



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

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

Bat Activity Analysis

Site Name: Breezy Hill

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05/08/2021

Summary

Bats were detected on 46 nights between 2020-05-13 and 2020-09-07, using 9 static bat detectors. Throughout this period 6 species were recorded. Table 1. Detectors were placed at the following locations:

Detector ID	Latitude	Longitude
loc9	55.37671	-4.391819
loc7	55.38497	-4.400969
loc2	55.38778	-4.388745
loc4	55.39323	-4.397317
loc6	55.38925	-4.403550
loc1	55.38280	-4.385303
loc5	55.39346	-4.407358
loc3	55.39033	-4.393383
loc8	55.38141	-4.401480

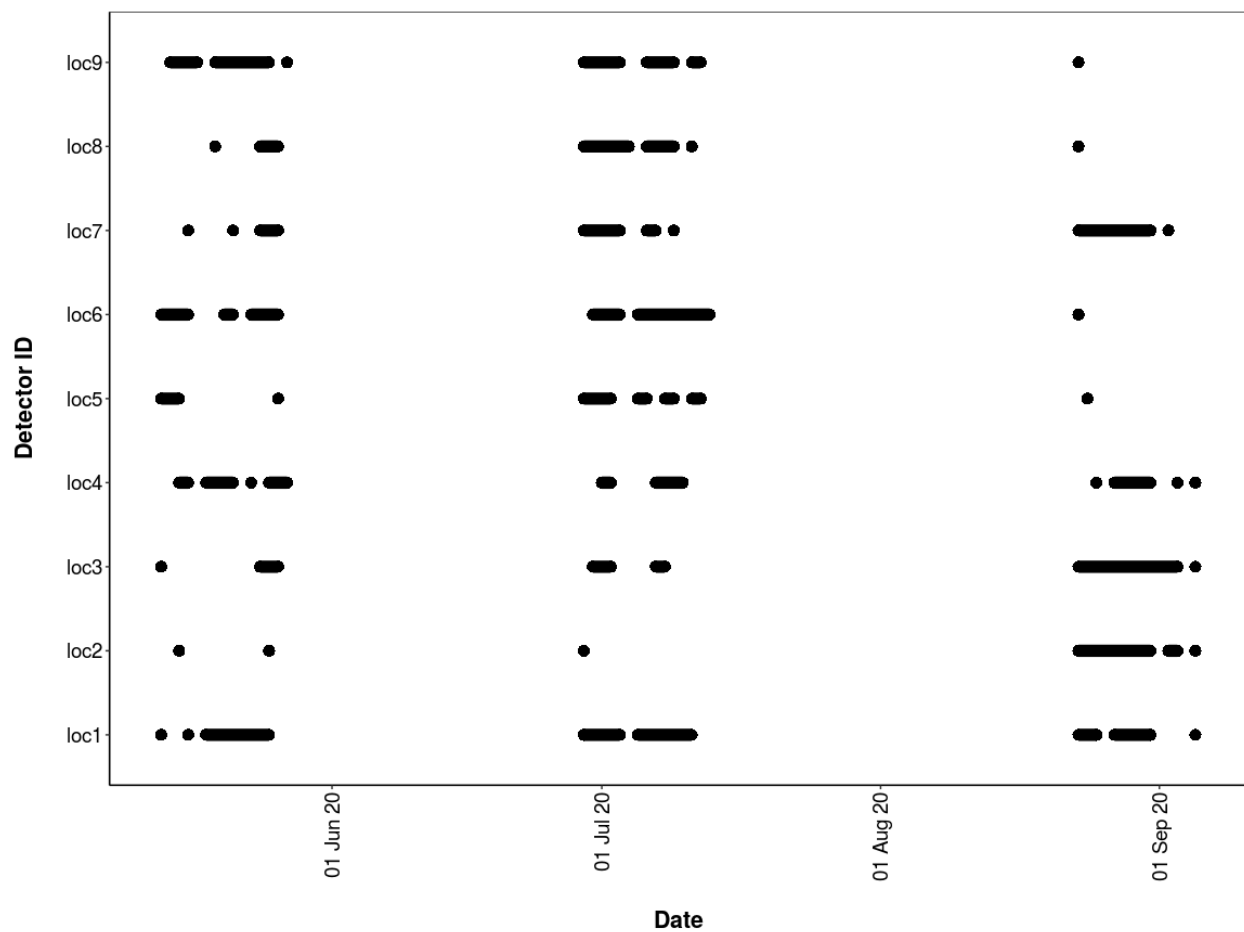
Survey Nights

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
loc1	33
loc2	17
loc3	24
loc4	26
loc5	21
loc6	39
loc7	28
loc8	27
loc9	39

Survey Nights

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



PART 1: Percentiles Analysis

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

The reference range dataset was stratified to include:

- Only records from within 30 days of the survey date.
- Only records from within 100km radius of the survey location.
- Records using any make of bat detector.

PER DETECTOR

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

Detector ID	Species/Species Group	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity
loc1	<i>Myotis</i>	0	1	0	0	0
loc1	<i>Myotis daubentonii</i>	0	2	0	0	0
loc1	<i>Nyctalus</i>	6	1	2	0	9
loc1	<i>Pipistrellus pipistrellus</i>	4	9	1	0	3
loc1	<i>Pipistrellus pygmaeus</i>	4	6	0	3	4
loc2	<i>Myotis</i>	0	0	0	0	1
loc2	<i>Myotis daubentonii</i>	0	0	0	1	4
loc2	<i>Nyctalus</i>	0	0	2	0	3
loc2	<i>Pipistrellus pipistrellus</i>	11	1	0	2	0
loc2	<i>Pipistrellus pygmaeus</i>	9	5	0	0	0
loc3	<i>Myotis daubentonii</i>	0	0	1	0	3
loc3	<i>Myotis nattereri</i>	0	0	0	0	1
loc3	<i>Nyctalus</i>	0	0	0	1	3
loc3	<i>Pipistrellus pipistrellus</i>	5	4	1	2	5
loc3	<i>Pipistrellus pygmaeus</i>	2	9	4	0	3
loc4	<i>Myotis</i>	0	0	0	0	1
loc4	<i>Myotis daubentonii</i>	0	0	2	1	2
loc4	<i>Myotis nattereri</i>	0	0	0	0	1
loc4	<i>Pipistrellus pipistrellus</i>	4	2	2	5	4

loc4	<i>Pipistrellus pygmaeus</i>	0	3	5	3	3
loc5	<i>Myotis daubentonii</i>	0	0	0	0	2
loc5	<i>Nyctalus</i>	5	3	0	2	4
loc5	<i>Pipistrellus pipistrellus</i>	0	1	1	6	4
loc5	<i>Pipistrellus pygmaeus</i>	0	2	2	2	2
loc6	<i>Myotis</i>	0	0	1	3	0
loc6	<i>Myotis daubentonii</i>	0	0	0	2	5
loc6	<i>Myotis nattereri</i>	0	0	0	0	3
loc6	<i>Nyctalus</i>	0	7	0	3	2
loc6	<i>Pipistrellus pipistrellus</i>	15	10	4	2	5
loc6	<i>Pipistrellus pygmaeus</i>	19	2	2	2	4
loc7	<i>Myotis</i>	0	0	1	4	1
loc7	<i>Myotis daubentonii</i>	0	0	0	1	7
loc7	<i>Nyctalus</i>	3	2	1	4	3
loc7	<i>Pipistrellus pipistrellus</i>	7	3	4	2	3
loc7	<i>Pipistrellus pygmaeus</i>	9	6	0	1	5
loc8	<i>Myotis daubentonii</i>	0	0	0	0	3
loc8	<i>Nyctalus</i>	3	4	0	3	4
loc8	<i>Pipistrellus pipistrellus</i>	12	0	4	4	3
loc8	<i>Pipistrellus pygmaeus</i>	11	1	0	1	5
loc9	<i>Myotis</i>	0	2	2	2	6
loc9	<i>Myotis daubentonii</i>	0	2	0	0	3
loc9	<i>Myotis nattereri</i>	0	0	0	0	1
loc9	<i>Nyctalus</i>	1	5	4	4	1

loc9	<i>Pipistrellus</i> <i>pipistrellus</i>	11	3	0	5	6
loc9	<i>Pipistrellus</i> <i>pygmaeus</i>	8	6	0	7	5

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.

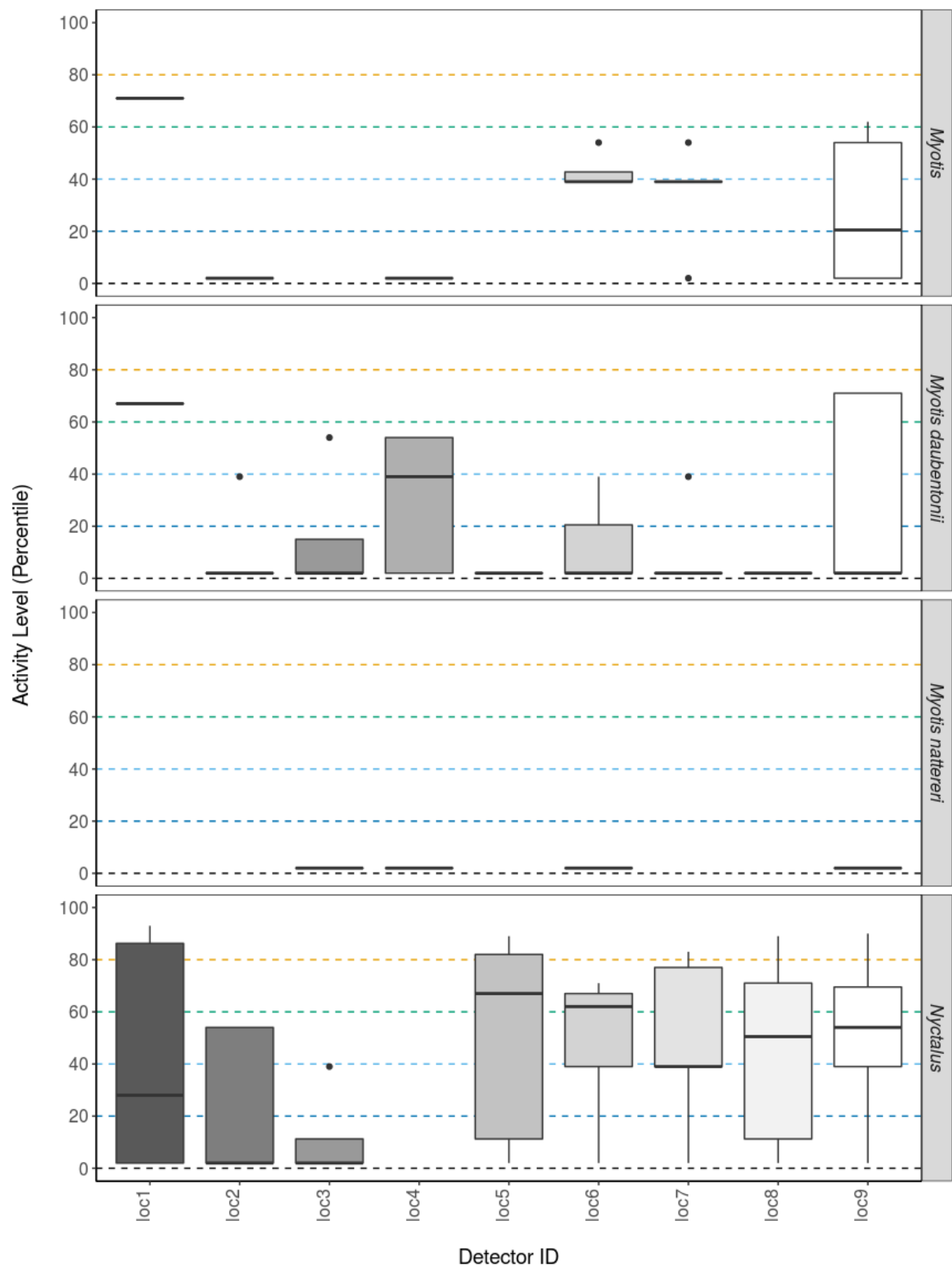
Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
loc1	<i>Myotis</i>	71	0	71	1	4394
loc1	<i>Myotis daubentonii</i>	67	67 - 67	67	2	498
loc1	<i>Nyctalus</i>	28	2 - 60.5	93	18	2991
loc1	<i>Pipistrellus pipistrellus</i>	74	41 - 77.5	89	17	8956
loc1	<i>Pipistrellus pygmaeus</i>	67	38 - 77.5	95	17	13312
loc2	<i>Myotis</i>	2	0	2	1	4394
loc2	<i>Myotis daubentonii</i>	2	2 - 2	39	5	498
loc2	<i>Nyctalus</i>	2	2 - 28	54	5	2991
loc2	<i>Pipistrellus pipistrellus</i>	92	67 - 95	97	14	8956
loc2	<i>Pipistrellus pygmaeus</i>	96	79.5 - 98	100	14	13312
loc3	<i>Myotis daubentonii</i>	2	2 - 2	54	4	498
loc3	<i>Myotis nattereri</i>	2	0	2	1	256
loc3	<i>Nyctalus</i>	2	2 - 2	39	4	2991
loc3	<i>Pipistrellus pipistrellus</i>	62	32 - 74	98	17	8956
loc3	<i>Pipistrellus pygmaeus</i>	67	41 - 74.5	82	18	13312
loc4	<i>Myotis</i>	2	0	2	1	4394
loc4	<i>Myotis daubentonii</i>	39	2 - 54	54	5	498
loc4	<i>Myotis nattereri</i>	2	0	2	1	256
loc4	<i>Pipistrellus pipistrellus</i>	39	28 - 63.5	88	17	8956
loc4	<i>Pipistrellus pygmaeus</i>	54	28 - 54	67	14	13312

loc5	<i>Myotis daubentonii</i>	2	2 - 2	2	2	498
loc5	<i>Nyctalus</i>	67	34.5 - 80	89	14	2991
loc5	<i>Pipistrellus pipistrellus</i>	39	20.5 - 46.5	74	12	8956
loc5	<i>Pipistrellus pygmaeus</i>	47	20.5 - 58	62	8	13312
loc6	<i>Myotis</i>	39	39 - 39	54	4	4394
loc6	<i>Myotis daubentonii</i>	2	2 - 20.5	39	7	498
loc6	<i>Myotis nattereri</i>	2	2 - 2	2	3	256
loc6	<i>Nyctalus</i>	62	34.5 - 67	71	12	2991
loc6	<i>Pipistrellus pipistrellus</i>	79	58 - 82.5	96	36	8956
loc6	<i>Pipistrellus pygmaeus</i>	85	58 - 89	99	29	13312
loc7	<i>Myotis</i>	39	2 - 54	54	6	4394
loc7	<i>Myotis daubentonii</i>	2	2 - 2	39	8	498
loc7	<i>Nyctalus</i>	39	20.5 - 68	83	13	2991
loc7	<i>Pipistrellus pipistrellus</i>	62	46 - 75	90	19	8956
loc7	<i>Pipistrellus pygmaeus</i>	67	43 - 80	96	21	13312
loc8	<i>Myotis daubentonii</i>	2	2 - 2	2	3	498
loc8	<i>Nyctalus</i>	51	20.5 - 71	89	14	2991
loc8	<i>Pipistrellus pipistrellus</i>	95	50.5 - 95.5	100	23	8956
loc8	<i>Pipistrellus pygmaeus</i>	94	49 - 97	99	18	13312
loc9	<i>Myotis</i>	21	2 - 50.5	62	12	4394
loc9	<i>Myotis daubentonii</i>	2	2 - 36.5	71	5	498

loc9	<i>Myotis nattereri</i>	2	0	2	1	256
loc9	<i>Nyctalus</i>	54	46.5 - 66.5	90	15	2991
loc9	<i>Pipistrellus pipistrellus</i>	77	41.5 - 81.5	99	25	8956
loc9	<i>Pipistrellus pygmaeus</i>	65	39.5 - 69.5	97	26	13312

###Figures

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



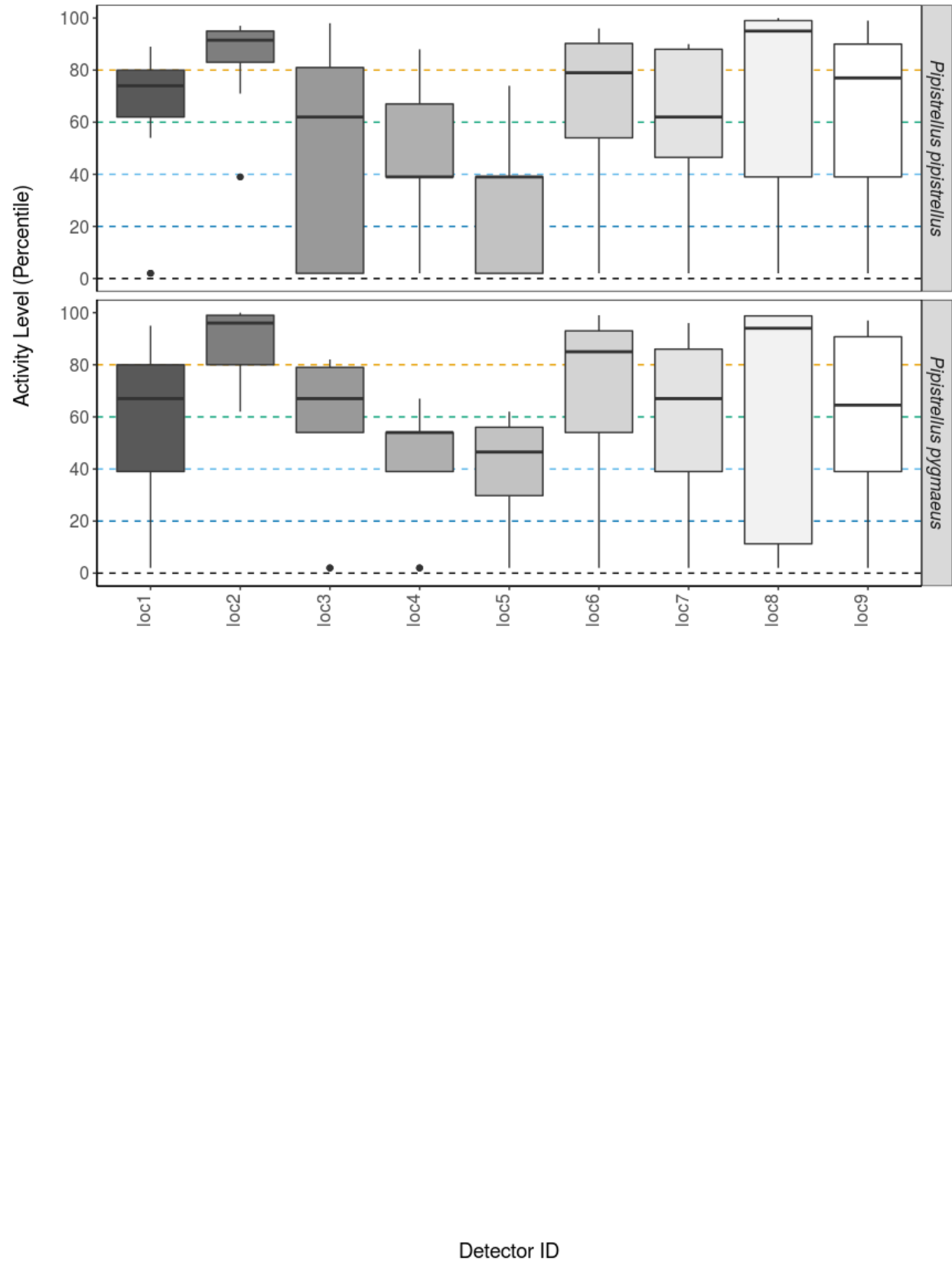
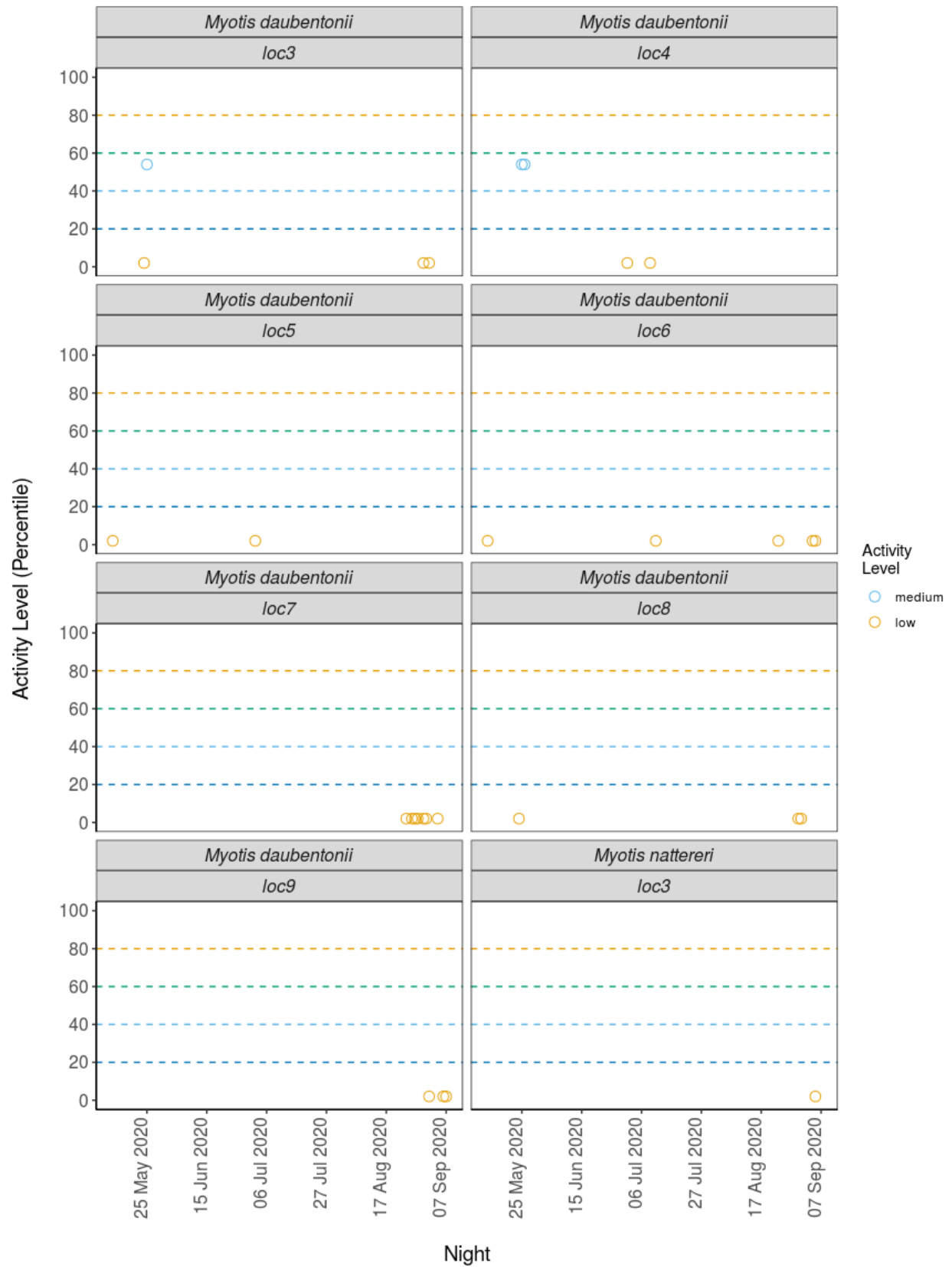
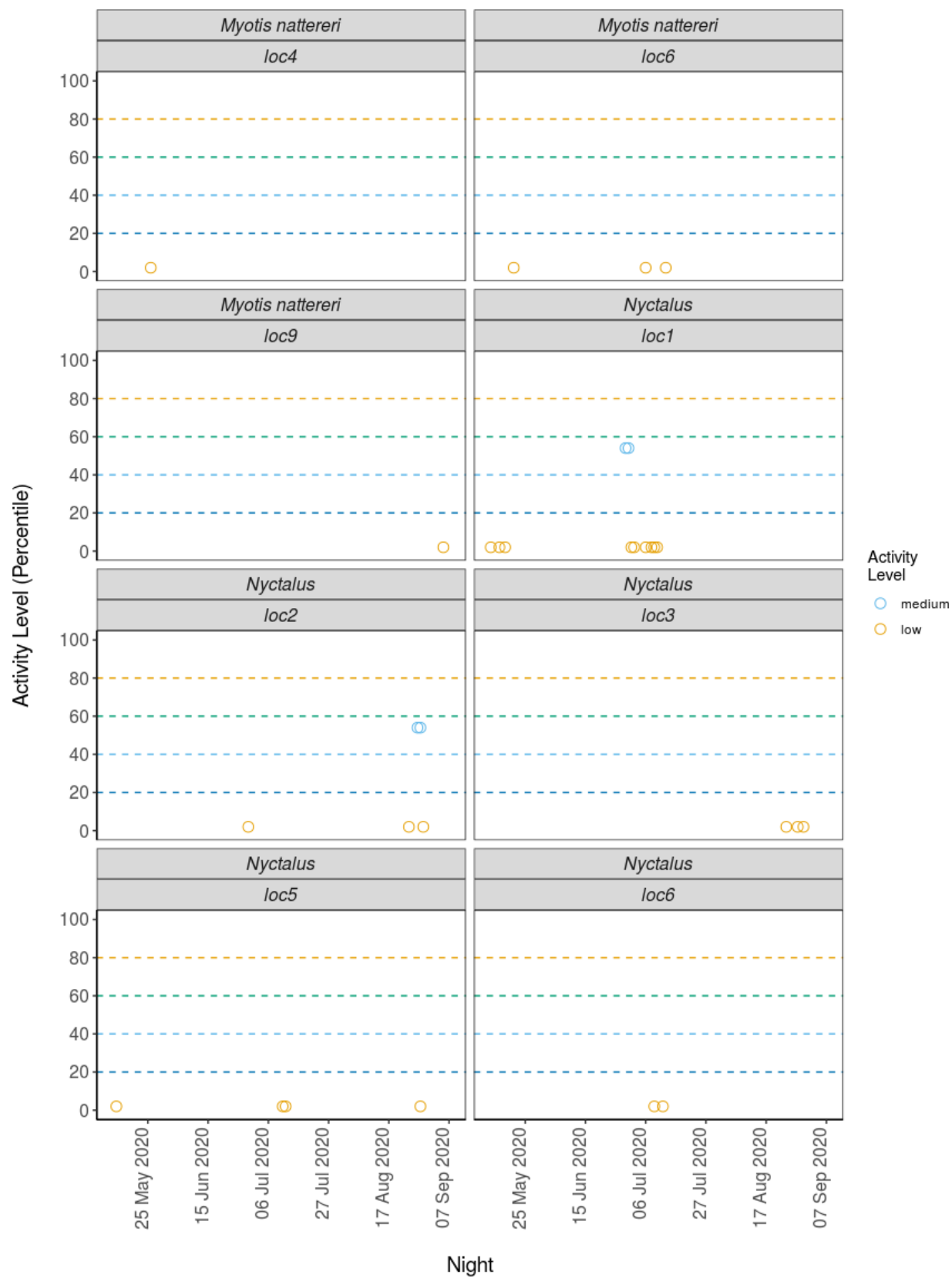
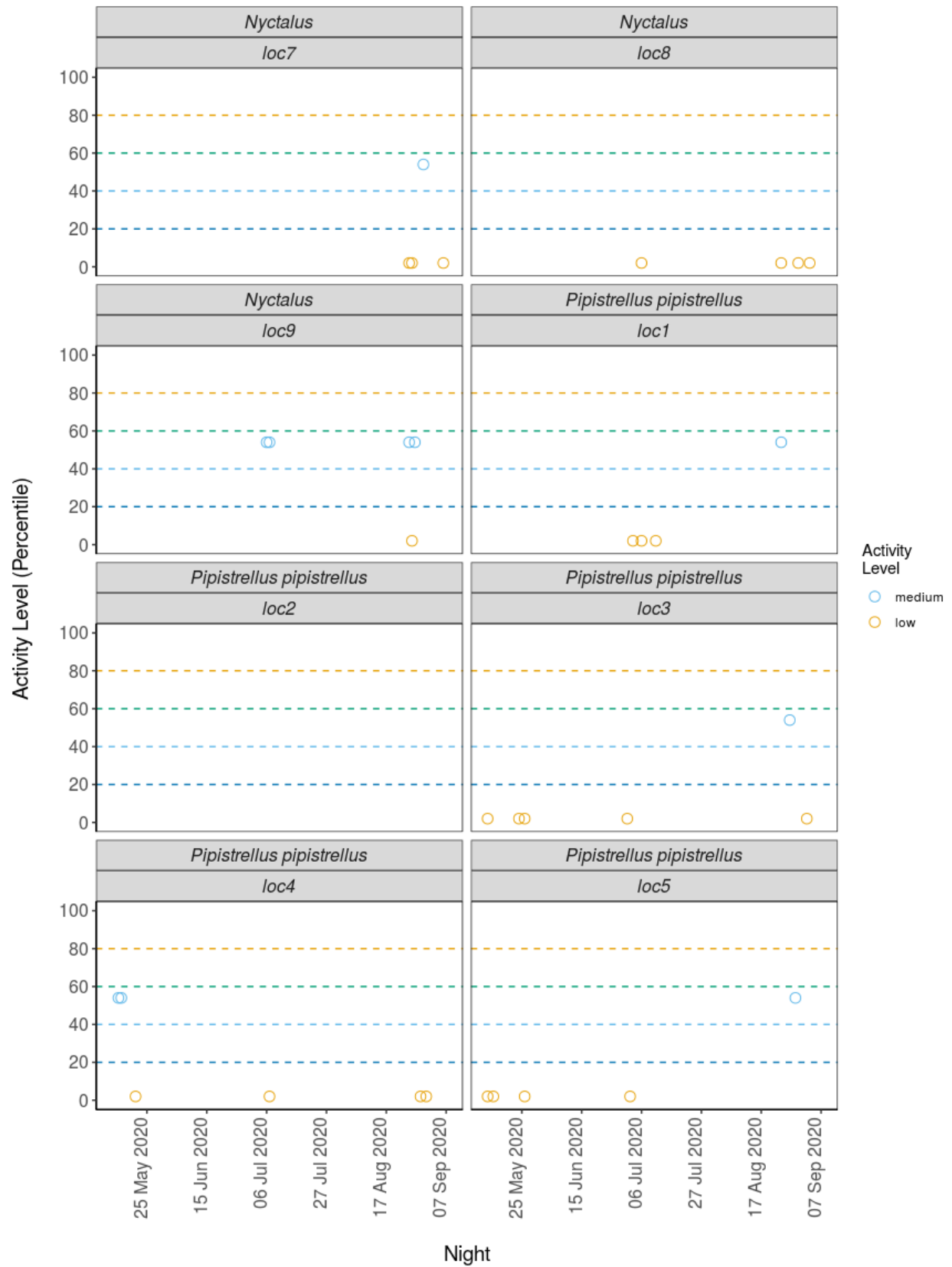
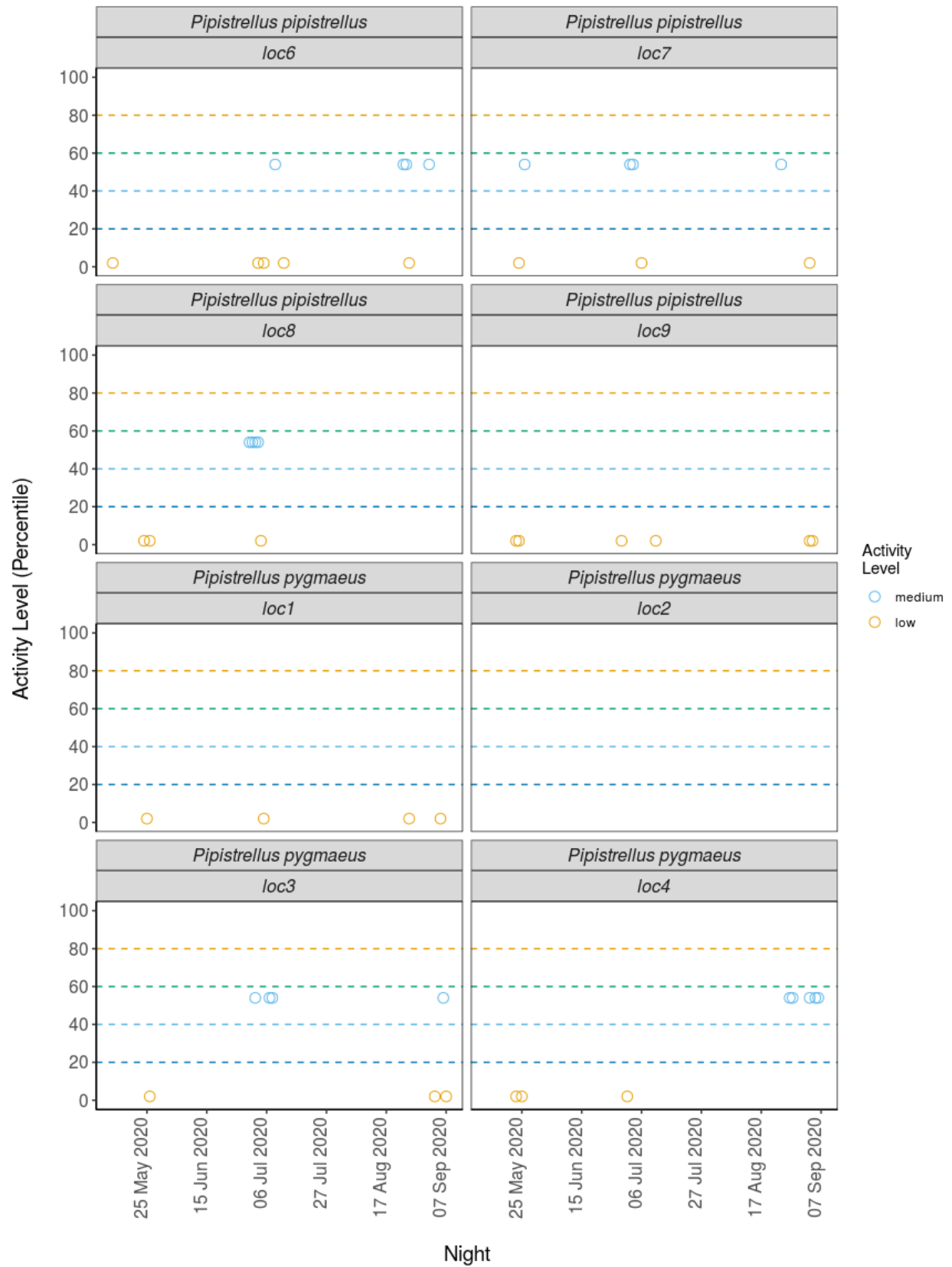


