Bat Surveys Interim Report

Margam, National Grid Electricity Transmission

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Prepared for:
National Grid Electricity Transmission

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Contents

Figures

Tables

Appendices

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 interim 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.

3. Discuss the value of the habitats on the Site for local bat populations in the context of the Site and local area, with reference to both the desk study and field survey results.

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 (SEWBReC), 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 and the GLTA survey area as shown on **Figure 2** 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 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 categorized 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 12^0C.

2.4 Preliminary Bat Roost Appraisal of Buildings

2.4.1 A 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/ PRF-I: one or more suitable features that could be used by single, or very low numbers of bats opportunistically.
- Category 3 - Moderate potential/ PRF-M: 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/ PRF-M: 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.

2.5 Night-time Bat Walkover Survey

2.5.1 Within the Site and the BOC land, a monthly walked transect route with seven "station stops" for visual observations and acoustic data recording was undertaken in April and May 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 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 three-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 continually 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 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 2**.

Table 2. NBW Survey Details

Date (2025)	Sunset (hrs)	Survey Period (hrs)	Commencement of walked transect (hrs)	Weather conditions
16 April	20:14	20:10-23:10	21:04	Temperature range 9-100C 10% cloud, dry Light wind (BF2)
12 May	20:54	20:50-23:45	21:28	Temperature range 14-150C 50% cloud, dry Light breeze (BF1)
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 Song Meter (SM) Mini Bat 2 made by Wildlife Acoustics was used for the monitoring. Six 'data loggers' (ref. DL1-DL6 shown on **Figure 5**) were used each month to gather a minimum of five consecutive monitoring nights in April and May 2025 during the following deployments:

- 11th – 15th April (five monitoring nights); and
- 9th – 14th May (six monitoring nights).

2.6.2 **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.

2.6.3 Photographs provided in **Appendix A** show the surrounding habitats of the data logger locations.

2.6.4 The dataloggers are triggered by the bat's (ultrasonic) echolocation call and record continuously over the duration of bat activity. The recordings captured by the SM Mini Bat 2 were analysed using Kaleidoscope Pro software, by Wildlife Acoustics (version 5.3.9). This information was used to produce a database of bat activity within the Site throughout the study period. Each datalogger unit was programmed to be active each night between dusk and dawn and captured a total of 30 monitoring nights in April and 36 monitoring nights in May. from the six datalogger locations shown on **Figure 5**. The datalogger deployment provides seasonal coverage of the early bat activity season, covering the period when bats are transitioning between winter and summer roosts (April/early May) and forming maternity roosts (mid-May onwards).

Data recording and Processing

2.6.5 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.

2.6.6 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

2.6.7 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 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).

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 survey area (National Grid and BOC land) and alongside the road verges in the survey area shown on **Figure 4** that may be impacted by trees works to provide suitable vehicle access to the Site. 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, Laing O'Rourke 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 licenced bat surveyor who has 25 years' of experience, with assistance from Mr. Dominic Hill, an ecologist with seven years' professional experience.

2.9 Report Qualification

2.9.1 All survey work and reporting was 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 Ecological surveys are limited by factors which affect the presence of plants such as the time of year, and ground conditions. The ecological surveys undertaken to support this report may not therefore provide a comprehensive picture of the habitats on Site. However, the results of this survey informed by desk study information and previous survey work undertaken during the bat activity season, is nonetheless considered to be suitably robust to inform this bat assessment.

2.9.4 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).

2.9.5 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 presenting in this report establishes the presence, or 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, and provides an evaluation of the described bat roost resource. Nocturnal bat activity surveys in April and May 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 (National Grid Land and northern access route), shown on **Figures 1 and 2.**

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 3** with photographs of the PRFs along Heol Cae'r Bont Road in **Appendix A**.

Table 3. 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) from1.5m-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

Tree			Potential Roost Features	
Ref	**Species**	**Description**	**Description**	**Evaluation**
T12	Oak	Mature tree 9m H with DBH c.0.8m	PRF-I - narrow, shallow split in limb near ground level	Low
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 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 A.**

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 A**):

Building B1

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 facsia. Several of these holes are blocked with dirt and cobwebs, but others remain open.

3. Broken corner cover on boxed uPVC eaves.

4. Gap in the corner of the boxed eaves provides access behind the fascia.

5. Missing mortar between bricks provides a cavity space for individual or very low numbers of bats

Building B2

6. Gap at the edge of the felt overhang – approximately 15-20mm wide continuous gap that is up to 10cm deep.

7. Regular indentations between concrete slabs provides 20mm x 15mm size holes at the base of the PCV facsia.

8. A 20mm wide unmortared gap between the concrete slabs at the top of the wall.

9. 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 A.** 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 A**. It has no bat roost potential and is classified as Category 1 (Negligible Potential).

