

The Great Grid Upgrade

Sea Link

Sea Link

Volume 6: Environmental Statement

Document: 6.3.3.2.L

Part 3 Kent

Chapter 2 Appendix 3.2.L

Nighttime Bat Walkover and Static Detector Survey Report

Planning Inspectorate Reference: EN020026

Version: A

March 2025

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009 Regulation 5(2)(a)

nationalgrid

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1. Nighttime Bat Walkover and Static Detector Survey Report

1.1 Introduction

Background

- 1.1.1 The Sea Link Project (hereafter referred to as the 'Proposed Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the southeast and East Anglia. The Proposed Project is required to accommodate additional power flows generated from renewable and low carbon generation, as well as accommodating additional new interconnection with mainland Europe. This would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400 kV overhead line close to Richborough in Kent.
- 1.1.2 The purpose of this document is to detail the methodology and results of ecological surveys for bat activity, comprising nighttime bat walkover (NBW) surveys and static automated detector surveys in relation to the Kent Onshore Scheme Order Limits.
- 1.1.3 The baseline findings of this report provide information on any potential ecological constraints associated with bats for incorporation into **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity** for the Kent Onshore Scheme and the **Application Document 6.6 Habitat Regulations Assessment (HRA) Report**.
- 1.1.4 This appendix should be read in conjunction with the following figures:
- **Application Document 6.4.3.2.L Nighttime Bat Walkover and Static Detector Report.**

Scope

- 1.1.5 This report details the results of surveys undertaken to confirm the value of the land within the Kent Onshore Scheme Order Limits for foraging and commuting bats. The findings of nighttime bat walkover surveys and static detector surveys within and adjacent to the Kent Onshore Scheme Order Limits have informed the ecological impact assessment and identification of mitigation measures (where required) which are reported in **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**.

Survey Area

- 1.1.6 The survey area included a total of six transect routes, shown within **Application Document 6.4.3.2.L.1 Kent Transect Routes and SM4 Locations**, with Transect 1 in the east of the Kent Onshore Scheme Order Limits, southwest of Cliffsend adjacent to St. Augustine's Golf Course, and Transect 6 in the southwest of the Kent Onshore Scheme Order Limits, immediately south of the River Stour.

1.2 Relevant Legislative and Policy Context

- 1.2.1 All UK native bat species and their roosts (whether bats are present or not are protected under the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017) and under the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981).
- 1.2.2 Under the Conservation of Habitats and Species Regulations 2017 (as amended) it is an offence to:
- deliberately capture, injure or kill a bat;
 - deliberately disturb bats; and
 - damage or destroy a bat breeding or resting place.
- 1.2.3 Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to:
- disturb a bat, either intentionally or recklessly, while occupying a structure or place of shelter/protection; and
 - intentionally or recklessly obstruct access to any structure which a bat uses for shelter or protection.
- 1.2.4 Given the above legislation the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required there is still a legal responsibility placed on the developer to ensure that a Natural England European Protected Species Mitigation Licence is obtained to cover any works that have the potential to result in an offence under the above legislation.

Priority Species

- 1.2.5 The Natural Environment and Rural Communities (NERC) Act 2006 (as amended) (HM Government, 2006) list of Species of Principal Importance is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006 (as amended); under Section 40 every public authority (e.g. a local authority or local planning authority) must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.
- 1.2.6 In addition, with regard to those species on the list of Species of Principal Importance (SPI) listed under Section 41, the Secretary of State must:
- “(a) take such steps as appear to the Secretary of State to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section; or
 - (b) promote the taking by others of such steps”
- 1.2.7 The UK Biodiversity Action Plan (UKBAP) (HM Government, 1994) was launched in 1994 and established a framework and criteria for identifying species and habitat types of conservation concern. From this list, action plans for priority habitats and species of conservation concern were published and have subsequently been succeeded by the UK Biodiversity Framework (May 2024) (JNCC on behalf of the Four Countries' Biodiversity Group, 2024). The UK Post 2010 Development Framework (JNCC and DEFRA on behalf of the Four Countries' Biodiversity Group, 2012) is relevant in the context of Section 40 of the NERC Act 2006 (as amended), meaning that Priority

Species and Habitats (now known as Species and Habitats of Principal Importance) are material considerations in planning. These habitats and species are identified as those of conservation concern due to their rarity or a declining population trend.

- 1.2.8 Seven of the UK bat species are listed as SPI within Section 41 of the NERC Act 2006 (as amended): namely, barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule bat (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*), meaning that they are of material consideration in planning.

1.3 Methodology

- 1.3.1 This section describes the survey methods used to determine the assemblage of bat species present within the survey area, which included:
- a desk study;
 - a series of nighttime bat walkover surveys; and
 - a series of static (automated) bat detector surveys.

Desk Study

- 1.3.2 A desk study was undertaken July 2022 and updated in 2024. This desk study obtained records of bats within the preceding ten years and within a 5 km radius of the Kent Onshore Scheme Order Limits and non-statutory nature conservation designations within 2 km of the Kent Onshore Scheme Order Limits (including those of relevance to bats) from Kent and Medway Biological Records Centre (Kent and Medway Biological Records Centre, 2022).
- 1.3.3 A search was also undertaken of freely available resources including the Multi-Agency Geographic Information for the Countryside (MAGIC) website (Department of Environment, Food and Rural Affairs, 2024) for relevant statutory site designations within 10 km of the Kent Onshore Scheme Order Limits and bat designated Special Areas of Conservation (SACs) within 30 km of the Kent Onshore Scheme Order Limits; and granted bat mitigation licenses (EPSMLs) within 5 km.

Field Survey Methods

Nighttime Bat Walkover (NBW) surveys

- 1.3.4 The number of transects and automated static bat echolocation detectors (SM4bat FS detectors) used, was determined through consideration of the size of the Kent Onshore Scheme Order Limits and its relative quality, in line with the current Bat Conservation Trust (BCT) guidance (Collins, 2023). Making reference to the current guidance (Collins, 2023) a single NBW was completed per season (Spring, Summer, Autumn) for each transect route.
- 1.3.5 Transect routes were focused on areas where permanent infrastructure will be built along the route, but also included areas of temporary habitat loss. Given the size of the Kent Onshore Scheme Order Limits, in order to adequately include all areas of permanent and temporary habitat loss, six transect routes were appropriate. These transect routes are hereafter collectively referred to as the 'Survey Area'.

- 1.3.6 The results of the NBW and SM4bat FS detector surveys were reviewed upon completion of each NBW or recording period, to determine if an increased survey effort was appropriate in line with the current BCT guidance (Collins, Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition), 2023).
- 1.3.7 Each NBW involved two surveyors walking a pre-defined transect route within the Survey Area which included a series of 'listening points' at suitable locations (shown in **Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023** to **Application Document 6.4.3.2.L.5 Kent Nighttime Bat Walkover - July 2024**). Where possible, at least one surveyor held a Natural England WML-CL18 (Bat Survey Level 2) class licence.
- 1.3.8 In line with updated guidance from the BCT (Collins, 2023), 'listening points' were utilised where deemed appropriate by surveyors during the survey at each 'listening point', surveyors recorded bat activity for three minutes using bat echolocation detectors. Any additional activity encountered whilst walking between points was also noted.
- 1.3.9 The survey route was designed to include potential flight paths or foraging areas within the Survey Area, and also mature trees, which offer potential roost sites. The starting point and direction of the transect route was varied during each survey visit in order to ensure all areas of the transect were walked close to dusk. The transect routes are shown in **Application Document 6.4.3.2.L.1 Kent Transect Routes and SM4 Locations**, with habitat descriptions in Table 1.1.

Table 1.1 Transect route descriptions

Transect	Transect Location	Habitats Present
1	East of the Kent Onshore Scheme Order Limits, west of St. Augustine's Golf Course	Arable land, scrub, broadleaved plantation woodland, running water (stream).
2	East of the Kent Onshore Scheme Order Limits, north of Weatherlees Hill Wastewater Treatment Works	Arable land bordered by hedgerows, scrub, tall ruderal vegetation and wet ditches. Woodland edges also present.
3	Centre of the Kent Onshore Scheme Order Limits, north of Weatherlees Hill	Arable land bordered by hedgerows, scrub, tall ruderal vegetation and wet ditches. Woodland edges also present.
4	Centre of the Kent Onshore Scheme Order Limits, north of Transect 3 within Minster Marshes	Arable land bordered by wet ditches, with hedgerows present in the west.
5	Southwest of the Kent Onshore Scheme Order Limits, north of the River Stour	Arable land in the north, semi-improved neutral grassland in the south with wet ditches, hedgerows. Static waterbodies and the River Stour are present to the south.
6	Southwest of the Kent Onshore Scheme Order Limits, south of the River Stour	Improved grassland that becomes waterlogged, arable land, hedgerows,

Transect	Transect Location	Habitats Present
		wet ditches. River Stour and static waterbodies are present to the north.
1.3.10	Surveys completed in 2023 were in line with best practice guidance at the time of survey (Collins, 2016). Surveys completed in 2024 were in line with current best practice guidance (Collins, 2023). The survey methodology has been updated to reflect the current guidance. Therefore, during the 2024 NBWs, surveyors remained static for the first 30 minutes after sunset at a suitable location, with the aim of determining the potential presence of any nearby roosting resources.	
1.3.11	Surveyors used echolocation detectors (BatloggerM) to help determine which species were present. Bat activity was plotted in the field on GPS-enabled devices.	
1.3.12	In line with current best practice guidance (Collins, 2023) the dusk surveys commenced at sunset or up to 15 minutes before and continued until at least two hours after sunset.	
1.3.13	The time, location, number, species (where possible) and direction of flight were recorded for each bat pass (discrete burst of echolocation heard, or bat activity observed) encountered during the survey.	
1.3.14	Surveyors recorded the echolocation calls to allow use of analysis software to verify bat calls where required.	
1.3.15	Survey visits were scheduled to avoid nights with cold, wet or windy conditions. All surveys were undertaken during favourable weather conditions which are summarised in Table 1.2 below.	

Table 1.2 NBW weather conditions

Transect	Transect Location	Survey date	Start and end date	Sunset time	Temperature (°C) at start of survey	Weather conditions
Transect 1	East of the Kent Onshore Scheme Order Limits, west of St. Augustin e's Golf Course	18/07/2023	8:46pm – 11:01pm	9:01pm	20	40-50% cloud cover, light air (Beaufort 1), dry
		10/10/2023	6:02pm – 8:20pm	6:18pm	19	60-90% cloud cover, light air (Beaufort 1), dry
		21/05/2024	8:48pm – 10:48pm	8:48pm	14	100% cloud cover, still

Transect	Transect Location	Survey date	Start and end date	Sunset time	Temperature (°C) at start of survey	Weather conditions
						(Beaufort 1), recent rain
Transect 2	East of the Kent Onshore Scheme Order Limits, north of Weatherlee's Hill Wastewater Treatment Works	18/07/2023	8:46pm – 11:01pm	9:01pm	20	40-50% cloud cover, still (Beaufort 0), dry
		10/10/2023	6:18pm – 20:18pm	6:18pm	19	60-90% cloud cover, light breeze (Beaufort 2), dry
		20/05/2024	8:47pm – 10:47pm	8:47pm	12	100% cloud cover, moderate breeze (Beaufort 4), dry
Transect 3	Centre of the Kent Onshore Scheme Order Limits, north of Weatherlee's Hill	18/07/2023	8:46pm – 11:01pm	9:01pm	20	60-90% cloud cover, light breeze (Beaufort 2), dry
		10/10/2023	6:02pm – 8:20pm	6:18pm	19	10-30% cloud cover, gentle breeze (Beaufort 3), dry
		20/05/2024	8:47pm – 10:47pm	8:47pm	12	100% cloud cover, moderate breeze (Beaufort 4), dry
Transect 4	Centre of the Kent Onshore Scheme Order	19/07/2023	8:45pm – 11pm	9pm	18	40-50% cloud cover, light air (Beaufort 1), dry

Transect	Transect Location	Survey date	Start and end date	Sunset time	Temperature (°C) at start of survey	Weather conditions
	Limits, north of Transect 3 within Minster Marshes	11/10/2023	6pm – 8:15pm	6:18pm	18	100% clouds, light breeze (Beaufort 2), dry but recent rain
		20/05/2024	8:47pm – 10:47pm	8:47pm	12	60-90% cloud cover, gentle breeze (Beaufort 3), dry
Transect 5	South-west of the Kent Onshore Scheme Order Limits, north of the River Stour	19/07/2023	8:46pm – 11:09pm	9pm	18	40-50% cloud cover, still (Beaufort 0), dry
		11/10/2023	6:16pm – 8:18pm	6:18pm	17	100% clouds, moderate breeze (Beaufort 4), dry
		21/05/2024	8:48pm – 10:48pm	8:48pm	14	100% cloud cover, still (Beaufort 1), recent rain
Transect 6	South-west of the Kent Onshore Scheme Order Limits, south of the River Stour	11/10/2023	6:16pm – 8:18pm	6:18pm	17	60-90% cloud cover, gentle breeze (Beaufort 3), dry
		21/05/2024	8:48pm – 10:48pm	8:48pm	15	100% cloud cover, still (Beaufort 1), drizzle
		23/07/2024	8:55pm – 10:55pm	8:55pm	17	10% cloud cover, still

Transect	Transect Location	Survey date	Start and end date	Sunset time	Temperature (°C) at start of survey	Weather conditions
						(Beaufort 1), dry

Static automated detector surveys

- 1.3.16 One SM4bat FS detector was placed within each transect route of the Kent Onshore Scheme Order Limits in July and October 2023, and once per month from May to September 2024 (i.e. six total detectors deployed per month). The locations of the automated detectors are shown in **Application Document 6.4.3.2.L.1 Kent Transect Routes and SM4 Locations** and described in Table 1.3. The SM4bat FS detectors were left on-site for a minimum of five consecutive nights for each survey occasion. Data were recorded onto an SD card in full spectrum format, and subsequently converted to zero crossing format for echolocation call analysis using Analook or Kaleidoscope Pro software.
- 1.3.17 The SM4bat FS detectors were set up to record bat echolocation over the periods shown in Table 1.4.

Table 1.3 SM4bat FS detector locations

Transect	Grid reference	Location within transect
1	TR 33373 63512	South-west of transect route, within hedgerow adjacent to the A256.
2	TR 32908 63338	South-west of transect route, within hedgerow adjacent to track.
3	TR 32397 63062	Centre of transect route, within hedgerow.
4	TR 32362 63226	South of transect route, within scrub along Minster Stream.
5	TR 31948 62871	South-west of transect route, within hedgerow.
6	TR 31799 62687	North of transect route, within hedgerow adjacent to wet ditch.

Table 1.4 SM4bat FS detector survey periods

Month/Year	Transect					
	1	2	3	4	5	6
July 2023 (dusk to dawn)	26/07 – 31/07	26/07 – 31/07	26/07 – 31/07	26/07 – 31/07	26/07 – 31/07	N/A
October 2023 (dusk to dawn)	11/10 – 16/10	11/10 – 16/10	11/10 – 16/10	11/10 – 16/10	11/10 – 16/10	16/10 – 26/10
May 2024 (dusk to dawn)	15/05 – 22/05	15/05 – 21/05	15/05 – 21/05	15/05 – 21/05	15/05 – 22/05	16/05 – 22/05
June 2024 (dusk to dawn)	19/06 – 25/06	19/06 – 25/06	19/06 – 25/06	19/06 – 25/06	19/06 – 25/06	19/06 – 25/06
July 2024 (dusk to dawn)	26/07 – 01/08	26/07 – 01/08	26/07 – 01/08	26/07 – 01/08	26/07 – 01/08	26/07 – 16/08
August 2024 (dusk to dawn)	16/08 – 28/08	16/08 – 28/08	16/08 – 28/08	16/08 – 28/08	16/08 – 28/08	16/08 – 28/08
September 2024 (dusk to dawn)	03/09 – 10/09	03/09 – 10/09	04/09 – 10/09	04/09 – 10/09	03/09 – 10/09	02/09 – 26/09

Limitations

- 1.3.18 It should be noted that ecosystems are dynamic and constantly changing, and therefore species may move, or new species may be recorded in subsequent years. In accordance with the current guidance (CIEEM, 2019) the results of the bat surveys are considered to be valid for a period of approximately 24 months and after this timeframe an ecologist should be consulted to determine if updated survey and assessment is required.
- 1.3.19 The detectability of bat echolocation calls varies greatly by species. Calls of lower frequency and louder calls, such as those by noctule and pipistrelle bats, will be detected at a greater distance than calls that are quieter (such as brown long-eared bat calls) or high frequency and therefore attenuate more quickly, and as such are more likely to be under recorded.

- 1.3.20 Due to equipment failures, in some months the SM4bat FS detectors did not record for five nights in all locations. The SM4bat FS detector located at Transect 1 in October 2023 recorded for a total of two nights, and in August 2024 recorded for a total of four nights. The SM4bat FS detector located at Transect 2 recorded for four nights in October 2023, did not record in August 2024, and recorded for three nights in September 2024. The SM4bat FS detector located at Transect 3 recorded for three nights in May, August and September 2024. The SM4bat FS detector located at Transect 4 recorded for three nights in May 2024, 3.5 nights in August 2024 and four nights in September. The SM4bat FS detector located at Transect 5 recorded for three nights in October 2023, August 2024 and September 2024. The SM4bat FS detector located at Transect 6 recorded for four nights in October 2023, and did not record in July 2024.
- 1.3.21 The average number of nights recorded across all transects in all months of recording is 4.67 which is below the recommended five nights average. Reduced data collection at some transect locations in some months is not considered to be a constraint to the conclusions of this report, as sufficient data has been collected across the Survey Area as a whole to determine the key habitat for use by bats, and the bat assemblage utilising the Kent Onshore Scheme Order Limits. Moreover, as a precaution all hedgerows being affected by the Kent Onshore Scheme are being treated as important features for bats.

1.4 Results

Desk Study

Bat records

- 1.4.1 The data search returned 283 records of bats within 5 km of the Kent Onshore Scheme Order Limits. The records represented ten bat species, comprising, serotine (*Eptesicus serotinus*), Daubenton's bat (*Myotis daubentonii*), whiskered bat (*Myotis mystacinus*), Natterer's bat (*Myotis natteri*), Leisler's bat (*Nyctalus leisleri*), noctule, Nathusius' pipistrelle (*Pipistrellus nathusii*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle, and brown long-eared bat. The closest of these records was recorded 70 m west of the Kent Onshore Scheme Order Limits.

Bat mitigation licenses

- 1.4.2 Desk study data from MAGIC (DEFRA, 2024) showed that there have been five granted EPSMLs within 5 km of the Kent Onshore Scheme Order Limits in relation to bats. Details of these are provided in Table 5.

Table 5 Granted EPSML licenses within 5 km of Kent Onshore Scheme Order Limits

License Case Reference	Approximate Species Distance to Kent Onshore order limits	Start Date	End Date	Permissible Activities
------------------------	---	------------	----------	------------------------

EPSM2013-6784	2.3 km south of A256 compound	Common pipisrelle, soprano pipistrelle, brown long-eared bat	10/12/2013	30/09/2016	Destruction of a resting place
2019-40666-EPS-MIT	2.6 km south of A256 compound	Brown long-eared bat	06/06/2019	06/06/2029	Destruction of a resting place
2017-31456-EPS-MIT	3.5 km south of A256 compound	Soprano pipistrelle	28/09/2017	31/10/2018	Destruction of a resting place
EPSM2010-2301	875 m southwest	Common pipisrelle, soprano pipistrelle, Nathusius' pipistrelle brown long-eared bat	02/08/2011	31/10/2012	Destruction of a resting place
2015-16862-EPS-NSIP2	625 m southwest	Common pipisrelle, soprano pipistrelle, Natterer's bat, Daubenton's bat, brown long-eared bat	16/11/2017	30/11/2022	Destruction of a resting place

Statutory designations

- 1.4.3 There are no statutory designations for sites in relation to bats within 30 km of the Kent Onshore Scheme Order Limits.

