Brooks Ecological
Grounded advice

Bat Activity Survey

Land South of Halifax Road, Penistone

Barratt and David Wilson Homes Yorkshire West

Report Reference: ER-4578-03

10/06/2020

Report Title:	Bat Activity Survey Land South of Halifax Road, Penistone
Report Reference:	ER-4578-03
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Summary Statement

Information gathered through a combination of remote monitoring and walked transects does not indicate that the Site is of significant importance to any local bat populations, but is consistently used by small numbers of common pipistrelle bats for foraging. Likewise, no significant commuting routes were identified.

There is the potential for development to provide an overall net gain for this group, with private gardens and public open space providing better foraging habitat for pipistrelle bats in the long term. Incorporating new roost features within a number of suitable units could also enhance the Site for local bat populations.

Introduction

1. Brooks Ecological was commissioned to carry out a Bat Activity Survey at the proposed development Site known as Land South of Halifax Road, Penistone.

2. These surveys are required to provide evidence of the baseline use of the Site by the local bat population, which in turn will then enable mitigation and enhancement strategies to be devised to support a future planning application.

3. The scope of the survey has been devised based on an assessment of the habitats present and in light of current best practice guidelines (BCT, 2016). In this case, a single activity survey, undertaken during the peak season, was considered sufficient to corroborate the assessment made in the Preliminary Ecological Appraisal – that the Site is unlikely to be of significant value to local bat populations in terms of commuting or foraging. The need for this survey was also raised in the Consultation Response from the Local Planning authority Ecologist; '*Bats – they need to do some simple activity surveys to confirm or otherwise the low commuting/ foraging value to these species – this will have to be done now.*'

Figure 1 The Site boundary - red line

Method

4. Survey and assessment was directed by Christopher Shaw BSc (Hons) MCIEEM. Chris is registered to use the Class Survey Licence WML CL18 (Bat Survey Level 2). He is an active member of the West Yorkshire Bat Group and West Yorkshire Bat Care Scheme.

5. The objective of the survey was to characterise how local bat populations currently make use of the Site, so that an accurate assessment of the potential impacts of development could be made. Transect and remote monitoring surveys were carried out to collect the following data (BCT survey guidelines 2016):

    - The assemblage of bat species using the site;
    - The relative frequency with which the site is used by different species;
    - The nature of activity for different bat species, for example foraging, commuting and roosting.

Transects

6. The transect began around sunset and continued up to 2 hours after when all bats were thought to have emerged, and thus were actively foraging and commuting. Conditions and dates are summarised in the table below.

Table 1 Transect survey summary

Date	Weather	Invertebrate activity
02.06.2020	19-17°C. Dry. Light breeze. Part cloud.	Low/ Moderate

7. The transect was walked by a single surveyor, equipped with a heterodyne detector as well as a Titley Scientific Anabat Express, used to track the transect route and aid species identification. Notes taken during the survey were then used to produce the activity 'heat map' seen in the below figure.

Remote monitoring

8. To supplement data collected during each of the walked transects, a static monitoring device (Wildlife Acoustic SM4's and SMZC's) was deployed in strategic locations around the Site prior to the start of each survey.

9. Data collected during the periods of remote monitoring has been run through Kaleidoscope Pro software, which can identify bat calls down to species level (except for myotid). Identification is generally correct when using this software; however, results are double checked to ensure accurate data analysis.

10. Every effort is made to split up myotid calls down to species level. This is done by analysing calls on Analook software and looking at parameters such as inter-pulse interval, call duration, slope and maximum / minimum / peak call frequency. However, this can often be difficult when registrations are short in duration, faint or distorted by cluttered environments.

Limitations

11. Static monitoring can only reliably provide information on what species of bat are regularly making use of a site. More detailed information on bat activity, such as frequency of bats, nature of activity (foraging, commuting, flight path), etc. can only be gleaned through walked transects.

12. The frequency of calls recorded can, to some extent, suggest whether activity on site is low, moderate or high, by comparing data collected with that of similar sites that have been surveyed.

