# Natural History Museum Wildlife Garden Anabat monitoring 2017
# Summary of results

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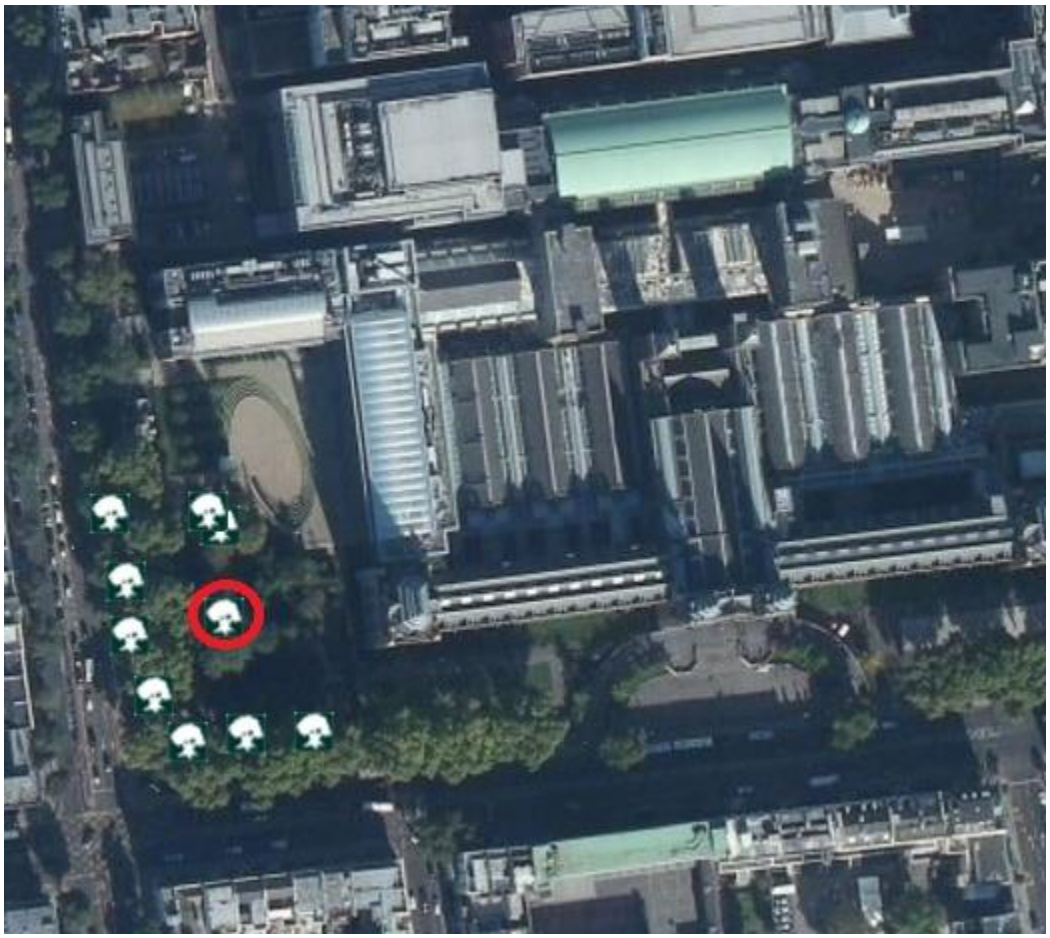
**Introduction**

The aim of this survey was to continue the bat monitoring carried out in the Natural History Museum wildlife garden in 2015 and 2016 and collect further information on species presence and levels and patterns of activity in order to assess the garden's value as foraging habitat for bats.

An Anabat SD1 bat detector was installed in a tree overlooking the pond in the wildlife garden from 29th June until 22nd August 2017, resulting in 55 nights of monitoring. The location of the tree is circled in the aerial photo below.



Three species were identified: common pipistrelle, soprano pipistrelle and a "big bat" species (most likely noctule or Leisler's bat).

