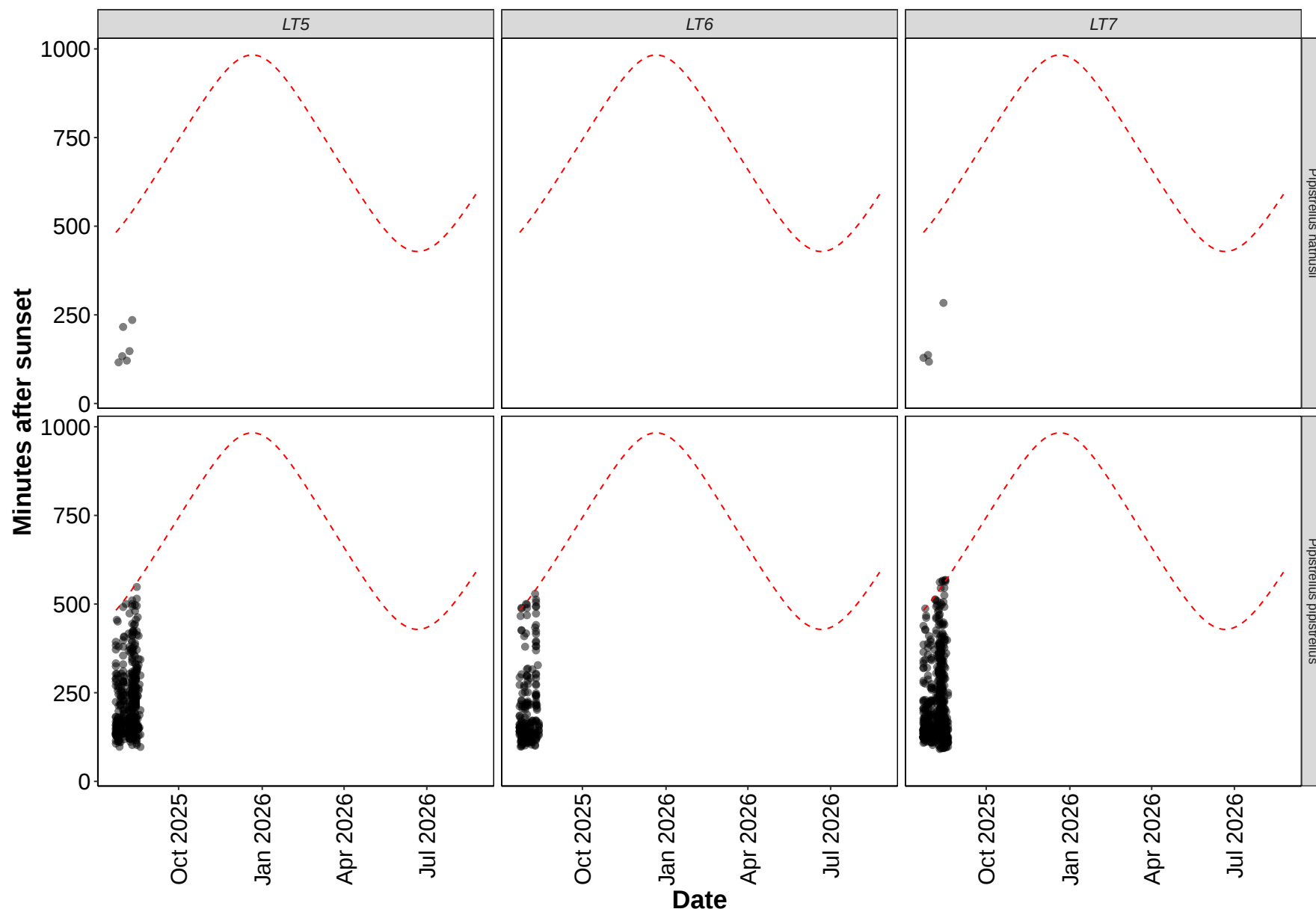


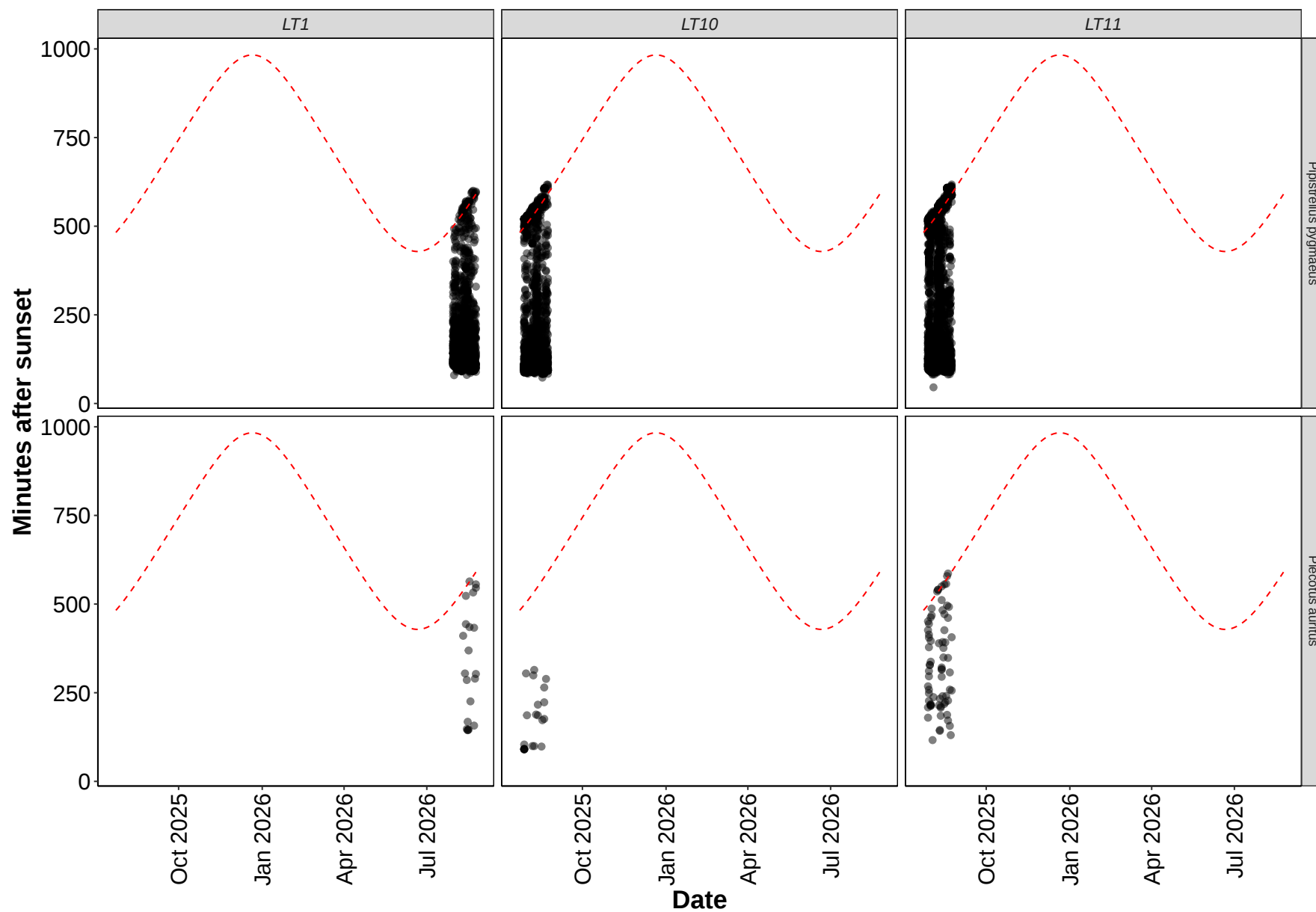


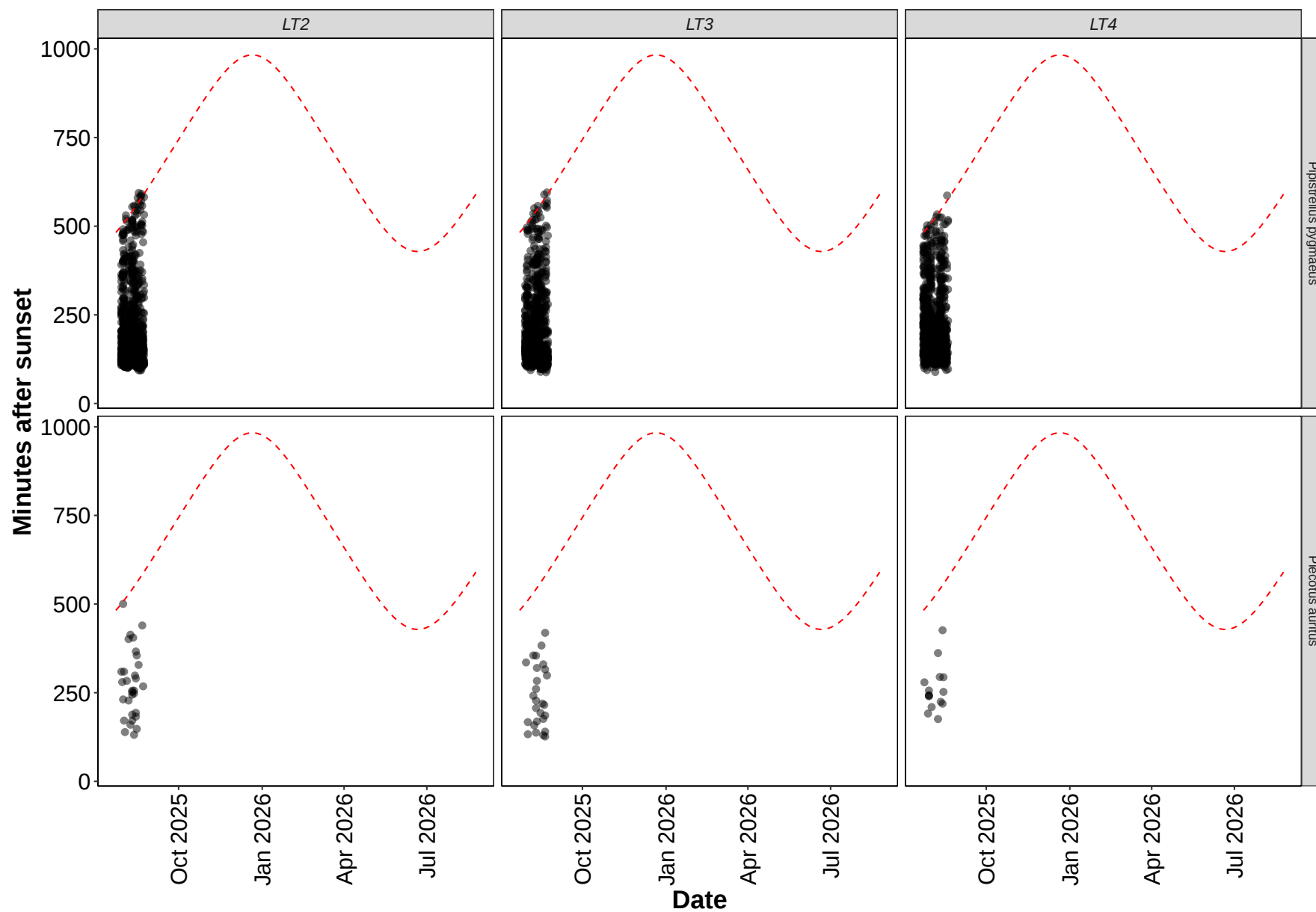












Roost Emergence Time and Bat Observation

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

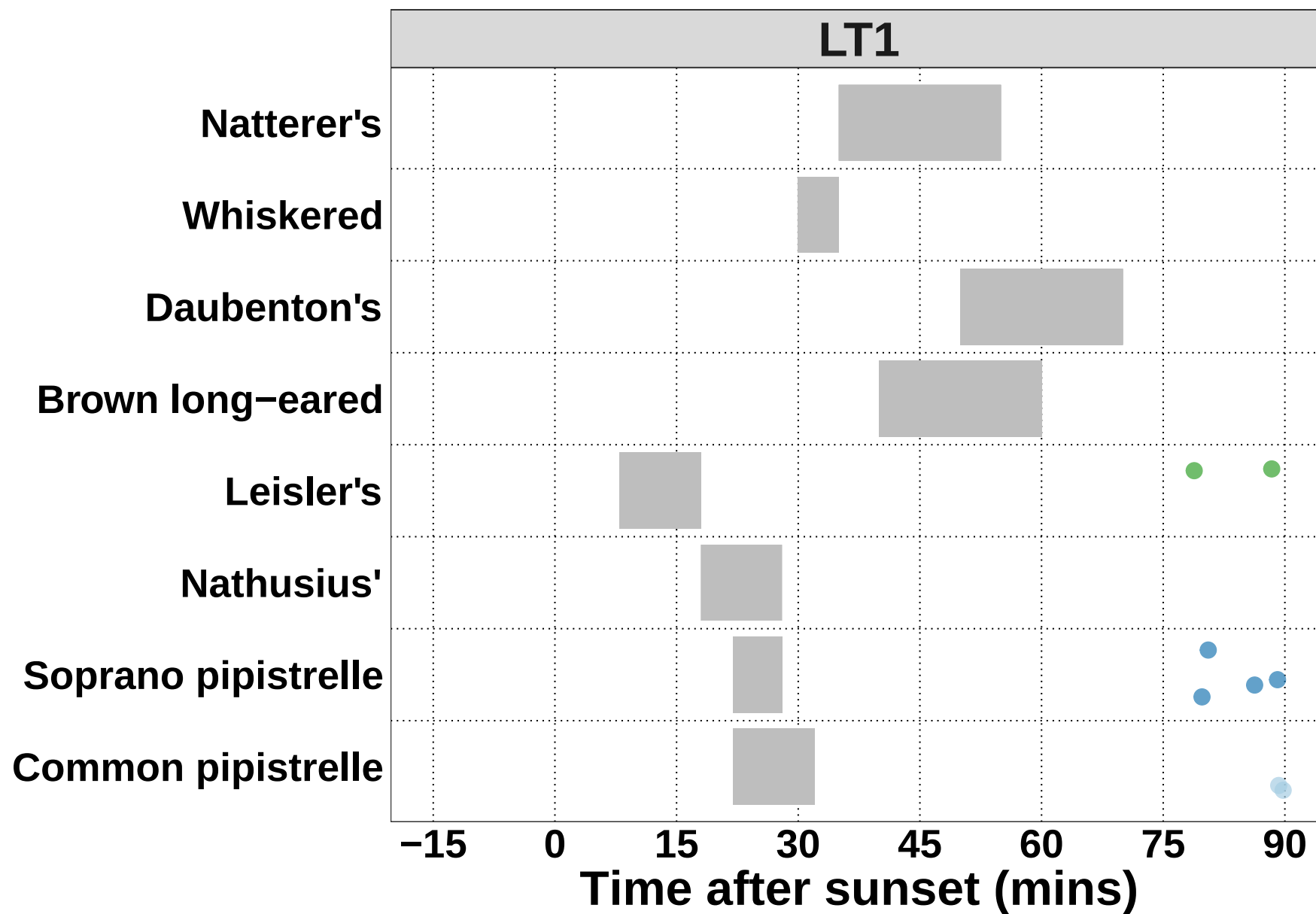
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

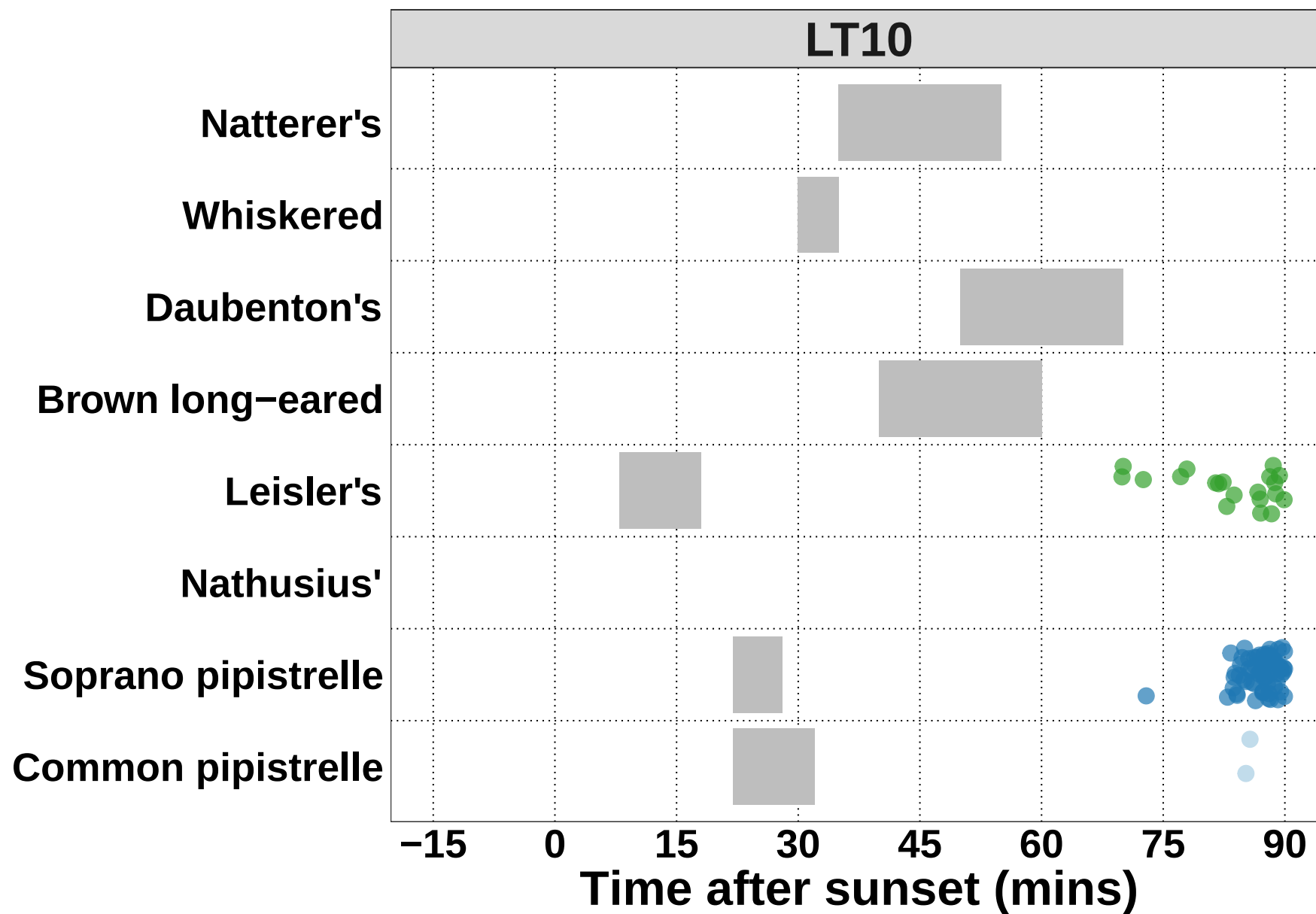
Table 12. Number of bat calls recorded before the upper time of the species-specific emergence time range, and which therefore may potentially indicate the presence of a nearby roost.

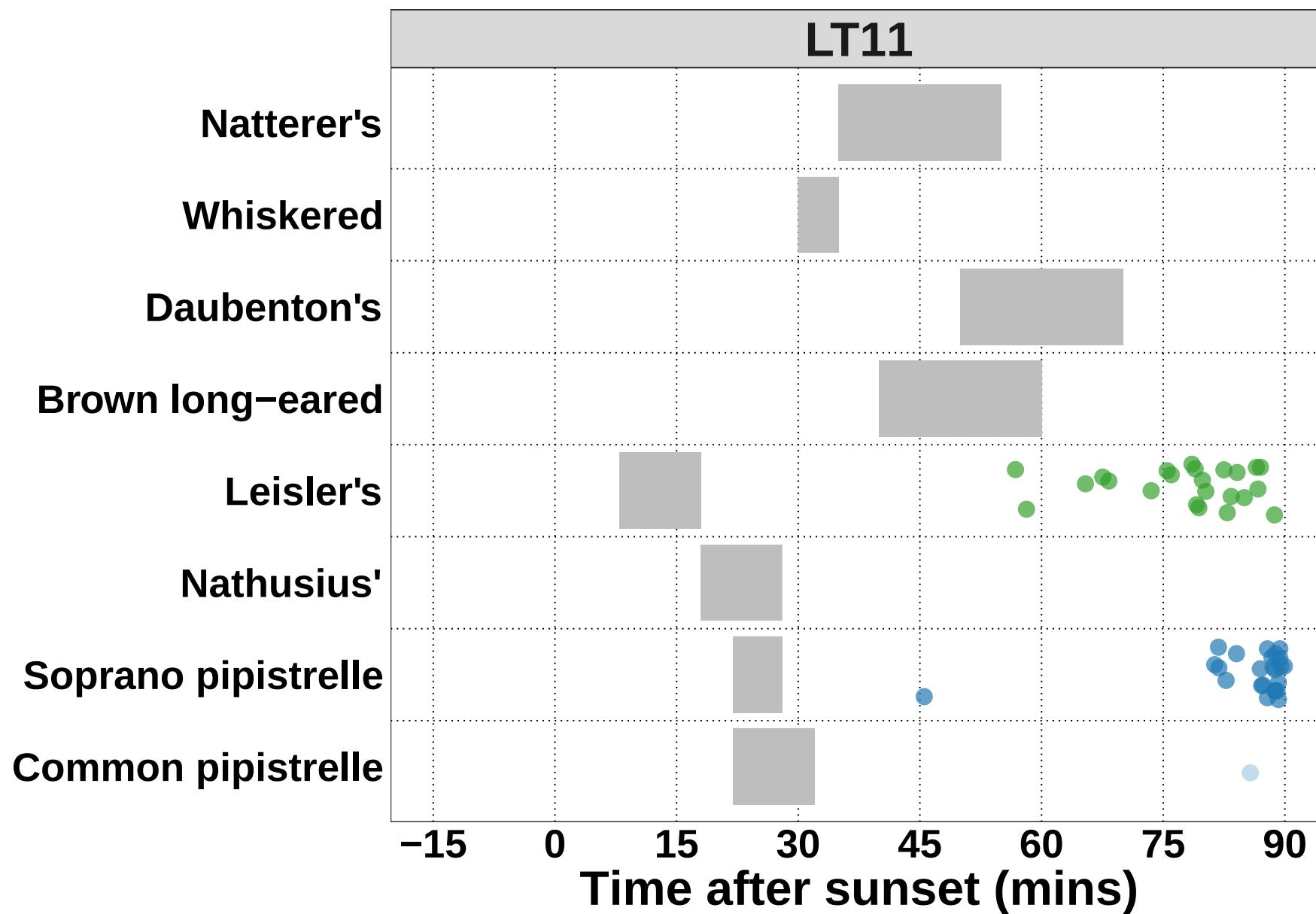
Species	Detector ID
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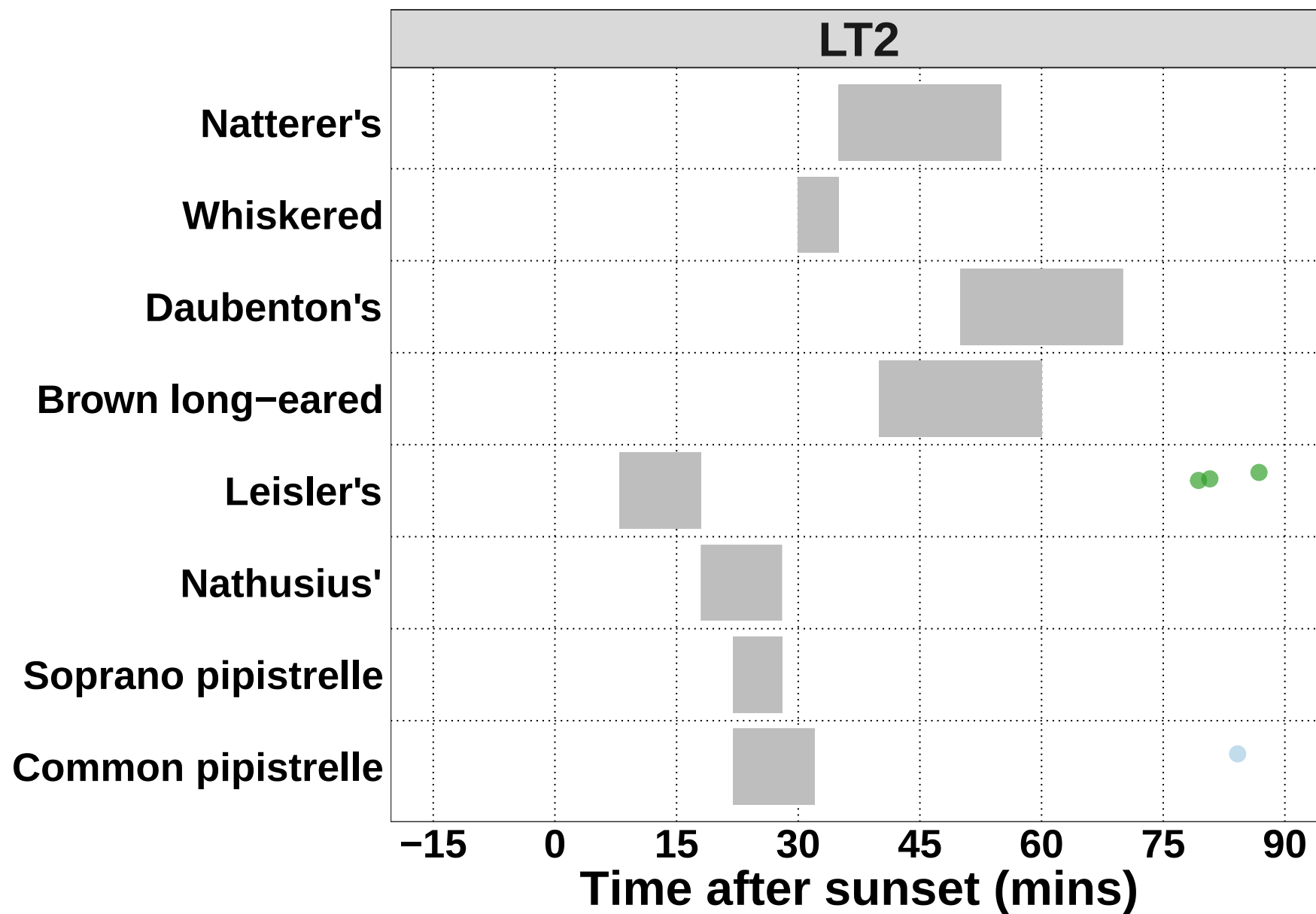
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

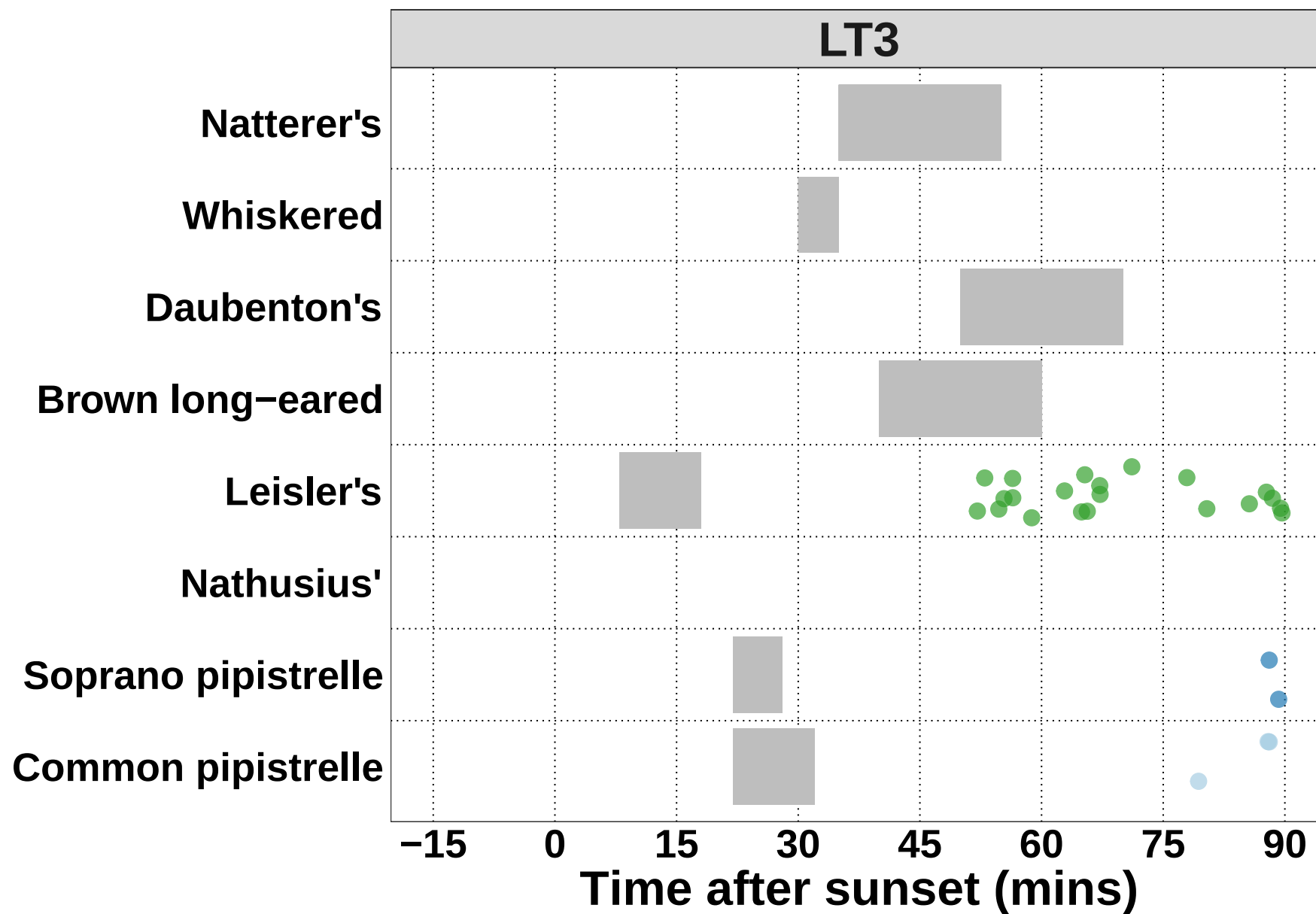
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

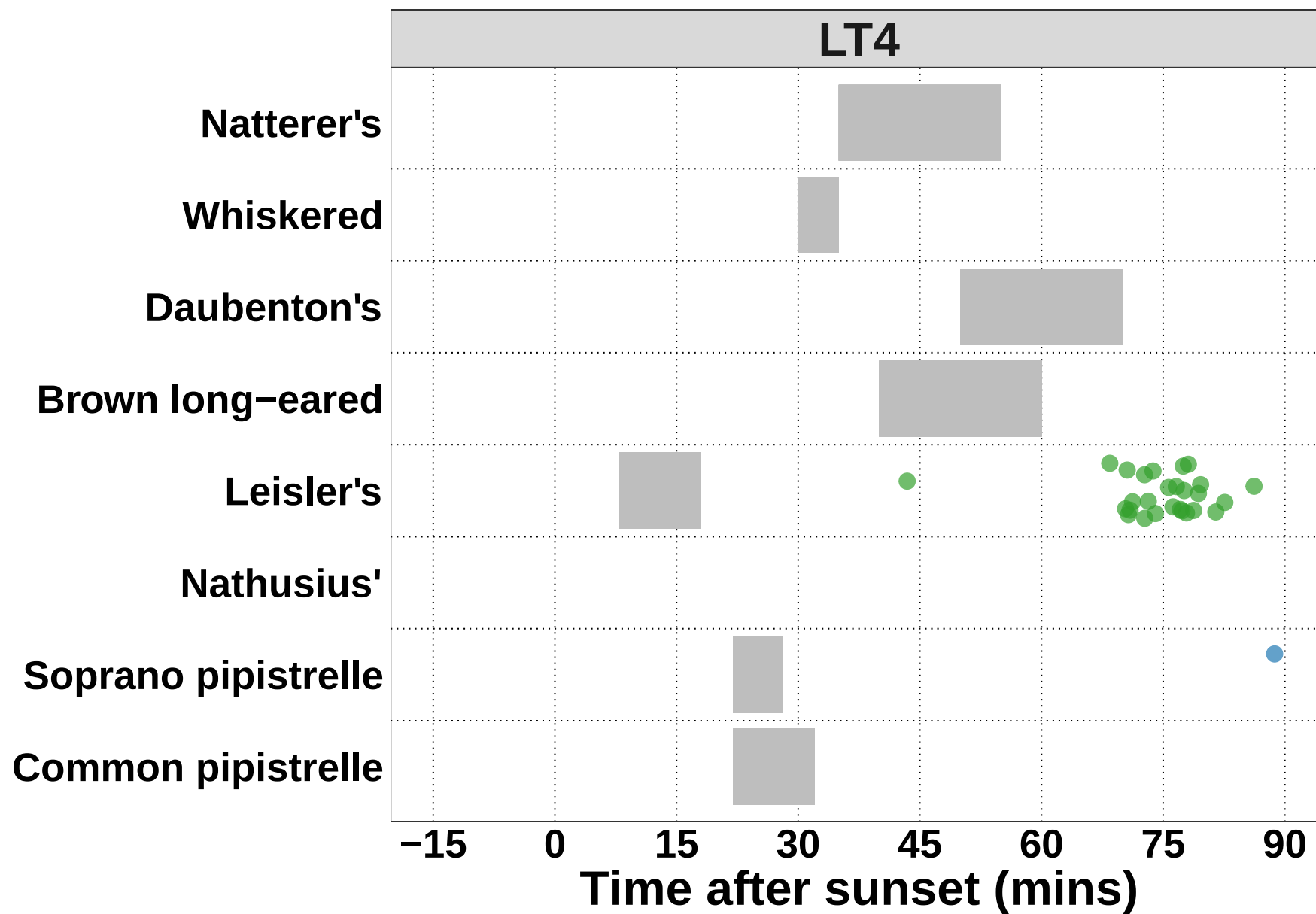


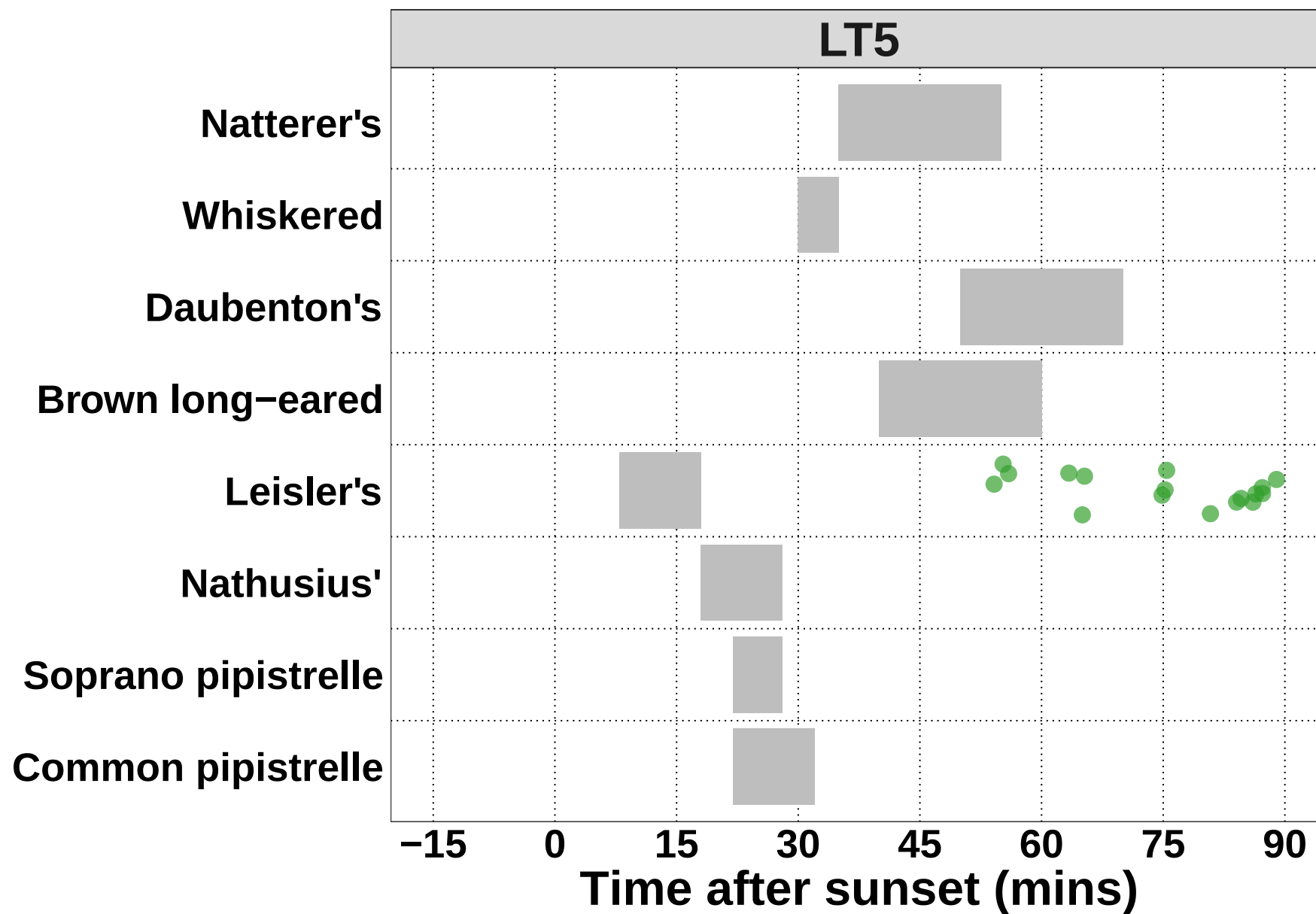


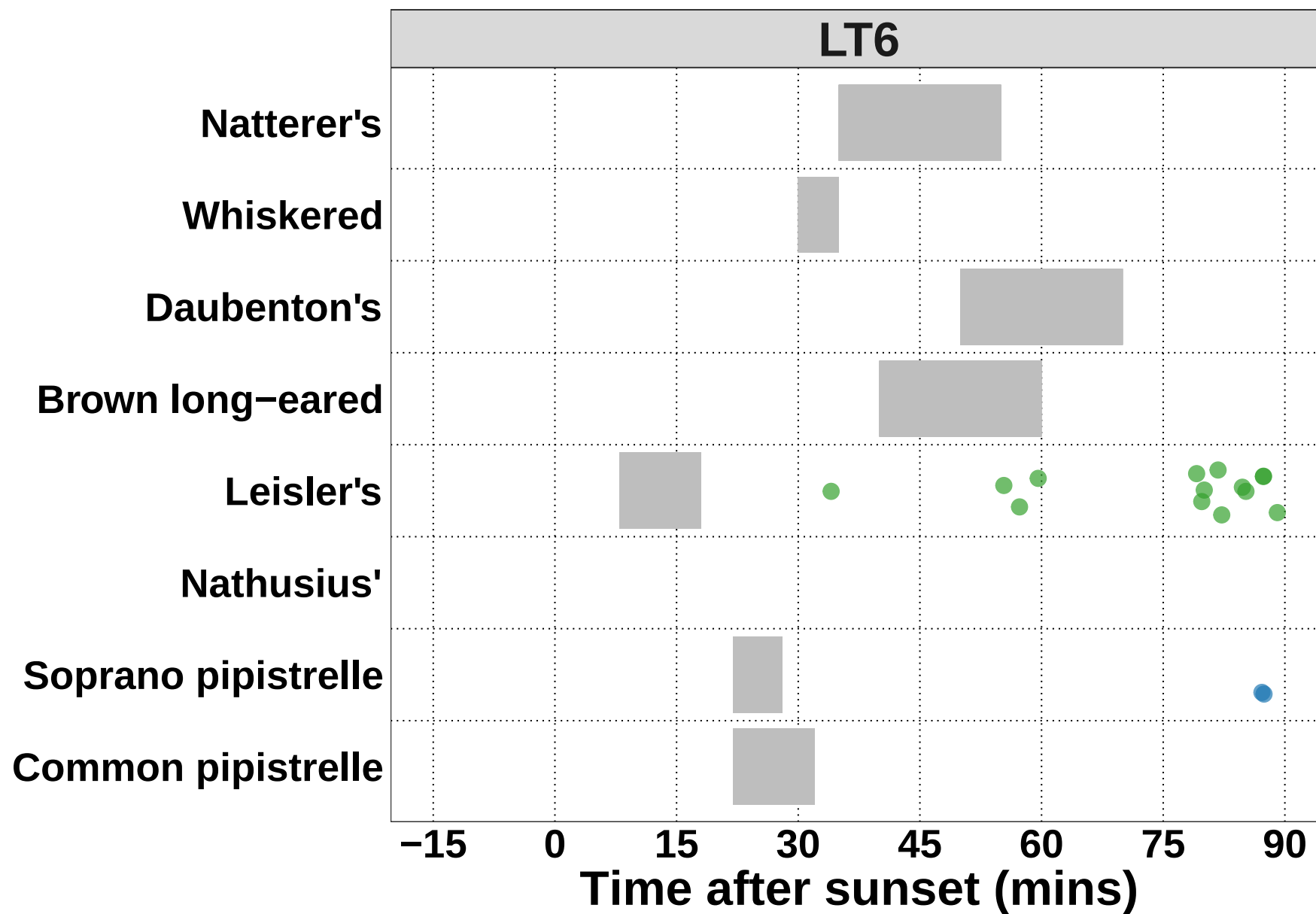


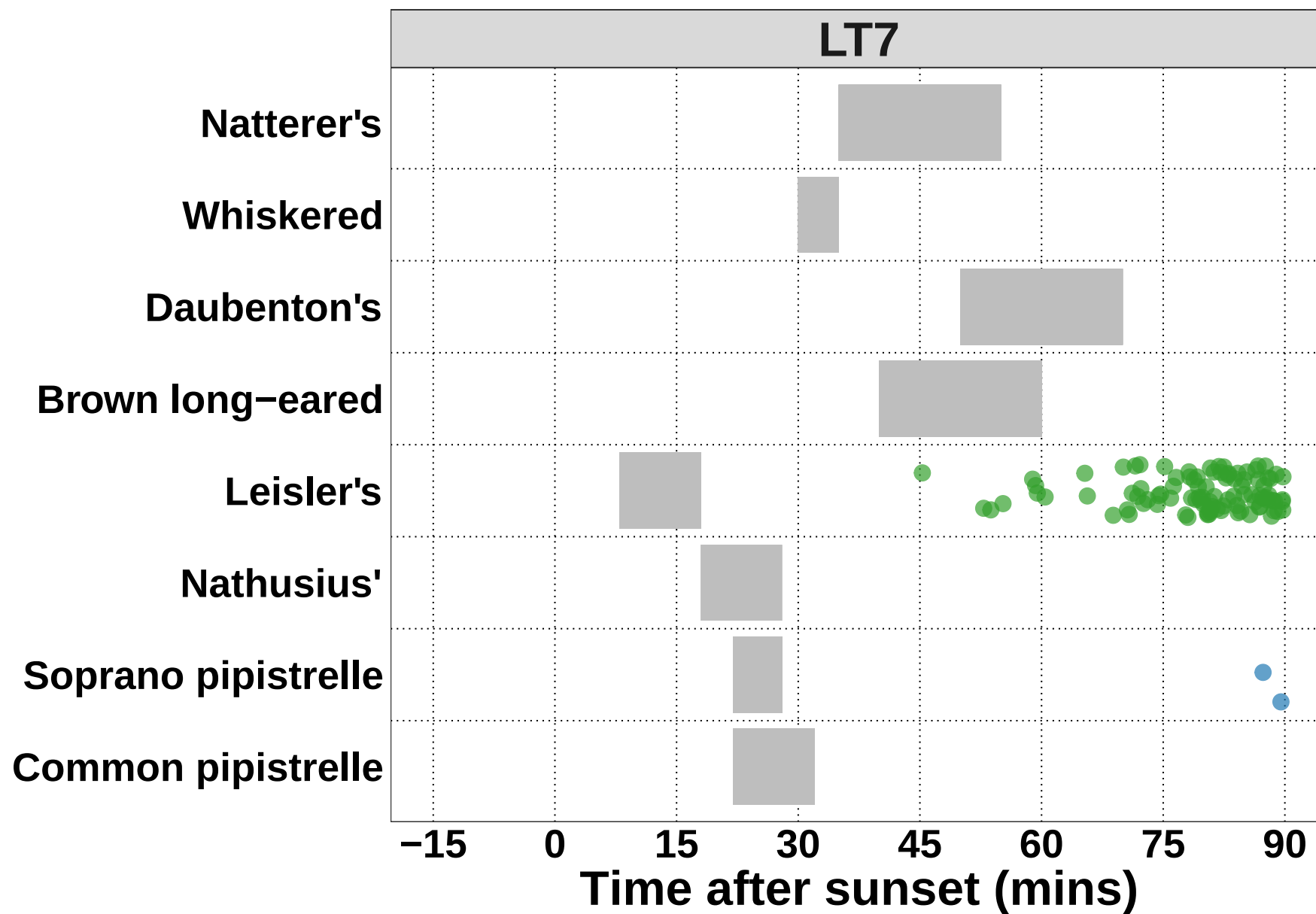


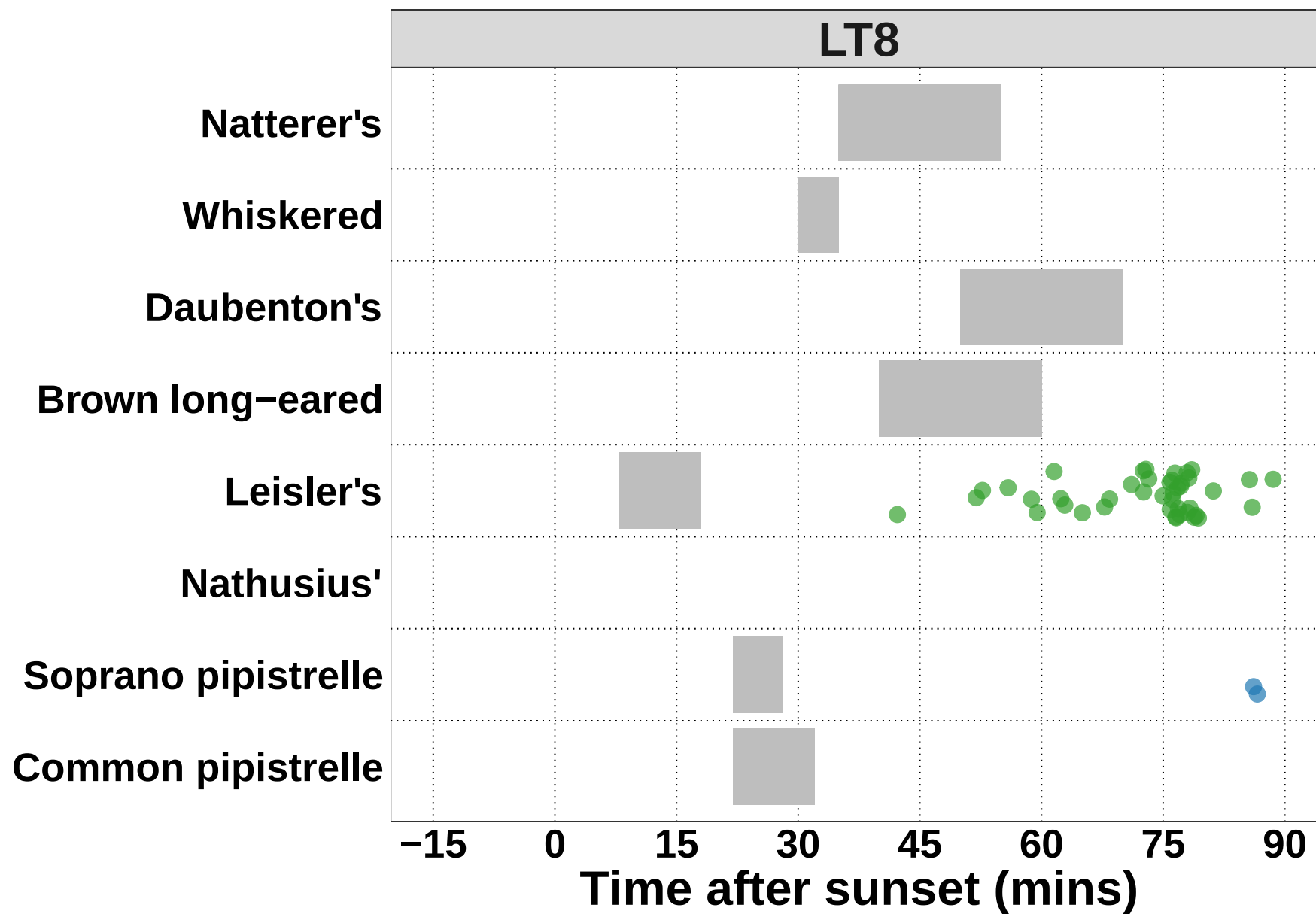


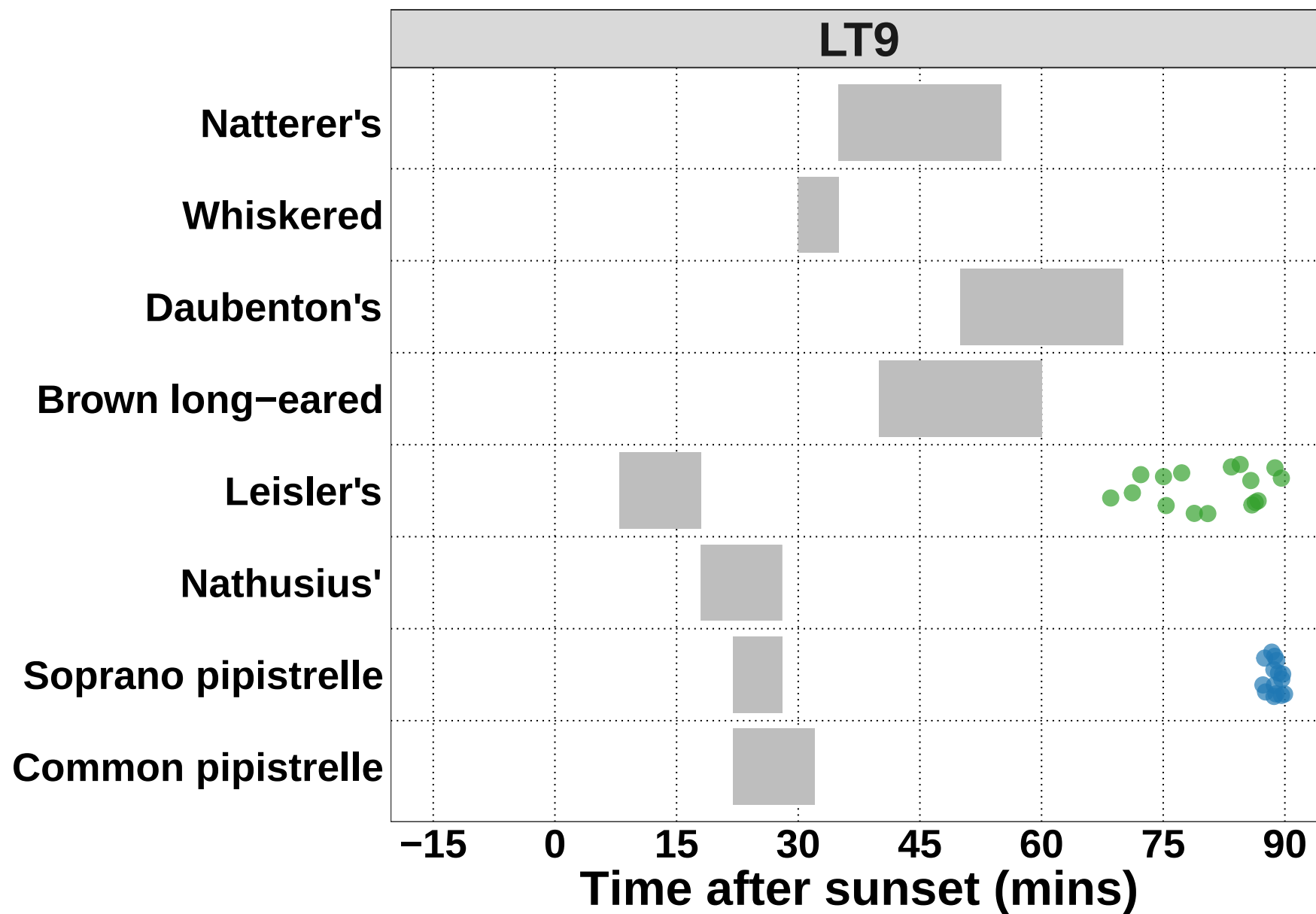








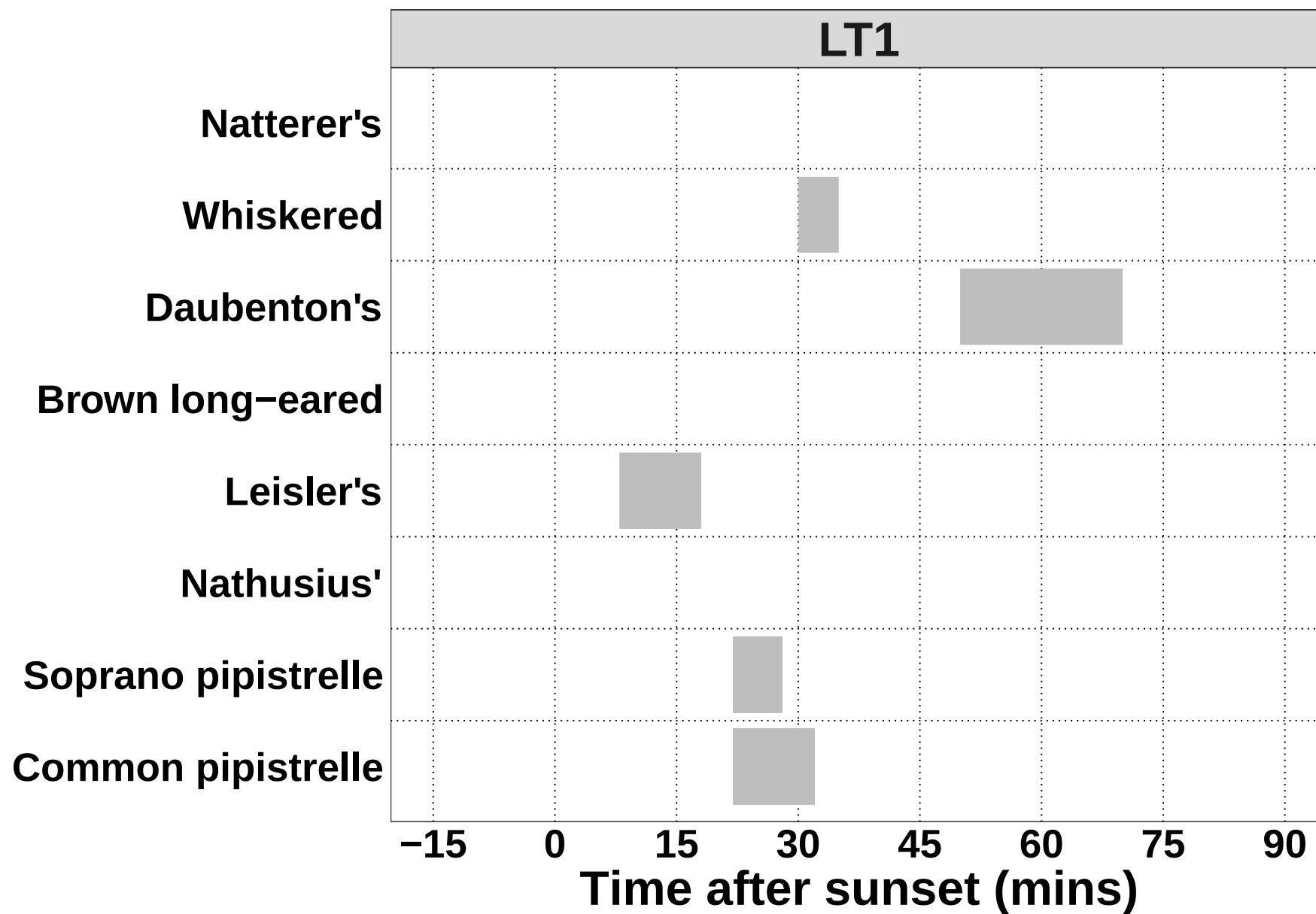


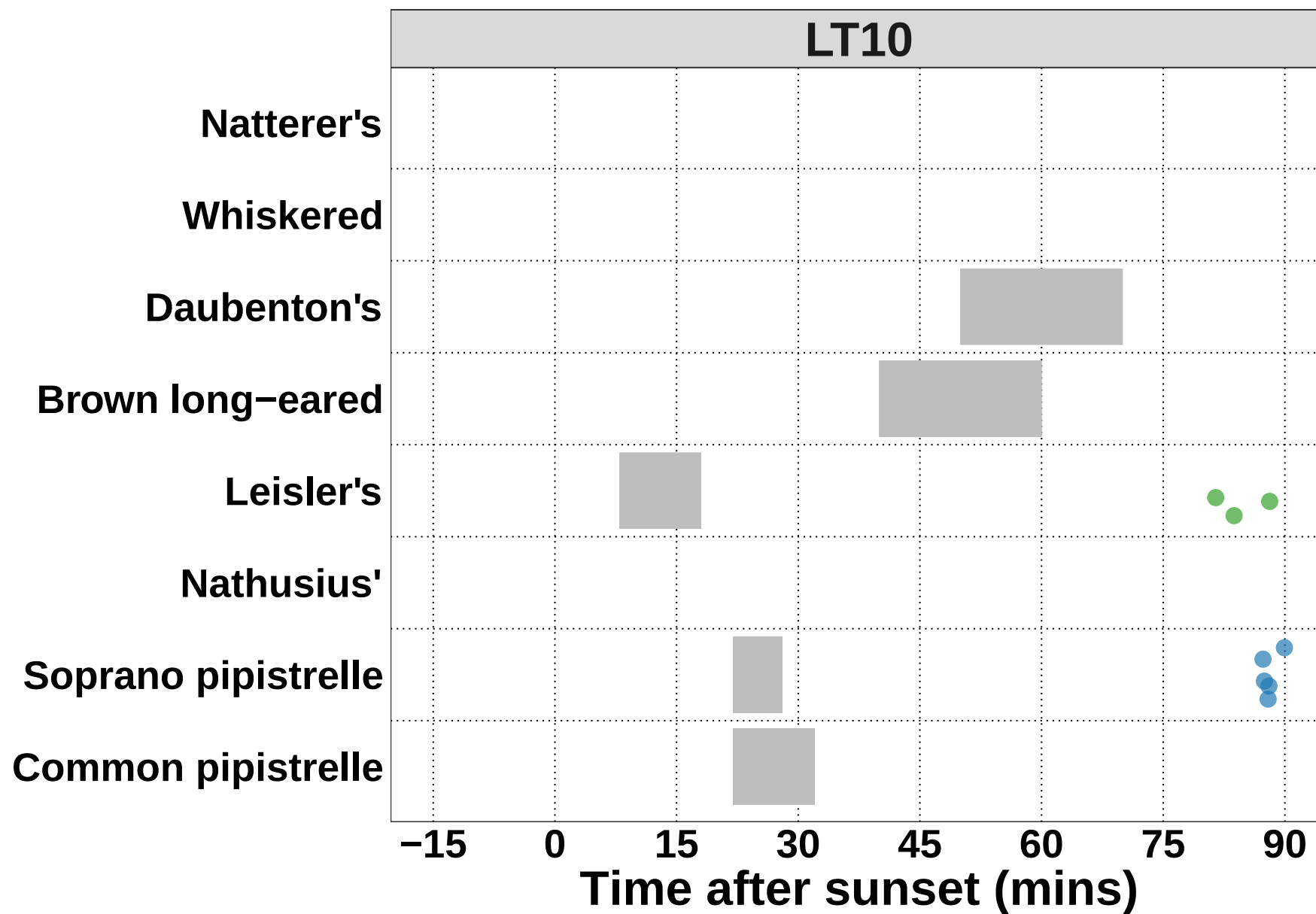


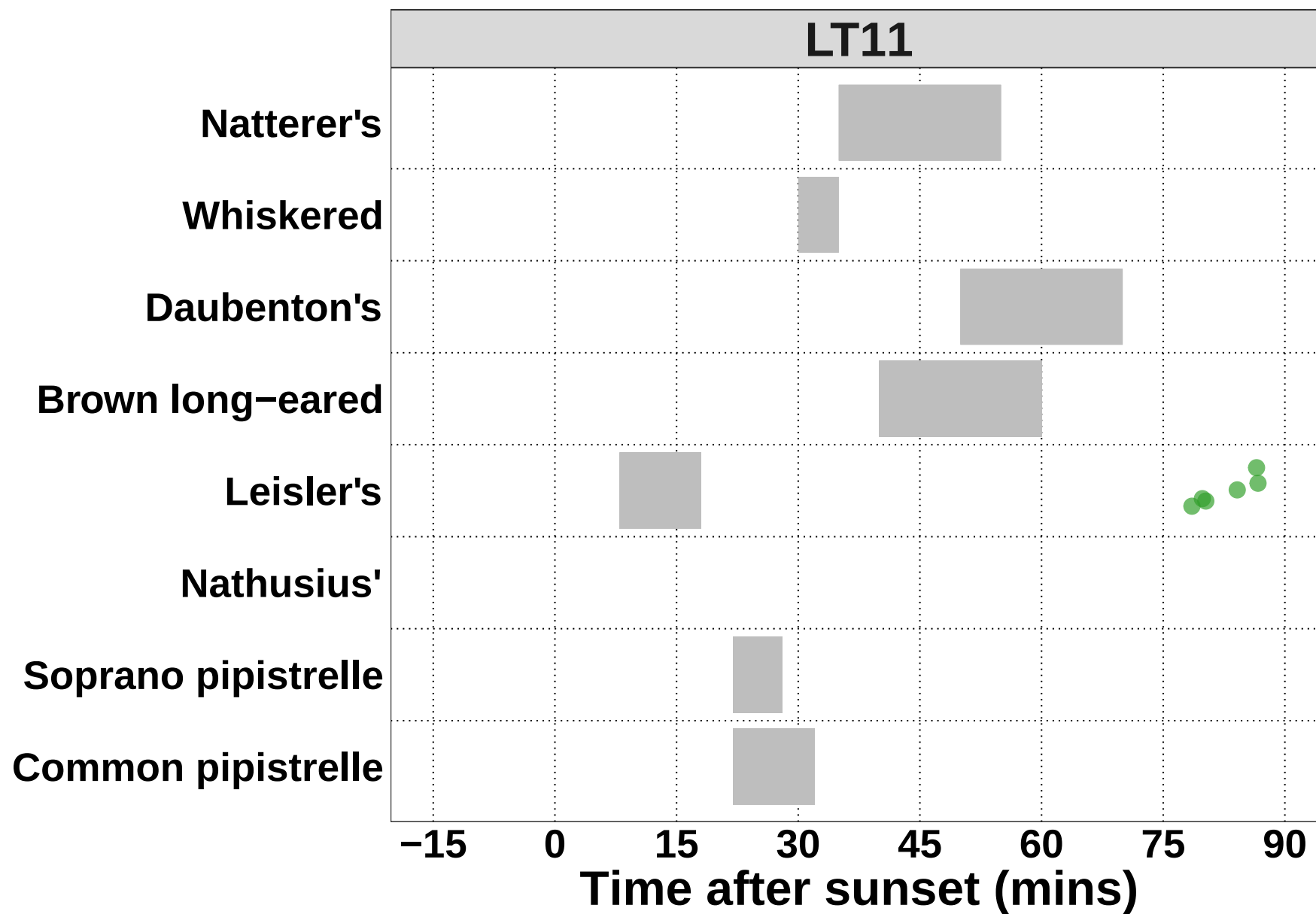
Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - *Maternity period defined as 15th June - 30th July.

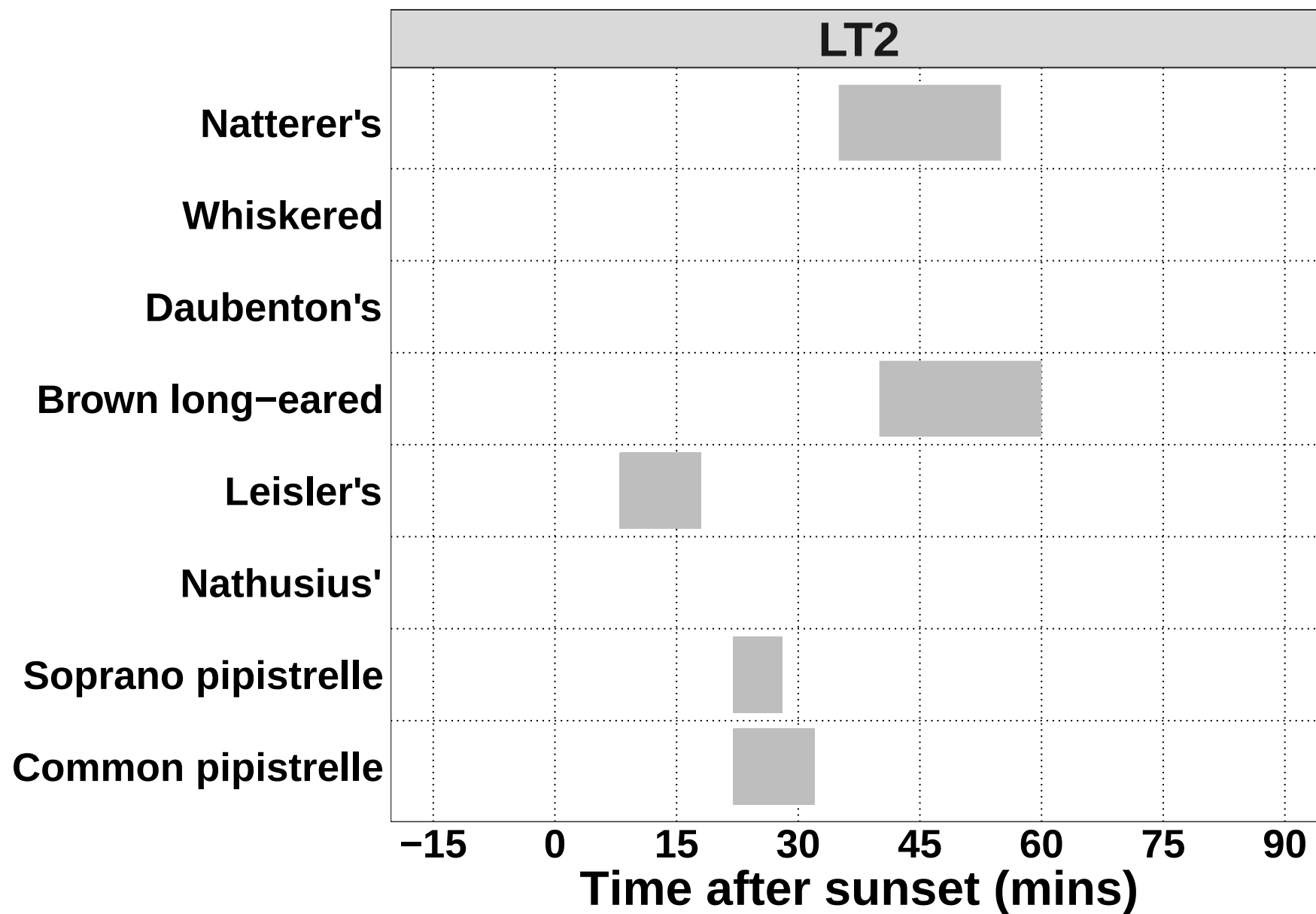
Species	Detector ID
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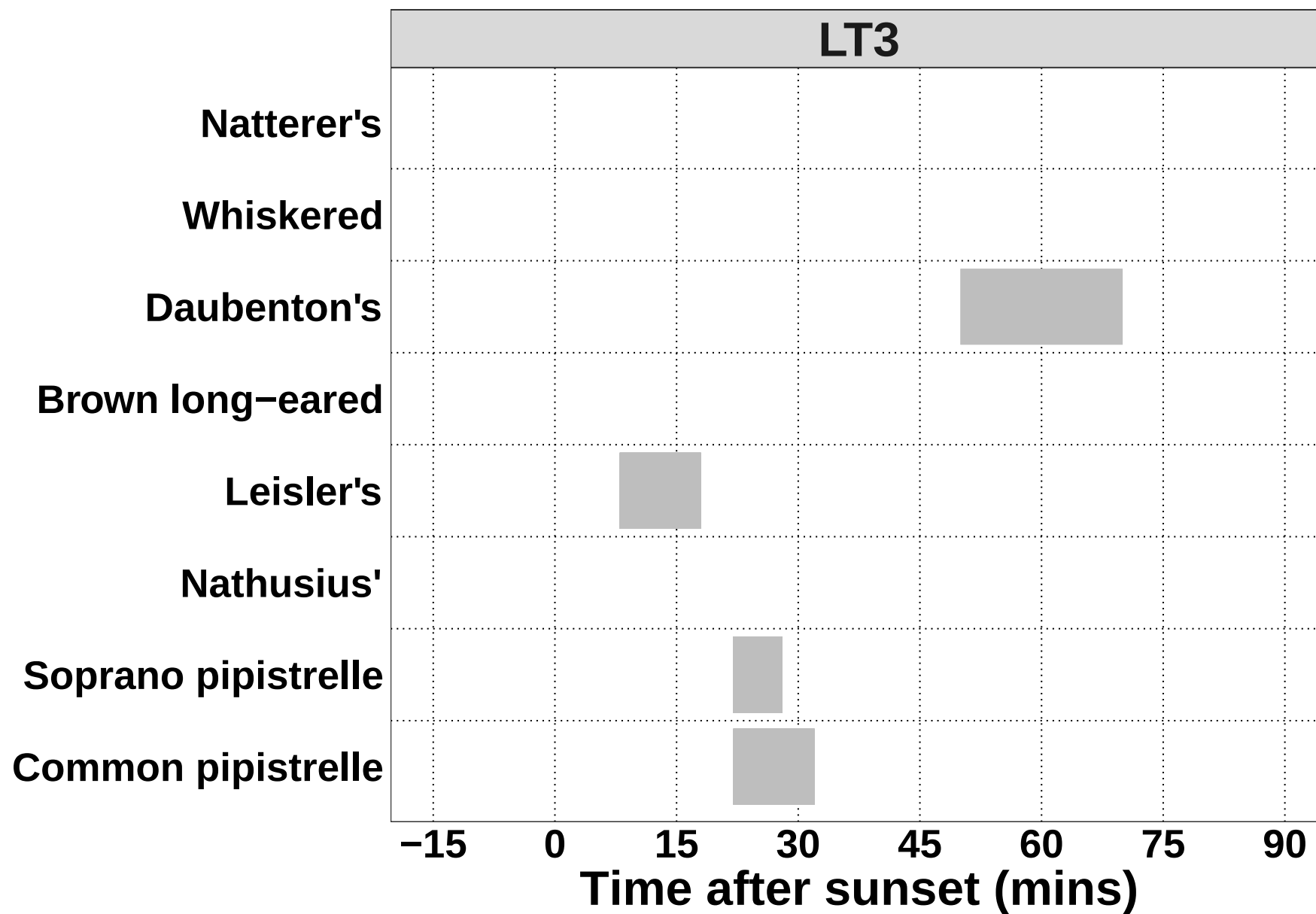
Bat Passes Potentially Indicating Close Proximity to a Roost (Maternity Period Only) - Maternity period defined as 15th June - 30th July.