Field Survey

NBW survey results

- 1.4.4 The results of the NBW surveys at the Kent Onshore Scheme are outlined by transect route below and shown on **Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 to Application Document 6.4.3.2.L.5 Kent Nighttime Bat Walkover - July 2023** which illustrate the spread of all bat registrations recorded during the bat activity transects across the Kent Onshore Scheme, together with locations of

relatively higher levels of bat activity recorded within the Kent Onshore Scheme, or where high quality bat habitat exists outside of the walked transect routes.

1.4.5 A summary of the results of the NBW surveys are presented in Table 1.6 to Table 11 below, with full results in **Annex 2.L.1** and example sonograms in **Annex 2.L.2**. Transect Points (TP) are shown in **Application Document 6.4.3.2.L.1 Kent Transect Routes and SM4 Locations**.

Transect 1

Table 6 NBW results summary - Transect 1

Survey Date	Summary of Results
Visit 1: Dusk 18 July 2023	<p>During the dusk activity survey on 18 July 2023, the first bat activity recorded was a commuting pass by a noctule bat at 38 minutes after sunset. The majority of activity recorded was of common pipistrelle bats, comprising predominantly commuting passes of individual bats throughout the transect. In total activity comprised:</p> <ul style="list-style-type: none">• two commuting passes by individual soprano pipistrelles;• twelve commuting passes, two foraging activity and four brief passes of individual common pipistrelles;• a single commuting pass by an individual noctule;• a single brief pass by a brown long-eared bat; and• one commuting pass and one brief pass by individual <i>Myotis</i> species bats¹. <p>Activity recorded was spread across the transect route, but predominantly in the southern half along concentrated around the hedgerows and a watercourse. See Annex 2.L.1 and Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 for further details.</p>
Visit 2: Dusk 10 October 2023	<p>During the dusk activity survey on 10 October 2023, the first bat activity recorded was a</p>

¹ *Myotis* bat calls can be very similar; therefore have been classified as *Myotis* species unless call characteristics or observations of the bat and behaviour have been recorded to enable species level identification.

	<p>commuting pass by a common pipistrelle at 38 minutes after sunset. The majority of activity recorded was of common pipistrelle bats, comprising predominantly commuting passes by individual bats throughout the transect. In total activity comprised:</p> <ul style="list-style-type: none"> • three commuting passes and two brief passes by individual common pipistrelles; • three brief passes by individual soprano pipistrelles; and • a single commuting pass by an individual brown long-eared bat. <p>Activity recorded was spread throughout the transect route, but predominantly at TP6, and between TP3 and TP4. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 3: Dusk 21 May 2024	<p>During the dusk activity survey on 21 May 2024, the first bat activity was a brief pass by a common pipistrelle bat at 25 minutes after sunset. All activity recorded was of individual common pipistrelle bats, predominantly comprising brief passes in the north of the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> • four brief passes, one commuting pass and one instance of foraging activity by individual common pipistrelles. <p>Activity was predominantly recorded in the north of the transect route, between TP1 and TP5 and at TP2 and TP3. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover – May 2024 for further details.</p>

Transect 2

Table 7 NBW results summary - Transect 2

Survey Date	Summary of Results
Visit 1: Dusk 18 July 2023	During the dusk activity survey on 18 July 2023, the first bat activity recorded was a brief pass by a Nathusius' pipistrelle at 42 minutes after sunset. The majority of activity recorded

Survey Date	Summary of Results
	<p>was of soprano pipistrelle bats, comprising brief passes only predominantly in the west of the transect route along watercourses. In total activity comprised:</p> <ul style="list-style-type: none"> • fourteen brief passes of individual soprano pipistrelles; • nine brief passes of individual common pipistrelles; • a single brief pass by an individual <i>Myotis</i> species bat; and • three brief passes by individual Nathusius' pipistrelles. <p>Activity was predominantly recorded in the west of the transect route concentrated along watercourses and associated hedgerows. See Annex 2.L.1 and Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 for further details.</p>
Visit 2: Dusk 10 October 2023	<p>During the dusk activity survey on 10 October 2023, the first bat activity recorded was a commuting pass by a soprano pipistrelle at 36 minutes after sunset. The majority of activity recorded was of soprano pipistrelle bats, predominantly comprising brief passes with two instances of foraging activity at TP8 and between TP8 and TP1. In total activity comprised:</p> <ul style="list-style-type: none"> • five brief passes, four commuting passes and two foraging activity of individual soprano pipistrelles; • two commuting passes, one brief pass and one social call of individual common pipistrelles; • two brief passes and two commuting passes of individual <i>Myotis</i> species bats; and • three commuting passes and two brief passes of individual Nathusius' pipistrelles. <p>Activity was predominantly recorded in the west of the transect route concentrated along watercourses and associated hedgerows. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 3: Dusk 20 May 2024	<p>During the dusk activity survey on 20 May 2024, the first bat activity recorded was a brief pass by a Nathusius' pipistrelle at 50 minutes after sunset. Activity recorded was split equally between common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle with two instances of each species recorded during the survey. In total activity comprised:</p>

Survey Date	Summary of Results
	<ul style="list-style-type: none"> • one brief pass and one commuting pass of individual soprano pipistrelles; • one brief pass and one commuting pass of individual common pipistrelles; and • two brief passes of individual Nathusius' pipistrelles. <p>Activity was predominantly recorded in the west of the transect route concentrated along watercourses and associated hedgerows. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover - July 2024 for further details.</p>

Transect 3

Table 8 NBW results summary - Transect 3

Survey Date	Summary of Results
Visit 1: Dusk 18 July 2023	<p>During the dusk activity survey on 18 July 2023, the first bat activity recorded was a brief pass of a pipistrelle bat, either common or soprano pipistrelle at 38 minutes after sunset. The majority of activity recorded was of soprano pipistrelle, predominantly comprising brief passes throughout the transect route, with two instances of foraging activity between TP2 and TP3, and TP1 and TP9. In total activity comprised:</p> <ul style="list-style-type: none"> • nine brief passes, four commuting passes and two foraging activity of individual soprano pipistrelles; • eight brief passes and three foraging activity of individual common pipistrelles; • a single commuting pass by a Leisler's bat; • a single brief pass by a pipistrelle species bat (either common or soprano pipistrelle)²; and • a single brief pass by a <i>Myotis</i> species bat. <p>Activity was recorded throughout the transect route, concentrated along the ditch network. See Annex 2.L.1</p>

² Common pipistrelle and soprano pipistrelle can be difficult to separate when calls recorded are towards the lower end of the soprano pipistrelle frequency and higher end of the common pipistrelle peak frequency. As such, any pipistrelle bat with a peak frequency between 49 kHz and 51kHz has been classified as pipistrelle bat.

Survey Date	Summary of Results
	<p>Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 for further details.</p>
Visit 2: Dusk 10 October 2023	<p>During the dusk activity survey on 10 October 2023, the first bat activity recorded was a commuting pass of a brown long-eared bat, 15 minutes after sunset. The majority of activity recorded was of soprano pipistrelle, predominantly comprising brief passes with two instances of foraging activity between TP8 and TP9, and at TP3. In total activity comprised:</p> <ul style="list-style-type: none"> • four brief passes, one commuting pass and two instances of foraging activity of individual soprano pipistrelles; • two brief passes, one commuting pass and one instance of foraging activity of individual common pipistrelles; • a single commuting pass of an individual brown long-eared bat; • two brief passes and one commuting pass of individual <i>Myotis</i> species bats; and • one brief pass and one commuting pass of individual Nathusius' pipistrelle bats. <p>Activity was predominantly recorded in the south of the transect route, concentrated along the woodland edge and ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 3: Dusk 20 May 2024	<p>During the dusk activity survey on 20 May 2024, the first bat activity recorded was foraging activity by an individual common pipistrelle 46 minutes after sunset. The majority of activity recorded was of common pipistrelle bats, predominantly comprising foraging activity in the east of the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> • eight instances of foraging activity, seven brief passes and one commuting pass of individual common pipistrelle bats; • seven instances of foraging activity, five brief passes and one commuting pass of individual soprano pipistrelles; • one brief pass of an individual pipistrelle species bat (either common or soprano pipistrelle); • one brief pass of an individual <i>Myotis</i> species bat; and

Survey Date	Summary of Results
	<ul style="list-style-type: none"> one brief pass of an individual Nathusius' pipistrelle. <p>Activity was predominantly in the east of the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover – May 2024 for further details.</p>

Transect 4

Table 9 NBW results summary - Transect 4

Survey Date	Summary of Results
Visit 1: Dusk 19 July 2023	<p>During the dusk activity survey on 19 July 2024, the first bat activity recorded was a brief pass by a common pipistrelle at 52 minutes after sunset. The majority of activity recorded was of soprano pipistrelle bats, comprising predominantly brief passes and commuting passes. In total activity comprised:</p> <ul style="list-style-type: none"> four brief passes, four commuting passes and two instances of foraging activity of individual soprano pipistrelle bats; and five commuting passes, one brief pass and three foraging activity of individual common pipistrelles. <p>Activity was predominantly in the south of the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 for further details.</p>
Visit 2: Dusk 11 October 2023	<p>During the dusk activity survey on 11 October 2023, the first bat activity recorded was a brief pass by a soprano pipistrelle at 26 minutes after sunset. The majority of activity recorded was of soprano pipistrelle bats, comprising predominantly brief passes with two instances of foraging activity, one at TP8 and one between TP8 and TP9. In total activity comprised:</p> <ul style="list-style-type: none"> four brief passes and two instances of foraging activity of individual soprano pipistrelles, with an additional brief pass by two soprano pipistrelles together; three foraging activity, two brief passes and one commuting pass by individual common pipistrelles; and

Survey Date	Summary of Results
	<ul style="list-style-type: none"> two brief passes by individual Nathusius' pipistrelles. <p>Activity was predominantly recorded in the west of the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 3: Dusk 20 May 2024	<p>During the dusk activity survey on 20 May 2024, the first bat activity recorded was a commuting pass by a pipistrelle species bat (either common or soprano pipistrelle) at 41 minutes after sunset. The majority of activity recorded was of common pipistrelle bats, predominantly comprising foraging activity throughout the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> five foraging activity, three brief passes and one commuting pass of individual common pipistrelles; two foraging activity of individual soprano pipistrelles; a single commuting pass by an individual pipistrelle species bat (common or soprano pipistrelle); and a single brief pass by an individual <i>Myotis</i> species bat. <p>Activity was recorded throughout the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover - May 2024 for further details.</p>

Transect 5

Table 10 NBW results summary - Transect 5

Survey Date	Summary of Results
Visit 1: Dusk 19 July 2023	<p>During the dusk activity survey on 19 July 2023, the first bat activity recorded was a brief pass by a soprano pipistrelle at one hour and six minutes after sunset. The majority of activity recorded was of soprano pipistrelle bats, comprising entirely brief passes spread throughout the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> twelve brief passes of individual soprano pipistrelle bats;

Survey Date	Summary of Results
	<ul style="list-style-type: none"> • ten brief passes of individual common pipistrelle bats; and • a single brief pass of an individual Nathusius' pipistrelle. <p>Activity was spread throughout the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.2 Kent Nighttime Bat Walkover - July 2023 for further details.</p>
Visit 2: Dusk 11 October 2023	<p>During the dusk activity survey on 11 October 2023, the first bat activity recorded was a brief pass by a Leisler's bat at 29 minutes after sunset. The majority of activity recorded was of Nathusius' pipistrelle bats, predominantly comprising commuting passes between TP5 and TP6. In total activity comprised:</p> <ul style="list-style-type: none"> • three commuting passes, one brief pass and one foraging activity of individual Nathusius' pipistrelles; • two brief passes of individual common pipistrelles; • one brief pass and one commuting pass of individual soprano pipistrelles; • a single brief pass of an individual Leisler's bat; and • a single commuting pass of an individual <i>Myotis</i> species bat. <p>Activity was predominantly in the south of the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 3: Dusk 21 May 2024	<p>During the dusk activity survey on 21 May 2024, the first bat activity recorded was a commuting pass by an individual soprano pipistrelle at 39 minutes after sunset. The majority of activity recorded was of soprano pipistrelle bats, comprising predominantly brief passes by individual bats spread throughout the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> • ten brief passes, three commuting passes and two foraging activity of individual soprano pipistrelles; • eleven brief passes and one commuting pass of individual common pipistrelles; • two brief passes of individual noctule bats;

Survey Date	Summary of Results
	<ul style="list-style-type: none"> one brief pass, one commuting pass and one foraging activity of individual pipistrelle species bats (either common or soprano pipistrelle); and six brief passes and two commuting passes of individual Nathusius' pipistrelles. <p>Activity was recorded throughout the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover - May 2024 for further details.</p>

Transect 6

Table 11 NBW results summary - Transect 6

Survey Date	Summary of Results
Visit 1: Dusk 10 October 2023	<p>During the dusk activity survey on 10 October 2023, the first bat activity recorded was foraging activity by an individual soprano pipistrelle at 30 minutes after sunset. The majority of activity recorded was of serotine bats, predominantly comprising foraging activity between TP3 and TP4. In total activity comprised:</p> <ul style="list-style-type: none"> two foraging activity and one brief pass of individual serotines; two foraging activity of individual Nathusius' pipistrelles; two instances of foraging activity of individual common pipistrelles; and two foraging activity of individual soprano pipistrelles. <p>Activity was predominantly recorded in the north and west of the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.3 Kent Nighttime Bat Walkover - October 2023 for further details.</p>
Visit 2: Dusk 21 May 2024	<p>During the dusk activity survey on 21 May 2024, the first bat activity recorded was foraging activity by an individual soprano pipistrelle at 53 minutes after sunset. The majority of activity recorded was of soprano pipistrelle, predominantly comprising foraging activity spread throughout the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> five foraging activity and two brief passes of individual soprano pipistrelle bats;

Survey Date	Summary of Results
	<ul style="list-style-type: none"> • four foraging activity of individual common pipistrelle bats; • three foraging activity of individual pipistrelle species bats (either common or soprano pipistrelle); and • one foraging activity of an individual Nathusius' pipistrelle. <p>Activity was recorded throughout the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.4 Kent Nighttime Bat Walkover – May 2024 for further details.</p>
Visit 3: Dusk 23 July 2024	<p>During the dusk activity survey on 23 July 2024, the first bat activity recorded was foraging activity by an individual soprano pipistrelle at 53 minutes after sunset. The majority of activity recorded was of soprano pipistrelle, predominantly comprising brief passes throughout the transect route. In total activity comprised:</p> <ul style="list-style-type: none"> • five brief passes and four foraging activity of individual soprano pipistrelles; • three brief passes and one commuting pass of individual common pipistrelles; and • one brief pass of an individual serotine. <p>Activity was recorded throughout the transect route, concentrated along the ditch network. See Annex 2.L.1 and Application Document 6.4.3.2.L.5 Kent Nighttime Bat Walkover - July 2024 for further details.</p>

Automatic detector survey results

- 1.4.1 The results of the SM4bat FS detector surveys completed at the Kent Onshore Scheme Order Limits are outlined by transect in Table 12 to Table 17 below. Full survey data can be found in **Annex 2.L.3**, including the number of bat registrations per hour at each monitored location. Examples of sonograms in **Annex 2.L.4**. The locations of the automated detectors during each survey visit are shown on **Application Document 6.4.3.2.L.1 Kent Transect Routes and SM4 Locations**.

Transect 1

Table 12 Automated detector results summary - Transect 1

Survey Date	Summary of Results
July 2023	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and noctule. In addition, registrations³ were made of pipistrelle species (common or soprano)⁴, <i>Nyctalus</i> species (noctule or Leisler's bat)⁵, either noctule, Leisler's bat or serotine⁶ and possible barbastelle (a single registration on 28 July 2023)⁷.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on all five nights. Soprano pipistrelle was the most frequently recorded with a total of 41 registrations over the five nights. Peak registrations of soprano pipistrelle during a single night were 20 registrations on 27 July 2023. See Annex 2.L.3 for full details.</p>
October 2023	<p>A total of two confirmed species were recorded, comprising common pipistrelle and soprano pipistrelle. In addition, registrations were made of pipistrelle species (common or Nathusius' pipistrelle)⁸ and <i>Myotis</i> species⁹.</p> <p>The detector recorded for two full nights and one partial night, during which registrations of bat echolocation were made on all three nights. Soprano pipistrelle was the most frequently recorded with a total of 12 registrations over the three nights. Peak registrations of soprano pipistrelle during a single night were 11 registrations on 11 October 2023. See Annex 2.L.3 for full details.</p>

³ A registration is a single bat species within a file. Registrations can either be from several individual bats, or from the same bat for a sustained period of activity within the range of the detector, as for extended durations (over 15 seconds) a call will be broken down across multiple files.

⁴ Common pipistrelle and soprano pipistrelle can be difficult to separate using a zero crossing file when calls recorded are towards the lower end of the soprano pipistrelle frequency and higher end of the common pipistrelle peak frequency. As such, any pipistrelle bat with a peak frequency between 49 kHz and 51kHz has been classified as pipistrelle bat.

⁵ Leisler's and noctule bats can be difficult to identify accurately when calls are recorded towards to lower end of the Leisler's peak frequency and higher end of the noctule peak frequency, therefore unless the species could be clearly distinguished have been grouped together.

⁶ Leisler's, noctule and serotine bat can be difficult to identify accurately if only part of the call is present towards the lower end of the serotine and Leisler's bat frequency and upper end of noctule peak frequency, therefore unless the species could be clearly distinguished these have been grouped together.

⁷ Barbastelle calls can be difficult to identify accurately if only part of the call is present. Therefore, unless the species could be clearly identified 'possible barbastelle' has been used.

⁸ Common pipistrelle and Nathusius' pipistrelle can be difficult to separate using a zero crossing file when calls recorded are towards the lower end of the common pipistrelle frequency and higher end of the Nathusius' pipistrelle peak frequency. As such, any pipistrelle bat with a peak frequency between 40 kHz and 41 kHz has been classified as pipistrelle bat.

⁹ *Myotis* bat calls can be very similar; therefore have been classified as *Myotis* species unless call characteristics or observations of the bat and behaviour have been recorded to enable species level identification.

Survey Date	Summary of Results
May 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, and brown long-eared bat. In addition, registrations were made of <i>Myotis</i> species, pipistrelle species (common or soprano pipistrelle) and pipistrelle species (common or Nathusius' pipistrelle).</p> <p>The detector recorded for seven nights, during which registrations of bat echolocation were made on all seven nights. Common pipistrelle was the most frequently recorded with a total of 152 registrations over the seven nights. Peak registrations of common pipistrelle during a single night were 42 registrations on 17 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of three confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle. In addition, registrations were made of pipistrelle species (common or soprano), <i>Myotis</i> species, possible barbastelle species (a single registration on 19 June 2024) and either <i>Myotis</i> species or brown long-eared bat¹⁰.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 69 registrations over the six nights. Peak registrations of common pipistrelle during a single night were 41 registrations on 20 June 2024. See Annex 2.L.3 for full details.</p>
July 2024	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, <i>Myotis</i> species, possible barbastelle (a single registration on 27 July 2024) and either <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 833 registrations over the six nights. Peak registrations of common pipistrelle during a single night were 432 registrations on 31 July 2024. See Annex 2.L.3 for full details.</p>

¹⁰ *Myotis* and brown long-eared bat calls can be very similar, making them difficult to identify accurately when only part of the call is present. Therefore, unless the species could be clearly distinguished these have been grouped together.