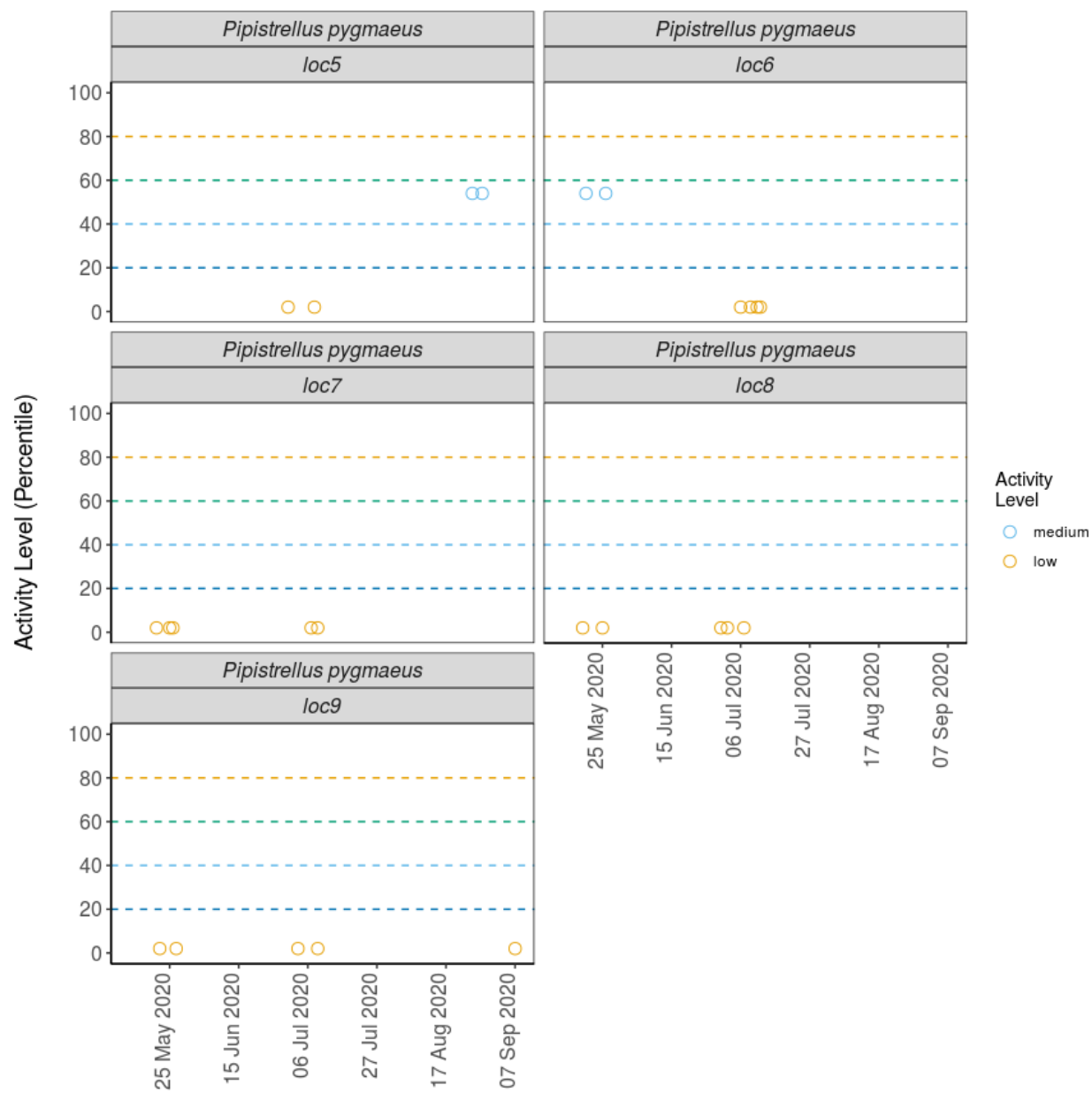
Figure 3. The activity level (percentile) of bats recorded across each night of the bat survey.











Night

PER DETECTOR, PER MONTH

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

Detector ID	Species / Species Group	Month	Nights of High Activity	Nights of Moderate / High Activity	Nights of Moderate Activity	Nights of Low / Moderate Activity	Nights of Low Activity
loc1	<i>Myotis</i>	Aug	0	1	0	0	0
loc1	<i>Myotis daubentonii</i>	Aug	0	2	0	0	0
loc1	<i>Nyctalus</i>	May	6	1	0	0	3
loc1	<i>Nyctalus</i>	Jun	0	0	2	0	0
loc1	<i>Nyctalus</i>	Jul	0	0	0	0	6
loc1	<i>Pipistrellus pipistrellus</i>	Jun	0	1	0	0	0
loc1	<i>Pipistrellus pipistrellus</i>	Jul	0	4	0	0	3
loc1	<i>Pipistrellus pipistrellus</i>	Aug	4	1	1	0	0
loc1	<i>Pipistrellus pipistrellus</i>	Sep	0	3	0	0	0
loc1	<i>Pipistrellus pygmaeus</i>	May	0	0	0	1	1
loc1	<i>Pipistrellus pygmaeus</i>	Jun	0	1	0	0	0
loc1	<i>Pipistrellus pygmaeus</i>	Jul	0	1	0	1	1
loc1	<i>Pipistrellus pygmaeus</i>	Aug	4	3	0	0	1
loc1	<i>Pipistrellus pygmaeus</i>	Sep	0	1	0	1	1
loc2	<i>Myotis</i>	May	0	0	0	0	1
loc2	<i>Myotis daubentonii</i>	May	0	0	0	0	1
loc2	<i>Myotis daubentonii</i>	Aug	0	0	0	1	2

loc2	<i>Myotis daubentonii</i>	Sep	0	0	0	0	1
loc2	<i>Nyctalus</i>	Jun	0	0	0	0	1
loc2	<i>Nyctalus</i>	Aug	0	0	2	0	2
loc2	<i>Pipistrellus pipistrellus</i>	Aug	9	0	0	0	0
loc2	<i>Pipistrellus pipistrellus</i>	Sep	2	1	0	2	0
loc2	<i>Pipistrellus pygmaeus</i>	Aug	9	0	0	0	0
loc2	<i>Pipistrellus pygmaeus</i>	Sep	0	5	0	0	0
loc3	<i>Myotis daubentonii</i>	May	0	0	1	0	1
loc3	<i>Myotis daubentonii</i>	Aug	0	0	0	0	1
loc3	<i>Myotis daubentonii</i>	Sep	0	0	0	0	1
loc3	<i>Myotis nattereri</i>	Sep	0	0	0	0	1
loc3	<i>Nyctalus</i>	Aug	0	0	0	1	3
loc3	<i>Pipistrellus pipistrellus</i>	May	0	0	0	0	3
loc3	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	0	1
loc3	<i>Pipistrellus pipistrellus</i>	Aug	2	4	1	2	0
loc3	<i>Pipistrellus pipistrellus</i>	Sep	3	0	0	0	1
loc3	<i>Pipistrellus pygmaeus</i>	May	0	0	0	0	1
loc3	<i>Pipistrellus pygmaeus</i>	Jun	0	1	0	0	0
loc3	<i>Pipistrellus pygmaeus</i>	Jul	0	1	3	0	0
loc3	<i>Pipistrellus pygmaeus</i>	Aug	2	7	0	0	0
loc3	<i>Pipistrellus pygmaeus</i>	Sep	0	0	1	0	2
loc4	<i>Myotis</i>	May	0	0	0	0	1

loc4	<i>Myotis daubentonii</i>	May	0	0	2	0	0
loc4	<i>Myotis daubentonii</i>	Jul	0	0	0	1	2
loc4	<i>Myotis nattereri</i>	May	0	0	0	0	1
loc4	<i>Pipistrellus pipistrellus</i>	May	0	2	2	3	1
loc4	<i>Pipistrellus pipistrellus</i>	Jul	4	0	0	0	1
loc4	<i>Pipistrellus pipistrellus</i>	Aug	0	0	0	0	2
loc4	<i>Pipistrellus pipistrellus</i>	Sep	0	0	0	2	0
loc4	<i>Pipistrellus pygmaeus</i>	May	0	0	0	1	2
loc4	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	0	1
loc4	<i>Pipistrellus pygmaeus</i>	Aug	0	3	2	1	0
loc4	<i>Pipistrellus pygmaeus</i>	Sep	0	0	3	1	0
loc5	<i>Myotis daubentonii</i>	May	0	0	0	0	1
loc5	<i>Myotis daubentonii</i>	Jul	0	0	0	0	1
loc5	<i>Nyctalus</i>	May	0	0	0	0	1
loc5	<i>Nyctalus</i>	Jun	1	1	0	0	0
loc5	<i>Nyctalus</i>	Jul	4	2	0	0	2
loc5	<i>Nyctalus</i>	Aug	0	0	0	2	1
loc5	<i>Pipistrellus pipistrellus</i>	May	0	0	0	0	3
loc5	<i>Pipistrellus pipistrellus</i>	Jun	0	0	0	1	0
loc5	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	0	1
loc5	<i>Pipistrellus pipistrellus</i>	Aug	0	1	1	5	0
loc5	<i>Pipistrellus pygmaeus</i>	Jun	0	0	0	0	1

loc5	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	0	1
loc5	<i>Pipistrellus pygmaeus</i>	Aug	0	2	2	2	0
loc6	<i>Myotis</i>	Aug	0	0	1	1	0
loc6	<i>Myotis</i>	Sep	0	0	0	2	0
loc6	<i>Myotis daubentonii</i>	May	0	0	0	0	1
loc6	<i>Myotis daubentonii</i>	Jul	0	0	0	0	1
loc6	<i>Myotis daubentonii</i>	Aug	0	0	0	2	1
loc6	<i>Myotis daubentonii</i>	Sep	0	0	0	0	2
loc6	<i>Myotis nattereri</i>	May	0	0	0	0	1
loc6	<i>Myotis nattereri</i>	Jul	0	0	0	0	2
loc6	<i>Nyctalus</i>	Jun	0	1	0	0	0
loc6	<i>Nyctalus</i>	Jul	0	4	0	2	2
loc6	<i>Nyctalus</i>	Aug	0	2	0	1	0
loc6	<i>Pipistrellus pipistrellus</i>	May	6	0	0	1	1
loc6	<i>Pipistrellus pipistrellus</i>	Jun	1	0	0	0	0
loc6	<i>Pipistrellus pipistrellus</i>	Jul	2	4	1	1	3
loc6	<i>Pipistrellus pipistrellus</i>	Aug	6	0	2	0	1
loc6	<i>Pipistrellus pipistrellus</i>	Sep	0	6	1	0	0
loc6	<i>Pipistrellus pygmaeus</i>	May	0	2	2	0	0
loc6	<i>Pipistrellus pygmaeus</i>	Jun	1	0	0	0	0
loc6	<i>Pipistrellus pygmaeus</i>	Jul	2	0	0	2	4
loc6	<i>Pipistrellus pygmaeus</i>	Aug	9	0	0	0	0

loc6	<i>Pipistrellus pygmaeus</i>	Sep	7	0	0	0	0
loc7	<i>Myotis</i>	May	0	0	0	0	1
loc7	<i>Myotis</i>	Aug	0	0	0	3	0
loc7	<i>Myotis</i>	Sep	0	0	1	1	0
loc7	<i>Myotis daubentonii</i>	Aug	0	0	0	0	6
loc7	<i>Myotis daubentonii</i>	Sep	0	0	0	1	1
loc7	<i>Nyctalus</i>	May	0	1	0	0	0
loc7	<i>Nyctalus</i>	Jun	1	1	0	0	0
loc7	<i>Nyctalus</i>	Jul	2	0	0	0	0
loc7	<i>Nyctalus</i>	Aug	0	0	1	3	2
loc7	<i>Nyctalus</i>	Sep	0	0	0	1	1
loc7	<i>Pipistrellus pipistrellus</i>	May	0	0	1	0	1
loc7	<i>Pipistrellus pipistrellus</i>	Jun	1	0	0	0	0
loc7	<i>Pipistrellus pipistrellus</i>	Jul	1	0	2	0	1
loc7	<i>Pipistrellus pipistrellus</i>	Aug	5	1	1	1	0
loc7	<i>Pipistrellus pipistrellus</i>	Sep	0	2	0	1	1
loc7	<i>Pipistrellus pygmaeus</i>	May	0	0	0	0	3
loc7	<i>Pipistrellus pygmaeus</i>	Jul	0	2	0	0	2
loc7	<i>Pipistrellus pygmaeus</i>	Aug	9	0	0	0	0
loc7	<i>Pipistrellus pygmaeus</i>	Sep	0	4	0	1	0
loc8	<i>Myotis daubentonii</i>	May	0	0	0	0	1
loc8	<i>Myotis daubentonii</i>	Aug	0	0	0	0	2
loc8	<i>Nyctalus</i>	Jun	2	0	0	0	0
loc8	<i>Nyctalus</i>	Jul	1	4	0	0	1
loc8	<i>Nyctalus</i>	Aug	0	0	0	3	2

loc8	<i>Nyctalus</i>	Sep	0	0	0	0	1
loc8	<i>Pipistrellus pipistrellus</i>	May	0	0	0	0	2
loc8	<i>Pipistrellus pipistrellus</i>	Jun	0	0	1	1	0
loc8	<i>Pipistrellus pipistrellus</i>	Jul	0	0	3	3	1
loc8	<i>Pipistrellus pipistrellus</i>	Aug	9	0	0	0	0
loc8	<i>Pipistrellus pipistrellus</i>	Sep	3	0	0	0	0
loc8	<i>Pipistrellus pygmaeus</i>	May	0	0	0	0	2
loc8	<i>Pipistrellus pygmaeus</i>	Jun	0	0	0	1	1
loc8	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	0	2
loc8	<i>Pipistrellus pygmaeus</i>	Aug	9	0	0	0	0
loc8	<i>Pipistrellus pygmaeus</i>	Sep	2	1	0	0	0
loc9	<i>Myotis</i>	May	0	0	0	0	3
loc9	<i>Myotis</i>	Aug	0	2	2	2	1
loc9	<i>Myotis</i>	Sep	0	0	0	0	2
loc9	<i>Myotis daubentonii</i>	Aug	0	2	0	0	0
loc9	<i>Myotis daubentonii</i>	Sep	0	0	0	0	3
loc9	<i>Myotis nattereri</i>	Sep	0	0	0	0	1
loc9	<i>Nyctalus</i>	May	1	2	0	0	0
loc9	<i>Nyctalus</i>	Jun	0	2	0	0	0
loc9	<i>Nyctalus</i>	Jul	0	1	2	3	0
loc9	<i>Nyctalus</i>	Aug	0	0	2	1	1
loc9	<i>Pipistrellus pipistrellus</i>	May	0	0	0	0	2
loc9	<i>Pipistrellus pipistrellus</i>	Jun	1	0	0	0	1

loc9	<i>Pipistrellus pipistrellus</i>	Jul	1	3	0	2	1
loc9	<i>Pipistrellus pipistrellus</i>	Aug	9	0	0	0	0
loc9	<i>Pipistrellus pipistrellus</i>	Sep	0	0	0	3	2
loc9	<i>Pipistrellus pygmaeus</i>	May	0	0	0	4	2
loc9	<i>Pipistrellus pygmaeus</i>	Jun	0	1	0	0	0
loc9	<i>Pipistrellus pygmaeus</i>	Jul	0	1	0	2	2
loc9	<i>Pipistrellus pygmaeus</i>	Aug	8	1	0	0	0
loc9	<i>Pipistrellus pygmaeus</i>	Sep	0	3	0	1	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
loc1	<i>Myotis</i>	Aug	71	0	71	1
loc1	<i>Myotis daubentonii</i>	Aug	67	67 - 67	67	2
loc1	<i>Nyctalus</i>	May	85	2 - 60.5	93	10
loc1	<i>Nyctalus</i>	Jun	54	2 - 60.5	54	2
loc1	<i>Nyctalus</i>	Jul	2	2 - 60.5	2	6
loc1	<i>Pipistrellus pipistrellus</i>	Jun	74	41 - 77.5	74	1
loc1	<i>Pipistrellus pipistrellus</i>	Jul	62	41 - 77.5	74	7
loc1	<i>Pipistrellus pipistrellus</i>	Aug	82	41 - 77.5	89	6
loc1	<i>Pipistrellus pipistrellus</i>	Sep	80	41 - 77.5	80	3
loc1	<i>Pipistrellus pygmaeus</i>	May	21	38 - 77.5	39	2
loc1	<i>Pipistrellus pygmaeus</i>	Jun	67	38 - 77.5	67	1
loc1	<i>Pipistrellus pygmaeus</i>	Jul	39	38 - 77.5	67	3
loc1	<i>Pipistrellus pygmaeus</i>	Aug	84	38 - 77.5	95	8
loc1	<i>Pipistrellus pygmaeus</i>	Sep	39	38 - 77.5	74	3
loc2	<i>Myotis</i>	May	2	0	2	1
loc2	<i>Myotis daubentonii</i>	May	2	2 - 2	2	1
loc2	<i>Myotis daubentonii</i>	Aug	2	2 - 2	39	3
loc2	<i>Myotis daubentonii</i>	Sep	2	2 - 2	2	1

loc2	<i>Nyctalus</i>	Jun	2	2 - 28	2	1
loc2	<i>Nyctalus</i>	Aug	28	2 - 28	54	4
loc2	<i>Pipistrellus pipistrellus</i>	Aug	95	67 - 95	97	9
loc2	<i>Pipistrellus pipistrellus</i>	Sep	71	67 - 95	86	5
loc2	<i>Pipistrellus pygmaeus</i>	Aug	99	79.5 - 98	100	9
loc2	<i>Pipistrellus pygmaeus</i>	Sep	62	79.5 - 98	80	5
loc3	<i>Myotis daubentonii</i>	May	28	2 - 2	54	2
loc3	<i>Myotis daubentonii</i>	Aug	2	2 - 2	2	1
loc3	<i>Myotis daubentonii</i>	Sep	2	2 - 2	2	1
loc3	<i>Myotis nattereri</i>	Sep	2	0	2	1
loc3	<i>Nyctalus</i>	Aug	2	2 - 2	39	4
loc3	<i>Pipistrellus pipistrellus</i>	May	2	32 - 74	2	3
loc3	<i>Pipistrellus pipistrellus</i>	Jul	2	32 - 74	2	1
loc3	<i>Pipistrellus pipistrellus</i>	Aug	67	32 - 74	81	9
loc3	<i>Pipistrellus pipistrellus</i>	Sep	96	32 - 74	98	4
loc3	<i>Pipistrellus pygmaeus</i>	May	2	41 - 74.5	2	1
loc3	<i>Pipistrellus pygmaeus</i>	Jun	67	41 - 74.5	67	1
loc3	<i>Pipistrellus pygmaeus</i>	Jul	54	41 - 74.5	67	4
loc3	<i>Pipistrellus pygmaeus</i>	Aug	79	41 - 74.5	82	9
loc3	<i>Pipistrellus pygmaeus</i>	Sep	2	41 - 74.5	54	3
loc4	<i>Myotis</i>	May	2	0	2	1
loc4	<i>Myotis daubentonii</i>	May	54	2 - 54	54	2

loc4	<i>Myotis daubentonii</i>	Jul	2	2 - 54	39	3
loc4	<i>Myotis nattereri</i>	May	2	0	2	1
loc4	<i>Pipistrellus pipistrellus</i>	May	47	28 - 63.5	67	8
loc4	<i>Pipistrellus pipistrellus</i>	Jul	84	28 - 63.5	88	5
loc4	<i>Pipistrellus pipistrellus</i>	Aug	2	28 - 63.5	2	2
loc4	<i>Pipistrellus pipistrellus</i>	Sep	39	28 - 63.5	39	2
loc4	<i>Pipistrellus pygmaeus</i>	May	2	28 - 54	39	3
loc4	<i>Pipistrellus pygmaeus</i>	Jul	2	28 - 54	2	1
loc4	<i>Pipistrellus pygmaeus</i>	Aug	58	28 - 54	67	6
loc4	<i>Pipistrellus pygmaeus</i>	Sep	54	28 - 54	54	4
loc5	<i>Myotis daubentonii</i>	May	2	2 - 2	2	1
loc5	<i>Myotis daubentonii</i>	Jul	2	2 - 2	2	1
loc5	<i>Nyctalus</i>	May	2	34.5 - 80	2	1
loc5	<i>Nyctalus</i>	Jun	85	34.5 - 80	89	2
loc5	<i>Nyctalus</i>	Jul	75	34.5 - 80	89	8
loc5	<i>Nyctalus</i>	Aug	39	34.5 - 80	39	3
loc5	<i>Pipistrellus pipistrellus</i>	May	2	20.5 - 46.5	2	3
loc5	<i>Pipistrellus pipistrellus</i>	Jun	39	20.5 - 46.5	39	1
loc5	<i>Pipistrellus pipistrellus</i>	Jul	2	20.5 - 46.5	2	1
loc5	<i>Pipistrellus pipistrellus</i>	Aug	39	20.5 - 46.5	74	7

loc5	<i>Pipistrellus pygmaeus</i>	Jun	2	20.5 - 58	2	1
loc5	<i>Pipistrellus pygmaeus</i>	Jul	2	20.5 - 58	2	1
loc5	<i>Pipistrellus pygmaeus</i>	Aug	54	20.5 - 58	62	6
loc6	<i>Myotis</i>	Aug	47	39 - 39	54	2
loc6	<i>Myotis</i>	Sep	39	39 - 39	39	2
loc6	<i>Myotis daubentonii</i>	May	2	2 - 20.5	2	1
loc6	<i>Myotis daubentonii</i>	Jul	2	2 - 20.5	2	1
loc6	<i>Myotis daubentonii</i>	Aug	39	2 - 20.5	39	3
loc6	<i>Myotis daubentonii</i>	Sep	2	2 - 20.5	2	2
loc6	<i>Myotis nattereri</i>	May	2	2 - 2	2	1
loc6	<i>Myotis nattereri</i>	Jul	2	2 - 2	2	2
loc6	<i>Nyctalus</i>	Jun	71	34.5 - 67	71	1
loc6	<i>Nyctalus</i>	Jul	51	34.5 - 67	67	8
loc6	<i>Nyctalus</i>	Aug	67	34.5 - 67	67	3
loc6	<i>Pipistrellus pipistrellus</i>	May	86	58 - 82.5	91	8
loc6	<i>Pipistrellus pipistrellus</i>	Jun	91	58 - 82.5	91	1
loc6	<i>Pipistrellus pipistrellus</i>	Jul	62	58 - 82.5	91	11
loc6	<i>Pipistrellus pipistrellus</i>	Aug	95	58 - 82.5	96	9
loc6	<i>Pipistrellus pipistrellus</i>	Sep	79	58 - 82.5	80	7
loc6	<i>Pipistrellus pygmaeus</i>	May	58	58 - 89	62	4
loc6	<i>Pipistrellus pygmaeus</i>	Jun	89	58 - 89	89	1

loc6	<i>Pipistrellus pygmaeus</i>	Jul	21	58 - 89	89	8
loc6	<i>Pipistrellus pygmaeus</i>	Aug	97	58 - 89	99	9
loc6	<i>Pipistrellus pygmaeus</i>	Sep	87	58 - 89	93	7
loc7	<i>Myotis</i>	May	2	2 - 54	2	1
loc7	<i>Myotis</i>	Aug	39	2 - 54	39	3
loc7	<i>Myotis</i>	Sep	47	2 - 54	54	2
loc7	<i>Myotis daubentonii</i>	Aug	2	2 - 2	2	6
loc7	<i>Myotis daubentonii</i>	Sep	21	2 - 2	39	2
loc7	<i>Nyctalus</i>	May	77	20.5 - 68	77	1
loc7	<i>Nyctalus</i>	Jun	77	20.5 - 68	83	2
loc7	<i>Nyctalus</i>	Jul	83	20.5 - 68	83	2
loc7	<i>Nyctalus</i>	Aug	39	20.5 - 68	54	6
loc7	<i>Nyctalus</i>	Sep	21	20.5 - 68	39	2
loc7	<i>Pipistrellus pipistrellus</i>	May	28	46 - 75	54	2
loc7	<i>Pipistrellus pipistrellus</i>	Jun	88	46 - 75	88	1
loc7	<i>Pipistrellus pipistrellus</i>	Jul	54	46 - 75	88	4
loc7	<i>Pipistrellus pipistrellus</i>	Aug	88	46 - 75	90	8
loc7	<i>Pipistrellus pipistrellus</i>	Sep	51	46 - 75	62	4
loc7	<i>Pipistrellus pygmaeus</i>	May	2	43 - 80	2	3
loc7	<i>Pipistrellus pygmaeus</i>	Jul	32	43 - 80	62	4
loc7	<i>Pipistrellus pygmaeus</i>	Aug	92	43 - 80	96	9

loc7	<i>Pipistrellus pygmaeus</i>	Sep	67	43 - 80	67	5
loc8	<i>Myotis daubentonii</i>	May	2	2 - 2	2	1
loc8	<i>Myotis daubentonii</i>	Aug	2	2 - 2	2	2
loc8	<i>Nyctalus</i>	Jun	89	20.5 - 71	89	2
loc8	<i>Nyctalus</i>	Jul	67	20.5 - 71	83	6
loc8	<i>Nyctalus</i>	Aug	39	20.5 - 71	39	5
loc8	<i>Nyctalus</i>	Sep	2	20.5 - 71	2	1
loc8	<i>Pipistrellus pipistrellus</i>	May	2	50.5 - 95.5	2	2
loc8	<i>Pipistrellus pipistrellus</i>	Jun	47	50.5 - 95.5	54	2
loc8	<i>Pipistrellus pipistrellus</i>	Jul	39	50.5 - 95.5	54	7
loc8	<i>Pipistrellus pipistrellus</i>	Aug	99	50.5 - 95.5	100	9
loc8	<i>Pipistrellus pipistrellus</i>	Sep	95	50.5 - 95.5	96	3
loc8	<i>Pipistrellus pygmaeus</i>	May	2	49 - 97	2	2
loc8	<i>Pipistrellus pygmaeus</i>	Jun	21	49 - 97	39	2
loc8	<i>Pipistrellus pygmaeus</i>	Jul	2	49 - 97	2	2
loc8	<i>Pipistrellus pygmaeus</i>	Aug	99	49 - 97	99	9
loc8	<i>Pipistrellus pygmaeus</i>	Sep	92	49 - 97	92	3
loc9	<i>Myotis</i>	May	2	2 - 50.5	2	3
loc9	<i>Myotis</i>	Aug	54	2 - 50.5	62	7
loc9	<i>Myotis</i>	Sep	2	2 - 50.5	2	2

loc9	<i>Myotis daubentonii</i>	Aug	71	2 - 36.5	71	2
loc9	<i>Myotis daubentonii</i>	Sep	2	2 - 36.5	2	3
loc9	<i>Myotis nattereri</i>	Sep	2	0	2	1
loc9	<i>Nyctalus</i>	May	62	46.5 - 66.5	90	3
loc9	<i>Nyctalus</i>	Jun	79	46.5 - 66.5	79	2
loc9	<i>Nyctalus</i>	Jul	47	46.5 - 66.5	77	6
loc9	<i>Nyctalus</i>	Aug	47	46.5 - 66.5	54	4
loc9	<i>Pipistrellus pipistrellus</i>	May	2	41.5 - 81.5	2	2
loc9	<i>Pipistrellus pipistrellus</i>	Jun	42	41.5 - 81.5	81	2
loc9	<i>Pipistrellus pipistrellus</i>	Jul	77	41.5 - 81.5	81	7
loc9	<i>Pipistrellus pipistrellus</i>	Aug	90	41.5 - 81.5	99	9
loc9	<i>Pipistrellus pipistrellus</i>	Sep	39	41.5 - 81.5	39	5
loc9	<i>Pipistrellus pygmaeus</i>	May	39	39.5 - 69.5	39	6
loc9	<i>Pipistrellus pygmaeus</i>	Jun	67	39.5 - 69.5	67	1
loc9	<i>Pipistrellus pygmaeus</i>	Jul	39	39.5 - 69.5	67	5
loc9	<i>Pipistrellus pygmaeus</i>	Aug	95	39.5 - 69.5	97	9
loc9	<i>Pipistrellus pygmaeus</i>	Sep	62	39.5 - 69.5	77	5

