BAT ACTIVITY SURVEY REPORT

PRESENTED TO

Bartra Property Cookstown Limited
Transitional Care Facility

DATE

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2 INTRODUCTION

Enviroguide Consulting was commissioned by Bartra Property Cookstown Limited to undertake a bat activity survey of the Site of the 'Proposed Development' at Unit 21, First Avenue, Cookstown Industrial Estate, Dublin 24 (the 'Site'). The scope of works includes the preparation of a Report detailing the results of a bat activity survey, which was undertaken to assess the current level of bat activity at the Site; to inform further action if required.

2.1 Quality assurance and competence

Synergy Environmental Ltd., T/A Enviroguide Consulting, is a wholly Irish Owned multi-disciplinary consultancy specialising in the areas of Environment, Waste Management and Planning. All consultants have scientific or technical qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Professional memberships include the Chartered Institution of Wastes Management (CIWM), and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Dr Bryan Thompson and Rozalyn O'Hora, Ecologists with Enviroguide Consulting, undertook the bat survey for this project. Shannen O'Brien, Ecologist with Enviroguide undertook the remaining habitat surveys and desktop research for this report.

Bryan has a B.Sc. in Environmental Biology (Hons) and a PhD in Marine Ecology from University College Dublin, and a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Habitat surveys, intertidal surveys, winter bird surveys, bat surveys, vantage point surveys and fresh water macro-invertebrates etc.). Bryan has experience in compiling Biodiversity Chapters of EIARs, Appropriate Assessment (AA) screening and Natura Impact Statement (NIS) reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments.

Rozalyn has a M.Sc. (Hons.) In Ecological Assessment from University College Cork and a B.Sc. (Hons.) in Environmental Science from National University of Ireland, Galway. She has a wealth of experience in desktop research, literature scoping-review, and report writing; as well as practical field experience (habitat surveys, bird surveys, terrestrial large mammals, invasive species surveys etc.). Rozalyn has experience in compiling Biodiversity Chapters of EIARs, EcIAs, AA screening and NIS reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments.

Shannen has a B.A. in Zoology from Trinity College Dublin and a M.Sc. Hons. in Wildlife Conservation and Management from University College Dublin, and has experience in desktop research, report writing, and literature scoping-review, as well as practical field and laboratory experience (Pollinator surveying, sampling and identification, habitat surveying, invasive species surveying, etc.). Shannen has prepared Stage I and Stage II Appropriate Assessment Reports, Invasive Species Surveys, Ecology Statements, and EcIAs.

3 Relevant Legislation

In view of their sensitive status across Europe, all species of bat have been listed on Annex IV of the EC 'Habitats and Species Directive' with some, such as the Lesser-Horseshoe bat (*Rhinolophus hipposideros*), given further protection and listed on Annex II of this Directive. This Directive was transposed into Irish law as the European Communities (Natural Habitats) Regulations, 1997, and combined with the Wildlife Acts 1976 as amended, ensures that individual bats, their breeding sites and resting places are fully protected in law. This has important implications for those who own or manage sites where bats occur.

All bat species are protected under the Wildlife Acts 1976 as amended, which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species however, the Acts permit limited exemptions for certain kinds of development which would require a derogation licence to be obtained from the NPWS with input from a qualified Bat Specialist. All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

1. Intentionally kill, injure or take a bat,
2. Possess or control any live or dead specimen or anything derived from a bat,
3. Wilfully interfere with any structure or place used for breeding or resting by a bat,
4. Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.

4 Description of the Site

4.1 Site Location

The Site of the Proposed Development is 1.67ha, and is located at the junction of Cookstown Road and First Avenue, which border the east and the north boundaries of the Site, respectively. The southern and western borders are abutted by industrial buildings. The Site is located 1.8km southwest of the M50 and 500m northeast of the Tallaght University Hospital. The surrounding landscape is predominantly urban in nature.

