

Brooks Ecological
Grounded advice

Bat Activity Survey

Bleachcroft Way, Barnsley

Harron Homes Yorkshire

Report Reference: ER-4066-03

15/10/2021

Report Title:	Bat Activity Survey Bleachcroft Way, Barnsley
Report Reference:	ER-4066-03
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Summary Statement

Survey has shown the Site to attract only low levels of bat activity, with foraging restricted to low numbers of common bat species.

Common pipistrelle is the species most encountered, with foraging activity scattered throughout the Site. Other species (Soprano Pipistrelle, Noctule, Leisler's and Myotid (Whiskered)) were recorded at much lower levels and irregularly.

The Site is not considered to be of significant importance to any local bat populations, as a foraging resource, but may be of value for commuting along vegetated boundaries.

The proposals should seek to enhance the Site for this group, through the enhancement of boundary vegetation and through the creation of new higher value bat habitat within POS, or roosting opportunities in housing

A sensitive lighting plan should be designed to show how light spill will be minimised/ avoided on enhanced and newly created habitat.

Introduction

1. Brooks Ecological was commissioned by Harron Homes Yorkshire to carry out detailed Bat Activity Survey at the proposed development Site at Bleachcroft Way, Barnsley.

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 planning application.

3. The scope of the survey has been devised based on an assessment of the habitats present, the results of previous activity surveys and in accordance with current best practice guidelines (Bat Conservation Trust, 2016).

Figure 1 Site location plan



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 collect up to date information on the Site's use by local bat populations, so that an accurate assessment of the potential impacts of development could be made.

6. A transect and remote monitoring survey was carried out during the main spring, summer and autumn periods, to collect the following data (Bat Conservation Trust, 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.

Survey Conditions

7. Survey conditions are summarised below:

Table 1 Survey Conditions

Survey	Date	Weather	Invertebrate Activity
Spring/ early summer	23.06.21	15-14°C. Dry. Light breeze (B1). 85% cloud cover.	Moderate
Summer	29.07.21	16-14°C. Dry. Still (B0). 35% cloud cover. Humid.	Good
Autumn	16.09.21	18-16°C. Dry. Still (B0). No cloud. Humid.	Moderate

Transects

8. Transects began around sunset and continued up to two hours after when all bats were thought to have emerged, and thus were actively foraging and commuting.

9. The transects were walked by a team of two surveyors, 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 figures.

10. Blue shades on the heat map correspond with low activity defined by up to 2 individuals intermittently recorded, yellow tones indicate more prolonged spells of activity by 2 -5 individuals whilst red tones indicate higher and consistent activity levels of 5 or more bats.



Remote Monitoring

11. To supplement data collected during the walked transect, static monitoring device/s (Wildlife Acoustic SM4) were deployed in a strategic location on-site prior to the start of the walked transect.

12. Data collected during the period 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.

13. 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

14. 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.

15. 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.