Survey Date	Summary of Results
August 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, noctule, and brown long-eared bat.</p> <p>The detector recorded for four nights during which registrations of bat echolocation were made over three nights. Common pipistrelle were the most frequently recorded with a total of 60 registrations over the three nights. Peak registrations of common pipistrelles during a single night were 26 registrations on 17 August 2024. See Annex 2.L.3 for full details.</p>
September 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and serotine. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, <i>Myotis</i> species and <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for six nights during which registrations of bat echolocation were made over six nights. Common pipistrelle were the most frequently recorded with a total of 67 registrations over the six nights. Peak registrations of common pipistrelles during a single night were 28 on 3 September 2024. See Annex 2.L.3 for full details.</p>

Transect 2

Table 13 Automated detector results summary - Transect 2

Survey Date	Summary of Results
July 2023	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat and brown long-eared. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), <i>Nyctalus</i> species, possible barbastelle (a total of three registrations, one each on 28, 29 and 30 July 2023), and <i>Myotis</i> species.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on all five nights. Soprano pipistrelle was the most frequently recorded with a total of 210 registrations over the five nights. Peak registrations of soprano pipistrelle during a single night were 74 registrations on 28 July 2023. See Annex 2.L.3 for full details.</p>
October 2023	<p>A total of three confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle and Nathusius'</p>

Survey Date	Summary of Results
	<p>pipistrelle. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), possible barbastelle (a total of two registrations, one each on 11 and 12 October 2023)) and <i>Myotis</i> species.</p> <p>The detector recorded for four nights, during which registrations of bat echolocation were made on all four nights. Nathusius' pipistrelle was the most frequently recorded with a total of 10 registrations over the four nights. Peak registrations of Nathusius' pipistrelle during a single night were 4 registrations on 11 October 2023. See Annex 2.L.3 for full details</p>
May 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), <i>Myotis</i> species, either noctule, Leisler's bat or serotine, either noctule or Leisler's bat and possible barbastelle (a single registration on 19 May 2024).</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 177 registrations over the six nights. Peak registrations of common pipistrelle during a single night were 49 registrations on 17 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and Leisler's bat. In addition, registrations were made of pipistrelle species (common or soprano and common or Nathusius' pipistrelle), <i>Myotis</i> species, either noctule or Leisler's bat, either noctule, Leisler's bat or serotine and either <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 52 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 17 registrations on 19 June 2024. See Annex 2.L.3 for full details.</p>
July 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat and serotine. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), <i>Myotis</i> species, either noctule or Leisler's bat,</p>

Survey Date	Summary of Results
	<p>either noctule, Leisler's bat or serotine and either <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 421 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 103 registrations on 30 July 2024. See Annex 2.L.3 for full details.</p>
August 2024	Void. No Data Recorded
September 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, <i>Myotis</i> species, and either <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all three nights. Soprano pipistrelle was the most frequently recorded with a total of 183 registrations over the three nights. Peak registrations of soprano pipistrelle during a single night were 87 registrations on 4 September 2024. See Annex 2.L.3 for full details.</p>

Transect 3

Table 14 Automated detector results summary - Transect 3

Survey Date	Summary of Results
October 2023	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and Leisler's bat. In addition, registrations were made of pipistrelle species (common or Nathusius' pipistrelle), possible barbastelle (a single registration on 14 October 2023) and <i>Myotis</i> species.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on all five nights. Soprano pipistrelle was the most frequently recorded with a total of 14 registrations over the five nights. Peak registrations of soprano pipistrelle during a single night were eight registrations on 11 October 2023. See Annex 2.L.3 for full details.</p>

Survey Date	Summary of Results
May 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle) and <i>Myotis</i> species.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all three nights. Common pipistrelle was the most frequently recorded with a total of 151 registrations over the three nights. Peak registrations of common pipistrelle during a single night were 87 registrations on 15 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, and noctule. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), <i>Myotis</i> species and either noctule or Leisler's bat.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 144 registrations over the six nights. Peak registrations of common pipistrelle during a single night were 63 registrations on 21 June 2024. See Annex 2.L.3 for full details.</p>
July 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and serotine. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), <i>Myotis</i> species or brown long-eared bat and either noctule, Leisler's bat or serotine.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 435 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 252 registrations on 28 July 2024. See Annex 2.L.3 for full details.</p>
August 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, and Leisler's bat. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), and pipistrelle social call.</p> <p>The detector recorded for three nights during which registrations of bat echolocation were made over two nights.</p>

Survey Date	Summary of Results
	Soprano pipistrelle were the most frequently recorded with a total of 90 registrations over the two nights. Peak registrations of common pipistrelles during a single night were 47 registrations on 16 of August 2024. See Annex 2.L.3 for full details.
September 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, and noctule. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule, Leisler's bat or serotine, and <i>Myotis</i> species.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all three nights. Soprano pipistrelle was the most frequently recorded with a total of 111 registrations over the three nights. Peak registrations of soprano pipistrelle during a single night were 59 registrations on 5 September 2024. See Annex 2.L.3 for full details.</p>

Transect 4

Table 15 Automated detector results summary - Transect 4

Survey Date	Summary of Results
July 2023	<p>A total of three confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle and Leisler's bat.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on three nights. Soprano pipistrelle was the most frequently recorded with a total of 70 registrations over the three nights. Peak registrations of soprano pipistrelle during a single night were 25 registrations on 28 July 2023. See Annex 2.L.3 for full details.</p>
October 2023	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and noctule. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius'), possible barbastelle (a single registration on 12 October 2023) and <i>Myotis</i> species.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on four nights. Common pipistrelle was the most frequently recorded with a total of 12 registrations over the four nights. Peak registrations of common pipistrelle during a single night were</p>

Survey Date	Summary of Results
	8 registrations on 12 October 2023. See Annex 2.L.3 for full details.
May 2024	<p>A total of three confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), and <i>Myotis</i> species.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all three nights. Common pipistrelle was the most frequently recorded with a total of 627 registrations over the three nights, with a peak of 349 registrations during a single night on 15 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine, and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), pipistrelle social call, either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, and <i>Myotis</i> species.</p> <p>The detector recorded for six nights during which registrations of bat echolocation were made on all six nights. Pipistrelle species (common or soprano) were the most frequently recorded with a total of 380 registrations over the six nights. Peak registrations of pipistrelle species (common or soprano) during a single night were 229 on 22 June 2024. See Annex 2.L.3 for full details.</p>
July 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, noctule, Leisler's bat, and serotine. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, and <i>Myotis</i> species.</p> <p>The detector recorded for six nights during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 169 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 61 on 26 July 2024. See Annex 2.L.3 for full details.</p>
August 2024	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), either noctule,</p>

Survey Date	Summary of Results
	<p>Leisler's bat or serotine, <i>Myotis</i> species and either <i>Myotis</i> species or brown long-eared bat.</p> <p>The detector recorded for three and a half nights (ending during the evening of the fourth night) during which registrations of bat echolocation were made on all nights. Soprano pipistrelle was the most frequently recorded with a total of 122 registrations over the three and a half nights. Peak registrations of soprano pipistrelle during a single night were 42 on 17 August 2024. See Annex 2.L.4 for full details.</p>
September 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), and pipistrelle species (common or Nathusius' pipistrelle).</p> <p>The detector recorded for four nights, during which registrations of bat echolocation were made on all four nights. Soprano pipistrelle was the most frequently recorded with a total of 52 registrations over the four nights. Peak registrations of soprano pipistrelle during a single night were 18 registrations on 5 September 2024. See Annex 2.L.3 for full details.</p>

Transect 5

Table 16 Automated detector results summary - Transect 5

Survey Date	Summary of Results
July 2023	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, possible barbastelle (totalling three registrations, all on 30 July 2023) and <i>Myotis</i> species.</p> <p>The detector recorded for five nights, during which registrations of bat echolocation were made on all five nights. Soprano pipistrelle was the most frequently recorded with a total of 1704 registrations over the five nights. Peak registrations of soprano pipistrelle during a single night were 623 registrations on 27 July 2023. See Annex 2.L.3 for full details.</p>

Survey Date	Summary of Results
October 2023	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and Leisler's bat. In addition, registrations were made of pipistrelle species (common or Nathusius' pipistrelle), possible barbastelle (a single registration on 11 October 2023) and <i>Myotis</i> species.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all two nights. Soprano pipistrelle were the most frequently recorded with a total of 14 registrations over the five nights. Peak registrations of soprano pipistrelle during a single night were eight registrations on 11 October 2023. See Annex 2.L.3 for full details.</p>
May 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and noctule. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), and <i>Myotis</i> species.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle were the most frequently recorded with a total of 396 registrations over the six nights. Peak registrations of common pipistrelle during a single night were 105 registrations on 18 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine, and brown long-eared. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), pipistrelle social call, either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, and <i>Myotis</i> species.</p> <p>The detector recorded for six nights during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 401 registrations over the six nights. Peak registrations of common pipistrelles during a single night were 128 registrations on 21 June 2024. See Annex 2.L.3 for full details.</p>
July 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, noctule, Leisler's bat, and serotine. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine, <i>Myotis</i> species, and either <i>Myotis</i> species or brown long-eared bat.</p>

Survey Date	Summary of Results
	<p>The detector recorded for six nights during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 376 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 101 registrations on 27 July 2024. See Annex 2.L.3 for full details.</p>
August 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle noctule, serotine, and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), and <i>Myotis</i> species.</p> <p>The detector recorded for three nights during which registrations of bat echolocation were made on all three nights. Soprano pipistrelle was the most frequently recorded with a total of 210 registrations over the six nights. Peak registrations of soprano pipistrelle during a single night were 116 registrations on 17 August 2024. See Annex 2.L.3 for full details.</p>
September 2024	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle), and <i>Myotis</i> species.</p> <p>The detector recorded for three nights, during which registrations of bat echolocation were made on all three nights. Pipistrelle species (common or soprano) was the most frequently recorded with a total of 207 registrations over the three nights, and a peak of 195 registrations during a single night on 3 September 2024. See Annex 2.L.3 for full details.</p>

Transect 6

Table 17 Automated detector results summary - Transect 6

Survey Date	Summary of Results
October 2023	<p>A total of four confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and Leisler's bat. In addition, registrations were made of pipistrelle species (common or soprano), pipistrelle species (common or Nathusius' pipistrelle) and either noctule or Leisler's bat.</p> <p>The detector recorded for four nights, during which registrations of bat echolocation were made on three nights.</p>

Survey Date	Summary of Results
	Nathusius' pipistrelle was the most frequently recorded with a total of 36 registrations over the three nights. Peak registrations of Nathusius' pipistrelle during a single night were 30 registrations on 19 October 2023. See Annex 2.L.3 for full details.
May 2024	<p>A total of seven confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), either noctule or Leisler's bat, either noctule, Leisler's bat or serotine and <i>Myotis</i> species.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Common pipistrelle was the most frequently recorded with a total of 629 registrations over the six nights, and a peak of 198 registrations during a single night on 17 May 2024. See Annex 2.L.3 for full details.</p>
June 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, and serotine. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), and <i>Myotis</i> species.</p> <p>The detector recorded for six nights during which registrations of bat echolocation were made over four nights. Common pipistrelle was the most frequently recorded with a total of 229 registrations over the three nights. Peak registrations of common pipistrelle during a single night were 101 registrations on 22 July 2024. See Annex 2.L.3 for full details.</p>
July 2024	Void, no data recorded.
August 2024	<p>A total of five confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, and serotine. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle) and <i>Myotis</i> species.</p> <p>The detector recorded for eight nights during which registrations of bat echolocation were made on all eight nights. Common pipistrelle was the most frequently recorded with a total of 150 registrations over the eight nights. Peak registrations of common pipistrelle during a single night were 53 registrations on 18 August 2024. See Annex 2.L.3 for full details.</p>

Survey Date	Summary of Results
September 2024	<p>A total of six confirmed species were recorded, comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, serotine and brown long-eared bat. In addition, registrations were made of pipistrelle species (common or soprano pipistrelle), pipistrelle species (common or Nathusius' pipistrelle), and <i>Myotis</i> species. Pipistrelle bat social calls were also recorded.</p> <p>The detector recorded for six nights, during which registrations of bat echolocation were made on all six nights. Soprano pipistrelle was the most frequently recorded with a total of 608 registrations, and a peak of 525 registrations during a single night on 3 September 2024. See Annex 2.L.3 for full details.</p>

1.5 Synthesis

All Bat Activity Recorded

- 1.5.1 The majority of activity recorded during the transects was of soprano pipistrelle bats across all parcels, followed by common pipistrelle, in line with the relative abundance of these species as well as the relative detectability of their calls. Based on professional judgement, activity levels of all species recorded during the walked transects were considered to generally be low across the Kent Onshore Scheme Order Limits and all parcels, but with more activity concentrated in the following locations, as shown on **Application Document 6.4.3.2.L.6 Kent Full Nighttime Bat Walkover Registrations:**
- along the hedgerow north of Ebbsfleet Lane in the west of Transect 1;
 - along the ditch network in the west of Transect 2;
 - along the woodland edge in the south of Transects 2 and 3; and
 - along Minster Stream within Transects 3, 4 and 5.
- 1.5.2 In the majority (20) of the static automated detector monitoring occasions, soprano pipistrelle was the most frequently recorded species; however, on 15 of the occasions common pipistrelle was the most frequently recorded (Transect 1 in May to September 2024, Transect 2 in May 2024, Transect 3 in May and June 2024, Transect 4 in October 2023 and May 2024, Transect 5 in May and June 2024, and Transect 6 in May, June and August 2024). On two monitoring occasions Nathusius' pipistrelle was the most frequently recorded species (at Transect 2 in October 2023 and Transect 6 in October 2023). The number of registrations per hour for each surveyed location and month are contained within **Annex 2.L.3**.
- 1.5.3 The highest levels of overall bat activity recorded from the automated detector surveys were at Transect 5, followed by Transect 4 (see Plate 1.1).

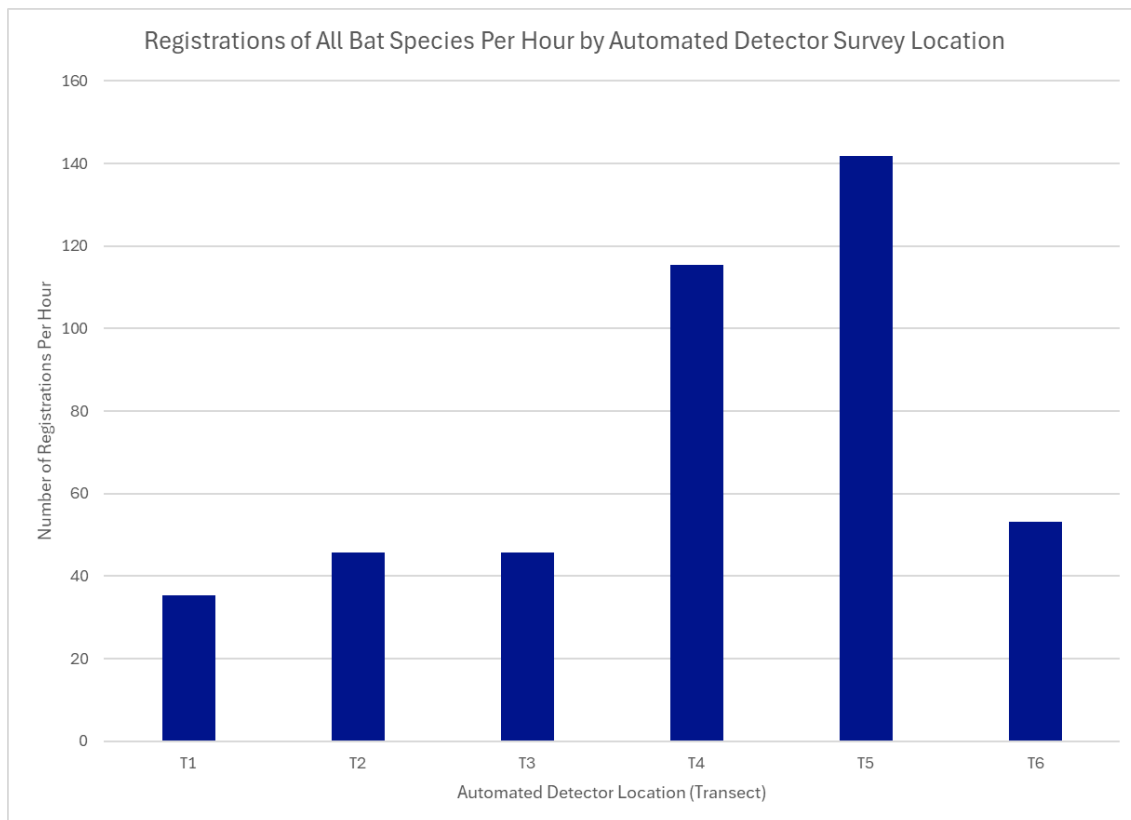


Plate 1.1 Registrations of all species of bat per hour, by automated detector location

Myotis Bat Species

1.5.4 Activity by *Myotis* bats was recorded on 14 occasions in total during the following walked transect surveys. Calls could not be separated to species level; however, it is considered unlikely that the Habitats Directive Annex II listed Bechstein's bat is present, as this species has not previously been recorded in south-east Kent (Joint Nature Conservation Committee, 2019). Activity by *Myotis* bats was as follows:

- Transect 1 with one registration of a brief pass and one commuting pass on 18 July 2023;
- Transect 2 with one registration of a brief pass on 18 July 2023, and two registrations of brief passes and two commuting passes on 10 October 2023;
- Transect 3 with one registration of a brief pass on 18 July 2023, two registrations of brief passes and one commuting pass on 10 October 2023, and one registration of a brief pass on 20 May 2024;
- Transect 4 with one registration of a brief pass on 20 May 2024; and
- Transect 5 with one registration of a commuting pass on 11 October 2023.

1.5.5 *Myotis* bat registrations were made at all of the automated static detector locations during each monitoring occasion except for Transect 1 in July 2023 and August 2024, Transect 3 in July and August 2024, Transect 4 in July 2023 and September 2024, and Transect 6 in October 2023.

- 1.5.6 The highest numbers of *Myotis* registrations in registrations per hour on the automated detectors were recorded at Transect 2, followed by Transect 5 and Transect 1 (see Plate 1.2).

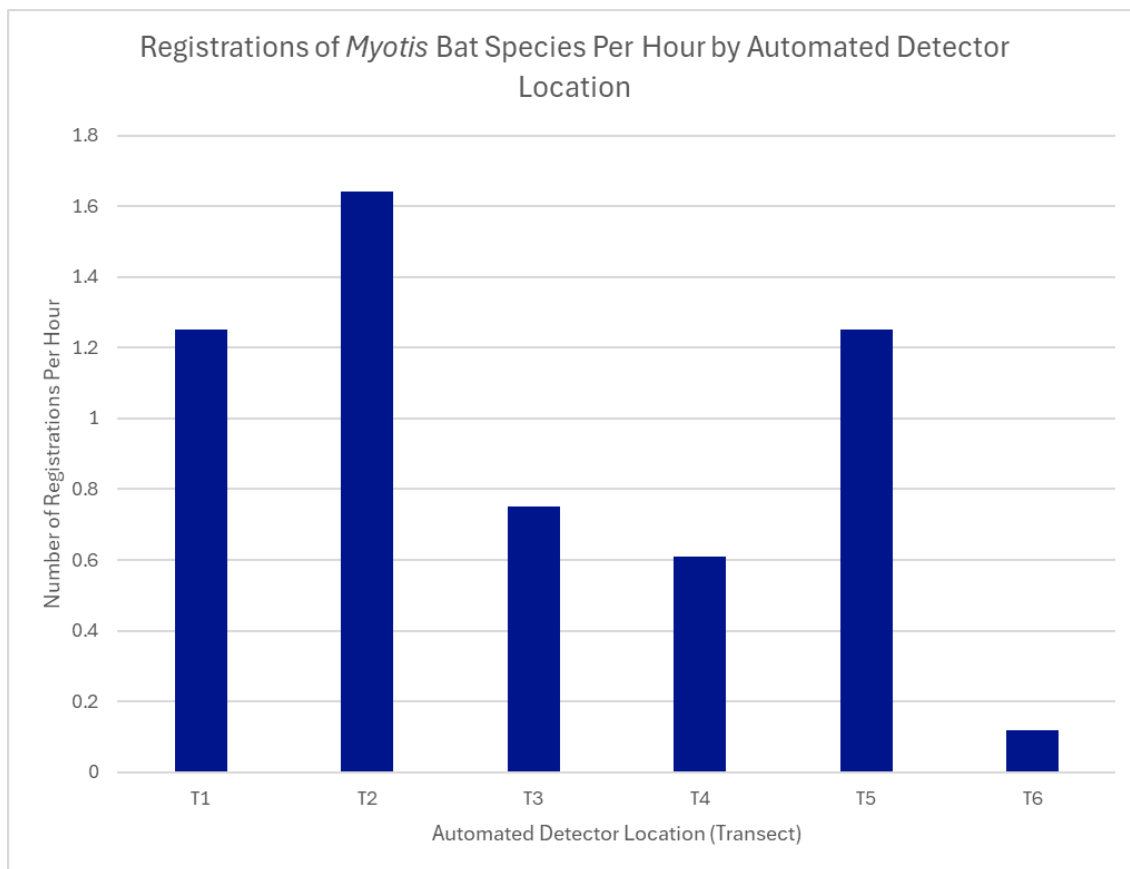


Plate 1.2 Registrations of *Myotis* bats per hour, by automated detector location

Barbastelle Bat

- 1.5.7 Activity by the Habitats Directive Annex II listed barbastelle bat was not recorded during the walked activity transects.
- 1.5.8 No confirmed barbastelle bat registrations were made at automated static detector locations. Possible registrations were made, but due to the quality or length of the call could not be confirmed. Possible barbastelle bat registrations were made at all automated static detector locations with the exception of Transect 6 (see Plate 1.3), although not during every monitoring occasion. Registrations of possible barbastelle were highest at Transect 2, followed by Transects 1 and 5. Overall, registrations of possible barbastelle bats were low across the static automated detector locations with a maximum of three registrations across all locations, recorded at both Transect 2 and Transect 5 in July 2023.
- 1.5.9 Taking a precautionary approach and assuming these registrations were of barbastelle bat, these results do not indicate the presence of a roost, important foraging areas or important commuting routes. The small number of registrations is considered to be from bats occasionally utilising the Kent Onshore Scheme Order Limits for transit.