4.2 Description of Development

Bartra Property Cookstown Limited intend to apply for permission for development on c.1.67ha at Unit 21, First Avenue, Cookstown Industrial Estate, Dublin 24. The Proposed Development will consist of the following:

- Demolition of all existing 1-3 storey industrial/commercial structures and small café totalling c.5,500sqm in area;
- Construction of a 1-5 storey Transitional Care Facility (step-up/step-down) providing 131 no. bedspaces over partial basement (total floor area c.6,743sqm) with central courtyard (c.519sqm);
- The basement consists of a sprinkler tank and pump rooms, water tank room, plant room and workshop;

- Provision of dining and kitchen areas, siting/family rooms, activity rooms, coffee dock, hair salon, oratory, lobbies/reception areas, ancillary offices and staff areas, stores, toilets, shower/changing facilities, ESB substation, generator, switchroom, service yard and waste areas serving the facility;
- Lobbies, stair/lifts, photovoltaic panels and green roofs throughout;
- Partial provision of the pocket park identified in the Tallaght LAP (c.1,286sqm);
- New vehicular access from First Avenue and egress onto Cookstown Road via a one-way system through the subject site;
- Entrance signage on the eastern elevation of the proposed facility; and
- All associated site development works, services provision, connection to the water supply, foul and surface water networks on First Avenue and Cookstown Road including partial diversion of the foul line to the north east of the site at First Avenue, temporary foul pump station, attenuation/bioretention systems, vehicular and pedestrian access including internal road and footpaths, interim pedestrian facilities/public realm upgrade works, landscape and boundary treatment works, tree removal, bicycle storage (76 no. total spaces), car parking (32 no. total spaces), set-down parking spaces, 1 no. ambulance set-down space serving the facility and delivery/loading areas to First Avenue.

5 METHODOLOGY

5.1 Desk Study

A desk-based review of relevant information concerning bats was completed. Information contained on the websites of the National Parks and Wildlife Service (NPWS) and the National Biodiversity Data Centre (NBDC) was reviewed.

The following publications and websites were also reviewed and consulted:

- Bat Conservation Ireland https://www.batconservationireland.org/irish-bats.
- Bat Conservation Trust (2018) Bats and artificial lighting in the UK Bats and the Built Environment series.
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition.
- Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers.
- Russ, J. (2012) British Bat Calls – A Guide to Species Identification. Pelagic Publishing.

5.2 Field Surveys

5.2.1 Potential Bat Roost Survey

Trees on Site were assessed during the daytime for Potential Roost Features (PRFs) which were used to determine the potential bat roost value of trees as per Table 4.1 in the Bat Conservations Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016). Evidence of bat usage can be in the form of actual bats (visible or audible), bat droppings, urine staining, grease marks (oily secretions from glands present on stonework) and claw marks. In addition, the presence of bat fly pupae (bat parasite) also can indicate that bat usage of a crevice, for example, has occurred in the past.

Daytime inspections were undertaken of all of the trees within the Site in order to make a list of trees within the Site that may be suitable as roosting sites for bats. Inspections were undertaken visually, from the ground, with the aid of a strong torch beam during the daytime search for PRFs.

5.2.2 Dusk Transect Activity Survey

The Site was also assessed during the daytime in relation to potential bat foraging habitat and potential bat commuting routes. Bat habitats and commuting routes identified were considered in relation to the wider landscape through the examination of aerial photographs; to determine landscape connectivity for local bat populations.

A dusk transect bat activity survey was undertaken at the Site on the evening of the 22nd of September 2022. The bat activity survey commenced at 19:00 and finished at 21:00 (sunset on the night was 19:26). The survey was conducted in suitable conditions for bat surveys. The evening was dry with little to no wind (<5m/s) and a temperature of 10^{o}C throughout.

The surveyors were equipped with an Elekon BatLogger M2 full spectrum bat detector, head torches and handheld torch, along with aerial maps of the Site.

A predetermined transect of the Site based on the daytime walkover was walked, allowing the buildings and trees on Site to be surveyed for bat foraging/commuting activity. Where activity was noted the surveyors remained in place for several minutes to ensure a representation of the activity was recorded.

