

Appendix 10D

Bat Survey Report



RWE Renewables UK Ltd

Eredine Wind Farm Environmental Impact Assessment Report

Appendix 10D: Bat Survey Report



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Report for

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1. Introduction

1.1 Background

- 1.1.1.1 WSP UK Ltd was commissioned by RWE Renewables UK Ltd ('the Applicant') to provide ecological consultancy services in relation to the proposed Eredine Wind Farm, herein after referred to as 'the Proposed Development'. The site where the Proposed Development is located is referred to as the 'Development Site'.
- 1.1.2 The Development Site is located approximately 4.5km west of Inveraray and approximately 17km to the north-east of Lochgilphead in Argyll and Bute. It is centred at coordinates (E)199418, (N) 704212. The Development Site extends to approximately 4,247 hectares (ha), however the permanent wind farm infrastructure would occupy only a small part of the overall Development Site, approximately 27ha.
- 1.1.3 The nearest residential property is Killean Farmhouse, which is located adjacent to the Development Site boundary where it joins the A83 to the east. Killean Farmhouse is located 3.8km southeast from the nearest turbine location.

1.2 Purpose of this Report

- 1.2.1.1 This report outlines the methods employed to carry out bat activity monitoring in 2020, followed by the presentation of results alongside a summary and evaluation of key findings relating to activity levels and potential risk to each species. These data may be used to inform an assessment of the ecological effects of the Proposed Development with regards to the Environmental Impact Assessment Report (EIA Report).
- 1.2.1.2 All British bat species are protected under UK and European legislation (see **Annex A**), such that it is a criminal offence to disturb, injure or kill any bat, or damage or destroy a bat roost (even when no bats are present). Therefore, it is, necessary to understand how bats use features within the Development Site so potential impacts on bat populations can be appropriately assessed and mitigated, in order to comply with the relevant legislation and policy.

1.3 Site and Study Area Description

- 1.3.1.1 The Development Site is situated within an area of land positioned between two large bodies of open water – Loch Awe to the north-west, and Loch Fyne to the south-east. Numerous fresh water lochans and ponds are present within the Development Site, which are drained by a network of watercourses. Those to the north are drained by the Abhainn a' Bhealaich and associated tributaries (which eventually flow into Loch Awe) while those to the north-east are drained by and Douglas Water and those to the south are drained by the Abhainn Dubhann and Leacann Water (all of which flow into Loch Fyne). The far south-west of the Development Site is drained by the River Add. Habitats within the Development Site are comprised primarily of coniferous plantation woodland, with open upland habitat within the north-west, a further band of open upland habitat stretching in a north-east to south-west direction to the south of the Development Site.
- 1.3.1.2 The elevation of the Development Site ranges from approximately 100 metres (m) Above Ordnance Datum (AOD) at the Development Site entrance (OS Grid reference: NN 04451 04183), to 482m at Beinn Dearg (OS Grid reference: NN 02314 04934).

- 1.3.1.3 The 'Study Area' was defined by the proposed wind farm layout at the time of the survey and incorporated all land within the blue line 'Developable Area' boundary (**Figure 10D-1, Annex I**).

2. Methodology

2.1 Best Practice Guidelines

- 2.1.1.1 A variety of survey methods have been applied to assess the use of the Study Area by bats, in line with best practice guidelines, interpreted using professional experience. The Bat Conservation Trust (BCT) third edition of Good Practice Guidelines (Collins, 2016) and Bats and Onshore Wind Turbines: Survey Assessment and Mitigation (NatureScot *et al*, 2021) was the main source of guidance considered when designing the survey methodology and programme of survey work.

2.2 Desk Study

2.2.1 Data Search

- 2.2.1.1 A Data Search was undertaken and is presented in **Technical Appendix 10A**.

2.3 Field Survey

2.3.1 Habitat assessment

- 2.3.1.1 The potential suitability of habitats and features present within the Study Area to support foraging and commuting bats was assessed using the guidance outlined in Collins (2016). The assessment comprised a walkover and drive-through of the Study Area to observe, assess and record any habitats suitable for bats to commute and forage, using the criteria summarised in **Table 2.1**. A general assessment of potential roost features was also carried out within the Study Area.

Table 2.1 Criteria for assessing the potential suitability of a proposed Development Site for bats

Suitability	Description of roosting habitat	Commuting and foraging habitat
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain Potential roost features (PRFs) but with none seen from the ground or features seen with only very limited roost potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to	Continuous habitat connected to the wider landscape that could be used by bats for

Suitability	Description of roosting habitat	Commuting and foraging habitat
	their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected by the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses and grazed parkland. Development Site is close to and connected to known roosts.

Note: Information within the table has been extracted from Collins (2016).

2.3.2 Bat Activity Survey

Automated Detector Survey

- 2.3.2.1 Automated bat detector units (Wildlife Acoustics SM4BATFS) were deployed within the Study Area to record bat echolocation calls throughout the entire night, for a minimum of ten consecutive nights over three monitoring periods during the active bat season (April to October). The detectors were set up to record bat echolocation calls continuously from 30 minutes before sunset to 30 minutes after sunrise. **Table 2.2** presents the dates of monitoring.
- 2.3.2.2 A total of 15 automated detectors were deployed throughout the Study Area, in accordance with best practice (NatureScot *et al*, 2021). In order to provide a representative sample of bat activity across the Study Area, 10 detectors were placed at/near proposed turbine locations, while the remaining five detectors were deployed in areas of suitable bat habitat. Each detector was positioned approximately 1.5m from ground level, at the locations displayed in **Figure 10D-2 (Annex I)** and detailed in **Annex B**.

Table 2.2 Summary of automated detector monitoring periods

Season	Monitoring dates	No. of monitoring nights
Spring (May)	14.05.20 – 27.05.20	14
Summer (July)	06.07.20 – 19.07.20	14
Autumn (September)	02.09.20 – 15.09.20	14

2.3.3 Species identification

2.3.3.1 Analysis of bat recordings were carried out with reference to Russ (2012) to aid species identification, using BatExplorer Software. Where records were not identified to species level during the sound analysis process due to the overlapping call parameters of some species, records were identified to genus or species group, with the following groups used:

- *Myotis sp.* (bat species in the genus myotis);
- *Nyctalus sp.* (noctule or Leisler's bat);
- *Pipistrellus sp.* (common pipistrelle or soprano pipistrelle);
- Bat *sp.* (calls that could not be ascribed to a species group).

2.3.3.2 Recordings of bats in the genus myotis were usually grouped together, as these species in particular, have widely overlapping call parameters.

2.3.3.3 The scientific names of bat species/ species groups presented in this report are provided in **Annex C**.

2.3.4 Ecobat

2.3.4.1 Following analysis of bat records, the data were then processed using Ecobat software¹ to gain a measure of relative bat activity across the Development Site. Ecobat is an online tool that compares data collected by automated bat detectors at the Development Site with data collected by the same means at the same time of year within a defined search area. The reference range data set were stratified to include:

- Only records from within 30 days of the survey dates; and
- Records within a 100km radius of the Study Area.

2.3.4.2 Through generating a percentile rank for each night of bat activity, the Ecobat tool can identify the number of nights in which the recorded level of bat species activity, as collected by an automated bat detector, could be considered to represent 'high', 'moderate/ high', 'low/moderate', or 'low' in the context of the geographical region, as shown in **Table 2.3**.

Table 2.3 Percentile score and categorised level of bat activity

Percentile score	Bat activity level
81 - 100	High
61 - 80	Moderate - High
41 - 60	Moderate
21 - 40	Low - Moderate
0 - 20	Low

Extracted from NatureScot *et al* (2021).

¹ <http://www.ecobat.org.uk/>

2.3.5 Potential Collision Risk Assessment

2.3.5.1 Estimating the vulnerability of bat populations to wind farms is based on three key factors:

- relative abundance;
- collision risk; and
- bat activity recorded at the Development Site.

2.3.5.2 The first two of these factors is pre-defined in guidance (NatureScot *et al*, 2021), with species categorised as set out in **Table 2.4**.

Table 2.4 Level of potential vulnerability of populations of bat species in Scotland

Relative abundance	Collision risk			
		Low	Medium	High
	Common species			Common pipistrelle Soprano pipistrelle
	Rarer species	Brown long-eared bat, Daubenton's bat, Natterer's bat		
	Rarest species	Whiskered bat Brandt's bat		Nathusius' pipistrelle Noctule, Leisler's bat

Table extracted from NatureScot *et al* (2021).

Yellow – low population vulnerability; Amber – medium population vulnerability; Red – high population vulnerability.

2.3.5.3 Using the outputs from the Ecobat analysis, the assessment of potential collision risk for bats has been carried out following the two-stage process outlined in current guidance (NatureScot *et al*, 2021) for all those species identified on the Development Site that are listed as 'high collision risk' in **Table 2.4**. Stage 1 provides an indication of the potential Development Site risk based on evaluation of habitat and the size of the development (see **Table 2.5**). For full details on how habitat risk and project size is determined, please refer to **Annex D**.

Table 2.5 Initial site risk assessment

Site risk level (1-5)	Project size			
Habitat risk		Small	Medium	Large
Low		1	2	3
Moderate		2	3	4
High		3	4	5

Table extracted from NatureScot *et al* (2021).

Green (1 – 2) – lowest/ low site risk; Amber (3) – medium site risk; Red (4 – 5) – highest/ high site risk

- 2.3.5.4 Stage 2 requires an overall assessment of risk, which can be made by considering the results of the initial site risk assessment in relation to bat activity output from Ecobat. This then considers the relative vulnerability, at population level, of each species of bat present (see **Table 2.6**).

Table 2.6 Overall risk assessment

Site risk level (1-5)	Project size					
Lowest (1)	0	1	2	3	4	5
Low (2)	0	2	4	6	8	10
Medium (3)	0	3	6	9	12	15
High (4)	0	4	8	12	16	18
Highest (5)	0	5	10	15	20	25

Overall assessment: Low (green) – 0-4; Medium (amber) 5 -12; High (red) – 15 - 25

2.3.6 Limitations

Activity Survey

- 2.3.6.1 Survey data was collected in 2020, which is older than NatureScot Guidance², which states that pre-application surveys normally remain valid for two more survey periods, and should be repeated if the application is going to be delayed beyond the start of a third survey period, unless it is clearly evident that there has been no substantive change in number, distribution or activity since the original survey was undertaken.
- 2.3.6.2 There has been no substantive land use change across the Development Site over the proceeding period, with the exception of ongoing forestry works based on follow up walkover visits in 2022 and 2023. The core habitat across the Study Area comprises commercial forestry and upland habitat on higher ground, both of which offer generally lower suitability for roosting and foraging bats, as such the populations utilising the Study Area are unlikely to have significantly altered during this period. On this basis, the bat surveys baseline is considered to remain suitable for the impacts to be fully considered within the EIA Report.
- 2.3.6.3 An automated detector unit was deployed at location L1 in May for the spring monitoring period. This unit was then moved to location L2 in July for the purpose of positioning closer to a proposed turbine location, where it remained throughout the summer and autumn monitoring period. While no data was collected at location L2 in spring, the attainment of summer and autumn monitoring data is considered sufficient to provide an indication of bat activity near this location.
- 2.3.6.4 Due to technical issues associated with automated detectors, it was not possible to obtain activity data for Location E and G during the autumn monitoring period. However, it is considered that data collected from surrounding monitoring locations provides enough coverage and a suitable representation of bat activity within the Study Area during autumn.