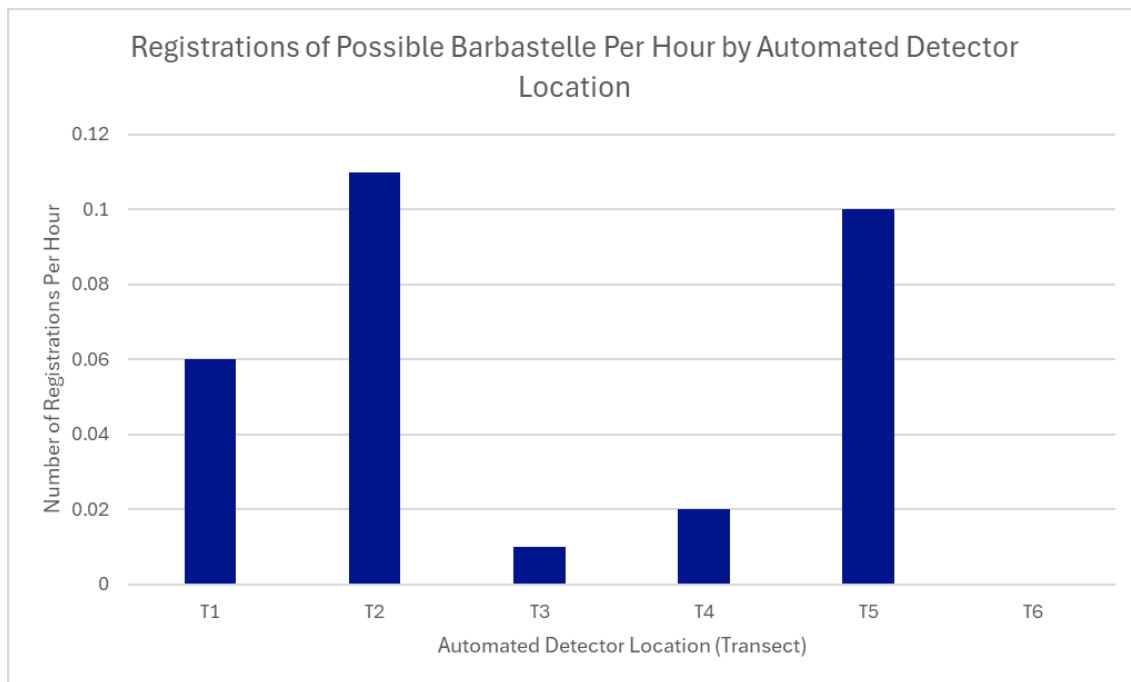


Plate 1.3 Registrations of possible barbastelle bats per hour, by automated detector location

1.6 Discussion

Bat Assemblage

- 1.6.1 Based on the nighttime bat walkover surveys and the SM4bat FS detector surveys undertaken between July 2023 and September 2024 the Kent Onshore Scheme Order Limits is considered to support an assemblage of at least nine species comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's, serotine, brown long-eared bat, barbastelle, and *Myotis* species that could not be identified to species level. Key areas of bat activity have been identified as follows:
- along the hedgerow north of Ebbsfleet Lane in the west of Transect 1, towards the south-western end;
 - along streams and hedgerows in the west of Transect 2;
 - along the woodland edge in the south of Transects 2 and 3; and
 - along Minster Stream within Transects 3, 4 and 5.
- 1.6.2 *Myotis* bat activity was recorded at all automated detector locations monitored across the Kent Onshore Scheme Order Limits. The highest levels of *Myotis* bat activity were recorded at Transect 2, along a hedgerow with associated stream between a woodland parcel in the south, and two large waterbodies in the north. The highest levels of possible barbastelle activity (a total of six registrations across all recording periods) were recorded at the same location.
- 1.6.3 Notwithstanding their legal protection, based on the rarity categories within the Bat Mitigation Guidelines (Reason & Wray, 2023) common pipistrelle, soprano pipistrelle and brown long-eared bats are widespread in the south-east. Noctule bats are considered to be widespread, but not abundant. Serotine, Leisler's bat and Nathusius'

pipistrelle have a rarer or restricted distribution. The Annex II listed barbastelle bat is considered to be very rare. From the *Myotis* species, Daubenton’s bat and Natterer’s bat are considered to be widespread, but not abundant. Whiskered and Brandt’s bat are considered to have a rarer or restricted distribution, and Alcaethoe bat (*Myotis alcathoe*) is considered to be very rare.

- 1.6.4
- In addition to species identified during the NBW and SM4bat FS detector surveys, the desk study identified the presence within the wider area of three *Myotis* species; Daubenton’s bat, whiskered bat, and Natterer’s bat. Therefore, these three species have been assumed present within the Kent Onshore Scheme Order Limits in the below evaluation.
- 1.6.5
- It is inherently more difficult to assess the importance of foraging and commuting bats, and requires a higher degree of professional judgement. For example, some routes may only be used at certain times of year with a low number of bat passes at other times. As such, the importance of foraging areas and flight lines are not interpreted in isolation, but judged on the overall knowledge of bat activity in the area using the desk study and survey data collected.
- 1.6.6
- Table 3.3 ‘Assessing the importance of a bat assemblage’ within the Bat Mitigation Guidelines 2023 (Reason & Wray, 2023) has been used to provide an assessment of the importance of the bat assemblage present. There is no formal distinction between the geographic areas listed within the table. However, the Kent Onshore Scheme Order Limits has been determined to be within the ‘southeastern’ geography.
- 1.6.7
- Using a combination of both survey and desk study data for the Kent Onshore Scheme Order Limits, common pipistrelle, soprano pipistrelle and brown long-eared bat have been assigned a score of one, noctule, Daubenton’s and Natterer’s bats have been assigned a score of two, serotine, Leisler’s bat, Nathusius’ pipistrelle and whiskered bat have been assigned a score of three, and barbastelle bat has been included as a precaution, and has been assigned a score of four. In total, the bat assemblage has a score of 25.
- 1.6.8
- This returns a result of ‘National’ importance for the bat assemblage present. However, assigning a level of importance to an assemblage provides contextual information only; it is not expected that the assemblage as a whole would be assessed as a single Important Ecological Feature (IEF) (or receptor).
- 1.6.9
- Based on professional judgement, activity levels of all species recorded during the walked transects were considered to generally be low across the Kent Onshore Scheme Order Limits. Taking into account the synthesis of results presented in Section 1.5, the mosaic of habitats within the Survey Area is considered to be of **County (Regional) Importance**.

Table 18 Summary of importance of commuting and foraging habitat, and bat assemblage

Species	Importance of Commuting and Foraging Habitat (summary of justification)	Importance of Assemblage
Widespread: Common pipistrelle	There is foraging and commuting activity by a diverse	(One point per species)

Soprano pipistrelle Brown long-eared bat	assemblage of bats. High reliance on habitats by common and soprano pipistrelle, demonstrated by regular use by larger numbers of bats (although this is still considered to be relatively low), with a lower reliance on habitats by all other species recorded, including the rarest Annex II species barbastelle, which was only recorded as potentially present and in very low numbers (peak count of three registrations at a single location in a single recording period). Woodland edges, streams, ditches and hedgerows form commuting routes, with grassland and arable margins used for foraging.	Score three for this part of the assemblage (of a maximum of three)
Widespread in many geographies, but not as abundant in all: Daubenton's bat Natterer's bat Noctule		(Two points per species) Score six for this part of the assemblage (of a maximum of six)
Rare or restricted distribution: Serotine Leisler's bat Nathusius' pipistrelle Whiskered bat		(Three points per species) Score 12 for this part of the assemblage (of a maximum of 15)
Rarest Annex II species and very rare: Barbastelle	On this basis, as a precaution the mosaic of habitats within the Study Area is considered to be of County Importance .	(Four points per species) Score four for this part of the assemblage (of a maximum of four)
Overall score: Assemblage score 25/28; meets the threshold for National importance		

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Annex 2.L.1 NBW Full Results Tables

Transect 1

Table A.1 Transect 1 Visit 1 NBW 18 July 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:39	Noctule	1	Commuting	Heard not Seen	5
21:59	Soprano Pipistrelle	1	Commuting	Heard not seen	1-2
22:08	Common pipistrelle	1	Brief pass	Heard not seen	2
22:09	Common pipistrelle	1	Foraging	Heard not seen	2-3
22:10	<i>Myotis</i> species	1	Commuting	Heard not seen	2-3
22:24	Common pipistrelle	1	Brief pass	Heard not seen	3-4
22:27	Common pipistrelle	1	Commuting	Heard not seen	3-4
22:29	Noctule	1	Commuting	Heard not seen	4
22:29	Brown long-eared bat	1	Brief pass	Heard not seen	4
22:29	Common pipistrelle	1	Commuting	Heard not seen	4
22:31	Common pipistrelle	1	Brief pass	Heard not seen	4
22:36	Common pipistrelle	1	Commuting	Heard not seen	4-5
22:41	Common pipistrelle	1	Commuting	Heard not seen	5
22:44	Common pipistrelle	1	Foraging	Heard not seen	5
22:44	Soprano pipistrelle	1	Commuting	Heard not seen	5
22:44	<i>Myotis</i> species	1	Brief pass	Heard not seen	5
22:46	Common pipistrelle	1	Brief pass	Heard not seen	5
22:49	Common pipistrelle	1	Commuting	Heard not seen	5-1
22:50	Common pipistrelle	1	Commuting	Heard not seen	1
22:52	Common pipistrelle	1	Commuting	Heard not seen	1
22:53	Common pipistrelle	1	Commuting	Heard not seen	1
22:54	Common pipistrelle	1	Commuting	Heard not seen	1

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:56	Common pipistrelle	1	Commuting	Heard not seen	1
22:57	Common pipistrelle	1	Commuting	Heard not seen	1
22:59	Common pipistrelle	1	Commuting	Heard not seen	1

Table A.2 Transect 1 Visit 2 NBW 10 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:56	Common pipistrelle	1	Commuting	Heard not seen	6
18:56	Soprano pipistrelle	1	Brief pass	Heard not seen	6
19:26	Brown long-eared bat	1	Commuting	Heard not seen	3
19:29	Common pipistrelle	1	Commuting	Heard not seen	3-4
19:31	Common pipistrelle	1	Brief pass	Heard not seen	3-4
19:54	Common pipistrelle	1	Commuting	Heard not seen	6
19:55	Common pipistrelle	1	Brief pass	Heard not seen	6
19:55	Soprano pipistrelle	1	Brief pass	Heard not seen	6
19:57	Soprano pipistrelle	1	Brief pass	Heard not seen	6

Table A.3 Transect 1 Visit 3 NBW 21 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:43	Common pipistrelle	1	Brief pass	Heard not seen	5-1
21:44	Common pipistrelle	1	Foraging	Heard not seen	5-1
21:51	Common pipistrelle	1	Brief pass	Heard not seen	1
21:52	Common pipistrelle	1	Commuting	Heard not seen	2
21:56	Common pipistrelle	1	Brief pass	Heard not seen	2
22:08	Common pipistrelle	1	Brief pass	Heard not seen	3

Transect 2

Table A.4 Transect 2 Visit 1 NBW 18 July 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:43 – 21:48	Nathusius' pipistrelle	1	Brief pass	Heard not seen	5
21:53	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:14	<i>Myotis</i> species	1	Brief pass	Heard not seen	6-7
22:14	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:14	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6-7
22:15	Soprano pipistrelle	1	Brief pass	Heard not seen	6-7
22:21	Soprano pipistrelle	1	Brief pass	Heard not seen	6-7
22:23	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:24	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:25	Soprano pipistrelle	1	Brief pass	Heard not seen	6-7
22:25	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:26	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:27	Nathusius' pipistrelle	1	Brief pass	Heard not seen	7
22:27 – 22:28	Soprano pipistrelle	1	Brief pass	Heard not seen	7
22:32	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
22:34	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
22:35	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
22:37	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
22:39	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:39	Common pipistrelle	1	Brief pass	Heard not seen	8
22:40	Common pipistrelle	1	Brief pass	Heard not seen	8
22:42	Common pipistrelle	1	Brief pass	Heard not seen	8
22:42	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:56	Soprano pipistrelle	1	Brief pass	Heard not seen	7-1
22:59	Soprano pipistrelle	1	Brief pass	Heard not seen	1-2
22:59	Common pipistrelle	1	Brief pass	Heard not seen	9
23:01	Soprano pipistrelle	1	Brief pass	Heard not seen	9

Table A.5 Transect 2 Visit 2 NBW 10 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:54	Soprano pipistrelle	1	Commuting	Heard not seen	5
18:56	Common pipistrelle	1	Commuting	Heard not seen	5
18:59	Soprano pipistrelle	1	Commuting	Heard not seen	5-6
19:03	Common pipistrelle	1	Social calls	Heard not seen	6
19:05	Nathusius' pipistrelle	1	Commuting	Heard not seen	6
19:06	Common pipistrelle	1	Commuting	Heard not seen	6
19:09	Nathusius' pipistrelle	1	Commuting	Heard not seen	6-7
19:10	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6-7
19:14	Soprano pipistrelle	1	Commuting	Heard not seen	7
19:15	Nathusius' pipistrelle	1	Brief pass	Heard not seen	7-8
19:16	Nathusius' pipistrelle	1	Commuting	Heard not seen	7-8
19:16	Soprano pipistrelle	1	Commuting	Heard not seen	7-8
19:17	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
19:20	Soprano pipistrelle	1	Foraging	Heard not seen	8
19:20	<i>Myotis</i> species	1	Commuting	Heard not seen	8
19:21	<i>Myotis</i> species	1	Brief pass	Heard not seen	8
19:21	Soprano pipistrelle	1	Brief pass	Heard not seen	8
19:22	Soprano pipistrelle	1	Brief pass	Heard not seen	8
19:23	Soprano pipistrelle	1	Social Calls	Heard not seen	8
19:23	<i>Myotis</i> species	1	Brief pass	Heard not seen	8
19:24	Soprano pipistrelle	1	Brief pass	Heard not seen	8
19:26	Soprano pipistrelle	1	Foraging	Heard not seen	8-1
19:27	Soprano pipistrelle	1	Brief pass	Heard not seen	8-1
19:28	Common pipistrelle	1	Brief pass	Heard not seen	8-1
19:37	<i>Myotis</i> species	1	Commuting	Heard not seen	5

Table A.6 Transect 2 Visit 3 NBW 20 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:37	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6
21:39	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6
21:42	Common pipistrelle	1	Brief pass	Heard not seen	6-7
21:45	Common pipistrelle	1	Commuting	Heard not seen	7
22:17	Soprano pipistrelle	1	Commuting	Heard not seen	4
22:51	Soprano pipistrelle	1	Brief pass	Heard not seen	3

Transect 3

Table A.7 Transect 3 Visit 1 NBW 18 July 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:39	Pipistrelle species	1	Brief pass	Heard not seen	7-8
21:49	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
22:01	Leisler's bat	1	Commuting	Heard not seen	9-1
22:01	Soprano pipistrelle	1	Commuting	Heard not seen	9-1
22:04	Common pipistrelle	1	Brief pass	Heard not seen	4
22:08	Soprano pipistrelle	1	Commuting	Heard not seen	1
22:10	Common pipistrelle	1	Brief pass	Heard not seen	2
22:11	Soprano pipistrelle	1	Commuting	Heard not seen	2
22:17	Soprano pipistrelle	1	Foraging	Heard not seen	2-3
22:18	Soprano pipistrelle	1	Brief pass	Heard not seen	2-3
22:18	Common pipistrelle	1	Brief pass	Heard not seen	2-3
22:19	Soprano pipistrelle	1	Brief pass	Heard not seen	2-3
22:22	Soprano pipistrelle	1	Commuting	Heard not seen	2-3
22:24	Soprano pipistrelle	1	Brief pass	Heard not seen	3
22:26	Common pipistrelle	1	Brief pass	Heard not seen	3-4
22:29	Soprano pipistrelle	1	Brief pass	Heard not seen	3-4

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:30	Common pipistrelle	1	Foraging	Heard not seen	1-4
22:31	Soprano pipistrelle	1	Brief pass	Heard not seen	1-4
22:36	Common pipistrelle	1	Foraging	Heard not seen	4
22:36	Soprano pipistrelle	1	Brief pass	Heard not seen	4
22:41	Common pipistrelle	1	Brief pass	Heard not seen	4-5
22:42	Common pipistrelle	1	Foraging	Heard not seen	4-5
22:47	Common pipistrelle	1	Brief pass	Heard not seen	5-6
22:47	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:48	<i>Myotis</i> species	1	Brief pass	Heard not seen	5-6
22:49	Common pipistrelle	1	Brief pass	Heard not seen	5-6
22:50	Common pipistrelle	1	Brief pass	Heard not seen	6
22:57	Soprano pipistrelle	1	Foraging	Heard not seen	9-1
22:58	Soprano pipistrelle	1	Brief pass	Heard not seen	9-2

Table A.8 Transect 3 Visit 2 NBW 10 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:33	Brown long-eared bat	1	Commuting	Heard not seen	3
18:52	Soprano pipistrelle	1	Foraging	Heard not seen	9-8
18:52	Common pipistrelle	1	Brief pass	Heard not seen	9-8
18:56	Common pipistrelle	1	Commuting	Heard not seen	8
19:07	<i>Myotis</i> species	1	Commuting	Heard not seen	8-7
19:11	Nathusius' pipistrelle	1	Commuting	Heard not seen	8-7
19:21	Soprano pipistrelle	1	Commuting	Heard not seen	6
19:30	Common pipistrelle	1	Foraging	Heard not seen	5
19:57	Soprano pipistrelle	1	Foraging	Heard not seen	3
19:59	Soprano pipistrelle	1	Brief pass	Heard not seen	3-2
20:00	Soprano pipistrelle	1	Brief pass	Heard not seen	3-2
20:01	Soprano pipistrelle	1	Brief pass	Heard not seen	3-2

Time	Species	Number of Bats	Activity	Observation	Transect Point
20:02	Soprano pipistrelle	1	Brief pass	Heard not seen	3-2
20:02	Common pipistrelle	1	Brief pass	Heard not seen	3-2
20:22	<i>Myotis</i> species	1	Brief pass	Heard not seen	1
20:23	Nathusius' pipistrelle	1	Brief pass	Heard not seen	1
20:29	<i>Myotis</i> species	1	Brief pass	Heard not seen	1

Table A.9 Transect 3 Visit 3 NBW 20 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:33 – 21:34	Common pipistrelle	1	Foraging	Heard and seen	9
21:41	Common pipistrelle	1	Brief pass, distant	Heard not seen	9-1
21:44	Nathusius' pipistrelle	1	Brief pass	Heard not seen	1
21:45	Common pipistrelle	1	Brief pass	Heard not seen	1
21:48	Soprano pipistrelle	1	Foraging	Heard not seen	1
21:55 – 21:56	Soprano pipistrelle	1	Foraging	Heard and seen	2
21:57	Common pipistrelle	1	Brief pass	Heard not seen	2-3
22:04	Soprano pipistrelle	1	Foraging	Heard and seen	3
22:04	Common pipistrelle	1	Brief pass	Heard not seen	3
22:10	Soprano pipistrelle	1	Commuting	Heard not seen	3-4
22:11	Soprano pipistrelle	1	Brief pass	Heard not seen	3-4
22:11	Common pipistrelle	1	Brief pass	Heard not seen	3-4
22:13 – 22:14	Common pipistrelle	2	Foraging	Heard not seen	3-4
22:15	Soprano pipistrelle	1	Brief pass	Heard not seen	3-4