5.3 Analysis

The data collected by the bat detector was analysed using Elekon's BatExplorer software (Version 2.1.10.1) Bat data was analysed and species assigned to each record with reference to species identification guides such as Russ (2012).

Each record i.e., a sequence of bat calls/pulses, is noted as a bat pass; to indicate the level of bat activity for each species recorded. Each bat pass does not correlate to an individual bat but is representative of bat activity levels. Some bats such as pipistrelle species (*Pipistrellus spp.*) may continuously fly around a habitat or feature, therefore, it is possible that a series of bat passes within a similar time frame is representative of an individual bat. On the other hand, Leisler's bats (*Nyctalus leisleri*) tend to travel through an area quickly, and as such, an individual sequence or bat pass is more likely to be indicative of individual bats.

6 RESULTS

6.1 Desk Study

6.1.1 Existing Records of Bats in the Locality

A desktop review was carried out to identify previous records of bat species from within the vicinity of the Site in question. The Site is located within the 10km^2 Grid Square O02. The website the NBDC (www.nbdc.ie) was accessed on 03/01/2023 to establish any previous bat records which are shown below in Table 1.

Table 1. Historical Bat Records from the 10km^2 Grid square O02 (NBDC website www.nbdc.ie accessed 03/01/2023)

Species Name - Common	Species Name - Latin	Last Documented Record
Brown Long-eared Bat	*Plecotus auritus*	05/07/2012
Daubenton's Bat	*Myotis daubentonii*	21/08/2014
Leisler's bat	*Nyctalus leisleri*	18/09/2012
Natterer's Bat	*Myotis nattereri*	14/09/2011
Common Pipistrelle	*Pipistrellus pipistrellus sensu lato*	15/10/2012
Soprano Pipistrelle	*Pipistrellus pygmaeus*	05/08/2012

6.1.2 Landscape Suitability

According to the NBDC's bat suitability index (Lundy et al. 2011), which provides a visual map of the broad scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species; the area surrounding the Site of the Proposed Development carries an overall bat suitability score of 24.67 out of 100. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. The species with the highest individual suitability scores for the area encompassing the Site are common pipistrelle (*Pipistrellus pipistrellus*) and Leisler's bats , both with 40.

The immediate landscape is considered of local importance (Lower value) for bats due to the highly urbanised environment and lack of ecological corridors and connectivity to the surrounding landscape.

Table 2 gives the suitability of the study area for the various bat species found in Ireland (based on NBDC) along with their Irish Red List Status (from Marnell *et al.*, 2019).

Table 2. Suitability of the study area for the bat species found in the vicinity of the Site of the Development (based on the NBDC data) with Irish Red list status indicated.

Common name	Scientific name	Suitability index	Irish red list status[1]
All bats	-	24.67	Least Concern
Soprano pipistrelle	*Pipistrellus pygmaeus*	33	Least Concern
Brown long-eared bat	*Plecotus auritus*	36	Least Concern
Common pipistrelle	*Pipistrellus pipistrellus*	40	Least Concern
Lesser-horseshoe bat	*Rhinolophus hipposideros*	0	Least Concern
Leisler's bat	*Nyctalus leisleri*	40	Least Concern
Whiskered bat	*Myotis mystacinus*	18	Least Concern
Daubenton's bat	*Myotis daubentonii*	15	Least Concern
Nathusius' pipistrelle	*Pipistrellus nathusii*	11	Least Concern
Natterer's bat	*Myotis nattereri*	29	Least Concern

6.2 Potential Bat Roost Assessment

There are buildings on the Site of the Proposed Development, however their potential to provide roosting habitat for local bats is considered *Low* to *Negligible* due to a general lack of PRFs and entrance/exit points for bats. A number of trees on Site support Ivy (*Hendra helix*), which can be classified as a roosting feature when it forms thick lattices, as outlined in Table 4.1 in the Bat Conservations Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016). However, the potential of these trees to provide roosting habitat for local bats is also considered *Low* to *Negligible* due to a lack of PRFs and the lack of thick ivy lattices (Ivy was noted to be mostly bushy foliage growth). As outlined in the Arboricultural Assessment & Impact Report (CMK Hort + Arb Ltd, 2022) accompanying this application, the trees are largely early mature to mature in nature and range from very poor to good condition. The Site also offers *Low* foraging and commuting habitat, due to the lack of connectivity of the Site and the surrounding landscape (Collins, 2016).

