Brooks Ecological

Grounded advice

Bat Activity Survey

Land at Chidswell, Dewsbury

R-3280-06

November 2018

Report Reference:	Bat Activity Survey Land at Chidswell, Dewsbury
Report Reference:	R-3280-06
Written by:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
Technical review:	Sam Kitching BSc (Hons) Grad CIEEM Ecologist
QA review:	Daniel Ross BSc (Hons) Grad CIEEM Ecologist
Approved for issue	Sam Kitching BSc (Hons) Grad CIEEM Ecologist
Date	01.11.18

Unit A, 1 Station Road, Guiseley, Leeds, LS20 8BX
Phone: **01943 884451**
01943 879129
www.brooks-ecological.co.uk
Registered in England Number 5351418

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Introduction

Subsequent to the recommendations made in WYG, December 2016, Extended Phase 1 Habitat Survey Report (Ref. A054074), Brooks Ecological was commissioned to undertake monthly Bat Activity Surveys at the proposed development Site in Chidswell (see Figure 1 below).

Figure 1 - Site boundary

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.

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

Methodology

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.

Each 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 conditions

Month	Date	Weather	Invertebrate activity
April	17.04.18	13°C. Dry. Calm. Part cloud.	Low
May	17.05.18	9-8°C. Dry. Calm. No cloud	Moderate
June	12.06.18	14°C. Dry. Light breeze. Full cloud.	Moderate
July	09.07.18	17°C. Dry. Light wind. Humid. Full cloud.	High
August	23.08.18	13-11°C. Dry. Light wind. No cloud.	Moderate
September	27.09.18	13°C. Dry. Light wind. Clear.	Low