² <https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms>

Ecobat

- 2.3.6.5 The Ecobat analysis tool provides a variety of outputs that are useful for interpreting the importance of a site with respect to bat activity and distribution. However, it is important to note that these outputs are considered in the context of the wider data collection from third parties, and the accuracy of results requires a considerable number of records to be present. A reference range (i.e. the number of nights for each species that the data is compared to) of at least 200 is recommended to be confident in the relative activity level.

3. Results

3.1 Desk Study

3.1.1 Data Search

3.1.1.1 Desk Study data relevant to bats is presented in **Technical Appendix 10A**.

3.2 Field survey

3.2.1 Habitat Assessment

3.2.1.1 Habitats within the Study Area comprise a mosaic of coniferous plantation and open moorland (formed of wet heath, blanket bog, wet modified bog, and small areas of acid flush). While coniferous plantation generally provides low suitability for roosting bats, tree lines may serve as edge habitats and provide a means of navigation for commuting and foraging purposes. The open moorland may also provide commuting pathways for bats, with foraging opportunities over waterbodies positioned within such habitat. A network of watercourses also drain the Study Area, which may serve as linear commuting features, provide added opportunities for foraging, and offer habitat connectivity into the wider area.

3.2.1.2 Based on habitat features present, the Study Area was considered to support moderate potential for commuting and foraging bats. The Study Area was considered to as low suitability for roosting bats due to the lack of buildings and limited number of trees with suitable features to support them.

3.2.2 Bat Activity Survey

Automated Detector Survey

3.2.2.1 The environmental conditions for each night of recording are displayed in **Annex E**. Full details of automated detector monitoring results provided in **Annex F**.

3.2.2.2 The term 'contact' has been used to describe a unit of bat activity. One contact equates to a single file recorded on the bat detector containing a sequence of bat calls apparently made by a single bat. Where a file clearly contains two bats recorded at the same time, that has been counted as two contacts.

3.2.2.3 The number of contacts recorded at each monitoring location is summarised in **Table 3.1**. Average contacts per night are calculated based on the number of nights of data being analysed for each location, to provide an index of bat activity. These data are intended to give an indication of relative levels of bat activity at each location and do not represent actual numbers of bats. A single bat may pass the same location repeatedly during the same evening, thus increasing the number of contacts recorded at that location. Equally, the same bat may pass more than one monitoring location, therefore being recorded by more than one detector during the same monitoring period.

Table 3.1 Summary of automated detector monitoring results

Location	Number of nights analysed	Total number of contacts (average per night)						
		CP	SP	CP/SP	M	BLE	Bat sp.	Total
A	42	1 (0.02)	42 (1.00)	3 (0.07)	53 (1.26)	0 (0.00)	0 (0.00)	99 (2.36)
B	42	1 (0.02)	3 (0.07)	2 (0.05)	4 (0.10)	0 (0.00)	0 (0.00)	10 (0.24)
C	42	2 (0.05)	9 (0.21)	8 (0.19)	19 (0.45)	1 (0.02)	0 (0.00)	39 (0.93)
D	42	0 (0.00)	1 (0.02)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.02)
E	28	1 (0.04)	4 (0.14)	4 (0.14)	0 (0.00)	0 (0.00)	0 (0.00)	9 (0.32)
F	42	1 (0.02)	9 (0.21)	2 (0.05)	8 (0.19)	4 (0.10)	1 (0.02)	25 (0.60)
G	28	4 (0.14)	34 (1.21)	3 (0.11)	15 (0.54)	0 (0.00)	0 (0.00)	56 (2.00)
H	42	0 (0.00)	5 (0.12)	3 (0.07)	10 (0.24)	0 (0.00)	0 (0.00)	18 (0.43)
I	42	0 (0.00)	15 (0.36)	8 (0.19)	17 (0.40)	0 (0.00)	0 (0.00)	40 (0.95)
J	42	1 (0.02)	2 (0.05)	1 (0.02)	57 (1.36)	0 (0.00)	0 (0.00)	61 (1.45)
K	42	9 (0.21)	786 (18.71)	16 (0.38)	60 (1.43)	0 (0.00)	0 (0.00)	871 (20.74)
L1	14	5 (0.36)	30 (2.14)	2 (0.14)	4 (0.29)	1 (0.07)	0 (0.00)	42 (3.00)
L2	28	0 (0.00)	38 (1.36)	0 (0.00)	2 (0.07)	0 (0.00)	0 (0.00)	40 (1.43)
M	42	2 (0.05)	1 (0.02)	1 (0.02)	10 (0.24)	2 (0.05)	0 (0.00)	16 (0.38)
N	42	5 (0.12)	16 (0.34)	5 (0.12)	44 (1.05)	0 (0.00)	0 (0.00)	70 (1.67)
O	42	9 (0.21)	603 (14.36)	186 (4.43)	15 (0.36)	0 (0.00)	0 (0.00)	813 (19.36)
Total	602	41	1598	244	318	8	1	2210
Proportion		1.86%	72.31%	11.04%	14.39%	0.36%	0.04%	

Species codes: CP = common pipistrelle; SP = soprano pipistrelle; CP/SP = common/soprano pipistrelle (Pipistrellus species); M = Myotis bat species; and BLE = brown long-eared bat.

Note – No data relating to contacts of Nyctalus species was obtained during automated detector monitoring.

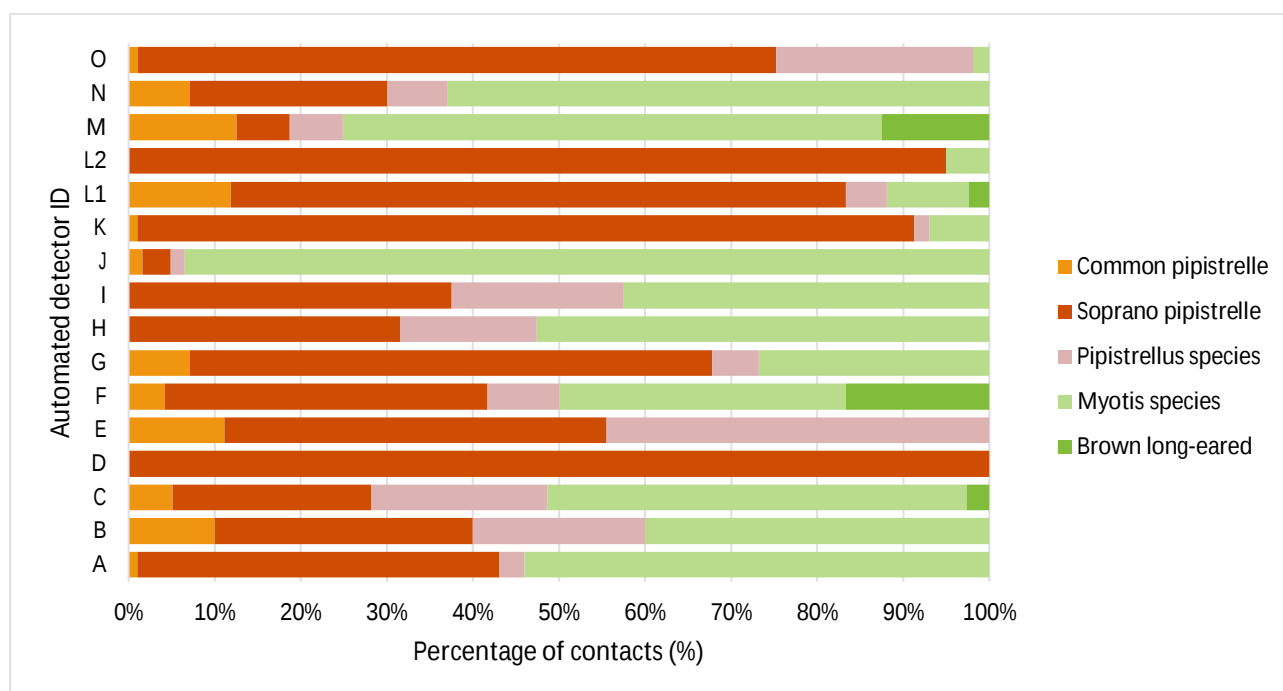
3.2.2.4 **Table 3.1** and the data presented in **Annex F** shows that:

- The automated detectors recorded a total of 2,210 contacts from at least four species/ species groups over 602 monitoring nights.
- The most frequently encountered species was the soprano pipistrelle, accounting for 72.31% of contacts, with activity recorded across all monitoring locations. The greatest level of soprano pipistrelle activity was recorded during the spring survey period at monitoring location K (40.43 contacts per night). This detector was positioned against a Sitka spruce tree adjacent to the access track, approximately 12m south-east of the Allt nam Muc watercourse (**Figure 10D-2**). The surrounding habitat comprised a stand of young coniferous plantation to the north-west of the watercourse, and mature coniferous plantation to the south-east of the watercourse.
- The second most encountered species/ species group was found to be myotis, accounting for 14.39% of contacts. The greatest level of myotis activity was recorded in summer at monitoring location K (4.07 contacts per night), of which was positioned in edge habitat between a stand of mature coniferous plantation and a more open area of previously felled plantation, within the west of the Study Area.
- The third most encountered species/ species group was attributed to *Pipistrellus* species, accounting for 11.04% of contacts. The greatest level of *Pipistrellus* species activity was recorded at monitoring location O in summer (averaging 9.5 contacts per night), which was positioned within a tree in an area of purple moor grass mire on the banks of the Douglas Water.
- The remaining contacts were attributed to common pipistrelle (1.86%), brown long-eared bat (0.36%), and a single contact from a bat species that was not possible to identify due to the poor quality of the call (0.04%).
- In terms of activity between seasons, the highest levels of bat activity were recorded during the spring monitoring period, with a total of 1,340 contacts recorded across 15 automated detectors (averaging 6.38 contacts per night) (**Annex F**). The level of bat activity was lower during the summer monitoring period, with a total count of 663 contacts recorded across 15 detectors (3.16 contacts per night). The level of activity was then found to decrease further in autumn, with 207 contacts recorded across 13 automated detector units³ (1.14 contacts per night).
- In terms of activity between monitoring locations, the highest overall level of bat activity was recorded at monitoring location K, with a total of 871 contacts over 42 monitoring nights (averaging 20.74 contacts per night). Similar levels of activity were also recorded at monitoring location O with 813 contacts recorded over 42 monitoring nights (averaging 19.36 contacts per night).
- In contrast, the lowest overall level of bat activity was recorded at monitoring location D (a total of 1 contact recorded over 42 monitoring nights) averaging 0.02 contacts per night. This monitoring location was situated within an open area of wet heath habitat the south-west of the Study Area, at approximately 380m AOD.

