
Ainsdale Hope Learning Centre

Bat Transect & Automated Survey Report

Compiled by Ecology Services Ltd.

on behalf of

Sefton Council

March 2025



Environmental Consultants

1 Church Row Chambers
Longton
Preston
Lancashire
PR4 5PN

Ref. number: 23055
Written by: LR/ SO'N/ CW
Checked: SO'N/ LR
Approved: SO'N

tel: 01772 614932
fax: 01772 614930
email: info@ecologyservices.co.uk
web: www.ecologyservices.co.uk

Contents

1.0	Introduction	2
2.0	Planning Policy and Legislation	2
3.0	Methodology	4
4.0	Results and Evaluation	8
5.0	Impacts and Recommendations	16
6.0	Conclusion	18
7.0	References	18

Tables

Table 1: Ecological Desktop Study Results and Record Centres Consulted

Table 2: Guidelines on the number of bat activity surveys recommended to achieve a reasonable survey effort in relation to habitat suitability (Table 8.3)

Table 3: Desktop Study Bat Species Results

Table 4: Bat recordings per transect & point count.

Table 5: Summary of the transect activity surveys

Table 6: Foraging habitat preferences & foraging strategies of different UK species (taken from BCT (2016) 3rd edition).

Table 7: Status of bat species. Detail of conservation status at a local, county and regional level.

Figures

Figure 1: Transect Route, Listening Points and Static Detector Location

Figure 2: Transect Survey 1 – Results Summary Plan

Figure 3: Transect Survey 2 – Results Summary Plan

Figure 4: Transect Survey 3 – Results Summary Plan

Figure 5: All Transect Surveys Combined – Results Summary Plan

Figure 6: Automated Survey Period 1 – All species recordings per night

Figure 7: Automated Survey Period 1 – Total recordings per hour

Figure 8: Automated Survey Period 2 – All species recordings per night

Figure 9: Automated Survey Period 2 – Total recordings per hour

Figure 10: Automated Survey Period 3 – All species recordings per night

Figure 11: Automated Survey Period 3 – Total recordings per hour

Appendices

Appendix 1: Planning Policy and Legislation

Appendix 2: Guidelines for assessing the potential suitability of proposed development sites for bats.

Appendix 3: Population Statuses of Bat Species in North Merseyside

Appendix 4: Raw Survey Data – Walked Transects

1.0 Introduction

- 1.1 Ecology Services Ltd was commissioned by Sefton Council in March 2023 to undertake bat habitat activity surveys to inform potential residential development at the Ainsdale Hope Learning Centre, Sandringham Rd, Ainsdale, Southport, PR8 2PJ, National Grid Reference (NGR) 331260, 412950. The location and boundary of the site are shown on Figure 1.
- 1.2 The site is allocated for residential development in the Sefton Local Plan (Sefton Council, 2017) with the requirement that an 'Ecological Improvement Area' is developed as a nature reserve on the site alongside the housing allocation. Development of the site must provide new habitat and ecological improvements on the adjacent 'Ecological Improvement Area', the extent of which is to be determined following the completion of future evidence (i.e. ecological surveys).
- 1.3 The scope of surveys to inform potential residential development was agreed with Merseyside Environmental Advisory Service (MEAS) in March 2023. While the Preliminary Ecological Appraisal (Kingdom Ecology, 2022) did not assess the habitat quality for bats, three bat activity transects were agreed which is consistent with low habitat quality.

Site Description

- 1.4 The site comprises the Learning Centre Buildings plus their surrounding areas of hardstanding parking and landscaped grounds. In addition, the site includes a large area of grassland habitat that has developed on former sports pitches. The site was previously the location of Ainsdale Hope High School which closed in 2009. The site is located immediately adjacent to internationally, nationally and locally important nature conservation sites to the north and west designated for their important sand dune and coastal habitats and associated flora and fauna. To the south of the site lies residential development and to the north and east, golf courses. A large residential property and its grounds also lie adjacent to the north of the site.
- 1.5 This report details the findings of the bat habitat activity surveys carried out to inform an assessment of the importance of habitats within the site for foraging and commuting bats.
- 1.6 The bat habitat activity surveys are undertaken in the form of walked transect surveys and automated static detector surveys, which aim to observe:
- The assemblages of bat species using the site;
 - The relative frequency with which the site is used by different bat species;
 - The locations and distribution of activity for different species within the site;
 - The nature of activity for different bat species, i.e. foraging, commuting etc.
- 1.7 The results from the habitat activity surveys detailed in this report will be used to inform any mitigation and or compensation requirements with regard to the potential residential development works affecting habitats within the site.

2.0 Planning Policy and Legislation

- 2.1 This section provides a brief overview of planning policy and legislation relevant to bats in the UK. Further information is provided in Appendix 1.

Planning Policy

- 2.2 The National Planning Policy Framework (NPPF, 2024) places a clear responsibility on Local Planning Authorities (LPAs) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Local Biodiversity Action Plan species); and identify and pursue

opportunities for securing measurable net gains for biodiversity. In accordance with the NPPF, local planning policy and guidance, development proposals should provide integrated improvement for biodiversity at the site and seek to maintain and enhance opportunities for bats.

- 2.3 Protected species within the UK, such as bats, are a 'material consideration' in the determination of a planning application. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted to inform a planning application.
- 2.4 The local planning authority (LPA) has a duty to ensure that protected and priority species (e.g. Species of Principal Importance, Biodiversity Action Plan species) are fully considered in a planning decision. Therefore, up to date survey information and, where required, mitigation strategies adequate to assess the impacts of the proposals and to demonstrate that opportunities for species using the site can be maintained, must be provided in support of a planning application.

Legislation

- 2.5 The Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, also known as the Habitats Directive, affords all bat species protection under Annex IV. In addition to this, four bat species (greater horseshoe, lesser horseshoe, Bechstein's and barbastelle) are also listed under Annex II which may afford the noted species the designation of Special Areas of Conservation (SAC) ("Natura 2000" sites").
- 2.6 All British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2017 (as amended)¹.
- 2.7 In brief, this legislation makes it an offence to:
- Deliberately capture, injure or kill any wild animal;
 - Deliberately disturb wild animals;
 - Damage or destroy a breeding site or resting place of such an animal.
- 2.8 Disturbance is defined as that which is likely:
- to impair their ability –
 - to survive, to breed or reproduce, or to rear or nurture their young, or
 - in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong.
- 2.9 When dealing with cases where a European Protected Species (EPS) (all UK bats) may be affected, a Local Authority is a 'competent authority' within the meaning of regulation 7 of the Conservation of Habitats & Species Regulations 2017 (as amended). The Local Authority must therefore exercise their functions under the provisions made within the 2017 Regulations (as amended) and planning decisions should only be made when European Protected Species are fully considered.

¹ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 continue the same provision for European protected species, licensing requirements and protected areas after Brexit.

- 2.10 Where bats are affected by development then a licence to derogate from the Conservation of Habitats and Species Regulations 2017 (as amended) would be required. European Protected Species (EPS) licence applications are processed and issued by Natural England and the EPS licence can only be applied for once planning permission is granted, if planning permission is required.
- 2.11 Natural England may grant an EPS licence for the purposes specified in paragraph 55 of the Regulations. The purposes are:
- 55(2)(e) preserving public health or safety or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment.
 - 55(2)(f) preventing the spread of disease.
 - 55(9)(a) that there is no satisfactory alternative; and
 - 55(9)(b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable status in their natural range.
- 2.12 Section 40 of the Natural Environmental and Rural Communities (NERC) Act 2006 (as amended) places a statutory duty on public authorities, in exercising their functions, to conserve and enhance biodiversity in England. Species of Principal Importance for the conservation or enhancement of biodiversity in England, identified by the Secretary of State in consultation with Natural England, are listed under Section 41 of the NERC Act. The Local Planning Authority and government bodies (e.g. Natural England) will expect the overall design of the development to have regard for the conservation and enhancement of populations of these species. Seven bat species are listed as 'Species of Principal Importance' under Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006:
- Noctule (*Nyctalus noctula*)
 - Soprano pipistrelle (*Pipistrellus pygmaeus*)
 - Lesser horseshoe (*Rhinolophus hipposideros*)
 - Greater horseshoe (*Rhinolophus ferrumequinum*)
 - Barbastelle (*Barbastella barbastellus*)
 - Bechstein's (*Myotis bechsteinii*)
 - Brown long-eared (*Plecotus auritus*)

3.0 Methodology

Ecological Desktop Study

- 3.1 Ecological data and historic record searches were undertaken, up to 2km from the site (5km for statutory designated sites), by contacting the following sources; listed in Table 1 below.

Table 1: Ecological Desktop Study Resources and Record Centres Consulted

Source of information	Information supplied
Multi Agency Geographical Information Centre (MAGIC)	To identify any statutory protected nature conservation sites with bats qualifying as criteria for their designation within 5km of the site.
Lancashire Environmental Records Centre (LERN) Local Records Centre	To identify non-statutory designated sites (Biological Heritage Sites) and records of bats within 2km of the site.
Merseyside Biobank	To identify non-statutory designated sites (Biological Heritage Sites) and records of bats within 2km of the site.
North Merseyside Biodiversity Action Plan (LBAP)	Identification of LBAP species known to occur in the region.
Natural Environment and Rural Communities (NERC) Act 2006 (as amended)	Review of Species of Principal Importance known to occur in the region.

3.2 The data search with Merseyside Biobank was undertaken on the 11th August 2022 at the time of the Preliminary Ecological Appraisal. The data search with LERN was undertaken on 23rd November 2023. Information provided by LERN has been collated from many sources. LERN is grateful for the assistance given by the organizations and individual naturalists who live and work in, and visit Lancashire.

3.3 As part of the desktop study, a review of habitats was completed using on line aerial mapping.

Habitat Activity Survey Methodology

3.4 In order to understand how bats may be using the site, walked transect surveys and automated surveys were undertaken following standard methodologies set out in the Bat Conservation Trust's (BCT's) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). It is acknowledged that the 4th edition Bat Survey Guidelines were published in September 2023 (Collins, 2023), however, the survey methodologies were undertaken in accordance with the previous guidelines which were the relevant guidelines at the time.

3.5 The scope of surveys to inform potential residential development comprising three bat activity transects along with a static bat detector survey. The Preliminary Ecological Appraisal (Kingdom Ecology, 2022) did not assess the habitat quality for bats; and the three bat activity transects agreed is consistent with low habitat quality (see Appendix 2: Table 4.1). This level of survey was agreed with the Client and Merseyside Environmental Advisory Service (MEAS) in March 2023.

3.6 The BCT's Guidelines (2016) sets out guidance in relation to the number of surveys recommended in relation to the potential habitat suitability, as shown in Table 2 below.

Table 2: 'Guidelines on the number of bat activity surveys recommended to achieve a reasonable survey effort in relation to habitat suitability' (Table 8.3).

Survey Type	Low suitability habitat for bats ^a	Moderate suitability habitat for bats	High suitability habitat for bats
Transect/ spot count/ timed search surveys	One survey visit ^b per season (spring - April/May, summer - June/July/August, autumn - September/October) ^c in appropriate weather conditions for bats. Further surveys may be required if these survey visits reveal higher levels of bat activity than predicted by habitat.	One survey visit ^b per month (April to October) ^c in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period.	Up to two survey visits ^b per month (April to October) ^c in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period.
AND			

Automated/static bat detectors surveys ^d	One location per transect, data to be collected on five consecutive nights per season (spring - April/May, summer - June/July/August, Autumn - September/October) in appropriate weather conditions for bats.	Two locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.	Three locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.
---	---	--	--

^a If the habitat has been classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available. It may or may not be appropriate or bat activity surveys to be carried out in low suitability habitats. However, caution should be exercised in fringe areas where 'low suitability habitat for bats' may be extremely important to local bat populations due to the relative scarcity of better habitats. In such situation, bats are likely to also be more widely dispersed and may use a larger number of sites, therefore survey effort may actually need to be increased to detect use on the proposed site in question.

^b A survey visits should aim to cover all habitats represented in the survey area that could be impacted by the proposed activities. This may consist of a single transect carried out on a single night for small sites (e.g. small housing developments) with low habitat diversity but could range up to multiple transects carried out over one or several nights (depending on number of ecologists) on a larger site (e.g. Road schemes) with greater habitat diversity.

^c April, September and October surveys are both weather - and location-dependent. Conditions may become more unsuitable on these months, particularly in Scotland, which may reduce the length of the survey season.

^d Detector locations should be assigned to cover all habitats represented in the survey area that could be impacted by the proposed activities. This could mean a single detector location at a small site with only one habitat represented but could range up to many detector locations on larger sites. Automated/static surveys are particularly useful when assessing collision risk, e.g. Detectors can be placed at crossing points on proposed roads or railways.

Note: Multiple survey visits should be separated by at least two weeks, preferably longer, to observed temporal changes in activity.