3.5 Nocturnal Bat Activity Surveys

Night-time Bat Walkover

3.5.1 The NBW recorded common and soprano pipistrelle bat activity within habitats along the transect route in April and May and one noctule bat pass in May. The distribution of bat activity along the transect route is shown on **Figure 6** [April] and **Figure 7** [May].

3.5.2 Bat activity in April was very low, with most records being common pipistrelle bats. Soprano pipistrelle bats 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.

The increased number of records/ detections of bats in May is considered to be associated with foraging activity. The diversity of species 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 pipistrelle bats. The frequency and distribution of bat activity was comparable for both common and soprano pipistrelle bats, indicating that they are present in all habitats in similar numbers. The presence of noctule bat was recorded, but only one detection of this species was made and there was no sustained activity at the Site recorded during the NBW. This recorded call was considered to be a commuting noctule bat passing over the Site.

Static Automated Bat Detector Surveys

Species Assemblage

3.5.3 The monthly data logger monitoring in April and May (recording simultaneously at DL1-6 shown on Figure 5) recorded seven bat species, with the following species being present:

- 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 B.** The diversity of bat species recorded each month was comparable, but with serotine bat being recorded in May only. However, serotine was only recorded at one data logger location (DL 1) on one occasion [monthly BAI 1 for May] and the Site is therefore not considered to be within an important population home range territory for this species.

3.5.5 Common and soprano pipistrelle bats were the only regular species at the Site and the BOC land, occurring on every monitoring night during both April and May. They also accounted for the majority of the bat activity recorded at the Site and the BOC land and the relative abundance of bat activity was similar for both species. Activity by both species increased in May compared to April, with the monthly BAI across all recording locations for common pipistrelle being BAI 3,003 [May] and BAI 898 [April] and soprano pipistrelle monthly activity being BAI 3,263 [May] and BAI 849 [April]. The increase in bat activity between the survey months of +234.41% for common pipistrelle bats and + 285.24% can be attributed to higher levels of foraging activity (observed during the NBW).

3.5.6 Noctule bats were recorded at every datalogger location during each survey month. They were present during 16 of the 30 monitoring nights in April and 31 of the 36 monitoring nights in May. Nightly activity was low however, with peak nightly activity in April being at DL 02 [BAI 5] and peak nightly activity in May being at DL 3 and DL 4 [BAI 7]. There was no evidence of sustained activity, such as foraging.

3.5.7 Brown long-eared bats were recorded at data logger location DL 1 in April and May, and DL 5 in May (only). This species can be under-recorded by acoustic surveys, but it does not appear 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 April and May, but the level of bat activity of this species group was very low. April had a monthly BAI 3 and May had a Monthly BAI 4. *Myotis sp*. were recorded at locations DL 2, DL 5 and DL 6 in April and DL 1 and DL 6 in May. 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. The records of *Myotis sp*. are possibly from a single species and given the very low level of bat activity of this species group recorded, the Site and the BOC land is unlikely to support a diverse number of species in this genus.

3.5.9 Lesser horseshoe bats were recorded at two data logger locations in April (DL 1 and DL 5) and three data logger locations in May (DL 3, DL 5 and DL 6). The monthly BAI for lesser horseshoe bats was BAI 17 [April] and BAI 11 [May]. Given the elevated conservation status of lesser horseshoe bat, further details of the lesser horseshoe bat activity are provided below.

Lesser horseshoe bat

3.5.10 The highest monthly BAI was at DL 5 in April [BAI 15]. Peak lesser horseshoe bat activity in May was at location DL 6 [BAI 8]. Comparison of lesser horseshoe bat activity between the April and May at these data logger locations also shows:

- DL 5 – monthly lesser horseshoe bat activity in May was BAI 1 [compared to BAI 15 in April].
- DL 6 – there was no lesser horseshoe activity in April.

3.5.11 Lesser horseshoe bat activity [April-May] was predominantly towards the BOC land and was recorded at data logger locations placed within habitats that have good tree and scrub cover (see Section 2.6.2 and the location photographs in **Appendix A**). The presence of lesser horseshoe bats at location DL 1 in April [monthly BAI 2] and DL 3 in May [monthly BAI 2] confirms this species is distributed across the Site, but a peak nightly activity of BAI 1 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).

3.5.12 The peak nightly lesser horseshoe bat activity [BAI 5] was recorded in April (at DL 5). The nightly lesser horseshoe bat 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.

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

3.5.14 The hourly BAI at DL 1 in April shows that lesser horseshoe bats 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.

3.5.15 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 bat activity was from the middle of the night.