3.2.2.5 A diagram illustrating the percentage of bat species contacts recorded at each monitoring location is displayed in **Chart 3.1** below.

³ Due to an equipment malfunction, no data was obtained from automated detector E or G in September.

Chart 3.1 Percentage species composition of contacts at each automated detector



3.2.3 Ecobat

3.2.3.1 Summary data relating to bat activity levels recorded across the Study Area is provided in **Table 3.2**. For detailed results relating to site-wide activity levels and activity levels at each monitoring location, please refer to **Annex G**.

Table 3.2 Summary table indicating the activity level (percentile) of bats recorded across the Development Site

Species/sp species group	Median percen tile	Median percentile activity category	95% CIs	Max percentile	Max percentile activity category	Nights Recorded
CP	24	Low - moderate	48 - 48	71	Moderate – high	27
SP	48	Moderate	71.5 - 89	100	High	136
CP/SP*	24	Low - moderate	53.5 – 83.5	97	High	57
M	24	Low - moderate	36 - 73	88	High	150
BLE	24	Low - moderate	24 - 24	66	Moderate – high	5

*CP/SP accounts for only those contacts classified as 'Pipistrellus species' during sound analysis – it does not account for individual contacts classified as either common or soprano pipistrelle.

3.2.3.2 From the data displayed in **Table 3.2**, the following observations can be made:

- Common pipistrelle – data suggests an overall ‘low to moderate’ level of activity across the Development Site (median percentile of 24), with occasional periods of ‘moderate to high’ activity also recorded during the survey period (max percentile of 71)⁴. The respective reference range was 1,336, thus allowing confidence in the accuracy of the comparison⁵ (Table G.3 in **Annex G**).
- Soprano pipistrelle – data indicates an overall ‘moderate’ level of activity across the Development Site (median percentile of 48), with periods of ‘high’ activity also recorded during the survey period (max percentile of 100)⁶. The respective reference range was 826, thus allowing confidence in the accuracy of the comparison.
- Pipistrellus species – data indicates an overall ‘low to moderate’ level of activity across the Development Site (median percentile of 24), with occasions of ‘high’ activity also recorded during the survey period (maximum percentile of 97). The respective reference range was 1,754, thus allowing confidence in the accuracy of comparison.
- Myotis species – data indicates an overall ‘low to moderate’ level of activity across the Development Site (median percentile of 24), with occasions of ‘high’ activity also recorded during the survey period (max percentile of 88)⁷. The respective reference range was 473, thus allowing confidence in the accuracy of the comparison.
- Brown long eared bat - data indicates an overall ‘low to moderate’ level of activity across the Development Site (median percentile of 24), with occasions of ‘moderate to high’ activity also recorded during the survey period (max percentile of 66)⁸. Due to a lack of available records for this species within 100km of the Development Site for comparison (respective reference range of 59), there is a low degree of confidence in these results.

First Contact Times

3.2.3.3 A summary of the earliest contact times for each species/species group is provided below. The distribution of species-specific contact times at monitoring locations at where early contacts were recorded are displayed in **Chart 3.2a - c**.

- One relatively early common pipistrelle contact was recorded in autumn at monitoring location J (**Chart 3.2a**).
- Several early contacts from soprano pipistrelle bats were recorded at monitoring location K in spring, summer, and autumn, with the earliest contact recorded 14 minutes before sunset in spring (**Chart 3.2b**). Early soprano pipistrelle contacts were also recorded at monitoring location L1 in spring, and monitoring location O during both spring and autumn (**Chart 3.2c**).
- Several early contacts from Pipistrellus species were recorded at monitoring location O in spring and summer. The earliest contact was recorded 11 minutes after sunset in spring (**Chart 3.2c**).
- Early myotis contacts were recorded at location K in spring (with the earliest recorded 41 minutes after sunset) and location O in autumn (the earliest recorded 55 minutes after sunset) (**Chart 3.2b and c**).

⁴ ‘Moderate to high’ common pipistrelle activity was recorded at location K and O in summer (Table G.3 in Annex G).

⁵ Ecobat recommend a reference range of 200+ to be confident in the relative activity level.

⁶ ‘High’ soprano pipistrelle activity was recorded at locations G, L1, and O in spring, locations L2, K, and O in summer, and locations A and K in autumn (Annex G).

⁷ ‘High’ levels of Myotis activity were recorded at location J and N in summer (Annex G).

⁸ ‘Moderate to high’ levels of brown long-eared bat activity were recorded at location F in autumn (Annex G).

- No 'early' contacts relating to brown long-eared bats were recorded across the Study Area during the monitoring period.

Chart 3.2a First contact times for each species at monitoring location J

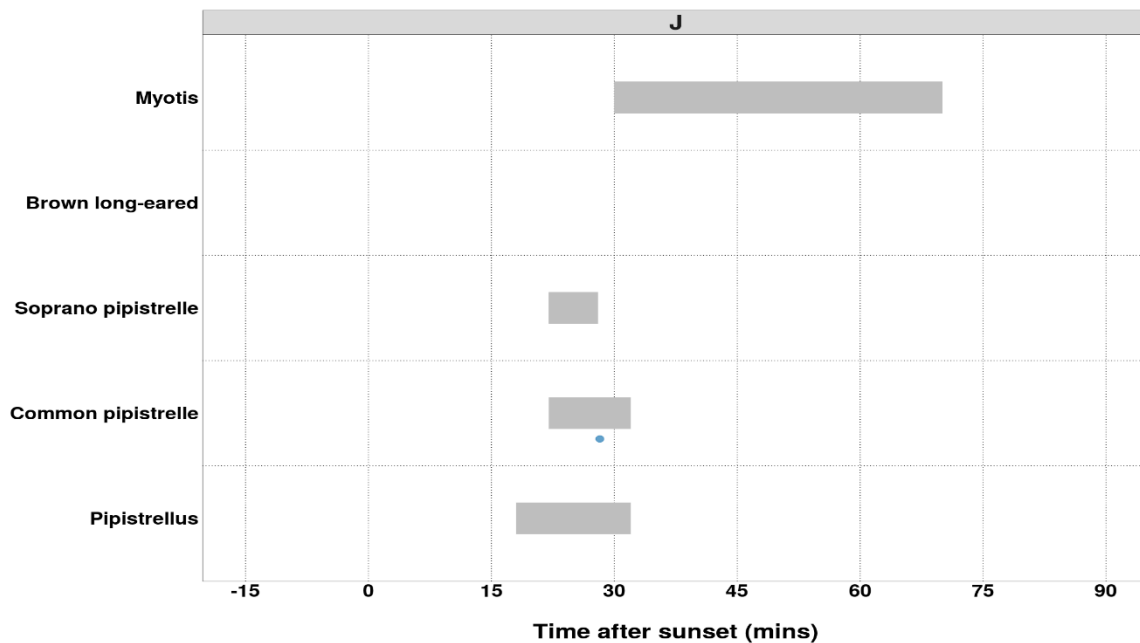


Chart 3.2b First contact times for each species at monitoring location K

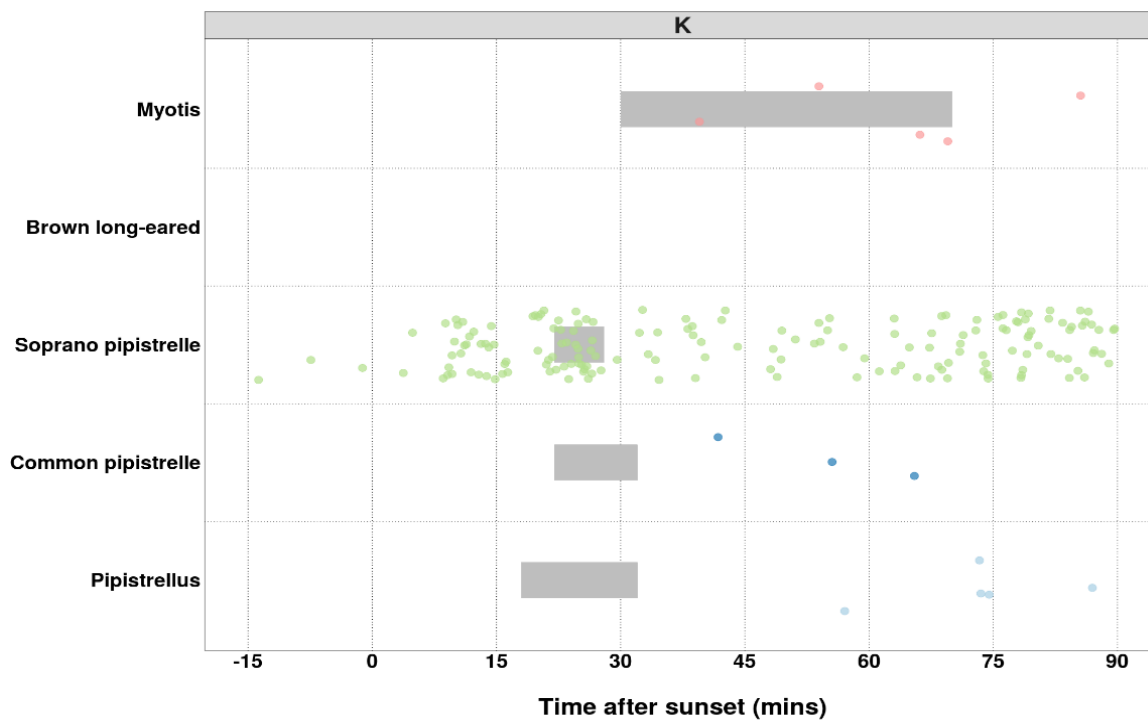
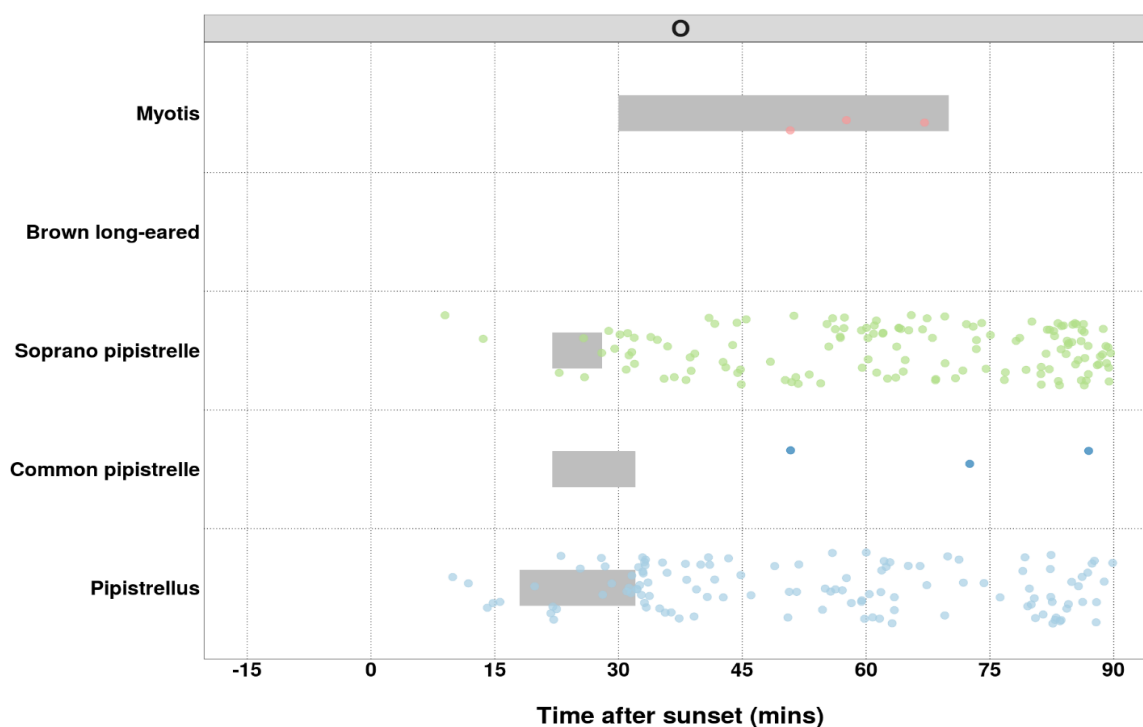