6.3 Bat Activity

Bat activity at the Site was low during the survey on the 22nd of September 2022 despite weather conditions during the survey being suitable for bat activity. In total, 2 no. bat species were recorded including common pipistrelle and Leisler's bat (Table 3). Common pipistrelle was recorded passing 10 times, primarily along the south-eastern treeline of the Site. Leisler's bat was recorded twice, also commuting within the southeast of the Site (Figure 1).

No "feeding buzzes" (rapid calls emitted before capturing prey) were heard during the survey. Overall, the majority of bat activity within the survey area was associated with linear vegetative

[1] Marnell, F., Looney, D. & Lawton, C. (2019) Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

features (treelines) for commuting and foraging, however the amount of bat activity at the Site was low. The lack of connectivity to the surrounding environment and urban nature of the Site may explain the low level of bat activity at the Site.

Table 3. Summary of bat activity recorded on Bat Detector (Non bat "noise" records removed)

Common Name	Scientific Name	Number of Passes	Number of Calls
Common Pipistrelle	*Pipistrellus pipistrellus*	10	185
Leisler's bat	*Nyctalus leisleri*	2	11

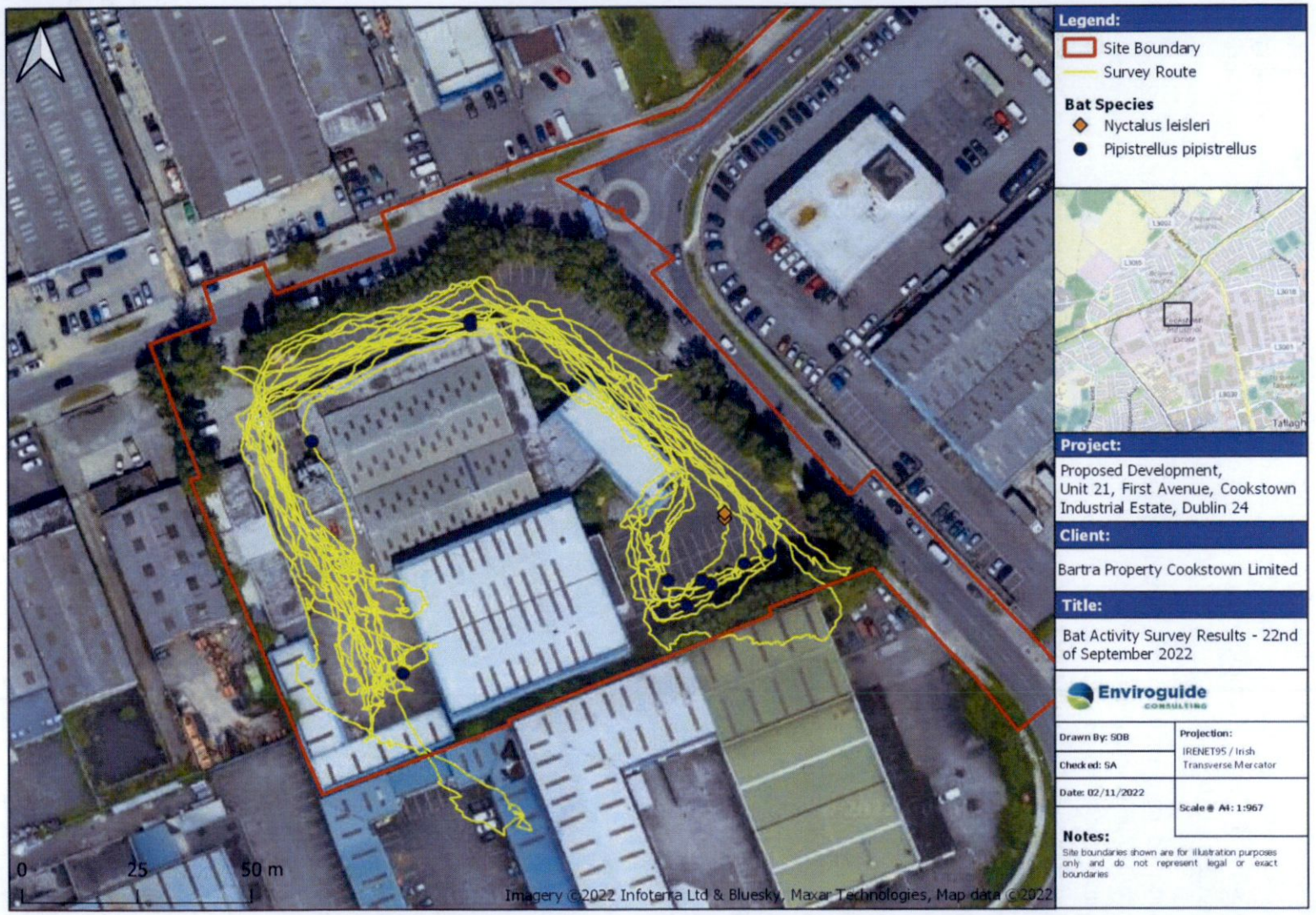

Figure 1. Bat survey results – 22nd of September 2022 (Species points indicate bat passes and not necessarily individual bats).

7 Potential Impacts

The removal of the treelines on Site would represent a loss of the limited commuting/foraging habitat the Site currently provides. Works which result in gaps in the linear features bats use to commute and navigate can impact on the bat species that do not favour commuting over open ground (e.g., Common pipistrelle); causing commuting route disruption and fragmentation of habitat.

