Eire Ecology

Environmental Consultants

Bat Survey Report

Tirawley Windfarm,

Co. Mayo.

DOCUMENT DETAILS

Client:	Constant Energy Ltd
Project Title:	Tirawley Proposed Windfarm
Document Title:	Bat Survey Report
Prepared By:	John Curtin – Consultant Ecologist
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Abstract: The following report details the results of bat surveys undertaken between 2022 and 2026 within the proposed Tirawley Wind Farm, Co. Mayo. This bat report is required to assess the impacts of the proposed development on bat species within and surrounding the proposed wind farm site. The proposed Wind farm consists of 16 no. wind turbines.

EXECUTIVE SUMMARY

This document reports on the findings of bat surveys conducted from 2022 to 2026 at the site of the proposed Tirawley windfarm. The proposed windfarm is located c.14km northwest of Ballina Town, c.5km northwest of the village of Killala and c.2.5km east of Ballycastle village in north Co. Mayo; within the townlands of Conaghra, Barroe, Lissadrone, Lissadrone West, Billoos, Lecarrowntemple, Lackanhill, Knockboha, Ballymurphy, Carrowmore, Castletown, Castlelackan Demense, Aghaleague, Ballynaleck, Carrowmachshane, Carn, Glebe, Cloonanass, Barnhill Lower, Barnhill Upper, Cloonavarry and Carrickanass. Surveys included pre-construction bat surveys focusing on proposed turbine locations, surrounding habitats and connectivity with the wider landscape, Static Detector surveys and nighttime emergence surveys.

Twenty one static detectors (SNH 2021) were placed within the site for 10 nights in each of: spring (April-May), summer (June-mid-August) and autumn (mid-August-October) of 2022 based on an initial proposal for forty three turbines. As a response to Northern Irish guidance (NIEA, 2021) additional static monitoring was conducted. This revised planning application proposing a sixteen turbine layout includes updated bat surveys from Spring 2026. Thirteen static detectors were placed within the site with locations informed by turbine locations.

During static surveys, a total of seven species of bats were recorded: Common Pipistrelle, Soprano Pipistrelle, Nathusius Pipistrelle, Leisler's bat, Natterer's bat, Brown long-eared bat and Lesser Horseshoe bat. In addition, unidentified Myotis species were recorded; several of which were likely whiskered bats. The most frequently recorded species was Soprano Pipistrelle, followed by Leisler's bat and Common Pipistrelle, with lower levels from other species.

Results from locations relevant to the final layout showed that when Octobers data was excluded, activity from Soprano Pipistrelle and Leisler's bat was moderate while Common Pipistrelle activity was low. An October drop-off in activity shows mitigation is not required at this time.

All bats recorded during surveys are classified as 'Least Concern' on the Irish Red List No. 12 and protected under the EU Habitats Directive Annex IV and Wildlife Acts. The site is outside the geographical range for the EU Habitats Directive Annex II listed species lesser horseshoe bat however a single recording from this species was recorded from a location since excluded from the final site boundary.

Robust mitigation is proposed in order to negate the potential for high casualty levels including feathering turbine blades in low wind conditions, curtailment of twelve turbines, cut-in speeds, creating buffers surrounding the turbines and a post construction monitoring program designed to examine the effectiveness of these mitigation measures.

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1 INTRODUCTION

This document reports on the findings of bat surveys conducted from 2022 to 2026 at the site of a proposed Tirawley windfarm located northwest of Ballina, Co. Mayo.

The purpose of this report is to identify species of bats utilising the site, quantify activity levels, particularly from those species most at risk to turbine collision and to examine feeding, roosting and commuting routes in the locality.

1.1 SITE DESCRIPTION

Tirawley proposed windfarm is located 13.9km northwest of Ballina Town, 4.7km northwest of the village of Killala and 2.5km east of Ballycastle village in north Co. Mayo. Surveys included pre-construction bat surveys focusing on proposed turbine locations, surrounding habitats and connectivity with the wider landscape.

The site is located in a rural area. The settlement pattern in the area is linear, made up of one-off rural housing and farmyards generally located along the local road network.

The majority of the proposed development is located within pasture and lowland conifer plantation. Several streams and drains can be found within the site all draining into the sea, or into the Cloonalaghan River or Ballinglen River.

1.2 PURPOSE OF THIS REPORT

This document reports on the findings of bat surveys conducted between 2022 and 2026. This report aims to;

- Identify species of bats using the site.
- Examine trees and buildings within and surrounding the site for roosting potential.
- Examine feeding and commuting routes.
- Potential impacts of bats by the proposed development.