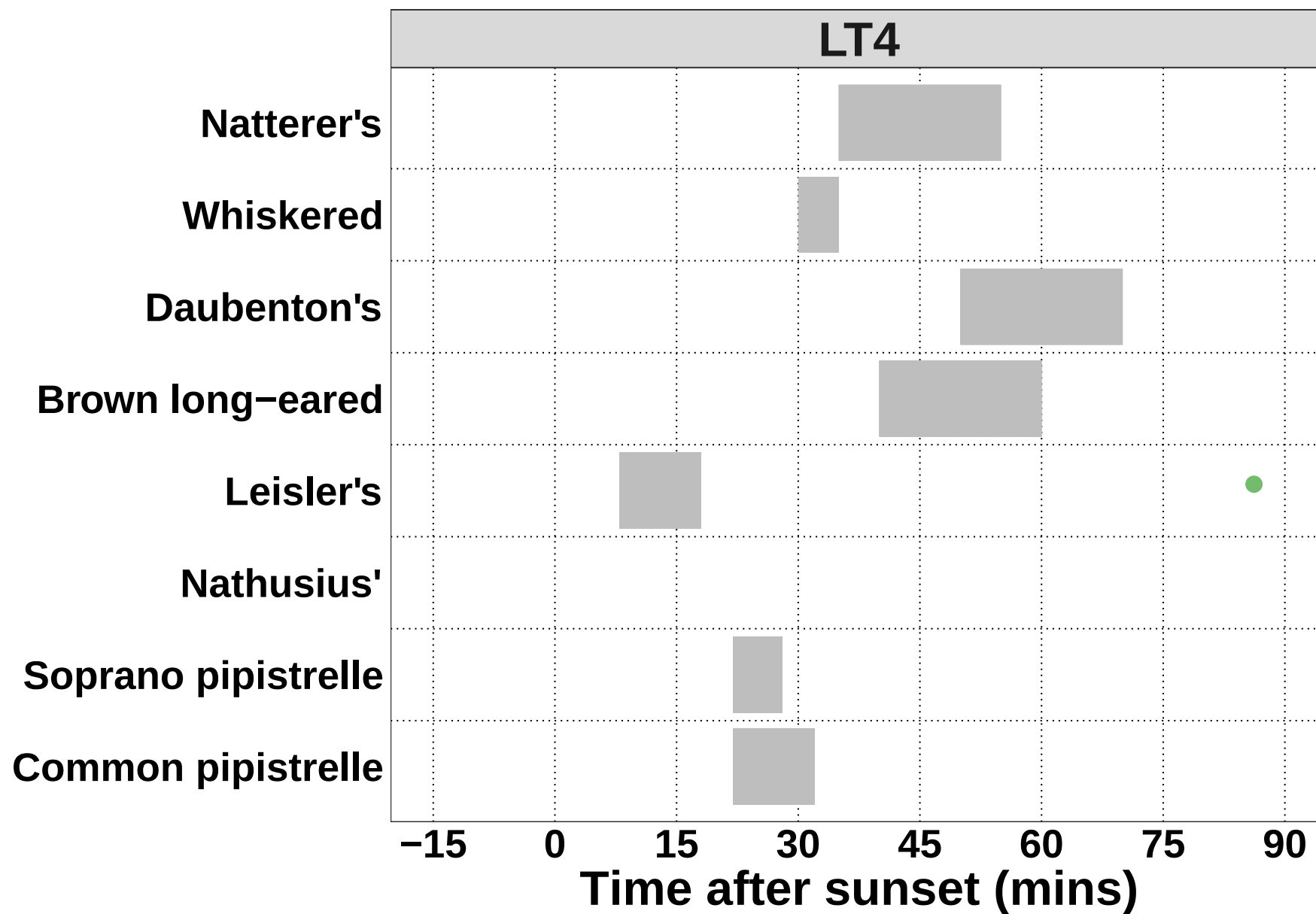


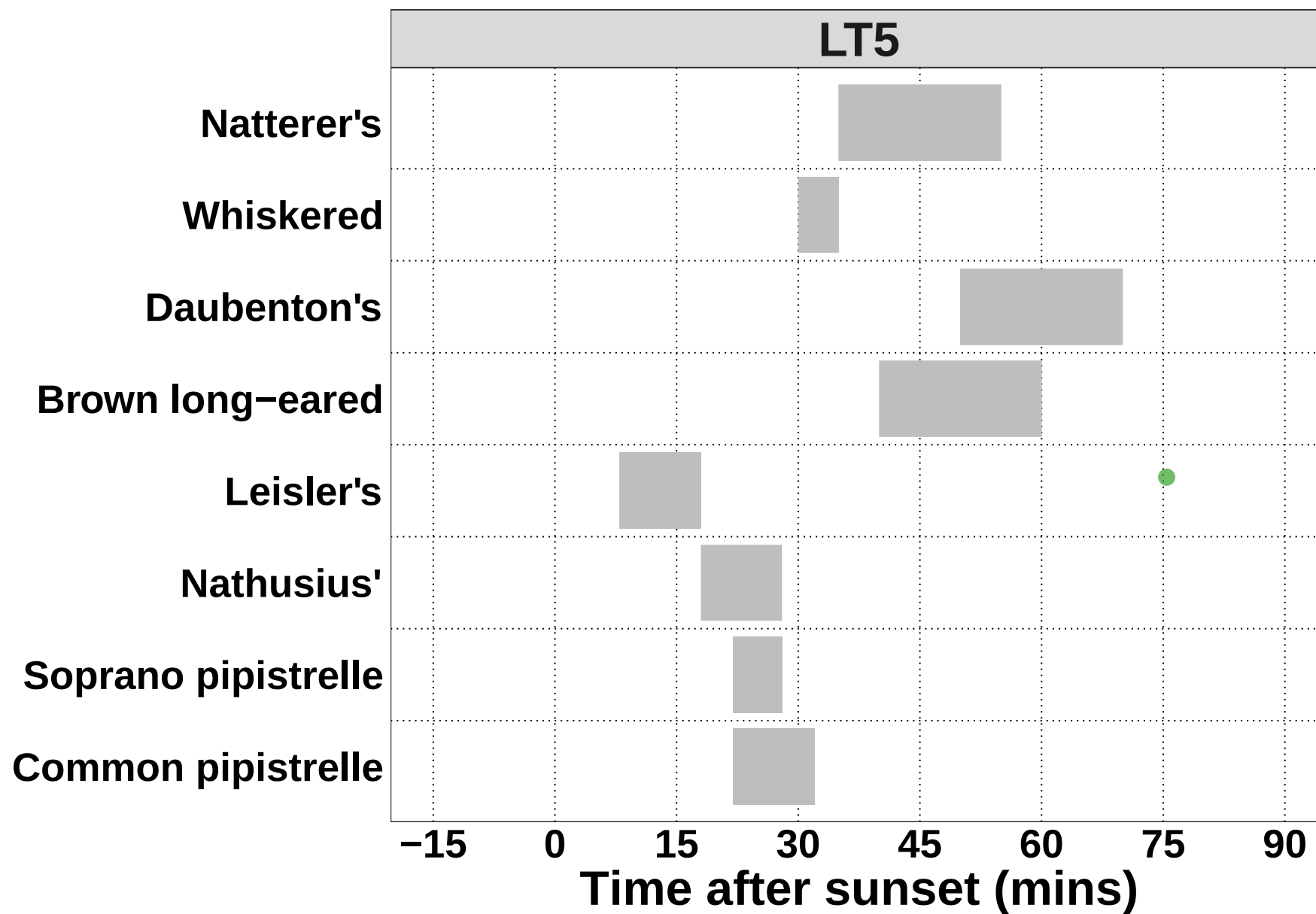


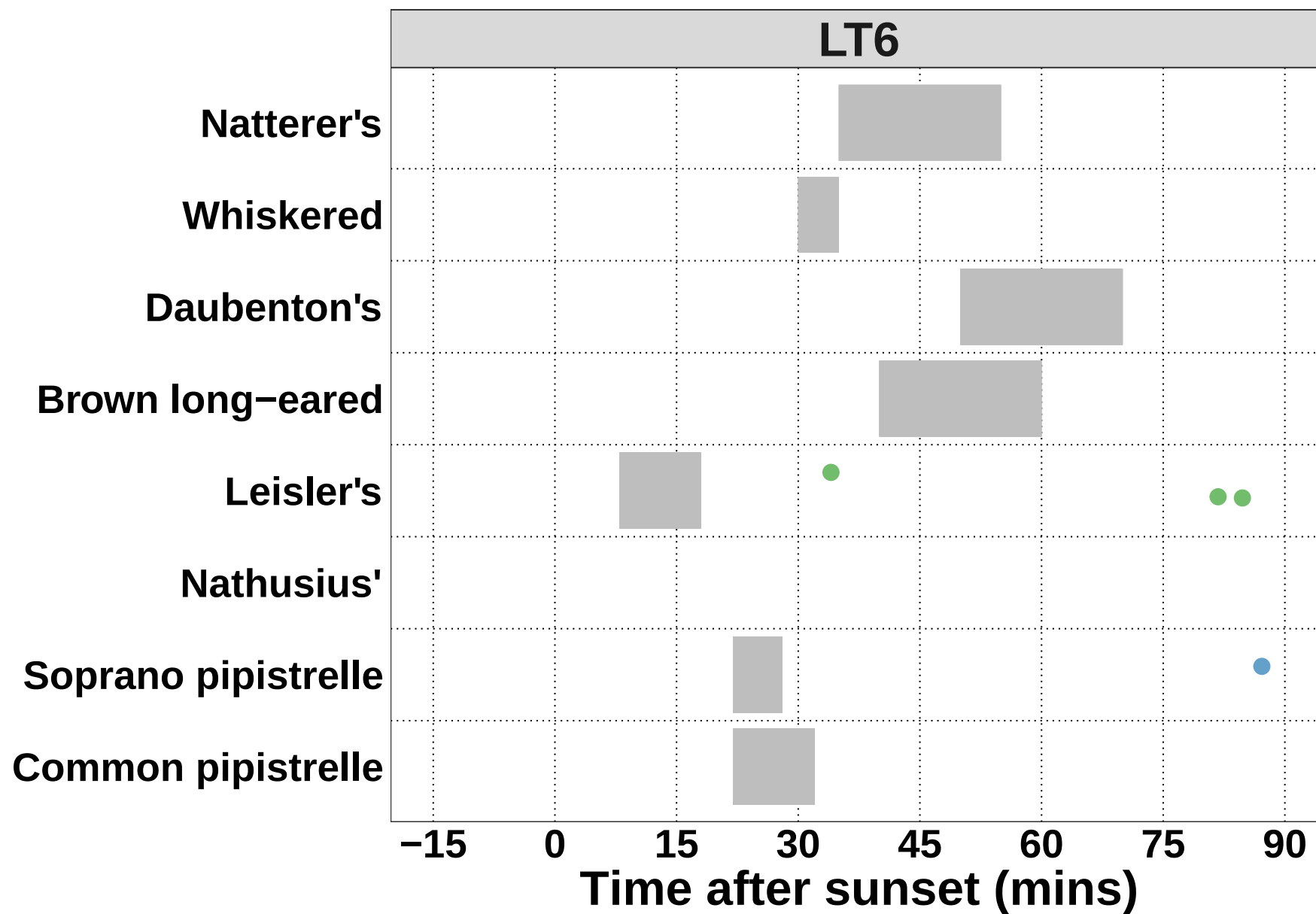


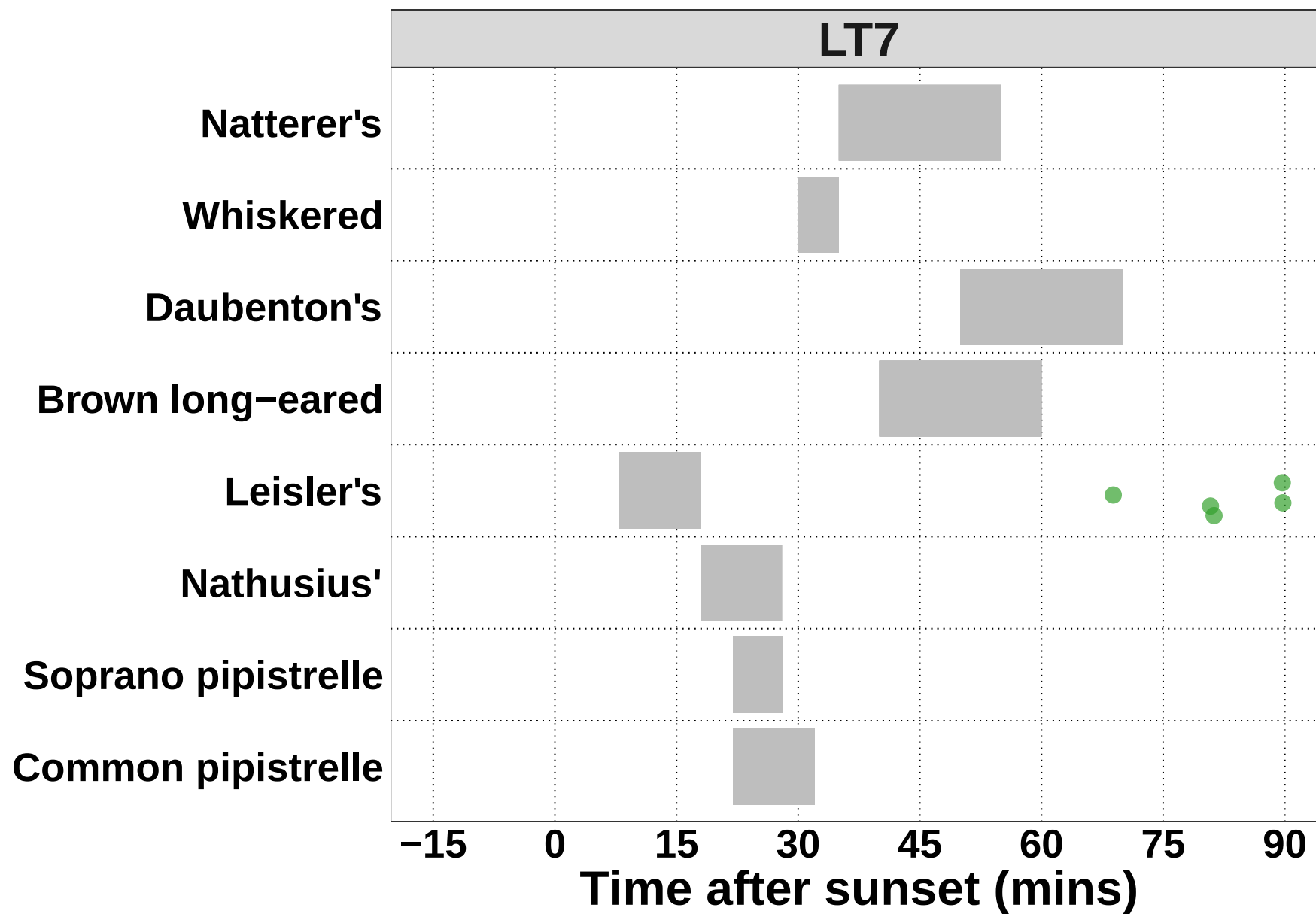


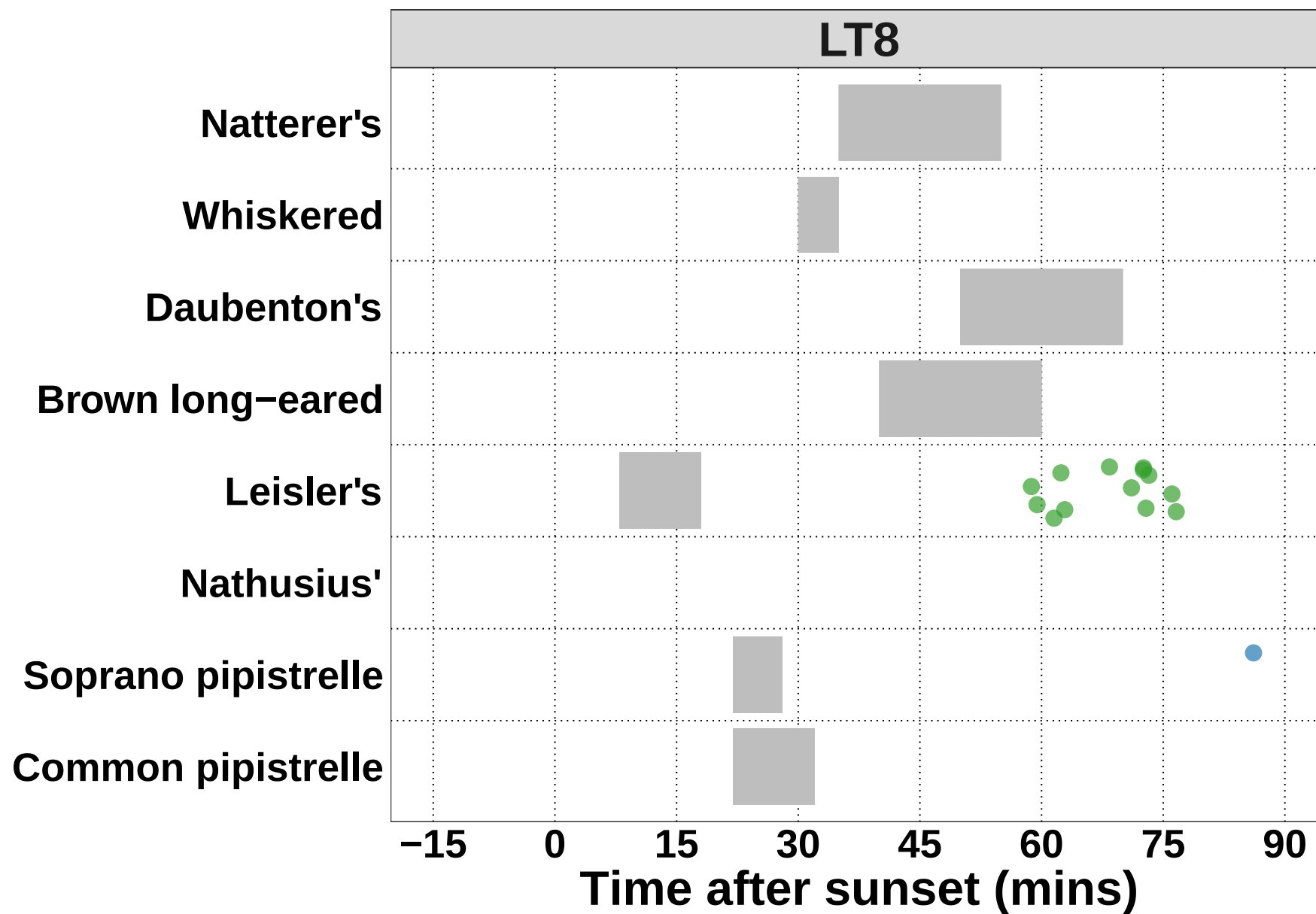


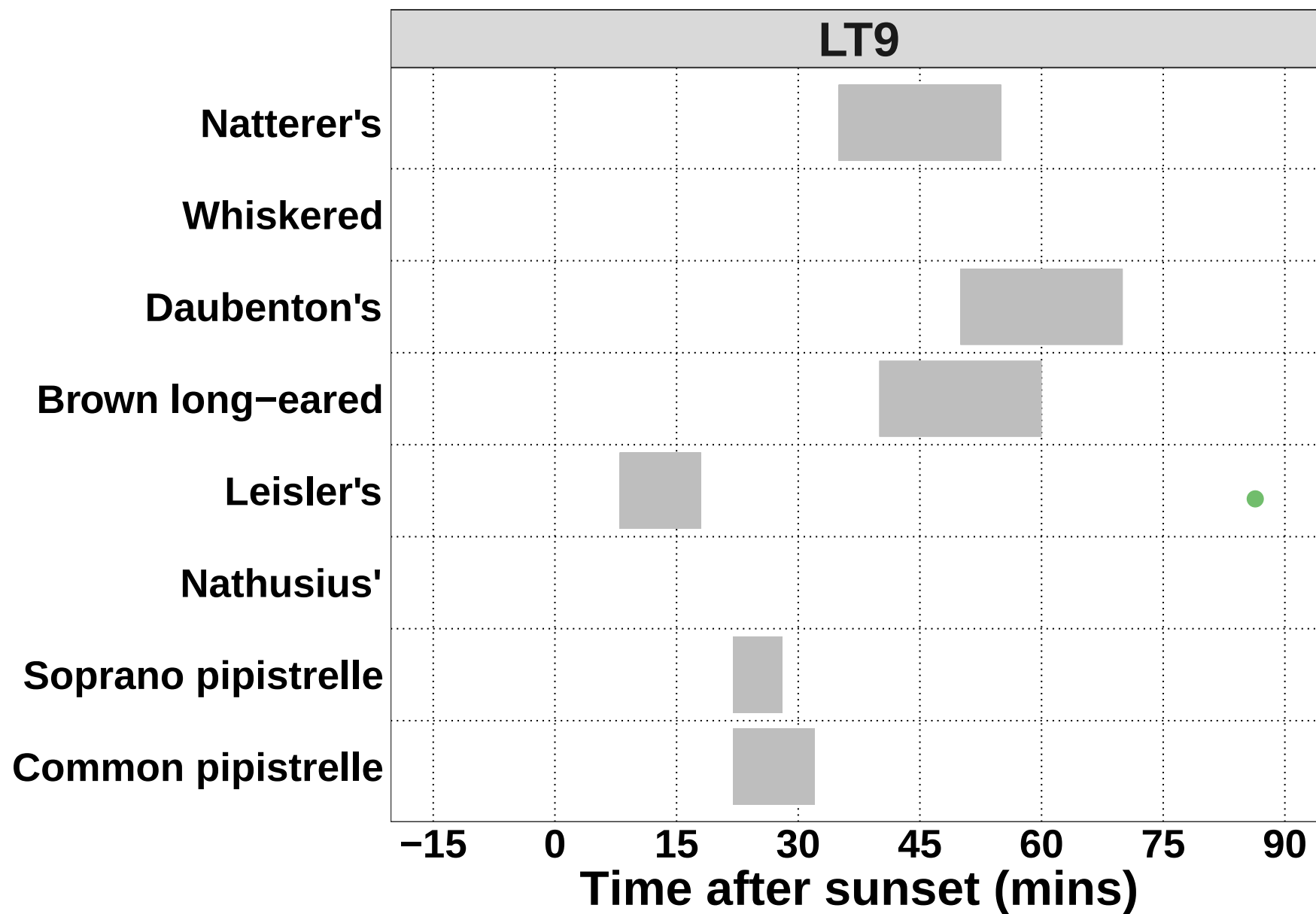












Count of Bat Passes

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 (%)
<i>Myotis daubentonii</i>	560	2.5
<i>Myotis mystacinus</i>	173	0.8
<i>Myotis nattereri</i>	371	1.7
<i>Nyctalus leisleri</i>	3946	17.7
<i>Pipistrellus nathusii</i>	22	0.1
<i>Pipistrellus pipistrellus</i>	4959	22.3
<i>Pipistrellus pygmaeus</i>	11880	53.3
<i>Plecotus auritus</i>	370	1.7
Total	22281	100.1

Per Detector

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

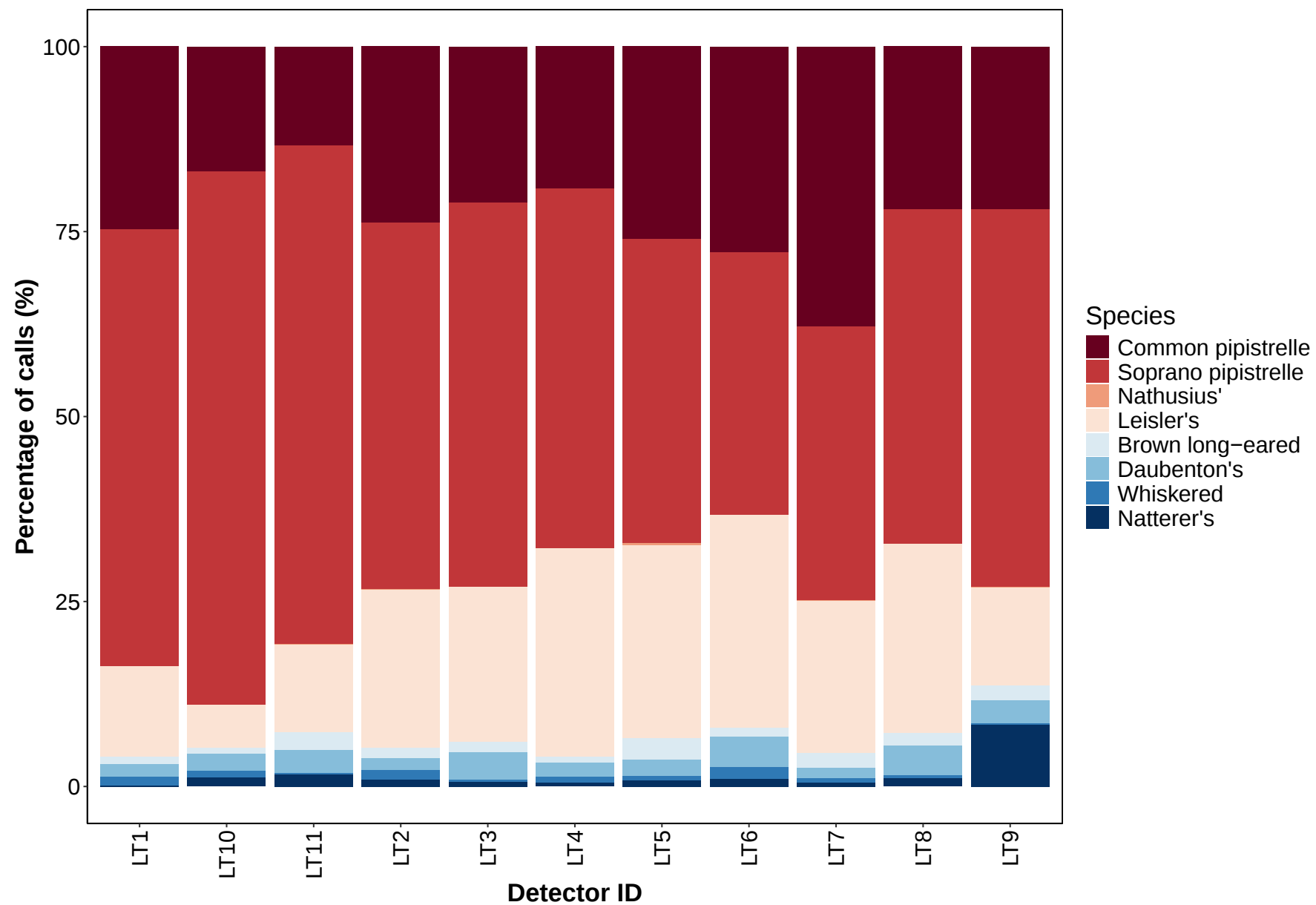
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	LT1	601	24.4806517
Common pipistrelle	LT10	477	17.2700941
Common pipistrelle	LT11	383	13.5479307
Common pipistrelle	LT2	450	23.6344538
Common pipistrelle	LT3	343	20.6129808
Common pipistrelle	LT4	292	19.1349934
Common pipistrelle	LT5	391	24.1060419
Common pipistrelle	LT6	217	27.6081425
Common pipistrelle	LT7	869	36.4513423
Common pipistrelle	LT8	451	21.7140106
Common pipistrelle	LT9	485	21.3280563
Soprano pipistrelle	LT1	1468	59.7963340
Soprano pipistrelle	LT10	1982	71.7595945
Soprano pipistrelle	LT11	1897	67.1029360
Soprano pipistrelle	LT2	958	50.3151261
Soprano pipistrelle	LT3	865	51.9831731
Soprano pipistrelle	LT4	751	49.2136304
Soprano pipistrelle	LT5	670	41.3070284
Soprano pipistrelle	LT6	285	36.2595420
Soprano pipistrelle	LT7	880	36.9127517
Soprano pipistrelle	LT8	951	45.7871931
Soprano pipistrelle	LT9	1173	51.5831135
Nathusius'	LT1	2	0.0814664
Nathusius'	LT11	4	0.1414927
Nathusius'	LT2	2	0.1050420
Nathusius'	LT5	6	0.3699137
Nathusius'	LT7	4	0.1677852
Nathusius'	LT9	4	0.1759015
Leisler's	LT1	287	11.6904277
Leisler's	LT10	152	5.5032585
Leisler's	LT11	332	11.7438981
Leisler's	LT2	389	20.4306723

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	LT3	347	20.8533654
Leisler's	LT4	414	27.1297510
Leisler's	LT5	444	27.3736128
Leisler's	LT6	219	27.8625954
Leisler's	LT7	515	21.6023490
Leisler's	LT8	529	25.4694271
Leisler's	LT9	318	13.9841689
Brown long-eared	LT1	21	0.8553971
Brown long-eared	LT10	21	0.7603186
Brown long-eared	LT11	72	2.5468695
Brown long-eared	LT2	31	1.6281513
Brown long-eared	LT3	27	1.6225962
Brown long-eared	LT4	15	0.9829620
Brown long-eared	LT5	46	2.8360049
Brown long-eared	LT6	8	1.0178117
Brown long-eared	LT7	50	2.0973154
Brown long-eared	LT8	38	1.8295619
Brown long-eared	LT9	41	1.8029903
Daubenton's	LT1	36	1.4663951
Daubenton's	LT10	68	2.4619841
Daubenton's	LT11	81	2.8652282
Daubenton's	LT2	32	1.6806723
Daubenton's	LT3	66	3.9663462
Daubenton's	LT4	28	1.8348624
Daubenton's	LT5	37	2.2811344
Daubenton's	LT6	33	4.1984733
Daubenton's	LT7	33	1.3842282
Daubenton's	LT8	75	3.6109774
Daubenton's	LT9	71	3.1222515
Whiskered	LT1	36	1.4663951
Whiskered	LT10	27	0.9775525
Whiskered	LT11	6	0.2122391
Whiskered	LT2	25	1.3130252
Whiskered	LT3	5	0.3004808
Whiskered	LT4	16	1.0484928
Whiskered	LT5	11	0.6781751

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Whiskered	LT6	13	1.6539440
Whiskered	LT7	16	0.6711409
Whiskered	LT8	13	0.6259027
Whiskered	LT9	5	0.2198769
Natterer's	LT1	4	0.1629328
Natterer's	LT10	35	1.2671977
Natterer's	LT11	52	1.8394057
Natterer's	LT2	17	0.8928571
Natterer's	LT3	11	0.6610577
Natterer's	LT4	10	0.6553080
Natterer's	LT5	17	1.0480888
Natterer's	LT6	11	1.3994911
Natterer's	LT7	17	0.7130872
Natterer's	LT8	20	0.9629273
Natterer's	LT9	177	7.7836412

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	LT1	2.9
Common pipistrelle	LT10	2.2
Common pipistrelle	LT11	2.1
Common pipistrelle	LT2	2.2
Common pipistrelle	LT3	1.7
Common pipistrelle	LT4	1.5
Common pipistrelle	LT5	1.8
Common pipistrelle	LT6	2.0
Common pipistrelle	LT7	3.8
Common pipistrelle	LT8	2.7
Common pipistrelle	LT9	1.9
Soprano pipistrelle	LT1	7.0
Soprano pipistrelle	LT10	9.4
Soprano pipistrelle	LT11	8.2
Soprano pipistrelle	LT2	4.6
Soprano pipistrelle	LT3	4.3
Soprano pipistrelle	LT4	3.6
Soprano pipistrelle	LT5	2.7
Soprano pipistrelle	LT6	2.1
Soprano pipistrelle	LT7	3.9
Soprano pipistrelle	LT8	4.6
Soprano pipistrelle	LT9	4.9
Nathusius'	LT1	0.1
Nathusius'	LT11	0.1
Nathusius'	LT2	0.1
Nathusius'	LT5	0.1
Nathusius'	LT7	0.1
Nathusius'	LT9	0.1
Leisler's	LT1	1.4
Leisler's	LT10	0.9
Leisler's	LT11	1.8
Leisler's	LT2	1.9
Leisler's	LT3	1.8
Leisler's	LT4	1.8
Leisler's	LT5	2.0
Leisler's	LT6	1.8

Species	Detector ID	Median Pass Rate
Leisler's	LT7	1.9
Leisler's	LT8	2.6
Leisler's	LT9	1.4
Brown long-eared	LT1	0.3
Brown long-eared	LT10	0.2
Brown long-eared	LT11	0.3
Brown long-eared	LT2	0.2
Brown long-eared	LT3	0.2
Brown long-eared	LT4	0.1
Brown long-eared	LT5	0.3
Brown long-eared	LT6	0.1
Brown long-eared	LT7	0.2
Brown long-eared	LT8	0.2
Brown long-eared	LT9	0.3
Daubenton's	LT1	0.2
Daubenton's	LT10	0.4
Daubenton's	LT11	0.5
Daubenton's	LT2	0.2
Daubenton's	LT3	0.3
Daubenton's	LT4	0.2
Daubenton's	LT5	0.2
Daubenton's	LT6	0.3
Daubenton's	LT7	0.2
Daubenton's	LT8	0.4
Daubenton's	LT9	0.4
Whiskered	LT1	0.1
Whiskered	LT10	0.2
Whiskered	LT11	0.1
Whiskered	LT2	0.1
Whiskered	LT3	0.1
Whiskered	LT4	0.1
Whiskered	LT5	0.1
Whiskered	LT6	0.2
Whiskered	LT7	0.1
Whiskered	LT8	0.2
Whiskered	LT9	0.1

Species	Detector ID	Median Pass Rate
Natterer's	LT1	0.1
Natterer's	LT10	0.2
Natterer's	LT11	0.2
Natterer's	LT2	0.2
Natterer's	LT3	0.1
Natterer's	LT4	0.1
Natterer's	LT5	0.1
Natterer's	LT6	0.1
Natterer's	LT7	0.1
Natterer's	LT8	0.2
Natterer's	LT9	0.7

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.

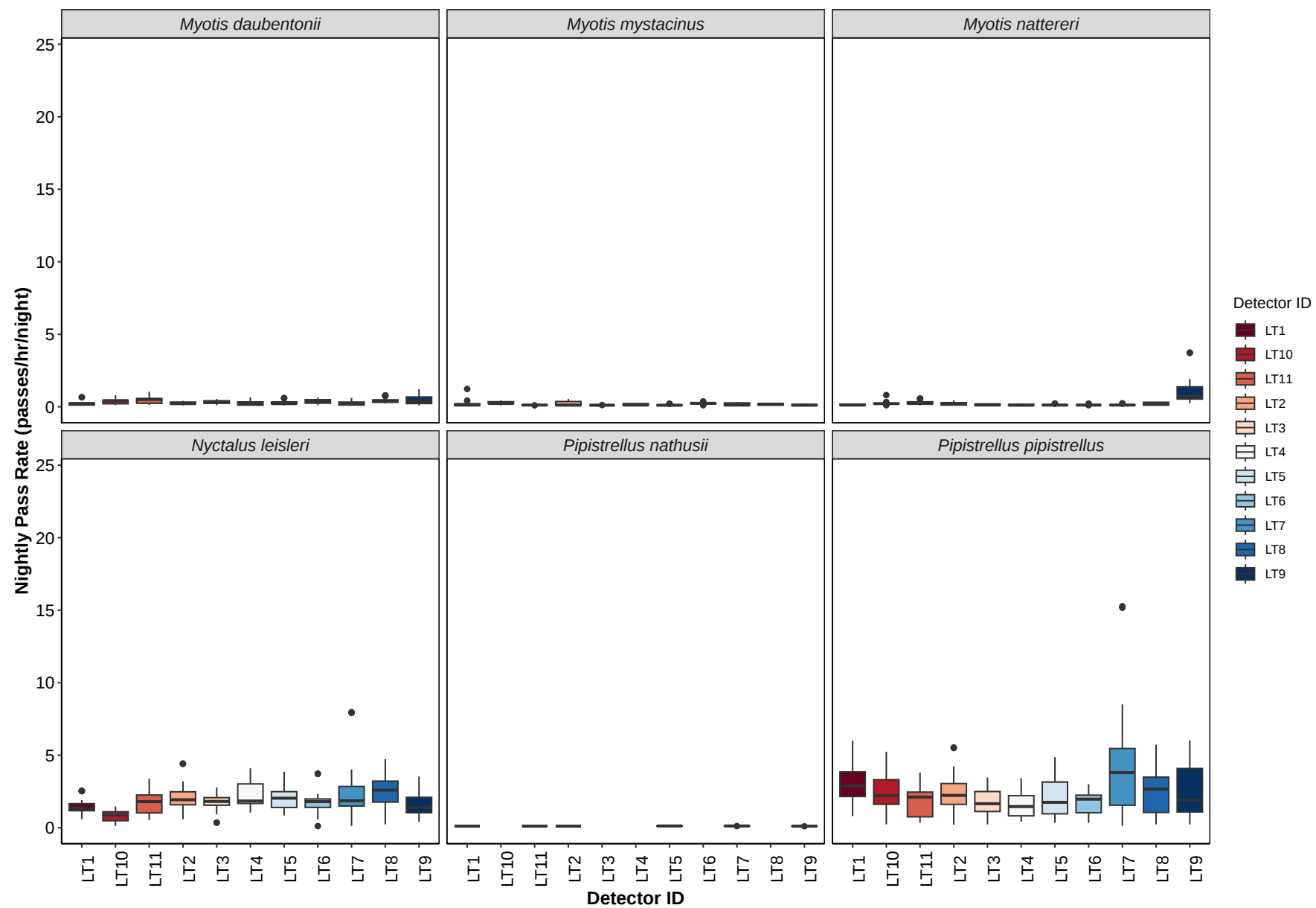
Species	Detector ID	Mean Pass Rate
Common pipistrelle	LT1	3.0
Common pipistrelle	LT10	2.4
Common pipistrelle	LT11	2.0
Common pipistrelle	LT2	2.4
Common pipistrelle	LT3	1.8
Common pipistrelle	LT4	1.6
Common pipistrelle	LT5	2.2
Common pipistrelle	LT6	1.8
Common pipistrelle	LT7	4.5
Common pipistrelle	LT8	2.4
Common pipistrelle	LT9	2.5
Soprano pipistrelle	LT1	7.1
Soprano pipistrelle	LT10	9.4
Soprano pipistrelle	LT11	9.6
Soprano pipistrelle	LT2	4.8
Soprano pipistrelle	LT3	4.4
Soprano pipistrelle	LT4	3.8
Soprano pipistrelle	LT5	3.5
Soprano pipistrelle	LT6	2.0
Soprano pipistrelle	LT7	4.4
Soprano pipistrelle	LT8	4.6
Soprano pipistrelle	LT9	6.0
Nathusius'	LT1	0.1
Nathusius'	LT11	0.1
Nathusius'	LT2	0.1
Nathusius'	LT5	0.1
Nathusius'	LT7	0.1
Nathusius'	LT9	0.1
Leisler's	LT1	1.4
Leisler's	LT10	0.8

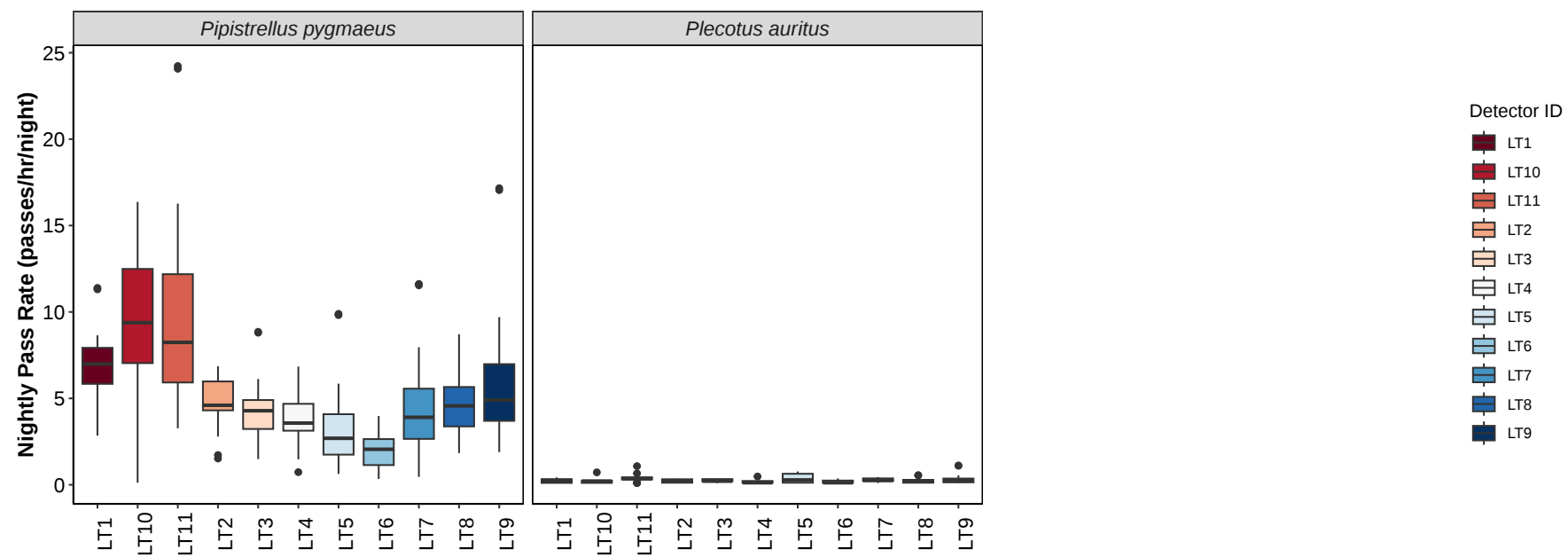
Species	Detector ID	Mean Pass Rate
Leisler's	LT11	1.7
Leisler's	LT2	2.1
Leisler's	LT3	1.8
Leisler's	LT4	2.2
Leisler's	LT5	2.1
Leisler's	LT6	1.7
Leisler's	LT7	2.5
Leisler's	LT8	2.6
Leisler's	LT9	1.6
Brown long-eared	LT1	0.2
Brown long-eared	LT10	0.2
Brown long-eared	LT11	0.4
Brown long-eared	LT2	0.2
Brown long-eared	LT3	0.2
Brown long-eared	LT4	0.2
Brown long-eared	LT5	0.4
Brown long-eared	LT6	0.2
Brown long-eared	LT7	0.3
Brown long-eared	LT8	0.3
Brown long-eared	LT9	0.4
Daubenton's	LT1	0.2
Daubenton's	LT10	0.4
Daubenton's	LT11	0.5
Daubenton's	LT2	0.3
Daubenton's	LT3	0.3
Daubenton's	LT4	0.3
Daubenton's	LT5	0.3
Daubenton's	LT6	0.4
Daubenton's	LT7	0.3
Daubenton's	LT8	0.4
Daubenton's	LT9	0.5
Whiskered	LT1	0.2
Whiskered	LT10	0.3
Whiskered	LT11	0.1
Whiskered	LT2	0.2
Whiskered	LT3	0.1

Species	Detector ID	Mean Pass Rate
Whiskered	LT4	0.2
Whiskered	LT5	0.1
Whiskered	LT6	0.2
Whiskered	LT7	0.2
Whiskered	LT8	0.2
Whiskered	LT9	0.1
Natterer's	LT1	0.1
Natterer's	LT10	0.3
Natterer's	LT11	0.3
Natterer's	LT2	0.2
Natterer's	LT3	0.1
Natterer's	LT4	0.1
Natterer's	LT5	0.1
Natterer's	LT6	0.1
Natterer's	LT7	0.1
Natterer's	LT8	0.2
Natterer's	LT9	1.1

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.





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	Jul	Aug
Common pipistrelle	LT1	49	644
Common pipistrelle	LT10	48	488
Common pipistrelle	LT11	50	411
Common pipistrelle	LT2	25	519
Common pipistrelle	LT3	19	400
Common pipistrelle	LT4	110	243
Common pipistrelle	LT5	106	410
Common pipistrelle	LT6	121	151
Common pipistrelle	LT7	174	949
Common pipistrelle	LT8	180	369
Common pipistrelle	LT9	48	574
Soprano pipistrelle	LT1	126	1532
Soprano pipistrelle	LT10	333	1949
Soprano pipistrelle	LT11	333	1989
Soprano pipistrelle	LT2	75	1060
Soprano pipistrelle	LT3	82	946
Soprano pipistrelle	LT4	318	579
Soprano pipistrelle	LT5	208	608
Soprano pipistrelle	LT6	173	174
Soprano pipistrelle	LT7	227	871
Soprano pipistrelle	LT8	333	799
Soprano pipistrelle	LT9	135	1314
Nathusius'	LT1	0	1
Nathusius'	LT11	0	4
Nathusius'	LT2	0	2
Nathusius'	LT5	2	4
Nathusius'	LT7	3	1
Nathusius'	LT9	0	4
Leisler's	LT1	10	333
Leisler's	LT10	20	165
Leisler's	LT11	75	332
Leisler's	LT2	28	461
Leisler's	LT3	26	391
Leisler's	LT4	140	379
Leisler's	LT5	154	363
Leisler's	LT6	140	142

Species	Detector ID	Jul	Aug
Leisler's	LT7	138	471
Leisler's	LT8	208	430
Leisler's	LT9	39	334
Brown long-eared	LT1	0	28
Brown long-eared	LT10	8	15
Brown long-eared	LT11	16	66
Brown long-eared	LT2	2	31
Brown long-eared	LT3	1	27
Brown long-eared	LT4	6	9
Brown long-eared	LT5	4	55
Brown long-eared	LT6	9	2
Brown long-eared	LT7	7	53
Brown long-eared	LT8	5	39
Brown long-eared	LT9	7	50
Daubenton's	LT1	3	44
Daubenton's	LT10	9	64
Daubenton's	LT11	6	103
Daubenton's	LT2	0	35
Daubenton's	LT3	4	70
Daubenton's	LT4	9	25
Daubenton's	LT5	17	26
Daubenton's	LT6	17	24
Daubenton's	LT7	15	27
Daubenton's	LT8	29	69
Daubenton's	LT9	7	82
Whiskered	LT1	1	32
Whiskered	LT10	3	28
Whiskered	LT11	2	4
Whiskered	LT2	1	29
Whiskered	LT3	1	4
Whiskered	LT4	3	13
Whiskered	LT5	2	10
Whiskered	LT6	9	6
Whiskered	LT7	3	13
Whiskered	LT8	5	7
Whiskered	LT9	0	4

Species	Detector ID	Jul	Aug
Natterer's	LT1	0	4
Natterer's	LT10	2	35
Natterer's	LT11	2	54
Natterer's	LT2	1	20
Natterer's	LT3	1	11
Natterer's	LT4	3	6
Natterer's	LT5	4	12
Natterer's	LT6	4	6
Natterer's	LT7	5	11
Natterer's	LT8	5	22
Natterer's	LT9	14	223

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jul	LT1	2
Jul	LT10	3
Jul	LT11	3
Jul	LT2	2
Jul	LT3	2
Jul	LT4	8
Jul	LT5	8
Jul	LT6	8
Jul	LT7	8
Jul	LT8	8
Jul	LT9	3
Aug	LT1	24
Aug	LT10	24
Aug	LT11	24
Aug	LT2	24
Aug	LT3	24
Aug	LT4	19
Aug	LT5	20
Aug	LT6	13
Aug	LT7	20
Aug	LT8	20
Aug	LT9	24

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	Jul	Aug
Common pipistrelle	LT1	2.9	2.9
Common pipistrelle	LT10	2.2	2.4
Common pipistrelle	LT11	2.1	2.1
Common pipistrelle	LT2	1.5	2.2
Common pipistrelle	LT3	1.1	1.7
Common pipistrelle	LT4	1.6	1.2
Common pipistrelle	LT5	1.6	2.4
Common pipistrelle	LT6	2.1	1.8
Common pipistrelle	LT7	2.5	4.6
Common pipistrelle	LT8	2.7	1.7
Common pipistrelle	LT9	2.2	1.9
Soprano pipistrelle	LT1	7.5	7.0
Soprano pipistrelle	LT10	13.7	8.5
Soprano pipistrelle	LT11	13.6	8.1
Soprano pipistrelle	LT2	4.5	5.0
Soprano pipistrelle	LT3	4.9	4.0
Soprano pipistrelle	LT4	4.7	3.3
Soprano pipistrelle	LT5	3.0	2.5
Soprano pipistrelle	LT6	2.4	1.6
Soprano pipistrelle	LT7	3.3	4.4
Soprano pipistrelle	LT8	4.2	4.6
Soprano pipistrelle	LT9	4.7	5.0
Nathusius'	LT1	NA	0.1
Nathusius'	LT11	NA	0.1
Nathusius'	LT2	NA	0.1
Nathusius'	LT5	0.1	0.1
Nathusius'	LT7	0.1	0.1
Nathusius'	LT9	NA	0.1
Leisler's	LT1	0.6	1.4
Leisler's	LT10	0.9	0.8
Leisler's	LT11	3.4	1.4
Leisler's	LT2	1.7	2.0
Leisler's	LT3	1.6	1.8
Leisler's	LT4	1.8	1.7
Leisler's	LT5	2.4	2.0
Leisler's	LT6	2.2	1.7

Species	Detector ID	Jul	Aug
Leisler's	LT7	1.9	1.8
Leisler's	LT8	3.1	2.6
Leisler's	LT9	1.7	1.4
Brown long-eared	LT1	NA	0.3
Brown long-eared	LT10	0.5	0.2
Brown long-eared	LT11	0.5	0.3
Brown long-eared	LT2	0.1	0.2
Brown long-eared	LT3	0.1	0.2
Brown long-eared	LT4	0.1	0.2
Brown long-eared	LT5	0.1	0.4
Brown long-eared	LT6	0.1	0.1
Brown long-eared	LT7	0.2	0.3
Brown long-eared	LT8	0.1	0.2
Brown long-eared	LT9	0.4	0.2
Daubenton's	LT1	0.2	0.2
Daubenton's	LT10	0.4	0.4
Daubenton's	LT11	0.2	0.5
Daubenton's	LT2	NA	0.2
Daubenton's	LT3	0.2	0.3
Daubenton's	LT4	0.1	0.2
Daubenton's	LT5	0.3	0.2
Daubenton's	LT6	0.4	0.3
Daubenton's	LT7	0.2	0.3
Daubenton's	LT8	0.5	0.3
Daubenton's	LT9	0.2	0.4
Whiskered	LT1	0.1	0.2
Whiskered	LT10	0.4	0.2
Whiskered	LT11	0.1	0.1
Whiskered	LT2	0.1	0.1
Whiskered	LT3	0.1	0.1
Whiskered	LT4	0.1	0.1
Whiskered	LT5	0.1	0.1
Whiskered	LT6	0.2	0.2
Whiskered	LT7	0.1	0.1
Whiskered	LT8	0.2	0.1
Whiskered	LT9	NA	0.1

Species	Detector ID	Jul	Aug
Natterer's	LT1	NA	0.1
Natterer's	LT10	0.2	0.2
Natterer's	LT11	0.2	0.2
Natterer's	LT2	0.1	0.2
Natterer's	LT3	0.1	0.1
Natterer's	LT4	0.2	0.1
Natterer's	LT5	0.1	0.1
Natterer's	LT6	0.1	0.1
Natterer's	LT7	0.1	0.1
Natterer's	LT8	0.2	0.2
Natterer's	LT9	0.7	0.7

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	Jul	Aug
Common pipistrelle	LT1	2.9	3.0
Common pipistrelle	LT10	1.9	2.5
Common pipistrelle	LT11	2.0	2.0
Common pipistrelle	LT2	1.5	2.5
Common pipistrelle	LT3	1.1	1.8
Common pipistrelle	LT4	1.7	1.6
Common pipistrelle	LT5	1.6	2.4
Common pipistrelle	LT6	1.8	1.7
Common pipistrelle	LT7	2.7	5.2
Common pipistrelle	LT8	2.7	2.3
Common pipistrelle	LT9	1.9	2.6
Soprano pipistrelle	LT1	7.5	7.0
Soprano pipistrelle	LT10	13.3	8.9
Soprano pipistrelle	LT11	13.3	9.2
Soprano pipistrelle	LT2	4.5	4.9
Soprano pipistrelle	LT3	4.9	4.3
Soprano pipistrelle	LT4	4.8	3.4
Soprano pipistrelle	LT5	3.6	3.4
Soprano pipistrelle	LT6	2.6	1.6
Soprano pipistrelle	LT7	3.5	4.8
Soprano pipistrelle	LT8	5.1	4.5
Soprano pipistrelle	LT9	5.4	6.1
Nathusius'	LT1	NA	0.1
Nathusius'	LT11	NA	0.1
Nathusius'	LT2	NA	0.1
Nathusius'	LT5	0.1	0.1
Nathusius'	LT7	0.1	0.1
Nathusius'	LT9	NA	0.1
Leisler's	LT1	0.6	1.5
Leisler's	LT10	0.8	0.8

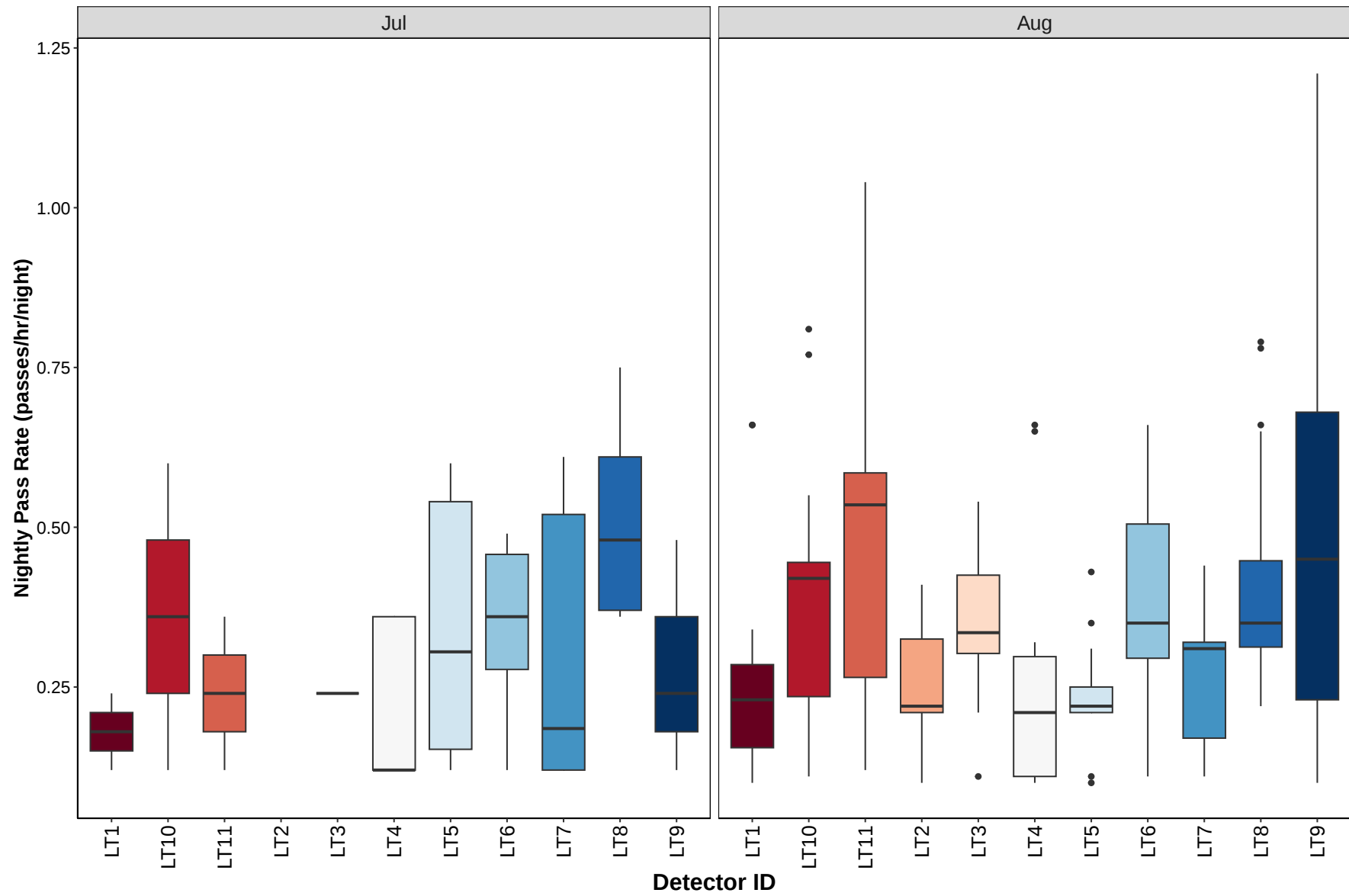
Species	Detector ID	Jul	Aug
Leisler's	LT11	3.0	1.5
Leisler's	LT2	1.7	2.1
Leisler's	LT3	1.6	1.8
Leisler's	LT4	2.1	2.2
Leisler's	LT5	2.4	2.0
Leisler's	LT6	2.4	1.3
Leisler's	LT7	2.1	2.6
Leisler's	LT8	3.2	2.4
Leisler's	LT9	1.6	1.6
Brown long-eared	LT1	NA	0.2
Brown long-eared	LT10	0.5	0.2
Brown long-eared	LT11	0.6	0.3
Brown long-eared	LT2	0.1	0.2
Brown long-eared	LT3	0.1	0.2
Brown long-eared	LT4	0.2	0.2
Brown long-eared	LT5	0.1	0.4
Brown long-eared	LT6	0.2	0.1
Brown long-eared	LT7	0.2	0.3
Brown long-eared	LT8	0.2	0.3
Brown long-eared	LT9	0.3	0.4
Daubenton's	LT1	0.2	0.3
Daubenton's	LT10	0.4	0.4
Daubenton's	LT11	0.2	0.5
Daubenton's	LT2	NA	0.3
Daubenton's	LT3	0.2	0.3
Daubenton's	LT4	0.2	0.3
Daubenton's	LT5	0.3	0.2
Daubenton's	LT6	0.3	0.4
Daubenton's	LT7	0.3	0.3
Daubenton's	LT8	0.5	0.4
Daubenton's	LT9	0.3	0.5
Whiskered	LT1	0.1	0.2
Whiskered	LT10	0.4	0.3
Whiskered	LT11	0.1	0.1
Whiskered	LT2	0.1	0.2
Whiskered	LT3	0.1	0.1

Species	Detector ID	Jul	Aug
Whiskered	LT4	0.1	0.2
Whiskered	LT5	0.1	0.1
Whiskered	LT6	0.3	0.2
Whiskered	LT7	0.1	0.2
Whiskered	LT8	0.2	0.2
Whiskered	LT9	NA	0.1
Natterer's	LT1	NA	0.1
Natterer's	LT10	0.2	0.3
Natterer's	LT11	0.2	0.3
Natterer's	LT2	0.1	0.2
Natterer's	LT3	0.1	0.1
Natterer's	LT4	0.2	0.1
Natterer's	LT5	0.1	0.1
Natterer's	LT6	0.1	0.1
Natterer's	LT7	0.1	0.1
Natterer's	LT8	0.2	0.2
Natterer's	LT9	0.6	1.2

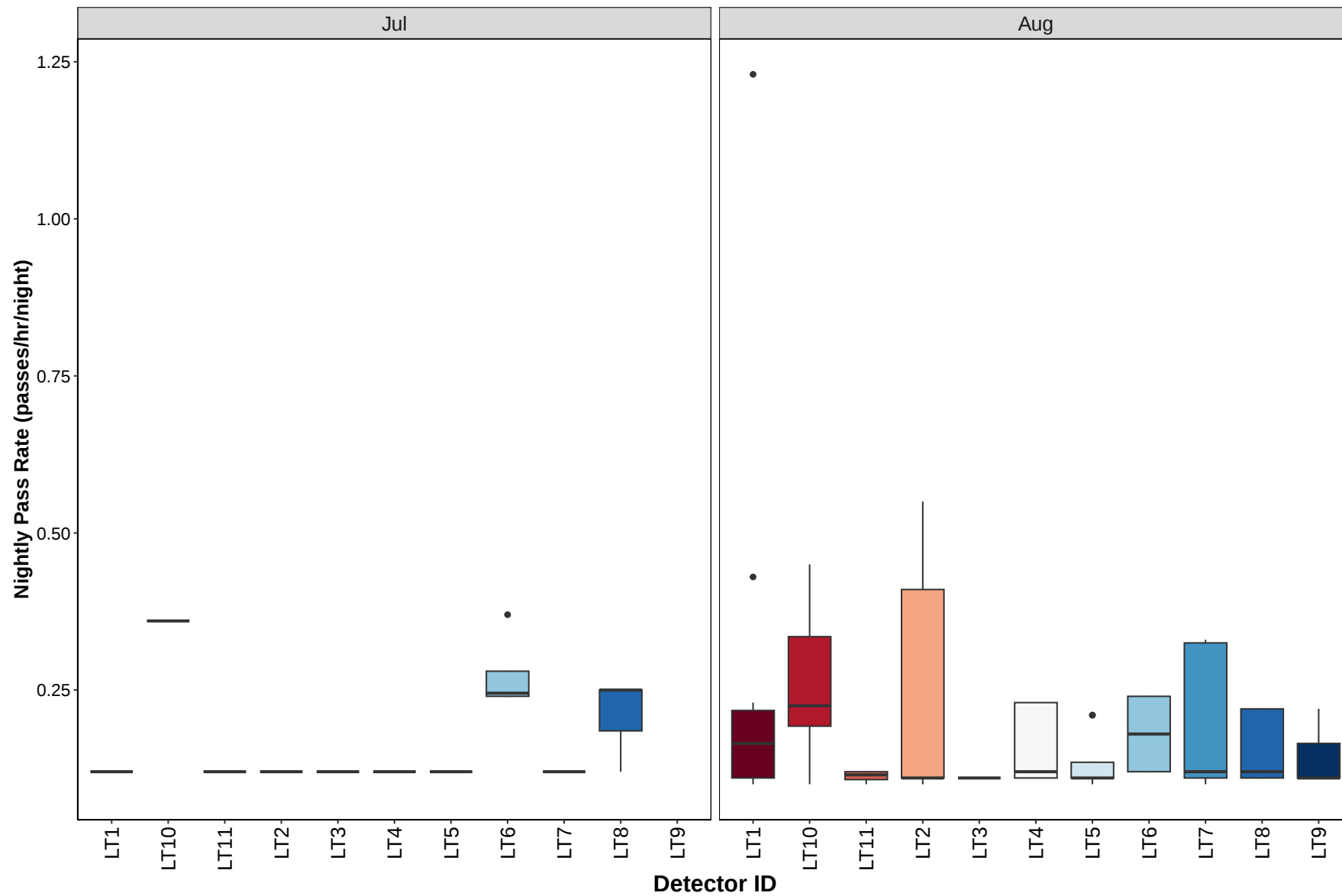
Per Detector

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.

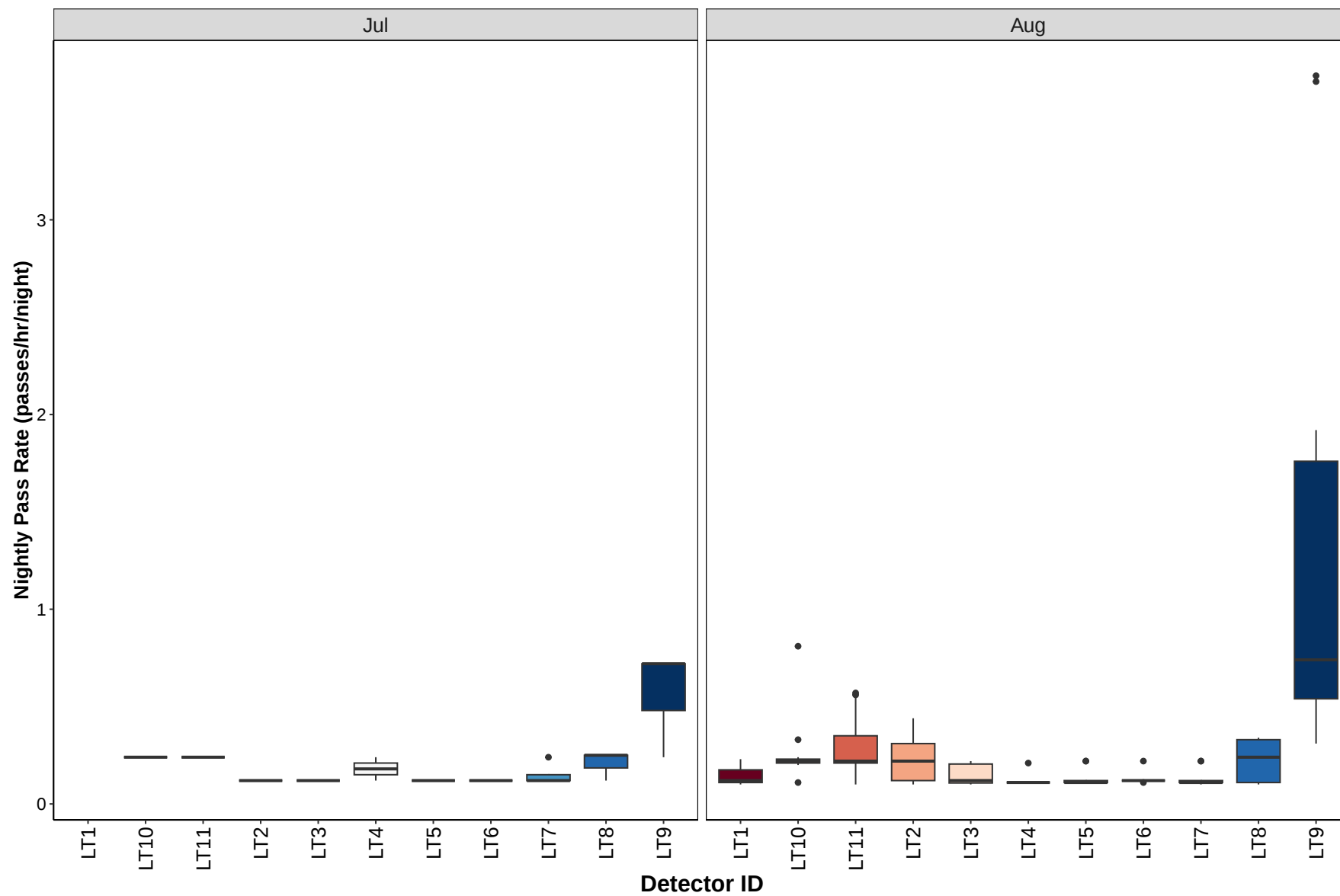
Daubenton's



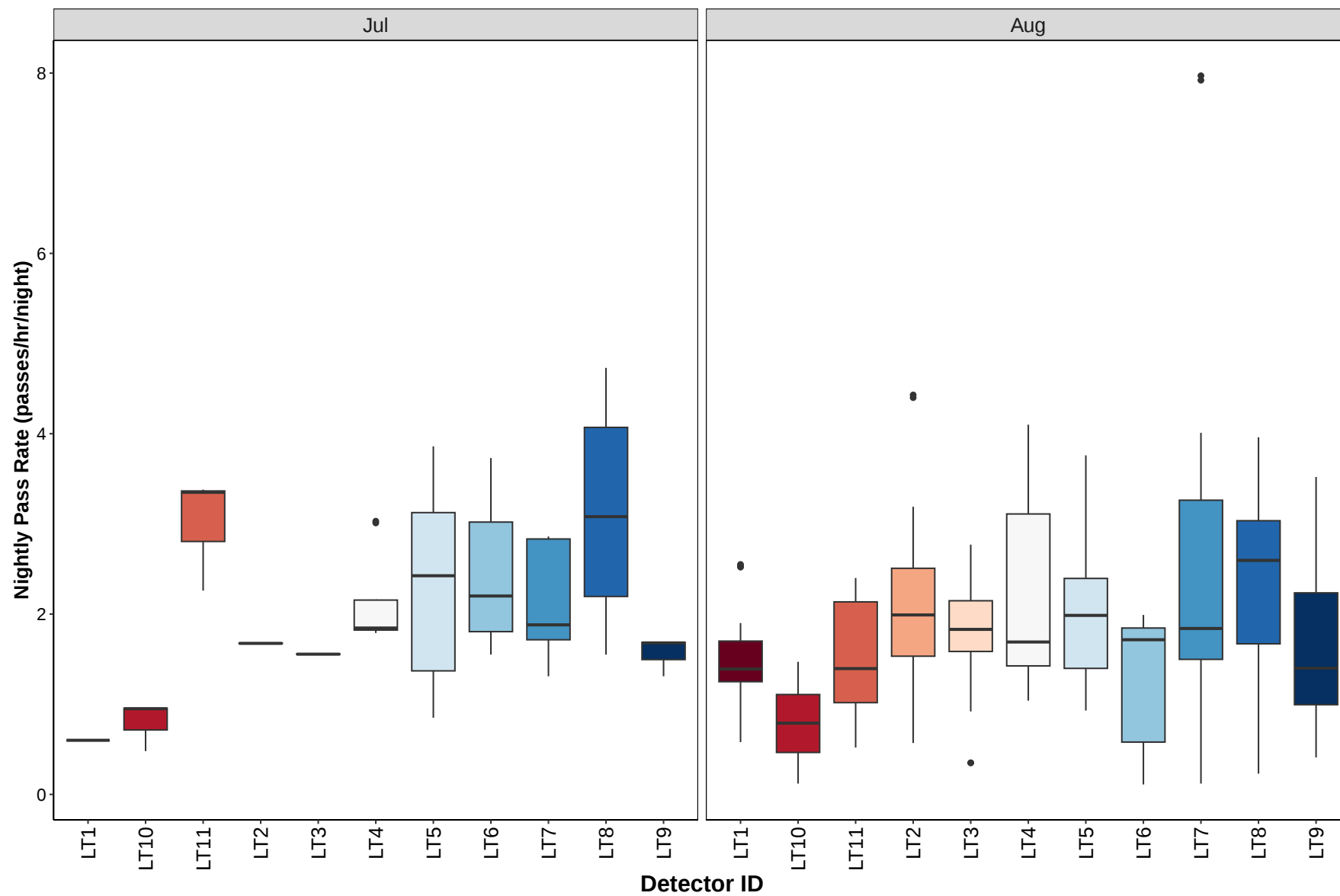
Whiskered



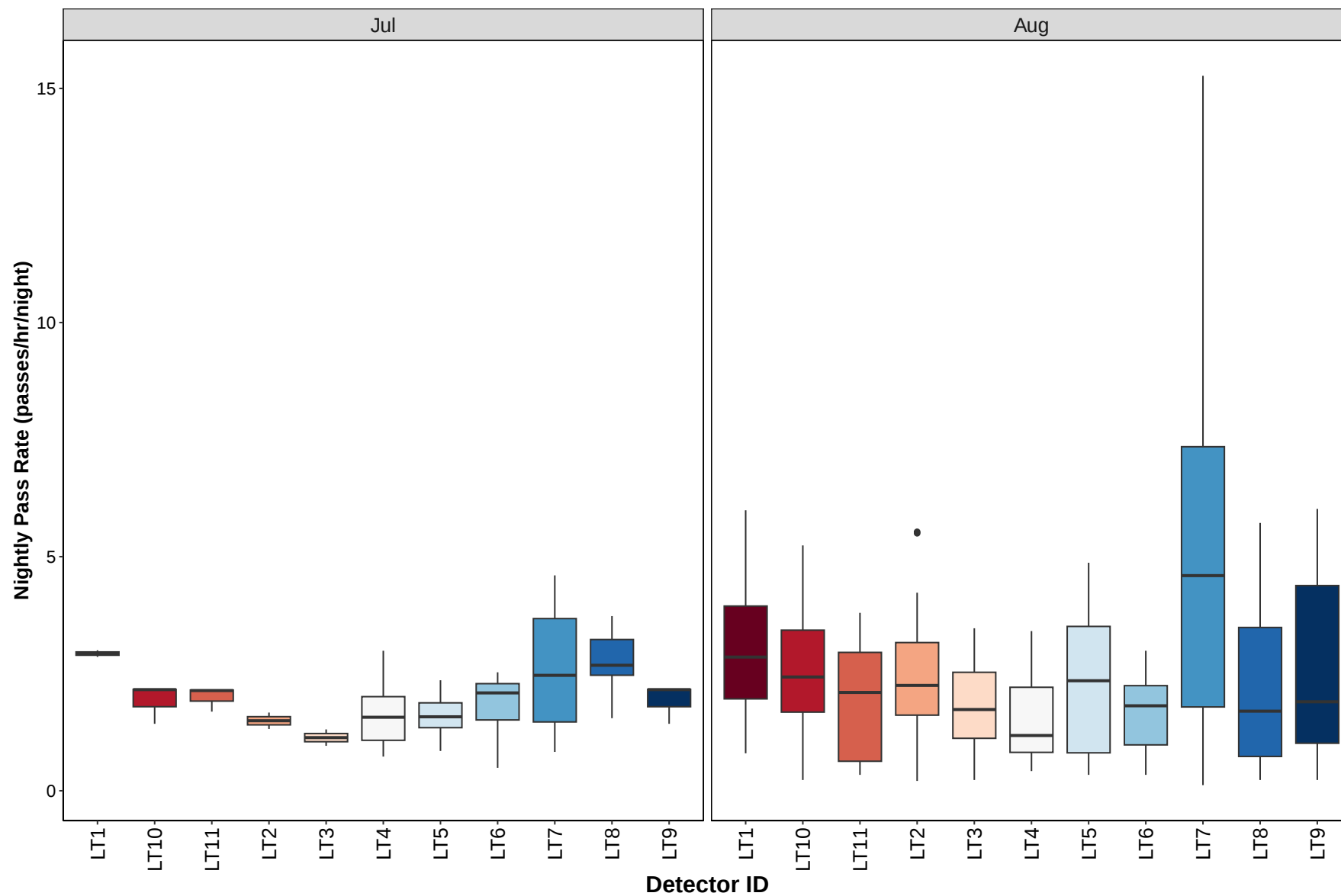
Natterer's



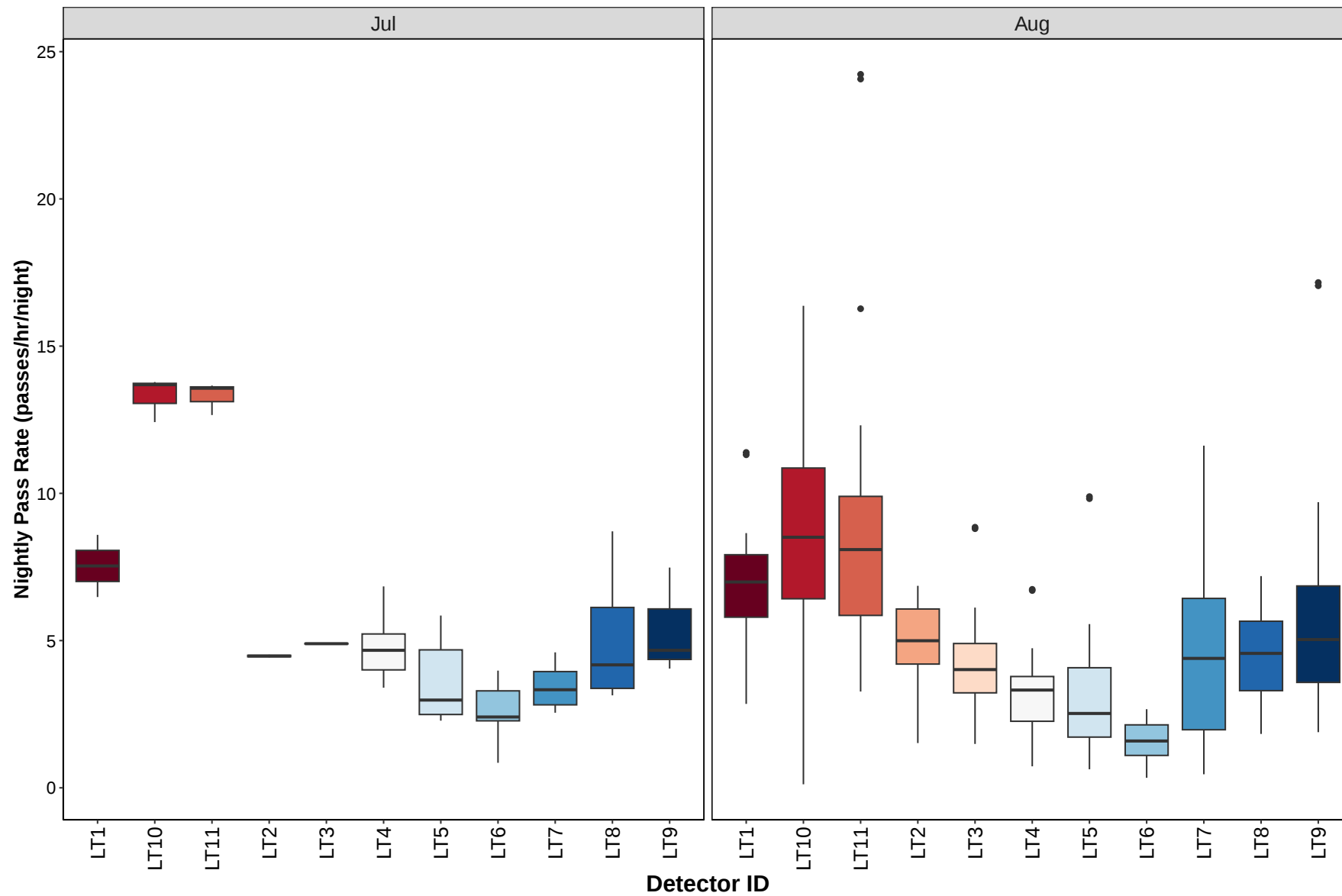
Leisler's



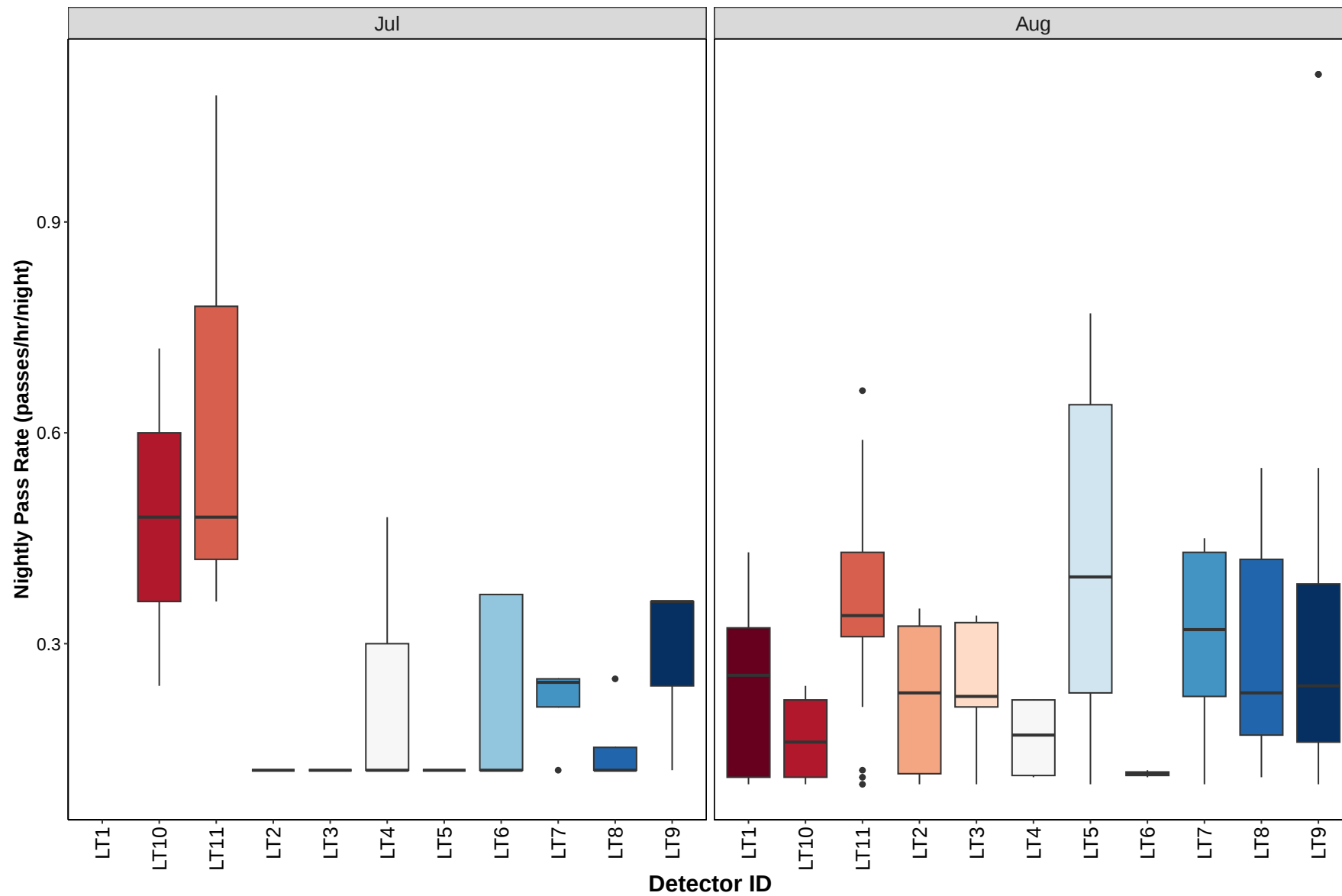
Common pipistrelle

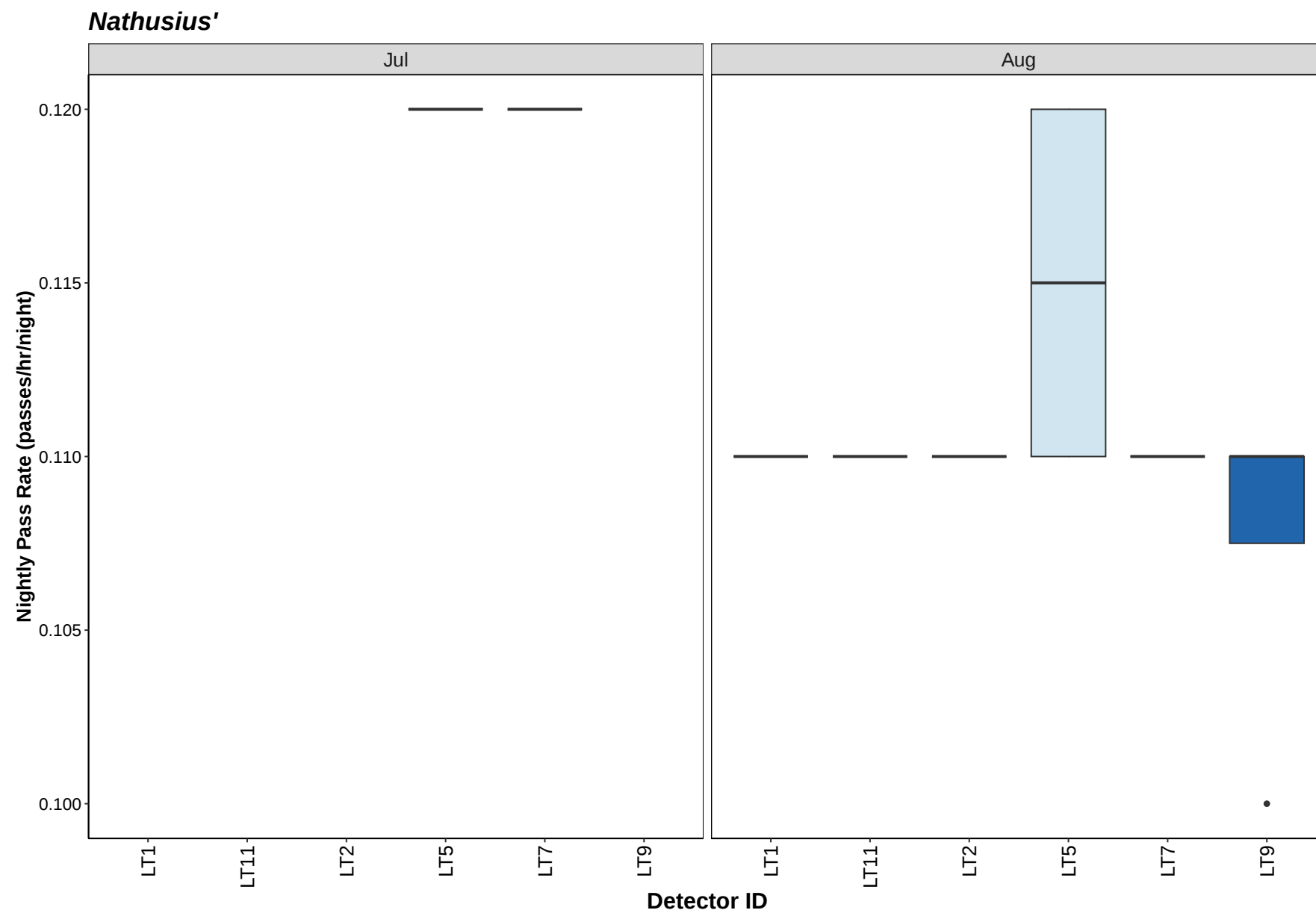


Soprano pipistrelle



Brown long-eared





Bat Activity per Detector Location

Figure 13. Detector ID reference:

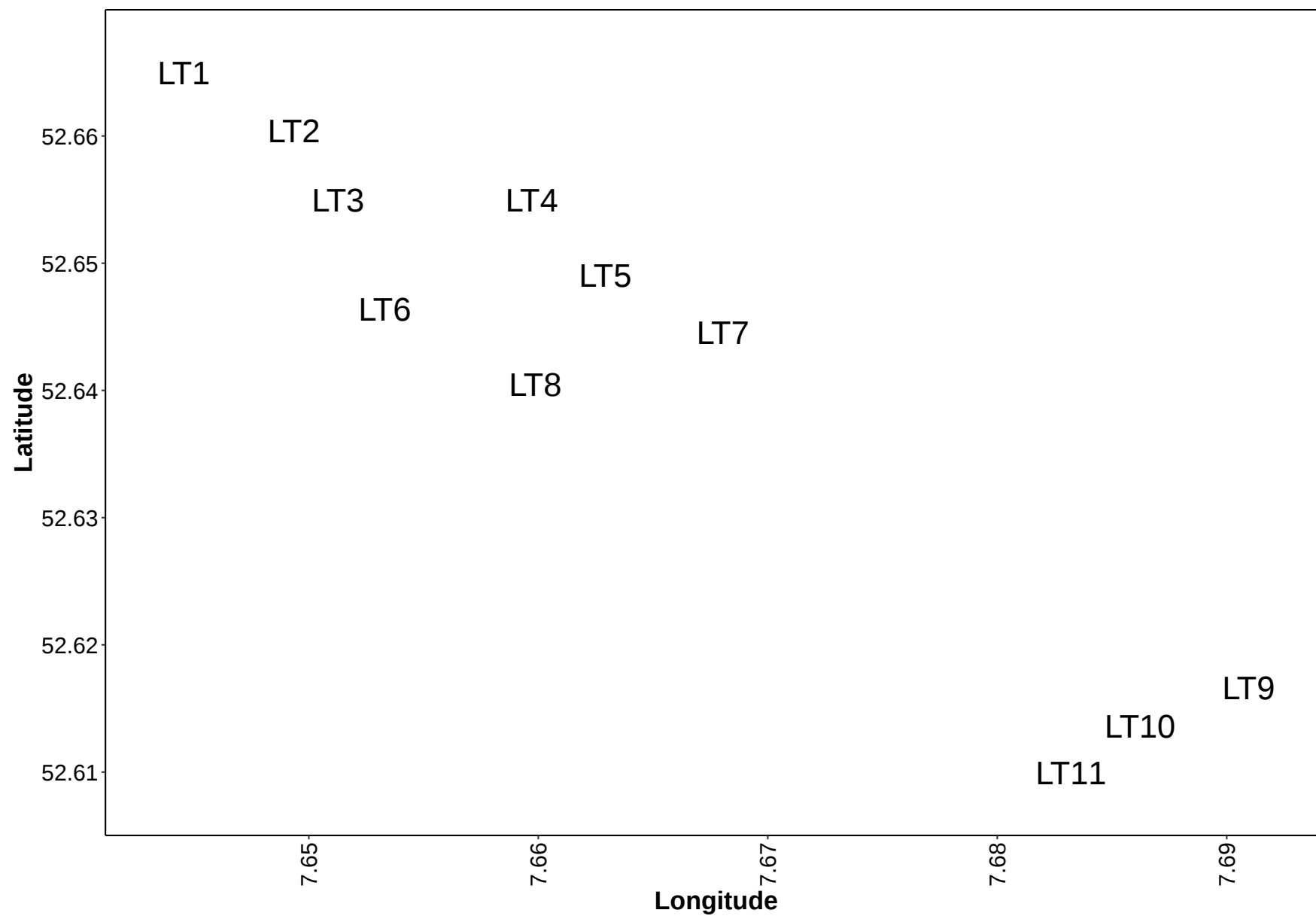
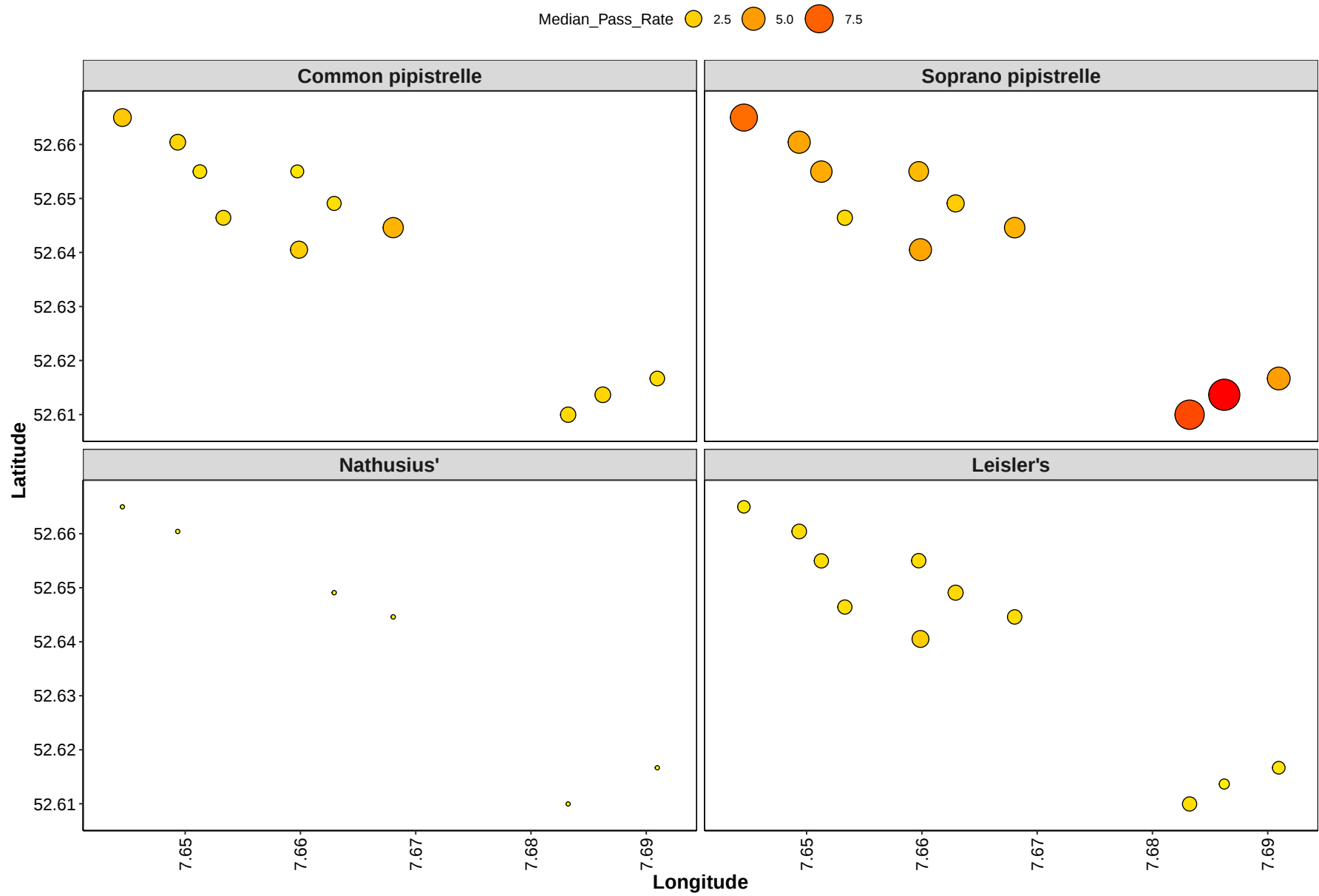


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



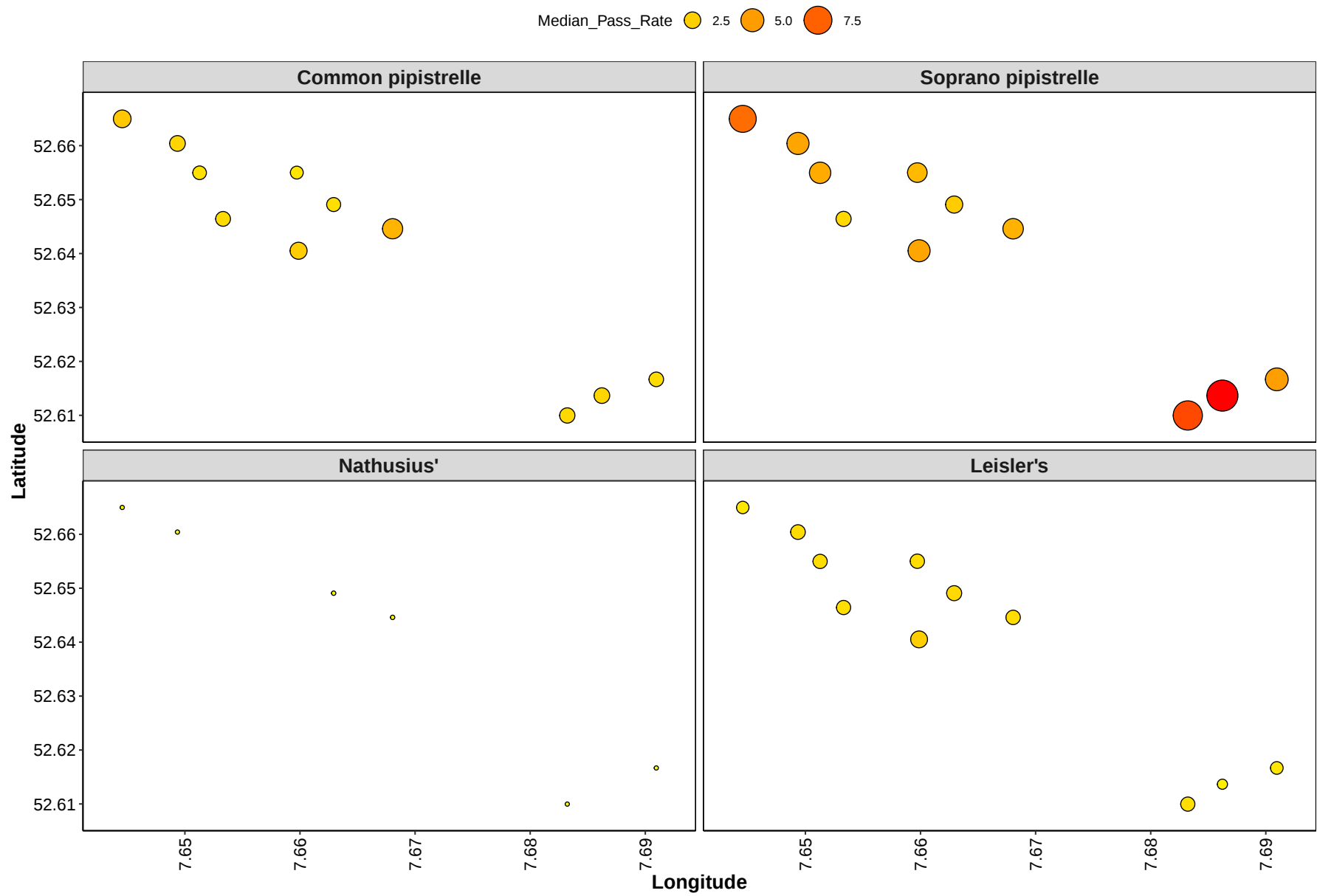
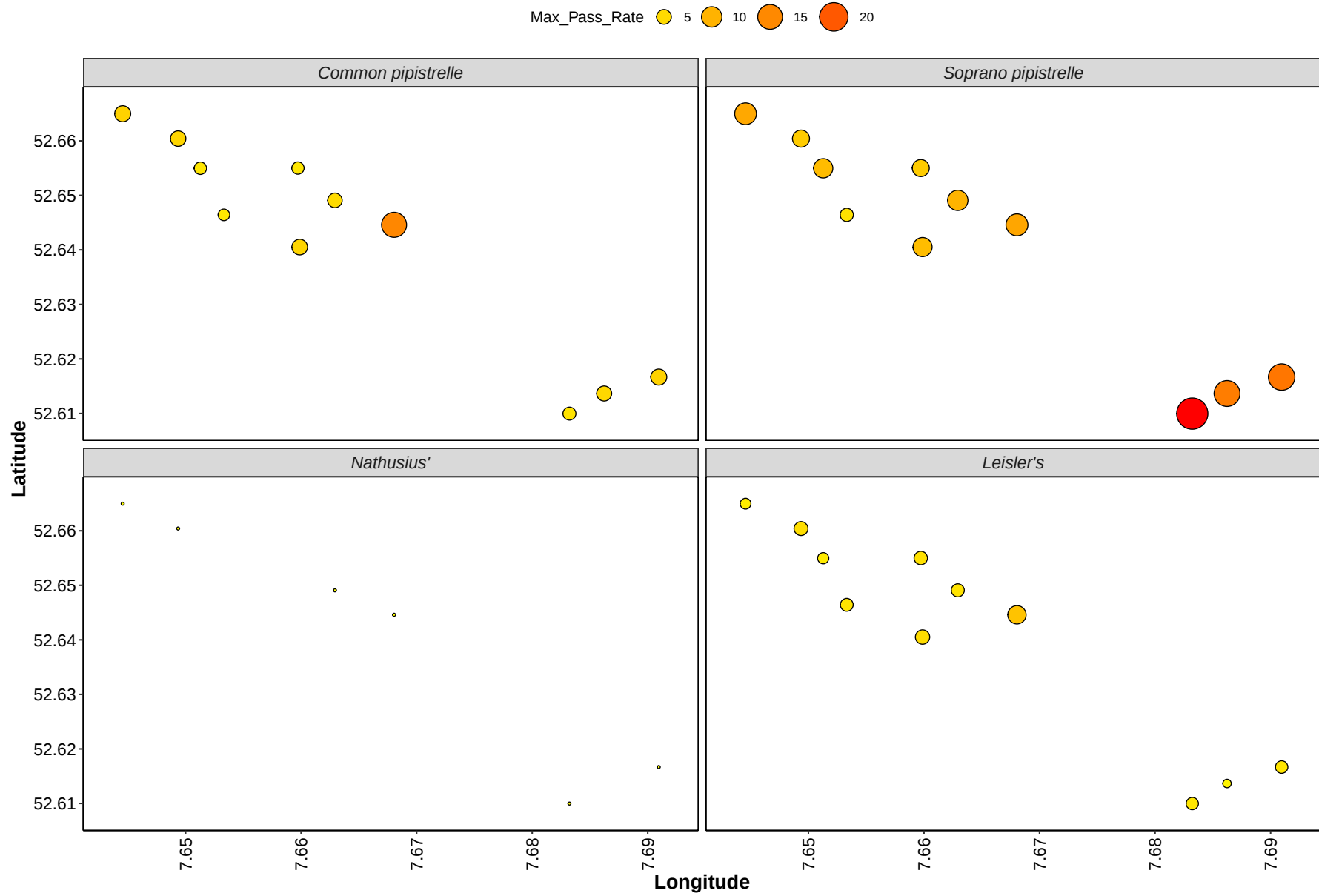
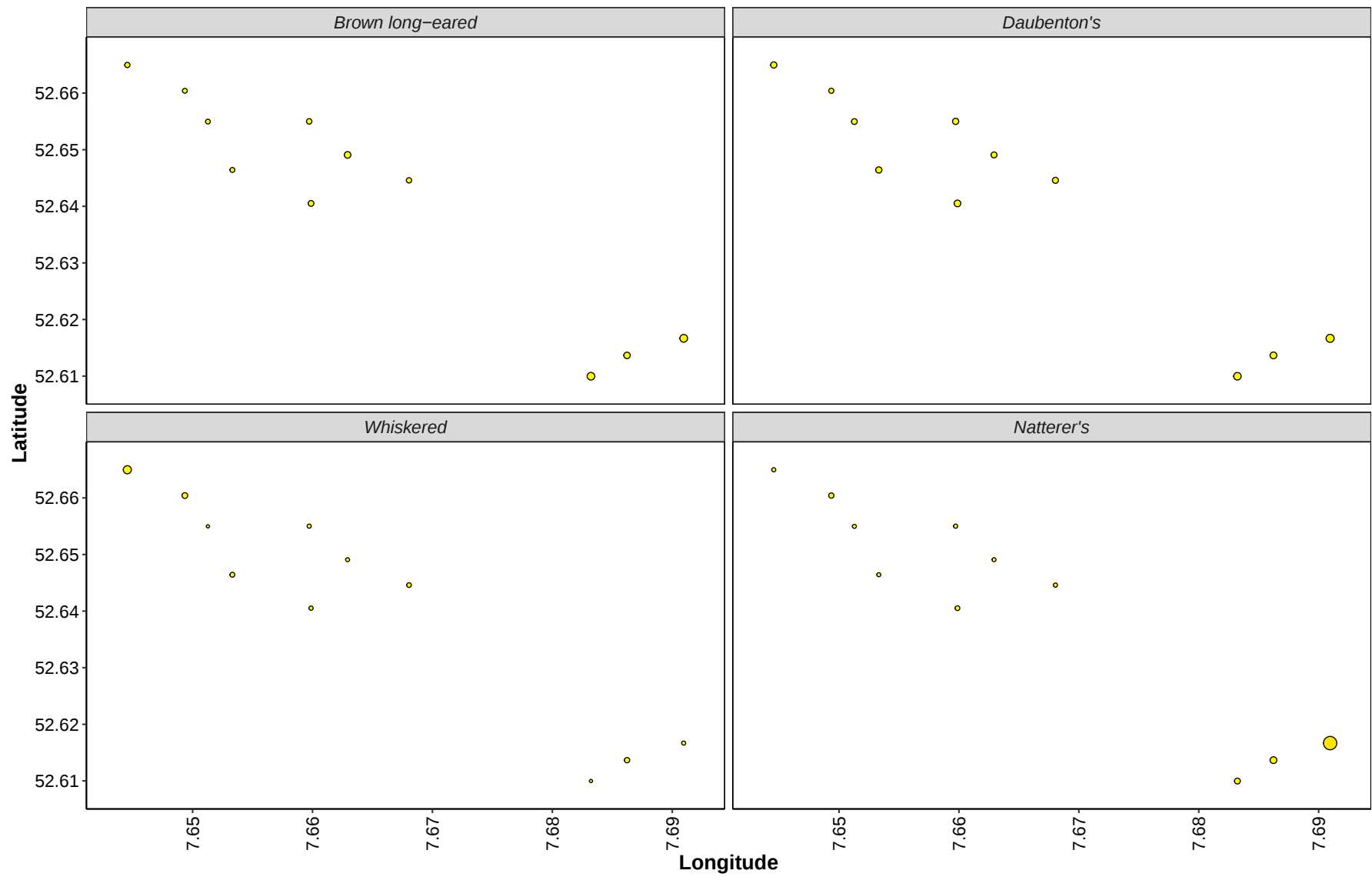


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.



Max_Pass_Rate ● 5 ● 10 ● 15 ● 20



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	LT1	0.0
Brown long-eared	LT10	0.0
Brown long-eared	LT11	0.3
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.0
Brown long-eared	LT4	0.0
Brown long-eared	LT5	0.1
Brown long-eared	LT6	0.0
Brown long-eared	LT7	0.2
Brown long-eared	LT8	0.1
Brown long-eared	LT9	0.1
Common pipistrelle	LT1	2.9
Common pipistrelle	LT10	2.2
Common pipistrelle	LT11	2.1
Common pipistrelle	LT2	2.1
Common pipistrelle	LT3	1.7
Common pipistrelle	LT4	1.2
Common pipistrelle	LT5	1.7
Common pipistrelle	LT6	1.7
Common pipistrelle	LT7	3.8
Common pipistrelle	LT8	2.3
Common pipistrelle	LT9	1.9
Daubenton's	LT1	0.2
Daubenton's	LT10	0.4
Daubenton's	LT11	0.5
Daubenton's	LT2	0.2
Daubenton's	LT3	0.3
Daubenton's	LT4	0.1
Daubenton's	LT5	0.2
Daubenton's	LT6	0.2
Daubenton's	LT7	0.1
Daubenton's	LT8	0.4
Daubenton's	LT9	0.2
Leisler's	LT1	1.4
Leisler's	LT10	0.7
Leisler's	LT11	1.8

Species	Detector ID	Median Pass Rate
Leisler's	LT2	1.9
Leisler's	LT3	1.8
Leisler's	LT4	1.8
Leisler's	LT5	2.0
Leisler's	LT6	1.8
Leisler's	LT7	1.9
Leisler's	LT8	2.6
Leisler's	LT9	1.4
Nathusius'	LT1	0.0
Nathusius'	LT10	0.0
Nathusius'	LT11	0.0
Nathusius'	LT2	0.0
Nathusius'	LT3	0.0
Nathusius'	LT4	0.0
Nathusius'	LT5	0.0
Nathusius'	LT6	0.0
Nathusius'	LT7	0.0
Nathusius'	LT8	0.0
Nathusius'	LT9	0.0
Natterer's	LT1	0.0
Natterer's	LT10	0.2
Natterer's	LT11	0.2
Natterer's	LT2	0.0
Natterer's	LT3	0.0
Natterer's	LT4	0.0
Natterer's	LT5	0.1
Natterer's	LT6	0.0
Natterer's	LT7	0.0
Natterer's	LT8	0.0
Natterer's	LT9	0.7
Soprano pipistrelle	LT1	7.0
Soprano pipistrelle	LT10	9.4
Soprano pipistrelle	LT11	8.2
Soprano pipistrelle	LT2	4.6
Soprano pipistrelle	LT3	4.3
Soprano pipistrelle	LT4	3.6

Species	Detector ID	Median Pass Rate
Soprano pipistrelle	LT5	2.6
Soprano pipistrelle	LT6	2.0
Soprano pipistrelle	LT7	3.9
Soprano pipistrelle	LT8	4.6
Soprano pipistrelle	LT9	4.9
Whiskered	LT1	0.1
Whiskered	LT10	0.0
Whiskered	LT11	0.0
Whiskered	LT2	0.1
Whiskered	LT3	0.0
Whiskered	LT4	0.0
Whiskered	LT5	0.0
Whiskered	LT6	0.0
Whiskered	LT7	0.0
Whiskered	LT8	0.0
Whiskered	LT9	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.

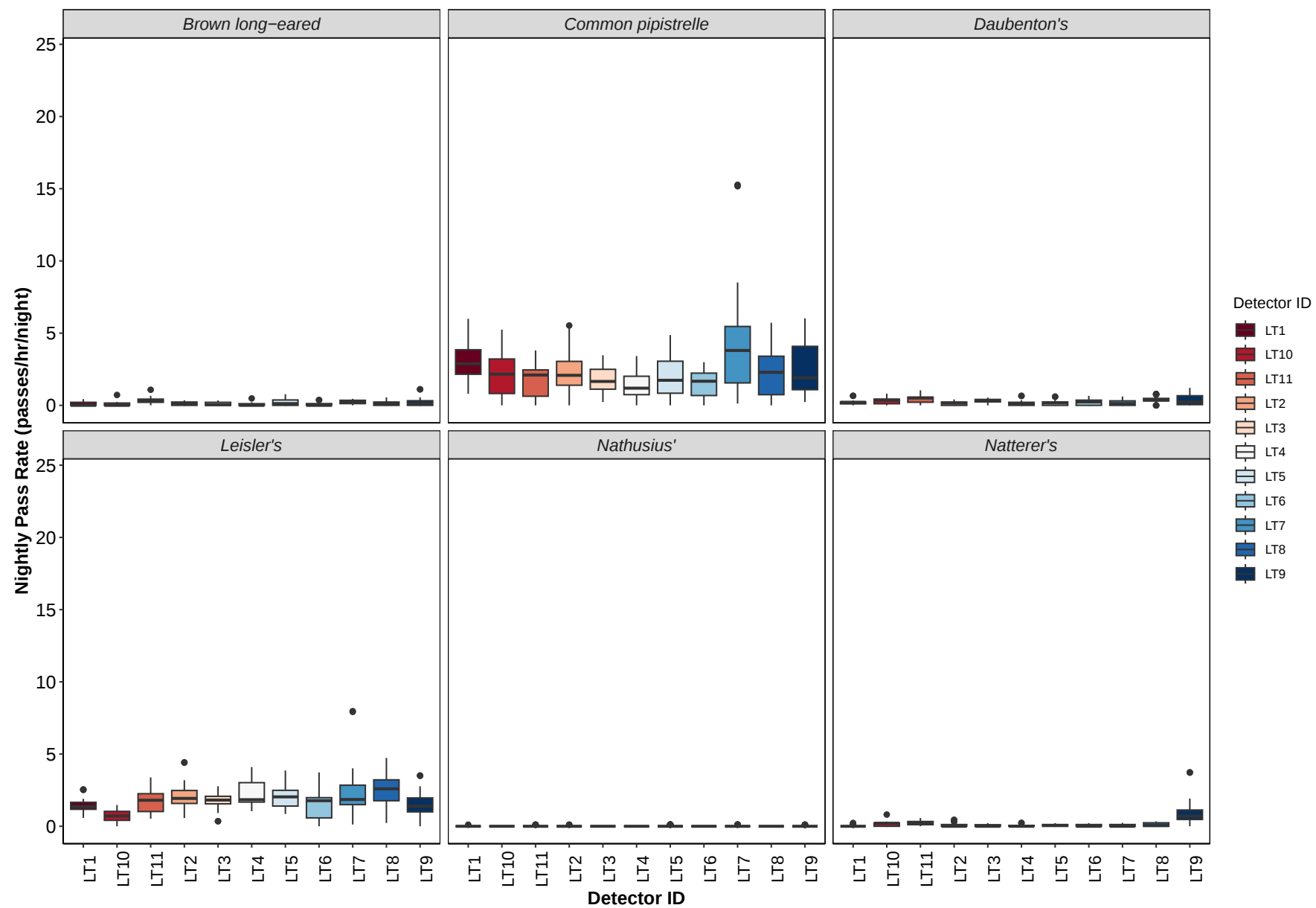
Species	Detector ID	Mean Pass Rate
Brown long-eared	LT1	0.1
Brown long-eared	LT10	0.1
Brown long-eared	LT11	0.3
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.1
Brown long-eared	LT4	0.1
Brown long-eared	LT5	0.2
Brown long-eared	LT6	0.1
Brown long-eared	LT7	0.2
Brown long-eared	LT8	0.2
Brown long-eared	LT9	0.2
Common pipistrelle	LT1	3.0
Common pipistrelle	LT10	2.2
Common pipistrelle	LT11	1.9
Common pipistrelle	LT2	2.3
Common pipistrelle	LT3	1.8
Common pipistrelle	LT4	1.5
Common pipistrelle	LT5	2.1
Common pipistrelle	LT6	1.5
Common pipistrelle	LT7	4.5
Common pipistrelle	LT8	2.2
Common pipistrelle	LT9	2.5
Daubenton's	LT1	0.2
Daubenton's	LT10	0.3
Daubenton's	LT11	0.4
Daubenton's	LT2	0.1
Daubenton's	LT3	0.3
Daubenton's	LT4	0.1
Daubenton's	LT5	0.2
Daubenton's	LT6	0.2
Daubenton's	LT7	0.2
Daubenton's	LT8	0.4
Daubenton's	LT9	0.4
Leisler's	LT1	1.4
Leisler's	LT10	0.8
Leisler's	LT11	1.7

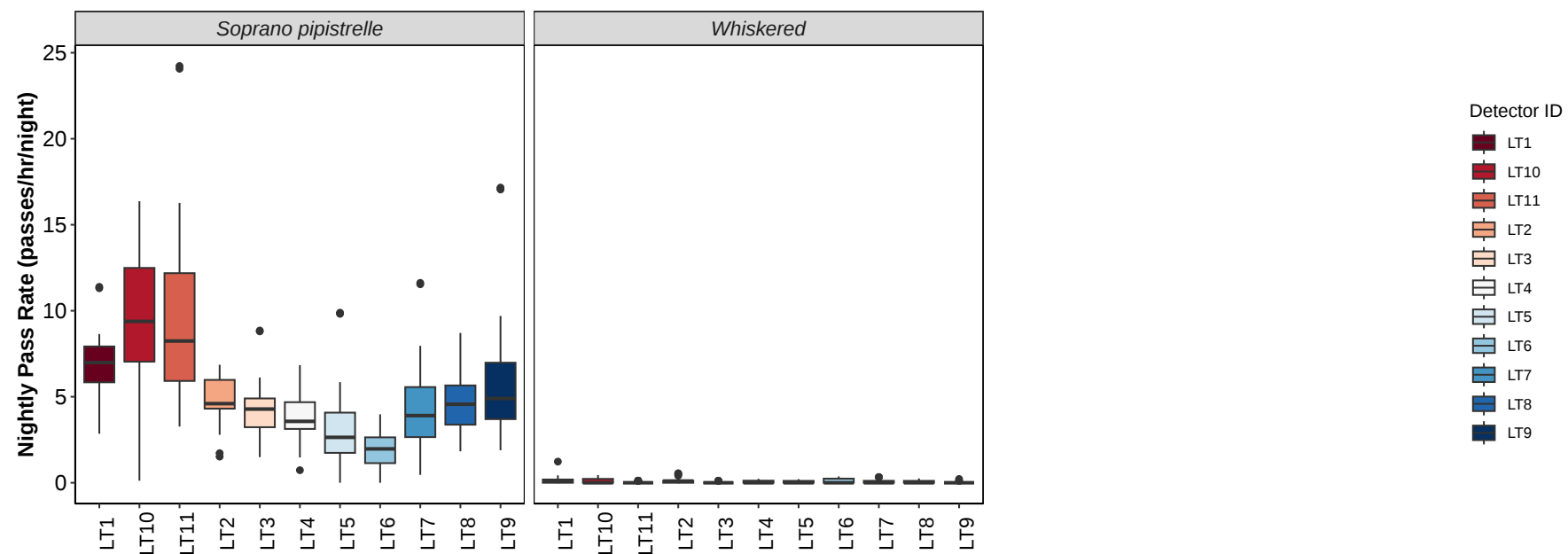
Species	Detector ID	Mean Pass Rate
Leisler's	LT2	2.1
Leisler's	LT3	1.8
Leisler's	LT4	2.2
Leisler's	LT5	2.1
Leisler's	LT6	1.6
Leisler's	LT7	2.5
Leisler's	LT8	2.6
Leisler's	LT9	1.5
Nathusius'	LT1	0.0
Nathusius'	LT10	0.0
Nathusius'	LT11	0.0
Nathusius'	LT2	0.0
Nathusius'	LT3	0.0
Nathusius'	LT4	0.0
Nathusius'	LT5	0.0
Nathusius'	LT6	0.0
Nathusius'	LT7	0.0
Nathusius'	LT8	0.0
Nathusius'	LT9	0.0
Natterer's	LT1	0.0
Natterer's	LT10	0.2
Natterer's	LT11	0.2
Natterer's	LT2	0.1
Natterer's	LT3	0.1
Natterer's	LT4	0.0
Natterer's	LT5	0.1
Natterer's	LT6	0.1
Natterer's	LT7	0.1
Natterer's	LT8	0.1
Natterer's	LT9	1.0
Soprano pipistrelle	LT1	7.1
Soprano pipistrelle	LT10	9.4
Soprano pipistrelle	LT11	9.6
Soprano pipistrelle	LT2	4.8
Soprano pipistrelle	LT3	4.4
Soprano pipistrelle	LT4	3.8

Species	Detector ID	Mean Pass Rate
Soprano pipistrelle	LT5	3.3
Soprano pipistrelle	LT6	1.9
Soprano pipistrelle	LT7	4.4
Soprano pipistrelle	LT8	4.6
Soprano pipistrelle	LT9	6.0
Whiskered	LT1	0.1
Whiskered	LT10	0.1
Whiskered	LT11	0.0
Whiskered	LT2	0.1
Whiskered	LT3	0.0
Whiskered	LT4	0.1
Whiskered	LT5	0.0
Whiskered	LT6	0.1
Whiskered	LT7	0.1
Whiskered	LT8	0.0
Whiskered	LT9	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.





Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
Jul	LT1	2
Jul	LT10	3
Jul	LT11	3
Jul	LT2	2
Jul	LT3	2
Jul	LT4	8
Jul	LT5	8
Jul	LT6	8
Jul	LT7	8
Jul	LT8	8
Jul	LT9	3
Aug	LT1	24
Aug	LT10	24
Aug	LT11	24
Aug	LT2	24
Aug	LT3	24
Aug	LT4	19
Aug	LT5	20
Aug	LT6	13
Aug	LT7	20
Aug	LT8	20
Aug	LT9	24

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the 'average' activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Aug	Jul
Brown long-eared	LT1	0.0	0.0
Brown long-eared	LT10	0.0	0.2
Brown long-eared	LT11	0.3	0.5
Brown long-eared	LT2	0.1	0.1
Brown long-eared	LT3	0.0	0.1
Brown long-eared	LT4	0.0	0.0
Brown long-eared	LT5	0.2	0.1
Brown long-eared	LT6	0.0	0.1
Brown long-eared	LT7	0.3	0.1
Brown long-eared	LT8	0.2	0.1
Brown long-eared	LT9	0.1	0.4
Common pipistrelle	LT1	2.9	2.9
Common pipistrelle	LT10	2.2	2.2
Common pipistrelle	LT11	2.1	2.1
Common pipistrelle	LT2	2.2	1.5
Common pipistrelle	LT3	1.7	1.1
Common pipistrelle	LT4	1.2	1.6
Common pipistrelle	LT5	2.3	1.6
Common pipistrelle	LT6	1.0	2.1
Common pipistrelle	LT7	4.6	2.5
Common pipistrelle	LT8	1.4	2.7
Common pipistrelle	LT9	1.9	2.2
Daubenton's	LT1	0.2	0.2
Daubenton's	LT10	0.4	0.4
Daubenton's	LT11	0.5	0.2
Daubenton's	LT2	0.2	0.0
Daubenton's	LT3	0.3	0.2
Daubenton's	LT4	0.1	0.1
Daubenton's	LT5	0.2	0.2
Daubenton's	LT6	0.1	0.3
Daubenton's	LT7	0.1	0.1
Daubenton's	LT8	0.3	0.4
Daubenton's	LT9	0.3	0.2
Leisler's	LT1	1.4	0.6
Leisler's	LT10	0.7	0.9
Leisler's	LT11	1.4	3.4

Species	Detector ID	Aug	Jul
Leisler's	LT2	2.0	1.7
Leisler's	LT3	1.8	1.6
Leisler's	LT4	1.7	1.8
Leisler's	LT5	2.0	2.4
Leisler's	LT6	1.7	2.0
Leisler's	LT7	1.8	1.9
Leisler's	LT8	2.6	3.1
Leisler's	LT9	1.3	1.7
Nathusius'	LT1	0.0	0.0
Nathusius'	LT10	0.0	0.0
Nathusius'	LT11	0.0	0.0
Nathusius'	LT2	0.0	0.0
Nathusius'	LT3	0.0	0.0
Nathusius'	LT4	0.0	0.0
Nathusius'	LT5	0.0	0.0
Nathusius'	LT6	0.0	0.0
Nathusius'	LT7	0.0	0.0
Nathusius'	LT8	0.0	0.0
Nathusius'	LT9	0.0	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT10	0.2	0.0
Natterer's	LT11	0.2	0.0
Natterer's	LT2	0.0	0.1
Natterer's	LT3	0.0	0.1
Natterer's	LT4	0.0	0.0
Natterer's	LT5	0.1	0.1
Natterer's	LT6	0.0	0.1
Natterer's	LT7	0.0	0.1
Natterer's	LT8	0.1	0.0
Natterer's	LT9	0.7	0.7
Soprano pipistrelle	LT1	7.0	7.5
Soprano pipistrelle	LT10	8.5	13.7
Soprano pipistrelle	LT11	8.1	13.6
Soprano pipistrelle	LT2	5.0	4.5
Soprano pipistrelle	LT3	4.0	4.9
Soprano pipistrelle	LT4	3.3	4.7

Species	Detector ID	Aug	Jul
Soprano pipistrelle	LT5	2.5	2.8
Soprano pipistrelle	LT6	1.3	2.4
Soprano pipistrelle	LT7	4.4	3.3
Soprano pipistrelle	LT8	4.6	4.2
Soprano pipistrelle	LT9	5.0	4.7
Whiskered	LT1	0.1	0.1
Whiskered	LT10	0.0	0.0
Whiskered	LT11	0.0	0.1
Whiskered	LT2	0.1	0.1
Whiskered	LT3	0.0	0.1
Whiskered	LT4	0.0	0.0
Whiskered	LT5	0.0	0.0
Whiskered	LT6	0.0	0.1
Whiskered	LT7	0.0	0.0
Whiskered	LT8	0.0	0.0
Whiskered	LT9	0.0	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	Aug	Jul
Brown long-eared	LT1	0.1	0.0
Brown long-eared	LT10	0.1	0.3
Brown long-eared	LT11	0.3	0.6
Brown long-eared	LT2	0.1	0.1
Brown long-eared	LT3	0.1	0.1
Brown long-eared	LT4	0.1	0.1
Brown long-eared	LT5	0.3	0.1
Brown long-eared	LT6	0.0	0.1
Brown long-eared	LT7	0.3	0.1
Brown long-eared	LT8	0.2	0.1
Brown long-eared	LT9	0.2	0.3
Common pipistrelle	LT1	3.0	2.9
Common pipistrelle	LT10	2.2	1.9
Common pipistrelle	LT11	1.9	2.0
Common pipistrelle	LT2	2.4	1.5
Common pipistrelle	LT3	1.8	1.1
Common pipistrelle	LT4	1.4	1.7
Common pipistrelle	LT5	2.3	1.6
Common pipistrelle	LT6	1.3	1.8
Common pipistrelle	LT7	5.2	2.7
Common pipistrelle	LT8	2.0	2.7
Common pipistrelle	LT9	2.6	1.9
Daubenton's	LT1	0.2	0.2
Daubenton's	LT10	0.3	0.4
Daubenton's	LT11	0.5	0.2
Daubenton's	LT2	0.2	0.0
Daubenton's	LT3	0.3	0.2
Daubenton's	LT4	0.1	0.1
Daubenton's	LT5	0.1	0.3
Daubenton's	LT6	0.2	0.3
Daubenton's	LT7	0.1	0.2
Daubenton's	LT8	0.4	0.4
Daubenton's	LT9	0.4	0.3
Leisler's	LT1	1.5	0.6
Leisler's	LT10	0.8	0.8
Leisler's	LT11	1.5	3.0

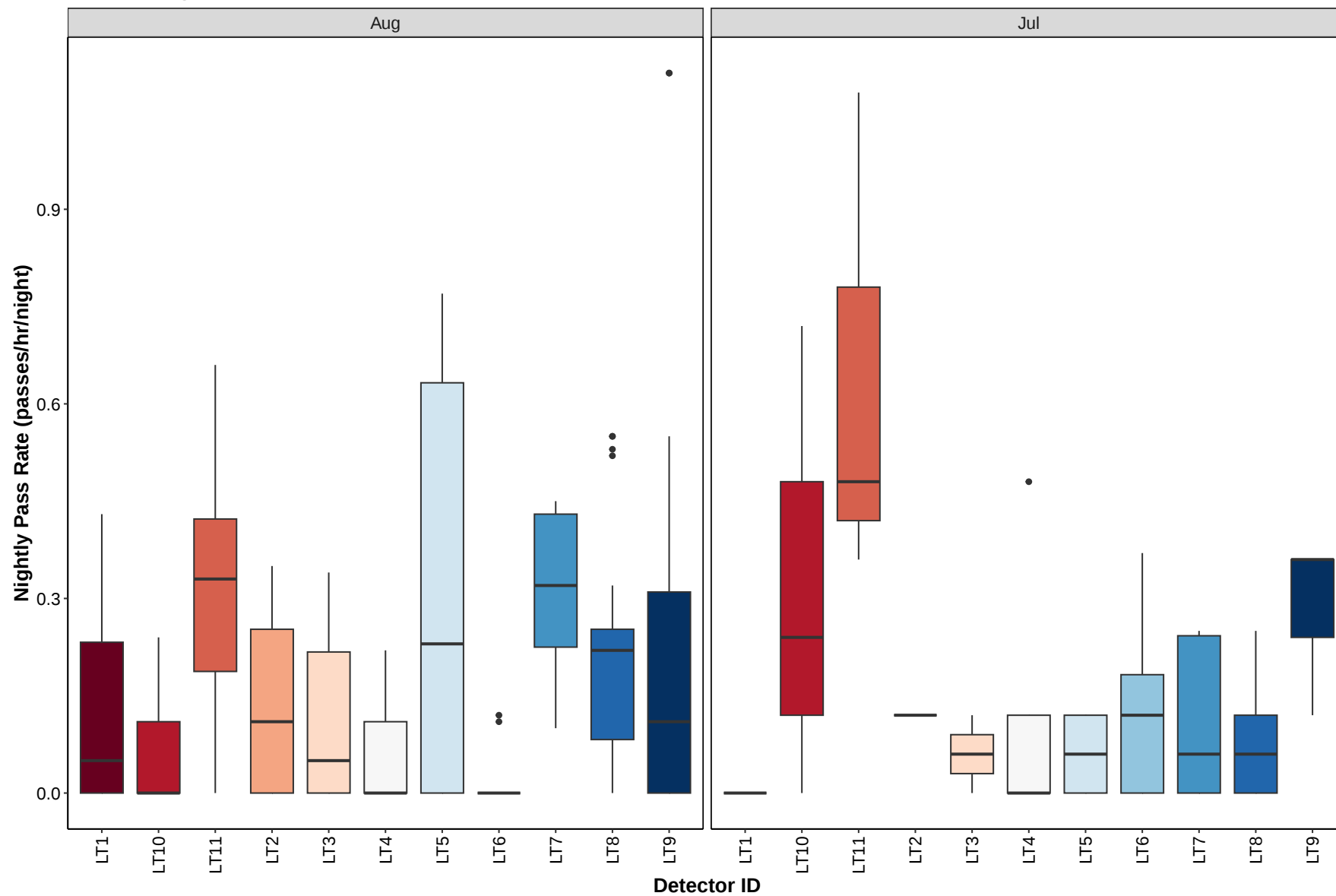
Species	Detector ID	Aug	Jul
Leisler's	LT2	2.1	1.7
Leisler's	LT3	1.8	1.6
Leisler's	LT4	2.2	2.1
Leisler's	LT5	2.0	2.4
Leisler's	LT6	1.2	2.1
Leisler's	LT7	2.6	2.1
Leisler's	LT8	2.4	3.2
Leisler's	LT9	1.5	1.6
Nathusius'	LT1	0.0	0.0
Nathusius'	LT10	0.0	0.0
Nathusius'	LT11	0.0	0.0
Nathusius'	LT2	0.0	0.0
Nathusius'	LT3	0.0	0.0
Nathusius'	LT4	0.0	0.0
Nathusius'	LT5	0.0	0.0
Nathusius'	LT6	0.0	0.0
Nathusius'	LT7	0.0	0.0
Nathusius'	LT8	0.0	0.0
Nathusius'	LT9	0.0	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT10	0.2	0.1
Natterer's	LT11	0.2	0.1
Natterer's	LT2	0.1	0.1
Natterer's	LT3	0.0	0.1
Natterer's	LT4	0.0	0.0
Natterer's	LT5	0.1	0.1
Natterer's	LT6	0.1	0.1
Natterer's	LT7	0.1	0.1
Natterer's	LT8	0.1	0.1
Natterer's	LT9	1.0	0.6
Soprano pipistrelle	LT1	7.0	7.5
Soprano pipistrelle	LT10	8.9	13.3
Soprano pipistrelle	LT11	9.2	13.3
Soprano pipistrelle	LT2	4.9	4.5
Soprano pipistrelle	LT3	4.3	4.9
Soprano pipistrelle	LT4	3.4	4.8

Species	Detector ID	Aug	Jul
Soprano pipistrelle	LT5	3.4	3.2
Soprano pipistrelle	LT6	1.5	2.6
Soprano pipistrelle	LT7	4.8	3.5
Soprano pipistrelle	LT8	4.5	5.1
Soprano pipistrelle	LT9	6.1	5.4
Whiskered	LT1	0.1	0.1
Whiskered	LT10	0.1	0.1
Whiskered	LT11	0.0	0.1
Whiskered	LT2	0.1	0.1
Whiskered	LT3	0.0	0.1
Whiskered	LT4	0.1	0.0
Whiskered	LT5	0.1	0.0
Whiskered	LT6	0.1	0.1
Whiskered	LT7	0.1	0.0
Whiskered	LT8	0.0	0.1
Whiskered	LT9	0.0	0.0

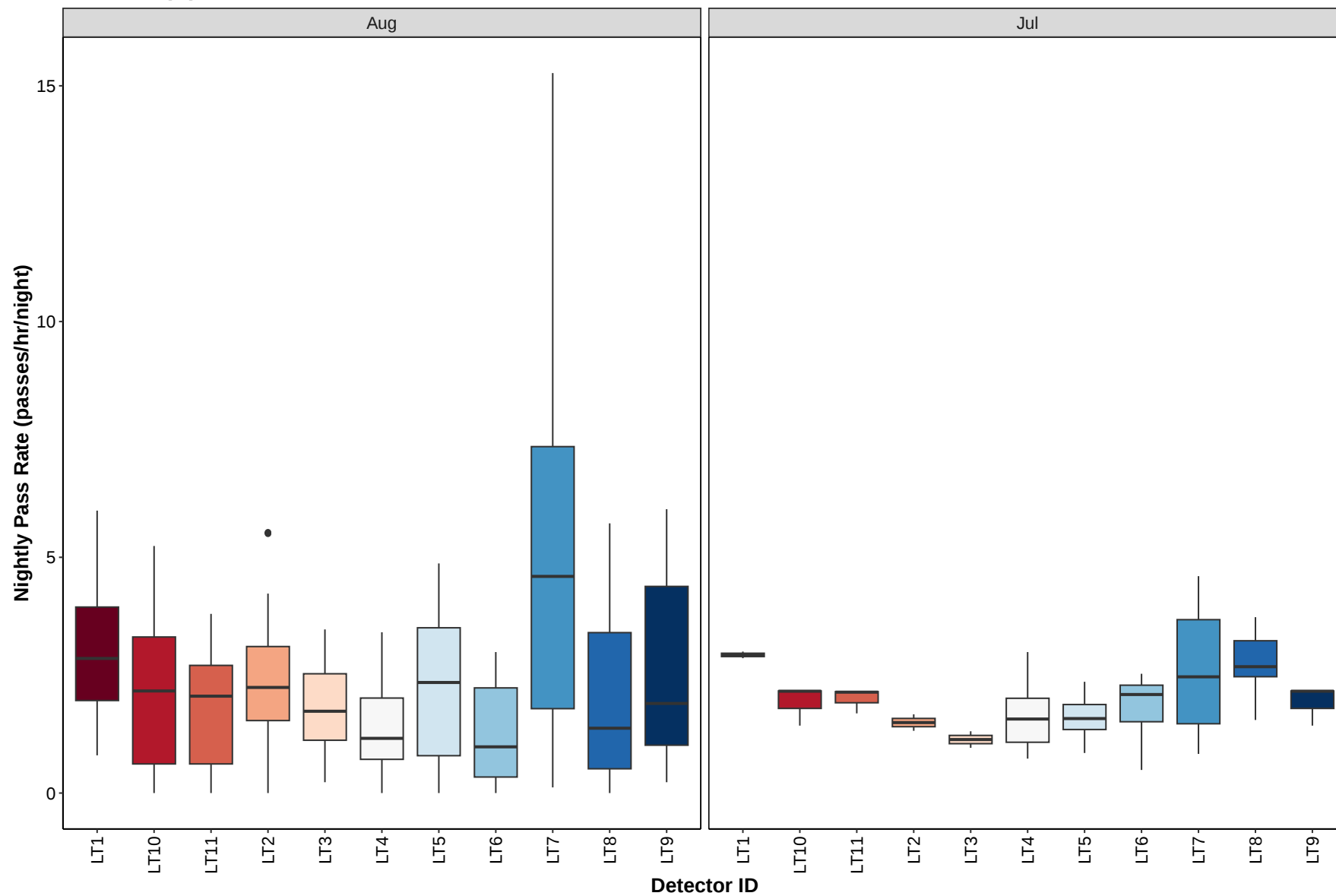
Per Detector

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.

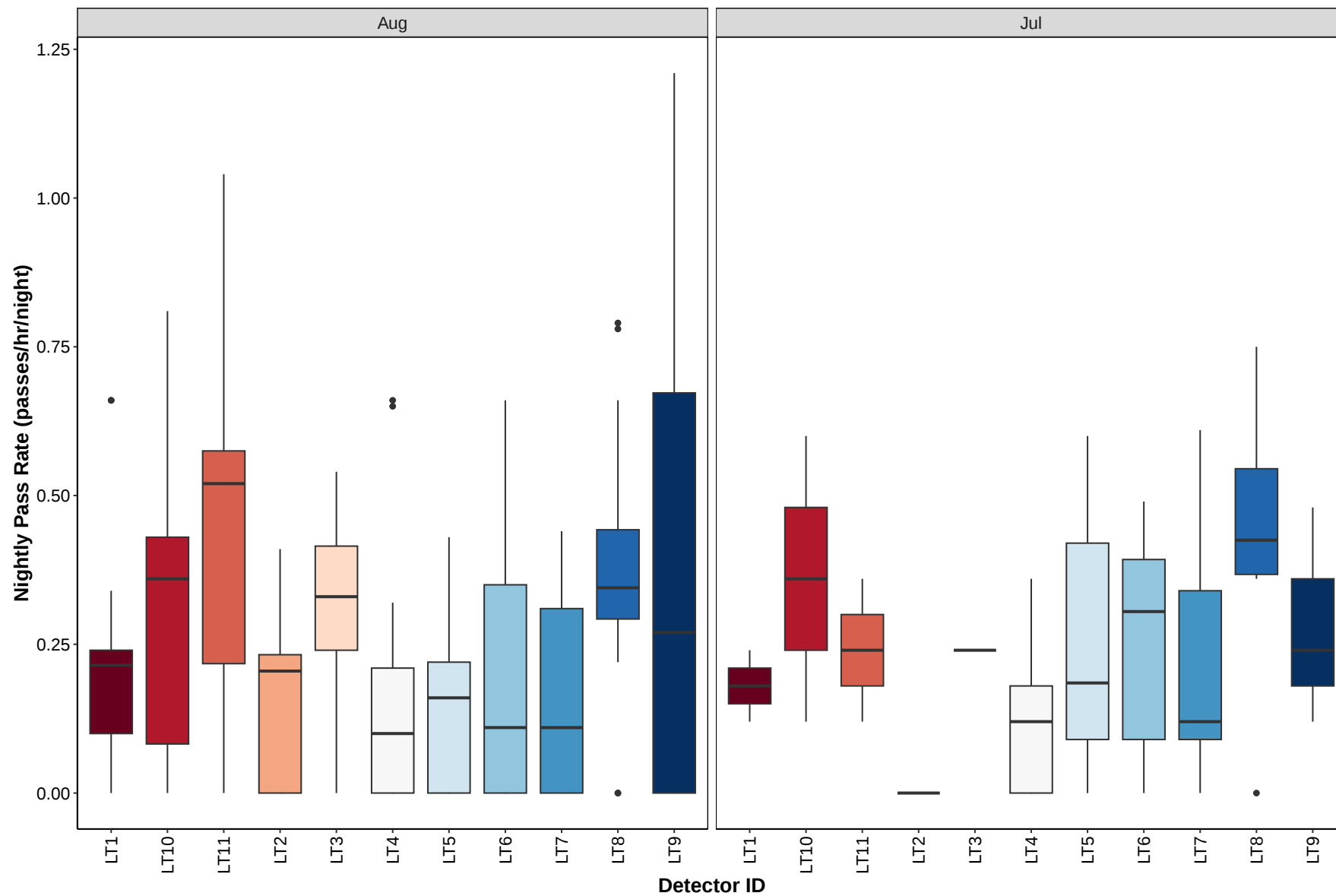
Brown long-eared



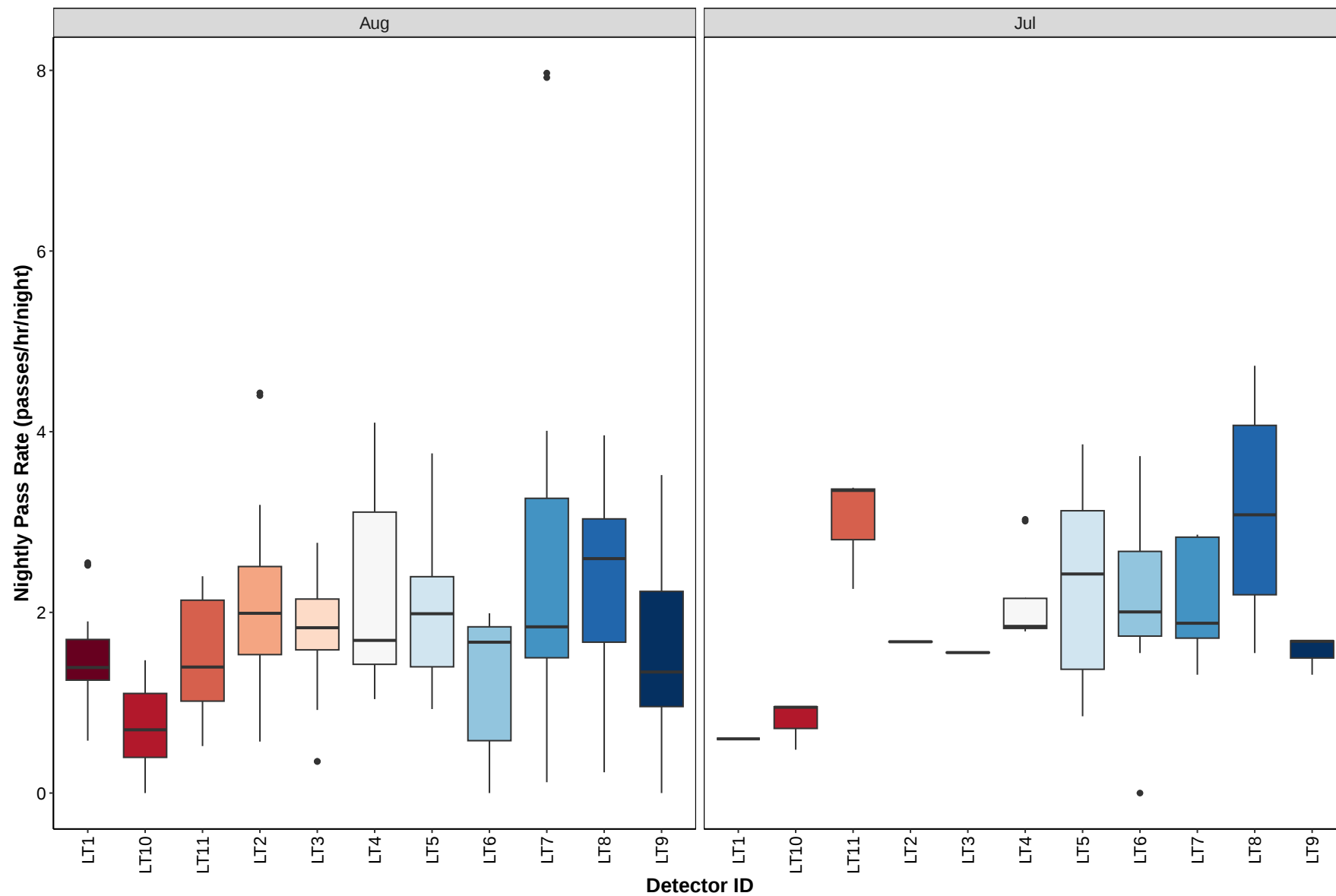
Common pipistrelle

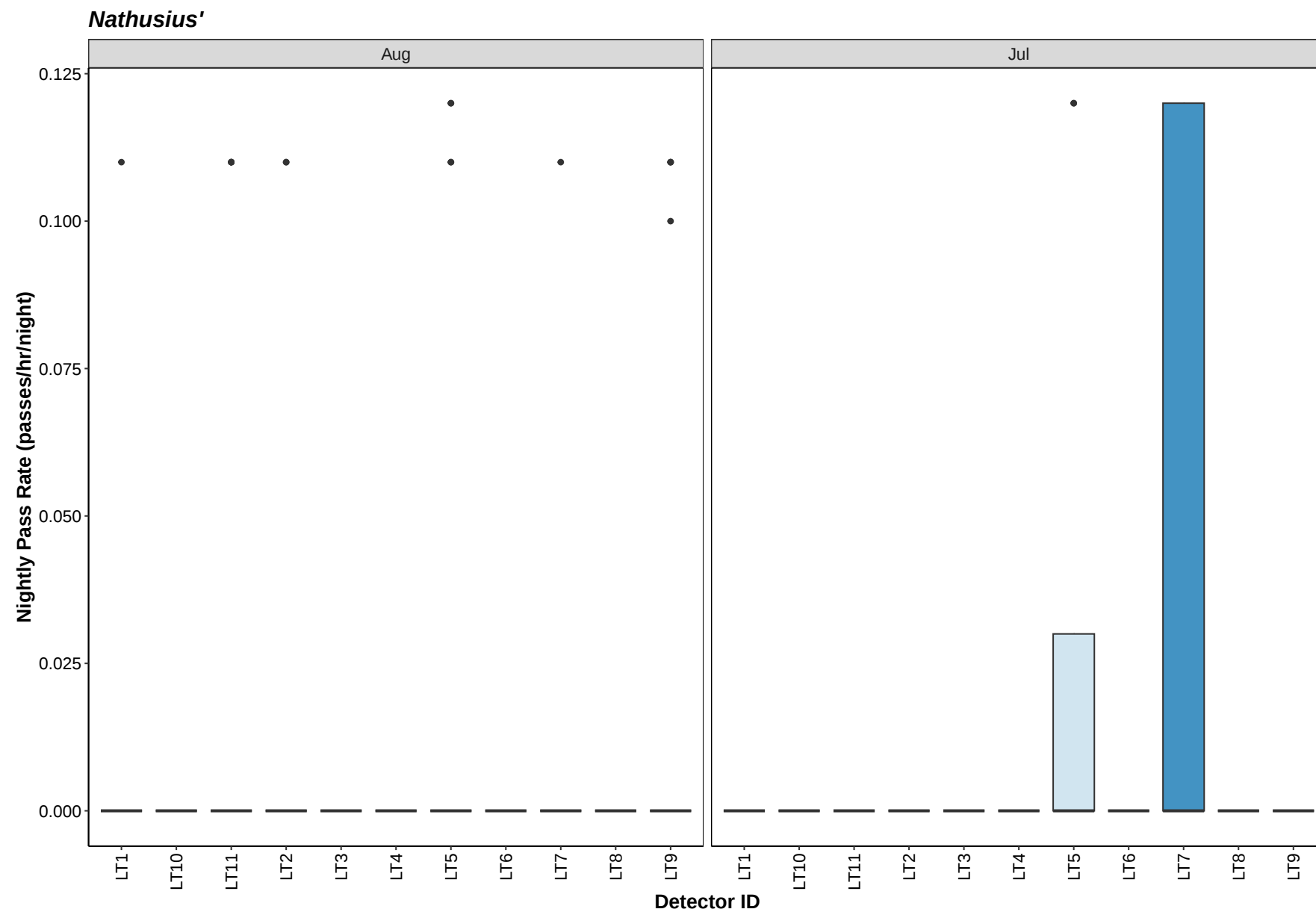


Daubenton's

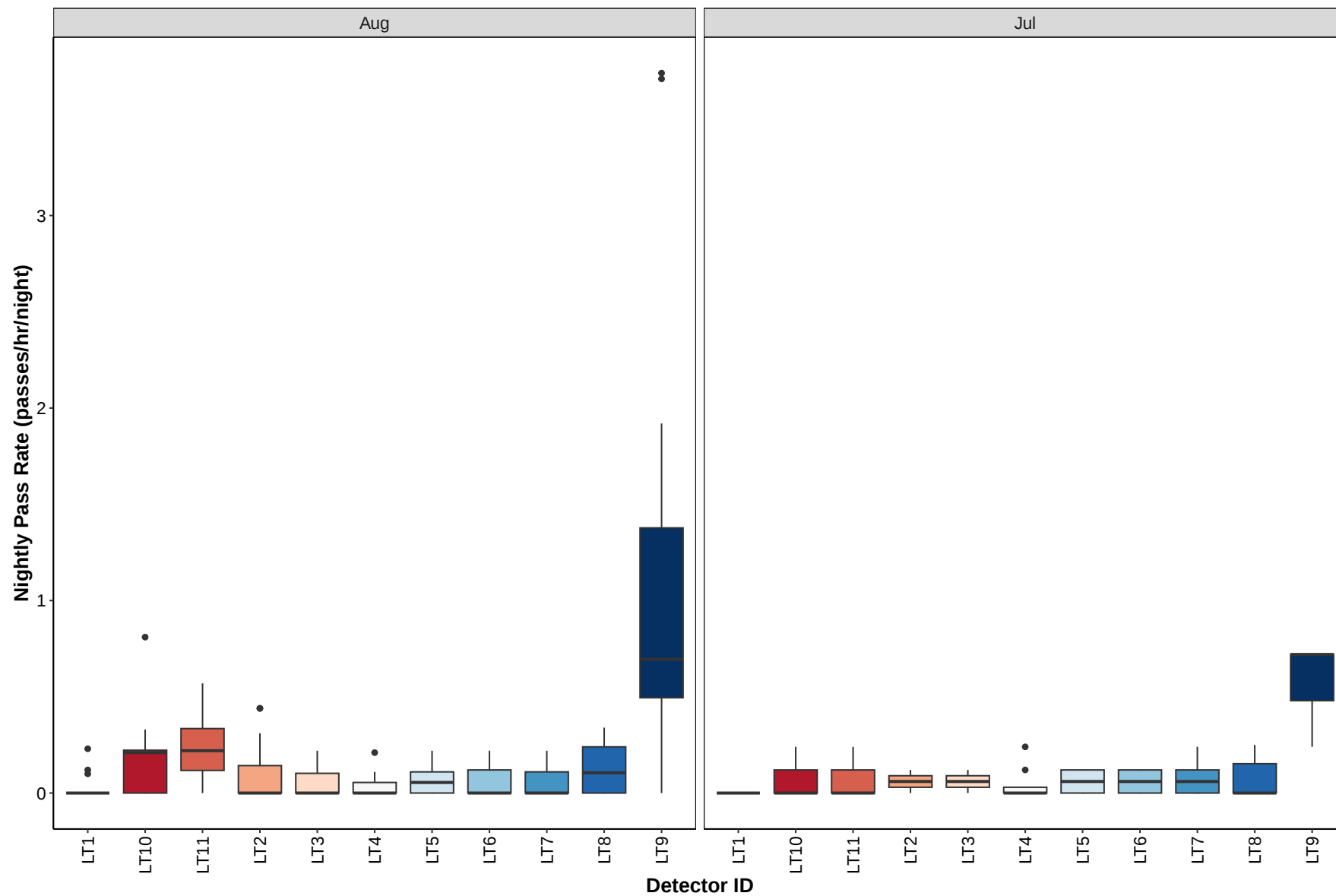


Leisler's

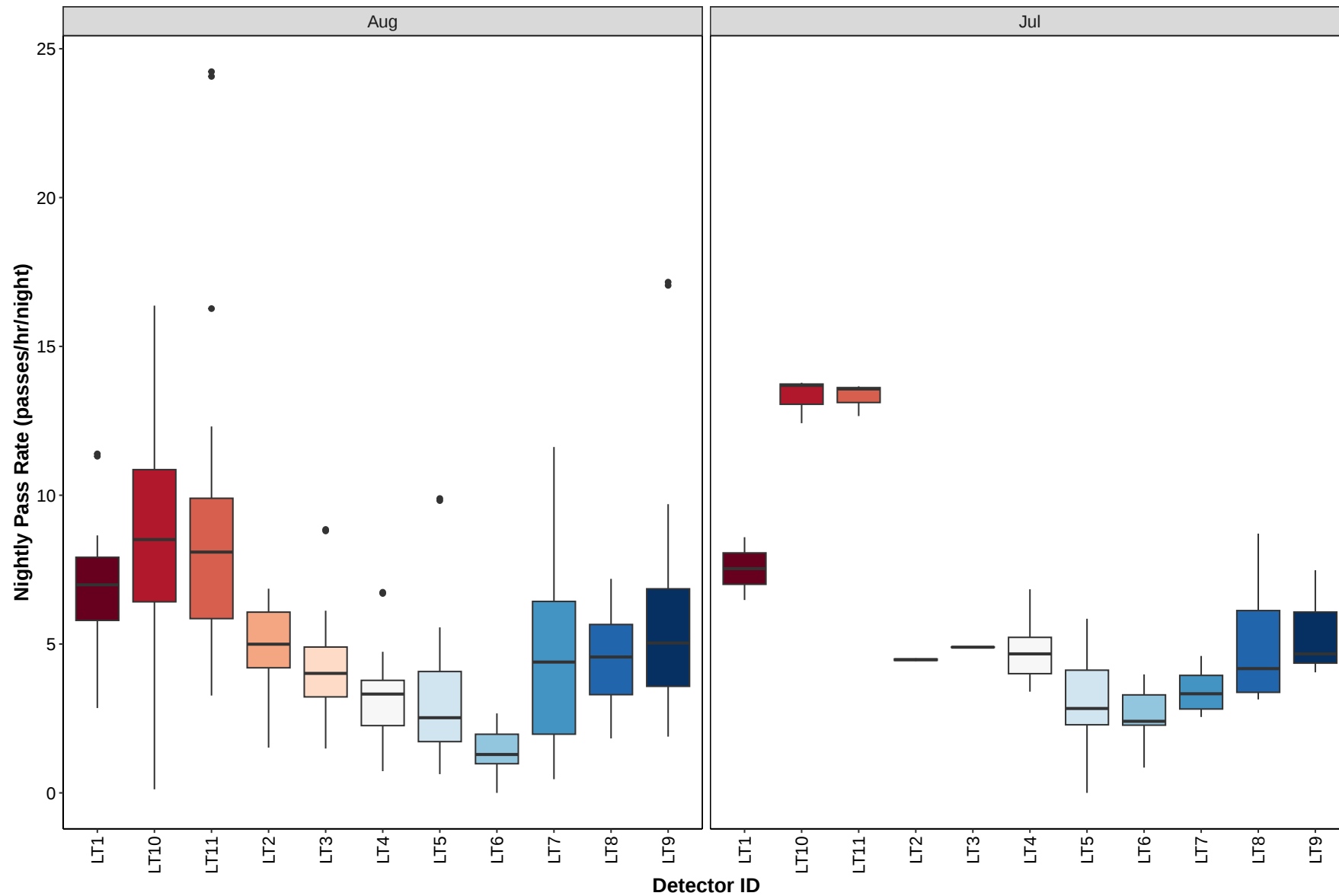




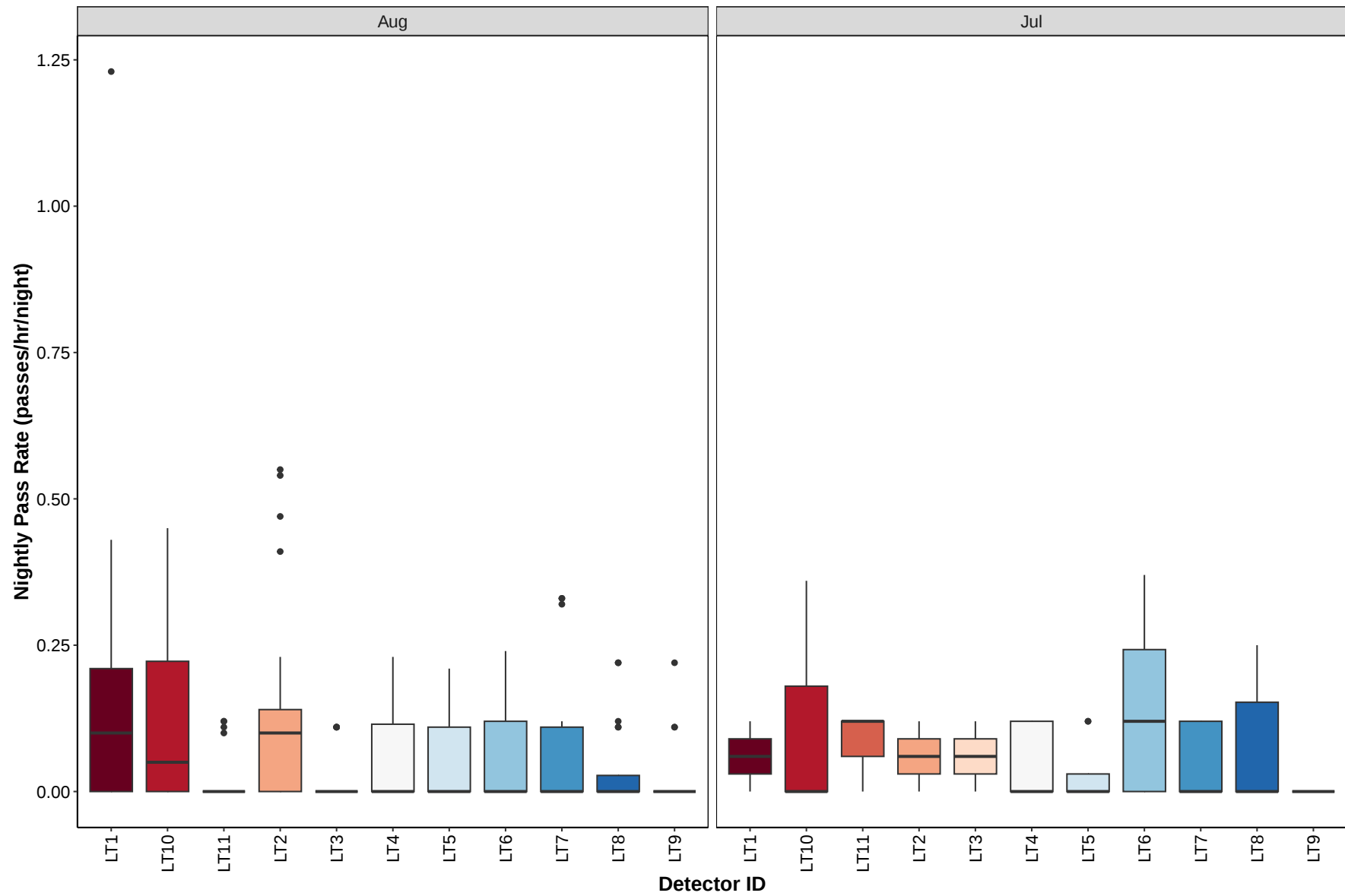
Natterer's



Soprano pipistrelle



Whiskered



Bat Activity per Detector Location

Figure 18. Detector ID reference:

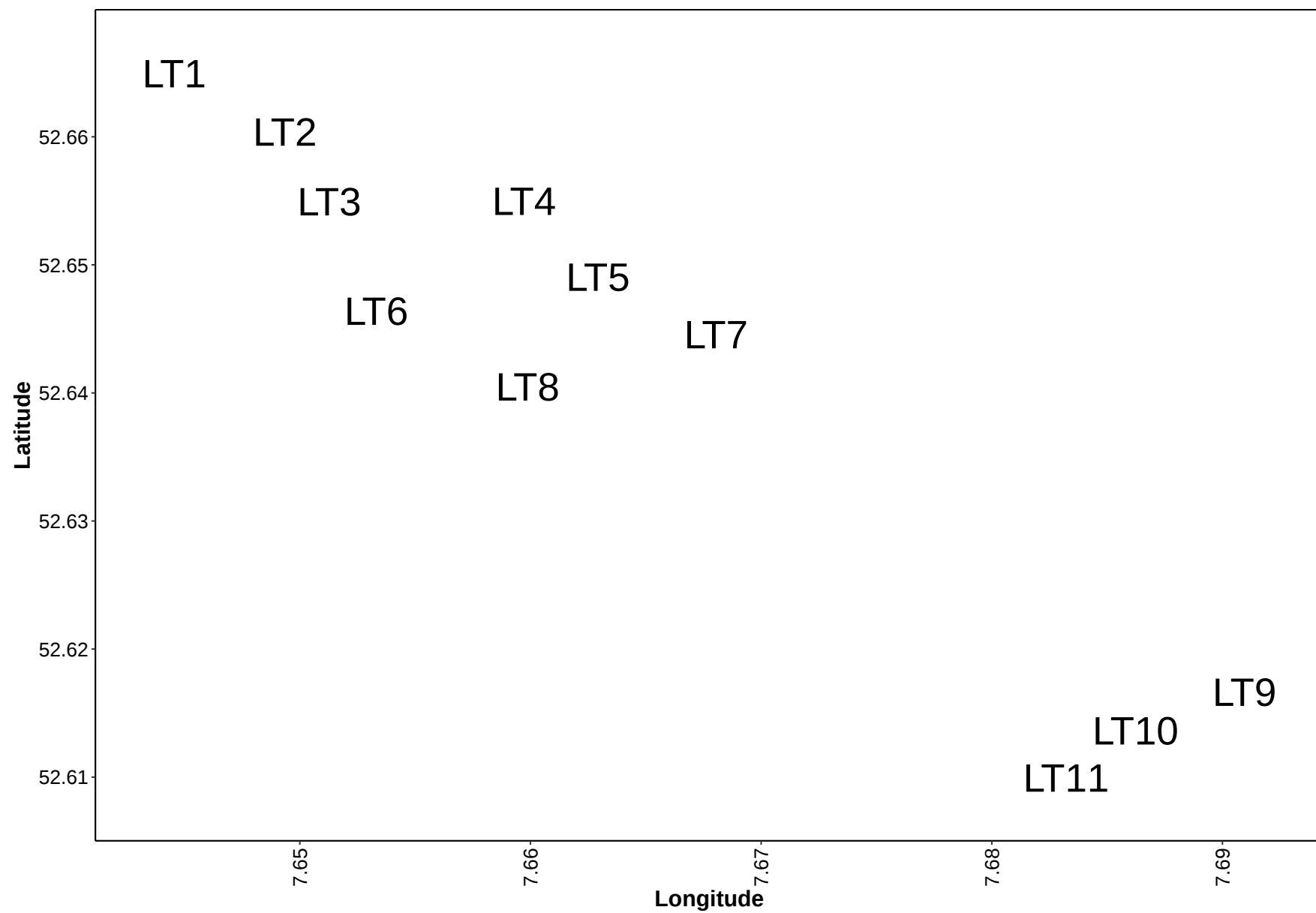
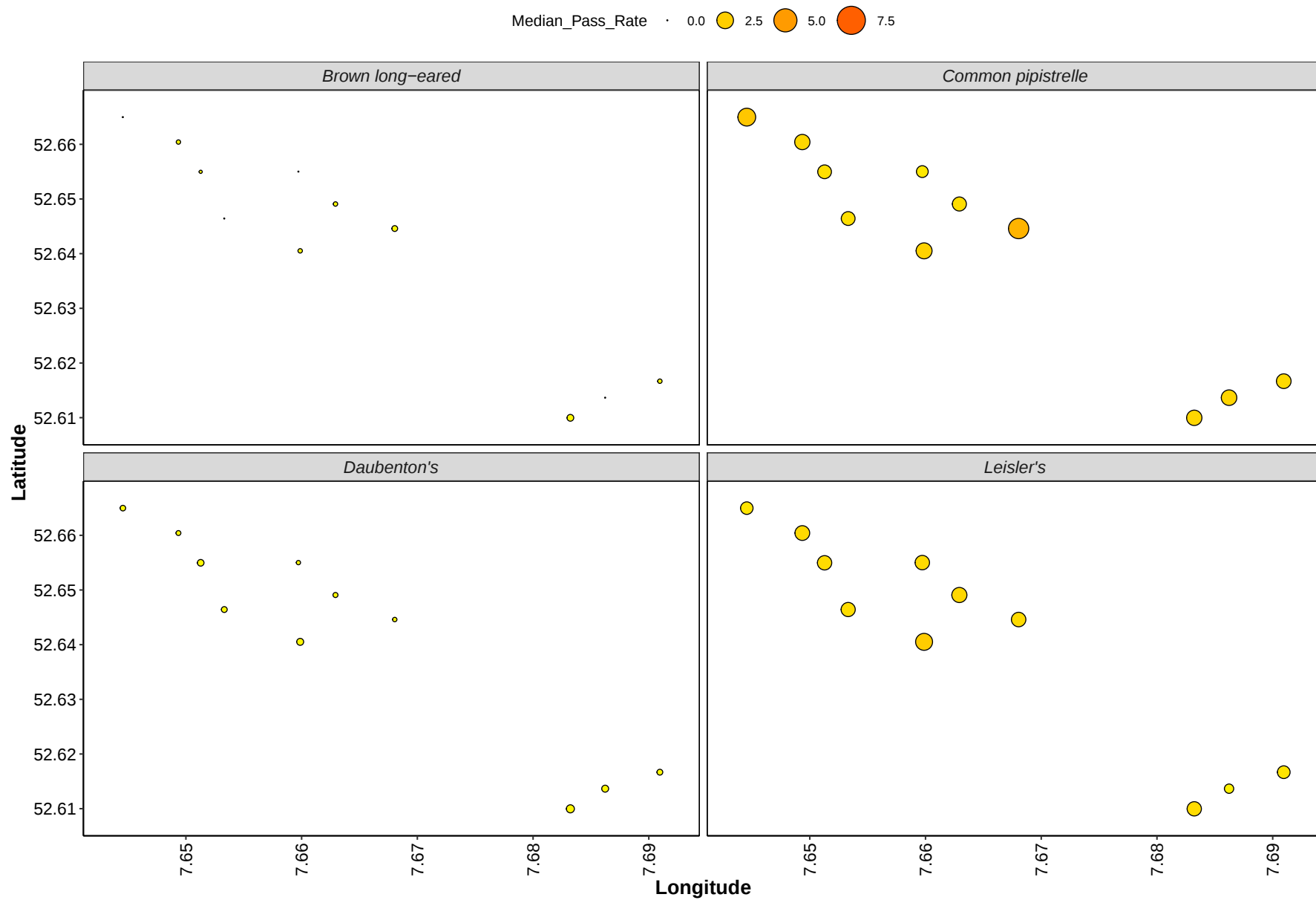


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



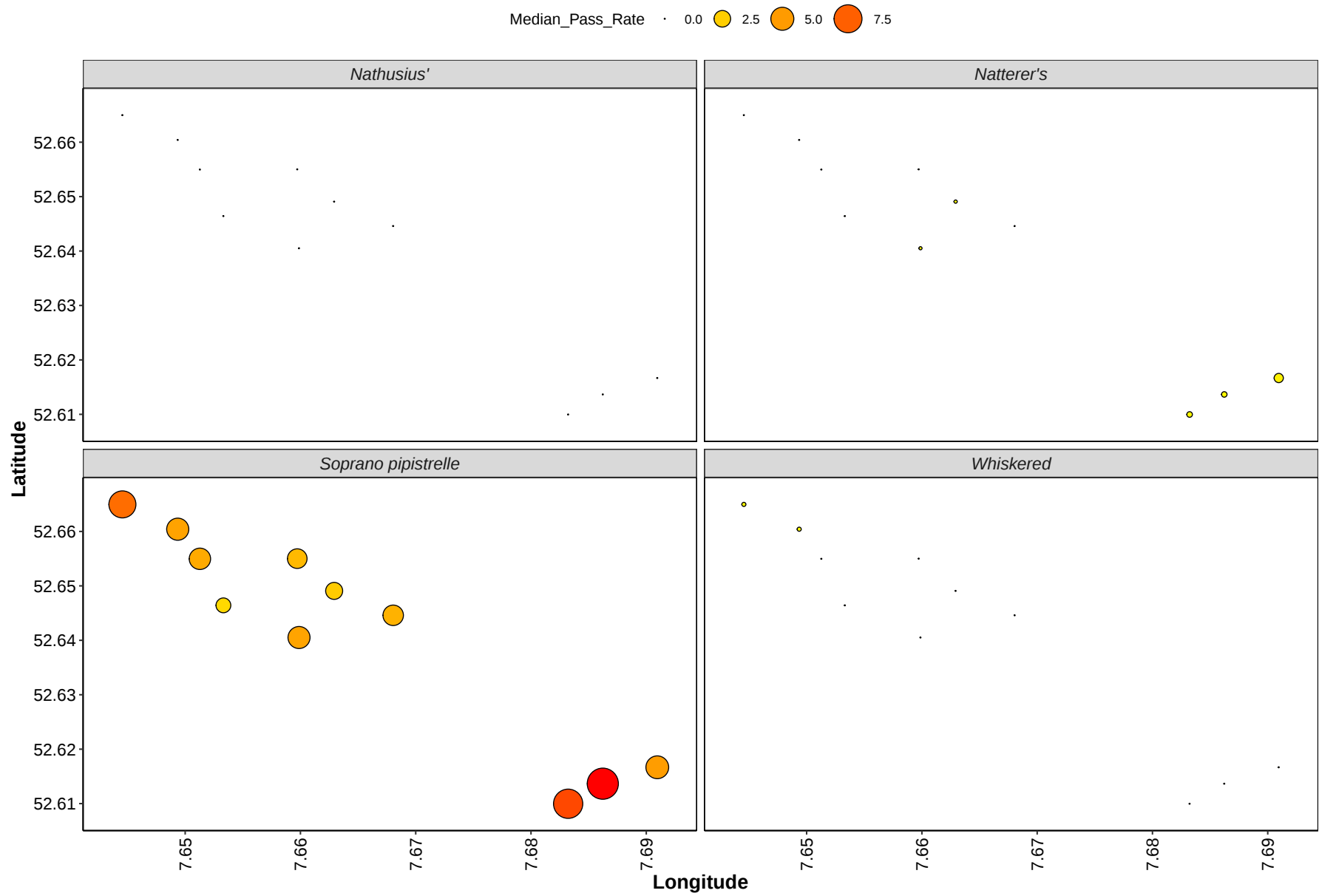
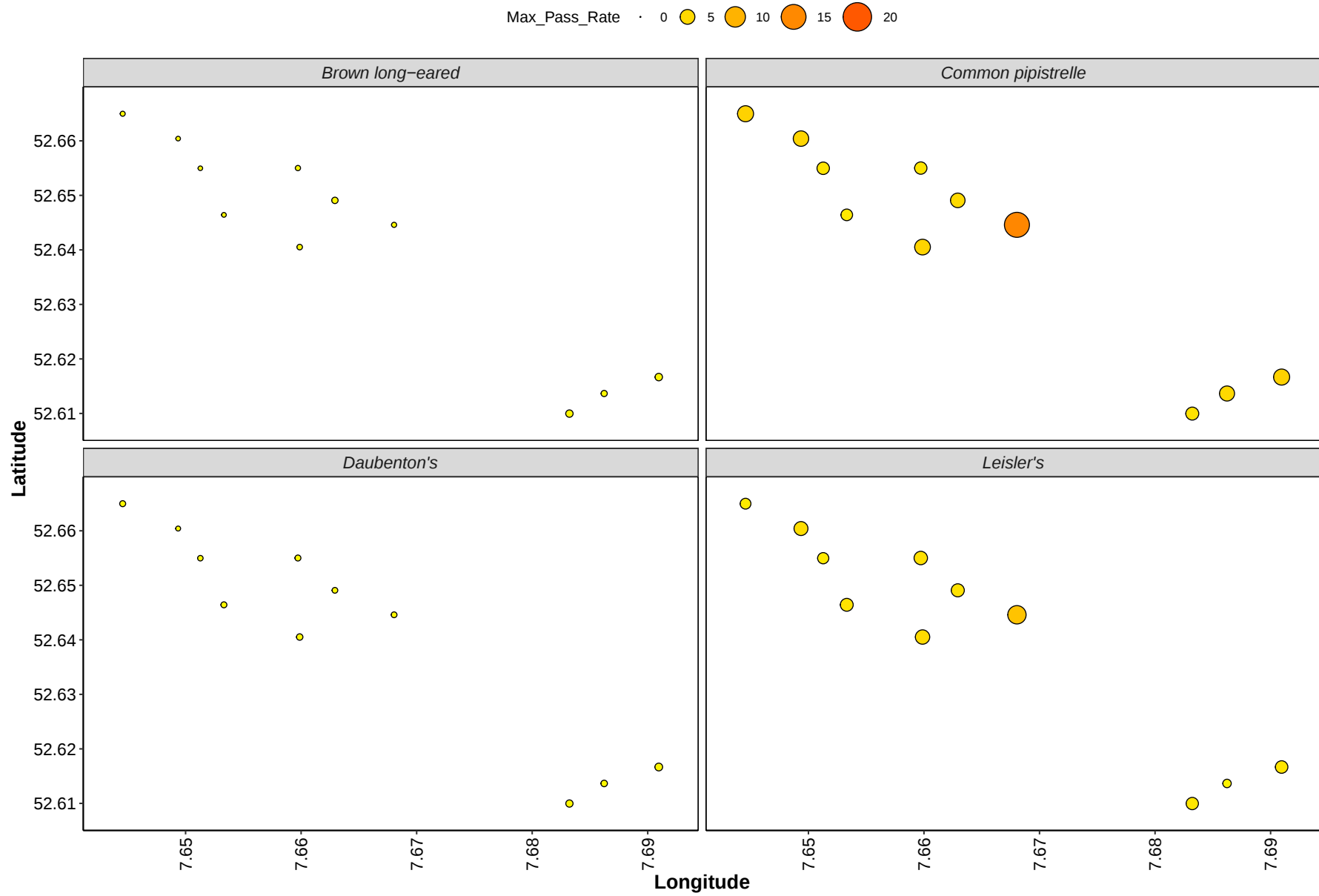
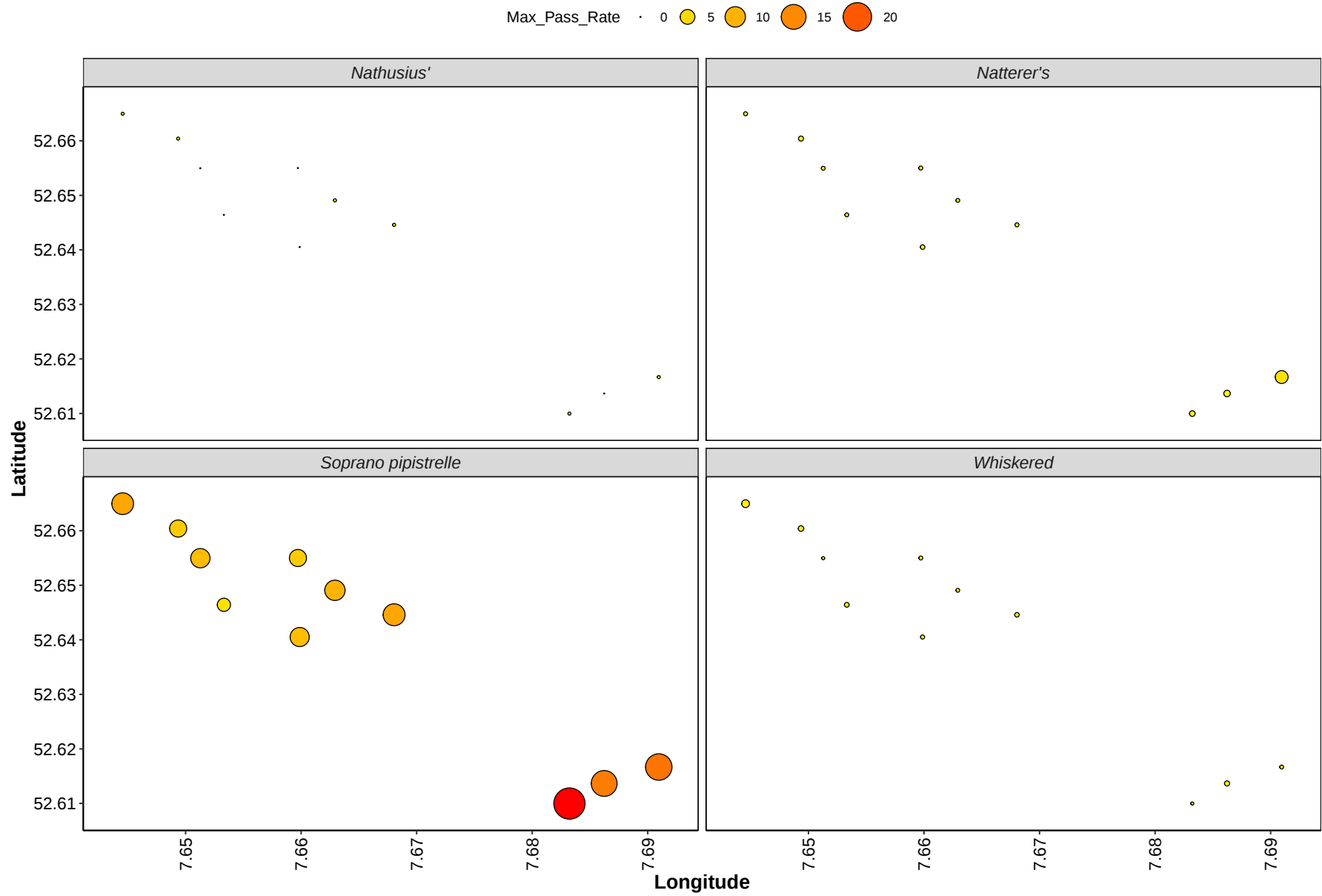


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





Thank you for using Ecobat!



Ecobat Report

2025-10-31

Geo filter: all, Time filter: all

Summary

Bats were detected on **28** nights between **21/08/2025** and **17/09/2025**, using **11** static bat detectors. Throughout this period, **8** species were recorded. **Table 1.**
Detectors were placed at the following locations:

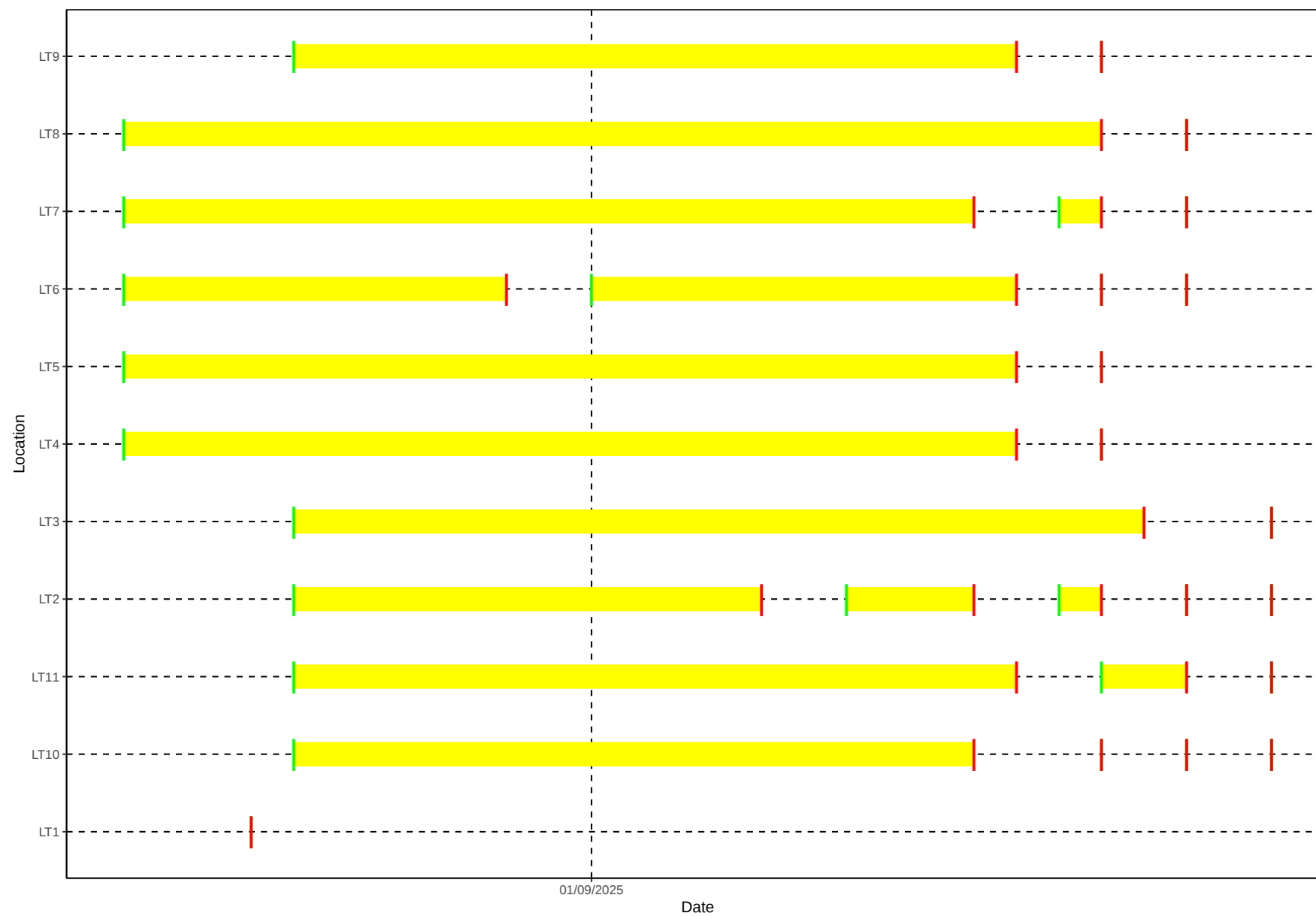
Detector ID	Latitude	Longitude
LT1	52.66497	7.644556
LT2	52.66041	7.649355
LT3	52.65497	7.651278
LT4	52.65501	7.659723
LT5	52.64908	7.662925
LT6	52.64642	7.653317
LT7	52.64459	7.668046
LT8	52.64051	7.659876
LT9	52.61667	7.690955
LT10	52.61366	7.686230
LT11	52.60997	7.683222

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
LT1	25
LT10	20
LT11	22
LT2	20
LT3	22
LT4	26
LT5	26
LT6	23
LT7	24
LT8	26
LT9	23

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



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
LT1	Myotis daubentonii	0	0	0	0	0	16
LT1	Myotis nattereri	0	0	0	0	0	5
LT1	Nyctalus leisleri	0	0	0	0	0	25
LT1	Pipistrellus pipistrellus	0	0	0	0	0	20
LT1	Pipistrellus pygmaeus	0	0	0	0	0	21
LT1	Plecotus auritus	0	0	0	0	0	13
LT10	Myotis daubentonii	0	0	0	0	0	10
LT10	Myotis mystacinus	0	0	0	0	0	2
LT10	Myotis nattereri	0	0	0	0	0	6
LT10	Nyctalus leisleri	0	0	0	0	0	13
LT10	Pipistrellus pipistrellus	0	0	0	0	0	11
LT10	Pipistrellus pygmaeus	0	0	0	0	0	17
LT10	Plecotus auritus	0	0	0	0	0	7
LT11	Myotis daubentonii	0	0	0	0	0	16
LT11	Myotis nattereri	0	0	0	0	0	11
LT11	Nyctalus leisleri	0	0	0	0	0	17
LT11	Pipistrellus nathusii	0	0	0	0	0	2
LT11	Pipistrellus pipistrellus	0	0	0	0	0	13
LT11	Pipistrellus pygmaeus	0	0	0	0	0	19

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
LT11	Plecotus auritus	0	0	0	0	0	13
LT2	Myotis daubentonii	0	0	0	0	0	11
LT2	Nyctalus leisleri	0	0	0	0	0	18
LT2	Pipistrellus pipistrellus	0	0	0	0	0	14
LT2	Pipistrellus pygmaeus	0	0	0	0	0	18
LT2	Plecotus auritus	0	0	0	0	0	4
LT3	Myotis daubentonii	0	0	0	0	0	9
LT3	Myotis mystacinus	0	0	0	0	0	9
LT3	Myotis nattereri	0	0	0	0	0	2
LT3	Nyctalus leisleri	0	0	0	0	0	21
LT3	Pipistrellus pipistrellus	0	0	0	0	0	13
LT3	Pipistrellus pygmaeus	0	0	0	0	0	19
LT3	Plecotus auritus	0	0	0	0	0	7
LT4	Myotis daubentonii	0	0	0	0	0	12
LT4	Myotis nattereri	0	0	0	0	0	9
LT4	Nyctalus leisleri	0	0	0	0	0	26
LT4	Pipistrellus pipistrellus	0	0	0	0	0	11
LT4	Pipistrellus pygmaeus	0	0	0	0	0	20
LT4	Plecotus auritus	0	0	0	0	2	12
LT5	Myotis daubentonii	0	0	0	0	0	9
LT5	Myotis mystacinus	0	0	0	0	0	1
LT5	Myotis nattereri	0	0	0	0	0	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
LT5	Nyctalus leisleri	0	0	0	0	0	26
LT5	Pipistrellus nathusii	0	0	0	0	0	1
LT5	Pipistrellus pipistrellus	0	0	0	0	0	11
LT5	Pipistrellus pygmaeus	0	0	0	0	0	20
LT5	Plecotus auritus	0	0	0	0	1	14
LT6	Myotis daubentonii	0	0	0	0	0	13
LT6	Myotis nattereri	0	0	0	0	0	9
LT6	Nyctalus leisleri	0	0	0	0	0	23
LT6	Pipistrellus pipistrellus	0	0	0	0	0	16
LT6	Pipistrellus pygmaeus	0	0	0	0	0	21
LT6	Plecotus auritus	0	0	0	0	0	11
LT7	Myotis daubentonii	0	0	0	0	0	16
LT7	Myotis nattereri	0	0	0	0	1	6
LT7	Nyctalus leisleri	0	0	0	0	0	24
LT7	Pipistrellus pipistrellus	0	0	0	0	0	16
LT7	Pipistrellus pygmaeus	0	0	0	0	0	22
LT7	Plecotus auritus	0	0	0	0	0	12
LT8	Myotis daubentonii	0	0	0	0	0	12
LT8	Myotis mystacinus	0	0	0	0	0	7
LT8	Myotis nattereri	0	0	0	0	0	7
LT8	Nyctalus leisleri	0	0	0	0	4	22
LT8	Pipistrellus pipistrellus	0	0	0	0	0	20

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
LT8	Pipistrellus pygmaeus	0	0	0	0	0	20
LT8	Plecotus auritus	0	0	0	0	0	13
LT9	Myotis daubentonii	0	0	0	0	9	8
LT9	Myotis mystacinus	0	0	0	0	0	6
LT9	Myotis nattereri	0	0	1	2	9	3
LT9	Nyctalus leisleri	0	0	0	0	0	21
LT9	Pipistrellus nathusii	0	0	0	0	0	3
LT9	Pipistrellus pipistrellus	0	0	0	0	0	16
LT9	Pipistrellus pygmaeus	0	0	0	0	0	19
LT9	Plecotus auritus	0	0	0	2	6	8

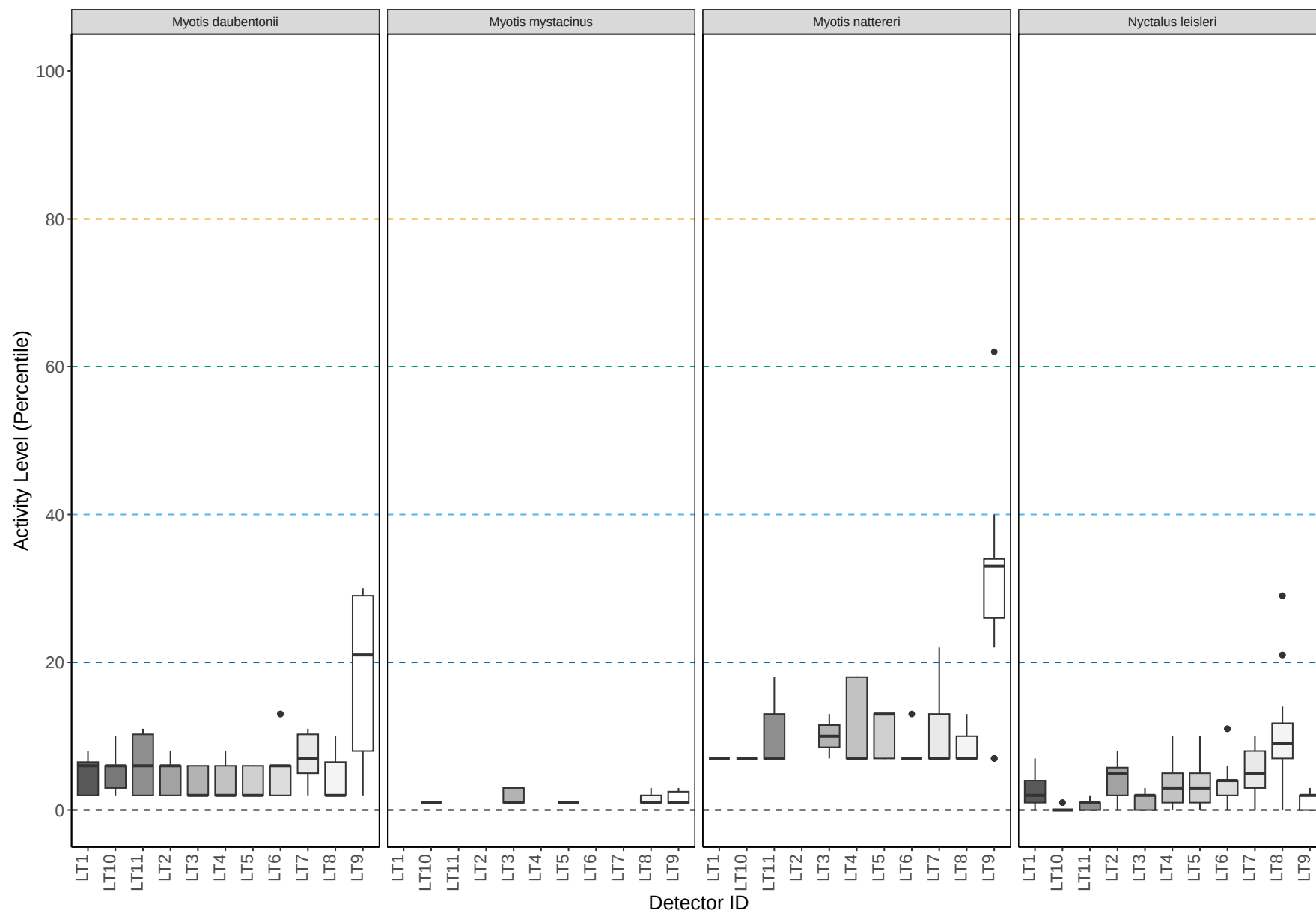
Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT1	Myotis daubentonii	6	4 - 7	8	16	6724
LT1	Myotis nattereri	7	7 - 7	7	5	1914
LT1	Nyctalus leisleri	2	2 - 4	7	25	60815
LT1	Pipistrellus pipistrellus	0	0 - 0	0	20	1534004
LT1	Pipistrellus pygmaeus	7	6 - 9	12	21	407082
LT1	Plecotus auritus	4	2.5 - 8.5	13	13	23418
LT10	Myotis daubentonii	6	4 - 7	10	10	6724
LT10	Myotis mystacinus	1	1 - 1	1	2	2677
LT10	Myotis nattereri	7	7 - 7	7	6	1914
LT10	Nyctalus leisleri	0	0 - 0	1	13	60815
LT10	Pipistrellus pipistrellus	0	0 - 0	0	11	1534004
LT10	Pipistrellus pygmaeus	3	3 - 9	17	17	407082
LT10	Plecotus auritus	1	1 - 1	4	7	23418
LT11	Myotis daubentonii	6	4 - 8.5	11	16	6724
LT11	Myotis nattereri	7	7 - 13	18	11	1914
LT11	Nyctalus leisleri	1	1 - 1	2	17	60815
LT11	Pipistrellus nathusii	8	8 - 8	8	2	3152
LT11	Pipistrellus pipistrellus	0	0 - 0	0	13	1534004
LT11	Pipistrellus pygmaeus	2	2 - 3.5	5	19	407082
LT11	Plecotus auritus	1	1 - 7	13	13	23418
LT2	Myotis daubentonii	6	2 - 6	8	11	6724
LT2	Nyctalus leisleri	5	3 - 6	8	18	60815
LT2	Pipistrellus pipistrellus	0	0 - 0	0	14	1534004
LT2	Pipistrellus pygmaeus	3	2.5 - 4	5	18	407082
LT2	Plecotus auritus	1	1 - 1	4	4	23418
LT3	Myotis daubentonii	2	2 - 4	6	9	6724
LT3	Myotis mystacinus	1	1 - 3	3	9	2677
LT3	Myotis nattereri	10	10 - 10	13	2	1914
LT3	Nyctalus leisleri	2	1.5 - 2.5	3	21	60815
LT3	Pipistrellus pipistrellus	0	0 - 0	0	13	1534004
LT3	Pipistrellus pygmaeus	1	1.5 - 3	4	19	407082
LT3	Plecotus auritus	1	1 - 2.5	4	7	23418
LT4	Myotis daubentonii	2	2 - 4	8	12	6724

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT4	Myotis nattereri	7	7 - 15.5	18	9	1914
LT4	Nyctalus leisleri	3	3 - 5.5	10	26	60815
LT4	Pipistrellus pipistrellus	0	0 - 0	0	11	1534004
LT4	Pipistrellus pygmaeus	0	1.5 - 2	2	20	407082
LT4	Plecotus auritus	9	5 - 14.5	28	14	23418
LT5	Myotis daubentonii	2	2 - 6	6	9	6724
LT5	Myotis mystacinus	1	0	1	1	2677
LT5	Myotis nattereri	13	10 - 13	13	7	1914
LT5	Nyctalus leisleri	3	2.5 - 5.5	10	26	60815
LT5	Pipistrellus nathusii	8	0	8	1	3152
LT5	Pipistrellus pipistrellus	0	0 - 0	0	11	1534004
LT5	Pipistrellus pygmaeus	0	1 - 2.5	3	20	407082
LT5	Plecotus auritus	9	4 - 9	28	15	23418
LT6	Myotis daubentonii	6	2 - 7.5	13	13	6724
LT6	Myotis nattereri	7	7 - 7	13	9	1914
LT6	Nyctalus leisleri	4	2.5 - 4	11	23	60815
LT6	Pipistrellus pipistrellus	0	0 - 0	0	16	1534004
LT6	Pipistrellus pygmaeus	1	1 - 2.5	4	21	407082
LT6	Plecotus auritus	1	1 - 2.5	4	11	23418
LT7	Myotis daubentonii	7	5 - 9	11	16	6724
LT7	Myotis nattereri	7	7 - 14.5	22	7	1914
LT7	Nyctalus leisleri	5	4 - 6.5	10	24	60815
LT7	Pipistrellus pipistrellus	0	0 - 0	0	16	1534004
LT7	Pipistrellus pygmaeus	2	2 - 4.5	6	22	407082
LT7	Plecotus auritus	3	1 - 8.5	16	12	23418
LT8	Myotis daubentonii	2	2 - 6	10	12	6724
LT8	Myotis mystacinus	1	1 - 2	3	7	2677
LT8	Myotis nattereri	7	7 - 10	13	7	1914
LT8	Nyctalus leisleri	9	8 - 14	29	26	60815
LT8	Pipistrellus pipistrellus	0	1 - 2	2	20	1534004
LT8	Pipistrellus pygmaeus	1	1 - 3	5	20	407082
LT8	Plecotus auritus	9	4 - 11	15	13	23418
LT9	Myotis daubentonii	21	12.5 - 25.5	30	17	6724
LT9	Myotis mystacinus	1	1 - 2	3	6	2677
LT9	Myotis nattereri	33	20.5 - 36.5	62	15	1914
LT9	Nyctalus leisleri	2	1.5 - 2.5	3	21	60815

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
LT9	Pipistrellus nathusii	8	8 - 8	13	3	3152
LT9	Pipistrellus pipistrellus	0	0 - 0	0	16	1534004
LT9	Pipistrellus pygmaeus	2	2 - 7	12	19	407082
LT9	Plecotus auritus	18	10 - 26	44	16	23418

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



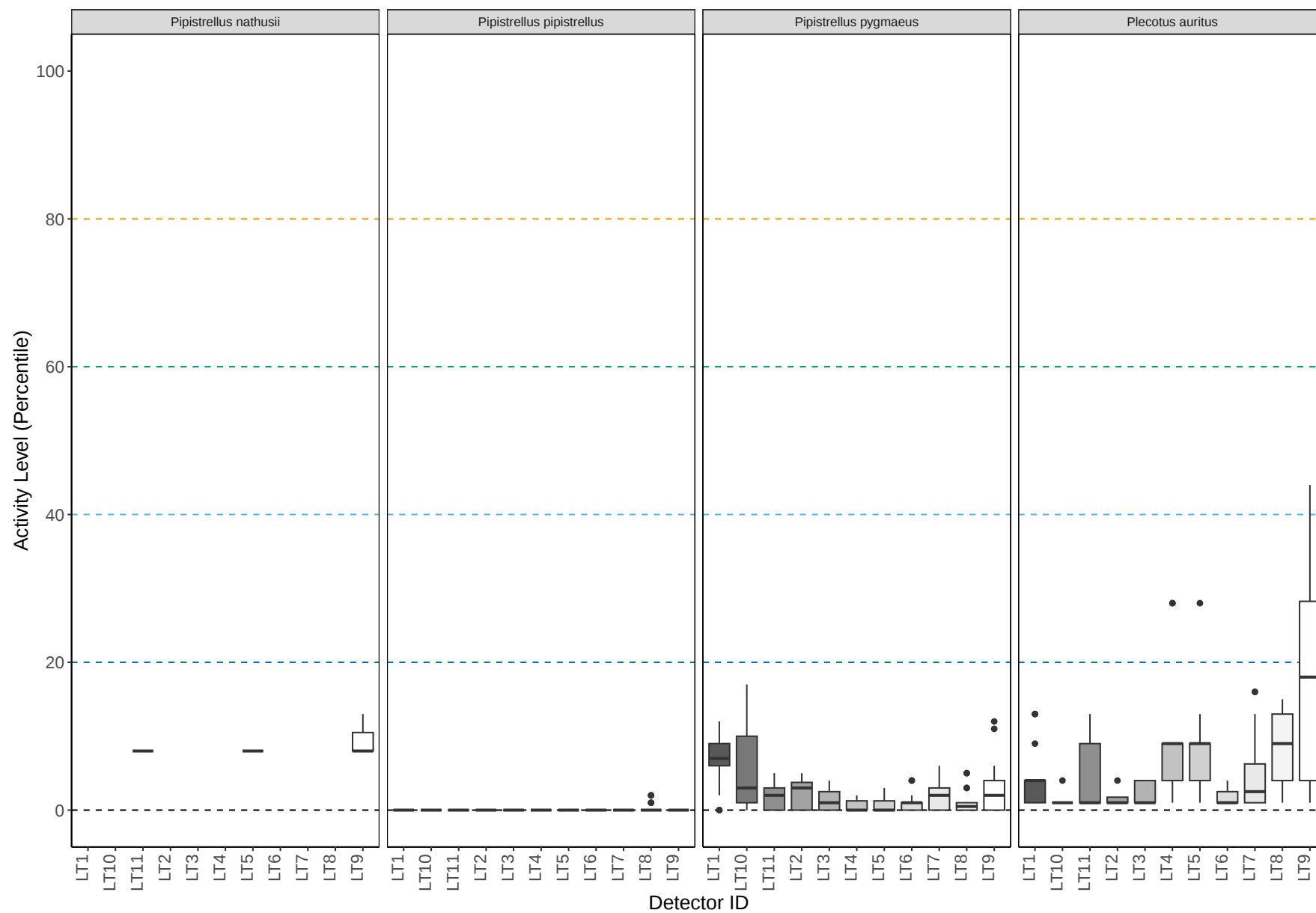
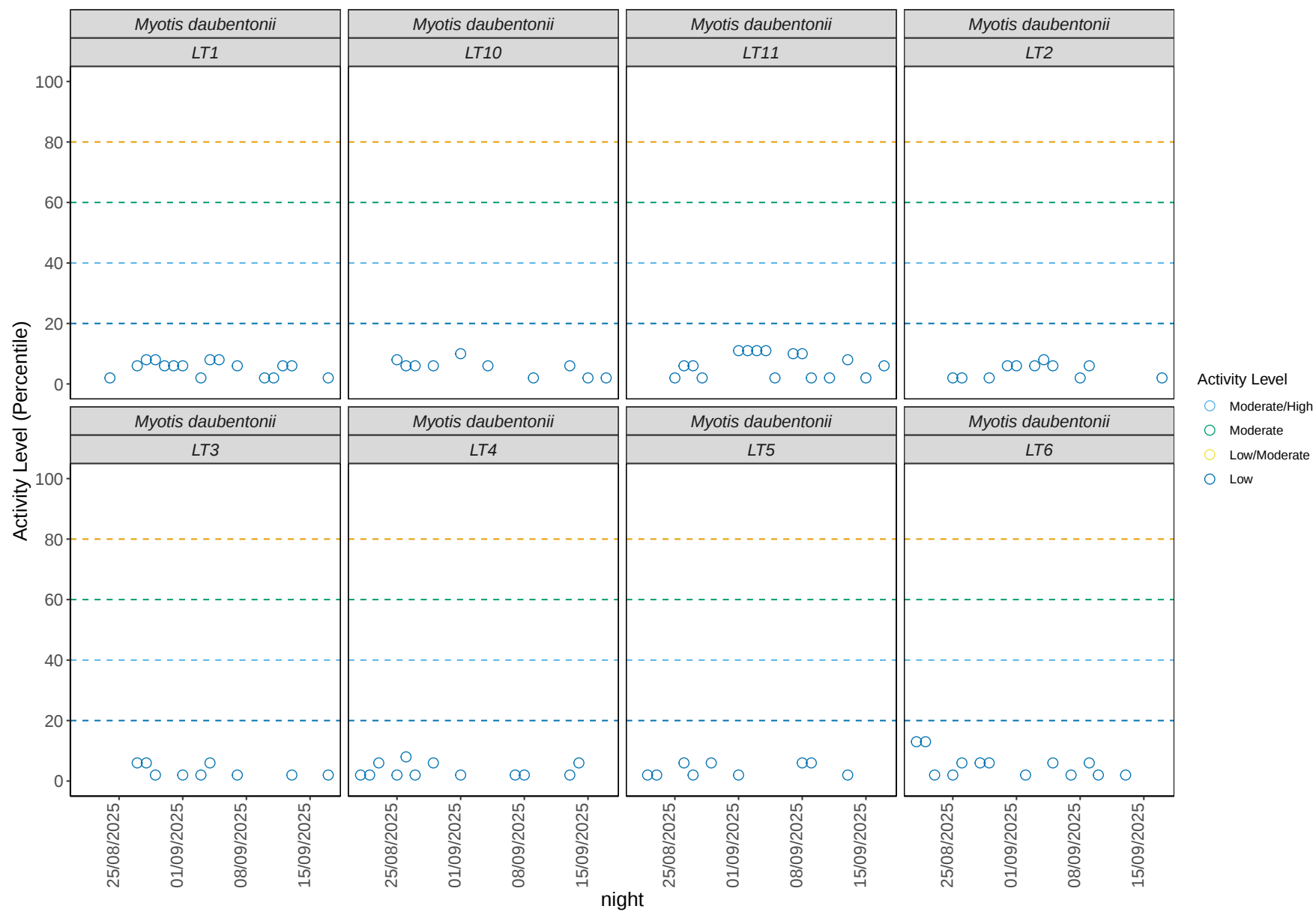
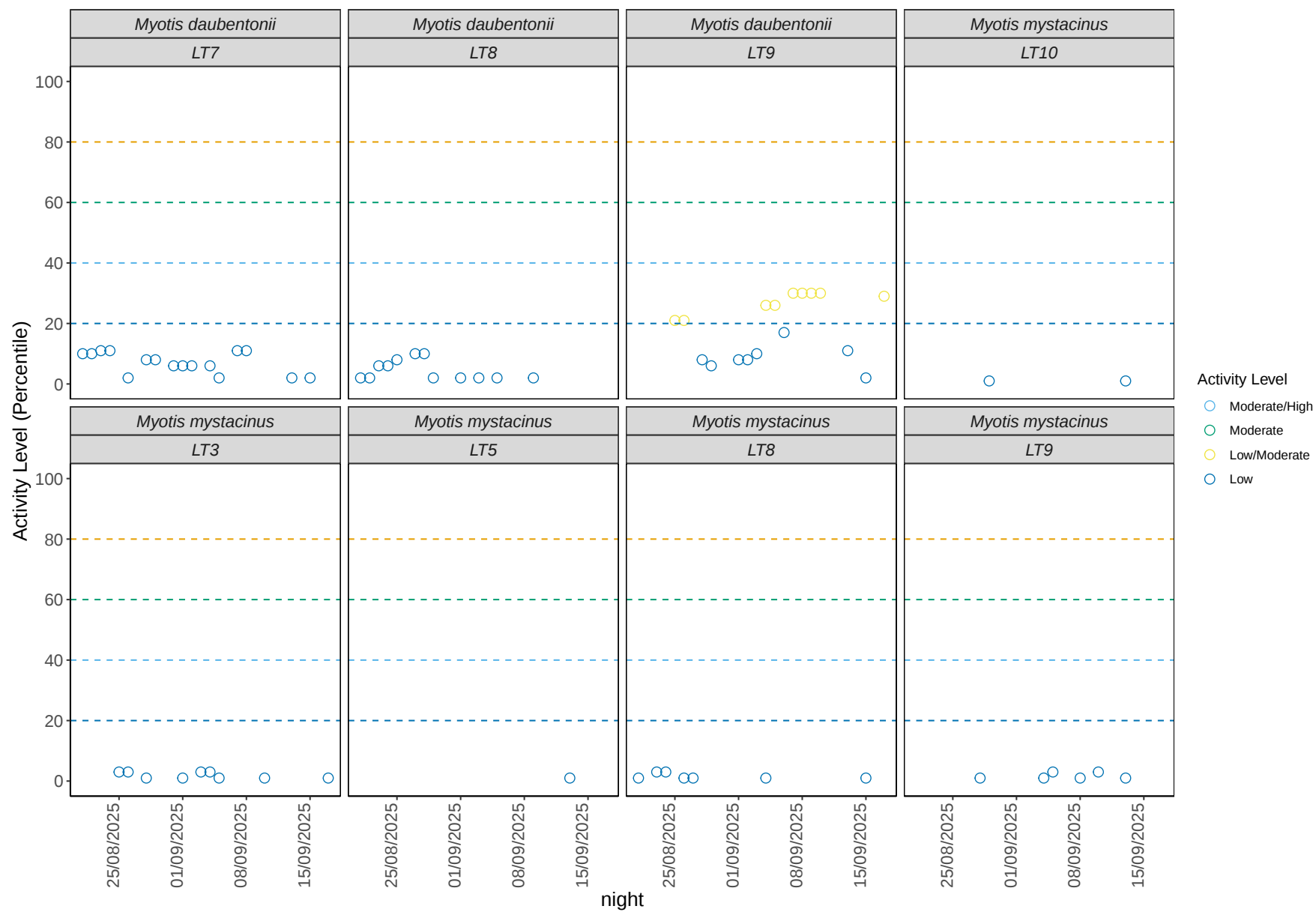
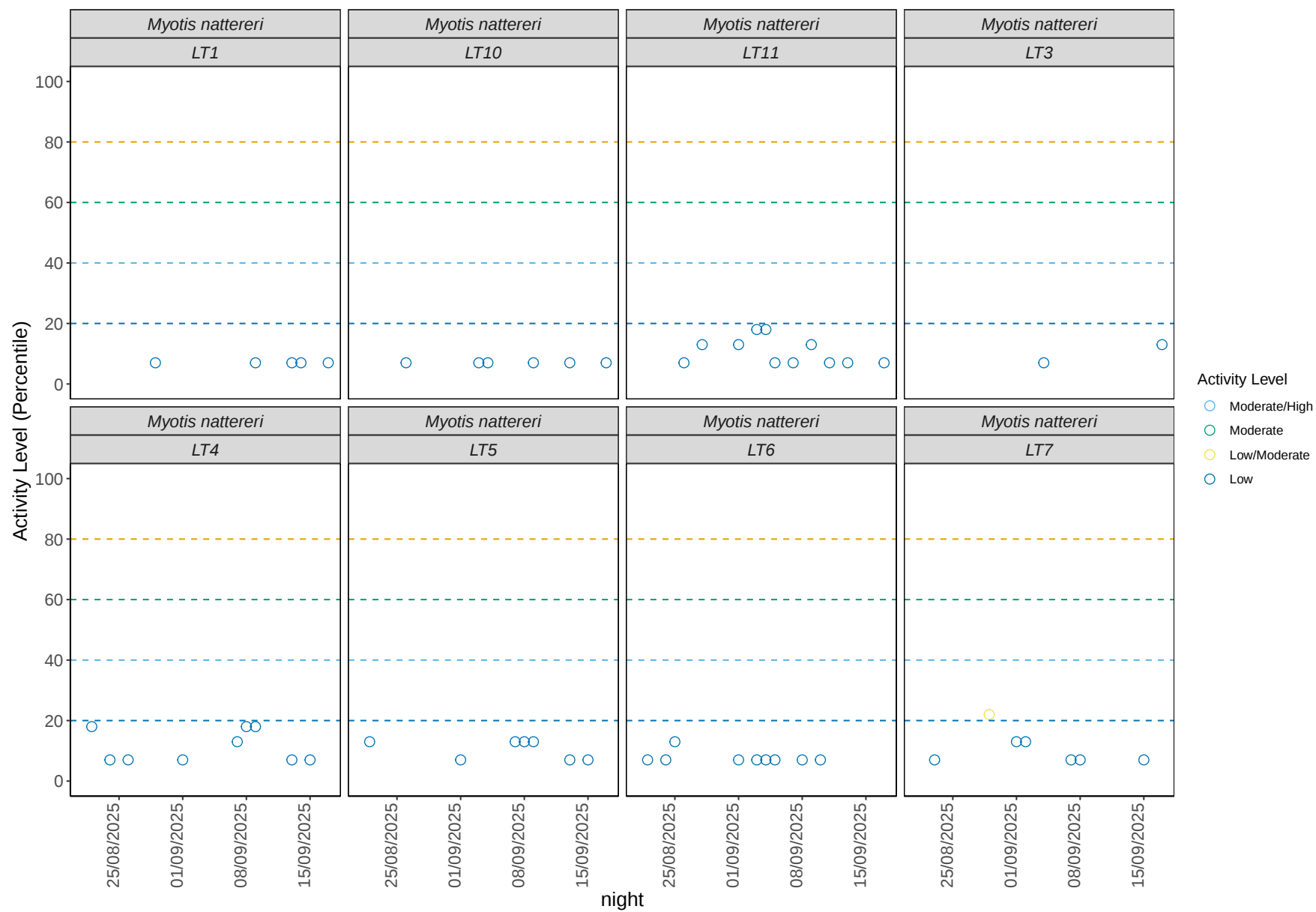
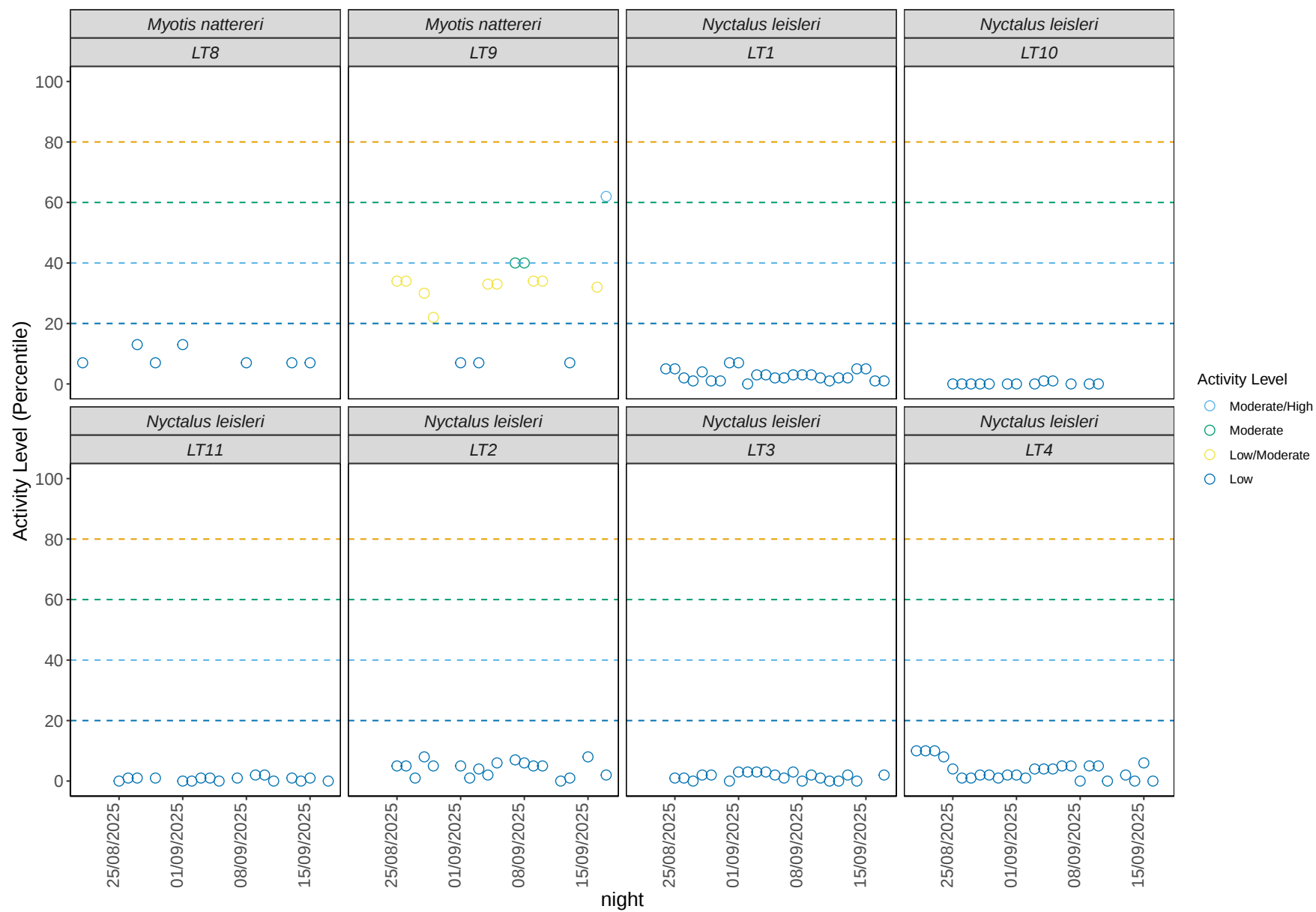


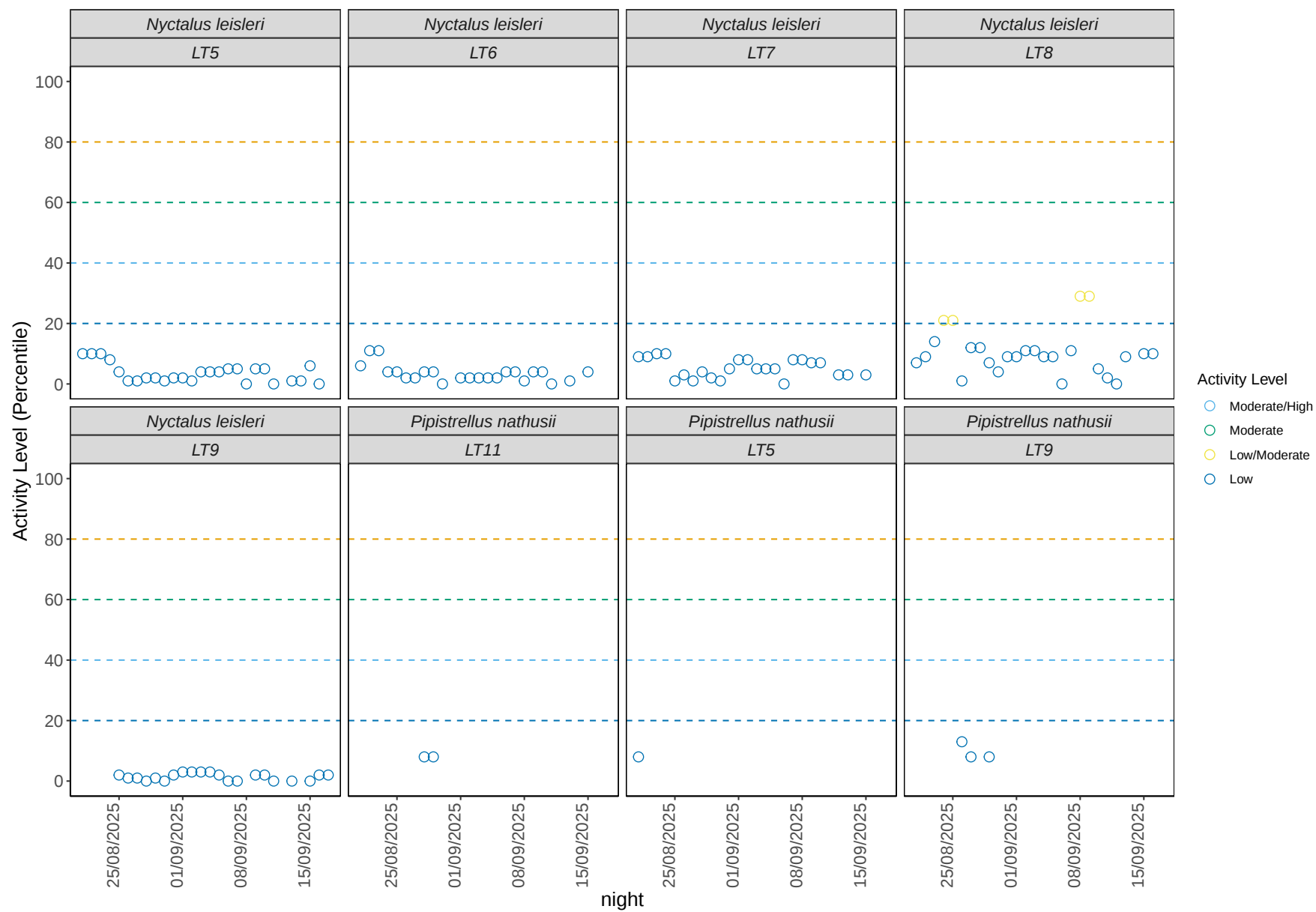
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.