3.5.16 All data of lesser horseshoe bat 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 sustain 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 bat. This species' distribution across the Site and the BOC land is widespread but patchy, with the lesser horseshoe bat activity 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.

4.1.3 Both spatial and temporal patterns of lesser horseshoe bat activity are relatively low. Many of the records also appeared to be commuting bats. Higher levels of lesser horseshoe bat activity in the BOC land at locations DL 5 and DL 6 are within suitable foraging habitats, but whilst low levels of foraging may occur (such as by individual or low numbers of bats), there is no evidence of sustained foraging or regularly used feeding areas within the Site or the BOC land. There is therefore no evidence the Site or the BOC land is within a Core Sustenance Zone for lesser horseshoe bats i.e. there is no evidence that the Site is in regular use by lesser horseshoe bats, such as those from the colony at Margam Park. Whilst small day roosts for lesser horseshoe bats may be present nearer the Site, there is no evidence of roosts present on Site and there is no evidence that the Site is within a core home range area for this species (typically considered to be up to 2km from a maternity roost).

5 References

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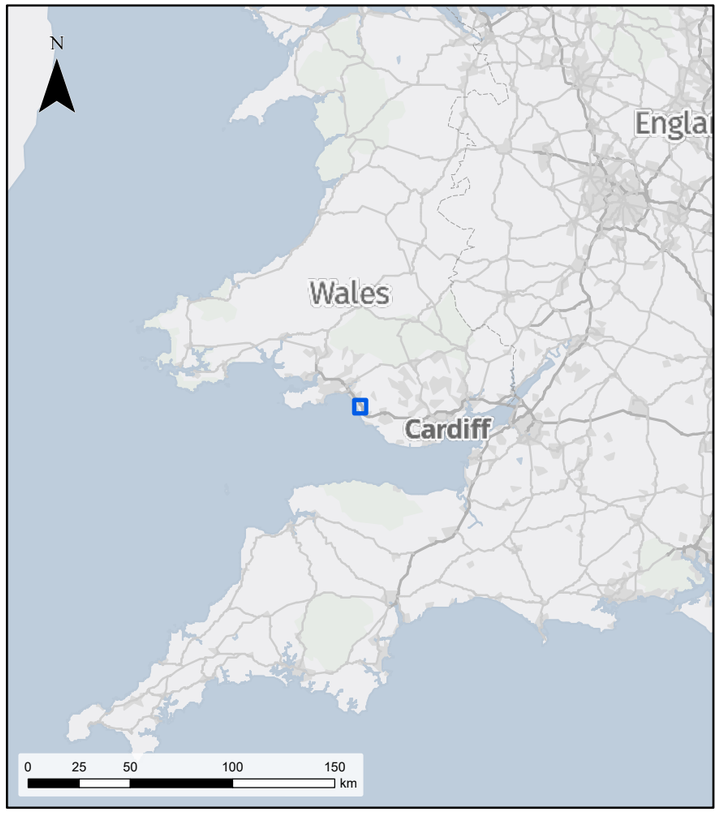
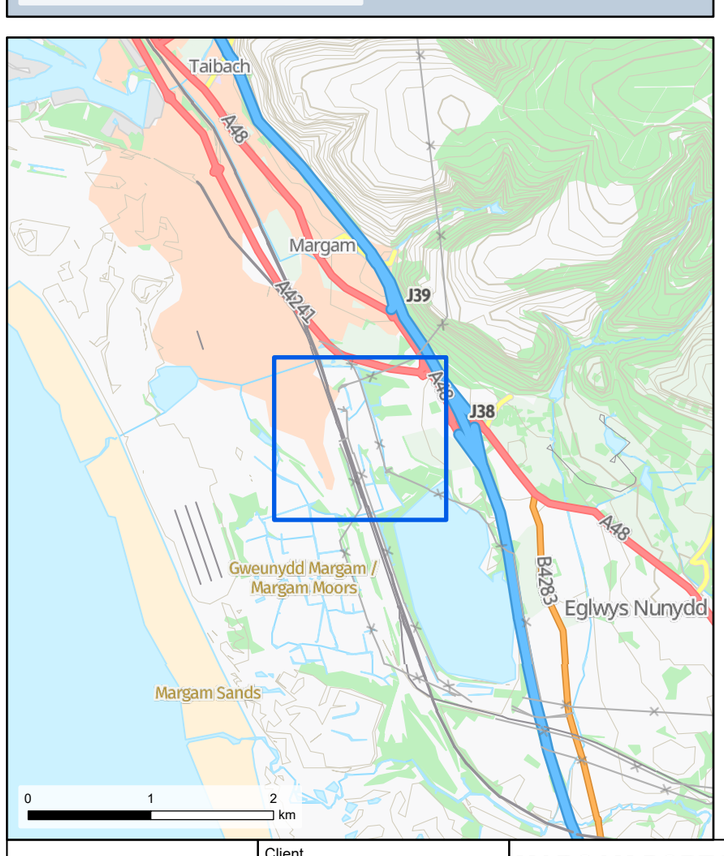
6 Figures