PER SITE

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

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

Species/Species Group	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity
<i>Myotis</i>	0	3	4	9	9
<i>Myotis daubentonii</i>	0	4	3	5	29
<i>Myotis nattereri</i>	0	0	0	0	6
<i>Nyctalus</i>	18	22	9	17	29
<i>Pipistrellus pipistrellus</i>	69	33	17	28	33
<i>Pipistrellus pygmaeus</i>	62	40	13	19	31

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

Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded
<i>Myotis</i>	39	39 - 39	71	25
<i>Myotis daubentonii</i>	2	67 - 67	71	41
<i>Myotis nattereri</i>	2	2 - 2	2	6
<i>Nyctalus</i>	54	46.5 - 66.5	93	95
<i>Pipistrellus pipistrellus</i>	67	67 - 95	100	180
<i>Pipistrellus pygmaeus</i>	67	79.5 - 98	100	165

###Figures

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

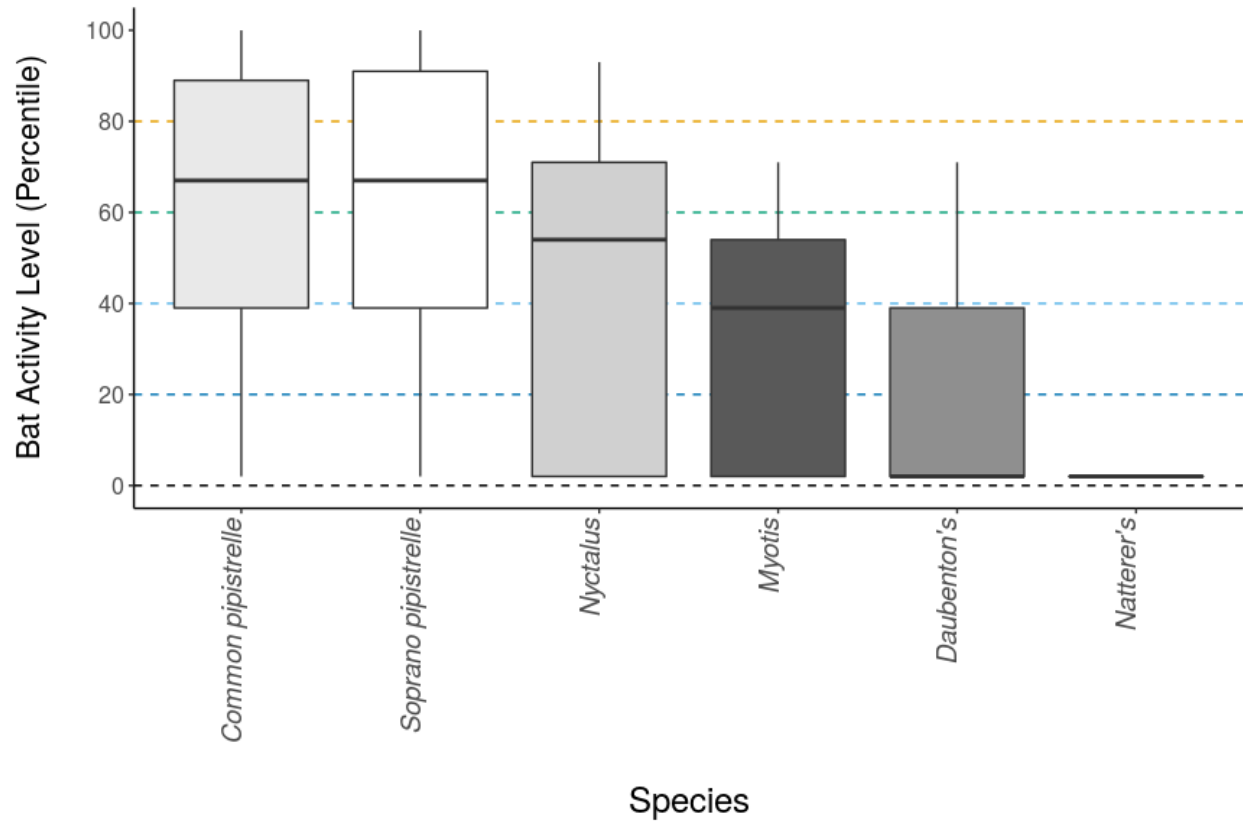
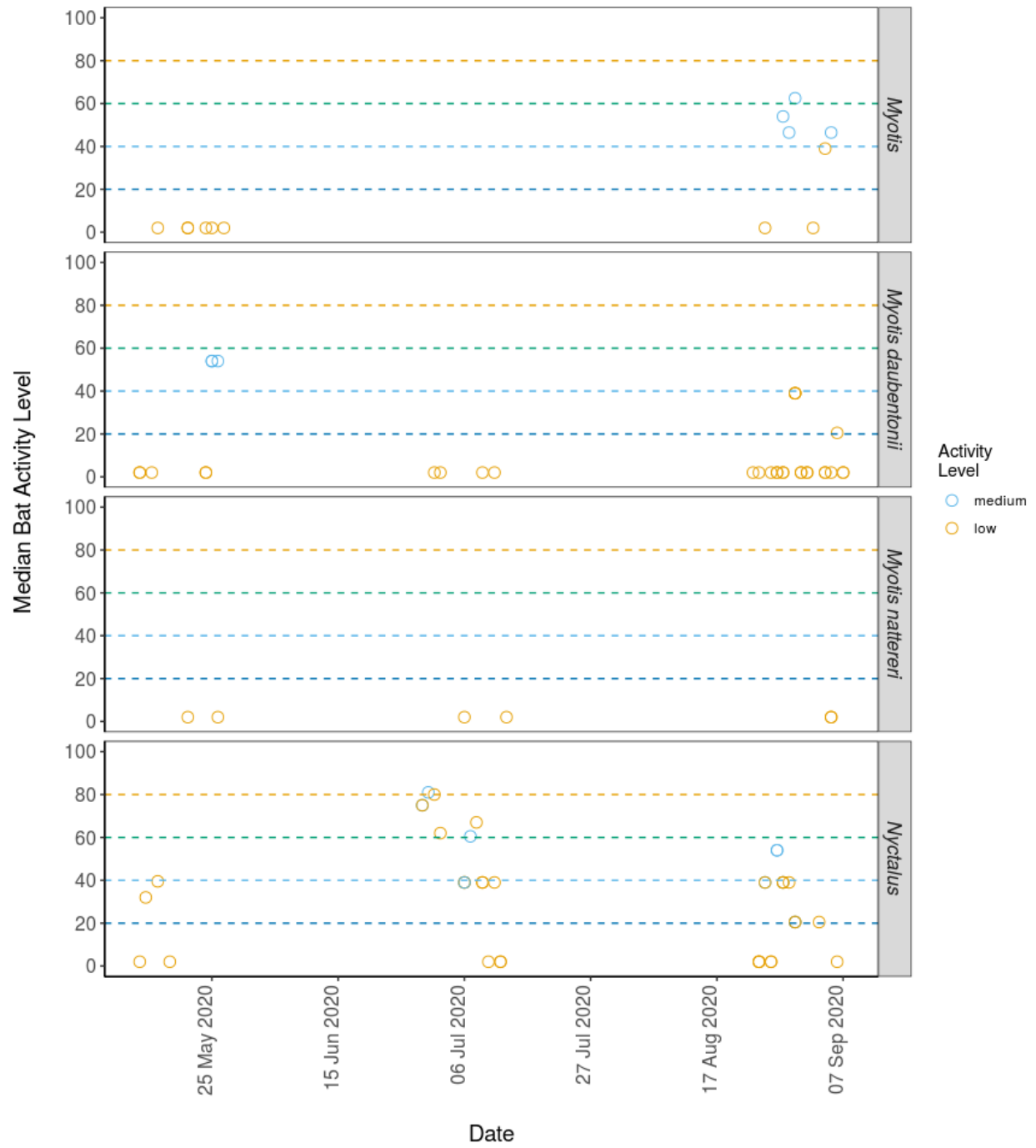
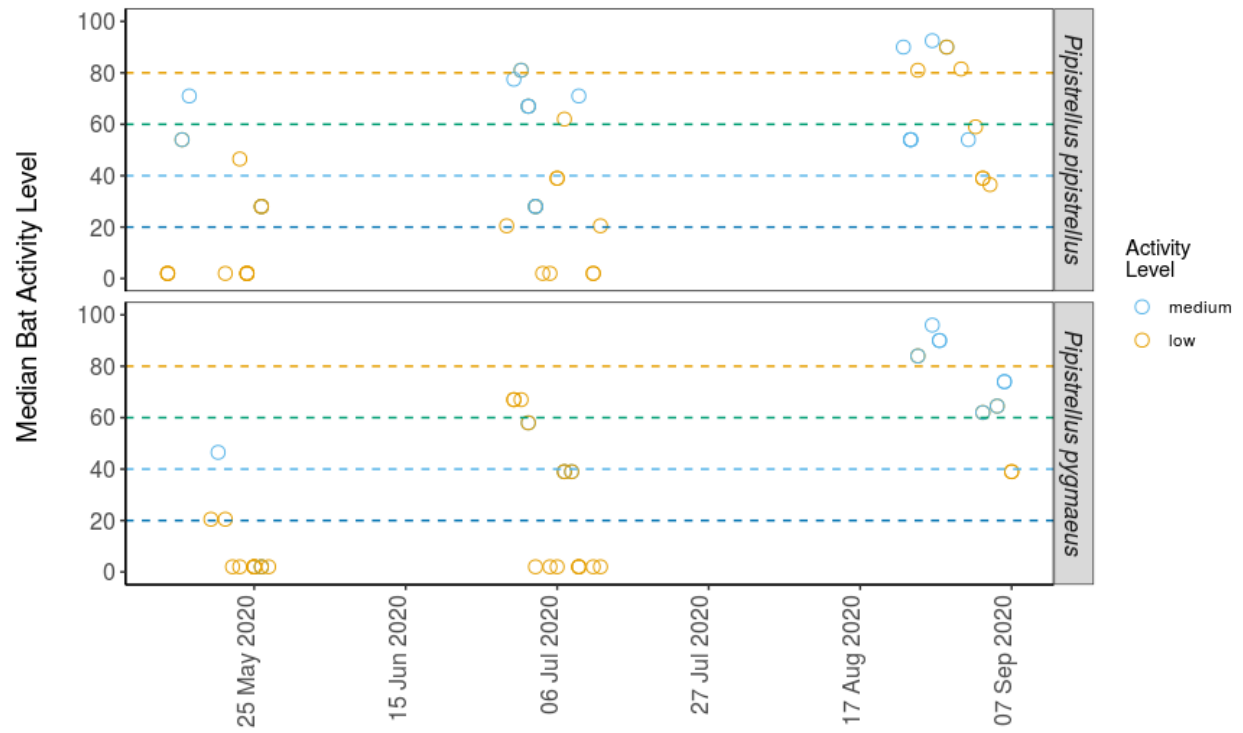


Figure 5. The median activity levels of bats recorded across all detectors each night.





Date

PER SITE, PER MONTH

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

Species/Species Group	Month	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity
<i>Myotis</i>	May	0	0	0	0	6
<i>Myotis</i>	Aug	0	3	3	6	1
<i>Myotis</i>	Sep	0	0	1	3	2
<i>Myotis daubentonii</i>	May	0	0	3	0	5
<i>Myotis daubentonii</i>	Jul	0	0	0	1	4
<i>Myotis daubentonii</i>	Aug	0	4	0	3	12
<i>Myotis daubentonii</i>	Sep	0	0	0	1	8
<i>Myotis nattereri</i>	May	0	0	0	0	2
<i>Myotis nattereri</i>	Jul	0	0	0	0	2
<i>Myotis nattereri</i>	Sep	0	0	0	0	2
<i>Nyctalus</i>	May	7	4	0	0	4
<i>Nyctalus</i>	Jun	4	5	2	0	1
<i>Nyctalus</i>	Jul	7	11	2	5	11
<i>Nyctalus</i>	Aug	0	2	5	11	11
<i>Nyctalus</i>	Sep	0	0	0	1	2
<i>Pipistrellus pipistrellus</i>	May	6	2	3	4	13
<i>Pipistrellus pipistrellus</i>	Jun	3	1	1	2	1
<i>Pipistrellus pipistrellus</i>	Jul	8	11	6	6	12
<i>Pipistrellus pipistrellus</i>	Aug	44	7	6	8	3
<i>Pipistrellus pipistrellus</i>	Sep	8	12	1	8	4

<i>Pipistrellus pygmaeus</i>	May	0	2	2	6	11
<i>Pipistrellus pygmaeus</i>	Jun	1	3	0	1	2
<i>Pipistrellus pygmaeus</i>	Jul	2	5	3	5	13
<i>Pipistrellus pygmaeus</i>	Aug	50	16	4	3	1
<i>Pipistrellus pygmaeus</i>	Sep	9	14	4	4	4

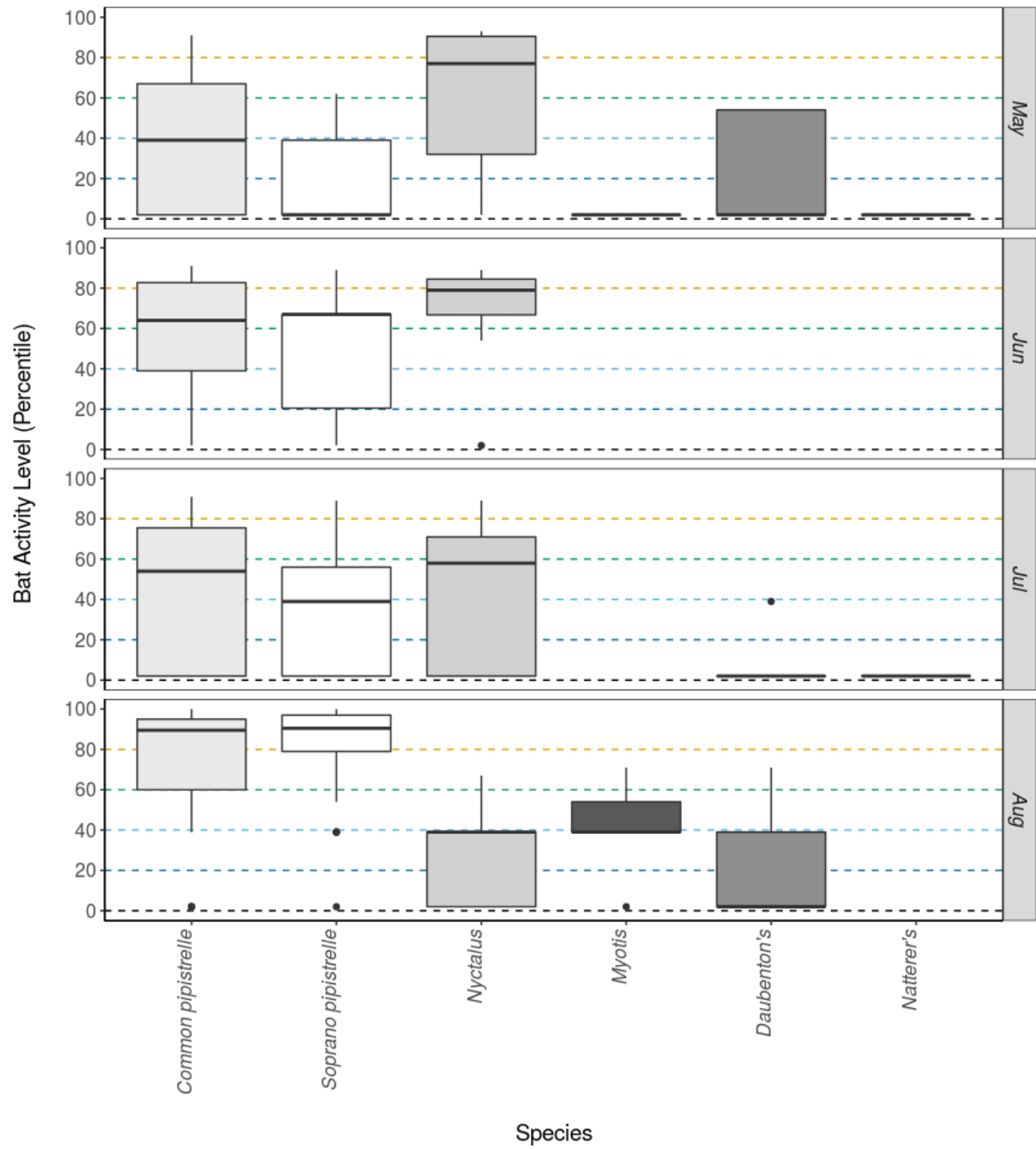
Table 10. Summary table showing key metrics for each species recorded per month.

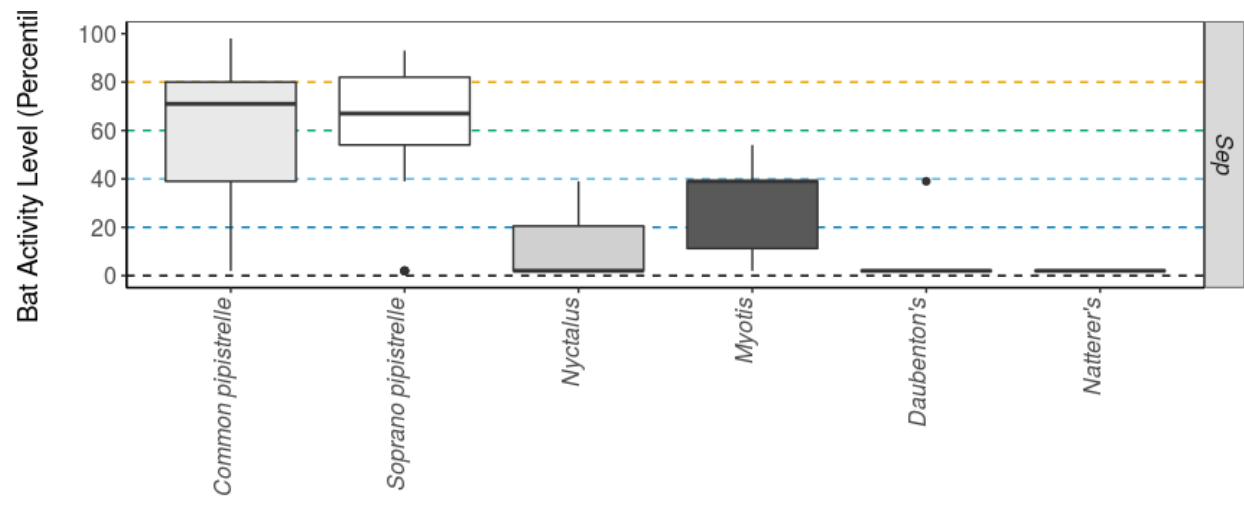
Species/Species Group	Month	Median Percentile	95% CIs	Max Percentile	Nights Recorded
<i>Myotis</i>	May	2	2 - 54	2	6
<i>Myotis</i>	Aug	39	39 - 39	71	13
<i>Myotis</i>	Sep	39	39 - 39	54	6
<i>Myotis daubentonii</i>	May	2	2 - 54	54	8
<i>Myotis daubentonii</i>	Jul	2	2 - 54	39	5
<i>Myotis daubentonii</i>	Aug	2	67 - 67	71	19
<i>Myotis daubentonii</i>	Sep	2	2 - 36.5	39	9
<i>Myotis nattereri</i>	May	2	2 - 2	2	2
<i>Myotis nattereri</i>	Jul	2	2 - 2	2	2
<i>Myotis nattereri</i>	Sep	2	0	2	2
<i>Nyctalus</i>	May	77	46.5 - 66.5	93	15
<i>Nyctalus</i>	Jun	79	46.5 - 66.5	89	12
<i>Nyctalus</i>	Jul	58	46.5 - 66.5	89	36
<i>Nyctalus</i>	Aug	39	46.5 - 66.5	67	29
<i>Nyctalus</i>	Sep	2	20.5 - 71	39	3
<i>Pipistrellus pipistrellus</i>	May	39	58 - 82.5	91	28
<i>Pipistrellus pipistrellus</i>	Jun	64	58 - 82.5	91	8
<i>Pipistrellus pipistrellus</i>	Jul	54	58 - 82.5	91	43
<i>Pipistrellus pipistrellus</i>	Aug	90	67 - 95	100	68
<i>Pipistrellus pipistrellus</i>	Sep	71	67 - 95	98	33
<i>Pipistrellus pygmaeus</i>	May	2	58 - 89	62	21
<i>Pipistrellus pygmaeus</i>	Jun	67	58 - 89	89	7

<i>Pipistrellus</i> <i>pygmaeus</i>	Jul	39	58 - 89	89	28
<i>Pipistrellus</i> <i>pygmaeus</i>	Aug	91	79.5 - 98	100	74
<i>Pipistrellus</i> <i>pygmaeus</i>	Sep	67	79.5 - 98	93	35

###Figures

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.

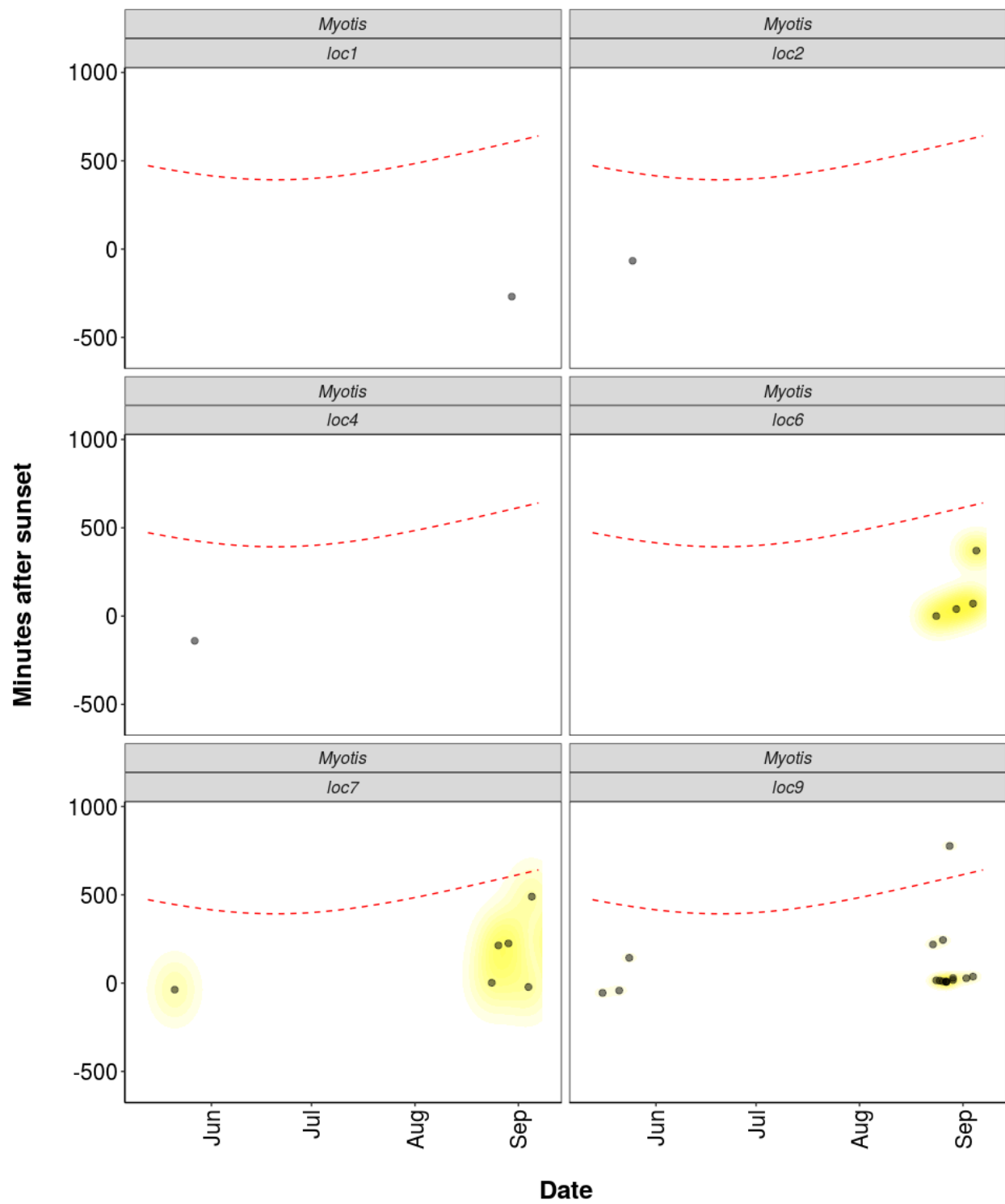
Night (y-m-d)	Sunset (hh:mm)	Sunrise (hh:mm)	Night Length (hours)
2020-05-13	21:18	05:10	7.9
2020-05-14	21:20	05:08	7.8
2020-05-15	21:21	05:06	7.7
2020-05-16	21:23	05:05	7.7
2020-05-17	21:25	05:03	7.6
2020-05-18	21:27	05:01	7.6
2020-05-19	21:29	05:00	7.5
2020-05-20	21:30	04:58	7.5
2020-05-21	21:32	04:57	7.4
2020-05-22	21:34	04:55	7.4
2020-05-23	21:35	04:54	7.3
2020-05-24	21:37	04:53	7.3
2020-05-25	21:39	04:51	7.2
2020-05-26	21:40	04:50	7.2
2020-05-27	21:42	04:49	7.1
2020-06-29	22:04	04:41	6.6
2020-06-30	22:03	04:41	6.6
2020-07-01	22:03	04:42	6.7
2020-07-02	22:02	04:43	6.7
2020-07-03	22:02	04:44	6.7
2020-07-04	22:01	04:45	6.7
2020-07-05	22:01	04:46	6.8
2020-07-06	22:00	04:47	6.8
2020-07-07	21:59	04:48	6.8
2020-07-08	21:58	04:50	6.9
2020-07-09	21:57	04:51	6.9
2020-07-10	21:56	04:52	6.9

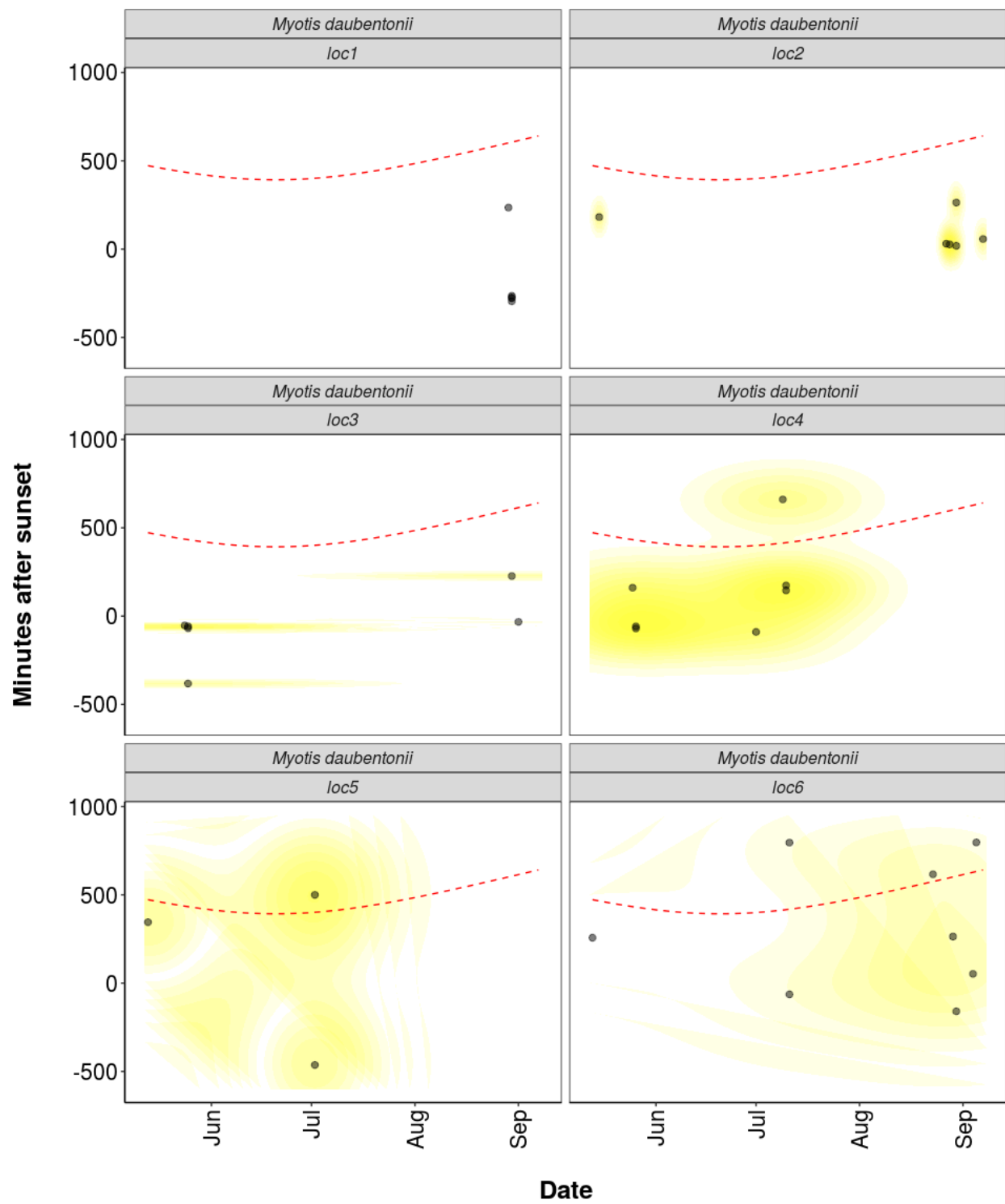
2020-07-11	21:55	04:53	7.0
2020-07-12	21:54	04:55	7.0
2020-07-13	21:53	04:56	7.0
2020-08-23	20:35	06:09	9.6
2020-08-24	20:32	06:11	9.7
2020-08-25	20:30	06:13	9.7
2020-08-26	20:27	06:15	9.8
2020-08-27	20:25	06:17	9.9
2020-08-28	20:22	06:19	9.9
2020-08-29	20:20	06:21	10.0
2020-08-30	20:17	06:23	10.1
2020-08-31	20:15	06:25	10.2
2020-09-01	20:12	06:27	10.2
2020-09-02	20:10	06:28	10.3
2020-09-03	20:07	06:30	10.4
2020-09-04	20:05	06:32	10.5
2020-09-05	20:02	06:34	10.5
2020-09-06	20:00	06:36	10.6
2020-09-07	19:57	06:38	10.7