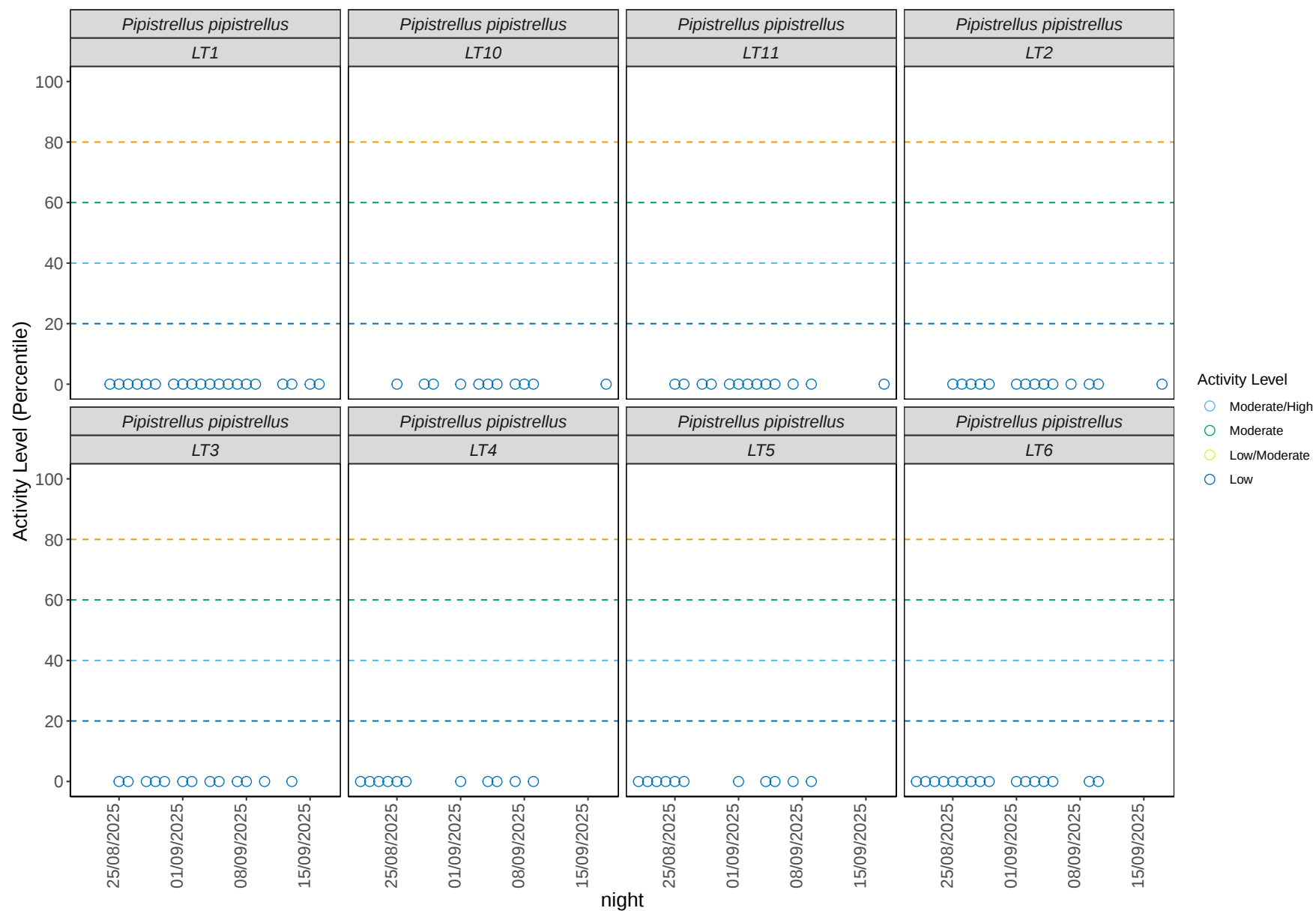


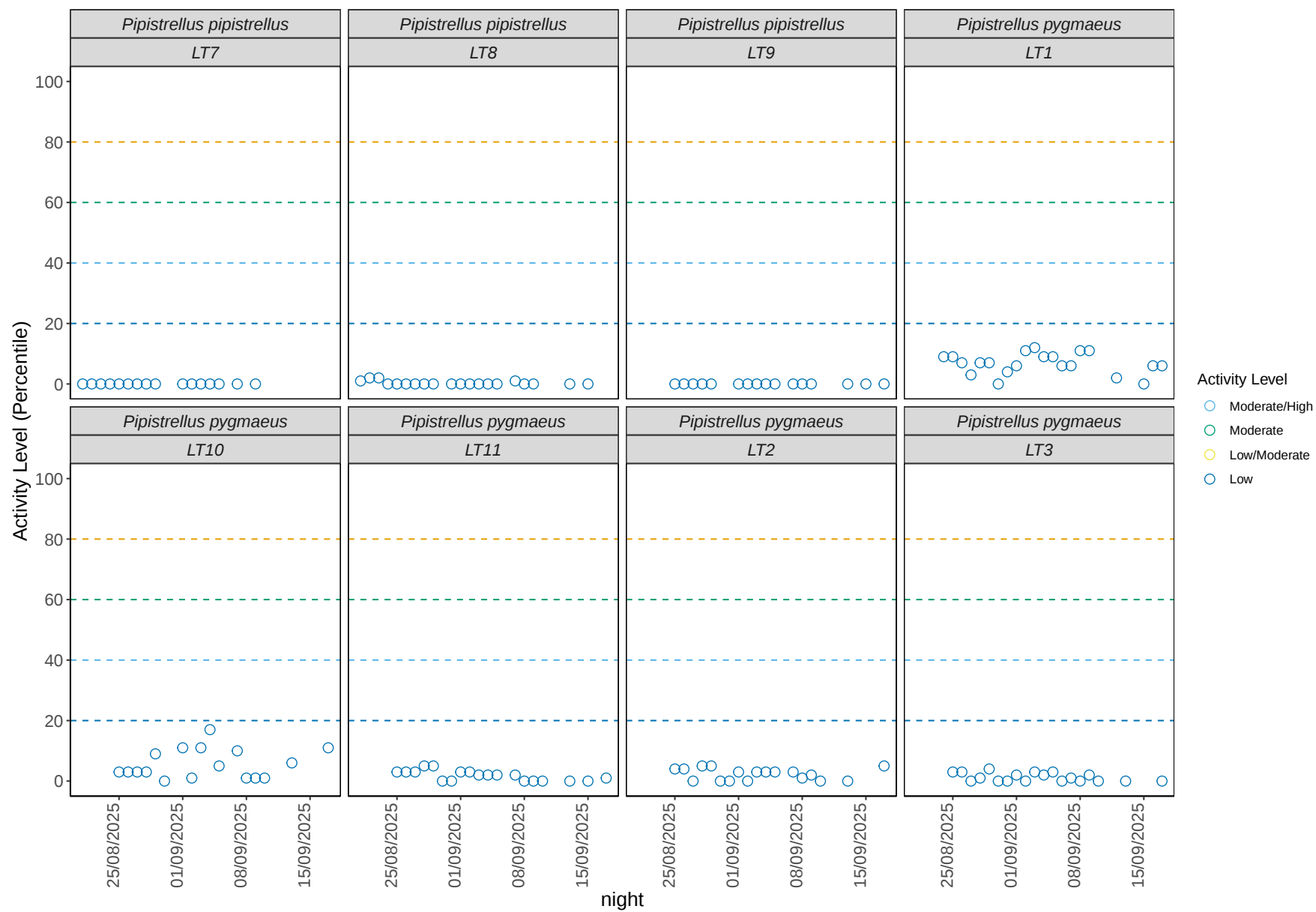


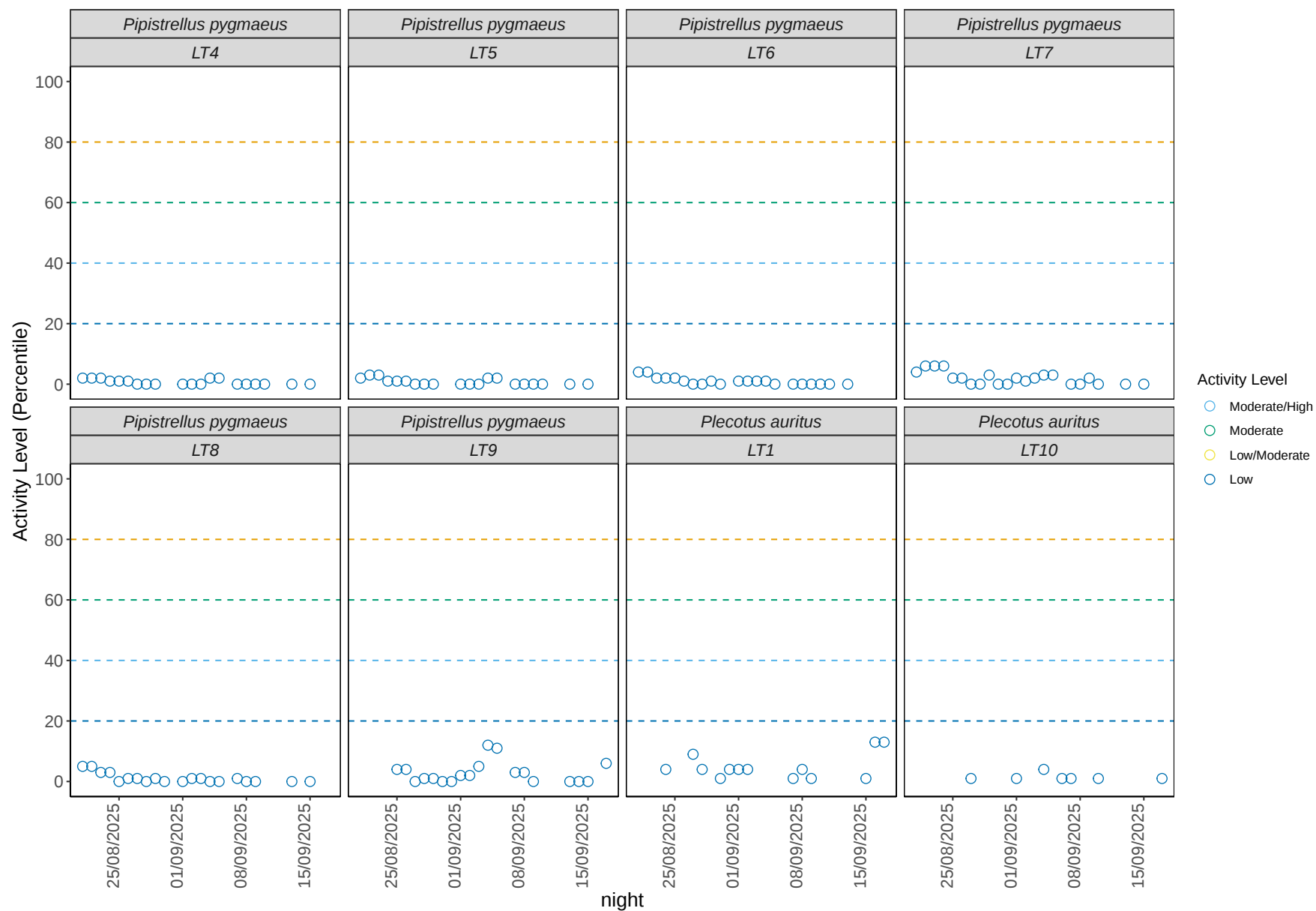


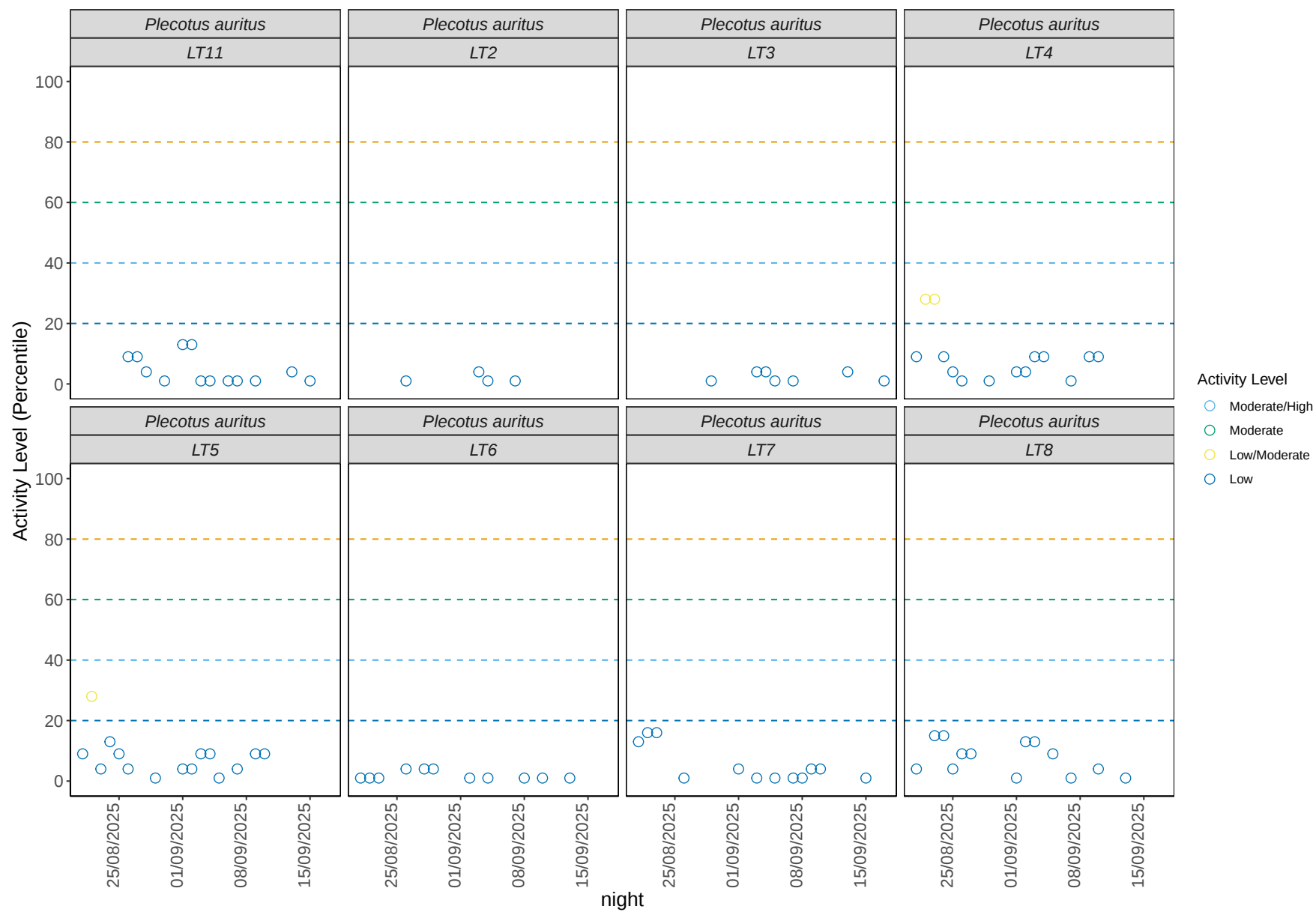














night

Per Detector, Per Month

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

Detector ID	Species/Species Group	month	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
LT1	Myotis daubentonii	Aug	0	0	0	0	0	6
LT1	Myotis daubentonii	Sep	0	0	0	0	0	10
LT1	Myotis nattereri	Aug	0	0	0	0	0	1
LT1	Myotis nattereri	Sep	0	0	0	0	0	4
LT1	Nyctalus leisleri	Aug	0	0	0	0	0	8
LT1	Nyctalus leisleri	Sep	0	0	0	0	0	17
LT1	Pipistrellus pipistrellus	Aug	0	0	0	0	0	7
LT1	Pipistrellus pipistrellus	Sep	0	0	0	0	0	13
LT1	Pipistrellus pygmaeus	Aug	0	0	0	0	0	8
LT1	Pipistrellus pygmaeus	Sep	0	0	0	0	0	13
LT1	Plecotus auritus	Aug	0	0	0	0	0	5
LT1	Plecotus auritus	Sep	0	0	0	0	0	8
LT10	Myotis daubentonii	Aug	0	0	0	0	0	4
LT10	Myotis daubentonii	Sep	0	0	0	0	0	6
LT10	Myotis mystacinus	Aug	0	0	0	0	0	1
LT10	Myotis mystacinus	Sep	0	0	0	0	0	1
LT10	Myotis nattereri	Aug	0	0	0	0	0	1
LT10	Myotis nattereri	Sep	0	0	0	0	0	5
LT10	Nyctalus leisleri	Aug	0	0	0	0	0	6
LT10	Nyctalus leisleri	Sep	0	0	0	0	0	7

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
LT10	Pipistrellus	Aug	0	0	0	0	0	3
	pipistrellus							
LT10	Pipistrellus	Sep	0	0	0	0	0	8
	pipistrellus							
LT10	Pipistrellus	Aug	0	0	0	0	0	6
	pygmaeus							
LT10	Pipistrellus	Sep	0	0	0	0	0	11
	pygmaeus							
LT10	Plecotus auritus	Aug	0	0	0	0	0	1
LT10	Plecotus auritus	Sep	0	0	0	0	0	6
LT11	Myotis	Aug	0	0	0	0	0	4
	daubentonii							
LT11	Myotis	Sep	0	0	0	0	0	12
	daubentonii							
LT11	Myotis nattereri	Aug	0	0	0	0	0	2
LT11	Myotis nattereri	Sep	0	0	0	0	0	9
LT11	Nyctalus leisleri	Aug	0	0	0	0	0	4
LT11	Nyctalus leisleri	Sep	0	0	0	0	0	13
LT11	Pipistrellus	Aug	0	0	0	0	0	2
	nathusii							
LT11	Pipistrellus	Aug	0	0	0	0	0	5
	pipistrellus							
LT11	Pipistrellus	Sep	0	0	0	0	0	8
	pipistrellus							
LT11	Pipistrellus	Aug	0	0	0	0	0	7
	pygmaeus							
LT11	Pipistrellus	Sep	0	0	0	0	0	12
	pygmaeus							
LT11	Plecotus auritus	Aug	0	0	0	0	0	4
LT11	Plecotus auritus	Sep	0	0	0	0	0	9
LT2	Myotis	Aug	0	0	0	0	0	4
	daubentonii							
LT2	Myotis	Sep	0	0	0	0	0	7
	daubentonii							

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
LT2	Nyctalus leisleri	Aug	0	0	0	0	0	5
LT2	Nyctalus leisleri	Sep	0	0	0	0	0	13
LT2	Pipistrellus pipistrellus	Aug	0	0	0	0	0	5
LT2	Pipistrellus pipistrellus	Sep	0	0	0	0	0	9
LT2	Pipistrellus pygmaeus	Aug	0	0	0	0	0	7
LT2	Pipistrellus pygmaeus	Sep	0	0	0	0	0	11
LT2	Plecotus auritus	Aug	0	0	0	0	0	1
LT2	Plecotus auritus	Sep	0	0	0	0	0	3
LT3	Myotis daubentonii	Aug	0	0	0	0	0	3
LT3	Myotis daubentonii	Sep	0	0	0	0	0	6
LT3	Myotis mystacinus	Aug	0	0	0	0	0	3
LT3	Myotis mystacinus	Sep	0	0	0	0	0	6
LT3	Myotis nattereri	Sep	0	0	0	0	0	2
LT3	Nyctalus leisleri	Aug	0	0	0	0	0	6
LT3	Nyctalus leisleri	Sep	0	0	0	0	0	15
LT3	Pipistrellus pipistrellus	Aug	0	0	0	0	0	5
LT3	Pipistrellus pipistrellus	Sep	0	0	0	0	0	8
LT3	Pipistrellus pygmaeus	Aug	0	0	0	0	0	7
LT3	Pipistrellus pygmaeus	Sep	0	0	0	0	0	12
LT3	Plecotus auritus	Aug	0	0	0	0	0	1
LT3	Plecotus auritus	Sep	0	0	0	0	0	6

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
LT4	Myotis daubentonii	Aug	0	0	0	0	0	7
LT4	Myotis daubentonii	Sep	0	0	0	0	0	5
LT4	Myotis nattereri	Aug	0	0	0	0	0	3
LT4	Myotis nattereri	Sep	0	0	0	0	0	6
LT4	Nyctalus leisleri	Aug	0	0	0	0	0	11
LT4	Nyctalus leisleri	Sep	0	0	0	0	0	15
LT4	Pipistrellus pipistrellus	Aug	0	0	0	0	0	6
LT4	Pipistrellus pipistrellus	Sep	0	0	0	0	0	5
LT4	Pipistrellus pygmaeus	Aug	0	0	0	0	0	9
LT4	Pipistrellus pygmaeus	Sep	0	0	0	0	0	11
LT4	Plecotus auritus	Aug	0	0	0	0	2	5
LT4	Plecotus auritus	Sep	0	0	0	0	0	7
LT5	Myotis daubentonii	Aug	0	0	0	0	0	5
LT5	Myotis daubentonii	Sep	0	0	0	0	0	4
LT5	Myotis mystacinus	Sep	0	0	0	0	0	1
LT5	Myotis nattereri	Aug	0	0	0	0	0	1
LT5	Myotis nattereri	Sep	0	0	0	0	0	6
LT5	Nyctalus leisleri	Aug	0	0	0	0	0	11
LT5	Nyctalus leisleri	Sep	0	0	0	0	0	15
LT5	Pipistrellus nathusii	Aug	0	0	0	0	0	1
LT5	Pipistrellus pipistrellus	Aug	0	0	0	0	0	6
LT5	Pipistrellus pipistrellus	Sep	0	0	0	0	0	5

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
LT5	Pipistrellus pygmaeus	Aug	0	0	0	0	0	9
LT5	Pipistrellus pygmaeus	Sep	0	0	0	0	0	11
LT5	Plecotus auritus	Aug	0	0	0	0	1	6
LT5	Plecotus auritus	Sep	0	0	0	0	0	8
LT6	Myotis daubentonii	Aug	0	0	0	0	0	7
LT6	Myotis daubentonii	Sep	0	0	0	0	0	6
LT6	Myotis nattereri	Aug	0	0	0	0	0	3
LT6	Myotis nattereri	Sep	0	0	0	0	0	6
LT6	Nyctalus leisleri	Aug	0	0	0	0	0	10
LT6	Nyctalus leisleri	Sep	0	0	0	0	0	13
LT6	Pipistrellus pipistrellus	Aug	0	0	0	0	0	9
LT6	Pipistrellus pipistrellus	Sep	0	0	0	0	0	7
LT6	Pipistrellus pygmaeus	Aug	0	0	0	0	0	10
LT6	Pipistrellus pygmaeus	Sep	0	0	0	0	0	11
LT6	Plecotus auritus	Aug	0	0	0	0	0	6
LT6	Plecotus auritus	Sep	0	0	0	0	0	5
LT7	Myotis daubentonii	Aug	0	0	0	0	0	8
LT7	Myotis daubentonii	Sep	0	0	0	0	0	8
LT7	Myotis nattereri	Aug	0	0	0	0	1	1
LT7	Myotis nattereri	Sep	0	0	0	0	0	5
LT7	Nyctalus leisleri	Aug	0	0	0	0	0	11
LT7	Nyctalus leisleri	Sep	0	0	0	0	0	13
LT7	Pipistrellus pipistrellus	Aug	0	0	0	0	0	9

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
LT7	Pipistrellus pipistrellus	Sep	0	0	0	0	0	7
LT7	Pipistrellus pygmaeus	Aug	0	0	0	0	0	11
LT7	Pipistrellus pygmaeus	Sep	0	0	0	0	0	11
LT7	Plecotus auritus	Aug	0	0	0	0	0	4
LT7	Plecotus auritus	Sep	0	0	0	0	0	8
LT8	Myotis daubentonii	Aug	0	0	0	0	0	8
LT8	Myotis daubentonii	Sep	0	0	0	0	0	4
LT8	Myotis mystacinus	Aug	0	0	0	0	0	5
LT8	Myotis mystacinus	Sep	0	0	0	0	0	2
LT8	Myotis nattereri	Aug	0	0	0	0	0	3
LT8	Myotis nattereri	Sep	0	0	0	0	0	4
LT8	Nyctalus leisleri	Aug	0	0	0	0	2	9
LT8	Nyctalus leisleri	Sep	0	0	0	0	2	13
LT8	Pipistrellus pipistrellus	Aug	0	0	0	0	0	10
LT8	Pipistrellus pipistrellus	Sep	0	0	0	0	0	10
LT8	Pipistrellus pygmaeus	Aug	0	0	0	0	0	10
LT8	Pipistrellus pygmaeus	Sep	0	0	0	0	0	10
LT8	Plecotus auritus	Aug	0	0	0	0	0	6
LT8	Plecotus auritus	Sep	0	0	0	0	0	7
LT9	Myotis daubentonii	Aug	0	0	0	0	2	2
LT9	Myotis daubentonii	Sep	0	0	0	0	7	6

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
LT9	Myotis mystacinus	Aug	0	0	0	0	0	1
LT9	Myotis mystacinus	Sep	0	0	0	0	0	5
LT9	Myotis nattereri	Aug	0	0	0	0	4	0
LT9	Myotis nattereri	Sep	0	0	1	2	5	3
LT9	Nyctalus leisleri	Aug	0	0	0	0	0	7
LT9	Nyctalus leisleri	Sep	0	0	0	0	0	14
LT9	Pipistrellus nathusii	Aug	0	0	0	0	0	3
LT9	Pipistrellus pipistrellus	Aug	0	0	0	0	0	5
LT9	Pipistrellus pipistrellus	Sep	0	0	0	0	0	11
LT9	Pipistrellus pygmaeus	Aug	0	0	0	0	0	7
LT9	Pipistrellus pygmaeus	Sep	0	0	0	0	0	12
LT9	Plecotus auritus	Aug	0	0	0	0	0	2
LT9	Plecotus auritus	Sep	0	0	0	2	6	6

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
LT1	Myotis daubentonii	Aug	6	4 - 7	8	6
LT1	Myotis daubentonii	Sep	6	4 - 7	8	10
LT1	Myotis nattereri	Aug	7	7 - 7	7	1
LT1	Myotis nattereri	Sep	7	7 - 7	7	4
LT1	Nyctalus leisleri	Aug	3	2 - 4	7	8
LT1	Nyctalus leisleri	Sep	2	2 - 4	7	17
LT1	Pipistrellus pipistrellus	Aug	0	0 - 0	0	7
LT1	Pipistrellus pipistrellus	Sep	0	0 - 0	0	13
LT1	Pipistrellus pygmaeus	Aug	7	6 - 9	9	8
LT1	Pipistrellus pygmaeus	Sep	6	6 - 9	12	13
LT1	Plecotus auritus	Aug	4	2.5 - 8.5	9	5
LT1	Plecotus auritus	Sep	4	2.5 - 8.5	13	8
LT10	Myotis daubentonii	Aug	6	4 - 7	8	4
LT10	Myotis daubentonii	Sep	4	4 - 7	10	6
LT10	Myotis mystacinus	Aug	1	1 - 1	1	1
LT10	Myotis mystacinus	Sep	1	1 - 1	1	1
LT10	Myotis nattereri	Aug	7	7 - 7	7	1
LT10	Myotis nattereri	Sep	7	7 - 7	7	5
LT10	Nyctalus leisleri	Aug	0	0 - 0	0	6
LT10	Nyctalus leisleri	Sep	0	0 - 0	1	7
LT10	Pipistrellus pipistrellus	Aug	0	0 - 0	0	3
LT10	Pipistrellus pipistrellus	Sep	0	0 - 0	0	8
LT10	Pipistrellus pygmaeus	Aug	3	3 - 9	9	6
LT10	Pipistrellus pygmaeus	Sep	6	3 - 9	17	11
LT10	Plecotus auritus	Aug	1	1 - 1	1	1
LT10	Plecotus auritus	Sep	1	1 - 1	4	6
LT11	Myotis daubentonii	Aug	4	4 - 8.5	6	4
LT11	Myotis daubentonii	Sep	9	4 - 8.5	11	12
LT11	Myotis nattereri	Aug	10	7 - 13	13	2
LT11	Myotis nattereri	Sep	7	7 - 13	18	9
LT11	Nyctalus leisleri	Aug	1	1 - 1	1	4
LT11	Nyctalus leisleri	Sep	1	1 - 1	2	13
LT11	Pipistrellus nathusii	Aug	8	8 - 8	8	2

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT11	Pipistrellus pipistrellus	Aug	0	0 - 0	0	5
LT11	Pipistrellus pipistrellus	Sep	0	0 - 0	0	8
LT11	Pipistrellus pygmaeus	Aug	3	2 - 3.5	5	7
LT11	Pipistrellus pygmaeus	Sep	2	2 - 3.5	3	12
LT11	Plecotus auritus	Aug	7	1 - 7	9	4
LT11	Plecotus auritus	Sep	1	1 - 7	13	9
LT2	Myotis daubentonii	Aug	2	2 - 6	6	4
LT2	Myotis daubentonii	Sep	6	2 - 6	8	7
LT2	Nyctalus leisleri	Aug	5	3 - 6	8	5
LT2	Nyctalus leisleri	Sep	5	3 - 6	8	13
LT2	Pipistrellus pipistrellus	Aug	0	0 - 0	0	5
LT2	Pipistrellus pipistrellus	Sep	0	0 - 0	0	9
LT2	Pipistrellus pygmaeus	Aug	4	2.5 - 4	5	7
LT2	Pipistrellus pygmaeus	Sep	3	2.5 - 4	5	11
LT2	Plecotus auritus	Aug	1	1 - 1	1	1
LT2	Plecotus auritus	Sep	1	1 - 1	4	3
LT3	Myotis daubentonii	Aug	6	2 - 4	6	3
LT3	Myotis daubentonii	Sep	2	2 - 4	6	6
LT3	Myotis mystacinus	Aug	3	1 - 3	3	3
LT3	Myotis mystacinus	Sep	1	1 - 3	3	6
LT3	Myotis nattereri	Sep	10	10 - 10	13	2
LT3	Nyctalus leisleri	Aug	1	1.5 - 2.5	2	6
LT3	Nyctalus leisleri	Sep	2	1.5 - 2.5	3	15
LT3	Pipistrellus pipistrellus	Aug	0	0 - 0	0	5
LT3	Pipistrellus pipistrellus	Sep	0	0 - 0	0	8
LT3	Pipistrellus pygmaeus	Aug	1	1.5 - 3	4	7
LT3	Pipistrellus pygmaeus	Sep	1	1.5 - 3	3	12
LT3	Plecotus auritus	Aug	1	1 - 2.5	1	1
LT3	Plecotus auritus	Sep	3	1 - 2.5	4	6
LT4	Myotis daubentonii	Aug	2	2 - 4	8	7
LT4	Myotis daubentonii	Sep	2	2 - 4	6	5
LT4	Myotis nattereri	Aug	7	7 - 15.5	18	3
LT4	Myotis nattereri	Sep	10	7 - 15.5	18	6
LT4	Nyctalus leisleri	Aug	2	3 - 5.5	10	11
LT4	Nyctalus leisleri	Sep	4	3 - 5.5	6	15
LT4	Pipistrellus pipistrellus	Aug	0	0 - 0	0	6

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT4	Pipistrellus pipistrellus	Sep	0	0 - 0	0	5
LT4	Pipistrellus pygmaeus	Aug	1	1.5 - 2	2	9
LT4	Pipistrellus pygmaeus	Sep	0	1.5 - 2	2	11
LT4	Plecotus auritus	Aug	9	5 - 14.5	28	7
LT4	Plecotus auritus	Sep	9	5 - 14.5	9	7
LT5	Myotis daubentonii	Aug	2	2 - 6	6	5
LT5	Myotis daubentonii	Sep	4	2 - 6	6	4
LT5	Myotis mystacinus	Sep	1	0	1	1
LT5	Myotis nattereri	Aug	13	10 - 13	13	1
LT5	Myotis nattereri	Sep	10	10 - 13	13	6
LT5	Nyctalus leisleri	Aug	2	2.5 - 5.5	10	11
LT5	Nyctalus leisleri	Sep	4	2.5 - 5.5	6	15
LT5	Pipistrellus nathusii	Aug	8	0	8	1
LT5	Pipistrellus pipistrellus	Aug	0	0 - 0	0	6
LT5	Pipistrellus pipistrellus	Sep	0	0 - 0	0	5
LT5	Pipistrellus pygmaeus	Aug	1	1 - 2.5	3	9
LT5	Pipistrellus pygmaeus	Sep	0	1 - 2.5	2	11
LT5	Plecotus auritus	Aug	9	4 - 9	28	7
LT5	Plecotus auritus	Sep	7	4 - 9	9	8
LT6	Myotis daubentonii	Aug	6	2 - 7.5	13	7
LT6	Myotis daubentonii	Sep	2	2 - 7.5	6	6
LT6	Myotis nattereri	Aug	7	7 - 7	13	3
LT6	Myotis nattereri	Sep	7	7 - 7	7	6
LT6	Nyctalus leisleri	Aug	4	2.5 - 4	11	10
LT6	Nyctalus leisleri	Sep	2	2.5 - 4	4	13
LT6	Pipistrellus pipistrellus	Aug	0	0 - 0	0	9
LT6	Pipistrellus pipistrellus	Sep	0	0 - 0	0	7
LT6	Pipistrellus pygmaeus	Aug	2	1 - 2.5	4	10
LT6	Pipistrellus pygmaeus	Sep	0	1 - 2.5	1	11
LT6	Plecotus auritus	Aug	3	1 - 2.5	4	6
LT6	Plecotus auritus	Sep	1	1 - 2.5	1	5
LT7	Myotis daubentonii	Aug	9	5 - 9	11	8
LT7	Myotis daubentonii	Sep	6	5 - 9	11	8
LT7	Myotis nattereri	Aug	15	7 - 14.5	22	2
LT7	Myotis nattereri	Sep	7	7 - 14.5	13	5
LT7	Nyctalus leisleri	Aug	4	4 - 6.5	10	11

Detector ID	Species/Species Group	month	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
LT7	Nyctalus leisleri	Sep	5	4 - 6.5	8	13
LT7	Pipistrellus pipistrellus	Aug	0	0 - 0	0	9
LT7	Pipistrellus pipistrellus	Sep	0	0 - 0	0	7
LT7	Pipistrellus pygmaeus	Aug	2	2 - 4.5	6	11
LT7	Pipistrellus pygmaeus	Sep	1	2 - 4.5	3	11
LT7	Plecotus auritus	Aug	15	1 - 8.5	16	4
LT7	Plecotus auritus	Sep	1	1 - 8.5	4	8
LT8	Myotis daubentonii	Aug	6	2 - 6	10	8
LT8	Myotis daubentonii	Sep	2	2 - 6	2	4
LT8	Myotis mystacinus	Aug	1	1 - 2	3	5
LT8	Myotis mystacinus	Sep	1	1 - 2	1	2
LT8	Myotis nattereri	Aug	7	7 - 10	13	3
LT8	Myotis nattereri	Sep	7	7 - 10	13	4
LT8	Nyctalus leisleri	Aug	9	8 - 14	21	11
LT8	Nyctalus leisleri	Sep	9	8 - 14	29	15
LT8	Pipistrellus pipistrellus	Aug	0	1 - 2	2	10
LT8	Pipistrellus pipistrellus	Sep	0	1 - 2	1	10
LT8	Pipistrellus pygmaeus	Aug	1	1 - 3	5	10
LT8	Pipistrellus pygmaeus	Sep	0	1 - 3	1	10
LT8	Plecotus auritus	Aug	9	4 - 11	15	6
LT8	Plecotus auritus	Sep	4	4 - 11	13	7
LT9	Myotis daubentonii	Aug	15	12.5 - 25.5	21	4
LT9	Myotis daubentonii	Sep	26	12.5 - 25.5	30	13
LT9	Myotis mystacinus	Aug	1	1 - 2	1	1
LT9	Myotis mystacinus	Sep	1	1 - 2	3	5
LT9	Myotis nattereri	Aug	32	20.5 - 36.5	34	4
LT9	Myotis nattereri	Sep	33	20.5 - 36.5	62	11
LT9	Nyctalus leisleri	Aug	1	1.5 - 2.5	2	7
LT9	Nyctalus leisleri	Sep	2	1.5 - 2.5	3	14
LT9	Pipistrellus nathusii	Aug	8	8 - 8	13	3
LT9	Pipistrellus pipistrellus	Aug	0	0 - 0	0	5
LT9	Pipistrellus pipistrellus	Sep	0	0 - 0	0	11
LT9	Pipistrellus pygmaeus	Aug	1	2 - 7	4	7
LT9	Pipistrellus pygmaeus	Sep	3	2 - 7	12	12
LT9	Plecotus auritus	Aug	3	10 - 26	4	2

LT9

Plecotus auritus

Sep

22

10 - 26

44

14

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 daubentonii	0	0	0	0	9	132
Myotis mystacinus	0	0	0	0	0	25
Myotis nattereri	0	0	1	2	10	65
Nyctalus leisleri	0	0	0	0	4	236
Pipistrellus nathusii	0	0	0	0	0	6
Pipistrellus pipistrellus	0	0	0	0	0	161
Pipistrellus pygmaeus	0	0	0	0	0	216
Plecotus auritus	0	0	0	2	9	114

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

Species/Species Group	Median Percentile	95% CIs	Max. Percentile	Nights Recorded
Myotis daubentonii	6	5 - 9	30	141
Myotis mystacinus	1	1 - 3	3	25
Myotis nattereri	7	7 - 7	62	78
Nyctalus leisleri	2	8 - 14	29	240
Pipistrellus nathusii	8	8 - 8	13	6
Pipistrellus pipistrellus	0	1 - 2	2	161
Pipistrellus pygmaeus	1	6 - 9	17	216
Plecotus auritus	4	5 - 14.5	44	125

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

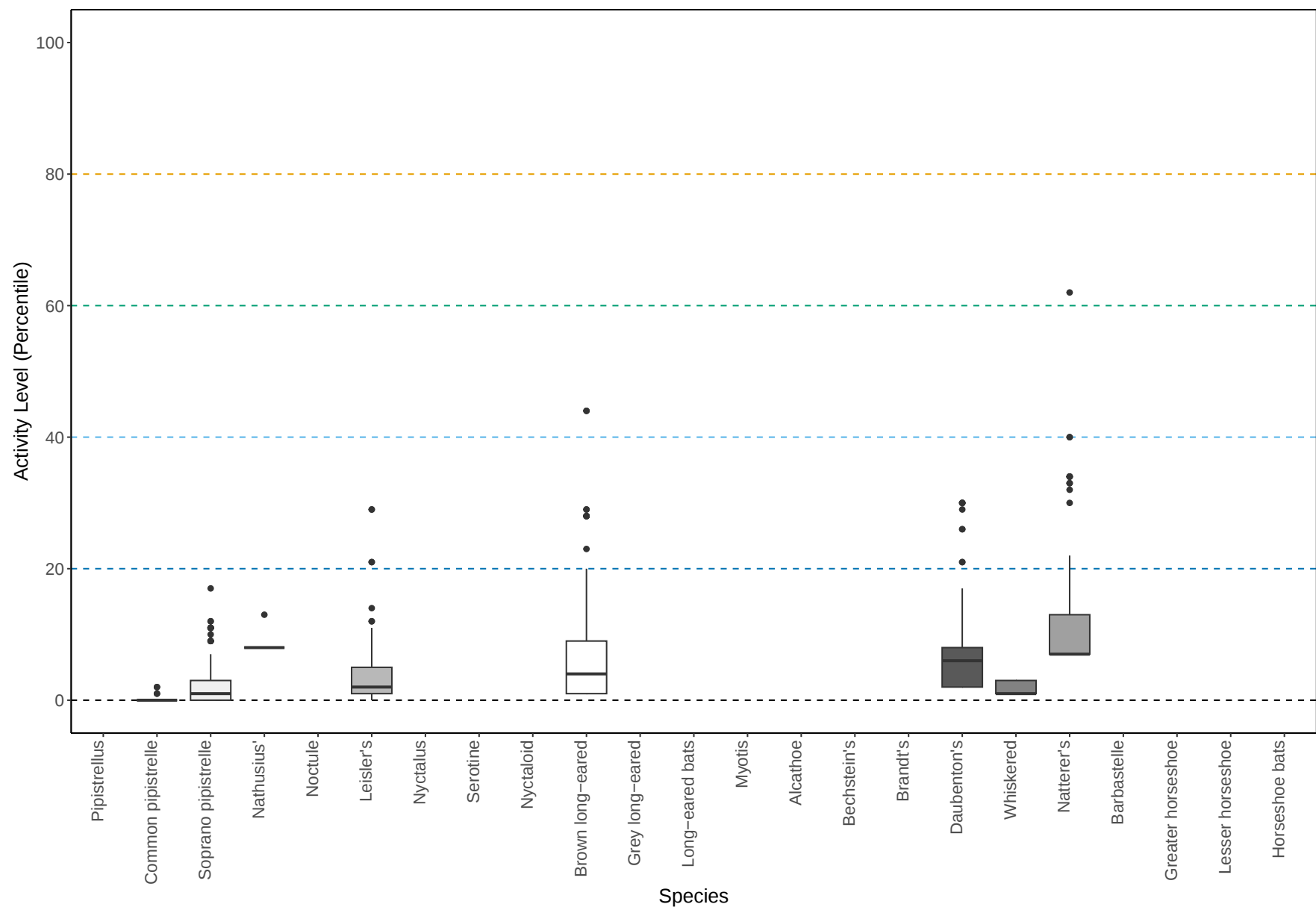
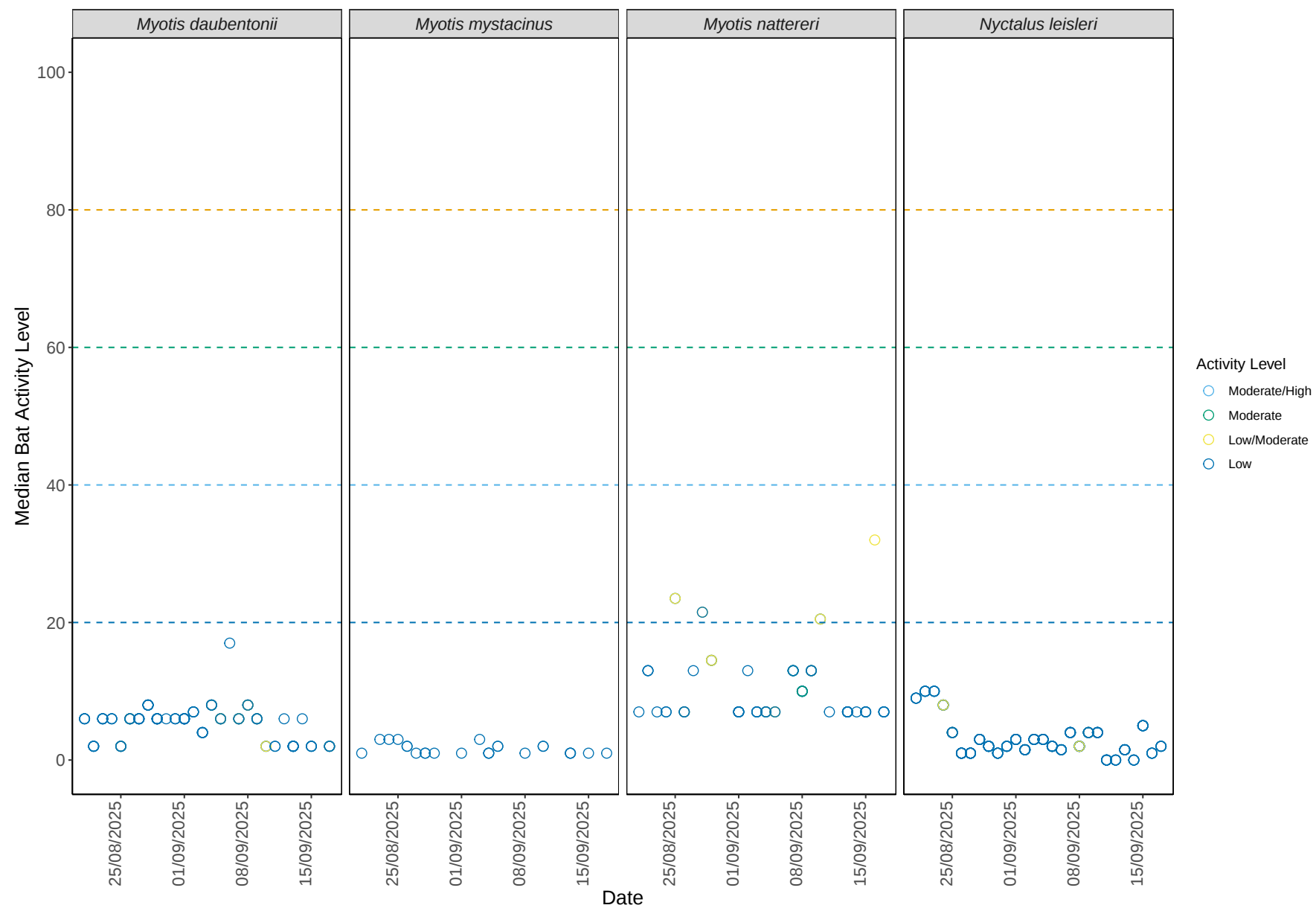
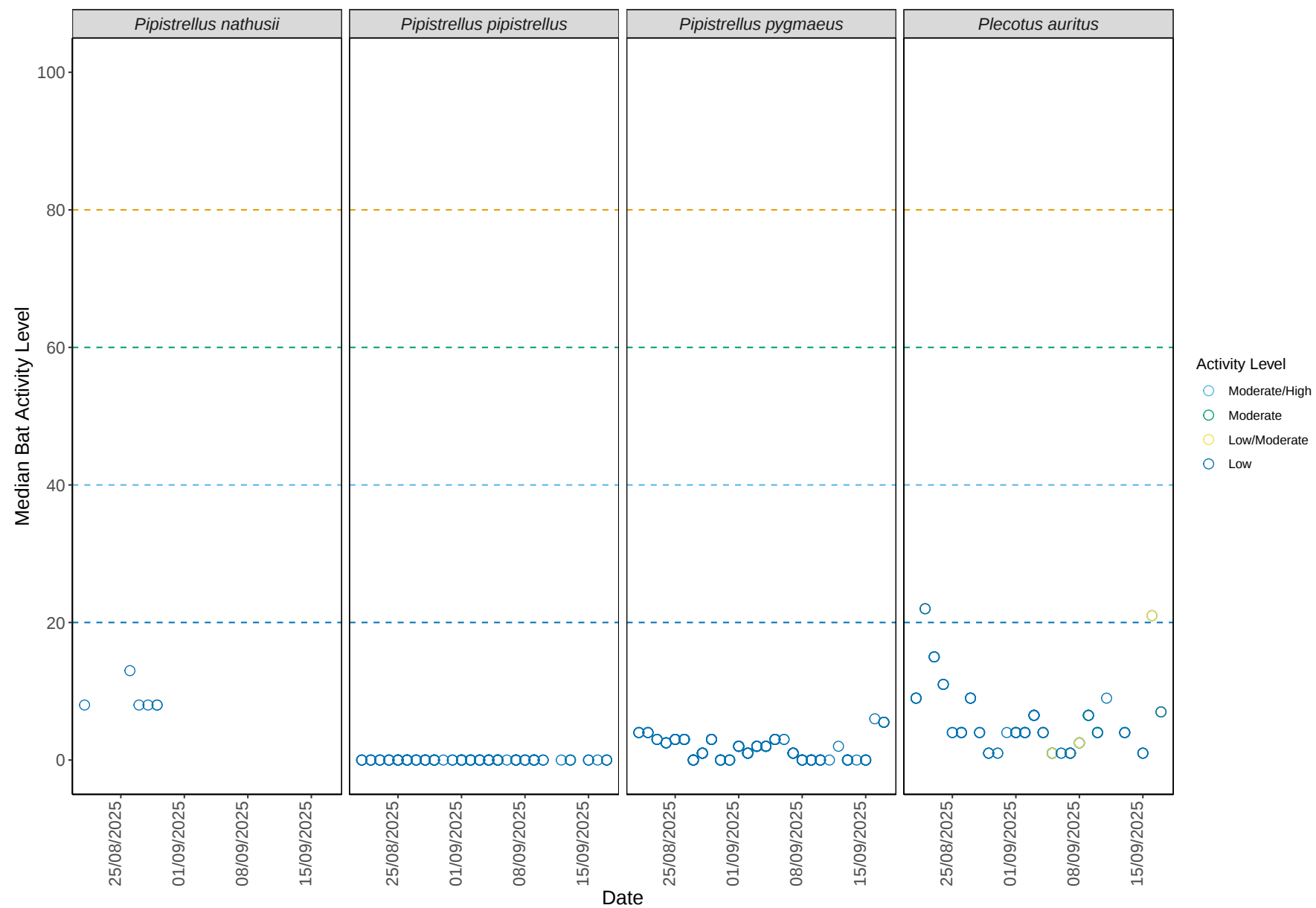


Figure 5. The median activity levels of bats recorded across all detectors each night.





Per Site, Per Month

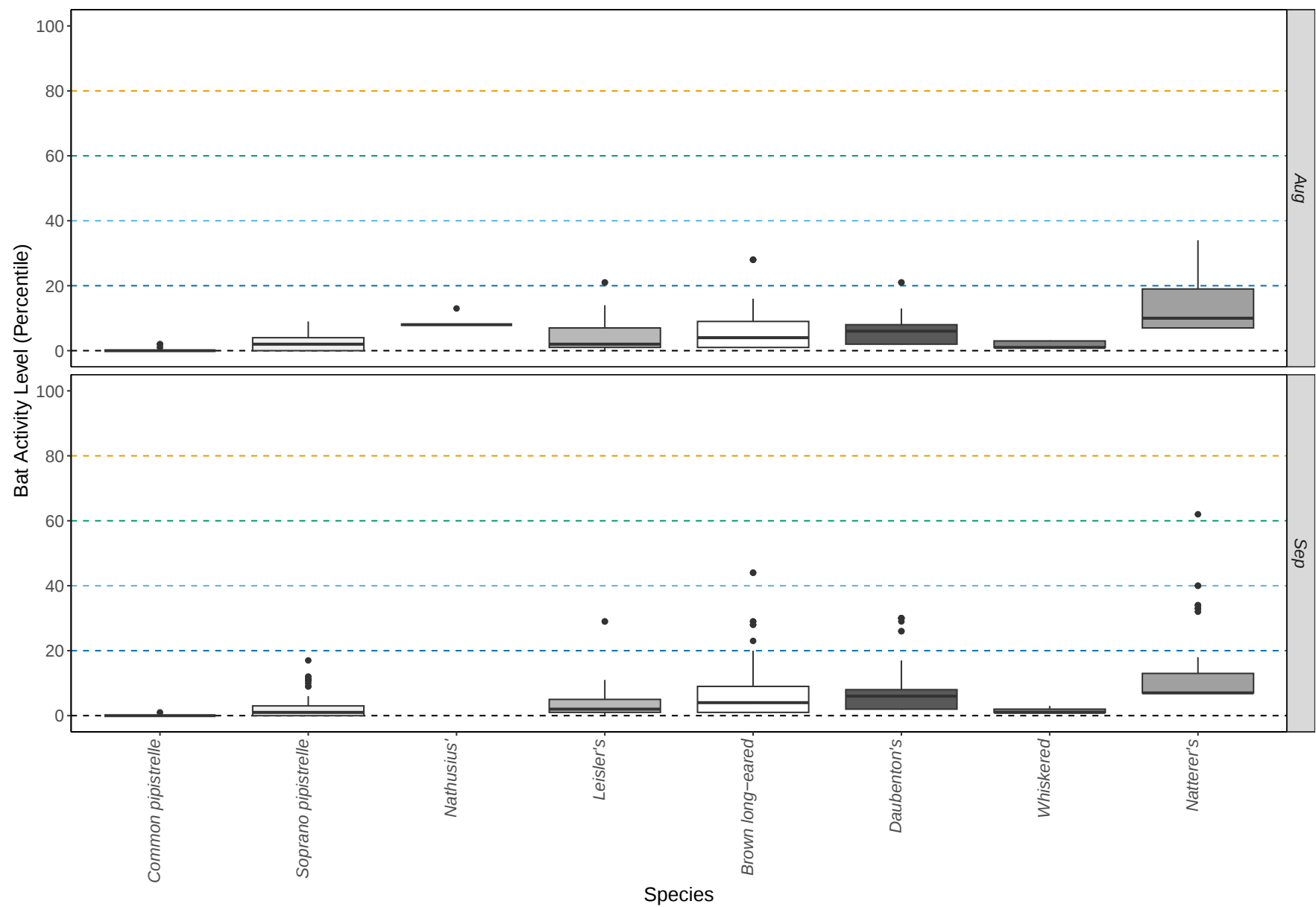
Table 9. Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month.

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 daubentonii	Aug	0	0	0	0	2	58
Myotis daubentonii	Sep	0	0	0	0	7	74
Myotis mystacinus	Aug	0	0	0	0	0	10
Myotis mystacinus	Sep	0	0	0	0	0	15
Myotis nattereri	Aug	0	0	0	0	5	15
Myotis nattereri	Sep	0	0	1	2	5	50
Nyctalus leisleri	Aug	0	0	0	0	2	88
Nyctalus leisleri	Sep	0	0	0	0	2	148
Pipistrellus nathusii	Aug	0	0	0	0	0	6
Pipistrellus pipistrellus	Aug	0	0	0	0	0	70
Pipistrellus pipistrellus	Sep	0	0	0	0	0	91
Pipistrellus pygmaeus	Aug	0	0	0	0	0	91
Pipistrellus pygmaeus	Sep	0	0	0	0	0	125
Plecotus auritus	Aug	0	0	0	0	3	41
Plecotus auritus	Sep	0	0	0	2	6	73

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 daubentonii	Aug	6	5 - 9	21	60
Myotis daubentonii	Sep	6	5 - 9	30	81
Myotis mystacinus	Aug	1	1 - 3	3	10
Myotis mystacinus	Sep	1	1 - 3	3	15
Myotis nattereri	Aug	10	7 - 7	34	20
Myotis nattereri	Sep	7	7 - 7	62	58
Nyctalus leisleri	Aug	2	8 - 14	21	90
Nyctalus leisleri	Sep	2	8 - 14	29	150
Pipistrellus nathusii	Aug	8	8 - 8	13	6
Pipistrellus pipistrellus	Aug	0	1 - 2	2	70
Pipistrellus pipistrellus	Sep	0	1 - 2	1	91
Pipistrellus pygmaeus	Aug	2	6 - 9	9	91
Pipistrellus pygmaeus	Sep	1	6 - 9	17	125
Plecotus auritus	Aug	4	5 - 14.5	28	44
Plecotus auritus	Sep	4	5 - 14.5	44	81

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



Part 2: Nightly Analysis

Entire Survey Period

Sunrise and Sunset Times

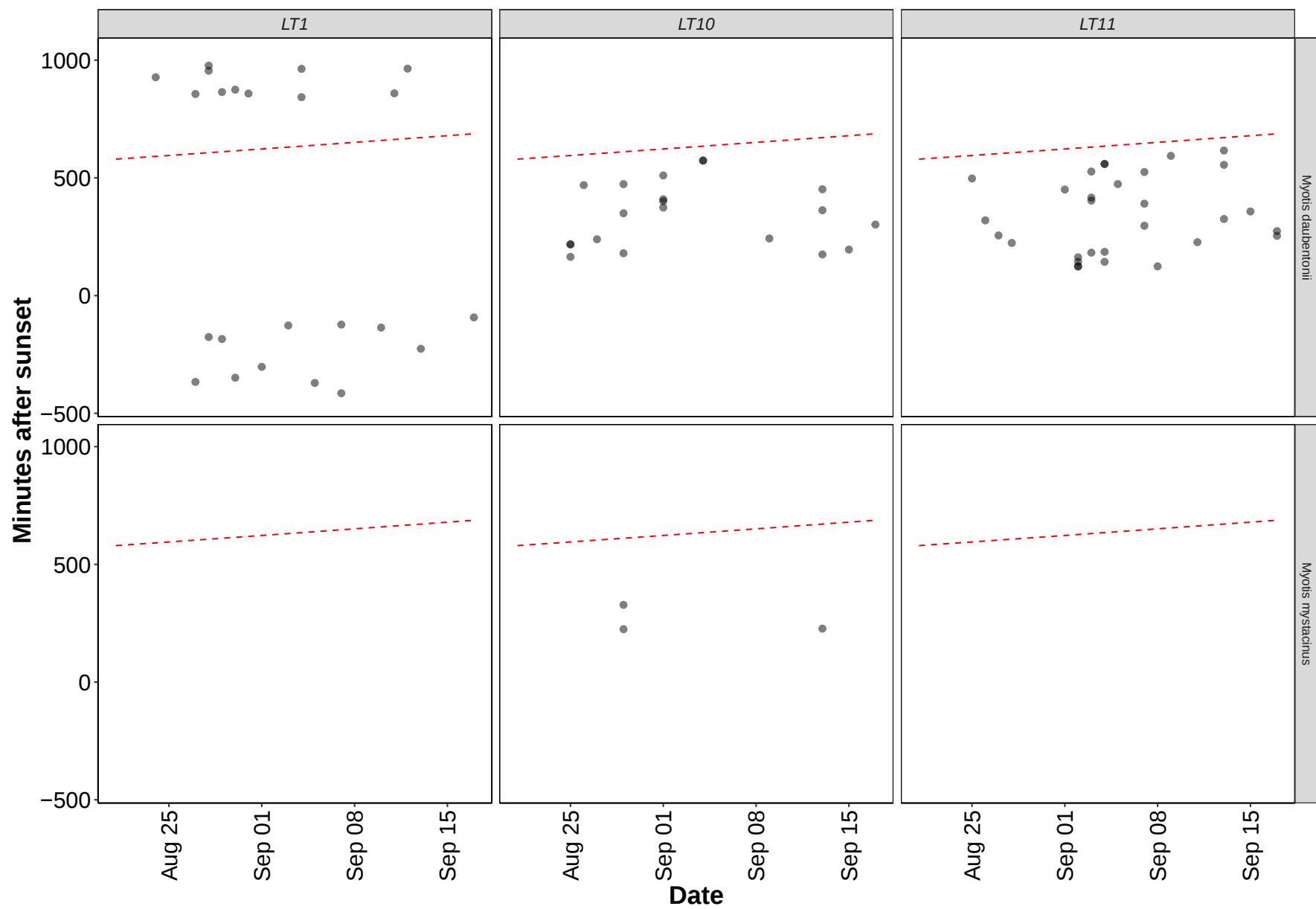
Table 11. The times of sunset and sunrise the following morning for surveys beginning on the date shown.

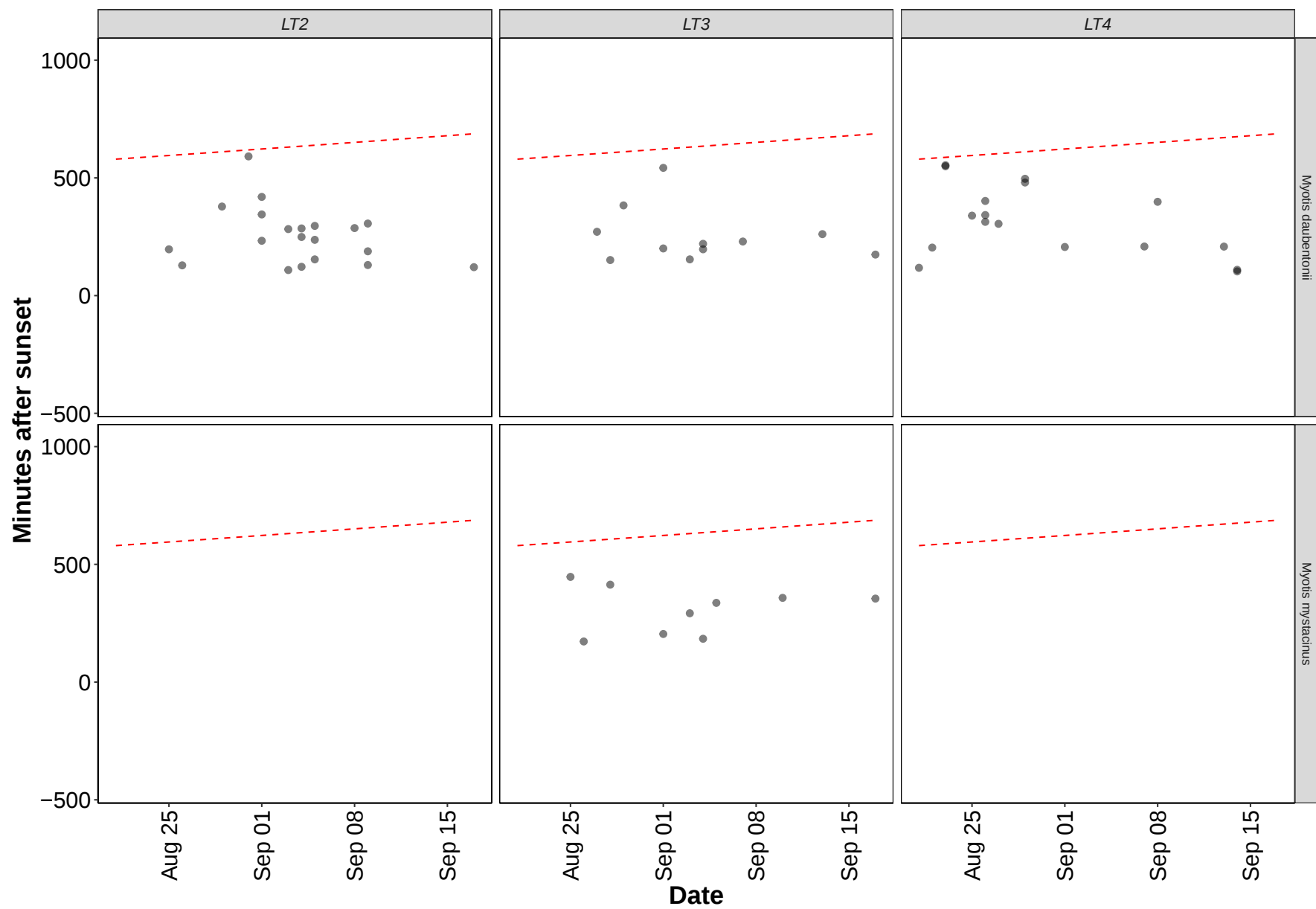
Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2025-08-21	19:45	05:24	9.7
2025-08-22	19:42	05:26	9.7
2025-08-23	19:40	05:28	9.8
2025-08-24	19:38	05:29	9.9
2025-08-25	19:36	05:31	9.9
2025-08-26	19:34	05:33	10.0
2025-08-27	19:31	05:34	10.0
2025-08-28	19:29	05:36	10.1
2025-08-29	19:27	05:38	10.2
2025-08-30	19:24	05:39	10.2
2025-08-31	19:22	05:41	10.3
2025-09-01	19:20	05:43	10.4
2025-09-02	19:18	05:44	10.4
2025-09-03	19:15	05:46	10.5
2025-09-04	19:13	05:48	10.6
2025-09-05	19:11	05:49	10.6
2025-09-06	19:08	05:51	10.7
2025-09-07	19:06	05:53	10.8
2025-09-08	19:03	05:54	10.8
2025-09-09	19:01	05:56	10.9
2025-09-10	18:59	05:58	11.0
2025-09-11	18:56	05:59	11.0
2025-09-12	18:54	06:01	11.1
2025-09-13	18:52	06:03	11.2
2025-09-14	18:49	06:04	11.3
2025-09-15	18:47	06:06	11.3
2025-09-16	18:44	06:08	11.4
2025-09-17	18:42	06:09	11.5

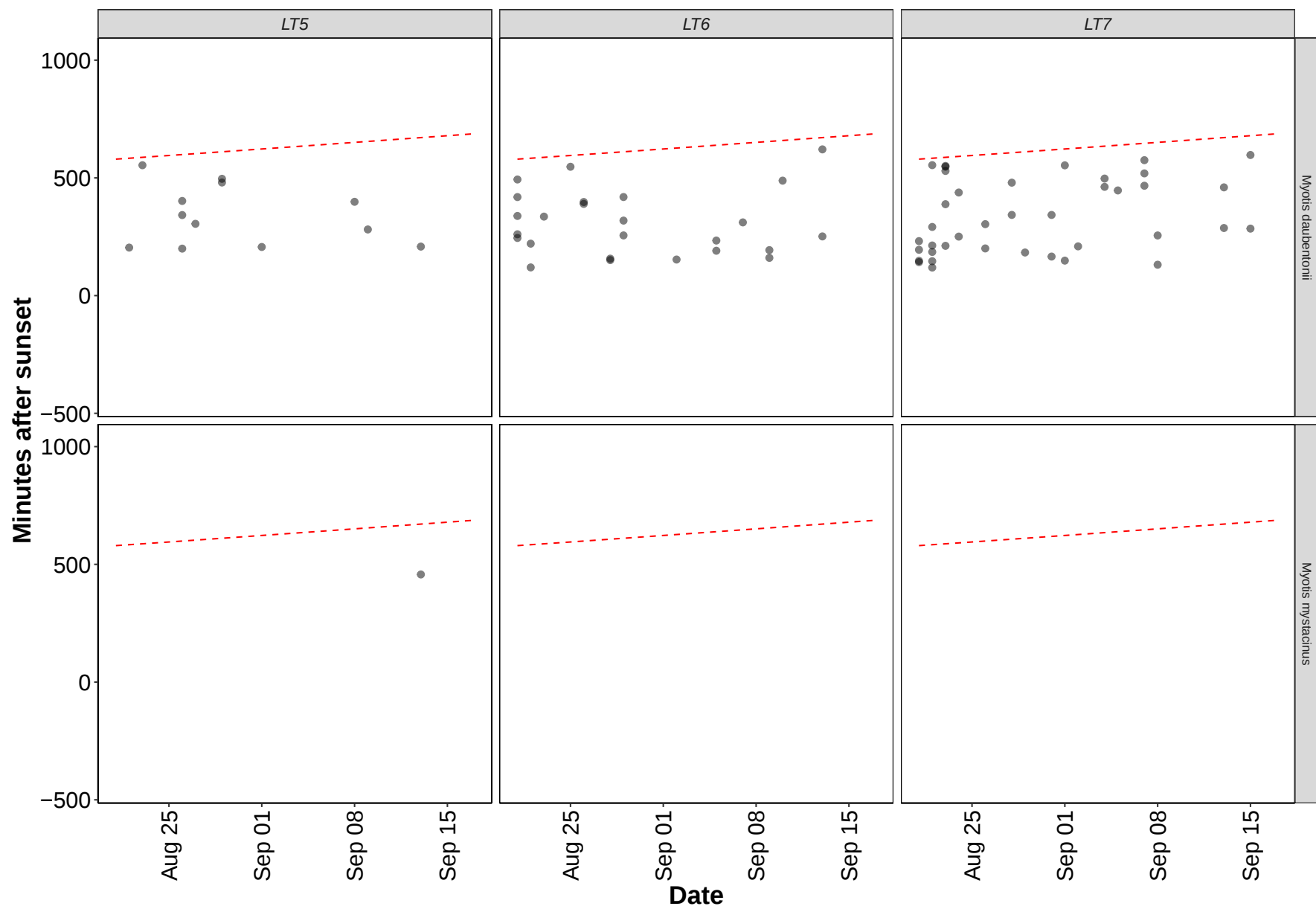
Distribution of Bat Activity Across the Night through Time

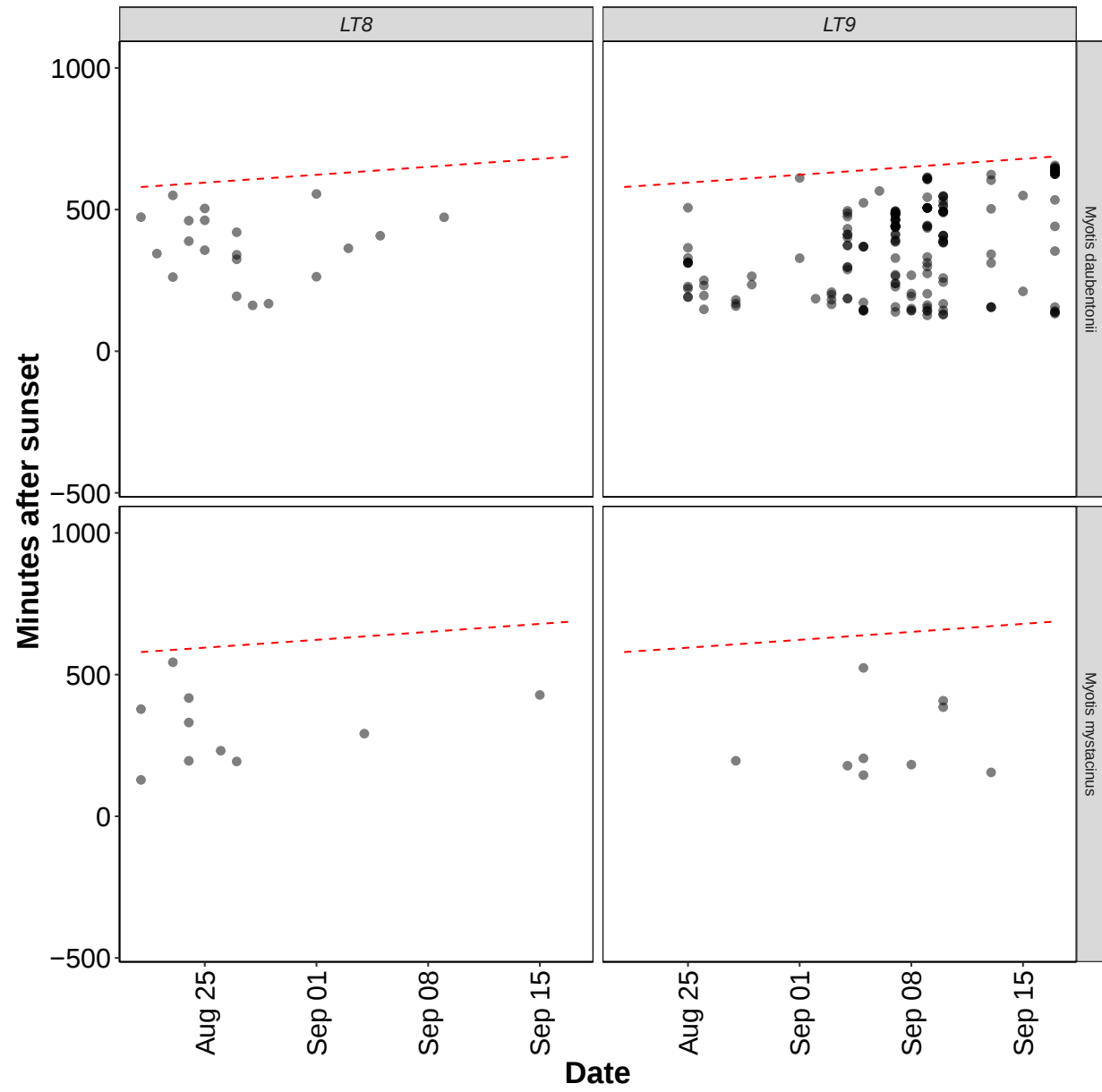
Per Detector

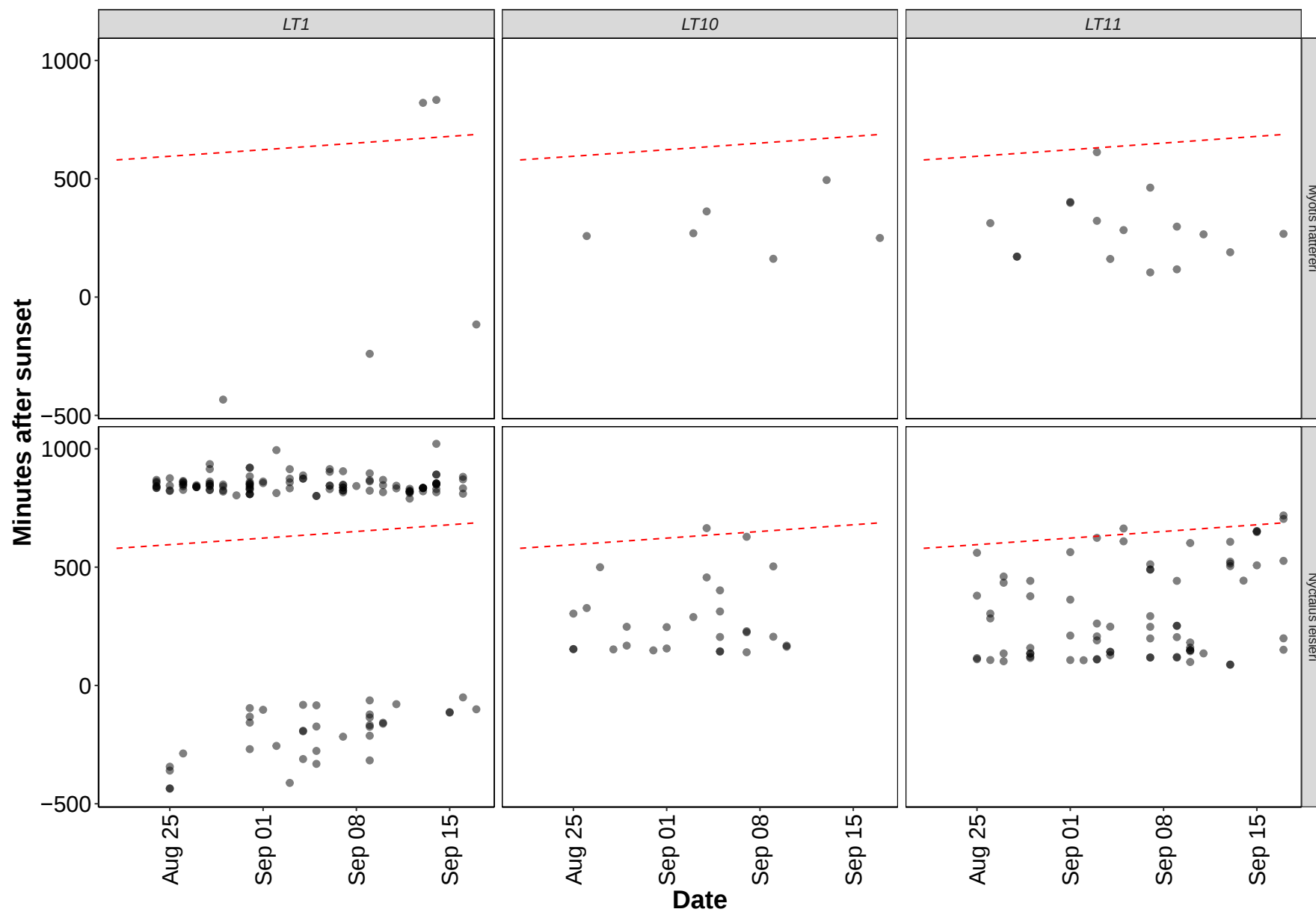
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