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:16 – 22:17	Common pipistrelle	1	Foraging	Heard not seen	4
22:19	Common pipistrelle	1	Foraging	Heard not seen	4
22:20	Soprano pipistrelle	1	Foraging	Heard and seen	4
22:22 – 22:23	Common pipistrelle	1	Foraging	Heard not seen	4
22:24	Soprano pipistrelle	1	Foraging	Heard not seen	4
22:25	Soprano pipistrelle	1	Foraging	Heard not seen	4-5
22:28	Common pipistrelle	1	Brief pass	Heard not seen	5
22:29	Soprano pipistrelle	1	Brief pass	Heard not seen	5
22:31	Pipistrelle species	1	Brief pass	Heard not seen	5-6
22:36	Common pipistrelle	1	Foraging	Heard not seen	7
22:37	Common pipistrelle	1	Foraging	Heard not seen	9-1
22:37	Common pipistrelle	1	Brief pass	Heard not seen	6
22:42 – 22:44	Soprano pipistrelle	2	Brief pass	Heard not seen	7
22:45	<i>Myotis</i> species	1	Brief pass	Heard not seen	7
22:45 – 22:48	Soprano pipistrelle	1	Foraging	Heard not seen	7-8

Transect 4

Table A.10 Transect 4 Visit 1 NBW 19 July 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:52	Common pipistrelle	1	Brief pass	Heard not seen	7-8
22:06	Soprano pipistrelle	1	Commuting	Heard not seen	7-8
22:12	Common pipistrelle	1	Commuting	Heard not seen	8

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:13	Soprano pipistrelle	1	Commuting	Heard not seen	8
22:13	Common pipistrelle	1	Foraging	Heard not seen	8
22:16	Soprano pipistrelle	1	Foraging	Heard not seen	8-9
22:17	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
22:18	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
22:19	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
22:29	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
22:31	Common pipistrelle	1	Foraging	Heard not seen	9-7
22:33	Common pipistrelle	1	Commuting	Heard not seen	9-7
22:37	Soprano pipistrelle	1	Commuting	Heard not seen	7-1
22:47	Soprano pipistrelle	1	Commuting	Heard not seen	1-2
22:49	Common pipistrelle	1	Commuting	Heard not seen	1-2
22:56	Common pipistrelle	1	Commuting	Heard not seen	1-2
23:00	Common pipistrelle	1	Foraging	Heard not seen	Transect 2 point 9
23:00	Soprano pipistrelle	1	Foraging	Heard not seen	Transect 2 point 9
23:11	Common pipistrelle	1	Commuting	Heard not seen	Transect 2 point 1 – Transect 2 point 2

Table A.11 Transect 4 Visit 2 NBW 11 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:44	Soprano pipistrelle	1	Brief pass	Heard not seen	6
18:58	Soprano pipistrelle	2	Brief pass	Heard not seen	8
18:58	Common pipistrelle	1	Brief pass	Heard not seen	8
18:59	Soprano pipistrelle	1	Foraging	Heard and seen	8
18:59	Common pipistrelle	1	Commuting	Heard not seen	8
19:00	Common pipistrelle	1	Foraging	Heard and seen	8-9

Time	Species	Number of Bats	Activity	Observation	Transect Point
19:02	Common pipistrelle	1	Foraging	Heard not seen	8-9
19:02	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
19:03	Common pipistrelle	1	Brief pass	Heard not seen	8-9
19:05	Soprano pipistrelle	1	Brief pass	Heard not seen	8-9
19:07	Soprano pipistrelle	1	Foraging	Heard not seen	8-9
19:56	Common pipistrelle	1	Foraging	Heard not seen	4-5
20:02	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6
20:03	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6

Table A.12 Transect 4 Visit 3 NBW 20 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:28	Pipistrelle species	1	Commuting	Heard and seen	9
21:47	Soprano pipistrelle	1	Foraging	Heard not seen	7
21:54	Common pipistrelle	1	Commuting	Heard not seen	6
22:09	Common pipistrelle	1	Foraging	Heard not seen	4
22:14 – 22:16	Common pipistrelle	1	Foraging	Heard not seen	4-3
22:33	Common pipistrelle	1	Foraging	Heard not seen	9
22:35	Common pipistrelle	1	Brief pass	Heard not seen	2-1
22:37	Common pipistrelle	1	Brief pass	Heard not seen	2-1
22:42	Common pipistrelle	1	Foraging	Heard not seen	1
22:44	<i>Myotis</i> species	1	Brief pass	Heard not seen	1
22:44	Common pipistrelle	1	Foraging	Heard not seen	1
22:47 – 22:49	Soprano pipistrelle	1	Foraging	Heard not seen	1 - 2
22:49	Common pipistrelle	1	Brief pass	Heard not seen	1-2

Transect 5

Table A.13 Transect 5 Visit 1 NBW 19 July 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:06	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:07	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:08	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:09	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:09	Common pipistrelle	1	Brief pass	Heard not seen	5-6
22:12	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:13	Soprano pipistrelle	1	Brief pass	Heard not seen	5-6
22:14	Common pipistrelle	1	Brief pass	Heard not seen	5-6
22:17	Common pipistrelle	1	Brief pass	Heard not seen	6
22:26	Soprano pipistrelle	1	Brief pass	Heard not seen	6-7
22:27	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6-7
22:27	Common pipistrelle	1	Brief pass	Heard not seen	6-7
22:28	Soprano pipistrelle	1	Brief pass	Heard not seen	6-7
22:30	Common pipistrelle	1	Brief pass	Heard not seen	7
22:31	Common pipistrelle	1	Brief pass	Heard not seen	7
22:31	Soprano pipistrelle	1	Brief pass	Heard not seen	7
22:33	Soprano pipistrelle	1	Brief pass	Heard not seen	7
22:42	Soprano pipistrelle	1	Brief pass	Heard not seen	7-8
22:46	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:48	Common pipistrelle	1	Brief pass	Heard not seen	8
22:54	Common pipistrelle	1	Brief pass	Heard not seen	8-9
22:55	Common pipistrelle	1	Brief pass	Heard not seen	8-9
22:58	Common pipistrelle	1	Brief pass	Heard not seen	9

Table A.14 Transect 5 Visit 2 NBW 11 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:47	Leisler's	1	Brief pass	Heard not seen	2-1

Time	Species	Number of Bats	Activity	Observation	Transect Point
19:30	Nathusius' pipistrelle	1	Commuting	Heard not seen	6
19:34	Nathusius' pipistrelle	1	Brief pass	Heard not seen	6-5
19:38	Nathusius' pipistrelle	1	Commuting	Heard not seen	6-5
19:40	Common pipistrelle	1	Brief pass	Heard not seen	6-5
19:45	Nathusius' pipistrelle	1	Commuting	Heard not seen	5
19:50	Nathusius' pipistrelle	1	Foraging	Heard not seen	5-4
19:56	<i>Myotis</i> species	1	Commuting	Heard not seen	5-4
20:08	Soprano pipistrelle	1	Commuting	Heard not seen	9-8
20:09	Common Pipistrelle	1	Brief pass	Heard not seen	9-8
20:09	Soprano Pipistrelle	1	Brief pass	Heard not seen	9-8

Table A.15 Transect 5 Visit 3 NBW 21 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:27	Soprano pipistrelle	1	Commuting	Heard and seen	5
21:29	Soprano pipistrelle	1	Commuting	Heard not seen	5
21:29	Nathusius' pipistrelle	1	Commuting	Heard not seen	5
21:33	Pipistrelle species	1	Commuting	Heard not seen	4
21:37	Soprano pipistrelle	1	Commuting	Heard not seen	4
21:37	Nathusius' pipistrelle	1	Commuting	Heard not seen	4
21:41	Common pipistrelle	1	Brief pass	Heard not seen	4-3
21:41	Nathusius' pipistrelle	1	Brief pass	Heard not seen	4-3
21:41	Noctule	1	Brief pass	Heard not seen	4-3
21:44	Common pipistrelle	1	Brief pass	Heard not seen	3
21:46	Soprano pipistrelle	2	Brief pass	Heard not seen	3
21:48	Noctule	1	Brief pass	Heard not seen	3
21:48 – 21:49	Common pipistrelle	2	Brief pass	Heard not seen	3

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:49 – 21:50	Nathusius' pipistrelle	1	Brief pass	Heard not seen	3
21:51	Nathusius' pipistrelle	1	Brief pass	Heard not seen	3
21:50 - 21:54	Soprano pipistrelle	1	Foraging	Heard not seen	3-8
21:55 – 21:56	Soprano pipistrelle	1	Brief pass	Heard not seen	8
21:57	Common pipistrelle	1	Brief pass	Heard not seen	8
21:58	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:02	Soprano pipistrelle	1	Brief pass	Heard not seen	2
22:03	Soprano pipistrelle	1	Brief pass	Heard not seen	2
22:11	Common pipistrelle	1	Brief pass	Heard not seen	2-1
22:13	Nathusius' pipistrelle	1	Brief pass	Heard not seen	2-1
22:13	Soprano pipistrelle	1	Brief pass	Heard not seen	2-1
22:15	Common pipistrelle	1	Brief pass	Heard not seen	2-1
22:16	Soprano pipistrelle	1	Brief pass	Heard not seen	2-1
22:18	Common pipistrelle	1	Commuting	Heard not seen	1
22:42	Common pipistrelle	1	Brief pass	Heard not seen	8
22:42	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:43	Common pipistrelle	2	Brief pass	Heard not seen	8
22:43	Nathusius' pipistrelle	1	Brief pass	Heard not seen	8
22:46	Soprano pipistrelle	1	Brief pass	Heard not seen	8
22:46	Nathusius' pipistrelle	1	Brief pass	Heard not seen	8
22:50	Common pipistrelle	1	Brief pass	Heard not seen	7
22:51	Pipistrelle species	1	Brief pass	Heard not seen	7
22:56	Pipistrelle species	1	Foraging	Heard not seen	7
22:56	Soprano pipistrelle	1	Foraging	Heard not seen	7

Transect 6

Table A.16 Transect 6 Visit 1 NBW 10 October 2023

Time	Species	Number of Bats	Activity	Observation	Transect Point
18:46	Soprano pipistrelle	1	Foraging	Heard not seen	4
18:53	Serotine	1	Foraging	Heard not seen	4-5
18:54	Serotine	1	Brief pass	Heard not seen	4-5
18:58	Common pipistrelle	1	Foraging	Heard not seen	4-5
18:59	Serotine	1	Foraging	Heard not seen	4-5
19:03	Common pipistrelle	1	Foraging	Heard not seen	4-5
19:29	Nathusius' pipistrelle	1	Foraging	Heard not seen	5-6
19:34	Nathusius' pipistrelle	1	Foraging	Heard not seen	5-6
19:48	Soprano pipistrelle	1	Foraging	Heard not seen	6-7

Table A.17 Transect 6 Visit 2 NBW 21 May 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:41	Soprano pipistrelle	1	Foraging	Heard not seen	4
21:47	Pipistrelle species	1	Foraging	Heard not seen	4-5
21:59	Nathusius' pipistrelle	1	Foraging	Heard not seen	5
22:01	Soprano pipistrelle	1	Foraging	Heard not seen	5
22:03 – 22:04	Common pipistrelle	1	Foraging	Heard not seen	5
22:15	Pipistrelle species	1	Foraging	Heard not seen	6
22:18	Soprano pipistrelle	1	Brief pass	Heard not seen	6
22:23	Common pipistrelle	1	Foraging	Heard not seen	7
22:26	Pipistrelle species	1	Foraging	Heard not seen	7
22:30	Soprano pipistrelle	1	Foraging	Heard not seen	8
22:34	Common pipistrelle	1	Foraging	Heard not seen	8-1
22:40	Soprano pipistrelle	1	Foraging	Heard not seen	8-1
22:44	Soprano pipistrelle	1	Brief pass	Heard not seen	8-1

Time	Species	Number of Bats	Activity	Observation	Transect Point
22:47	Common pipistrelle	1	Foraging	Heard not seen	8-1
22:48 – 22:50	Soprano pipistrelle	1	Foraging	Heard not seen	1

Table A.18 Transect 6 Visit 3 NBW 23 July 2024

Time	Species	Number of Bats	Activity	Observation	Transect Point
21:48 – 21:49	Soprano pipistrelle	1	Foraging	Heard not seen	5-4
21:51	Soprano pipistrelle	1	Brief pass	Heard not seen	5-4
21:52	Common pipistrelle	1	Brief pass	Heard not seen	5-4
21:53 – 21:54	Soprano pipistrelle	1	Foraging	Heard not seen	5-4
21:55	Soprano pipistrelle	1	Brief pass	Heard not seen	5-4
21:59	Common pipistrelle	1	Commuting	Heard not seen	5-4
22:00 - 22:01	Soprano pipistrelle	1	Foraging	Heard not seen	5-4
22:03	Common pipistrelle	1	Brief pass	Heard not seen	5-4
22:04	Soprano pipistrelle	1	Brief pass	Heard not seen	5-4
22:06	Soprano pipistrelle	1	Brief pass	Heard not seen	4
22:10	Soprano pipistrelle	1	Brief pass	Heard not seen	4-3
22:13	Common pipistrelle	1	Brief pass	Heard not seen	4-3
22:20 – 22:21	Soprano pipistrelle	1	Foraging	Heard not seen	3-2
22:27	Serotine	1	Brief pass	Heard not seen	1-8