Transect Surveys

- 3.7 Three transect survey visits have been undertaken, one each season between May and October 2023 inclusive. The surveys consisted of walked transect surveys with a series of static listening points and were conducted by two surveyors at any one time. The recommended time and duration of walked transect surveys is to start at sunset and end between 2 to 3 hours after sunset (for dusk surveys) or to start 2 hours before sunrise and end at sunrise (for dawn surveys).
- 3.8 The walked transect surveys were aided with the use of heterodyne and frequency division bat detectors with calls recorded using Wildlife Acoustic EchoMeter Touch 2 Pro detector used in conjunction with Samsung SM-P610 Tab S6 Lite tablet, which were set to record. The transects were walked at a constant speed where possible; regular listening point (LP) counts were undertaken for a period of 5 minutes each along the route to record the number of passes, activity and species of bats. Bat passes were also recorded on the transit between the static point counts. The recorded echolocation calls were then analysed with computer software (Anabat Insight Version 2.0.6-3-g73846db) to verify the field results. The direction that the transect routes were walked was varied so as to avoid bias in the coverage. Due to the small size of the site, the transect was walked twice on each survey.

Automated Surveys

- 3.9 Automated surveys were designed following the BCT's 2016 guidance.
- 3.10 Automated surveys to record bat echolocation calls were undertaken at one location adjacent to the woodland on the north eastern boundary of the site (see Figure 1 for the automated detector location). The automated detector was deployed three times for a minimum of five consecutive nights once per season between May and October 2023 inclusive.

- 3.11 Automated detectors deployed comprised an Anabat Express (Full Spectrum upgrade) detector for all three periods. The full spectrum recordings from the Anabat Express (Full Spectrum upgrade) detector were analysed using Anabat Insight software.
- 3.12 Both transect and automated surveys provide a record of activity within the site for those specific periods and locations.
- 3.13 The frequency that bats are encountered during activity surveys depend upon several factors, including:
- Number of roosts within or in close proximity to the site and the number of individuals in the roost;
 - The quality of foraging habitat within site and its surrounds and the distance at which it is located from a roost;
 - The quantity and diversity of invertebrates; and
 - The extent of the survey, in terms of distance for transect surveys and duration in terms of automated surveys.

Timing

Transects

- 3.14 A total of three walked transect surveys have been undertaken to date at the site between May and October 2023 inclusive. The survey visits were undertaken on the 24th May, 13th July and 9th October 2023.
- 3.15 All transect surveys were undertaken at dusk, starting at sunset and finishing between 2 hours 5 minutes and 2 hours 20 minutes after sunset.

Automated Surveys

- 3.16 A total of three automated surveys have been undertaken at the site, each with one detector being deployed for a minimum of five consecutive nights each season between May and October 2023 inclusive. The static detectors were deployed for additional nights to ensure data was collected over five nights with suitable weather conditions. The surveys were conducted on the following dates; 2nd to 7th May, 13th to 20th July and 17th to 29th October 2023.
- 3.17 During the five nights selected for analysis in each period, weather suitable for recording bat activity generally prevailed (no heavy rain, no strong winds and temperatures at sunset >9°C). There were strong winds (up to 54km/h, Beaufort Scale 7) overnight on 4th/5th May 2023, and up to 58km/h (Beaufort Scale 7) on 15th July 2023. There was rain overnight on 15th and 16th July 2023 and 18th, 20th and 24th October 2023 with rain for some of the night on 21st October 2023.
- 3.18 The Anabat Express detectors were set to the 'night only' recording mode. This recording mode will automatically turn on the detector 30 minutes before sunset and off 30 minutes after sunrise on each night. This recording mode determines the correct sunset and sunrise times using the inbuilt GPS.

Personnel

- 3.19 The walked transect surveys were completed by two surveyors on each visit for safety reasons. The transect surveys were conducted by: Senior Consultant Ecologist Mr. S. Booth who holds a Natural England Bat Class Licence (Level 2) (Registration number 2016-27296-CLS-CLS); and experienced consultant ecologists Mr. C. Smith BA MSc, Mr. M. Barnes BSc (Hons), Miss S. Cork BSc (Hons) and Mr. V. Smith. All surveyors are experienced at undertaking bat habitat and activity surveys.

- 3.20 Analysis of bat calls was undertaken by consultant ecologist Ms. L. Wilde BSc (Hons) MSc QCIEEM and Senior Ecologist Miss C. Wood MSc, BSc (Hons) who holds a Natural England Bat Class Licence (Level 2) (Registration number 2025-12614-CL18-BAT).

Constraints

- 3.21 The habitat activity surveys provide a snapshot of habitat usage at the time that each visit was undertaken and the habitats present may be used by bats species for different purposes at different times of the year.
- 3.22 For some species, the call parameters are very similar, overlapping considerably in different environments. This is particularly the case for species in the *Myotis* genus, and therefore species in the genus have not been separated to species level. In addition, species in the *Pipistrellus* can also have similar call parameters and cannot always be distinguishable. In these cases, they were not identified to species level.
- 3.23 The call of the brown long-eared bat is very quiet which often leads to this species being under recorded by bat detectors, particularly where there are high levels of activity by louder species (e.g. *Pipistrellus* spp.). This has been considered when estimating the abundance of brown long-eared bats using the site.

4.0 Results and Evaluation

Desktop Study

National Status

- 4.1 There are 18 species of bat that are native to the United Kingdom. The latest Review of the Conservation Status of British Mammals (2018) has shown that where change could be assessed with reasonable confidence there have been increases in the geographical range and population status of two species of UK bat (greater and lesser horseshoe bat) and decrease in the geographical range of one species (grey long-eared bat).
- 4.2 Increases in population were also identified in the following species: Bechstein's, Daubenton's, Natterers, serotine and brown long-eared although it is noted that the reliability of the results is poor.
- 4.3 Population data was not available for; Alcahloe, whiskered, Brandt's, Leisler's, noctule, Barbastelle and Nathusius pipistrelle.
- 4.4 Population estimates were given for common and soprano pipistrelle however could not be reliably compared to the results from Harris et al. (1995) as the two species had not been identified as separate species at the time of the survey. *Pipistrellus* spp. remain the commonest species of bat in the UK despite their decline.
- 4.5 Serotine and barbastelle are considered vulnerable and Leisler's and Nathusius' pipistrelle, near threatened in Britain and England in the Red List for Britain's Terrestrial Mammals (Mathews and Harrower, 2020).

Regional Status

- 4.6 The north-west of England appears to be a stronghold for whiskered and Brandt's bats, both of which are reasonably rare in southern England.

Designated Sites

- 4.7 There are no statutory or non-statutory protected sites designated on the basis of their interest for bats that are located within the vicinity of the site and which could be adversely affected by the proposed development of the site.

Records Data Search

- 4.8 The data searches identified the following bat species within 2km of the development site within the last 20 years:

Table 3: Desktop Study Bat Species Results

Common name	Scientific name	Most recent date of record(s)	Distance from site (km)	Legally protected	NERC S41	NM LBAP
Bats (all species)	<i>Chiroptera</i>	2015	1.5km E	EPS, WCA5		✓
Brown long-eared bat	<i>Plecotus auritus</i>	2020	1.7km S	EPS, WCA5	✓	✓
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	2020	0.5km NW	EPS, WCA5		✓
Daubenton's bat	<i>Myotis daubentonii</i>	2019	1km W	EPS, WCA5		✓
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	2020	1km SW	EPS, WCA5		✓
Noctule	<i>Nyctalus noctula</i>	2018	0.8km S	EPS, WCA5	✓	✓

- 4.9 One record of granted European Protected Species License for bats was identified approximately 0.6km southwest of site: Case Ref. 2017-28306-EPS-MIT for destruction of a resting place in relation to common pipistrelle, dated 01.04.2017 – 31.12.2018.

Transect Survey Results

- 4.10 Table 4 below shows the total bat recordings per transect on each night and the average recordings per hour during each transect.

Table 4: Bat recordings per transect & point count.

Transect	Survey 1	Survey 2	Survey 3
Month	May	July	October
Total bat recordings per survey	33	154	26
Total bat recordings per hour	15.84	66.00	11.73

- 4.11 During the three transect surveys undertaken, up to four bat species were encountered:
- Common pipistrelle – Detected during all transects.
 - *Myotis* species – Detected during the first and second transect.
 - Noctule – Detected during all transects.
 - Brown long-eared – Detected during the last two transects.
- 4.12 Common pipistrelle accounted for the vast majority (90.61%) of bat activity recorded during the transect surveys and was recorded throughout all areas of the site. Noctule was recorded on a low number of occasions during all surveys (3.29%). *Myotis* sp., were recorded in low numbers on the May and July surveys (1.41%). Brown long-eared were recorded in low numbers on the July and October surveys (4.69%).
- 4.13 A summary of the data from the transect activity surveys (including observed and recorded data) is provided in Table 5 overleaf; the raw survey data can be found at Appendix 4. Figure 1 shows the transect route and the static point count locations. Figures 2-4 show a summary of the results of each transect survey, with Figure 5 providing a combined summary of the three transect surveys.

Table 5: Summary of the transect activity surveys, see Figures 2 - 4 for results plans.

Survey details	Summary of bat activity
Survey 1 - 24th May 2023 21:20 – 23:25 (sunset 21:20)	(Start to LP1 - LP10 to Finish) Activity by up to three species Common pipistrelle: • Activity recorded from 21:45 onwards. • Approximately 30 bat registrations recorded feeding or commuting across the whole site. • The highest concentrations of bats were recorded along the western boundary of the site adjacent to the boundary hedgerow. Noctule • Activity recorded from 21:41 onwards. • Two records including individual bats briefly passing the northern area of the site near to LP4. <i>Myotis</i> sp.: • A single brief recording at 22:32 of an individual passing over the eastern area of the site close to LP1.
Survey 2 - 13th July 2023 21:36 – 23:56 (sunset 21:36)	(Finish to LP10 - LP1 to Start) Activity by up to four species Common pipistrelle: • Activity recorded from 22:10 onwards. • Approximately 143 bat registrations recorded using the site foraging or commuting along the northern boundary (along the woodland edge) and the western boundary (along the adjacent hedgerow). Noctule: • Activity recorded from 22:25 onwards. • Three registrations at 22:26 and 22:28 (foraging between LP4 & LP3 and LP3), one at 22:36 (at LP 2) along the northern site boundary. Brown long-eared: • Activity recorded between 23:27 and 23:53. • Two registrations at LP5 (on the western boundary along the adjacent hedgerow); two registrations at LP3 and two registrations at 23:36 on the northern boundary adjacent to the woodland and one at 23:52 on the walk between LP1 and the start/ finish on the eastern boundary. <i>Myotis</i> sp.: • Activity recorded from 22:13 onwards. • One registration at 22:13 on the walk between LP5 and LP6 and a second registration at 23:53 on the walk between LP1 and the start/ finish both on the eastern boundary of the site.
Survey 3 - 9th October 2023 18:30 – 20:43 (sunset 18:30)	(Start to LP1 - LP10 to Finish) Activity by up to three species Common pipistrelle: • Activity observed at 18:52 and recorded from 19.13 onwards. • Approximately 20 bat registrations recorded within the site boundary throughout the site, 7 of which were noted over the immediate adjacent habitat foraging/ commuting over gardens of houses to the east and south of the boundary. • The highest amount of activity within the site was in the southern area. Noctule: • A single registration recorded at 20:28 on the walk between LP8 and LP9 to the south eastern corner of the site. Brown long-eared: • Activity recorded between 19:15 and 20:29. • Five registrations; four recorded between 19:15 and 19:18 at LP6 in the western corner of the site and one recorded at 20:29 on the walk between LP8 and LP9 at the south eastern corner of the site.

4.14 During the three transect surveys, four bat species/ species groups were encountered: common pipistrelle, noctule, brown long-eared and *Myotis* sp.

- 4.15 The vast majority of activity recorded during the transect surveys relates to common pipistrelle bats. Up to 143 records of common pipistrelle bats were noted during the July survey visit, with 30 recorded on the May visit and 20 on the October visit. Bats were recorded foraging and feeding, mostly in the north eastern and western boundaries of the site.
- 4.16 Low numbers of noctule bats were recorded on the north eastern site boundary passing or briefly foraging on the first two transect surveys.
- 4.17 Low numbers of brown long-eared bats were recorded along the north eastern and north western boundaries on the second and third transects (brief registrations, heard not seen).
- 4.18 A single, brief registration of a *Myotis* sp. bat was recorded on the first survey in the eastern corner of the site.