To assess the presence and activity of bats within the proposed development grounds the following surveys were undertaken within and adjacent to the proposed planning boundary:

- Preliminary roost assessment
- Bat activity (walked, driven transects and emergence surveys); and
- Static detector (five survey periods).

While survey methodologies were primarily informed by SNH (2021) guidance alongside aspects of the NIEA (2021), the Bat Conservation Ireland (BCI, 2026) guidelines were also taken into account for surveys undertaken in 2026, particularly in relation to the placement of static detectors within conifer plantations and at woodland edge habitats.

1.2.1 Surveyor Information

Bat surveys were designed by John Curtin BSc. John qualified in Environmental Science at NUI Galway in 2010 and has been working as an ecologist ever since. John has been conducting bat surveys at windfarm sites since 2012. He has also completed the Bat Conservation Ireland, Bat Detector Workshop and Bat Handling Workshop which are the standard training for the carrying out of bat surveys in Ireland. In addition, John is an active member of Bat Conservation Ireland, which monitor bat populations in Ireland, and facilitate the education of bat communities to the public.

John holds the following licences.

Description	Licence No
Licence to capture protected wild animals for educational, scientific or other purposes (bats)	C072/2026
Roost disturbance (bats)	DER-BAT-2026-145
Licence to photograph / film wild animals (bats)	030-2026

In addition, night-time detector surveys were supported by Rory O'Reilly. Rory has a degree in Wildlife Biology and has completed CPD courses on Fundamentals of Biodiversity Considerations for Engineering Projects, Bat License Training & Bat Sound Analysis. An assessment of trees was conducted by John Curtin and Karolina Illien. Karolina has a Masters in Environmental Leadership and has worked as an ecologist since 2022. Fionn O' Neill provided fieldwork assistance in 2026.

1.3 Relevant Legislation

The protection of bats in Ireland is governed by a combination of domestic wildlife legislation, EU-derived regulations, and the statutory planning framework. Together, these instruments establish strict protection for all bat species, regulate activities that may affect them, and set out how ecological considerations must be integrated into the planning and development process. The key legislative provisions relevant to wind energy development are outlined below.

The Wildlife Acts 1976 and 2000

The Wildlife Act 1976, as amended by the Wildlife (Amendment) Act 2000, is the primary domestic legislation providing for the protection of wild fauna and flora in Ireland. Its objectives include the conservation of wildlife, the safeguarding of important ecosystems, and the regulation of activities that may adversely affect protected species.

All bat species occurring in Ireland are protected under the Act. It is an offence to:

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

These provisions apply irrespective of species, population status, or location, and they cover both natural and artificial roost structures. The Act also provides for enforcement powers, penalties, and the regulation of activities requiring licences.

1.3.1.1 European Communities (Birds and Natural Habitats) Regulations 2011 to 2021

The European Communities (Birds and Natural Habitats) Regulations transpose the EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) into Irish law. All bat species found in Ireland are listed on **Annex IV** of the Habitats Directive, requiring strict protection across their natural range. This includes prohibitions on deliberate capture, killing, disturbance, and the deterioration or destruction of breeding sites or resting places.

Activities that may contravene these prohibitions may only proceed under a **derogation licence**, which can be granted only where:

- There is no satisfactory alternative,
- The action is necessary for reasons of overriding public interest, and
- The action will not adversely affect the favourable conservation status of the species.

The **lesser horseshoe bat** (*Rhinolophus hipposideros*) is additionally listed on **Annex II**, requiring the designation and conservation management of Special Areas of Conservation (SACs) for the species. Projects with potential to affect Annex II species or their SACs must undergo screening for Appropriate Assessment (AA) and, where necessary, a full AA under Article 6(3) of the Directive.

1.3.1.2 Planning and Development Act 2024

The Planning and Development Act 2024 replaces and consolidates the former Planning and Development Act 2000 and introduces a restructured planning system with strengthened environmental obligations. While it does not alter the underlying species protection afforded by the Wildlife Acts or the Habitats Regulations, it significantly changes how biodiversity and protected species must be addressed within the planning process.

Key provisions relevant to bat protection include:

- **Strengthened environmental integration in decision-making** Planning authorities and An Bord Pleanála must ensure that decisions are consistent with environmental law, including the Wildlife Acts and the Habitats Regulations.
- **Revised and clarified Appropriate Assessment procedures** The Act consolidates the statutory basis for AA screening and Natura Impact Statements, ensuring full alignment with EU law.
- **Mandatory integration of biodiversity in plan-making** Development plans, regional strategies and National Planning Statements must incorporate biodiversity protection, ecological connectivity and climate considerations.
- **Enhanced enforcement and compliance mechanisms** The Act strengthens enforcement provisions, including increased penalties and clearer powers for planning authorities.
- **Greater emphasis on cumulative effects and environmental evidence** Planning decisions must be informed by up-to-date ecological data, with explicit consideration of cumulative impacts.