Chart 3.2c First contact times for each species at monitoring location O



3.2.4 Potential Collision Risk Assessment

Initial site risk assessment

- 3.2.4.1 An assessment of risk from the Proposed Development can be made using the parameters outlined in the most recent SNH guidance (NatureScot et al, 2021).
- 3.2.4.2 The Proposed Development consists of 22 turbines with a tip height of 200m and therefore falls within the category of 'large' project size.
- 3.2.4.3 In terms of habitat risk, the coniferous plantation that covers much of the Development Site is considered to support low suitability for roosting bats, with edge habitat providing moderate suitability for commuting bats. The open upland habitat and associated lochans may provide open commuting pathways, with foraging opportunities over waterbodies. In addition, the presence of linear features such as watercourses may serve as commuting pathways and provide added foraging opportunities within the Study Area. The Abhainn a' Bhealaich watercourse also provides habitat connectivity downgradient towards Loch Awe, where stands of Ancient Woodland and built structures may support commuting, foraging, and potentially roosting bats.
- 3.2.4.4 Based on these observations, the habitat risk has been assessed as 'moderate'. According to the parameters presented in **Table 2.5**, the initial site risk assessment score for the Development Site is 'high' (i.e. a score of 4).

Risk assessment for 'high collision risk' species

- 3.2.4.5 The results of the bat activity survey indicate that two bat species classified as 'high collision risk' utilise the Study Area; these are common and soprano pipistrelle (NatureScot et al, 2021). **Table 3.3** summarises this data with an overall risk assessment score for the Development Site based on median and maximum percentiles.

Table 3.3 Site-wide risk assessment scores for 'high collision risk' bat species

Species	Median percentile	Median risk category	Maximum percentile	Maximum risk category	Initial site risk score	Median risk category	Maximum risk category
CP	24	Low - moderate	71	Moderate - high	4	8	15
SP	48	Moderate	100	High	4	12	18
CP/SP*	24	Low - moderate	97	High	4	8	18

*CP/SP accounts for only those contacts classified as 'Pipistrellus species' during sound analysis – it does not account for individual contacts classified as either common or soprano pipistrelle.

3.2.4.6 Based on the data presented in **Table 3.3**, the overall site risk assessment score for common and soprano pipistrelle is 'medium risk' (score of 8 and 12 respectively). Both the median (i.e. the most frequent) activity percentile and the maximum (i.e. the highest) activity percentile have been displayed in the overall risk assessment in order to show both typical and more elevated levels of bat activity within the Development Site, so that potentially important peaks in activity are not overlooked.

3.2.4.7 Table H.1 in **Annex H** presents the results of the risk assessment scores for high collision risk species at each monitoring location within the Study Area.

Common pipistrelle

3.2.4.8 Contacts relating to common pipistrelle were recorded at 12 monitoring locations within the Study Area. Results of the potential collision risk assessment indicate a median risk category score of 8 or 12 at each monitoring location where this species was recorded, suggesting a 'medium risk' of collision at each location. The maximum risk category score across almost all monitoring locations was also 8 or 12, which also corresponds to 'medium' collision risk. The only exception to this was location K in spring and location O in summer, where scores of 15 indicate 'high' collision risk during peak levels of activity.

Soprano pipistrelle

3.2.4.9 Results of the potential collision risk assessment for each monitoring location show that soprano pipistrelle is subject to a 'medium collision risk' at 10 monitoring locations (median risk category score of 8 or 12), and 'high risk' at five monitoring locations (median risk category score of 15 or 18). Monitoring locations that have been assessed as overall 'high' collision risk are Locations G (in spring), K (all seasons), L1 (spring), N (spring) and O (all seasons). In addition, the collision risk at locations A and L2 was found to increase from 'medium' to 'high' during peak levels of activity (Location A - in spring and autumn, and L2 - in summer).

Pipistrellus species

3.2.4.10 Pipistrellus species (i.e. species relating to either common or soprano pipistrelle) were recorded at 13 monitoring locations within the Study Area. Table H.1 shows that Pipistrellus are subject to an overall 'medium' collision risk at 11 of the 13 monitoring locations in which this species group was recorded. Exceptions to this include monitoring location K (in spring) and O (in spring and summer), which are assessed as having an overall 'high' collision risk for this species.

4. Summary

4.1 Habitats

- 4.1.1.1 The Study Area is formed of coniferous plantation and open upland habitat (formed of wet heath, bog, and flush), with a network of watercourses and lochans distributed throughout. Tree lines and watercourses are likely to serve as linear commuting features and provide opportunities for foraging within the Study Area. The series of lochans present within the Study Area may also give rise to an increase in insect abundance, thus encouraging bats to commute across open habitat and forage over waterbodies.
- 4.1.1.2 Monitoring locations positioned near watercourses (e.g. locations K, L1, N, and O) recorded the greatest levels of activity within the Study Area, thus indicating that these features serve as important commuting and foraging corridors for bats. These linear features (particularly the Abhainn a' Bhealaich watercourse and associated tributaries) may also provide connectivity to more suitable areas of roosting habitat within the wider area.
- 4.1.1.3 Due to the closed nature of the coniferous plantation and open nature of upland moorland habitat, potential roosting features appear to be limited within the Study Area. Potential roosting features may however exist within ancient woodland habitat and built structures present within 2km north-west and south-east of the Development Site boundary.

4.2 Baseline Summary by Species

- 4.2.1.1 The survey results indicate that at least four bat species/ species groups utilise the Study Area: common pipistrelle, soprano pipistrelle, brown long-eared, and bats of the genera myotis. The activity levels and distribution recorded suggest that bats utilise the Study Area for commuting and foraging, and early contact times for soprano pipistrelle at automated detectors K and O suggest a roost may be present within, or in commuting distance of, the Study Area.
- 4.2.1.2 **Table 4.1** presents a summary of bat species recorded within, or potentially occurring within the Study Area; along with a summary of data relating to each species.

Table 4.1 Summary of survey results

Species	Contextual and Desk Study Information	Activity Summary	Roosting Status
Common pipistrelle	Common and widespread nationally and throughout the west coast of Scotland^{9,10}. The desk study identified several records relating to roosting common pipistrelle bats within 10km of the Development Site boundary.	The activity survey recorded a generally low to moderate level of common pipistrelle activity, with occasions of moderate to high activity also recorded (Table 3.4). A total of two nights of moderate to high activity, seven nights of moderate activity, and 18 nights of low to moderate activity were recorded during the survey period (Table G.1 Annex G). The greatest levels of activity were recorded at monitoring locations K (in spring) and O (in summer) (Table G.3. Annex G).	Low potential for roosting bats within the Development Site.
Soprano pipistrelle	Patchy distribution throughout the west coast of Scotland. Study Area is within known range for soprano pipistrelle¹¹. The desk study returned records of roosting soprano pipistrelle within 10km of the Study Area. In addition, data from FLS indicate bat boxes within 1.5km of the Development Site boundary, of which may support soprano pipistrelle.	Soprano pipistrelle was the most frequently encountered species during the activity survey, with contacts recorded at all monitoring locations within the Study Area. This indicates that soprano pipistrelle utilise the linear flyways and open habitat near which proposed turbines may be sited. As soprano pipistrelle accounts for 72.31% of contacts, they form a potentially significant component of the bat community within the Study Area. Data output from the Ecobat tool shows an overall moderate level of activity across the Study Area, with occasions of high activity recorded during the survey period (Table 3.4). A total of 34 nights of high activity, 26 nights of moderate to high activity, 28 nights of moderate activity, and 48 nights of low to moderate activity were recorded (Table G.1 Annex G). High levels of activity were associated with monitoring locations A	Overall low potential for roosting bats within the Study Area, however contact times for soprano pipistrelle at automated detectors K and O suggest a roost may be present within, or in commuting distance of, the Study Area.

⁹ Mathews, F., Kubasiewicz, L.M., Gurnell, J., Harrower, C., McDonald, R.A., Shore, R.F (2018). A review of the population and conservation status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.