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MARGAM PORT TALBOT

Site Location Plan

Date: 20/08/2025	
Drawn: TL	Checked: HE
Figure: 01	Rev: A

Document Path: C:\Users\tletendrie\Documents\ArcGIS\Projects\331201497\331201497.aprx

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MARGAM PORT TALBOT

Ground Level Tree Assessment (GLTA) Study Area

0 200 400 m

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1:5,000 @ A3	Date: 20/08/2025
Drawn: TL	Checked: HE
Figure: 02	Rev: A

Document Path: C:\Users\tletendrie\Documents\ArcGIS\Projects\331201497\331201497.aprx

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

Bat Roost Potential

- High
- Moderate
- Low

1
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MARGAM PORT TALBOT

Ground Level Tree Assessment (GLTA) Results

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Drawn: TL	Checked: HE
Figure: 03	Rev: A

Document Path: C:\Users\tletendrie\Documents\ArcGIS\Projects\331201497\331201497.aprx

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MARGAM PORT TALBOT

Preliminary Roost Appraisal of Buildings

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Figure: 04	Rev: A

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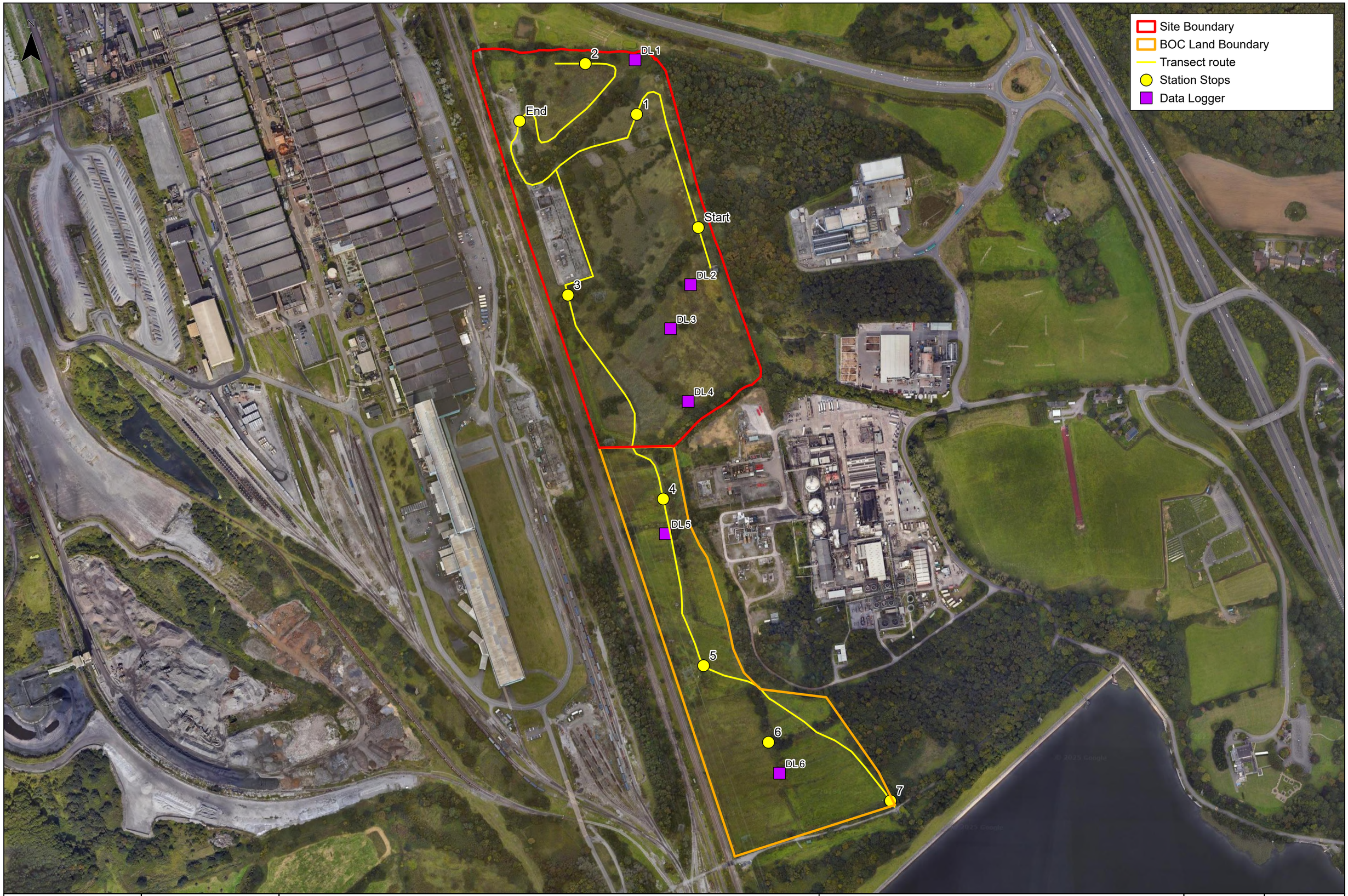