Automated Survey Results

- 4.19 Figure 1 shows the location of the automated detector and Figures 6 - 11 provide charts summarising the results from the automated detector survey. In total, 807 bat recordings were made over five nights during three automated survey periods. The most active period was July (Period 2: 436 recordings) followed by May (Period 1: 303 recordings). The lowest levels of activity were recorded in October (Period 3: 68 recordings). All percentages below are rounded to 2 decimal places.
- 4.20 Overall, the following species/ species groups were detected through data analysis:
- Common pipistrelle
 - *Myotis* sp.
 - Brown long-eared
 - Noctule
- 4.21 Species recorded included a genus of bat (*Myotis* sp.) which are difficult to separate into species due to the similarity of their calls.
- 4.22 The detector was deployed on a poplar (*Populus alba*) tree located near Listening Point 2 on the northeastern boundary of the site, facing west into the site. An analysis of bat activity recorded at this location during each survey period is provided below.

Period 1

- 4.23 During Period 1 (2nd-3rd and 5th-7th May), four bat species/groups were detected, as detailed below:
- Common pipistrelle – 93.07% of total bat recordings over the period. Detected on all five nights.
 - *Myotis* sp. – 3.63% of total bat recordings over the period. Detected on the all nights except the third night.
 - Noctule – 1.65% of total bat recordings over the period. Detected on three nights; first, second and fourth.
 - Brown long-eared – 1.65% of total bat recordings over the period. Detected on all nights except the last night.
- 4.24 Bat activity was recorded on all nights over the period. Common pipistrelle was the most frequently recorded species on every night. The second most recorded species over the period was *Myotis* sp., which were recorded 7 times on the second night, twice on the fifth night and once on the first and fourth nights. Noctule were recorded on three nights, with 3 registrations on the first night and 1 registration on the second and fourth nights. Brown long-eared had the lowest number of registrations respectively and had no more than two registrations on any one night (see Figure 6).

- 4.25 Bat activity was recorded within most hours of every night between dusk and dawn over the period. The greatest levels of bat activity were recorded between the hours of 21:00 and 01:00 during each night (see Figure 7) with lower levels of activity between 01.00 and 05.00.

Period 2

- 4.26 During Period 2 (13th-14th and 17th-19th July), three bat species were detected, as detailed below:

- Common pipistrelle – 94.27% of total bat recordings over the period. Detected on all five nights.
- Noctule – 2.98% of total bat recordings over the period. Detected on the first four nights.
- Brown long-eared – 2.75% of total bat recordings over the period. Detected on the first, third and fourth nights.

- 4.27 Bat activity was recorded on all nights over the period. Common pipistrelle was the most frequently recorded species over the period as a whole and was the most recorded species on all nights. Noctule were the next most frequently recorded species and were recorded on all nights except the last night. Brown long-eared were recorded in similar numbers to noctule and were recorded on the first, third and fourth nights (see Figure 8).

- 4.28 Bat activity was recorded within most hours of every night between dusk and dawn over the period. The peak levels of bat activity were between 22.00-00.00 with a second, smaller peak between 03.00 and 05.00. These peaks are during the first couple of hours after sunset and another peak just before dawn (see Figure 9).

Period 3

- 4.29 During Period 3 (19th, 22nd-23rd and 25th-26th October), three bat species/groups were detected, as detailed below:

- Common pipistrelle – 77.94% of total bat recordings over the period. Detected on all five nights.
- Brown long-eared – 19.12% of total bat recordings over the period. Detected on all five nights.
- *Myotis* sp., – 2.94% of total bat recordings over the period. Detected on only the first and second nights.

- 4.30 Bat activity was recorded on all nights over the period. Common pipistrelle was the most frequently recorded species overall, being recorded on every night. Brown long-eared was recorded on all nights and was the most recorded species on the third night. *Myotis* sp. was only recorded once on the first and second nights (see Figure 10).

- 4.31 Bat activity was recorded within most hours of every night between dusk and dawn over the period. The amount of bat activity was relatively low compared with the other two periods, and therefore there is less of a noticeable trend in the results (see Figure 11). Activity was recorded between 18.00-19.00 on every night of the period. The next most frequently recorded time between 19.00-20.00. The majority of the other recordings were singular registrations throughout the night.

Combined Automated Survey Results

- 4.32 In total, 807 bat recordings were made over the three survey periods. 436 (54.02%) of the registrations were recorded during the July period, 303 (37.55%) were recorded during the May period and 68 (8.43%) were recorded during the October period.

- 4.33 During the three automated survey periods completed between May and October 2023, at least four bat species were recorded; common pipistrelle, brown long-eared, noctule and

Myotis sp. The *Myotis* genus of bat is difficult to separate into species due to the similarity of their calls.

- 4.34 Common pipistrelle was the most frequently recorded species during the survey periods (average 92.02%). Brown long-eared bats were the next most recorded species across the periods (average 3.93%) and were recorded during all the periods. Noctule were the third most recorded species across the periods (average 2.36%), with no recordings during period three. *Myotis* sp. the least recorded across the periods (average 1.70%), with no recordings during period two.
- 4.35 Common pipistrelle bats were detected on all nights across the periods except for one night during period three. In view of the frequency that this species was recorded during the transect and automated surveys, it is expected that the site is used by low numbers of common pipistrelle bats on a frequent basis.
- 4.36 Brown long-eared bats were detected on most nights during all periods. Brown long-eared bats were the joint third most frequently recorded species during the first period, the third most frequently recorded species during the second period and the second most recorded species during the third period. It should be noted that brown long-eared bats have a very quiet echolocation call which often leads to this species being under recorded, and it should therefore be considered that the site is used on a fairly frequent basis by low numbers of this species.
- 4.37 Noctule bats were detected during periods one and two, with no recordings in period three. Noctule bats were the joint third most frequently recorded species in the first period and the second most frequent during the second period. In view of the frequency that this species was recorded during the transect and automated surveys, it is expected that the site is used by a very low number of noctule bats on an occasional basis. Noctule bats have a large range, and it is therefore considered likely that the site and its surrounds form a very small part of a much wider foraging territory for individuals of this species.
- 4.38 *Myotis* sp. bats were the least frequently recorded species/ species groups during the second and third periods. They were detected on most nights during the first period, the first two nights during the third period and were not recorded during the second period. In view of the frequency that this species group was recorded during the transect and automated surveys, it is expected that the site is used by a very low number of *Myotis* sp. bats on an occasional basis

Habitat Assessment

- 4.39 In addition to the three bat habitat activity surveys, a detailed habitat appraisal has been undertaken bringing together the survey results, the habitats assessment and considering the specific requirements of each bat species recorded. The assessment has been based upon experience and knowledge of the species identified at the site.
- 4.40 The site comprises a large area (approximately 7.5ha) of mainly unmanaged grassland habitat that has developed on former sports pitches with landscaped grounds in the vicinity of the former Ainsdale Hope High School, which closed in 2009. Two lines of poplar trees are present along the north western boundary a band of vegetation up to approximately 3m in width comprising bramble with rank, coarse grasses, ivy and scattered scrub is present along the south western boundary. Scattered ornamental trees are present around the buildings and there is some scattered scrub along the north-eastern boundary. In the south east of the site are the Learning Centre Buildings plus their surrounding areas of hardstanding parking, regularly mown amenity grassland and scattered trees.

- 4.41 The site is located immediately adjacent to internationally, nationally and locally important nature conservation sites to the north and west designated for their important sand dune and coastal habitats and associated flora and fauna. To the south west of the site lies residential development with associated gardens and to the north and east, golf courses with mown and unmanaged grassland and scattered patches of scrub and trees. A large residential property and its grounds including broadleaved woodland lie adjacent to the north east of the site. Ainsdale Sands Lake lies c. 0.9km west of the site, surrounded by trees and scrub
- 4.42 While the large area of rough grassland provides low suitability for foraging bats, boundary features such as the lines of poplars (albeit gappy) along the north western boundary, band of vegetation with scattered scrub along the south western boundary, scattered trees associated with the buildings and woodland edge along the north eastern boundary are considered to provide '**moderate**' suitability habitat for foraging and commuting bats.
- 4.43 There is a band of scrub/ woodland to the west of the site, a large wooded garden to the north east and patches of scrub and trees associated with the golf courses to the north and east. Residential areas to the south west and east of the site feature linked back gardens. The wider landscape is considered to provide moderate to good suitability habitat for foraging and commuting bats.
- 4.44 Habitats within the site and its immediate surrounds were assessed to assist in the determination of impacts. Table 6 reviews habitat preferences for the species identified during the surveys. This includes a number of *Myotis* sp. that are considered to potentially be present at the site.

Table 6: Foraging habitat preferences and foraging strategies of different UK species (taken from BCT (2016) 3rd Edition except where otherwise stated).

Species	Habitat Preferences
Common pipistrelle	Shows preference to deciduous woodland but a generalist using a wide range of habitats.
Daubenton's (<i>Myotis daubentonii</i>)	Preferred foraging habitat is over water, this species favours riverine habitats but is also known to forage in woodland.
Whiskered/ Brandt's (<i>Myotis brandtii</i>)	Buckley et al. (2013) found whiskered bat used mixed woodland, riparian vegetation, arable and rough grassland habitats although selected the first two as core foraging habitats. Berge (2007) found that whiskered bat selected pasture and hedgerows. A German study showed Brandt's bat favours woodland and whiskered bat favours areas near water and more open habitats with hedges and coppices (Taake, 1984).
Natterer's (<i>Myotis nattereri</i>)	Preferred foraging habitat is semi-natural woodland, tree-lined river corridors and ponds, but also uses grassland. Tends to avoid dense coniferous plantations.
Brown long-eared	Strongly associated with tree cover, prefers woodland with cluttered under storey, including native species particularly deciduous woodland. Also forages in mixed woodland edge and among conifers. Use of hedgerows increases though the active season.
Noctule	Found in a range of habitats, forages out in the open, often over trees and with strong affinity to water. Reported as selecting broad-leaved woodland and pasture.

- 4.45 In addition to areas of suitable foraging and commuting habitat, there are a number of buildings and trees in the area that could provide suitable roosting habitat for bats within the site and adjacent habitats. Bat activity surveys of the house in the south of the site have **confirmed** a bat roost used by common pipistrelle species. A further roost characterisation survey during the optimal period (May to August inclusively) in accordance with BCT

Guidelines (Collins, 2023) is yet to be undertaken to confirm that size and status of the roost (see Ainsdale Hope Learning Centre Bat Survey Report, Ecology Services Ltd., 2023).

Summary and Evaluation

- 4.46 The bat habitat activity surveys (transect and automated detector surveys) recorded four bat species/ species groups foraging and/ or commuting within the site, as listed below:
- Common pipistrelle
 - Noctule
 - Brown long-eared
 - *Myotis* sp.
- 4.47 The conservation status of the bat species identified at the site through surveys are detailed in Table 7 below.

Table 7: Status of bat species. Detail of conservation status at a local, county and regional level.

Species	Conservation status assessment		
	Local	County	Regional
Common pipistrelle	Common and widespread	Common and widespread.	Common and widespread. Considered to be widely distributed across the UK and one of the commonest bat species*.
Natterer's	Widespread but not common	Widespread but not common	Although it is found throughout most of the British Isles it is a relatively scarce species and is classed as uncommon*.
Daubenton's	Common and widespread	Common and widespread	Common and fairly widespread with ranges increasing within the UK*.
Whiskered/Brandts	Common and widespread	Rare locally	Common and widespread. Located within England and Wales
Noctule	Common and widespread	Common and widespread	Common and widespread. Considered to be widely distributed across the UK*.
Brown long-eared	Common and widespread	Common and widespread. Clusters of brown long-eared are known in the County.	Common and widespread. Considered to be found throughout the UK*.

*According to Bat Conservation Trust (BCT) data.

- 4.48 Common pipistrelle made up the majority of activity recorded during the transect surveys with low numbers of individuals recorded on a frequent basis foraging around the site, mostly utilising interfaces between trees, scrub and grassland habitats on the site boundaries and the neighbouring gardens of residential properties. In view of the frequency that this species was recorded during the transect and automated surveys, it is expected that the site is used by a low number of common pipistrelle bats on a regular basis. The transect and automated surveys also recorded low numbers of noctule foraging above the site on an occasional basis.
- 4.49 The frequency of brown long-eared bat recordings during the automated surveys suggests that low numbers of individuals of this species likely use the site and its immediate surrounds on a fairly frequent basis. Other species recorded in very low numbers at the site on an occasional basis included *Myotis* sp. bats.

- 4.50 The results of the habitat activity surveys (Transect and Automated) found low levels of bat activity within the survey area. Distribution of bat activity is over the survey area as a whole, with numbers of bat passes being greater to the west and north east of the survey area. The transect surveys demonstrate that the majority of bat activity at the site is associated with interfaces between trees, scrub and rough grassland habitats which are located around the margins of the site.

