



Bat Surveys Report

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Prepared by:
Pure Ecology and Stantec

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Bat Surveys Report

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Prepared by:

Signature
Anton Kattan

Printed Name

Reviewed by:

Signature
Helen Evriviades

Printed Name

Approved by:

Signature
Hilal Uflaz

Printed Name



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1 Introduction

1.1 Overview

- 1.1.1 Stantec UK Limited (Stantec) was commissioned by National Grid Electricity Transmission (NGET) to undertake bat surveys of an area of land owned by NGET at Margam, Neath Port Talbot; hereafter referred to as 'the Site'. and the land to the south of the Site, owned by BOC Ltd, hereafter referred to as 'the BOC land'.

1.2 Project Context

Site Location and Description

- 1.2.1 The Site is located in Margam, Port Talbot, at approximate central grid reference SS 78658 86270. The Site comprises an existing substation to the east of the Tata Steel Works and Network Rail railway line; the Site also lies to the south of the Tata Steel Sports and Social Club (golf course), to the west of woodland and to the north of the BOC Ltd works area and fields owned by BOC Ltd. Beyond the immediate Site surroundings, the M4 corridor lies to the east, Swansea Bay lies to the west, Eglwys Nunydd Reservoir to the south and Margam town to the north.
- 1.2.2 The BOC land considered in this report lies immediately to the south of the Site, between the Site and the road to the north of the Eglwys Nunydd Reservoir, Heolcae'r Bont. The location of the Site and the BOC land is shown in **Figure 1**.

Description of Works

- 1.2.3 The Site and the BOC land are proposed for an extension to the existing substation and associated cabling works, with the substation extension proposed to the east of the existing substation within the Site and cabling works passing through the Site and the BOC land. The proposed substation extension and associated works within the Site will be progressed under a planning application. The cabling and associated temporary works to link the proposed new substation extension at Margam to the Port Talbot Steelworks will be progressing under NGET's permitted development rights.

Historic Project Understanding and Ecological Context

- 1.2.4 The Site was subject to a successful prior planning application for a new substation which received planning consent in 2009. However, the development was not progressed by NGET. A suite of ecological surveys, including habitat surveys, were completed during the course of 2008 to inform the planning application. The results of the survey work were presented within the Margam 275kV Substation Environmental Report (National Grid 2009).

1.3 Objectives

- 1.3.1 The purpose of this bat survey report is to
1. Set out the methods for the desk study and field survey.
 2. Detail the results of the desk study and field survey and provide ecological baseline, and assessment of bat habitat value of the Site and the BOC land.
 3. Discuss the value of the habitats on the Site and the BOC land for local bat populations in the context of the Site and local area, with reference to both the desk study and field survey results.



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4. Provide a high-level overview of recommendations and identify any opportunities for ecological mitigation or enhancements for the proposed development and any future works associated with it, to enable legal and policy compliance



2 Methods

2.1 Desk Study

- 2.1.1 A 2 km data search was requested from South East Wales Biodiversity Records Centre (SEWBRc), the local biological records centre in October 2024. To ensure that the information is as current as possible, records within the last ten years were considered most relevant. However, records older than this were analysed for their potential relevance to the Site.
- 2.1.2 The citation for the *Junction 38 Wetland Complex* Site of Importance for Nature Conservation (SINC), in which the Site lies, has been reviewed to provide contextual information.
- 2.1.3 A report of previous bat surveys of Tata steel land to the west of the Site by RSK (2004) have been reviewed to obtain data on local bat populations. The report presents the findings of a suite of bat surveys including preliminary roost assessments (structures and trees), aerial surveys (trees), emergence surveys (structures) and activity surveys. carried out on land at Tata Steelworks in Port Talbot, South Wales (central Grid Ref SS 77524 86021). Furthermore, information pertaining to known bat roosts provided by Neath Port Talbot Council during consultation meetings in 2025 are also taken into account in this Report.

2.2 Survey Area

- 2.2.1 The survey area covers two contiguous but distinct areas. The Site, which is owned by NGET and is the location for the Proposed Development, and the BOC land which is a linear strip running south from the Site and is the route through which the cabling will run (**Figure 1**).
- 2.2.2 The survey area also includes an assessment of trees along the northern access road to substation and along Heolcae'r Bont Road to the south (See **Figure 2**).

2.3 Ground- Level Tree Assessment for Bat Roosts

- 2.3.1 The Ground Level Tree Assessment (GLTA) entailed a walkover of the Site and the BOC land to identify trees with potential roost features (PRFs) that may be impacted by tree works required for the works and/or to provide access for plant machinery to the Site. The GLTA survey area is shown on **Figure 2**. The GLTA catalogues the roost resource for the trees identified as supporting features suitable for roosting bats, as shown on **Figure 3**. The approach is based on bat survey guidelines provided by the Bat Conservation Trust (Collins, 2023), with particular reference to Chapter 6 that advises on 'Surveying Woodlands and Trees for Bats'. The GLTA survey was undertaken on the 6th March 2025 when trees were not in leaf and there was good visibility through the trees' canopy. Examples of the type of features inspected are:
- rot holes and cavities;
 - woodpecker holes;
 - splits and cracks in branches, such as storm damaged limbs;
 - loose bark;
 - thick-stem ivy; and
 - twisted and entwined limbs.
- 2.3.2 In addition to the GLTA, PRF's that were accessible from the ground were surveyed using an endoscope to examine the cavity space, allowing the surveyor to look for bats (or evidence of bats) and estimate the size of the hollow/ crack.



- 2.3.3 The presence of bats and potential of bat roost features in trees was evaluated according to the criteria specified in **Table 1**. Trees are categorised according to the highest value of any one potential bat roost feature it supports. The evaluation criteria consider the potential for trees to support a bat roost of conservation importance (i.e. moderate or high potential bat roost features).

Table 1. Evaluation Criteria for Bat Roost Features in Trees

Value	PRF Category	Criteria
Confirmed	Confirmed	Bats observed sheltering in the roost feature. Bat droppings collected from the cavity or opening and confirmed through DNA analysis.
High	PRF-M	Large dry cavity with the potential to support a colony of bats during the breeding season or winter hibernation. Feature with smooth or stained timber that may indicate previous use as a bat roost.
Moderate	PRF-M	Tree with an array of features that collectively may provide a significant roost resource for bats. Tree within a woodland context with features that may be important for rarer, tree dwelling bat species. Consideration should be given to the known, or likely diversity of bats recorded at the site.
Low	PRF-I	Features that are unsuitable for breeding bats or hibernation and are only large enough to provide shelter for individual or very low numbers of animals.
Negligible (or None)	Negligible	Large tree with decay, but detailed inspection did not find any suitable cavities for bats to shelter.

- 2.3.4 Weather at the time of survey was dry, bright and calm. There was partial cloud cover through the day (approximately 60% cover on average) and the daily temperature was around 12°C.

2.4 Bat Roost Survey of Buildings

Building Appraisal

- 2.4.1 An initial bat roost assessment of buildings B1-B4 shown on the plan of the existing substation (**Figure 4**) was undertaken on 6th March 2025 (see Para 2.3.4 for weather conditions). The survey was undertaken in accordance with Bat Conservation Trust guidelines (Collins, J (ed.), 2023) and included an internal inspection of B1 and external inspection of all the buildings (B1-B4) looking for signs of, or the potential for the buildings to support roosting bats. A high-powered torch, endoscope and binoculars were all available and were used where necessary to examine spaces, crevices and other small gaps suitable for roosting bats to occupy. Evidence of bat presence/occupation includes:
- droppings;
 - urine staining;
 - feeding remains (such as moth wings);
 - smudge marks and scratches around potential bat roost holes; and
 - live roosting bats, bat skeletal remains or dead bats.
- 2.4.2 Conditions indicating an absence of bats can include the presence of established spider webs, bird nesting material, wasp nests (especially blocking potential entrances) and live sheltering/hibernating butterflies/moths and other insects.

- 2.4.3 The suitability of the buildings to support roosting bats was classified according to the following categories, which help guide the survey requirements for professional standards to evaluate type and status of bat roosts, as recommended by The Bat Conservation Trust (Collins J (ed.), 2023):
- Category 1 - Negligible potential/not a roost: no suitable features.
 - Category 2 - Low potential: one or more suitable features that could be used by single, or very low numbers of bats opportunistically.
 - Category 3 - Moderate potential: one or more suitable features that could be regularly used by bats, but sub-optimal conditions may limit the potential for breeding or hibernating bats.
 - Category 4 - High potential: one or more roost features that are suitable for use by a colony of bats on a regular basis and may support a maternity or hibernation site.
 - Category 5 - Confirmed roost: evidence of current/recent bat occupation.

Nocturnal Presence/Absence Survey

- 2.4.4 The initial bat roost assessment from the visual inspection on the 6th March 2025 assessed two of the four target buildings (B1 and B2) as having low suitability for bats to shelter (Category 2), with roosting opportunities associated with small external gaps in the building fabric, buildings B3 and B4 have negligible bat roost potential and were assessed as Category 1 (as detailed in Section 3.4). One dusk nocturnal survey of buildings B1 and B2 was therefore undertaken in accordance with guidance for professional survey standards (Collins J (ed.), 2023), which advocates a proportionate level of survey for buildings with the potential to support roosting bats.
- 2.4.5 The dusk survey of buildings B1 and B2 was undertaken on the 5 June 2025 to determine presence, or likely absence of roosting bats during the breeding season, when maternity roosts are formed. The timings and weather conditions for the bat survey are shown in **Table 2**.
- 2.4.6 The two surveyor and two remote camera observation positions shown on **Figure 4** provided suitable coverage of all building elevations with potential bat roost features, which are also shown on **Figure 4** by Target Notes.
- 2.4.7 Each surveyor was equipped with a Nightfox Whisker Night Vision Aid (NVA) and Wildlife Acoustic EM Touch Pro full-spectrum bat detector. Canon XA11 Infra-Red (IR) cameras with IR torches and lamps that "illuminate" the cameras' field of view were used as remote, fixed position cameras. The cameras' field of view is shown in **Appendix A**.
- 2.4.8 Two Wildlife Acoustic's Song Meter (SM) 4 detectors that record bat echolocation calls on time-stamped files were used to monitor bat activity around building B1. The SM4s were placed close to the building to monitor bat activity within the cameras' field of view. The time-stamped files with bat call recordings can then be linked to the roost emergence time of bats seen emerging from the building.
- 2.4.9 Wildlife Acoustic's Kaleidoscope computer software (version 5.3.9) was used for analysis of bat calls for species identification from the acoustic data recorded on the EM Touch Pro and SM4 bat detectors.



Table 2. Nocturnal Bat Survey of Buildings

Date	Survey Period (hrs)	Sunset (hrs)	Weather
5 th June 2025	21:05- 22:55	21:24	Temp range 14-15°C, 80% cloud Wind BF 2 (with gust of BF 3) Dry
BF – Beaufort Scale			

2.5 Night-time Bat Walkover Survey

- 2.5.1 Within the Site and the BOC land, a walked transect route with seven "station stops" for visual observations and acoustic data recording was undertaken in April, May and July 2025.
- 2.5.2 The Night-time Bat Walkover (NBW) adopted the following survey principles recommended in the Bat Conservation Trust's good practice guidelines for professional ecologists (Collins, 2023):
- Ideally all habitats represented on site should be sampled.
 - Surveyors should be on site and stationed before sunset.
 - The surveyors should not start walking around the site before 30 minutes after sunset and the starting time (up to 60 minutes after sunset) should be determined by live observations in the field.
 - Surveyors should follow a pre-determined route taking acoustic recordings and recording a time-stamped narrative about their observations.
 - Stops and/or detours along the route may be appropriate to observe bat behaviour.
 - Portable Night Vision Aids can be used when light levels are low.
 - All echolocation calls should be recorded and subsequently analysed for species or genus identification.
- 2.5.3 The NBW followed a safe transect through the Site and the BOC land that traverses the major habitat types to record bat activity and behaviour using acoustic and observational survey methods. The transect route is shown on **Figure 5** and followed mown paths around the reedbeds, ditches and scattered scrub in the northern section of the Site and a track that runs through the grassland (and fields with hedgerow boundaries) in the BOC land. Due to the difficult terrain (dense reedbed-dominated vegetation and dense willow scrub across much of the site), deviations were not taken from the transect route, but seven pre-defined 10-minute station stops were included along the route to regularly record observations on bat activity across the Site. The survey covered a circa 2.5 hour period after sunset.
- 2.5.4 Bat activity was continuously recorded on a Wildlife Acoustic EMTouch Pro bat detector (hereafter referred to as the 'EMTouch'). The unit records the ultrasonic calls of bats and logs the time and location [with GPS fix] of the contact with the bat.
- 2.5.5 A Canon XA camera with infra-red (IR) mode and Nightfox Whisker night vision binoculars were used as night vision aids for observing bat activity at each of the seven station stops. Three Nightfox Arc IR floodlights were positioned around the station stop observation area to help increase visibility in shaded habitats (such as along hedge lines). One surveyor continuously watched for bat activity using the night vision aids, whilst a second surveyor used the bat detector as an acoustic aid to locate bats and direct observations to where bat activity



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was occurring. The surveillance survey recorded activity according to the following observations:

- number of bats;
- flight behaviour (direct/ straight line or multiple/meandering flight patterns);
- apparent bat behaviour (e.g. Social calls or “feeding buzzes”); and
- direction of flight and/or use of habitat features by bats.

2.5.6 The timings of the surveys are provided in **Table 3**.

Table 3. NBW Survey Details

Date (2025)	Sunset (hrs)	Survey Period (hrs)	Commencement of walked transect (hrs)	Weather conditions
16 th April	20:14	20:10-23:10	21:04	Temperature range 9-10°C 10% cloud, dry Light wind (BF2)
12 th May	20:54	20:50-23:45	21:28	Temperature range 14-15°C 50% cloud, dry Light breeze (BF1)
23 rd July	21:18	21:15-00:05	22:05	Temperature range 16-17°C 75% cloud, dry Light wind (BF2)
Notes: Temperature range calculated from readings taken at the start and end of the survey period. Abbreviations: BF Beaufort Scale				

2.6 Static Automated Bat Detector Surveys

2.6.1 Remote, unattended bat detector recording units (termed bat ‘data loggers’) were deployed at the Site and the BOC land to obtain quantitative data on bat activity. The SM Mini Bat 2 made by Wildlife Acoustics was used for the monitoring. Six ‘data loggers’ (ref. DL1-DL6) were used each month to gather at least five consecutive monitoring nights each month between April-August 2025 during the following deployments:

- 11th – 15th April (5 nights);
- 9th – 14th May (6 nights);
- 5th - 11th June (7 nights);
- 10th - 22nd July (13 nights);
- 5th - 11th August (7 nights).

