# Appendix 9.3: Baseline Bat Report

## Banniskirk Substation and Converter Station

PREPARED FOR

SSEN Transmission

DATE
29 October 2024

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0697221

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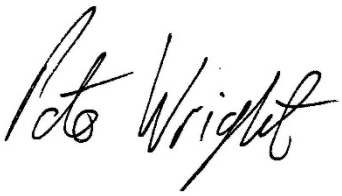
# Banniskirk Substation

## Bat Report

0697221



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# CONTENTS



## LIST OF TABLES



## LIST OF FIGURES



## LIST OF ANNEXES

## ACRONYMS AND ABBREVIATIONS

| Acronyms | Description |
|---|---|
| AOD | Above Ordnance Datum |
| AWI | Ancient Woodland Inventory |
| BS | Bat Surveys |
| BSA | Bat Survey Area |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| EcIA | Ecological Impact Assessment |
| EIA | Environmental Impact Assessment |
| HVDC | High-voltage Direct Current |
| LNR | Local Nature Reserve |
| NBN | National Biodiversity Network |
| NS | NatureScot |
| SAC | Special Area of Conservation |
| SINC | Sites of Importance for Nature Conservation (SINC) |
| SSSI | Sites of Special Scientific Interest |
| TA | Technical Appendix |

# 1. INTRODUCTION

This report presents the findings of Bat Activity Surveys undertaken in 2024, to obtain baseline ecological information in connection with the proposed Banniskirk Substation ('the Proposed Development') by SSEN Transmission. The following terminology is used throughout this report:

- The **Proposed Development**: the whole physical process involved in the development of the land at Banniskirk, including construction and operation (not a piece of land);
- The **Site**: all land with the potential to support the Proposed Development (as shown by the red-line boundary in **Figure 1**, **Annex A**);
- The **Bat Survey Area**: the land within which the Bat Surveys were undertaken (shown in **Figure 1**, **Annex A**). In accordance with current Bat Conservation Trust (BCT) guidance[1].

## 1.1 BACKGROUND OF THE PROJECT

Scottish and Southern Electricity Networks Transmission (SSEN Transmission), operating under licence held by Scottish Hydro Electric Transmission plc ('the Applicant'), owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands.

SSEN Transmission has a statutory duty under Schedule 9 of the Electricity Act 1989[2] to develop and maintain an efficient, coordinated and economical electrical transmission system in its licensed areas. The Applicant is proposing to submit an application for detailed planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended)[3] for consent to construct and operate a new strategic transmission hub approximately 12 kilometres (km) to the south of Thurso and near the small settlement of Spittal in Caithness, Scotland, hereafter referred to as 'the Proposed Development'.

The Proposed Development is part of SSEN Transmission's Pathway to 2030 projects. These projects are part of a proposed major upgrade of the electricity transmission network across Great Britain to help deliver United Kingdom (UK) and Scottish Government climate change and energy security targets. They would connect UK based low carbon renewable electricity generation to areas of demand across the country, with the aim of building a cleaner, more secure and affordable energy system for homes and businesses across Great Britain.

## 1.2 THE PROPOSED DEVELOPMENT

The Proposed Development is situated in the Scottish Highlands, approximately 12 km south of Thurso, near to the settlement of Spittal, central grid reference ND 15950 56780. The Proposed Development will comprise a new 400kV substation and HVDC converter station to connect to the proposed new 400kV overhead line between Spittal and Beauly, a new Spittal to Peterhead HVDC underground cable, and an underground cable to the existing Spittal 275/132kV substation. It will be located on agricultural and other grassland approximately 460

[1] Collins, J. (ed) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition) The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6

[2] UK Government Legislation (1989). Electricity Act 1989. Available online at: https://www.legislation.gov.uk/ukpga/1989/29/contents

[3] UK Government Legislation (1997). Town and Country Planning (Scotland) Act 1997. Available online at: https://www.legislation.gov.uk/ukpga/1997/8/contents

m northeast of the existing Spittal substation, and approximately 2.4 km southeast of the nearest settlement of Halkirk.

Overall, habitats within the Site were dominated by woodland (broadleaved, mixed and conifer), upland heathland, and acid, neutral and modified grassland.

# 2. METHODOLOGY

## 2.1 DESIGNATED SITES

To provide context for the results of the Bat Surveys, a Desk Study was carried out in September 2024 to obtain information about relevant designated nature conservation sites and records of species. A search radius of 2km from the Site was applied for species records.

Records were obtained from publicly available sources, such as the National Biodiversity Network (NBN) Atlas[4]. Only data that can be used for commercial use, (open licenses Creative Commons (CC0), Creative Commons Attributions (CC-BY) and Open Government Licenses (OGL)) was considered for the purposes of this report. The criteria applied for the search of statutory designated sites of ecological interest is provided in **Table 2-1**. Details regarding designated sites were sought from the NatureScot Site Link website[5].

TABLE 2-1: SEARCH CRITERIA FOR STATUTORY DESIGNATED SITES

| Protection | Designation | Search Radius |
|---|---|---|
| Statutory | Local Nature Reserves (LNR)<br>Sites of Special Scientific Interest (SSSI)<br>National Nature Reserve (NNR) | 5 km |
| | Ramsar Sites<br>Special Area of Conservation | 10 km |

## 2.2 BAT SURVEYS

During the initial Site walkover, carried out by ERM in September 2023, an assessment of habitat suitability for bats was undertaken. During the assessment, which adhered to the current guidance at that time[6], habitats within the Site were determined to provide low suitability for bats. Within the wider Bat Activity Surveys (BSA) 9 potential roost features (PRFs) were identified. For full details of this assessment refer to Banniskirk Habitat and Fauna Walkover Survey Report[7] as provided in the EIAR.