5.0 Impacts and Recommendations

- 5.1 The site is allocated for residential development in the Sefton Local Plan (Sefton Council, 2017) with the requirement that an 'Ecological Improvement Area' is developed on the site alongside the housing allocation, the extent of which is to be determined following the completion of future evidence (i.e. ecological surveys).
- 5.2 This development would result in the loss of some of the grassland and scrub habitats within the site to facilitate construction of the proposed residential dwellings and associated infrastructure. These habitats would be largely replaced by buildings, hardstanding and associated gardens and landscaping. It is anticipated that the trees along the north western boundary will be retained. The woodland to the north east lies outside the site boundary and will not be directly affected.
- 5.3 Proposed loss of grassland habitats from the site is considered unlikely to have a significant effect on the use of the site by foraging common pipistrelle and noctule bats, which have a wide range of habitat preferences and regularly forage around residential development and gardens. It is expected that the trees along the boundaries of the site will be retained and therefore foraging and commuting habitats relating to these habitats would be maintained. However, *Myotis* sp. and brown long-eared bats are also known to forage in gardens, parkland and along woodland edges, providing these areas are not affected by artificial light spill.

Roosting habitat

- 5.4 Bat activity surveys of the house in the south of the site have **confirmed** a bat roost used by common pipistrelle species. A further roost characterisation survey during the optimal period (May to August inclusively) in accordance with BCT Guidelines (Collins, 2023) is yet to be undertaken to confirm that size and status of the roost and inform mitigation requirements (see Ainsdale Hope Learning Centre Bat Survey Report, Ecology Services Ltd., 2023).
- 5.5 Historic data identified the presence of two common pipistrelle bat roosts approximately 0.6km to the south and south west of the site.
- 5.6 Artificial illumination of roost entrances can result in shortened feeding times for bats, as emergence from the roost is delayed and/ or the desertion of the roost can occur. A delay in emergence can significantly reduce feeding ability as the peak times for insect abundance is at and just after dusk. Artificial lighting of a roost entrance can therefore have an adverse impact on the bat species utilising the roost.

Foraging Habitat

- 5.7 The development proposals should seek to maintain and enhance opportunities for bat species favouring wooded, parkland and scrub interface habitats such as pipistrelles, brown long-eared and some *Myotis* species. Loss of foraging habitat should be compensated for through implementing measures to maximise the value of new and retained habitats as part of the development scheme. This should include provision of native species-rich tree and shrub planting within gardens and areas of public open space. The value of proposed gardens should be further enhanced through the use of native species-rich hedgerow as

boundary features and use of wildlife friendly shrubs and flowers in planting schemes to encourage a higher diversity and abundance of invertebrates at the site. Over time, residential gardens will mature and are likely to provide suitable foraging habitat for many of the bat species recorded using the site during the surveys.

Commuting Features

- 5.8 It is likely that low numbers of bats use the site for commuting, in particular trees and scrub along the site boundaries. Development should seek to maximise retention of boundary trees and scrub in order to maintain linear vegetated corridors for commuting bats. Scrub loss along the boundaries is expected to be partially compensated for by proposed tree planting within gardens close to the site boundaries. Provision of native species-rich hedgerow, scrub and/ or further treeline planting along the boundaries of the site is recommended to further enhance these linear habitats.
- 5.9 In order to maintain the suitability of retained and newly created habitat corridors for commuting bats, the proposals should seek to minimise indirect effects of artificial light spill onto areas of semi-natural vegetation (see below).

Lighting

- 5.10 Pipistrelles and noctule are known to be relatively tolerant of artificial light spill and are even known to actively seek out light sources which can attract their insect prey. However, brown long-eared bats and some species of *Myotis* bats are very intolerant of artificial light spill and therefore the residential development within the site has the potential to significantly reduce the suitability of these areas for these species if measures are not implemented to minimise light pollution associated with the new dwellings and infrastructure.
- 5.11 Development proposals should seek to maintain suitable opportunities for these species within the site with high importance given to maintaining areas of high-quality foraging habitat and commuting corridors with minimal artificial light pollution.
- 5.12 In order to minimise potential effects of artificial lighting, both during construction and the operational phase upon completion of the proposed development, a sensitive lighting scheme should be designed and implemented in accordance with Institution of Lighting Professional (ILP) Guidance Notes (2023). This shall aim to maintain the site as suitable for foraging and commuting bat species which are sensitive to light such as brown long-eared and *Myotis* sp. bats. Lighting levels should be at the minimum required for health and safety, and avoided wherever possible. The effects of lighting could be reduced through the use of low-level lighting and/ or using bulbs emitting low UV light and should be directed away from more sensitive habitats that could be used by foraging or commuting bats such as boundary trees and scrub, and neighbouring gardens. The lighting strategy should be reviewed at an appropriate stage of design by a suitably qualified ecologist.
- 5.13 The Chartered Institute for Ecology and Environmental Management's advice note on the lifespan of ecological reports and surveys (CIEEM, 2019) advises that surveys are likely to be valid in most cases for up to 18 months with the following exceptions:
- Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe;
 - Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment; or
 - Where country-specific or species-specific guidance dictates otherwise.
- 5.14 If more than 18 months has passed since the surveys were undertaken, a site visit will need to be undertaken by an ecologist to check whether there have been any significant changes

to habitats or habitat management within the site that could affect the validity of the survey results. The review should also consider whether there have been any changes in the status of roosting bats at the site and desk study information may also need to be updated. If more than three years old, the report is unlikely to be valid.

Enhancement measures

- 5.15 As best practice, opportunities for bat species such as bat boxes/bat access tiles within new buildings and bat boxes installed on retained trees should be incorporated within the proposed development to ensure that the long-term status of bat species in the local area is maintained. Additionally, habitat creation and enhancement as described above will enhance commuting and foraging habitat within the site.

6.0 Conclusion

- 6.1 To conclude, this report details the findings of the bat habitat activity surveys (transect and automated detector surveys) that have been undertaken at this site.
- 6.2 All completed surveys have been undertaken by suitably experienced surveyors at the appropriate time of year and in line with current guidance.
- 6.3 The bat habitat activity surveys recorded four bat species/ species groups foraging and/ or commuting within the site with the majority of activity comprising common pipistrelle bats. Generally low levels of bat activity were identified within the survey area. Activity was distributed over the survey area as a whole, with numbers of bat passes being greater to the north west and north east of the survey area. The majority of bat activity at the site was associated with interfaces between trees, scrub and rough grassland habitats which are located around the margins of the site.
- 6.4 Effects that are likely to occur due to the proposed development have been reviewed. Through the implementation of the above measures to maintain and enhance areas of good quality foraging and commuting habitat within the site for bats and minimising potential effects of artificial lighting associated with the proposals, it is considered that opportunities for foraging and commuting bat species recorded at the site can be maintained and enhanced in the long-term. Subject to the recommended measures being implemented and no further impacts arising, it is concluded unlikely that the proposed development of the site would result in a significant reduction in the interest of the site for foraging and commuting bats.

7.0 References

Bat Conservation Trust (2017) The State of the UK's Bats 2017. National Bat Monitoring Programme Population Trends.

BCT (2020) Core Sustenance Zones and habitats of importance for designing Biodiversity Net Gain for bats. Bat Conservation Trust, London. Online - available from: <https://www.bats.org.uk/resources/guidance-for-professionals/bat-species-core-sustenance-zones-and-habitats-for-biodiversity-net-gain> [Accessed August 2023].

Bat Conservation Trust (2021) The National Bat Monitoring Programme Annual Report 2020. Bat Conservation Trust, London. Available at <https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/nbmp-annual-report> [Accessed August 2023].

Berge, L., (2007). Resource partitioning between the cryptic species Brandt's bat (*Myotis brandtii*) and the whiskered bat (*M. mystacinus*) in the UK. Ph.D. thesis, University of Bristol.

Buckley, D.J., Lundy, M.G., Boston, E.S.M. et al. (2013) The spatial ecology of the whiskered bat (*Myotis mystacinus*) at the western extreme of its range provides evidence of regional adaptation. *Mamm Biol* 78, 198–204.

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd edition, The Bat Conservation Trust, London.

Department for Levelling Up, Housing and Communities (December 2023). National Planning Policy Framework (NPPF). Online - available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed February 2025].

Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92-43-EEC (2007). Online - available from: http://ec.europa.eu/environment/nature/conservation/species/guidance/pdf/guidance_en.pdf [Accessed February 2025].

Harris, S. et al. (1995) A review of British mammals: population estimates and conservation status of British Mammals other than cetaceans. JNCC, Peterborough.

Individual Species Reports – Fourth Article 17 UK Habitats Directive Report (2019): Supporting Information (habitats & species). Online – available from <https://hub.jncc.gov.uk/assets/081db8a3-afa7-442b-bd0d-701aaf830bdc> [accessed February 2025].

Institution of Lighting Professionals (ILP) (2023) *Bats and artificial lighting in the UK* (GN08/23), ILP, Rugby, Warwickshire.

Marnell, F. & Presetnik, P. (2010) Protection of over ground roosts for bats (particularly roosts in buildings of cultural heritage importance). EUROBATS Publication Series No. 4 (English Version). UNEP/EUROBATS secretariat, Bonn, Germany.

Mathews F, and Harrower C. (2020). IUCN – compliant Red List for Britain’s Terrestrial Mammals. Assessment by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

Ministry of Housing, Communities and Local Government (December 2024). National Planning Policy Framework (NPPF). Online - available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed February 2025].

Mitchell-Jones, A.J. (2004). *The Bat Workers Manual* (3rd Edition) JNCC. The Bat Mitigation Guidelines (English Nature 2004)

ODPM Circular 06/2005/ Defra Circular 01/2005: Biodiversity & Geological Conservation – Statutory Obligations and their impact within the Planning System (16 August 2005). Online - available from; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf [Accessed February 2025].

Rowse, E.G., Lewanzik D., Stone, E.L., Harris, S. & Jones G. (2016) *Dark Matters: The Effects of Artificial Lighting on Bats*. In: Voigt C., Kingston T. (eds) *Bats in the Anthropocene: Conservation of Bats in a Changing World*. Springer, Cham

Species Factsheet, Bat Conservation Trust, Online – individual species factsheets available from <https://www.bats.org.uk/about-bats/what-are-bats/uk-bats> [Accessed February 2025].

Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation guidance

The Conservation of Habitats and Species Regulations 2017 (as amended).

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The Wildlife & Countryside Act 1981 (as amended)

UK Biodiversity Steering Group (1995) Biodiversity – the UK Steering Group Report. Volume 2: Action Plans. P89 SAP for Pipistrelle. London, HMSO.

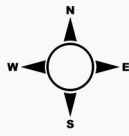
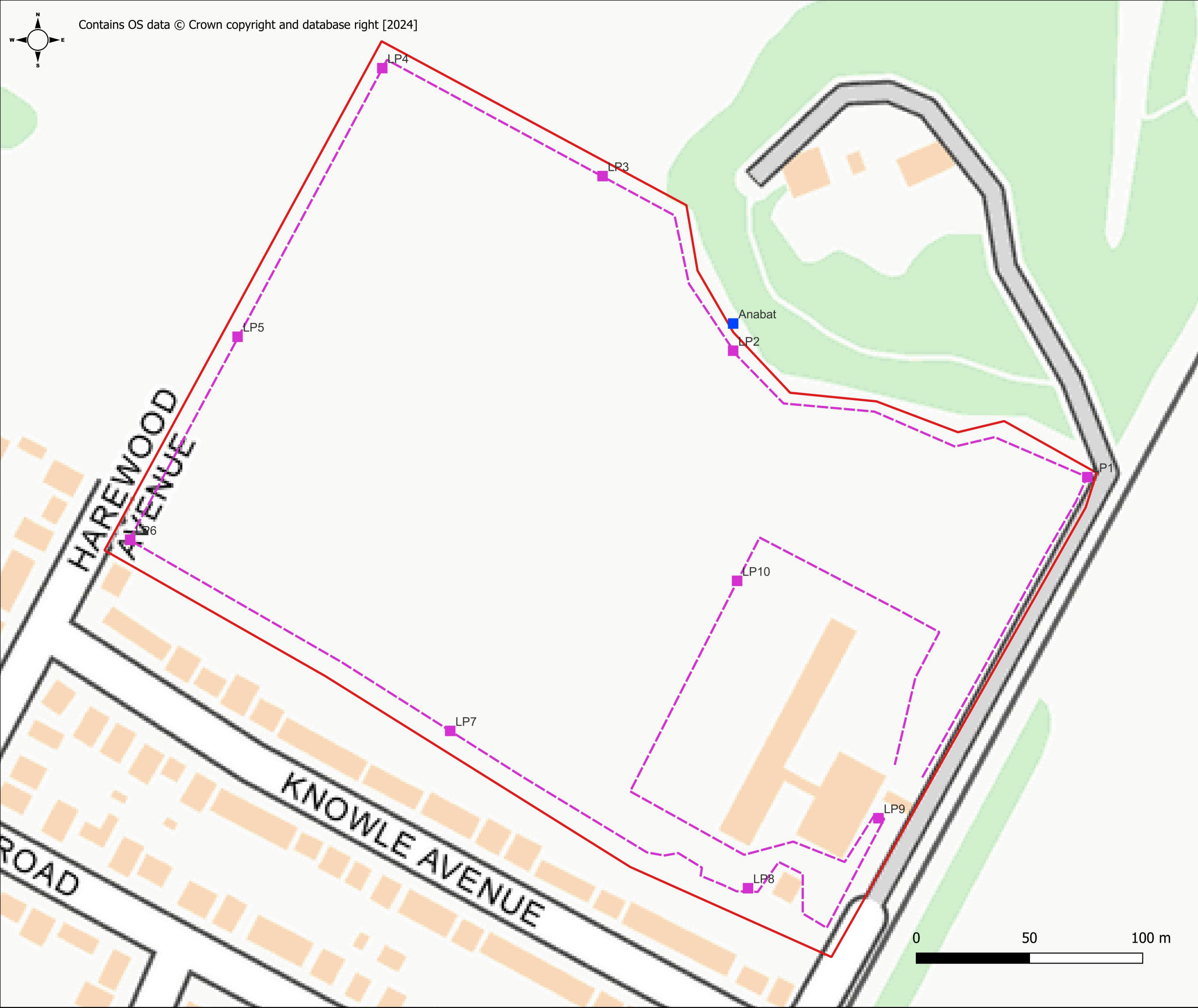
White, S.J. (ed), Beattie, D., Bedford, A., Brown, M., Cripps, R., Cross, S., Greenhalgh, M.E.G., Liggett, C., Martin, S.J., Parker, A., Smith, P.H & Tapp, S. (2017). Lancashire's Vertebrates: The Mammals, Amphibians, Reptiles and Freshwater Fish of Lancashire and North Merseyside. Lancashire & Cheshire Fauna Society, Publication No. 122. Rishton, Lancashire.

