



Llandyfaelog Substation Bat Activity Survey Report



On behalf of **National Grid**
nationalgrid



Bat Activity Survey Report

Llandyfaelog, Carmarthenshire

November 2025

Prepared for:
National Grid Electrical Transmission

Prepared by:
Stantec

Project Number:
331201429

Bat Activity Survey Report

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
1	First Issue	WC	14/10/25	CC/ HM	05/11/25	TA/ HS	06/11/25



Bat Activity Survey Report

The conclusions in the Report titled Bat Activity Surveys are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Client (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by:



Signature

W Coles

Printed Name

Reviewed by:

Signature

Hayley Scoffham

Printed Name

Approved by:

Signature

Lucy Bankhead

Printed Name



Contents

Executive Summary	vii
1 Introduction	1
1.1 Overview	1
1.2 The Site and Survey Area	1
1.3 Proposed Development.....	1
1.4 Legislation.....	1
1.5 Aims and Objectives.....	2
2 Methods	3
2.1 Desk Study	3
2.2 Field Survey	3
2.3 Night-time Bat Walkover Survey.....	3
2.4 Automated Static Detector Survey	4
2.5 Evaluation	4
2.6 Limitations.....	5
3 Results and Evaluation	6
3.1 Desk Study.....	6
3.2 Night-time Bat Walkover Surveys	6
3.3 Static Detector Surveys.....	7
3.4 Earliest Record and Indication of Roosting Potential	10
3.5 Bat Assemblage	10
4 Conclusion	12
5 References	13
6 Figures	14

Figures

Figure 1 Site and Survey Area	14
Figure 2 Night-time Bat Walkover Transect Routes: May	14
Figure 3 Night-time Bat Walkover Transect Routes: July and September	14
Figure 4 Static Detector Locations	14

Tables

Table 2-1 Bat Activity Transect Survey Timing and Weather	3
Table 3-1 Desk Study Results.....	6
Table 3-2 Night-time Bat Walkover Spring Results Summary.....	6
Table 3-3 Night-time Bat Walkover Summer and Autumn Results Summary	7
Chart 1: Summary of Bat Passes per Hour Recorded on Static Detectors within the Site	8
Chart 2 Summary of Bat Passes per Hour Recorded on Static Detectors within the Wider Survey Area	9
Table 3-4 Time of Earliest Bat Pass Record.....	10
Table 3-5 Analysis of Bat Assemblage Recorded on Site Against Reason and Wray (2025)	10



Bat Activity Survey Report

Table C 1 Number of Bat Passes Per Hour by Detector Location – April to May Recording Period	18
Table C 2 Number of Bat Passes Per Hour by Detector Location – May to June Recording Period	18
Table C 3 Number of Bat Passes Per Hour by Detector Location – June to July Recording Period	19
Table C 4 Number of Bat Passes Per Hour by Detector Location –July to August Recording Period	19
Table C 5 Number of Bat Passes Per Hour by Detector Location –August-to September Recording Period	20
Table C 6 Number of Bat Passes Per Hour by Detector Location – September- October Recording Period.....	20
Table C 7 Number of Bat Passes Per Hour by Detector Location – October Recording Period	21

Appendices

Appendix A	Legislation
Appendix B	Static Detector Deployment and Recording Dates
Appendix C	Static Detector Survey Results



Executive Summary

Stantec UK Ltd. was commissioned by National Grid Electricity Transmission to undertake bat activity surveys for land at Llandyfaelog, Carmarthenshire (hereafter 'the Site'), in support of an Ecological Impact Assessment for a proposed substation development.

The assessment included a desk study, night-time bat walkover surveys, and static detector monitoring undertaken between April and October 2025. Ten automated static detectors and five transect routes were deployed across the Site and wider Survey Area to record seasonal activity patterns up until June. From June to October, surveys were only conducted within the Site, comprising six static detectors and three transect routes.

A total of at least nine bat species or species groups representing six genera (*Pipistrellus*, *Nyctalus*, *Eptesicus*, *Myotis*, *Plecotus* and *Rhinolophus*) were recorded. Activity was dominated by soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus*. Noctule *Nyctalus noctula* and serotine *Eptesicus serotinus* were recorded in low to moderate numbers, while *Myotis* species, brown long-eared *Plecotus auritus*, Nathusius' pipistrelle *Pipistrellus nathusii* and greater horseshoe *Rhinolophus ferrumequinum* were recorded occasionally. Barbastelle *Barbastella barbastellus* were recorded at trace levels (< 0.01 passes/hr).

Seasonal trends showed peak activity during mid-summer, with a gradual decline into autumn, although soprano pipistrelle remained active throughout.

The timing of first detections for several species suggests that roosts are likely present on or adjacent to the Site, particularly within mature trees and farm buildings.

The combined species assemblage using the UK Bat Mitigation Guidelines v1.2 (Reason & Wray 2025) provided a population value score of 27, equating to roughly 66% of the maximum possible (41 points), which is valued at the Regional level.



1 Introduction

1.1 Overview

- 1.1.1 Stantec UK Ltd. was instructed by National Grid Electrical Transmission (NGET) to undertake bat activity surveys of land at Llandyfaelog, Carmarthenshire (Ordnance Survey grid reference SN 419 132) (hereafter referred to as 'the Site').
- 1.1.2 The purpose of this report is to inform an Ecological Impact Assessment of proposals to construct a new substation and associated infrastructure.
- 1.1.3 The report has been produced in accordance with Chapters 8 and 9 of Collins (2023), relating respectively to night-time bat walkover (transect) surveys and static detector surveys, and with reference to report writing guidelines produced by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017).

1.2 The Site and Survey Area

- 1.2.1 The Site for the proposed Llandyfaelog substation comprises agricultural grassland fields bound by hedgerows with an area of ancient woodland to the south of the Site.
- 1.2.2 The Survey Area for the April and May bat activity surveys encompassed the Site, as well as the wider Survey Area assessed to inform the Environmental Impact Assessment Screening (Stantec 2025). In addition to agricultural grassland fields the Survey Area comprises marshy ground to the west and an area of immature plantation forestry in the south-west. The Survey Area is bordered to the north by the C2074, to the west by the A484, the Crugan Fawr Road and farm tracks to the south, and by open countryside to the east. A tributary of the Gwendraeth Fach runs through woodland along part of the eastern boundary and the headwaters of a stream (Nant Morlais) run from the centre of the Survey Area in the form of drainage ditches.
- 1.2.3 Bat activity surveys undertaken up until June 2025 were carried out within the wider Survey Area, whereas surveys undertaken between June and October 2025 were undertaken within the Site only.
- 1.2.4 Figure 1 shows the boundaries of the Site and the Survey Area.

1.3 Proposed Development

- 1.3.1 The proposed development is comprised of the following principal elements:
- Construction of a single level platform (260 metres (m) by 640 m) on which an Air Insulated Substation (AIS) is sited measuring 155 m by 602 m.
 - Bellmouth access to the A484 with an operational access road to connect the platform to the A484.
 - Modification works to the existing 400kV Overhead Line (OHL) to connect the substation to the existing OHL involving the installation of two new towers (pylons) and one replacement tower (pylon) circa 18 m and 62 m.
 - Associated drainage, and hard and soft landscaping.

1.4 Legislation

- 1.4.1 Within Wales, bats and their roosts are protected under the following legislation:



Bat Activity Survey Report

- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended); and
- Environment (Wales) Act 2016.

1.4.2 Please see Appendix A for a summary of the protection each bat species receives.

1.5 Aims and Objectives

1.5.1 The aim of the bat activity survey was to ascertain the:

- assemblage of bat species using the Site;
- relative frequency with which the Site is used by the species present; and
- spatial and temporal distribution of bat activity.
- evaluation of the bat assemblage within the Site.



2 Methods

2.1 Desk Study

- 2.1.1 West Wales Biodiversity Information Centre (WWBIC) was contacted in May 2025 for records of bats within a 2 km buffer of the Survey Area (see Figure 1).
- 2.1.2 Species records requested from WWBIC were limited to those reported within the last ten years and with 6-figure grid reference resolutions or higher, since locations given at a lower resolution do not allow for the accurate calculation of distance from the Site.

2.2 Field Survey

- 2.2.1 The bat activity survey methodology followed current best practice as set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023) and the professional competency standards of the Chartered Institute for Ecology and Environmental Management (CIEEM, 2023).

2.3 Night-time Bat Walkover Survey

- 2.3.1 Five dusk night-time bat walkover (NBW) transect routes were initially established in May 2025, covering representative habitats across the Survey Area (see Figure 2 and Figure 3). Following refinement of the Site boundary in June 2025, this was reduced to three standardised NBW transect routes for the remainder of the season. Three survey visits were undertaken in spring, summer and autumn for each transect. Each survey commenced at sunset and continued for two hours after sunset. Surveys were carried out under suitable weather conditions, avoiding nights with heavy rain, low temperatures or high wind. Table 2-1 summarises the survey dates, times for each transect and the weather conditions.