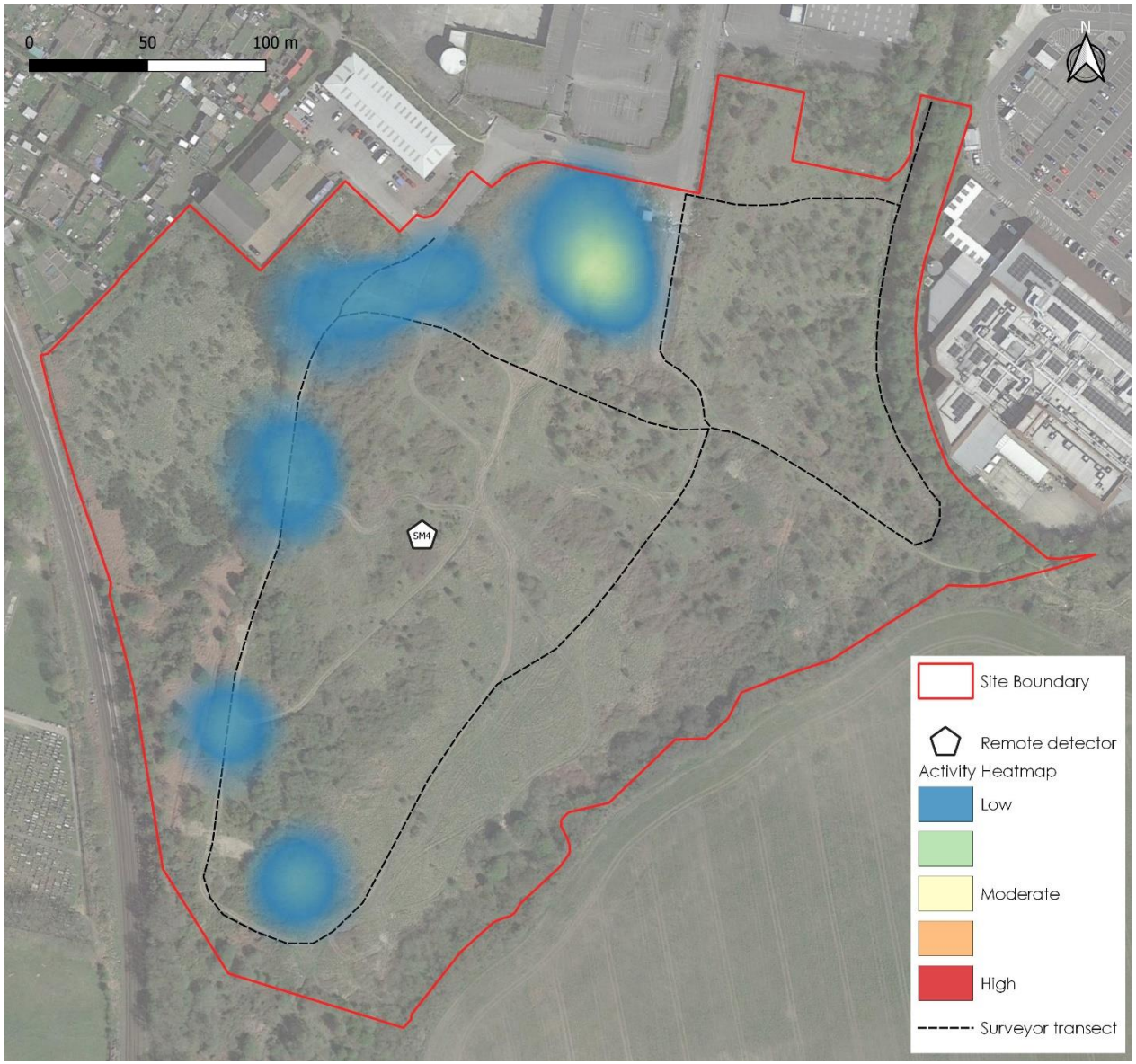
16. A single registration can account for up to 15 seconds of continuous bat call. Large batches of registrations can be interpreted in several different ways, i.e. a single bat foraging continuously for only an hour can result in many hundreds of registrations being logged; similarly, many hundreds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

Spring / Early Summer Results

Walkover Transect

17. Survey was constrained by dense vegetation. An approximate route walked by the surveyor is shown in the figure opposite. This followed existing 'informal' footpaths created by dog walkers. At least two laps of the Site were completed.
18. Bat activity was relatively low overall, with all contacts being made by common pipistrelle (CP) bats.
19. The first contact was logged at 22:12, when two CP bats were observed foraging over scrub to the north. These were noted foraging in the same location on the second lap of the Site.
20. After this, only solitary CP were observed foraging sporadically over scrub within the western half of the Site. None were recorded foraging in the same location twice.