Implications for Wind Farm Development

Taken together, these legislative instruments require that wind farm proposals:

- Identify and assess all potential impacts on bats, including roosts, foraging habitat, commuting routes, and collision risk.
- Demonstrate compliance with the strict protection provisions of the Wildlife Acts and Habitats Regulations.
- Provide mitigation and monitoring measures that are proportionate, evidence-based, and capable of ensuring no contravention of species protection law.
- Address cumulative effects with other wind energy projects and land-use changes.
- Provide sufficient ecological evidence to enable the planning authority to meet its obligations under the Planning and Development Act 2024.

This legislative framework establishes a high standard of protection for bats and requires that wind energy developments be designed and assessed in a manner that avoids or minimises impacts on these strictly protected species.

1.3.1.3 National Climate Policy and RED III

Ireland's national climate commitments, together with the EU Renewable Energy Directive (RED III), require a substantial acceleration of renewable energy deployment and introduce streamlined permitting timelines for wind energy projects. These policy drivers do not alter the strict protection afforded to bats under the Wildlife Acts or the Habitats Regulations; however, they reinforce the need for early, comprehensive and well-evidenced bat survey programmes to ensure that planning applications are complete at submission and that renewable energy development proceeds in full compliance with species protection law.

2 DESKTOP STUDY

2.1 SCOPE

All surveys adhered to SNH (2021) guidelines. Baseline static detector surveys were undertaken between May and October 2022 over four survey rounds, with an additional updated survey completed in spring 2026. Emergence surveys were carried out in 2022, 2023 and 2026, while winter surveys were conducted in 2023 and 2024.

The survey methodologies were considered appropriate for establishing a baseline species assemblage and for characterising the spatial and temporal distribution of bat activity within the proposed planning boundary.

2.2 BAT SPECIES IN IRELAND AND ROOST TYPES.

There are nine species have been confirmed resident in Ireland. These belong to two families; eight species are in the family Vespertilionidae and one is in the Rhinolophidae family (BCIreland, 2022). The bat species resident in Ireland are:

Family Vespertilionidae

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Nathusius' pipistrelle (*Pipistrellus nathusii*)
- Leisler's bat (*Nyctalus leisleri*)
- Brown long-eared bat (*Plecotus auritus*)
- Daubenton's bat (*Myotis daubentonii*)
- Whiskered bat (*Myotis mystacinus*)
- Natterer's bat (*Myotis nattereri*)

Family Rhinolophidae

- Lesser horseshoe bat (*Rhinolophus hipposideros*)

For more details on each of these species please see Bat Conservation Ireland (https://www.batconservationireland.org). In addition to the aforementioned bats two other species may be considered vagrant or possible residents;

- Brandt's bat (*Myotis brandti*). A single dead Brandt's bat was found by Enda Mullin (NPWS) in Wicklow in 2003. No other confirmed records of this species have been found in Ireland since.
- Greater Horseshoe bat (*Rhinolophus ferrumequinum*). A single bat was recorded in Wexford by Paul Scott roosting in a disused cellar. In 2020 Nick Marchant identified a number of greater horseshoe recordings in Glendalough, Wicklow.

The Bat Mitigation Guidelines for Ireland (Marnell, 2022) describe bat roosts in the following broad categories;

- Maternity site, where pups are born and raised to independence;
- Hibernation site, where bats may be found during the winter;
- Mating site, where males and females gather during the autumn;
- Feeding site (night roost), where bats rest between feeding bouts during the night but are rarely present by day;
- Transitional (or swarming) site, where bats may be present during the spring or autumn;
- Satellite roost, used by males and non-breeding females.

2.3 DESKTOP REVIEW

A desktop assessment is required in order to assign a risk level to the site and design future survey work. The appropriate level of survey effort for a site depends on the quality of habitat present and the scale and likely impact of the development. Consideration should be given to the presence of suitable commuting and foraging habitat and the likely presence of bat roosts near proposed turbines. An assessment was conducted for Tirawley by examining the BCI database, NBDC records, BCI landscape model for bat suitability, Ordinance survey, aerial photos and google street view.