As a result of the habitats assessment in 2023, Bat Activity Surveys (a combination of Automated, Static Detector Surveys and Night-time Bat Walkovers) were deemed necessary, in

[4] NBN Atlas Partnership (2023) https://scotland.nbnatlas.org/ (Accessed September 2024)

[5] NatureScot (2021) *SiteLink*. Available online at https://sitelink.nature.scot/home (Accessed September 2024)

[6] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition) The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

[7] ERM (2024) Banniskirk Ecological Impact Assessment Report: Chapter 9: Technical Appendix 9.1: Habitat and Fauna WalkoverSurvey Report

accordance with current BCT guidance[1] (see **Table 2-2** adapted from BCT 2023). Bat Activity Surveys were carried out throughout the BSA between April and October 2024 (the Bat Survey Season), with all survey work undertaken by ERM. Lead Surveyors were members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and of at least "capable" level of competence in undertaking bat surveys as per CIEEM's Competency Framework[8].

TABLE 2-2: RECOMMENDED SURVEY EFFORT FOR BAT ACTIVITY SURVEYS

| Survey Type | Low Suitability Habitat for Bats | Moderate Suitability Habitat for Bats | High Suitability Habitat for Bats |
|---|---|---|---|
| Night-time Bat Walkover (NBW) | One survey visit per season (spring – April/ May, summer – June/ July/ August, autumn – September/ October). Further surveys may be required if these visits, or the results of Automated, Static Detector Surveys, reveal activity of interest that requires more observation on Site. | | |
| Automated/ Static Bat Detector Surveys | Data to be collected for a minimum of five consectutive nights per season (spring – April/ May, summer – June/ July/ August, autumn – September/ October) in appropriate (or the best available) weather conditions for bats. | Data to be collected for a minimum of five consecutive nights per month (April – October) in approproate (or the best available) weather conditions for bats. | |

### 2.2.1 AUTOMATED DETECTOR SURVEYS

The Bat Survey Season is comprised of the following three seasonal Survey Sessions, in relation to Automated, Static Detector Surveys, as defined in BCT guidance[1];

- Survey Season 1: April – May (Spring);
- Survey Season 2: June – August (Summer); and
- Survey Season 3: September – October (Autumn).

A ground-level automated, static survey was undertaken to identify the species assemblage and activity levels at the Site. To comply BCT guidance, a total of five bat detectors (A-E), full spectrum Anabat Swift bat detectors (hereby referred to as Anabats), were deployed at ground-level for a minimum of five consecutive nights each Survey Season. The Anabats were set to record from approximately half an hour before sunset until approximately half an hour after sunrise.

The Automated, Static Detector Survey programme, undertaken across three seasonal Survey Sessions in 2023, is summarised in **Table 2-3**.

[8] CIEEM. (2021) Competency Framework. Chartered Institute of Ecology and Environmental Management. Available online at: CIEEM's Competency Framework | CIEEM .

TABLE 2-3: AUTOMATED, STATIC DETECTOR SURVEY DATES

| Survey Season | Deployment Period | Survey Hours (per Anabat) | Survey Hours (per Session) |
|---|---|---|---|
| 1 (Spring) | 23/04/2024- 01/05/2024 | 73.26 | 366.30 |
| 2 (Summer) | 12/06/2024- 21/06/2024 | 57.51 | 287.55 |
| 3 (Autumn) | 02/09/2024 – 09/09/2024 | 64.4 | 322 |

In order to collect comparative data, all five Anabats were deployed within the same Static Survey Locations (SSLs), labelled A-E, across each of the Survey Sessions. In accordance with BCT guidance[1] Anabats were located with the aim to cover all representative habitats within the BSA that could be impacted by the Proposed Development. Weather data for the duration of Automated, Static Detector Surveys is summarised in **Table A**, **Annex B.** Habitats present across the SSLs are summarised in **Table 2-4**, SSL locations are presented in **Figure 1, Annex A**.

TABLE 2-4: AUTOMATED, STATIC DETECTOR SURVEY LOCATIONS

| SSL ID | Habitat Description | Grid Reference | Habitat Type |
|---|---|---|---|
| A | Positioned along the northern border of the Site, habitats outwith the northern border of the Site, within the wider BSA, included an area categorised as ancient woodland and Burn of Halkirk. | ND 15753 57485 | Edge |
| B | Positioned on the north eastern boundary of the Site, within proximity to habitats outwith the Site, within the wider BSA, which included ancient woodland and the Burn of Halkirk. | ND 16089 57268 | Edge |
| C | Positioned on the eastern border of the Site, within proximity to habitats outwith the Site, within the wider BSA, which included scrub, coniferous woodland and an unnamed waterbody. | ND 16353 56877 | Edge |
| D | Positioned inside the southern boundary of the Site, habitats in this area of the Site included semi-improved fields used for livestock grazing. | ND 15971 56451 | Open |
| E | Positioned just west of the centre of the Site, habitats in this area of the Site included a small area of coniferous woodland. | ND 15711 56819 | Edge |

### 2.2.2 NIGHT-TIME BAT WALKOVER

Night-time Bat Walkovers (NBWs) were carried out with reference to BCT survey guidelines[1] and aimed to provide an indication of the bat activity occurring within and around the BSA. The

activity surveys were not intended to provide an exhaustive account of the local bat community; rather, they sought to identify the most likely species present and their general patterns of behaviour and distribution (e.g. foraging and commuting routes, spatially and temporally) with respect to the BSA.