Figure 2 Summary of bat activity observed during walked transect



Spring / Early Summer Results

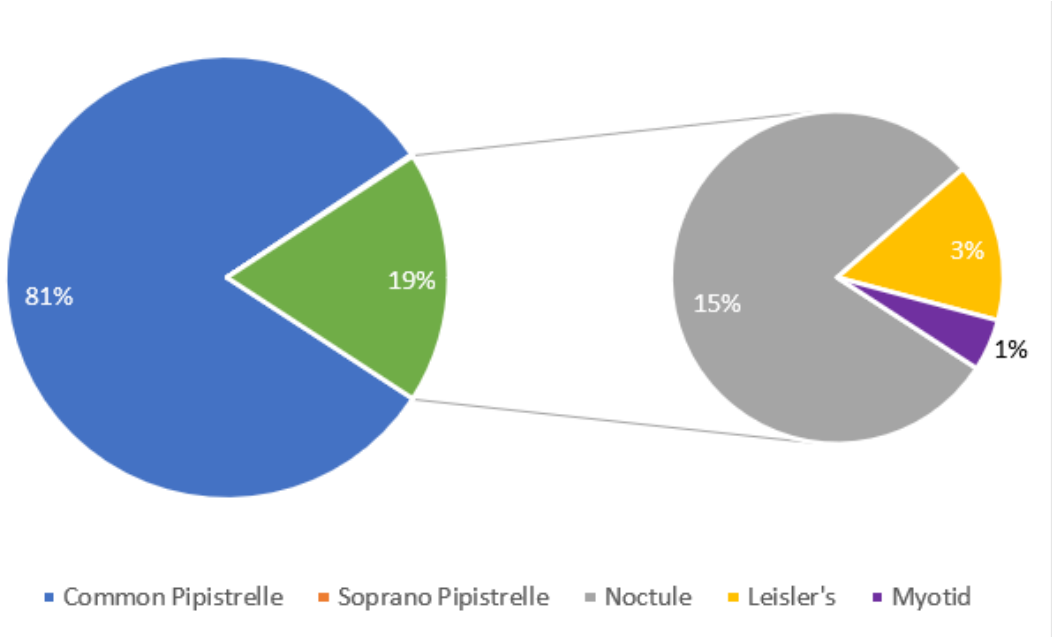
Remote Monitoring

21. A single remote detector (Song Meter SM4BAT FS) was deployed in a central location, as shown in Figure 2, above. This was left to run for 5 consecutive nights, from the 23rd to the 27th June 2021.
22. Activity throughout this period of monitoring can be considered low-moderate, with and average of 280 registrations logged per night.
23. At least five species of bat were recorded overall: these being common and soprano pipistrelle noctule, leisler's and at least one myotid (likely whiskered).
24. As can be seen in the chart opposite, common pipistrelle make up the bulk of this activity (81%), with other species recorded more irregularly and at lower levels.
25. Activity for all species is fairly erratic, with the number of registrations climbing and dropping with no clear pattern. This suggests that the Site is used sporadically by each of the local bat populations, with foraging resources of equal or greater importance being used in the surrounding landscape.

Table 2 Total number of registrations logged for each bat species, per day across the spring/ early summer period.

Species	23rd	24th	25th	26th	27th
Common Pipistrelle	118	2	418	457	148
Soprano Pipistrelle	-	-	1	1	-
Noctule	135	34	30	6	-
Leisler's	23	2	11	4	-
Myotid	-	-	2	10	1

Figure 3 Proportion of each bat species recorded during spring/early summer monitoring*.