2.6.2 This totals 228 monitoring nights over the study period.

2.6.3 **Figure 5** shows the distribution of DL1-DL6 across the Site and the BOC land, with the data loggers placed in the following positions:

- DL1 and DL4 – Scrub margins of the Upper Mother Ditch and linked ditch within the reedbeds and marshy grassland / scrub in the northern area of the of the Site.



- DL2 and DL3 – Placed on the boundary fence to the “Early Works” area (associated with Permitted Development works within the Site), within reedbed habitats (with scattered/dense scrub).
- DL5 – Dense scrub at the margins of the BOC land.
- DL6 – Scrub/ margins of grassland (including marshy grassland within former grazing marsh) within the BOC land.

2.6.4 Photographs provided in **Appendix B** show the surrounding habitats of the data logger locations.

2.6.5 The dataloggers are triggered by the bat's (ultrasonic) echolocation call and record continuously over the duration of bat activity. This information was used to produce a database of bat activity (see Para 2.6.8) within the Site and the BOC land throughout the study period. Each datalogger unit was programmed to be active each night between dusk and dawn and captured at least five monitoring nights per month from each of the six datalogger locations shown on **Figure 5**. The datalogger deployment provides seasonal coverage during the bat breeding season, covering the early period when bats are transitioning between winter and summer roosts (April/early May) and when maternity roosts have formed and including the period when juvenile bats are in flight (late July/ August)¹.

Data Recording and Processing

2.6.6 The SM Mini Bat 2 data loggers use omnidirectional ultrasonic microphones and were set at 384 kHz sampling rate for recording bat calls within the frequency range 10 - 150 kHz. The unit automatically activates when there is a trigger above 16kHz for a period of over 0.05 seconds. The data loggers are triggered by the bat's (ultrasonic) echolocation call and record continuously over the duration of bat activity. The unit is set up to save bat sound recordings of 15-second duration sound files for analysis. Each sound file records a sequence of echolocation calls from a passing bat/s, or if there is constant activity in the vicinity of the datalogger consecutive sound files will be created for the duration of the activity.

2.6.7 The SM Mini Bat 2 captures 16-bit full spectrum recordings, recording data on a high capacity SDHC card. The recordings were analysed using Kaleidoscope Pro software, by Wildlife Acoustic (v5.3.9). The software has an automatic recogniser to classify bat calls into batches (according to species identification). Once classified, the systems operator manually verified the bat calls.

Data Interpretation and Presentation

2.6.8 The SM Mini Bat 2 collected raw data in the form of sound file recordings of bat calls. Sound files were analysed using the Kaleidoscope software to produce data giving the date, time, location and species of each bat echolocation detected. This information was used to produce a database of bat activity across the Site and the BOC land during the April and May study period, using the "acoustic activity index" method presented by Miller (2001). The data captured by the data loggers was used to derive the presence or absence of bat activity for each species at each logger location. The data was coded by grouping activity into one-minute time intervals to give a per-minute presence/absence 'bat activity index' (BAI). If one or more bat echolocations was recorded within a one minute interval, bat activity per minute was set to '1'. If no activity was recorded within a one minute time interval, bat activity per minute was set to '0'. It was then possible to derive hourly, daily and monthly BAI for species. The BAI is analogous to the number of minutes within each hour that bats are present and this metric provides count data showing the maximum level of bat activity. A BAI 1 is also generated by a bat passing the data logger (and is equivalent to the term “bat pass”, which is sometimes used to describe bat activity).

¹ Post-natal flight (i.e. the first flight outside the roost by pups) typically occurs when bats are around six weeks old.



2.7 Survey Limitations

- 2.7.1 There was no access to the internal areas within buildings B2-B4 at the electrical substation. These buildings do not however have roof spaces (or underground voids) and furthermore the external survey established there were not any access points for bats to the building interiors. The building assessment could therefore determine with adequate certainty that roosting opportunities for bats within the substation buildings are associated with external gaps and voids in the building fabric [of B1 and B2].
- 2.7.2 The GLTA surveyed trees within the Site and the BOC land and alongside the road verges in the survey area shown on **Figure 2** that may be impacted by trees works to provide suitable vehicle access to the Site and the BOC land. The focus along the access routes was the trees positioned immediately adjacent to the carriageway or those with canopy branches overhanging the road, as these are at the greatest risk of being impacted. Discussion was undertaken with NGET's contractors and Laing O'Rourke in 2025 to help determine the survey areas required to enable access along Heol Cae'r Bont Road and along the access road to the north.
- 2.7.3 Due to safety considerations, field work for nocturnal surveys was restricted to working areas and pre-defined routes identified during daytime walkovers, avoiding site hazards that include uneven and marshy ground conditions (with trip hazards), dense and thorny vegetation, open water and steep sided ditches. This survey limitation often precluded sampling bat activity in more sheltered habitats and/or hazardous features such as the wet ditches, which can provide navigational flight routes and the good quality feeding areas for bats on the wing. This limitation is a consideration when interpreting the NBW survey findings but is also countered by the multiple static monitoring locations which include such habitats in their immediate surroundings.

2.8 Personnel

- 2.8.1 All bat surveys were undertaken by Mr. Anton Kattan MCIEEM, a professional ecologist and Natural Resources Wales (NRW) licenced bat surveyor who has 25 years' of experience, with assistance from Mr. Dominic Hill, an ecologist with seven years' professional experience. Ms. Anna Gundrey MCIEEM assisted with the nocturnal presence/absence bat surveys of buildings. Ms. Gundrey is a professional ecologist and NRW licenced bat surveyor with 29 years' experience.

2.9 Report Qualification

- 2.9.1 All survey work and reporting were undertaken by experienced and qualified ecologists, in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management (CIEEM, 2022).
- 2.9.2 The surveys described here were undertaken in accordance with the best practice methodologies current at the time of commissioning. Site circumstances, scientific knowledge or methodological requirements can change during the course of a project, and these external factors may impact on the scope of subsequent work requirements.
- 2.9.3 It should be noted that all ecological surveys have an expected validity period owing to the tendency of the natural environment to change over time. This validity period varies depending on the ecological feature and is also dependent on the degree of change in a site's management and overall landscape ecology. Where the potential for change is considered to be relevant to the Site, it is highlighted within the report below. Bat roost and bat activity data is generally considered valid for 24 months (2 years).
- 2.9.4 This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.



3 Results

3.1 Overview

- 3.1.1 The baseline information presented in this report establishes the likely absence of bat roosts within trees and buildings at the Site and the BOC land, or within trees adjacent to access routes to the Site that may be impacted by the scheme, and provides an evaluation of the described bat roost resource. Nocturnal bat activity surveys between April and August provide seasonal information on commuting and foraging behaviour within the habitats that are present at the Site and the BOC land, which includes historic grazing marsh that is now reedbeds and scattered scrub grading to grassland, with the southern half of the BOC land consisting of two grassland fields divided by linear scrub. The scrub now forms dense stands of willow scrub.

3.2 Desk Study

- 3.2.1 The desk study information provided by SEwBReC returned 95 records of bat species; of the 95 records, 26 are from roosts, all within the Margam Country Park SINC, and include the following species: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, whiskered *Myotis mystacinus*, brown long-eared *Plecotus auratus*, lesser horseshoe *Rhinolophus hipposideros*, Daubenton's *Myotis daubentonii*, noctule *Nyctalus noctule* and Nathusius' pipistrelle *Pipistrellus nathusii*. The closest roost records are of common pipistrelle, soprano pipistrelle, whiskered and brown long-eared located approximately 1 km east of the Site boundary within Margam cottage. The lesser horseshoe roost record is for a maternity roost within the Margam Park apple store, located approximately 1.2 km east of the Site boundary.
- 3.2.2 Margam Country Park SINC is noted to support bats of 14 species, including lesser horseshoe, greater horseshoe *Rhinolophus ferrumequinum* and barbastelle *Barbastella barbastellus*.
- 3.2.3 Surveys conducted for Tata Steel land to the west of the Site in 2023 and 2024 identified no roosting bats, however, activity surveys identified at least five species using the area for foraging and commuting.
- 3.2.4 Neath Port Talbot Council's (NPTC's) Ecologist advised of a recent record of a lesser horseshoe roost (likely maternity roost) at Kenfig Industrial Estate, approximately 2.5 km south of the Site. NPTC's ecologist also advised of a further lesser horseshoe roost in a farm building less than 1 km to the east. A review of the information relating to that record via the planning portal identified that this record related to a single lesser horseshoe bat.

3.3 Ground- Level Tree Assessment

- 3.3.1 There were no trees with PRF's within the potential impact zone in the northern section of the survey area (the Site and northern access route), shown on **Figure 2 and 3**.
- 3.3.2 The GLTA identified thirteen trees within southern section of the survey area along Heol Cae'r Bont Road and two trees/outgrown scrub in the BOC Land which could be potentially impacted by the permitted development works, as shown on **Figure 3**. No evidence of current or previous bat roost activity was recorded in the trees and the results of the roost appraisal are provided in **Table 4** with photographs of the PRFs along Heol Cae'r Bont Road in **Appendix B**.



Table 4. Trees with Bat Roost Potential

Tree			Potential Roost Features	
Ref	Species	Description	Description	Evaluation
T1	Oak	Mature tree 10m H with DBH 0.8m	Two PRF-I: - Dead, broken branch 2.5m AGL on east side of the tree - Broken end of large limb 1.5m AGL on north side of the tree	Low
T2	Willow	Mature tree 10m H with DBH 0.3m	Two PRF-I: - Hazard beam 0.5m AGL on south side of the tree - Hazard beam with central split in upper limb 3.5m AGL on north-east side of the tree	Low
T3	Willow	Mature tree 12m H with DBH 0.25m	Three PRF-I: - Hazard beam 1m AGL on west side of the tree - Hazard beam 1.5m AGL on north side of the tree - Hazard beam 2m AGL on south side of the tree	Low
T4	Oak	Mature tree 15m H with DBH 0.75m	PRF-M - Lifted bark on north side of trunk with large cavity space 2.5m AGL. Typical feature used by barbastelle bat PRF-I – dead wood in canopy 4m AGL	High
T5	Oak	Mature tree 15m H with DBH 0.65m	PRF-I - Thick stem ivy plant with lifted plates on large limbs 3-4m AGL on west side of tree	Low
T6	Willow	Early mature tree (fallen) DBH 0.25m	PRF-I -Splits in two large limbs 1.5m AGL.	Low
T7	Oak	Mature tree 18m H with DBH 0.4m	PRF-M - Significant decay in trunk with deadwood features (including rot holes and limb break) from 1.5m-5m AGL and access holes on east and west side of the tree.	Moderate
T8	Oak	Mature tree 18m H with DBH 0.5m	PRF-I – Limb break with cavity hole in small branch overhanging road, 5m AGL on southwest side of tree	Low
T9	Willow	Mature tree 10m H with DBH 0.35m	PRF-M – Hazard tree with break in main stem 4m AGL and cavities in this damaged section on west side of tree PRF-I – crack in stem 3.5m AGL on southwest side of tree	Moderate
T10	Oak	Mature tree 15m H with DBH 0.7m	Three PRF-M: - One limb tear 2.5m AGL on east side of tree - One limb tear 3m AGL on southeast side of tree - Hazard beam 4m AGL on south side of tree	High
T11	Ash	Mature tree 18m H with DBH 0.5m	PRF-M – Limb tear 6m AGL on west side of tree PRF-I – Limb tear 2m AGL	Moderate
T12	Oak	Mature tree 9m H with	PRF-I - narrow, shallow split in limb near ground level	Low



Tree			Potential Roost Features	
Ref	Species	Description	Description	Evaluation
		DBH c.0.8m		
T13	Sycamore	Mature tree 17m H with DBH 0.4m	PRF-M – shear plane crack in trunk 4m AGL on southwest side of tree	Moderate
T14	Within outgrown hedge/scrub	Within outgrown hedge/scrub	PRF-I - Low split trunk – dbh 60cm	Low
T15	Within outgrown hedge/scrub	Within outgrown hedge/scrub	PRF-M - Split stem/rot hole	Moderate
Abbreviations: H – Tree Height; DBH – Diameter at Breast Height AGL – height of PRF Above Ground Level PRF-I potential roost feature for individual or very low numbers of bats PRF-M potential roost feature for multiple bats, including colony roosts.				

3.4 Bat Roost Survey of Buildings

Preliminary Bat Roost Appraisal of Buildings

- 3.4.1 Buildings within the electrical substation are modern, utilitarian buildings with a simple construction. Two buildings for staff and amenity facilities are B1 and B2. They have an identical construction with solid, sealed brick walls and flat roof with felt cover. The eaves have PVC fascia and the top of the walls are capped with concrete slabs. The buildings have tightly sealed metal doors and PVC windows, with concrete lintels.
- 3.4.2 The design of buildings B1 and B2 is generally unfavourable for bats as they do not have a roof space and the simplistic exterior details do not have any notable architectural features that would provide shelter for bats. There are also floodlights on both buildings, with four lamps on two elevations of B1 and two lamps on each elevation of B2 for external lighting. These external lamps have PIR motion sensors and illuminate all aspects of the buildings when activated. Photographs of the buildings are provided in **Appendix B**.
- 3.4.3 There is no access for bats to the building interiors of B1 and B2. Opportunities for bats to gain access to external crevice features and voids is limited to the following features, which are shown by target notes on **Figure 4** (with photographs in **Appendix B**):

Building B1

- Gap at the edge of the felt overhang – approximately 15-20mm wide continuous gap that is up to 10cm deep.
- Regular indentations between concrete slabs provides 20mm x 15mm size holes at the base of the PCV fascia. Several of these holes are blocked with dirt and cobwebs, but others remain open.
- Broken corner cover on boxed uPVC eaves.
- Gap in the corner of the boxed eaves provides access behind the fascia.
- Missing mortar between bricks provides a cavity space for individual or very low numbers of bats

Building B2



1. Gap at the edge of the felt overhang – approximately 15-20mm wide continuous gap that is up to 10cm deep.
 2. Regular indentations between concrete slabs provides 20mm x 15mm size holes at the base of the PCV fascia.
 3. A 20mm wide unmortared gap between the concrete slabs at the top of the wall.
 4. Lifted Section of uPVC fascia.
- 3.4.4 Buildings B1 and B2 have been classified as Category 2 (low potential) for roosting bats. Subsequent emergence survey of these buildings (B1 and B2) undertaken in June 2025 recorded no bats emerging from either building and therefore bats are considered likely absent from these buildings.

