



Bat Survey
Land off Skimmingdish Lane, Bicester

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Summary Statement

Bat activity is found to be low on site, indicating that the habitats on site are of relatively low importance for local bat populations.

Emergence surveys indicate the likely absence of roosting bats in trees identified as having bat roost potential. The removal of these trees can therefore proceed with minimal risk of impacting on roosting bats.

A further activity transect is planned for autumn 2015 but this is not expected to change the conclusion drawn in this report.



Introduction

1. Subsequent to the recommendations made in Brooks Ecological's Ecological Appraisal (BES-R-180-01.1) detailed bat survey was commissioned of land off Skimmingdish Lane, Bicester, Oxfordshire (SP 600 236).
2. Information relating to local status is provided in report BES-R-180-01.1 and is not repeated here. However these two reports should be read in conjunction with each other for full context.

Objectives

3. The objectives of these surveys are to characterise how local bat populations currently make use of the site, so that an accurate assessment of the potential impacts of development on the site could be made. Surveys therefore set out to collect the following data (BCT survey guidelines 2012):
 - 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.

Method

4. Transects began around sunset and continued up to 2 hours after sunset; when all bats were thought to have emerged, and thus were actively foraging and commuting. Conditions and dates are summarised in Table 1 below.
5. Transects were walked by a single surveyor, equipped with a heterodyne detector and frequency division recording devices (Anabat Express). Notes taken during the survey were then used to produce the activity 'heat map' seen in the below figures. Activity was split into three categories; low irregular, low regular and medium regular. Low activity was classified as up to 2 individual bats, with medium being anything over 2.

Table 1 Survey summary

Survey	Date	Sunset	Weather	Invertebrate activity
Spring	25.05.15	20:46	13 °C, overcast, light wind	Low
Summer	06.08.15	20:41	15 °C, overcast, calm	Low

6. To supplement data collected during transects, static monitoring devices (Wildlife Acoustic SMZC or SM3+) were deployed in strategic locations around the site prior to the start of survey.
7. 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. 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.
8. A single registration accounts 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.
9. The data collected during the period of remote monitoring was run through Kaleidoscope Pro software package, which is able to identify bat calls down to species level (with the exception of myotis). Identification is generally correct when using this software; however results are double checked to ensure accurate data analysis.
10. Survey and assessment was directed by Peter Brooks BSc (Hons) MA, MCIEEM CEnv. Peter has over 15 years experience of carrying out bat surveys in a professional capacity and holds a Natural England license in respect of bats and is a Natural England Roost Warden.

Results

11. Features referenced in the descriptions below are labelled in the figure below.

Figure 1 Features referred to in text



Spring Survey- sunset 20:46

12. This survey began with emergence surveys of trees identified as having the potential to support roosting bats (see D-0180-03.1). At no point were any bats suspected to have emerged from the surveyed trees.
13. Activity was noted of 3 species, including noctule, common pipistrelle, and *Myotis* sp.
14. The first bat seen was a common pipistrelle at 21:26, 40 minutes after sunset. This bat arrived on site from the north and foraged along the SW-NE hedgerow.
15. From this point activity was dominated by low level irregular foraging along hedgerows by a maximum of 2 individual bats.
16. At 21:53 a single noctule was noted commuting along the SW-NE hedgerow.
17. At 22:15 a Myotid bat foraged briefly before leaving the site to the northeast.

18. Analysis of static monitoring data (position N1 on D-0180-03.1) showed activity to be dominated by common pipistrelle, with occasional recordings of noctule and whiskered bat. A total of 12 registrations were recorded over the period of the emergence survey, representing low level activity.

Summer Transect- 06/08/15 - sunset 20:41

19. Activity on this survey was low, dominated by low level irregular foraging of common pipistrelle, with occasional noctule passes high over the site.
20. Activity was concentrated along off site hedgerow to the east, and along the NW-SE Hedgerow. A maximum of 1 bat was noted at any one time.

Static Monitoring

21. Two SMZC frequency division recording devices were deployed along the 2 hedgerows which intersects the site, the positions of which are marked on D-0180-01.1. These were in place for 3 consecutive nights from the 06/08/15 – 09/08/15.
22. During this period of monitoring, only 5 species of bat were recorded (Species identification from kaleidoscope), with the majority of registrations relating to common pipistrelle. Data collected are summarised in tables below:

Table 3 Total number of registration combined from both detectors across 3 nights.

