



Bat Activity Survey Report
Land at Church Lane, Climping
June 2023

Bat Activity Survey Report

Land at Church Lane, Climping

01/06/2023

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Non-technical Summary

Phlorum was commissioned by Foreman Homes to carry out a series of two bat activity (emergence/re-entry) surveys which were carried out at Land at Church Lane, Climping, on the 4th May 2023, and 25th May 2023, prior to development. The bat survey follows on from an aerial tree climbing inspection and concurrent preliminary roost assessment for bats and this report should be read in conjunction with the bat tree assessment report (Phlorum 2023).

Current proposals are for the construction of an approximately 300-unit residential development with green space provision. A new junction will be required between A259 and Church Lane. It is understood the woodland within the southern and western site extent will be retained with the exception of an area of hedge and trees within the south-eastern site extent to make way for the new junction. Ponds will also be created as part of the plans. The survey area extended over approximately 25 hectares (ha).

The main findings of the survey are as follows:

- ❖ Further surveys were recommended due to the conflict of the updated drainage layout with the roost protection areas of T18 and T20, necessitating the removal of these trees.
- ❖ An aerial tree climbing inspection and concurrent roost assessment (Preliminary Roost Assessment) carried out in April 2023 concluded T18 and T20 had **moderate** bat roosting potential.
- ❖ Overall, there was a low level of bat activity at the site. A total of two bat species were recorded foraging and commuting at the site which included common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). Common pipistrelle was recorded most frequently. Foraging was recorded in high volume between the treeline and field edge. No bats were seen to emerge from any of the features monitored during the surveys.
- ❖ Therefore, it was determined that bat roosts were absent at T18 and T20 at the time of the survey. However, as bats are a mobile species and can change roost site at any time, and the likelihood that roosts are nearby for common pipistrelle, a precautionary approach to the start of works is recommended to minimise disturbance should any bats utilise the potential roosting feature in the interim before developments start.
- ❖ Providing a precautionary approach is followed, and no bats are found, then a European Protected Species Mitigation will not be required. A suitably experienced ecologist should oversee the start of the works and discuss the stages of the proposed works with the on-site contractors. The ecologist may then return to the site to oversee certain stages of the works as considered necessary.

- ◊ Further information regarding mitigation and site enhancement is provided in the recommendations section of the report.

1. Introduction

Background

- 1.1 Phlorum Limited was commissioned by Foreman Homes to carry out a series of bat activity (emergence/re-entry) surveys in relation to Land at Church Lane, Climping (hereafter referred to as “the site”) prior to development.
- 1.2 The bat survey follows on from an aerial tree climbing inspection and concurrent preliminary roost assessment for bats and this report should be read in conjunction with the bat tree assessment report (Phlorum 2023).
- 1.3 It is understood that current proposals are for the construction of a 300 unit residential development with green space provision. The survey area extended over approximately 25 hectares (ha).
- 1.4 During the aerial tree climbing inspection and concurrent preliminary roost assessment, T18 and T20 were assessed as both offering **moderate** potential to support roosting bats. It was therefore recommended that a series of two activity surveys be undertaken to assess whether or not bats are using the trees.
- 1.5 This report provides an assessment of the status of bats within the site, providing information on their presence/likely absence and distribution. Potential impacts of the proposed development are identified and measures to mitigate the effects of the proposed development on bats are discussed in outline.

Site Description

- 1.6 The site adjacent to Church Lane is within a relatively rural location within the centre of Climping in West Sussex. The site is bounded to the north by residential housing, and Horsemere Green Lane and to the east by Church Lane. Yapton Road bounds the site to the west and Crookthorn Lane is directly south.
- 1.7 In wider surrounds, agricultural land dominates the landscape south, east and west with residential properties and commercial buildings to the north. Littlehampton is located approximately 1.5km to the east and the coastline is approximately 1.3km to the south.
- 1.8 The National Grid Reference for the centre of the site is TQ 00082 02044. The survey area extended over approximately 25 hectares (ha).

2. Methodology

Data Search

- 2.1 Records for bats within a 2km radius of the site were obtained from the Local Records Centre (SxBRC, 2023) as part of the desktop study for this report.