Although no confirmed roosts were identified during survey in September 2022, in the absence of mitigation, there is the potential for bats to be injured/killed roosting in the low suitability treelines along the boundaries of the Site, should they be present at the time of felling. Depending on the number of bats potentially utilising these features as a roost site and the status of that roost e.g., maternity, hibernation, day roost etc., the impacts to local bat populations could vary in significance. Based on the condition and roost potential of the trees present and the PRFS (or lack thereof) they support, any roost present would at the most be day roosts used sporadically by low numbers of bats.

There is also potential for increased Operational Phase night-time lighting to impact local bat populations by degrading the quality of, or limiting the use of, known commuting and foraging habitats should they be illuminated.

8 Recommendations

8.1 Tree Removal

All trees within the Site are to be felled to facilitate the Proposed Development. All trees present were assessed as having negligible to low bat potential and are not likely to support roosting bats. No further mitigation is required. Should any bats be found before or during the felling, the works will stop and a suitably qualified ecologist will be consulted. A license may be required from the NPWS and felling of the trees will not continue until this has been received.

8.2 Proposed Planting

The landscape design proposes approximately 24 semi-mature and 10 small trees, including a "Neighbourhood Pocket Park" within the southwest of the Site, as outlined in the Landscape Report – Additional Information (Áit Urbanism + Landscape Ltd, 2023) accompanying this application. This planting will offer potential foraging and commuting habitat for local bats.

In addition, a series of 5 no. bat boxes will be erected within the treeline habitat to be provided at the Site; on suitably large trees along southwest boundaries of the Site to provide future roosting opportunities. The guidance of a suitably qualified Bat ecologist will be sought in the selection of bat box type and placement; to avoid disturbance from lighting generated by the Proposed Development and maximise the likelihood of their uptake by local bats.