¹⁰ Information relating to the distribution and range of common pipistrelle in Scotland is available at: <https://jncc.gov.uk/jncc-assets/Art17/S1309-SC-Habitats-Directive-Art17-2019.pdf>

¹¹ Information relating to the distribution and range of soprano pipistrelle in Scotland is available at: <https://jncc.gov.uk/jncc-assets/Art17/S5009-SC-Habitats-Directive-Art17-2019.pdf>

Species	Contextual and Desk Study Information	Activity Summary	Roosting Status
		(autumn) G (spring), K (all seasons), L1 (spring), L2 (summer), N (spring), and O (all seasons) (Table G.3 Annex G).	
Pipistrellus species	As noted above, common and soprano pipistrelle are widespread nationally. Common pipistrelle is also widespread throughout the west coast of Scotland, while the distribution of soprano pipistrelle is fragmented along the west coast. No contacts relating to Nathusius' pipistrelle were recorded during the survey, and the Study Area is considered to lie outside the known range for this species¹².	Species in the genus <i>Pipistrellus</i> were recorded at 13 monitoring locations within the Study Area, accounting for 11.04% of total contacts. The greatest level of <i>Pipistrellus</i> species activity was recorded at monitoring location O in summer, which was positioned on the banks of the Douglas Water. Data output from the Ecobat tool shows an overall low to moderate level of activity, with periods of high activity also recorded (Table 3.4). A total of six nights of high activity, five nights of moderate to high activity, 11 nights of moderate activity and 35 nights of low to moderate activity were recorded during the survey period (Table G.1 Annex G). High levels of activity were associated with monitoring location O during spring and summer (Table G.3 Annex G).	Overall low potential for roosting bats within the Study Area, however contact times for <i>Pipistrellus</i> at automated detector O suggest a roost may be present within, or in commuting distance of, the Study Area.
Myotis bat species	Three <i>Myotis</i> bat species typically occur in Scotland, namely Daubenton's, Natterer's and whiskered bats. Daubenton's bat is common and relatively widespread throughout Scotland. However, the Study area is positioned near the edge of the known range for this species¹³.	Myotis was the second most commonly encountered species/ species group of the activity survey with contacts recorded at 14 monitoring locations. The greatest level of myotis activity was recorded in summer at monitoring location J of which was positioned in woodland edge habitat. Data output from the Ecobat tool shows an overall low to moderate level of activity, with occasions of high activity also recorded during the survey period (Table 3.4). A total of four nights of high activity, 17 nights of moderate to high activity,	Low potential for roosting bats within the Development Site.

¹² Information relating to the distribution and range of Nathusius' pipistrelle in Scotland is available at: <https://jncc.gov.uk/jncc-assets/Art17/S1317-SC-Habitats-Directive-Art17-2019.pdf>

¹³ Information relating to the distribution and range of Daubenton's bat in Scotland is available at: <https://jncc.gov.uk/jncc-assets/Art17/S1314-SC-Habitats-Directive-Art17-2019.pdf>

Species	Contextual and Desk Study Information	Activity Summary	Roosting Status
	The range for Natterer's bat spans across the Scottish Central belt, with species records also present within Aberdeenshire and the Black Isle. The Study Area therefore lies outside the known range for this species⁹. The known range for Whiskered bat is limited to south-west Scotland⁹. Therefore, this species is unlikely to occur within the Study Area. The desk study returned no data relating to records of <i>Myotis</i> bat species.	37 nights of moderate activity, and 92 nights of low to moderate activity were recorded (Table G.1 Annex G). Nights with high myotis activity were associated with monitoring locations J and N in summer (Table G.3 Annex G).	
Brown long-eared bat.	Relatively common and widespread nationally. Study Area is located on the edge of the known range for this species¹⁴. The desk study returned no records relating to brown-long eared bat within 10km of the Development Site boundary.	Activity surveys recorded an overall low to moderate level of brown long-eared bat activity, with periods of moderate to high activity also recorded (Table 3.4). A total of one night of moderate to high activity (Location F) and four nights of low to moderate activity were recorded during the survey period (Table G.1 Annex G).	Low potential for roosting bats within the Development Site.

¹⁴ Information relating to the distribution and range of brown long-eared bat in Scotland is available at: <https://jncc.gov.uk/jncc-assets/Art17/S1326-SC-Habitats-Directive-Art17-2019.pdf>

5. Potential Collision Risk Assessment

5.1.1.1 **Table 2.4** outlines the collision risk vulnerability of different bat species present in Scotland when considering the impact of wind farm developments. Survey results indicate that two bat species classified as 'high risk' of turbine collision have been confirmed to utilise the Study Area – these are common and soprano pipistrelle bat.

- Soprano Pipistrelle: Of the monitoring locations with high collision risk, location G is situated within close proximity to proposed T12. Given the results obtained, the overall collision risk to soprano pipistrelle is considered to be 'moderate'.
- Common Pipistrelle: No turbines are situated within close proximity (within 500m) to monitoring locations K and O, and therefore, the overall collision risk to common pipistrelle is likely to be slightly lower. Given the results obtained, the overall collision risk to common pipistrelle is considered to be 'moderate'.
- Pipistrellus species: Occasions of 'high' risk were recorded in spring and summer at monitoring location O. No turbine infrastructure is situated near location O. Given the results obtained, the overall collision risk to Pipistrellus is considered to 'moderate'.

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Annex A

Relevant Legislation

All bat species in Scotland are afforded legal protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)¹⁵. This makes it an offence to deliberately or recklessly:

- capture, injure or kill a wild bat;
- harass a wild bat or group of wild bats;
- disturb a wild bat in a roost (any structure or place which it uses for shelter or protection);
- disturb a wild bat while it is rearing or otherwise caring for its young;
- obstruct access to a bat roost or to otherwise deny the animal use of the roost;
- disturb a wild bat in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; and
- disturb a wild bat in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.

It is also an offence to:

- Damage or destroy a breeding site or resting place of such an animal (whether deliberately or recklessly); and
- Keep, transport, sell or exchange offer for sale or exchange any wild bat (or any part or a derivative of one) obtained after June 1994.

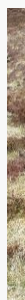
Any activity which is likely to affect bats requires consultation with the relevant statutory nature conservation organisation prior to any works commencing. In Scotland, this is NatureScot

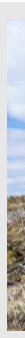
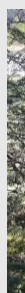
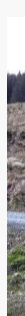
¹⁵ The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) have been amended by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019. The regulations as detailed above therefore remain in force following the UK's departure from the European Union.

Annex B

Location of Automated Detectors

L o c a t i o n	NGR	Habitat type(s)	Details	P h o t o g r a p h
	A NN 00296 05220	Open moorland	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake, in open upland habitat comprised of modified bog.	
	B NM 99692 05529	Open moorland	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake, in a clear-felled area comprised of acid grassland.	
	C NM 98954 05478	Clear-fell	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake, in an area of clear-felled habitat covered in rushes.	

D	NM 96702 01766	Open moorland	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake, on an open slope comprised of wet heath.	
E	NM 96410 03295	Woodland edge	Automated detector and microphone positioned approximately 1.5m above ground level within a Sitka spruce tree on the edge of a forest ride. An area of clear-felled woodland was present immediately south and south-east) of the detector.	
F	NM 98797 06055	Clear-fell	Automated detector and microphone positioned approximately 1.5m above ground level on a log sticking out of the ground. Coniferous plantation woodland surrounded the clear-felled stand in which the detector was situated.	
G	NM 98888 04486	Woodland edge	Automated detector and microphone positioned approximately 1.5m above ground level within a Sitka spruce tree at the edge of the access track.	
H	NM 99627 05071	Woodland edge	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake in a pocket of modified bog habitat surrounded by coniferous plantation.	

I	NM 98436 03352	Open moorland	Automated detector and microphone positioned approximately 1.5m above ground level on a fence post in open upland habitat close to a lochan.	
J	NM 97165 04522	Woodland edge	Automated detector and microphone positioned approximately 1.5m above ground level on a wooden stake between a stand of coniferous plantation and clear-fell.	
K	NM 97732 05482	Woodland edge and watercourse	Positioned within a Sitka spruce tree immediately adjacent to the Allt nam Muc watercourse and access track.	
L 1	NM 96872 00521	Woodland edge and watercourse	Positioned within a tree immediately adjacent to the access track and Allt Garbh watercourse.	
L 2	NM 97019 02550	Wet heath	Automated detector positioned approximately 1.5m from ground level on a wooden stake within an area of wet heath habitat, adjacent to an unnamed tributary of Loch Sidheannach.	
M	NN 00550 06456	Woodland edge	Automated detector positioned approximately 1.5m from ground level on a post within acid grassland/ heath habitat located between the access track and woodland edge.	

N
/
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N	NM 97995 04248	Clear-fell	Automated detector positioned approximately 1.5m from ground level on a stake within marshy grassland habitat near the Allt nan Sac watercourse.	
O	NN 04068 07566	Watercourse	Automated detector positioned within a Sitka spruce tree in an area of purple moor grass mire immediately adjacent to the Douglas water.	

Annex C

Scientific Species Names

Common name	Scientific name
Brown long-eared bat	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>
Natterers bat	<i>Myotis nattereri</i>
<i>Nyctalus</i> bat species	<i>Nyctalus</i> sp.
<i>Myotis</i> bat species	<i>Myotis</i> sp.
Sitka spruce	<i>Picea sitchensis</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Whiskered bat	<i>Myotis mystacinus</i>

Annex D

Assessing Potential Site Risk

Table D.1 Full details relating to Stage 1 – Initial site risk assessment

Site risk level (1-5)	Project size			
		Small	Medium	Large
Habitat risk	Low	1	2	3
	Moderate	2	3	4
	High	3	4	5
Habitat risk	Description			
Low	- Small number of potential roost features, of low quality. - Low quality foraging habitat that could be used by small numbers of foraging bats. - Isolated site not connected to the wider landscape by prominent linear features.			
Moderate	- Buildings, trees or other structures with moderate – high potential as roost sites on or near the site. - Habitat could be used extensively for foraging bats. - Site is connected to the wider landscape by linear features such as scrub, tree lines and streams.			
High	- Numerous suitable buildings, trees (particularly mature ancient woodland) or other structures with moderate-high potential as roost sites on or near the site, and/ or confirmed roosts present close to or on the site. - Extensive and diverse habitat mosaic of high quality foraging for bats. - Site is connected to the wider landscape by a network of strong linear features such as rivers, blocks of woodland and mature hedgerows. - At/ near edge of range and/ or an important flyway. - Close to key roost and/ or swarming site.			
Project size	Description			
Small	- Small scale development (≤ 10 turbines). No other wind energy developments within 10km. - Comprising turbines $<50\text{m}$ in height.			
Medium	- Larger developments (between 10 and 40 turbines). May have some other wind developments within 5km. - Comprising turbines 50 – 100m in height.			
Large	- Largest developments (>40 turbines) with other wind energy developments within 5km. - Comprising turbines $>100\text{m}$ in height.			