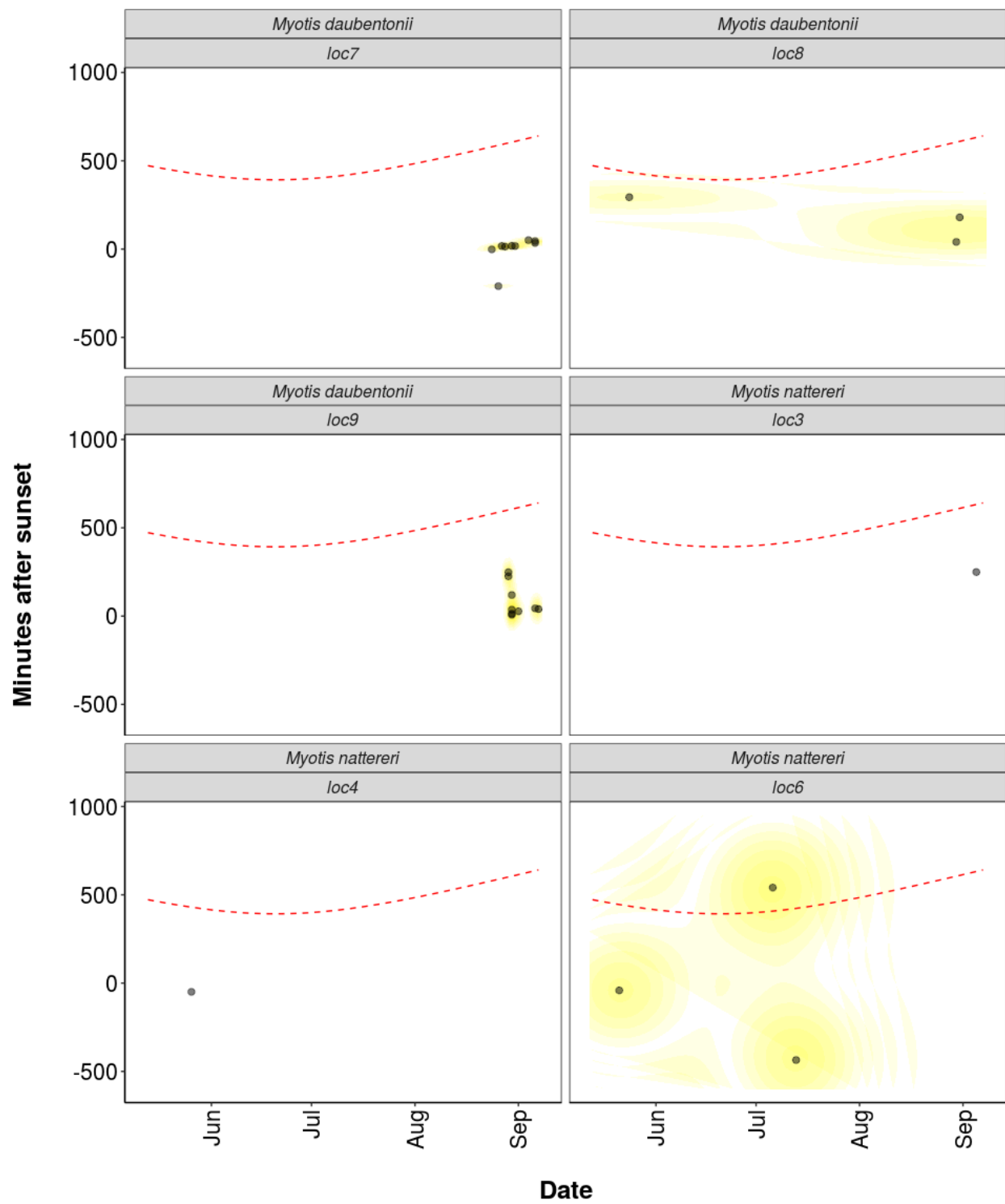
Distribution of Bat Activity Across the Night through Time

Per Detector

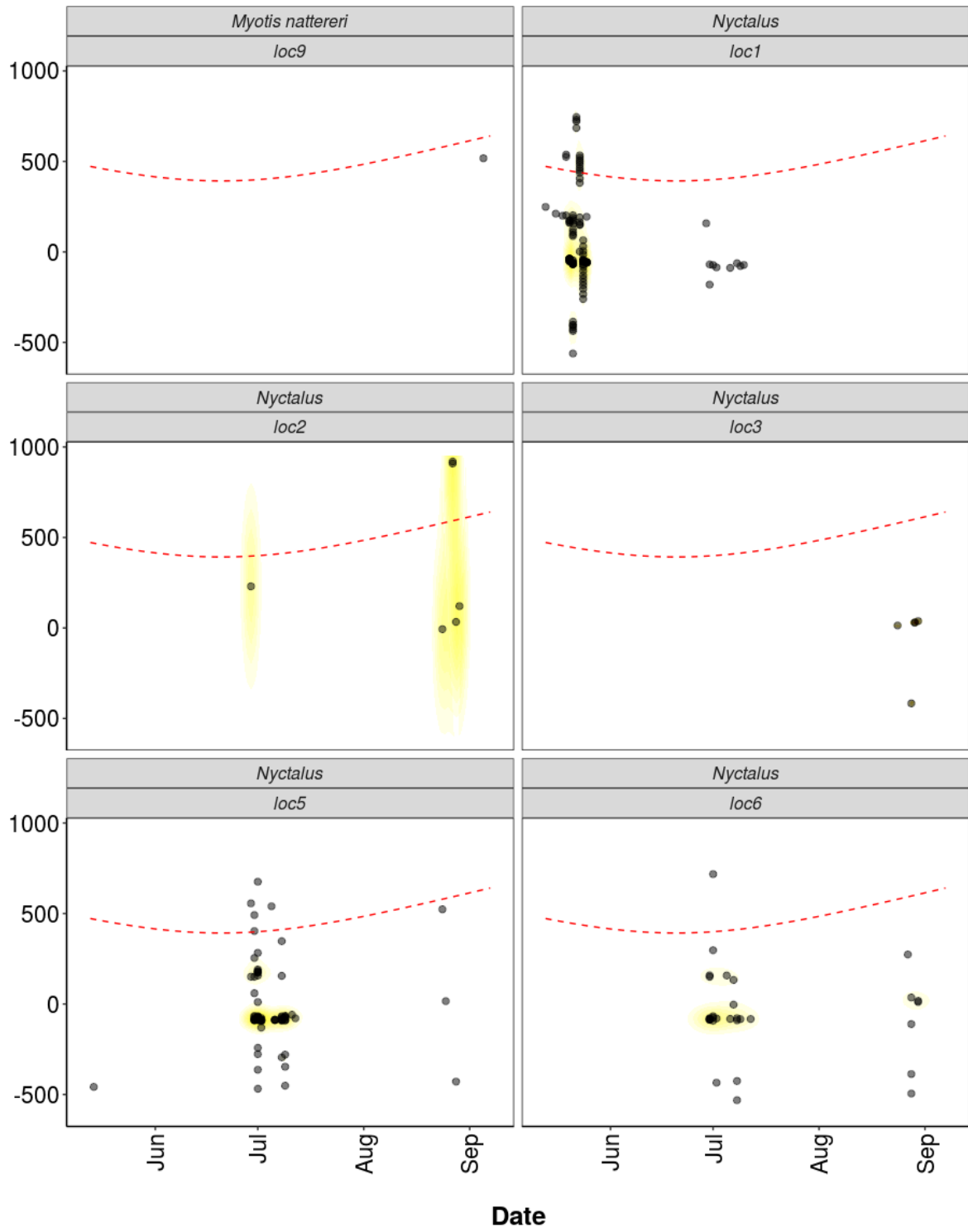
Figure 7. Timing of bat calls plotted as minutes before/after sunset, whereby 0 on the y axis represents sunset. Sunrise throughout the survey period is depicted as the red dashed line. Colours indicate kernel densities, with darkest colours showing peaks of activity. These colours are comparative only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

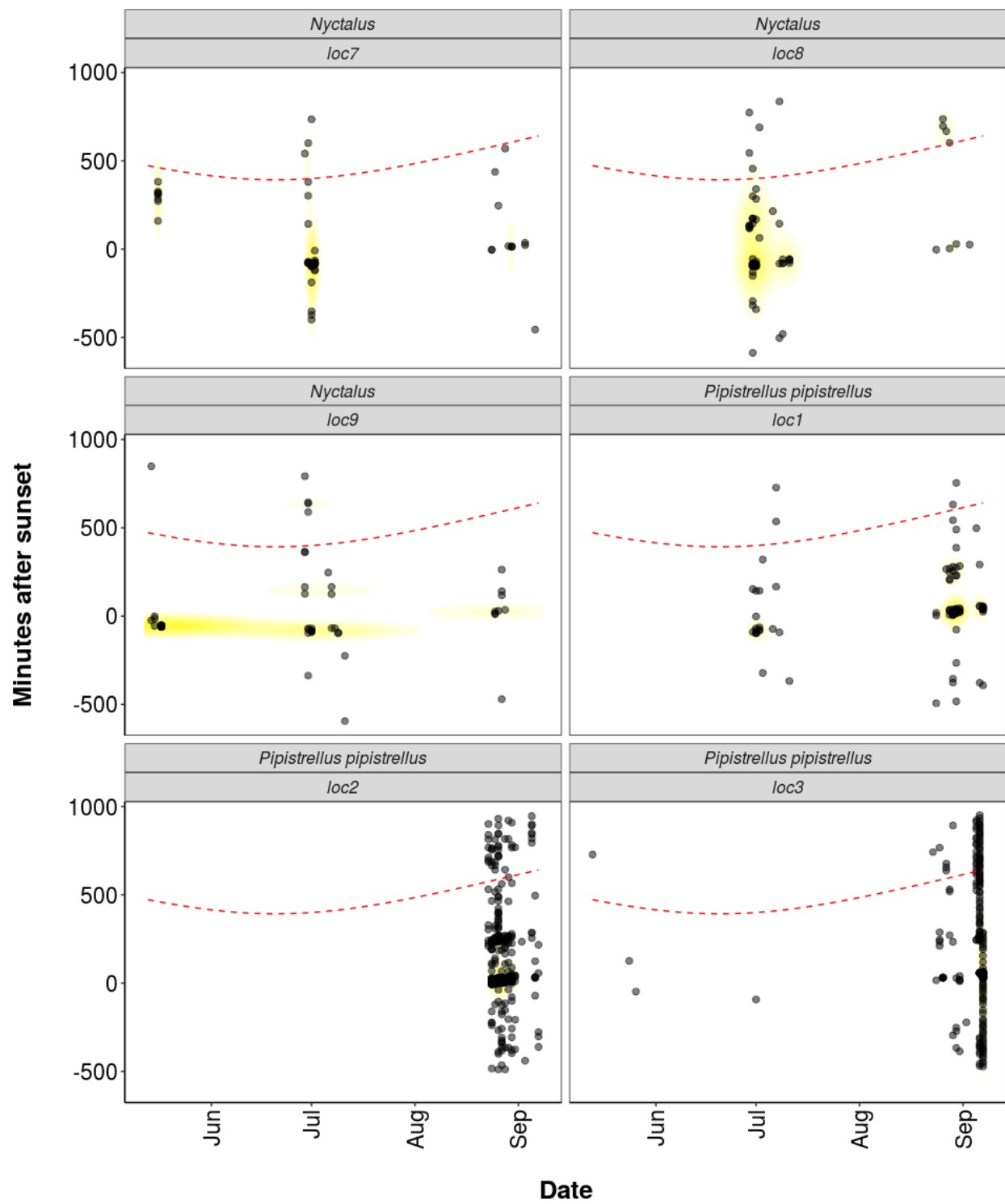


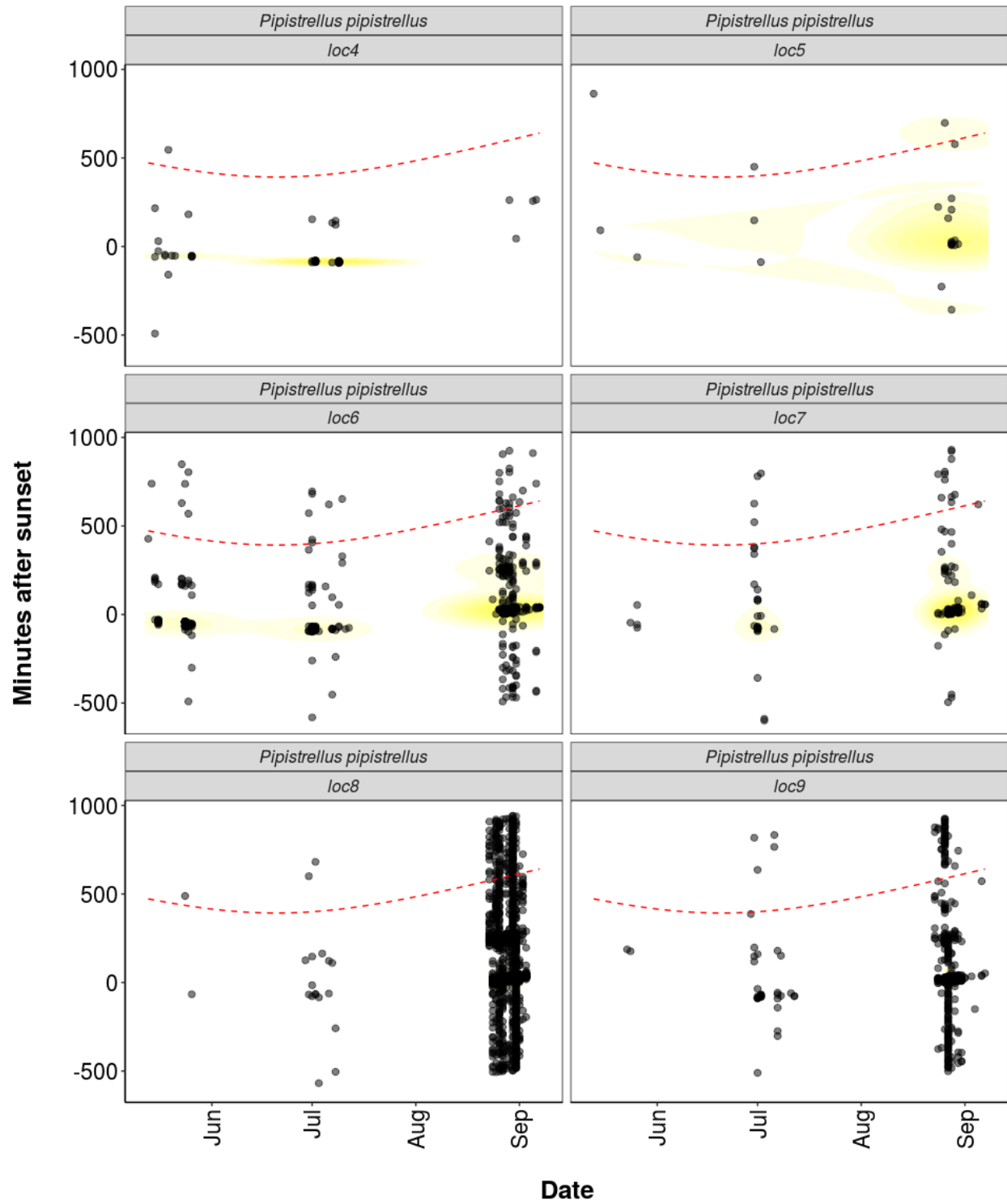


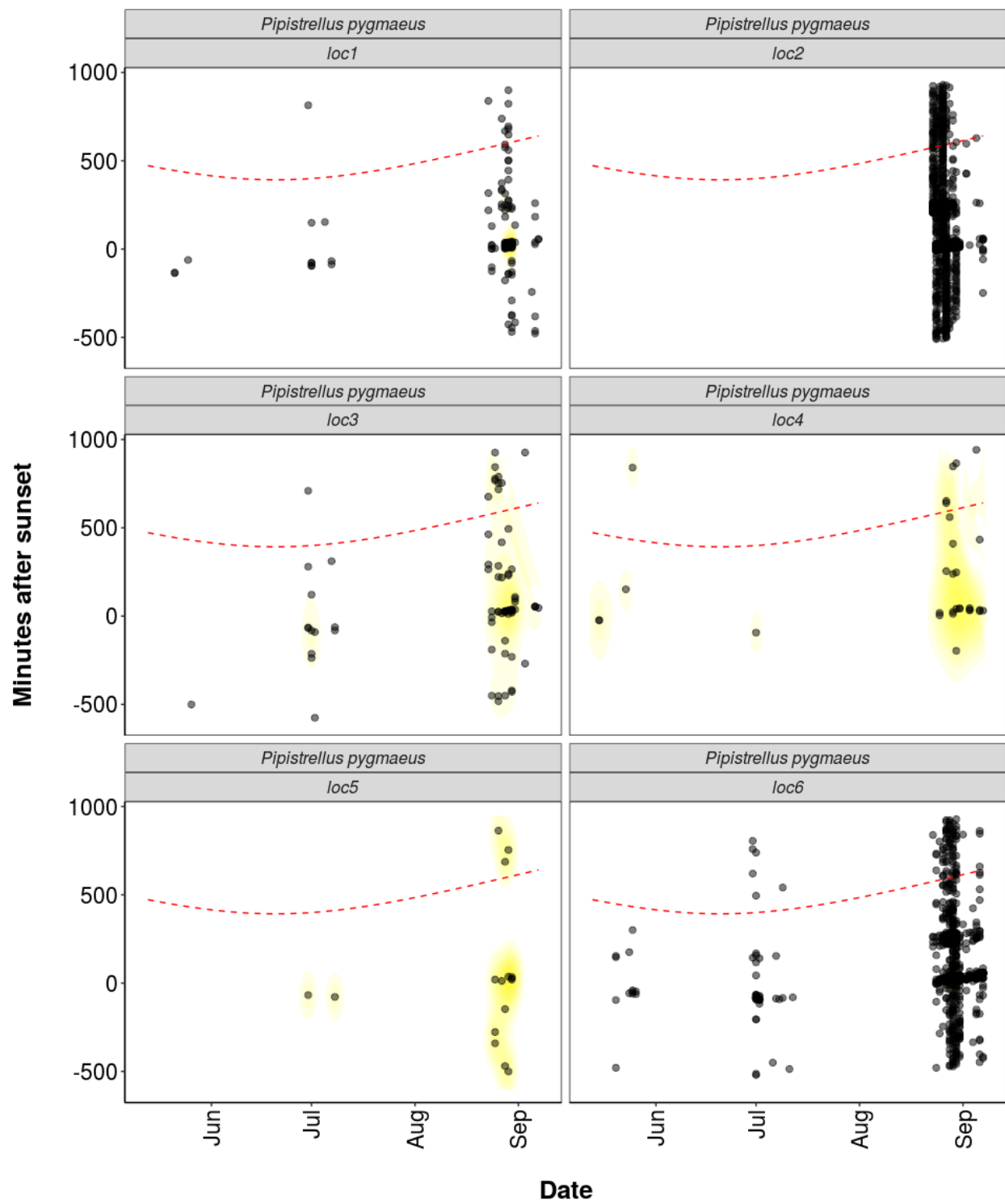


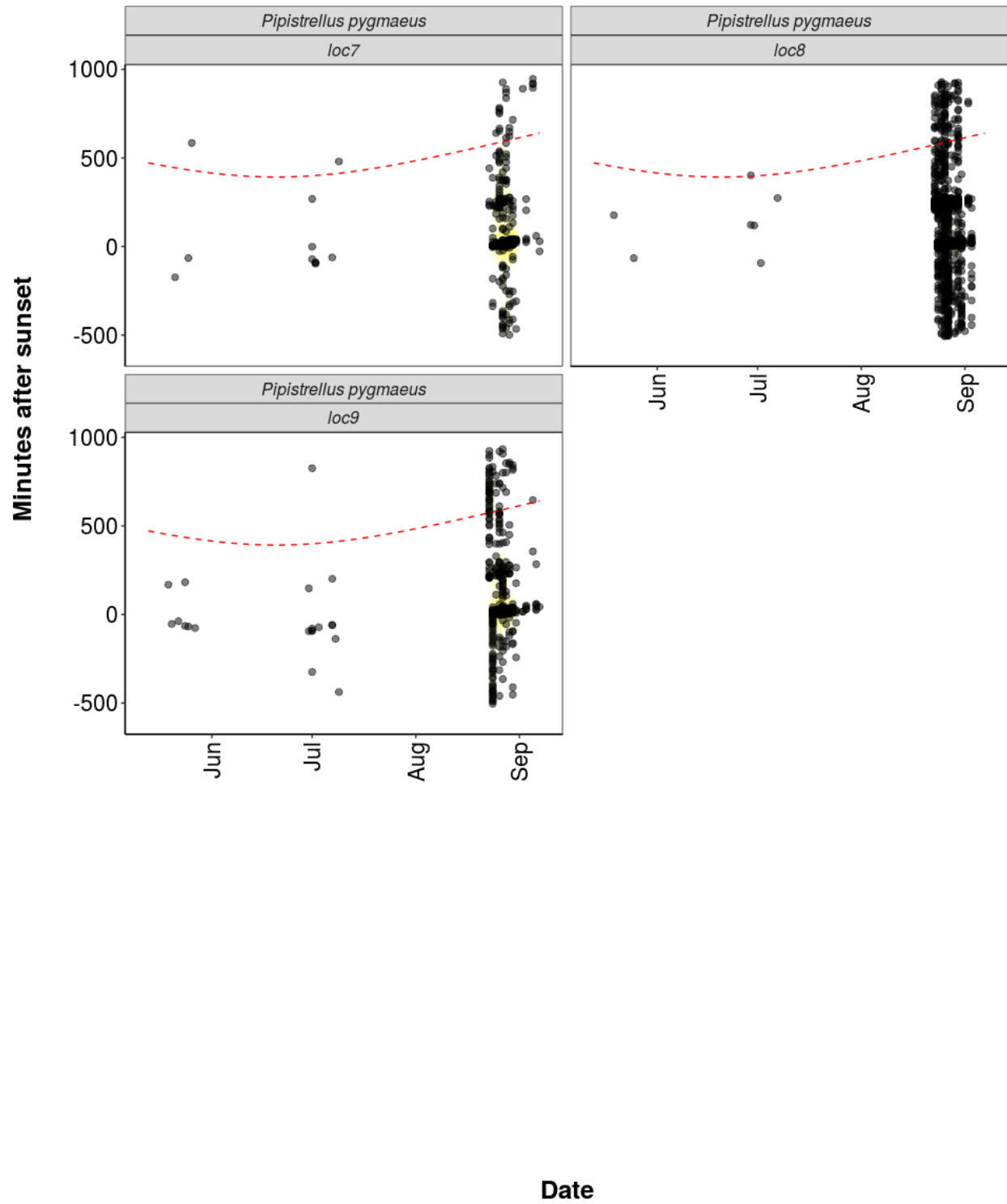
Minutes after sunset











Roost Emergence Time and Bat Observation

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

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

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

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

Table continues below

Species	Detector ID	2020-05-14	2020-05-15	2020-05-16	2020-05-17	2020-05-18
Common pipistrelle	loc1	0	0	0	0	0
Common pipistrelle	loc2	0	0	0	0	0
Common pipistrelle	loc3	0	0	0	0	0
Common pipistrelle	loc4	0	2	2	0	2
Common pipistrelle	loc5	0	0	0	0	0
Common pipistrelle	loc6	0	1	16	0	0
Common pipistrelle	loc7	0	0	0	0	0
Common pipistrelle	loc8	0	0	0	0	0
Common pipistrelle	loc9	0	0	0	0	0
Soprano pipistrelle	loc1	0	0	0	0	0
Soprano pipistrelle	loc2	0	0	0	0	0
Soprano pipistrelle	loc3	0	0	0	0	0

Soprano pipistrelle	loc4	0	2	0	0	0
Soprano pipistrelle	loc5	0	0	0	0	0
Soprano pipistrelle	loc6	0	0	0	0	0
Soprano pipistrelle	loc7	0	0	0	0	0
Soprano pipistrelle	loc8	0	0	0	0	0
Soprano pipistrelle	loc9	0	0	0	0	0
Nyctalus	loc1	0	0	0	0	0
Nyctalus	loc2	0	0	0	0	0
Nyctalus	loc3	0	0	0	0	0
Nyctalus	loc5	1	0	0	0	0
Nyctalus	loc6	0	0	0	0	0
Nyctalus	loc7	0	0	0	0	0
Nyctalus	loc8	0	0	0	0	0
Nyctalus	loc9	1	3	0	26	0
Myotis	loc1	0	0	0	0	0
Myotis	loc2	0	0	0	0	0
Myotis	loc4	0	0	0	0	0
Myotis	loc6	0	0	0	0	0
Myotis	loc7	0	0	0	0	0
Myotis	loc9	0	0	1	0	0
Daubenton's	loc1	0	0	0	0	0
Daubenton's	loc2	0	0	0	0	0
Daubenton's	loc3	0	0	0	0	0
Daubenton's	loc4	0	0	0	0	0
Daubenton's	loc5	0	0	0	0	0
Daubenton's	loc6	0	0	0	0	0
Daubenton's	loc7	0	0	0	0	0
Daubenton's	loc8	0	0	0	0	0
Daubenton's	loc9	0	0	0	0	0
Natterer's	loc4	0	0	0	0	0
Natterer's	loc6	0	0	0	0	0

Table continues below

2020-05-19	2020-05-20	2020-05-21	2020-05-22	2020-05-23	2020-05-24	2020-05-25
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1	1	1	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	24	6
0	0	0	0	0	1	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	2	0	0	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	2	0	0	0	1	3
0	0	1	0	0	0	1
0	0	0	0	0	0	1
0	1	0	1	0	1	1
0	17	18	0	1	28	10
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
0	0	0	0	0	0	0

0	0	0	0	0	0	0
0	0	0	0	0	1	3
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	1	0	0	0	0

Table continues below

2020-05-26	2020-05-27	2020-06-30	2020-07-01	2020-07-02	2020-07-03	2020-07-06
0	0	1	6	3	1	1
0	0	0	0	0	0	0
1	0	0	1	0	0	0
4	0	0	2	13	0	0
1	0	0	0	1	0	0
8	0	4	24	8	1	0
2	0	1	12	1	2	1
1	0	1	2	2	2	1
0	0	0	7	7	0	0
0	0	0	4	0	0	0
0	0	0	0	0	0	0
1	0	2	3	2	0	0
0	0	0	1	0	0	0
0	0	1	0	0	0	0
2	0	0	16	8	0	1
0	0	0	2	3	0	0
0	0	0	0	1	0	0
0	1	1	4	0	1	0
0	0	2	1	1	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	8	17	9	0	4
0	0	5	3	2	0	1

0	0	5	9	11	0	0
0	0	14	9	0	0	0
0	0	4	5	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	1	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
2	0	0	1	0	0	0
0	0	0	0	1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1	0	0	0	0	0	0
0	0	0	0	0	0	0

Table continues below

2020-07-07	2020-07-08	2020-07-09	2020-07-10	2020-07-11	2020-07-12	2020-07-13
0	1	0	0	1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1	0	18	0	0	0	0
0	0	0	0	0	0	0
5	2	2	0	1	1	0
0	0	0	0	0	0	0
0	2	0	0	0	0	0
6	1	0	0	1	2	0
2	0	0	0	0	0	0
0	0	0	0	0	0	0
0	2	0	0	0	0	0
0	0	0	0	0	0	0

Table continues below

2020-08-24	2020-08-25	2020-08-26	2020-08-27	2020-08-28	2020-08-29	2020-08-30
3	0	0	0	2	9	11
41	11	46	78	13	11	34
1	0	6	0	0	1	4