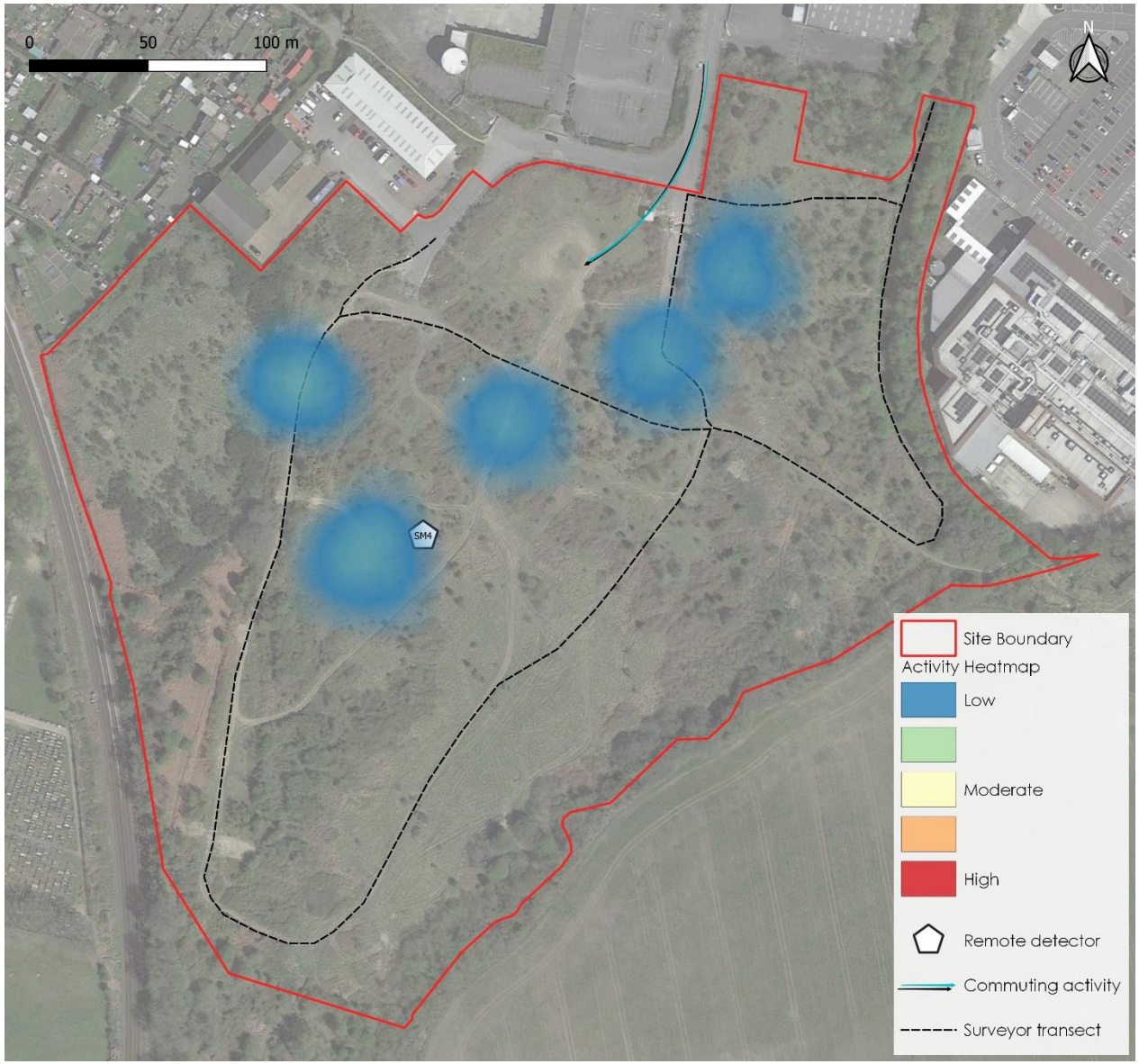
* Soprano Pipistrelle are recorded at less than 1%, and thus do not show up within the pie-chart.

Summer Results

Walkover Transect

26. Dense vegetation continued to present a constraint, and thus a similar route was followed to that walked in spring. At least two laps of the Site were completed.
27. Activity was similar to that recorded in spring, with all bat contacts attributed to solitary common pipistrelle.
28. There was no recognisable pattern to this activity, with no specific habitat feature or area of habitat attracting notably greater levels of foraging.
29. Bats were only recorded foraging in any one location on one of the two laps, indicating that foraging was relatively brief, with bats quickly moving on.
30. A single bat was seen commuting into the Site from the north at around 21:39, 31 minutes after sunset.
31. The bat activity observed during this transect can be considered be low.