Data searches were conducted in April 2002, July 2023, Sept 2025 and March 2026 to revise existing information from the surrounds of the proposed planning boundary. The following information sources were examined:

- Known bat records within a 10km radius of the proposed sites from the Bat Conservation Ireland database
- Adhoc and observational bat records from the National Bat Database held by the National Biodiversity Data Centre (www.biodiversityireland.ie)
- Review of Ordnance Survey mapping and aerial photography of the proposed wind farm boundaries and their environs (i.e. 200 m plus rotor radius of the boundary of the proposed development)
- Records of designated sites within a 6 km radius of the proposed sites where bats form part or all of the reason for designation (https://www.npws.ie/protected-sites)
- Collation of data on known caves within a 4 km radius of the proposed sites from the Cave Database for the Republic of Ireland, compiled by Trinity College (http://www.ubss.org.uk/search_irishcaves.php)
- Review of bat survey data from Ecological Impact Assessments from proposed and permitted developments within the wider environs of the site.
- Bat Tree Habitat Key Database (BTHK) was examined in order to assess likelihood of bats roosting in conifer plantation.

2.3.1 Designated Sites

A search was made for designated sites within 6 km of the proposed planning boundary. These included sites designated at the European level (in the context for bats, this refers to Special Areas for Conservation or SACs) and the Irish level (Natural Heritage Areas or NHAs and proposed Natural Heritage Areas or pNHAs). The Habitats Directive (Article 6) forms a basis for the designation of SACs.

NHAs are areas considered important for the habitats present or which holds species of plants and animals whose habitat needs protection. Under the Wildlife Amendment Act (2000), NHAs are legally protected from damage from the date they are formally proposed for designation.

All pNHAs were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. However, for the purposes of this assessment all pNHAs have been considered as fully designated sites.

Both NHAs and pNHAs may be designated due to the presence of bats.

2.3.2 Sites Designated for Nature Conservation

Table 2-1: Natura 2000 sites within 6km of subject site

Name	Site Code	Distance (km)	Designated for Lesser Horseshoe
Lackan Saltmarsh and Kilcummin Head SAC	000516	1.3	No
Killala Bay/Moy Estuary SAC	000458	4.1	No
Glenamoy Bog Complex SAC	000500	4.9	No

Table 2-2: Nationally designated sites within 6km of subject site

Name	Site Code	Distance (km)	Does Site Synopsis mention bats?
Creevagh Head pNHA	000482	2.4	No
Killalla Esker pNHA	001517	4.9	No
Downpatrick Head pNHA	000494	5.1	No

2.3.3 Bat Landscapes

(Lundy, 2011) produced a landscape model by analysing data contained in the Irish National Bat Database, maintained by Bat Conservation Ireland and the National Lesser Horseshoe Bat database maintained by National Parks and Wildlife Service. The maps are a visualisation of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. The landscape model has been conducted for all of Irelands nine resident species.

Proposed potential turbines locations, as provided by the Client are situated in habitats ranging from moderate low to moderate high suitability (see Table 2-2).

Table 2-1: Landscape model for areas of the site (green is low suitability for bats, red is high)

Turbines	All bats result	Species	Suitability result
10 turbines AT07 to AT16	16.89	*Pipistrellus pygmaeus*	39
		Plecotus auritus	18
		Pipistrellus pipistrellus	27
		Rhinolophus hipposideros	0

Turbines	All bats result	Species	Suitability result
(North)		*Nyctalus leisleri*	25
		Myotis mystacinus	3
		Myotis daubentonii	22
		Pipistrellus nathusii	2
		Myotis nattereri	16
6 turbines AT01 to AT06 (South)	22.56	*Pipistrellus pygmaeus*	44
		Plecotus auritus	26
		Pipistrellus pipistrellus	32
		Rhinolophus hipposideros	1
		Nyctalus leisleri	32
		Myotis mystacinus	11
		Myotis daubentonii	31
		Pipistrellus nathusii	2
		Myotis nattereri	24

2.3.4 Historical Bat Records from the vicinity of the site

The NBDC and Bat Conservation Ireland database was consulted for details on bat records held for the site and the surroundings. The database was consulted on the 20/03/2022 and again on the 28/01/2024 for details on historical records from the site, the surrounding 10km. Results are outlined in **Appendix 1**. The closest historical roosts are located 900m east and 2.3km to the west, both containing Brown Long-eared and Natterer's bat roosts. The western roost also recorded Common and Soprano pipistrelle, however these were recorded on a bat detector rather than observed emerging.

In addition, multiple records of bats have been recorded by Ruth Cardin during Bat Conservation Ireland's BATLAS 2010. Species recorded included Soprano Pipistrelle, Common Pipistrelle, Leisler's bat, Brown Long-eared bat and Daubenton's bat.