Review of Aerial Tree Climbing Inspection (Preliminary Roost Assessment)

- 2.2 An aerial tree climbing inspection and concurrent roost assessment (Preliminary Roost Assessment) was carried out as part of the Bat Tree Assessment (Phlorum, 2023). A review of this document was carried out to guide the activity surveys and ensure appropriate coverage.

Personnel

- 2.3 The survey was led by Harry Webster, an ecological consultant with over 3 years' survey experience. Harry holds a Bat Level 1 Survey Class License (CL17) (2023-11013-CL17-BAT), and has conducted and assisted protected species surveys, including bats.

Dusk Emergence Survey

- 2.4 An activity survey was carried out on the 4th May 2023. Two surveyors were used to assess the site for roosting, foraging and commuting activity. Bat Box Duet heterodyne detectors and Echo Meter Touch 2 frequency division detectors were used for the survey.
- 2.5 During the survey the lead surveyor was positioned at the north field boundary with a view of T18. The assistant surveyor was also positioned at the north boundary with a view of T20.
- 2.6 The evening surveys commenced at least 15 minutes before sunset and lasted for at least two hours after sunset. Prior to sunset, bat detectors were tuned to below 30 kHz to listen for any potential pre-emergence social calls and noctules, which occasionally leave their roosts before sunset, tuning the detectors up to 45 kHz to pick up on general pipistrelle activity.
- 2.7 All surveys followed standard protocols and accepted standards (Mitchell-Jones and McLeish, 2004; Collins, 2016).

Dawn Re-Entry Survey

- 2.8 A dawn activity survey was carried out on the 25th May 2023. Two surveyors were used to assess the site for roosting, foraging and commuting activity. Bat Box Duet and Echo Meter Touch 2 detectors were used for the survey.
- 2.9 During the survey the lead surveyor was positioned at the north field boundary with a view of T18. The assistant surveyor was also positioned at the north boundary with a view of T20.
- 2.10 The morning survey commenced at least two hours before sunrise and lasted until at least 15 minutes after.
- 2.11 All surveys followed standard protocols and accepted standards (Mitchell-Jones and McLeish, 2004; Collins, 2016).

Roost Characterisation

- 2.12 Where a potential bat roosting feature or confirmed roost was identified, the surveyor assessed how these could be used by bats throughout the year, in accordance with Natural England (2015):
 - ☞ day roost - where individual bats, or small groups of males, rest or shelter in the day, but rarely on summer nights;
 - ☞ night roost - where bats rest or shelter at night, but rarely during the day;
 - ☞ feeding roost - where bats rest at night between feeding sessions, but rarely during the day;
 - ☞ hibernation roost - where bats are found during winter;
 - ☞ transitional or occasional roost - where bats gather at a temporary site before and after hibernation;
 - ☞ mating site - where males and females gather from late summer to early winter;
 - ☞ maternity roost - where babies are born and raised until they're independent;
 - ☞ satellite roost - where breeding females roost close to the main nursery colony in the breeding season; and
 - ☞ swarming site - where bats gather in large numbers from late summer to autumn.

Constraints

Data Search Constraints

- 2.13 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Bat Survey Constraints

- 2.14 Bats are mobile animals which can move roost sites both within and between years. It is possible that surveys carried out in May could miss roosts occupied earlier in the year.

3. Results

Data Search

- 3.1 The data search returned recent (post-2005) records of bats from the genera pipistrelle (*Pipistrellus*), long-eared (*Plecotus*), Myotis, serotine (*Serotinus*), and noctule (*Nyctalus*) occurring within the 2km search area.

Review of Bat Tree Assessment (Preliminary Roost Assessment)

- 3.2 An aerial tree climbing inspection and concurrent roost assessment (Preliminary Roost Assessment) was carried out as part of the Bat Tree Assessment (Phlorum 2023). This discovered the following potential roost features:
- ❖ Knot/rot holes;
 - ❖ Woodpecker holes;
 - ❖ Branch splits;
 - ❖ Ivy clad; and
 - ❖ Trunk cavities.

Survey Overview

- 3.3 The survey concentrated on Tree's T18 and T20 due to the proposed works to remove them.
- 3.4 No bats were seen to emerge from the trees during the surveys.
- 3.5 Overall, there was a low level of bat activity recorded at the site. A total of 2 bat species were recorded foraging and commuting at the site which included common pipistrelle (*Pipistrellus pipistrellus*), and soprano pipistrelle (*Pipistrellus pygmaeus*). Individuals were mainly observed foraging along the treeline. Common pipistrelle was the most frequently recorded bat species.
- 3.6 The area surveyed is illustrated in the Map in Appendix A.