8.3 Night-time Lighting

To minimise disturbance to bats in the immediate vicinity of the Site, the Lighting Plan (JV Tierney & Co, 2023) accompanying this application has incorporated the below measures, in accordance with guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers 'Bats and Lighting in the UK - Bats and Built Environment Series', (ILP, 2018) the Bat Conservation Trust 'Artificial Lighting and Wildlife Interim Guidance' and the Bat Conservation Trust 'Statement on the impact and design of artificial light on bats'. Therefore, the lighting scheme will include the following as per the above guidance:

- The minimisation of night-time lighting emitted during both the Construction and Operational Phases of the Proposed Development (once health and safety requirements are met).
- All luminaires will lack UV elements and will be LED.
- A warm white spectrum of 2700 Kelvin will be adopted to reduce blue light component.
- All mounted luminaires will be installed at 0° tilt.
- The avoidance of direct lighting of the "Neighbourhood Pocket Park" within the southwest of the Site, as well as other areas of planting.
- The proposed lighting will be controlled via presence detection within the courtyards within the apartment complex. Lights will dim down when no pedestrians are using the paths, and once their presence is detected, the lights will return to their full output during the hours of darkness.
- LED luminaires will be programmable on Site and will be dimmed between midnight and 6am to 75%.

9 Conclusions

Bat activity at the Site of the Proposed Development was relatively low and associated with the treelines on Site. No confirmed roosts were recorded and the treelines are classed as having *Low* to *Negligible* roost potential. The treelines on-site acts as foraging and commuting habitat for local bats in low numbers.

Appropriate measures have been recommended to ensure that the removal of the trees on Site will not significantly affect local bat populations. In addition, several measures have also been outlined to minimise the impact of Operational Phase lighting on bats.

Once these mitigations measures are implemented in full, the impacts on local bat populations as a result of the Proposed Development are not considered to be significant.

10 REFERENCES

CIEEM. (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

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Russ, J. (2012) British Bat Calls – A Guide to Species Identification. Pelagic Publishing

11 APPENDIX I

Bat Detector – Metadata

Table 4. Full bat survey metadata (analysis carried out using Elekon BatExplorer 2.0 software)

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Max Frequency [kHz]	Mean Min Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature	Latitude [WGS84]	Longitude [WGS84]
3750002	22/09/2022 19:40	*Nyctalus leisleri*	6	23	24.2	22.3	11	233	15	53.29625	-6.37583
3750003	22/09/2022 19:40	*Nyctalus leisleri*	5	22.7	25.4	22.1	16	871	15	53.29626	-6.37583
3750006	22/09/2022 19:52	*Pipistrellus pipistrellus*	6	44.7	47.1	43.9	10	187	14	53.29613	-6.37602
3750007	22/09/2022 19:53	*Pipistrellus pipistrellus*	36	47.3	57.8	46.4	6	100	14	53.29612	-6.37588
3750008	22/09/2022 19:53	*Pipistrellus pipistrellus*	16	47.3	64.2	46.5	4	85	14	53.29613	-6.37591
3750009	22/09/2022 20:02	*Pipistrellus pipistrellus*	19	47.1	85.5	46	4	90	14	53.29664	-6.37664
3750010	22/09/2022 20:02	*Pipistrellus pipistrellus*	3	47.3	54.1	46.6	3	92	14	53.29665	-6.37664
3750011	22/09/2022 20:17	*Pipistrellus pipistrellus*	15	47.6	65.1	46.8	4	180	14	53.29608	-6.37596
3750012	22/09/2022 20:17	*Pipistrellus pipistrellus*	48	49	89.8	47.5	4	84	14	53.29616	-6.37577
3750014	22/09/2022 20:30	*Pipistrellus pipistrellus*	24	47.7	55.6	47	4	90	13	53.29618	-6.37569
03750016_1	22/09/2022 20:37	*Pipistrellus pipistrellus*	4	47.1	53.6	46.6	6	328	13	53.29596	-6.37689
3750018	22/09/2022 20:44	*Pipistrellus pipistrellus*	14	45.4	53	44.8	4	190	13	53.29642	-6.37717

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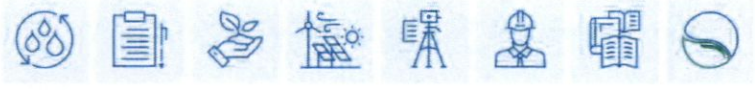

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