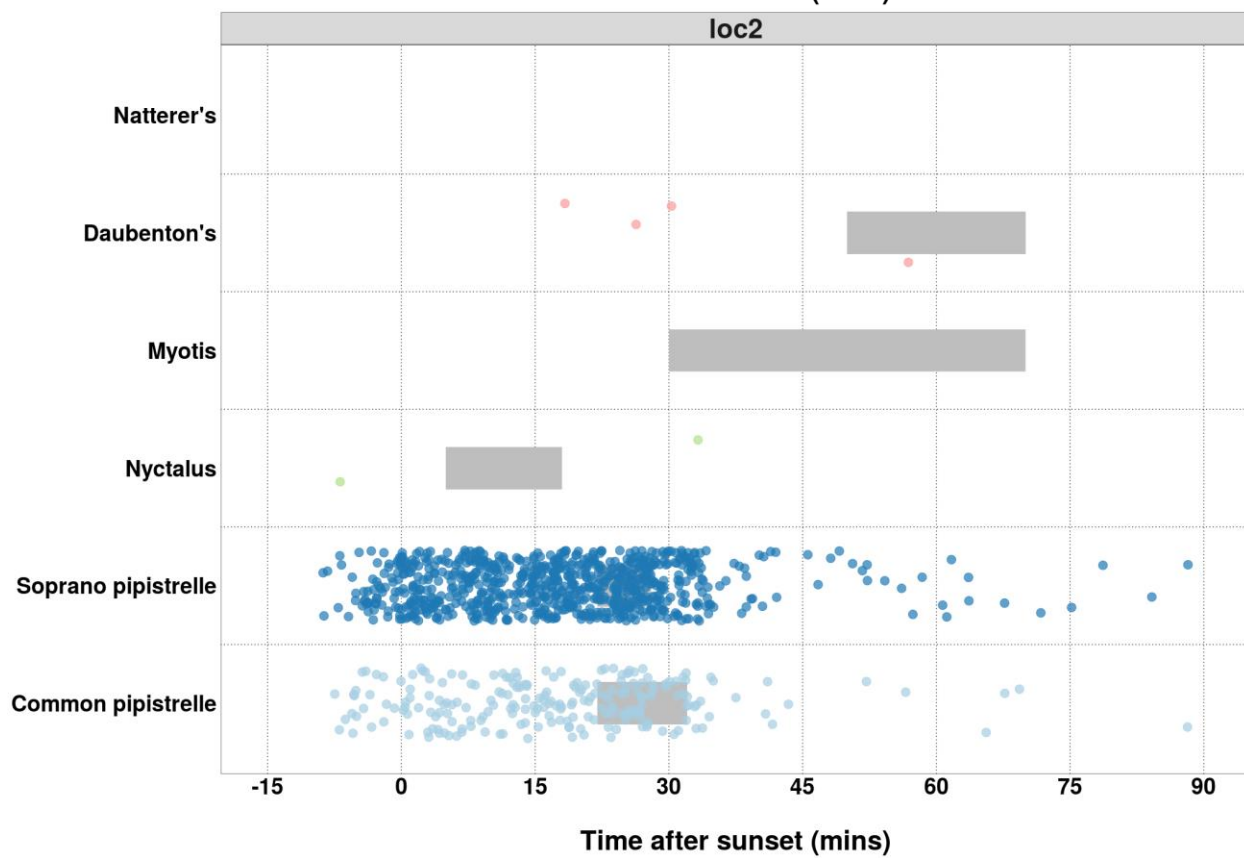
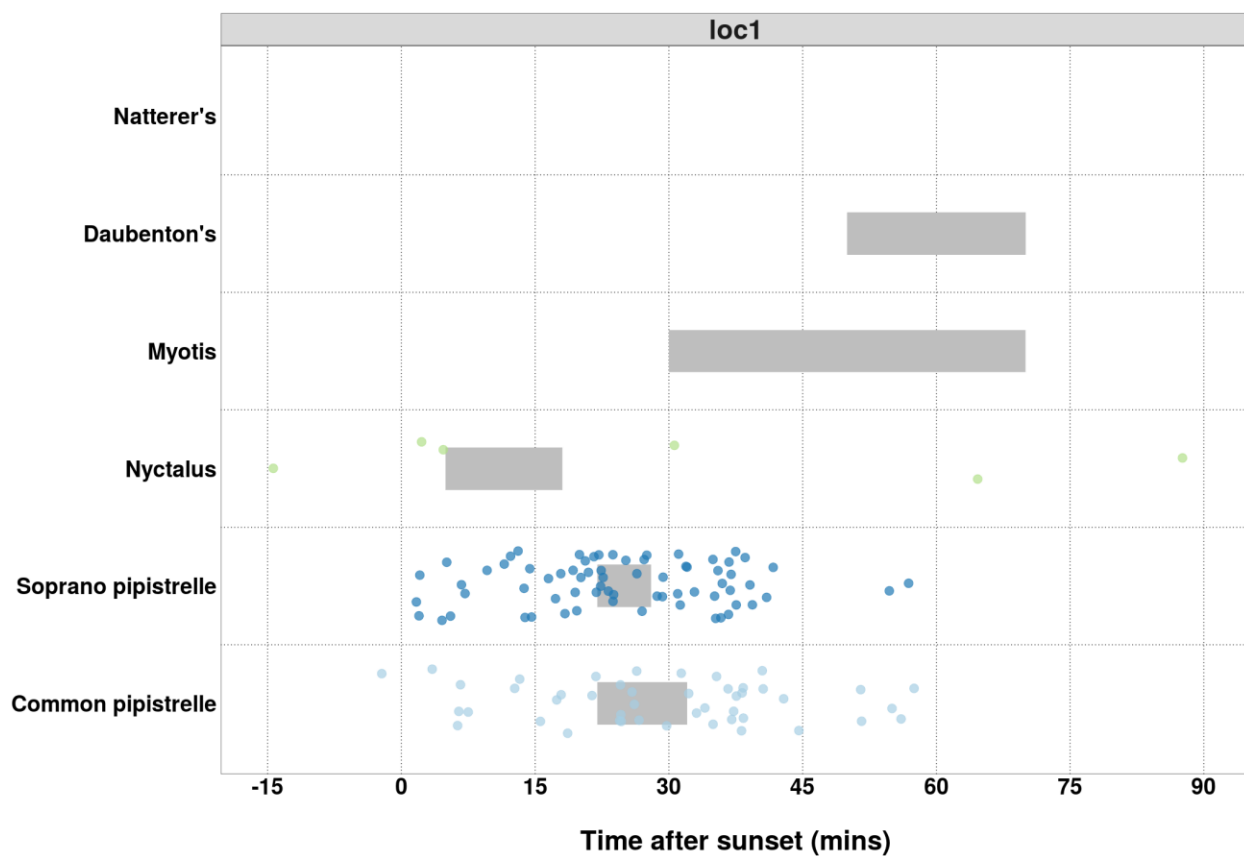
0	0	0	0	0	0	0
0	1	0	0	6	1	1
0	1	5	43	41	11	45
3	1	2	15	12	4	14
156	36	176	177	25	44	92
15	3	45	241	12	17	14
6	1	0	0	9	9	31
238	60	128	293	36	23	66
5	0	4	1	7	1	5
0	2	0	0	0	2	1
0	3	0	1	2	1	2
8	18	2	32	48	122	108
11	8	8	29	22	19	20
139	42	189	240	47	37	83
76	3	47	29	11	16	13
0	0	0	0	0	0	0
1	0	0	0	0	0	0
1	0	0	0	1	0	0
0	1	0	0	1	0	0
0	0	0	0	3	0	2
2	0	0	0	0	1	3
1	0	0	0	1	0	0
0	2	0	1	0	0	0
0	0	0	0	0	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1	0	0	0	0	0	1
1	0	0	0	0	0	0
1	1	1	3	0	2	0
0	0	0	0	0	0	4
0	0	0	1	1	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	1
1	0	1	1	1	0	1

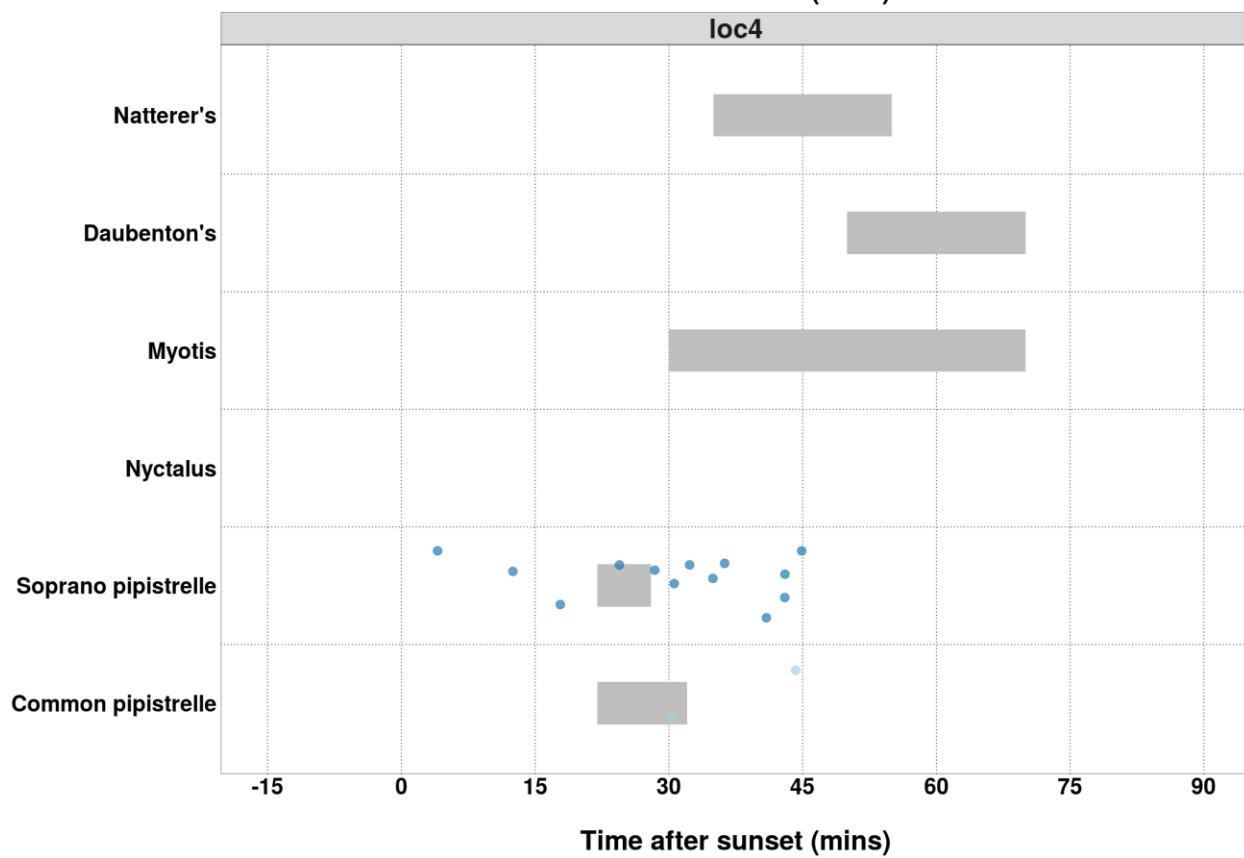
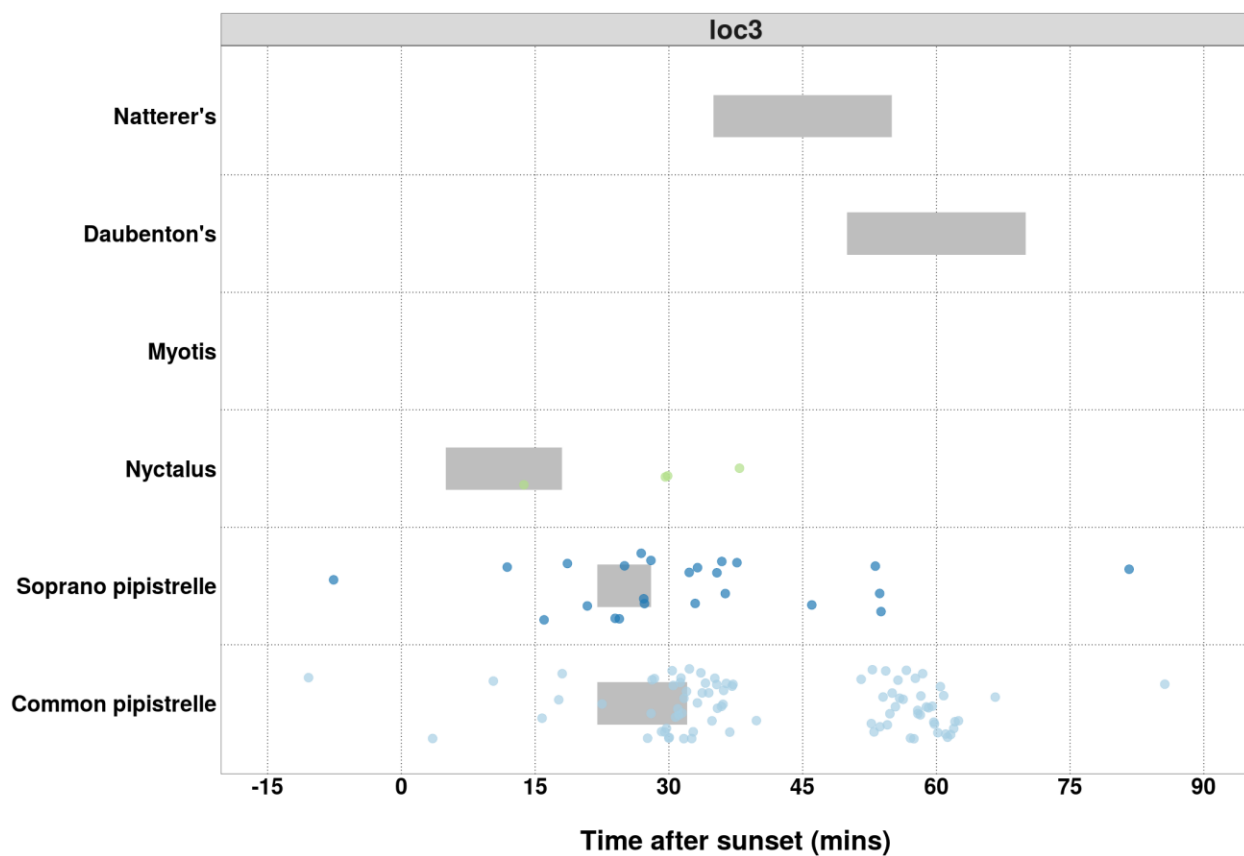
[illegible]

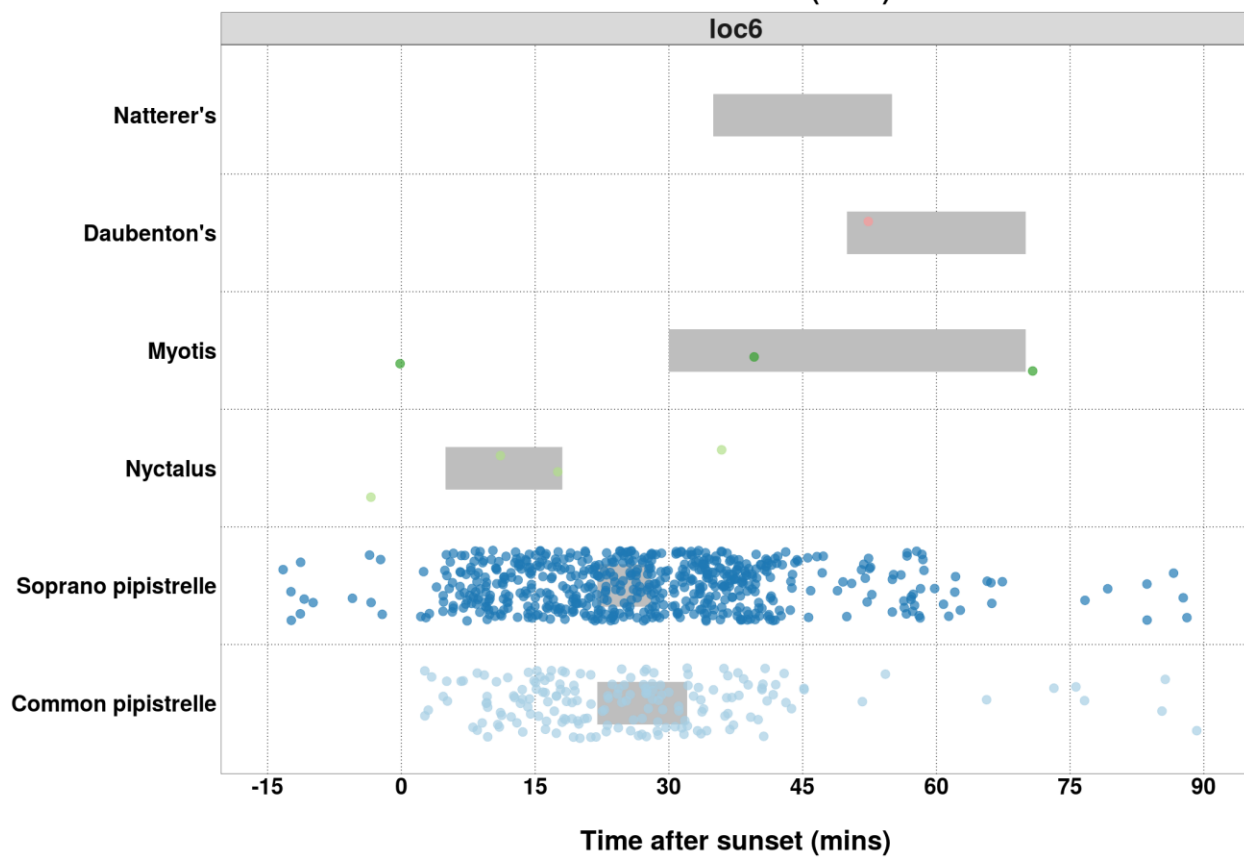
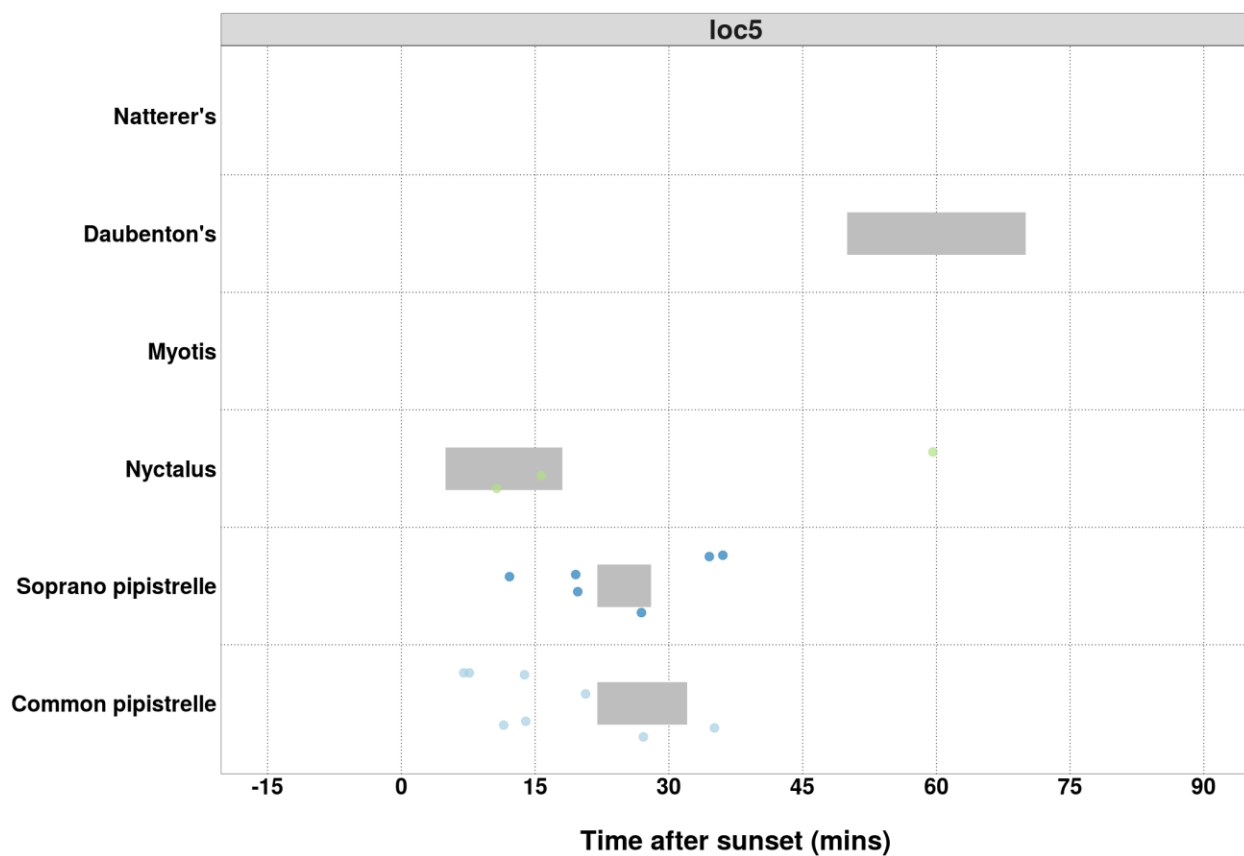
0	0	0	0	1	0	0	0
0	0	1	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
1	0	0	0	1	0	2	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

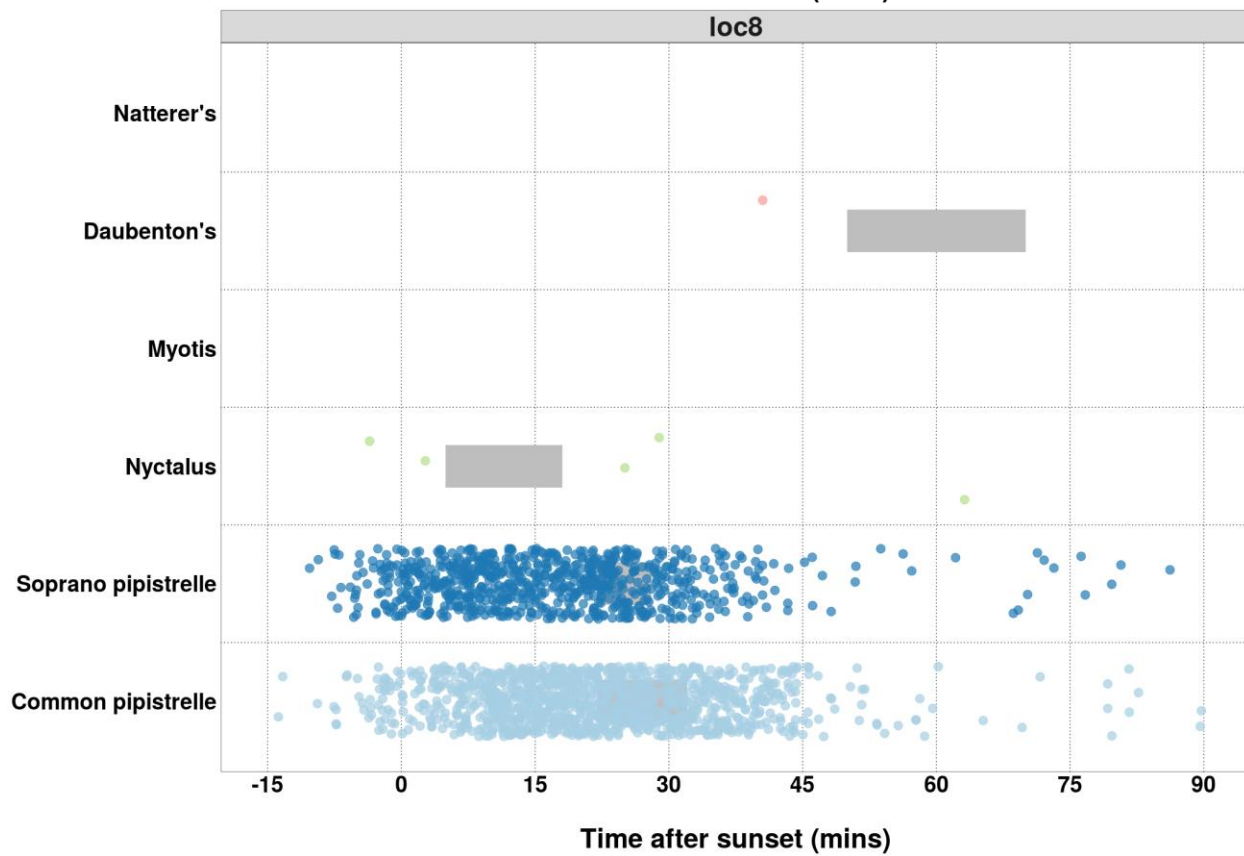
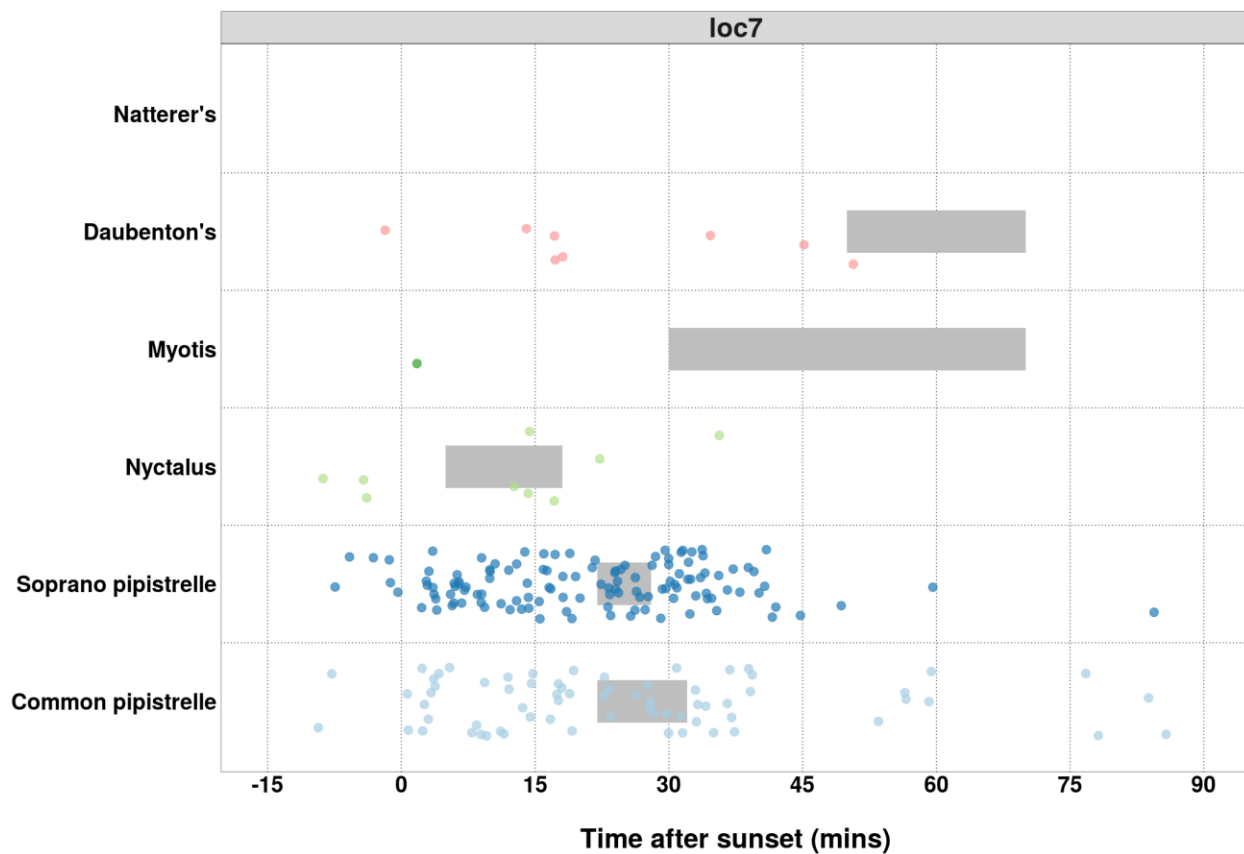
Bat Passes Potentially Indicating Close Proximity to a Roost (Russ 2012) - Figures

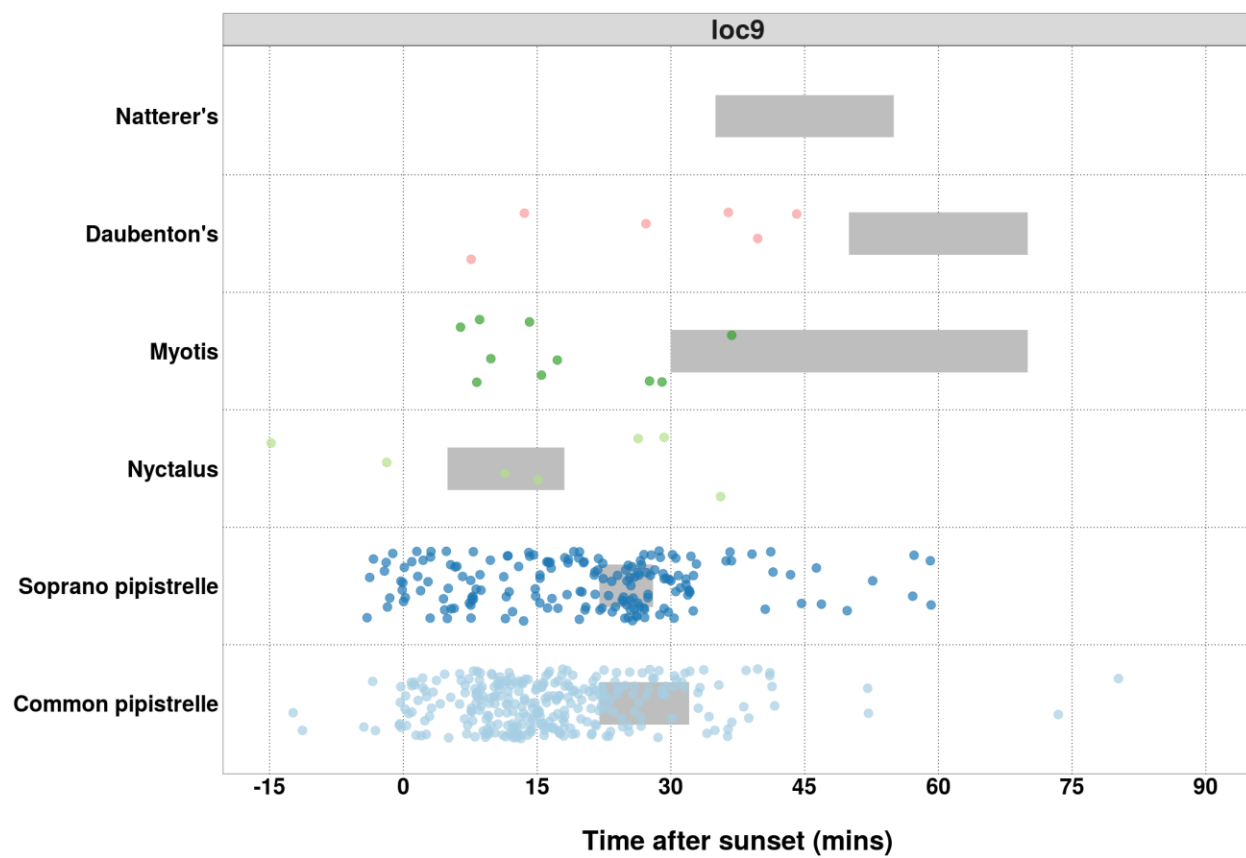
Figure 8. Time from 15 minutes before to 90 minutes after sunset. Species-specific emergence time ranges are shown as grey bars. Bat passes overlapping species-specific grey bars, or occurring earlier than this time range, may potentially indicate the presence of a nearby roost.