Dusk Emergence Survey

4th May 2023

- 3.7 Sunset was at 20:30hrs and the temperature at the start of the survey was 13°C, staying the same at the end of the survey.
- 3.8 In total 1 bat species was recorded during the survey. This was common pipistrelle.

- 3.9 No bats were seen to emerge from any features for the duration of the survey.
- 3.10 The first bat pass was recorded at 20:38hrs which was seen but not heard, and unidentified as it did not echolocate. Based on the time of the first passes, it can be assumed that roosts are close by for the unidentified species. Foraging was recorded frequently, particularly towards the end of the survey by one bat flying along between the treeline and the field. The highest level of activity was recorded from 22:01 until 22:30. The last pass was recorded at 22:30hrs which was a common pipistrelle flying between the treeline and field edge.
- 3.11 The full survey data can be found in Appendix C.

Dawn Re-Entry Survey

25th May 2023

- 3.12 Sunrise was at 05:00hrs and the temperature at the start of the survey was 10°C, falling to 9°C at the end of the survey. The weather conditions were dry and clear.
- 3.13 In total two bat species were recorded during the survey. These were common pipistrelle and soprano pipistrelle.
- 3.14 No bats were seen to emerge from any features for the duration of the survey.
- 3.15 The first bat pass was at 03:15hrs which was a common pipistrelle. Based on the time of the first passes, it can be assumed that roosts are close by for this species. Foraging was recorded throughout the survey. The highest level of activity was between 04:15-04:28. The last pass was recorded at 04:28 which was a common pipistrelle.
- 3.16 The full survey data can be found in Appendix D.

4. Discussion and Recommendations

Discussion

- 4.1 Overall, there was a **low** level of bat activity recorded at the site. A total of two bat species were recorded foraging, socialising and commuting at the site. No emergences were recorded.
- 4.2 Based on the findings of this survey a European Protected Species Mitigation (EPSM) licence **will not be required**.
- 4.3 As bats are a mobile species and can move between roost sites at any moment, a precautionary approach to the removal of any potential bat roost features is recommended. A suitably experienced ecologist should oversee the start of the works and discuss the stages of the proposed works with the on-site contractors. The ecologist may then return to the site to oversee certain stages of the works as considered necessary. If during the precautionary works a bat is found, then the ecologist needs to be informed and all work stopped until it has been assessed. If a roost is confirmed, then a bat EPSM licence may be required before the work commences.

Recommendations

Construction Phase

- 4.4 A precautionary approach to works should be adopted in order to safeguard any potential bat roost.
- 4.5 It is recommended that any works to remove the trees onsite commence outside of the hibernation period, when bats are considered least vulnerable. The hibernation period is taken to run between mid to late November and mid-March, weather dependant.
- 4.6 A suitably experienced ecologist should oversee the tree removal works. On arrival to the site the ecologist will carry out a ground based tree inspection to look for evidence of roosting bats. An on-site assessment can then be made by the ecologist regarding the status of any roosts present.
- 4.7 The ecologist will then discuss the different stages of the proposed works with the on-site contractors. The ecologist may need to return to the site to oversee certain stages of the works.
- 4.8 If considered necessary following consultation with the on-site contractors, the ecologist will guide the start of the works.
- 4.9 If bats are subsequently found to be present during the remainder of the work, activities should cease immediately and advice sought from a suitably experienced ecologist.

Habitat Enhancement/Retention

- 4.10 The proposals seek to retain the majority of the trees across the site which should provide enough suitable roosting habitat for any losses incurred by the proposed tree removals. The treeline along the northern boundary will be kept mostly intact which is a key linear feature that provides habitat connectivity to the wider landscape.
- 4.11 The landscape masterplan also proposes to incorporate a high proportion of native species into the landscape design. This will provide further foraging opportunities in the short to medium term, and roosting potential in the long term.
- 4.12 Additional roosting opportunities could be incorporated into the final design to enhance the site for roosting bats post works. This could include the installation of at least two bat boxes such as the Schwegler 1FF bat box located on surrounding mature trees within the site. These should be orientated with a south east or south west aspect and located at least 3m from ground level.

