Bat Activity Surveys

Land South of Barrow Green Road, Oxted, Surrey

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Contents

1.0 Introduction

Background

1.1 The Ecology Partnership Ltd was commissioned by Croudace Homes to undertake monthly bat activity surveys of the land to the south of Barrow Green Road, Oxted, Surrey. This is in support of a planning application for the site.

1.2 A desk study of the site identified a series of woodlands, tree lines, hedgerows and scrub, suitable to support commuting and foraging bats. Due to this, bat activity transect surveys were recommended, to assess the value of the site for bats and inform any future ecological impact assessments.

1.3 This report presents the results of The Ecology Partnership's surveys in and around the site so far, which aims specifically to assess how bats are using the site over the course of the 2022 survey season.

1.4 Section 2 of this report sets out the methodology of The Ecology Partnership's survey and the results in Section 3 and the implications discussed in Section 4. Conclusions are provided for in chapter 5 of this report.

Site Context and Status

1.5 The site comprises an arable field with small areas of woodland at the northern and southern edges. The site is approximately 9.7ha and located on the north-western edge of Oxted, bound by Barrow Green Road and a railway corridor to the north, a cemetery to the east, residential housing and gardens to the south, ancient woodland to the south-west and a small ephemeral stream to the west (TQ 387 531). The wider surrounding area comprises residential areas to the north, east and south, with extensive woodland and private green space to the west.

1.6 The aerial photograph below (Figure 1) shows the site and its immediate surrounds with the approximate site boundary.

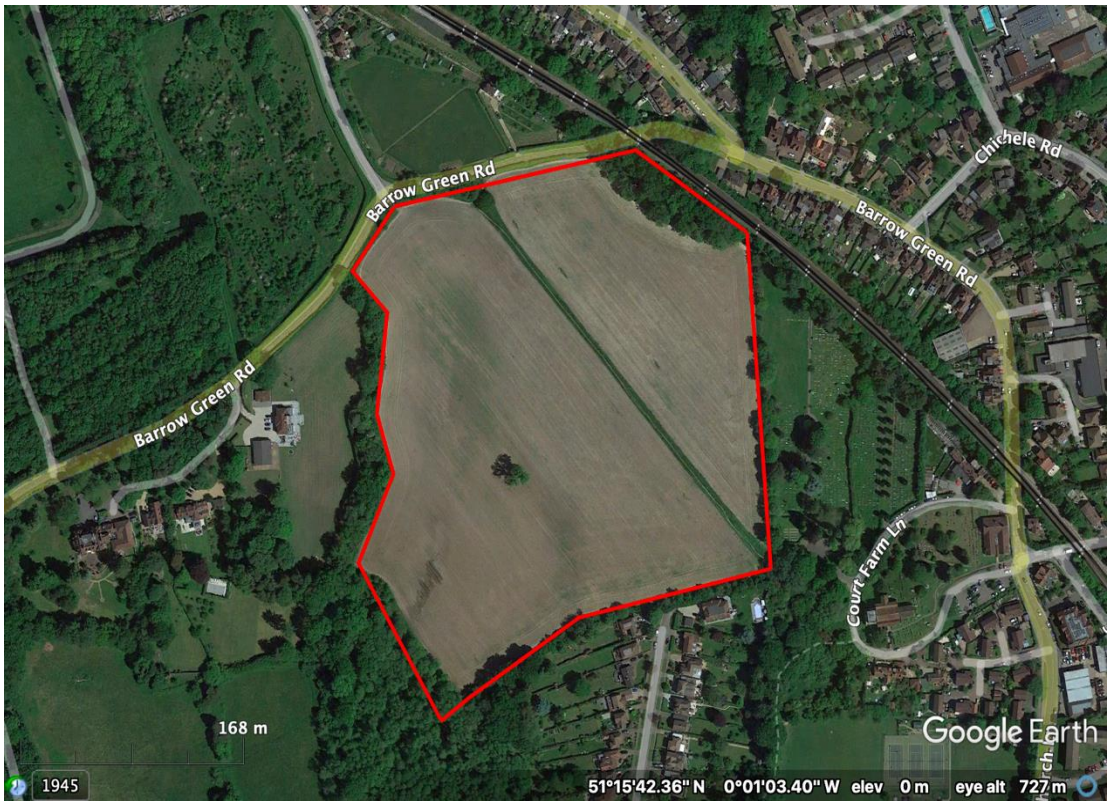

Figure 1: Approximate location of the red line boundary
Satellite imagery obtained from Google Earth Pro on 24/03/2022

Description of Proposed Development

1.7 Outline application for a residential development of up to 190 dwellings (including affordable homes) (Use Class C3), an extra care facility with up to up 80 beds (Use Class C2), together with the formation of vehicular access, landscaping, parking, open space, green and blue infrastructure, and all other associated development works. All matters reserved except access.

Legislation

1.8 Under the NERC Act (2006) it is now the duty of every Government department in carrying out its functions "*to have regard, so far as it is consistent with the proper exercise of those functions, to the purpose of conserving biological diversity in accordance with the Convention*".

1.9 Bats are covered by the following relevant legislation: the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment

and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

1.10 Under the WCA 1981 it is an offence to:

- intentionally, recklessly or deliberately disturb a roosting or hibernating bat i.e. disturbing it whilst it is occupying a structure or place used for shelter or protection)
- intentionally or recklessly obstruct access to a roost (i.e. a structure or place used for shelter or protection).