Table 2-1 Bat Activity Transect Survey Timing and Weather

Season	Date	Transect Surveyed	Sunset	Start Time	End Time	Weather
Spring	13/05/25	1 & 3	21:05	21:05	23:05	13°C, light breeze, 100% cloud cover, no rain
	14/05/25	2, 4 & 5	21:07	21:10	23:10	14-15°C, light breeze, 100% cloud cover, no rain
Summer	16/07/25	2, 3 & 4	21:29	21:30	23:30	17°C, light wind, 50% cloud cover, no rain
Autumn	30/09/25	2, 3 & 4	18:58	19:00	21:00	16°C, light breeze, 15% cloud cover, no rain

- 2.3.2 During each visit, experienced bat surveyors walked the designated transect routes, subdivided into survey sectors. The start points and walking direction were alternated to achieve representative temporal coverage of the Survey Area/ Site. Bat passes were recorded in real time, and flight direction, activity type (foraging, commuting, or social) and environmental conditions were noted.
- 2.3.3 The surveyors used a combination of Song Meter Mini Bat 1 and Song Meter Mini Bat 2 detectors (Wildlife Acoustics Inc., Concord, MA), which recorded high-quality full-spectrum echolocation data. Batbox Duet detectors (Stag Electronics, Steyning, West Sussex) were also used for real-time acoustic monitoring. Recordings were analysed using Wildlife Acoustics Kaleidoscope Pro software following identification procedures in Collins (2023).



2.4 Automated Static Detector Survey

- 2.4.1 Ten automated static detectors (Song Meter Mini Bat 1 and Song Meter Mini Bat 2 units) were deployed on 22 April 2025. Four detectors were removed in June 2025 when the Site boundary was refined, leaving six detectors for the remainder of the monitoring season. Detectors were positioned approximately 1 metre above ground level in representative locations to capture a range of habitat types. Each detector was programmed to record from 30 minutes before sunset to 30 minutes after sunrise. The locations of the ten detectors are shown on Figure 4.
- 2.4.2 The detectors were checked monthly, with batteries replaced and data downloaded. Each detector recorded for as long as it had battery capacity. This was dependent on environmental factors and the amount of data recorded. The date ranges recorded by detector is given in Appendix B. Also given is the total recording time over that period based on those dates, sunrise and sunset times for the latitude and longitude of the site, and the parameters above.
- 2.4.3 Upon retrieval, all recordings were analysed using Wildlife Acoustics Kaleidoscope Pro software to identify bat species where possible. Where calls could not be confidently assigned to species due to frequency overlap, particularly within the *Myotis* and *Nyctalus* genera, identifications were made to genus level in line with current best practice (Collins, 2023).
- 2.4.4 All auto-classified files were subsequently reviewed by a suitably experienced ecologist with demonstrable competence in sonogram interpretation. Where Kaleidoscope Pro indicated Bechstein's bat, the relevant recordings were submitted to the BTO Acoustic Pipeline for independent verification of the identification.
- 2.4.5 To standardise survey effort for each deployment location, total call numbers for each species was divided by the number of hours recorded at that location to give total passes per hour.

2.5 Evaluation

- 2.5.1 Bat activity data from static detectors and NBW surveys were analysed to determine the spatial and temporal distribution of activity, species assemblage composition, and relative levels of use across the Site and wider Survey Area.
- 2.5.2 Activity recorded by static detectors was standardised to passes per hour to account for variations in deployment length and detector function. Values were compared between locations and survey periods to identify activity hotspots and seasonal trends. Night-time walkover data were used to verify detector results, confirm species presence, and provide contextual information on habitat use and flight behaviour.
- 2.5.3 Evaluation of bat activity followed the analytical framework set out in Collins (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition, Bat Conservation Trust), which recommends assessment of species richness, activity rates, and spatial distribution to inform ecological importance.
- 2.5.4 The ecological value of the bat assemblage was subsequently assessed using the approach outlined by Reason and Wray (2025) in the UK Bat Mitigation Guidelines, which provides a structured method for assigning significance based on species diversity, conservation status, and rarity at the regional level. Using this guidance the Site is evaluated to determine its relative importance at a geographic scale (e.g. County, Regional and National).
- 2.5.5 Under the guidelines for South Wales, the point thresholds for each geographical significance are given below:
- County importance $\geq 45\%$ (18 points)
 - Regional importance $\geq 55\%$ (23 points)



- National importance $\geq 70\%$ (29 points)

2.6 Limitations

- 2.6.1 Desk study data are reliant on the accuracy and completeness of submitted records and may not represent exhaustive coverage. The absence of data should not be interpreted as evidence of absence. Field results are representative of conditions at the time of survey only.
- 2.6.2 Survey methods followed industry standards current at the time of survey (Collins, 2023). No responsibility will be accepted for undetected species or for changes to guidance that occur after the date of survey. Long-eared bats *Plecotus* spp. echolocate quietly and horseshoe bats *Rhinolophus* spp. have directional calls, making both less detectable compared to other species. *Myotis* and *Nyctalus* species also have overlapping call characteristics and may be indistinguishable acoustically; such calls have been recorded to genus level where appropriate. As such, during the bat assemblage evaluation cautious was applied to the weighting to *Myotis* spp. and it was assumed that four species of *Myotis* may be present within the Site.
- 2.6.3 Weather conditions during all surveys were optimal and coverage is considered robust.
- 2.6.4 Detector SMMB225 failed during the April–May period, slightly reducing coverage in the northern area. Detector SMMB223 failed in the August–September period, slightly reducing coverage in the south of the Site. During the October deployment, none of the deployed detectors recorded for the full five days, as outlined as a minimum within best practice guidance (Collins, 2023). All detectors were triggered constantly due to wind, which caused rapid battery drainage. The data for this deployment was supplemented with October data recorded during the September–October period to take all but detector SMMB228 and SMMB226 to over 5 days of deployment and is therefore not considered to be a limitation.
- 2.6.5 Roost location inference is based on timing and activity patterns rather than direct emergence observation.



3 Results and Evaluation

3.1 Desk Study

- 3.1.1 In total, 36 records of bats were returned by WWBIC, of which three were for unidentified bat species. The majority of these were roost records, with droppings found in roof voids or emergences recorded during dusk surveys. A summary of the records is given in Table 3-1. It is possible based on the suitability of the habitat on the Site and the distance between the roost and the Site in relation to the recorded Core Sustainance Zones for the species (Collins, 2023), that all species returned in desk study records, aside from whiskered, forage or pass through the Site.

Table 3-1 Desk Study Results

Species	Number and Location of Records	Type of Record	Species CSZ
Brown long-eared <i>Plecotus auritus</i>	One record, closest located 1.95 km from the Site (lodge school)	Roosts – building	3 km
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Two records, closest located 1.95 km from the Site (lodge school)	Roosts – building	2 km
Greater horseshoe <i>Rhinolophus ferrumequinum</i>	Three records, closest located 2.44 km from the Site (Garthowen Farm)	Mostly roosts	3 km
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Two records, closest located 1.95 km from the Site (lodge school)	Roosts – building	3 km
Whiskered <i>Myotis mystacinus</i>	One record, closest located 1.95 km from the Site (lodge school)	Roosts	1 km

3.2 Night-time Bat Walkover Surveys

- 3.2.1 Seven species/ species groups were recorded, these included soprano pipistrelle, common pipistrelle, *Myotis* spp. (including likely Daubenton's *Myotis daubentonii*, based on characteristics features within the sonogram call), noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, brown long-eared and Nathusius' pipistrelle *Pipistrellus nathusii*.
- 3.2.2 Transect results showed moderate to high levels of activity dominated by pipistrelle species. Soprano pipistrelle was the most frequently recorded, peaking at 225 passes on transect 2 in autumn. Common pipistrelle maintained consistent activity through the season peaking at 95 passes on transect 1 in spring. Noctule was recorded across all transects and serotine activity increased during summer and autumn. *Myotis* spp. detections were low but regular.
- 3.2.3 A summary of night-time bat walkover results for each transect is given below in Table 3-2 and Table 3-3.

Table 3-2 Night-time Bat Walkover Spring Results Summary

Species	Bat Passes Per Transect				
	1	2	3	4	5
Soprano pipistrelle	33	114	37	99	57
<i>Myotis</i> spp.	7	11	3	12	5
Common pipistrelle	95	3	51	57	56
Noctule	28	2	27	6	3
Serotine	1	-	-	-	-



Bat Activity Survey Report

Species	Bat Passes Per Transect				
	1	2	3	4	5
Brown long-eared	-	1	1	-	-
Nathusius' pipistrelle	-	-	3	-	-
Daubenton's*	-	-	1	-	-
Total	164	131	123	174	121
*assumed based on characteristic features within sonogram call.					