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 maps' seen later in this report.

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. 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.

Limitations: Static monitoring can only reliably provide information on what species of bat are regularly making use of a site. 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.

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.

April Results

Walked Transect

Overall bat activity was found to be relatively low through the Site. As would be expected, bat activity was focussed along the wooded field boundaries and central watercourse (see figure) and for the most part comprised of irregular foraging by solitary common pipistrelle bats.

In only three locations was more than a single bat seen at any one time, these being towards the northern end of the central watercourse and along the plantation woodland to the west. In all three locations, activity consisted of regular foraging by up to 3 common pipistrelle bats.

Near the start of the survey, commuting by solitary bats was observed along several of the hedge lines to the north of the Site, as shown in the figure.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 2a: Data collected at Location 1

Species	17th	18th	19th	20th	21st
C. Pip	41	16	13	-	-
S. Pip	-	-	-	-	-
Noctule	-	1	-	-	-
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Table 2b: Data collected at Location 2

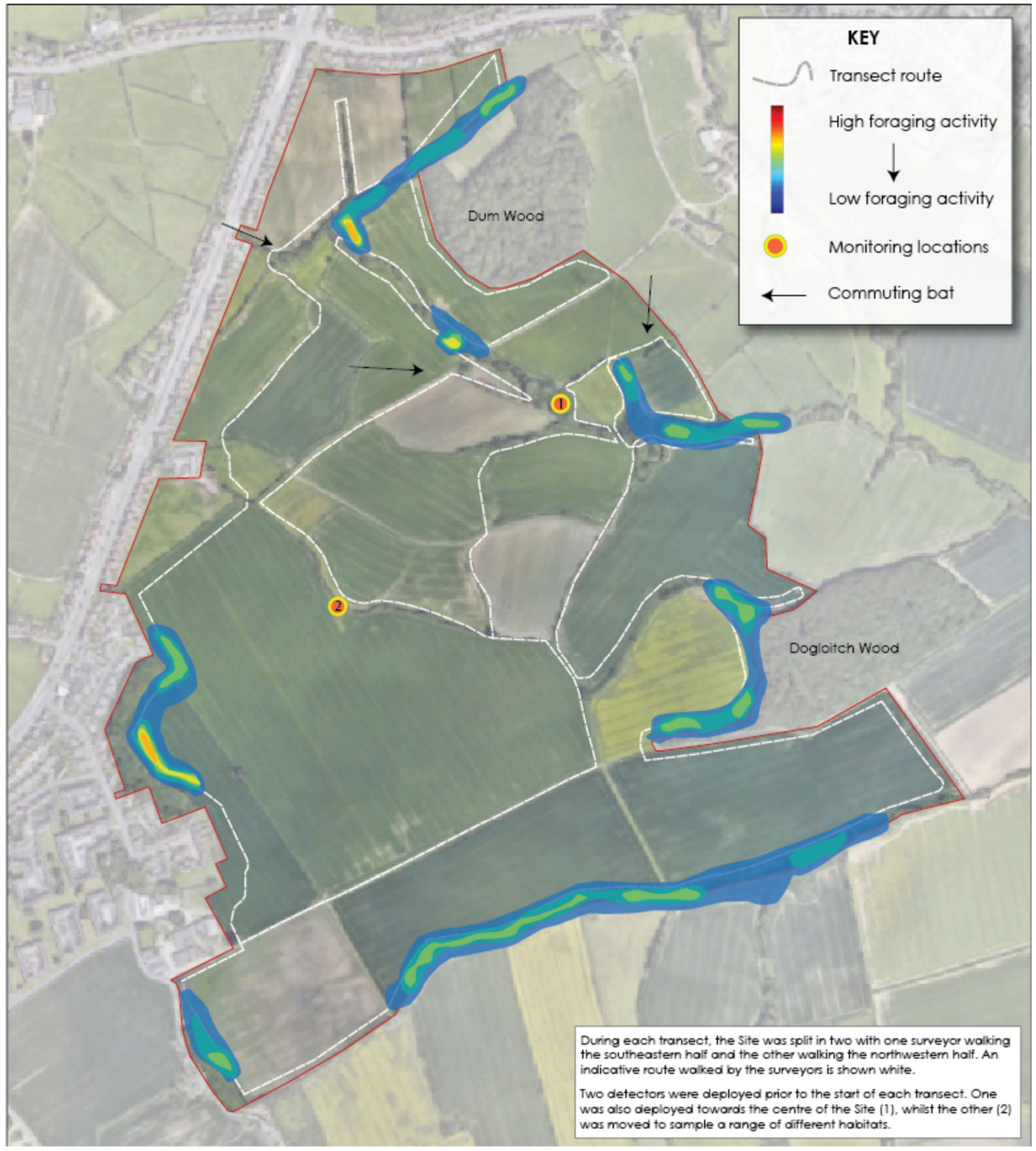
Species	17th	18th	19th	20th	21st
C. Pip	-	-	-	-	-
S. Pip	-	-	-	-	-
Noctule	-	-	-	-	-
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