1.11 Under the CHSR 2010 it is an offence to:

- deliberately capture (or take), injure or kill a bat
- intentionally, recklessly or deliberately disturb a bat, in particular (i) any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability in the case of hibernating or migratory species, to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong
- damage or destroy a breeding site or resting place (roost) of a bat.

2.0 Methodology

Bat Transect Activity Surveys

2.1 Monthly dusk activity surveys were carried out between 3rd May to the 5th October 2022.

2.2 The surveys followed BCT guidelines (Collins, 2016). A predetermined transect route was agreed and followed for the duration of the survey, during which bat flyovers and activity were recorded. The transect route was walked twice during the surveys. The transect route was designed to follow linear features such as treelines, scrub and woodland edge which bats are known to use as commuting corridors. These habitats also provide the most suitable habitat on site for foraging.

2.3 The dusk surveys started at sunset and observations were maintained until at least 2 hours after sunset. Bats usually emerge about twenty minutes after sunset depending on the

species, light level, weather conditions and time of year. Peak activity will normally last for about two hours after sunset, during times of peak insect activity.

2.4 Surveyors were equipped with one of the following recording devices: Batlogger and an Echo Meter Touch with an iPad.

2.5 The date, time and weather conditions during for each monthly survey is shown in Table 1.

Table 1. Summary of the date, time and weather conditions during each monthly survey.

Survey date	Time of sunset	Weather conditions
3rd May 2022	20:27	Conditions were clouded with a light breeze and temperature starting 12°C and then dropping to 10°C at the end of the survey.
22nd June 2022	21:20	Conditions were clear with a light breeze and temperature starting 17°C and then dropping to 14°C at the end of the survey.
27th July 2022	20:55	Conditions were overcast with a slight breeze with temperature starting 18°C and then dropping to 15°C at the end of the survey
23rd August 2022	20:20	Conditions were overcast and calm with temperature starting 20°C and then dropping to 18°C at the end of the survey
21st September 2022	19:04	Conditions were clear and calm with temperature starting 16°C and then dropping to 13°C at the end of the survey.
5th October 2022	18:30	Conditions were clear with slight breeze. The temperature was initially 14°C, dropping to 13°C by the end of the survey.

2.6 Three Anabat Express static recording devices were also deployed across the site over periods of at least five consecutive nights between May to October 2022. The recording devices were placed within habitats that was considered suitable for use by commuting or foraging bats in order to gauge activity levels and species diversity on site. The subsequent recordings from the Anabat Express device were analysed using Anabat Insight software.

Limitations

2.7 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

2.8 The Anabats recording ability are limited by the quantity of insect noise picked up over the bat calls, which varies over the season. This is a limit of the zero-crossing functionality of the Anabat recording devices. The number of bat calls recorded was particularly low some

months because the loudest calls at a single frequency are always recorded. The actual number of passes is expected to have been higher.

2.9 There were some technical difficulties with the Anabats in September, and no data was recorded by these Anabat during those periods. However, the anabats were functioning as expected every other month, and, there were no other technical problems with the other anabats throughout the duration of the survey period. A such, there is sufficient data to draw from, allowing a broad overview of bat activity across the site, and therefore, the absence of data from individual anabats in a single month is not thought to impact on the conclusions drawn from the results.

2.10 Filters are created and used on Analook for the bat call analysis, which will have a certain degree of error, although tests are carried out to ensure the highest accuracy possible.

3.0 Results

Bat Transect Surveys

3.1 Bat activity surveys have been carried out in May to October 2022. The following section summarises the results from these transect surveys per month.

May

3.2 During the May transect, low levels of bat activity were recorded on site. Common pipistrelle (*Pipistrellus pipistrellus*) was the only recorded species on site (15 passes). The first pass was recorded 7 minutes after sunset in the southwest corner of the site adjacent to the ancient woodland. The other passes were mainly recorded in the same corner of the site or along the north adjacent to Barrow Green Road. The final pass was in the northeast corner 94 minutes after sunset.

June

3.3 During the June transect, low-moderate levels of bat activity were recorded on site. Common pipistrelle, noctule (*Nyctalus noctule*), serotine (*Eptesicus serotinus*) and Leisler's (*Nyctalus leisleri*) were the only recorded species on site. The first pass was a common pipistrelle

recorded 44 minutes after sunset in the northeast of the site adjacent to the woodland parcel. Two more common pipistrelle passes and a noctule were recorded in the same section in the next 5 minutes. Common pipistrelle and serotine were recorded foraging between 50 minutes and 60 minutes after sunset in the north of the site. The final recording was of a foraging serotine at 66 minutes after sunset.

July

3.4 During the July transect, low-moderate levels of bat activity were recorded on site. Common pipistrelle, noctule, serotine and brown long-eared (*Plecotus auritus*) were the only recorded species on site. The first pass was a foraging common pipistrelle recorded 17 minutes after sunset in the southeast of the site. Noctules were recorded commuting northeast across the site at 28 minutes after sunset as well as a commuting serotine at 35 minutes after sunset. More foraging activity was recorded for common pipistrelle and serotine around 60 minutes after sunset in the southwest corner adjacent to the ancient woodland. The final pass was a common pipistrelle commuting north across the site 96 minutes after sunset.