Figure 1:
Transect Route, Listening Points and Automated Detector Location Plan

Figure 1: Transect Route, Listening Points and Automated Detector Location Plan

Map Ref (NGR): 331260, 412950

- Approximate site boundary
- Bat transect
- Automated detector location
- Listening Point



Contains OS data © Crown copyright and database right [2024]

Figure 2:
Transect Survey 1 – Results Summary Plan

Figure 2: Transect Survey 1 – Results Summary Plan

Map Ref (NGR): 331260, 412950

- ▬ Site Boundary
- Static Detector
- Listening Point
- - - Bat transect
- Bat Flight Path
- ◆ Common Pipistrelle
- ◆ Noctule
- ◆ Myotis

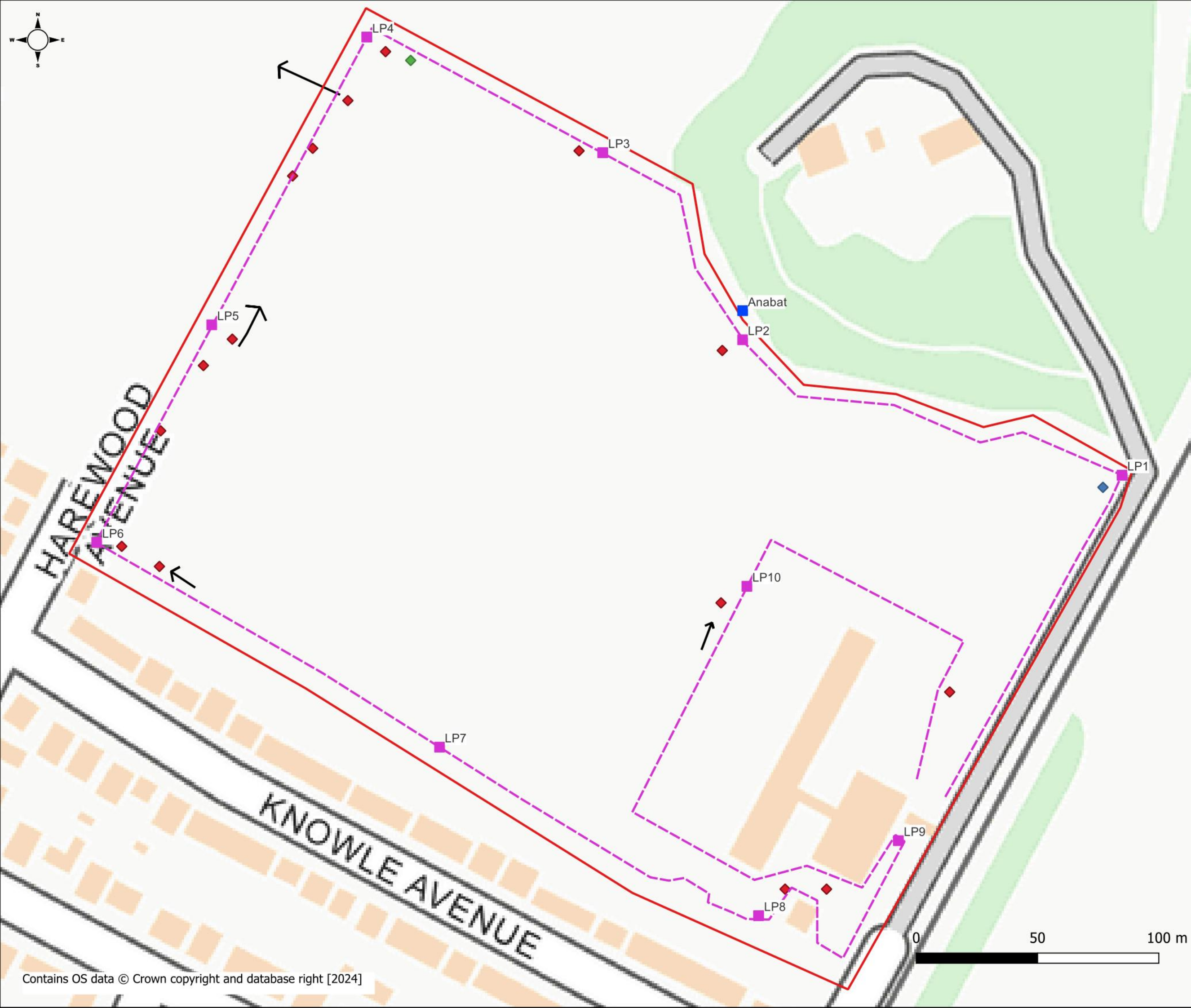


Figure 3:
Transect Survey 2 – Results Summary Plan

Figure 3: Transect Survey 2 – Results Summary Plan

Map Ref (NGR): 331260, 412950

- ▬ Site Boundary
- Static Detector
- Listening Point
- - - Bat transect
- Bat Flight Path
- ◆ Common Pipistrelle
- ◆ Noctule
- ◆ Brown Long Eared

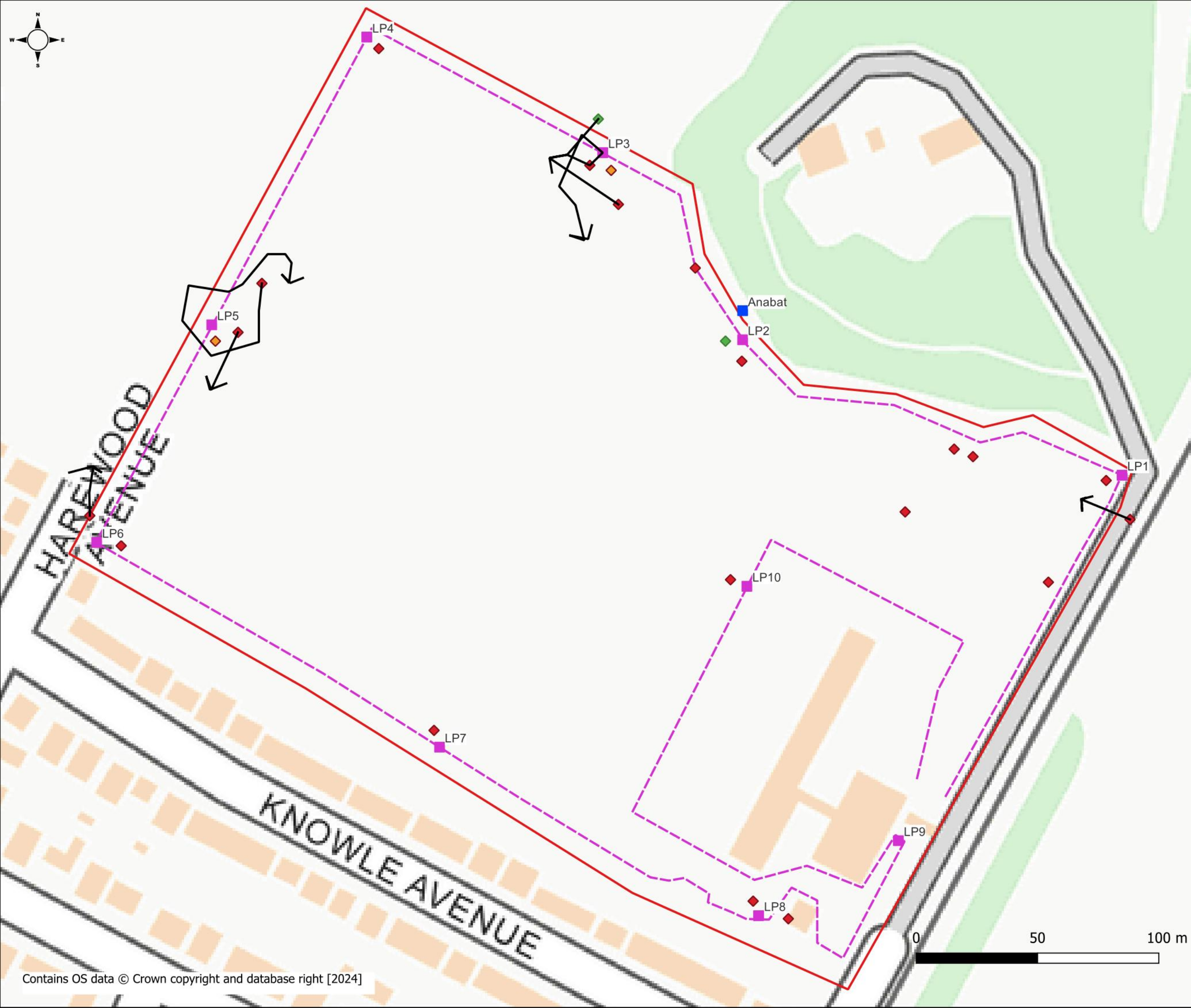


Figure 4:
Transect Survey 3 – Results Summary Plan

Figure 4: Transect Survey 3 – Results Summary Plan

Map Ref (NGR): 331260, 412950

- ▬ Site Boundary
- Static Detector
- Listening Point
- - - Bat transect
- Bat Flight Path
- ◆ Common Pipistrelle
- ◆ Brown Long Eared