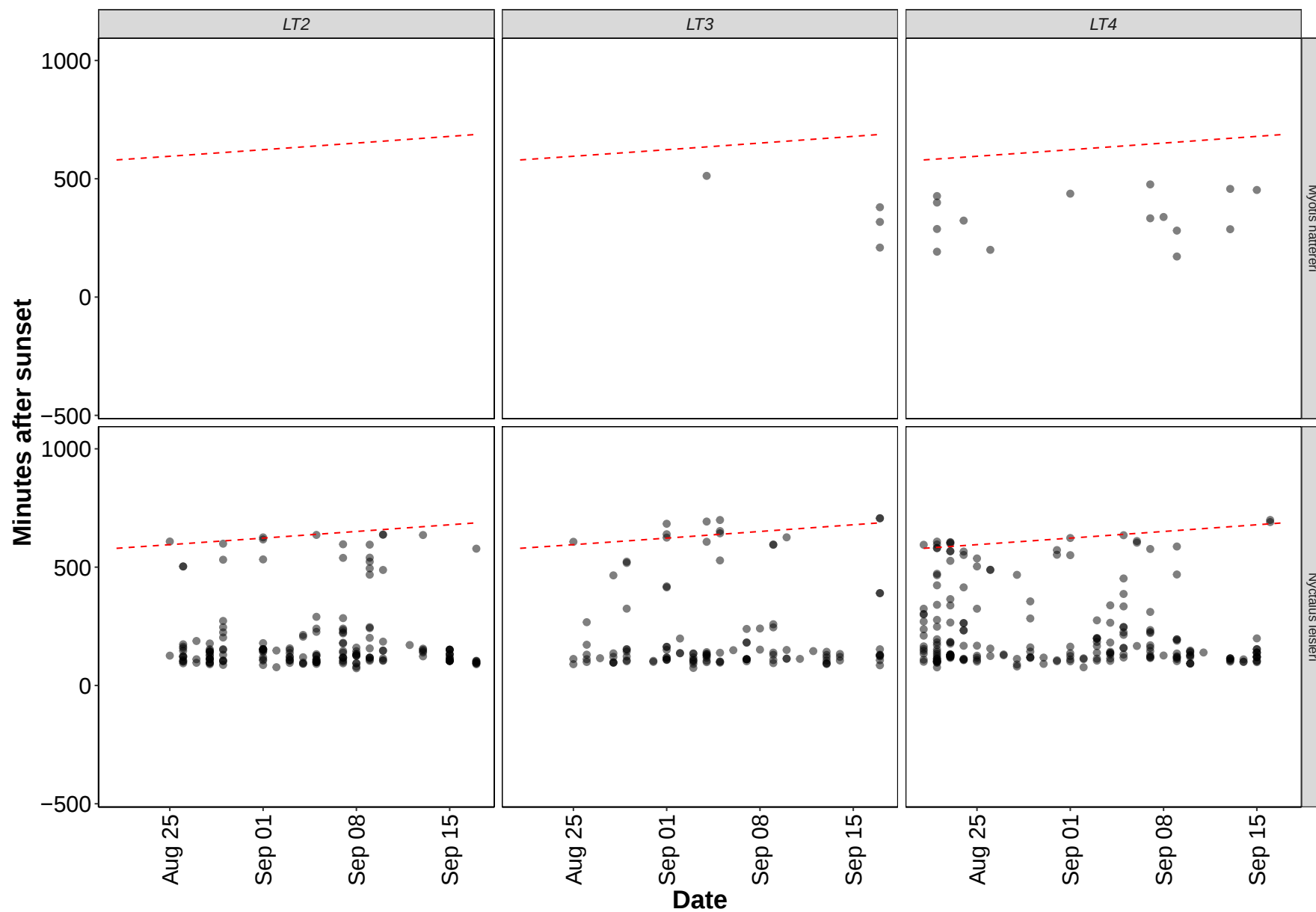


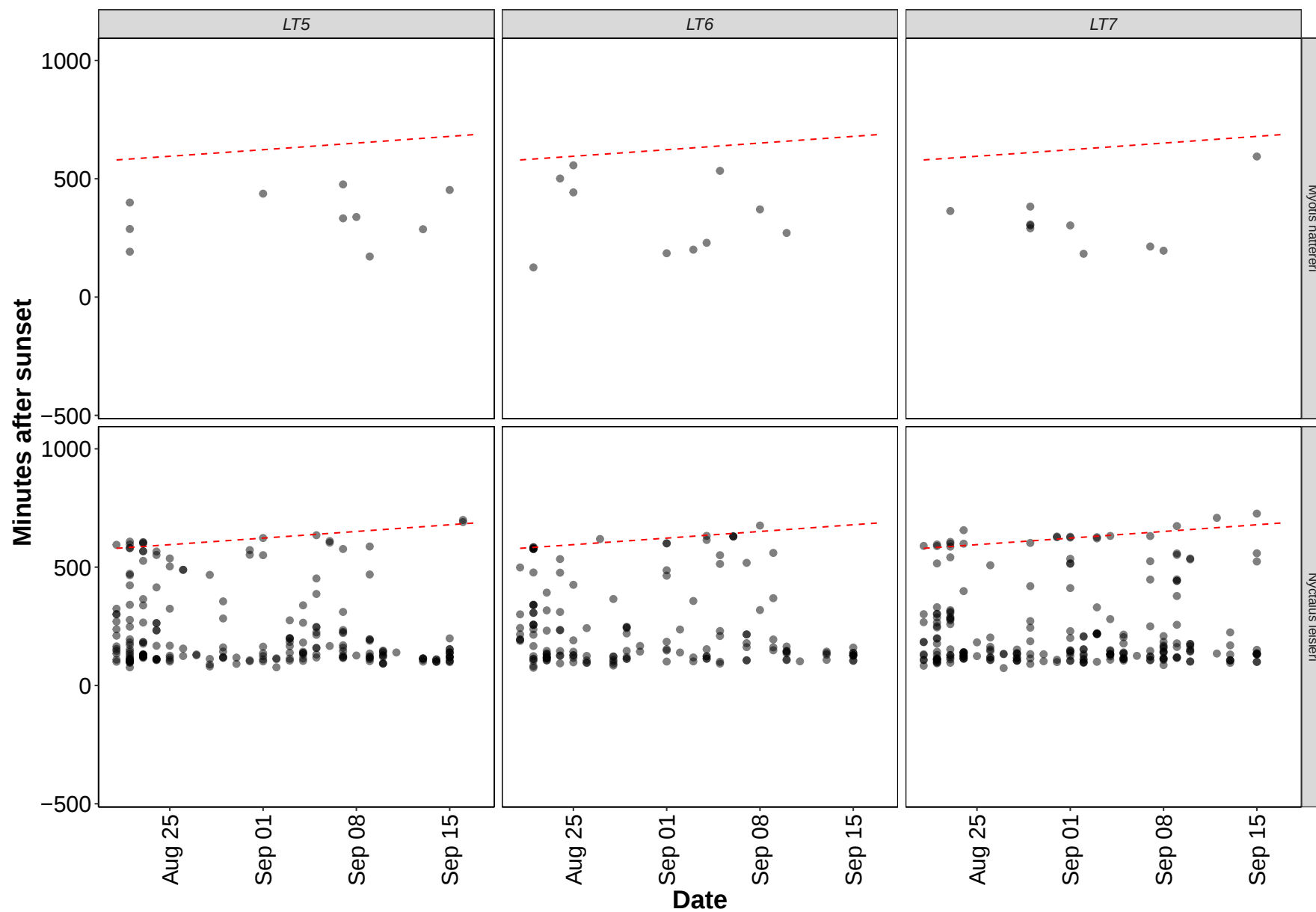


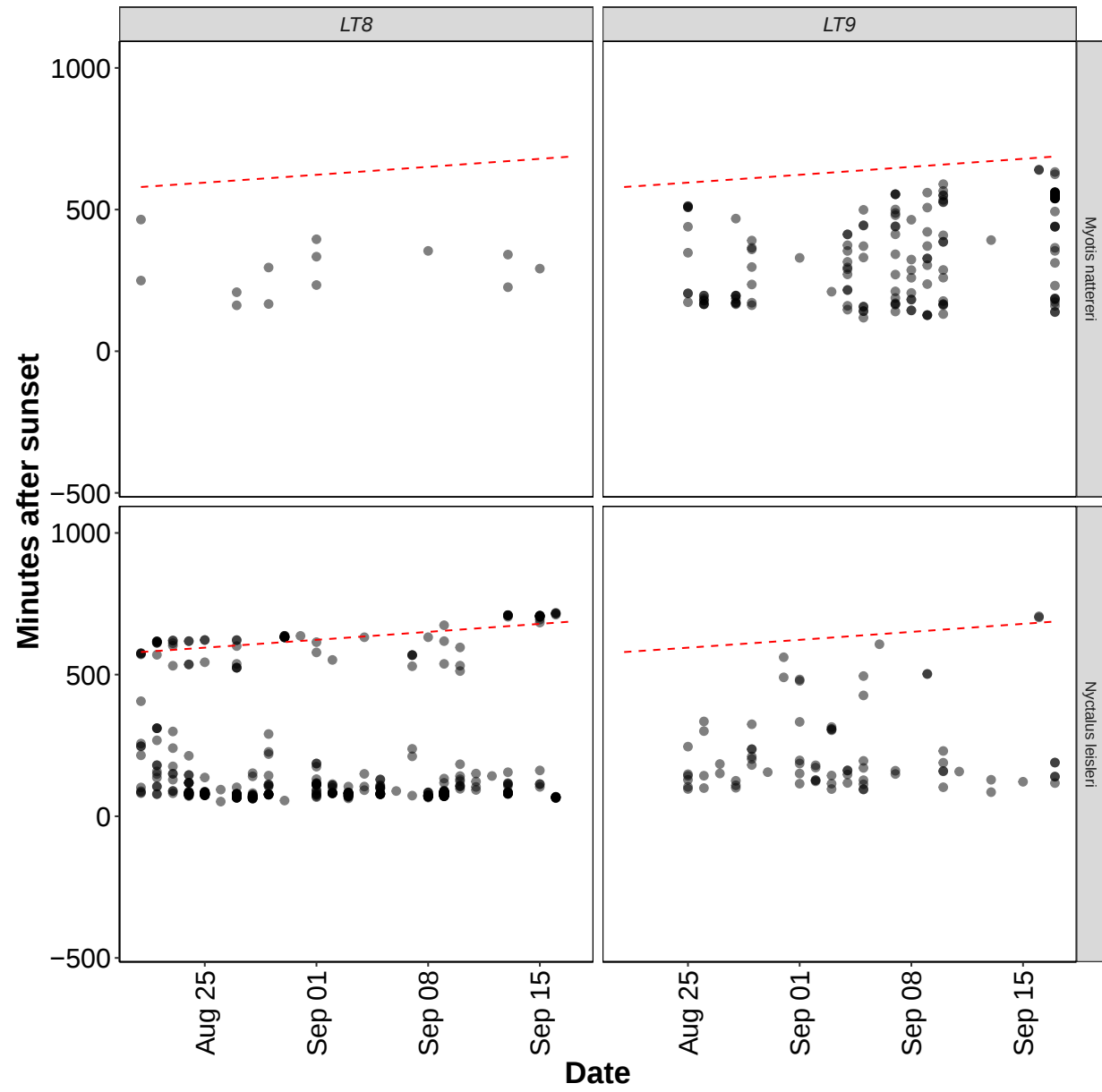


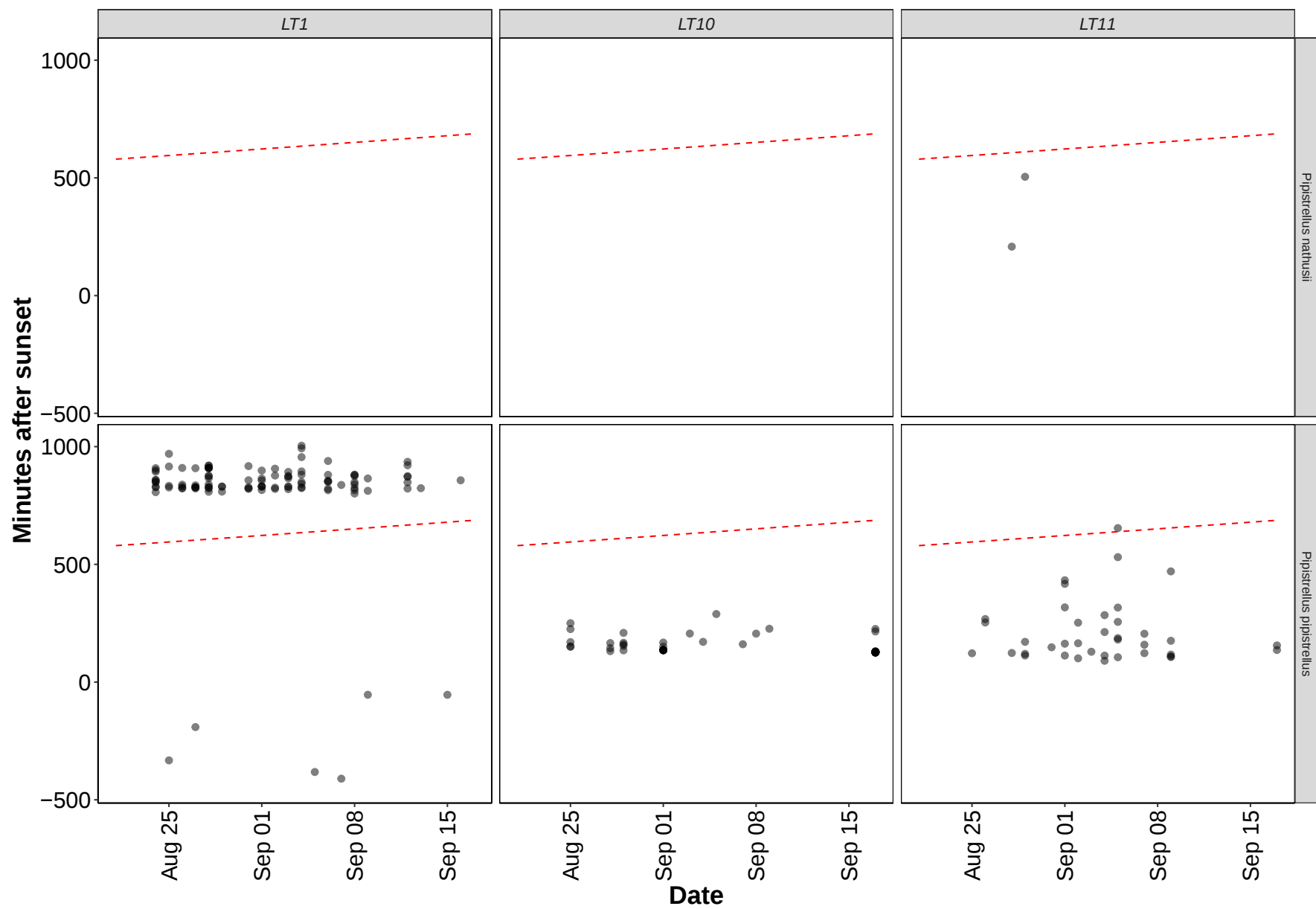


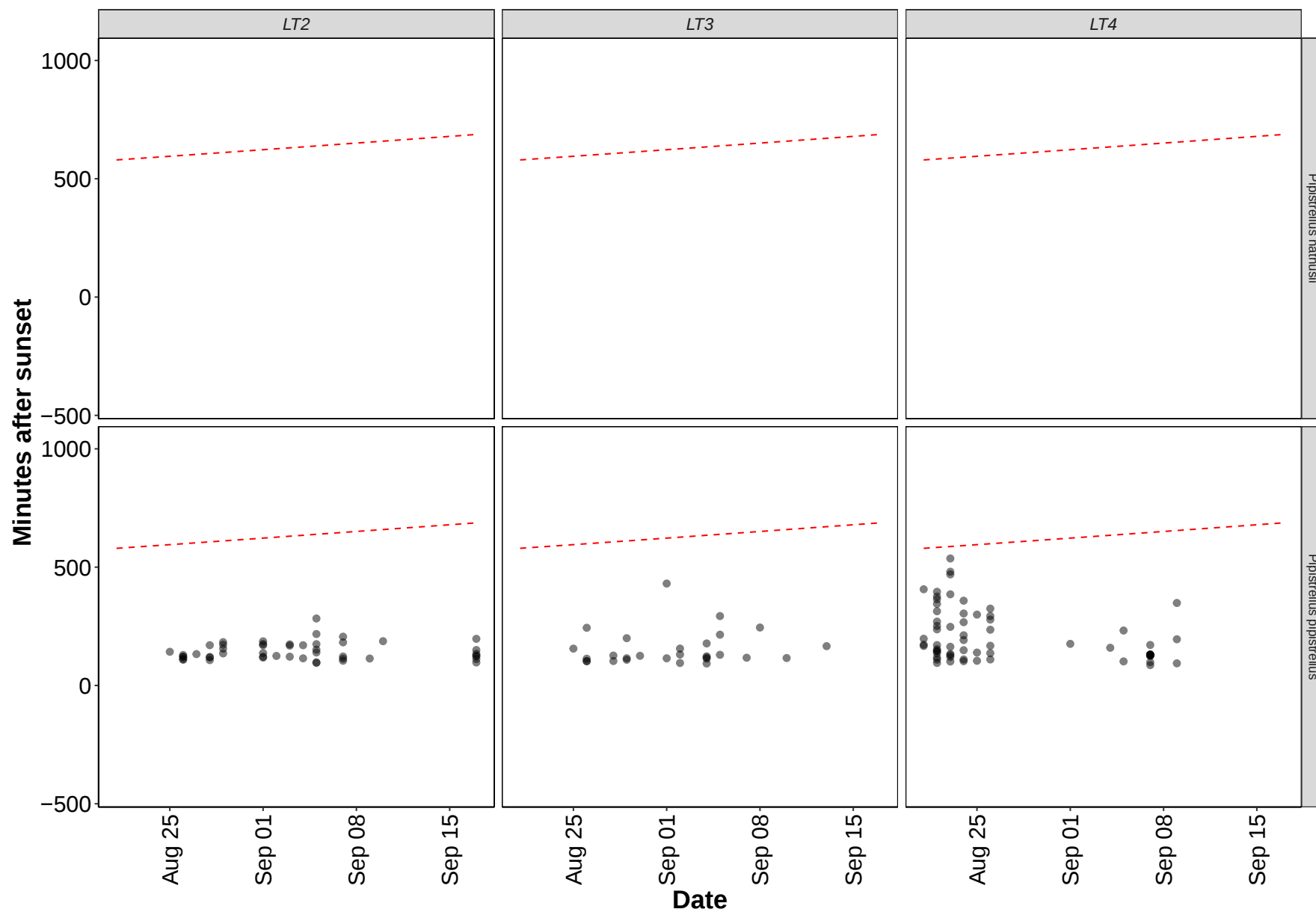


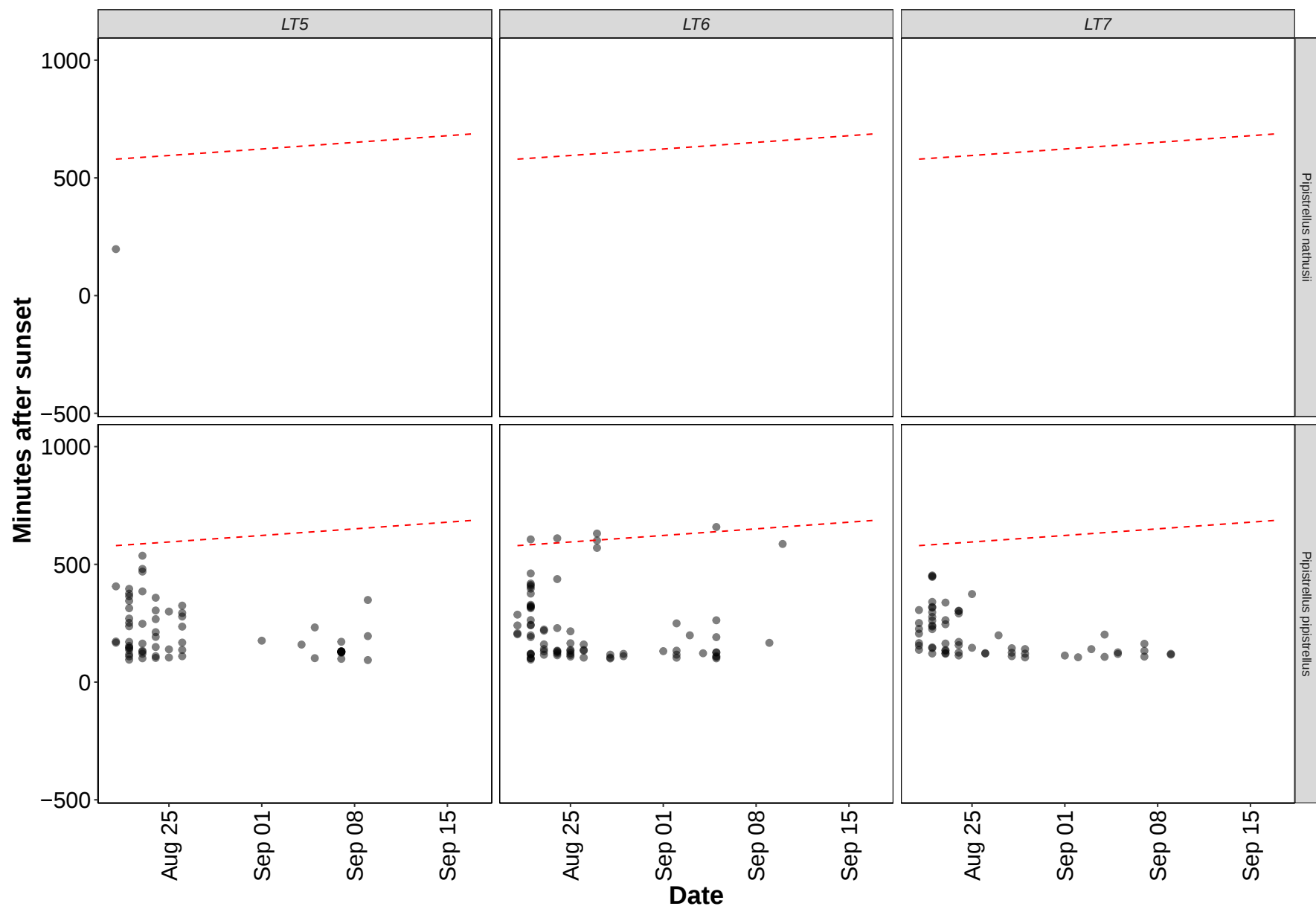


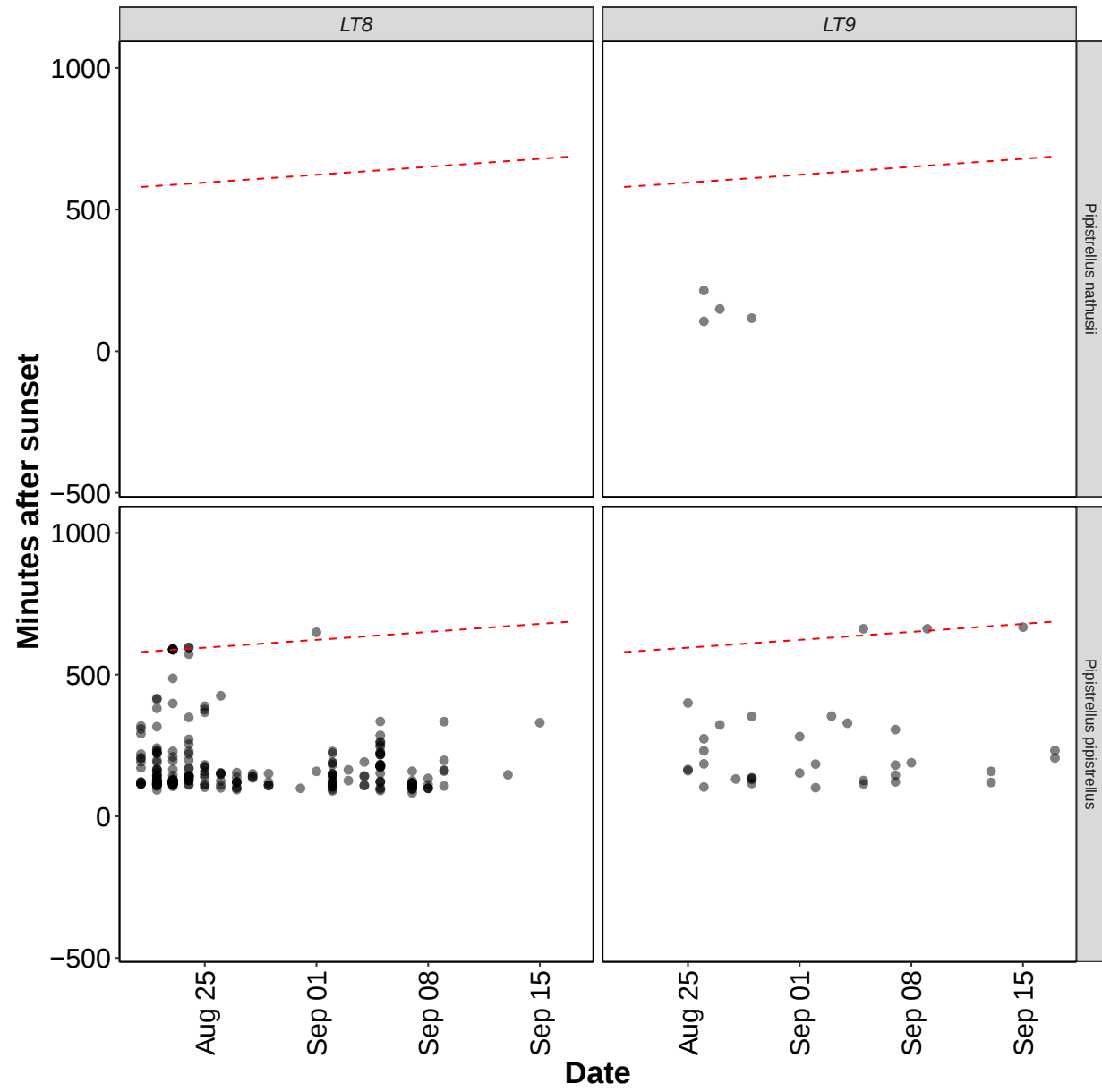


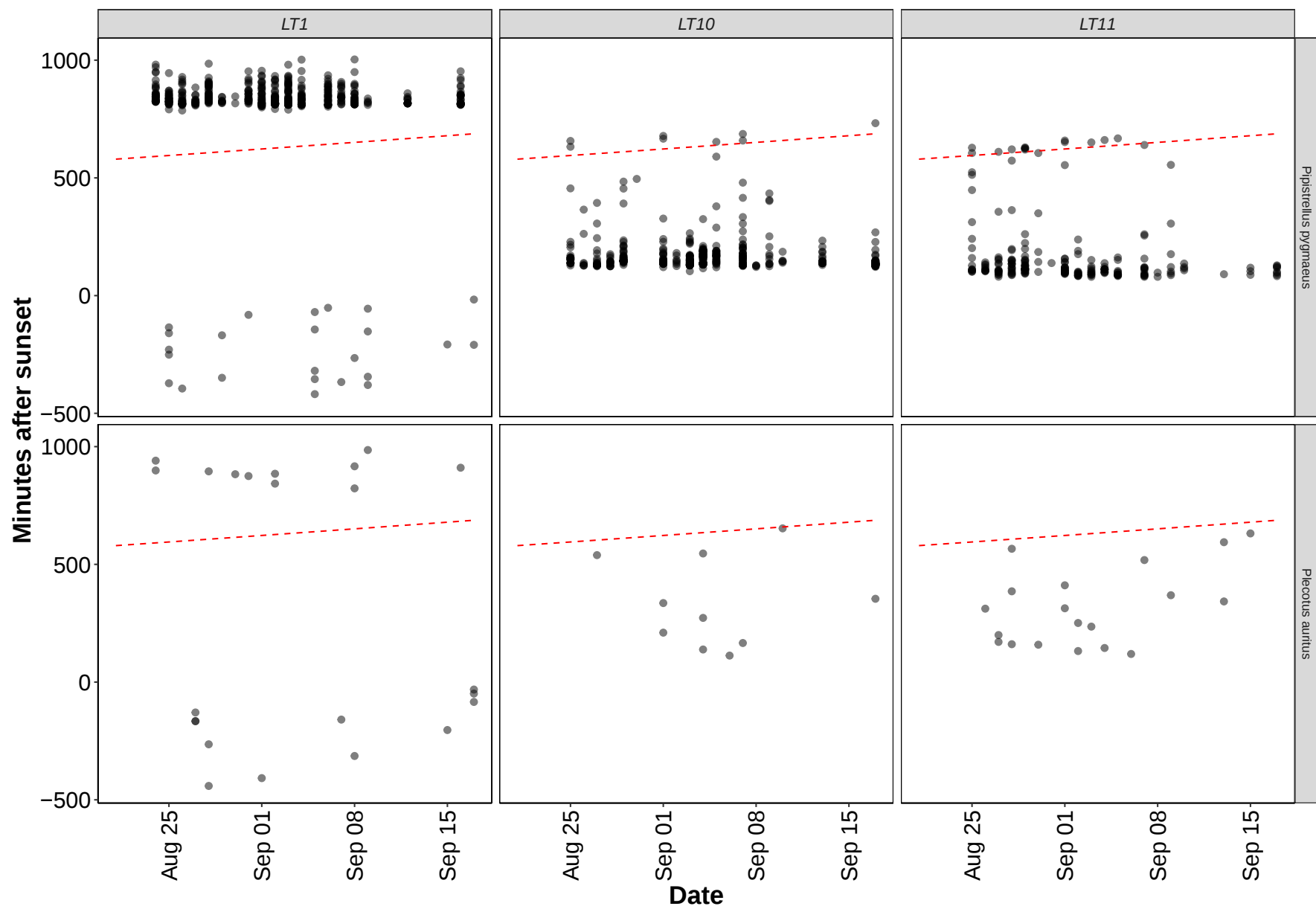












Roost Emergence Time and Bat Observation

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

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	2025-08-25	2025-08-26	2025-08-27	2025-08-28	2025-08-29
Common pipistrelle	LT1	1	0	1	0	0
Soprano pipistrelle	LT1	5	1	0	0	2
Leisler's	LT1	4	1	0	0	0
Brown long-eared	LT1	0	0	3	2	0
Daubenton's	LT1	0	0	1	1	1
Natterer's	LT1	0	0	0	0	1

Table 13: Table continues below

2025-08-30	2025-08-31	2025-09-01	2025-09-02	2025-09-03	2025-09-04	2025-09-05
0	0	0	0	0	0	1
0	1	0	0	0	0	5
0	4	1	1	1	4	4
0	0	1	0	0	0	0
1	0	1	0	1	0	1
0	0	0	0	0	0	0

Table 14: Table continues below

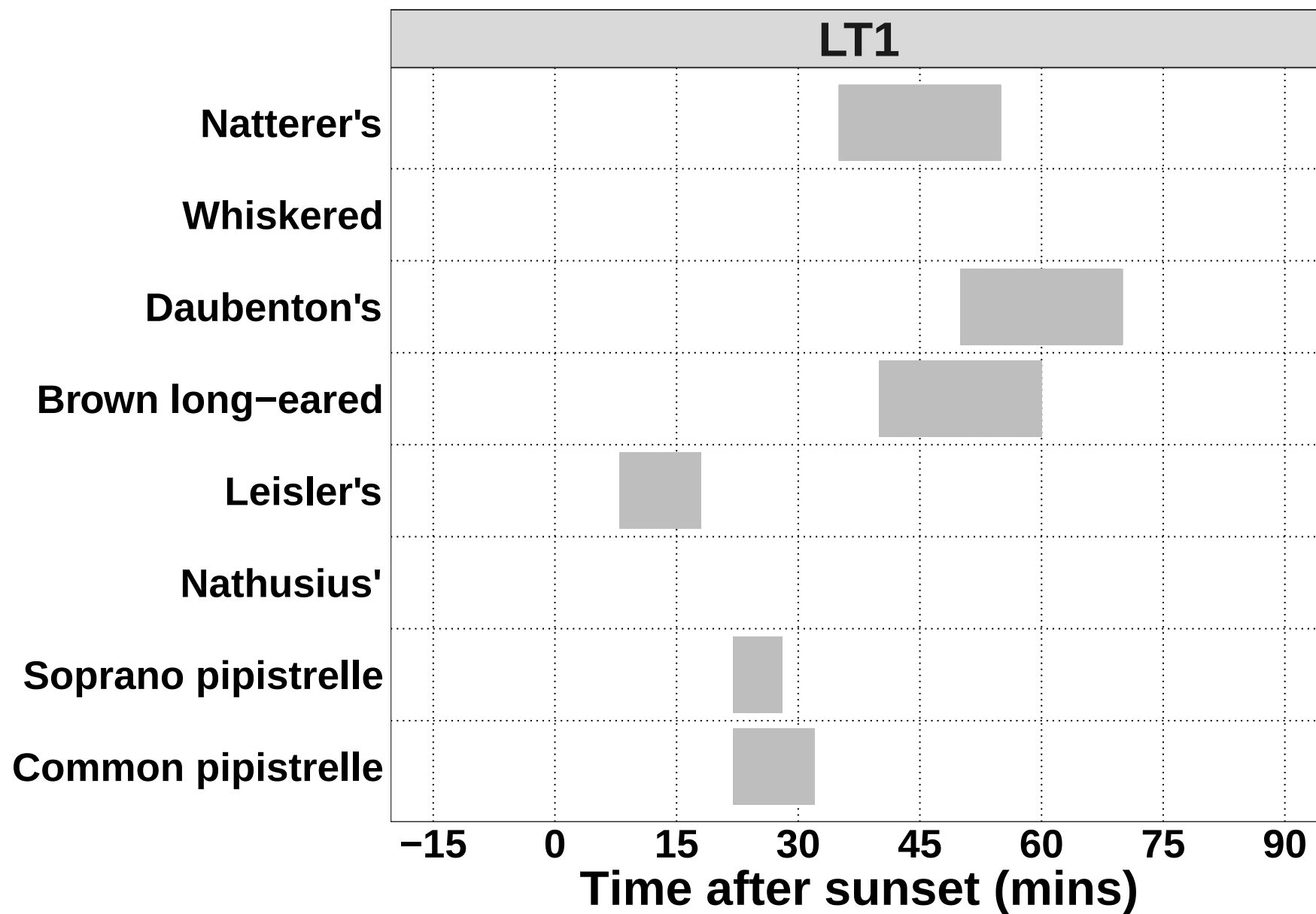
2025-09-06	2025-09-07	2025-09-08	2025-09-09	2025-09-10	2025-09-11	2025-09-13
0	1	0	1	0	0	0
1	1	1	4	0	0	0

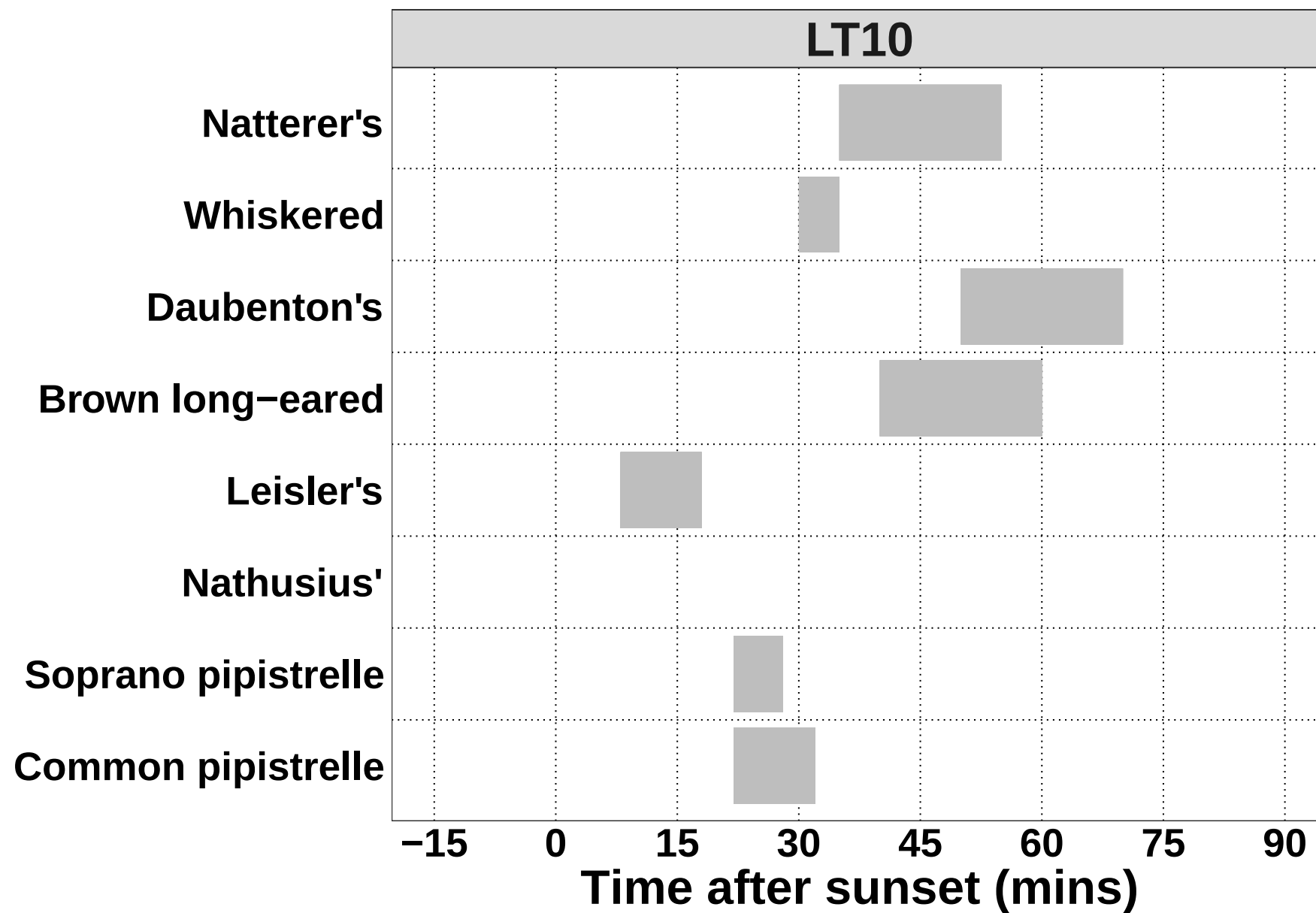
2025-09-06	2025-09-07	2025-09-08	2025-09-09	2025-09-10	2025-09-11	2025-09-13
0	1	0	7	2	1	0
0	1	1	0	0	0	0
0	2	0	0	1	0	1
0	0	0	1	0	0	0

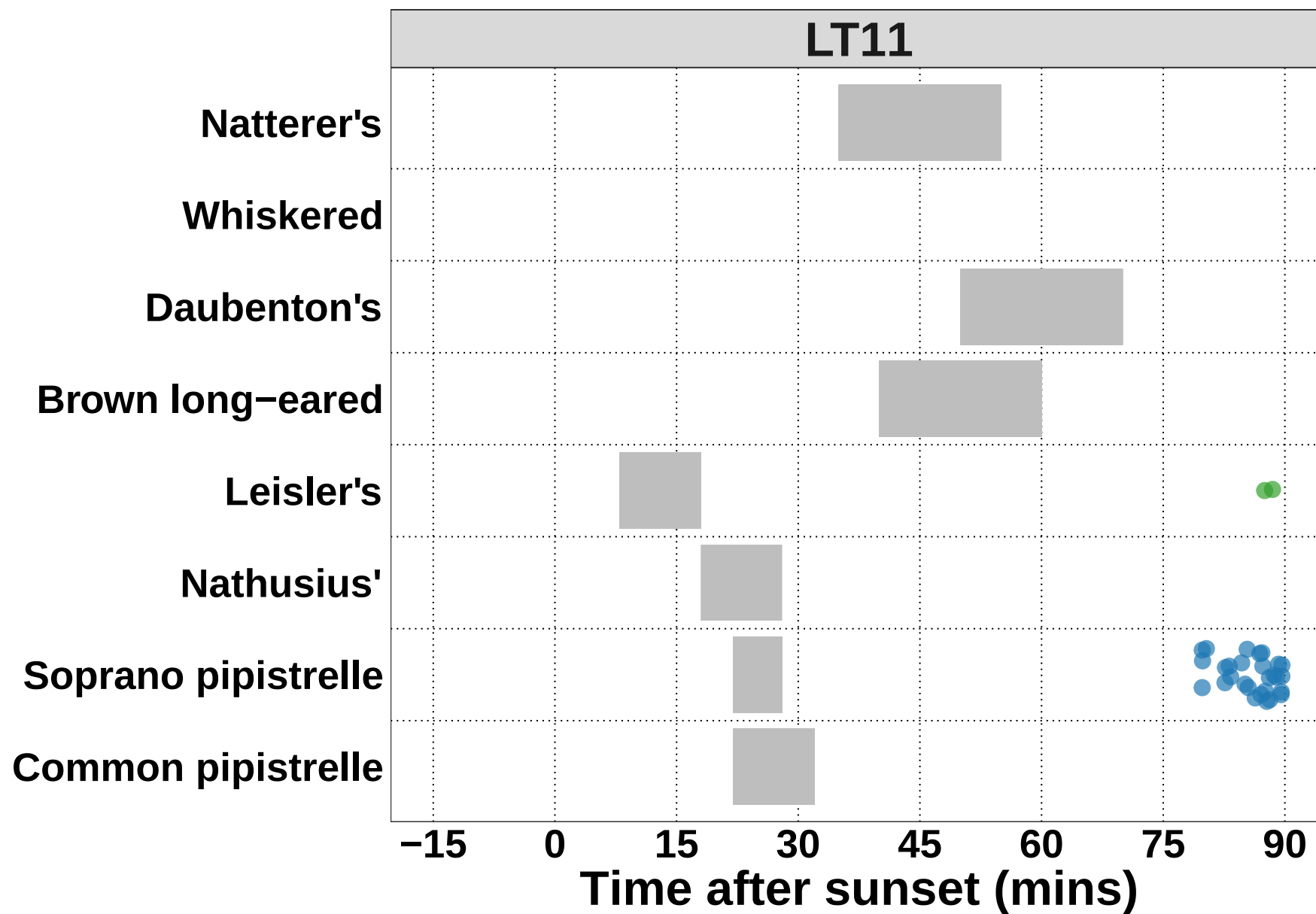
2025-09-15	2025-09-16	2025-09-17
1	0	0
1	0	2
2	1	1
1	0	3
0	0	1
0	0	1

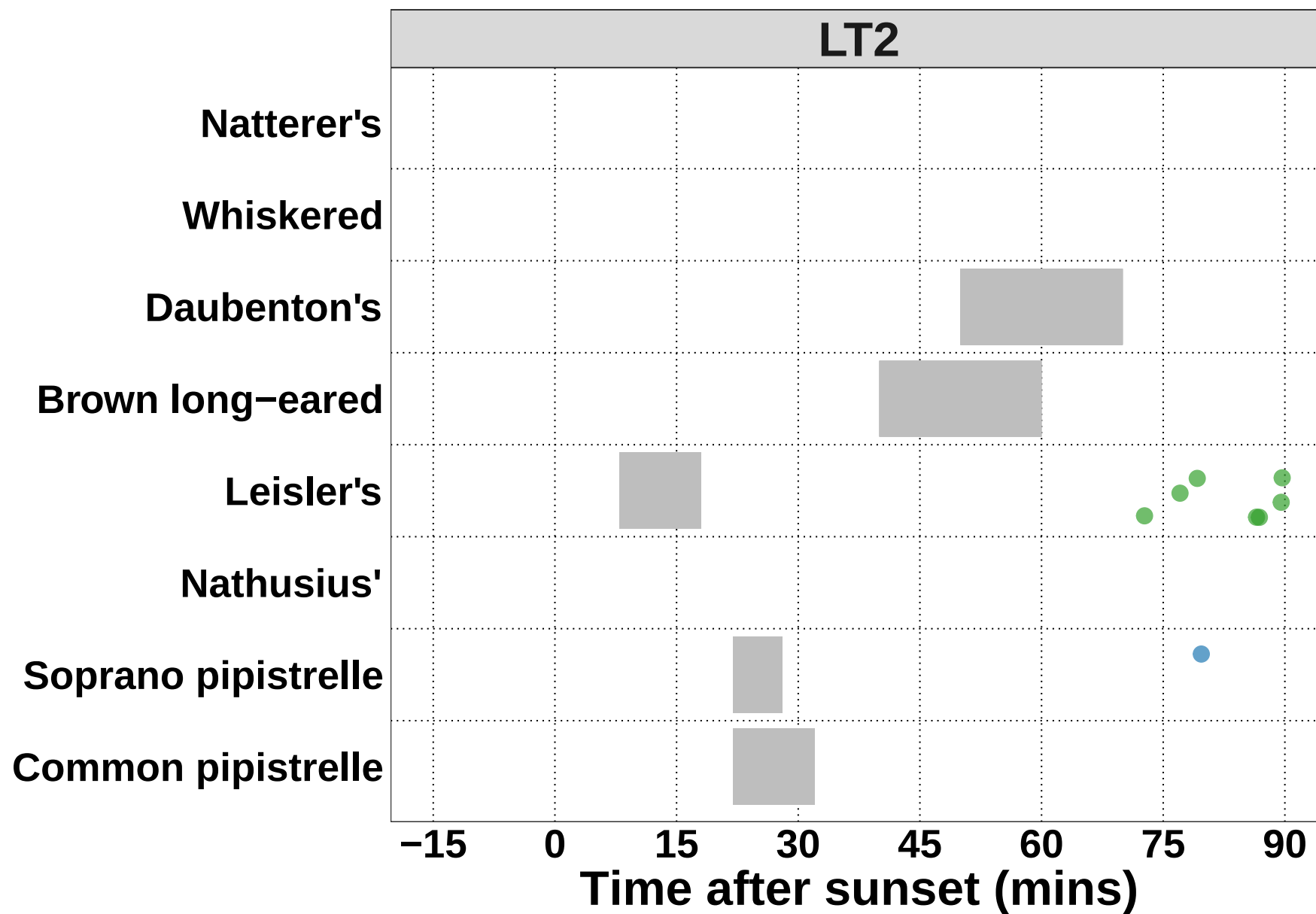
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012)

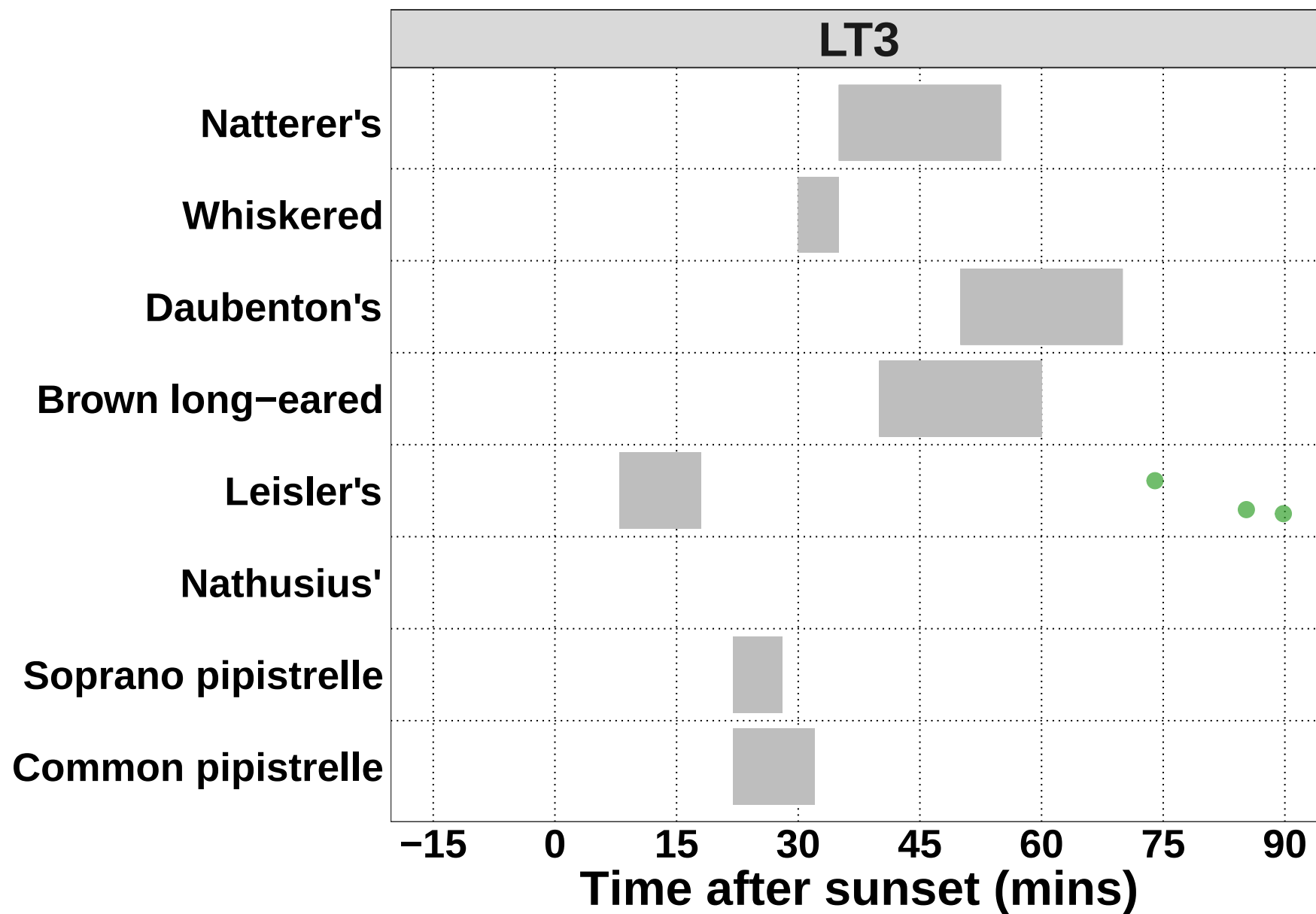
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.

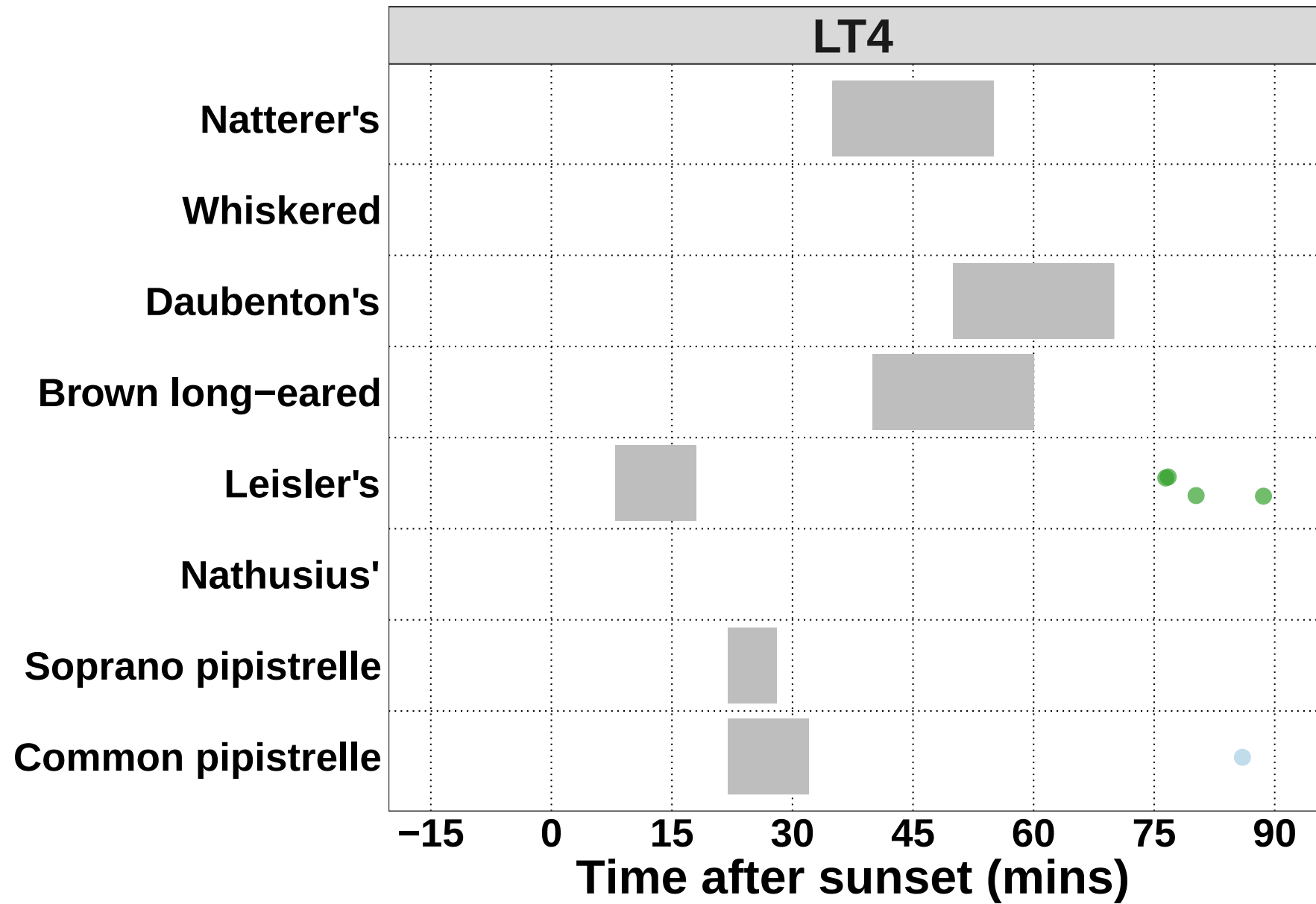


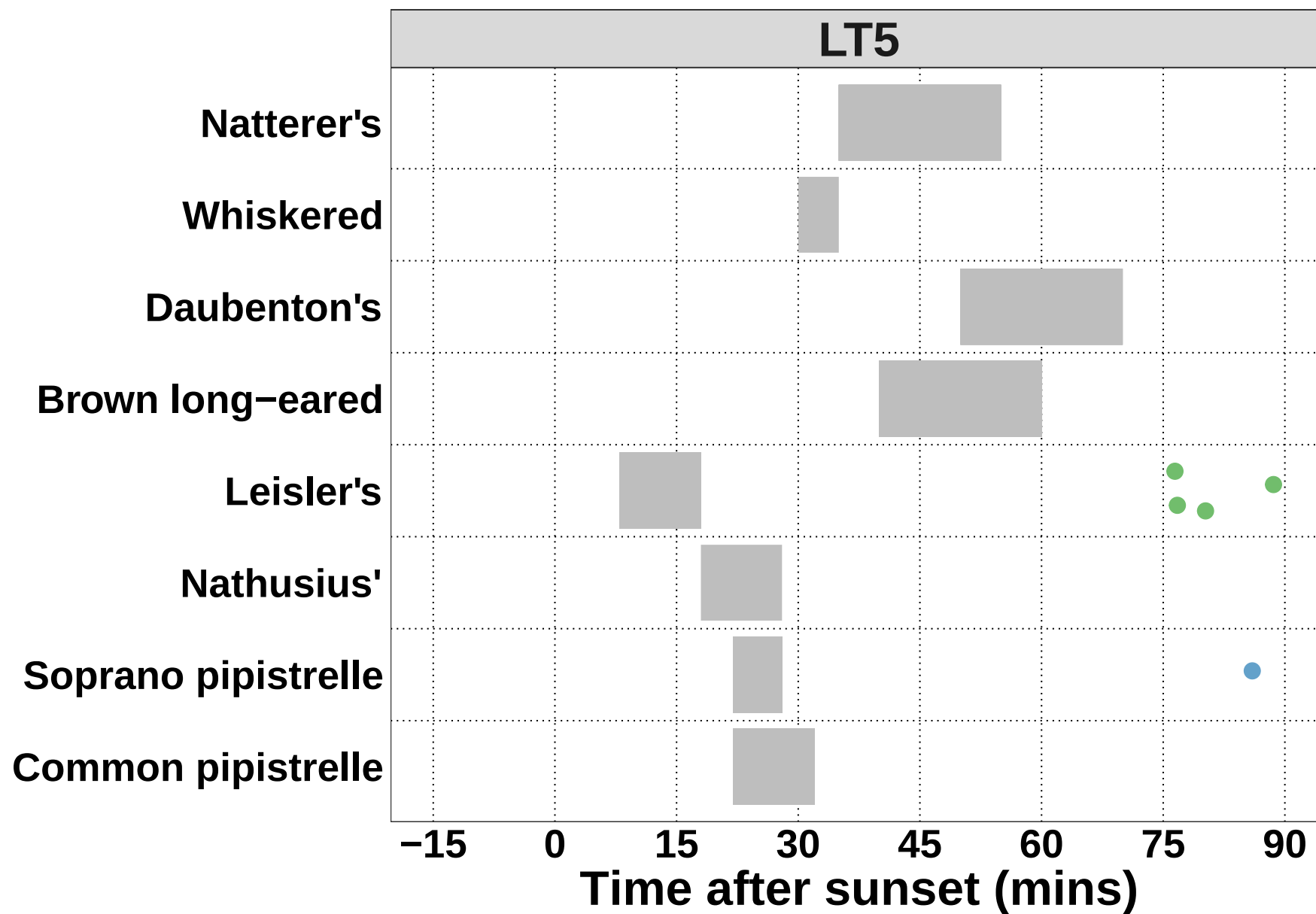


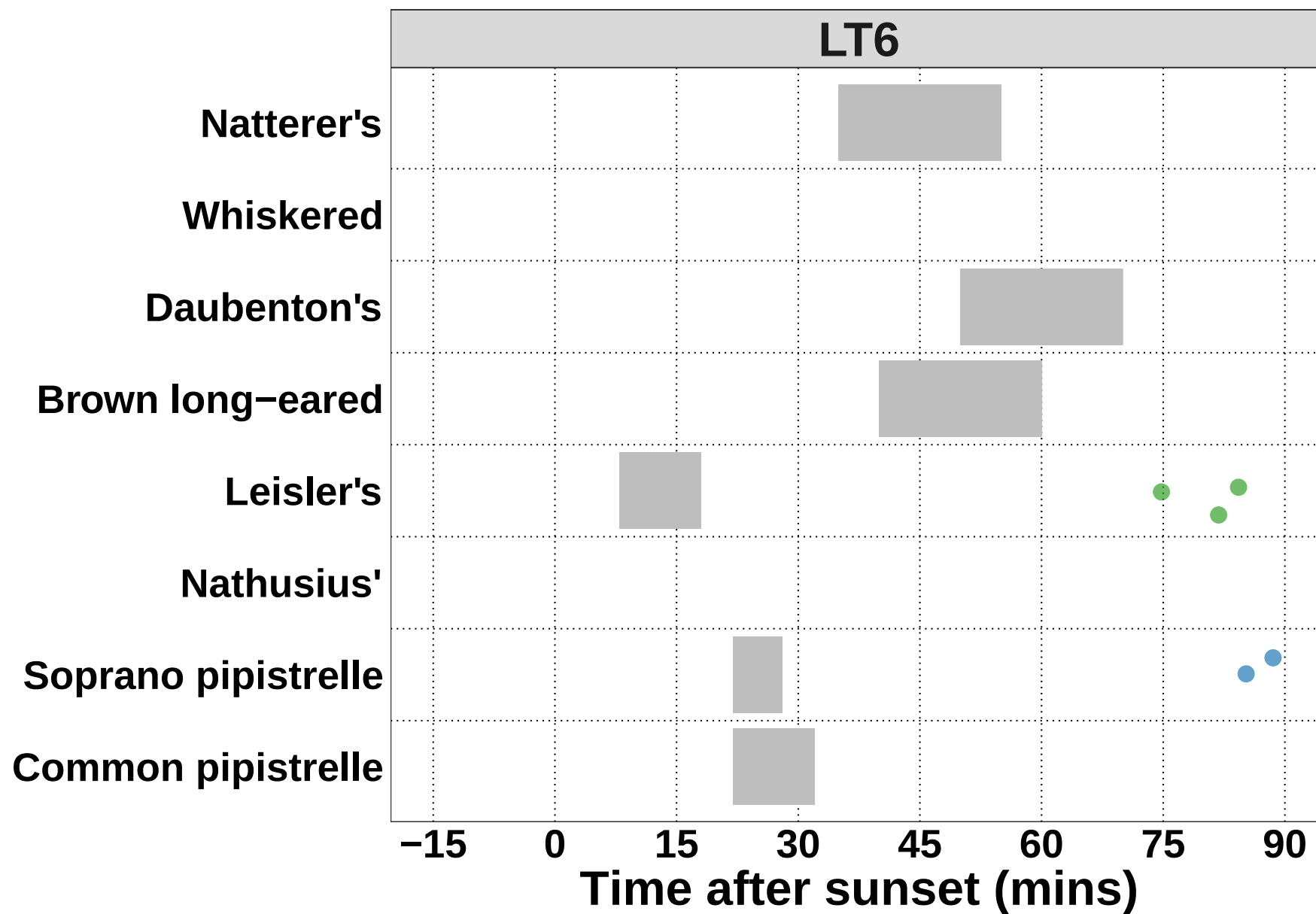


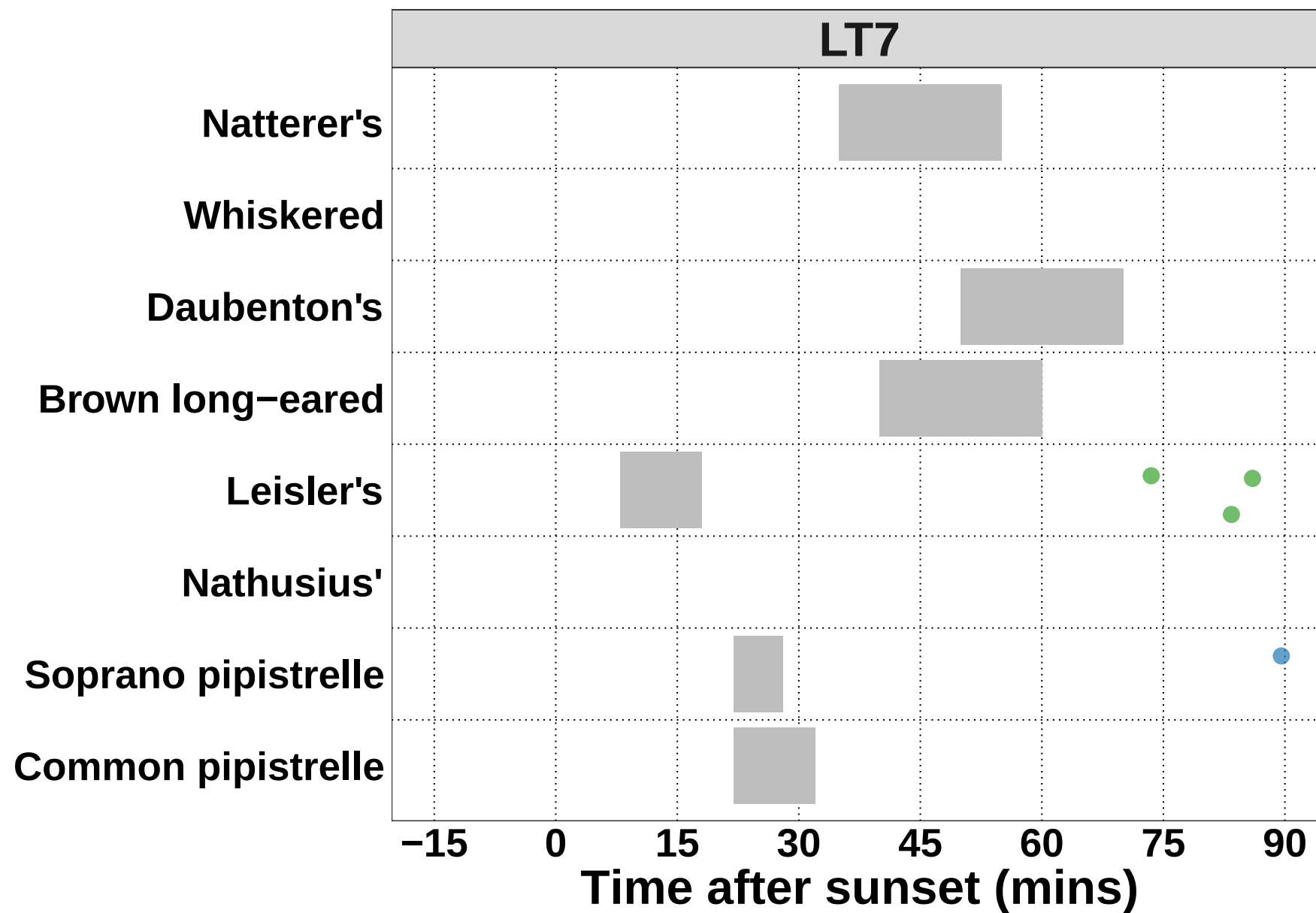


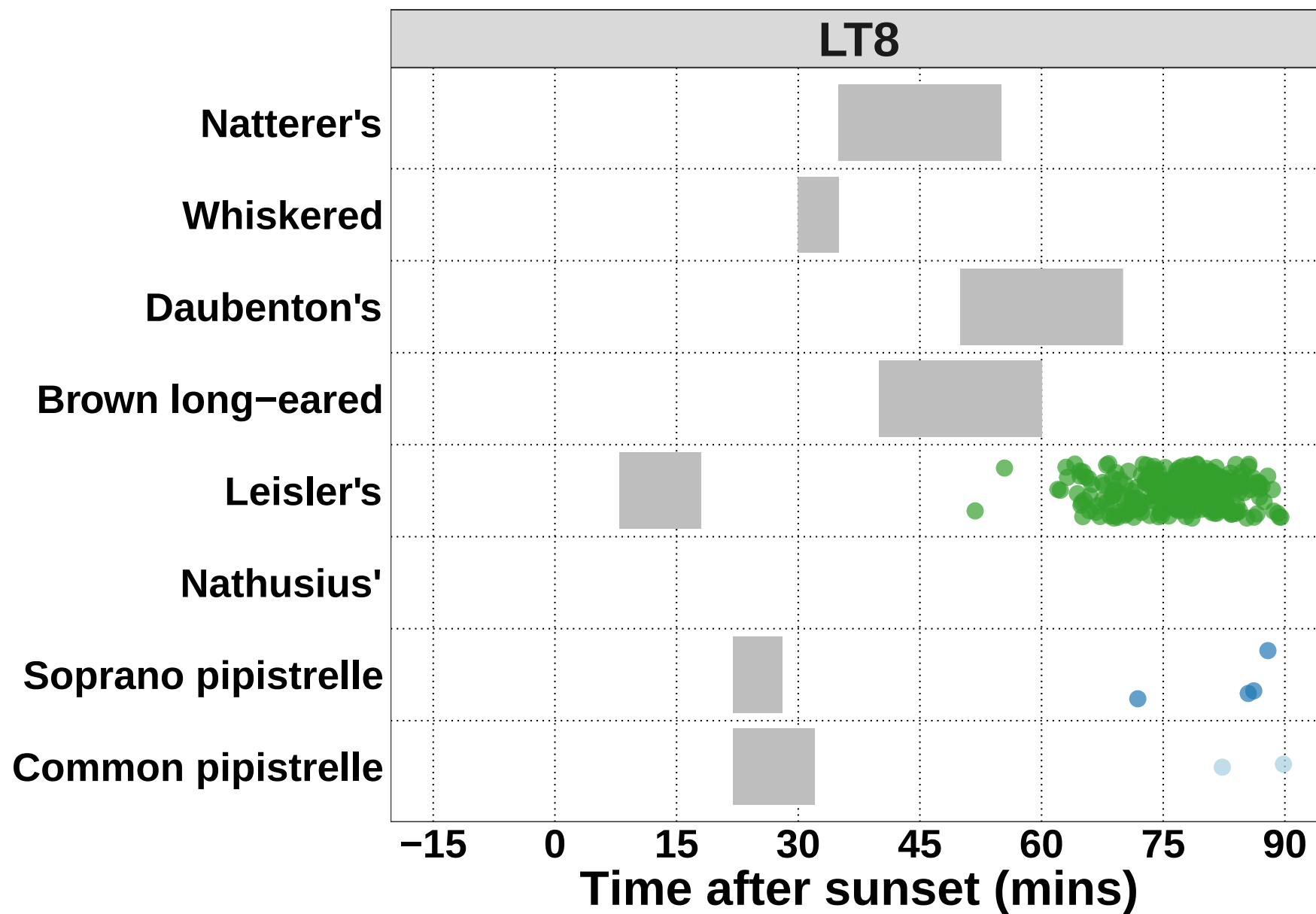


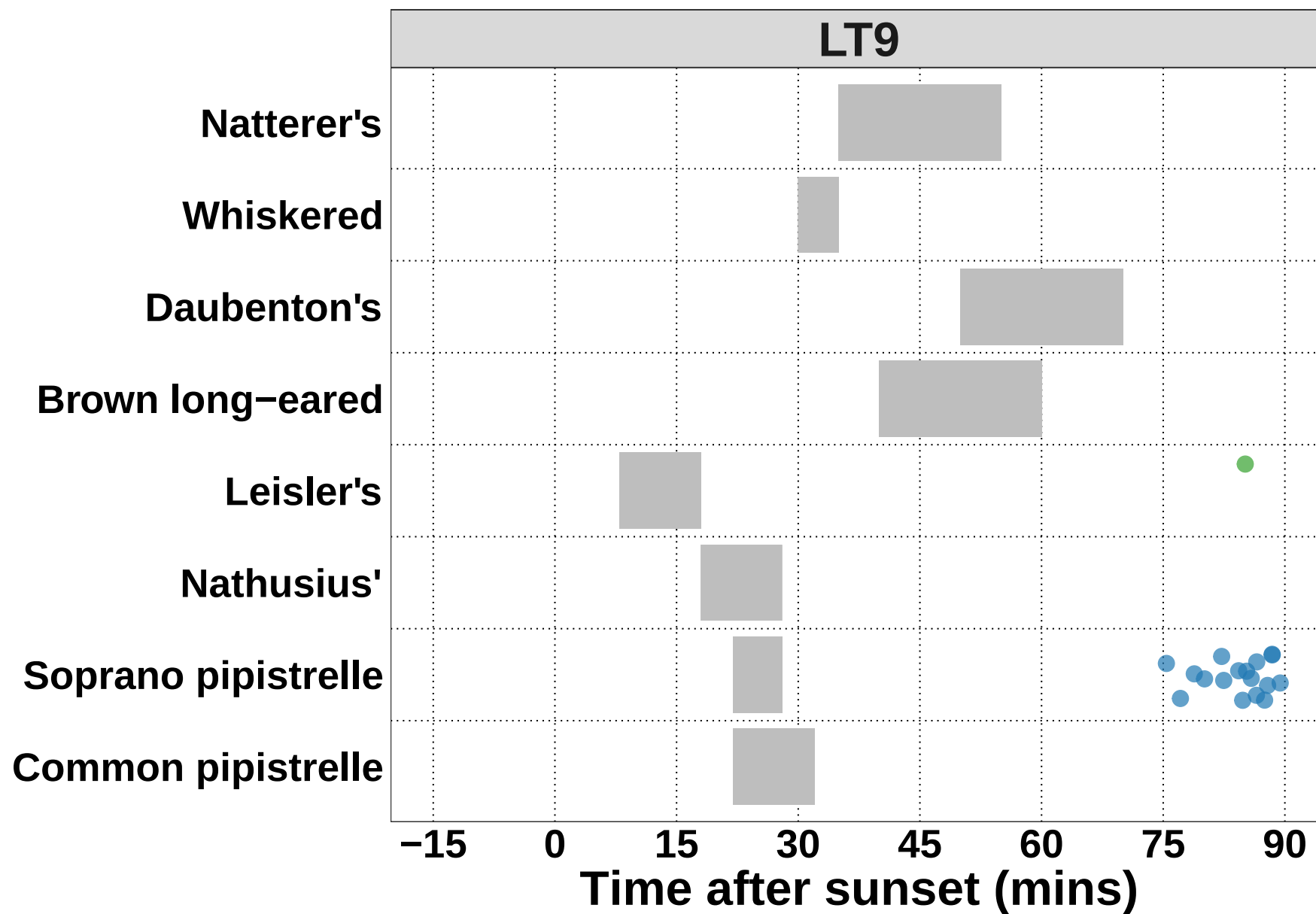












Count of Bat Passes

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 daubentonii	398	6.1
Myotis mystacinus	32	0.5
Myotis nattereri	249	3.8
Nyctalus leisleri	1854	28.2
Pipistrellus nathusii	7	0.1
Pipistrellus pipistrellus	879	13.4
Pipistrellus pygmaeus	2836	43.1
Plecotus auritus	319	4.9
Total	6574	100.1

Per Detector

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

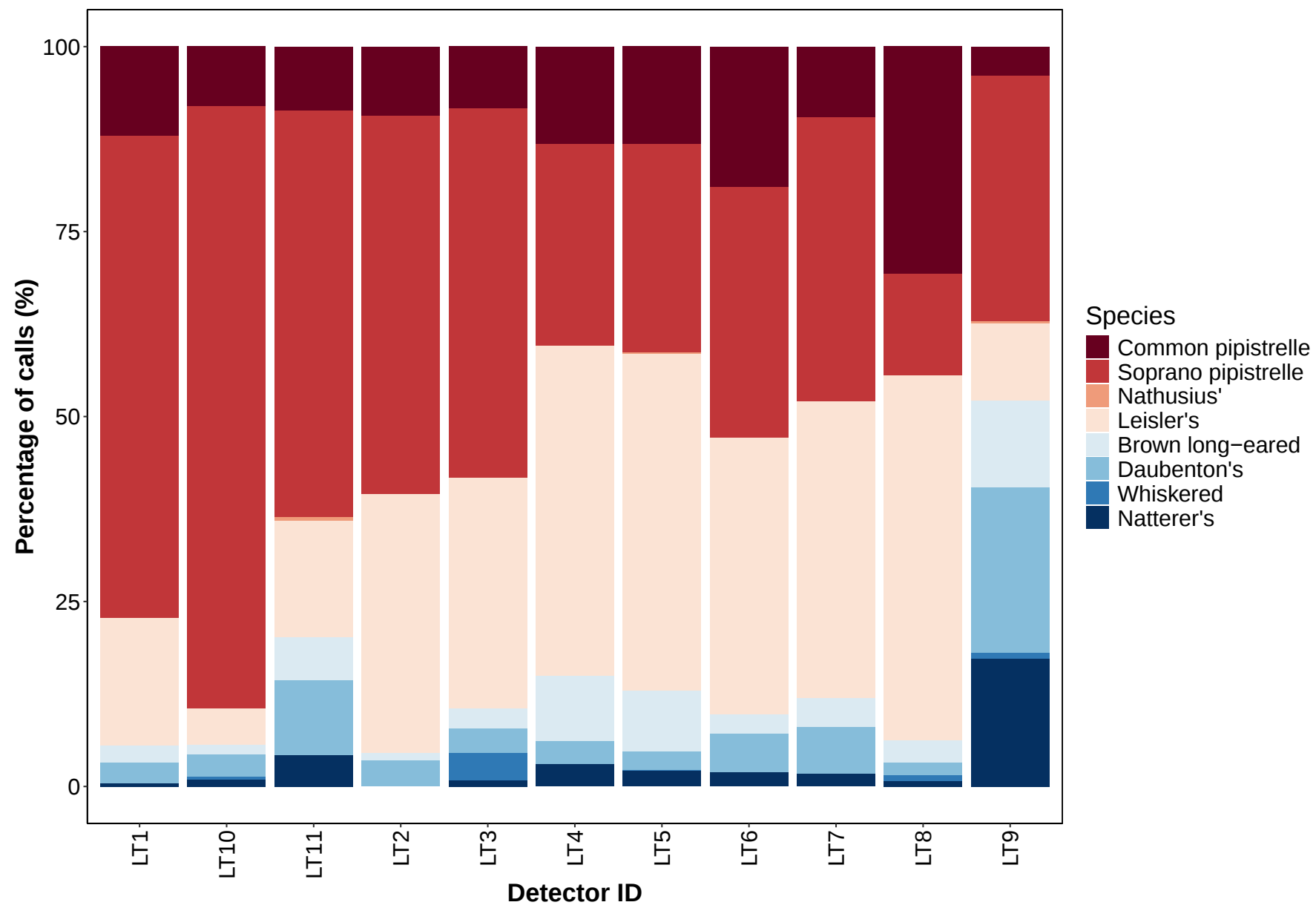
Species	Detector ID	Count (no.)	Percentage by Detector (%)
Common pipistrelle	LT1	106	12.3112660
Common pipistrelle	LT10	52	8.0620155
Common pipistrelle	LT11	38	9.7435897
Common pipistrelle	LT2	48	9.7759674
Common pipistrelle	LT3	28	8.2111437
Common pipistrelle	LT4	66	14.1630901
Common pipistrelle	LT5	64	13.7044968
Common pipistrelle	LT6	77	18.0327869
Common pipistrelle	LT7	60	9.8522167
Common pipistrelle	LT8	306	31.0030395
Common pipistrelle	LT9	34	3.8202247
Soprano pipistrelle	LT1	555	64.4599303
Soprano pipistrelle	LT10	527	81.7054264
Soprano pipistrelle	LT11	212	54.3589744
Soprano pipistrelle	LT2	242	49.2871690
Soprano pipistrelle	LT3	166	48.6803519
Soprano pipistrelle	LT4	126	27.0386266
Soprano pipistrelle	LT5	129	27.6231263
Soprano pipistrelle	LT6	153	35.8313817
Soprano pipistrelle	LT7	250	41.0509031
Soprano pipistrelle	LT8	150	15.1975684
Soprano pipistrelle	LT9	326	36.6292135
Nathusius'	LT11	2	0.5128205
Nathusius'	LT5	1	0.2141328
Nathusius'	LT9	4	0.4494382
Leisler's	LT1	149	17.3054588
Leisler's	LT10	27	4.1860465
Leisler's	LT11	73	18.7179487
Leisler's	LT2	176	35.8452138
Leisler's	LT3	114	33.4310850
Leisler's	LT4	207	44.4206009
Leisler's	LT5	208	44.5396146

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Leisler's	LT6	148	34.6604215
Leisler's	LT7	226	37.1100164
Leisler's	LT8	450	45.5927052
Leisler's	LT9	76	8.5393258
Brown long-eared	LT1	23	2.6713124
Brown long-eared	LT10	10	1.5503876
Brown long-eared	LT11	19	4.8717949
Brown long-eared	LT2	5	1.0183299
Brown long-eared	LT3	9	2.6392962
Brown long-eared	LT4	35	7.5107296
Brown long-eared	LT5	42	8.9935760
Brown long-eared	LT6	14	3.2786885
Brown long-eared	LT7	24	3.9408867
Brown long-eared	LT8	38	3.8500507
Brown long-eared	LT9	100	11.2359551
Daubenton's	LT1	23	2.6713124
Daubenton's	LT10	20	3.1007752
Daubenton's	LT11	30	7.6923077
Daubenton's	LT2	20	4.0733198
Daubenton's	LT3	11	3.2258065
Daubenton's	LT4	17	3.6480687
Daubenton's	LT5	12	2.5695931
Daubenton's	LT6	25	5.8548009
Daubenton's	LT7	39	6.4039409
Daubenton's	LT8	20	2.0263425
Daubenton's	LT9	181	20.3370787
Whiskered	LT10	3	0.4651163
Whiskered	LT3	9	2.6392962
Whiskered	LT5	1	0.2141328
Whiskered	LT8	10	1.0131712
Whiskered	LT9	9	1.0112360
Natterer's	LT1	5	0.5807201
Natterer's	LT10	6	0.9302326
Natterer's	LT11	16	4.1025641
Natterer's	LT3	4	1.1730205
Natterer's	LT4	15	3.2188841

Species	Detector ID	Count (no.)	Percentage by Detector (%)
Natterer's	LT5	10	2.1413276
Natterer's	LT6	10	2.3419204
Natterer's	LT7	10	1.6420361
Natterer's	LT8	13	1.3171226
Natterer's	LT9	160	17.9775281

Species Composition

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



Part 2a: Presence Only

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

Nightly Bat 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
Common pipistrelle	LT1	0.7
Common pipistrelle	LT10	0.1
Common pipistrelle	LT11	0.3
Common pipistrelle	LT2	0.3
Common pipistrelle	LT3	0.2
Common pipistrelle	LT4	0.5
Common pipistrelle	LT5	0.5
Common pipistrelle	LT6	0.5
Common pipistrelle	LT7	0.3
Common pipistrelle	LT8	1.0
Common pipistrelle	LT9	0.2
Soprano pipistrelle	LT1	3.5
Soprano pipistrelle	LT10	1.8
Soprano pipistrelle	LT11	1.2
Soprano pipistrelle	LT2	1.6
Soprano pipistrelle	LT3	0.7
Soprano pipistrelle	LT4	0.6
Soprano pipistrelle	LT5	0.6
Soprano pipistrelle	LT6	0.8
Soprano pipistrelle	LT7	1.1
Soprano pipistrelle	LT8	0.7
Soprano pipistrelle	LT9	1.3
Nathusius'	LT11	0.1
Nathusius'	LT5	0.1
Nathusius'	LT9	0.1
Leisler's	LT1	0.7
Leisler's	LT10	0.2
Leisler's	LT11	0.4
Leisler's	LT2	1.0
Leisler's	LT3	0.6
Leisler's	LT4	0.8
Leisler's	LT5	0.8
Leisler's	LT6	0.8
Leisler's	LT7	1.1
Leisler's	LT8	2.0
Leisler's	LT9	0.6

Species	Detector ID	Median Pass Rate
Brown long-eared	LT1	0.2
Brown long-eared	LT10	0.1
Brown long-eared	LT11	0.1
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.1
Brown long-eared	LT4	0.3
Brown long-eared	LT5	0.3
Brown long-eared	LT6	0.1
Brown long-eared	LT7	0.1
Brown long-eared	LT8	0.3
Brown long-eared	LT9	0.7
Daubenton's	LT1	0.2
Daubenton's	LT10	0.2
Daubenton's	LT11	0.2
Daubenton's	LT2	0.2
Daubenton's	LT3	0.1
Daubenton's	LT4	0.1
Daubenton's	LT5	0.1
Daubenton's	LT6	0.2
Daubenton's	LT7	0.2
Daubenton's	LT8	0.1
Daubenton's	LT9	1.1
Whiskered	LT10	0.1
Whiskered	LT3	0.1
Whiskered	LT5	0.1
Whiskered	LT8	0.1
Whiskered	LT9	0.1
Natterer's	LT1	0.1
Natterer's	LT10	0.1
Natterer's	LT11	0.1
Natterer's	LT3	0.1
Natterer's	LT4	0.1
Natterer's	LT5	0.2
Natterer's	LT6	0.1
Natterer's	LT7	0.1
Natterer's	LT8	0.1

Species	Detector ID	Median Pass Rate
Natterer's	LT9	1.1

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.