The site does not lie within a Lesser |Horseshoe bat range with the closest records for this species lying 40km to the SE in Tubbercurry (2008 record) and 40km south in Bellavary (roost record from 1999).

2.3.5 Initial Site Risk Value.

2.3.5.1 Habitat vale

An initial risk assessment is based on an assessment of habitats and the size of the development. Habitat suitability is ranked either low, moderate and high while project size is ranked from small, medium and large. Habitats surrounding the subject turbines are ranked as Moderate given connectivity to the wider landscape with the presence of hedgerows, treelines and sections of conifer plantation. While there are streams running through the site, the nearest river lies over 2.3km (from AT02).

2.3.5.2 Project size & in-combination effect value

Project size is where in-combination effects of the site alongside other windfarms are considered in the SNH 2021 guidance document. For Tirawley there are no other commercial windfarms within 5km. Two domestic turbines, attached to the side of houses are within a 5km buffer; 1.1km to the northwest of AT15 and 4.1km south east. Notwithstanding this, the project is still categorised as large, as while the proposed development contains a moderate number of turbines (16), with no other operational windfarms within a 5km radius, turbines reach over 100m in height. A small windfarm can be found on the outskirts of Killala some 6.2km from proposed turbine 2.

1.3.1.4 Site risk value

The proposed Tirawley windfarm thus derives an Initial Site Risk Assessment Value of *4; high site risk*. The output from the initial site risk assessment is used in combination with onsite results to derive an overall risk assessment based on the activity level of high collision risk species. Common Pipistrelle, Soprano Pipistrelle and Leisler's bat are considered high collision. Ireland is considered the world stronghold for Leisler's bat with an estimated population of 73,000 – 130,000 (2007-2012) (Roche N. A., 2014).

3 SURVEY METHODOLOGY

3.1 HABITATS ON SITE

The subject site is situated in a variety of habitats consisting of cutover blanket bog, improved agricultural and wet grassland, hedgerow, treeline, scrub, streams and conifer plantation. Elevation on site ranges from 40 to 180m. The surrounding area is serviced by a variety of roads from secondary to tertiary. Figure 3-1 shows the site outline while Table 4-1 details habitats within 252m of each proposed turbine.