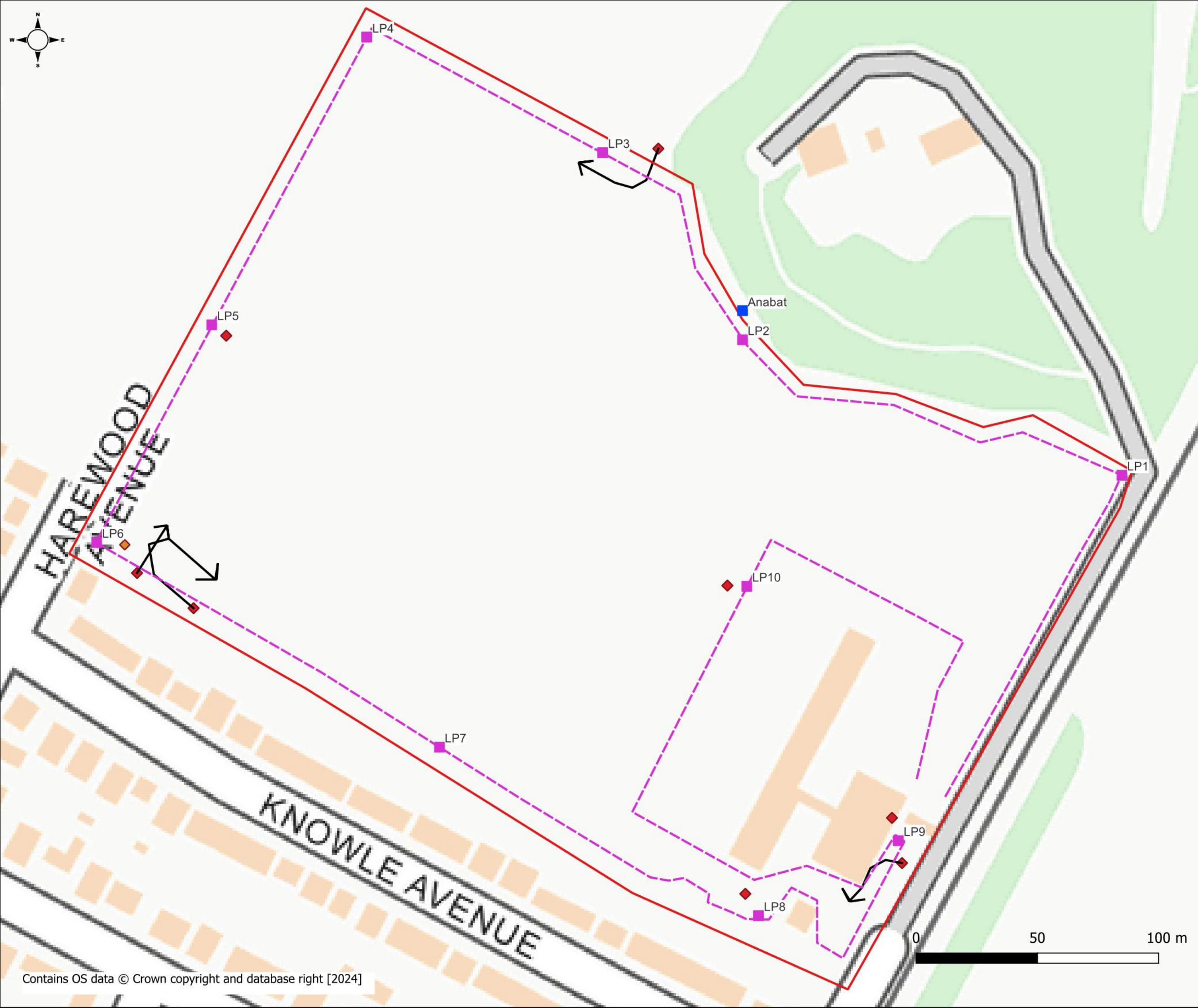


Figure 5:
All Transect Surveys Combined – Results Summary Plan

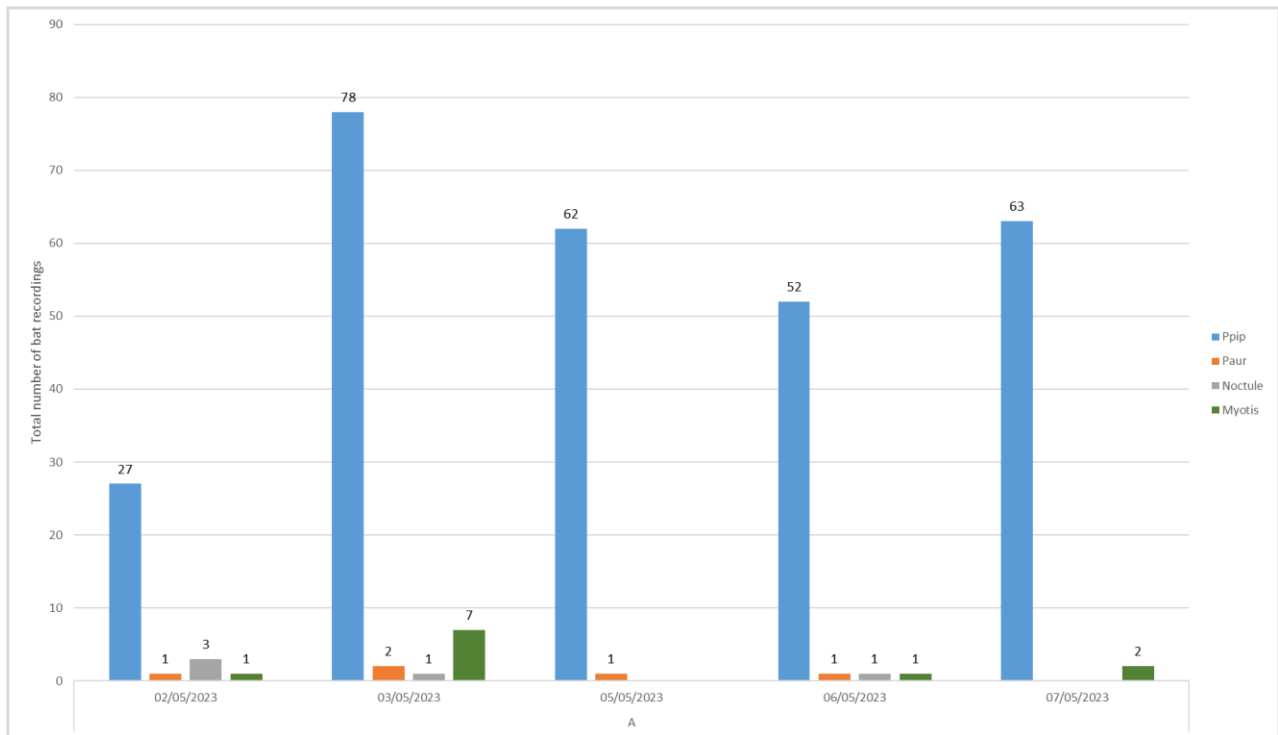
Figure 5: All Transect Surveys Combined – Results Summary Plan

Map Ref (NGR): 331260, 412950

- ▬ Site Boundary
- Static Detector
- Listening Point
- - - Bat transect
- Bat Flight Path
- ◆ Common Pipistrelle
- ◆ Noctule
- ◆ Myotis
- ◆ Brown Long Eared



Figure 6:
Automated Survey Period 1 – All Species Recordings per Night



Ppip = Common pipistrelle (*Pipistrellus pipistrellus*), Paur = Brown long-eared (*Plecotus auritus*),
Myotis = *Myotis* sp., Noctule = Noctule (*Nyctalus noctula*).

Figure 7:
Automated Survey Period 1 – Total Recordings per Hour

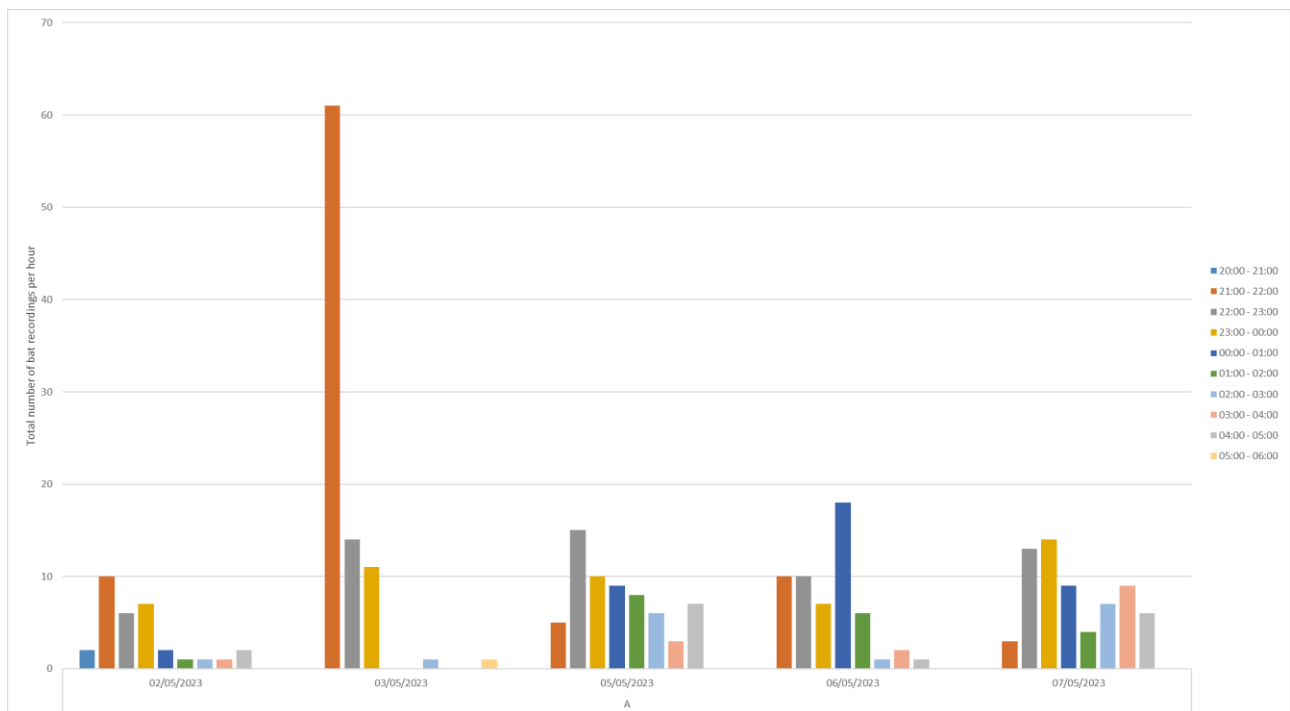
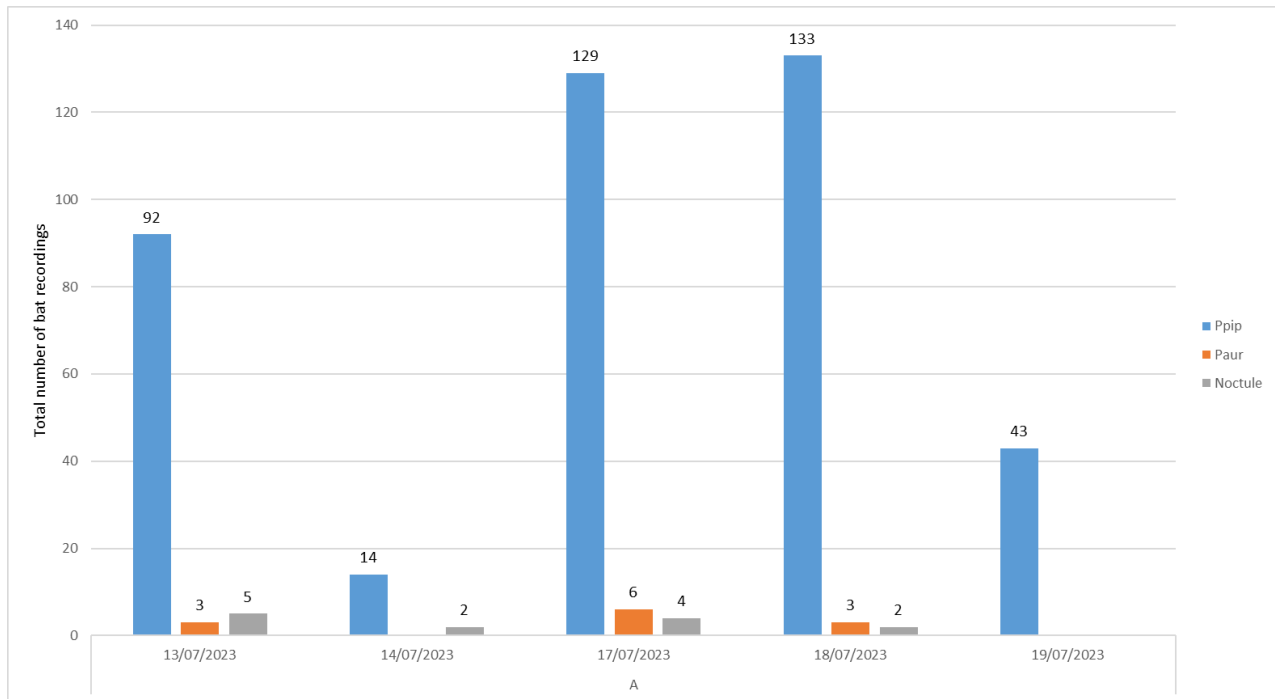


Figure 8:
Automated Survey Period 2 – All Species Recordings per Night



Ppip = Common pipistrelle (*Pipistrellus pipistrellus*), Paur = Brown long-eared (*Plecotus auritus*), Noctule = Noctule (*Nyctalus noctula*).