Buildings B3 and B4

- 3.4.5 Building B3 is a small toilet block with a flat roof and sealed sheet material walls. A photograph of the building is provided in **Appendix B**. It has no bat roost potential and is classified as Category 1 (negligible potential).
- 3.4.6 Building B4 houses the diesel generator. It is a boxed metal structure (similar in appearance to a portacabin construction). A photograph of the building is provided in **Appendix B**. It has no bat roost potential and is classified as Category 1 (negligible potential).

Nocturnal Presence/Absence Survey

- 3.4.7 No bats emerged from buildings B1 or B2 during the dusk survey on the 5th June 2025. It can be concluded with reasonable certainty that roosting bats are absent, and the buildings (B1 and B2) are not a roost (Category 1).
- 3.4.8 There was very low bat activity within the immediate vicinity of buildings B1 and B2. There are high levels of lighting due to security lights on the buildings (which are shown on photographs in **Appendix B**, including an image of building B1 at night). The only species recorded during the bat survey was common pipistrelle, with surveyors observing bats very occasionally passing through the substation, but bat activity was mostly concentrated along the woodland/scrub edge of the access track to the west that is outside the substation security fencing. There was frequent common pipistrelle foraging activity along the track.

3.5 Nocturnal Bat Activity Surveys

Night-time Bat Walkover

- 3.5.1 The NBW recorded common and soprano pipistrelle activity within habitats along the transect route in April, May and June. Noctule bat was the only other species recorded during the transect, with one record/ detection recorded in May and two records/ detections recorded in July. The distribution of bat activity along the transect route is shown on **Figure 6** [April], **Figure 7** [May] and **Figure 8** [July].
- 3.5.2 Bat activity in April was very low, with most records being common pipistrelles. Soprano pipistrelles were recorded at two locations in April, the first being on the Upper Mother Ditch (north-eastern area of the Site) at the start of the transect and the second being at station stop 7, adjacent to woodland at the southern end of the BOC land.

There was an increase in pipistrelle activity in May, with the number of records/ detections of bats considered to be associated with foraging activity due to there being more multiple passes of bats observed on the IR camera and occasional “feeding buzz” acoustic recordings. Bat activity along the NBW transect route reduced in July with the distribution map (**Figure 8**) showing most activity concentrated along the ditches at the northern end of the Site. This



mostly appears to be associated with relatively low number of soprano pipistrelles foraging in this location. Individual bats were observed foraging up and down the ditches, often flying over the channel where they could feed on insects. Activity was often centred around sections of the ditch where there was overhanging tree/ scrub canopy.

The diversity of bat species recorded between April and July remained low, although it is recognised that only the drier, more accessible habitats could be sampled during the NBW (see Section 2.7). The difference in bat activity between April and May was the wider distribution of soprano pipistrelles. The subsequent reduction in activity in July coincides with the time of year female bats have more contracted home ranges around their maternity roosts [due to having dependent young].

Overall, the frequency and distribution of bat activity was comparable for both common and soprano pipistrelles, indicating that they are present in all habitats in similar numbers. The presence of noctule was recorded (May and July), but this species was very infrequent and there was no sustained activity at the Site recorded during the NBW. The low number of noctule activity records was considered to be from commuting bats passing over the Site, and there was no evidence of foraging.

Static Automated Bat Detector Surveys

Species Assemblage

- 3.5.3 The monthly data logger monitoring between April and August (recording simultaneously at DL1-6 shown on **Figure 5**) recorded the seven bat species listed below:
- lesser horseshoe;
 - common pipistrelle;
 - soprano pipistrelle;
 - brown long-eared;
 - noctule;
 - *Myotis* sp.; and
 - serotine *Eptesicus serotinus*.
- 3.5.4 The monthly data logger results are summarised in **Appendix C**. The diversity of bat species recorded each month was comparable, with the exception that serotine was not recorded in April or July. However, serotine was only recorded at two data logger locations, being present at DL 1 in May, June and August and DL 2 in August [only]. With a peak monthly BAI 2, the occurrence of this species is infrequent and therefore the Site and the BOC land is not considered to be within an important population home range territory for serotine.
- 3.5.5 Common and soprano pipistrelles were the most regular species at the Site and the BOC land, occurring on every monitoring night between April and August. They also accounted for the majority of the bat activity recorded at the Site and the BOC land. The cumulative total bat activity over the whole study period shows that soprano pipistrelle is the more abundant species (with a total BAI 9,320 compared to 6,774 for common pipistrelle). The habitat preference for soprano pipistrelle foraging within wetland areas is likely to account for the relative abundance of activity by this species. Activity by both species was greatest in May with an average nightly BAI 83.4 for common pipistrelle and 90.6 for soprano pipistrelle. This compares with a range of 15.6 - 20.4 for the average nightly BAI of common pipistrelles June - August, and 20.2 - 41.2 for the average nightly BAI of soprano pipistrelles June - August. The lowest level of activity for both species was in April.



- 3.5.6 Noctule were recorded at every datalogger location during each survey month, with the exception of DL 5 in August. They were present during 138 of the 228 monitoring nights between April and August. They are therefore considered to be frequent. Nightly activity was however often low. Peak nightly activity occurred in July, when there was regular activity and a higher peak nightly activity with BAI 13. The data indicates there may be low levels of foraging activity in July, August and possibly June.
- 3.5.7 Brown long-eared were recorded at DL 1, DL 4 and DL 5. These dataloggers monitored areas with scrub/tree cover (as described in Para 2.6.3). They were most frequent at DL 1, being present every month other than June, and were present during two months of the five month study period at DL 4 and DL 5. Peak activity was at DL 1 in July with a monthly BAI 13, compared to a monthly BAI ≤ 4 at all other locations/months. This species can be under-recorded by acoustic surveys, but it appears to be confined to marginal areas with dense/continuous scrub and is not considered to be widespread or frequent at the Site or the BOC land.
- 3.5.8 Bat species in the genus *Myotis* sp. were recorded in all months other than June. Activity peaked in July with a monthly BAI 135 and was relatively high in August (monthly BAI 44) compared to April/May that had a monthly BAI ≤ 4 . The peaks in activity in July and August can be attributed to high nightly activity at DL 6, which is an indication of regular foraging activity. Whilst these species are widespread across the Site and the BOC land, having been recorded at every datalogger location, nightly activity at most data logger locations was low and is therefore likely to be commuting bats with very low/intermittent bouts of foraging. There does not appear to be widespread, sustained foraging activity throughout the Site or the BOC land. This genus of bats cannot be accurately identified to species level, but several of the calls did have characteristic traits often associated with Daubenton's bat. This species is often associated with wetland habitats, which are present within the survey area. Although species-level identification of bat calls is not feasible, the relatively low observed bat activity suggests that the diversity of bat species within the genus *Myotis* sp. is also likely to be limited.
- 3.5.9 Lesser horseshoe were recorded in April (DL 1 and DL 5), May (DL 3, DL 5 and DL 6), July (DL 3) and August (DL 1 and DL 2). The monthly BAI for lesser horseshoe was BAI 16 [April], BAI 11 [May], BAI 1 [July] and BAI 2 [August]. Given the elevated conservation status of lesser horseshoe, further details of the lesser horseshoe activity are provided below.

Lesser horseshoe

- 3.5.10 Lesser horseshoe activity was highest in April, with a monthly BAI 16, followed by May [monthly BAI 11]. The level of lesser horseshoe activity during the subsequent monitoring months then noticeably reduced, with no records of activity in June and monthly activity in July and August of BAI 1 and BAI 2, respectively.
- 3.5.11 The highest BAI in April was at DL 5 [BAI 14], which accounted for 87.5% of the monthly activity recorded over the entire Site and BOC land (DL 1-DL 6). Peak lesser horseshoe activity in May was at location DL 6 [BAI 8], which accounted for 72.2% of the monthly total for the entire Site and BOC land.
- 3.5.12 Lesser horseshoe activity in April and May was predominantly towards the BOC land and was recorded at data logger locations [DL 5 and DL 6] placed within habitats that have good tree and scrub cover (see Section 2.6.2 and the location photographs in **Appendix B**). The presence of lesser horseshoes at location DL 1 in April [monthly BAI 2], DL 3 in May and July [monthly BAI 2 and BAI 1, respectively], and DL 1 and DL 2 in August [monthly BAI 1 at both locations] confirms this species is distributed across the Site and the BOC land, but a peak nightly activity of BAI 2 at these locations indicates solitary bats are passing/ commuting and there was no regular or sustained nightly activity that would indicate foraging, or more complex behaviour (such as social flights).



3.5.13 The nightly lesser horseshoe activity each month is summarised as follows:

April

- Present on six of the 30 monitoring nights (at two locations), which is 20% of the monthly monitoring period.
- The peak nightly BAI [BAI 5] occurred on two of the monitoring nights between the 11th-16th April at DL 5.
- A nightly BAI 1 on three of the six monitoring nights is indicative of one commuting bat passing the location each night. That is, 50% of the nightly records are from one commuting bat passing a data logger location.

May

- Peak nightly activity is BAI 3, which occurred on one night (11th May) at DL 6.
- Present on eight of the 36 monitoring nights (at two locations), which is 22% of the monthly monitoring period.
- A nightly BAI 1 on six of the eight monitoring nights is indicative of one commuting bat passing the location each night. That is, 75% of the nightly records are from one commuting bat passing a data logger location.

June

- No lesser horseshoe activity recorded during the 42 monitoring nights in June.

July

- Peak nightly activity is BAI 1, which occurred on one night (22nd July) at DL 3. This was the only record of lesser horseshoe activity in July.
- Present on only one of the 78 monitoring nights in July [recorded at DL 3, as described above].

August

- Peak nightly activity is BAI 1, which occurred on two nights (6th August at DL 1 and 9th August at DL 2)
- Present on only two of the 42 monitoring nights in August [recorded at DL 1 and DL 2, as described above]

3.5.14 Nightly patterns of lesser horseshoe activity are summarised in **Appendix C** by presenting the hourly BAI of lesser horseshoe bat activity each night at the data logger locations (i.e. the level of lesser horseshoe activity each hour throughout the night).

3.5.15 The hourly BAI at DL 1 in April shows that lesser horseshoe were present during the first hour after sunset on two nights [hourly BAI 1 per night]. This timeframe is close to roost emergence times for this species, indicating there may be a roost close to the Site.

3.5.16 In May, there was one record of lesser horseshoe activity at DL 05 during the first hour after sunset [BAI 1]. All other lesser horseshoe activity was from the middle of the night.

3.5.17 In July and August, there was no lesser horseshoe activity during the first hour after sunset.



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- 3.5.18 All data of lesser horseshoe activity in the first hour after sunset was from very low levels of bat activity (i.e. low hourly BAI) and there was no regular or sustained use of habitat features at any of the data logger locations.



4 Interpretation of Results

- 4.1.1 The assemblage of bat species within the Site and the BOC land is considered relatively low for both the county (West Glamorgan) and wider region (South Wales). Using the method for assessing the importance of the bat assemblage recommended in the Bat Mitigation Guidelines (Reason and Wray, 2023), a Site score of 13 is achieved for the confirmed species. This is significantly below the threshold score of 20 set for sites of County importance in South Wales. Furthermore, a score below 20 would be achieved even if all four widespread species of bats in the genus *Myotis* spp. were to be included in the calculations.
- 4.1.2 The most notable species recorded at the Site and the BOC land is lesser horseshoe. This species' distribution across the Site and the BOC land is widespread but patchy, with lesser horseshoe activity often occurring where there are trees and scrub, particularly features such as along the edges of dense or linear scrub which meet the species' habitat preferences. Pipistrelles represented the most frequently observed, numerous, and widely distributed species, with soprano pipistrelle comprising 58% of recorded activity and common pipistrelle accounting for 42%. Noctule were also common, but there was no evidence of regular, sustained foraging activity and most records appear to be from bats passing over the Site and the BOC land. *Myotis* spp. occurred regularly, but there were very low levels of activity at all data logger locations. These species were most widely spread in August, when they were recorded at every data logger location. Brown long-eared have a patchy distribution across the Site and the BOC land, occurring at data logger locations DL 1, DL4 and DL 5. Whilst this species can be under recorded by acoustic surveys, the levels of activity at these data logger locations is low and there was no sustained nightly activity. Serotine was recorded in May, June and August. This species was infrequent, and activity was confined to the north-east of the Site, mostly being recorded at DL 1 but also present at DL 2; the species was not recorded from the BOC land. There was no evidence of sustained foraging activity by serotine at these data logger locations.
- 4.1.3 Both spatial and temporal patterns of lesser horseshoe activity are relatively low. Many of the records also appeared to be commuting bats. Higher levels of lesser horseshoe activity in the BOC land were at locations DL 5 and DL 6 in April and May. These data loggers were within suitable foraging habitats, and whilst low levels of foraging may occur (such as by individual or low numbers of bats), there was no evidence of sustained foraging or regularly used feeding areas within the Site or the BOC land. Furthermore, lesser horseshoe activity significantly reduced between June and August (see Para 3.5.13).
- 4.1.4 The data gathered for this study indicate that the Site and BOC land are not part of a Core Sustainance Zone for lesser horseshoe. There is no evidence to suggest regular use of the Site and the BOC land by lesser horseshoe, including those from the colony at Margam Park or the [potential] maternity roost at Kenfig Industrial Estate. Additionally, recorded activity of lesser horseshoe decreased during June to August, which coincides with the period when female bats give birth and rear their young. There are no lesser horseshoe roosts present on the Site or the BOC land and whilst small day roosts may be present within the immediate vicinity of the Site (such as in April/May when bats move between hibernation and breeding sites), it is not considered to be within a core home range area for this species (typically considered to be up to 2 km from a maternity roost).