Species	Count
C. Pipistrelle	161
Soprano pipistrelle	23
Myotis	8
Noctule	22
Brown long-eared	12

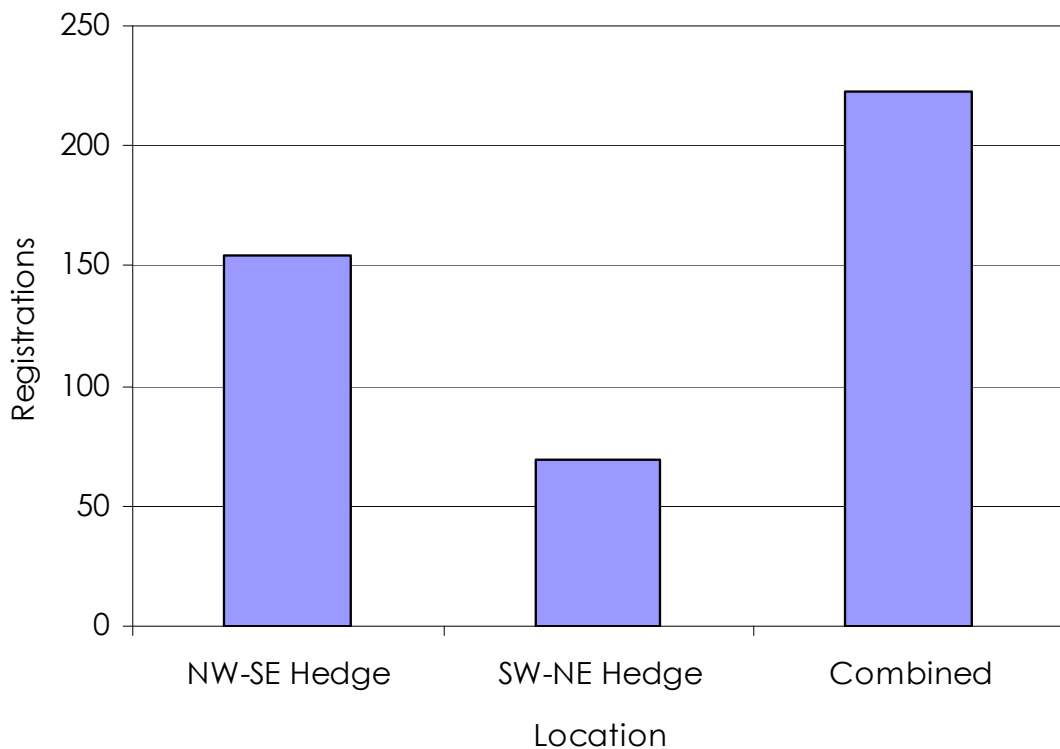
Table 4 Total number of registration from detector on NW-SE hedgerow across 3 nights.

Species	Count
C. Pipistrelle	104
Soprano pipistrelle	18
Myotis	7
Noctule	13
Brown long-eared	12

Table 5 Total number of registration from detector on SW-NE hedgerow across 3 nights.

Species	Count
C. Pipistrelle	57
Soprano pipistrelle	5
Myotis	1
Noctule	5
Brown long-eared	0

Figure 2 Showing bat registrations on each hedgerow and combined registrations.



23. Overall bat activity was generally low, and dominated by common pipistrelle. Figure 2 shows how activity was higher along the NW-SE Hedgerow, although neither shows levels of registrations which indicate high levels of activity on site.

Evaluation and Recommendations

24. Emergence surveys of trees identified as having roosting potential has confirmed the likely absence of roosting. Removal of these trees can therefore proceed with minimal risk of impacting on roosting bats.
25. Spring and summer surveys have found bat activity to be relatively low and dominated by common species. Activity is noted as being higher along the west-east hedgerow, relative to the north-south hedgerow.
26. Given the results of monitoring to date the site is assessed to be of low importance to local bat populations. The east-west and north-south hedges, which theoretically could present potential commuting / foraging opportunities, in reality support only low numbers of common species foraging sporadically.
27. The loss of these features will likely have a negligible impact on local bat populations, given the availability of large amounts of similar / higher value habitat which is found in the wider area.
28. The current plans allow for the incorporation of an area of green space at the north eastern boundary of the site, including a number of attenuation swales and boundary planting. This area should maintain east-west connectivity through the site, and provide relatively high value foraging habitat for bats, sufficient to mitigate for the required loss of hedgerow. Connectivity from the north to the south will be maintained via the retention of boundary hedgerows along the north eastern boundary, and incorporation of new planting along the south eastern boundary.

Enhancement

29. The UK government's guidance on nature conservation in relation to development (NPPF) makes it clear that opportunities should be sought through their planning system to use development as an opportunity to enhance sites for wildlife where possible.
30. The site would benefit from the incorporation of artificial bat boxes erected on suitable trees within the boundary hedgerow. To increase the chances of uptake, a range of designs should be used, including simple wooden boxes and more hardy woodcrete boxes.

References

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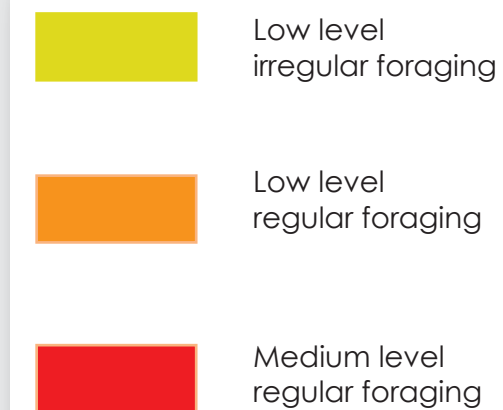
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Bat activity heat map:
areas without shading:
no bat activity noted