**Common pipistrelle**

This species displayed the highest levels of activity of all species recorded (Figure 1). As in 2016, the highest activity was on 29th June when 307 files were found to contain common pipistrelle calls (considerably lower than the figure of 655 files on that night in 2016). Each file is up to 15 seconds in length so the figures indicate activity in units of 15 seconds throughout the night. Activity dropped off sharply from 25th July (later than this occurred in 2016 when the drop off in activity was from 8th July) and continued at a lower level throughout the monitoring period, occasionally fluctuating to slightly higher levels of activity.

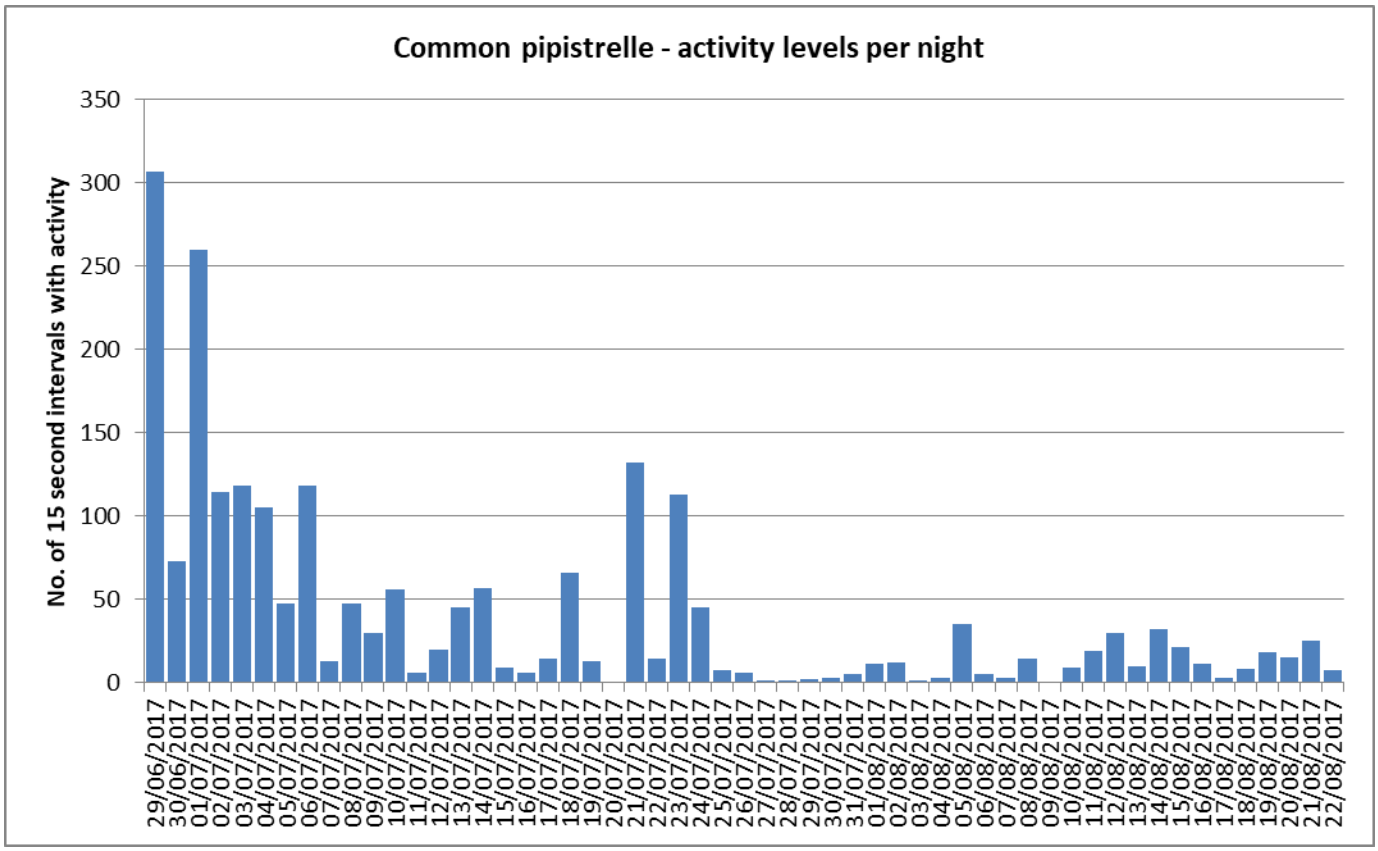



*Figure 1 Common pipistrelle – activity levels by night*

The earliest common pipistrelle calls were recorded 40 minutes after sunset (a little later than in 2016 when first activity was 34 minutes after sunset) (Figure 2). Other than that the activity patterns throughout the night were very similar between the two years, with the first period of activity tending to peak around 1 hour after sunset. The following summary from the 2016 report remains true for 2017.

Pipistrelle emergence time typically begins around 20 minutes after sunset so these results are not suggestive of a potential roost within or very close to the wildlife garden, though further investigation would be needed if the presence or absence of roosts is to be confirmed. Over the monitoring period activity occurred throughout the night with a second peak in activity around 4.5 hours after sunset. The bimodal pattern of peaks in activity appears to be consistent with the typical activity pattern of female bats in the post-parturition period, with bats emerging to feed 2-3 times during the night and returning to the roost to feed the young in between foraging sessions. The fact that activity continues throughout the night indicates that the garden provides common

pipistrelles with an attractive foraging area, though these results are not able to indicate whether the activity was from many bats or just one or two very active individuals.