Table 3-3 Night-time Bat Walkover Summer and Autumn Results Summary

Species	Bat Passes Per Transect					
	2		3		4	
	Summer	Autumn	Summer	Autumn	Summer	Autumn
Soprano pipistrelle	24	225	2	162	43	35
<i>Myotis</i> spp.	9	1	1	2	1	3
Common pipistrelle	27	65	-	30	28	63
Noctule	6	5	5	14	36	14
Brown long-eared	-	-	-	-		1
Serotine	-	2	1	4	5	4
Total	66	298	9	212	113	120

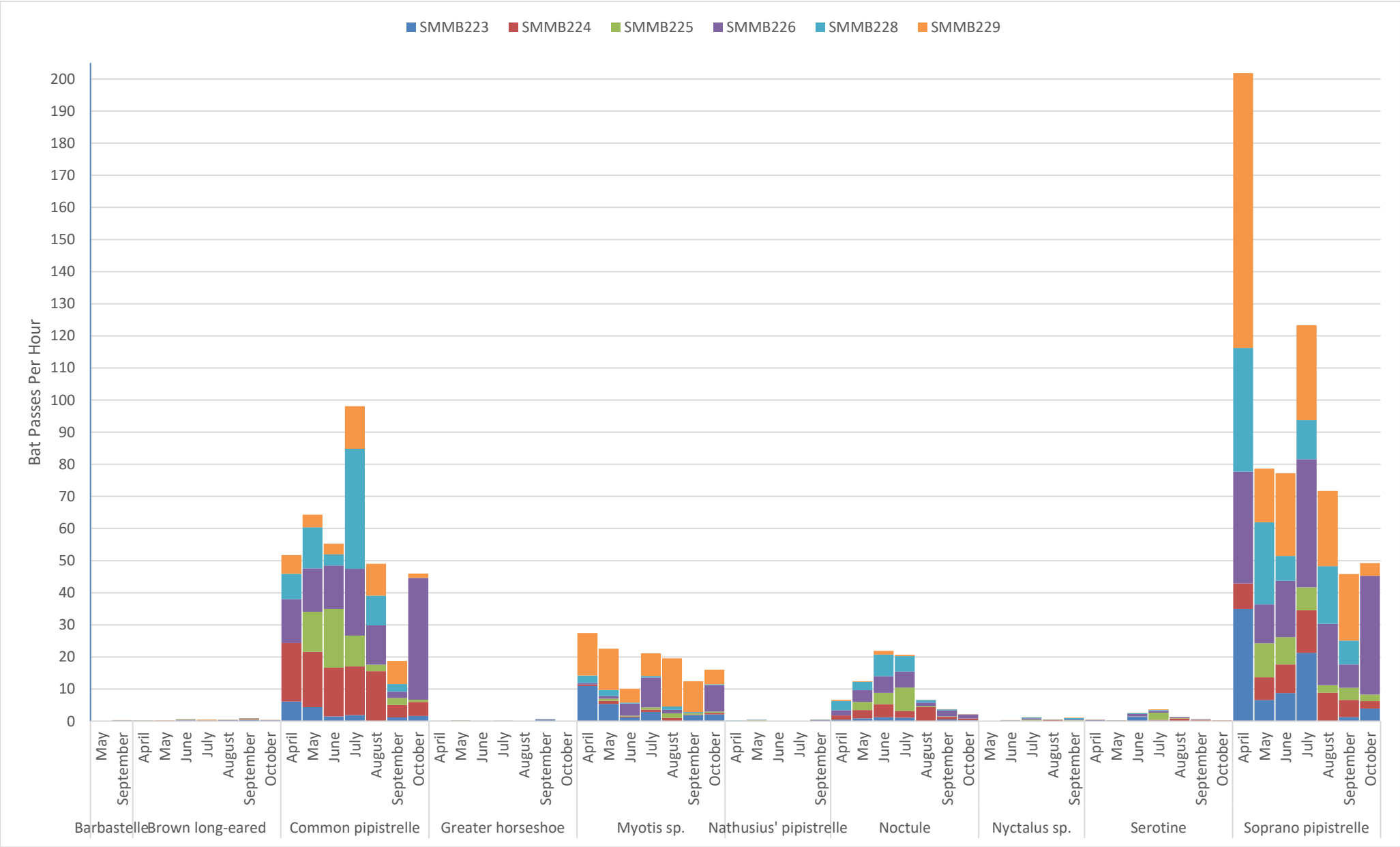
3.3 Static Detector Surveys

- 3.3.1 Bat activity recorded across the Survey Area was relatively consistent across the Site, although there were some patterns in species dominance, and seasonal variation. Seasonally, peak bat activity was recorded in mid-summer with activity gradually declined into autumn.
- 3.3.2 Soprano pipistrelle was the most recorded species throughout the entire survey period, consistently dominating bat activity across all parts of the Site with particularly high activity in the north west/centre, south east, and north west. Peak activity for soprano pipistrelle was recorded in April to May with 201.82 passes/hour recorded across the Site. Common pipistrelle was the second most active species overall with hotspots in the north east, south east, and centre of the Site. Common pipistrelle's highest activity occurring between July and August with 98.13 passes/hour recorded across the Site.
- 3.3.3 Moderate activity was recorded for *Myotis* species, with hotspots recorded in the south, north west/centre, and centre of the Site. The highest *Myotis* activity was recorded in July to August (21.18 passes/hour). Moderate activity was also recorded for noctule, with hotspots recorded in the centre, south east, and north of the Site, particularly during June, July and August.
- 3.3.4 Serotines were recorded at low levels across the Site, with a brief peak in the south west of the Site between May and June. Brown long-eared bats were present in small numbers throughout, with slightly higher activity between September and October.
- 3.3.5 Rare species such as greater horseshoe, Nathusius' pipistrelle and barbastelle *Barbastella barbastellus* were recorded sporadically and at very low levels across the Site. Greater horseshoe was slightly more active in the west of the Site between May and June, while barbastelle was recorded between September and October.
- 3.3.6 Full results are provided in Appendix B A summary of bat passes per hour for each species recorded within the Site is provided in Chart 1 and species recorded within the wider Survey Area is provided in Chart 2.



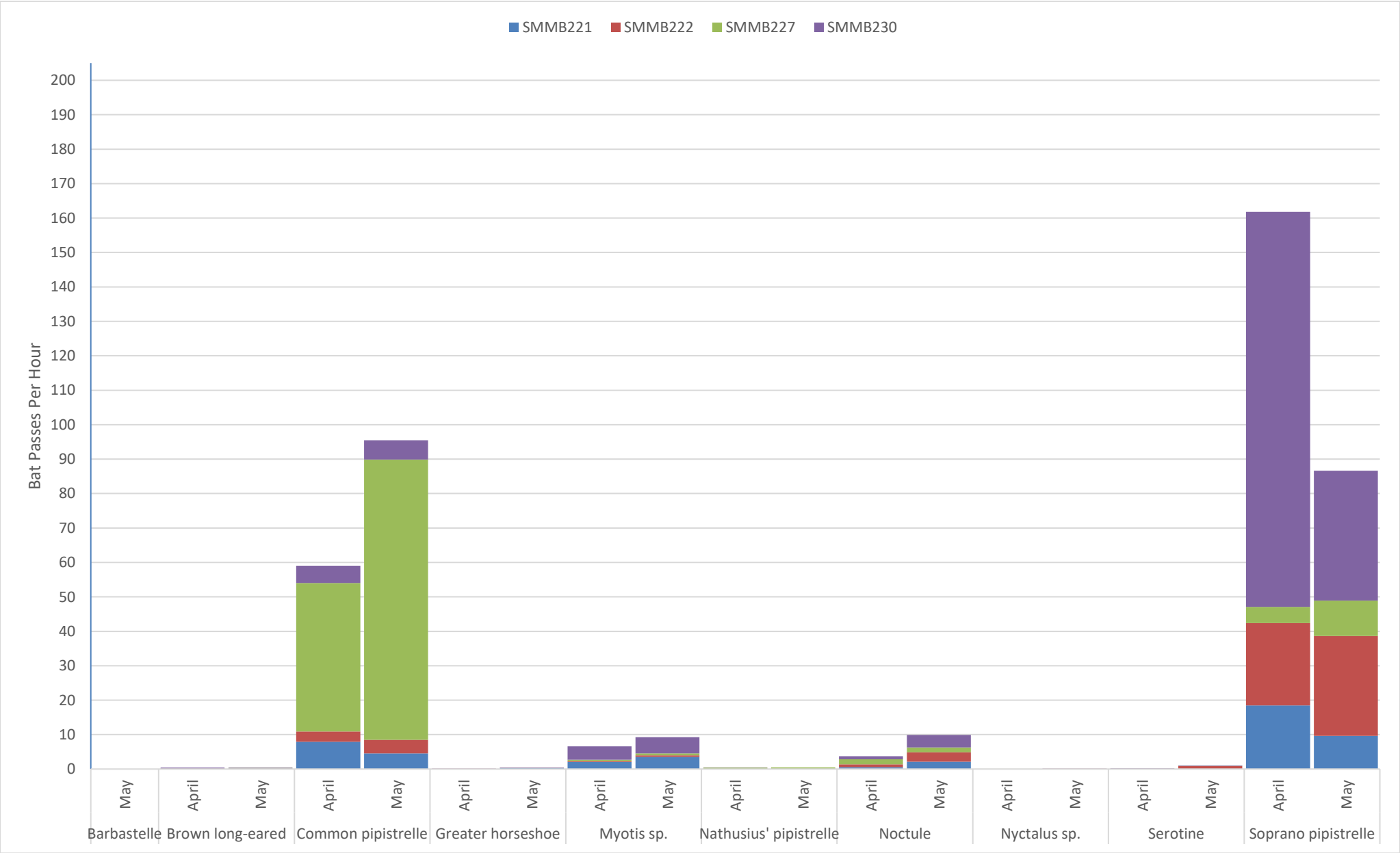
Bat Activity Survey Report

Chart 1: Summary of Bat Passes per Hour Recorded on Static Detectors within the Site