As can be seen, very low levels of bat activity were recorded during this period, with only a handful of registrations being logged across the first three nights at location 1, and no activity whatsoever being logged at location 2. The lack of recordings is down to low bat activity.

Only two species of bat were recorded during this period, these being common pipistrelle and noctule.

A total of 71 bat registrations were logged across the 5 days of monitoring, averaging out at 14 reg. per night. This can be considered to represent very low levels of bat activity.

Figure 2 Summary of April walked transect



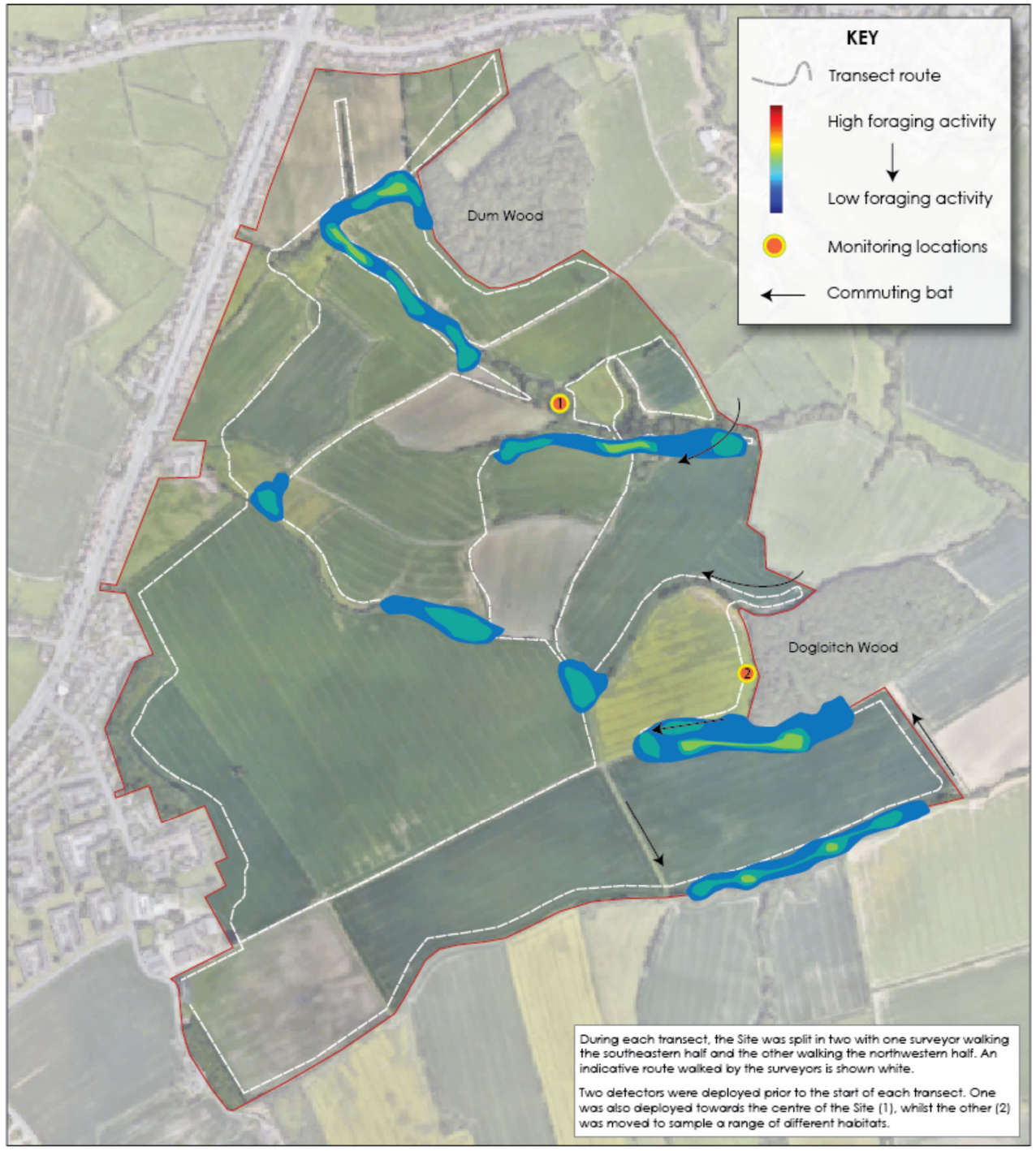
May Results

Walked Transect

Bat activity was again found to be relatively low and was this time focussed along the central watercourse and mature woodland edges abutting the east and southeast boundaries (see figure right); where regular forging by up to two common pipistrelles was observed. Elsewhere along hedgerow field boundaries, activity was confined to irregular foraging by solitary common pipistrelle bats,

Early on, small numbers of common pipistrelle were observed commuting along several of the hedge lines within the eastern half of the Site, as shown in the figure.

Figure 3 Summary of May walked transect



Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 3a: Data collected at Location 1

Species	11th	12th	13th	14th	15th
C. Pip	641	26	394	2452	955
S. Pip	1	1	2	-	-
Noctule	20	11	77	61	37
Myotid	-	-	-	-	1
BLE	-	-	-	-	1

Table 3b: Data collected at Location 2

Species	11th	12th	13th	14th	15th
C. Pip	452	12	138	601	341
S. Pip	-	-	-	-	-
Noctule	51	7	1	5	11
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Bat activity was significantly greater during this period, when compared to the previous month, with both detectors logging bat calls across all five nights.

Activity was greatest at location 1, with up to five species of bat being recorded here. The bulk of this activity is attributable to common pipistrelle, and then noctule, with both species being recorded consistently across all five nights. For all but one of the nights, this data is consistent with low level foraging by noctule and moderate levels of foraging by common pipistrelle. The exception is on the 14th, and partially on the 15th, when uncharacteristically high levels of activity was recorded for common pipistrelle. This is possibly a reflection of slightly greater numbers of common pipistrelle foraging more consistently around the monitoring device on these two nights.

The other three species (soprano pipistrelle, brown long eared and a myotid bat) were only recorded on a couple of the nights, and is likely to represent solitary commuting bats.

Location 2 (western edge of Dogloitch Wood), recorded only low levels of foraging activity by common pipistrelle and noctule bat.

An average of 936 registrations were logged per night at location 1, with an average of 323 reg. per night at location 2, this can be interpreted as moderate and low levels of bat activity, respectively.