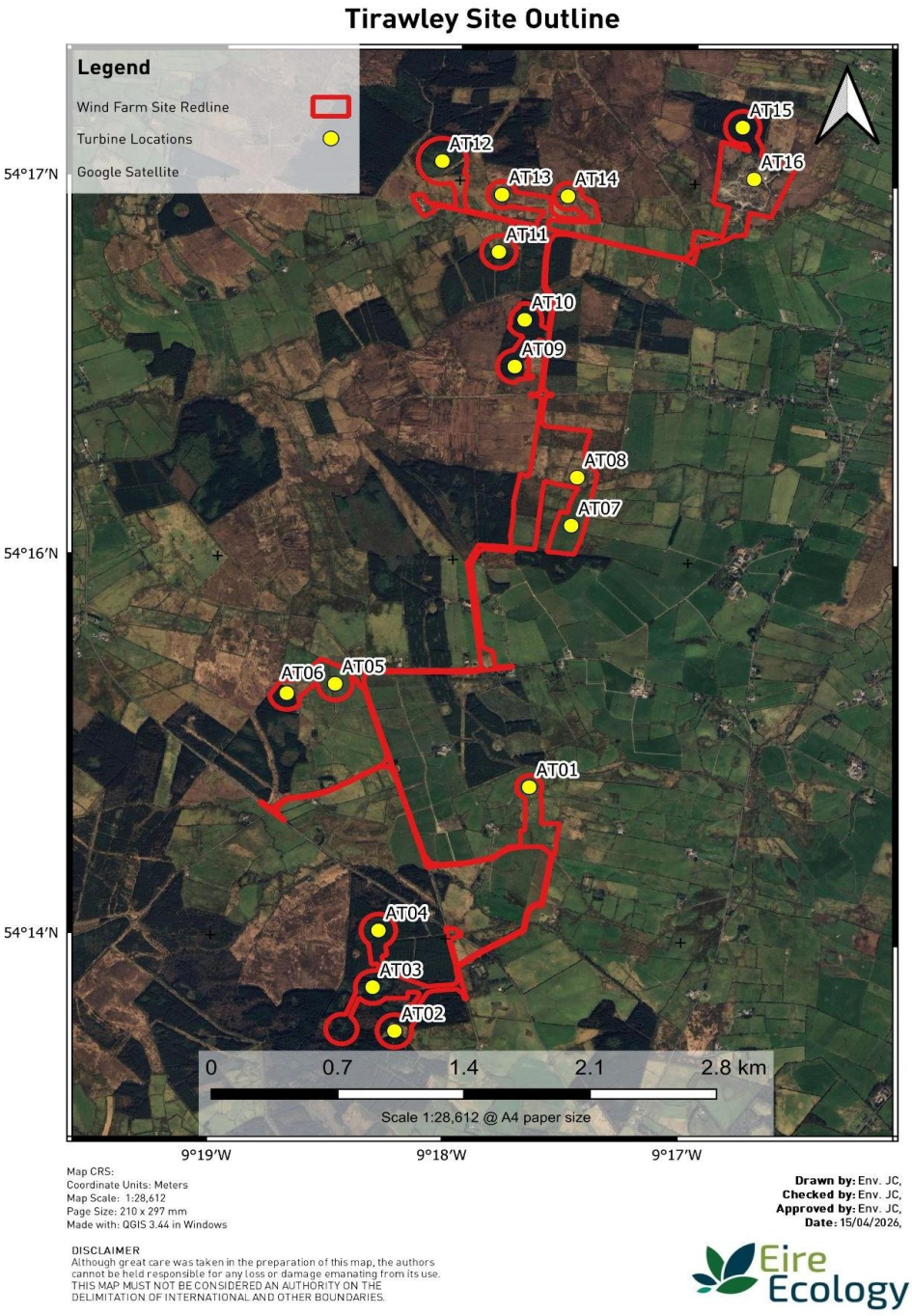

Figure 3-1: Aerial view displaying site sections.

3.2 PRELIMINARY ECOLOGICAL APPRAISAL (PEA)

The only existing buildings proposed to be impacted by the development are an unoccupied dwelling (proposed operations building 54.2789319,-9.3035854) and farm sheds proposed as temporary site compounds (54.2784558,-9.3031924). In addition a number of linear features including small portions of hedgerow, conifer plantation and scrub will be removed to allow for the construction of access tracks and turbines.

Inspection of structures and ground level assessment of trees was undertaken in June 2022, March 2023, February 2024, June 2024 and April 2026 to evaluate the potential their potential to host bat roosts. Structures such as sheds can also offer shelter and breeding opportunities for bats, while trees are a highly important feature of landscapes that can provide roost sites throughout the year as well as being essential sources of insect prey. The removal of trees feature reduces the availability of shelter and feeding sites for bats (NRA 2005).

3.2.1 Structures.

Structures thought to be of high potential for bat roosts were identified onsite during desktop review and preliminary roost assessment by surveyors. Primarily, surveyors focused on structures within 200m plus blade radius (252m) of each turbine. Given the number of changes to the project, several structures were examined, now outside the zone of influence of the development. In addition, multiple structures were examined in the wider landscape, along the grid route, TDR and general area.

3.2.2 Trees - GLTA

The use of trees as roost sites by bats is well established, as they provide essential shelter, breeding sites, and hibernation refuges throughout the year. Roosting opportunities are typically associated with structural features such as cavities, cracks, splits, or areas of lifted bark. These features are collectively referred to as Potential Roost Features (PRFs). The discovery of such roosts can be established through a variety of methods, including bat detector surveys to record bat activity during emergence or return flights, as well as close visual inspection of crevices, cavities, and other PRFs for evidence of bat use (e.g., droppings, staining, or scratch marks). Trees most likely to serve as bat roosts are identified by a bat specialist from a walk-through of the route, from aerial photography or from directed tree surveys.

PRF's used by bats include;

- **K**not-Holes – dead branch
- Flush-Cuts – chainsaw cut of branch
- Tear-Outs – wind or snow, often well below canopy
- Double-Leaders - 2 stems of equal diameter emerge from same spot, cavity is located below split. Increased chance of roost where entrance hole is small
- Wounds & Cankers - Rough edge, indistinct shape of entrance
- Butt-Rot - decay at the base of a tree
- Hazard-Beams - longitudinal splits in lateral limbs and (less frequently) upright stems allowing light to be seen through the gap typically found on Quercus, Salix and horse chestnut

- Subsidence, Shearing & Helical-Splits - typically on the convex side of a bend
- Lightning-Strikes – from crown to base.
- Impact-Shatters – branch hit by falling tree etc.
- Desiccation-Fissures – dead wood
- Transverse-Snaps – branch / stem snapped however still attached
- Lifting-bark
- Unions – 2 independent branches (or double leader) fuses. Frequently Beech and Scots Pine
- Ivy - typically where the root forms a mat against the tree – rare for bat usage.