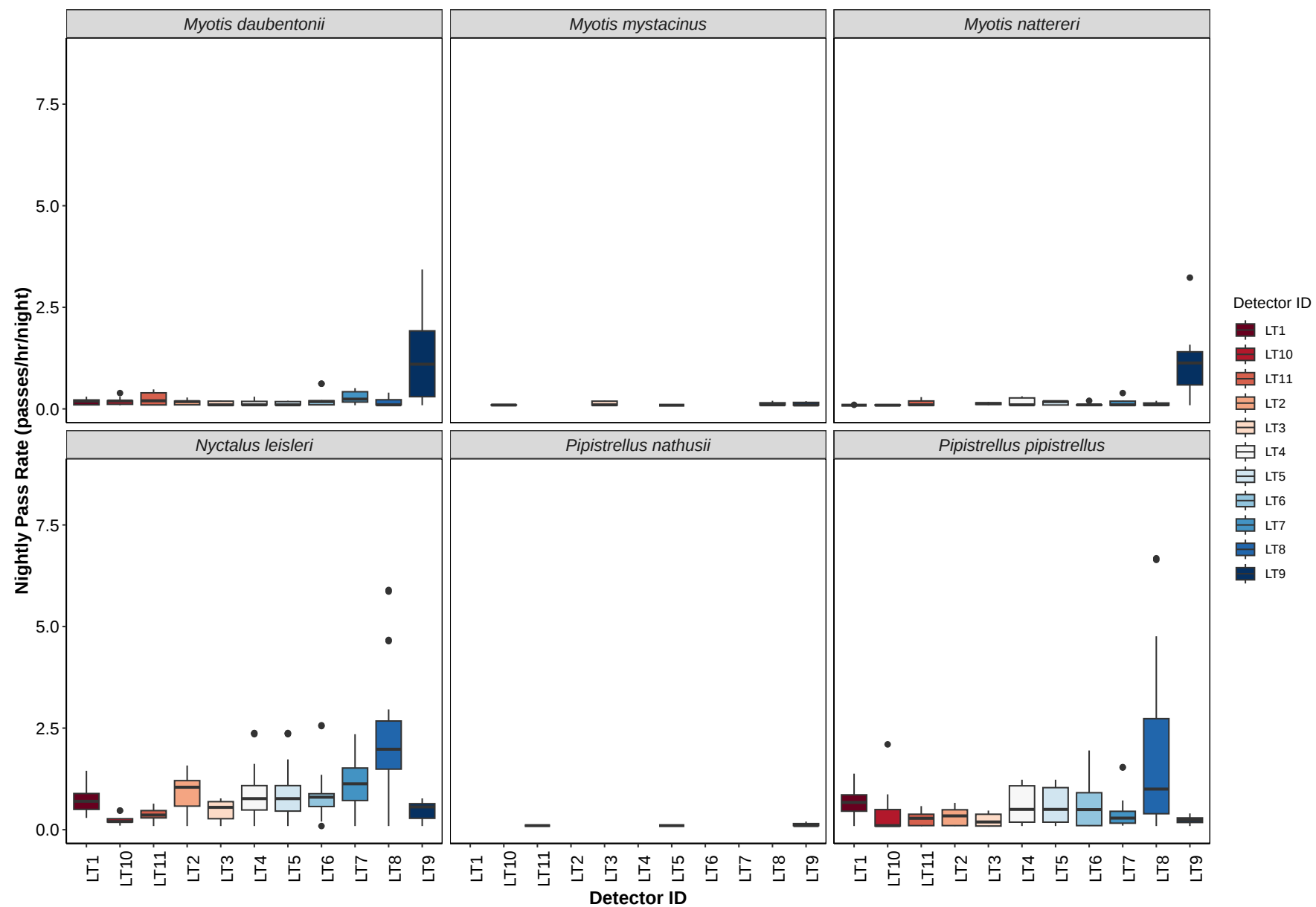
Species	Detector ID	Mean Pass Rate
Common pipistrelle	LT1	0.7
Common pipistrelle	LT10	0.4
Common pipistrelle	LT11	0.3
Common pipistrelle	LT2	0.3
Common pipistrelle	LT3	0.2
Common pipistrelle	LT4	0.6
Common pipistrelle	LT5	0.6
Common pipistrelle	LT6	0.6
Common pipistrelle	LT7	0.4
Common pipistrelle	LT8	1.9
Common pipistrelle	LT9	0.2
Soprano pipistrelle	LT1	3.4
Soprano pipistrelle	LT10	2.9
Soprano pipistrelle	LT11	1.2
Soprano pipistrelle	LT2	1.4
Soprano pipistrelle	LT3	0.9
Soprano pipistrelle	LT4	0.7
Soprano pipistrelle	LT5	0.7
Soprano pipistrelle	LT6	0.9
Soprano pipistrelle	LT7	1.2
Soprano pipistrelle	LT8	0.8
Soprano pipistrelle	LT9	1.7
Nathusius'	LT11	0.1
Nathusius'	LT5	0.1
Nathusius'	LT9	0.1
Leisler's	LT1	0.7
Leisler's	LT10	0.2
Leisler's	LT11	0.4
Leisler's	LT2	0.9
Leisler's	LT3	0.5

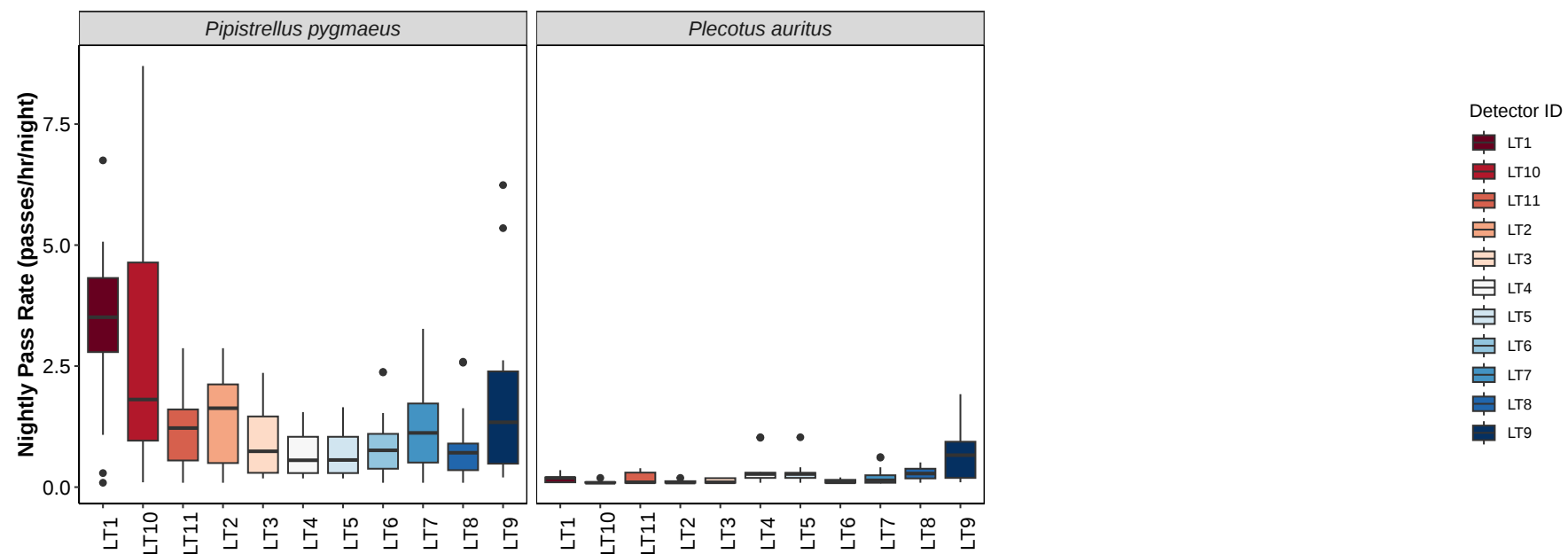
Species	Detector ID	Mean Pass Rate
Leisler's	LT4	0.9
Leisler's	LT5	0.9
Leisler's	LT6	0.8
Leisler's	LT7	1.2
Leisler's	LT8	2.2
Leisler's	LT9	0.5
Brown long-eared	LT1	0.2
Brown long-eared	LT10	0.1
Brown long-eared	LT11	0.2
Brown long-eared	LT2	0.1
Brown long-eared	LT3	0.1
Brown long-eared	LT4	0.3
Brown long-eared	LT5	0.3
Brown long-eared	LT6	0.1
Brown long-eared	LT7	0.2
Brown long-eared	LT8	0.3
Brown long-eared	LT9	0.7
Daubenton's	LT1	0.2
Daubenton's	LT10	0.2
Daubenton's	LT11	0.3
Daubenton's	LT2	0.2
Daubenton's	LT3	0.1
Daubenton's	LT4	0.1
Daubenton's	LT5	0.1
Daubenton's	LT6	0.2
Daubenton's	LT7	0.3
Daubenton's	LT8	0.2
Daubenton's	LT9	1.3
Whiskered	LT10	0.1
Whiskered	LT3	0.1
Whiskered	LT5	0.1
Whiskered	LT8	0.1
Whiskered	LT9	0.1
Natterer's	LT1	0.1
Natterer's	LT10	0.1
Natterer's	LT11	0.2

Species	Detector ID	Mean Pass Rate
Natterer's	LT3	0.1
Natterer's	LT4	0.2
Natterer's	LT5	0.1
Natterer's	LT6	0.1
Natterer's	LT7	0.2
Natterer's	LT8	0.1
Natterer's	LT9	1.1

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.





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	Aug	Sep
Common pipistrelle	LT1	56	81
Common pipistrelle	LT10	13	39
Common pipistrelle	LT11	7	30
Common pipistrelle	LT2	15	33
Common pipistrelle	LT3	11	19
Common pipistrelle	LT4	54	17
Common pipistrelle	LT5	54	16
Common pipistrelle	LT6	85	16
Common pipistrelle	LT7	57	12
Common pipistrelle	LT8	250	128
Common pipistrelle	LT9	16	24
Soprano pipistrelle	LT1	239	502
Soprano pipistrelle	LT10	113	415
Soprano pipistrelle	LT11	120	114
Soprano pipistrelle	LT2	110	152
Soprano pipistrelle	LT3	73	107
Soprano pipistrelle	LT4	84	62
Soprano pipistrelle	LT5	86	64
Soprano pipistrelle	LT6	123	58
Soprano pipistrelle	LT7	168	108
Soprano pipistrelle	LT8	115	55
Soprano pipistrelle	LT9	79	261
Nathusius'	LT11	2	0
Nathusius'	LT5	1	0
Nathusius'	LT9	4	0
Leisler's	LT1	67	128
Leisler's	LT10	10	22
Leisler's	LT11	16	51
Leisler's	LT2	56	124
Leisler's	LT3	28	84
Leisler's	LT4	127	113
Leisler's	LT5	128	114
Leisler's	LT6	114	85
Leisler's	LT7	131	157
Leisler's	LT8	263	345
Leisler's	LT9	30	76

Species	Detector ID	Aug	Sep
Brown long-eared	LT1	10	17
Brown long-eared	LT10	1	7
Brown long-eared	LT11	9	16
Brown long-eared	LT2	1	4
Brown long-eared	LT3	1	9
Brown long-eared	LT4	30	17
Brown long-eared	LT5	25	19
Brown long-eared	LT6	9	5
Brown long-eared	LT7	17	11
Brown long-eared	LT8	20	16
Brown long-eared	LT9	3	118
Daubenton's	LT1	13	18
Daubenton's	LT10	9	11
Daubenton's	LT11	6	37
Daubenton's	LT2	5	13
Daubenton's	LT3	5	7
Daubenton's	LT4	11	6
Daubenton's	LT5	7	6
Daubenton's	LT6	20	8
Daubenton's	LT7	27	19
Daubenton's	LT8	18	4
Daubenton's	LT9	27	202
Whiskered	LT10	1	1
Whiskered	LT3	5	8
Whiskered	LT5	0	1
Whiskered	LT8	7	2
Whiskered	LT9	1	7
Natterer's	LT1	1	4
Natterer's	LT10	1	5
Natterer's	LT11	3	15
Natterer's	LT3	0	3
Natterer's	LT4	5	11
Natterer's	LT5	2	9
Natterer's	LT6	4	6
Natterer's	LT7	5	7
Natterer's	LT8	4	5

Species	Detector ID	Aug	Sep
Natterer's	LT9	40	137

Survey Effort

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

month	Detector ID	No. of Survey Nights
Aug	LT1	8
Aug	LT10	7
Aug	LT11	7
Aug	LT2	7
Aug	LT3	7
Aug	LT4	11
Aug	LT5	11
Aug	LT6	10
Aug	LT7	11
Aug	LT8	11
Aug	LT9	7
Sep	LT1	17
Sep	LT10	13
Sep	LT11	15
Sep	LT2	13
Sep	LT3	15
Sep	LT4	15
Sep	LT5	15
Sep	LT6	13
Sep	LT7	13
Sep	LT8	15
Sep	LT9	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	Aug	Sep
Common pipistrelle	LT1	0.6	0.7
Common pipistrelle	LT10	0.5	0.1
Common pipistrelle	LT11	0.1	0.4
Common pipistrelle	LT2	0.4	0.3
Common pipistrelle	LT3	0.2	0.1
Common pipistrelle	LT4	1.0	0.2
Common pipistrelle	LT5	1.0	0.2
Common pipistrelle	LT6	0.9	0.1
Common pipistrelle	LT7	0.4	0.2
Common pipistrelle	LT8	1.2	0.5
Common pipistrelle	LT9	0.4	0.2
Soprano pipistrelle	LT1	3.6	3.2
Soprano pipistrelle	LT10	1.7	2.7
Soprano pipistrelle	LT11	1.6	0.9
Soprano pipistrelle	LT2	2.2	1.6
Soprano pipistrelle	LT3	0.9	0.7
Soprano pipistrelle	LT4	1.0	0.6
Soprano pipistrelle	LT5	1.0	0.6
Soprano pipistrelle	LT6	1.3	0.5
Soprano pipistrelle	LT7	1.2	0.9
Soprano pipistrelle	LT8	0.9	0.6
Soprano pipistrelle	LT9	0.8	1.6
Nathusius'	LT11	0.1	NA
Nathusius'	LT5	0.1	NA
Nathusius'	LT9	0.1	NA
Leisler's	LT1	0.8	0.7
Leisler's	LT10	0.2	0.3
Leisler's	LT11	0.4	0.3
Leisler's	LT2	1.2	1.0
Leisler's	LT3	0.5	0.6
Leisler's	LT4	0.7	0.8
Leisler's	LT5	0.7	0.8
Leisler's	LT6	0.9	0.6
Leisler's	LT7	0.9	1.1
Leisler's	LT8	2.1	1.9
Leisler's	LT9	0.4	0.6

Species	Detector ID	Aug	Sep
Brown long-eared	LT1	0.2	0.2
Brown long-eared	LT10	0.1	0.1
Brown long-eared	LT11	0.2	0.1
Brown long-eared	LT2	0.1	0.1
Brown long-eared	LT3	0.1	0.1
Brown long-eared	LT4	0.3	0.3
Brown long-eared	LT5	0.3	0.2
Brown long-eared	LT6	0.2	0.1
Brown long-eared	LT7	0.5	0.1
Brown long-eared	LT8	0.3	0.2
Brown long-eared	LT9	0.2	0.8
Daubenton's	LT1	0.2	0.2
Daubenton's	LT10	0.2	0.1
Daubenton's	LT11	0.2	0.3
Daubenton's	LT2	0.1	0.2
Daubenton's	LT3	0.2	0.1
Daubenton's	LT4	0.1	0.1
Daubenton's	LT5	0.1	0.1
Daubenton's	LT6	0.2	0.1
Daubenton's	LT7	0.4	0.2
Daubenton's	LT8	0.2	0.1
Daubenton's	LT9	0.7	1.6
Whiskered	LT10	0.1	0.1
Whiskered	LT3	0.2	0.1
Whiskered	LT5	NA	0.1
Whiskered	LT8	0.1	0.1
Whiskered	LT9	0.1	0.1
Natterer's	LT1	0.1	0.1
Natterer's	LT10	0.1	0.1
Natterer's	LT11	0.2	0.1
Natterer's	LT3	NA	0.1
Natterer's	LT4	0.1	0.1
Natterer's	LT5	0.2	0.1
Natterer's	LT6	0.1	0.1
Natterer's	LT7	0.2	0.1
Natterer's	LT8	0.1	0.1

Species	Detector ID	Aug	Sep
Natterer's	LT9	1.1	1.1

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	Aug	Sep
Common pipistrelle	LT1	0.8	0.6
Common pipistrelle	LT10	0.4	0.4
Common pipistrelle	LT11	0.1	0.4
Common pipistrelle	LT2	0.3	0.3
Common pipistrelle	LT3	0.2	0.2
Common pipistrelle	LT4	0.9	0.3
Common pipistrelle	LT5	0.9	0.3
Common pipistrelle	LT6	1.0	0.2
Common pipistrelle	LT7	0.6	0.2
Common pipistrelle	LT8	2.6	1.2
Common pipistrelle	LT9	0.3	0.2
Soprano pipistrelle	LT1	3.0	3.6
Soprano pipistrelle	LT10	1.9	3.5
Soprano pipistrelle	LT11	1.7	0.9
Soprano pipistrelle	LT2	1.6	1.3
Soprano pipistrelle	LT3	1.0	0.8
Soprano pipistrelle	LT4	0.9	0.5
Soprano pipistrelle	LT5	1.0	0.5
Soprano pipistrelle	LT6	1.2	0.5
Soprano pipistrelle	LT7	1.6	0.9
Soprano pipistrelle	LT8	1.2	0.5
Soprano pipistrelle	LT9	1.1	2.0
Nathusius'	LT11	0.1	NA
Nathusius'	LT5	0.1	NA
Nathusius'	LT9	0.1	NA
Leisler's	LT1	0.8	0.7
Leisler's	LT10	0.2	0.3
Leisler's	LT11	0.4	0.4
Leisler's	LT2	1.1	0.9
Leisler's	LT3	0.5	0.5

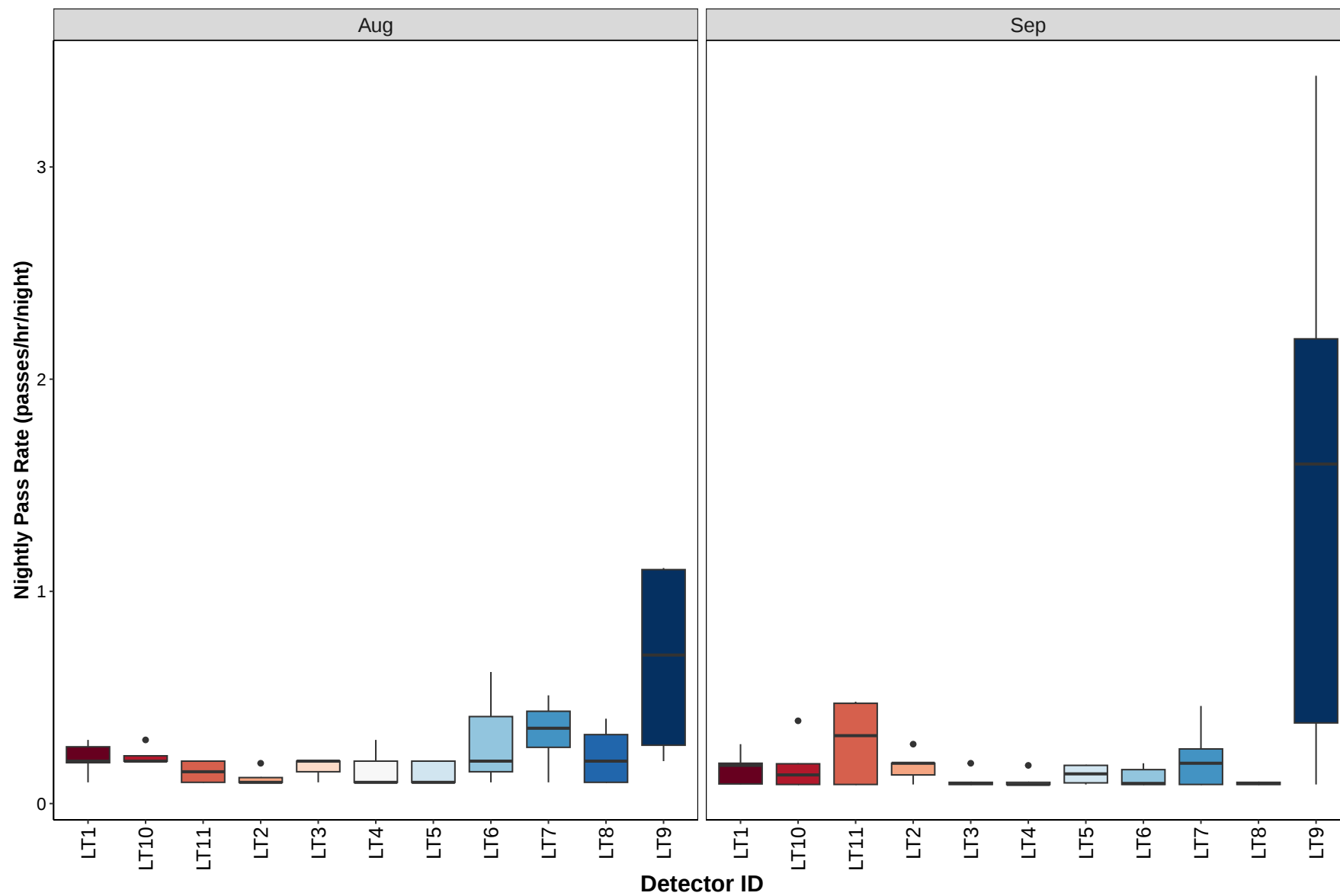
Species	Detector ID	Aug	Sep
Leisler's	LT4	1.2	0.7
Leisler's	LT5	1.2	0.7
Leisler's	LT6	1.2	0.6
Leisler's	LT7	1.2	1.1
Leisler's	LT8	2.4	2.1
Leisler's	LT9	0.4	0.5
Brown long-eared	LT1	0.2	0.2
Brown long-eared	LT10	0.1	0.1
Brown long-eared	LT11	0.2	0.2
Brown long-eared	LT2	0.1	0.1
Brown long-eared	LT3	0.1	0.1
Brown long-eared	LT4	0.4	0.2
Brown long-eared	LT5	0.4	0.2
Brown long-eared	LT6	0.2	0.1
Brown long-eared	LT7	0.4	0.1
Brown long-eared	LT8	0.3	0.2
Brown long-eared	LT9	0.2	0.8
Daubenton's	LT1	0.2	0.2
Daubenton's	LT10	0.2	0.2
Daubenton's	LT11	0.2	0.3
Daubenton's	LT2	0.1	0.2
Daubenton's	LT3	0.2	0.1
Daubenton's	LT4	0.2	0.1
Daubenton's	LT5	0.1	0.1
Daubenton's	LT6	0.3	0.1
Daubenton's	LT7	0.3	0.2
Daubenton's	LT8	0.2	0.1
Daubenton's	LT9	0.7	1.4
Whiskered	LT10	0.1	0.1
Whiskered	LT3	0.2	0.1
Whiskered	LT5	NA	0.1
Whiskered	LT8	0.1	0.1
Whiskered	LT9	0.1	0.1
Natterer's	LT1	0.1	0.1
Natterer's	LT10	0.1	0.1
Natterer's	LT11	0.2	0.2

Species	Detector ID	Aug	Sep
Natterer's	LT3	NA	0.1
Natterer's	LT4	0.2	0.2
Natterer's	LT5	0.2	0.1
Natterer's	LT6	0.1	0.1
Natterer's	LT7	0.2	0.1
Natterer's	LT8	0.1	0.1
Natterer's	LT9	1.0	1.1

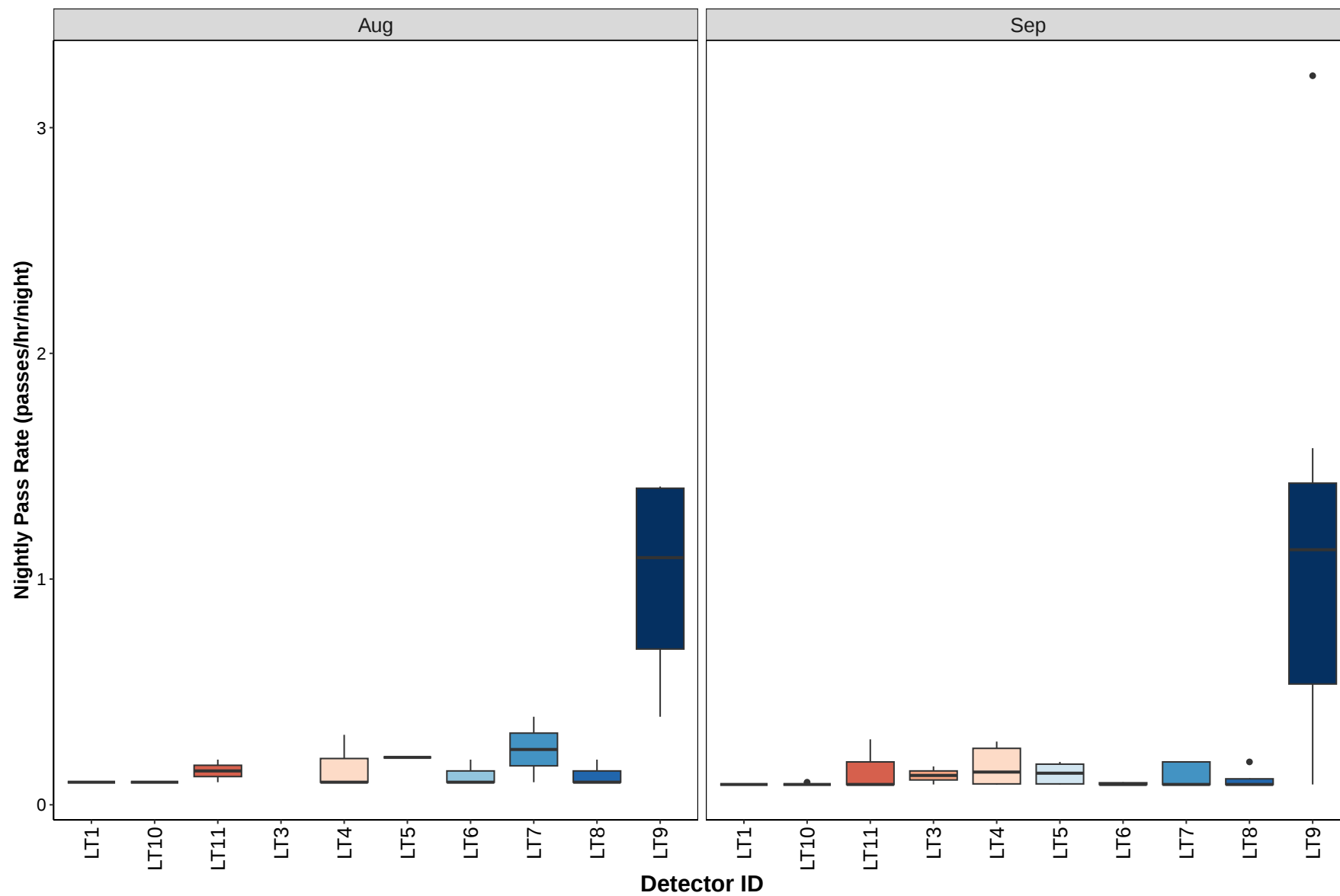
Per Detector

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.

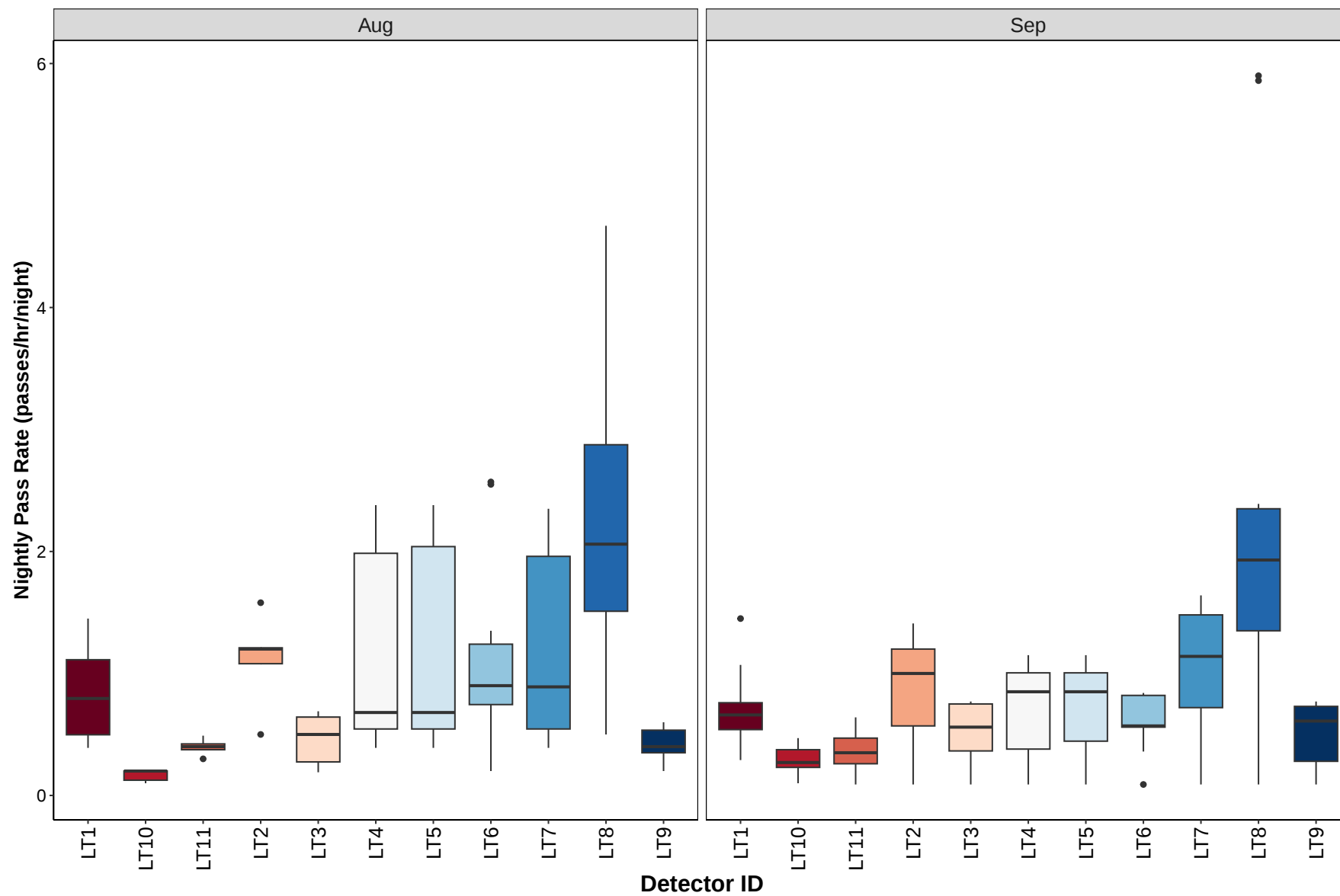
Daubenton's



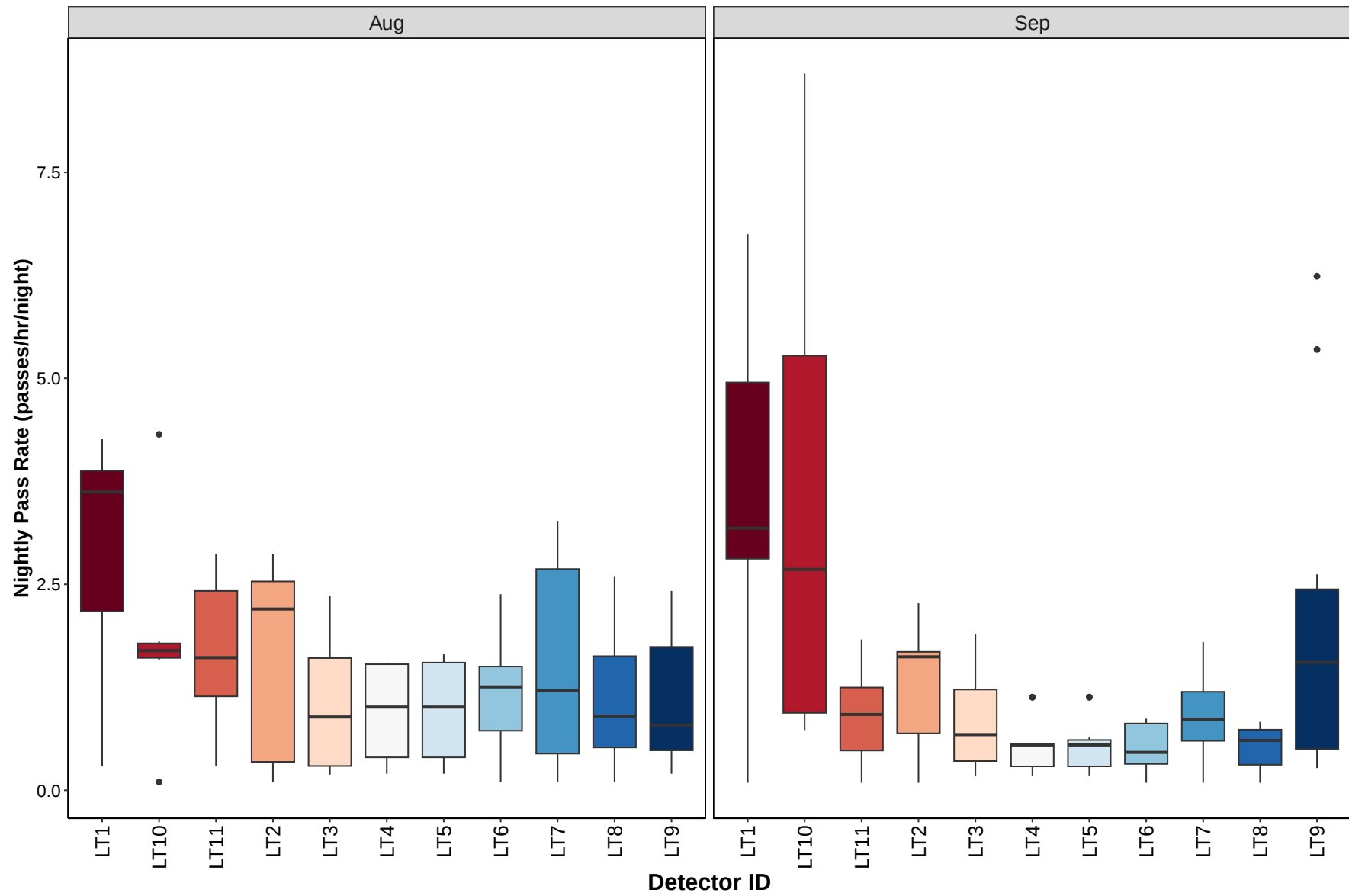
Natterer's



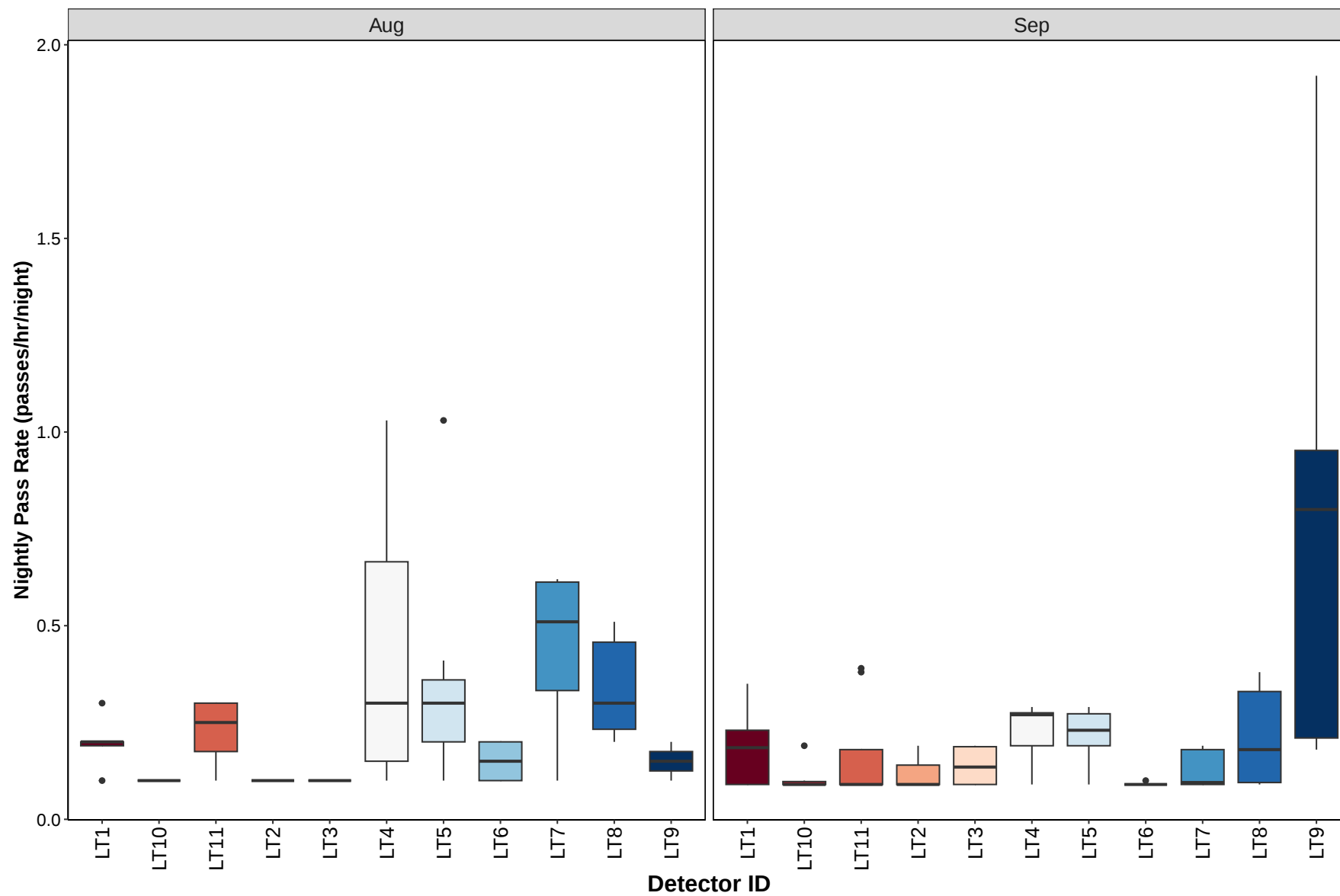
Leisler's



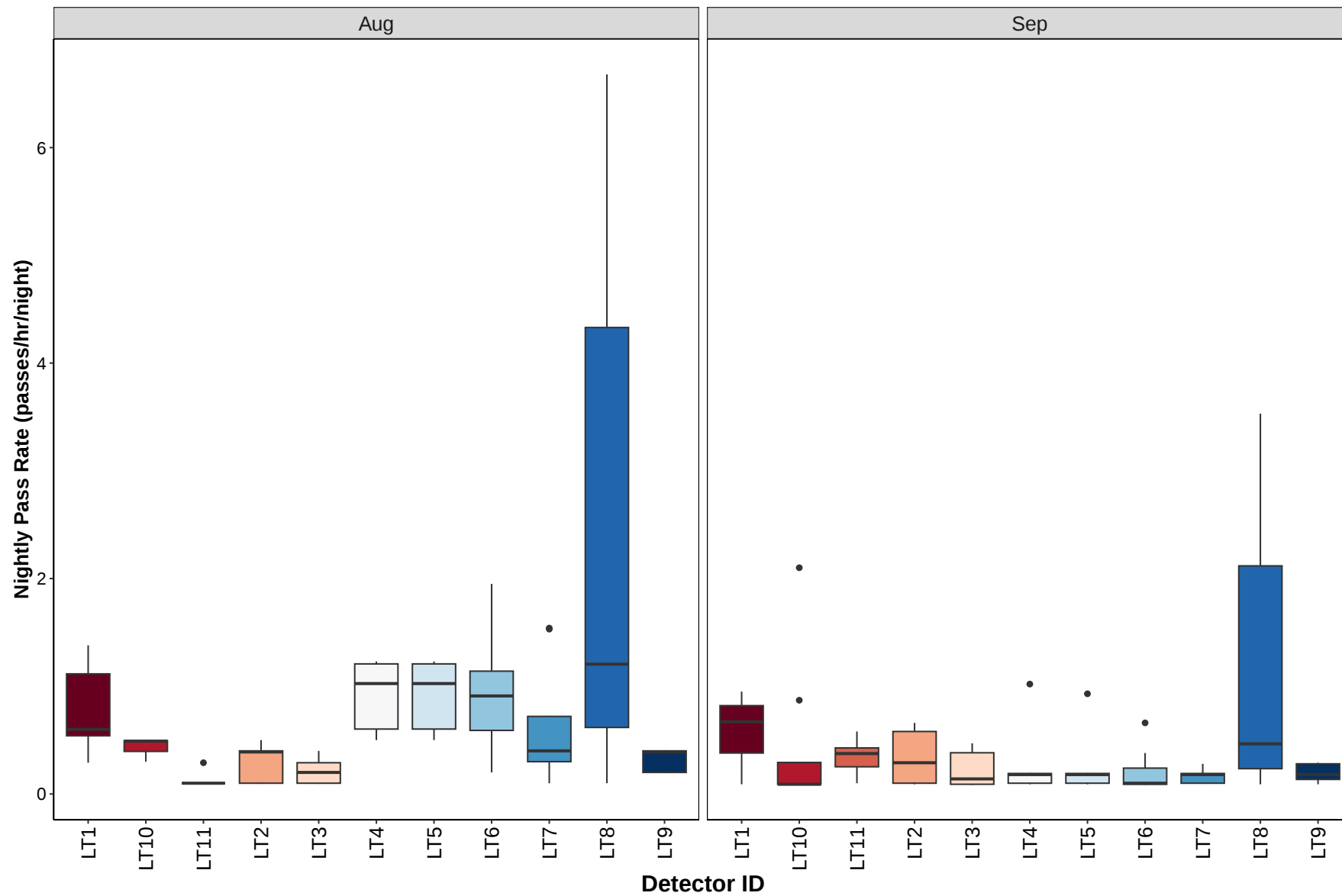
Soprano pipistrelle



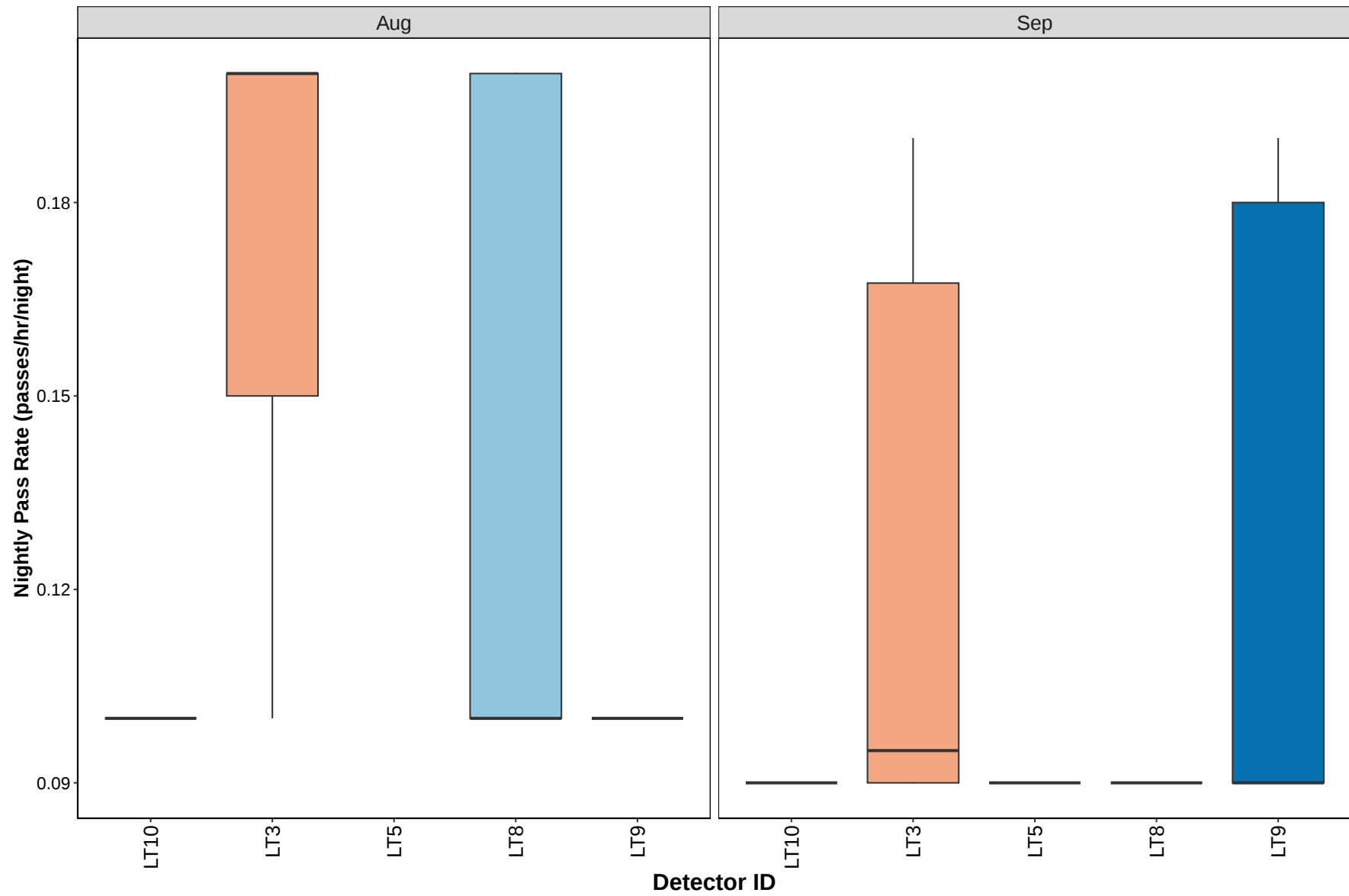
Brown long-eared

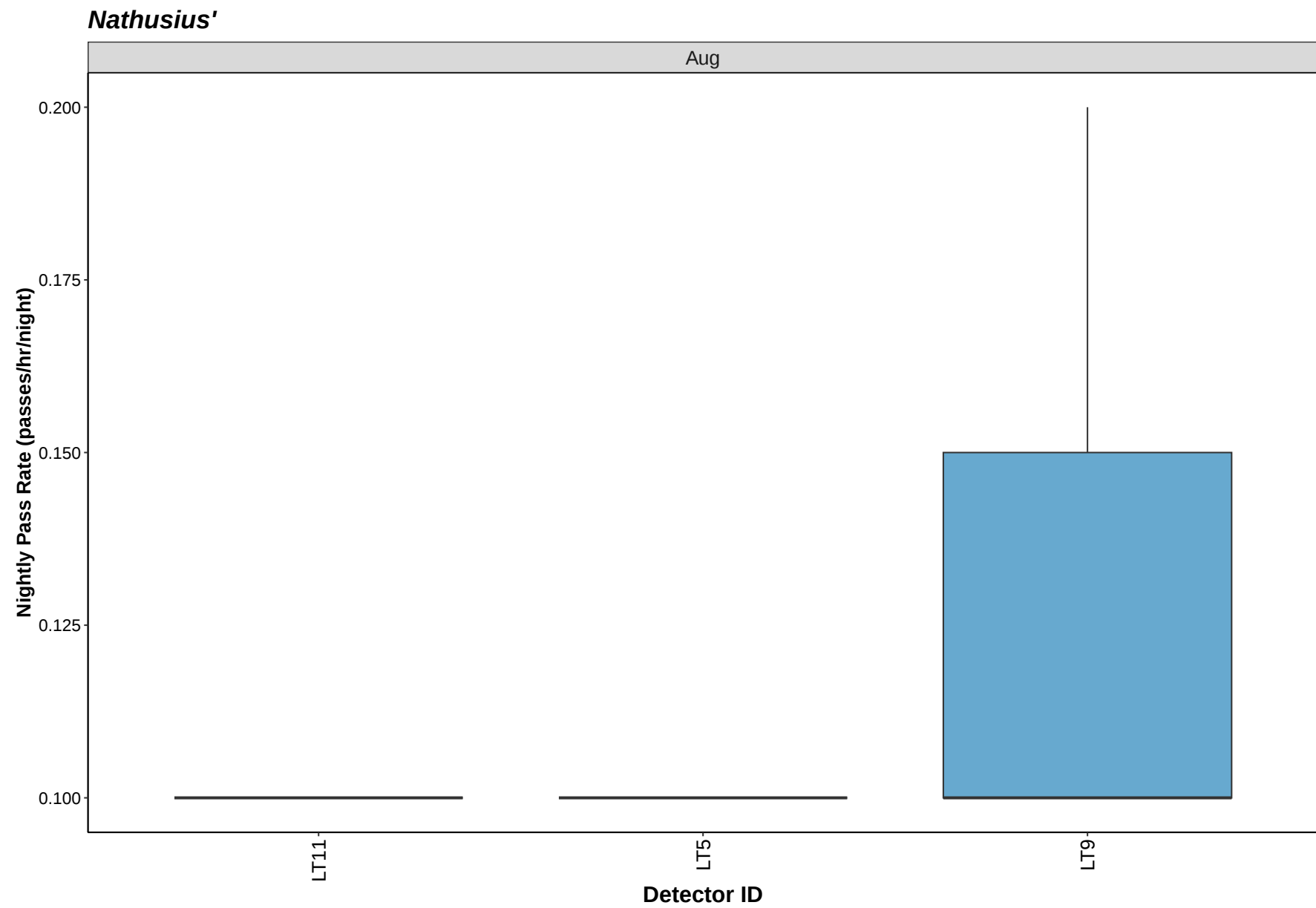


Common pipistrelle



Whiskered





Bat Activity per Detector Location

Figure 13. Detector ID reference:

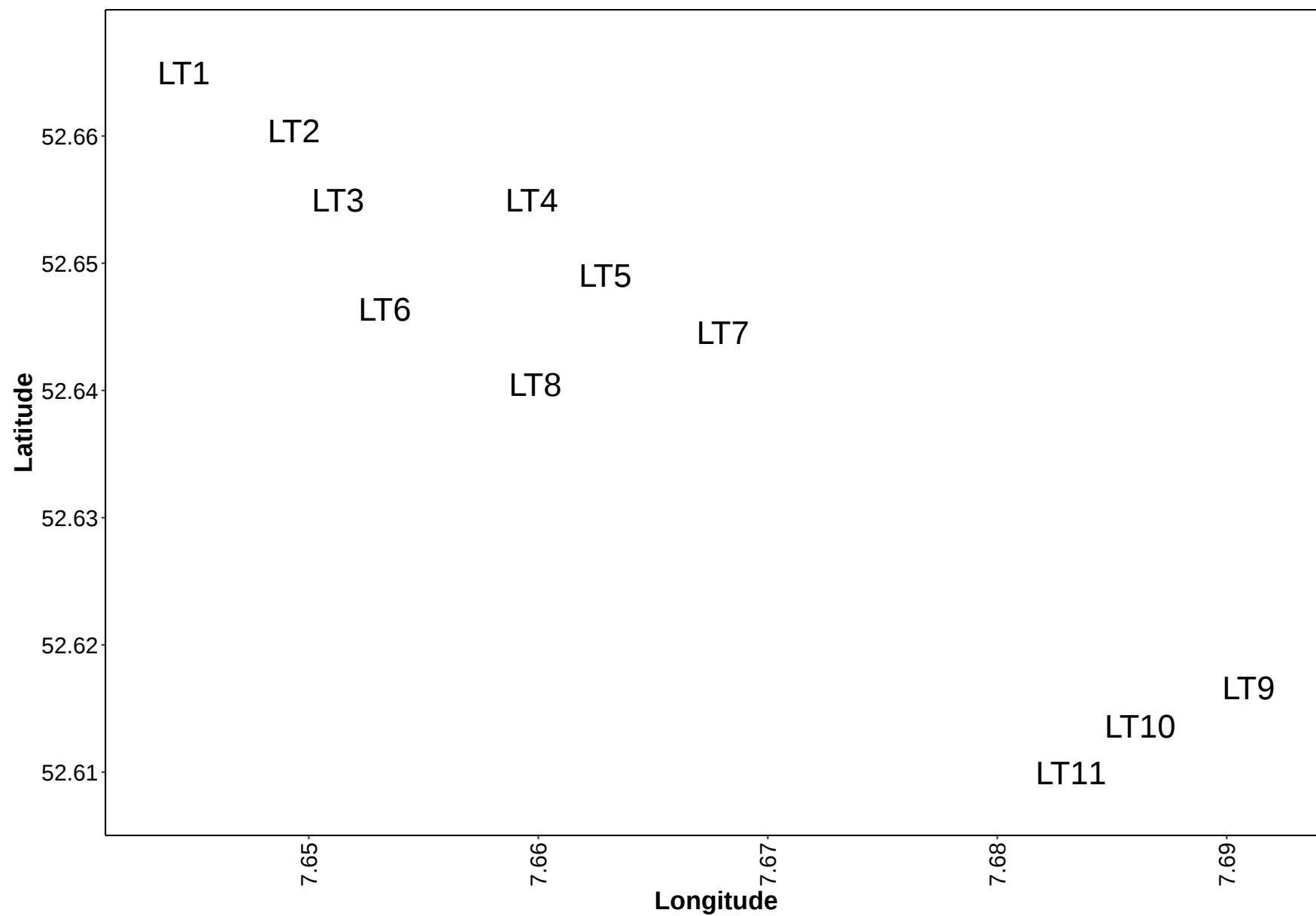
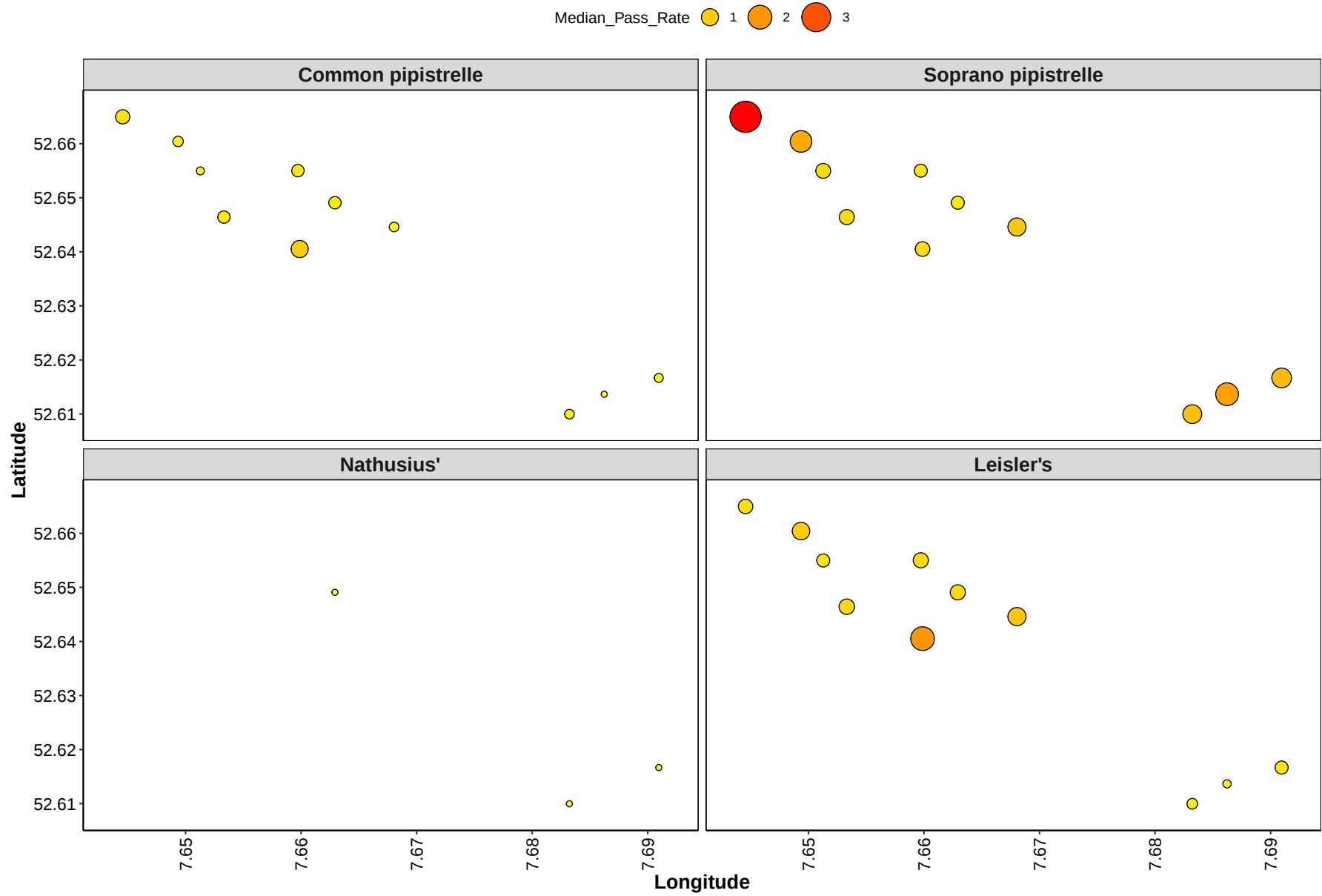


Figure 14. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



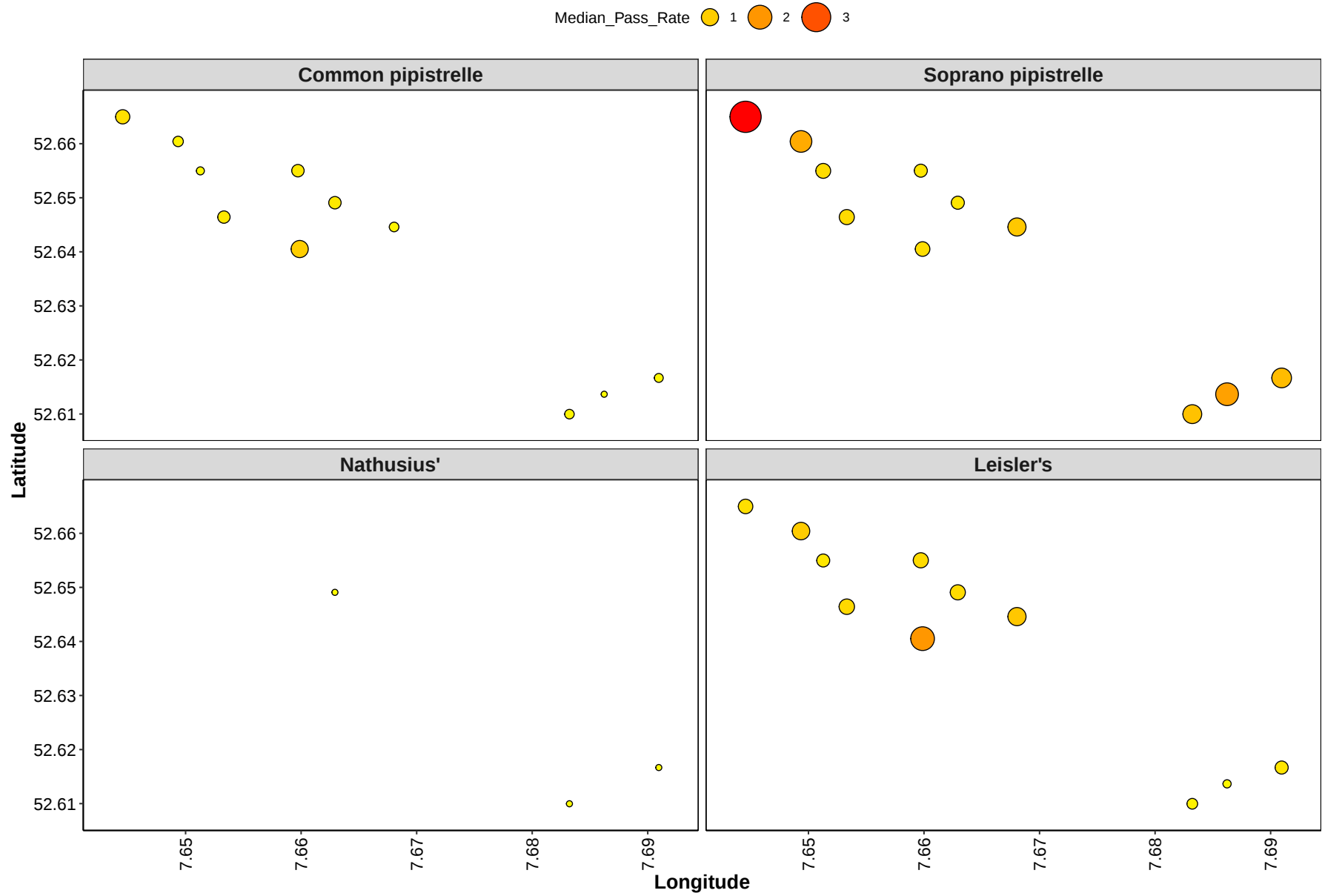
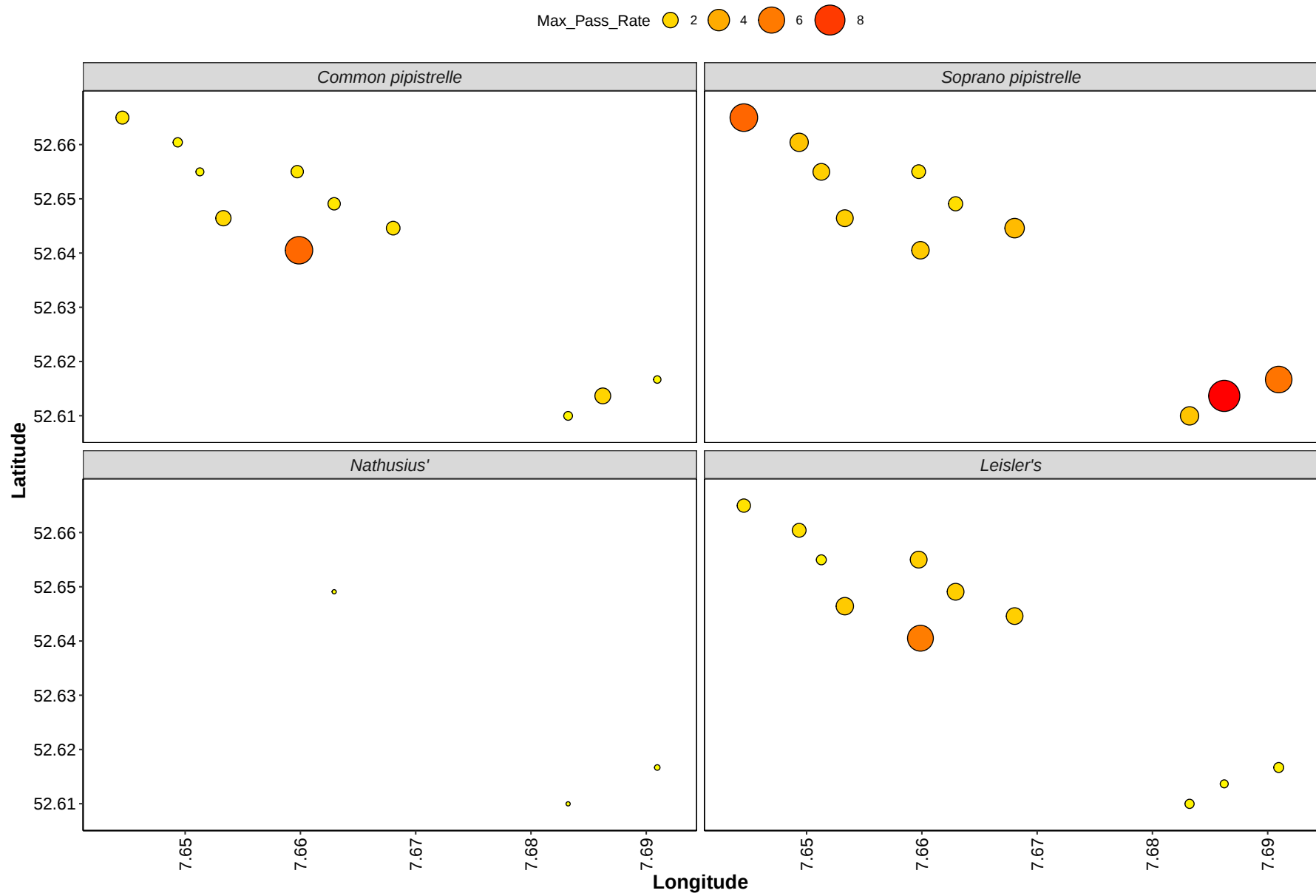
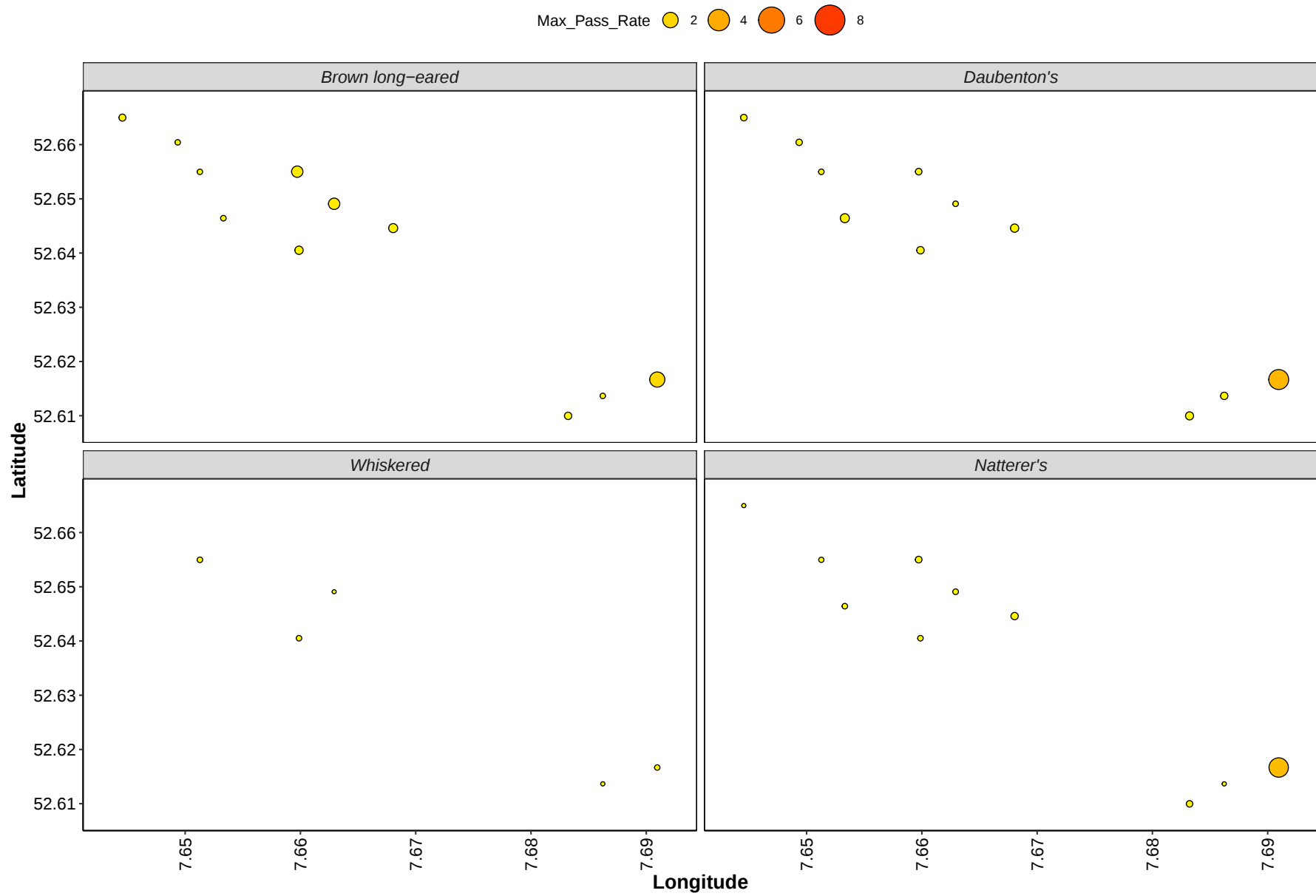


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





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	LT1	0.1
Brown long-eared	LT10	0.0
Brown long-eared	LT11	0.1
Brown long-eared	LT2	0.0
Brown long-eared	LT3	0.0
Brown long-eared	LT4	0.1
Brown long-eared	LT5	0.1
Brown long-eared	LT6	0.0
Brown long-eared	LT7	0.0
Brown long-eared	LT8	0.0
Brown long-eared	LT9	0.2
Common pipistrelle	LT1	0.6
Common pipistrelle	LT10	0.1
Common pipistrelle	LT11	0.1
Common pipistrelle	LT2	0.1
Common pipistrelle	LT3	0.1
Common pipistrelle	LT4	0.0
Common pipistrelle	LT5	0.0
Common pipistrelle	LT6	0.1
Common pipistrelle	LT7	0.1
Common pipistrelle	LT8	0.5
Common pipistrelle	LT9	0.2
Daubenton's	LT1	0.1
Daubenton's	LT10	0.0
Daubenton's	LT11	0.1
Daubenton's	LT2	0.1
Daubenton's	LT3	0.0
Daubenton's	LT4	0.0
Daubenton's	LT5	0.0
Daubenton's	LT6	0.1
Daubenton's	LT7	0.1
Daubenton's	LT8	0.0
Daubenton's	LT9	0.4
Leisler's	LT1	0.7
Leisler's	LT10	0.1
Leisler's	LT11	0.3

Species	Detector ID	Median Pass Rate
Leisler's	LT2	1.0
Leisler's	LT3	0.5
Leisler's	LT4	0.8
Leisler's	LT5	0.8
Leisler's	LT6	0.8
Leisler's	LT7	1.1
Leisler's	LT8	2.0
Leisler's	LT9	0.5
Nathusius'	LT1	0.0
Nathusius'	LT10	0.0
Nathusius'	LT11	0.0
Nathusius'	LT2	0.0
Nathusius'	LT3	0.0
Nathusius'	LT4	0.0
Nathusius'	LT5	0.0
Nathusius'	LT6	0.0
Nathusius'	LT7	0.0
Nathusius'	LT8	0.0
Nathusius'	LT9	0.0
Natterer's	LT1	0.0
Natterer's	LT10	0.0
Natterer's	LT11	0.0
Natterer's	LT2	0.0
Natterer's	LT3	0.0
Natterer's	LT4	0.0
Natterer's	LT5	0.0
Natterer's	LT6	0.0
Natterer's	LT7	0.0
Natterer's	LT8	0.0
Natterer's	LT9	0.4
Soprano pipistrelle	LT1	3.2
Soprano pipistrelle	LT10	1.7
Soprano pipistrelle	LT11	0.9
Soprano pipistrelle	LT2	1.5
Soprano pipistrelle	LT3	0.5
Soprano pipistrelle	LT4	0.4

Species	Detector ID	Median Pass Rate
Soprano pipistrelle	LT5	0.4
Soprano pipistrelle	LT6	0.7
Soprano pipistrelle	LT7	1.0
Soprano pipistrelle	LT8	0.5
Soprano pipistrelle	LT9	0.8
Whiskered	LT1	0.0
Whiskered	LT10	0.0
Whiskered	LT11	0.0
Whiskered	LT2	0.0
Whiskered	LT3	0.0
Whiskered	LT4	0.0
Whiskered	LT5	0.0
Whiskered	LT6	0.0
Whiskered	LT7	0.0
Whiskered	LT8	0.0
Whiskered	LT9	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.