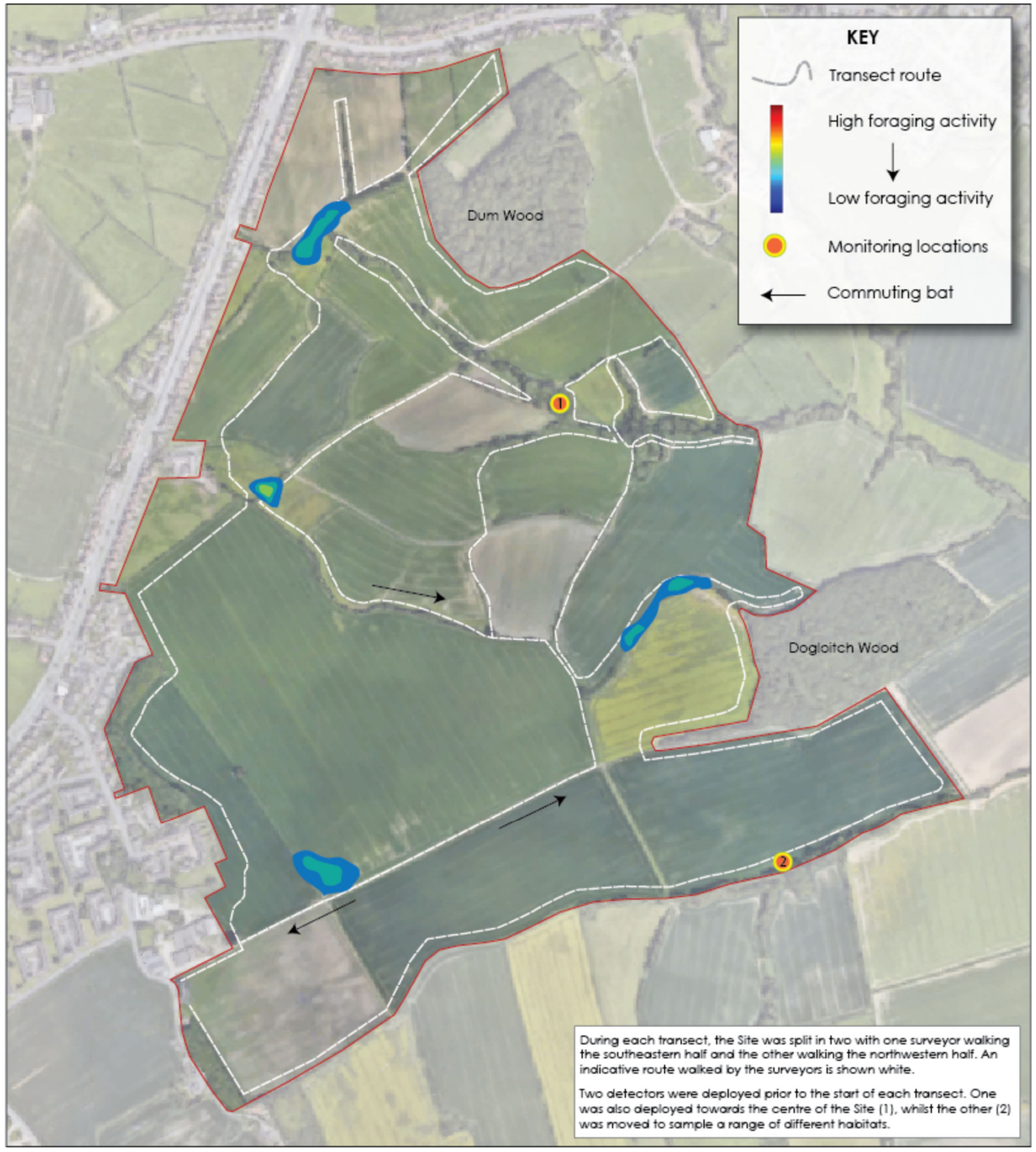
June Results

Walked Transect

Bat activity was significantly lower during this months transect, with foraging by solitary common pipistrelles being encountered in only four locations (see figure).

Commuting by solitary bats was observed along three of the central hedge lines.

Figure 4 Summary of June walked transect



Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 4a: Data collected at Location 1

Species	6th	7th	8th	9th	10th
C. Pip	33	17	24	18	50
S. Pip	-	-	-	-	-
Noctule	32	60	24	71	57
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Table 4b: Data collected at Location 2

Species	6th	7th	8th	9th	10th
C. Pip	8	23	32	21	30
S. Pip	-	-	-	-	-
Noctule	2	20	5	21	13
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

The drop in bat activity seen during the walked transect is also seen in the results of the remote monitoring.

This time, only two species of bat (common pipistrelle and noctule) were recorded at both monitoring stations; and both in low amounts.

An average of 77 registrations was logged across each night at location 1, with an average of 35 reg. per night at location 2, this can be interpreted as very low levels of bat activity at both locations.