Figure 4 Summary of bat activity observed during walked transect



Summer Results

Remote Monitoring

32. A single remote detector (Song Meter SM4BAT FS) was deployed in a central location, as shown in Figure 2, above. This was left to run for 5 consecutive nights, from the 29th July to the 2nd August 2021.

33. Activity throughout this period of monitoring can be considered low, with less than 50 registrations logged per night for most of this period.

34. Four species of bat were recorded overall: these being common and soprano pipistrelle, noctule and leisler's.

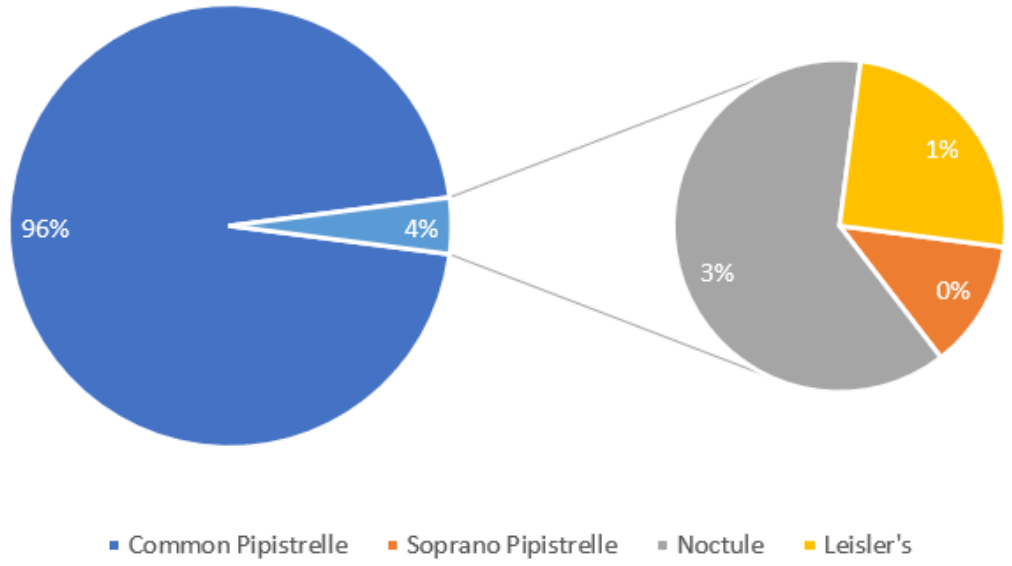
35. As can be seen in the chart opposite, common pipistrelle makes up the bulk of this activity, and is the only species recorded every night. For much of the monitoring period, only a small number of registrations were logged for this species each night; however, there was then a minor jump in activity on the 31st, with over 100 registrations logged. This can still be seen as relatively low levels of activity overall and fits with the patterns of activity recorded on Site during the transect, with solitary pips foraging sporadically across the Site.

36. For all other species, activity suggests that solitary or very small numbers of bats commute through the Site on an ad-hoc basis but have no reliance on it for foraging.

Table 3 Total number of registrations logged for each bat species, per day across the summer period.

Species	29th	30th	31st	1st	2nd
Common Pipistrelle	2	4	130	36	16
Soprano Pipistrelle	-	-	-	-	1
Noctule	4	1	-	-	-
Leisler's	-	1	1	-	-

Figure 5 Proportion of each bat species recorded during summer monitoring.



Autumn Results

Walkover Transect

37. Prior to the autumn visit, a large amount of on-site vegetation had been cleared to ground level, leaving only the occasional small tree. In order to maintain continuity with previous seasons, a similar route was followed, despite greater access being available across the Site.