Bat Activity Survey Report

Chart 2 Summary of Bat Passes per Hour Recorded on Static Detectors within the Wider Survey Area



3.4 Earliest Record and Indication of Roosting Potential

- 3.4.1 Table 3-4 provides a summary of the mean emergence times for species, the time species were first recorded within the Survey Area and the location detected to provide insight into potential roost proximity for species recorded within the Survey Area.
- 3.4.2 All species were first detected before or within 30 minutes of sunset, earlier than expected for individuals commuting from distant roosts. This strongly suggests that roosts for all species recorded within the Site are present on or within proximity to the Site, likely within mature trees or farm buildings.

Table 3-4 Time of Earliest Bat Pass Record

Species	Mean Emergence Time (Minutes from Sunset)*	Time First Detected from Sunset (Minutes)	Location Detected within the Survey Area	Roost Likely on the Site
Barbastelle	24	23.9	East	On or nearby
Brown long-eared	61	11.6	South, adjacent to ancient woodland	On or nearby
Common pipistrelle	24.8	-29.2	South, adjacent to ancient woodland	On or nearby
Greater horseshoe	26-28	25.4	East	Nearby (no potential roost sites on the Site)
Myotis sp.	Various	8.9	North	On or nearby
Nathusius' pipistrelle	30	-9.3	Northeast	On or nearby
Noctule	7-11	-27.8	Centre	On or nearby
Serotine	11.6	9.9	North	Nearby (no potential roost sites on the Site)
Soprano pipistrelle	27-35	-14.6	West	On or nearby
* Taken from Bat Survey Guidelines (Collins, 2023)				

3.5 Bat Assemblage

- 3.5.1 Using the UK Bat Mitigation Guidelines v1.2 (Reason & Wray 2025), the combined species assemblage yields a population value score of 27, equating to roughly 66 % of the maximum possible (41 points), which is valued at the Regional level (See Table 3-5).
- 3.5.2 This classification reflects the diversity of the assemblage – encompassing both common edge and open-habitat species (pipistrelles, noctule, serotine) and rarer species (barbastelle and greater horseshoe) – while applying a cautious weighting to Myotis spp. detections that could not be resolved to species level.

Table 3-5 Analysis of Bat Assemblage Recorded on Site Against Reason and Wray (2025)

Species Recorded on Site	Rarity Category	Score
Common pipistrelle	Widespread all geographies	1
Soprano pipistrelle	Widespread all geographies	1
Brown long-eared	Widespread all geographies	1
Noctule	Widespread in many geographies, but not as abundant in all	2



Bat Activity Survey Report

Species Recorded on Site	Rarity Category	Score
Serotine	Rarer or restricted distribution	3
Nathusius' pipistrelle	Rarer or restricted distribution	3
Myotis spp. (presence of 4 widespread species assumed, although unconfirmed – Bechstein's unlikely to be present based on call analysis)	Widespread in many geographies, but not as abundant in all	8
Barbastelle	Rarest Annex II species and very rare	4
Greater horseshoe	Rarest Annex II species and very rare	4
Total	27 / 41 (66% of possible)	



4 Conclusion

- 4.1.1 The bat activity surveys undertaken at Llandyfaelog between April and October 2025 have provided a robust and comprehensive dataset, capturing seasonal patterns, species diversity, and spatial distribution across the Site and wider Survey Area.
- 4.1.2 The assessment included a desk study, NBW surveys and static detector monitoring undertaken between April and October 2025. Ten automated static detectors and five transect routes were deployed across the Site and wider Survey Area to record seasonal activity patterns up until June. From June to October, surveys were only conducted within the Site, comprising six static detectors and three transect routes.
- 4.1.3 Activity was consistently dominated by soprano pipistrelle and common pipistrelle, which together accounted for the majority of bat passes across all survey periods. Their widespread presence across all detector locations highlights the suitability of the Site for edge and open-habitat foraging species.
- 4.1.4 Myotis species were recorded regularly, with moderate activity levels. Noctule, serotine and brown long-eared were also detected in low to moderate numbers. Rare species, including greater horseshoe, Nathusius' pipistrelle and barbastelle, were recorded at very low levels.
- 4.1.5 Seasonal trends showed peak activity during mid-summer, with a gradual decline into autumn, although soprano pipistrelle remained active throughout.
- 4.1.6 The timing of first detections for several species suggests that roosts are likely present on or adjacent to the Site, particularly within mature trees and farm buildings.
- 4.1.7 The combined species assemblage using the UK Bat Mitigation Guidelines v1.2 (Reason & Wray 2025) provided a population value score of 27, equating to roughly 66% of the maximum possible (41 points), which is valued at the Regional level. Overall, the Site supports a diverse and potentially a regionally significant bat assemblage, including both common and rare taxa.



5 References

Bat Conservation Trust (BCT) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th ed.). BCT, London. Available at: <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-4th-edition>

Reason, P.F. & Wray, S. (2025). UK Bat Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats (Version 1.2). Chartered Institute of Ecology and Environmental Management (CIEEM), Ampfield. Available at: <https://cieem.net/resource/uk-bat-mitigation-guidelines-2025/>

Chartered Institute of Ecology and Environmental Management (CIEEM) (2017). Guidelines for Ecological Report Writing. CIEEM, Winchester. Available at: <https://cieem.net/resource/guidelines-for-ecological-report-writing/>

CIEEM (2023). Competency Framework for Professional Ecologists & Environmental Managers. CIEEM, Winchester. Available at: <https://cieem.net/i-am/a-professional/competency-framework/>

Wildlife Acoustics (2024). Kaleidoscope Pro User Guide and Song Meter Mini Bat / Mini Bat 2 User Guides. Wildlife Acoustics, MA, USA. Available at: <https://www.wildlifeacoustics.com>

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579). Available at: <https://www.legislation.gov.uk/ukxi/2019/579/contents>

Wildlife and Countryside Act 1981 (as amended). Available at: <https://www.legislation.gov.uk/ukpga/1981/69>

Environment (Wales) Act 2016. Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents>

Planning Policy Wales (PPW), Edition 12 (Welsh Government, 2021). Available at: <https://www.gov.wales/planning-policy-wales>

Technical Advice Note (TAN) 5: Nature Conservation and Planning (Welsh Government). Available at: <https://www.gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning>