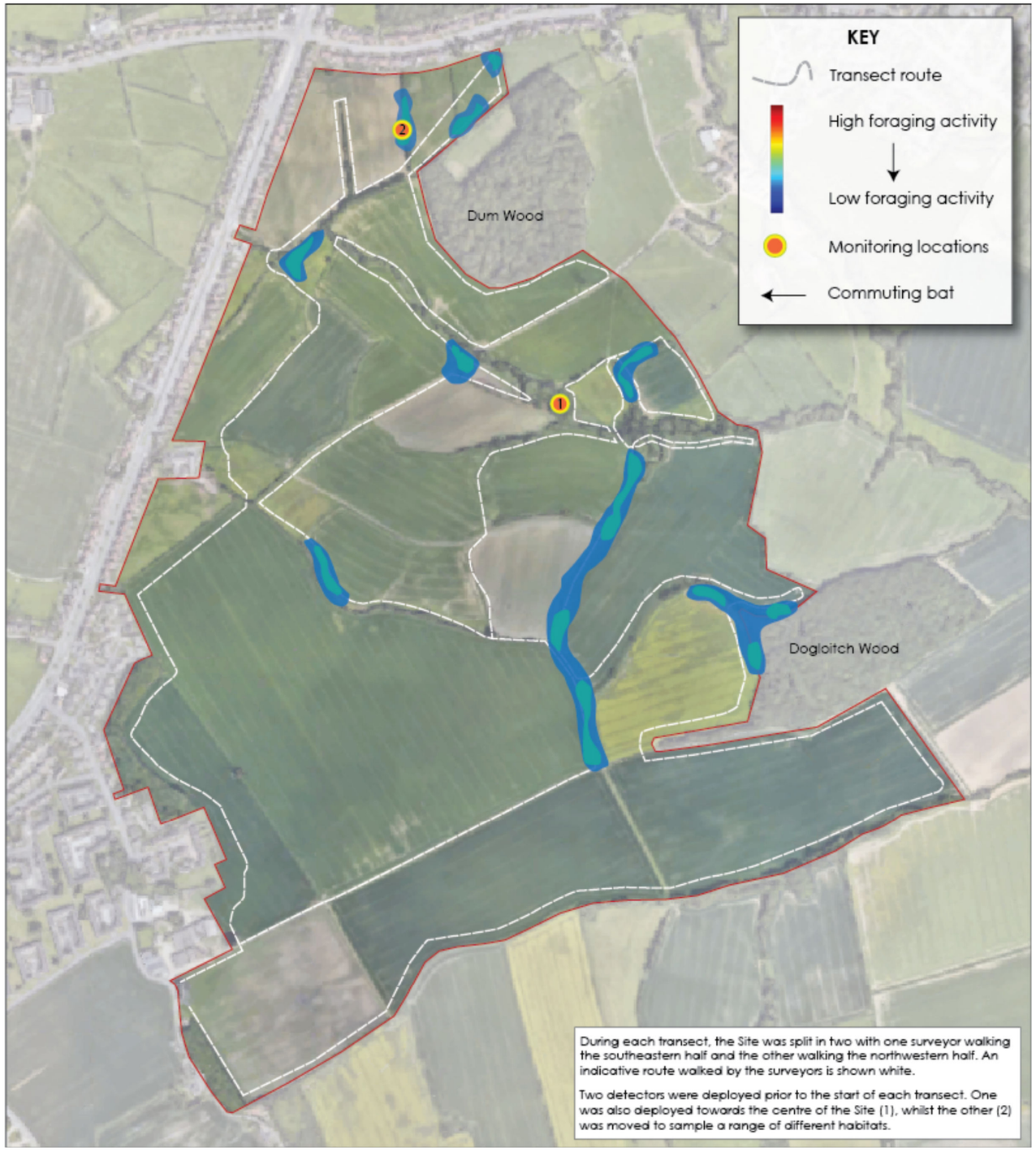
July Results

Walked Transect

Bat activity was slightly higher in July, when compared to June, but again was still relatively low overall. All activity was attributed to solitary common pipistrelles, foraging along some of the internal field hedgerows and mature tree lines (see figure right).

No obvious commuting activity was recorded on this occasion.

Figure 5 Summary of July walked transect



Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 5a: Data collected at Location 1

Species	9th	10th	11th	12th	13th
C. Pip	116	74	119	87	49
S. Pip	1	-	1	-	-
Noctule	17	15	20	14	26
Myotid	-	-	-	-	1
BLE	-	-	-	-	-

Table 5b: Data collected at Location 2

Species	9th	10th	11th	12th	13th
C. Pip	217	271	506	190	-
S. Pip	1	-	-	-	-
Noctule	6	8	5	3	-
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

Four species of bat were recorded making use of the Site during this period, with the bulk of activity at both monitoring stations being attributed to common pipistrelle. Noctule were recorded in smaller amounts on most nights, whilst soprano pipistrelle and a single myotid bat were recorded commuting past the detectors on only four occasions.

An average of 108 registrations were logged across each night at location 1, with an average of 241 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.

August Results

Walked Transect

Bat activity was exceptionally low during this transect, with only a single bat being encountered all evening; this being a single common pipistrelle commuting along one of the central hedgerows near the start of the survey.

Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 6a: Data collected at Location 1

Species	23rd	24th	25th	26th	27th
C. Pip	5	6	74	196	200
S. Pip	-	-	-	-	-
Noctule	-	1	5	7	16
Myotid	-	-	-	-	-
BLE	-	-	-	-	2