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MARGAM PORT TALBOT

Night-time Bat Walkover Survey and Data Logger Locations

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Drawn: TL	Checked: HE
Figure: 05	Rev: A

Document Path: C:\Users\tletendrie\Documents\ArcGIS\Projects\331201497\331201497.aprx

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MARGAM PORT TALBOT

Bat Activity Recorded During Nighttime Bat Walkover – April

0 200 400 m

Imagery ©2024 Google, Imagery ©2024 Airbus, Imagery ©2024 TerraMetrica, Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024

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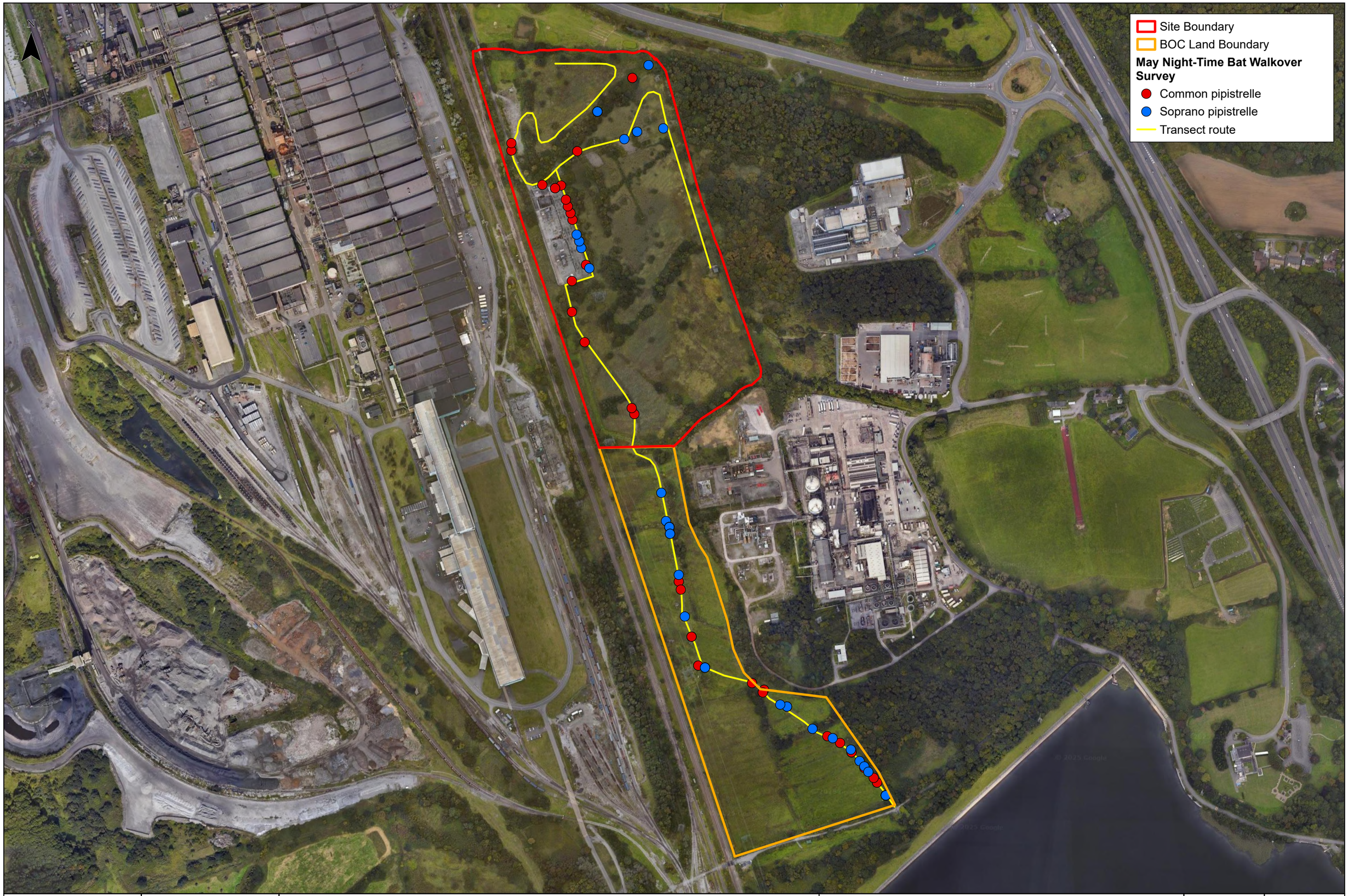

