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Dear Martyn

WINTER BAT SURVEYS – THE UNIVERSITY OF BATH

In March 2019, Ecosulis were commissioned by the University of Bath to undertake bat surveys over the winter months. This was to provide additional supporting information for the masterplan design. Bat activity on site is well documented with previous surveys being focused specifically on horseshoe bats. Greater and lesser horseshoe bats are Annex II listed species and their presence on site is likely associated with the nearby Bath and Bradford-on-Avon Bats SAC.

The ecological works to date relevant to the masterplan include the following:

- J006306 Preliminary Ecological Appraisal of the Main Campus and Sulis Club (2017)
- J006306 Bat Activity Survey and Report (2017)
- J006559 University of Bath Masterplan Meeting (2019)
- J006566 Bat Activity Survey and Report (2019)
- J006586 University of Bath input into LEMP (on-going)

Methodology

Bat activity surveys are predominantly carried out during the season when they are most active, which is generally between April to October. While bat activity decreases during the winter months, individuals will occasionally emerge from hibernation in mild conditions to drink, feed and change roosts. This activity is relatively understudied but can be monitored in a similar manner, using survey methodology implemented during the active season. Therefore, static detectors were deployed on site from November 2019 – March 2020 to determine winter bat activity.

There is no existing guidance for undertaking winter bat activity surveys. Therefore methodologies followed best practice guidance for bat active season, including those outlined within the Bat Mitigation Guidelines (English Nature, 2004), the Bat Workers Manual (JNCC, 2004), The Lesser Horseshoe Bat Conservation Handbook (Vincent Wildlife Trust, 2008) and the Bat Conservation Trust Survey Guidelines (2016).

Statics were deployed in locations most likely to be impacted by future developments, as shown in Figure 1. Six Anabat Express static bat detectors were deployed in total to provide a sufficient amount of bat data across the site. They were deployed for 5 nights each month between November 2019 and March 2020. Data collected by the static detectors was later analysed by an experienced Bat Ecologist using Analook software.

Table 1 - Bat Static Survey Dates

Month	Dates	Locations
November	27th – 30th 28th – 29th	1, 2, 3, 4, 5 6
December	24th – 30th 19th – 25th 22nd – 28th	1 2, 3 4, 5

	18th – 21st	6
January	23rd – 29th	1, 2, 3, 5, 6
February	24th – 1st 24th – 29th 23rd – 28th 24th – 28th	1, 2, 5 3 4 6
March	3rd – 9th 2nd 1st – 3rd 2nd – 7th	1 2 3 5

Results and Evaluation

Throughout the winter, bat activity was low across all locations. This was the expected outcome as the survey was carried out in hibernation season. There is evidence that a number of bats came out of torpor.

November had no records of bat activity. January had the highest number of different bat species (4); however the highest pass count was in February (40 Myotis sp.).

Both lesser and greater horseshoe bats, were detected during the surveys. The evidence therefore suggests that the habitats on site are important for these species all year round, as opposed to only within the active season. The finding is significant as the additional information further emphasises the importance on the habitat for horseshoe bats and highlights the requirement for its ongoing protection.

Greater horseshoe bats were detected at locations 2 and 3, and lesser horseshoe bats were detected at only location 3. The 2017 and 2019 bat activity surveys highlighted low activity across the site for lesser and greater horseshoe bats, but moderate activity along the site boundaries of the campus, particularly in the east. The winter bat surveys also supported this outcome, with all lesser and greater horseshoe records coming from the eastern and south eastern boundary of the site. All surveys to date suggest that these boundary habitats which include woodland edge and hedgerows, are the main habitats used by horseshoe bats on site.

Pipistrelle species were recorded in low numbers, at locations 3, 4 and 5. *Nyctalus/Eptesicus* species were not recorded at any of the locations. This is dissimilar to the bat activity surveys, which found higher numbers of these species. As these were winter activity surveys this did not indicate a reduction in the number of species using the site.

Long eared species were also recorded at static location 3. This location had the higher number of species recorded than any other location. However, static location 5 recorded high numbers of *Myotis sp,* this may suggest that they are roosting closer to this location, or are more tolerant to colder temperatures.

The results for the winter bat activity surveys are displayed in Table 2 below:

Table 2 - Bat Static Detector Results

Static Location	November	December	January	February	March
1	-	-	-	-	-
2	-	-	-	2 GHS	-
3	-	2 LHS	1 GHS 1 SPIP 3 CPIP	1 LE	-

4	-	2 SPIP	-	1 CPIP	-
5	-	-	1 CPIP 6 MYO	40 MYO	9 MYO
6	-	-	-	-	-

LHS – Lesser horseshoe bat
GHS – Greater horseshoe bat
SPIP – Soprano pipistrelle
CPIP – Common pipistrelle
LE – Long-eared species
MYO – Myotis species

Ecological Opportunities and Recommendations

Please refer to J006566 – Bat Activity Surveys 2019 report for a full list of ecological opportunities and Recommendations.

Limitations of Survey and Report

There is no guidance for wintering bat activity surveys, therefore methodologies followed best practice guidance for bat activity season including those outlined within the Bat Mitigation Guidelines (English Nature, 2004), the Bat Workers Manual (JNCC, 2004), The Lesser Horseshoe Bat Conservation Handbook (Vincent Wildlife Trust, 2008) and the Bat Conservation Trust Survey Guidelines (2016).