6 Figures

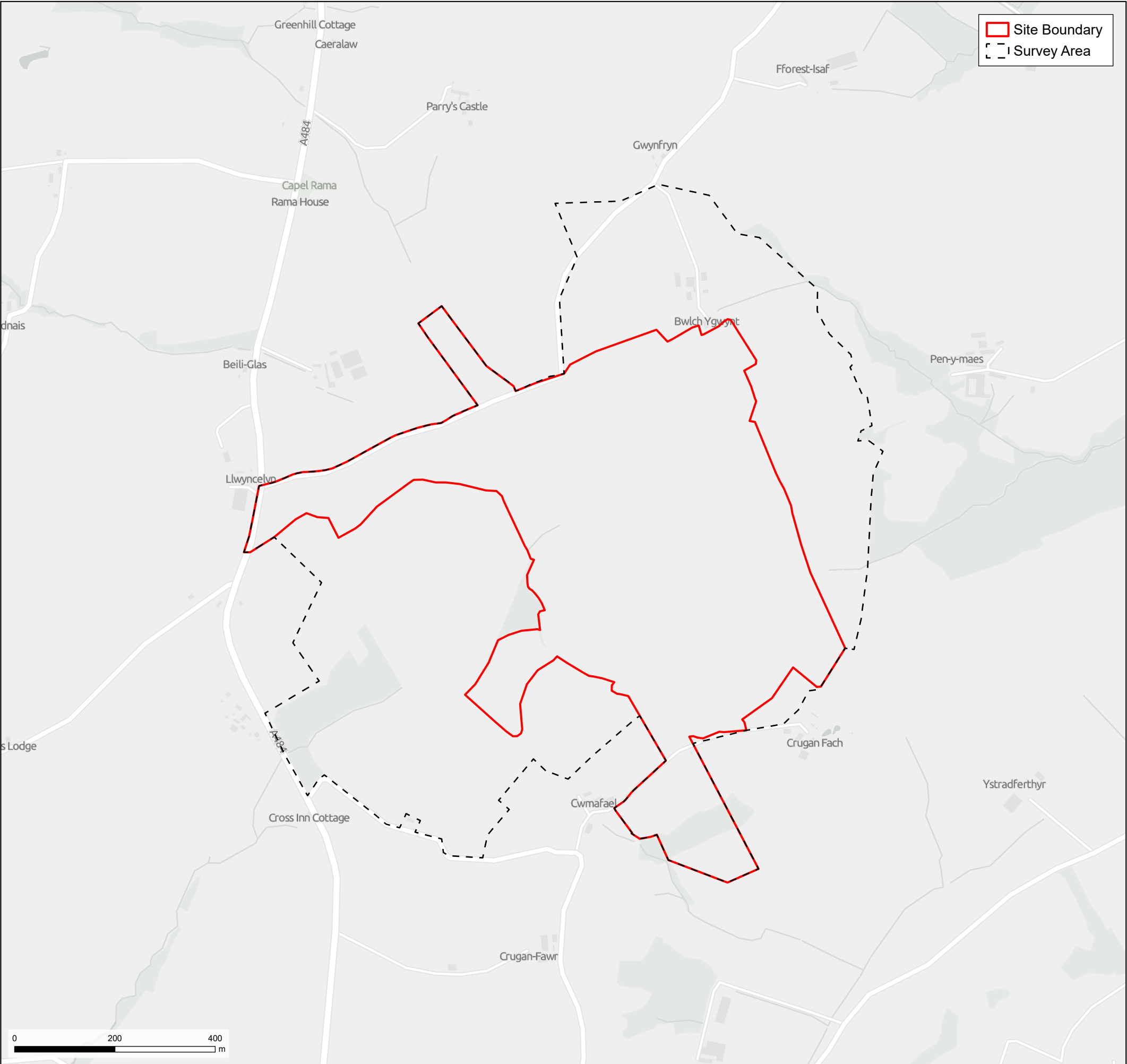
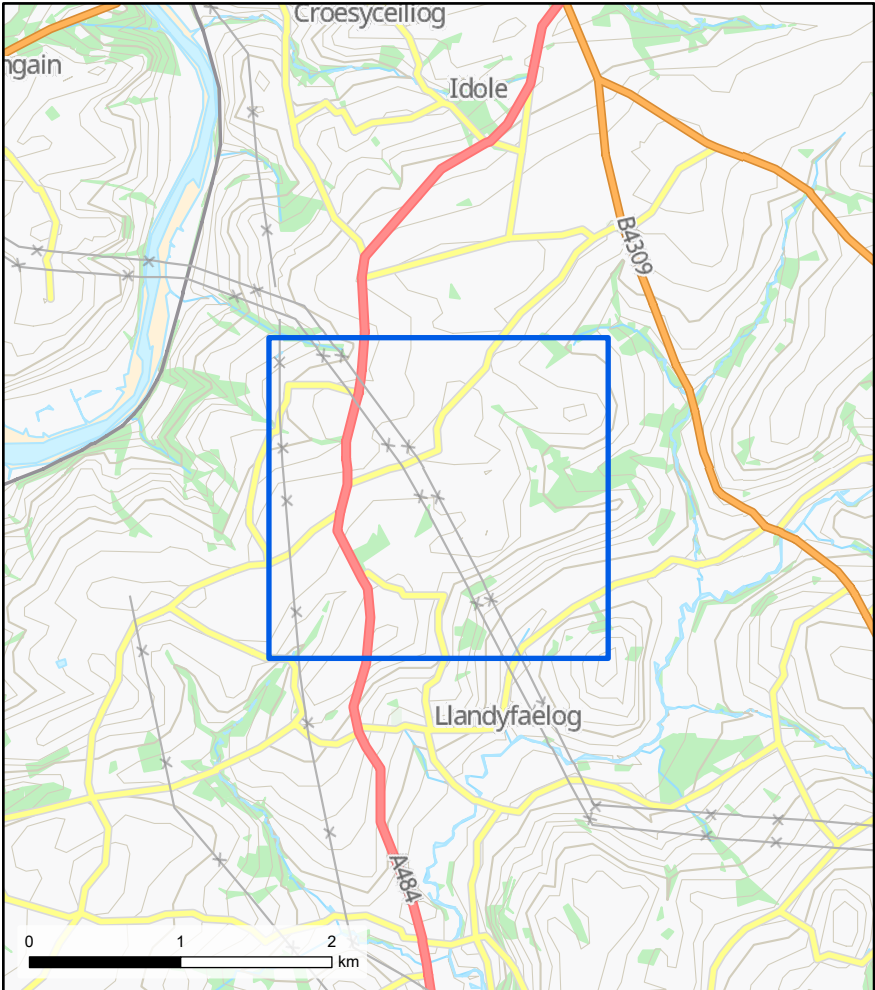
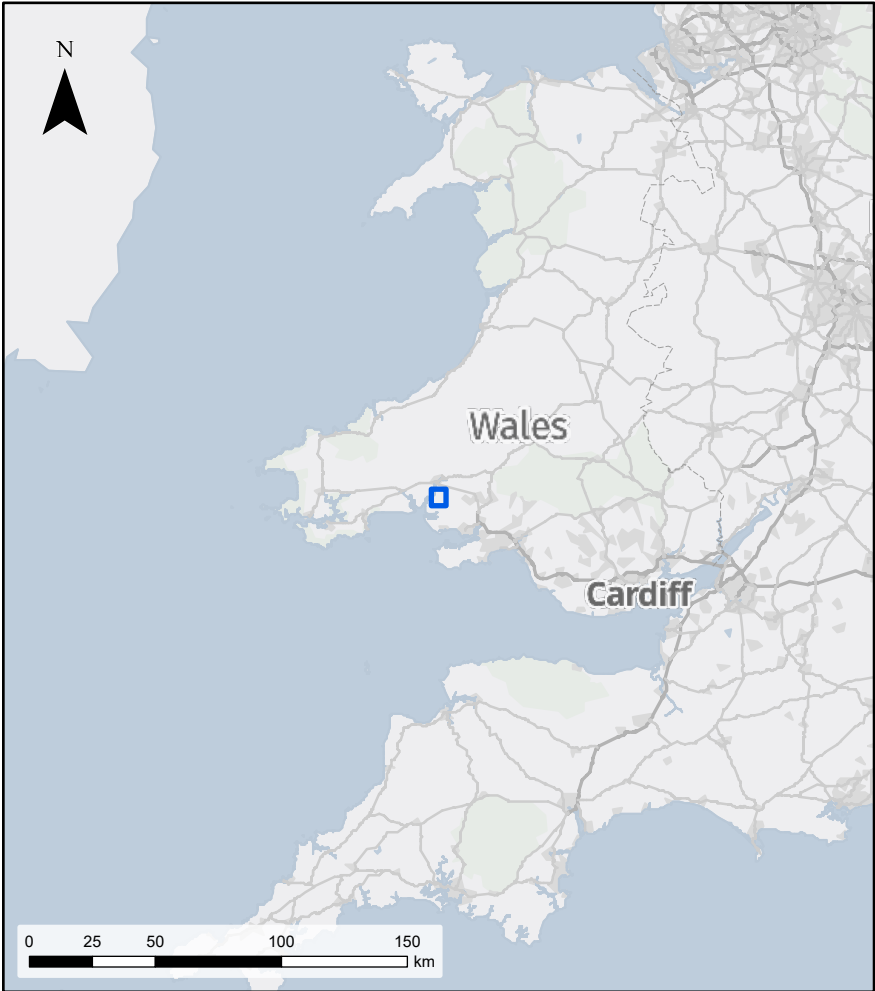
Figure 1 Site and Survey Area