Bats and Lighting

- 4.13 Different species of bat have been found to react differently to night-time lighting however research has found that generally, all species of bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging, thus shortening the time available for foraging, as well as causing individuals to move away from suitable foraging grounds or roost sites, to alternative dark areas (Jones, 2000). Bats can also become isolated from their foraging grounds if the linear features they use for commuting are suddenly illuminated, creating a light barrier (Fure, 2006).
- 4.14 The current site is not well lit at night and therefore the development should serve to maintain the site's value for foraging bats and to minimise indirect impacts from lighting associated with the new residential development. This can be achieved by following accepted best practice (Institute of Ecology and Environmental Management 2006, Institute of Lighting Professionals 2018, Bat Conservation Trust, 2014):
 - ☛ The level of any artificial lighting including flood lighting should be kept to a minimum, particularly around the site boundaries;
 - ☛ LED lights are a preferred option to low pressure sodium lights or high pressure sodium or mercury lamps. LED lights do not emit UV radiation, towards which some insects are attracted, drawing them away from bat foraging areas in the surrounding landscape;
 - ☛ all lights should be directed at a low angle with minimal light spillage wherever possible;
 - ☛ ideally the site boundaries should be kept dark, preferably at bat emergence (0-1 hour after sunset) and during peak bat activity periods (e.g. 1.5 hours after sunset and 1.5 hours before sunrise);

- ☛ Artificial lighting should not directly illuminate any potential bat commuting areas such as boundary features. Similarly, any newly planted linear features or buffer areas around the site boundary should not be directly lit; and
- ☛ If security lights are required, then they will be set on a Passive Infrared (PIR) sensor and timer so that the light is only emitted for the short time period required.

5. Conclusions

Conclusions

- 5.1 The site is located at land at Church Lane, Climping. The site is currently a cropped field with broad-leaved woodland at the south and west boundaries providing potential roosting, foraging and commuting opportunities for bats in the wider landscape.
- 5.2 Current proposals are for the construction of an approximately 300 unit residential development to include the provision of green space. A new junction will be required between A259 and Church Lane. It is understood that the woodland within the southern and western site extent will be retained except for an area of hedge and trees within the south eastern site extent to make way for the new junction. Ponds will also be created as part of the plans. The survey area extended over approximately 25 hectares (ha).
- 5.3 Further surveys were recommended due to the conflict of the updated drainage layout with the root protection areas of T18 and T20, necessitating the removal of these trees.
- 5.4 During the initial roost assessment undertaken in February 2021, T18 was assessed as having **moderate** potential for roosting bats and T20 was assessed as having **high** potential for roosting bats. A subsequent aerial tree climbing inspection and concurrent roost assessment undertaken in April 2023 re-assessed T20 to **moderate** potential for roosting bats. T18's potential remained the same.
- 5.5 Overall, there was a low level of bat activity observed at the site. A total of 2 bat species were recorded foraging and commuting which included common pipistrelle and soprano pipistrelle. Common pipistrelle was recorded most frequently. Foraging was recorded in high volume between the treeline and field edge. No bats were seen to emerge from any of the features monitored during the surveys.
- 5.6 There remains potential for bats to roost in the trees and therefore a precautionary approach to the tree removal is recommended to minimise disturbance to any potential roost. Providing a precautionary approach is followed, a European Protected Species Mitigation licence in will not be required.

6. References

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 - ❖ Schwegler (2016). *Bird and Nature Conservation Products* [on-line]. Available from http://www.schwegler-natur.de/pdf/Katalog/CatalogueEN_HQ.pdf [Accessed on 11/02/2019].
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Appendix A