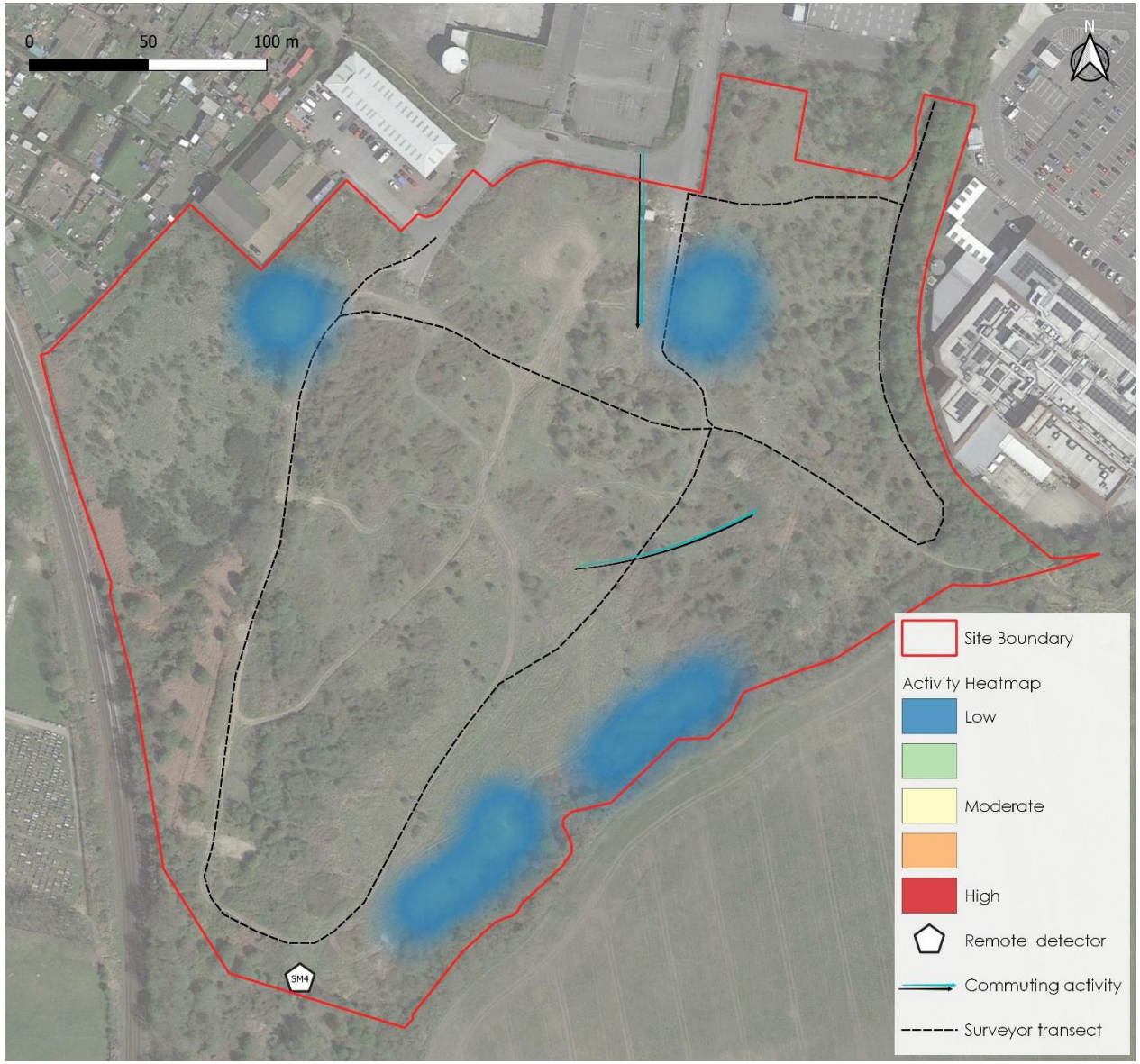
38. Activity was again very low, with all contacts being made by solitary common pipistrelle.

39. As before, there was no noticeable pattern to this activity, with no specific habitat feature or area of habitat attracting notably greater levels of foraging.