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MARGAM PORT TALBOT

Bat Activity Recorded During Nighttime Bat Walkover – May

0 200 400 m

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Drawn: TL	Checked: HE
Figure: 07	Rev: A

Document Path: C:\Users\tletendrie\Documents\ArcGIS\Projects\331201497\331201497.aprx

Appendix A Photographs

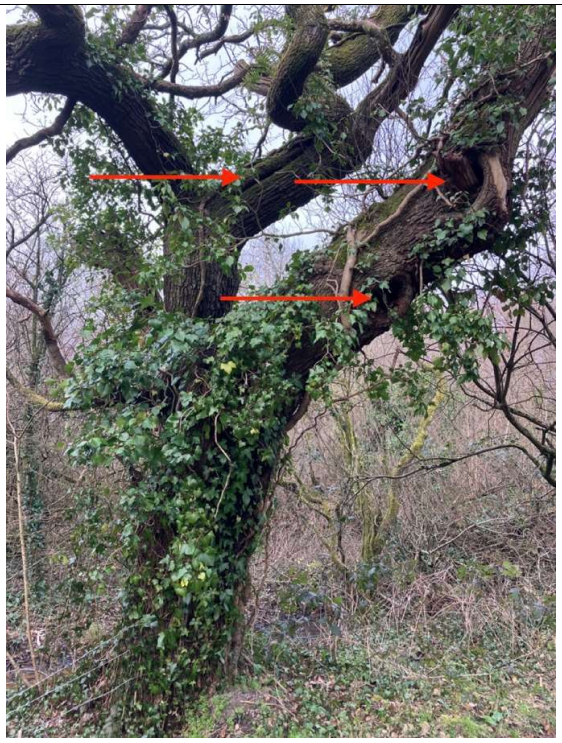
Tree Photographs

Tree Ref	PRF	Photograph
T1 Oak	Broken end of large limb 1.5m AGL on north side	
T2 Willow	Hazard beams on tree	
T3	Hazard beams on tree	

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

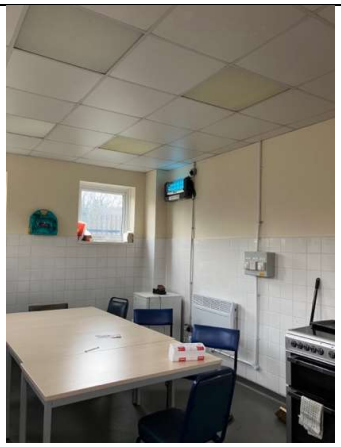
Tree Ref	PRF	Photograph
T6 Willow	Splits in main trunks	
T7 Oak	Deadwood and decay in trunk	

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

Tree Ref	PRF	Photograph
T10 Oak	Hazard beam and limb tears	
T11 Ash	Limb tear outs	

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

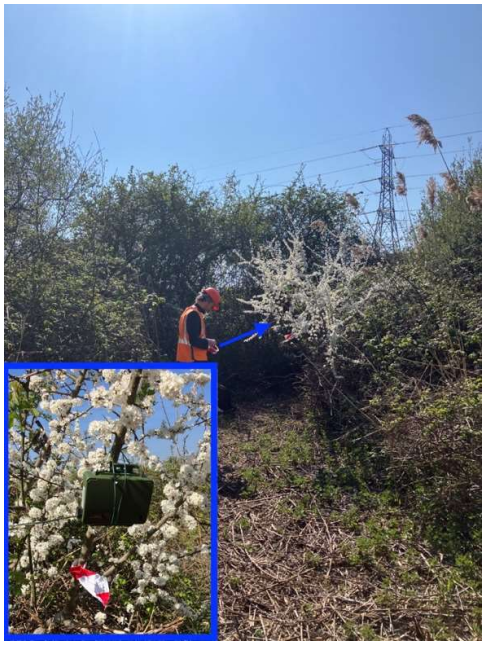
Building Photographs

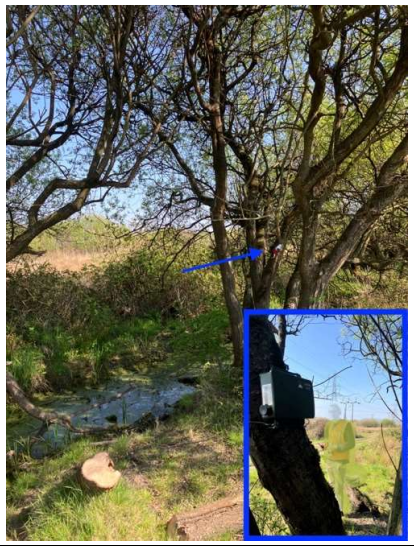
Building B1	
South (front) and west (side) elevations with PRF 3	North (rear) and west (side) elevations with PRF 4
	