A single NBW was carried out on foot utilising field margins within the BSA. NBWs were carried out seasonally across the three Survey Seasons (as per **Table 2-2**) taking place between April and September 2024 (**Table 2-5**). Each NBW took place between up to 30 minutes before sunset until up to two hours after sunset. NBWs included a series of ten, five-minute spot counts, and were designed with reference to accessibility and habitat features (see **Table 2-6**). The start and end point of each NBW (the direction in which it was walked) was varied across the Survey Season, to reduce temporal and spatial bias. The NBW route and Spot Count Locations are present in **Figure 1**, **Annex A**.

TABLE 2-5: SUMMARY OF NBW TIMINGS AND WEATHER CONDITIONS

| Survey Session | Date | Survey Period (Time) | | Weather Conditions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Temp (°C) | | Wind Speed (Beaufort) | | Cloud Cover (Oktas) | | Rain Scale (0-3) | |
| | | Start | End | S* | *E | S* | *E | S* | *E | S* | *E |
| **1** | 01/05/2024 | 20:51 | 22:32 | 8 | 7 | 1 | 2 | | 8 | 0 | 0 |
| **2** | 09/07/2024 | 22:46 | 01:28 | 14 | 14 | 4 | 4 | 6 | 7 | 0 | 0 |
| **3** | 09/09/2024 | 19:41 | 22:02 | 12 | 10 | 2 | 2 | 8 | 7 | 0 | 1 |

*Start (S*) / *End (*E)

Surveyors recorded bat activity with an Echo Meter Touch Pro 2 ultrasonic bat detector connected to an iPhone, which recorded, time stamped, auto IDed and mapped all bat calls. All bat passes during the survey were recorded through bat detectors; however, visual observation was also made on a number of passes, which helped confirm identification. In addition to the digital recordings, information about bat registrations was also recorded manually using the Collector ArcGIS mapping software app installed on surveyors smart phones and included, if possible:

- Direction of flight;
- Bat behaviour, e.g. foraging, commuting; and
- Environmental variables, including cloud cover, wind strength, precipitation and air temperature (recorded at the start and end of each NBW).

TABLE 2-6: NBW SPOT COUNT LOCATIONS AND HABITAT DESCRIPTIONS

| Spot Count Number | GPS Location | | Habitat Description |
|---|---|---|---|
| | X | Y | |
| **1** | 315737 | 956133 | South west corner of the Site boundary, open agricultural field. |
| **2** | 316161 | 956412 | Mid-point of the southern Site boundary, in proximity to coniferous plantation woodland. |
| **3** | 316496 | 956642 | South east corner of the Site boundary, in proximity to coniferous plantation woodland. |
| **4** | 316353 | 956877 | North corner of mixed plantation woodland adjacent to the eastern boundary of the Site. |
| **5** | 316142 | 957181 | South corner of broadleaved woodland adjacent to the north eastern boundary of the Site, within proximity to the Burn of Halkirk |
| **6** | 315849 | 957387 | Mid-point of northern Site boundary, adjacent to broadleaved woodland and the Burn of Halkirk. |
| **7** | 315540 | 957609 | Northern corner of the Site boundary, adjacent to broadleaved woodland and the Burn of Halkirk. |
| **8** | 315490 | 95733 | North east corner of mixed plantation woodland within the Site. |
| **9** | 315562 | 957072 | South east corner of mixed plantation woodland within the Site. |
| **10** | 315712 | 956822 | South of the centre of the Site, open agricultural field. |

### 2.2.3 BAT SOUND ANALYSIS

Ultrasonic recordings captured during all activity surveys were subject to detailed analysis using audio software BatExplorer, with reference to bat species call identification guidance[9], to enable identification of bat species.

Although analysis of ultrasonic recordings does enable identification of bat species, there are some limitations associated with species identification from acoustic monitoring. Echolocation calls from bats in the same genus often exhibit a large degree of overlap in their call structures, making definitive (species level) identification difficult. Additionally, a bat will vary the structure of its echolocation calls to reflect its needs. This behaviour results in a large degree of variation in the call structure of any given bat species and can also result in the structure of echolocation calls overlapping with those of other bat species.

Other limiting factors which may affect the recording of a bat echolocation call include (but are not strictly limited to):

[9] Russ, J (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing

- The distance and direction of the bat in relation to a bat detector;
- The amount and type of 'clutter' in the vicinity of a bat detector;
- Weather conditions; and
- The frequency response of the bat detector microphone.

There is significant overlap in the call parameters between the species of the *Myotis* bats[8], therefore identifications for these species are restricted to genus level and defined as *Myotis* species (sp.).

Anabat bat detectors record bat echolocation as individual files containing bat calls within set periods of time (up to a maximum of 20 seconds), as opposed to the total individual bat calls. Additionally, it is often difficult (or not possible in the case of remote monitoring), to distinguish between a single bat passing the detector several times and several bats passing once in succession. Following identification and analysis, bat data is quantified as the number of files recorded containing bat calls (bat files), not the number of actual calls in real time. Following analysis, baseline data was interpreted to give an indication of bat activity. Bat Static Survey data was expressed using an index known as the Bat Activity Index (BAI).