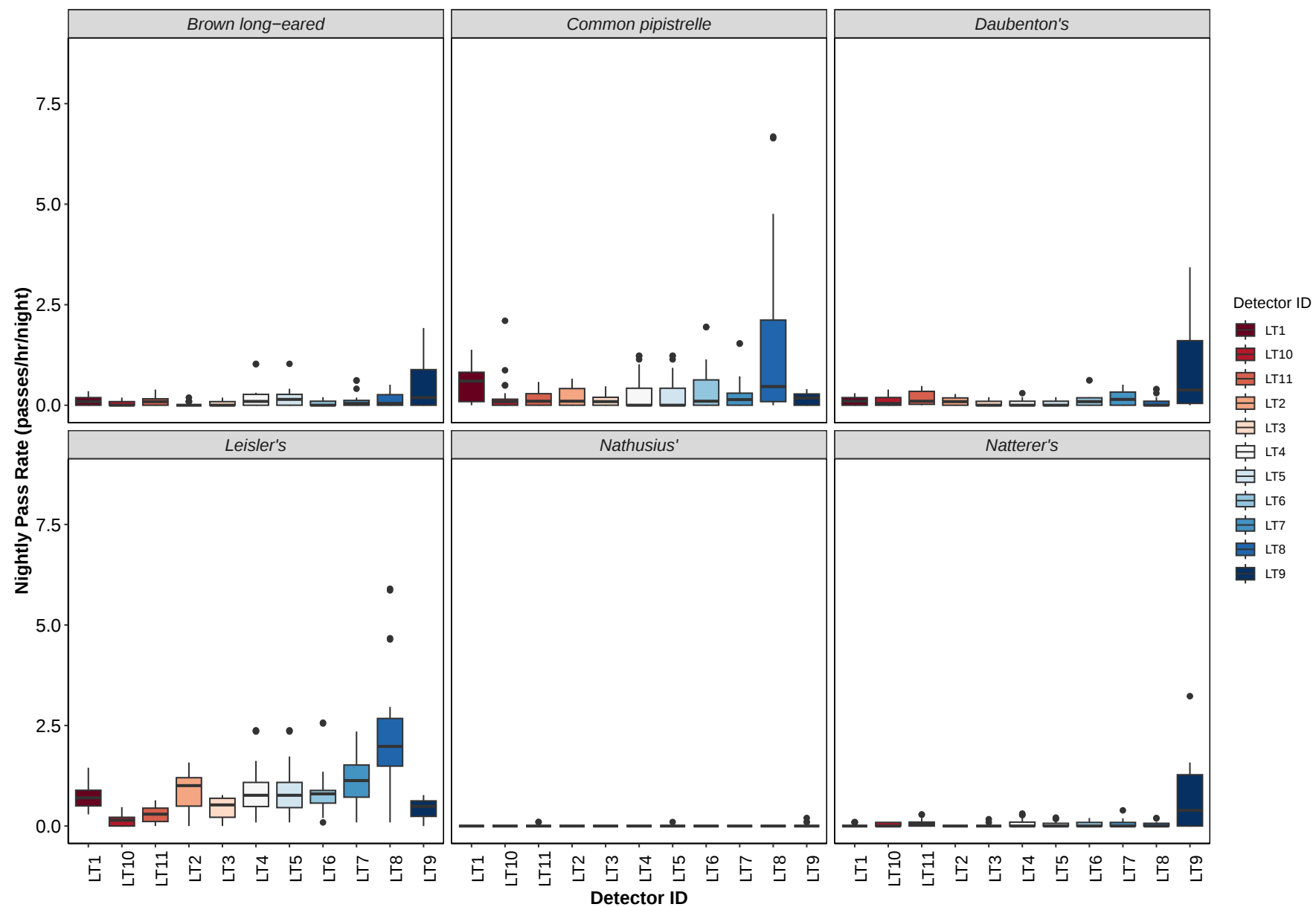
Species	Detector ID	Mean Pass Rate
Brown long-eared	LT1	0.1
Brown long-eared	LT10	0.0
Brown long-eared	LT11	0.1
Brown long-eared	LT2	0.0
Brown long-eared	LT3	0.0
Brown long-eared	LT4	0.2
Brown long-eared	LT5	0.2
Brown long-eared	LT6	0.1
Brown long-eared	LT7	0.1
Brown long-eared	LT8	0.1
Brown long-eared	LT9	0.5
Common pipistrelle	LT1	0.5
Common pipistrelle	LT10	0.2
Common pipistrelle	LT11	0.2
Common pipistrelle	LT2	0.2
Common pipistrelle	LT3	0.1
Common pipistrelle	LT4	0.3
Common pipistrelle	LT5	0.3
Common pipistrelle	LT6	0.4
Common pipistrelle	LT7	0.3
Common pipistrelle	LT8	1.4
Common pipistrelle	LT9	0.2
Daubenton's	LT1	0.1
Daubenton's	LT10	0.1
Daubenton's	LT11	0.2
Daubenton's	LT2	0.1
Daubenton's	LT3	0.1
Daubenton's	LT4	0.1
Daubenton's	LT5	0.0
Daubenton's	LT6	0.1
Daubenton's	LT7	0.2
Daubenton's	LT8	0.1
Daubenton's	LT9	0.9
Leisler's	LT1	0.7
Leisler's	LT10	0.2
Leisler's	LT11	0.3

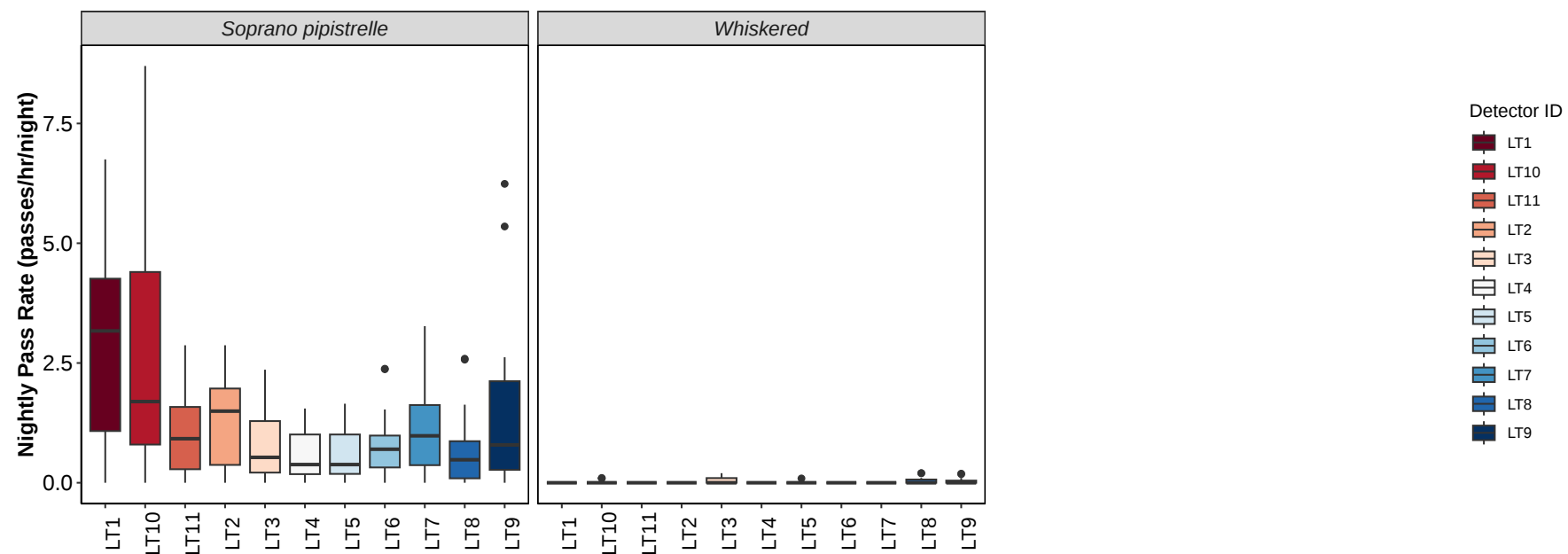
Species	Detector ID	Mean Pass Rate
Leisler's	LT2	0.9
Leisler's	LT3	0.5
Leisler's	LT4	0.9
Leisler's	LT5	0.9
Leisler's	LT6	0.8
Leisler's	LT7	1.2
Leisler's	LT8	2.2
Leisler's	LT9	0.4
Nathusius'	LT1	0.0
Nathusius'	LT10	0.0
Nathusius'	LT11	0.0
Nathusius'	LT2	0.0
Nathusius'	LT3	0.0
Nathusius'	LT4	0.0
Nathusius'	LT5	0.0
Nathusius'	LT6	0.0
Nathusius'	LT7	0.0
Nathusius'	LT8	0.0
Nathusius'	LT9	0.0
Natterer's	LT1	0.0
Natterer's	LT10	0.0
Natterer's	LT11	0.1
Natterer's	LT2	0.0
Natterer's	LT3	0.0
Natterer's	LT4	0.1
Natterer's	LT5	0.0
Natterer's	LT6	0.0
Natterer's	LT7	0.0
Natterer's	LT8	0.0
Natterer's	LT9	0.7
Soprano pipistrelle	LT1	2.8
Soprano pipistrelle	LT10	2.5
Soprano pipistrelle	LT11	1.0
Soprano pipistrelle	LT2	1.3
Soprano pipistrelle	LT3	0.8
Soprano pipistrelle	LT4	0.6

Species	Detector ID	Mean Pass Rate
Soprano pipistrelle	LT5	0.6
Soprano pipistrelle	LT6	0.8
Soprano pipistrelle	LT7	1.1
Soprano pipistrelle	LT8	0.6
Soprano pipistrelle	LT9	1.4
Whiskered	LT1	0.0
Whiskered	LT10	0.0
Whiskered	LT11	0.0
Whiskered	LT2	0.0
Whiskered	LT3	0.1
Whiskered	LT4	0.0
Whiskered	LT5	0.0
Whiskered	LT6	0.0
Whiskered	LT7	0.0
Whiskered	LT8	0.0
Whiskered	LT9	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.





Detector ID

Survey Effort

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

month	Detector ID	No. of Survey Nights
Aug	LT1	8
Aug	LT10	7
Aug	LT11	7
Aug	LT2	7
Aug	LT3	7
Aug	LT4	11
Aug	LT5	11
Aug	LT6	10
Aug	LT7	11
Aug	LT8	11
Aug	LT9	7
Sep	LT1	17
Sep	LT10	13
Sep	LT11	15
Sep	LT2	13
Sep	LT3	15
Sep	LT4	15
Sep	LT5	15
Sep	LT6	13
Sep	LT7	13
Sep	LT8	15
Sep	LT9	16

Nightly Bat Pass Rate for Each Month

Median per Detector

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

Bat pass rates are often highly variable between nights, with some nights having few or no passes and other nights having high activity. In these circumstances, the median is likely to be a more useful summary of the ‘average’ activity than is the mean. For further information see: Lintott, P. R., & Mathews, F. (2018). Basic mathematical errors may make ecological assessments unreliable. *Biodiversity and Conservation*, 27(1), 265-267. <https://doi.org/10.1007/s10531-017-1418-5>

Species	Detector ID	Aug	Sep
Brown long-eared	LT1	0.1	0.0
Brown long-eared	LT10	0.0	0.0
Brown long-eared	LT11	0.1	0.1
Brown long-eared	LT2	0.0	0.0
Brown long-eared	LT3	0.0	0.0
Brown long-eared	LT4	0.1	0.0
Brown long-eared	LT5	0.2	0.1
Brown long-eared	LT6	0.1	0.0
Brown long-eared	LT7	0.0	0.1
Brown long-eared	LT8	0.2	0.0
Brown long-eared	LT9	0.0	0.7
Common pipistrelle	LT1	0.6	0.5
Common pipistrelle	LT10	0.0	0.1
Common pipistrelle	LT11	0.1	0.1
Common pipistrelle	LT2	0.1	0.1
Common pipistrelle	LT3	0.1	0.1
Common pipistrelle	LT4	0.5	0.0
Common pipistrelle	LT5	0.5	0.0
Common pipistrelle	LT6	0.8	0.1
Common pipistrelle	LT7	0.3	0.1
Common pipistrelle	LT8	1.0	0.2
Common pipistrelle	LT9	0.2	0.1
Daubenton's	LT1	0.2	0.1
Daubenton's	LT10	0.2	0.0
Daubenton's	LT11	0.1	0.2
Daubenton's	LT2	0.1	0.1
Daubenton's	LT3	0.0	0.0
Daubenton's	LT4	0.1	0.0
Daubenton's	LT5	0.0	0.0
Daubenton's	LT6	0.2	0.0
Daubenton's	LT7	0.3	0.1
Daubenton's	LT8	0.1	0.0
Daubenton's	LT9	0.2	0.6
Leisler's	LT1	0.8	0.7
Leisler's	LT10	0.2	0.1
Leisler's	LT11	0.3	0.3

Species	Detector ID	Aug	Sep
Leisler's	LT2	1.1	1.0
Leisler's	LT3	0.5	0.6
Leisler's	LT4	0.7	0.8
Leisler's	LT5	0.7	0.8
Leisler's	LT6	0.9	0.6
Leisler's	LT7	0.9	1.1
Leisler's	LT8	2.1	1.9
Leisler's	LT9	0.4	0.6
Nathusius'	LT1	0.0	0.0
Nathusius'	LT10	0.0	0.0
Nathusius'	LT11	0.0	0.0
Nathusius'	LT2	0.0	0.0
Nathusius'	LT3	0.0	0.0
Nathusius'	LT4	0.0	0.0
Nathusius'	LT5	0.0	0.0
Nathusius'	LT6	0.0	0.0
Nathusius'	LT7	0.0	0.0
Nathusius'	LT8	0.0	0.0
Nathusius'	LT9	0.0	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT10	0.0	0.0
Natterer's	LT11	0.0	0.1
Natterer's	LT2	0.0	0.0
Natterer's	LT3	0.0	0.0
Natterer's	LT4	0.0	0.0
Natterer's	LT5	0.0	0.0
Natterer's	LT6	0.0	0.0
Natterer's	LT7	0.0	0.0
Natterer's	LT8	0.0	0.0
Natterer's	LT9	0.4	0.5
Soprano pipistrelle	LT1	3.6	3.1
Soprano pipistrelle	LT10	1.7	2.6
Soprano pipistrelle	LT11	1.6	0.6
Soprano pipistrelle	LT2	2.2	1.4
Soprano pipistrelle	LT3	0.9	0.4
Soprano pipistrelle	LT4	1.0	0.3

Species	Detector ID	Aug	Sep
Soprano pipistrelle	LT5	1.0	0.3
Soprano pipistrelle	LT6	1.3	0.4
Soprano pipistrelle	LT7	1.2	0.7
Soprano pipistrelle	LT8	0.9	0.3
Soprano pipistrelle	LT9	0.8	0.9
Whiskered	LT1	0.0	0.0
Whiskered	LT10	0.0	0.0
Whiskered	LT11	0.0	0.0
Whiskered	LT2	0.0	0.0
Whiskered	LT3	0.0	0.0
Whiskered	LT4	0.0	0.0
Whiskered	LT5	0.0	0.0
Whiskered	LT6	0.0	0.0
Whiskered	LT7	0.0	0.0
Whiskered	LT8	0.0	0.0
Whiskered	LT9	0.0	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	Aug	Sep
Brown long-eared	LT1	0.1	0.1
Brown long-eared	LT10	0.0	0.0
Brown long-eared	LT11	0.1	0.1
Brown long-eared	LT2	0.0	0.0
Brown long-eared	LT3	0.0	0.1
Brown long-eared	LT4	0.3	0.1
Brown long-eared	LT5	0.2	0.1
Brown long-eared	LT6	0.1	0.0
Brown long-eared	LT7	0.2	0.1
Brown long-eared	LT8	0.2	0.1
Brown long-eared	LT9	0.0	0.7
Common pipistrelle	LT1	0.7	0.4
Common pipistrelle	LT10	0.2	0.3
Common pipistrelle	LT11	0.1	0.2
Common pipistrelle	LT2	0.2	0.2
Common pipistrelle	LT3	0.2	0.1
Common pipistrelle	LT4	0.5	0.1
Common pipistrelle	LT5	0.5	0.1
Common pipistrelle	LT6	0.9	0.1
Common pipistrelle	LT7	0.5	0.1
Common pipistrelle	LT8	2.3	0.8
Common pipistrelle	LT9	0.2	0.1
Daubenton's	LT1	0.2	0.1
Daubenton's	LT10	0.1	0.1
Daubenton's	LT11	0.1	0.2
Daubenton's	LT2	0.1	0.1
Daubenton's	LT3	0.1	0.0
Daubenton's	LT4	0.1	0.0
Daubenton's	LT5	0.1	0.0
Daubenton's	LT6	0.2	0.1
Daubenton's	LT7	0.2	0.1
Daubenton's	LT8	0.2	0.0
Daubenton's	LT9	0.4	1.2
Leisler's	LT1	0.8	0.7
Leisler's	LT10	0.1	0.2
Leisler's	LT11	0.2	0.3

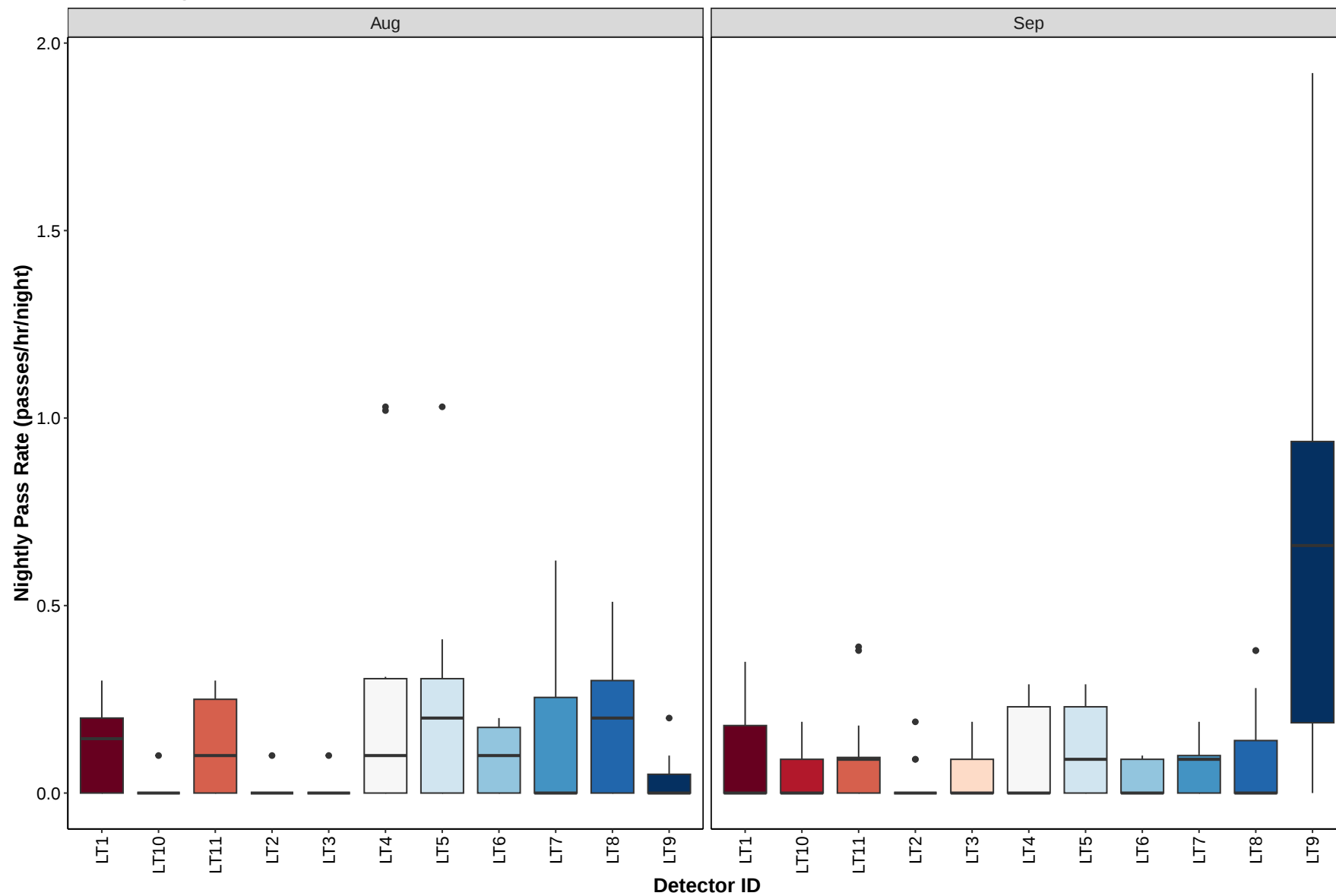
Species	Detector ID	Aug	Sep
Leisler's	LT2	0.8	0.9
Leisler's	LT3	0.4	0.5
Leisler's	LT4	1.2	0.7
Leisler's	LT5	1.2	0.7
Leisler's	LT6	1.2	0.6
Leisler's	LT7	1.2	1.1
Leisler's	LT8	2.4	2.1
Leisler's	LT9	0.4	0.4
Nathusius'	LT1	0.0	0.0
Nathusius'	LT10	0.0	0.0
Nathusius'	LT11	0.0	0.0
Nathusius'	LT2	0.0	0.0
Nathusius'	LT3	0.0	0.0
Nathusius'	LT4	0.0	0.0
Nathusius'	LT5	0.0	0.0
Nathusius'	LT6	0.0	0.0
Nathusius'	LT7	0.0	0.0
Nathusius'	LT8	0.0	0.0
Nathusius'	LT9	0.1	0.0
Natterer's	LT1	0.0	0.0
Natterer's	LT10	0.0	0.0
Natterer's	LT11	0.0	0.1
Natterer's	LT2	0.0	0.0
Natterer's	LT3	0.0	0.0
Natterer's	LT4	0.0	0.1
Natterer's	LT5	0.0	0.1
Natterer's	LT6	0.0	0.0
Natterer's	LT7	0.0	0.0
Natterer's	LT8	0.0	0.0
Natterer's	LT9	0.6	0.8
Soprano pipistrelle	LT1	3.0	2.7
Soprano pipistrelle	LT10	1.6	3.0
Soprano pipistrelle	LT11	1.7	0.7
Soprano pipistrelle	LT2	1.6	1.1
Soprano pipistrelle	LT3	1.0	0.7
Soprano pipistrelle	LT4	0.8	0.4

Species	Detector ID	Aug	Sep
Soprano pipistrelle	LT5	0.8	0.4
Soprano pipistrelle	LT6	1.2	0.4
Soprano pipistrelle	LT7	1.6	0.8
Soprano pipistrelle	LT8	1.1	0.3
Soprano pipistrelle	LT9	1.1	1.5
Whiskered	LT1	0.0	0.0
Whiskered	LT10	0.0	0.0
Whiskered	LT11	0.0	0.0
Whiskered	LT2	0.0	0.0
Whiskered	LT3	0.1	0.0
Whiskered	LT4	0.0	0.0
Whiskered	LT5	0.0	0.0
Whiskered	LT6	0.0	0.0
Whiskered	LT7	0.0	0.0
Whiskered	LT8	0.1	0.0
Whiskered	LT9	0.0	0.0

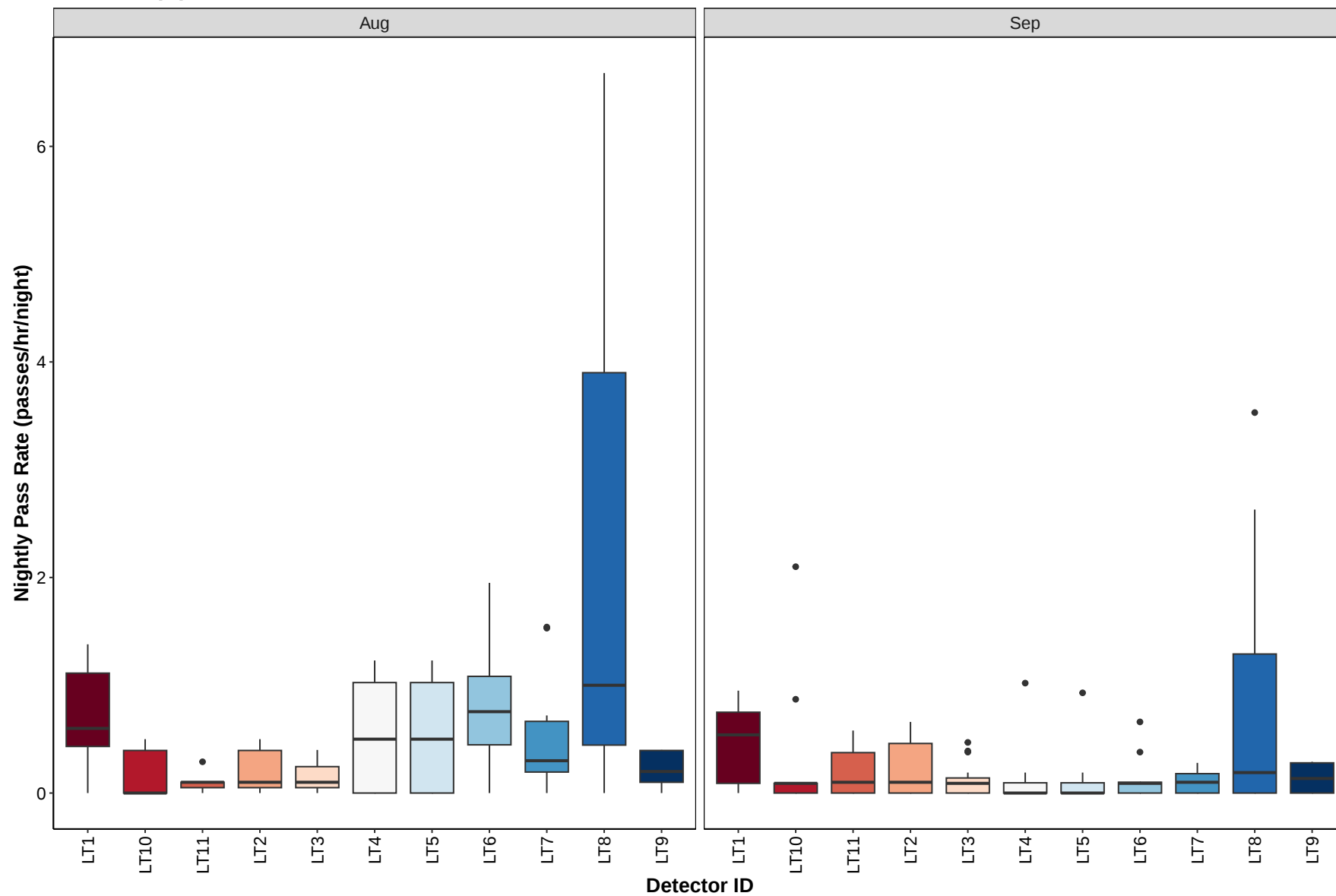
Per Detector

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.

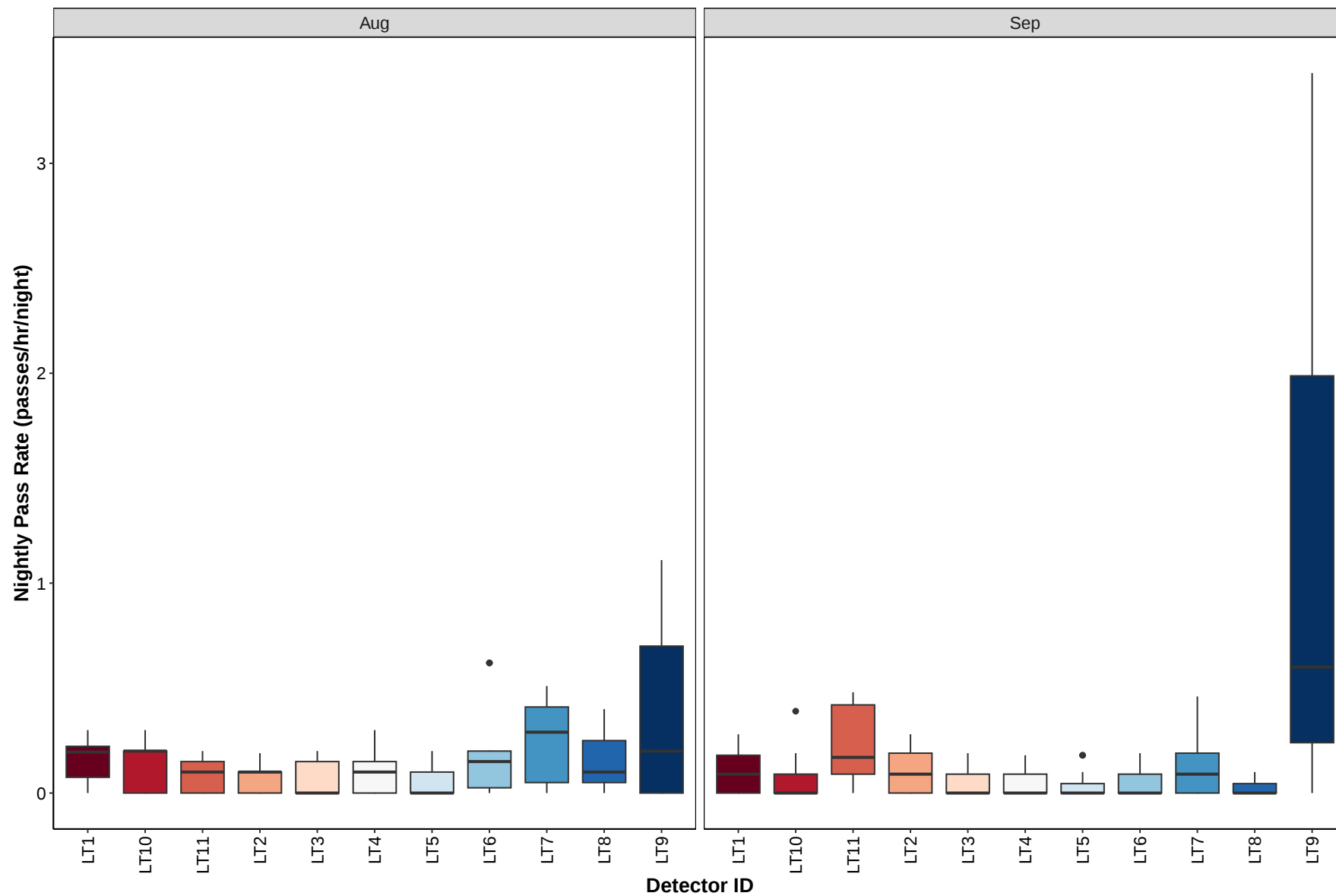
Brown long-eared



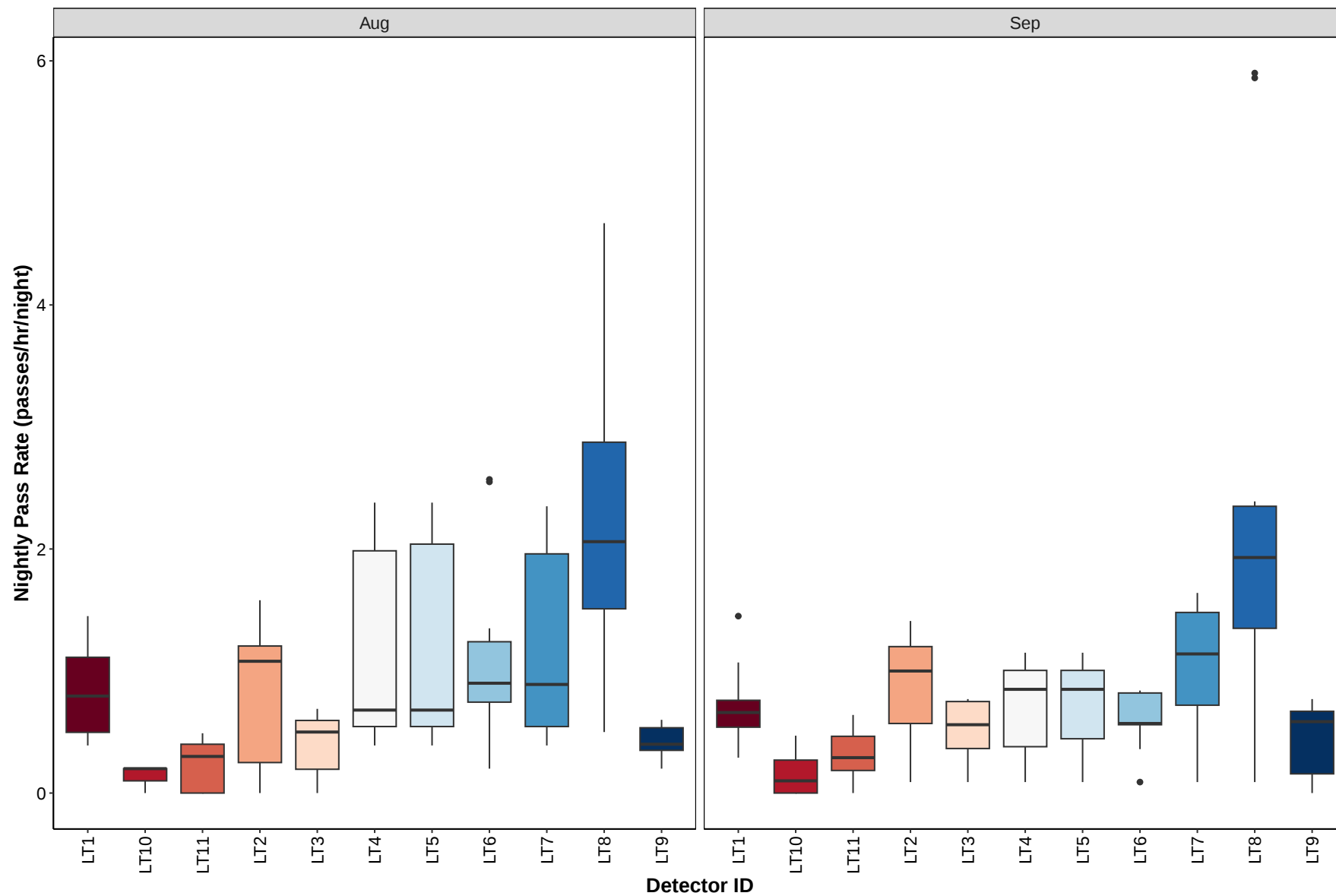
Common pipistrelle



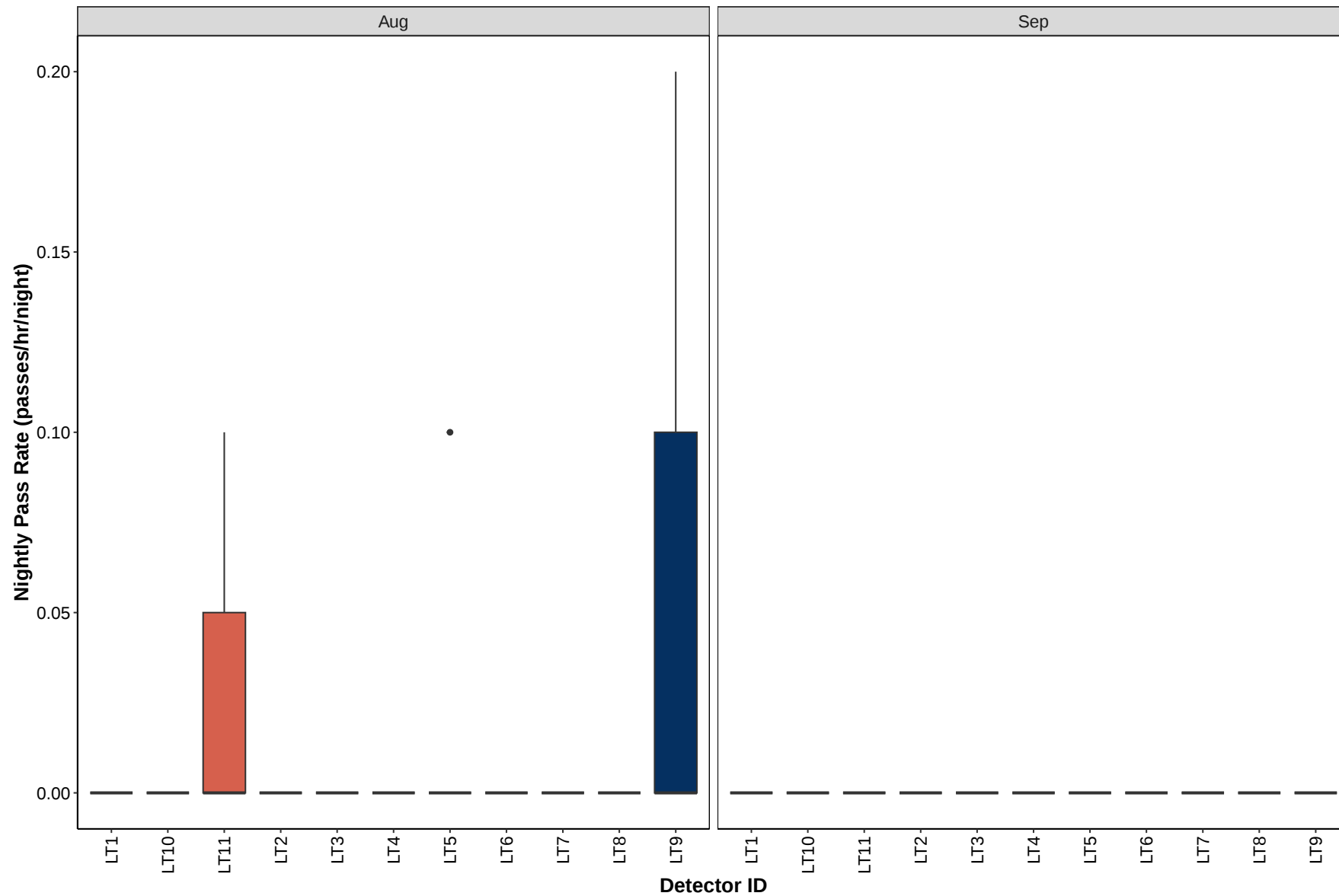
Daubenton's



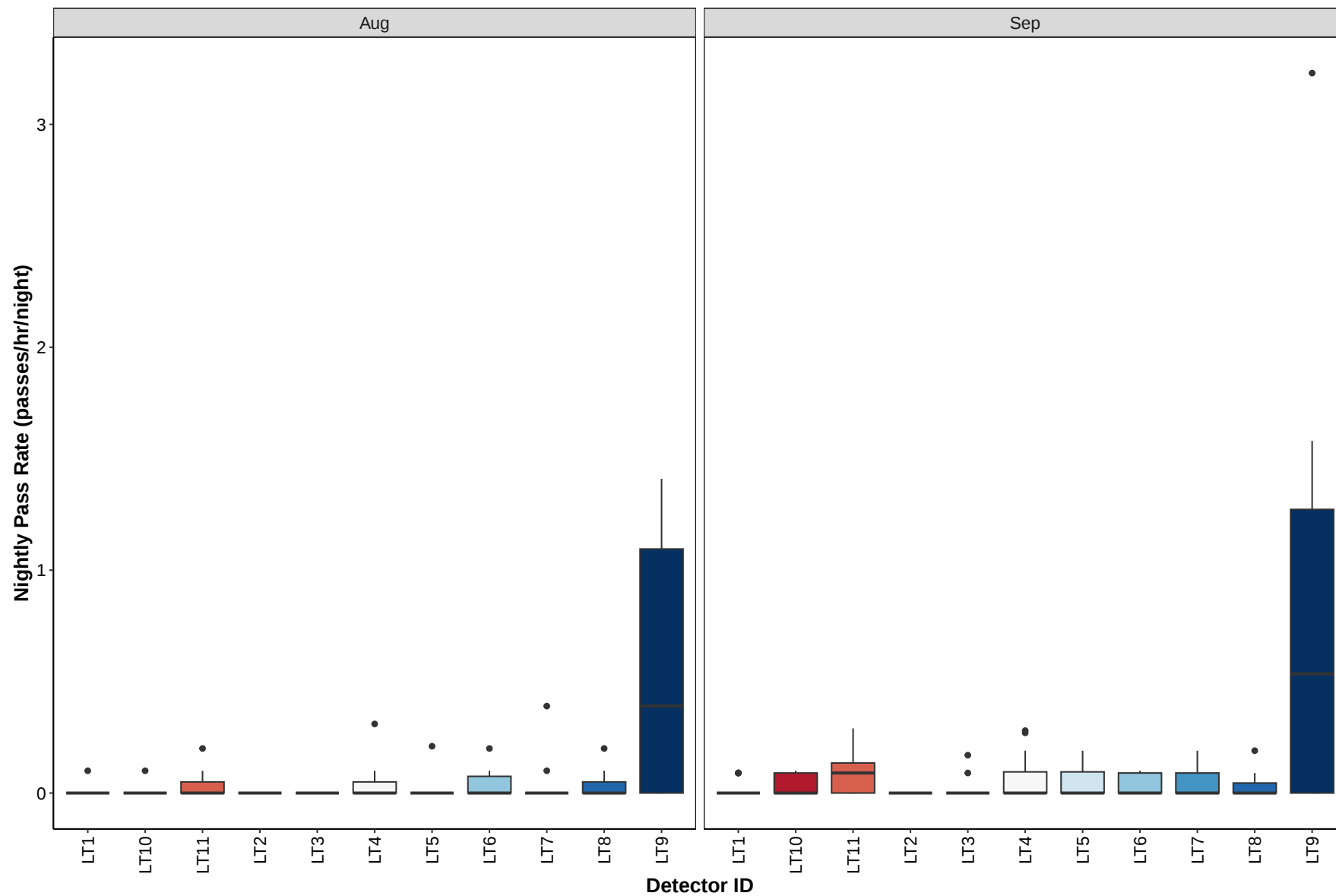
Leisler's



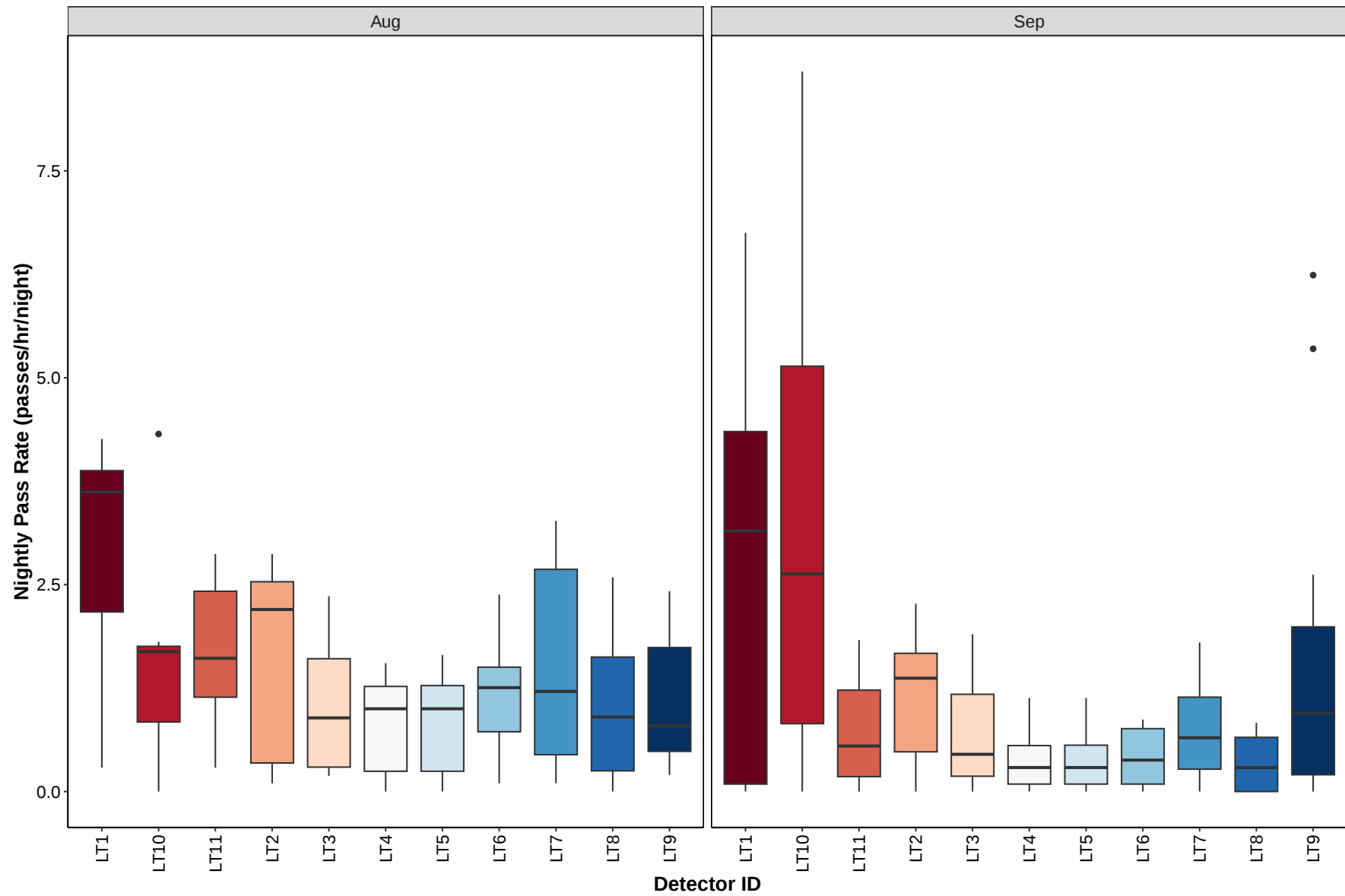
Nathusius'

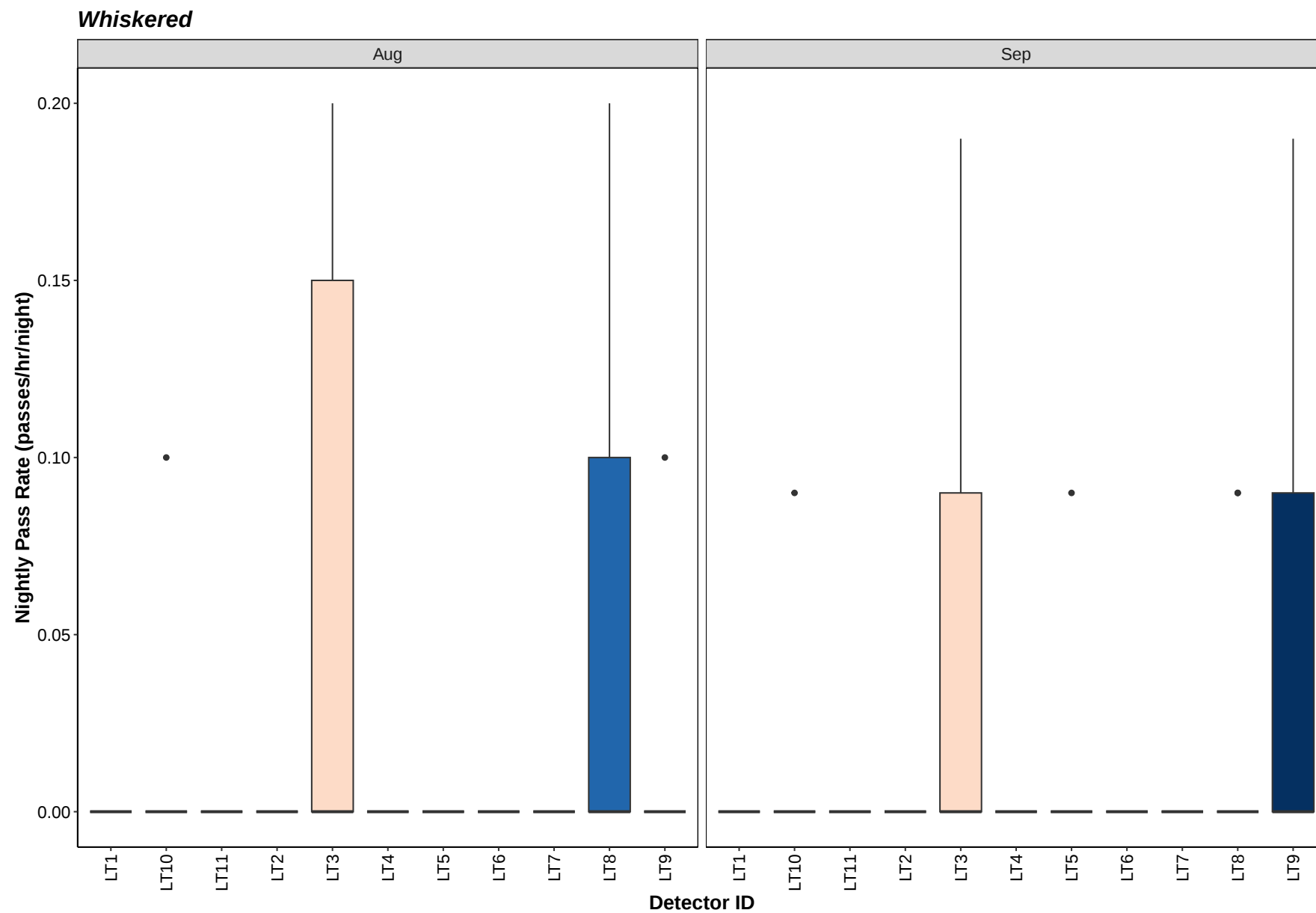


Natterer's



Soprano pipistrelle





Bat Activity per Detector Location

Figure 18. Detector ID reference:

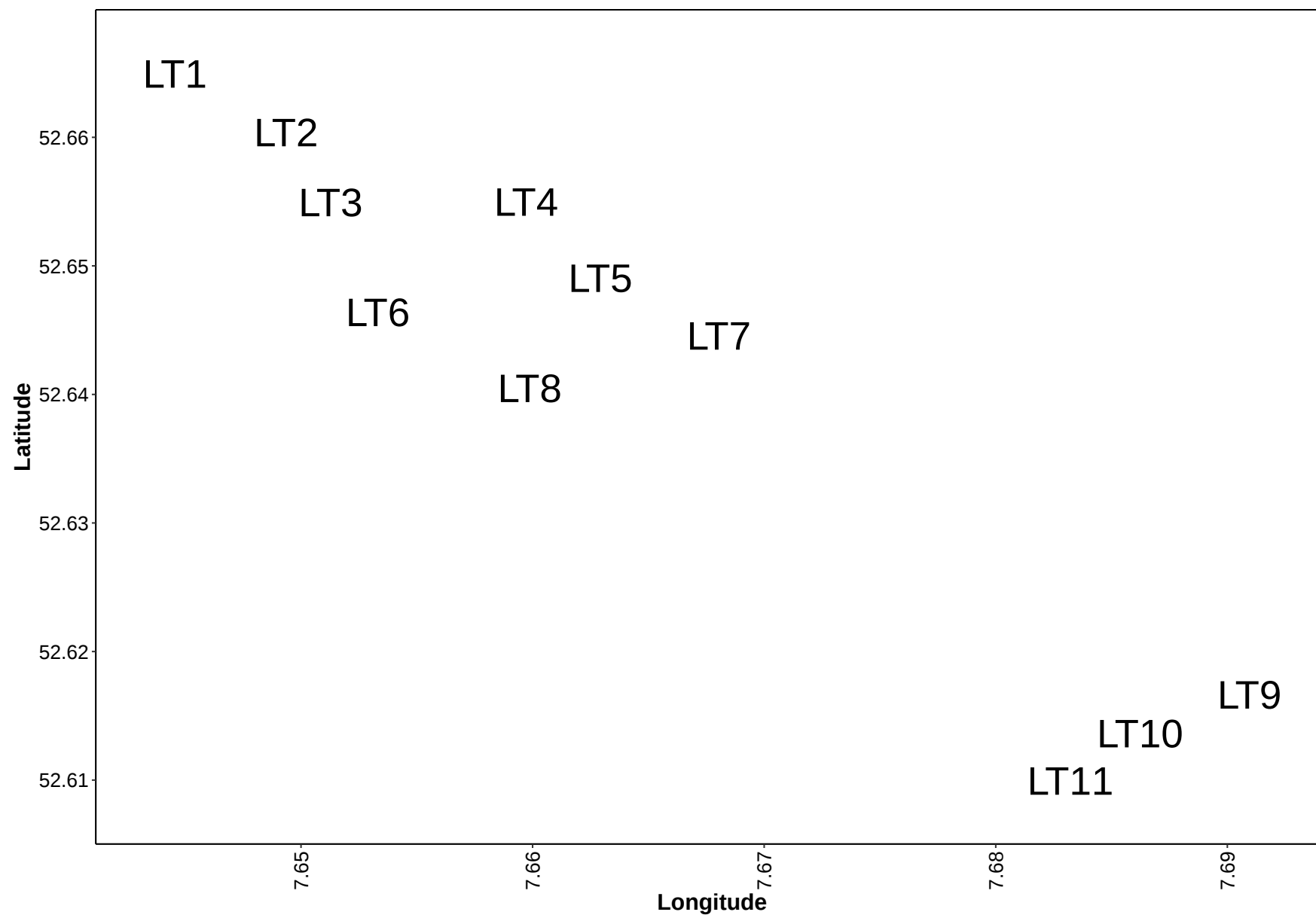
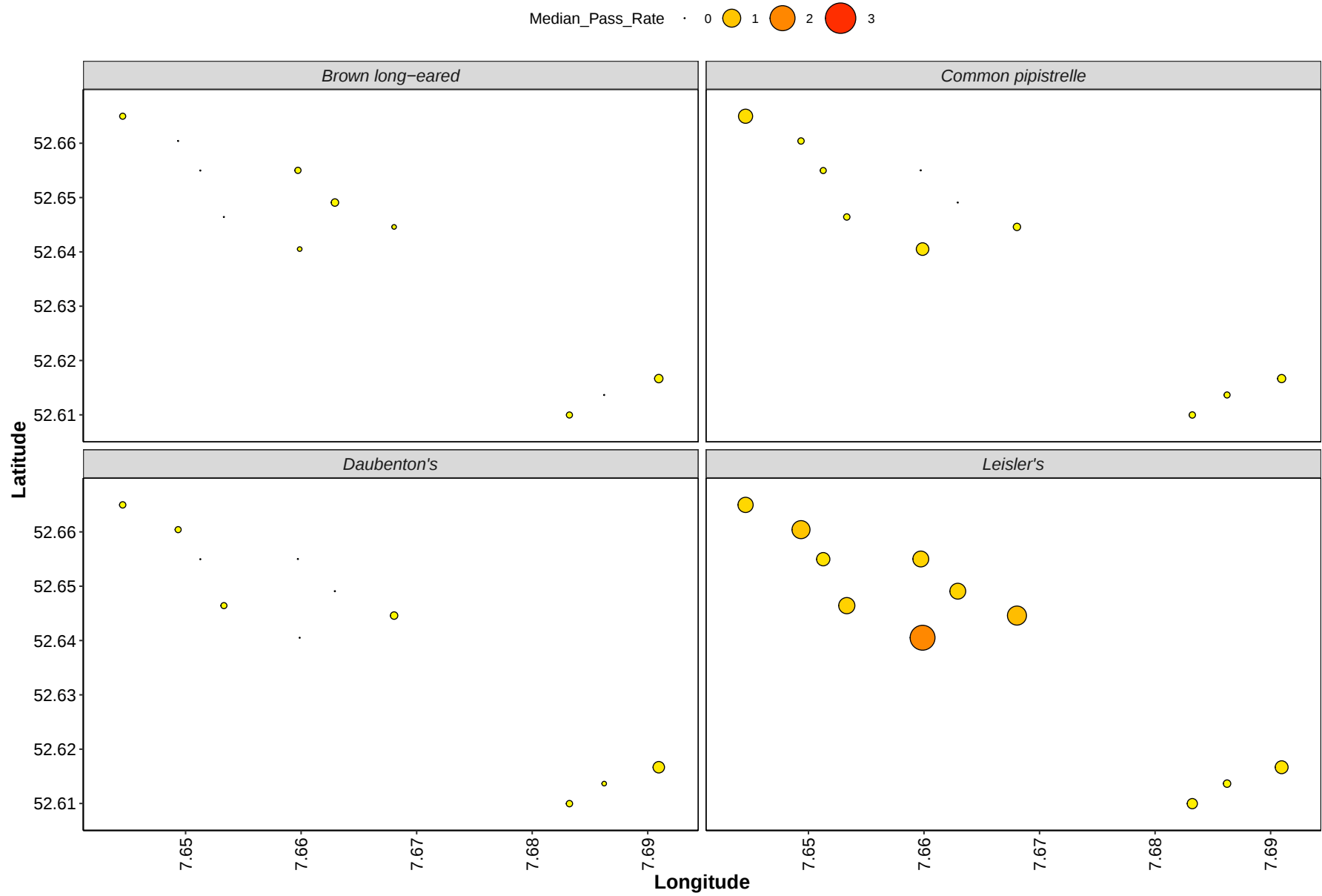


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.



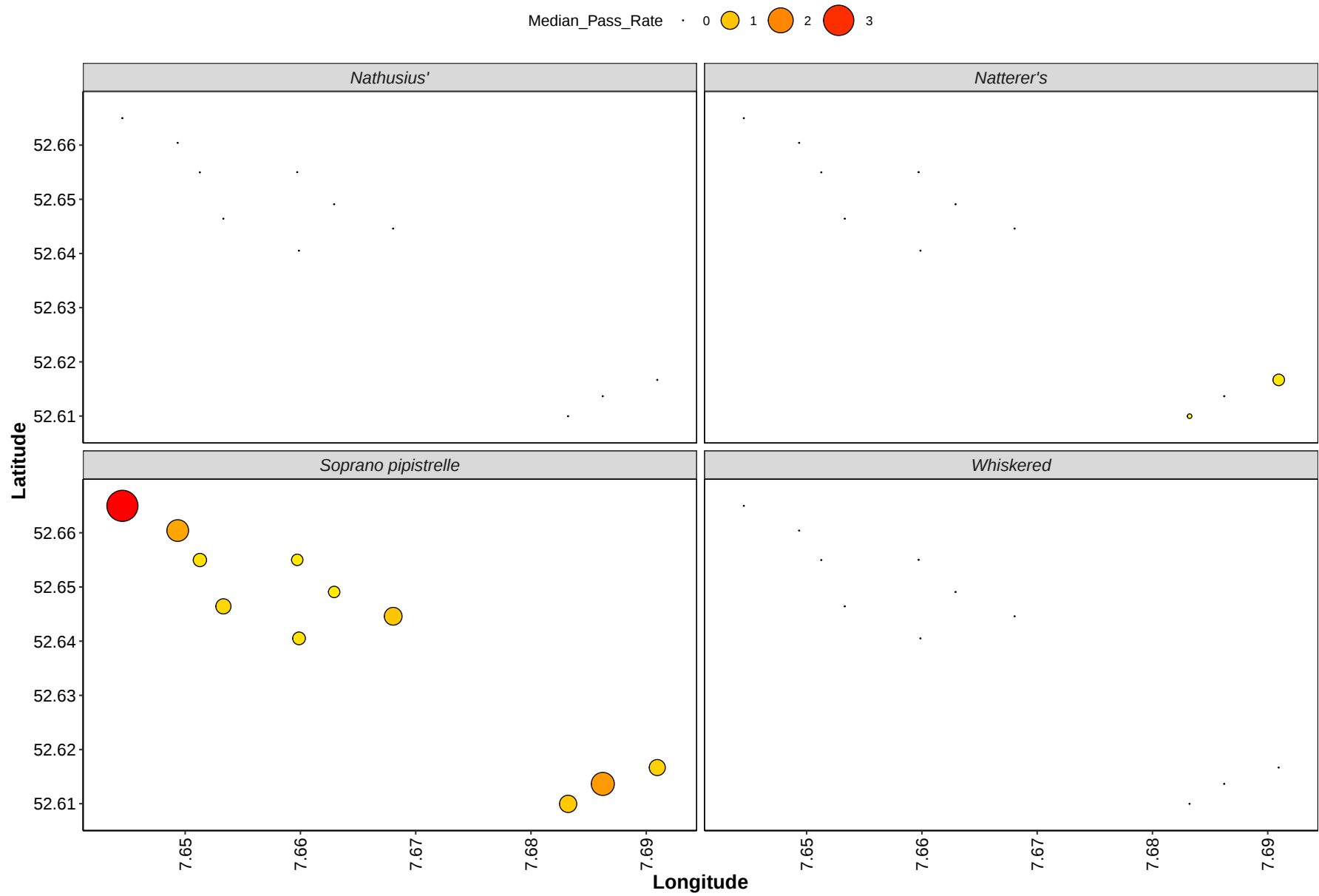
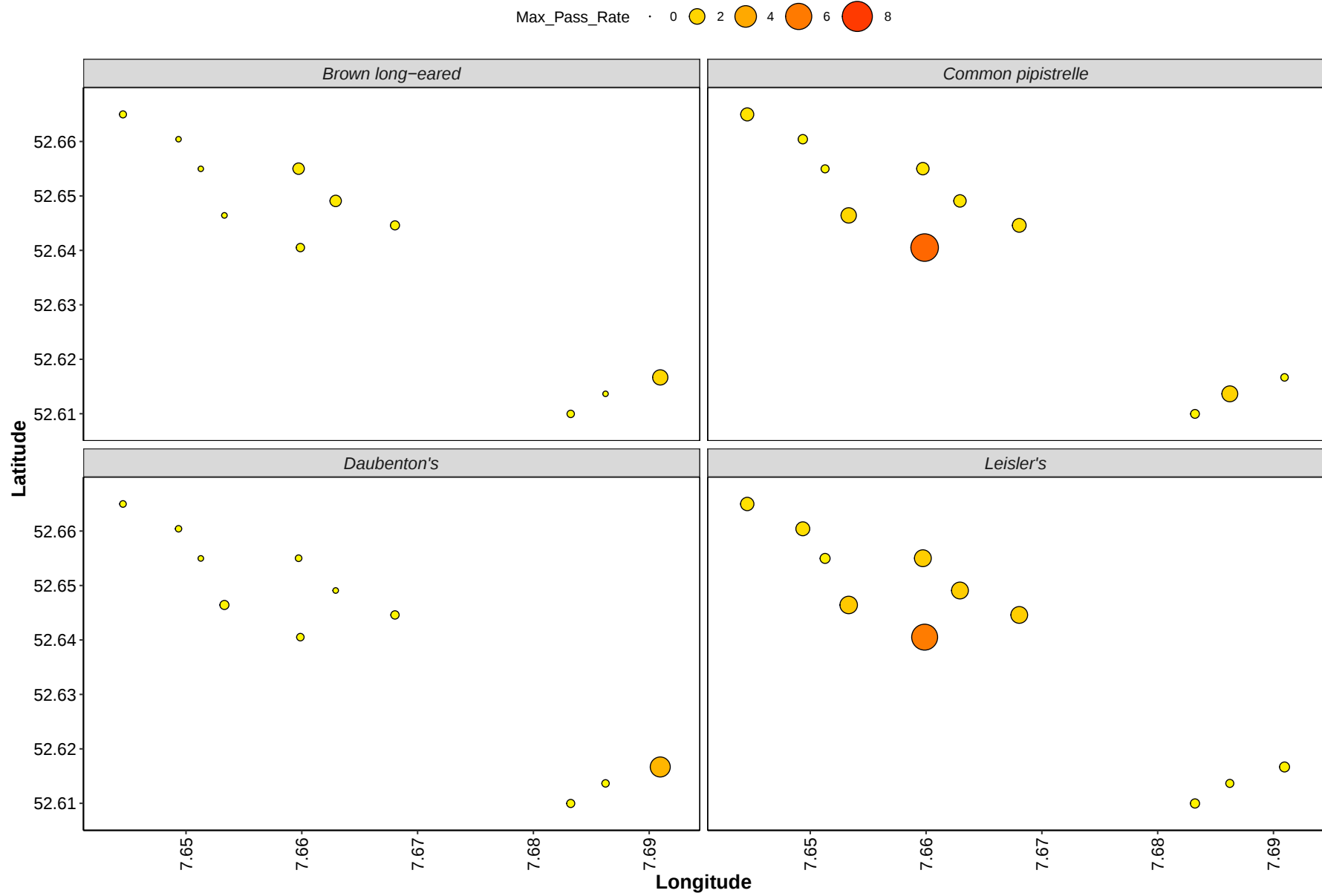
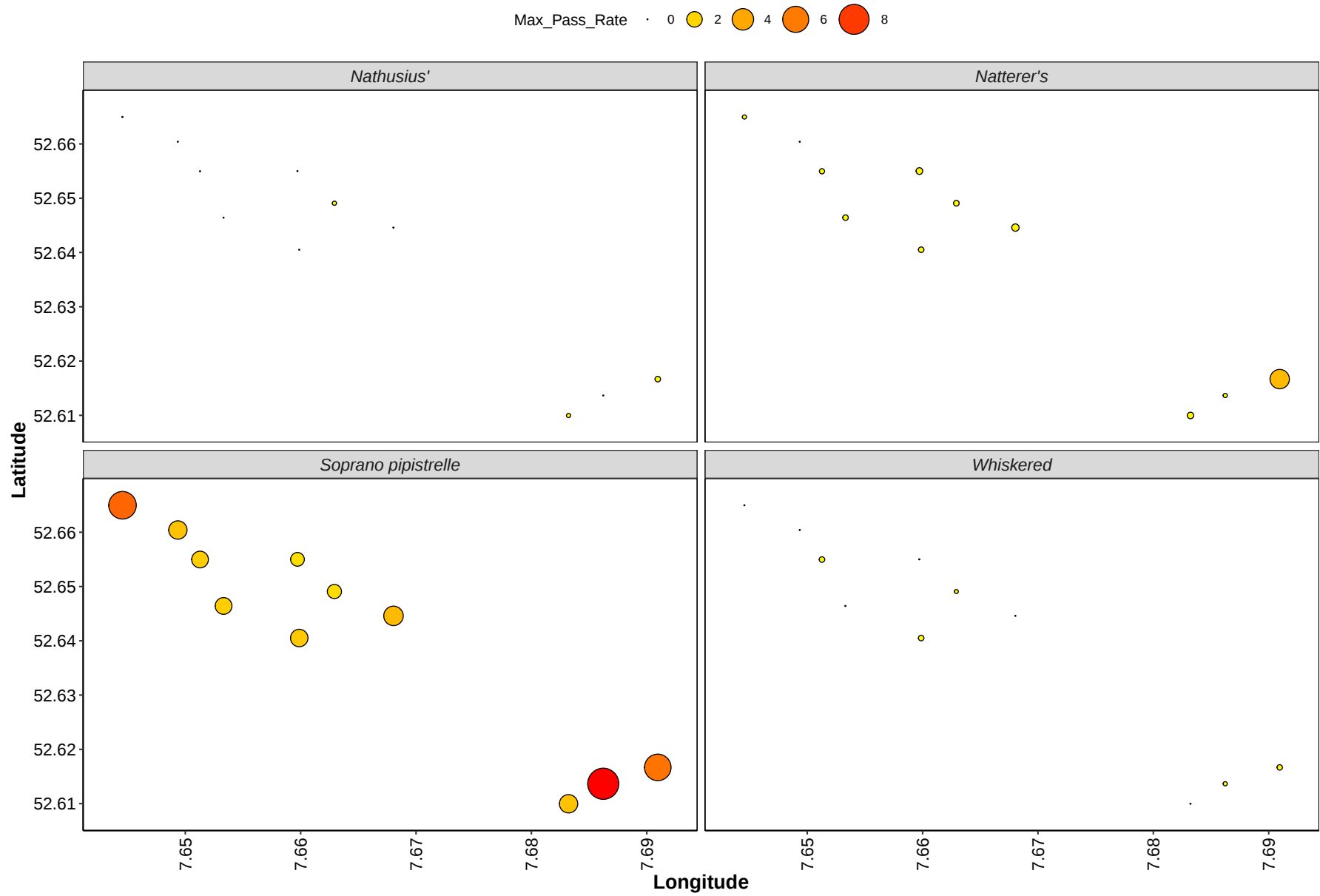


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.





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