Bat Survey Map

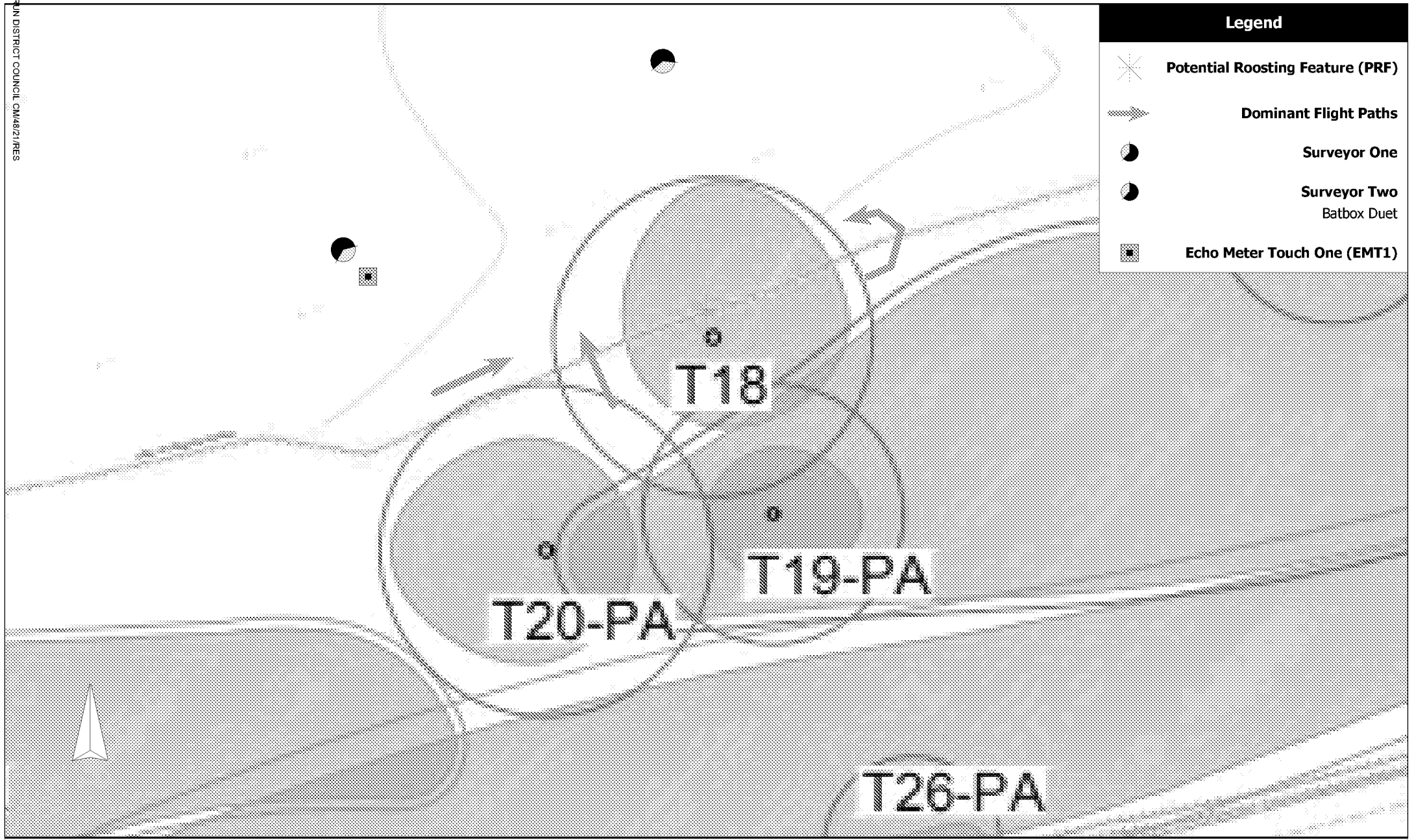


Figure 1: Climbing Bat Survey Map

Drawn by: HW
On the: 31/05/2023
Not to Scale
Ref: 9709



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Appendix B

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive¹ is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- ❖ Countryside and Rights of Way (CROW) Act 2000;
- ❖ Deer Act 1991;
- ❖ Natural Environment & Rural Communities (NERC) Act 2006;
- ❖ Protection of Badgers Act 1992; and
- ❖ Wild Mammals (Protection) Act 1996.