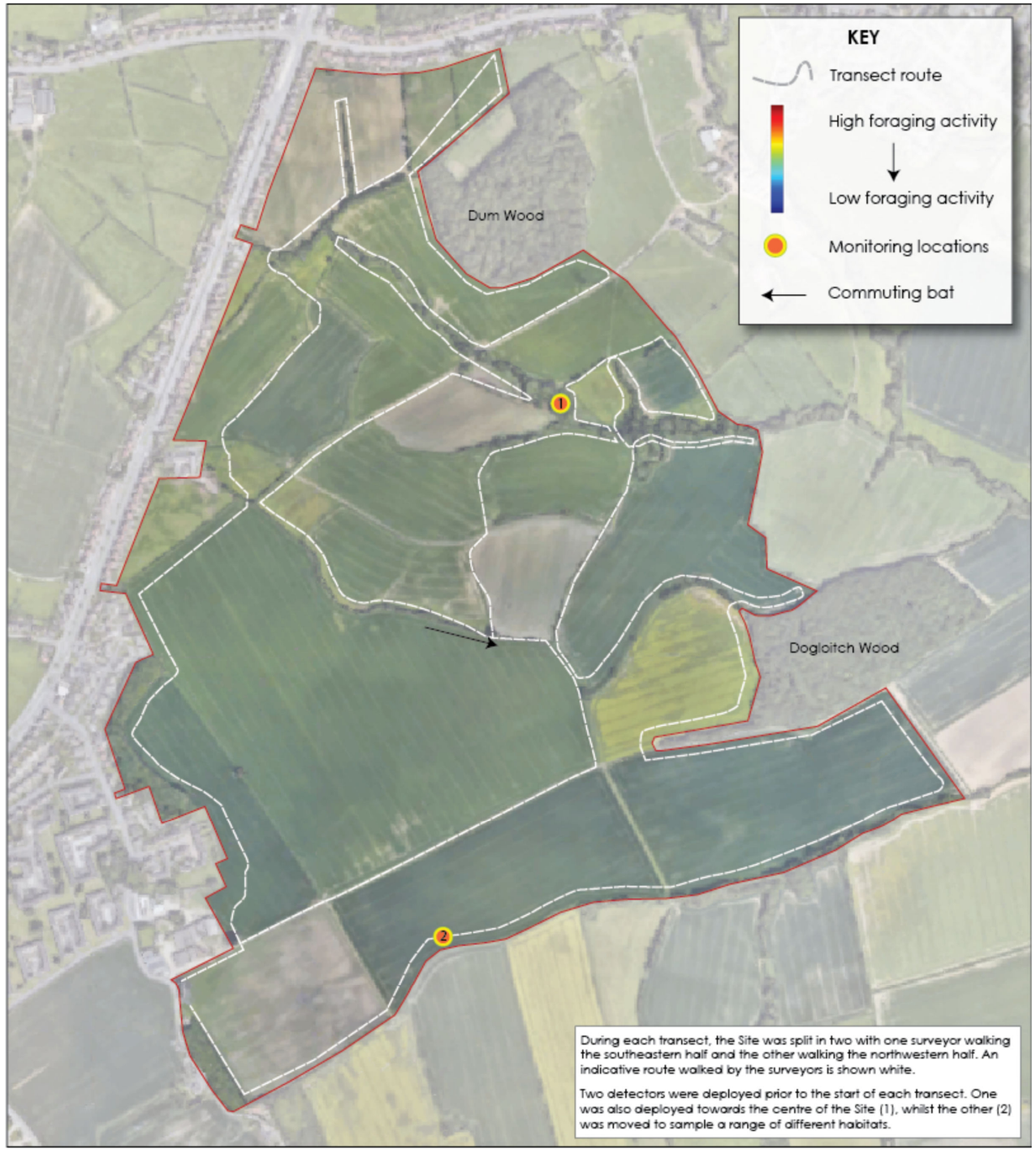
Table 6b: Data collected at Location 2

Species	23rd	24th	25th	26th	27th
C. Pip	1	2	3	-	5
S. Pip	-	-	-	-	-
Noctule	15	-	2	4	3
Myotid	-	-	-	-	-
BLE	-	-	-	-	-

As with the walked transect, bat activity was very low during this period. Only three species of bat were recorded making use of the Site, with the bulk of the bat activity being made by common pipistrelle. Noctule were recorded in small amounts on most nights, whilst a brown long eared bat was recorded on a single evening (27th August).

An average of 102 registrations were logged across each night at location 1, with an average of 7 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.