Annex 2.L.2 NBW Example Sonograms

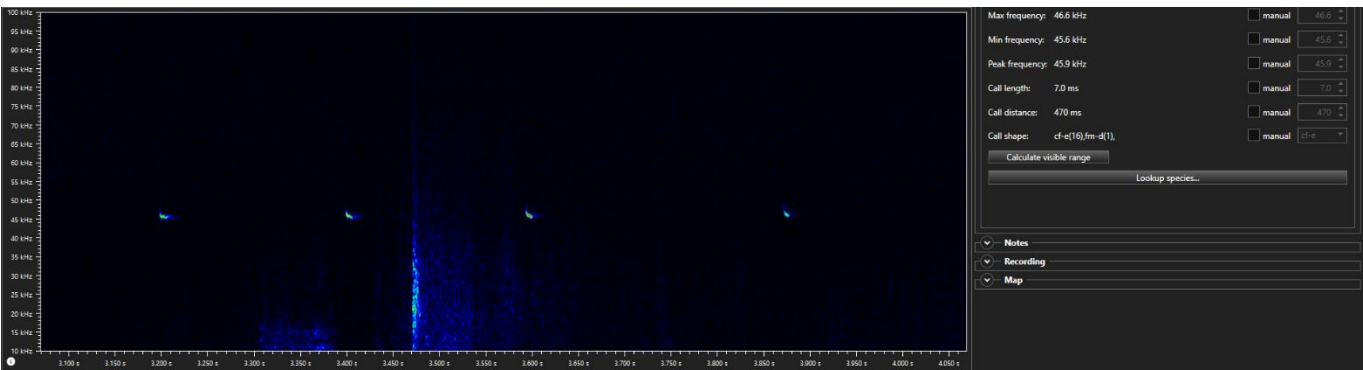


Plate 1.4 Common pipistrelle recorded at 22:31 on 18 July 2023, Transect 1

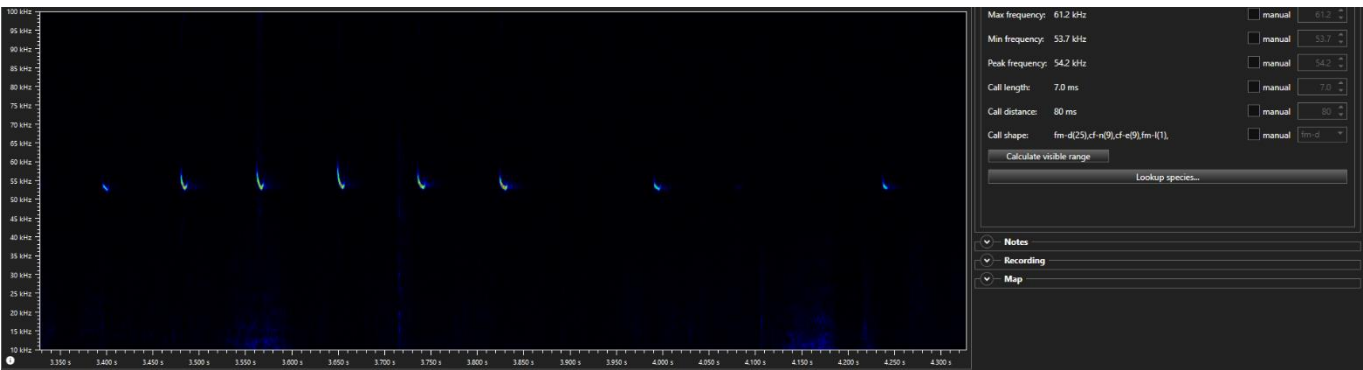


Plate 1.5 Soprano pipistrelle recorded at 21:59 on 18 July 2023, Transect 1

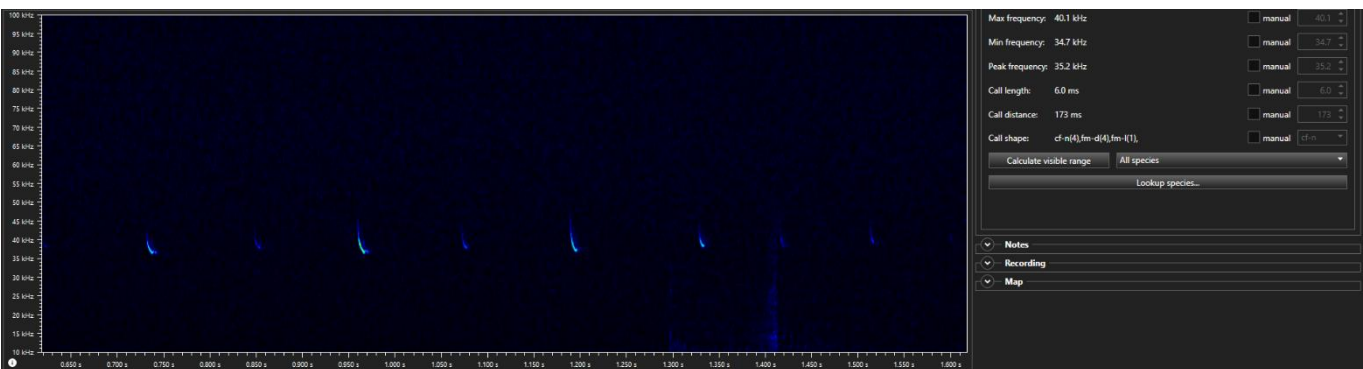


Plate 1.6 Nathusius' pipistrelle recorded at 21:42 on 18 July 2023, Transect 2

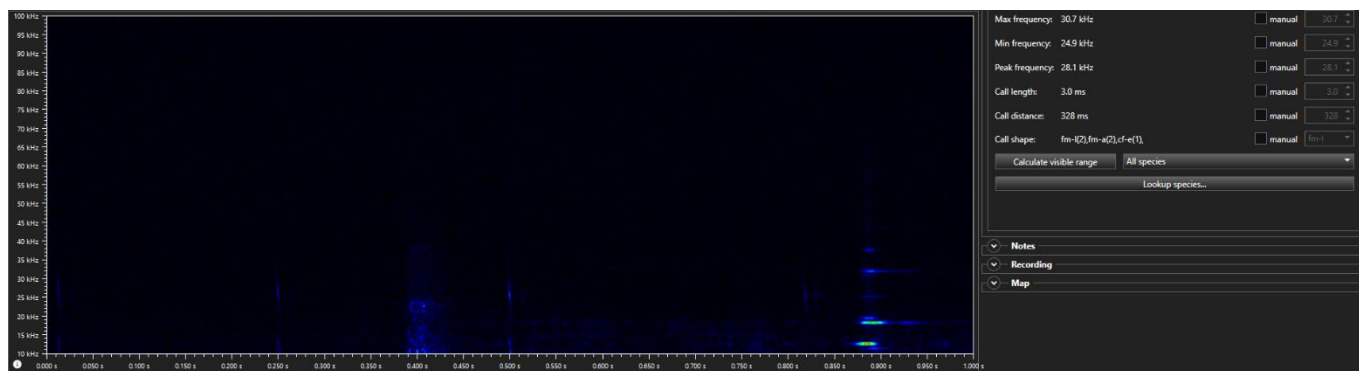


Plate 1.7 Brown long-eared bat recorded at 19:26 on 10 October 2023, Transect 1

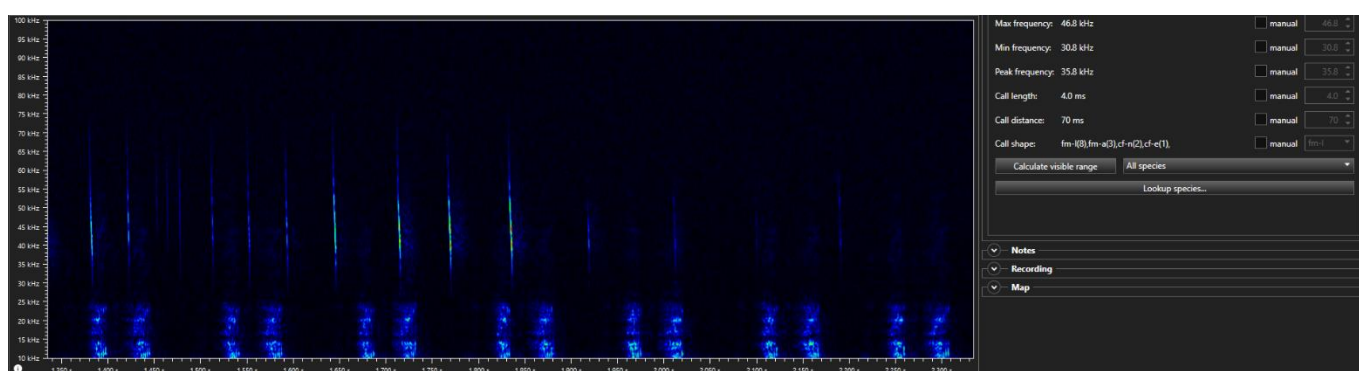


Plate 1.8 *Myotis* species bat recorded at 22:10 on 18 July 2023, Transect 1

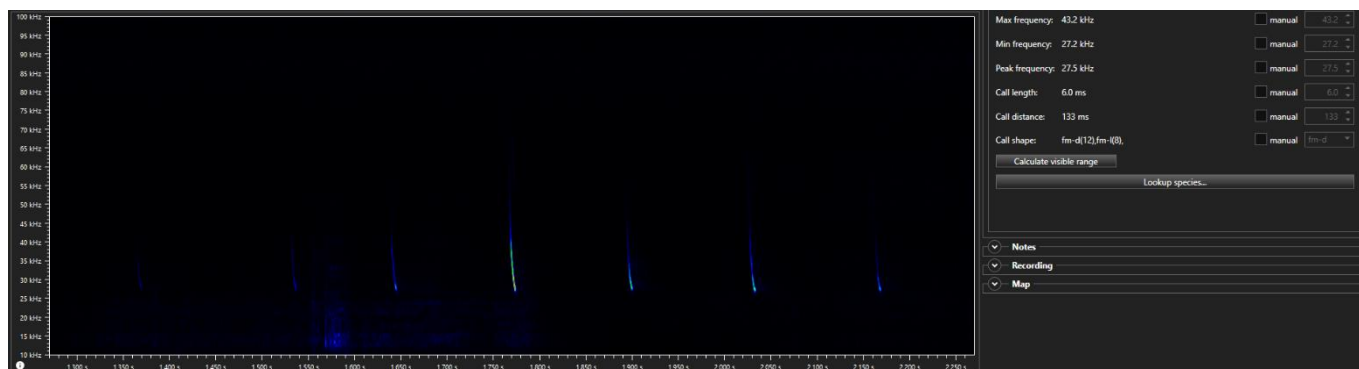


Plate 1.9 Serotine recorded at 18:52 on 11 October 2023, Transect 6

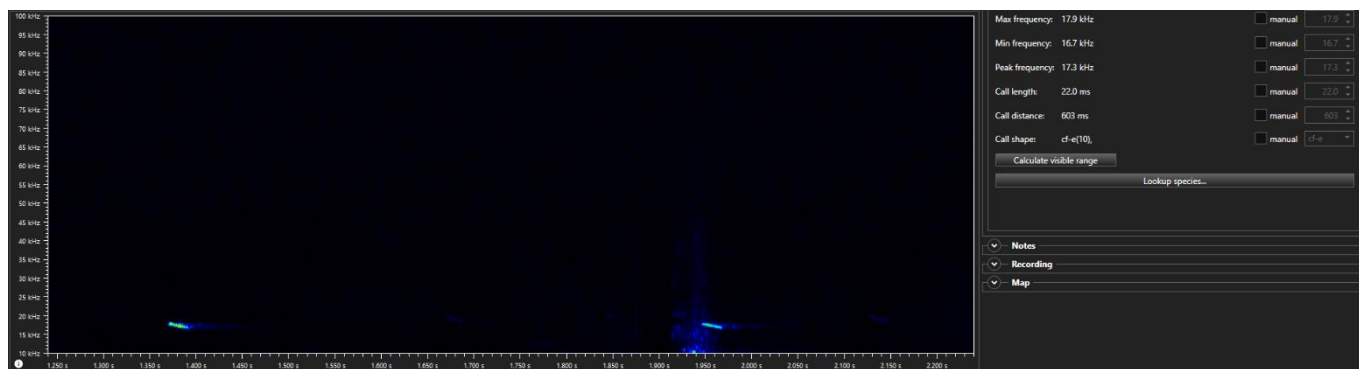


Plate 1.10 Noctule recorded at 21:39 on 18 July 2023, Transect 1

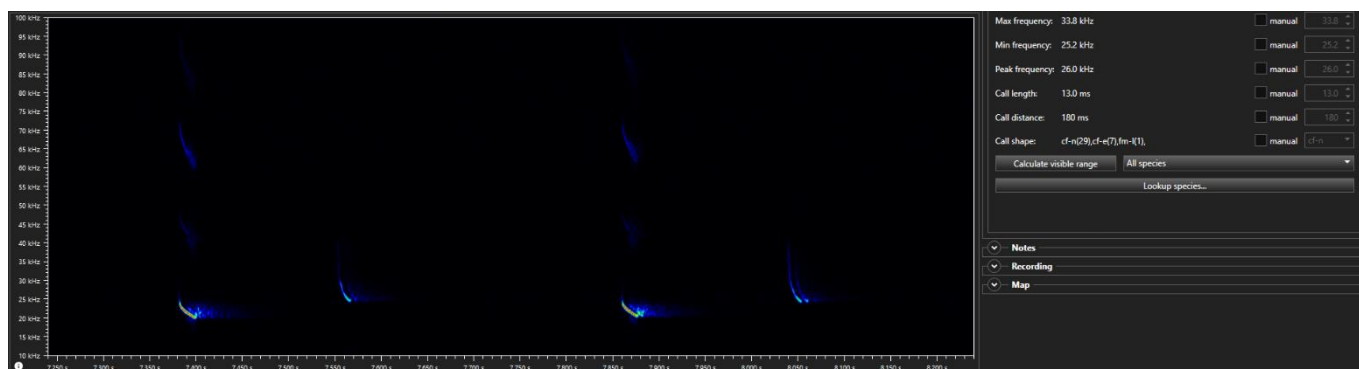


Plate 1.11 Leisler's bat recorded at 22:01 on 18 July 2023, Transect 3

Annex 2.L.3 Automated Detector Surveys Full Results Tables

Transect 1

Table A.19 Transect 1 July 2023 SM4 results

Date (night commencing)	Observation								
	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Noctule	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Possible barbastelle
26/07/2023	8.25	1	0	0	0	0	0	0	0
27/07/2023	8.25	13	20	0	1	0	0	3	0
28/07/2023	8.5	7	11	0	0	0	0	1	1
29/07/2023	8.5	5	9	2	1	4	1	3	0
30/07/2023	8.5	0	1	0	0	0	0	0	0
Total	42	26	41	2	2	4	1	7	1
Registrations per hour by species		0.61	0.97	0.04	0.04	0.09	0.02	0.16	0.02
Registrations of all bat species per hour		2.00							

Table A.20 Transect 1 October 2023 SM4 results

Date (night commencing)	Observation				
	Night length	Common pipistrelle	Soprano pipistrelle	Pipistrelle species (common or Nathusius' pipistrelle)	<i>Myotis</i> species
11/10/2023	13	1	11	2	1
12/10/2023	13	0	1	0	0
13/10/2023	13	0	0	0	1
Total	39	1	12	2	2
Registrations per hour by species		0.02	0.30	0.05	0.05
Registrations of all bat species per hour			0.44		

Table A.21 Transect 1 May 2024 SM4 results

Date (night commencing)	Observation									
	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Noctule	Leisler's bat	<i>Myotis</i> species	Brown long-eared bat
15/05/2024	8.5	28	8	3	1	1	0	1	0	1
16/05/2024	8.5	16	2	1	0	2	1	0	1	0
17/05/2024	8.5	42	15	2	1	9	5	1	2	0
18/05/2024	8.25	34	5	1	5	0	0	0	0	0
19/05/2024	8.25	29	3	1	0	0	0	0	0	0
20/05/2024	8.25	2	1	0	0	0	0	1	0	0
21/05/2024	8.25	1	0	0	0	0	0	0	0	0
Total	58.5	152	34	8	7	12	6	3	3	1

Observation										
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Noctule	Leisler' s bat	<i>Myotis</i> species	Brown long-eared bat
Registrations per hour by species		2.59	0.58	0.13	0.11	0.20	0.10	0.05	0.05	0.01
Registrations of all bat species per hour		3.44								

Table A.22 Transect 1 June 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (Common or Nathusius'	Pipistrelle species (Common or soprano)	<i>Myotis</i> species	Possible barbastelle bat	<i>Myotis</i> species or long-eared bat
19/06/2024	7.25	7	2	0	1	0	0	1	1
20/06/2024	7.25	41	5	0	0	7	0	0	0
21/06/2024	7.25	14	6	0	0	10	3	0	0
22/06/2024	7.25	7	4	2	0	14	0	0	0
23/06/2024	7.25	0	2	0	0	1	0	0	0
24/06/2024	7.25	0	0	0	0	0	0	0	0
Total	43.50	69	19	2	1	32	3	1	1
Registrations per hour by species		1.59	0.44	0.05	0.02	0.74	0.07	0.02	0.02

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (Common or Nathusius'	Pipistrelle species (Common or soprano	<i>Myotis</i> species	Possible barbastelle bat	<i>Myotis</i> species or long-eared bat
Registrations of all bat species per hour						2.94			

Table A.23 Transect 1 July 2024 SM4 results

Observation															
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (Common or Nathusius'	Pipistrelle species (Common or soprano pipistrelle)	Noctule	Leisler' s bat	Serotine	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	<i>Myotis</i> species	Possible barbastelle bat	<i>Myotis</i> species or long-eared bat	Brown long-eared bat
26/07/2024	8.5	12	6	1	0	26	0	0	0	0	1	3	0	1	1
27/07/2024	8.5	31	39	1	1	11	1	0	2	0	0	11	1	0	0
28/07/2024	8.5	13	20	1	0	4	0	0	0	1	1	5	0	0	0
29/07/2024	8.5	79	37	0	0	19	0	4	2	2	5	26	0	0	1

Observation															
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (Common or Nathusius' pipistrelle)	Pipistrelle species (Common or soprano pipistrelle)	Noctule	Leisler' s bat	Serotine	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species	Possible barbastelle bat	Myotis species or long-eared bat	Brown long-eared bat
30/07/2024	8.5	266	15	1	10	4	0	1	2	0	5	4	0	0	0
31/07/2024	8.5	432	3	0	3	2	0	0	0	0	0	2	0	0	1
Total	51	833	120	4	14	66	1	5	6	3	12	51	1	1	3
Registrations per hour by species		16.33	2.35	0.08	0.27	1.29	0.02	0.10	0.12	0.06	0.24	1.0	0.02	0.02	0.06
Registrations of all bat species per hour		21.96													

Table A.24 Transect 1 August 2024 SM4 results

Observation					
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Noctule	Brown long-eared bat
16/08/2024	9.5	11	5	3	1

Observation					
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Noctule	Brown long-eared bat
17/08/2024	9.5	26	9	0	0
18/08/2024	9.5	17	6	1	0
19/08/2024	9.5	6	4	0	0
Total	38	60	24	4	1
Registrations per hour by species		1.58	0.63	0.11	0.03
Registrations of all bat species per hour		2.34			

Table A.25 Transect 1 September 2024 SM4 result

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano pipistrelle)	Pipistrelle species (common or Nathusius)	Pipistrelle social call	Noctule	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Serotine	Myotis species	Myotis species or brown long-eared bat
03/09/2024	12	28	12	3	1	0	0	4	1	0	0	1	0
04/09/2024	12	7	1	0	0	1	0	1	0	0	0	0	0
05/09/2024	12.25	7	5	1	1	1	1	2	0	0	0	2	0
06/09/2024	12.25	7	7	6	0	2	0	2	0	0	0	0	1
07/09/2024	12.25	17	9	7	4	2	0	3	0	2	1	2	1
08/09/2024	12.25	1	6	4	0	0	0	2	0	0	0	1	0
Total	73	67	40	21	6	6	1	14	1	2	1	6	2
Registrations per hour by species		0.92	0.55	0.29	0.08	0.08	0.01	0.19	0.01	0.03	0.01	0.08	0.03
Registrations of all bat species per hour		2.29											

Transect 2

Table A.26 Transect 2 July 2023 SM4 results

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Possible barbastelle	Myotis species	Brown long-eared bat
26/07/2023	8.25	2	1	0	0	0	0	0	0	0	1	0
27/07/2023	8.25	15	67	1	1	1	12	5	1	0	0	0
28/07/2023	8.5	14	74	0	4	0	3	1	5	1	0	0
29/07/2023	8.5	11	54	3	1	0	1	3	0	1	0	1
30/07/2023	8.5	1	14	0	2	0	0	1	0	1	2	0
Total	42	43	210	4	8	1	16	10	6	3	3	1
Registrations per hour by species		1.02	5.00	0.10	0.19	0.02	0.38	0.24	0.14	0.07	0.07	0.02
Registrations of all bat species per hour						7.26						

Table A.27 Transect 2 October 2023 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Possible barbastelle	Myotis species	
11/10/2023	13	2	5	4	0	0	1	2	

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Possible barbastelle	Myotis species
12/10/2023	13	3	1	2	0	1	1	1
13/10/2023	13	1	3	1	2	0	0	1
14/10/2023	13	0	0	3	0	1	0	1
Total	52	6	9	10	2	2	2	5
Registrations per hour by species		0.11	0.17	0.19	0.03	0.03	0.03	0.09
Registrations of all bat species per hour					0.69			

Table A.28 Transect 2 May 2024 SM4 results

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Noctule	Noctule, Leisler' s bat or serotine	Leisler' s bat	Noctule or Leisler' s bat	Possible barbastelle	Myotis species
15/05/2024	8.5	31	21	3	0	12	0	0	0	2	0	5
16/05/2024	8.5	23	10	4	2	8	1	0	0	1	0	2

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Noctule	Noctule, Leisler' s bat or serotine	Leisler' s bat	Noctule or Leisler' s bat	Possible barbastelle	Myotis species
17/05/2024	8.5	49	22	2	5	28	3	0	0	1	0	3
18/05/2024	8.25	45	26	9	0	15	1	0	0	1	0	2
19/05/2024	8.25	15	19	10	4	3	3	0	0	0	1	4
20/05/2024	8.25	14	12	9	0	1	0	1	1	2	0	3
Total	50.25	177	110	37	11	67	8	1	1	7	1	19
Registrations per hour by species		3.52	2.18	0.73	0.21	1.33	0.15	0.01	0.01	0.13	0.01	0.37
Registrations of all bat species per hour							8.74					

Table A.29 Transect 2 June 2024 SM4 results

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Common or soprano pipistrelle	Myotis species	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species or long-eared bat
19/06/2024	7.25	11	17	3	1	3	1	0	0	0	0	0

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Common or Nathusius' pipistrelle	Common or soprano pipistrelle	Myotis species	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species or long-eared bat
20/06/2024	7.25	5	7	2	0	5	0	0	0	0	0	1
21/06/2024	7.25	4	2	0	0	8	0	2	0	1	1	0
22/06/2024	7.25	4	6	4	2	0	0	2	1	1	0	2
23/06/2024	7.25	5	12	1	2	8	3	0	0	0	0	1
24/06/2024	7.25	9	8	2	0	4	6	0	0	0	0	2
Total	43.5	38	52	12	5	28	10	4	1	2	1	4
Registrations per hour by species		0.87	1.19	0.27	0.11	0.64	0.22	0.09	0.02	0.04	0.02	0.09
Registrations of all bat species per hour							3.61					

Table A.30 Transect 2 July 2024 SM4 results

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (Common or Nathusius' pipistrelle)	Pipistrelle species (Common or soprano pipistrelle)	Noctule	Leisler' s bat	Serotine	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species	Myotis species or long-eared bat
26/07/2024	8.5	10	44	1	0	6	1	0	0	0	0	10	0
27/07/2024	8.5	33	47	1	1	2	0	0	0	0	0	4	0
28/07/2024	8.5	38	77	2	0	3	0	1	0	0	0	9	1
29/07/2024	8.5	30	58	0	1	1	0	0	1	1	2	4	0
30/07/2024	8.5	150	103	4	2	5	2	0	1	0	4	2	1
31/07/2024	8.5	29	92	3	1	3	1	0	0	0	1	3	0
Total	51	290	421	11	5	20	4	1	2	1	7	32	2
Registrations per hour by species		5.69	8.25	0.22	0.10	0.39	0.08	0.02	0.04	0.02	0.14	0.63	0.04
Registrations of all bat species per hour							15.61						

Table A.31 Transect 2 September 2024 SM4 results

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Brown long-eared bat	Leisler's bat	Noctule or Leisler's bat	Noctule, Leisler's bat or serotine	Myotis species or brown long-eared bat	Myotis species
03/09/2024	12	36	66	23	12	3	1	0	1	1	2	0	1
04/09/2024	12	29	87	7	9	3	0	0	0	0	0	0	5
05/09/2024	12.25	24	30	6	7	0	0	2	0	0	0	1	2
Total	36.25	89	183	36	28	6	1	2	1	1	2	1	8
Registrations per hour by species		2.46	5.05	0.99	0.77	0.17	0.03	0.06	0.03	0.03	0.06	0.03	0.22
Registrations of all bat species per hour		9.88											

Transect 3

Table A.32 Transect 3 October 2023 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or Nathusius')	Noctule	Leisler' s	Possible barbastelle	Myotis species
11/10/2023	13	4	8	3	0	0	1	0	0
12/10/2023	13	2	4	1	1	1	0	0	0
13/10/2023	13	2	2	0	0	0	0	0	1
14/10/2023	13	0	0	0	1	0	0	1	2
15/10/2023	13.25	0	0	1	0	0	0	0	0
Total	52.25	8	14	5	2	1	1	1	3
Registrations per hour by species		0.15	0.26	0.09	0.03	0.01	0.01	0.01	0.05
Registrations of all bat species per hour					0.67				

Table A.33 Transect 3 May 2024 SM4 results

Observation											
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or Nathusius'	Pipistrelle species (common or soprano)	Noctule	Noctule or Leisler' s bat	Brown long-eared bat	Myotis species	Myotis species or long-eared bat
15/05/2024	8.5	87	34	8	5	66	0	0	0	0	2
16/05/2024	8.5	37	18	5	1	17	1	1	0	1	1
17/05/2024	8.5	27	15	6	1	13	1	0	1	3	0
Total	25.5	151	67	19	7	96	2	1	1	4	3
Registrations per hour by species		5.92	2.62	0.74	0.27	3.76	0.07	0.03	0.03	0.15	0.11
Registrations of all bat species per hour						13.76					