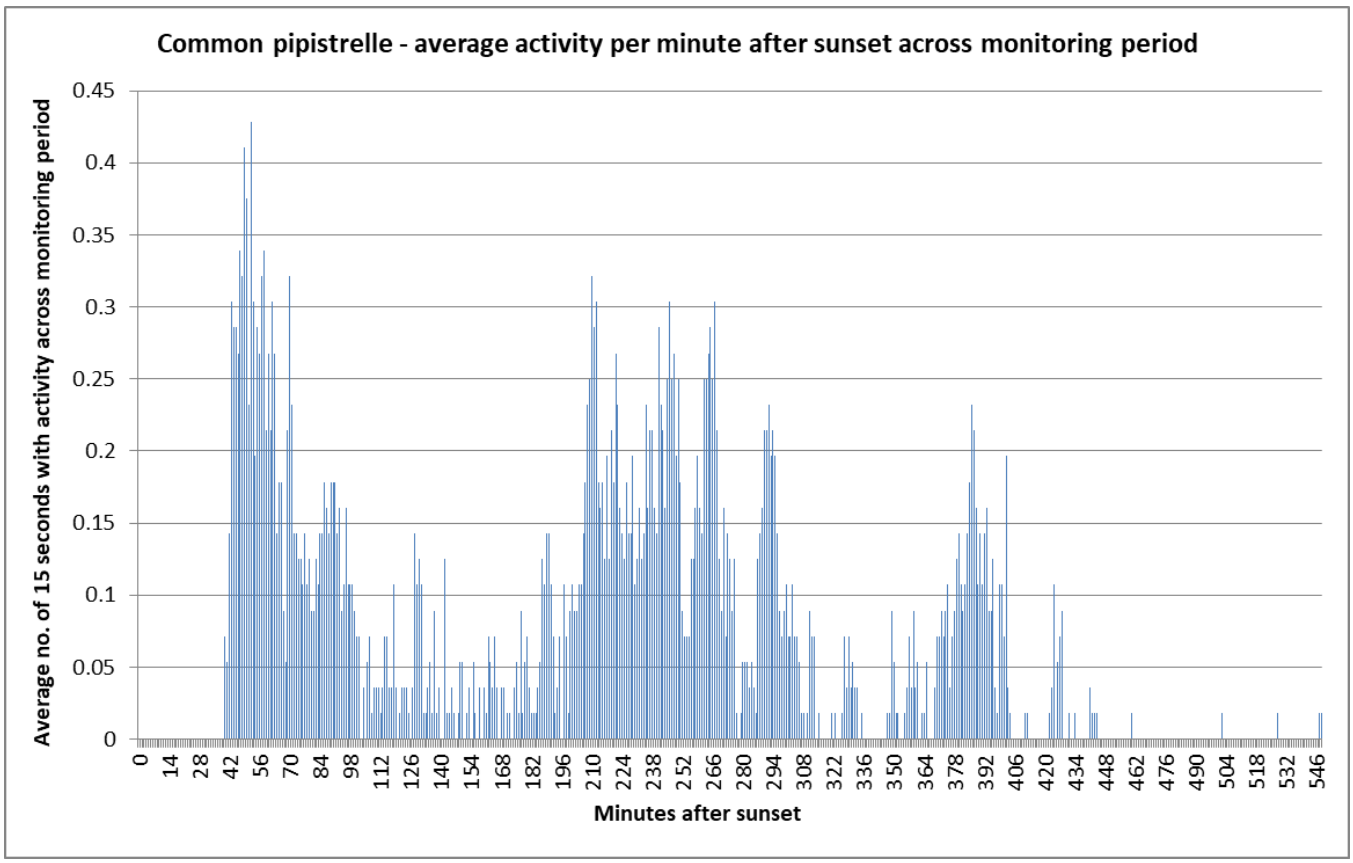



*Figure 2 Common pipistrelle – average activity per minute after sunset across monitoring period*

**Soprano pipistrelle**

As in 2016, soprano pipistrelle activity was recorded at a much lower level and more sporadically than common pipistrelle (Figure 3). Activity was not recorded on all nights and, aside from a peak count of seven passes on 15th July, slightly higher activity was recorded in the second half of the monitoring period in contrast to common pipistrelle which showed higher activity in the first half.