Annex E

Environmental conditions

Table E.1 Automated detector survey - monitoring periods and weather conditions

Survey month 2020	Monitoring period	Sunrise/sunset	Min daily temperature (°C)	Max daily temperature (°C)	Min daily wind speed (km/h)	Max daily wind speed (km/h)	Precipitation (mm)
May	14.05.20	05:07/21:27	0	13	2	24	0
	15.05.20	05:05/21:29	2	15	6	30	1.4
	16.05.20	05:03/21:30	8	14	11	26	4.6
	17.05.20	05:01/21:32	10	12	6	28	10
	18.05.20	05:00/21:34	10	15	4	30	23.2
	19.05.20	04:58/21:36	11	16	2	26	11.2
	20.05.20	04:56/21:38	8	20	2	9	1.4
	21.05.20	04:55/21:39	3	16	2	17	0
	22.05.20	04:53/21:41	11	13	11	48	17.2
	23.05.20	04:52/21:43	9	11	19	52	39.6
	24.05.20	04:50/21:44	7	15	4	33	28.2
	25.05.20	04:59/21:46	4	17	0	30	2.2
	26.05.20	04:47/21:48	6	16	6	24	2.6
	27.05.20	04:46/21:49	5	20	2	13	0
	28.05.20	04:45/21:51	9	23	2	17	0
July	06.07.20	04:42/22:07	10	16	9	32	7.8
	07.07.20	04:43/22:06	10	16	6	17	0.6
	08.07.20	04:44/22:05	9	17	2	20	0
	09.07.20	04:45/22:04	9	18	4	19	0
	10.07.20	04:47/22:03	10	16	7	28	4.8
	11.07.20	04:48/22:02	9	16	9	28	0
	12.07.20	04:49/22:01	7	20	2	30	16.6
	13.07.20	04:51/21:59	12	18	11	30	3.6

Survey month 2020	Monitoring period	Sunrise/sunset	Min daily temperature (°C)	Max daily temperature (°C)	Min daily wind speed (km/h)	Max daily wind speed (km/h)	Precipitation (mm)
	14.07.20	04:52/21:58	11	15	9	24	8
	15.07.20	04:54/21:57	12	16	9	24	7.8
	16.07.20	04:55/21:55	13	19	9	30	21
	17.07.20	04:57/21:54	14	16	9	24	0
	18.07.20	04:59/21:53	10	17	6	32	2.4
	19.07.20	05:00/21:51	10	16	9	32	7.2
September	02.09.20	06:26/20:11	14	18	7	30	30.4
	03.09.20	06:28/20:08	13	18	4	41	10.6
	04.09.20	06:30/20:06	11	16	11	41	8.2
	05.09.20	06:32/20:03	9	15	2	26	3.8
	06.09.20	06:34/20:00	10	17	2	19	17.6
	07.09.20	06:36/19:58	12	16	4	35	4
	08.09.20	06:38/19:55	13	19	4	43	30
	09.09.20	06:40/19:53	10	16	7	35	3.2
	10.09.20	06:42/19:50	6	14	2	33	12.6
	11.09.20	06:44/19:47	11	16	11	41	24.4
	12.09.20	06:46/19:45	11	15	11	46	64.8
	13.09.20	06:48/19:42	14	19	7	50	10.2
	14.09.20	06:50/19:39	14	18	2	20	6.8
	15.09.20	06:52/19:36	13	21	2	7	8

Sunrise and sunset data obtained from:

<https://www.timeanddate.com/sun/@2646140?month=9&year=2020> Accessed on 03.05.21

Maximum and minimum temperature and wind speeds obtained from:

<https://www.timeanddate.com/weather/@2643824/historic?month=5&year=2020> Accessed on 03.05.21. Note that the closest complete weather dataset was at Lochgoilhead, located approximately 18km south-east of the Study Area.

Rainfall data obtained from the Scottish Environmental Protection Agency (SEPA) automated rain gauge at Rest and Be Thankful, located approximately 21km north-east of the Study Area.

<https://www2.sepa.org.uk/rainfall/>

Annex F

Activity Survey Results

Table F.1 Total contacts (average contacts per night) during spring 2020

Location	No. of nights analysed	Total contacts (average per night)						
		CP	SP	CP/SP	M	BLE	Bat sp.	Total
A	14	0 (0.00)	12 (0.86)	3 (0.21)	21 (1.50)	0 (0.00)	0 (0.00)	36 (2.57)
B	14	1 (0.07)	1 (0.07)	1 (0.07)	4 (0.29)	0 (0.00)	0 (0.00)	7 (0.50)
C	14	2 (0.14)	6 (0.43)	2 (0.14)	4 (0.29)	0 (0.00)	0 (0.00)	14 (1.00)
D	14	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
E	14	1 (0.07)	3 (0.21)	3 (0.21)	0 (0.00)	0 (0.00)	0 (0.00)	7 (0.50)
F	14	0 (0.00)	2 (0.14)	2 (0.14)	2 (0.14)	0 (0.00)	0 (0.00)	6 (0.43)
G	14	1 (0.07)	23 (1.64)	2 (0.14)	6 (0.43)	0 (0.00)	0 (0.00)	32 (2.29)
H	14	0 (0.00)	4 (0.29)	2 (0.14)	5 (0.36)	0 (0.00)	0 (0.00)	11 (0.79)
I	14	0 (0.00)	8 (0.57)	5 (0.36)	12 (0.86)	0 (0.00)	0 (0.00)	25 (1.79)
J	14	0 (0.00)	1 (0.07)	1 (0.07)	0 (0.00)	0 (0.00)	0 (0.00)	2 (0.14)
K	14	7 (0.50)	566 (40.43)	12 (0.86)	51 (3.64)	0 (0.00)	0 (0.00)	636 (45.43)
L1	14	5 (0.36)	30 (2.14)	2 (0.14)	4 (0.29)	1 (0.07)	0 (0.00)	42 (3.00)
M	14	2 (0.14)	0 (0.00)	1 (0.07)	4 (0.29)	0 (0.00)	0 (0.00)	7 (0.50)
N	14	4 (0.29)	11 (0.79)	2 (0.14)	15 (1.07)	0 (0.00)	0 (0.00)	32 (2.29)
O	14	2 (0.14)	427 (30.50)	52 (3.71)	2 (0.14)	0 (0.00)	0 (0.00)	483 (34.50)

Location	No. of nights analysed	Total contacts (average per night)						
		CP	SP	CP/SP	M	BLE	Bat sp.	Total
Total		25 (0.12)	1094 (5.21)	90 (0.43)	130 (0.62)	1 (0.00)	0 (0.00)	1340 (6.38)
Proportion		1.87%	81.64%	6.72%	9.70%	0.07%	0.00%	

Table F.2 Total contacts (average contacts per night) during Summer 2020

Location	No. of nights analysed	Total contacts (average per night)						
		CP	SP	CP/SP	M	BLE	Bat sp.	Total
A	14	1 (0.07)	5 (0.36)	0 (0.00)	22 (1.57)	0 (0.00)	0 (0.00)	28 (2.00)
B	14	0 (0.00)	2 (0.14)	1 (0.07)	0 (0.00)	0 (0.00)	0 (0.00)	3 (0.21)
C	14	0 (0.00)	3 (0.21)	6 (0.43)	12 (0.86)	0 (0.00)	0 (0.00)	21 (1.50)
D	14	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
E	14	0 (0.00)	1 (0.07)	1 (0.07)	0 (0.00)	0 (0.00)	0 (0.00)	2 (0.14)
F	14	1 (0.07)	4 (0.29)	0 (0.00)	4 (0.49)	0 (0.00)	1 (0.07)	10 (0.71)
G	14	3 (0.21)	11 (0.79)	1 (0.07)	9 (0.64)	0 (0.00)	0 (0.00)	24 (1.71)
H	14	0 (0.00)	1 (0.07)	1 (0.07)	4 (0.29)	0 (0.00)	0 (0.00)	6 (0.43)
I	14	0 (0.00)	3 (0.21)	2 (0.14)	4 (0.29)	0 (0.00)	0 (0.00)	9 (0.64)
J	14	0 (0.00)	0 (0.00)	0 (0.00)	57 (4.07)	0 (0.00)	0 (0.00)	57 (4.07)
K	14	1 (0.07)	148 (10.57)	4 (0.29)	6 (0.43)	0 (0.00)	0 (0.00)	159 (11.36)
L2	14	0 (0.00)	28 (2.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	28 (2.00)
M	14	0 (0.00)	1 (0.07)	0 (0.00)	5 (0.36)	0 (0.00)	0 (0.00)	6 (0.43)
N	14	0 (0.00)	1 (0.07)	1 (0.07)	24 (1.71)	0 (0.00)	0 (0.00)	26 (1.86)
O	14	7 (0.50)	139 (9.93)	133 (9.50)	5 (0.36)	0 (0.00)	0 (0.00)	284 (20.29)
Total	210	13 (0.06)	347 (1.65)	150 (0.71)	152 (0.72)	0 (0.00)	1 (0.00)	663 (3.16)
Proportion		1.96%	53.34%	22.62%	22.93%	0.00%	0.15%	

Table F.3 Total contacts (average contacts per night) during Autumn 2020

Location	No. of nights analysed	Total contacts (average per night)						
		CP	SP	CP/SP	M	BLE	Bat sp.	Total
A	14	0 (0.00)	25 (1.79)	0 (0.00)	10 (0.71)	0 (0.00)	0 (0.00)	25 (2.50)
B	14	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
C	14	0 (0.00)	0 (0.00)	0 (0.00)	3 (0.21)	1 (0.07)	0 (0.00)	4 (0.29)
D	14	0 (0.00)	1 (0.07)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.07)
E	-	-	-	-	-	-	-	-
F	14	0 (0.00)	3 (0.21)	0 (0.00)	2 (0.14)	4 (0.29)	0 (0.00)	9 (0.64)
G	-	-	-	-	-	-	-	-
H	14	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.07)	0 (0.00)	0 (0.00)	1 (0.07)
I	14	0 (0.00)	4 (0.29)	1 (0.07)	1 (0.07)	0 (0.00)	0 (0.00)	6 (0.43)
J	14	1 (0.07)	1 (0.07)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	2 (0.14)
K	14	1 (0.07)	72 (5.14)	0 (0.00)	3 (0.21)	0 (0.00)	0 (0.00)	76 (5.43)
L2	14	0 (0.00)	10 (0.71)	0 (0.00)	2 (0.14)	0 (0.00)	0 (0.00)	12 (0.86)
M	14	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.07)	2 (0.14)	0 (0.00)	3 (0.21)
N	14	1 (0.07)	4 (0.29)	2 (0.14)	5 (0.36)	0 (0.00)	0 (0.00)	12 (0.86)
O	14	0 (0.00)	37 (2.64)	1 (0.07)	8 (0.57)	0 (0.00)	0 (0.00)	46 (3.29)
Total	182	3 (0.02)	157 (0.86)	4 (0.02)	36 (0.20)	7 (0.04)	0 (0.00)	207 (1.14)
Proportion		1.45%	75.85%	1.93%	17.39%	3.38%	0.00%	

Annex G

Ecobat Results

Site-wide Results

Table G.1 Number of nights that recorded bat activity fell into each activity band for each species

Species/ species group	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
CP	0	2	7	18	0
SP	34	26	28	48	0
CP/SP	6	5	11	35	0
M	4	17	37	92	0
BLE*	0	1	0	4	0

Note that number of nights can exceed total recording length as multiple instances can be generated if bat activity was detected on multiple detectors during the same nights recording.