Table A.34 Transect 3 June 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or Nathusius'	Pipistrelle species (common or soprano pipistrelle)	Myotis species	Noctule	Noctule or Leisler's bat
19/06/2024	7.25	11	16	1	1	5	0	0	0
20/06/2024	7.25	9	5	0	1	17	0	0	0
21/06/2024	7.25	63	3	2	1	24	0	1	1
22/06/2024	7.25	14	27	1	0	12	1	0	0
23/06/2024	7.25	38	11	0	1	33	23	2	0
24/06/2024	7.25	9	7	0	1	22	0	0	0
Total	43.5	144	69	4	5	113	24	3	1
Registrations per hour by species		3.31	1.58	0.09	0.11	2.59	0.55	0.06	0.02
Registrations of all bat species per hour					8.34				

Table A.35 Transect 3 July 2024 SM4 results

Observation										
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or Nathusius')	Pipistrelle species (common or soprano pipistrelle)	Noctule	Serotine	Noctule, Leisler's bat or serotine	Myotis species or brown long-eared bat
26/07/2024	8.5	2	22	0	0	2	0	0	0	0
27/07/2024	8.5	35	13	0	1	4	0	0	1	0
28/07/2024	8.5	23	252	1	0	0	0	1	0	0
29/07/2024	8.5	25	47	0	0	2	0	0	0	1
30/07/2024	8.5	18	47	0	0	2	2	0	1	0
31/07/2024	8.5	36	54	2	0	2	0	0	0	1
Total	51	139	435	3	1	12	2	1	2	2
Registrations per hour by species		2.73	8.53	0.06	0.02	0.24	0.04	0.02	0.04	0.04
Registrations of all bat species per hour		11.71								

Table A.36 Transect 3 August 2024 SM4 results

Observation							
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle Social Call	Leisler's bat
16/08/2024	9.5	12	47	0	3	0	0

Observation							
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle Social Call	Leisler's bat
17/08/2024	9.5	21	25	1	5	2	1
18/08/2024	9.5	8	18	0	13	0	0
Total	28.5	40	90	1	21	2	1
Registrations per hour by species		0.71	2.25	0.03	0.53	0.05	0.03
Registrations of all bat species per hour				5.44			

Table A.37 Transect 3 September 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Noctule, Leisler's bat or serotine	Myotis species
04/09/2024	12	20	28	3	10	3	0	0	0
05/09/2024	12.25	16	59	2	11	0	2	1	1
06/09/2024	12.25	7	24	9	7	4	3	0	2

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Noctule, Leisler's bat or serotine	Myotis species
Total	36.5	43	111	14	28	7	5	1	3
Registrations per hour by species		1.17	3.04	0.38	0.76	0.19	0.13	0.02	0.08
Registrations of all bat species per hour					5.81				

Transect 4

Table A.38 Transect 4 July 2023 SM4 results

Observation				
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Leisler's bat
26/07/2023	8.25	0	0	0
27/07/2023	8.25	5	21	0
28/07/2023	8.5	4	25	0
29/07/2023	8.5	7	24	2
30/07/2023	8.5	0	0	0
Total	42	16	70	2
Registrations per hour by species		0.24	1.07	0.03
Registrations of all bat species per hour			2.10	

Table A.39 Transect 4 October 2023 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Noctule	Possible barbastelle	Myotis species
11/10/2023	13	2	9	2	0	5	4	0	1
12/10/2023	13	8	1	0	2	1	0	1	0
13/10/2023	13	0	0	0	0	0	0	0	0
14/10/2023	13	2	0	0	0	0	0	0	0
15/10/2023	13.25	0	0	4	0	0	0	0	0
Total	65.25	12	10	6	2	6	4	1	1

Observation									
Date (night commencing)									
	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Noctule	Possible barbastelle	Myotis species
Registrations per hour by species		0.18	0.15	0.09	0.03	0.09	0.06	0.02	0.02
Registrations of all bat species per hour					0.64				

Table A.40 Transect 4 May 2024 SM4 results

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Pipistrelle bat social call	Myotis species
15/05/2024	8.5	349	125	5	131	1	1	3
16/05/2024	8.5	102	125	14	57	1	2	2
17/05/2024	8.5	176	131	2	163	2	4	1
Total	25.5	627	381	21	351	4	7	6
Registrations per hour by species		24.59	14.94	0.82	13.76	0.16	0.27	0.24
Registrations of all bat species per hour					54.78			

Table A.41 Transect 4 June 2024 SM4 results

Observation														
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Pipistrelle Social Call	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Serotine	Myotis species	Brown long-eared Bat
19/06/2024	7.25	34	299	9	51	2	23	0	3	6	0	2	10	0
20/06/2024	7.25	28	44	0	57	0	3	0	0	1	0	0	0	0
21/06/2024	7.25	52	155	2	208	0	10	0	3	7	2	0	1	1
22/06/2024	7.25	29	199	1	229	0	34	0	2	2	0	0	0	0
23/06/2024	7.25	26	50	0	186	0	14	1	0	0	0	0	0	0
24/06/2024	7.25	20	47	1	133	1	2	3	0	0	0	0	0	0
Total	43.5	189	794	13	864	3	86	4	8	16	2	2	11	1
Registrations per hour by species		4.34	18.25	0.30	19.86	0.07	1.98	0.09	0.18	0.37	0.05	0.05	0.25	0.02
Registrations of all bat species per hour		45.82												

Table A.42 Transect 4 July 2024 SM4 results

Observation											
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Pipistrelle species (common or Nathusius'	Pipistrelle species (common or soprano	Noctule	Leisler' s bat	Serotine	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species
26/07/2024	8.5	8	61	0	4	0	0	0	0	0	1
27/07/2024	8.5	11	12	0	3	0	1	0	0	1	0
28/07/2024	8.5	8	30	0	0	0	0	1	0	1	0
29/07/2024	8.5	26	28	1	3	1	1	1	0	2	0
30/07/2024	8.5	13	21	1	1	1	0	2	1	0	0
31/07/2024	8.5	5	17	0	0	0	0	1	0	0	0
Total	51	71	169	2	11	2	2	5	1	4	1
Registrations per hour by species		1.39	3.31	0.04	0.22	0.04	0.04	0.10	0.02	0.08	0.02
Registrations of all bat species per hour							5.25				

Table A.43 Transect 4 August 2024 SM4 results

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle social call	Noctule	Leisler's bat	Serotine	Noctule, Leisler's bat or serotine	Myotis species	Brown long-eared bat	Myotis species or brown long-eared bat
16/08/2024	9.5	9	25	2	2	1	0	0	1	0	1	0	0
17/08/2024	9.5	6	42	2	8	0	0	0	0	1	2	0	0
18/08/2024	9.5	7	40	0	6	0	0	1	0	0	0	1	1
19/08/2024	9.5	7	15	0	2	0	2	0	0	0	0	0	0
Total	38	29	122	4	18	1	2	1	1	1	3	1	1
Registrations per hour by species		0.76	3.21	0.11	0.47	0.03	0.05	0.03	0.03	0.03	0.08	0.03	0.03
Registrations of all bat species per hour		4.84											

Table A.44 Transect 4 September 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Noctule	Brown long-eared bat	Leisler' s bat
04/09/2024	12	6	7	1	0	0	0	0	0
05/09/2024	12	2	18	3	1	0	0	0	0
06/09/2024	12.25	1	12	5	1	0	4	1	0
07/09/2024	12.25	4	15	8	2	2	0	0	1
Total	48.5	13	52	17	4	2	4	1	1
Registrations per hour by species		0.26	1.07	0.35	0.08	0.04	0.08	0.02	0.02
Registrations of all bat species per hour					1.94				

Transect 5

Table A.45 Transect 5 July 2023 SM4 results

Observation														
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius’ pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius’)	Noctule	Leisler’ s bat	Noctule or Leisler’ s bat	Serotine	Noctule, Leisler’ s bat or serotine	Possible barbastelle	Myotis species	Brown long-eared bat
26/07/2023	8.25	0	0	1	0	1	0	0	0	0	0	0	0	0
27/07/2023	8.25	327	623	3	57	0	9	2	0	1	1	0	1	0
28/07/2023	8.5	230	497	1	114	0	0	4	0	0	1	0	2	1
29/07/2023	8.5	101	460	0	48	0	1	2	1	0	0	0	5	0
30/07/2023	8.5	1	124	0	0	0	0	0	0	0	0	3	0	0
Total	42	659	1704	5	219	1	10	8	1	1	2	3	8	1
Registrations per hour by species		15.69	40.57	0.11	5.21	0.02	0.23	0.19	0.02	0.02	0.04	0.07	0.19	0.02
Registration s of all bat species per hour		62.43												

Table A.46 Transect 5 October 2023 SM4 results

Observation										
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Noctule or Leisler' s bat	Possible barbastelle	Myotis species
11/10/2023	13	9	30	17	0	11	1	2	1	13
12/10/2023	13	21	22	22	3	22	0	0	0	0
13/10/2023	13	0	0	0	0	0	0	0	0	0
Total	39	30	52	39	3	33	1	2	1	13
Registrations per hour by species		0.77	1.33	1.00	0.08	0.85	0.03	0.05	0.03	0.33
Registrations of all bat species per hour						4.46				

Table A.47 Transect 5 May 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Noctule or Leisler' s bat	Myotis species
15/05/2024	8.5	79	11	7	25	1	1	0	0
16/05/2024	8.5	62	9	4	15	6	0	0	1
17/05/2024	8.5	104	32	8	26	10	1	0	1
18/05/2024	8.25	105	44	3	62	7	0	1	0
19/05/2024	8.25	35	15	7	16	3	0	0	0

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius)	Noctule	Noctule or Leisler' s bat	Myotis species
20/05/2024	8.25	11	6	1	5	1	0	0	0
Total	50.25	396	117	30	149	28	2	1	2
Registrations per hour by species		7.88	2.33	0.60	2.97	0.56	0.04	0.02	0.04
Registrations of all bat species per hour		14.43							

Table A.48 Transect 5 June 2024 SM4 results

Observation														
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius' pipistrelle)	Pipistrelle social call	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Serotine	Myotis species	Brown long-eared bat
19/06/2024	7.25	41	48	14	7	0	0	1	1	0	0	0	2	0
20/06/2024	7.25	87	10	1	10	0	1	0	5	4	4	1	1	6
21/06/2024	7.25	128	114	6	40	1	1	1	0	1	0	0	3	0
22/06/2024	7.25	78	55	1	29	0	0	4	2	3	3	2	1	0
23/06/2024	7.25	53	21	1	13	0	0	1	0	0	1	0	1	0

Observation														
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius' pipistrelle)	Pipistrelle social call	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Serotine	Myotis species	Brown long-eared bat
24/06/2024	7.25	14	15	0	13	0	0	2	0	1	0	0	2	0
Total	43.5	401	263	23	112	1	2	9	7	9	8	3	10	6
Registrations per hour by species		9.2 2	6.0 5	0.5 3	2.5 7	0.02	0.0 5	0.2 1	0.1 8	0.2 1	0.1 8	0.0 7	0.2 3	0.1 4
Registrations of all bat species per hour		19.63												

Table A.49 Transect 5 July 2024 SM4 results

Observation												
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Pipistrelle species (common or Nathusius'	Pipistrelle species (common or soprano	Noctule	Leisler' s bat	Serotine	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Myotis species	Myotis species or brown long-eared bat
26/07/2024	8.5	34	69	0	60	0	1	2	1	3	2	0
27/07/2024	8.5	87	101	2	12	0	2	1	0	1	1	0
28/07/2024	8.5	38	47	3	3	0	0	1	0	0	4	0
29/07/2024	8.5	36	59	0	9	0	2	1	1	0	2	0
30/07/2024	8.5	27	84	0	4	1	0	2	1	1	2	0
31/07/2024	8.5	14	16	0	5	0	0	3	0	0	1	1
Total	51	236	376	5	93	1	5	10	3	5	12	1
Registrations per hour by species		4.63	7.37	0.10	1.82	0.02	0.10	0.20	0.06	0.10	0.24	0.02
Registrations of all bat species per hour		14.65										

Table A.50 Transect 5 August 2024 SM4 results

Observation									
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano pipistrelle)	Noctule	Serotine	Myotis species	Brown long-eared bat
16/08/2024	9.5	31	50	3	18	0	0	2	3
17/08/2024	9.5	95	116	0	60	0	0	1	3
18/08/2024	9.5	44	44	1	15	2	2	1	0
Total	28.5	170	210	4	93	2	2	4	6
Registrations per hour by species		5.96	7.37	0.14	3.26	0.07	0.07	0.14	0.21
Registrations of all bat species per hour					17.23				

Table A.51 Transect 5 September 2024 SM4 results

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Brown long-eared bat	Myotis species
03/09/2024	12	24	43	4	195	1	1	0
04/09/2024	12	17	8	2	11	0	0	0

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Brown long-eared bat	Myotis species
05/09/2024	12.25	6	9	3	1	0	0	3
Total	36.25	47	60	9	207	1	1	3
Registrations per hour by species		1.29	1.65	0.24	5.71	0.02	0.02	0.08
Registrations of all bat species per hour				9.05				

Transect 6

Table A.52 Transect 6 October 2023 SM4 results

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Leisler' s bat	Noctule or Leisler' s bat
16/10/2023	13.25	0	1	1	0	2	0	0
17/10/2023	13.25	0	10	5	0	1	0	0
19/10/2023	13.5	11	20	30	4	3	2	1
Total	40	11	31	36	4	6	2	1
Registrations per hour by species		0.28	0.78	0.90	0.10	0.15	0.05	0.03
Registrations of all bat species per hour				2.28				

Table A.53 Transect 6 May 2024 SM4 results

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or soprano)	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotine	Serotine	Myotis species	Brown long-eared bat
16/05/2024	8.5	120	22	5	10	3	0	0	1	0	0	0	0
17/05/2024	8.5	198	58	20	84	18	4	2	0	31	0	0	2
18/05/2024	8.25	160	33	15	63	3	0	1	0	27	9	3	0

Observation													
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or soprano)	Noctule	Leisler' s bat	Noctule or Leisler' s bat	Noctule, Leisler' s bat or serotina	Serotine	Myotis species	Brown long-eared bat
19/05/2024	8.25	60	19	4	9	4	0	1	1	7	0	1	0
20/05/2024	8.25	66	32	16	13	5	0	0	0	0	0	0	0
21/05/2024	8.25	25	3	1	21	0	0	1	0	3	0	0	0
Total	50	629	167	61	200	33	4	5	2	68	9	4	2
Registrations per hour by species		12.58	3.34	1.22	4.00	0.66	0.08	0.10	0.04	1.36	0.18	0.08	0.04
Registrations of all bat species per hour		23.68											

Table A.54 Transect 6 June 2024 SM4 results

Observation											
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Pipistrelle social call	Noctule	Leisler' s bat	Serotine	Myotis species
19/06/2024	7.25	0	0	0	0	0	0	0	0	0	0
20/06/2024	7.25	0	0	0	0	0	0	0	0	0	0
21/06/2024	7.25	33	21	0	13	0	1	2	1	1	0
22/06/2024	7.25	101	37	3	65	0	2	8	2	5	0

Observation											
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Pipistrelle social call	Noctule	Leisler' s bat	Serotine	Myotis species
23/06/2024	7.25	53	11	1	22	1	1	6	0	0	1
24/06/2024	7.25	42	10	0	17	0	0	1	1	0	0
Total	43.50	229	79	4	117	1	4	17	4	6	1
Registrations per hour by species		5.26	1.82	0.09	2.69	0.02	40.09	0.39	0.09	0.14	0.02
Registrations of all bat species per hour						10.62					

Table A.55 Transect 6 August 2024 SM4 results

Observation								
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano pipistrelle)	Noctule	Serotine	Myotis species
16/08/2024	9.5	17	12	0	36	0	2	0
17/08/2024	9.5	21	28	1	22	1	0	0
18/08/2024	9.5	53	27	0	33	0	0	0
19/08/2024	9.5	28	16	2	15	0	1	0
20/08/2024	9.75	23	15	0	33	0	0	0
21/08/2024	9.75	1	9	0	1	1	0	0
22/08/2024	9.75	0	0	0	1	0	0	0
23/08/2024	10	7	14	0	3	0	0	1
Total	77.25	150	121	3	144	2	3	1
Registrations per hour by species		1.94	1.57	0.04	1.86	0.03	0.04	0.01
Registrations of all bat species per hour					5.49			

Table A.56 Transect 6 September 2024 SM4 results

Observation											
Date (night commencing)	Night length	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle species (common or soprano)	Pipistrelle species (common or Nathusius')	Pipistrelle social call	Noctule	Serotine	Brown long-eared bat	Myotis species
02/09/2024	12	8	15	0	22	1	0	1	1	0	1
03/09/2024	12	24	525	0	20	1	16	0	1	4	0
04/09/2024	12	5	25	9	19	0	0	0	0	0	0
05/09/2024	12.25	5	7	1	2	1	0	0	0	0	0
06/09/2024	12.25	5	9	5	12	2	0	0	0	1	0
07/09/2024	12.25	11	27	0	16	0	0	0	0	0	0
Total	72.75	58	608	15	91	5	16	1	2	5	1
Registrations per hour by species		0.80	8.36	0.21	1.25	0.07	0.22	0.01	0.03	0.07	0.01
Registrations of all bat species per hour						11.02					

Annex 2.L.4 Automated Detector Surveys Sonograms

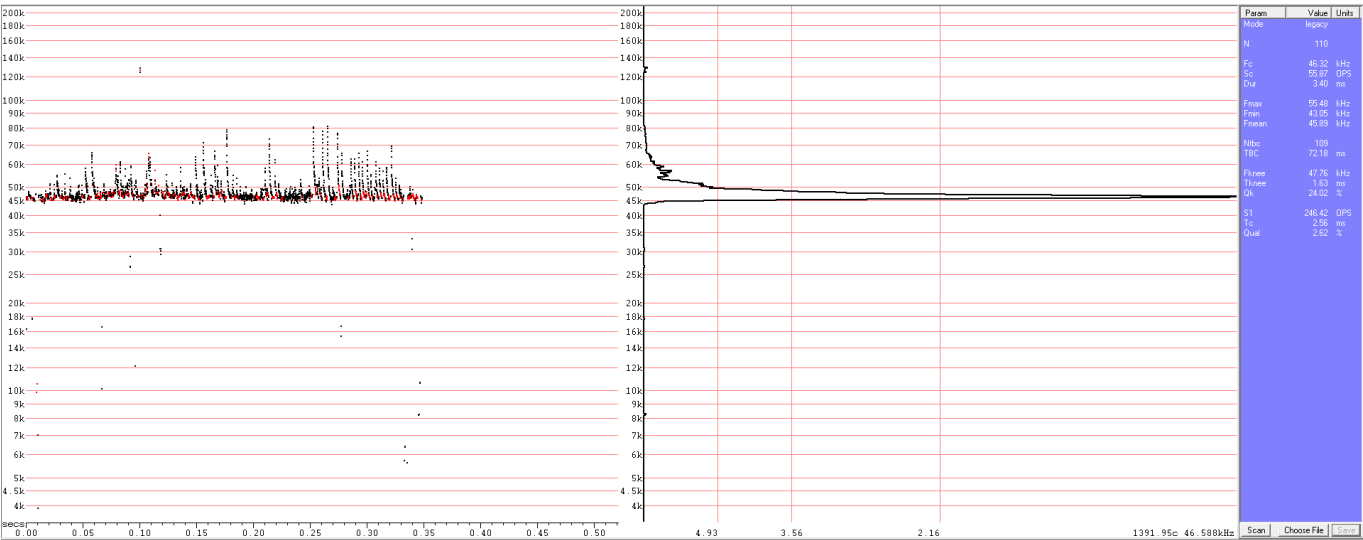


Plate 1.12 Common pipistrelle recorded at 22:47 on 15 May 2024, Transect 1, F6 compression