Figure 2 Night-time Bat Walkover Transect Routes: May

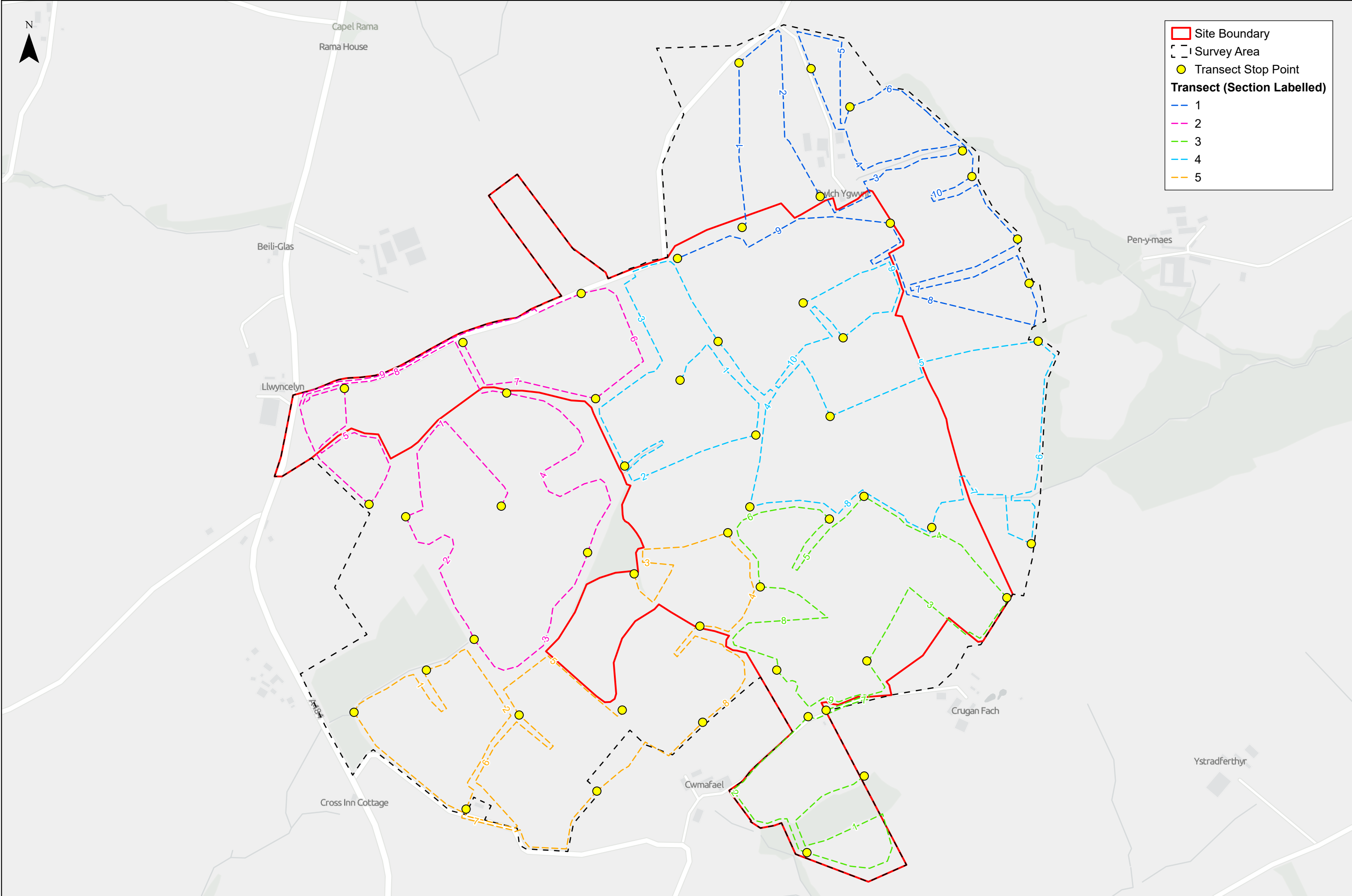
Figure 3 Night-time Bat Walkover Transect Routes: July and September

Figure 4 Static Detector Locations





	Client nationalgrid	LLANDYFAELOG Site Location and Survey Area	Contains OS data © Crown Copyright and database right 2025 Contains data from OS Zoomstack, Contains OS data © Crown Copyright and database right 2023 Contains data from OS Zoomstack		Date: 06/11/2025	
					Drawn: TB	Checked: HM
					Figure: 01	Rev: A



Site Boundary

Survey Area

Transect Stop Point

Transect (Section Labelled)