### 2.2.4 BAT ACTIVITY INDEX (BAI)

The length of the night (hours of darkness) varies throughout the Survey Season by up to 40%, and thus the period over which bats may be active also varies significantly. As Bat Static Surveys are carried out over at least five nights (but at this Site the maximum Anabat deployment period extended up to 25 nights), the survey period of each Survey Session will also be seen to vary considerably. In order to carry out more detailed interpretation of the results, this temporal bias requires some correction. To correct for temporal bias in levels of bat activity, all Bat Static Survey data was interpreted using the BAI.

Within this report, the value of the BAI is expressed as passes (i.e., bat files) per hour (pph). The BAI may not identify the overall abundance of bats (i.e., in terms of absolute number of registrations), but it helps to identify the highest intensities of habitat use by bats during the available recording time. Through the application of the BAI, data can be interpreted by SSL, taxa, habitat feature or Survey Session, and used to determine spatial patterns in activity within the Site, as well as temporal patterns across the Survey Season.

BAI was calculated for each SSL by dividing the number of recorded Anabat files by the total number of sampling hours (between 0.5 hours before sunset to 0.5 hours after sunrise), to provide the mean number of bat pph.

The mean BAI for each Survey Session recorded across all SSL was calculated by dividing the number of recorded Anabat files by the total number of detector hours per session (total session sampling hours multiplied by number of detectors).

The mean BAI across the Survey Season, for example BAI per species, was calculated by dividing the number of recorded Anabat files across the Survey Season per species, by the total number of detector hours across the total Survey Season (sampling hours multiplied by number of detectors).

A summary of the bat activity recorded during Remote Static Surveys, expressed by BAI, is presented in **Table 3-2.** This table presents the mean BAI per SSL across all three Survey

Sessions. A table presenting the levels of activity expressed as BAI per species at each SSL during each Survey Session is presented in **Table B and C, Annex B.**

### 2.2.5 SURVEY LIMITATIONS

Two bulls were present in the fields within the north of the Site on 09th July, which resulted in the route for the NBW undertaken that evening having to be revised to avoid coming into contact with the animals. Stopping points 8, 9 and 10 could not be completed; however, as alternative stopping points were conducted within the BSA in the same habitat as those missed, this is not considered a significant limitation.

# 3. RESULTS

## 3.1 DESK STUDY

### 3.1.1 STATUTORY DESIGNATED SITES

Four statutory designated sites were identified within a 5 km radius of the Site, however none of these had designated features which include bat species, refer to Banniskirk Habitat and Fauna Walkover Survey Report[7] for full details.

### 3.1.2 BAT SPECIES RECORDS

There were no records of bat species identified within a 2 km radius of the Site; the closest records were of brown long-eared bat (*Plecotus auratus*) and common pipistrelle (*Pipistrellus pipistrellus*) identified 2.87 and 2.48 km from the Site, respectively summarised in **Table 3-1**.

TABLE 3-1: BAT RECORDS WITHIN THE DESK STUDY AREA

| Species | Conservation Status | Proximity of Closest Record to Site | Years of Record(s) |
|---|---|---|---|
| Brown long-eared bat (*Plecotus auritus*) | European Protected Species (EPS)[10], Scottish Biodiversity List[11] (SBL) Species | 2.87 km east | 2006-2016 (6 records) |
| Common pipistrelle (*Pipistrellus pipistrellus*) | EPS, SBL | 2.48 km south east | 2007-2023 (14 records) |

## 3.2 BAT ACTIVTY SURVEYS

### 3.2.1 AUTOMATED, STATIC DETECTOR SURVEYS

A total of 519 bat passes were recorded over a total of 195.17 survey hours across the Bat Survey Season, giving a 'total mean BAI' (across the Survey Season by location as well as the mean across each of the SSLs by Survey Season) of 0.5 passes per hour (pph).

The following species/genus were detected within the BSA:

- Common pipistrelle;

[10] European Protected Species, Habitats Regulations (1994) Available at: http://www.legislation.gov.uk/uksi/1994/2716/contents/made.
[11] Scottish Government (2020) Scottish Biodiversity List. Available at: https://www.nature.scot/doc/scottish-biodiversity-list.

- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Nathusius' pipistrelle (*Pipistrellus nathusii*);
- *Myotis* sp.

Of the total activity recorded, the majority 73.41 % was attributed to soprano pipistrelle, with a further 26.20 % attributed to common pipistrelle. The remaining activity was split between Myotis sp. (0.19 %) and Nathusius' pipistrelle (0.19 %). **Table 3-2** provides a summary of the Mean Bat Activity Index across the Site.