Counts of Bat Passes

All detectors

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

Species	Passes (No.)	Percentage of total (%)
Common pipistrelle	6591	45.4
Soprano pipistrelle	7193	49.5
Nyctalus	606	4.2
Myotis	53	0.4
Daubenton's	70	0.5
Natterer's	6	0.0
Total	14519	100.0

Counts of Bat Passes

Per Detector

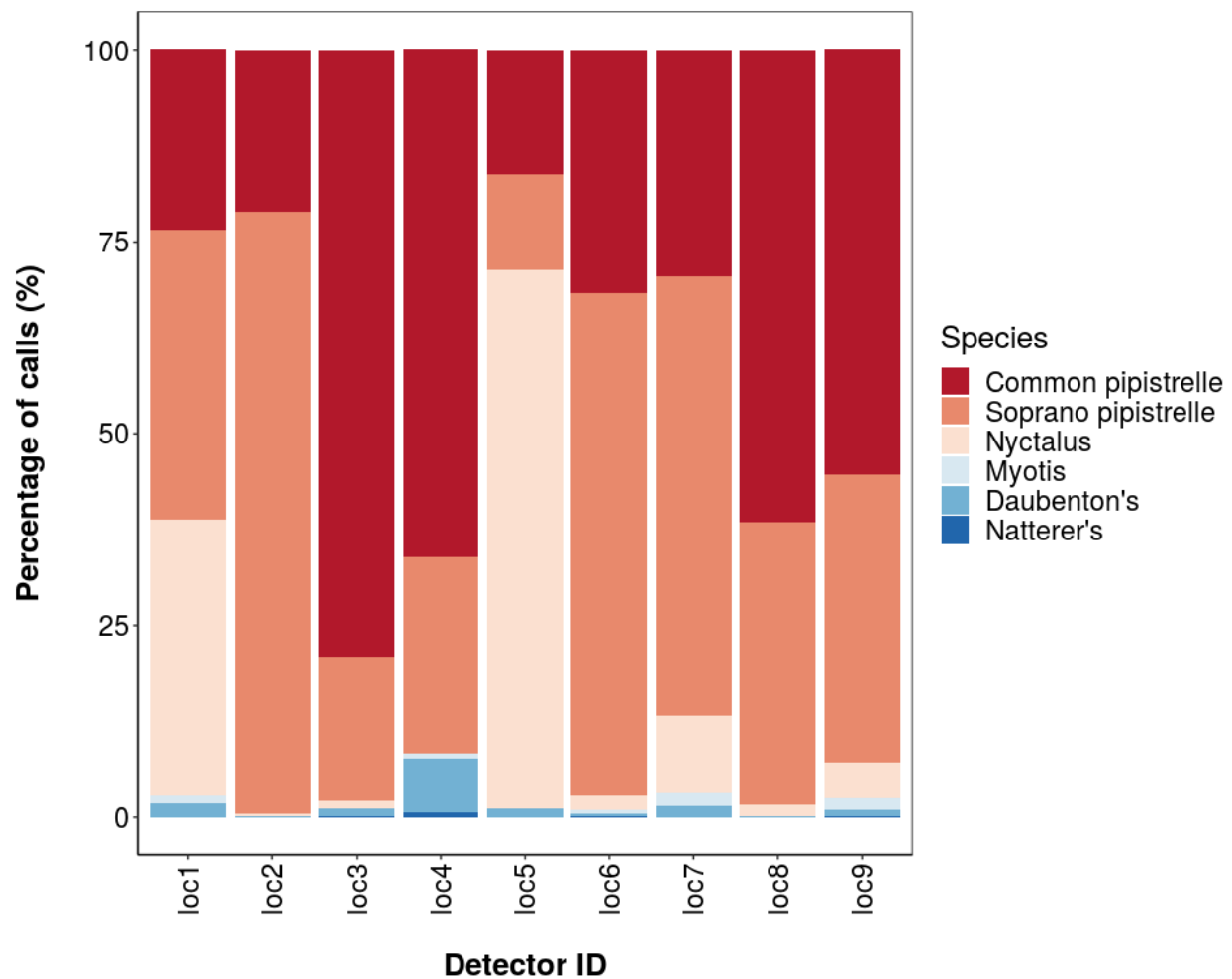
Table 15. The number of passes recorded for each species at each detector.

Species	Detector ID	Count (No)	Percentage by Detector (%)
Common pipistrelle	loc1	132	23.5
Common pipistrelle	loc2	613	21.0
Common pipistrelle	loc3	457	79.2
Common pipistrelle	loc4	98	66.2
Common pipistrelle	loc5	26	16.1
Common pipistrelle	loc6	694	31.6
Common pipistrelle	loc7	194	29.4
Common pipistrelle	loc8	3425	61.5
Common pipistrelle	loc9	952	55.4
Soprano pipistrelle	loc1	213	37.9
Soprano pipistrelle	loc2	2296	78.5
Soprano pipistrelle	loc3	108	18.7
Soprano pipistrelle	loc4	38	25.7
Soprano pipistrelle	loc5	20	12.4
Soprano pipistrelle	loc6	1442	65.6
Soprano pipistrelle	loc7	379	57.4
Soprano pipistrelle	loc8	2051	36.8
Soprano pipistrelle	loc9	646	37.6
Nyctalus	loc1	201	35.8
Nyctalus	loc2	9	0.3
Nyctalus	loc3	5	0.9
Nyctalus	loc5	113	70.2
Nyctalus	loc6	42	1.9
Nyctalus	loc7	66	10.0
Nyctalus	loc8	89	1.6
Nyctalus	loc9	81	4.7
Myotis	loc1	6	1.1
Myotis	loc2	1	0.0
Myotis	loc4	1	0.7

Myotis	loc6	9	0.4
Myotis	loc7	12	1.8
Myotis	loc9	24	1.4
Daubenton's	loc1	10	1.8
Daubenton's	loc2	6	0.2
Daubenton's	loc3	6	1.0
Daubenton's	loc4	10	6.8
Daubenton's	loc5	2	1.2
Daubenton's	loc6	9	0.4
Daubenton's	loc7	9	1.4
Daubenton's	loc8	3	0.1
Daubenton's	loc9	15	0.9
Natterer's	loc3	1	0.2
Natterer's	loc4	1	0.7
Natterer's	loc6	3	0.1
Natterer's	loc9	1	0.1

Species Composition

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



PART 2a: Presence Only

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

Nightly Bat Pass Rate (Bat passes per hour)

Median Per Detector

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

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

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

Species	Detector ID	Median Pass Rate
Common pipistrelle	loc1	0.8
Common pipistrelle	loc2	3.9
Common pipistrelle	loc3	0.4
Common pipistrelle	loc4	0.3
Common pipistrelle	loc5	0.2
Common pipistrelle	loc6	0.9
Common pipistrelle	loc7	0.4
Common pipistrelle	loc8	6.0
Common pipistrelle	loc9	1.2
Soprano pipistrelle	loc1	0.7
Soprano pipistrelle	loc2	8.8
Soprano pipistrelle	loc3	0.8
Soprano pipistrelle	loc4	0.3
Soprano pipistrelle	loc5	0.2
Soprano pipistrelle	loc6	1.7
Soprano pipistrelle	loc7	0.6
Soprano pipistrelle	loc8	5.8
Soprano pipistrelle	loc9	0.6
Nyctalus	loc1	0.3
Nyctalus	loc2	0.2
Nyctalus	loc3	0.1
Nyctalus	loc5	0.7
Nyctalus	loc6	0.5

Nyctalus	loc7	0.2
Nyctalus	loc8	0.4
Nyctalus	loc9	0.4
Myotis	loc1	0.6
Myotis	loc2	0.1
Myotis	loc4	0.1
Myotis	loc6	0.2
Myotis	loc7	0.2
Myotis	loc9	0.2
Daubenton's	loc1	0.5
Daubenton's	loc2	0.1
Daubenton's	loc3	0.1
Daubenton's	loc4	0.3
Daubenton's	loc5	0.1
Daubenton's	loc6	0.1
Daubenton's	loc7	0.1
Daubenton's	loc8	0.1
Daubenton's	loc9	0.1
Natterer's	loc3	0.1
Natterer's	loc4	0.1
Natterer's	loc6	0.1
Natterer's	loc9	0.1

Nightly Bat Pass Rate (Bat passes per hour)

Mean per Detector

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

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

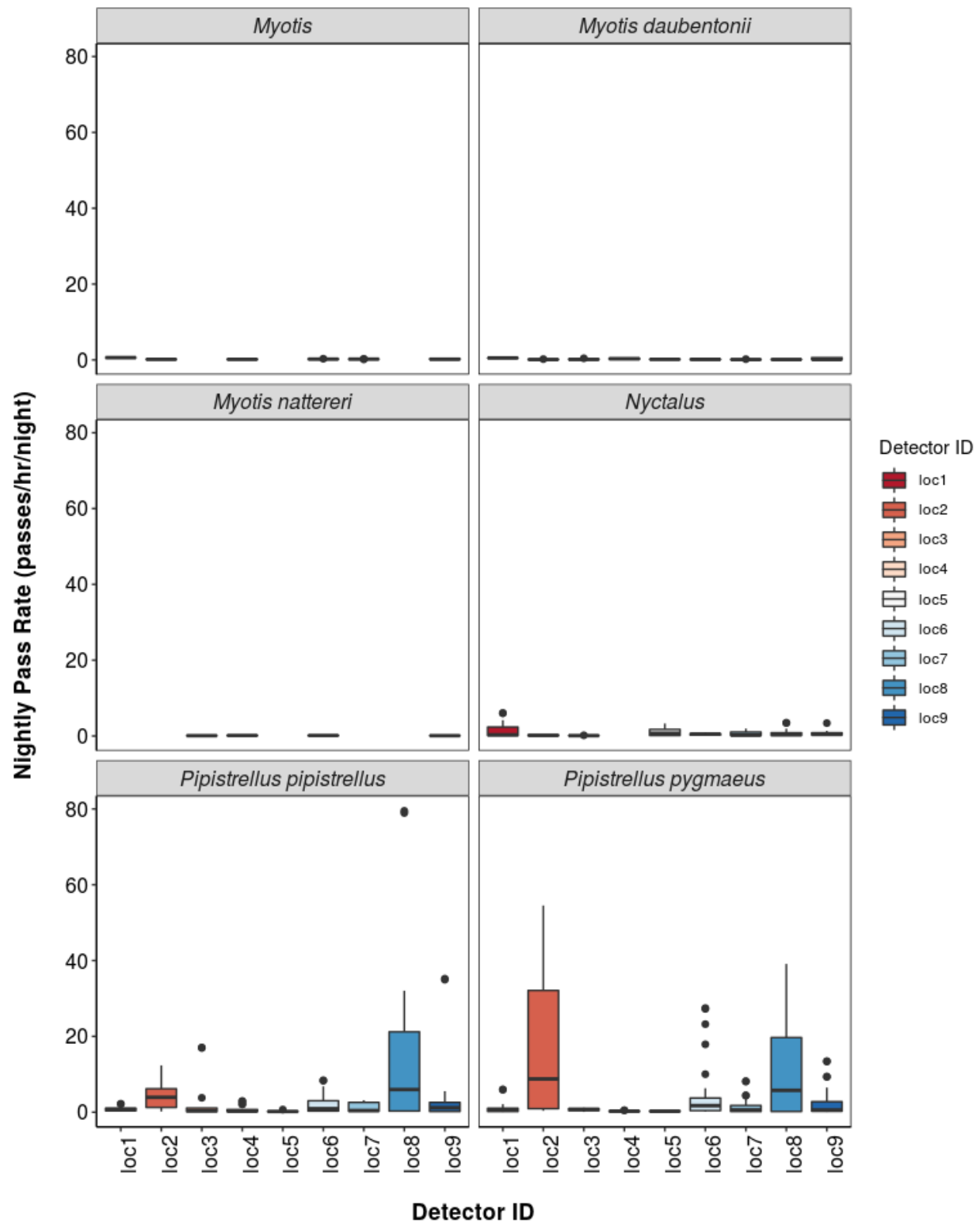
Species	Detector ID	Mean Pass Rate
Common pipistrelle	loc1	0.9
Common pipistrelle	loc2	4.4
Common pipistrelle	loc3	2.6
Common pipistrelle	loc4	0.8
Common pipistrelle	loc5	0.2
Common pipistrelle	loc6	2.2
Common pipistrelle	loc7	1.2
Common pipistrelle	loc8	15.0
Common pipistrelle	loc9	4.0
Soprano pipistrelle	loc1	1.3
Soprano pipistrelle	loc2	16.8
Soprano pipistrelle	loc3	0.7
Soprano pipistrelle	loc4	0.3
Soprano pipistrelle	loc5	0.3
Soprano pipistrelle	loc6	5.1
Soprano pipistrelle	loc7	1.8
Soprano pipistrelle	loc8	11.6
Soprano pipistrelle	loc9	2.6
Nyctalus	loc1	1.5
Nyctalus	loc2	0.2
Nyctalus	loc3	0.1
Nyctalus	loc5	1.2
Nyctalus	loc6	0.5
Nyctalus	loc7	0.7
Nyctalus	loc8	0.9
Nyctalus	loc9	0.7

Myotis	loc1	0.6
Myotis	loc2	0.1
Myotis	loc4	0.1
Myotis	loc6	0.2
Myotis	loc7	0.2
Myotis	loc9	0.2
Daubenton's	loc1	0.5
Daubenton's	loc2	0.1
Daubenton's	loc3	0.2
Daubenton's	loc4	0.3
Daubenton's	loc5	0.1
Daubenton's	loc6	0.1
Daubenton's	loc7	0.1
Daubenton's	loc8	0.1
Daubenton's	loc9	0.3
Natterer's	loc3	0.1
Natterer's	loc4	0.1
Natterer's	loc6	0.1
Natterer's	loc9	0.1

Nightly Bat Passes (Bat passes per hour)

Per Detector - Figures

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



SPLIT BY MONTH

Total Bat Passes per Detector, each Month

Per Detector

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

Species	Detector ID	May	Jun	Jul	Aug	Sep
Common pipistrelle	loc1	0	7	23	78	24
Common pipistrelle	loc2	0	0	0	571	42
Common pipistrelle	loc3	3	0	1	50	403
Common pipistrelle	loc4	23	0	69	2	4
Common pipistrelle	loc5	3	2	1	20	0
Common pipistrelle	loc6	133	30	76	399	56
Common pipistrelle	loc7	4	21	28	130	11
Common pipistrelle	loc8	2	5	16	3186	216
Common pipistrelle	loc9	2	12	41	889	8
Soprano pipistrelle	loc1	3	5	8	187	10
Soprano pipistrelle	loc2	0	0	0	2264	32
Soprano pipistrelle	loc3	1	5	14	83	5
Soprano pipistrelle	loc4	4	0	1	22	11
Soprano pipistrelle	loc5	0	1	1	18	0
Soprano pipistrelle	loc6	14	22	42	1189	175
Soprano pipistrelle	loc7	3	0	10	344	22
Soprano pipistrelle	loc8	2	3	2	1972	72
Soprano pipistrelle	loc9	10	5	11	597	23
Nyctalus	loc1	189	6	6	0	0
Nyctalus	loc2	0	1	0	8	0
Nyctalus	loc3	0	0	0	5	0
Nyctalus	loc5	1	32	75	5	0
Nyctalus	loc6	0	6	24	12	0
Nyctalus	loc7	8	19	25	11	3

Nyctalus	loc8	0	46	34	8	1
Nyctalus	loc9	34	18	20	9	0
Myotis	loc1	0	0	0	6	0
Myotis	loc2	1	0	0	0	0
Myotis	loc4	1	0	0	0	0
Myotis	loc6	0	0	0	5	4
Myotis	loc7	1	0	0	6	5
Myotis	loc9	3	0	0	19	2
Daubenton's	loc1	0	0	0	10	0
Daubenton's	loc2	1	0	0	4	1
Daubenton's	loc3	4	0	0	1	1
Daubenton's	loc4	6	0	4	0	0
Daubenton's	loc5	1	0	1	0	0
Daubenton's	loc6	1	0	1	5	2
Daubenton's	loc7	0	0	0	6	3
Daubenton's	loc8	1	0	0	2	0
Daubenton's	loc9	0	0	0	12	3
Natterer's	loc3	0	0	0	0	1
Natterer's	loc4	1	0	0	0	0
Natterer's	loc6	1	0	2	0	0
Natterer's	loc9	0	0	0	0	1

Survey Effort

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

Month	Detector ID	No. of Survey Nights
May	loc1	10
May	loc2	2
May	loc3	4
May	loc4	10
May	loc5	4
May	loc6	10
May	loc7	5
May	loc8	4
May	loc9	12
Jun	loc1	2
Jun	loc2	1
Jun	loc3	1
Jun	loc5	2
Jun	loc6	1
Jun	loc7	2
Jun	loc8	2
Jun	loc9	2
Jul	loc1	10
Jul	loc3	4
Jul	loc4	6
Jul	loc5	8
Jul	loc6	12
Jul	loc7	6
Jul	loc8	9
Jul	loc9	9
Aug	loc1	8
Aug	loc2	9
Aug	loc3	9
Aug	loc4	6
Aug	loc5	7
Aug	loc6	9

Aug	loc7	9
Aug	loc8	9
Aug	loc9	9
Sep	loc1	3
Sep	loc2	5
Sep	loc3	6
Sep	loc4	4
Sep	loc6	7
Sep	loc7	6
Sep	loc8	3
Sep	loc9	7

Nightly Bat Pass Rate for each Month

Median Per Detector

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

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

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

Species	Detector ID	May	Jun	Jul	Aug	Sep
Common pipistrelle	loc1	NA	1.1	0.6	1.2	0.9
Common pipistrelle	loc2	NA	NA	NA	6.1	0.6
Common pipistrelle	loc3	0.1	NA	0.2	0.5	10.4
Common pipistrelle	loc4	0.3	NA	2.1	0.1	0.2
Common pipistrelle	loc5	0.1	0.3	0.2	0.2	NA
Common pipistrelle	loc6	2.3	4.5	0.6	6.4	0.9
Common pipistrelle	loc7	0.3	3.2	0.4	2.1	0.3
Common pipistrelle	loc8	0.1	0.4	0.3	29.9	6.0
Common pipistrelle	loc9	0.1	0.9	1.2	2.6	0.2
Soprano pipistrelle	loc1	0.2	0.8	0.3	1.6	0.2
Soprano pipistrelle	loc2	NA	NA	NA	21.6	0.4
Soprano pipistrelle	loc3	0.1	0.8	0.4	0.9	0.1
Soprano pipistrelle	loc4	0.1	NA	0.2	0.3	0.3
Soprano pipistrelle	loc5	NA	0.2	0.2	0.3	NA
Soprano pipistrelle	loc6	0.5	3.3	0.2	10.0	1.7
Soprano pipistrelle	loc7	0.1	NA	0.4	3.7	0.5
Soprano pipistrelle	loc8	0.1	0.2	0.2	21.1	3.2
Soprano pipistrelle	loc9	0.3	0.8	0.3	6.5	0.4
Nyctalus	loc1	2.1	0.4	0.2	NA	NA
Nyctalus	loc2	NA	0.2	NA	0.2	NA
Nyctalus	loc3	NA	NA	NA	0.1	NA
Nyctalus	loc5	0.1	2.4	1.2	0.2	NA
Nyctalus	loc6	NA	0.9	0.4	0.5	NA

Nyctalus	loc7	1.0	1.4	1.9	0.2	0.1
Nyctalus	loc8	NA	3.5	0.7	0.2	0.1
Nyctalus	loc9	0.5	1.4	0.4	0.2	NA
Myotis	loc1	NA	NA	NA	0.6	NA
Myotis	loc2	0.1	NA	NA	NA	NA
Myotis	loc4	0.1	NA	NA	NA	NA
Myotis	loc6	NA	NA	NA	0.3	0.2
Myotis	loc7	0.1	NA	NA	0.2	0.2
Myotis	loc9	0.1	NA	NA	0.3	0.1
Daubenton's	loc1	NA	NA	NA	0.5	NA
Daubenton's	loc2	0.1	NA	NA	0.1	0.1
Daubenton's	loc3	0.3	NA	NA	0.1	0.1
Daubenton's	loc4	0.4	NA	0.2	NA	NA
Daubenton's	loc5	0.1	NA	0.2	NA	NA
Daubenton's	loc6	0.1	NA	0.1	0.2	0.1
Daubenton's	loc7	NA	NA	NA	0.1	0.1
Daubenton's	loc8	0.1	NA	NA	0.1	NA
Daubenton's	loc9	NA	NA	NA	0.6	0.1
Natterer's	loc3	NA	NA	NA	NA	0.1
Natterer's	loc4	0.1	NA	NA	NA	NA
Natterer's	loc6	0.1	NA	0.1	NA	NA
Natterer's	loc9	NA	NA	NA	NA	0.1

Nightly Bat Pass Rate for each Month

Mean per Detector

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

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

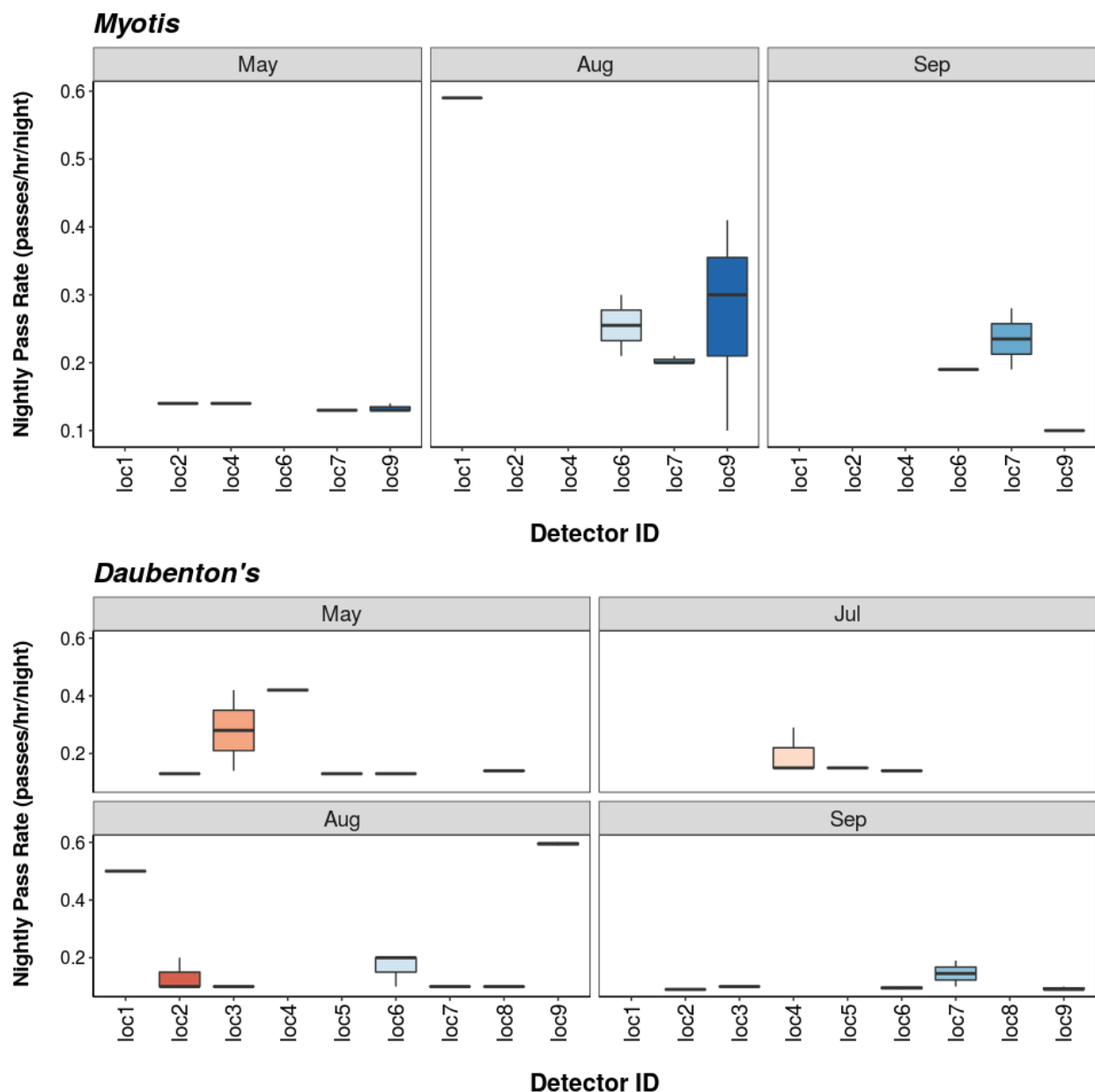
Species	Detector ID	May	Jun	Jul	Aug	Sep
Common pipistrelle	loc1	NA	1.1	0.5	1.3	0.8
Common pipistrelle	loc2	NA	NA	NA	6.5	0.8
Common pipistrelle	loc3	0.1	NA	0.2	0.6	9.5
Common pipistrelle	loc4	0.4	NA	2.0	0.1	0.2
Common pipistrelle	loc5	0.1	0.3	0.2	0.3	NA
Common pipistrelle	loc6	2.2	4.5	1.0	4.5	0.8
Common pipistrelle	loc7	0.3	3.2	1.1	1.6	0.3
Common pipistrelle	loc8	0.1	0.4	0.3	35.6	7.0
Common pipistrelle	loc9	0.1	0.9	0.9	10.0	0.2
Soprano pipistrelle	loc1	0.2	0.8	0.4	2.3	0.3
Soprano pipistrelle	loc2	NA	NA	NA	25.7	0.6
Soprano pipistrelle	loc3	0.1	0.8	0.5	0.9	0.2
Soprano pipistrelle	loc4	0.2	NA	0.2	0.4	0.3
Soprano pipistrelle	loc5	NA	0.2	0.2	0.3	NA
Soprano pipistrelle	loc6	0.5	3.3	0.8	13.2	2.4
Soprano pipistrelle	loc7	0.1	NA	0.4	3.9	0.4
Soprano pipistrelle	loc8	0.1	0.2	0.2	22.3	2.3
Soprano pipistrelle	loc9	0.2	0.8	0.3	6.8	0.4
Nyctalus	loc1	2.6	0.4	0.1	NA	NA
Nyctalus	loc2	NA	0.2	NA	0.2	NA
Nyctalus	loc3	NA	NA	NA	0.1	NA
Nyctalus	loc5	0.1	2.4	1.4	0.2	NA
Nyctalus	loc6	NA	0.9	0.4	0.4	NA
Nyctalus	loc7	1.0	1.4	1.9	0.2	0.1
Nyctalus	loc8	NA	3.5	0.8	0.2	0.1
Nyctalus	loc9	1.5	1.4	0.5	0.2	NA

Myotis	loc1	NA	NA	NA	0.6	NA
Myotis	loc2	0.1	NA	NA	NA	NA
Myotis	loc4	0.1	NA	NA	NA	NA
Myotis	loc6	NA	NA	NA	0.3	0.2
Myotis	loc7	0.1	NA	NA	0.2	0.2
Myotis	loc9	0.1	NA	NA	0.3	0.1
Daubenton's	loc1	NA	NA	NA	0.5	NA
Daubenton's	loc2	0.1	NA	NA	0.1	0.1
Daubenton's	loc3	0.3	NA	NA	0.1	0.1
Daubenton's	loc4	0.4	NA	0.2	NA	NA
Daubenton's	loc5	0.1	NA	0.2	NA	NA
Daubenton's	loc6	0.1	NA	0.1	0.2	0.1
Daubenton's	loc7	NA	NA	NA	0.1	0.1
Daubenton's	loc8	0.1	NA	NA	0.1	NA
Daubenton's	loc9	NA	NA	NA	0.6	0.1
Natterer's	loc3	NA	NA	NA	NA	0.1
Natterer's	loc4	0.1	NA	NA	NA	NA
Natterer's	loc6	0.1	NA	0.1	NA	NA
Natterer's	loc9	NA	NA	NA	NA	0.1