Trees were categorized following (Collins, Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition), 2023).

Table 3-1: Tree category (according to Table 4.2 of (Collins, Bat Surveys for Professional Eccologists: Good Practice Guidelines (4th edition), 2023)).

Tree Category	Description
PRF	A tree with at least one potential roost feature (PRF)
FAR	Further assessment required to establish if PRF's are present in the tree.
None	Trees have no potential.

In total 273 trees (and hedge clusters) were surveyed from ground level for their potential to host individual bats or a maternity roost.

3.3 BAT ACTIVITY AND EMERGENCE SURVEYS

The bat detectors used during the walked and driven surveys were Wildlife Acoustics Inc. (Massachusetts, USA) Echo Meter Touch Pro 2 which are triggered to record when a bat call is emitted louder than 18dB for 1sec. These detectors use full spectrum sampling; detecting all frequencies simultaneously, meaning that multiple bat calls can be recorded at the same time.

Nighttime surveys combined emergence surveys towards dusk and dawn and a combination of walked and driven transects of bat favourable habitats within and surrounding the study were conducted between June to August 2022 while additional emergence surveys were conducted in June 2024 and April 2026.

Transects targeted a range of foraging and commuting habitats present within and surrounding the study area, those associated with linear features such as roadside margins, woodland plantation edges, hedgerows, treelines and waterbodies.

In addition to audio recording, multiple NVA's were used to assist the onsite surveyors. These include:

- Track IR Pro 19mm thermal imaging scope
- Track IR Guide Pro TK thermal imaging scope
- Canon XA10 night vision camcorder supplemented with two Nightfox IR torches
- Pixfra Thermal scope

A contact describes a bat observed by the surveyor. This contact can range from a commuter passing quickly to a foraging bat circling a feature lasting for several minutes. Some observations contain multiple bats. When several bats of the same species are encountered together, they are recorded under the one contact. A separate contact is recorded for each species. A contact finishes when the recorder assumes the bat is no longer present. It is likely that the same bat is recorded in several contacts throughout the night. This survey type cannot estimate abundance of bats, rather activity; *the amount of use bats make of an area / feature.*

Where possible, a positive identification to species level was made. Information on the behaviour was also recorded where available.

Bat activity is governed by the activity of their insect prey and insect abundance is in turn governed by weather conditions and climate. Insects, and therefore bats, are unlikely to be present at temperatures below 7°C or during periods of strong winds or heavy rainfall so surveying in such conditions is not possible. All field surveys were undertaken within the active bat season and during good weather conditions (dry conditions and sunset temperature at 8°C and greater[1]).

3.4 STATIC BAT DETECTOR SURVEYS

Song Meter Mini and SM4BAT Full spectrum bat recorders were deployed within the study area at the site of the proposed turbines for ten nights in the spring, summer, early autumn and late autumn periods. Each bat pass does not correlate to an individual bat but is representative of bat activity levels. Some species such as the pipistrelles will continuously fly around a habitat and therefore it is likely that a series of bat passes within a similar time frame is one individual bat. On the other hand, Leisler's bats tend to travel through an area quickly and therefore an individual sequence or bat pass is more likely to be indicative of individual bats.

Per SNH (2019) guidance, static units (Song Meter SM4BAT and SM-Mini) were programmed to commence half an hour before sunset and finish half an hour after sunrise to ensure that bat species that emerge early in the evening and return to roosts late are recorded. Detectors were left out for a minimum of 10 consecutive nights across four survey periods.

SNH (2021) guidance states that "*Detectors should be placed at all known turbine locations at wind farms containing less than ten proposed turbines. Where developments have more than ten turbines, detectors should be placed within the developable area at ten potential turbine locations plus a third of additional potential turbine sites up to a maximum of 40 detectors for the largest developments*".

In 2022, twenty-one detectors were deployed throughout the site based on an original proposal of 43 turbines. The placement of detectors was split between habitats surrounding turbines (within 100m) and location. Originally, 17 turbines were proposed within peat habitats, 12 in grassland and 11 in conifer plantation. Based on this, 9 detectors were placed in peatland, 6 in grassland and 7 in conifer plantation.

[1] Emergence surveys carried out on the 1st of April 2026 were cool with sunset temperature of 7 degrees. Bats were recorded flying however it is acknowledged these surveys were suboptimal

Many of these turbine locations were later revised or removed, in particular, multiple peatland turbines were removed from the scope of the application. As of 2026, turbine locations have changed and 9 turbines are placed within conifer plantation, 6 within grassland and 1 located in a pre-existing quarry.