August

3.5 During the August transect, low-moderate levels of bat activity were recorded on site. Common pipistrelle, noctule and serotine were the only recorded species on site, all recorded multiple times throughout the survey. The passes in this survey were the most spread out than other months with no boundary recording a significantly higher number of passes. The first pass was 2 minutes after sunset where a common pipistrelle was foraging the southwest corner of the site. A noctule was recorded commuting across the same area 3 minutes after sunset. Two serotines were record foraging the northern boundary 31 minutes after sunset. The final pass was recorded in the southeast corner of the site 94 minutes after sunset.

September

3.6 During the September transect, low levels of bat activity were recorded on site. Common pipistrelle, soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's and serotine were the only recorded species on site. The first pass was 17 minutes after sunset where a serotine was commuting the southeast boundary of the site. The only soprano pipistrelle was recorded

commuting the southwest corner 27 minutes after sunset. The only Leisler's pass was recorded along the northern boundary 67 minutes after sunset. Multiple common pipistrelle passes were recorded across the site throughout the survey with the final pass being along the northern boundary 90 minutes after sunset.

October

3.7 During the October transect, low levels of bat activity were recorded on site. Common pipistrelle, soprano pipistrelle, noctule and serotine were the only recorded species on site. The first pass was 14 minutes after sunset where a common pipistrelle was foraging the southwest corner of the site. A soprano pipistrelle was recorded foraging the northwest corner 30 minutes after sunset. The only noctule pass was recorded along the northern boundary 33 minutes after sunset. The last passes were two serotines recorded in the northeast corner 90 minutes after sunset.

Anabat Express Static Recorders

3.8 Three Anabat Express static recording devices were deployed monthly across the site between May to October 2022. The data for each Anabat across the survey period is presented in Appendix 1.

3.10 In total **2291** bat passes were recorded over the survey period, comprising at least seven species (See Figure 2). The most frequently recorded species was the common pipistrelle, accounting for *c.*51% of all passes, the next most frequently recorded species was the soprano pipistrelle which accounted for *c.*25% of all passes, the remaining *c.*24% of passes were made up of Leisler's *c.*9.5%, noctule *c.*6%, myotis species *c.*4%, serotine *c.*3.5%, and brown long-eared bats *c.*1%. Bats of the Myotis genus have been grouped together owing to difficulties in identifying calls to species level. Tables 2-4 summarise the results based on species, percentage total and anabat location.