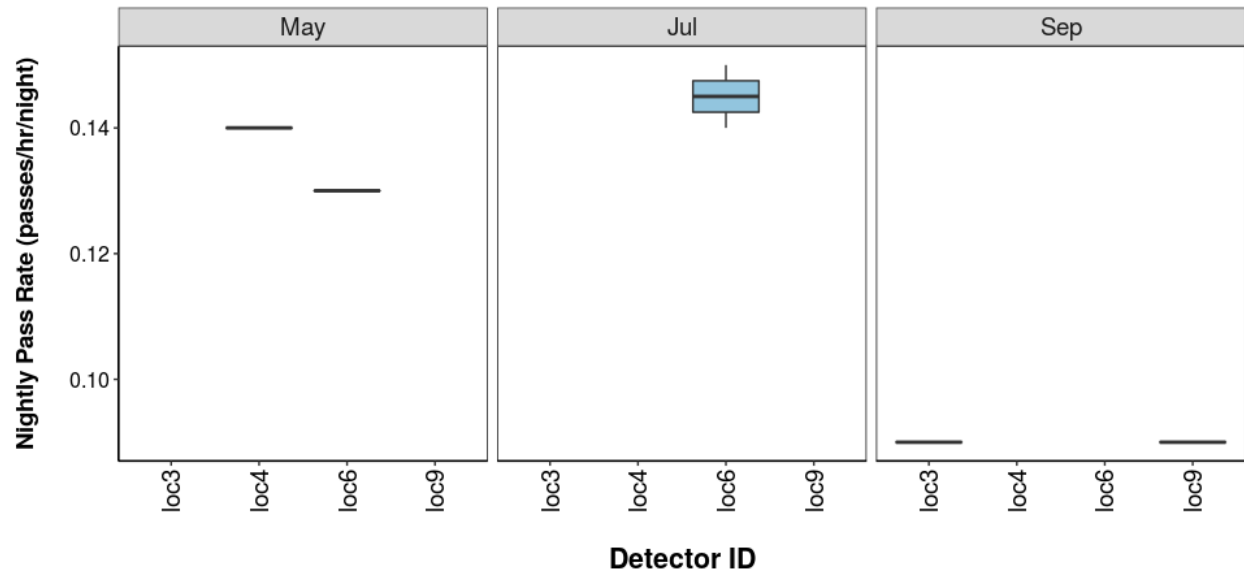
Nightly Bat Pass Rate for each Month

Per Detector - Figures

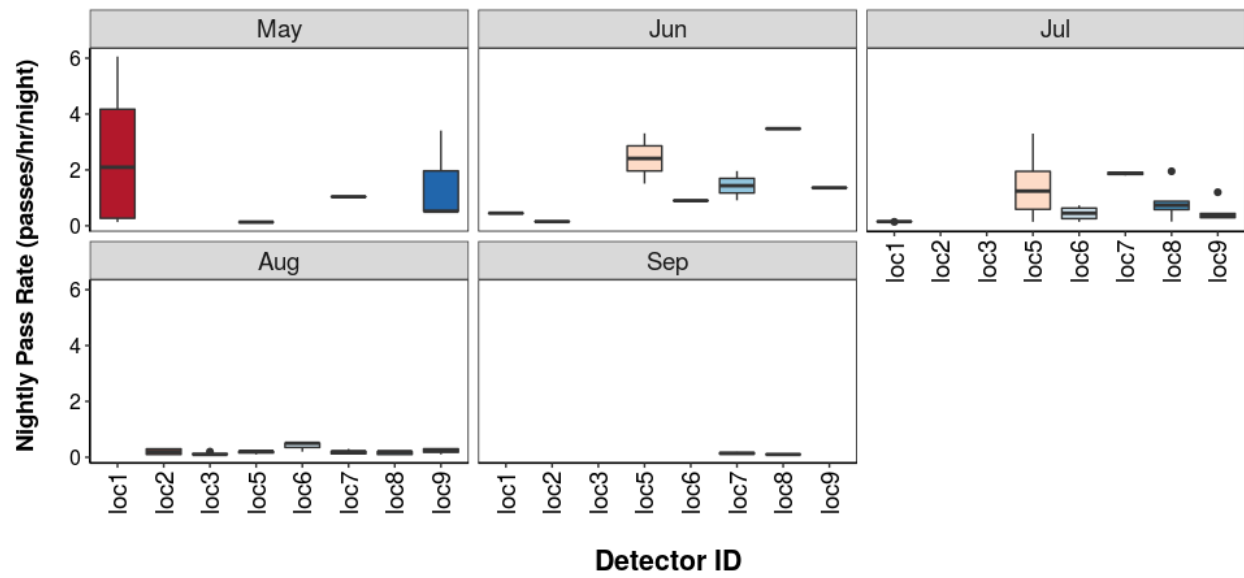
Figure 12. Figures show boxplots for the number of bat passes per hour by detector, for each month. The 'box' shows the interquartile range, which is where the middle 50% of the data lie. The line dividing the box is the median, the mid-point of the data. The 'whiskers' extend from the box and represent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



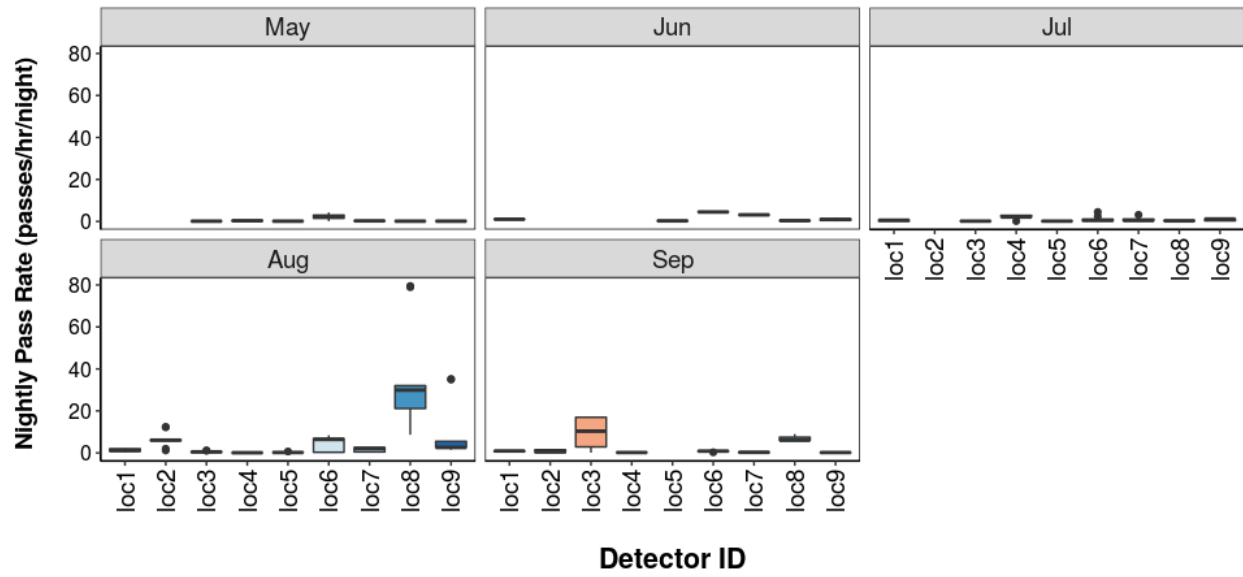
Natterer's



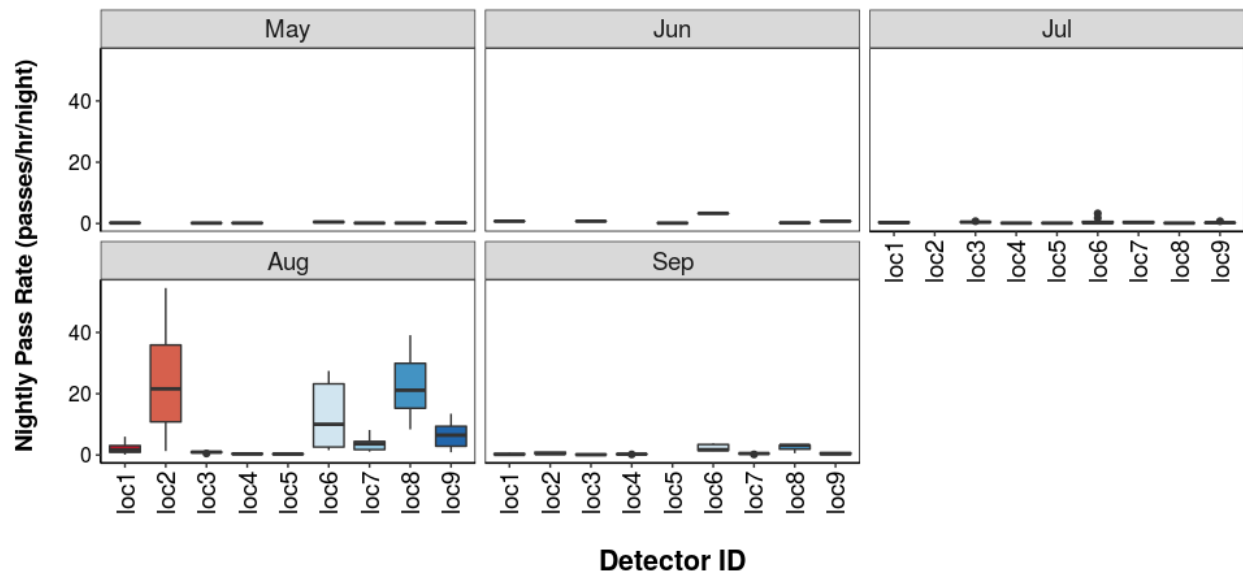
Nyctalus



Common pipistrelle



Soprano pipistrelle



Bat Activity per Detector Location

Figure 13. Detector ID reference:

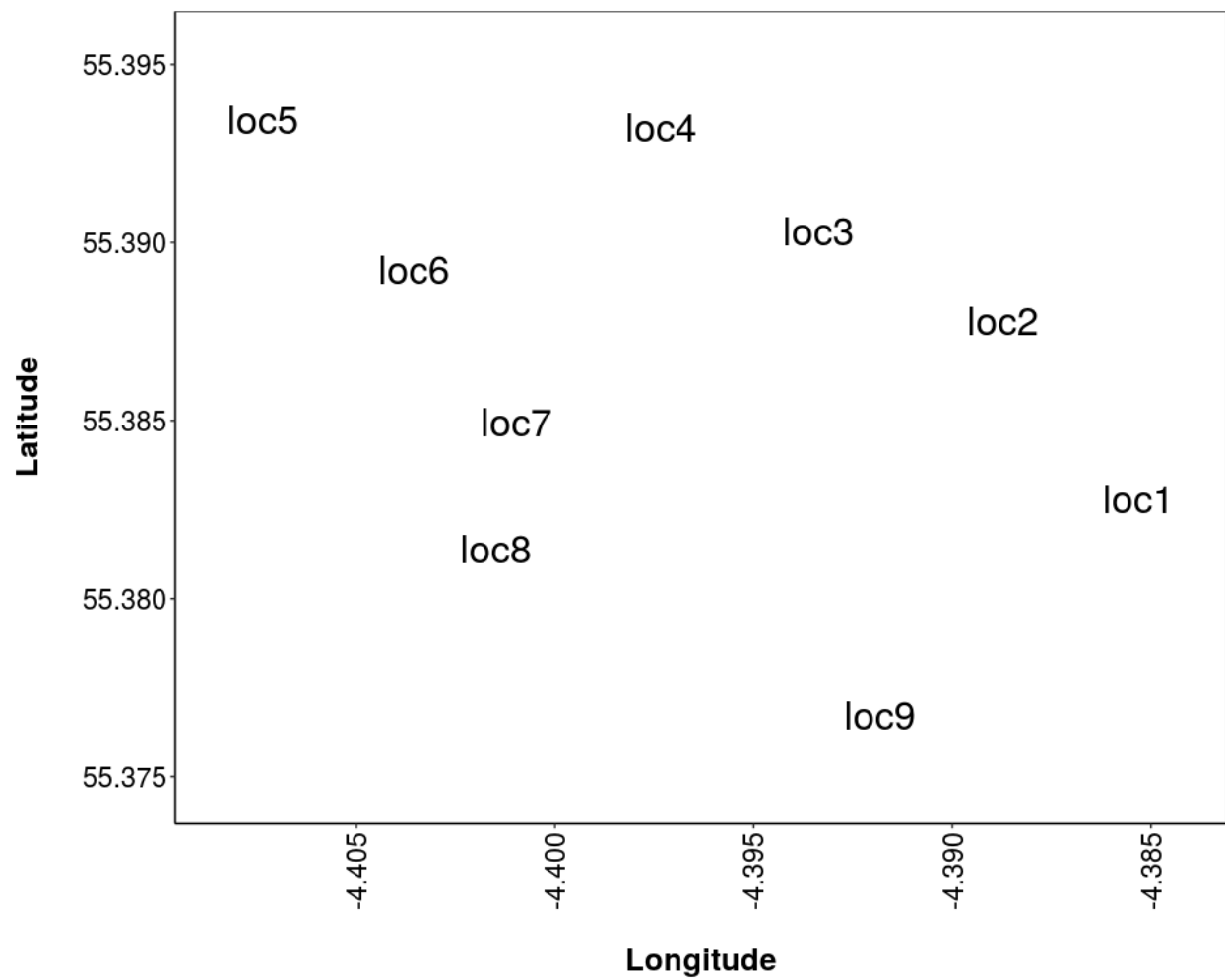


Figure 14. Median Nightly Pass Rate (bat passes/hr /night) throughout the survey period - represented by the size and colour of the point at each detector location.

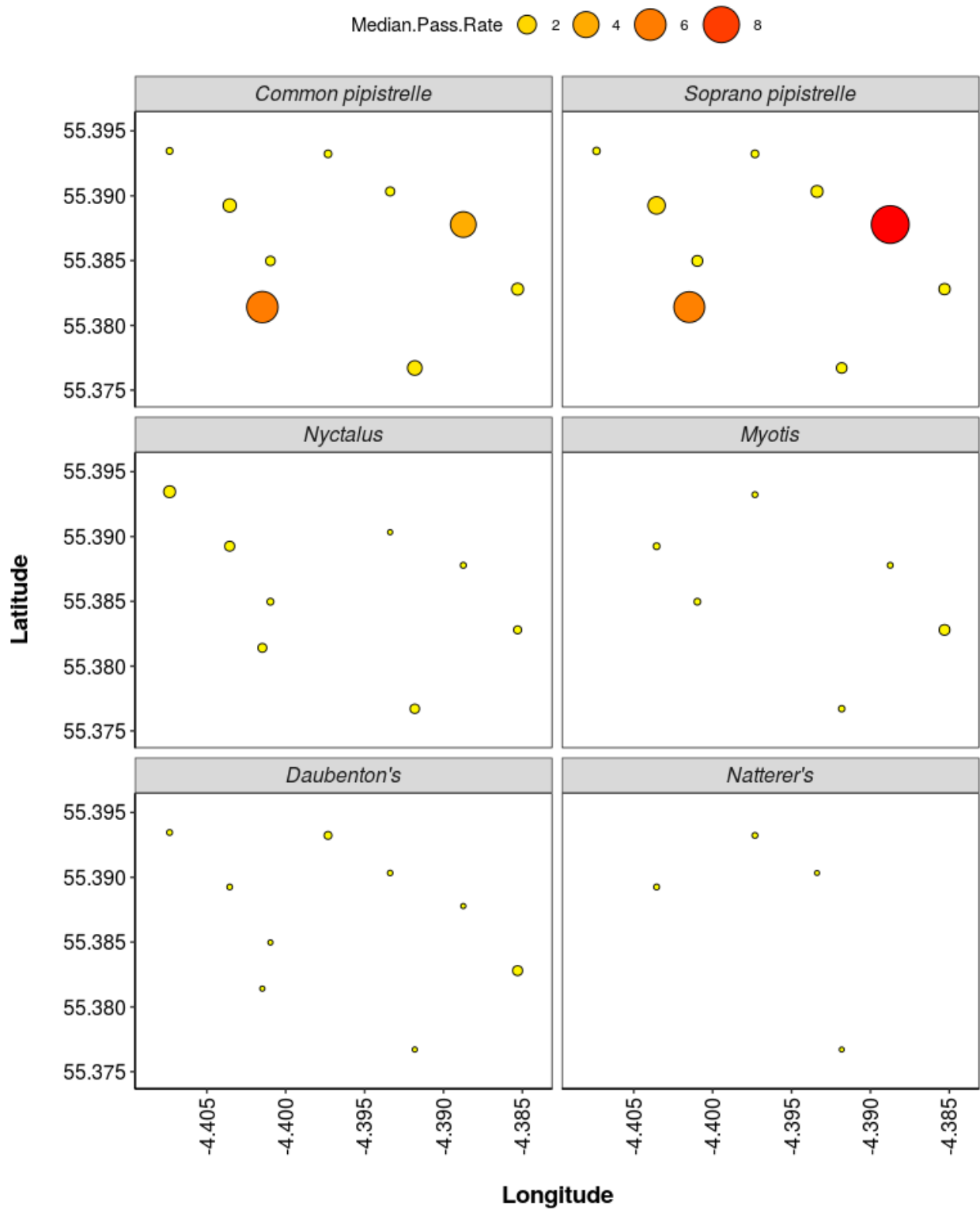
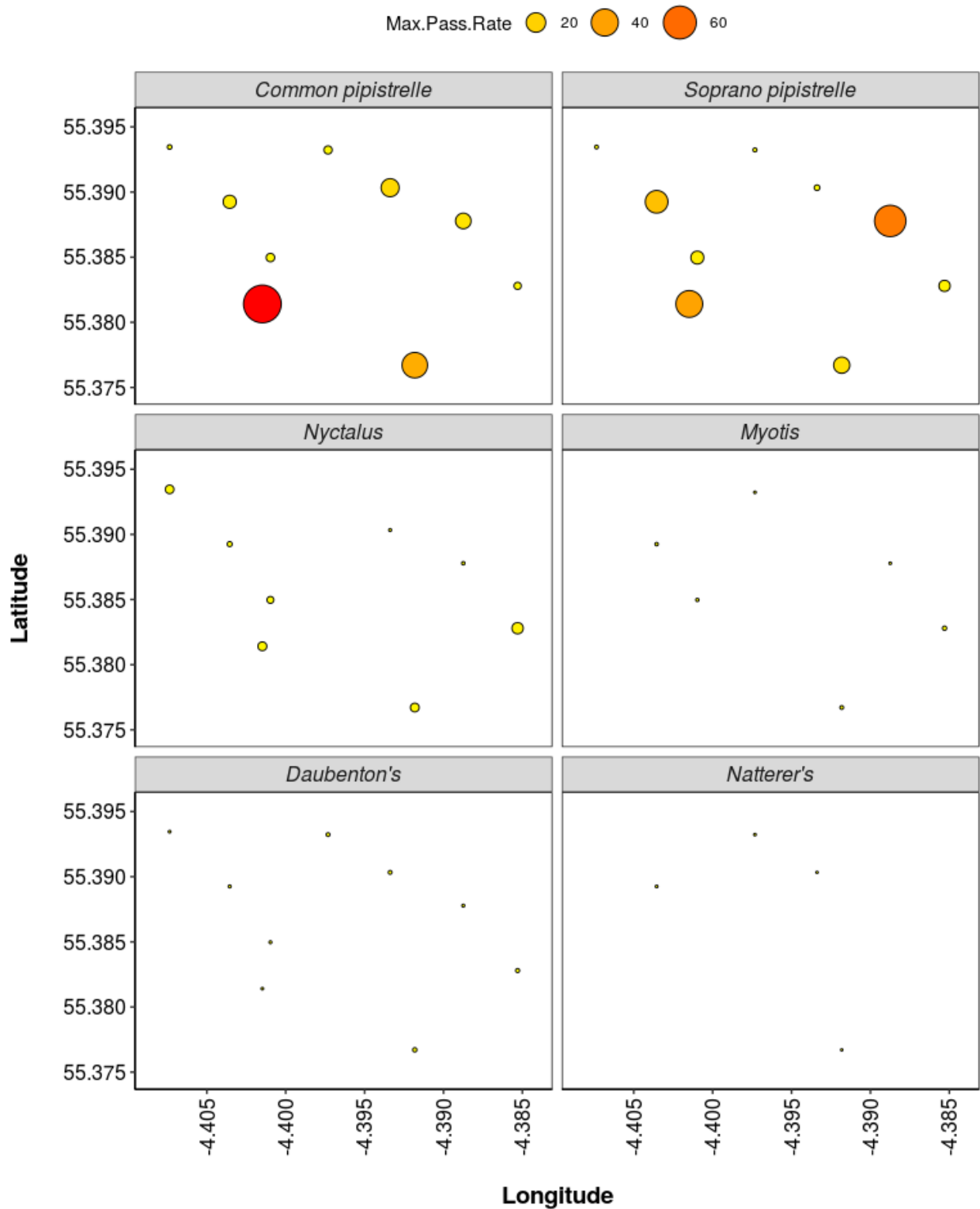


Figure 15. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.



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 (Bat passes per hour)

Median Per Detector

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

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

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

Species	Detector ID	Median Pass Rate
Common pipistrelle	loc1	0.1
Common pipistrelle	loc2	1.5
Common pipistrelle	loc3	0.2
Common pipistrelle	loc4	0.2
Common pipistrelle	loc5	0.1
Common pipistrelle	loc6	0.9
Common pipistrelle	loc7	0.3
Common pipistrelle	loc8	0.4
Common pipistrelle	loc9	0.2
Daubenton's	loc1	0.0
Daubenton's	loc2	0.0
Daubenton's	loc3	0.0
Daubenton's	loc4	0.0
Daubenton's	loc5	0.0
Daubenton's	loc6	0.0
Daubenton's	loc7	0.0
Daubenton's	loc8	0.0
Daubenton's	loc9	0.0
Myotis	loc1	0.0
Myotis	loc2	0.0
Myotis	loc3	0.0
Myotis	loc4	0.0
Myotis	loc5	0.0

Myotis	loc6	0.0
Myotis	loc7	0.0
Myotis	loc8	0.0
Myotis	loc9	0.0
Natterer's	loc1	0.0
Natterer's	loc2	0.0
Natterer's	loc3	0.0
Natterer's	loc4	0.0
Natterer's	loc5	0.0
Natterer's	loc6	0.0
Natterer's	loc7	0.0
Natterer's	loc8	0.0
Natterer's	loc9	0.0
Nyctalus	loc1	0.1
Nyctalus	loc2	0.0
Nyctalus	loc3	0.0
Nyctalus	loc4	0.0
Nyctalus	loc5	0.1
Nyctalus	loc6	0.0
Nyctalus	loc7	0.0
Nyctalus	loc8	0.1
Nyctalus	loc9	0.0
Soprano pipistrelle	loc1	0.1
Soprano pipistrelle	loc2	1.3
Soprano pipistrelle	loc3	0.4
Soprano pipistrelle	loc4	0.1
Soprano pipistrelle	loc5	0.0
Soprano pipistrelle	loc6	0.6
Soprano pipistrelle	loc7	0.5
Soprano pipistrelle	loc8	0.2
Soprano pipistrelle	loc9	0.3

Nightly Bat Pass Rate (Bat passes per hour)

Mean per Detector

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

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

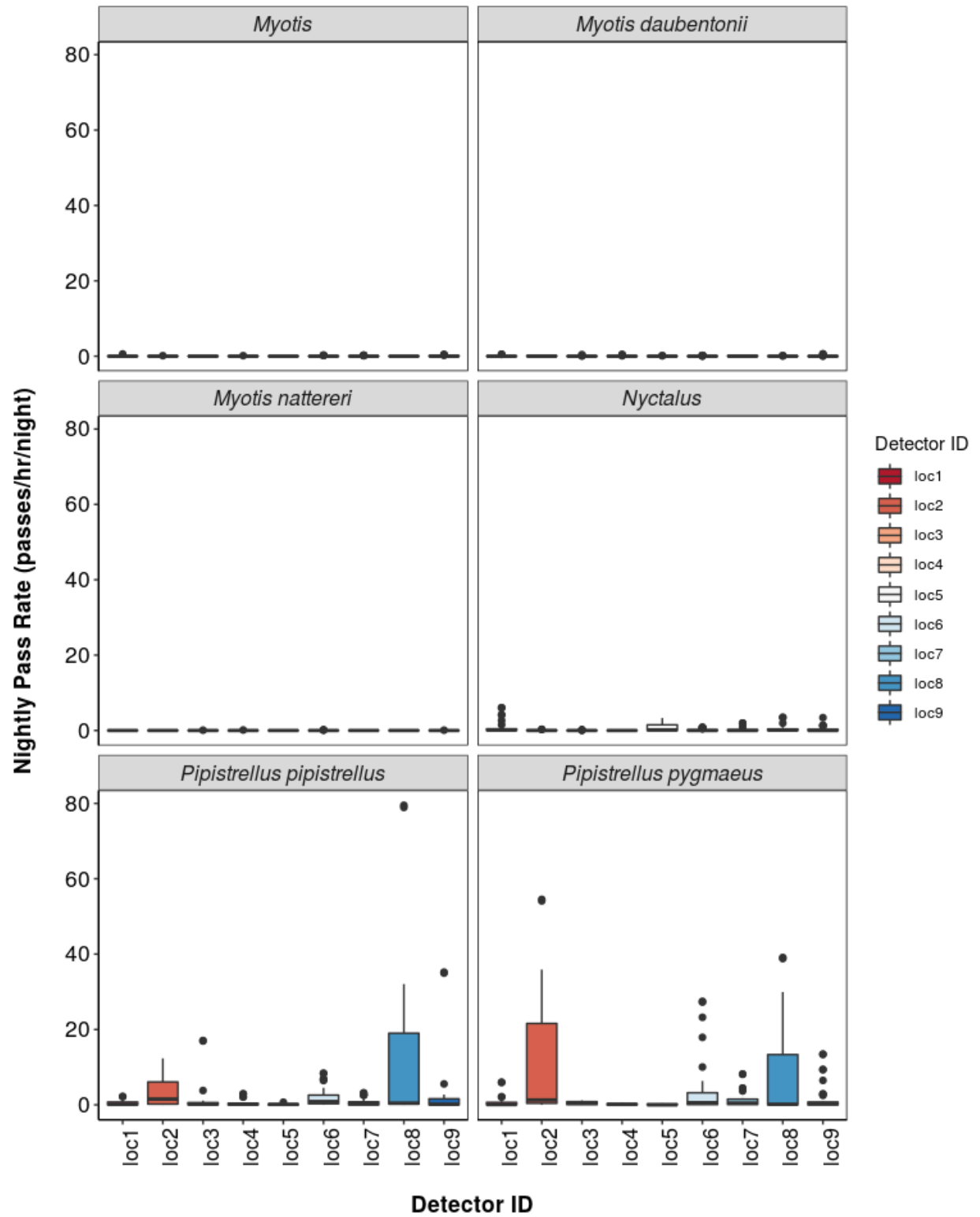
Species	Detector ID	Mean Pass Rate
Common pipistrelle	loc1	0.4
Common pipistrelle	loc2	3.7
Common pipistrelle	loc3	1.8
Common pipistrelle	loc4	0.5
Common pipistrelle	loc5	0.1
Common pipistrelle	loc6	2.0
Common pipistrelle	loc7	0.8
Common pipistrelle	loc8	12.8
Common pipistrelle	loc9	2.5
Daubenton's	loc1	0.0
Daubenton's	loc2	0.0
Daubenton's	loc3	0.0
Daubenton's	loc4	0.1
Daubenton's	loc5	0.0
Daubenton's	loc6	0.0
Daubenton's	loc7	0.0
Daubenton's	loc8	0.0
Daubenton's	loc9	0.0
Myotis	loc1	0.0
Myotis	loc2	0.0
Myotis	loc3	0.0
Myotis	loc4	0.0
Myotis	loc5	0.0
Myotis	loc6	0.0
Myotis	loc7	0.0
Myotis	loc8	0.0

Myotis	loc9	0.1
Natterer's	loc1	0.0
Natterer's	loc2	0.0
Natterer's	loc3	0.0
Natterer's	loc4	0.0
Natterer's	loc5	0.0
Natterer's	loc6	0.0
Natterer's	loc7	0.0
Natterer's	loc8	0.0
Natterer's	loc9	0.0
Nyctalus	loc1	0.8
Nyctalus	loc2	0.1
Nyctalus	loc3	0.0
Nyctalus	loc4	0.0
Nyctalus	loc5	0.8
Nyctalus	loc6	0.1
Nyctalus	loc7	0.3
Nyctalus	loc8	0.5
Nyctalus	loc9	0.3
Soprano pipistrelle	loc1	0.7
Soprano pipistrelle	loc2	13.8
Soprano pipistrelle	loc3	0.5
Soprano pipistrelle	loc4	0.2
Soprano pipistrelle	loc5	0.1
Soprano pipistrelle	loc6	3.8
Soprano pipistrelle	loc7	1.4
Soprano pipistrelle	loc8	7.7
Soprano pipistrelle	loc9	1.7

Nightly Bat Passes (Bat passes per hour)

Per Detector - Figures

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



Survey Effort

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

Month	Detector ID	No of Survey Nights
May	loc1	10
May	loc2	2
May	loc3	4
May	loc4	10
May	loc5	4
May	loc6	10
May	loc7	5
May	loc8	4
May	loc9	12
Jun	loc1	2
Jun	loc2	1
Jun	loc3	1
Jun	loc5	2
Jun	loc6	1
Jun	loc7	2
Jun	loc8	2
Jun	loc9	2
Jul	loc1	10
Jul	loc3	4
Jul	loc4	6
Jul	loc5	8
Jul	loc6	12
Jul	loc7	6
Jul	loc8	9
Jul	loc9	9
Aug	loc1	8
Aug	loc2	9
Aug	loc3	9
Aug	loc4	6
Aug	loc5	7
Aug	loc6	9

Aug	loc7	9
Aug	loc8	9
Aug	loc9	9
Sep	loc1	3
Sep	loc2	5
Sep	loc3	6
Sep	loc4	4
Sep	loc6	7
Sep	loc7	6
Sep	loc8	3
Sep	loc9	7

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	Jun	May	Sep
Common pipistrelle	loc1	0.9	0.2	0.5	0.0	0.9
Common pipistrelle	loc2	6.1	NA	0.0	0.0	0.6
Common pipistrelle	loc3	0.5	0.0	0.0	0.1	2.0
Common pipistrelle	loc4	0.0	2.1	NA	0.3	0.1
Common pipistrelle	loc5	0.2	0.0	0.2	0.1	NA
Common pipistrelle	loc6	6.4	0.5	4.5	1.9	0.9
Common pipistrelle	loc7	1.6	0.3	1.6	0.0	0.1
Common pipistrelle	loc8	29.9	0.3	0.4	0.1	6.0
Common pipistrelle	loc9	2.6	0.3	0.9	0.0	0.1
Daubenton's	loc1	0.0	0.0	0.0	0.0	0.0
Daubenton's	loc2	0.0	NA	0.0	0.1	0.0
Daubenton's	loc3	0.0	0.0	0.0	0.1	0.0
Daubenton's	loc4	0.0	0.1	NA	0.0	0.0
Daubenton's	loc5	0.0	0.0	0.0	0.0	NA
Daubenton's	loc6	0.0	0.0	0.0	0.0	0.0
Daubenton's	loc7	0.1	0.0	0.0	0.0	0.0
Daubenton's	loc8	0.0	0.0	0.0	0.0	0.0
Daubenton's	loc9	0.0	0.0	0.0	0.0	0.0
Myotis	loc1	0.0	0.0	0.0	0.0	0.0
Myotis	loc2	0.0	NA	0.0	0.1	0.0
Myotis	loc3	0.0	0.0	0.0	0.0	0.0
Myotis	loc4	0.0	0.0	NA	0.0	0.0
Myotis	loc5	0.0	0.0	0.0	0.0	NA