TABLE 3-2: SUMMARY OF MEAN BAT ACTIVITY INDEX

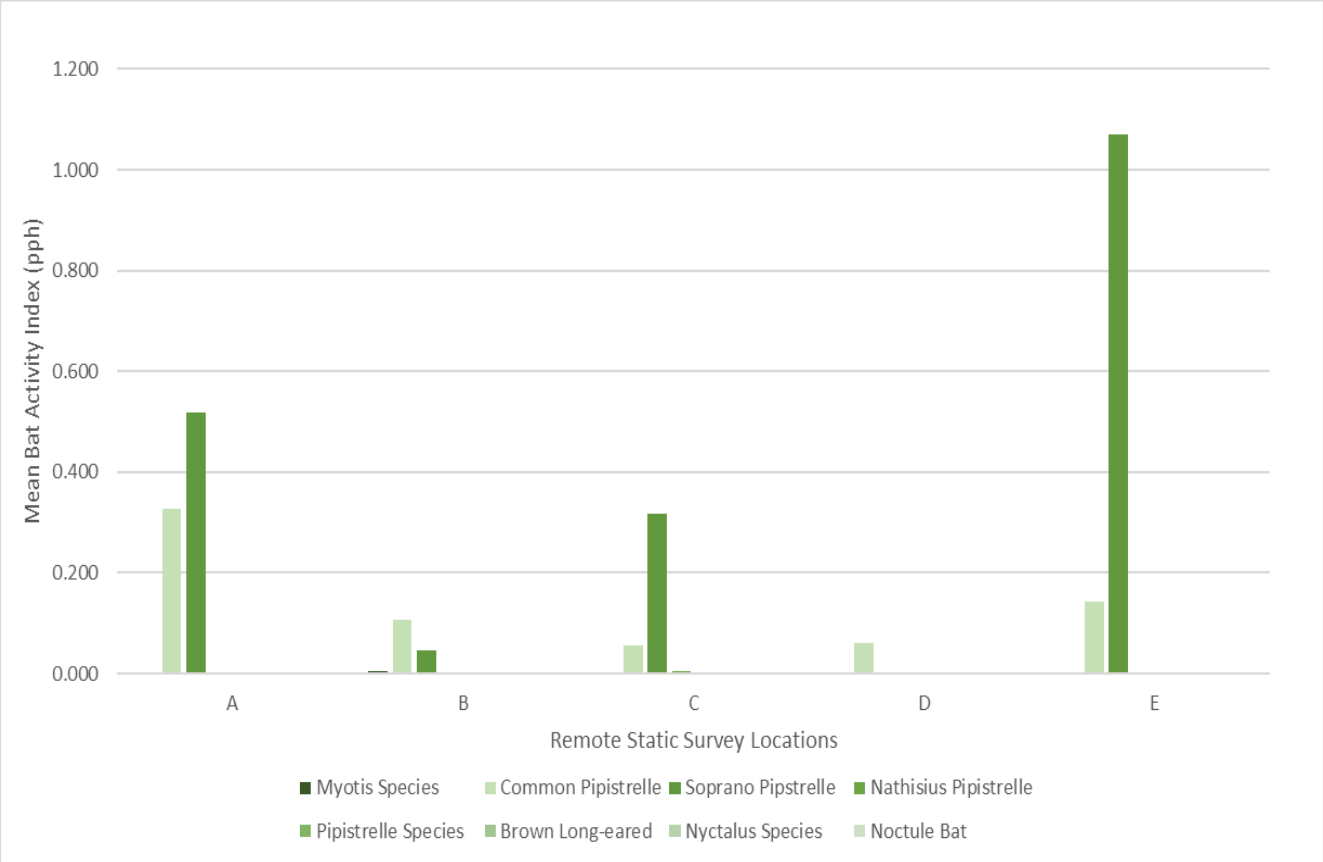
| SSL | ***Myotis* sp.** | **Common pipistrelle** | **Soprano pipistrelle** | **Nathusius' pipistrelle** | **Mean Total** |
|---|---|---|---|---|---|
| A | 0.000 | 0.328 | 0.517 | 0.000 | 0.845 |
| B | 0.005 | 0.108 | 0.046 | 0.000 | 0.159 |
| C | 0.000 | 0.056 | 0.318 | 0.005 | 0.379 |
| D | 0.000 | 0.061 | 0.000 | 0.000 | 0.061 |
| E | 0.000 | 0.143 | 1.071 | 0.000 | 1.214 |
| Survey Session | Myotis sp. | Common pipistrelle | Soprano pipistrelle | Nathusius' pipistrelle | **Mean Total** |
| 1 (Spring) | 0.000 | 0.046 | 0.000 | 0.000 | **0.046** |
| 2 (Summer) | 0.000 | 0.063 | 1.325 | 0.000 | **1.388** |
| 3 (Autumn) | 0.008 | 0.314 | 0.000 | 0.003 | **0.320** |
| **Bat Survey Season** | **0.001** | **0.139** | **0.390** | **0.001** | **0.532** |

The design of Bat Static Surveys allowed for the collection of comparative datasets sufficient to draw robust conclusions on spatial and temporal distributions of bat activity across the site during the Survey season. A summary of these distributions is detailed in **Sections 3.2.3** and **3.2.4.**

#### 3.2.1.1 SPATIAL VARIATION IN BAT ACTIVITY

During the Bat Survey Season activity was recorded at every SSL. However, notable spatial variation in the level of activity was evident (as shown on **Graph 3-1**). Two SSLs recorded mean activity levels above the total mean BAI (Site average) of 0.5 pph, these were SSLs A, which recorded a mean activity level of 0.845 and SSL E with a mean activity level of 1.214 (over twice the Site average). Activity at these two SSLs accounted for 77.4 % of the overall activity recorded. Remaining SSLs were broadly consistent in the activity levels recorded, ranging from 0.06-0.37 pph.