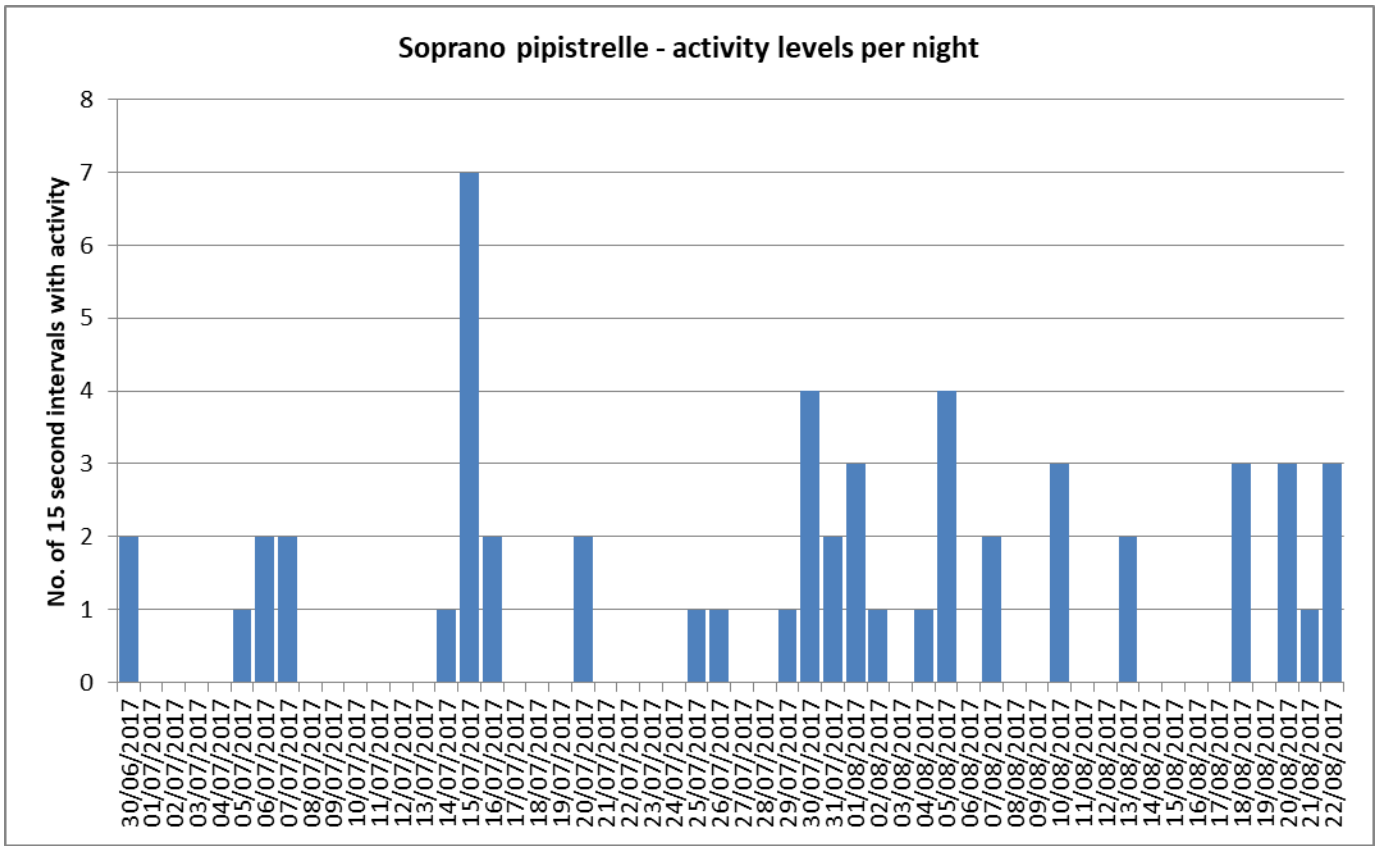



*Figure 3 Soprano pipistrelle – activity levels by night*

Soprano pipistrelle activity tended to occur more sporadically throughout the night (Figure 4) and was much more sporadic than in 2016. As with common pipistrelle, the earliest time at which soprano pipistrelle calls were first recorded (32 minutes after sunset) is not suggestive of a roost within or very close to the garden but again further investigation would be needed to provide more concrete evidence of presence/absence of roosts.