40. Bats were only recorded foraging in any one location on one of the two laps, indicating that foraging was relatively brief, with bats quickly moving on.

41. Bats were recorded commuting through the Site (west-east) and into the Site (north-south) and 20:00 and 20:08, respectively; this being over 40 minutes after sunset.

Figure 6 Summary of bat activity observed during walked transect



Autumn Results

Remote Monitoring

42. In contrast to previous seasons, a single remote detector (Song Meter SM4BAT FS) was deployed in along the southern boundary, as shown in Figure 6. This was in response to vegetation clearance works within the Sites interior limiting safe deployment locations.

43. The detector was initially deployed on the 16th September 2021 and left to run for 5 consecutive nights. However, this failed to record and thus will be redeployed in October.

44. Once the data has been collected and analysed, an updated report will be issued.

Evaluation

45. Evaluation of foraging and commuting habitat is made with reference to Wray *et al* (2010). This uses a scoring system to assess the Site's importance to bats against a geographic frame of reference.

Table 5 Scoring system for valuing commuting and foraging habitat

Geographic Frame of Reference	Score
International	>50
National	41-50
Regional	31-40
County	21-30
District, Local or Parish	11-20
Not Important	1-10

46. Using the above methodology, the Site is assessed as follows:

Foraging

47. Individual bats (5) of common species of bat (2). No roosts identified nearby (1). Suburban areas (2).

48. Total of **10 points.** The Site is not important to bat populations as a foraging resource.

Commuting

49. Individuals (5) of common species of bat (2). No roosts identified nearby (1) Well-grown and well-connected hedgerows/ watercourse, small field sizes (4).

50. Total of **13 points.** The Site is of Local importance to bat populations as a commuting resource.

Conclusions

51. The Site has been subject to seasonal bat activity survey, covering the Spring, Summer and Autumn periods of 2021, with transects and remote monitoring completed during optimal weather conditions.

52. Walked transects recorded only low-levels of bat activity on Site, with foraging restricted to individuals, or very small numbers of bats (max. 2) in any given part of the Site. Common pipistrelle is the only species recorded on Site during transects, with foraging activity scattered indiscriminately across the Site, and short in duration.

53. Remote monitoring recorded similar low-level, erratic activity, with common pipistrelle (CP) making up the bulk of this. Soprano pipistrelle, noctule, leisler's and a myotid species (likely whiskered) were also recorded on Site, but at much lower levels and on a much more irregular basis.

54. Autumn remote monitoring failed to record, and thus has been re-deployed. The result of this monitoring will be issued as an Addendum but is not expected to change this assessment.

55. Based on the evaluation presented in the previous section, the Site is not considered to be of importance to any local bat populations as a foraging resource.

56. Given the presence of strong linear vegetation features along the Site boundaries, the Site is assessed as being of at least Local level importance as a commuting resource, although little commuting activity was directly observed during the transects.

Recommendations

57. No specific habitat features were identified on Site that were of particular importance to this group. Proposals should therefore more generally seek to enhance the Sites value for this group, through the enhancement of existing boundary vegetation, and through the creation of new, high value foraging habitat such as ponds/ wetland.

58. A sensitive lighting plan should be designed to show how light spill will be minimised / avoided on enhanced and newly created habitat targeted at attracting bats.

59. Bat boxes could be installed within a number of suitable new builds, i.e. those fronting onto strong boundary vegetation.

References

BS:42020 2013. Biodiversity - Code of practice for planning development. BSI

Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists – Good Practice Guidelines

Conservation of Habitats and Species Regulations 2010 http://www.legislation.gov.uk/uksi/2010/490/contents/made

English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.

Institute of Lighting Professionals (2018) Bats and artificial lighting in the UK. Bat Conservation Trust Guidance Note 08/18.

https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

JNCC (2004) The Bat Workers Manual. 3rd Edition.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity

Wray S, Wells D, Long E, Mitchell-Jones T (2010) Valuing Bats in Ecological Impact Assessment. CIEEM In Practice.