GRAPH 3—1: SPATIAL VARIATION IN TOTAL BAT ACTIVITY (MEAN BAI) ACROSS THE BAT SURVEY SEASON




### 3.2.1.2 TEMPORAL VARIATION IN BAT ACTIVITY

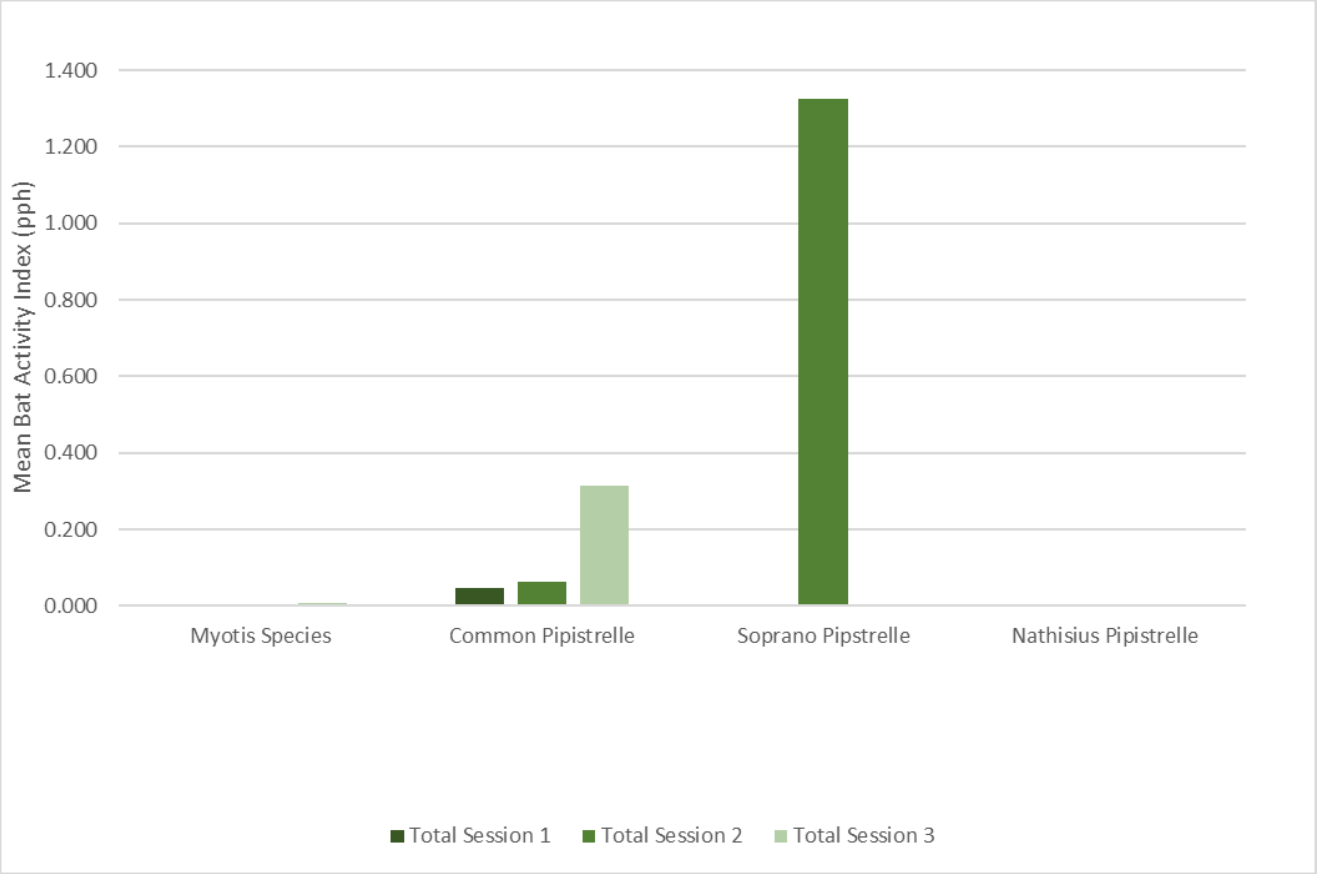
In addition to spatial variation, bat activity recorded notable temporal variation in the overall levels of bat activity, as well as the species abundances recorded. Session 2 recorded the highest number of bat passes with 399 passes, representing 76.88% of the total activity across the whole Bat Survey Season. This equated to Session 2 having a mean BAI of 1.38 pph, above the average of 0.5 pph.

Session 3 had 103 bat passes, representing 19.85% of total activity, and Session 1 had 17 bat passes, representing 3.28% of total activity across the whole Bat Survey Season.

Due to longer day length during the summer months (and therefore fewer hours of darkness in which bats are active), it should be noted that the number of survey hours during Session 1 and Session 2 was less than Session 3, see **Table 2-2**. However, this temporal bias is accounted for within the BAI calculations to enable comparisons between each Survey Session (see **Table C, Annex B**).

Species abundances were consistent through the Bat Survey Season as summarised in **Graph 3-2.** Common pipistrelle was the most recorded species throughout Survey Sessions 1-3. Nathusius' Pipistrelle was only recorded in Session 3 with no detections in Sessions 1-2.

GRAPH 3—2: TEMPORAL VARIATION IN TOTAL BAT ACTIVITY (MEAN BAI) ACROSS THE BAT SURVEY SEASON




### 3.2.2 NIGHT-TIME BAT WALKOVER

During the NBWs a total of 15 bat passes were recorded, the only species recorded was common pipistrelle. The majority of the passes 60% were recorded during the NBW undertaken on 01/05/24. The NBW undertaken on 09/09/24 recorded 5 common pipistrelle with no other bat species recorded during the walkover.

Bat passes were only recorded at three stopping points, 4, 5 and 7, and of these only stopping point 7 recorded bats during all three NBWs. Stopping points 4, 5 and 7 were all located in proximity to woodland, 4 and 5 positioned on the eastern Site boundary and 7 on the northern corner of the Site. Incidental bat passes were recorded between stopping points 7 and 9 in the vicinity of Achalone Farm and the woodland within the west of the Site.