Figure 6 Summary of August walked transect



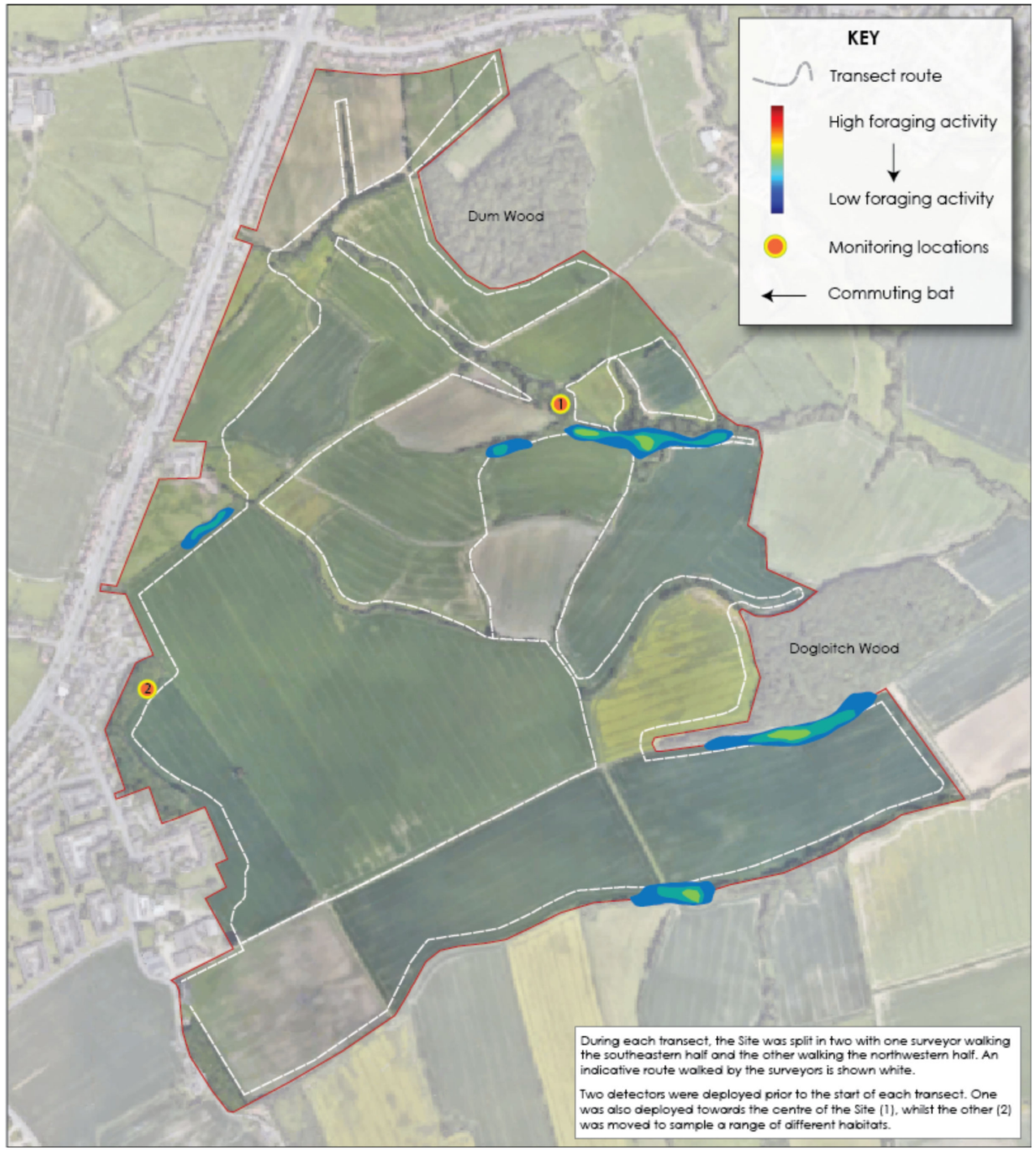
September Results

Walked Transect

Bat activity was slightly higher again in this month, when compared to August, but was still relatively low overall. All activity was attributed to solitary common pipistrelles, foraging along the central watercourse and mature boundary tree lines (see figure right).

No obvious commuting activity was recorded on this occasion.

Figure 7 Summary of September walked transect



Remote Monitoring

Two remote monitoring devices were deployed (as shown in the figure right) and left to run for 5 consecutive nights. A summary of the data collected are shown in the tables below:

Table 7a: Data collected at Location 1

Species	21st	22nd	23rd	24th	25th
C. Pip	45	54	70	23	752
S. Pip	-	-	-	-	-
Noctule	1	8	1	6	6
Myotid	-	-	-	3	-
BLE	-	-	-	-	-

Table 7b: Data collected at Location 2

Species	21st	22nd	23rd	24th	25th
C. Pip	33	48	48	51	256
S. Pip	-	-	-	-	1
Noctule	1	10		2	1
Myotid	-	-	-	1	-
BLE	-	1	-	-	-

Monitoring at both locations recorded only very low levels of bat activity across the first four nights, with slightly greater levels of activity logged on the fifth night.

The same five species of bat were recorded on Site, all in similar proportions to previous monitoring.