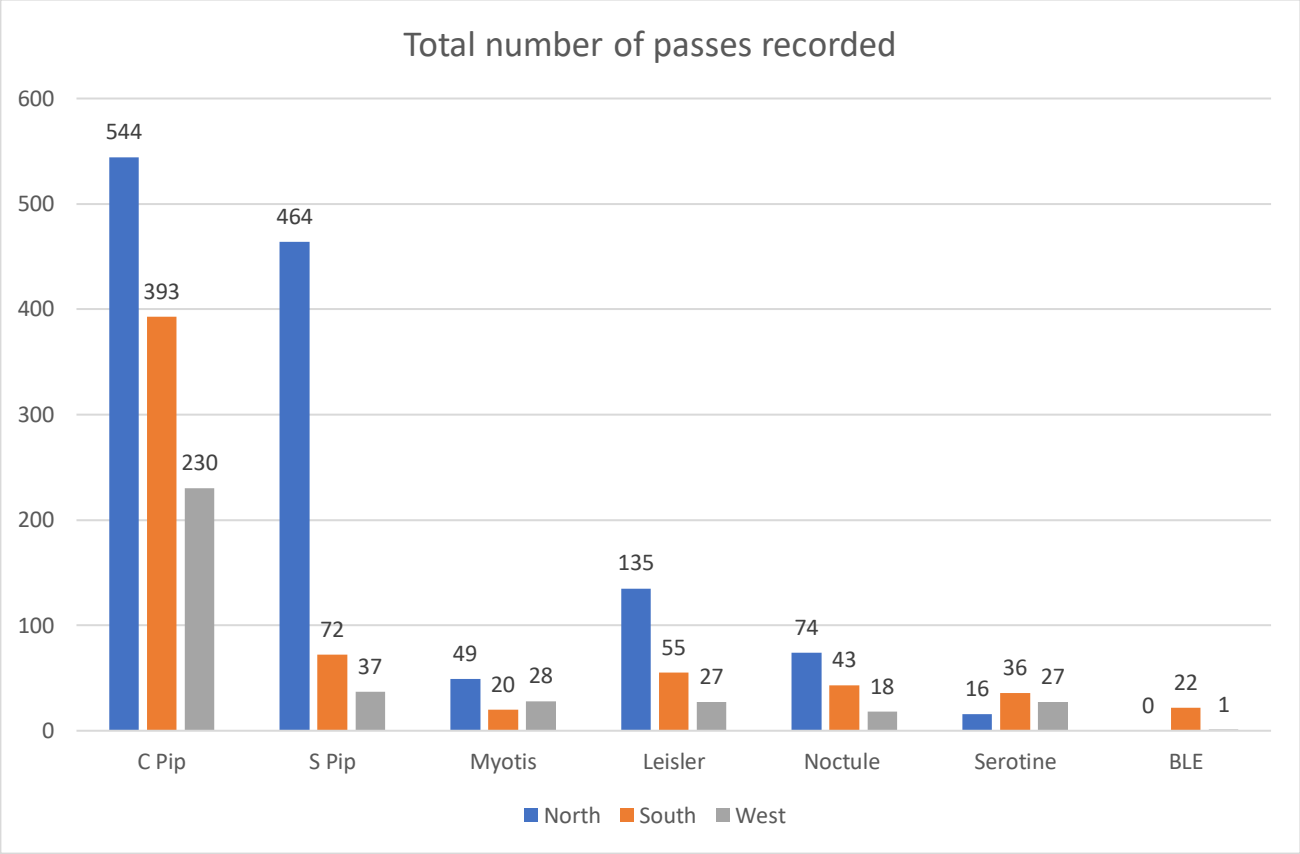

Figure 2: Total number of passes recorded by each anabats for each species across the site.

3.11 Clear differences were observed between the anabats on site. Pipistrelles, Leisler's, and Noctules were most frequently recorded by the north anabat in the woodland that is adjacent to the railway corridor. Brown long eared bats were largely only recorded by the southern anabat, which also recorded the largest number of serotine bats. The western anabat, which is located in the linear woodland/scrub leading north from the ancient woodland, had the lowest number of calls detected.

Table 2: Total bat passes recorded by species

Bat Species	Total Number of Recordings	% of Total
Common pipistrelle	1167	50.9
Soprano pipistrelle	573	25.0
Leisler's	79	9.5
Noctule	23	5.9
Myotis	97	4.2
Serotine	217	3.4
Brown long-eared	135	1.0
Total	2291	

Table 3: Number of calls made at each Anabat location

Anabat Location	Total Number of Passes per Month				
	May	June	July	August	October
North	181	346	431	296	28
South	78	73	77	365	48
West	72	31	111	98	56

Table 4: Number and percentage of calls made by each species at each Anabat location

	Northern Anabat		Southern Anabat		Western Anabat	
Bat Species	**Total Number of Recordings**	**% of Total**	**Total Number of Recordings**	**% of Total**	**Total Number of Recordings**	**% of Total**
Common pipistrelle	544	42.4	393	61.3	230	62.5
Soprano pipistrelle	464	36.2	72	11.2	37	10.1
Leisler's	49	3.8	20	3.1	28	7.6
Noctule	135	10.5	55	8.6	27	7.3
Myotis	74	5.8	43	6.7	18	4.9
Serotine	16	1.2	36	5.6	27	7.3
Brown long-eared	0	0.0	22	3.4	1	0.3
Total	1282		641		368	

4.0 Discussion

Bat Species and Activity

Transect Activity Surveys

4.1 In general, low levels of bat activity was recorded during the transect surveys with some surveys having more moderate activity due to frequent foraging heard. The highest amount of activity was recorded along the northern boundary hedgerow, the southwest corner adjacent to the ancient woodland and in the woodland parcel in the northeast. The lowest amount of activity was in the south and south east closest to the residential areas of Oxted. Activity was dominated by common pipistrelle, with occasional serotine and noctule passes and low numbers of soprano pipistrelles, Leisler's and one BLE pass.

Anabat Data

4.2 Higher levels of bat activity were recorded across the site on the Anabat detectors in comparison with the walked transect surveys, with the highest levels of activity overall being recorded in July and August. However, it must be noted that remote recording does not distinguish between a single individual making numerous passes whilst foraging around a particular feature, and between more numerous individual bats commuting across the landscape. As such, walked transects provide a good understanding of how a particular feature is being used.

4.3 The highest level of activity was recorded by the northern anabat, with the least activity recorded by the western anabat.

Evaluation

Common & Soprano pipistrelle

4.4 In the Anabat surveys, the majority of bat passes recorded on site was from common and soprano pipistrelles, making up approximately 51% and 25% of all bat calls respectively. In the walked transects only a few soprano pipistrelle passes were recorded compared to common pipistrelles, which dominated the number of passes. Foraging bats are likely to make repeated passes within a small area whilst hunting for invertebrates. Consequently, a

high number of passes could be generated by a small number of bats foraging in a small area, as opposed to a large number of bats making individual passes.

4.5 These species are both common and widespread across the UK. The site shows regular use by common pipistrelles, with variable usages from single passes to multiple passes dependent on the night. Considering the general low level of activity across the months, it is considered unlikely that this site forms a significant part of their core habitat, albeit it is regularly used by low numbers. The population of these species using the site is therefore considered to be of **site** value.

Noctules and Leisler's

4.6 Leisler's were the next most frequently recorded bat making up 9.5% of all calls picked up on anabats, however only low numbers were recorded during the transect surveys. Noctules made up 6% of the calls recorded. Noctules are uncommon, but numerous in well-wooded areas, and, Leisler's are widespread but scarce in Britain but may be under-recorded. Both these species are associated with woodland and parkland, which is extensive within the surrounding area, likely accounting for the relatively high numbers of these species. Whilst the use of the site was considered to be regular, again only low numbers of passes were recorded during the surveys. Consequently, the population of these species using the site is considered to be of **local** value

Myotis species

4.7 Passes by myotis species were recorded on the Anabats and their calls accounted for approximately 4% of the total calls on site. Due to the difficulty in identifying myotis calls to species level using call analysis software, none of the calls on site were identified to species level, however, calls were largely indicative of Daubenton's, and, Natterer's bats. However, due to relatively low number of myotis passes being recorded across the site, the populations on site are considered to be of **site** value.