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6 Figures

Figure 1: Site Location Plan

Figure 2: Ground Level Tree Assessment Survey Area

Figure 3: Ground Level Tree Assessment Results

Figure 4: Preliminary Roost Appraisal of Buildings

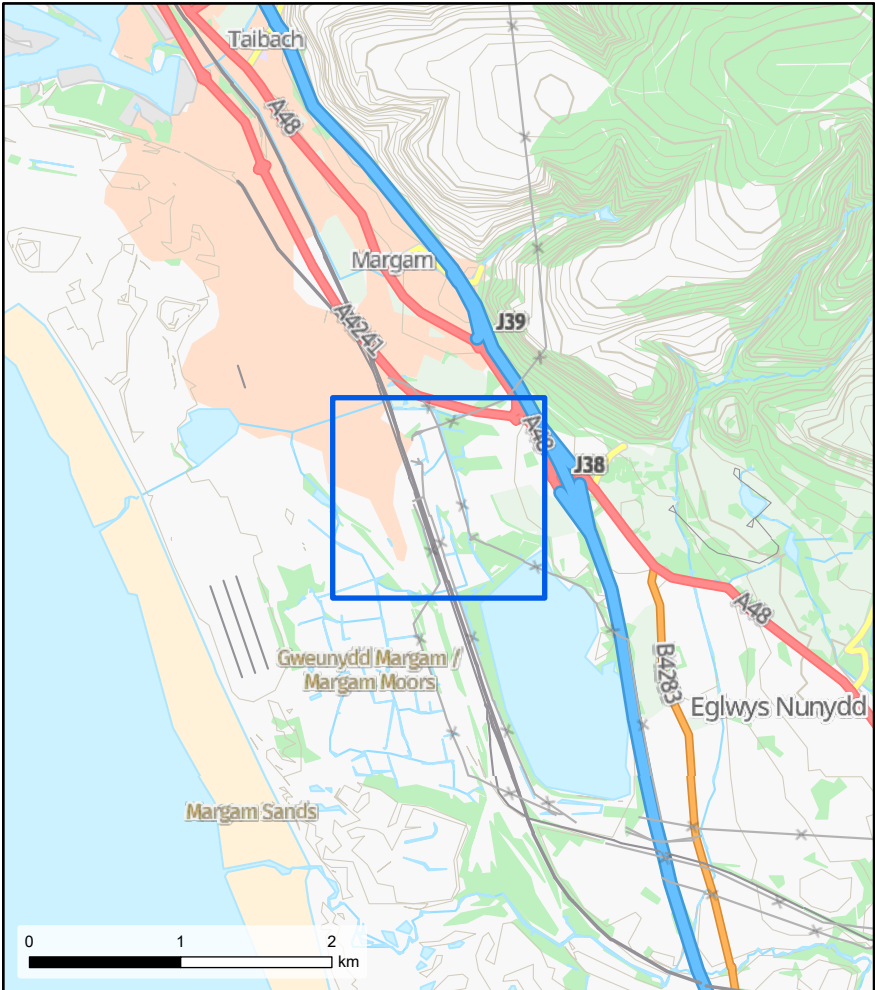
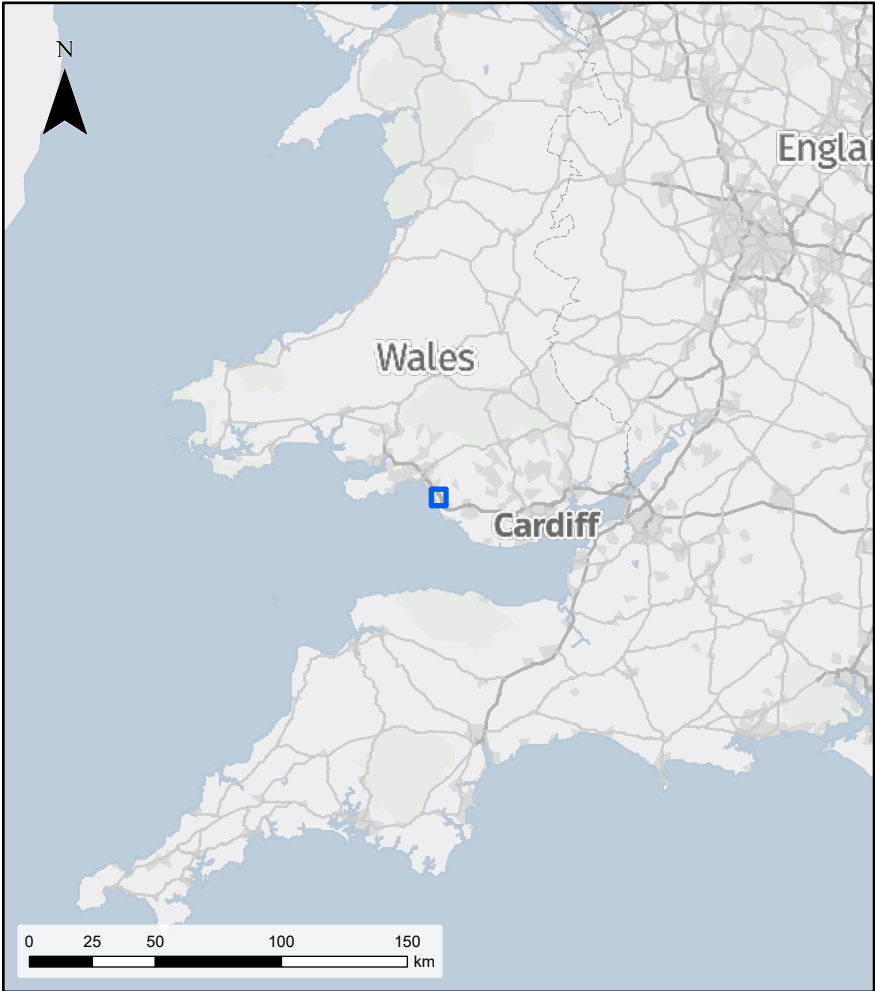
Figure 5: Night-time Bat Walkover Survey and Data Logger Locations

Figure 6: Bat Activity Recorded During Night-time Bat Walkover – April

Figure 7: Bat Activity Recorded During Night-time Bat Walkover – May

Figure 8: Bat Activity Recorded During Night-time Bat Walkover – July





	Client 	MARGAM PORT TALBOT Site Location Plan	Contains OS data © Crown Copyright and database right 2025 Contains data from OS Zoomstack, Imagery ©2024 Google, Imagery ©2024 Airbus, Imagery ©2024 TerraMetrics, Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024, Contains OS data © Crown Copyright and database right 2023 Contains data from OS Zoomstack		Date: 20/08/2025	
					Drawn: TL	Checked: HE
					Figure: 01	Rev: A



- Site Boundary
- BOC Land Boundary
- Ground Level Tree Assessment (GLTA) Study Area





- Site Boundary
- Location of PRF
- Target Note
- Building Surveyed
- Multiple/Repeat PRFs
- Surveyor Location
- Camera Location
- C1 Field of View
- C2 Field of View



- Site Boundary
- BOC Land Boundary
- Transect route
- Station Stops
- Data Logger



	Client MARGAM PORT TALBOT Bat Activity Recorded During Nighttime Bat Walkover – April	0 200 400 m Imagery ©2024 Google, Imagery ©2024 Airbus, Imagery ©2024 TerraMetrics, Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024	1:5,000 @ A3 Drawn: TL Figure: 06	Date: 20/08/2025 Checked: HE Rev: A
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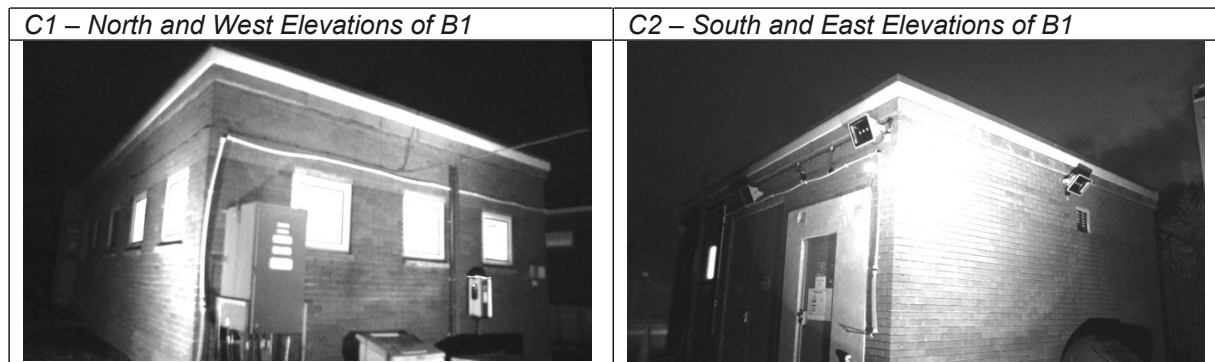


- Site Boundary
- BOC Land Boundary
- May Night-Time Bat Walkover Survey**
- Common pipistrelle
- Soprano pipistrelle
- Transect route



Appendix A Bat Survey IR Camera Fields of View

IR camera positions (C1 and C2) are shown on **Figure 4**.



Night-fox Whisker: Sample of the NVA view during the darkest period of the night survey



Appendix B Photographs

Tree Photographs

Tree Ref	PRF	Photograph
T1 Oak	Broken end of large limb 1.5m AGL on north side	 A photograph of a large, moss-covered tree limb that has broken off. A red arrow points to the broken end of the limb, which is hanging from the main trunk. The background shows a wooded area with bare trees and a clear blue sky.
T2 Willow	Hazard beams on tree	 A photograph of a willow tree with several large, moss-covered limbs. A red arrow points to a specific limb. An inset photograph in the bottom right corner shows a close-up of a broken limb lying on the ground, covered in moss and leaves.
T3	Hazard beams on tree	 A photograph of a tree with several large, moss-covered limbs. A red arrow points to a specific limb. Two inset photographs in the bottom left and bottom right corners show close-ups of broken limbs and moss-covered tree trunks.

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Tree Ref	PRF	Photograph
T4 Oak	Lifted bark and dead wood	
T5 Oak	Thick stem ivy	



Bat Surveys Report

Tree Ref	PRF	Photograph
T6 Willow	Splits in main trunks	 A photograph of a large, moss-covered Willow tree trunk. Two red arrows point to horizontal splits in the bark. The tree is surrounded by dense green ivy and other vegetation.
T7 Oak	Deadwood and decay in trunk	 A photograph of a large, moss-covered Oak tree trunk. Two red arrows point to horizontal splits in the bark. A blue rectangular box highlights a section of the trunk, and a red arrow points to a split within that section. The tree is surrounded by dense green ivy and other vegetation.

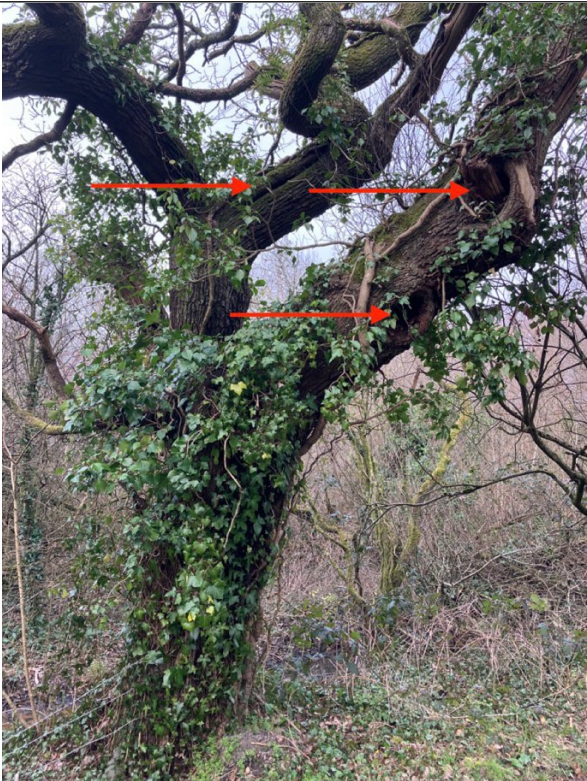


Bat Surveys Report

Tree Ref	PRF	Photograph
T8 Oak	One small limb break	 A close-up photograph of a large, moss-covered oak tree branch. A red arrow points to a small, jagged break in the bark of a limb.
T9 Willow	Hazard tree	 A photograph of a large, moss-covered willow tree in a wooded area. Two red arrows point to a significant, horizontal break in a large branch, indicating a hazard.



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Tree Ref	PRF	Photograph
T10 Oak	Hazard beam and limb tears	 A photograph of a large, mature oak tree with a thick trunk and several large, spreading limbs. The tree is heavily covered in green ivy. Three red arrows point to specific areas of concern: one points to a horizontal crack in the upper trunk, another points to a vertical crack in a large limb, and a third points to a horizontal crack in another limb. The background shows a dense forest of bare trees.
T11 Ash	Limb tear outs	 A photograph of a large, mature ash tree with a thick trunk and several large, spreading limbs. The tree is mostly bare, with some green leaves visible on the lower limbs. Two red arrows point to specific areas of concern: one points to a horizontal crack in the upper trunk, and another points to a vertical crack in a large limb. A blue rectangular box highlights a section of the tree trunk, and a red arrow points to a specific area within this box. The background shows a dense forest of bare trees.



Bat Surveys Report

Tree Ref	PRF	Photograph
T12 Oak	Split in ground level branch	
T13 Sycamore	One shear plane crack in trunk	



Building Photographs

Building B1	
South (front) and west (side) elevations with PRF 3	North (rear) and west (side) elevations with PRF 4
	
South (front) elevation PRF 5	PRF 1 – gap behind felt roof overhang
	
PRF 2 Regular gaps at base of fascia with concrete slab cap	Rest room facilities in B1
	

Bat Surveys Report

Building B2	
West (front) elevation of B2 – the building has the same construction as B1 with PRFs 6 & 7 at the edge of the roof. The inset image shows the building lit at night.	PRF 8 on the south elevation of B2
	
PRF 8 on the south elevation of B2	North (side) and east (rear) elevations of B2
	
Building B3 – Toilet facilities	Building B4 – Diesel generator
	

Data Logger Locations

Refer to **Figure 5** for data logger locations DL1-DL6.



Bat Surveys Report

DL5	DL6
 Photograph of DL5 site. A blue arrow points to a specific location on a tree trunk. An inset image shows a close-up of the tree trunk.	 Photograph of DL6 site. A blue arrow points to a specific location on a tree trunk.



Appendix C Static Automated Bat Detector Survey Results

Species Assemblage

The nightly BAI of bat species at all data logger locations (DL1-DL6) are presented below.