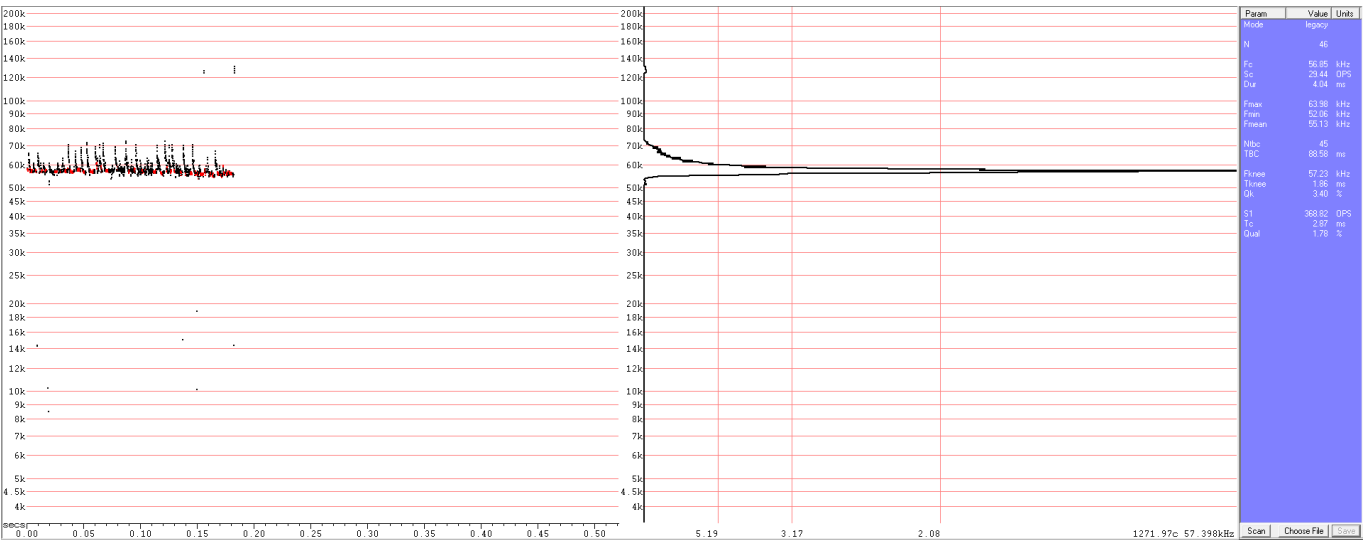


Plate 1.13 Soprano pipistrelle recorded at 02:08 on 16 May 2024, Transect 1, F6 compression

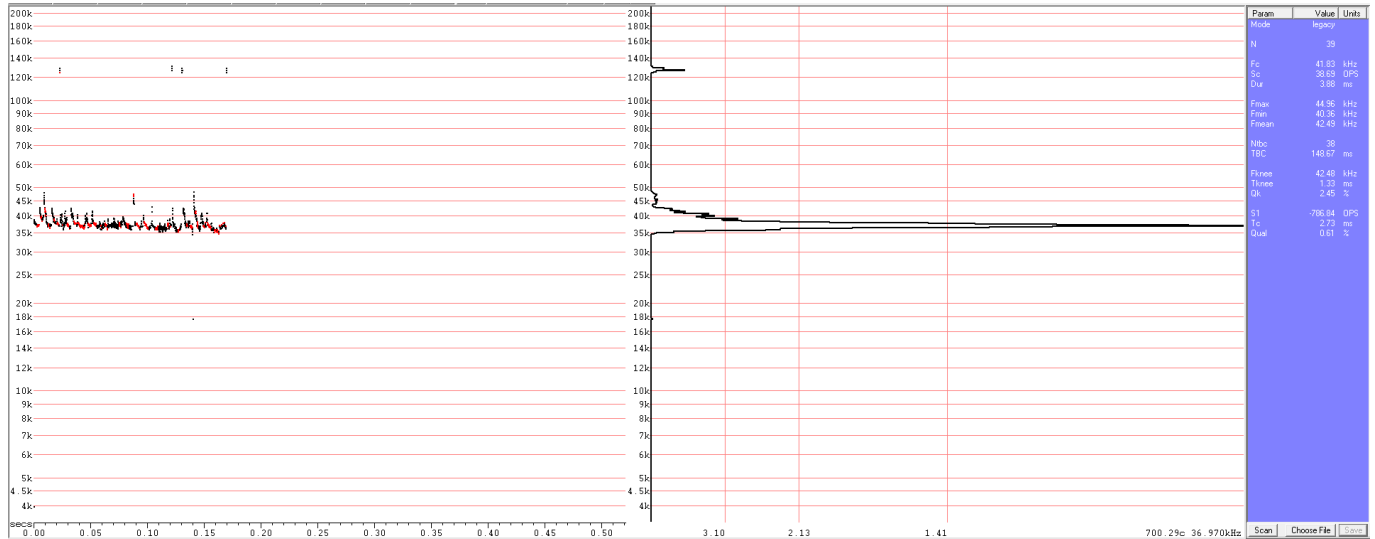


Plate 1.14 Nathusius' pipistrelle recorded at 22:23 on 15 May 2024, Transect 1, F6 compression

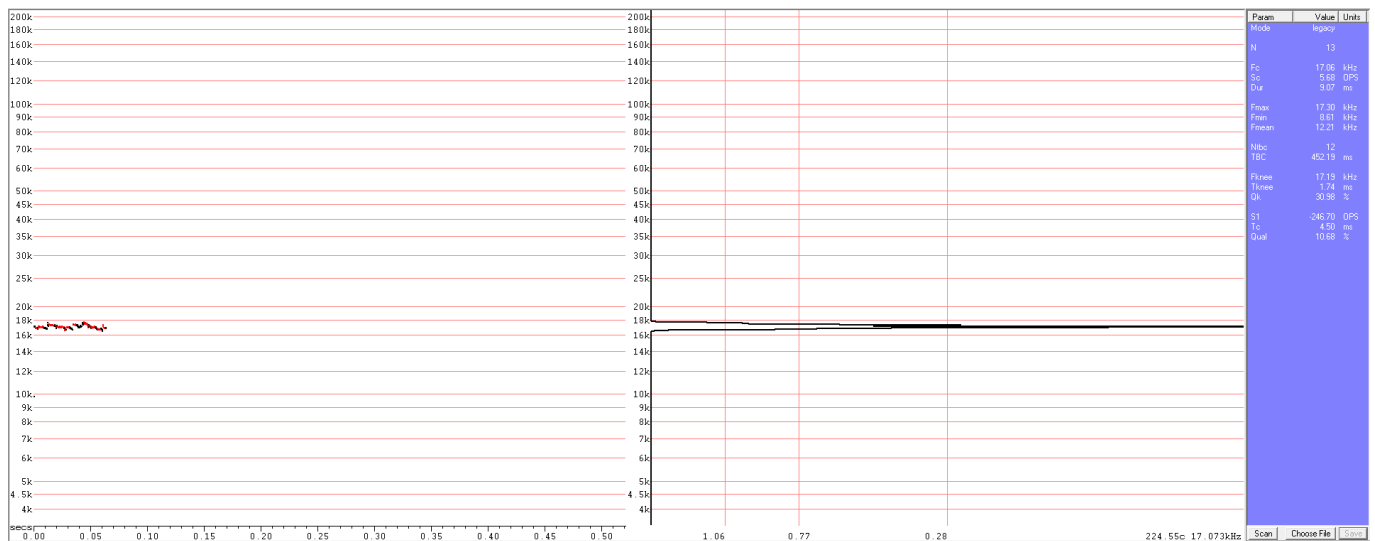


Plate 1.15 Noctule recorded at 21:24 on 17 May 2024, Transect 2, F6 compression

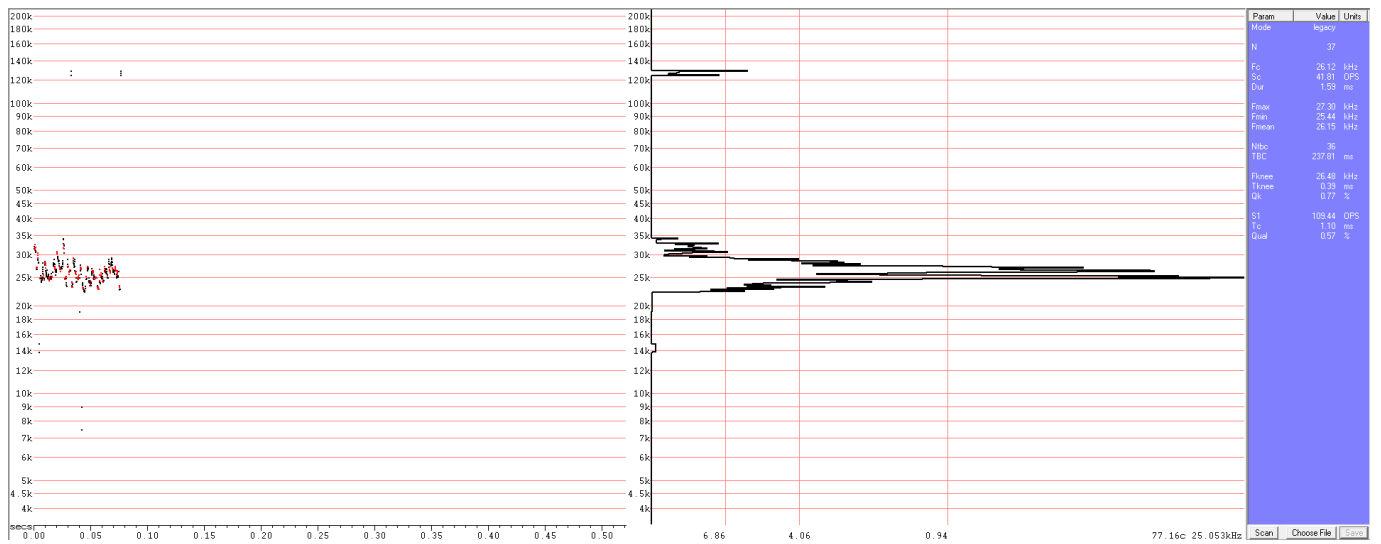


Plate 1.16 Leisler's bat recorded at 22:12 on 28 July 2023, Transect 1, F6 compression

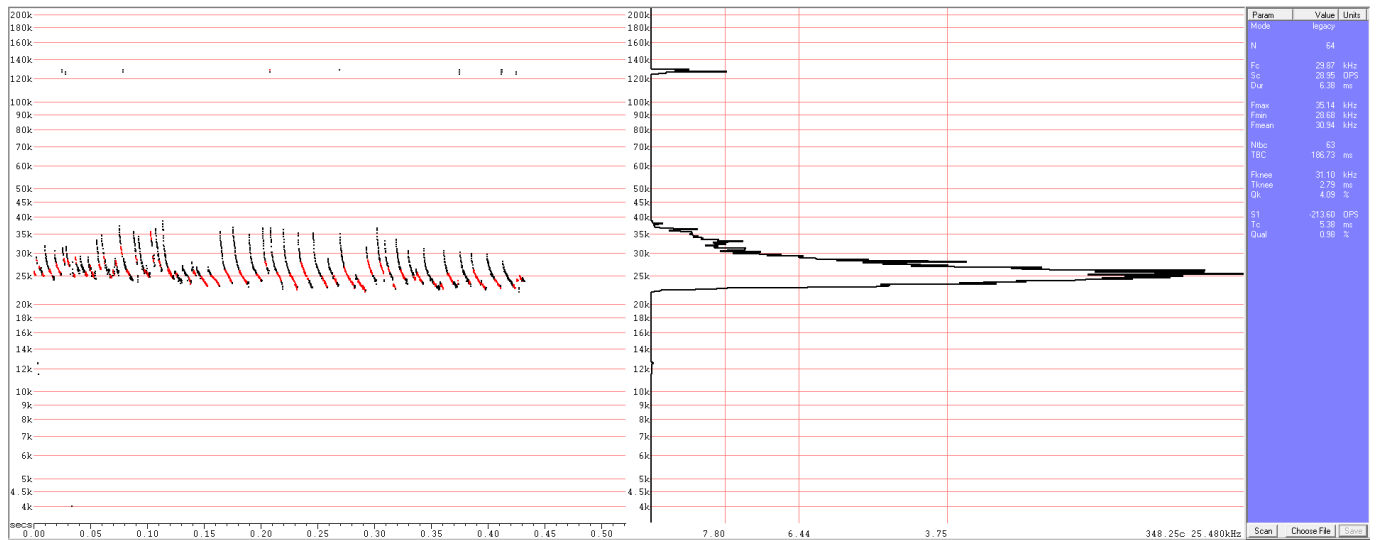


Plate 1.17 Serotine recorded at 22:22 on 22 June 2024, Transect 6, F6 compression

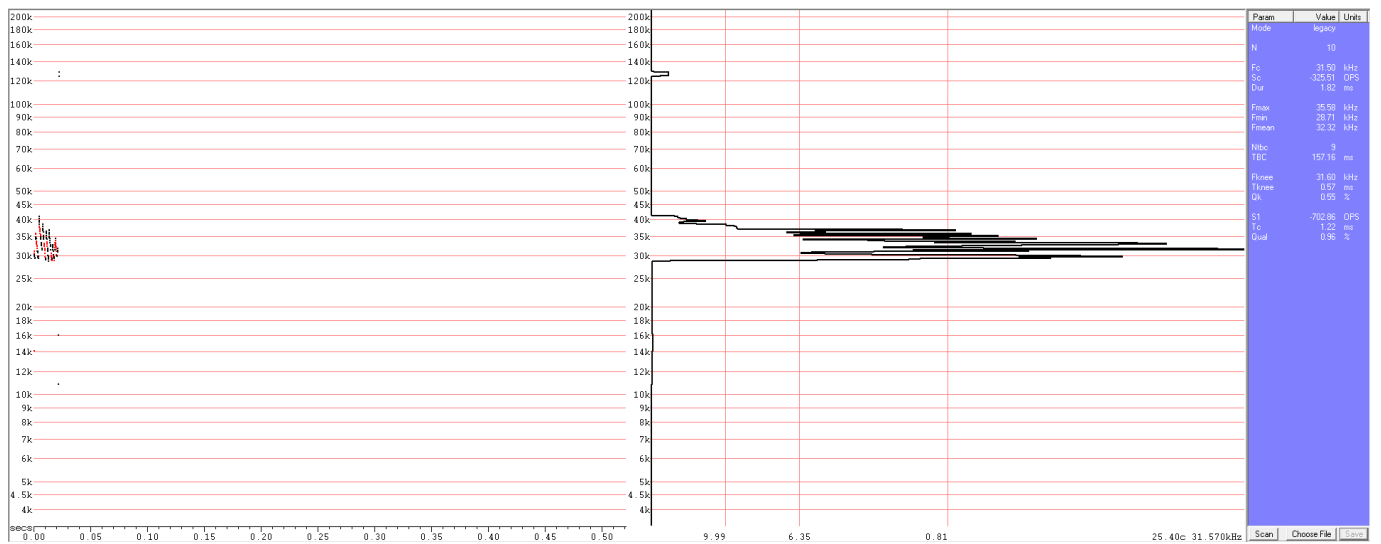


Plate 1.18 Possible barbastelle bat recorded at 21:47 on 30 July 2024, Transect 5, F6 compression

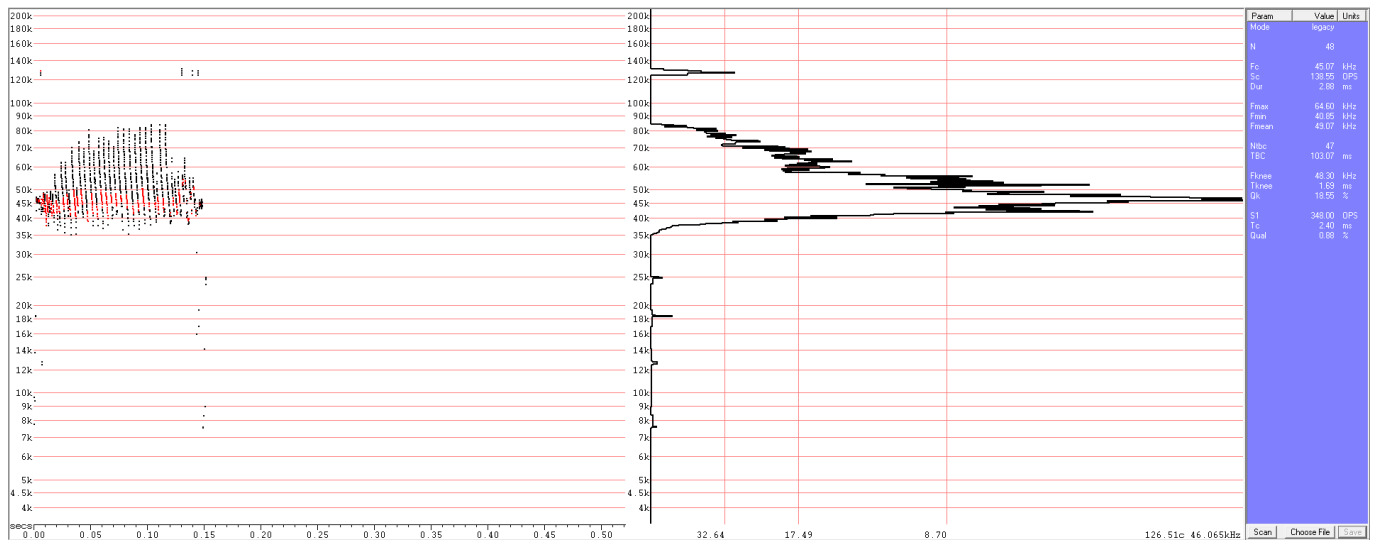


Plate 1.19 *Myotis* species recorded at 21:53 on 28 July 2024, Transect 5, F6 compression

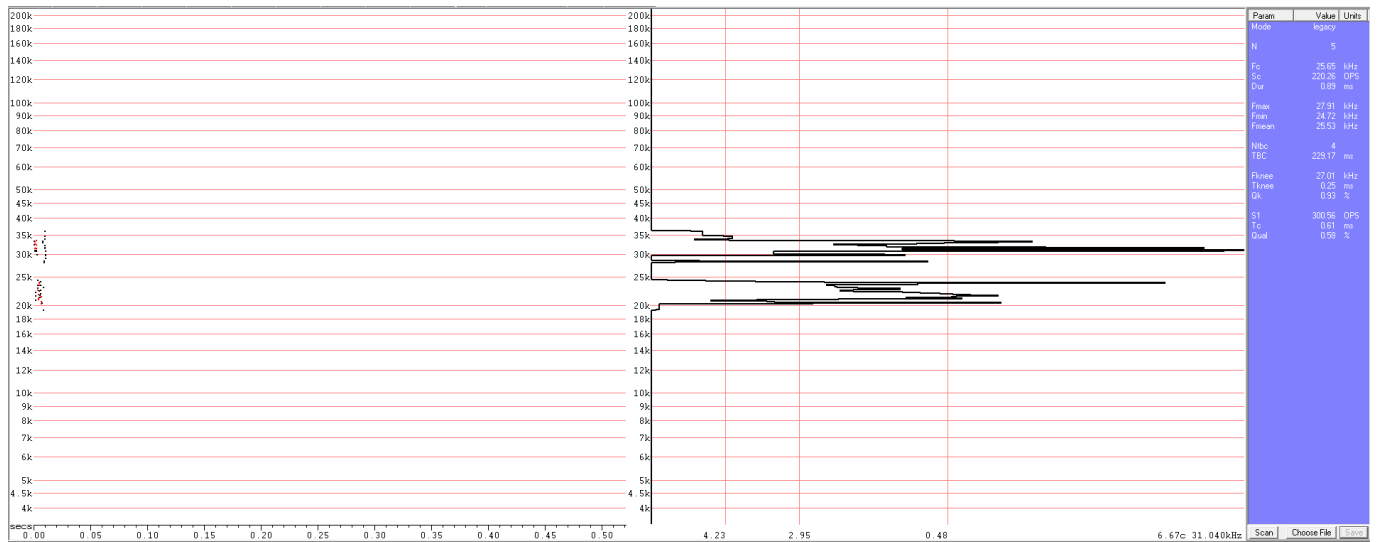


Plate 1.20 Brown long-eared bat recorded at 00:34 on 27 July 2024, Transect 1, F6 compression

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