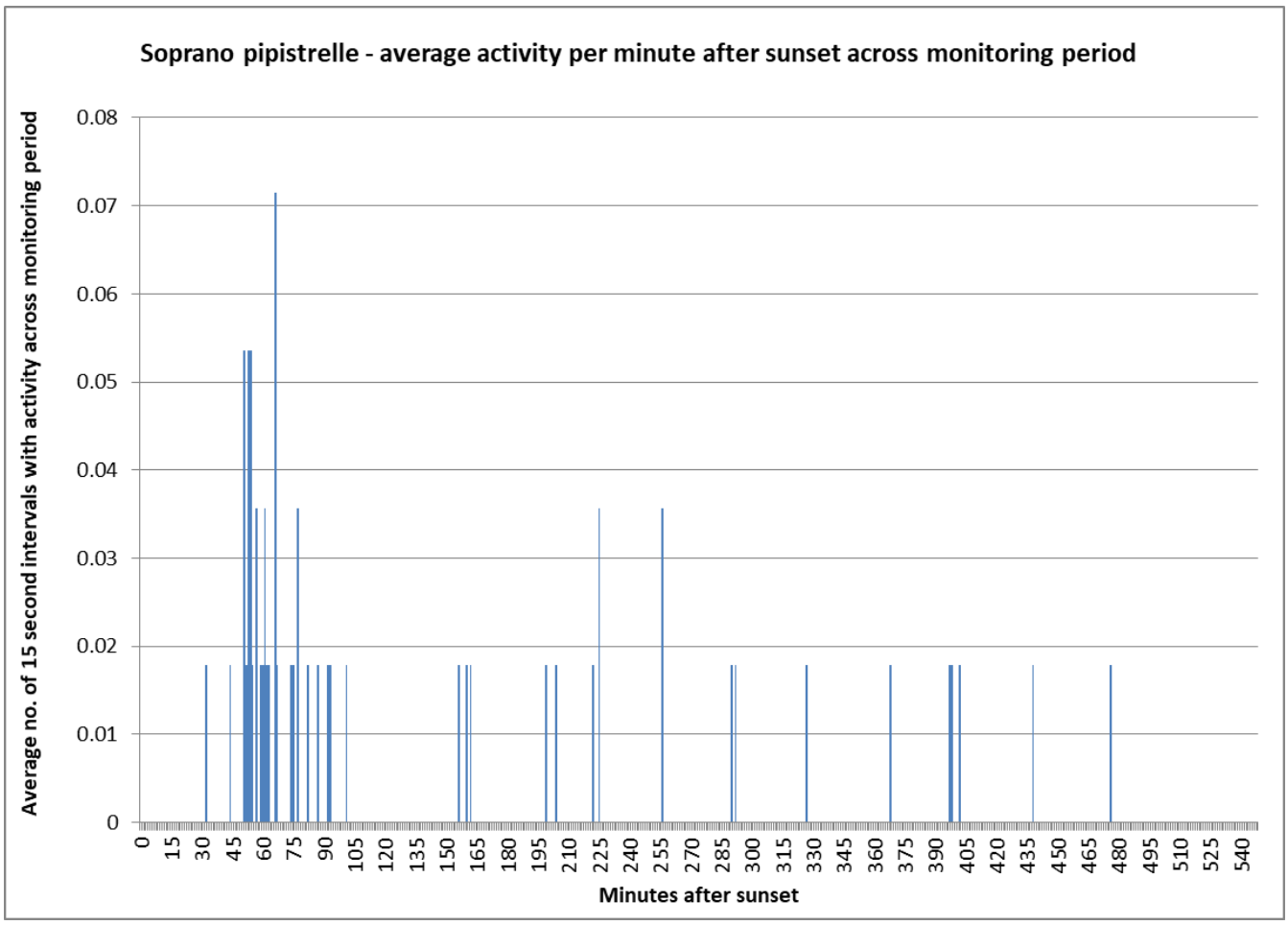



*Figure 4 Soprano pipistrelle – average activity per minute after sunset across monitoring period*

**Nathusius' pipistrelle**

This species was not recorded during the 2017 survey. In 2016 a single call sequence was identified as being from a Nathusius' pipistrelle, recorded on 10th August. More frequent activity was recorded during the 2015 survey which was carried out during late summer/early autumn which is the peak time for recording Nathusius' pipistrelle due to an influx of migratory bats into the UK. In 2015 this species was recorded on nine nights in September, with one or two passes recorded on all nights with the exception of 25th September 2015 when nine passes were recorded – slightly more sustained but still relatively low activity.

**"Big bat" species**

A single pass was recorded from a "big bat" species, either noctule, Leisler's bat or serotine (Figure 5). The structure of the calls was typical of these species' echolocation calls when they are flying in a more enclosed environment, in which situation their calls become similar and it is difficult to tell the species apart. Noctule or Leisler's bat are the more likely species as they are more frequently recorded in London than serotine. During the 2015 survey two passes were recorded from a *Nyctalus* sp (noctule/Leisler's bat) on 8th September. Combined with this year's result this indicates that individuals of this species occasionally pass over the site but the current evidence doesn't show that they linger at the site in order to forage.