The UK went into full national lockdown on the 16th March 2020. Due to this additional data for March could not be obtained for the survey.

Higher levels of bad weather (wind, rain) in winter may have reduced the Anabat Express battery life much faster as they are making many more recordings. This ends up in a reduction of data recorded for the period deployed.

Static 4 collected no data during its deployment period in January 2020, the reason for this is unknown, but it is likely a mechanical fault.

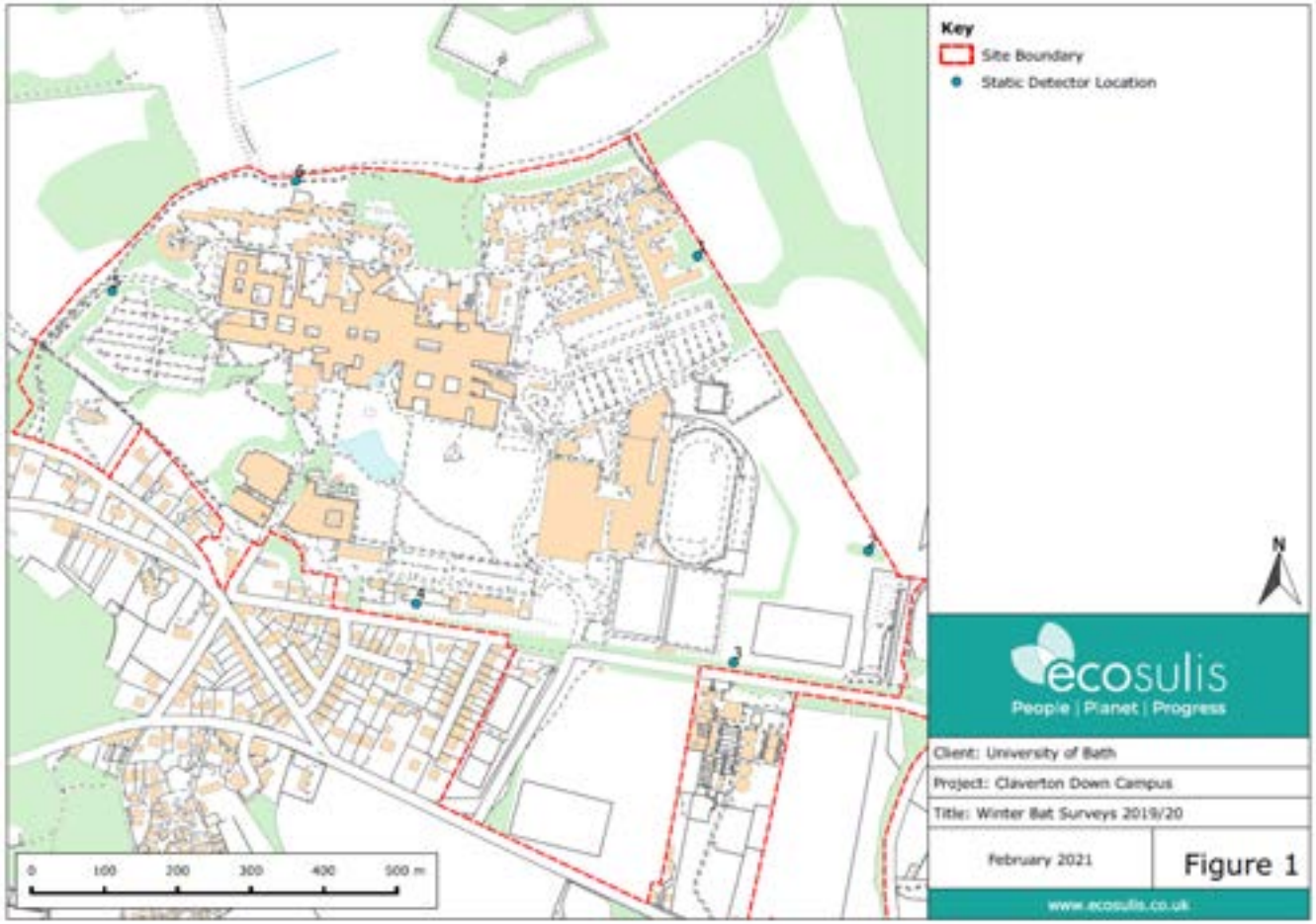
Please refer to J006566 – Bat Activity Surveys 2019 report for a full list of limitations relating to bat surveys in general.

Taking all aforementioned limitations into account, it is considered unlikley that technical failures encountered on site altered the findings detailed in this report as sufficient data was gathered nonetheless. Furthermore, as winter bat activity surveys are not included within existing bat survey guidelines, this monitoring process is only to inform on a greater understanding of bat activity on site throughout the year; therefore, they are only adding a higher level of detail to the main bat activity surveys.

Kind regards

Chloe Tustain
Assistant Ecological Consultant

FIGURE 1


Key
Site Boundary
Static Detector Location
N
0
100
200
300
400
500 m
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Client: University of Bath
Project: Claverton Down Campus
Title: Winter Bat Surveys 2019/20
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Figure 1
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