South (front) elevation PRF 5	PRF 1 – gap behind felt roof overhang
	
PRF 2 Regular gaps at base of fascia with concrete slab cap	Rest room facilities in B1
	

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	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.

DL1	DL2
	
DL3	**DL4**
	

DL5	DL6
	

Appendix B 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 (*Eptesicus serotinus*)	PIPI – Common pipistrelle (*Pipistrellus pipistrellus)*
MYSP – *Myotis sp.*	PIPY – Soprano pipistrelle *(P. pygmaeus*)
NYNO – Noctule (*Nyctalus noctule*)	PLAUR – Brown long-eared (*Plecotus auritus)*
	RHHI – *Lesser horseshoe (Rhinolophus hipposideros)*

	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

	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
	16/04/25	0	0	12	7	1
	Total	**1**	**3**	**268**	**233**	**15**
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	
	Total	**1**	**7**	**276**	**288**	

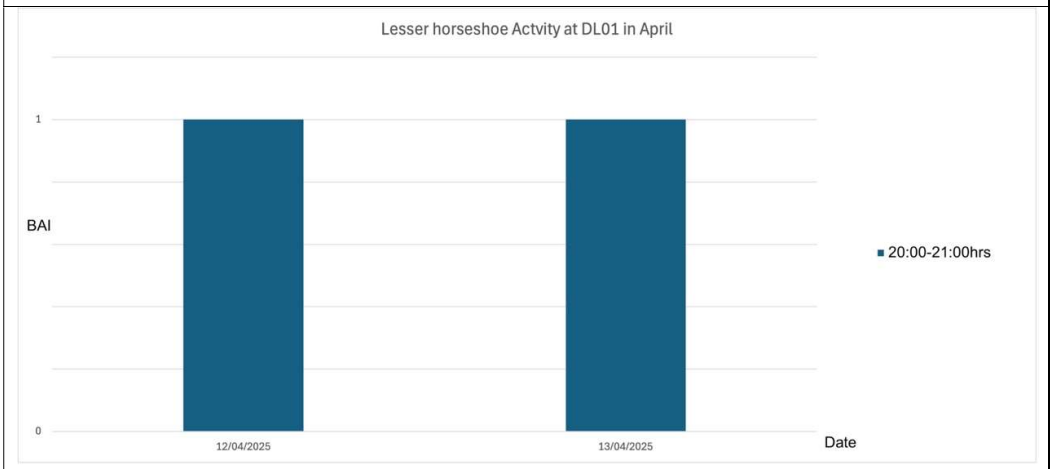
	May						
Location	**Date**	**Species**					
DL 1		**EPSE**	**MYOSP**	**NYNO**	**PIPI**	**PIPY**	**PLAUR**
	09/05/2025	0	0	3	58	63	0
	10/05/2025	0	0	2	93	55	1
	11/05/2025	0	0	6	130	65	1
	12/05/2025	1	2	1	192	64	0
	13/05/2025	0	0	1	8	2	1
	14/05/2025	0	0	0	96	64	0
	Total	**1**	**2**	**13**	**577**	**313**	**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			

	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**	**RHHI**
	09/05/2025	3	116	92	0	0
	10/05/2025	1	81	98	0	0
	11/05/2025	2	38	36	0	0
	12/05/2025	1	73	68	0	1
	13/05/2025	5	59	53	2	0
	14/05/2025	0	83	87	2	0
	Total	**12**	**450**	**434**	**4**	**1**
DL 6		**MYOSP**	**NYNO**	**PIPI**	**PIPY**	**RHHI**
	09/05/2025	1	1	154	303	1
	00/01/1900	0	0	304	382	2
	11/05/2025	0	2	256	323	3
	12/05/2025	1	2	286	340	0
	13/05/2025	0	1	237	254	1
	14/05/2025	0	3	255	308	1
	Total	**2**	**9**	**1492**	**1910**	**8**