Bat Species Name Abbreviations	
EPSE – Serotine (<i>Eptesicus serotinus</i>)	PIPI – Common pipistrelle (<i>Pipistrellus pipistrellus</i>)
MYSP – <i>Myotis</i> sp.	PIPY – Soprano pipistrelle (<i>P. pygmaeus</i>)
NYNO – Noctule (<i>Nyctalus noctule</i>)	PLAUR – Brown long-eared (<i>Plecotus auritus</i>)
	RHHI – Lesser horseshoe (<i>Rhinolophus hipposideros</i>)

	April					
Location	Date	Species				
DL 1		NYNO	PIPI	PIPY	PLAUR	RHHI
	11/04/25	1	12	11	1	0
	12/04/25	0	26	19	1	1
	13/04/25	0	20	8	0	1
	14/04/25	1	8	10	0	0
	15/04/25	1	7	1	0	0
	Total	3	73	49	2	2
DL 2		MYOSP	NYNO	PIPI	PIPY	
	11/04/25	1	5	43	43	
	12/04/25	0	0	19	17	
	13/04/25	0	0	11	18	
	14/04/25	0	1	6	3	
	15/04/25	0	1	5	2	
	Total	1	7	84	83	
DL 3		NYNO	PIPI	PIPY		
	11/04/25	2	47	69		
	12/04/25	0	43	34		
	13/04/25	0	14	23		
	15/04/25	0	0	1		
	Total	2	104	127		
DL 4		NYNO	PIPI	PIPY	PLAUR	
	11/04/25	3	58	32	1	
	12/04/25	0	7	8	0	
	13/04/25	0	17	13	0	
	14/04/25	1	7	9	0	
	15/04/25	1	4	5	0	
	Total	5	93	67	1	
DL 5		MYOSP	NYNO	PIPI	PIPY	RHHI
	11/04/25	1	2	103	91	5



Bat Surveys Report

	April					
Location	Date	Species				
	12/04/25	0	0	78	40	4
	13/04/25	0	0	56	29	5
	14/04/25	0	0	2	7	0
	15/04/25	0	1	17	59	0
	Total	1	3	256	226	14
DL 6		MYOSP	NYNO	PIPI	PIPY	
	11/04/25	1	3	161	171	
	12/04/25	0	2	66	86	
	13/04/25	0	2	48	30	
	14/04/25	0	0	1	1	
	15/04/25	0	0	1	2	
	Total	1	7	277	290	

	May						
Location	Date	Species					
DL 1		EPSE	MYOSP	NYNO	PIPI	PIPY	PLAUR
	09/05/2025	0	0	3	58	63	0
	10/05/2025	0	0	2	93	55	1
	11/05/2025	0	0	6	130	65	1
	12/05/2025	1	2	1	192	64	0
	13/05/2025	0	0	1	8	2	1
	14/05/2025	0	0	0	96	64	0
	Total	1	2	13	577	313	3
DL 2		NYNO	PIPI	PIPY			
	09/05/2025	1	22	32			
	10/05/2025	2	81	96			
	11/05/2025	1	45	35			
	12/05/2025	2	50	57			
	13/05/2025	1	8	12			
	14/05/2025	0	35	29			
	Total	7	241	261			
DL 3		NYNO	PIPI	PIPY	RHHI		
	09/05/2025	1	23	28	0		
	10/05/2025	1	23	43	1		
	11/05/2025	3	13	31	0		
	12/05/2025	2	14	42	1		
	13/05/2025	7	14	28	0		
	14/05/2025	0	13	33	0		
	Total	14	100	205	2		
DL 4		NYNO	PIPI	PIPY			
	09/05/2025	3	19	18			



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	May				
	10/05/2025	1	21	51	
	11/05/2025	1	27	25	
	12/05/2025	4	19	20	
	13/05/2025	7	22	12	
	14/05/2025	1	35	14	
	Total	17	143	140	
DL 5		NYNO	PIPI	PIPY	PLAUR
	09/05/2025	3	116	92	0
	10/05/2025	1	81	98	0
	11/05/2025	2	38	36	0
	12/05/2025	1	73	68	0
	13/05/2025	5	59	53	2
	14/05/2025	0	83	87	2
	Total	12	450	434	4
DL 6		MYOSP	NYNO	PIPI	PIPY
	09/05/2025	1	1	154	303
	00/01/1900	0	0	304	382
	11/05/2025	0	2	256	323
	12/05/2025	1	2	286	340
	13/05/2025	0	1	237	254
	14/05/2025	0	3	255	308
	Total	2	9	1492	1910

	June				
Location	Date	Species			
DL 1		EPSE	NYNO	PIPI	PIPY
	05/06/2025		2	7	3
	06/06/2025		3	46	28
	07/06/2025		4	18	8
	08/06/2025			33	51
	09/06/2025			8	8
	10/06/2025		3	22	23
	11/06/2025	1		31	24
	Total	1	12	165	145
DL 2		NYNO	PIPI	PIPY	
	05/06/2025	1	6	2	
	06/06/2025		22	18	
	07/06/2025	1	5	11	
	08/06/2025		23	17	
	09/06/2025		7	28	
	10/06/2025	3	44	24	
	11/06/2025		10	18	



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	June			
	Total	5	117	118
DL 3		NYNO	PIPI	PIPY
	05/06/2025	1	1	1
	06/06/2025	1	15	8
	07/06/2025	1	7	5
	08/06/2025		12	8
	09/06/2025		9	4
	10/06/2025	1	19	24
	11/06/2025		9	14
	Total	4	72	64
DL 4		NYNO	PIPI	PIPY
	05/06/2025	1	9	1
	06/06/2025	1	8	5
	07/06/2025		7	7
	08/06/2025		6	3
	09/06/2025		2	1
	10/06/2025	4	14	29
	11/06/2025	1	5	8
	Total	7	51	54
DL 5		NYNO	PIPI	PIPY
	05/06/2025	1	4	2
	06/06/2025		22	16
	07/06/2025		7	9
	08/06/2025		10	11
	09/06/2025		7	6
	10/06/2025	1	18	32
	11/06/2025		30	145
	Total	2	98	221
DL 6		NYNO	PIPI	PIPY
	05/06/2025		9	8
	06/06/2025		30	49
	07/06/2025		9	9
	08/06/2025	1	20	56
	09/06/2025		8	13
	10/06/2025	1	39	51
	11/06/2025	2	41	62
	Total	4	156	248

	July			
Location				
DL 1		NYNO	PIPI	PIPY
	10/07/2025	1	17	32
				PLAUR



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	July				
	11/07/2025	3	20	78	2
	12/07/2025	1	25	33	2
	13/07/2025	3	26	45	2
	14/07/2025		1	3	1
	15/07/2025		8	7	2
	16/07/2025	1	6	21	
	17/07/2025	2	15	27	
	18/07/2025	12	11	46	1
	19/07/2025	3	5	6	
	20/07/2025	8	4	19	
	21/07/2025		12	19	2
	22/07/2025	7	8	17	1
	Total	41	158	353	13
DL 2		MYOSP	NYNO	PIPI	PIPY
	10/07/2025		4	17	36
	11/07/2025		3	18	39
	12/07/2025		2	33	29
	13/07/2025		10	25	60
	14/07/2025			16	5
	15/07/2025			17	10
	16/07/2025		2	38	23
	17/07/2025		2	36	75
	18/07/2025		13	51	79
	19/07/2025			6	16
	20/07/2025	1	8	34	38
	21/07/2025		1	104	41
	22/07/2025		1	42	34
	Total	1	46	437	485
DL 3		NYNO	PIPI	PIPY	RHHI
	10/07/2025	3	18	42	
	11/07/2025	2	13	35	
	12/07/2025	2	17	28	
	13/07/2025	2	21	50	
	14/07/2025		5	6	
	15/07/2025		1	4	
	16/07/2025		31	36	
	17/07/2025	1	17	94	
	18/07/2025	3	33	47	
	19/07/2025		5	27	
	20/07/2025	5	17	50	
	21/07/2025	1	15	34	
	22/07/2025		12	33	1



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	July				
	Total	19	205	486	1
DL 4		NYNO	PIPI	PIPY	
	10/07/2025	3	13	46	
	11/07/2025	3	16	39	
	12/07/2025	3	27	31	
	13/07/2025	5	17	50	
	14/07/2025	2	1	1	
	15/07/2025		3	6	
	16/07/2025	1	25	32	
	17/07/2025	1	9	76	
	18/07/2025		16	48	
	19/07/2025	2	3	21	
	20/07/2025	3	11	48	
	21/07/2025	1	12	33	
	22/07/2025	1	10	23	
	Total	25	163	454	
DL 5		MYOSP	NYNO	PIPI	PIPY
	10/07/2025	1		9	27
	11/07/2025		1	8	20
	12/07/2025		1	5	21
	13/07/2025	1		3	17
	16/07/2025	2		13	22
	17/07/2025	2		17	62
	18/07/2025			15	38
	19/07/2025			7	27
	20/07/2025		5	29	43
	21/07/2025	1	1	33	36
	22/07/2025	2	1	16	59
	Total	9	9	155	372
DL 6		MYOSP	NYNO	PIPI	PIPY
	10/07/2025	32	7	23	38
	11/07/2025	6	2	19	33
	12/07/2025		3	14	22
	13/07/2025	40	1	8	22
	14/07/2025	1		38	13
	15/07/2025			3	3
	16/07/2025		2	27	47
	17/07/2025	4	1	20	106
	18/07/2025	6		20	75
	19/07/2025		1	10	17
	20/07/2025	20	2	40	50
	21/07/2025	5		4	16



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	July			
	22/07/2025	11		14
				39
	Total	125	19	240
				481

	August						
Location							
DL 1	EPSE	MYOSP	NYNO	PIPI	PIPY	PLAUR	RHHI
05/08/2025			1	8	20		
06/08/2025	1	2	3	15	37		1
07/08/2025		1	1	14	33	1	
08/08/2025				3	6	1	
09/08/2025			2	23	35		
10/08/2025		1	11	15	31		
11/08/2025			5	14	30	1	
Total	1	4	23	92	192	3	1
DL 2	EPSE	MYOSP	NYNO	PIPI	PIPY	RHHI	
05/08/2025			2	15	30		
06/08/2025				24	34		
07/08/2025				19	30		
08/08/2025				18	17		
09/08/2025			1	64	154	1	
10/08/2025		1	2	24	30		
11/08/2025	1		6	22	38		
Total	1	1	11	186	333	1	
DL 3	MYOSP	NYNO	PIPI	PIPY			
05/08/2025		5	16	27			
06/08/2025			13	22			
07/08/2025			6	14			
08/08/2025			9	10			
09/08/2025			34	43			
10/08/2025	4	1	26	37			
11/08/2025		4	14	26			
Total	4	10	118	179			
DL 4	MYOSP	NYNO	PIPI	PIPY	PLAUR		
05/08/2025			25	34	1		
06/08/2025		1	18	69			
07/08/2025			13	17			
08/08/2025			13	31			
09/08/2025		1	46	80			
10/08/2025	4		21	60			
11/08/2025	1	2	11	59			
Total	5	4	147	350	1		
DL5	MYOSP	PIPI	PIPY	PLAUR			



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	August				
	05/08/2025	5	23	49	1
	06/08/2025	1	14	41	
	07/08/2025		10	18	
	08/08/2025		2	5	
	09/08/2025		31	73	
	10/08/2025	5	41	71	1
	11/08/2025		10	25	
	Total	11	131	282	2
DL6		MYOSP	NYNO	PIPI	PIPY
	05/08/2025	4	1	42	58
	06/08/2025	2		10	30
	07/08/2025			3	19
	08/08/2025			5	25
	09/08/2025	3	3	55	126
	10/08/2025	10	5	61	109
	11/08/2025		3	6	26
	Total	19	12	182	393

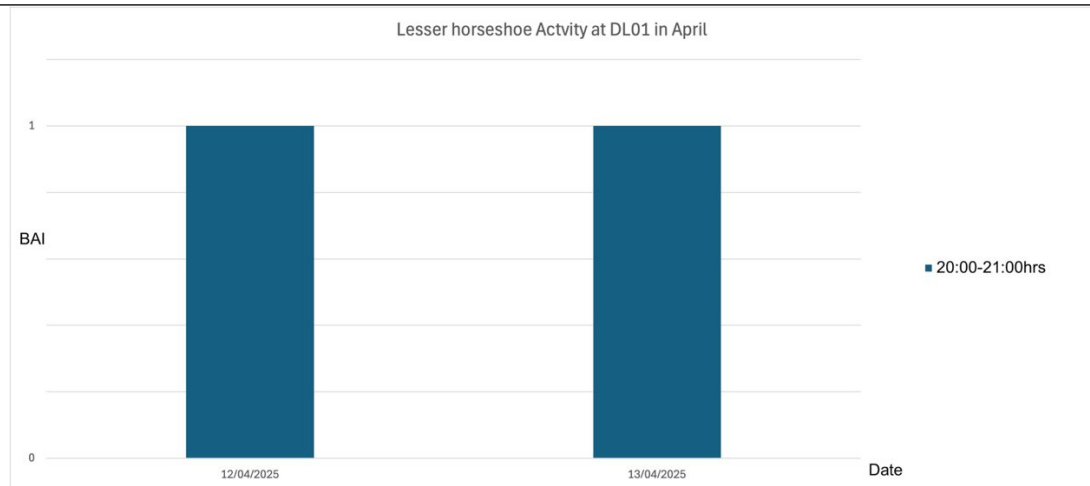


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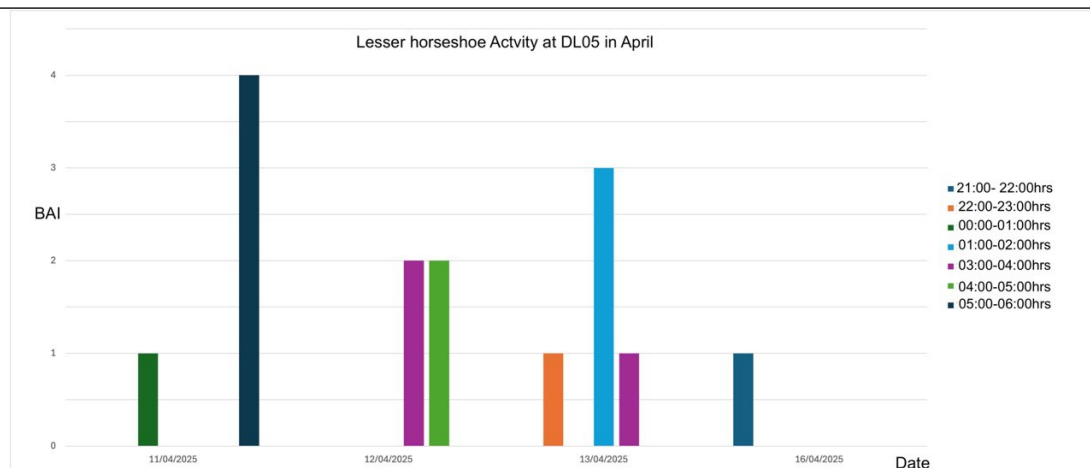
Lesser horseshoe Bat Nightly Activity

The following graphs and information present the hourly BAI per night for lesser horseshoe bats at the data logger locations they were recorded.