* Due to a lack of available records within 100km of the Development Site for this species for comparison there is a low degree of confidence in these results.

Per Location Results

Table G.2 Summary table showing key metrics for each species recorded.

Static detector ID	Species/ species group	Median percentile	95% CIs	Max percentile	Nights recorded	Reference range*
A	<i>Myotis</i>	48	36 - 49	74	23	473
A	<i>Pipistrellus</i>	36	36 - 36	48	2	1754
A	<i>Pipistrellus pipistrellus</i>	24	0	24	1	1336
A	<i>Pipistrellus pygmaeus</i>	48	24 - 68.5	92	10	826
B	<i>Myotis</i>	24	24 - 24	48	3	473
B	<i>Pipistrellus</i>	24	24 - 24	24	2	1754
B	<i>Pipistrellus pipistrellus</i>	24	0	24	1	1336
B	<i>Pipistrellus pygmaeus</i>	36	36 - 36	48	2	826
C	<i>Myotis</i>	24	24 - 36	74	12	473
C	<i>Pipistrellus</i>	24	24 - 24	48	7	1754

Static detector ID	Species/ species group	Median percentile	95% CIs	Max percentile	Nights recorded	Reference range*
C	<i>Pipistrellus pipistrellus</i>	48	0	48	1	1336
C	<i>Pipistrellus pygmaeus</i>	24	24 - 36	48	7	826
C	<i>Plecotus auritus</i>	24	0	24	1	59
D	<i>Pipistrellus pygmaeus</i>	24	0	24	1	826
E	<i>Pipistrellus</i>	24	24 - 24	48	3	1754
E	<i>Pipistrellus pipistrellus</i>	24	0	24	1	1336
E	<i>Pipistrellus pygmaeus</i>	24	24 - 24	48	3	826
F	<i>Myotis</i>	24	24 - 36	48	6	473
F	<i>Pipistrellus</i>	24	24 - 24	24	2	1754
F	<i>Pipistrellus pipistrellus</i>	24	0	24	1	1336
F	<i>Pipistrellus pygmaeus</i>	24	24 - 36	48	7	826
F	<i>Plecotus auritus</i>	66	0	66	1	59
G	<i>Myotis</i>	24	24 - 24	24	15	473
G	<i>Pipistrellus</i>	24	24 - 24	24	3	1754
G	<i>Pipistrellus pipistrellus</i>	24	24 - 24	24	4	1336
G	<i>Pipistrellus pygmaeus</i>	48	24 - 59	85	12	826
H	<i>Myotis</i>	24	24 - 24	48	9	473
H	<i>Pipistrellus</i>	24	24 - 24	24	3	1754
H	<i>Pipistrellus pygmaeus</i>	24	24 - 24	48	5	826
I	<i>Myotis</i>	48	24 - 53.5	66	9	473
I	<i>Pipistrellus</i>	24	24 - 41.5	59	5	1754
I	<i>Pipistrellus pygmaeus</i>	36	24 - 53.5	66	8	826
J	<i>Myotis</i>	48	36 - 73	88	11	473
J	<i>Pipistrellus</i>	24	0	24	1	1754
J	<i>Pipistrellus pipistrellus</i>	24	0	24	1	1336
J	<i>Pipistrellus pygmaeus</i>	24	24 - 24	24	2	826
K	<i>Myotis</i>	48	36 - 63.5	79	17	473
K	<i>Pipistrellus</i>	24	24 - 51.5	79	6	1754
K	<i>Pipistrellus pipistrellus</i>	24	24 - 45	66	5	1336

Static detector ID	Species/ species group	Median percentile	95% CIs	Max percentile	Nights recorded	Reference range*
K	<i>Pipistrellus pygmaeus</i>	84	71.5 - 89	99	31	826
L1	<i>Myotis</i>	24	24 - 24	48	3	473
L1	<i>Pipistrellus</i>	24	24 - 24	24	2	1754
L1	<i>Pipistrellus pipistrellus</i>	48	48 - 48	48	3	1336
L1	<i>Pipistrellus pygmaeus</i>	74	66 - 77.5	81	5	826
L1	<i>Plecotus auritus</i>	24	0	24	1	59
L2	<i>Myotis</i>	24	24 - 24	24	2	473
L2	<i>Pipistrellus pygmaeus</i>	48	36 - 66	91	10	826
M	<i>Myotis</i>	24	24 - 45	66	6	473
M	<i>Pipistrellus</i>	24	0	24	1	1754
M	<i>Pipistrellus pipistrellus</i>	48	0	48	1	1336
M	<i>Pipistrellus pygmaeus</i>	24	0	24	1	826
M	<i>Plecotus auritus</i>	24	24 - 24	24	2	59
N	<i>Myotis</i>	24	24 - 41.5	84	22	473
N	<i>Pipistrellus</i>	24	24 - 24	48	4	1754
N	<i>Pipistrellus pipistrellus</i>	24	24 - 24	48	4	1336
N	<i>Pipistrellus pygmaeus</i>	24	24 - 47.5	71	8	826
O	<i>Myotis</i>	24	24 - 36	48	12	473
O	<i>Pipistrellus</i>	76	53.5 - 83.5	97	16	1754
O	<i>Pipistrellus pipistrellus</i>	36	24 - 48	71	4	1336
O	<i>Pipistrellus pygmaeus</i>	80	71.5 - 86.5	100	24	826

*The reference range is the number of nights for each species that the data is compared to. A reference range of 200+ is recommended to be confident in the relative activity level.

Table G.3 Summary table showing the number of nights recorded bat activity fell into each activity band for each species during each month of monitoring

Monitoring location ID	Species/ species group	Month*	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
A	<i>Myotis</i>	May	0	2	3	3	0
A	<i>Myotis</i>	Jul	0	2	4	4	0
A	<i>Myotis</i>	Sep	0	1	1	3	0
A	<i>Pipistrellus</i>	May	0	0	1	1	0
A	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	1	0
A	<i>Pipistrellus pygmaeus</i>	May	0	2	1	1	0
A	<i>Pipistrellus pygmaeus</i>	Jul	0	0	2	1	0
A	<i>Pipistrellus pygmaeus</i>	Sep	1	0	0	2	0
B	<i>Myotis</i>	May	0	0	1	2	0
B	<i>Pipistrellus</i>	May	0	0	0	1	0
B	<i>Pipistrellus</i>	Jul	0	0	0	1	0
B	<i>Pipistrellus pipistrellus</i>	May	0	0	0	1	0
B	<i>Pipistrellus pygmaeus</i>	May	0	0	0	1	0
B	<i>Pipistrellus pygmaeus</i>	Jul	0	0	1	0	0
C	<i>Myotis</i>	May	0	0	0	4	0
C	<i>Myotis</i>	Jul	0	1	2	2	0
C	<i>Myotis</i>	Sep	0	0	0	3	0
C	<i>Pipistrellus</i>	May	0	0	0	2	0
C	<i>Pipistrellus</i>	Jul	0	0	1	4	0
C	<i>Pipistrellus pipistrellus</i>	May	0	0	1	0	0
C	<i>Pipistrellus pygmaeus</i>	May	0	0	2	2	0
C	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	3	0
C	<i>Plecotus auritus</i>	Sep	0	0	0	1	0
D	<i>Pipistrellus pygmaeus</i>	Sep	0	0	0	1	0
E	<i>Pipistrellus</i>	May	0	0	1	1	0
E	<i>Pipistrellus</i>	Jul	0	0	0	1	0
E	<i>Pipistrellus pipistrellus</i>	May	0	0	0	1	0

Monitoring location ID	Species/ species group	Month*	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
E	<i>Pipistrellus pygmaeus</i>	May	0	0	1	1	0
E	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	1	0
F	<i>Myotis</i>	May	0	0	0	2	0
F	<i>Myotis</i>	Jul	0	0	1	2	0
F	<i>Myotis</i>	Sep	0	0	1	0	0
F	<i>Pipistrellus</i>	May	0	0	0	2	0
F	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	1	0
F	<i>Pipistrellus pygmaeus</i>	May	0	0	0	2	0
F	<i>Pipistrellus pygmaeus</i>	Jul	0	0	1	2	0
F	<i>Pipistrellus pygmaeus</i>	Sep	0	0	1	1	0
F	<i>Plecotus auritus</i>	Sep	0	1	0	0	0
G	<i>Myotis</i>	May	0	0	0	6	0
G	<i>Myotis</i>	Jul	0	0	0	9	0
G	<i>Pipistrellus</i>	May	0	0	0	2	0
G	<i>Pipistrellus</i>	Jul	0	0	0	1	0
G	<i>Pipistrellus pipistrellus</i>	May	0	0	0	1	0
G	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	3	0
G	<i>Pipistrellus pygmaeus</i>	May	1	1	2	0	0
G	<i>Pipistrellus pygmaeus</i>	Jul	0	0	3	5	0
H	<i>Myotis</i>	May	0	0	1	3	0
H	<i>Myotis</i>	Jul	0	0	0	4	0
H	<i>Myotis</i>	Sep	0	0	0	1	0
H	<i>Pipistrellus</i>	May	0	0	0	2	0
H	<i>Pipistrellus</i>	Jul	0	0	0	1	0
H	<i>Pipistrellus pygmaeus</i>	May	0	0	1	3	0
H	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	1	0
I	<i>Myotis</i>	May	0	1	2	3	0
I	<i>Myotis</i>	Jul	0	0	2	0	0