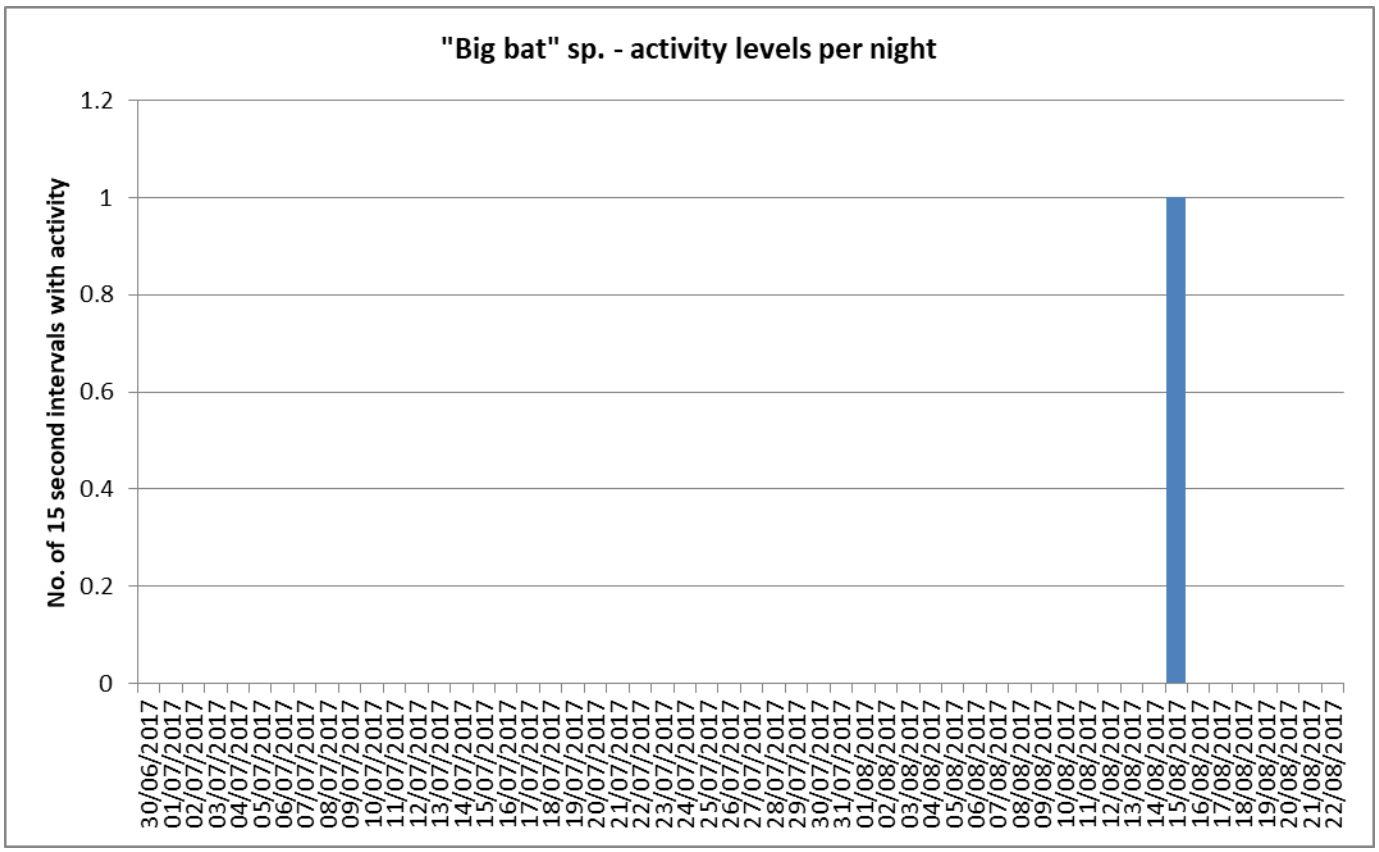



*Figure 5 "Big bat" species – activity levels by night*

**Conclusion**

As in 2015 and 2016, this year's survey provides ongoing evidence that the Natural History Museum wildlife garden is an attractive foraging habitat for common pipistrelle and is also regularly used by soprano pipistrelle. *Nyctalus* species occasionally pass through but there is no evidence that they forage at the site. Surveys from previous years showed that Nathusius' pipistrelle also occasionally visits the site, particularly during its autumn migration period. This species was not detected during the 2017 survey but this may be because the survey period didn't coincide with the peak activity period in late summer/autumn. This survey was not able to provide information on numbers of bats using the site or confirm whether roosts are present but the high levels of extended common pipistrelle activity continue to support the view that the garden is a wildlife oasis within a very urbanised area.

This report represents monitoring carried out to provide some information about the species of bats using the garden and the relative activity levels. If a more detailed ecological impact assessment is required (e.g. to inform development proposals) this would require more comprehensive surveys (for example to establish activity at different times of year or the presence/absence of legally protected bat roosts) to be carried out by an ecological consultant.