Brown long-eared bat

4.8 Only 23 passes of brown long-eared (BLE) bats were recorded, however, it is considered likely that further activity by this species may have been missed due to the quietness of their

low-amplitude echolocation calls, which could be obscured by louder species such as pipistrelles, and their reliance upon their hearing and sight for foraging. This species is both common and widespread across the UK and within Surrey, and, the numbers recorded on site were relatively low. Consequently, the population of this species using the site is considered to be of **site** value.

Serotine

4.9 Passes by serotine were recorded on the Anabats and their calls accounted for approximately 3.5% of the total calls on site. Serotine are vulnerable within the UK as a whole, however, are more common within the south. Due to relatively low number of serotine passes being recorded across the site, the populations on site are considered to be of **site** value.

Mitigation Recommendations

4.10 It is important to provide habitat for foraging bats on site and ensure connectivity through the site in order to maintain the favourable conservation status of bats in the area post-development. As such, a number of recommendations have been outlined below to be considered when designing the scheme.

Commuting and foraging habitat

4.11 Maintaining and enhancing the existing linear features on site, such as hedgerows, boundary scrub, and, mature treelines, as well habitats suitable for foraging, such as woodland, would be considered necessary to ensure that bats would not be adversely affected by the proposals. As such, loss of these features should be avoided in the first instance, and, they should be incorporated within the design and layout of the scheme. However, if loss of small sections of these habitats cannot be avoided, then this loss should be offset through the planting of new hedgerows and treelines on site to maintain and enhance connectivity across the site for foraging and commuting bats in addition to other species. These features should be planted in such a way as to create variety in the species composition, structure and age which would provide a number of niches for bats favoured invertebrate prey.

Lighting recommendations

4.12 As a number of bat species make use of the linear features across the site, it is recommended that light should be directed away from these features, maintaining these as 'dark corridors'. In particular the woodland in the north of the site and other areas of retained woodland should be shielded from any artificial light. Any lighting necessary within proximity to other commuting features (mature linear scrub/tree lines) should comprise sensitive low-level lighting to minimise any potential impacts on light sensitive species such as brown long-eared bats, barbastelle, and some myotis species (Stone *et al*., 2012).

4.13 Lighting can alter bat behaviour significantly in terms of light avoidance with some species unable to cross lit areas even at low light levels. In addition, lighting can affect the availability of insect prey with some groups attracted to lights, creating a 'vacuum effect' in adjacent habitats. Some of the species on site, such as brown long-ears, barbastelles and *Myotis* species, are known to avoid all street lights (Stone *et al.*, 2009, 2012, 2015), meaning that development could seriously impact the abundance of these species on site post-development without careful design and mitigation.

4.14 Dark corridors could be implemented through the inclusion of dark buffer zones along important features highlighted above in addition to the new linear features and woodland screens to be created as part of the proposals. These will help to ensure that light levels (measured in lux) within a certain distance of a feature do no exceed certain defined limits. The feature itself, such as the woodland edge or hedgerow, would not have any artificial lighting (Zone A in Figure 3). The habitats between these important features and the development area would then act as a transition with lighting limits (Zones B and C in Figure 3). Within the transition zone, it is important to use screening methods and to carefully consider whether lighting is appropriate and at what levels. The size of these buffers will be dependent on the importance of the feature. A lighting specialist in collaboration with an ecologist would help determine these levels and zone sizes. The development area itself (Zone D in Figure 3) should then be subject to a sensitive lighting scheme.