Bats

Bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This act protects individuals from:

- ❖ intentional or reckless disturbance (at any level);
- ❖ intentional or reckless obstruction of access to any place of shelter or protection; and

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- ☞ selling, offering or exposing for sale, possession or transporting for purpose of sale

In addition, all species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- ☞ deliberate killing, injuring or capturing of Schedule 2 species (all bats);
- ☞ deliberate disturbance of bat species as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- ☞ deliberate disturbance of bat species as to affect significantly the local distribution or abundance of the species;
- ☞ damage or destruction of a breeding site or resting place; and
- ☞ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake activities listed above. A licence is required to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Appendix C

Bat Survey Data

Bat Survey Data

Dusk Emergence Survey on 4th May 2023

Number of Surveyors	Site and Job no:	Start Time	Sunset Time	Finish Time	Temperature (°C) at start	Temperature (°C) at end	Cloud Cover (Oktas 1-8)	Windspeed (Beauforts 1-12)	Rain
2	9709 Climping	20:15	20:30	22:30	13	13	2	2	No

Surveyor 1: Harry				Bat Detector Used: Echo Meter	
Time	Location	Activity observed	Number of passes	Comments/Notes	
20:38	flying away from trees toward field	Commuting	S	unknown (did not echolocate)	
20:47	flying east	Commuting	SH	Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	
20:49	towards treeline	Foraging	SH	Common pipistrelle	

20:51	towards treeline	Foraging	SH	Common pipistrelle
20:55	towards treeline	Foraging	SH	Common pipistrelle
21:27	Between trees and field edge	Foraging	SH	Common pipistrelle
21:32	Between trees and field edge	Foraging	SH	Common pipistrelle
21:47	Between trees and field edge	Foraging	SH	Common pipistrelle
22:05	Between trees and field edge	Foraging	SH	Common pipistrelle
22:17	Between trees and field edge	Commuting	SH	Common pipistrelle

Surveyor 2: Andy				Bat Detector Used: Batbox Duet
Time	Location	Activity observed	Number of passes	Comments/Notes
20:47	Treeline towards field	Commuting	1	Seen.
20:59	Between trees and field edge	Foraging	1	Seen and heard.
21:21	n/a	Foraging	1	Heard
21:24	n/a	Commuting	4	Heard
21:27	Treeline towards field	Commuting	6	Seen and heard
21:30	n/a	Commuting	13	Heard
21:35	n/a	Foraging	10	Heard
21:39	n/a	Commuting	1	Heard
21:42	n/a	Foraging	7	Heard
22:01	n/a	Commuting	6	Heard
22:03	n/a	Commuting	5	Heard

22:08	n/a	Commuting	1	Heard
22:22	Between trees and field edge	Foraging	1	Seen and heard

Dawn Re-entry Survey on 25th May 2023

Number of Surveyors	Site and Job no:	Start Time	Sunrise Time	Finish Time	Temperature (°C) at start	Temperature (°C) at end	Cloud Cover (Oktas 1-8)	Windspeed (Beauforts 1-12)	Rain
2	9709 Climping	03:00	05:00	05:15	10	9	1	1	No

Surveyor 1: Richard				Bat Detector Used: Echo Meter
Time	Location	Activity observed	Number of passes	Comments/Notes
03:16	n/a	n/a	1	Heard – Common pipistrelle
03:22	n/a	n/a	1	Heard – Common pipistrelle
03:40	n/a	n/a	1	Heard – Common pipistrelle
04:01	n/a	n/a	1	Heard – Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)
04:02	n/a	n/a	1	Heard – Common pipistrelle
04:14	n/a	n/a	1	Heard – Soprano pipistrelle
04:15	n/a	n/a	1	Heard – Common pipistrelle
04:16	n/a	n/a	4	Heard – Common pipistrelle

04:17	n/a	n/a	1	Heard – Common pipistrelle
04:19	n/a	n/a	2	Heard – Soprano pipistrelle
04:20	n/a	n/a	1	Heard – Common pipistrelle
04:23	n/a	n/a	2	Heard – Soprano pipistrelle
04:25	n/a	n/a	1	Heard – Common pipistrelle
04:27	n/a	n/a	1	Heard – Common pipistrelle

Surveyor 2: Andy				Bat Detector Used: Batbox Duet
Time	Location	Activity observed	Number of passes	Comments/Notes
03:15	n/a	Foraging	10	Heard
03:23	n/a	Foraging	10	Heard
03:57	n/a	n/a	2	Heard
04:00	n/a	n/a	1	Heard
04:09	n/a	n/a	1	Heard
04:28	n/a	n/a	1	Heard

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