# 4. CONCLUSION AND RECOMMENDATIONS

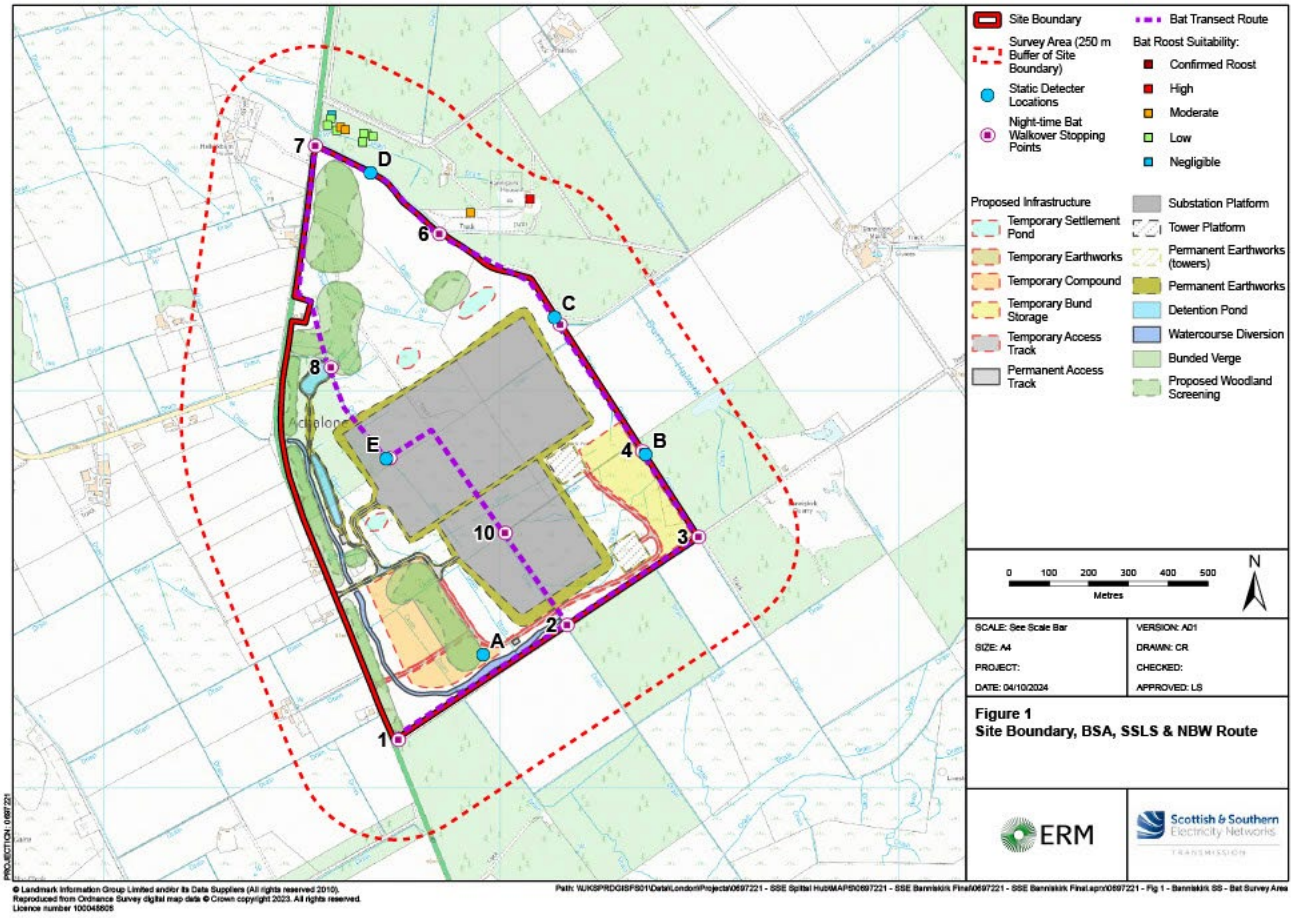
Roost surveys confirmed the presence of habitats within the BSA suitable to support roosting bats. Bat Activity Surveys confirmed the presence of common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and *Myotis spp.* within the Site, with common and soprano pipistrelle, both common and widespread species in Scotland, making up the majority of species present.

If any trees are to be felled as a result of the Proposed Development, particularly those identified as having bat roost suitability during the Roost Survey, then further surveys, e.g., ground level tree assessments (GLTA) and/ or PRF inspection surveys, will be required in accordance with best practice guidelines[1], to determine the presence of roosting bats.

Any tree and/ or structure identified as having bat roost suitability which falls within the disturbance buffer for bat roosts (within 30 m of proposed works) will require further surveys, e.g., ground level tree assessments (GLTA) and/ or PRF inspection surveys, will be required to determine the presence of roosting bats.