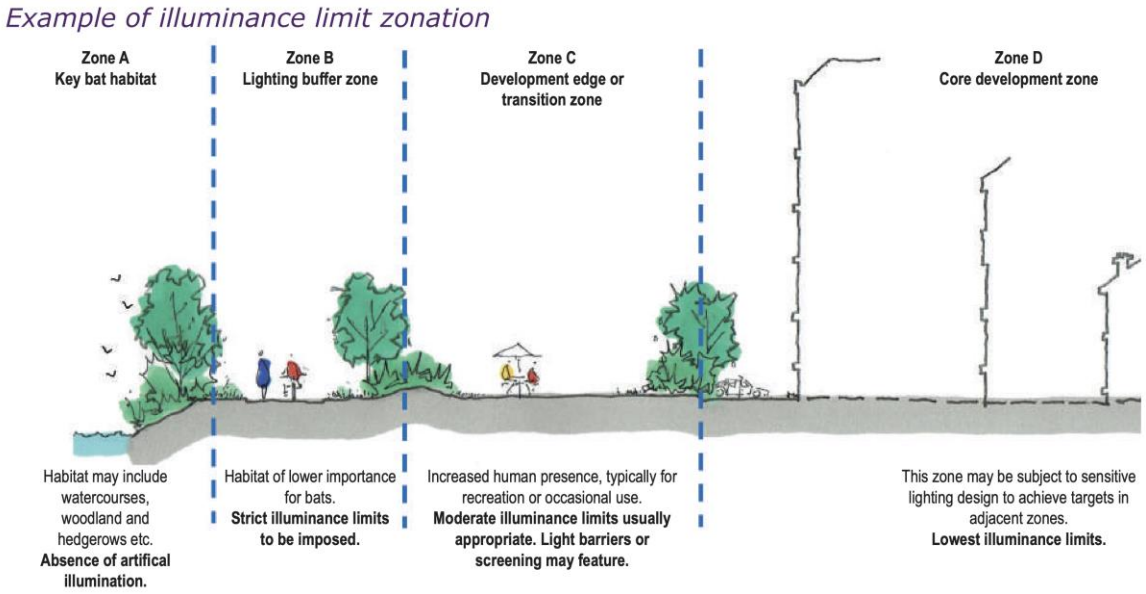

Figure 3: Examples of lighting buffers which can be included within the design of the scheme. Image sourced from the Bat Conservation Trusts Guidance Note 08.18 - Bats and artificial lighting in the UK:

4.15 Where lighting is required on site, a sensitive lighting scheme must be implemented. Again collaboration between a lighting professional and ecologist may be required in order to help design this scheme but measures should include:

- The impact on bats can be minimised by the use of Light emitting diodes (LEDs) instead of mercury, fluorescent or metal halide lamps where glass glazing is preferred due to their sharp cut-off, lower intensity and their dimming capability. Lighting should be directed to where it is needed and light spillage avoided.
- This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.
- Soft landscape planting should also be used as a barrier or manmade features such as walls or fencing with planted climbers where required within the build can be positioned so as to form a barrier between any development and the linear features used by bats.

4.16 The edges of semi-natural woodland across the site are recommended to be maintained as dark corridors with no lighting installed in these areas. Where lighting is necessary near other commuting features (mature linear scrub\mature trees), bollard lighting is recommended, in

place of full street lighting (Figure 4). This will maintain the integrity of these corridors for foraging bats. Warm-white or red lights are recommended to be used if health and safety concerns are great as these are said to limit the impact on insects and therefore bat activity.

Figure 4: Example of low level bollard lighting

4.17 If any future scheme follows the above recommendations for retention of existing commuting and foraging habitat on site, and sufficiently protects it from artificial light, then a significant impact on foraging/commuting bats would be unlikely.

Enhancement Recommendations

Strengthening commuting features

4.18 New treelines and hedgerows, comprising native species, could be created within the site to strengthen existing linear features. This would improve these features as commuting corridors and provide a greater number of foraging opportunities. These could be buffered by areas of species-rich meadows to provide additional foraging resources for bats.

Newly created waterbodies and SUDS

4.19 The creation of new wildlife ponds and wetland areas on-site would encourage a greater number and diversity of bats to use the site. New ponds should be designed to facilitate the foraging habits of the bats found on-site. This can be achieved through suitable placement, management of surrounding vegetation and design of the water body itself. There is no need to plant ponds with vegetation as pioneer species will quickly establish, this also reduces the

likelihood of invasive species, such as New Zealand pigmyweed, contaminating the pond from commercial stockists.

4.20 There are a number of things to consider when designing these ponds in relation to bats:

- Medium to large ponds (5m x 10m upwards) will benefit a wider range of bat species;
- Ponds should include a mixture of shallow areas to benefit invertebrate prey as and deeper areas to maintain areas of open surface water for bats;
- Ponds should be created along landscape features to ensure good connectivity with other habitat features in the area;
- Ponds within or close to a woodland will benefit rare species such as barbastelles as well as brown long-eared bats, soprano pipistrelles and Natterer's bats which require shelter when commuting and foraging;
- Pond edges should include a mixture of vegetated and open areas – taller vegetation provides shelter from wind and rain meaning insects accumulate there whilst larger bats need open approach routes to access the pond (Figure 5).