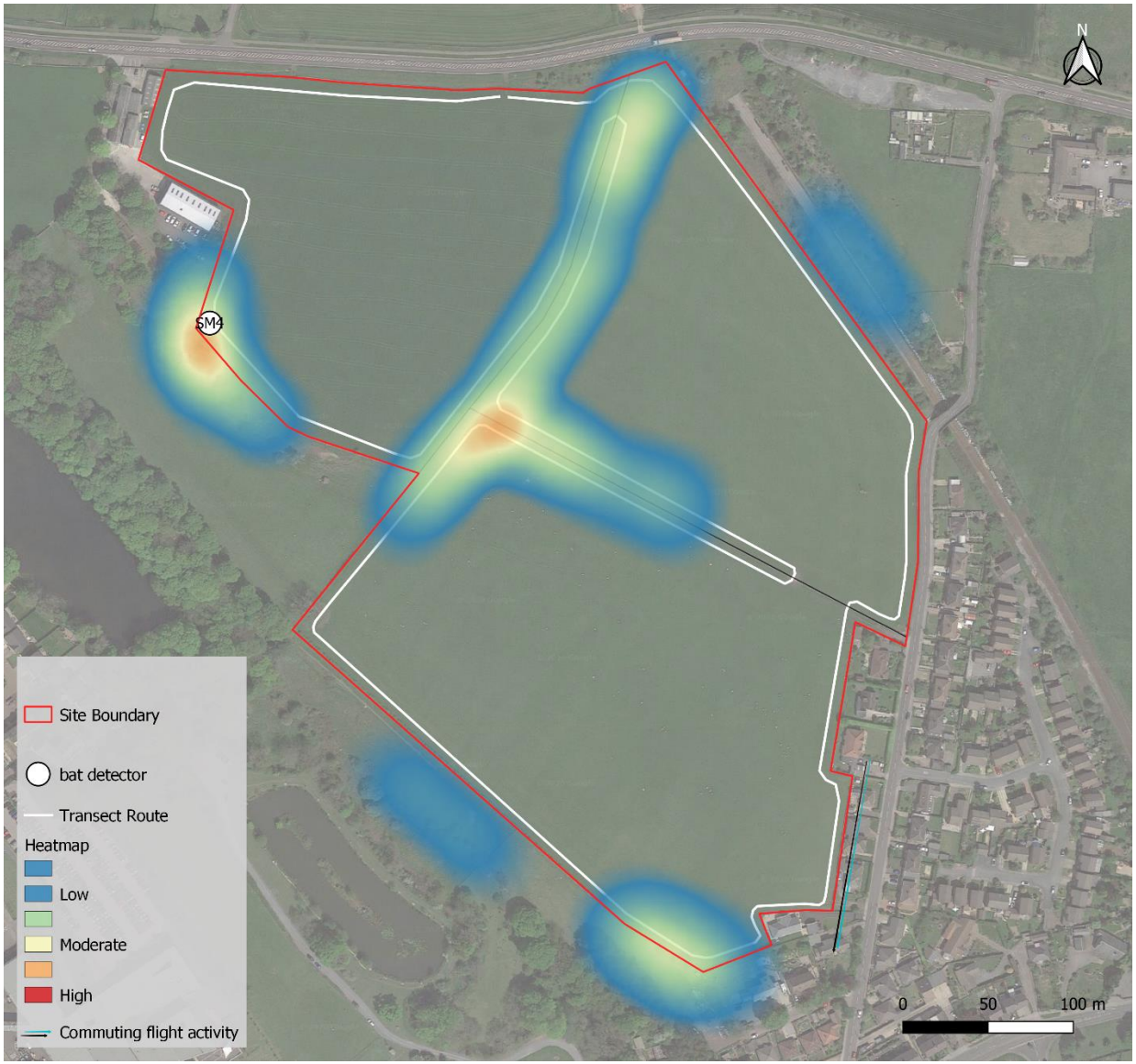
13. A single registration can account for up to 15 seconds of continuous bat call. Large batches of registrations can be interpreted in several different ways, i.e. a single bat foraging continuously for only an hour can result in many hundreds of registrations being logged; similarly, many hundreds of bats commuting quickly past the detector can result in the same number of registrations.

Results

Walkover Transect

14. An approximate route walked by the surveyor is shown in Figure 2 (right). The survey began on the eastern boundary and proceeded anti-clockwise around the Site, along the boundaries and interior field margins.
15. The first activity was recorded at 21:42, 15 minutes after sunset, and was attributed to a single common pipistrelle found foraging within the treeline along the western boundary.
16. Throughout the survey activity was dominated by common pipistrelle largely found foraging within the western treeline and along the central interior field margin, where up to two individuals were recorded at once.
17. Pockets of low activity were also noted along the southern Site boundary and the northern railway boundary.
18. A single noctule was recorded at 22:25 within the north western field, this was heard but not seen.

Figure 2 Summary of walked transect results.



Results

Remote monitoring

19. A single remote recorder (Song Meter SM4BAT FS Bat Detector) was deployed along the western boundary prior to the start of the walked transect; as shown in Figure 2 above. This was left to record for five consecutive nights.

20. A summary of the results is presented in the table and figure right.

21. At least four species of bats have been recorded making use of the Site, with common pipistrelle making up the bulk of this activity at over 99% of registrations logged.