Figure 9:

Automated Survey Period 2 – Total Recordings per Hour

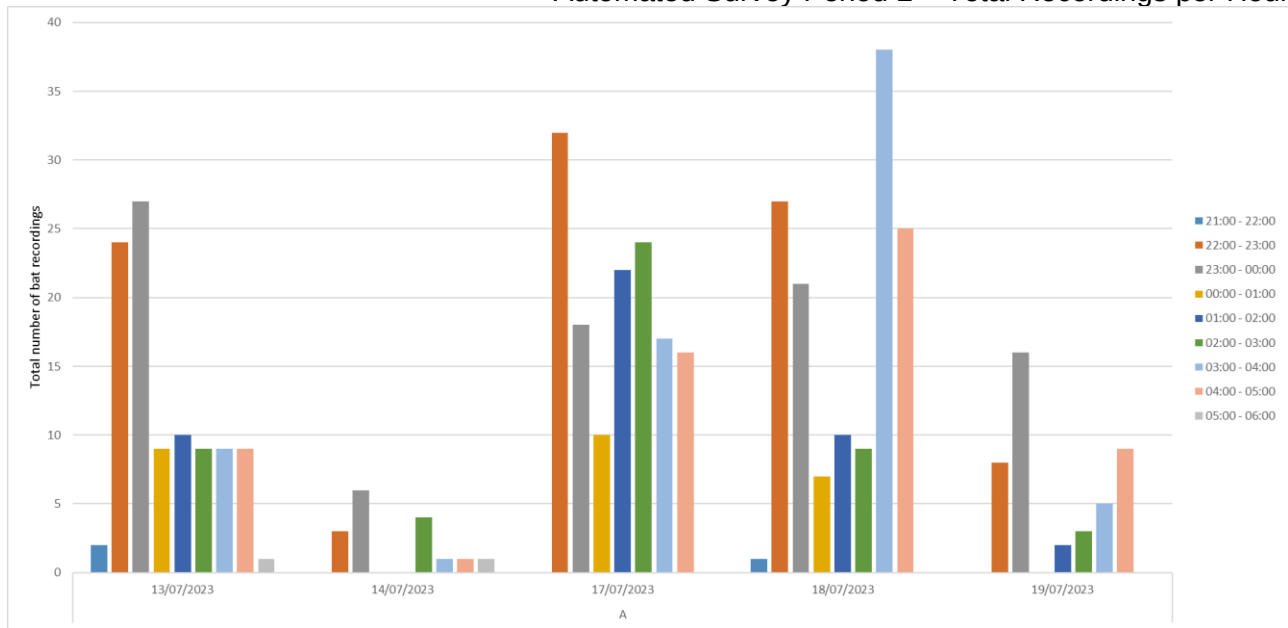
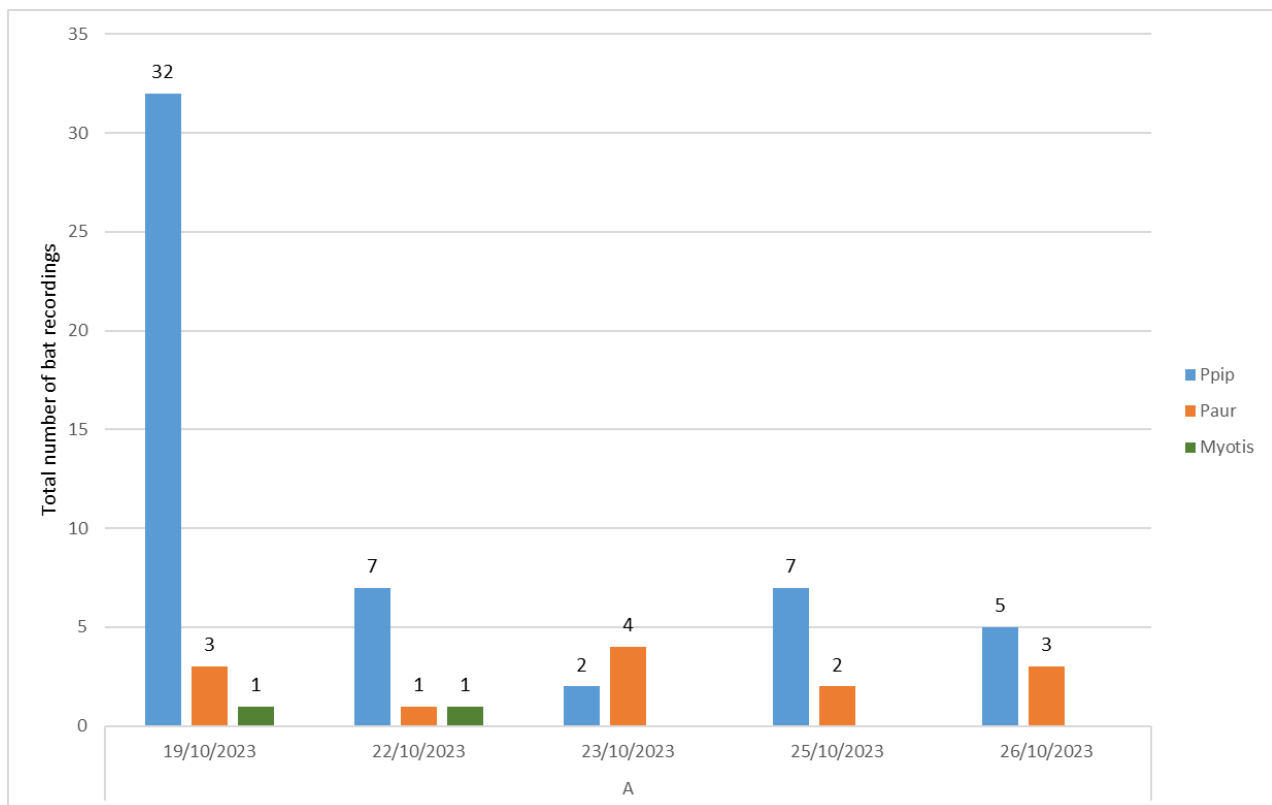
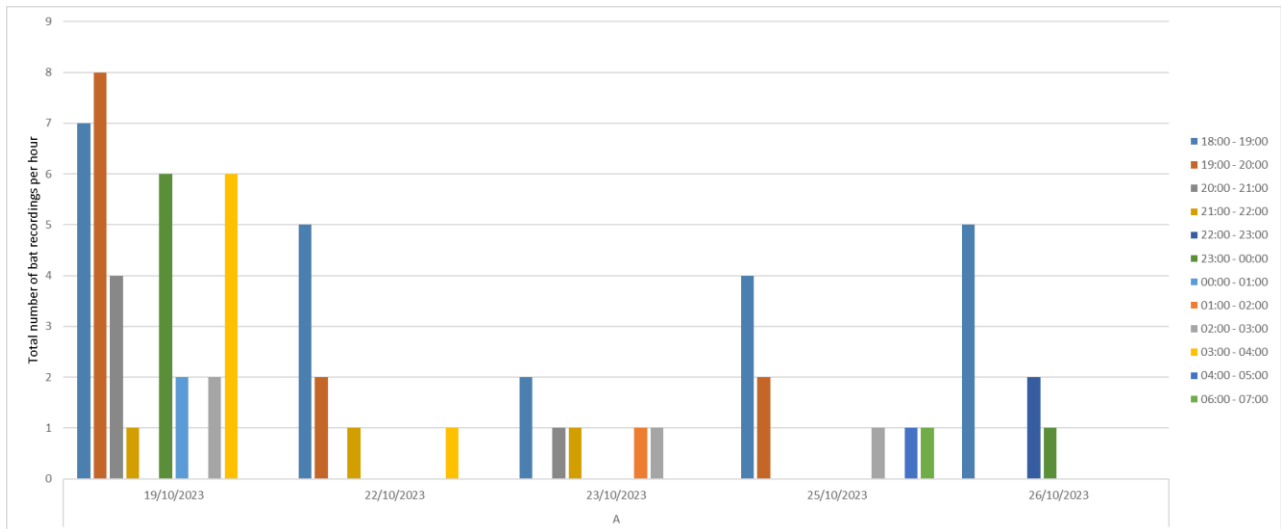


Figure 10:
Automated Survey Period 3 – All Species Recordings per Night



Ppip = Common pipistrelle (*Pipistrellus pipistrellus*), Paur = Brown long-eared (*Plecotus auritus*), Myotis = *Myotis* sp.

Figure 11:
Automated Survey Period 3 – Total Recordings per Hour



Appendix 1: Planning Policy and Legislation

Planning Context

National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF, 2024) places a clear responsibility on Local Planning Authorities (LPA) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Biodiversity Action Plan species); and identify and pursue opportunities for securing measurable net gains for biodiversity. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.

A Local Planning Authority (LPA) has a duty to ensure that protected species and habitats within the UK are a 'material consideration' in the determination of a planning application. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted in support of a planning application.

Statutory Protection Afforded UK Bats

The Conservation of Habitats & Species Regulations 2017 (as amended), also known as the Habitats Regulations, lists all UK bat species on Schedule 2 which places an obligation to implement strict protection for these species. This legislation makes it an offence to:

- deliberately kill, injure or capture a wild bat;
- deliberately disturb* a bat;
- damage or destroy a breeding site or resting place of a bat.

*Disturbance, as defined by the Conservation of Habitats & Species Regulations 2017 (as amended), is that which is likely to:

- impair their ability –
 - to survive, to breed or reproduce, or to rear or nurture their young; or
 - in the case of animals of a hibernating or migratory species, to hibernate or migrate.
- affect significantly the local distribution or abundance of the species to which they belong.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 will continue the same provision for European protected species, licensing requirements and protected areas after Brexit.

All UK bats and their roosts are afforded further protection through their inclusion on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), which makes it an offence to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection;
- intentionally or recklessly obstruct access to a structure or place which a bat uses for shelter or protection.

Regulation 12 the Conservation of Habitats and Species Regulations 2017 (as amended) requires the appropriate authority in England and Wales to designate as Special Areas of Conservation such sites as the authority considers to be of national importance which contribute significantly to the maintenance, or restoration at favourable conservation status in the natural range of the species

listed in Annex II of the EC Habitats Directive. Four bat species (greater horseshoe, lesser horseshoe, Bechstein's and barbastelle) are listed under Annex II.

When dealing with planning applications where a European Protected Species (EPS) (all UK bats) may be affected, a Local Authority is a 'competent authority' within the meaning of regulation 7 of the Conservation of Habitats & Species Regulations 2017 (as amended). The local authority must therefore exercise their functions under the provisions made within the 2017 Regulations (as amended), and planning decisions should only be made when European Protected Species and their habitats are fully taken into account.

Licensing of Works Affecting Roosting Bats

Where a bat roost is likely to be affected by development then a licence to derogate from the legal protection would be required. Licence applications are processed and issued by Natural England and can only be applied for once planning permission (if required) has been granted.

Natural England may grant a licence for the purposes specified in paragraph 55 of the Regulations. The purposes are:

- 55(2)(e) preserving public health or safety or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment.
- 55(2)(f) preventing the spread of disease.

Natural England must not grant a licence under paragraph 55 unless it is satisfied that:

- 55(9)(a) there is no satisfactory alternative; and
- 55(9)(b) the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable status in their natural range.

In December 2016, Natural England introduced four policies for European Protected Species (EPS) licensing. The policies were revised in January 2022. The policies seek to achieve better outcomes for EPS and reduce unnecessary costs, delays and uncertainty that were inherent in the current system. In brief, the four policies are:

- **Policy 1.** Reduce mitigation measures for impacts on EPS
- **Policy 2.** Location of compensation habitats
- **Policy 3.** Let EPS use temporary habitats
- **Policy 4.** Alternative sources of evidence to reduce standard survey requirements

Policy 1 allows compensation for EPS impacts to be delivered without the need to relocate or exclude populations where: exclusion or relocation measures are not necessary to maintain the conservation status of the local population; the avoid-mitigate-compensate hierarchy is followed; and compensation provides greater benefits to the local population than would exclusion and/or relocation. This policy can be used to reduce mitigation measures, such as exclusion or relocation of EPS, by increasing compensation. This policy allows killing of EPS and destruction of their habitat without needing to exclude or relocate individual animals.

Policy 2 allows for the provision of off-site compensation measures where the licensing tests are met, the avoid-mitigate-compensate hierarchy is followed, there are good reasons for maximising development on the site of EPS impacts and where an off-site solution provides greater benefit to the local population than an on-site solution.

Policy 3 relates to developments, such as mineral extraction, which temporarily create habitat which is likely to attract EPS and enables works to proceed without the exclusion of EPS where the conservation status of the local population would not be detrimentally affected. On completion of development, such sites must contribute to the conservation status of the local population as much as or more than the land use which preceded development. The measures to achieve this should be set out in a management plan and secured by a legal agreement.

Under **Policy 4** Natural England may accept a lower than standard survey effort where: the costs or delays associated with carrying out standard survey requirements would be disproportionate to the additional certainty that it would bring; the ecological impacts of development can be predicted with sufficient certainty; and mitigation or compensation will ensure that the licensed activity does not detrimentally affect the conservation status of the local population of any EPS.

Natural Environmental and Rural Communities (NERC) Act 2006

Section 40 of the Natural Environmental and Rural Communities (NERC) Act 2006 (as amended) places a statutory duty on public authorities, in exercising their functions, to conserve and enhance biodiversity in England. Species of Principal Importance for the conservation or enhancement of biodiversity in England, as identified by the Secretary of State in consultation with Natural England, are listed under Section 41 of the NERC Act. The Local Planning Authority and government bodies (e.g. Natural England) will expect the overall design of the development to have regard for the conservation and enhancement of populations of these species. Section 41 of the NERC Act lists seven bat species as Species of Principal Importance (refer to Section 2).