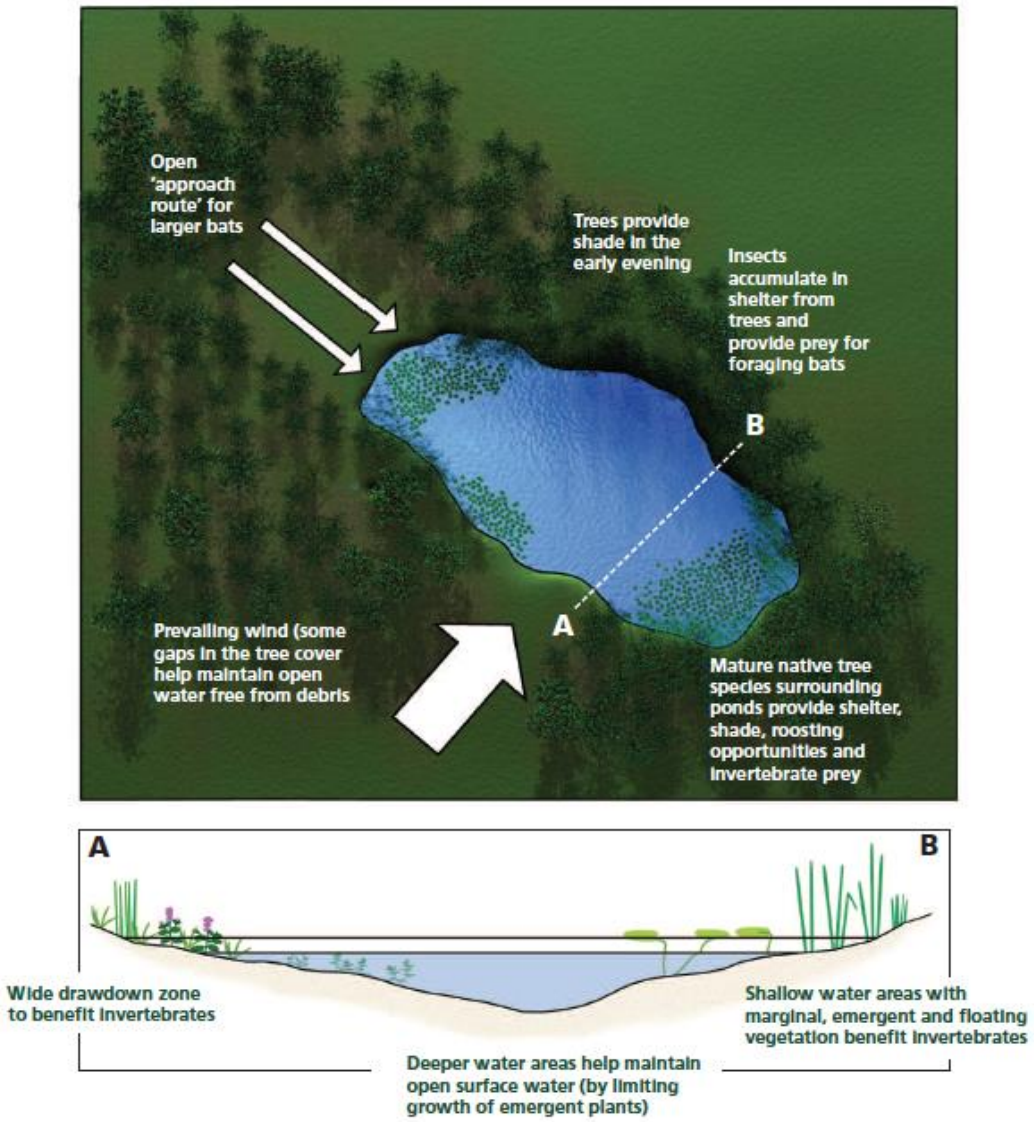

Figure 5: Pond features which benefit bats (Pond Conservation 2011)

4.21 The vegetation surrounding ponds should be managed with consideration for bats. Trees around the edges of waterbodies provide shelter from wind and rain as well as increasing invertebrate activity, trees in proximity to waterbodies are also particularly attractive to bats as roosts. It is also recommended some areas are left free from vegetation to provide an approach route for larger bats, excessively shaded banks can also reduce the abundance of invertebrates such as Diptera.

Roost enhancements - Bat boxes and tubes

4.22 It is recommended that new roosting opportunities are created on site through installing bat boxes on retained mature trees along the site boundaries, within areas devoid of artificial light. This would enhance the site for local bat populations and would provide further roosting opportunities. Recommended boxes include:

- Vivara Pro WoodStone Bat Box – A general purpose bat box that supports a range of species (Figure 6). These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.
- Large Multi Chamber WoodStone Bat Box – This is a multipurpose box designed for larger colonies and a range of bat species including pipistrelles, noctules and brown long-eared bats. These should be hung on mature trees around the site (Figure 6).

Figure 6: Vivara Pro WoodStone Bat Box (left) and Large Multi Chamber WoodStone Bat Box (right)

4.23 Incorporating specially designed bat boxes into the design can enhance the habitat on site for bats. Suitable bat boxes include a variety of wooden bat boxes, such as an improved cavity box, a double chamber bat box and other wood based varieties.

5.0 Conclusions

5.1 Relatively low levels of bat activity were recorded during transect surveys at the Land South of Barrow Green Road. Current surveys have identified key areas of habitat used by bats, including the woodlands, hedgerows, treelines throughout the site as well as the boundary scrub. The highest level of activity was recorded along the woodland edge in the north of the site.

5.2 Activity on site was largely dominated by common and soprano pipistrelles, which made up 51% and 25% of the calls. The remaining *c.*24% of passes were made up of Leisler's *c.*9.5%, noctule *c.*6%, myotis species *c.*4%, serotine *c.*3.5%, and brown long-eared bats *c.*1%. Numbers of Leisler's and noctules were considered to be of district value, pipistrelle species of local value, and other bat species of site value.

5.3 Recommendations have been made to retain and enhance the identified key features where possible and protect them from any new artificial lighting to ensure that any future proposals would not impact upon the favourable conservation status of bats within the local area post-development.