Monitoring location ID	Species/ species group	Month*	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
I	<i>Myotis</i>	Sep	0	0	0	1	0
I	<i>Pipistrellus</i>	May	0	0	2	0	0
I	<i>Pipistrellus</i>	Jul	0	0	0	2	0
I	<i>Pipistrellus</i>	Sep	0	0	0	1	0
I	<i>Pipistrellus pygmaeus</i>	May	0	1	1	1	0
I	<i>Pipistrellus pygmaeus</i>	Jul	0	0	1	1	0
I	<i>Pipistrellus pygmaeus</i>	Sep	0	0	1	2	0
J	<i>Myotis</i>	Jul	3	1	5	2	0
J	<i>Pipistrellus</i>	May	0	0	0	1	0
J	<i>Pipistrellus pipistrellus</i>	Sep	0	0	0	1	0
J	<i>Pipistrellus pygmaeus</i>	May	0	0	0	1	0
J	<i>Pipistrellus pygmaeus</i>	Sep	0	0	0	1	0
K	<i>Myotis</i>	May	0	7	1	2	0
K	<i>Myotis</i>	Jul	0	0	1	4	0
K	<i>Myotis</i>	Sep	0	0	1	1	0
K	<i>Pipistrellus</i>	May	0	2	0	0	0
K	<i>Pipistrellus</i>	Jul	0	0	0	4	0
K	<i>Pipistrellus pipistrellus</i>	May	0	1	1	1	0
K	<i>Pipistrellus pipistrellus</i>	Jul	0	0	0	1	0
K	<i>Pipistrellus pipistrellus</i>	Sep	0	0	0	1	0
K	<i>Pipistrellus pygmaeus</i>	May	9	1	0	1	0
K	<i>Pipistrellus pygmaeus</i>	Jul	5	5	1	1	0
K	<i>Pipistrellus pygmaeus</i>	Sep	4	1	2	1	0
L1	<i>Myotis</i>	May	0	0	1	2	0
L1	<i>Pipistrellus</i>	May	0	0	0	2	0
L1	<i>Pipistrellus pipistrellus</i>	May	0	0	2	1	0
L1	<i>Pipistrellus pygmaeus</i>	May	1	4	0	0	0
L1	<i>Plecotus auritus</i>	May	0	0	0	1	0

Monitoring location ID	Species/ species group	Month*	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
L2	<i>Myotis</i>	Sep	0	0	0	2	0
L2	<i>Pipistrellus pygmaeus</i>	Jul	1	1	2	0	0
L2	<i>Pipistrellus pygmaeus</i>	Sep	0	0	3	3	0
M	<i>Myotis</i>	May	0	1	0	0	0
M	<i>Myotis</i>	Jul	0	0	1	3	0
M	<i>Myotis</i>	Sep	0	0	0	1	0
M	<i>Pipistrellus</i>	May	0	0	0	1	0
M	<i>Pipistrellus pipistrellus</i>	May	0	0	1	0	0
M	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	1	0
M	<i>Plecotus auritus</i>	Sep	0	0	0	2	0
N	<i>Myotis</i>	May	0	1	1	7	0
N	<i>Myotis</i>	Jul	1	0	4	4	0
N	<i>Myotis</i>	Sep	0	0	1	3	0
N	<i>Pipistrellus</i>	May	0	0	1	0	0
N	<i>Pipistrellus</i>	Jul	0	0	0	1	0
N	<i>Pipistrellus</i>	Sep	0	0	0	2	0
N	<i>Pipistrellus pipistrellus</i>	May	0	0	1	2	0
N	<i>Pipistrellus pipistrellus</i>	Sep	0	0	0	1	0
N	<i>Pipistrellus pygmaeus</i>	May	0	2	0	1	0
N	<i>Pipistrellus pygmaeus</i>	Jul	0	0	0	1	0
N	<i>Pipistrellus pygmaeus</i>	Sep	0	0	0	4	0
O	<i>Myotis</i>	May	0	0	0	2	0
O	<i>Myotis</i>	Jul	0	0	1	3	0
O	<i>Myotis</i>	Sep	0	0	2	4	0
O	<i>Pipistrellus</i>	May	2	0	2	0	0
O	<i>Pipistrellus</i>	Jul	4	3	3	1	0
O	<i>Pipistrellus</i>	Sep	0	0	0	1	0
O	<i>Pipistrellus pipistrellus</i>	May	0	0	0	2	0

Monitoring location ID	Species/ species group	Month*	Nights of high activity	Nights of moderate/ high activity	Nights of moderate activity	Nights of low/ moderate activity	Nights of low activity
O	<i>Pipistrellus pipistrellus</i>	Jul	0	1	1	0	0
O	<i>Pipistrellus pygmaeus</i>	May	5	0	0	2	0
O	<i>Pipistrellus pygmaeus</i>	Jul	7	3	1	0	0
O	<i>Pipistrellus pygmaeus</i>	Sep	0	5	1	0	0

*Monitoring months and associated seasons: May -spring; Jul – summer; Sep - Autumn

Annex H

Ecobat Results

Table H.1 Location specific risk assessment scores for ‘high collision risk’ species recorded within the Development Site

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
A	<i>Pipistrellus</i>	May	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium
A	<i>Pipistrellus pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
A	<i>Pipistrellus pygmaeus</i>	May	57	Moderate	71	Moderate - high	4	12	Medium	15	High
A	<i>Pipistrellus pygmaeus</i>	Jul	48	Moderate	48	Moderate	4	12	Medium	12	Medium
A	<i>Pipistrellus pygmaeus</i>	Sep	24	Low - moderate	92	High	4	8	Medium	18	High
B	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
B	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
B	<i>Pipistrellus pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
B	<i>Pipistrellus pygmaeus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
B	<i>Pipistrellus pygmaeus</i>	Jul	48	Moderate	48	Moderate	4	12	Medium	12	Medium
C	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
C	<i>Pipistrellus</i>	Jul	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
C	<i>Pipistrellus pipistrellus</i>	May	48	Moderate	48	Moderate	4	12	Medium	12	Medium
C	<i>Pipistrellus pygmaeus</i>	May	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium
C	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
D	<i>Pipistrellus pygmaeus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
E	<i>Pipistrellus</i>	May	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium
E	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
E	<i>Pipistrellus pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
E	<i>Pipistrellus pygmaeus</i>	May	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium
E	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
F	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
F	<i>Pipistrellus pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
F	<i>Pipistrellus pygmaeus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
F	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
F	<i>Pipistrellus pygmaeus</i>	Sep	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium
G	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
G	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
G	<i>Pipistrellus pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
G	<i>Pipistrellus pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
G	<i>Pipistrellus pygmaeus</i>	May	67	Moderate-high	85	High	4	15	High	18	High
G	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
H	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
H	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
H	<i>Pipistrellus pygmaeus</i>	May	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
H	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
I	<i>Pipistrellus</i>	May	54	Moderate	59	Moderate	4	12	Medium	12	Medium
I	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
I	<i>Pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
I	<i>Pipistrellus pygmaeus</i>	May	59	Moderate	66	Moderate-high	4	12	Medium	15	High
I	<i>Pipistrellus pygmaeus</i>	Jul	36	Low - moderate	48	Moderate	4	8	Medium	12	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
I	<i>Pipistrellus pygmaeus</i>	Sep	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
J	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
J	<i>Pipistrellus pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
J	<i>Pipistrellus pygmaeus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
J	<i>Pipistrellus pygmaeus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
K	<i>Pipistrellus</i>	May	73	Moderate-high	79	Moderate-high	4	15	High	15	High
K	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
K	<i>Pipistrellus pipistrellus</i>	May	48	Moderate	66	Moderate-high	4	12	Medium	15	High
K	<i>Pipistrellus pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
K	<i>Pipistrellus pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
K	<i>Pipistrellus pygmaeus</i>	May	96	High	99	High	4	18	High	18	High

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
K	<i>Pipistrellus pygmaeus</i>	Jul	73	Moderate-high	96	High	4	15	High	18	High
K	<i>Pipistrellus pygmaeus</i>	Sep	81	High	91	High	4	18	High	18	High
L1	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
L1	<i>Pipistrellus pipistrellus</i>	May	48	Moderate	48	Moderate	4	12	Medium	12	Medium
L1	<i>Pipistrellus pygmaeus</i>	May	74	Moderate-high	81	High	4	15	High	18	High
L2	<i>Pipistrellus pygmaeus</i>	Jul	57	Moderate	91	High	4	12	Medium	18	High
L2	<i>Pipistrellus pygmaeus</i>	Sep	36	Low - moderate	59	Moderate	4	8	Medium	12	Medium
M	<i>Pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
M	<i>Pipistrellus pipistrellus</i>	May	48	Moderate	48	Moderate	4	12	Medium	12	Medium
M	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
N	<i>Pipistrellus</i>	May	48	Moderate	48	Moderate	4	12	Medium	12	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
N	<i>Pipistrellus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
N	<i>Pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
N	<i>Pipistrellus pipistrellus</i>	May	24	Low - moderate	48	Moderate	4	8	Medium	12	Medium
N	<i>Pipistrellus pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
N	<i>Pipistrellus pygmaeus</i>	May	71	Moderate-high	71	Moderate-high	4	15	High	15	High
N	<i>Pipistrellus pygmaeus</i>	Jul	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
N	<i>Pipistrellus pygmaeus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
O	<i>Pipistrellus</i>	May	76	Moderate-high	93	High	4	15	High	18	High
O	<i>Pipistrellus</i>	Jul	77	Moderate-high	97	High	4	15	High	18	High
O	<i>Pipistrellus</i>	Sep	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium
O	<i>Pipistrellus pipistrellus</i>	May	24	Low - moderate	24	Low - moderate	4	8	Medium	8	Medium

Automated detector ID	Species/ species group	Month	Median percentile	Median activity category	Max percentile	Max activity category	Initial site risk score	Median category risk score	Median risk category	Maximum category risk score	Maximum risk category
O	<i>Pipistrellus pipistrellus</i>	Jul	60	Moderate	71	Moderate-high	4	12	Medium	15	High
O	<i>Pipistrellus pygmaeus</i>	May	92	High	100	High	4	18	High	18	High
O	<i>Pipistrellus pygmaeus</i>	Jul	84	High	95	High	4	18	High	18	High
O	<i>Pipistrellus pygmaeus</i>	Sep	77	Moderate-high	79	Moderate-high	4	15	High	15	High

Annex I Figures