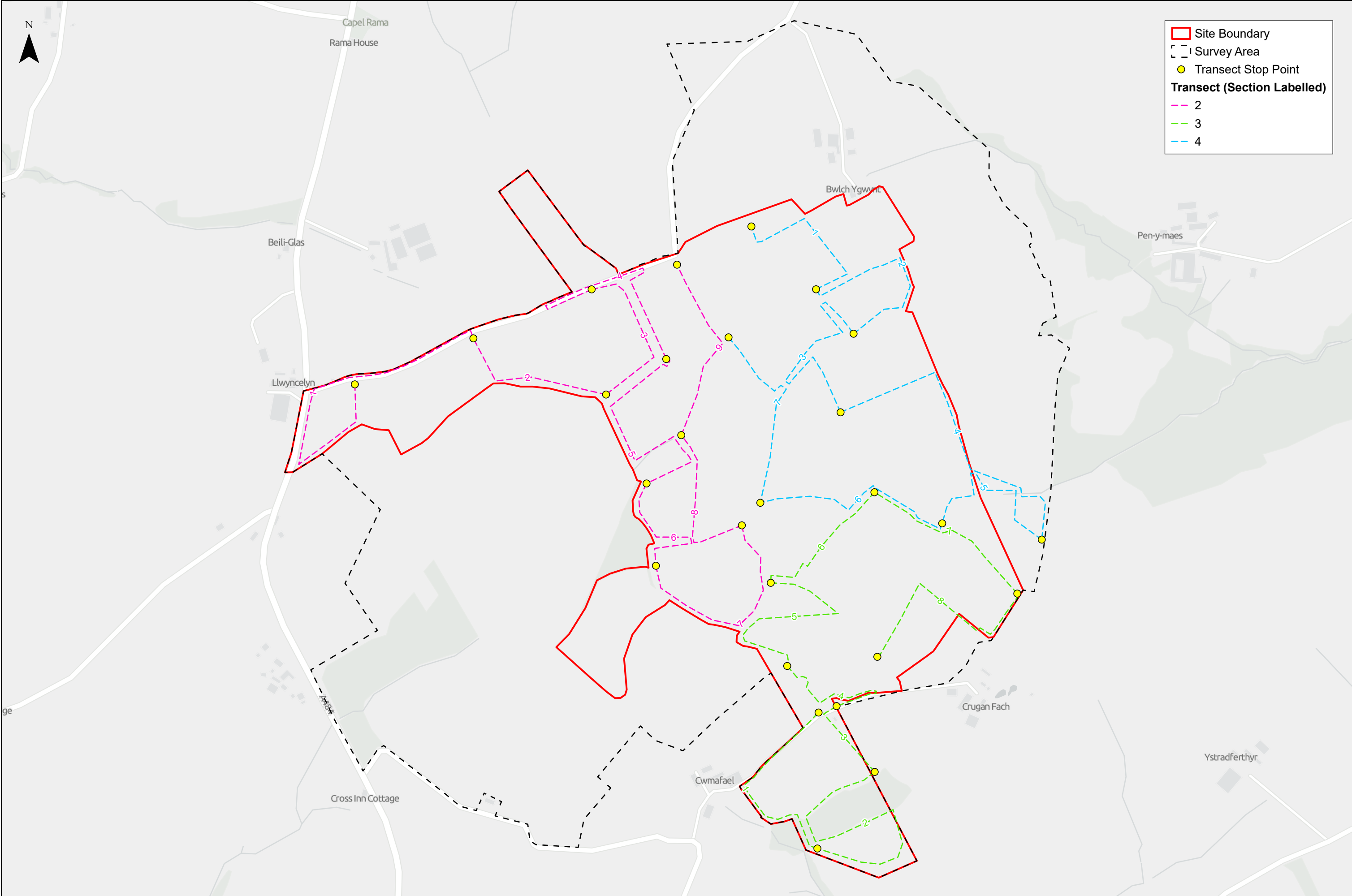
1

2

3

4

5



Site Boundary

Survey Area

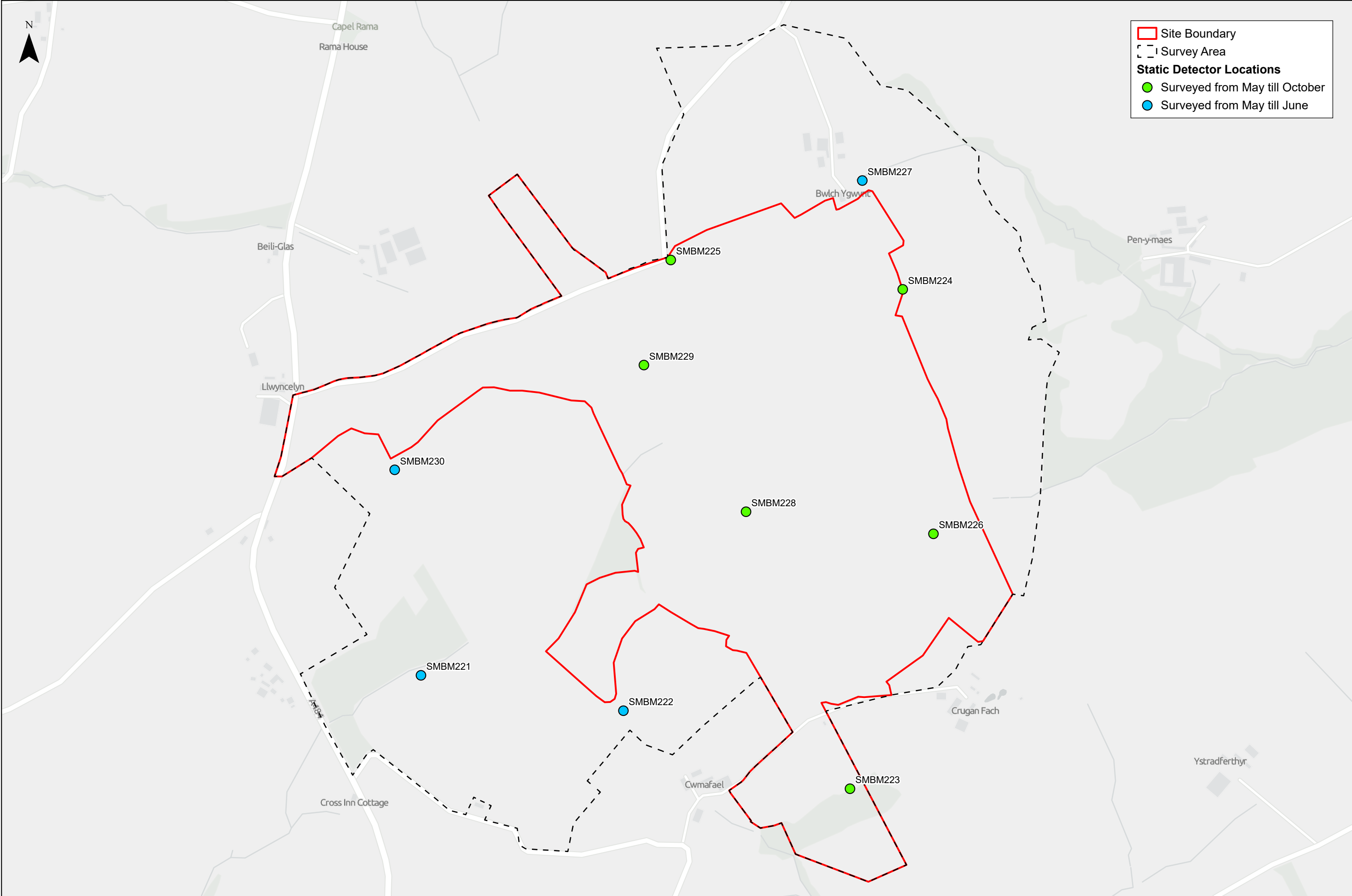
Transect Stop Point

Transect (Section Labelled)

2

3

4



Site Boundary

Survey Area

Static Detector Locations

Surveyed from May till October

Surveyed from May till June

Appendix A Legislation

- A.1.1 Please note that this legal information is provided as a summary for general guidance only. The original legal texts should be consulted for definitive information. Web addresses providing access to the full text of these documents are included in Section 5 References.
- A.1.2 All bat species occurring in the United Kingdom are listed under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and therefore receive protection under Regulation 43 of these Regulations. In addition, all bat species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded protection under Section 9 of that Act.
- A.1.3 Together, this legislation makes it an offence to:
- Deliberately capture, injure or kill a bat
 - Deliberately disturb a bat
 - Intentionally or recklessly disturb a bat while it is occupying a structure or place of shelter or protection
 - Intentionally or recklessly obstruct access to any such structure or place
 - Damage or destroy a breeding site or resting place used by bats
- A.1.4 In the case of *Vivienne Morge v Hampshire County Council* (2010), the Supreme Court interpreted deliberate disturbance as an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species.
- A.1.5 Since 2007, it has not been a valid legal defence to claim that the killing, capture, or disturbance of a European Protected Species (EPS), or the damage or destruction of its breeding site or resting place, was an incidental and unavoidable result of an otherwise lawful activity.
- A.1.6 EPS licences in Wales may be granted by Natural Resources Wales (NRW) to permit activities that would otherwise be unlawful under the Habitats Regulations. Such licences can only be issued where the following three tests, derived from the Habitats Directive, are met:
- The activity is for reasons of overriding public interest
 - There is no satisfactory alternative
 - The favourable conservation status of the species concerned will be maintained
- A.1.7 Under Section 6 of the Environment (Wales) Act 2016, all public authorities, including planning authorities, have a duty to seek to maintain and enhance biodiversity and promote the resilience of ecosystems in the exercise of their functions (known as the Section 6 Duty).
- A.1.8 Section 7 of the Environment (Wales) Act 2016 requires Welsh Ministers to publish a list of species and habitats of principal importance for the purpose of maintaining and enhancing biodiversity in Wales. This list informs local planning authorities and statutory bodies in the discharge of their biodiversity duties. Several bat species are included on the Section 7 list of Species of Principal Importance (SPI), including barbastelle bat *Barbastella barbastellus*, brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii*, lesser horseshoe bat *Rhinolophus hipposideros*, serotine bat *Eptesicus serotinus*, and Nathusius' pipistrelle *Pipistrellus nathusii*.



Bat Activity Survey Report

- A.1.9 Although bat foraging areas and commuting routes are not directly protected under the above legislation, their loss may constitute a disturbance offence if it significantly affects the ability of bats to use a roost or to forage effectively. The loss of a commuting route providing the only access to a roost could also amount to the damage or destruction of a breeding site or resting place. Even where loss of foraging or commuting habitat does not constitute an offence, the presence of such habitat remains a material consideration under planning policy, and planning authorities are legally required to take it into account under the Environment (Wales) Act 2016.



Appendix B Static Detector Deployment and Recording Dates

Site or Wider Survey Area	Detector	Static Detector Recording													
		April - May		May - June		June - July		July- August		August - September		September - October		October	
		Dates	Time (hrs)	Dates	Time (hrs)	Dates	Time (hrs)	Dates	Time (hrs)	Dates	Time (hrs)	Dates	Time (hrs)	Dates	Time (hrs)
Wider Survey Area	SMMB221	22.04.25 – 11.05.25	191.43	12.05.25 – 23.06.25	374.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wider Survey Area	SMMB222	22.04.25 – 11.05.25	191.43	12.05.25 – 18.06.25	333.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wider Survey Area	SMMB227	22.04.25 – 11.05.25	191.43	12.05.25 – 03.06.25	207.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wider Survey Area	SMMB230	22.04.25 – 10.05.25	181.87	12.05.25 – 20.06.25	349.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Site	SMMB223	22.04.25 – 05.05.25	133.23	12.05.25 – 21.06.25	358.13	23.06.25 – 15.07.25	186.70	16.07.25 – 05.08.25	185.58	Detector Failed		17.09.25 – 22.09.25	63.18	01.10.25 – 18.10.25	237.18
Site	SMMB224	22.04.25 – 11.05.25	191.43	12.05.25 – 09.06.25	258.00	23.06.25 – 15.07.25	186.70	16.07.25 – 13.08.25	265.70	21.08.25 – 09.09.25	215.37	17.09.25 – 22.09.25	63.18	01.10.25 – 20.10.25	266.32
Site	SMMB225	Detector Failed		12.05.25 – 23.06.25	374.75	23.06.25 – 15.07.25	186.70	16.07.25 – 04.08.25	175.82	21.08.25 – 09.09.25	215.37	17.09.25 – 22.09.25	63.18	01.10.25 – 02.10.25 and 15.10.25 – 18.10.25	70.13
Site	SMMB226	22.04.25 – 11.05.25	191.43	12.05.25 – 22.06.25	366.45	23.06.25 – 15.07.25	186.70	16.07.25 – 24.07.25	71.93	21.08.25 – 04.09.25	156.43	17.09.25 – 22.09.25	63.18	01.10.25 – 03.10.25 and 15.10.25	41.23
Site	SMMB228	22.04.25 – 11.05.25	191.43	12.05.25 – 05.06.25	224.13	23.06.25 – 13.07.25	169.20	16.07.25 – 25.07.25	81.12	21.08.25 – 28.08.25	76.67	17.09.25 – 22.09.25	63.18	15.10.25 – 16.10.25	14.33
Site	SMMB229	22.04.25 – 10.05.25	181.87	12.05.25 – 07.06.25	241.12	23.06.25 – 15.07.25	186.70	16.07.25 – 02.08.25	156.47	21.08.25 – 07.09.25	191.60	17.09.25 – 22.09.25	63.18	01.10.25 – 09.10.25 and 15.10.25 – 19.10.25	167.02



Appendix C Static Detector Survey Results

Table C 1 Number of Bat Passes Per Hour by Detector Location – April to May Recording Period

	Location	The Site							Wider Survey Area					Grand Total
		south	north east	north	south east	centre	north west/ centre	Sub Total	west	south west	north east	north west	Sub Total	
	Detector	SMMB 223	SMMB 224	SMMB 225	SMMB 226	SMMB 228	SMMB229		SMMB 221	SMMB 222	SMMB 227	SMMB 230		
	Total Hours Recorded	133.23	191.43	Detect or failed	191.43	191.43	181.87		191.43	191.43	191.43	181.87		
Bat passes per hour	Brown long-eared bat	0.02	0.09		0.06	0.01	0.11	0.29	0.03	0.03	0.07	0.31	0.44	0.73
	Common pipistrelle	6.13	18.20		13.69	7.86	5.86	51.74	7.93	2.97	43.12	5.00	59.03	110.77
	Greater horseshoe bat	0.03	0.01		0.03	0.06	0.00	0.12	0.07	0.01	0.00	0.01	0.08	0.20
	<i>Myotis</i> sp.	10.97	0.49		0.45	2.29	13.25	27.44	2.08	0.26	0.38	3.85	6.58	34.02
	Nathusius' pipistrelle	0.00	0.08		0.06	0.04	0.00	0.18	0.01	0.02	0.42	0.01	0.45	0.63
	Noctule	0.51	1.24		1.64	2.86	0.32	6.57	0.57	0.82	1.46	0.89	3.75	10.32
	<i>Nyctalus</i> sp.	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01
	Serotine	0.01	0.10		0.28	0.00	0.03	0.41	0.04	0.02	0.03	0.15	0.23	0.64
	Soprano pipistrelle	34.92	7.95		34.82	38.55	85.58	201.82	18.47	23.90	4.75	114.68	161.81	363.63
	Grand Total	52.59	28.16		51.02	51.65	105.15	288.57	29.21	28.03	50.24	124.89	232.37	520.95