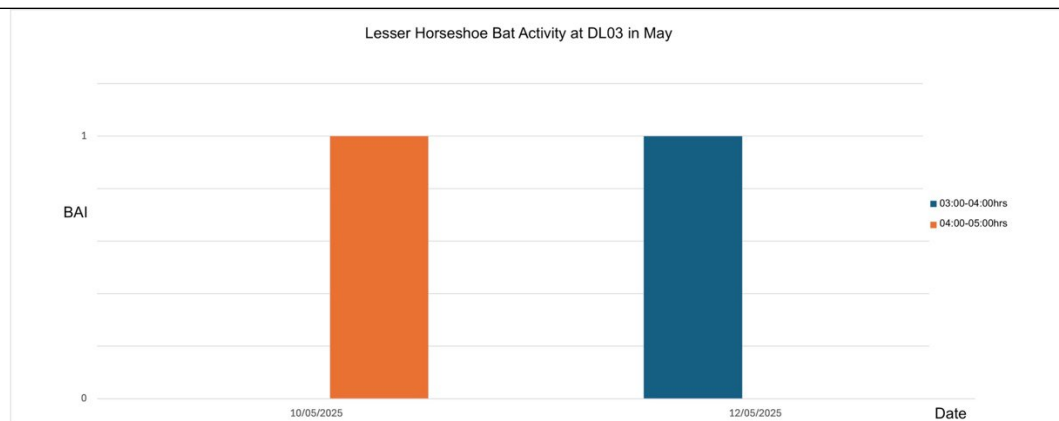
Data logger DL 1 – April



Data logger DL 5 – April

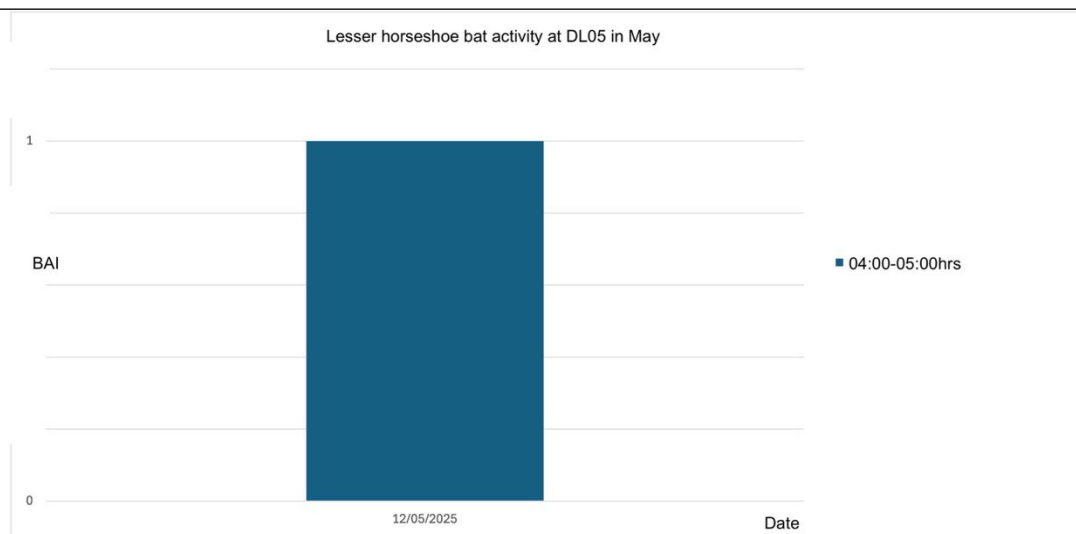


Data logger DL 3 – May

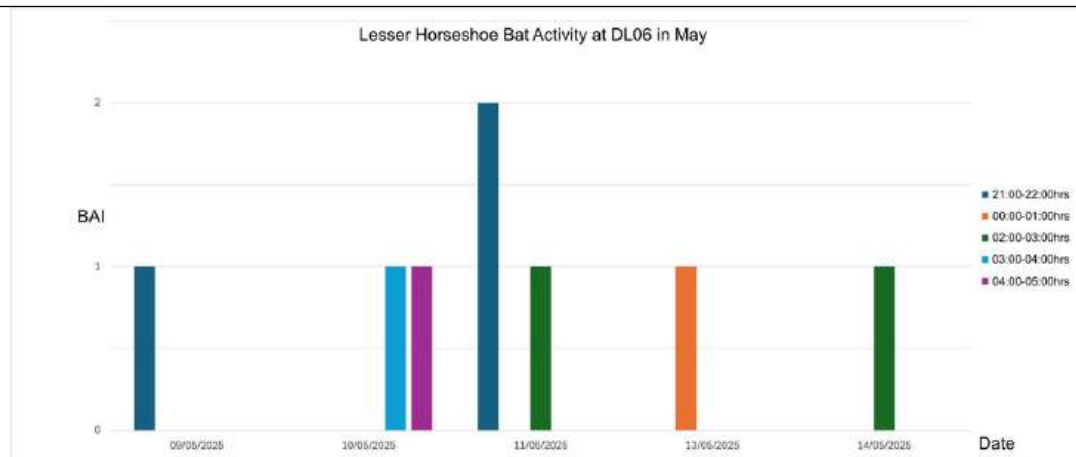


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Data logger DL 5 – May



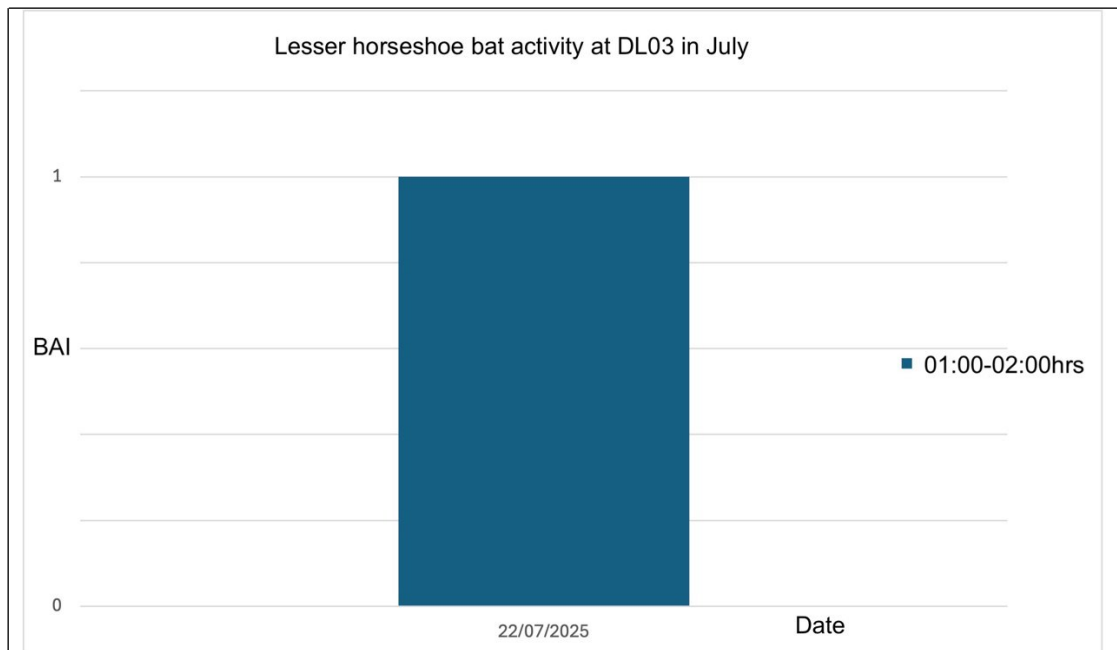
Data logger DL 6 – May



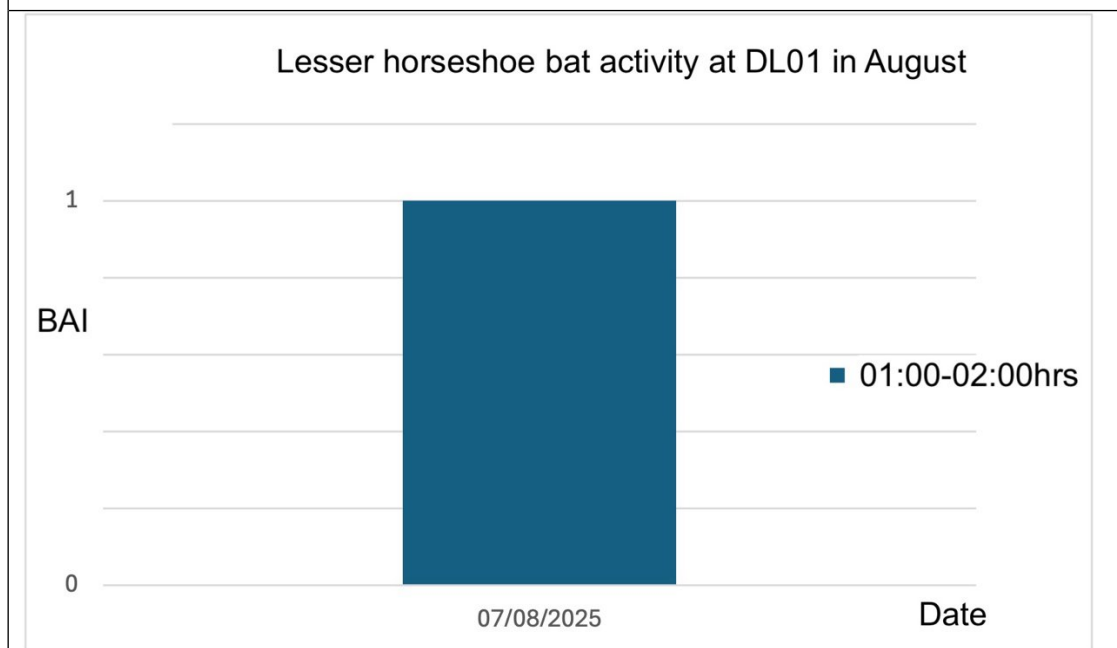
Data logger DL 3 - July



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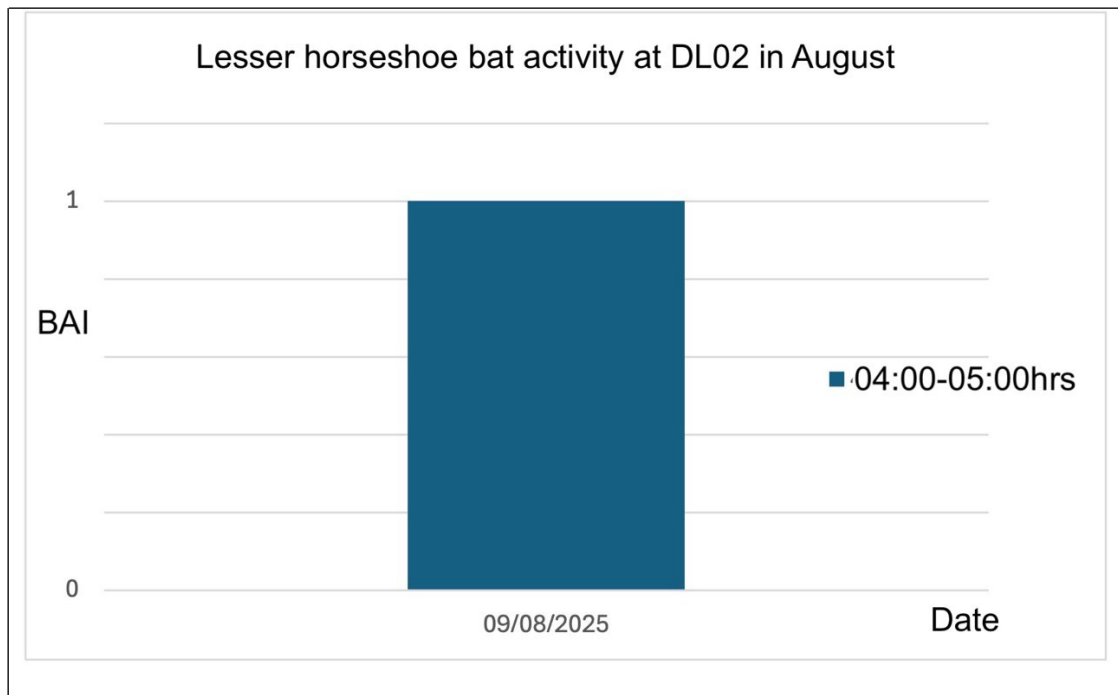
Data logger DL 1 - August



Data logger D L2 - August

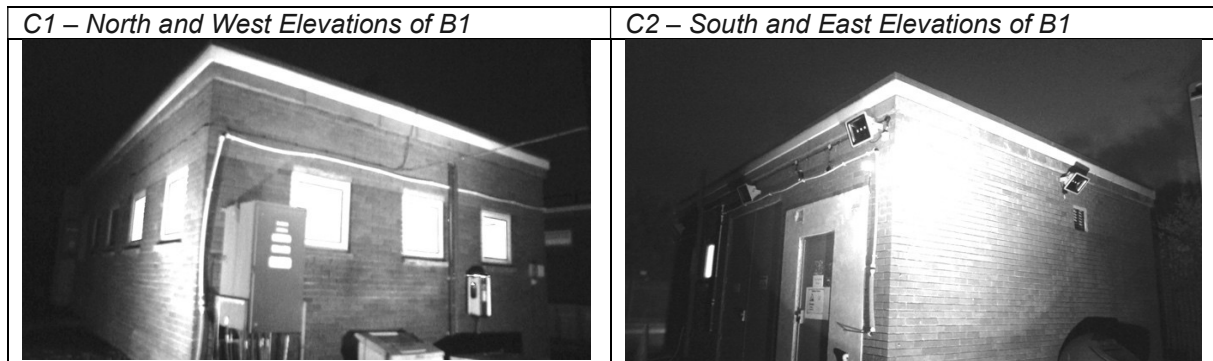


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Appendix A Bat Survey IR Camera Fields of View

IR camera positions (C1 and C2) are shown on Figure 4.



Night-fox Whisker: Sample of the NVA view during the darkest period of the night survey



Appendix B Photographs

Tree Photographs

Tree Ref	PRF	Photograph
T1 Oak	Broken end of large limb 1.5m AGL on north side	 A photograph of a large, thick, moss-covered tree limb that has broken off. A red arrow points to the broken end of the limb. The tree is situated in a wooded area with a fence visible in the background.
T2 Willow	Hazard beams on tree	 A photograph of a willow tree with several horizontal, moss-covered branches that could pose a hazard. A red arrow points to one of these branches. An inset photograph shows a close-up of a similar branch.
T3	Hazard beams on tree	 A photograph of a tree with several horizontal, moss-covered branches. A red arrow points to one of these branches. Two inset photographs show close-ups of similar branches.