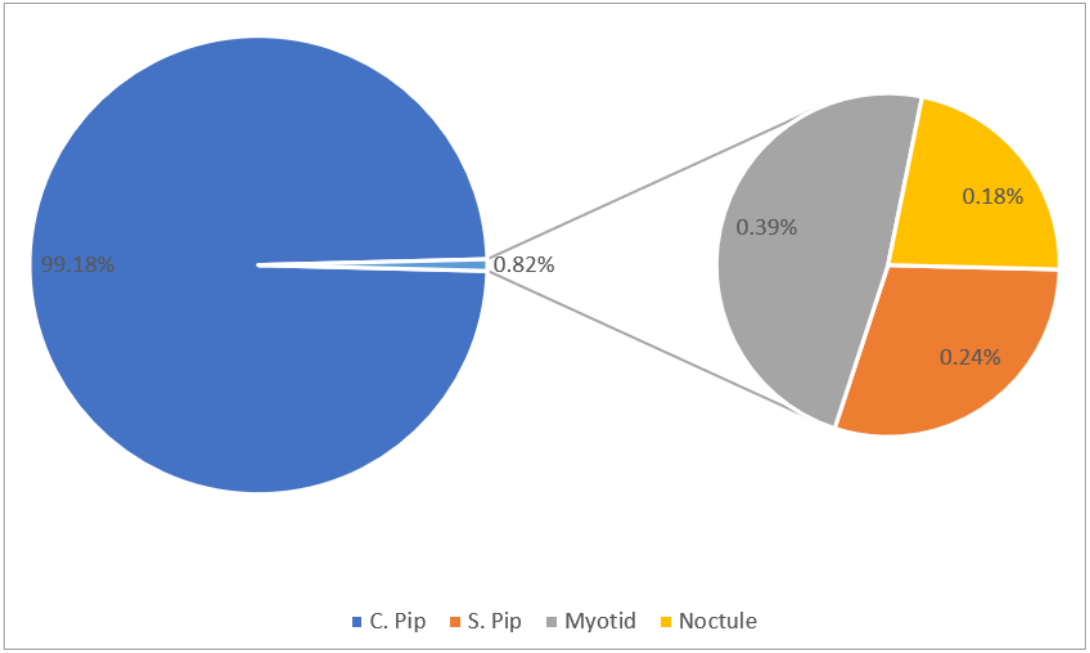
22. The activity for common pipistrelle is likely to reflect a small number of bats foraging along the eastern boundary, early on in the evening, for short periods of time – as was seen in the walked transect. On one of the nights (4th June) a spike in activity was noted, indicating higher levels of sustained foraging.

23. Other species were recorded at much lower levels (all less than 0.5%). In all cases, this is likely to reflect individual, or small numbers of bats passing quickly through the Site, with no evidence of sustained foraging.

Table 2 Summary of remote monitoring

Species	2nd June	3rd June	4th June	5th June	6th June
Com. Pipistrelle	118	465	1785	42	875
Sop. Pipistrelle	1	4	2	-	1
Myotid	6	-	2	3	2
Noctule	2	-	-	-	4

Figure 3 Summary of remote monitoring



Conclusions & Recommendations

24. A single bat activity survey has been undertaken within the peak season and during optimal weather conditions, in order to collect baseline information on the Site's use by local bat populations.

25. Both the walked transect and remote monitoring has found the Site to be used almost exclusively by common pipistrelle bats, with foraging focused along the field boundaries (drystone walls, tree lines and hedgerows) and limited to small numbers of individuals (1-2 individuals). This was supported by data collected through remote monitoring.

26. Activity from other species, including soprano pipistrelle, noctule and a myotid species, was extremely low (collectively less than 1% of registrations logged), and sporadic.

27. There did not appear to be any significant commuting activity along the northeast (railway line) or southern (hedgerow) boundaries, nor any significant levels of foraging activity associated with these features. Instead, the highest levels of foraging activity (max 2 bats) were observed along the central drystone walls and the tree line to the west.

28. The information collected does not suggest the Site is of significant importance to any local bat populations but is consistently used by small numbers of common pipistrelle bats for foraging.

29. Proposals to develop the Site for residential use is unlikely to impact significantly on its current use by this species, with common pipistrelle being relatively tolerant of human disturbance and regularly being associated with urban / residential settings.

30. Overall, proposals have the potential to provide a net gain for this group, with new gardens, in the long term, providing better foraging habitat for common pipistrelle than the existing improved agricultural grassland fields. In addition, three pockets of Public Open Space (POS) will be created along the south and west boundaries. These areas provide an opportunity for ecological enhancement, and habitat creation could be aimed at attracting foraging bats by including suitable planting.

31. In addition, the Site could be enhanced for this group by providing potential roost features (integral bat boxes), within a number of suitable new builds, i.e. those located along the south, west and northeast boundaries.

32. Artificial lighting is unlikely to have a significant adverse impact on common pipistrelle, but could deter other, more sensitive species, such as brown long eared and many of the myotid bats, from using the Site. As such, it is recommended that a sensitive lighting plan be designed to show how light spill will be minimised/ avoided on retained and newly created habitats favoured by bats.

References

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