6.0 References

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The Ecology Partnership (2022) Land South of Barrow Green Road, Oxted - Preliminary Ecological Appraisal

Appendix 1- Raw Anabat Data

Table 1: Anabat data for the northern anabat

Night	Common pip	Soprano	Myotis	Leisler's	Noctule	Serotine	BLE
03/05/2022	15	0	0	2	0	0	0
04/05/2022	21	4	1	0	0	0	0
05/05/2022	26	9	0	2	3	0	0
06/05/2022	2	5	0	1	3	0	0
07/05/2022	46	23	0	11	3	4	0
Total	**110**	**41**	**1**	**16**	**9**	**4**	**0**
22/06/2022	73	8	5	5	5	0	0
23/06/2022	19	14	0	0	0	0	0
24/06/2022	9	1	1	0	0	1	0
25/06/2022	84	1	3	0	3	0	0
26/06/2022	113	1	0	0	0	0	0
Total	**298**	**25**	**9**	**5**	**8**	**1**	**0**
26/07/2022	4	8	3	5	2	0	0
27/07/2022	3	0	0	15	1	1	0
28/07/2022	7	140	0	12	11	0	0
29/07/2022	11	79	1	22	10	6	0
30/07/2022	1	40	0	44	4	1	0
Total	**26**	**267**	**4**	**98**	**28**	**8**	**0**

Night	Common pip	Soprano	Myotis	Leisler's	Noctule	Serotine	BLE
23/08/2022	9	6	0	6	4	0	0
24/08/2022	43	51	7	5	16	1	0
25/08/2022	15	16	9	0	1	0	0
26/08/2022	18	34	6	1	1	1	0
27/08/2022	15	24	6	0	1	0	0
Total	100	131	28	12	23	2	0
No data recorded in September							
05/10/2022	0	0	1	3	0	1	0
06/10/2022	2	0	4	0	2	0	0
07/10/2022	2	0	0	1	1	0	0
08/10/2022	1	0	1	0	2	0	0
09/10/2022	5	0	1	0	1	0	0
Total	**10**	**0**	**7**	**4**	**6**	**1**	**0**

Table 2: Anabat data for the western anabat

Night	Common pip	Soprano	Myotis	Leisler's	Noctule	Serotine	BLE
03/05/2022	24	0	0	0	1	0	0
04/05/2022	10	0	1	0	0	0	0
05/05/2022	3	0	0	1	0	0	0
06/05/2022	24	4	0	0	0	1	0
07/05/2022	2	0	0	1	0	0	0
Total	**63**	**4**	**1**	**2**	**1**	**1**	**0**
22/06/2022	1	2	1	0	0	0	0
23/06/2022	12	0	4	0	0	0	0
24/06/2022	2	1	1	0	1	0	0
25/06/2022	3	0	0	0	0	0	0
26/06/2022	1	1	1	0	0	0	0
Total	**19**	**4**	**7**	**0**	**1**	**0**	**0**
26/07/2022	9	1	0	2	1	1	0
27/07/2022	19	3	2	1	1	1	0
28/07/2022	2	7	0	1	1	0	0
29/07/2022	5	1	0	8	5	0	0
30/07/2022	16	5	0	4	4	11	0
Total	**51**	**17**	**2**	**16**	**12**	**13**	**0**

Night	Common pip	Soprano	Myotis	Leislers	Noctule	BLE	Total
23/08/2022	16	4	0	3	0	11	0
24/08/2022	10	3	5	4	0	2	0
25/08/2022	11	2	3	0	1	0	0
26/08/2022	7	0	2	2	1	0	0
27/08/2022	7	1	1	0	1	0	1
Total	**51**	**10**	**11**	**9**	**3**	**13**	**1**
No data recorded in September							
06/10/2022	8	0	2	0	1	0	0
07/10/2022	29	1	5	0	0	0	0
08/10/2022	0	0	0	0	0	0	0
09/10/2022	8	0	0	0	0	0	0
10/10/2022	1	1	0	0	0	0	0
Total	**46**	**2**	**7**	**0**	**1**	**0**	**0**

Table 3: Anabat data for the southern anabat

Night	Common pip	Soprano	Myotis	Leisler's	Noctule	Serotine	BLE
03/05/2022	10	3	1	0	2	1	0
04/05/2022	11	1	0	1	0	2	0
05/05/2022	4	0	1	2	0	1	0
06/05/2022	12	4	0	3	1	3	0
07/05/2022	4	3	0	5	1	2	0
Total	**41**	**11**	**2**	**11**	**4**	**9**	**0**
22/06/2022	8	0	0	1	5	0	0
23/06/2022	18	3	0	2	2	1	0
24/06/2022	9	0	0	1	1	2	0
25/06/2022	1	5	0	1	5	0	0
26/06/2022	7	0	0	1	0	0	0
Total	**43**	**8**	**0**	**6**	**13**	**3**	**0**
26/07/2022	14	0	0	1	4	0	0
27/07/2022	8	1	0	1	0	0	0
28/07/2022	1	0	0	2	0	0	0
29/07/2022	4	1	0	11	1	2	0
30/07/2022	7	5	1	5	2	6	0
Total	**34**	**7**	**1**	**20**	**7**	**8**	**0**

Night	Common pip	Soprano	Myotis	Leislers	Noctule	BLE	Total
23/08/2022	104	8	1	7	9	16	0
24/08/2022	73	10	5	4	4	0	6
25/08/2022	31	4	2	0	3	0	2
26/08/2022	21	4	4	1	0	0	6
27/08/2022	27	4	3	0	2	0	4
Total	**256**	**30**	**15**	**12**	**18**	**16**	**18**
No data recorded in September							
05/10/2022	2	2	1	1	0	0	1
06/10/2022	2	6	0	1	0	0	0
07/10/2022	7	3	1	3	1	0	1
08/10/2022	3	0	0	0	0	0	1
09/10/2022	5	5	0	1	0	0	1
Total	**19**	**16**	**2**	**6**	**1**	**0**	**4**

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