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Tree Ref	PRF	Photograph
T4 Oak	Lifted bark and dead wood	
T5 Oak	Thick stem ivy	



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Tree Ref	PRF	Photograph
T6 Willow	Splits in main trunks	
T7 Oak	Deadwood and decay in trunk	

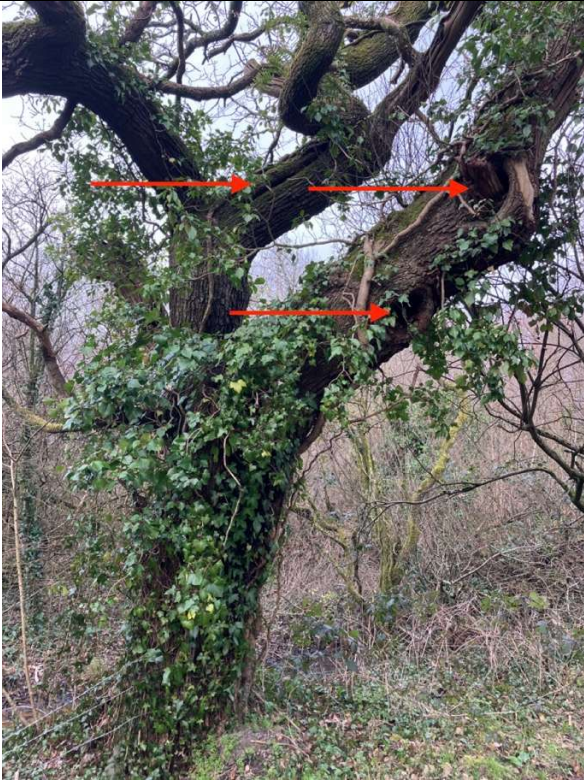


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Tree Ref	PRF	Photograph
T8 Oak	One small limb break	
T9 Willow	Hazard tree	



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Tree Ref	PRF	Photograph
T10 Oak	Hazard beam and limb tears	 A photograph of a large, mature oak tree with a thick trunk and several large, spreading limbs. The tree is heavily covered in green ivy. Three red arrows point to specific areas of concern: one points to a horizontal crack in the upper trunk, another points to a vertical crack in a lower limb, and a third points to a horizontal crack in a side limb. The background shows a dense forest of bare trees.
T11 Ash	Limb tear outs	 A photograph of a large, mature ash tree with a thick trunk and several large, spreading limbs. The tree is heavily covered in green ivy. Two red arrows point to specific areas of concern: one points to a horizontal crack in the upper trunk, and another points to a vertical crack in a lower limb. A blue rectangular box highlights a section of the tree trunk, and a red arrow points to a specific area of concern within this box. The background shows a dense forest of bare trees.



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Tree Ref	PRF	Photograph
T12 Oak	Split in ground level branch	
T13 Sycamore	One shear plane crack in trunk	



Building Photographs

Building B1	
South (front) and west (side) elevations with PRF 3	North (rear) and west (side) elevations with PRF 4
	
South (front) elevation PRF 5	PRF 1 – gap behind felt roof overhang
	
PRF 2 Regular gaps at base of fascia with concrete slab cap	Rest room facilities in B1
	

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Building B2	
West (front) elevation of B2 – the building has the same construction as B1 with PRFs 6 & 7 at the edge of the roof. The inset image shows the building lit at night.	PRF 8 on the south elevation of B2
	
PRF 8 on the south elevation of B2	North (side) and east (rear) elevations of B2
	
Building B3 – Toilet facilities	Building B4 – Diesel generator
	



Data Logger Locations

Refer to **Figure 5** for data logger locations DL1-DL6.



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DL5	DL6
 Photograph of DL5 site. A blue arrow points to a specific location on a tree trunk. An inset image shows a close-up of the tree trunk.	 Photograph of DL6 site. A blue arrow points to a specific location on a tree trunk. An inset image shows a close-up of the tree trunk.



Appendix C Static Automated Bat Detector Survey Results

Species Assemblage

The nightly BAI of bat species at all data logger locations (DL1-DL6) are presented below.

Bat Species Name Abbreviations	
EPSE – Serotine (<i>Eptesicus serotinus</i>)	PIPI – Common pipistrelle (<i>Pipistrellus pipistrellus</i>)
MYSP – <i>Myotis</i> sp.	PIPY – Soprano pipistrelle (<i>P. pygmaeus</i>)
NYNO – Noctule (<i>Nyctalus noctule</i>)	PLAUR – Brown long-eared (<i>Plecotus auritus</i>)
	RHHI – Lesser horseshoe (<i>Rhinolophus hipposideros</i>)

	April					
Location	Date	Species				
DL 1		NYNO	PIPI	PIPY	PLAUR	RHHI
	11/04/25	1	12	11	1	0
	12/04/25	0	26	19	1	1
	13/04/25	0	20	8	0	1
	14/04/25	1	8	10	0	0
	15/04/25	1	7	1	0	0
	Total	3	73	49	2	2
DL 2		MYOSP	NYNO	PIPI	PIPY	
	11/04/25	1	5	43	43	
	12/04/25	0	0	19	17	
	13/04/25	0	0	11	18	
	14/04/25	0	1	6	3	
	15/04/25	0	1	5	2	
	Total	1	7	84	83	
DL 3		NYNO	PIPI	PIPY		
	11/04/25	2	47	69		
	12/04/25	0	43	34		
	13/04/25	0	14	23		
	15/04/25	0	0	1		
	Total	2	104	127		
DL 4		NYNO	PIPI	PIPY	PLAUR	
	11/04/25	3	58	32	1	
	12/04/25	0	7	8	0	
	13/04/25	0	17	13	0	
	14/04/25	1	7	9	0	
	15/04/25	1	4	5	0	
	Total	5	93	67	1	
DL 5		MYOSP	NYNO	PIPI	PIPY	RHHI
	11/04/25	1	2	103	91	5



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	April					
Location	Date	Species				
	12/04/25	0	0	78	40	4
	13/04/25	0	0	56	29	5
	14/04/25	0	0	2	7	0
	15/04/25	0	1	17	59	0
	Total	1	3	256	226	14
DL 6		MYOSP	NYNO	PIPI	PIPY	
	11/04/25	1	3	161	171	
	12/04/25	0	2	66	86	
	13/04/25	0	2	48	30	
	14/04/25	0	0	1	1	
	15/04/25	0	0	1	2	
	Total	1	7	277	290	

	May						
Location	Date	Species					
DL 1		EPSE	MYOSP	NYNO	PIPI	PIPY	PLAUR
	09/05/2025	0	0	3	58	63	0
	10/05/2025	0	0	2	93	55	1
	11/05/2025	0	0	6	130	65	1
	12/05/2025	1	2	1	192	64	0
	13/05/2025	0	0	1	8	2	1
	14/05/2025	0	0	0	96	64	0
	Total	1	2	13	577	313	3
DL 2		NYNO	PIPI	PIPY			
	09/05/2025	1	22	32			
	10/05/2025	2	81	96			
	11/05/2025	1	45	35			
	12/05/2025	2	50	57			
	13/05/2025	1	8	12			
	14/05/2025	0	35	29			
	Total	7	241	261			
DL 3		NYNO	PIPI	PIPY	RHHI		
	09/05/2025	1	23	28	0		
	10/05/2025	1	23	43	1		
	11/05/2025	3	13	31	0		
	12/05/2025	2	14	42	1		
	13/05/2025	7	14	28	0		
	14/05/2025	0	13	33	0		
	Total	14	100	205	2		
DL 4		NYNO	PIPI	PIPY			
	09/05/2025	3	19	18			



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	<u>May</u>				
	10/05/2025	1	21	51	
	11/05/2025	1	27	25	
	12/05/2025	4	19	20	
	13/05/2025	7	22	12	
	14/05/2025	1	35	14	
	Total	17	143	140	
DL 5		NYNO	PIPI	PIPY	PLAUR
	09/05/2025	3	116	92	0
	10/05/2025	1	81	98	0
	11/05/2025	2	38	36	0
	12/05/2025	1	73	68	0
	13/05/2025	5	59	53	2
	14/05/2025	0	83	87	2
	Total	12	450	434	4
DL 6		MYOSP	NYNO	PIPI	PIPY
	09/05/2025	1	1	154	303
	00/01/1900	0	0	304	382
	11/05/2025	0	2	256	323
	12/05/2025	1	2	286	340
	13/05/2025	0	1	237	254
	14/05/2025	0	3	255	308
	Total	2	9	1492	1910

	<u>June</u>				
Location	Date	Species			
DL 1		EPSE	NYNO	PIPI	PIPY
	05/06/2025		2	7	3
	06/06/2025		3	46	28
	07/06/2025		4	18	8
	08/06/2025			33	51
	09/06/2025			8	8
	10/06/2025		3	22	23
	11/06/2025	1		31	24
	Total	1	12	165	145
DL 2		NYNO	PIPI	PIPY	
	05/06/2025	1	6	2	
	06/06/2025		22	18	
	07/06/2025	1	5	11	
	08/06/2025		23	17	
	09/06/2025		7	28	
	10/06/2025	3	44	24	
	11/06/2025		10	18	



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	<u>June</u>			
	Total	5	117	118
DL 3		NYNO	PIPI	PIPY
	05/06/2025	1	1	1
	06/06/2025	1	15	8
	07/06/2025	1	7	5
	08/06/2025		12	8
	09/06/2025		9	4
	10/06/2025	1	19	24
	11/06/2025		9	14
	Total	4	72	64
DL 4		NYNO	PIPI	PIPY
	05/06/2025	1	9	1
	06/06/2025	1	8	5
	07/06/2025		7	7
	08/06/2025		6	3
	09/06/2025		2	1
	10/06/2025	4	14	29
	11/06/2025	1	5	8
	Total	7	51	54
DL 5		NYNO	PIPI	PIPY
	05/06/2025	1	4	2
	06/06/2025		22	16
	07/06/2025		7	9
	08/06/2025		10	11
	09/06/2025		7	6
	10/06/2025	1	18	32
	11/06/2025		30	145
	Total	2	98	221
DL 6		NYNO	PIPI	PIPY
	05/06/2025		9	8
	06/06/2025		30	49
	07/06/2025		9	9
	08/06/2025	1	20	56
	09/06/2025		8	13
	10/06/2025	1	39	51
	11/06/2025	2	41	62
	Total	4	156	248

	<u>July</u>			
Location				
DL 1		NYNO	PIPI	PIPY
	10/07/2025	1	17	32
				PLAUR



Bat Surveys Report

	July				
	11/07/2025	3	20	78	2
	12/07/2025	1	25	33	2
	13/07/2025	3	26	45	2
	14/07/2025		1	3	1
	15/07/2025		8	7	2
	16/07/2025	1	6	21	
	17/07/2025	2	15	27	
	18/07/2025	12	11	46	1
	19/07/2025	3	5	6	
	20/07/2025	8	4	19	
	21/07/2025		12	19	2
	22/07/2025	7	8	17	1
	Total	41	158	353	13
DL 2		MYOSP	NYNO	PIPI	PIPY
	10/07/2025		4	17	36
	11/07/2025		3	18	39
	12/07/2025		2	33	29
	13/07/2025		10	25	60
	14/07/2025			16	5
	15/07/2025			17	10
	16/07/2025		2	38	23
	17/07/2025		2	36	75
	18/07/2025		13	51	79
	19/07/2025			6	16
	20/07/2025	1	8	34	38
	21/07/2025		1	104	41
	22/07/2025		1	42	34
	Total	1	46	437	485
DL 3		NYNO	PIPI	PIPY	RHHI
	10/07/2025	3	18	42	
	11/07/2025	2	13	35	
	12/07/2025	2	17	28	
	13/07/2025	2	21	50	
	14/07/2025		5	6	
	15/07/2025		1	4	
	16/07/2025		31	36	
	17/07/2025	1	17	94	
	18/07/2025	3	33	47	
	19/07/2025		5	27	
	20/07/2025	5	17	50	
	21/07/2025	1	15	34	
	22/07/2025		12	33	1



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	July				
	Total	19	205	486	1
DL 4		NYNO	PIPI	PIPY	
	10/07/2025	3	13	46	
	11/07/2025	3	16	39	
	12/07/2025	3	27	31	
	13/07/2025	5	17	50	
	14/07/2025	2	1	1	
	15/07/2025		3	6	
	16/07/2025	1	25	32	
	17/07/2025	1	9	76	
	18/07/2025		16	48	
	19/07/2025	2	3	21	
	20/07/2025	3	11	48	
	21/07/2025	1	12	33	
	22/07/2025	1	10	23	
	Total	25	163	454	
DL 5		MYOSP	NYNO	PIPI	PIPY
	10/07/2025	1		9	27
	11/07/2025		1	8	20
	12/07/2025		1	5	21
	13/07/2025	1		3	17
	16/07/2025	2		13	22
	17/07/2025	2		17	62
	18/07/2025			15	38
	19/07/2025			7	27
	20/07/2025		5	29	43
	21/07/2025	1	1	33	36
	22/07/2025	2	1	16	59
	Total	9	9	155	372
DL 6		MYOSP	NYNO	PIPI	PIPY
	10/07/2025	32	7	23	38
	11/07/2025	6	2	19	33
	12/07/2025		3	14	22
	13/07/2025	40	1	8	22
	14/07/2025	1		38	13
	15/07/2025			3	3
	16/07/2025		2	27	47
	17/07/2025	4	1	20	106
	18/07/2025	6		20	75
	19/07/2025		1	10	17
	20/07/2025	20	2	40	50
	21/07/2025	5		4	16



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	July			
	22/07/2025	11		14
				39
	Total	125	19	240
				481

	August						
Location							
DL 1	EPSE	MYOSP	NYNO	PIPI	PIPY	PLAUR	RHHI
05/08/2025			1	8	20		
06/08/2025	1	2	3	15	37		1
07/08/2025		1	1	14	33	1	
08/08/2025				3	6	1	
09/08/2025			2	23	35		
10/08/2025		1	11	15	31		
11/08/2025			5	14	30	1	
Total	1	4	23	92	192	3	1
DL 2	EPSE	MYOSP	NYNO	PIPI	PIPY	RHHI	
05/08/2025			2	15	30		
06/08/2025				24	34		
07/08/2025				19	30		
08/08/2025				18	17		
09/08/2025			1	64	154	1	
10/08/2025		1	2	24	30		
11/08/2025	1		6	22	38		
Total	1	1	11	186	333	1	
DL 3	MYOSP	NYNO	PIPI	PIPY			
05/08/2025		5	16	27			
06/08/2025			13	22			
07/08/2025			6	14			
08/08/2025			9	10			
09/08/2025			34	43			
10/08/2025	4	1	26	37			
11/08/2025		4	14	26			
Total	4	10	118	179			
DL 4	MYOSP	NYNO	PIPI	PIPY	PLAUR		
05/08/2025			25	34	1		
06/08/2025		1	18	69			
07/08/2025			13	17			
08/08/2025			13	31			
09/08/2025		1	46	80			
10/08/2025	4		21	60			
11/08/2025	1	2	11	59			
Total	5	4	147	350	1		
DL5	MYOSP	PIPI	PIPY	PLAUR			