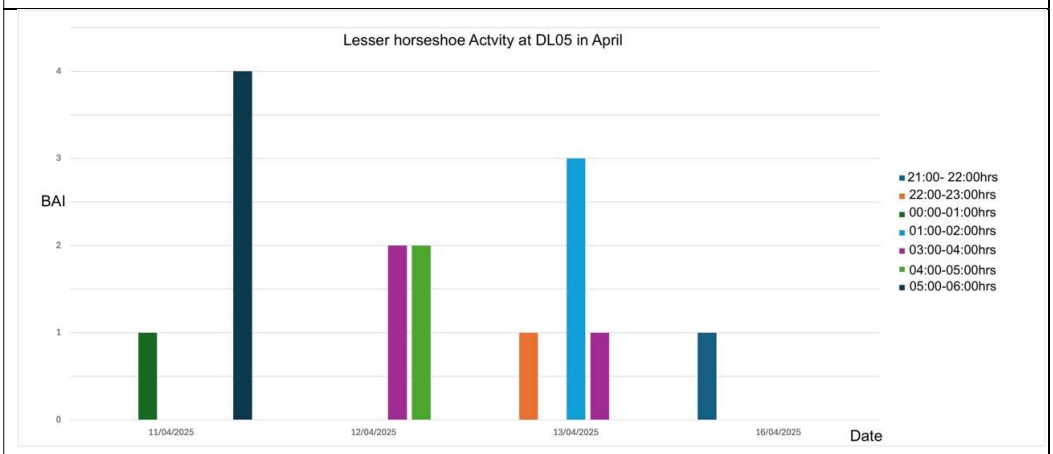
Lesser horseshoe Bat Nightly Activity

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

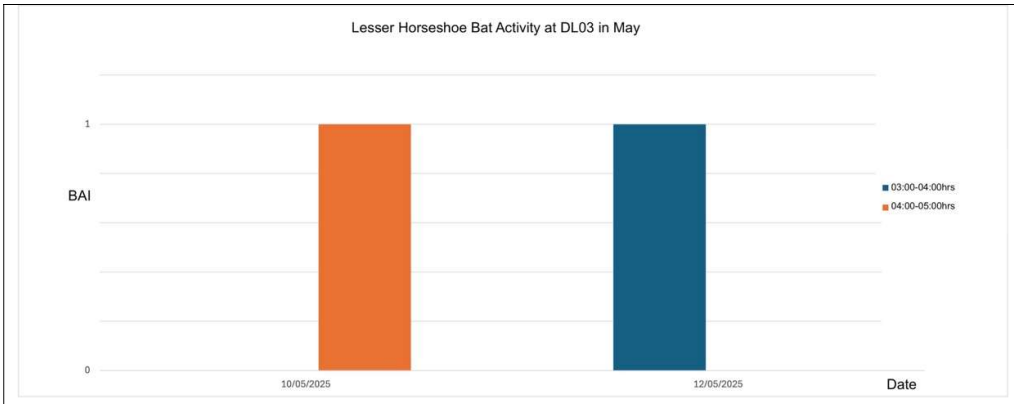
Data logger DL 1 – April



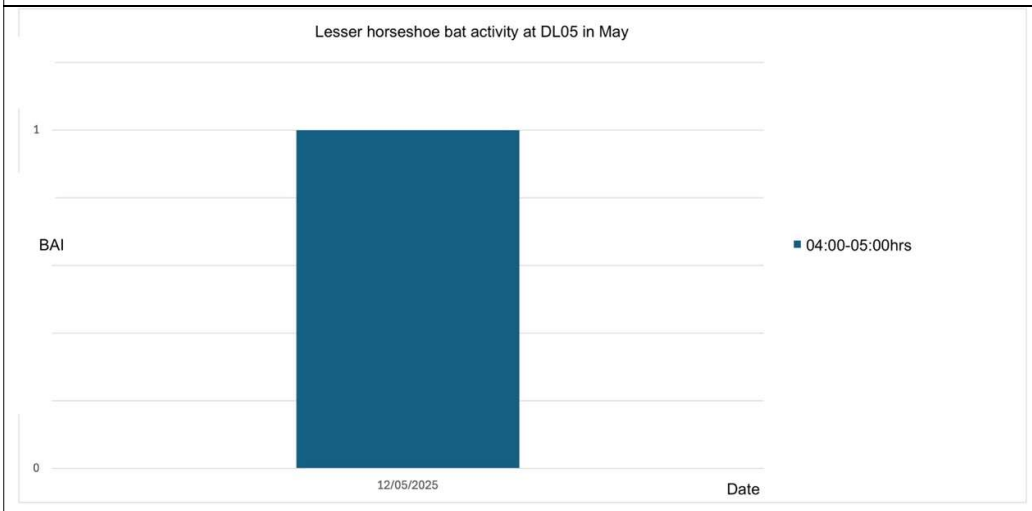
Data logger DL 5 – April



Data logger DL 3 – May



Data logger DL 5 – May



Data logger DL 6 – May