Appendix 2:**Table 4.1** Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement (Taken from the Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines, 2016).

Suitability	Description	
	Roosting habitats	Commuting & foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions¹ and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation²). A tree of sufficient size and age to contain PRF's but with none seen from the ground or features seen with only very limited roosting potential³.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) of a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ¹ and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back to gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland and water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ¹ and surrounding habitat.	Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broad-leaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

¹For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.²Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.³This system of categorisation aligns with BS8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Appendix 3:

Population Statuses of Bat Species in North Merseyside

National Status

There are 18 species of bat that are native to the United Kingdom.

The latest Review of the Conservation Status of British Mammals (2018) has shown that where change could be assessed with reasonable confidence there have been increases in the geographical range and population status of two species of UK bat (greater and lesser horseshoe bat) and decrease in the geographical range of one species (grey long-eared bat). Increases in population were also identified in the following species: Bechstein's, Daubenton's, Natterers, Serotine and brown long-eared although it is noted that the reliability of the results is poor. Population data was not available for; Alcaho, whiskered, Brandt's, Leisler's, noctule, Barbastelle and Nathusius pipistrelle.

Population estimates were given for common and soprano pipistrelle however they could not be reliably compared to the results from Harris et al. (1995) as the two species had not been identified as separate species at the time of that survey. *Pipistrellus* spp. remain the commonest species of bat in the UK despite their decline.

The State of Bats 2017 report produced by the Bat Conservation Trust used results from multiple survey types (hibernation, roost, waterway and field) of the National Bat Monitoring Programme (NBMP) to compile population trends between 1999, 2001 or 2002 to 2016. The report identified statistically significant (95% accuracy) population increase in Great Britain in the following species; greater horseshoe (hibernation and roost surveys), lesser horseshoe (hibernation and roost surveys), Daubenton's (hibernation surveys), Natterers (hibernation surveys), common pipistrelle (field surveys), soprano pipistrelle (field surveys). Significant decreases in population in Great Britain were identified in common pipistrelle (roost surveys), soprano pipistrelle (roost surveys) and brown long-eared (roost surveys).

These trends reflect relatively recent changes to bat populations since the 1990s. It is generally considered that prior to this there were significant historical declines in bat populations dating back to at least the start of the 20th century, although evidence is fragmented and few data were collected in a systematic way.

Serotine and barbastelle are considered vulnerable and Leisler's and Nathusius' pipistrelle, near threatened in Britain and England in the Red List for Britain's Terrestrial Mammals (Mathews and Harrower, 2020).

Local Status

Eight bat species are listed as being resident in North Merseyside; these are as follows:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared (*Plecotus auritus*)
- Whiskered (*Myotis mystacinus*)
- Brandt's (*Myotis brandtii*)
- Natterer's (*Myotis nattereri*)
- Daubenton's (*Myotis daubentonii*)
- Noctule (*Nyctalus noctula*)

Nine native species of bat have been recorded in North Merseyside, which include the above list with the addition of Nathusius pipistrelle (*Pipistrellus nathusii*), which have been trapped and ringed at Knowsley Safari Park and identified on bat detectors in some Liverpool parks including Newsham Park.

In addition to this, an individual record of the non-native Savi's Pipistrelle (*Pipistrellus savii*) was recorded which is thought to have arrived in the UK on a ship bound for Liverpool.

Populations of bats in many parts of North Merseyside are comparable in size and importance to some of the best areas in the country and the size and changes are believed to mirror national trends.

Pipistrelle bats occur in all four of the Merseyside districts and are widely distributed in North Merseyside, being the most encountered bats roosting within built structures and foraging in urban areas.

Brown long-eared and noctule are found throughout North Merseyside but are less common.

The distribution of Daubenton's, which feed predominately over water, are localised with records from Sefton, Liverpool and St Helens.

Whiskered/Brandt's and Natterer's are rare locally, with whiskered being recorded in Sefton and St. Helens and Natterer's only recorded in St. Helens so far.

Swarming activity has only been identified in one area in North Merseyside; Rainford of up to seven species (four species of *Myotis*, *Pipistrellus pipistrellus*, *Pipistrellus pygmaeus* and *Plecotus auritus*) (White, Ed.) et. al., 2017).

Appendix 4: Raw Survey Data - Walked Transects

Type by Survey:		Survey 1	Project:	Ainsdale Hope		
Date:		24/05/2023	Start Time:	21:24	Finish Time:	23:25
Sunset:		21:20	Start °C:	14.7	Finish °C:	13.9
Weather condition:		Dry, cool	Cloud cover (%):	5-10	Wind strength:	Beaufort 2-3
Transect No. 1		Surveyor: Martyn Barnes				
Time:	Listening Point (LP No.)/ Walk (W No.)	Bat Passes Heard & Activity				
21:20	Start	None				
21:20-21:23	W1	None				
21:23-21:26	LP1	None				
21:26-21:29	W2	None				
21:29-21:32	LP2	None				
21:32-21:35	W3	None				
21:35-21:37	LP3	None				
21:37-21:41	W4	Noctule (HNS) Brief pass				
21:41-21:45	LP4	Noctule (HNS) Brief pass and P45 passed west intro tree line				
21:45-21:49	W5	3x P45 foraging in western boundary tree line				
21:49-21:51	LP5	None				
21:51-21:54	W6	P45 foraging in western tree line				
21:54-21:56	LP6	2x P45 foraging and feeding at west corner of site				
21:57-21:59	W7	P45 foraging pass north along west boundary				
21:59-22:02	LP7	None				
22:02-22:05	W8	None				
22:05-22:07	LP8	None				
22:07-22:10	W9	1x P45 (HNS) Brief pass				
22:10-22:14	LP9	None				
22:14-22:17	W10	1x P45 (HNS) Brief pass				
22:17-22:20	LP10	1x P45 foraging along fence line				
22:20-22:25	W1	1x P45 (HNS) Foraging				
22:25-22:32	LP1	1x Myotis (HNS) Brief pass				
22:32-22:34	W2	None				
22:34-22:37	LP2	1x P45 (HNS) Foraging briefly				
22:37-22:39	W3	None				
22:39-22:42	LP3	1x P45 (HNS) and 3x P45 two of which chasing each other along hedgerow and social calling				
22:42-22:43	W4	None				
22:43-22:48	LP4	1x P45 (HNS) Foraging 2x P45 (HNS) Brief pass				
22:48-22:51	W5	2x P45 feeding and foraging and 2x P45 (HNS) Brief pass				
22:51-22:52	LP5	2x P45 (HNS) Brief pass				
22:52-22:55	W6	1x P45 (HNS) Feeding				
22:55-22:57	LP6	None				
22:57-23:00	W7	None				
23:00-23:02	LP7	None				
23:02-23:05	W8	None				

23:05-23:08	LP8	None
23:08-23:11	W9	None
23:11-23:13	LP9	1x P45 (HNS) Brief pass
23:13-23:16	W10	1x P45 (HNS) Brief pass
23:16-23:21	LP10	1x P45 (HNS) Brief pass
23:25	Finish	None

P45 – Common pipistrelle; HNS – Heard Not Seen.

Type by Survey:	Survey 2	Project:	Ainsdale Hope		
Date:	13/07/2023	Start Time:	21:36	Finish Time:	23:56
Sunset:	21:36	Start °C:	19.2	Finish °C:	18.1
Weather condition:	Mostly calm with misty spells	Cloud cover (%):	90-100	Wind strength:	Beaufort 0-1
Transect No. 1	Surveyor: Craig Smith & Vincent Smith				
Time:	Listening Point (LP No.)/ Walk (W No.)	Bat Passes Heard & Activity			
21:36	Finish	None			
21:36-21:39	LP10	None			
21:39-21:48	W10	None			
21:48-21:51	LP9	None			
21:51-21:53	W9	None			
21:53-21:56	LP8	None			
21:56-22:00	W8	None			
22:00-22:03	LP7	None			
22:03-22:07	W7	None			
22:07-22:11	LP6	1x P45 (HNS) Brief pass and 1x P45 commuting/foraging along treeline 10m high			
22:11-22:15	W6	None			
22:15-22:18	LP5	2x P45 constant foraging along treeline 1-6m high			
22:18-22:21	W5	2x P45 constant foraging along treeline 1-6m high			
22:21-22:25	LP4	1x P45 brief foraging (likely same bat from previous)			
22:25-22:27	W4	1x Noctule foraging 2-6m high and 1x P45 foraging 2-3m high			
22:27-22:30	LP3	2x P45 (HNS) Foraging			
22:30-22:33	W3	None			
22:33-22:36	LP2	1x P45 (HNS) Distant foraging and 1x Noctule (HNS)			
22:36-22:42	W2	1x P45 (HNS) Distant foraging and 1x P45			
22:42-22:45	LP1	2x P45 (HNS) Commuting pass			
22:45-22:51	W1	1x P45 foraging/commuting and 1x P45 (HNS) Distant call			
22:54-22:57	LP10	1x P45 (HNS) Pass			
22:57-23:01	W10	None			
23:01-23:04	LP9	1x P45 (HNS) Distant foraging pass			
23:04-23:06	W9	1x P45 (HNS)			
23:06-23:09	LP8	2x P45 (HNS) Distant pass			
23:09-23:12	W8	1x P45 (HNS) Foraging possibly from gardens			
23:12-23:15	LP7	1x P45 (HNS) Distant foraging pass			
23:15-23:18	W7	1x P45 (HNS) Distant foraging pass			
23:18-23:21	LP6	1x P45 (HNS) Distant foraging pass			
23:21-23:23	W6	None			
23:23-23:26	LP5	None			
23:26-23:29	W5	1x P45 foraging pass and 1x BLE			
23:29-23:32	LP4	1x Noctule (HNS) and 1x P45 (HNS)			
23:32-23:34	W4	1x P45			
23:34-23:37	LP3	1x BLE (HNS) Pass and 1x P45 (HNS) Distant pass			
22:37-22:39	W3	1x P45 (HNS) Foraging pass			
23:39-23:42	LP2	1x P45 (HNS) Foraging pass			
23:42-23:47	W2	1x P45 (HNS) Foraging pass			
23:47-23:50	LP1	1x P45 (HNS) On and off foraging throughout			

23:50-23:56	W1	2+ P45 (HNS) Multiple bats foraging/feeding and 2x P45 (HNS) Foraging pass
23:56	Start	None

P45 – Common pipistrelle; BLE – Brown long-eared; HNS – Heard Not Seen.

Type by Survey:	Survey 3	Project:	Ainsdale Hope		
Date:	09/10/2023	Start Time:	18:30	Finish Time:	20:43
Sunset:	18:30	Start °C:	17.7	Finish °C:	13
Weather condition:	Warm and humid	Cloud cover (%):	100	Wind strength:	Beaufort 0-1
Transect No. 1	Surveyor: Craig Smith & Sophie Cork				
Time:	Listening Point (LP No.)/ Walk (W No.)	Bat Passes Heard & Activity			
18:30	Start	None			
18:30-18:35	W1	None			
18:35-18:38	LP1	None			
18:38-18:44	W2	None			
18:44-18:47	LP2	None			
18:47-18:52	W3	None			
18:52-18:55	LP3	1x P45 flying from hedge towards hill 2-3m high			
18:55-18:59	W4	None			
18:59-19:02	LP4	None			
19:02-19:06	W5	None			
19:06-19:09	LP5	None			
19:09-19:13	W6	None			
19:13-19:16	LP6	1x P45 flew along hedge then turned and 1x BLE (HNS) and 1x P45 flew from garden			
19:16-19:21	W7	1x P45 foraging/commuting			
19:21-19:24	LP7	None			
19:24-19:28	W8	None			
19:28-19:31	LP8	None			
19:31-19:32	W9	None			
19:32-19:35	LP9	1x P45 commuting towards road			
19:35-19:40	W10	None			
19:40-19:43	LP10	1x P45 (HNS) Very distant			
19:43-19:48	W1	None			
19:48-19:51	LP1	None			
19:51-19:54	W2	None			
19:54-19:57	LP2	None			
19:57-19:59	W3	None			
19:59-20:02	LP3	None			
20:02-20:04	W4	None			
20:04-20:07	LP4	None			
20:07-20:09	W5	None			
20:09-20:12	LP5	1x P45 (HNS) Distant pass			
20:12-20:14	W6	None			
20:14-20:17	LP6	None			
20:17-20:20	W7	None			
20:20-20:23	LP7	None			
20:23-23:25	W8	None			
20:25-20:28	LP8	1x P45 (HNS) Foraging pass			
20:28-20:30	W9	None			
20:30-20:33	LP9	1x P45 (HNS) Social calling and 1x P45 flying 6m from road			
20:33-20:37	W10	1x P45 (HNS)			

20:37-20:40	LP10	None
20:43	Finish	None

P45 – Common pipistrelle; BLE – Brown long-eared; HNS – Heard Not Seen.