Table C 2 Number of Bat Passes Per Hour by Detector Location – May to June Recording Period

	Location	The Site							Wider Survey Area					Grand Total
		south	north east	north	south east	centre	north west/ centre	Sub Total	west	south west	north east	north west	Sub Total	
	Detector	SMMB 223	SMMB 224	SMMB 225	SMMB 226	SMMB 228	SMMB229		SMMB 221	SMMB 222	SMMB 227	SMMB 230		
	Total Hours Recorded	358.13	258.00	374.75	366.45	224.13	241.12		374.75	333.20	207.05	349.82		
Bat	Barbastelle	0.00	0.00	0.00	<0.01	0.00	0.00	<0.01	0.00	0.00	0.00	<0.01	<0.01	<0.01
	Brown long-eared	0.06	0.02	0.03	0.02	0.00	0.11	0.24	0.18	0.08	0.07	0.15	0.49	0.72
	Common pipistrelle	4.38	17.25	12.44	13.51	12.80	3.92	64.30	4.56	3.93	81.41	5.55	95.45	159.74



Bat Activity Survey Report

	Greater horseshoe	0.07	0.00	0.02	0.03	0.04	0.02	0.18	0.33	0.03	0.00	0.03	0.40	0.57
	<i>Myotis</i> sp.	5.35	0.96	0.67	0.84	1.91	12.83	22.56	3.54	0.42	0.59	4.73	9.28	31.84
	Nathusius' pipistrelle	0.01	0.18	0.18	0.05	0.05	0.00	0.47	0.01	0.02	0.48	0.00	0.51	0.98
	Noctule	0.91	2.59	2.50	3.67	2.56	0.20	12.43	2.12	2.76	1.38	3.65	9.91	22.35
	<i>Nyctalus</i> sp.	0.01	0.01	0.01	0.03	0.00	0.00	0.06	0.03	0.02	0.00	0.03	0.07	0.14
	Serotine	0.09	0.03	0.00	0.05	0.01	0.02	0.21	0.06	0.81	0.02	0.12	1.02	1.22
	Soprano pipistrelle	6.59	7.10	10.61	12.09	25.52	16.74	78.65	9.64	28.98	10.31	37.72	86.66	165.31
	Grand Total	17.47	28.13	26.47	30.29	42.90	33.85	179.10	20.49	37.04	94.28	51.98	203.78	382.89

Table C 3 Number of Bat Passes Per Hour by Detector Location – June to July Recording Period

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	186.70	186.70	186.70	186.70	169.20	186.70	
Bat passes per hour	Brown long-eared	0.27	0.07	0.13	0.07	0.05	0.09	0.68
	Common pipistrelle	1.47	15.20	18.31	13.49	3.45	3.34	55.26
	Greater horseshoe	0.04	0.00	0.01	0.00	0.00	0.01	0.05
	<i>Myotis</i> sp.	1.19	0.26	0.26	3.78	0.32	4.28	10.09
	Nathusius' pipistrelle	0.00	0.02	0.01	0.01	0.00	0.00	0.03
	Noctule	1.22	4.08	3.54	5.19	6.74	1.15	21.91
	<i>Nyctalus</i> sp.	0.02	0.06	0.02	0.10	0.09	0.01	0.30
	Serotine	1.34	0.12	0.07	0.74	0.23	0.08	2.59
	Soprano pipistrelle	8.76	8.89	8.55	17.54	7.71	25.79	77.23
	Grand Total	14.31	28.69	30.90	40.91	18.60	34.74	168.15

Table C 4 Number of Bat Passes Per Hour by Detector Location –July to August Recording Period

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	185.58	265.70	175.82	71.93	81.12	156.47	
Bat passes per hour	Barbastelle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Brown long-eared	0.05	0.02	0.09	0.04	0.02	0.25	0.46
	Common pipistrelle	1.90	15.17	9.57	20.81	37.37	13.31	98.13
	Greater horseshoe	0.04	0.00	0.01	0.03	0.00	0.01	0.10



Bat Activity Survey Report

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	185.58	265.70	175.82	71.93	81.12	156.47	
	<i>Myotis</i> sp.	2.83	0.75	0.73	9.27	0.51	7.09	21.19
	Nathusius' pipistrelle	0.00	0.00	0.00	0.04	0.07	0.00	0.12
	Noctule	1.10	2.10	7.25	4.99	4.80	0.40	20.64
	<i>Nyctalus</i> sp.	0.02	0.12	0.36	0.42	0.21	0.09	1.22
	Serotine	0.20	0.23	2.26	0.53	0.23	0.24	3.70
	Soprano pipistrelle	21.28	13.28	7.13	39.88	12.18	29.57	123.32
	Grand Total	27.43	31.67	27.41	76.01	55.39	50.96	268.88

Table C 5 Number of Bat Passes Per Hour by Detector Location –August-to September Recording Period

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	Detector failed	215.37	215.37	156.43	76.67	191.60	
Bat passes per hour	Brown long-eared	Detector failed	0.03	0.14	0.15	0.01	0.09	0.42
	Common pipistrelle		15.55	2.06	12.23	9.23	9.92	48.99
	Greater horseshoe		0.00	0.01	0.03	0.01	0.00	0.05
	<i>Myotis</i> sp.		1.00	1.43	1.09	1.04	15.02	19.60
	Noctule		4.34	0.39	1.04	0.80	0.08	6.65
	<i>Nyctalus</i> sp.		0.35	0.02	0.07	0.03	0.02	0.48
	Serotine		0.82	0.13	0.29	0.03	0.09	1.35
	Soprano pipistrelle		8.94	2.31	19.11	17.88	23.49	71.73
	Grand Total		31.05	6.49	34.00	29.03	48.71	149.28

Table C 6 Number of Bat Passes Per Hour by Detector Location – September- October Recording Period

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	63.18	63.18	63.18	63.18	63.18	63.18	
Bat passes per hour	Barbastelle	0.05	0.05	0.02	0.08	0.06	0.02	0.27
	Brown long-eared	0.40	0.25	0.09	0.13	0.02	0.09	0.98
	Common pipistrelle	1.14	3.93	2.12	1.98	2.37	7.20	18.74



Bat Activity Survey Report

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	63.18	63.18	63.18	63.18	63.18	63.18	
	Greater horseshoe	0.51	0.02	0.00	0.02	0.05	0.00	0.59
	<i>Myotis</i> sp.	1.93	0.14	0.36	0.17	0.25	9.62	12.49
	Nathusius' pipistrelle	0.11	0.02	0.02	0.22	0.13	0.06	0.55
	Noctule	0.57	0.82	0.14	1.80	0.32	0.11	3.77
	<i>Nyctalus</i> sp.	0.00	0.21	0.11	0.21	0.44	0.14	1.11
	Serotine	0.16	0.17	0.08	0.14	0.02	0.06	0.63
	Soprano pipistrelle	1.28	5.32	3.80	7.26	7.45	20.73	45.85
	Grand Total	6.14	10.92	6.74	12.01	11.11	38.05	84.97

Table C 7 Number of Bat Passes Per Hour by Detector Location – October Recording Period

	Location	south	north east	north	south east	centre	north west/ centre	Grand Total
	Detector	SMMB223	SMMB224	SMMB225	SMMB226	SMMB228	SMMB229	
	Total Hours Recorded	237.18	266.32	70.13	41.23	14.33	167.02	
Bat passes per hour	Brown long-eared	0.08	0.01	0.06	0.12	0.07	0.07	0.41
	Common pipistrelle	1.62	4.40	0.63	37.86	0.07	1.41	45.98
	Greater horseshoe	0.01	0.02	0.00	0.02	0.00	0.00	0.05
	<i>Myotis</i> sp.	2.12	0.45	0.40	8.25	0.28	4.55	16.04
	Noctule	0.31	0.42	0.10	1.29	0.00	0.04	2.15
	<i>Nyctalus</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Serotine	0.05	0.06	0.01	0.02	0.00	0.02	0.17
	Soprano pipistrelle	3.92	2.37	2.04	36.94	0.00	3.96	49.23
	Grand Total	8.10	7.73	3.24	84.49	0.42	10.05	114.03