Bat Surveys Report

	August				
	05/08/2025	5	23	49	1
	06/08/2025	1	14	41	
	07/08/2025		10	18	
	08/08/2025		2	5	
	09/08/2025		31	73	
	10/08/2025	5	41	71	1
	11/08/2025		10	25	
	Total	11	131	282	2
DL6		MYOSP	NYNO	PIPI	PIPY
	05/08/2025	4	1	42	58
	06/08/2025	2		10	30
	07/08/2025			3	19
	08/08/2025			5	25
	09/08/2025	3	3	55	126
	10/08/2025	10	5	61	109
	11/08/2025		3	6	26
	Total	19	12	182	393

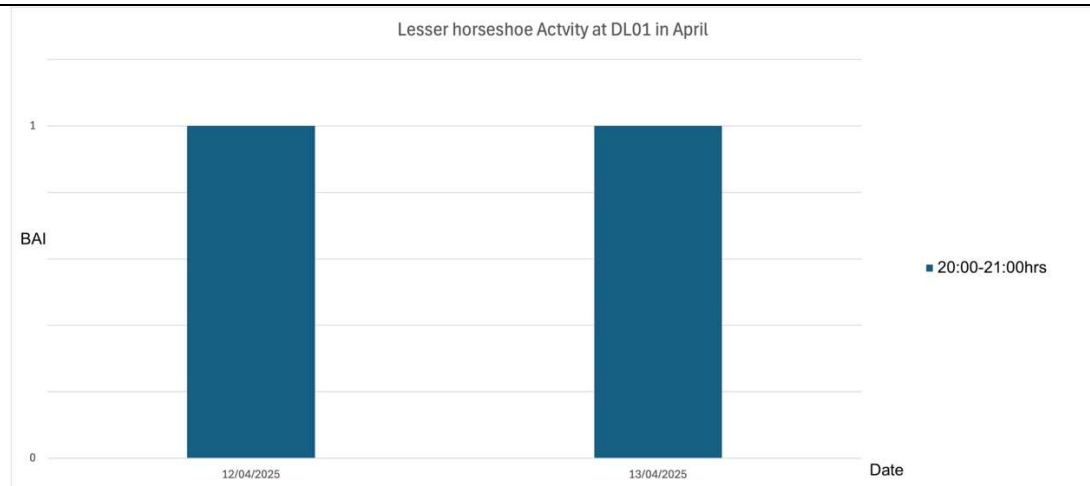


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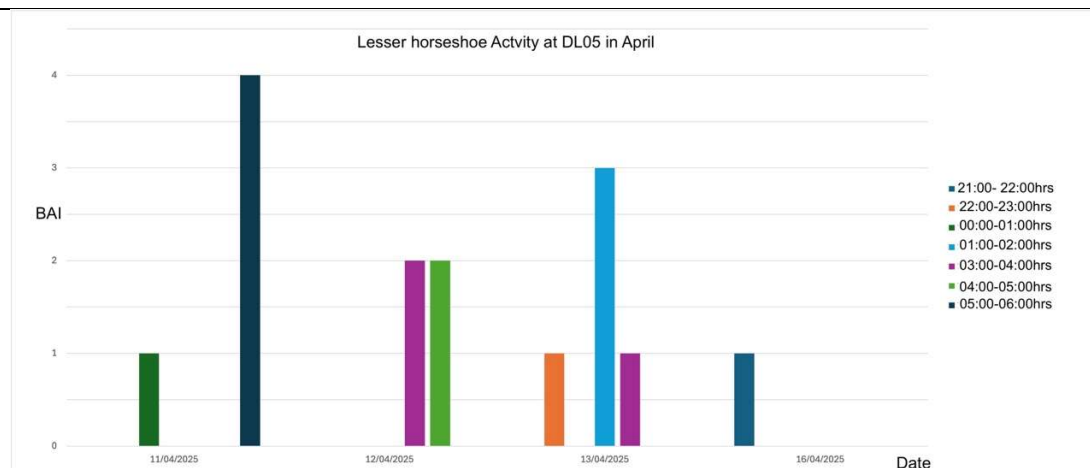
Lesser horseshoe Bat Nightly Activity

The following graphs and information present the hourly BAI per night for lesser horseshoe bats at the data logger locations they were recorded.

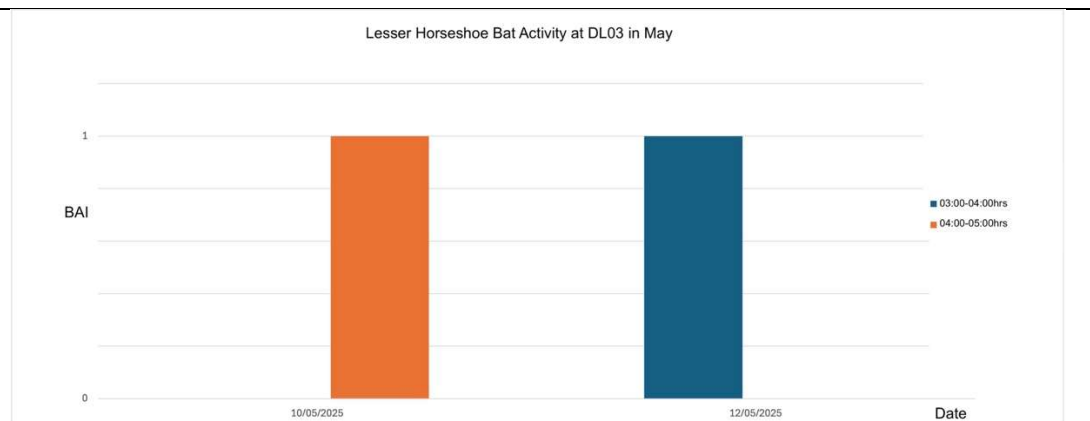
Data logger DL 1 – April



Data logger DL 5 – April

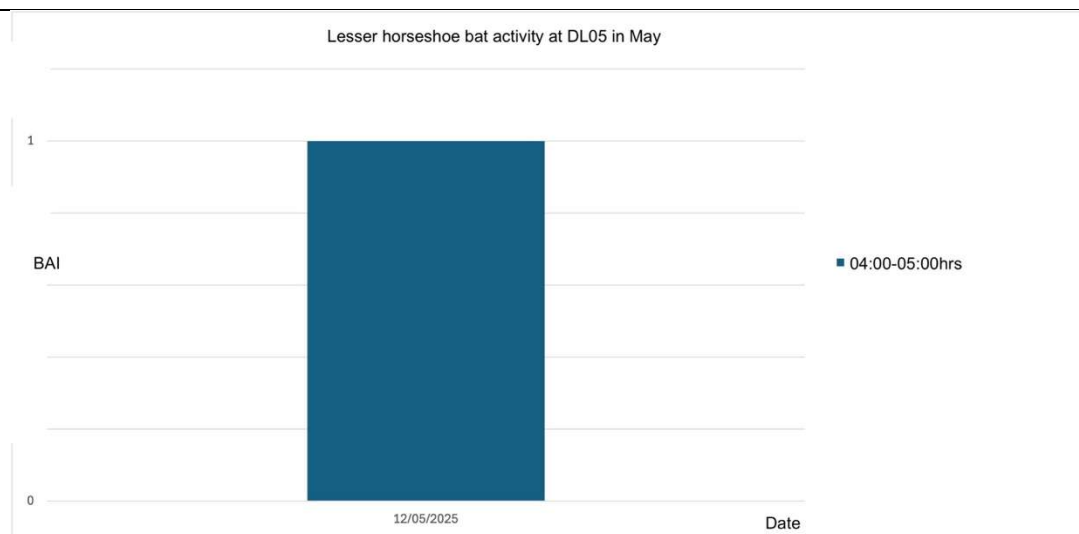


Data logger DL 3 – May

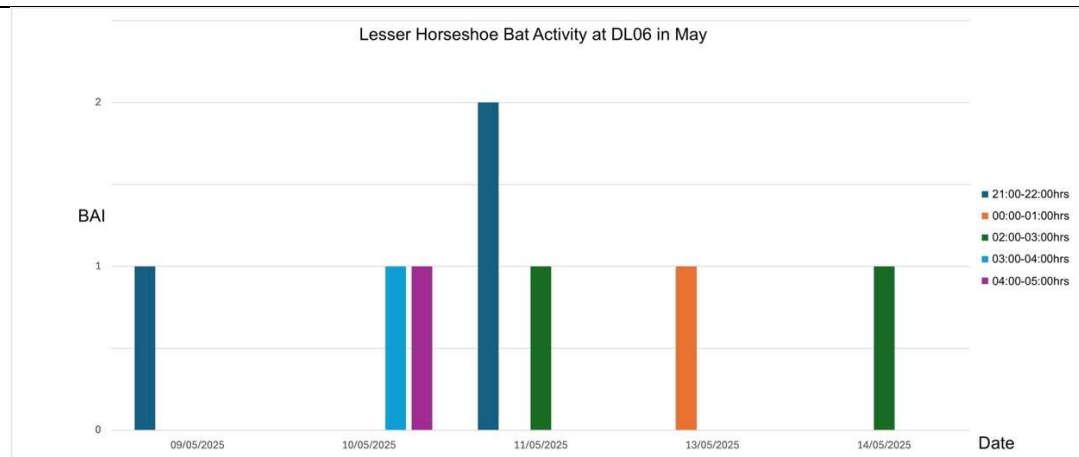


Bat Surveys Report

Data logger DL 5 – May



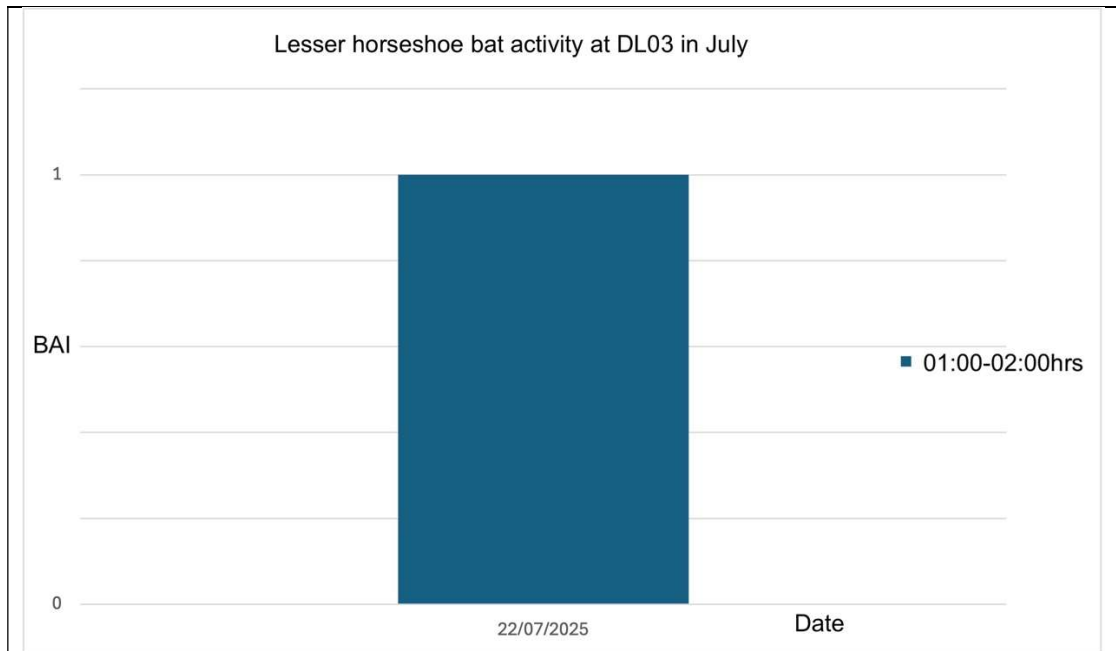
Data logger DL 6 – May



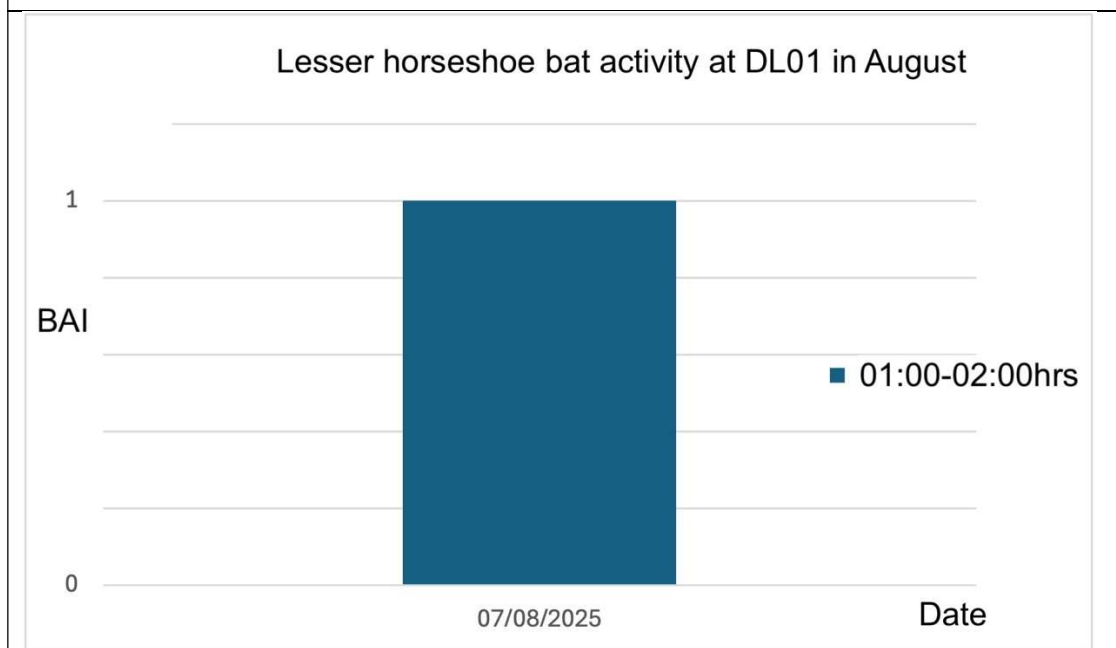
Data logger DL 3 - July



Bat Surveys Report



Data logger DL 1 - August



Data logger D L2 - August



Bat Surveys Report