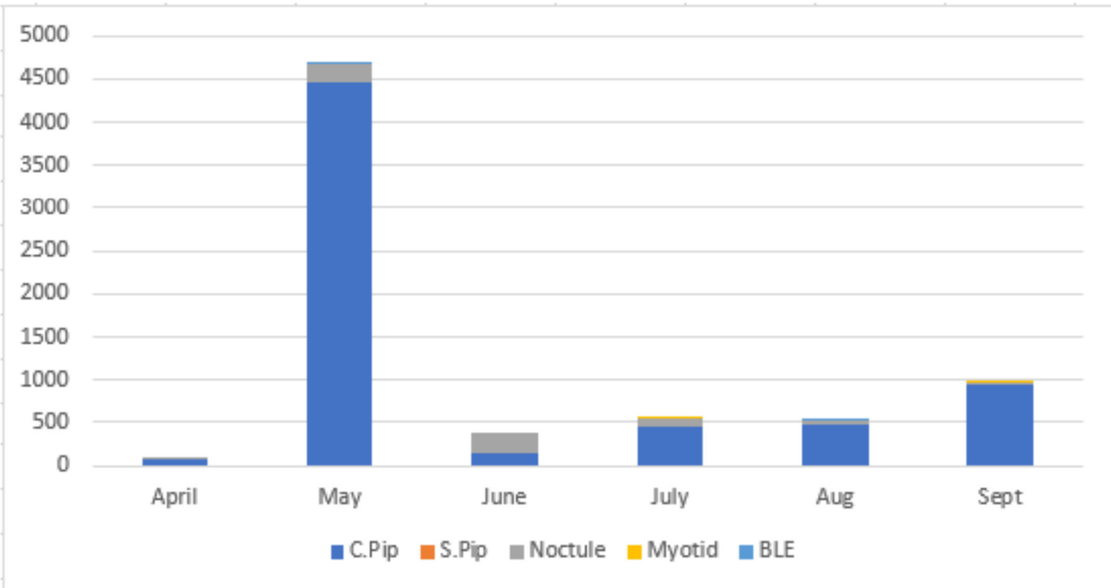
An average of 193 registrations were logged across each night at location 1, with an average of 90 reg. per night at location 2, this can be interpreted as low levels of bat activity at both locations.

Evaluation

Despite the Site's extensive size and the presence of some relatively high quality semi-natural habitat - both within the Site and along its boundaries - survey has shown that bat activity is consistently low throughout the Site across all six months of study. The only exception to this was during the May monitoring, when on two of the nights an uncharacteristically high number of registrations were logged. Data collected therefore indicates that the Site of relatively little importance to any local bat populations.

Walked transects have recorded only low level foraging and commuting by common pipistrelle bats, with activity focussed along the central watercourse and mature tree lines, with less consistent activity along some of the internal field hedgerows/ tree lines.

Remote monitoring has shown that the Site is only regularly used by the two most commonly encountered species of bat (common pipistrelle and noctule), with a further three (common) species recorded in very low numbers and on a very ad-hoc basis; these being soprano pipistrelle, brown long eared and a single myotid species (most likely whiskered bat).



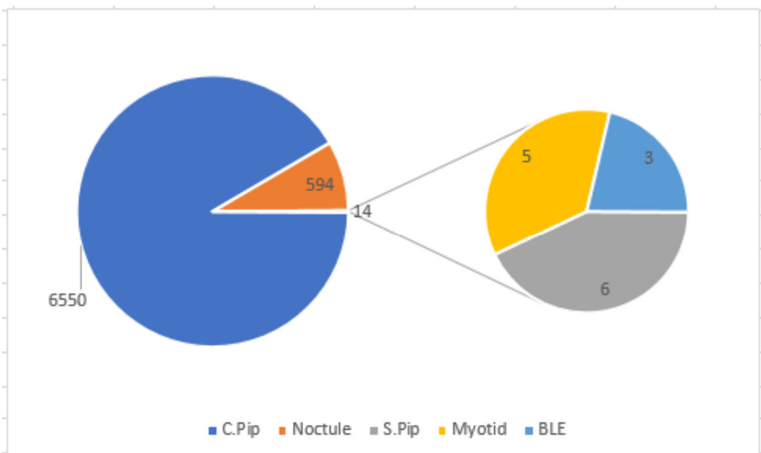


Figure 8 (top)

Cumulative number of registrations logged each month at monitoring location 1. Note - the spike in May is due to two nights of uncharacteristically high activity.

Figure 9 (left)

Proportion of registrations attributed to each bat species/ group recorded at location 1

Conclusions & Recommendations

Survey has found the Site to be of relatively low importance to this group and despite the Site's large size, the data collected would indicate that development is unlikely to impact significantly on any of the local bat populations.

Nevertheless, features that are consistently favoured by bats - namely the central watercourse and mature woodland edges (Dum Wood and Dogloitch Wood) - should be retained, protected and enhanced through development. The following is recommended:

- Standard protection of favoured habitat during construction, including the erection of BS5837:2012 Tree Protection fencing and safe storage of hazardous chemicals. This would be delivered through a Construction Environmental Management Plan (CEMP: Biodiversity).
- A suitable lighting scheme, which directs all artificial lighting (i.e. flood lighting used during the construction phase, new street lighting, security lights) away from the watercourse and woodland edges.
- A Landscape and Ecological Management Pan (LEMP) should be produced to show how connectively through the Site can be maintained, as well as how to maximise the wildlife value of retained and newly created habitat.
- New roosting opportunities will be designed into the masterplan, and placed strategically alongside the best bat habitat.

Provided the above recommendations are properly implemented, development presents a real opportunity to deliver long term gains for this group.

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