Myotis	loc6	0.0	0.0	0.0	0.0	0.0
Myotis	loc7	0.0	0.0	0.0	0.0	0.0
Myotis	loc8	0.0	0.0	0.0	0.0	0.0
Myotis	loc9	0.2	0.0	0.0	0.0	0.0
Natterer's	loc1	0.0	0.0	0.0	0.0	0.0
Natterer's	loc2	0.0	NA	0.0	0.0	0.0
Natterer's	loc3	0.0	0.0	0.0	0.0	0.0
Natterer's	loc4	0.0	0.0	NA	0.0	0.0
Natterer's	loc5	0.0	0.0	0.0	0.0	NA
Natterer's	loc6	0.0	0.0	0.0	0.0	0.0
Natterer's	loc7	0.0	0.0	0.0	0.0	0.0
Natterer's	loc8	0.0	0.0	0.0	0.0	0.0
Natterer's	loc9	0.0	0.0	0.0	0.0	0.0
Nyctalus	loc1	0.0	0.1	0.4	2.1	0.0
Nyctalus	loc2	0.0	NA	0.2	0.0	0.0
Nyctalus	loc3	0.0	0.0	0.0	0.0	0.0
Nyctalus	loc4	0.0	0.0	NA	0.0	0.0
Nyctalus	loc5	0.0	1.2	2.4	0.0	NA
Nyctalus	loc6	0.0	0.2	0.9	0.0	0.0
Nyctalus	loc7	0.1	0.0	1.4	0.0	0.0
Nyctalus	loc8	0.1	0.6	3.5	0.0	0.0
Nyctalus	loc9	0.0	0.3	1.4	0.0	0.0
Soprano pipistrelle	loc1	1.6	0.0	0.4	0.0	0.2
Soprano pipistrelle	loc2	21.6	NA	0.0	0.0	0.4
Soprano pipistrelle	loc3	0.9	0.4	0.8	0.0	0.0
Soprano pipistrelle	loc4	0.3	0.0	NA	0.0	0.3
Soprano pipistrelle	loc5	0.3	0.0	0.1	0.0	NA
Soprano pipistrelle	loc6	10.0	0.1	3.3	0.0	1.7
Soprano pipistrelle	loc7	3.7	0.2	0.0	0.1	0.5
Soprano pipistrelle	loc8	21.1	0.0	0.2	0.1	3.2
Soprano pipistrelle	loc9	6.5	0.2	0.4	0.1	0.2

Nightly Bat Pass Rate for each Month

Mean per Detector

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

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

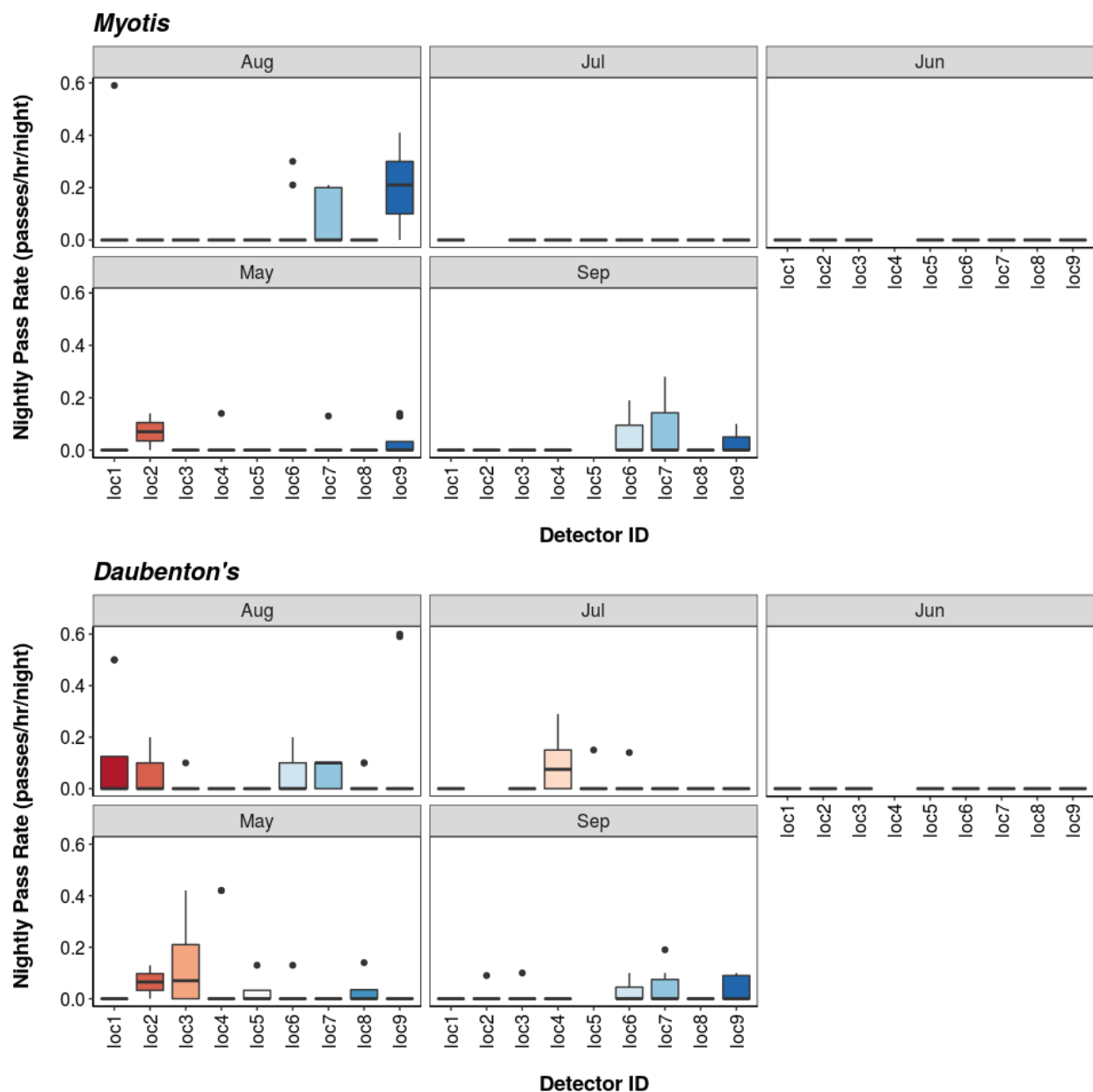
Species	Detector ID	Aug	Jul	Jun	May	Sep
Common pipistrelle	loc1	1.0	0.3	0.5	0.0	0.8
Common pipistrelle	loc2	6.5	NA	0.0	0.0	0.8
Common pipistrelle	loc3	0.6	0.0	0.0	0.1	6.3
Common pipistrelle	loc4	0.0	1.7	NA	0.3	0.1
Common pipistrelle	loc5	0.3	0.0	0.2	0.1	NA
Common pipistrelle	loc6	4.5	0.9	4.5	1.8	0.8
Common pipistrelle	loc7	1.5	0.7	1.6	0.1	0.2
Common pipistrelle	loc8	35.6	0.3	0.4	0.1	7.0
Common pipistrelle	loc9	10.0	0.7	0.9	0.0	0.1
Daubenton's	loc1	0.1	0.0	0.0	0.0	0.0
Daubenton's	loc2	0.0	NA	0.0	0.1	0.0
Daubenton's	loc3	0.0	0.0	0.0	0.1	0.0
Daubenton's	loc4	0.0	0.1	NA	0.1	0.0
Daubenton's	loc5	0.0	0.0	0.0	0.0	NA
Daubenton's	loc6	0.1	0.0	0.0	0.0	0.0
Daubenton's	loc7	0.1	0.0	0.0	0.0	0.0
Daubenton's	loc8	0.0	0.0	0.0	0.0	0.0
Daubenton's	loc9	0.1	0.0	0.0	0.0	0.0
Myotis	loc1	0.1	0.0	0.0	0.0	0.0
Myotis	loc2	0.0	NA	0.0	0.1	0.0
Myotis	loc3	0.0	0.0	0.0	0.0	0.0
Myotis	loc4	0.0	0.0	NA	0.0	0.0
Myotis	loc5	0.0	0.0	0.0	0.0	NA
Myotis	loc6	0.1	0.0	0.0	0.0	0.1
Myotis	loc7	0.1	0.0	0.0	0.0	0.1
Myotis	loc8	0.0	0.0	0.0	0.0	0.0

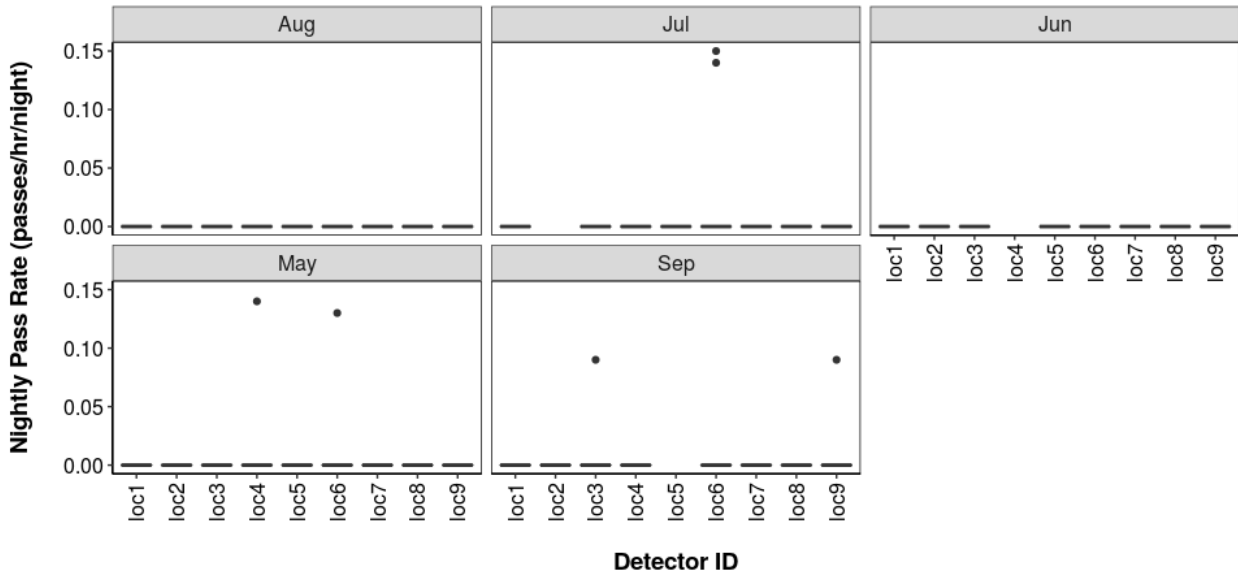
Myotis	loc9	0.2	0.0	0.0	0.0	0.0
Natterer's	loc1	0.0	0.0	0.0	0.0	0.0
Natterer's	loc2	0.0	NA	0.0	0.0	0.0
Natterer's	loc3	0.0	0.0	0.0	0.0	0.0
Natterer's	loc4	0.0	0.0	NA	0.0	0.0
Natterer's	loc5	0.0	0.0	0.0	0.0	NA
Natterer's	loc6	0.0	0.0	0.0	0.0	0.0
Natterer's	loc7	0.0	0.0	0.0	0.0	0.0
Natterer's	loc8	0.0	0.0	0.0	0.0	0.0
Natterer's	loc9	0.0	0.0	0.0	0.0	0.0
Nyctalus	loc1	0.0	0.1	0.4	2.6	0.0
Nyctalus	loc2	0.1	NA	0.2	0.0	0.0
Nyctalus	loc3	0.1	0.0	0.0	0.0	0.0
Nyctalus	loc4	0.0	0.0	NA	0.0	0.0
Nyctalus	loc5	0.1	1.4	2.4	0.0	NA
Nyctalus	loc6	0.1	0.3	0.9	0.0	0.0
Nyctalus	loc7	0.1	0.6	1.4	0.2	0.0
Nyctalus	loc8	0.1	0.6	3.5	0.0	0.0
Nyctalus	loc9	0.1	0.3	1.4	0.4	0.0
Soprano pipistrelle	loc1	2.3	0.1	0.4	0.0	0.3
Soprano pipistrelle	loc2	25.7	NA	0.0	0.0	0.6
Soprano pipistrelle	loc3	0.9	0.5	0.8	0.0	0.1
Soprano pipistrelle	loc4	0.4	0.0	NA	0.1	0.3
Soprano pipistrelle	loc5	0.3	0.0	0.1	0.0	NA
Soprano pipistrelle	loc6	13.2	0.5	3.3	0.2	2.4
Soprano pipistrelle	loc7	3.9	0.2	0.0	0.1	0.3
Soprano pipistrelle	loc8	22.3	0.0	0.2	0.1	2.3
Soprano pipistrelle	loc9	6.8	0.2	0.4	0.1	0.3

Nightly Bat Pass Rate for each Month

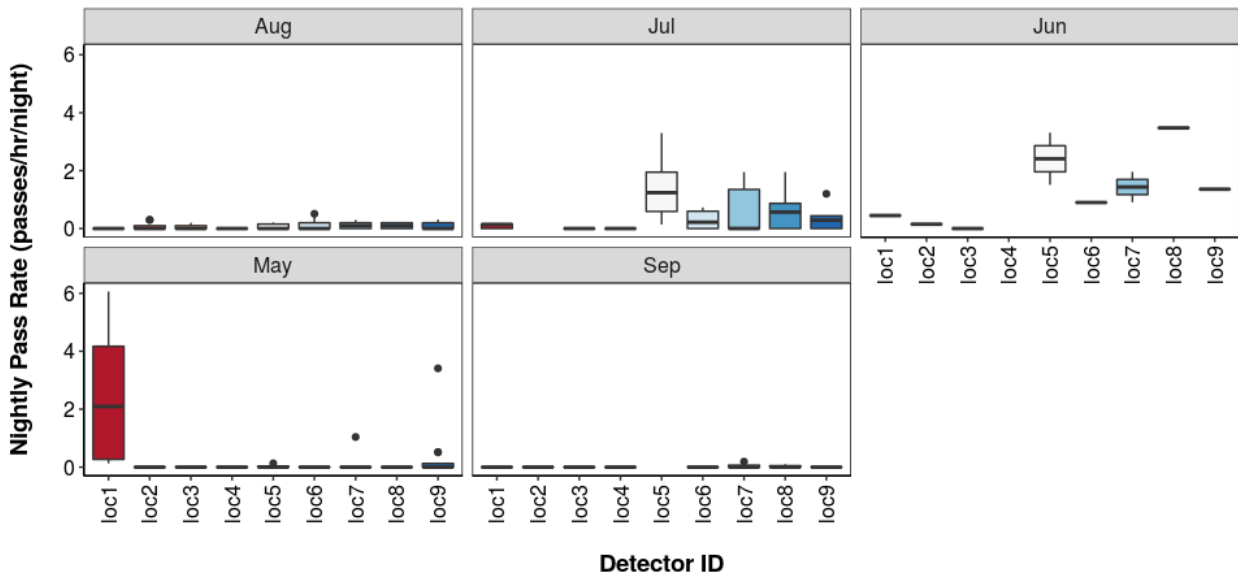
Per Detector - Figures

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

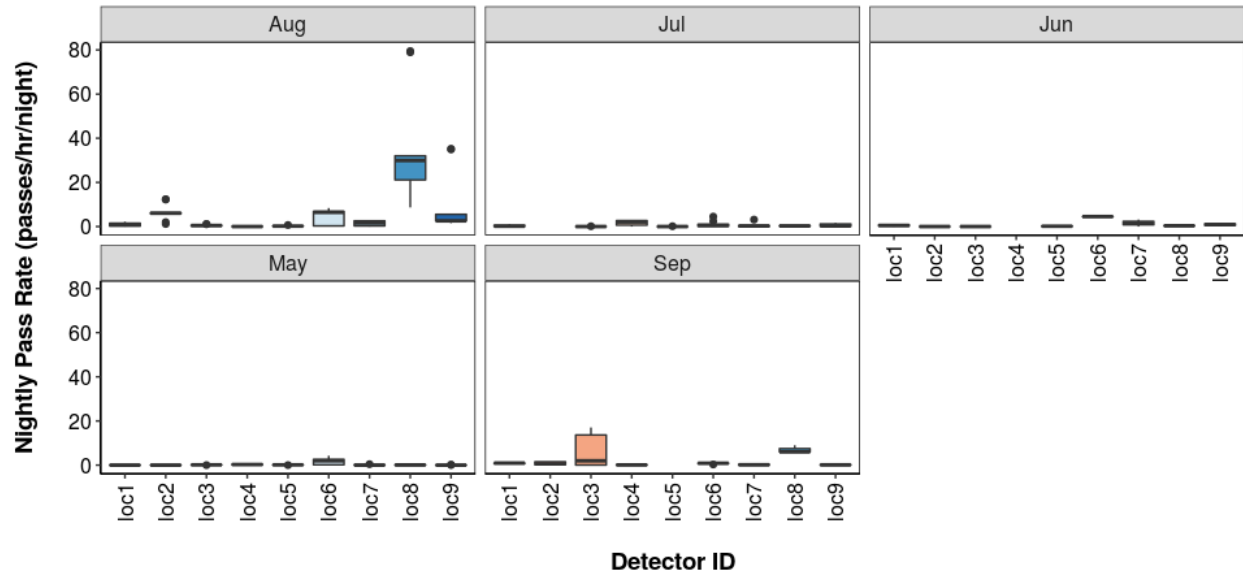


Natterer's

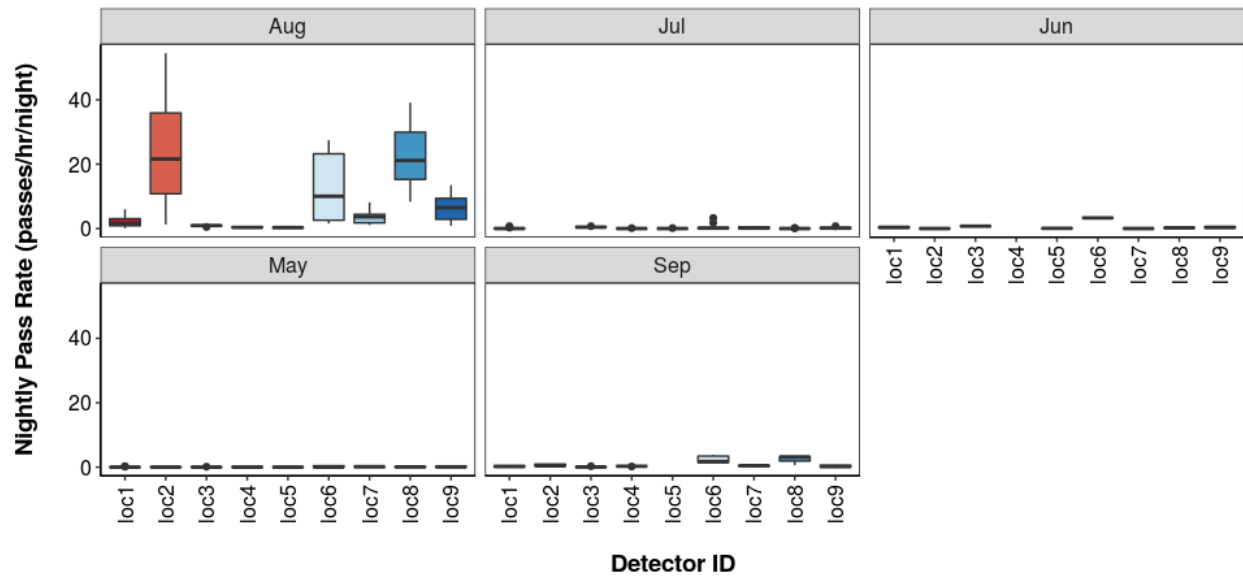
Nyctalus



Common pipistrelle



Soprano pipistrelle



Bat Activity per Detector Location

Figure 18. Detector ID reference:

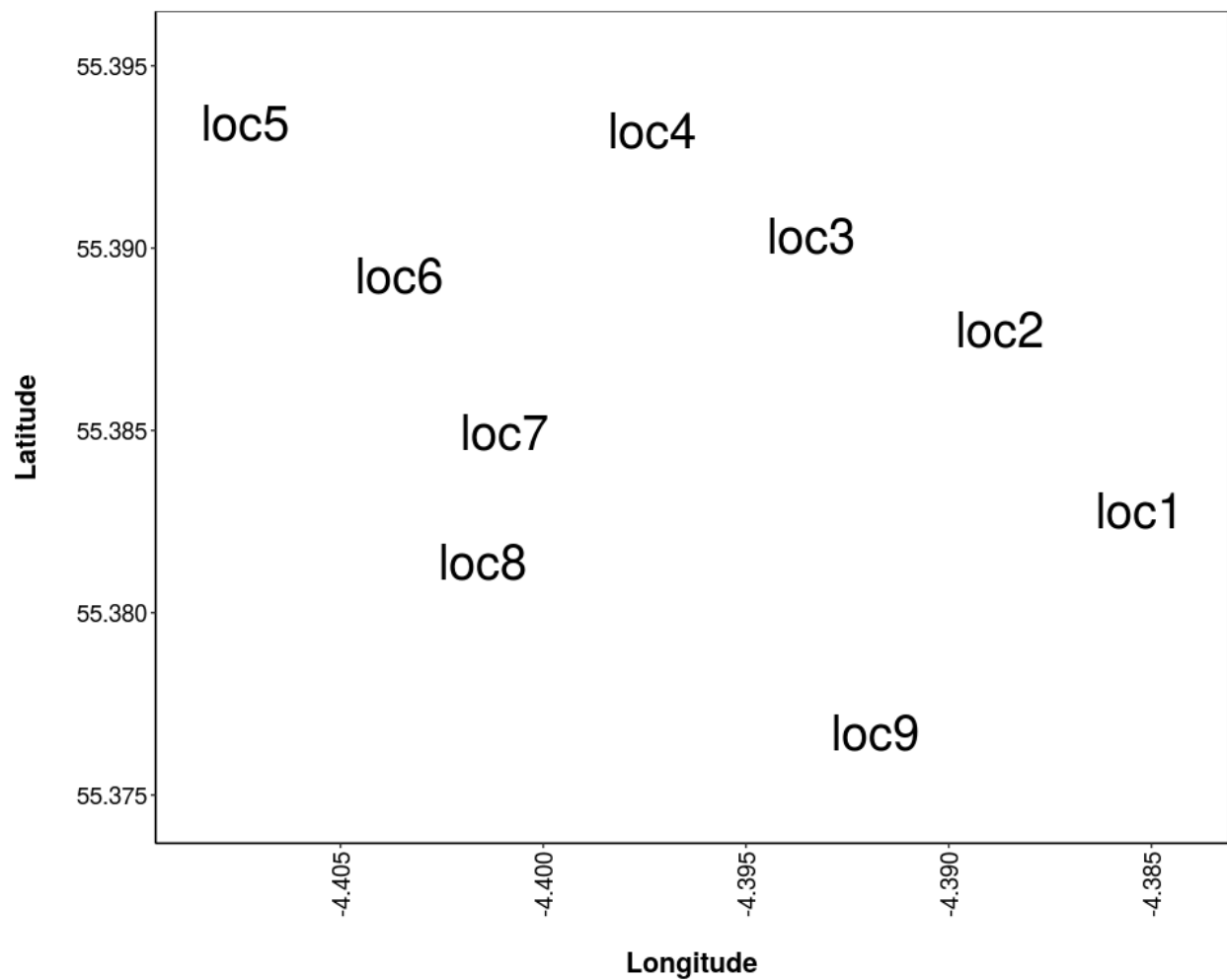


Figure 19. Median Nightly Pass Rate (bat passes/hr/night) throughout the survey period - represented by the size and colour of the point at each detector location.

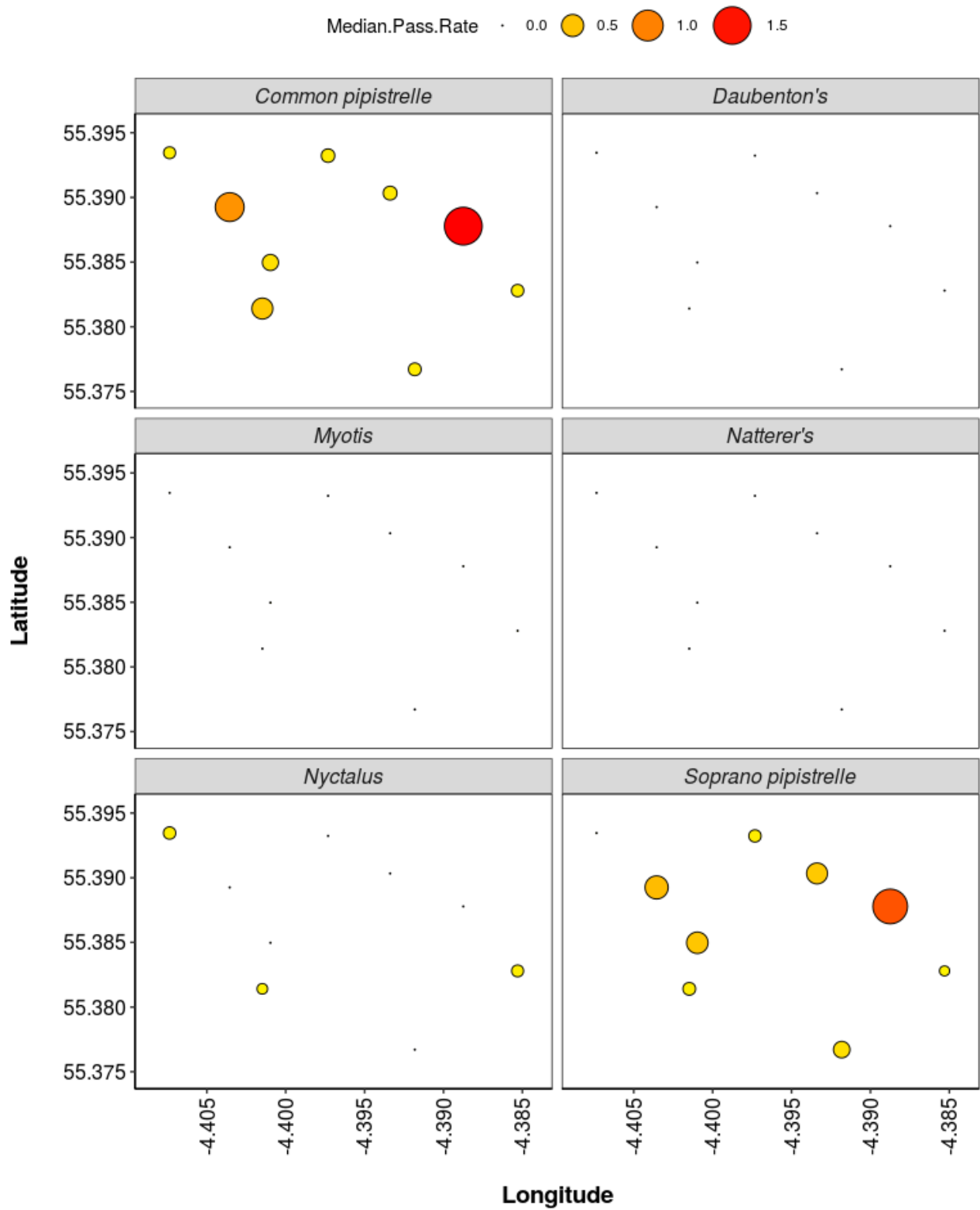
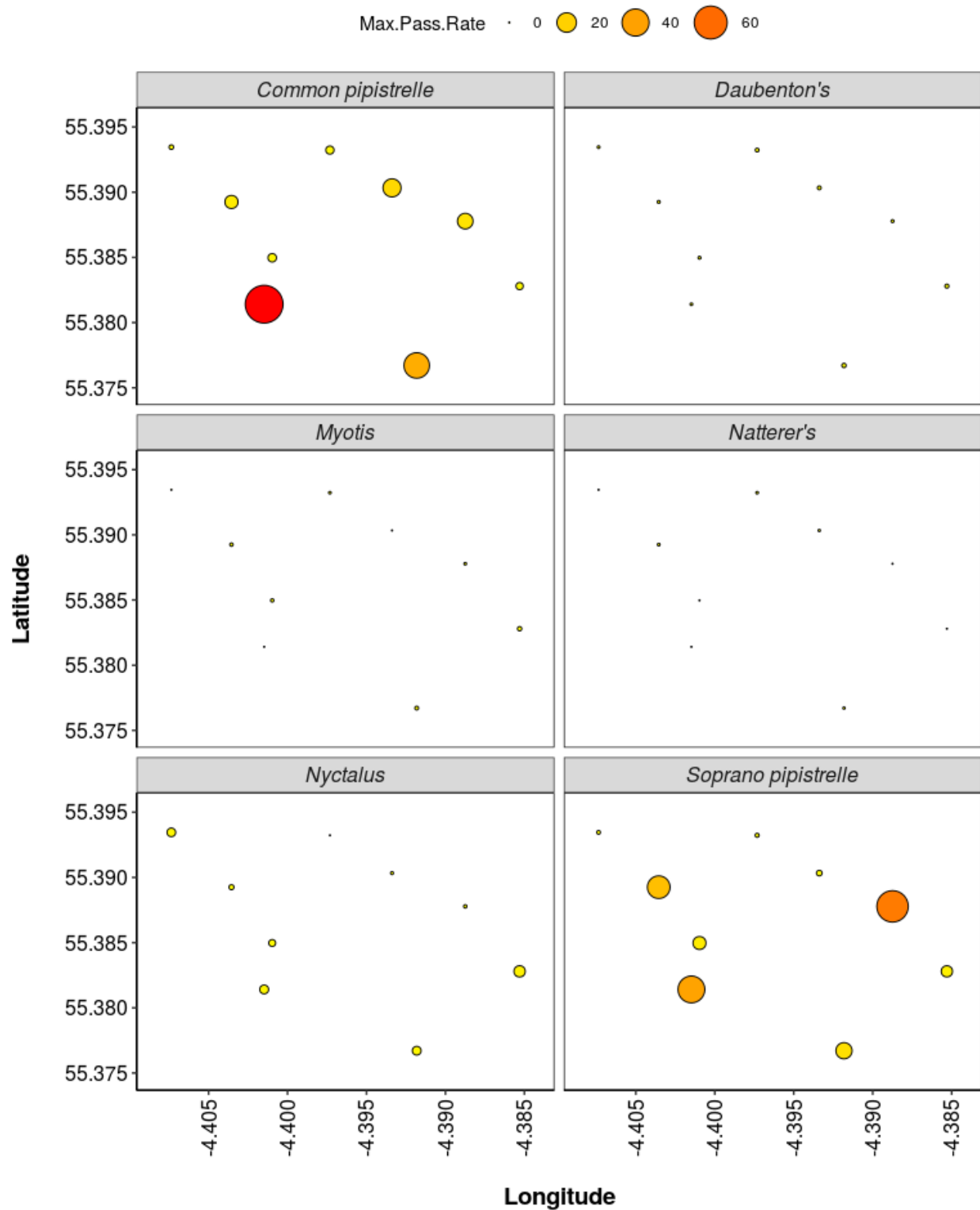


Figure 20. Maximum Nightly Pass Rate (bat passes/hr/night) recorded in a single night throughout the survey period - represented by the size and colour of the point at each detector location.



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info@themammalsociety.org.uk