## Annex A Figures

FIGURE 1: SITE BOUNDARY, BSA, SSLS AND NBW ROUTE



## Annex B: Raw Data

TABLE A: BAT STATIC SURVEYS WEATHER DATA

| Survey | Deployment | Avg. Daily Temperature | Daily Rainfall | Max. Daily Wind Speed |
|---|---|---|---|---|
| 1 (Spring) | 23/04/2024 | 7.7 | 0 | 10 |
| | 24/04/2024 | 7.2 | 0 | 9 |
| | 25/04/2024 | 6.1 | 0 | 12 |
| | 26/04/2024 | 7.7 | 0 | 6.5 |
| | 27/04/2024 | 7.3 | 0 | 15.5 |
| | 28/04/2024 | 7.5 | 0 | 17.2 |
| | 29/04/2024 | 8.8 | 0 | 15.6 |
| | 30/04/2024 | 9.4 | 0 | 13 |
| | 01/05/2024 | 8.8 | 0 | 9 |
| 2 (Summer) | 12/06/2024 | 9.4 | 0 | 14.4 |
| | 13/06/2024 | 12.2 | 0 | 17.3 |
| | 14/06/2024 | 11.1 | 0 | 17.5 |
| | 15/06/2024 | 11.1 | 0 | 7.3 |
| | 16/06/2024 | 11.2 | 0 | 14.2 |
| | 17/06/2024 | 12.2 | 0 | 12.1 |
| | 18/06/2024 | 10 | 0 | 17.3 |
| | 19/06/2024 | 12.2 | 0 | 12 |
| | 20/06/2024 | 12.7 | 0 | 9.5 |
| | 21/06/2024 | 16.1 | 0 | 8.6 |
| 3 (Autumn) | 02/09/2024 | 12.7 | 0 | 7.5 |
| | 03/09/2024 | 12.2 | 0 | 7.5 |
| | 04/09/2024 | 12.7 | 0 | 9.5 |
| | 05/09/2024 | 12.3 | 0 | 8 |
| | 06/09/2024 | 13.3 | 0 | 5.6 |
| | 07/09/2024 | 12.8 | 0 | 6.5 |
| | 08/09/2024 | 12.2 | 0 | 12.3 |
| | 09/09/2024 | 12.5 | 0 | 13.4 |

TABLE B: TOTAL BAT PASSES RECORDED DURING BAT STATIC SURVEYS, BY TAXA, SSL ID AND SESSION

| Survey Season | SSL ID | *Myotis spp*. | Common pipistrelle | Soprano pipistrelle | Nathusius' pipistrelle | Total per Location |
|---|---|---|---|---|---|---|
| 1 Spring | A | 0 | 0 | 0 | 0 | **0** |
| | B | 0 | 6 | 0 | 0 | **6** |
| | C | 0 | 2 | 0 | 0 | **2** |
| | D | 0 | 6 | 0 | 0 | **6** |
| | E | 0 | 3 | 0 | 0 | **3** |
| **Total Per Species** | | **0** | **17** | **0** | **0** | **17** |
| 2 Summer | A | 0 | 3 | 101 | 0 | **104** |
| | B | 0 | 0 | 9 | 0 | **9** |
| | C | 0 | 5 | 62 | 0 | **67** |
| | D | 0 | 0 | 0 | 0 | **0** |
| | E | 0 | 10 | 209 | 0 | **219** |
| **Total Per Species** | | **0** | **18** | **381** | **0** | **399** |
| 3 Autumn | A | 0 | 61 | 0 | 0 | **61** |
| | B | 1 | 15 | 0 | 0 | **16** |
| | C | 0 | 4 | 0 | 1 | **5** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | D | 0 | 6 | 0 | 0 | **6** |
| | E | 0 | 15 | 0 | 0 | **15** |
| **Total Per Species** | | **1** | **101** | **0** | **0** | **103** |
| **Grand Total** | | **1** | **136** | **381** | **1** | **519** |

TABLE C: THE MEAN NIGHTLY PASS RATE (BAT PASSES PER HOUR, PER NIGHT) RECORDED DURING BAT STATIC SURVEYS, BY TAXA AND SSL ID

| Survey Season | SSL ID | *Myotis* Species | Common Pipistrelle | Soprano Pipistrelle | Nathusius' Pipistrelle | Total per Location |
|---|---|---|---|---|---|---|
| 1 (Spring) | A | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| | B | 0.00 | 0.08 | 0.00 | 0.00 | **0.08** |
| | C | 0.00 | 0.03 | 0.00 | 0.00 | **0.03** |
| | D | 0.00 | 0.08 | 0.00 | 0.00 | **0.08** |
| | E | 0.00 | 0.04 | 0.00 | 0.00 | **0.04** |
| **Total Per Species** | | **0.00** | **0.05** | **0.00** | **0.00** | **0.05** |
| 2 (Summer) | A | 0.00 | 0.05 | 1.76 | 0.00 | **1.81** |
| | B | 0.00 | 0.00 | 0.16 | 0.00 | **0.16** |
| | C | 0.00 | 0.09 | 1.08 | 0.00 | **1.17** |
| | D | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| | E | 0.00 | 0.17 | 3.63 | 0.00 | **3.81** |
| **Total Per Species** | | **0.00** | **0.06** | **1.32** | **0.00** | **1.39** |

| Survey Season | SSL ID | *Myotis* Species | Common Pipistrelle | Soprano Pipistrelle | Nathusius' Pipistrelle | Total per Location |
|---|---|---|---|---|---|---|
| 3 (Autumn) | A | 0.00 | 0.95 | 0.00 | 0.00 | **0.95** |
| | B | 0.02 | 0.23 | 0.00 | 0.00 | **0.25** |
| | C | 0.00 | 0.06 | 0.00 | 0.02 | **0.08** |
| | D | 0.00 | 0.09 | 0.00 | 0.00 | **0.09** |
| | E | 0.00 | 0.23 | 0.00 | 0.00 | **0.23** |
| **Total Per Species** | | **0.00** | **0.31** | **0.00** | **0.00** | **0.32** |
| **Grand Total** | | **0.00** | **0.14** | **0.39** | **0.00** | **0.53** |