A fresh round of static monitoring was conducted in spring of 2026 aiming to verify that the landscape for bats remained similar, and to provide more accurate location based data with multiple statics placed at the final turbine locations. Figure 4-3 shows the location of statics compared to turbines.

The data was analysed with Wildlife Acoustic's Kaleidoscope Pro; version 5.6.8). This software identifies many of the calls made by Irish bats. All calls were manually verified. Results presented below show some Myotis calls that the surveyor is confident the bat is a Natterer's bat and a single Daubenton's Bat. Distinguishing between Myotis species recordings is difficult (unless distinctive social calls are recorded thus several calls are recorded to genus level only. These could be either Whiskered, Daubenton's or Natterer's bat. Similarly, several Pipistrelle calls were recorded with a peak frequency of around 40kHz. These calls are lower than expected for Common Pipistrelle but higher than typical for Nathusius'.

3.5 Assumptions and Limitations

Bat survey results and the subsequent assessment of potential effects are based on a series of assumptions and constraints that are inherent to ecological field surveys and data interpretation. These are outlined below to ensure transparency and to provide appropriate context for the interpretation of survey findings and impact predictions.

3.5.1.1 Survey Design and Temporal Coverage

Bat surveys were designed and implemented in accordance with recognised best practice guidance current at the time of survey, including SNH (2021), and were considered sufficient to characterise baseline bat activity at the site. It is assumed that the survey effort undertaken is representative of typical seasonal bat activity patterns for the locality. However, bat activity can vary between years due to weather conditions, prey availability, land management practices, and wider population dynamics. As such, survey results represent a snapshot of activity during the survey period rather than a complete account of all bat use of the site.

3.5.1.2 Weather Conditions

Bat activity is strongly influenced by weather variables including temperature, wind speed and rainfall. Surveys were undertaken during periods considered suitable for bat activity in line with guidance; however, short-term weather variability may have influenced activity levels recorded on individual nights. As a result, absolute activity levels should be interpreted as indicative rather than definitive.

3.5.1.3 Species Detectability

Bat detector surveys rely on the detection of echolocation calls and are subject to limitations in species identification, particularly for Myotis species and in areas of high background noise or cluttered habitats. Where calls could not be reliably identified to species level, recordings were classified to genus or left unidentified. It is assumed that such classifications do not materially affect the overall assessment of collision risk, which is driven primarily by open-air foraging species known to be most vulnerable to wind turbine collision.

3.5.1.4 Spatial Coverage

Static detectors and walked transects provide point-based and linear samples of bat activity and cannot capture all bat movements across a site. Detector locations were selected to represent a range of habitats and turbine locations; however, bats may utilise areas not directly sampled. Static detectors detection rates are influenced by vegetation structure, and local topography. The assessment therefore focuses on relative activity patterns and spatial trends rather than absolute population estimates.

3.5.1.5 Static Detector Survey Limitations

Static bat detectors record activity at a fixed height and location and do not capture vertical flight behaviour or activity at turbine blade height. Detection ranges vary between species and are influenced by call intensity, frequency, and environmental conditions. As a result, static detector data may under-represent high-flying species or activity occurring outside the effective detection range. Static survey results are therefore interpreted in combination with walked transects, emergence surveys, habitat assessment and professional judgement.

3.5.1.6 Roost Assessment Limitations

Preliminary roost assessments of trees and structures were undertaken from ground level and were limited by visibility, access constraints and seasonal factors. The absence of evidence of roosting during daytime inspections does not confirm the absence of bat roosts. For this reason, precautionary measures and pre-construction checks are recommended where works may affect potential roost features.

3.5.1.7 Use of Desk-Based Data

Desktop information, including historical records and landscape suitability models, was used to inform survey design and contextualise findings. Such data are dependent on recording effort and may not reflect current site usage. The absence of historical records within a defined search area should not be interpreted as evidence of absence.

3.5.1.8 ECOBAT and Activity Band Analysis

ECOBAT outputs and activity band classifications are used as comparative tools to contextualise site activity levels against wider datasets. These tools do not predict collision rates or population-level impacts and are interpreted alongside site-specific ecological knowledge and professional judgement.

3.5.1.9 Impact Assessment and Mitigation

Impact predictions are based on current turbine layouts and operational assumptions. Changes to turbine specifications, layout, or operational parameters may alter predicted impacts. Mitigation measures are proposed on a precautionary basis and are intended to reduce risk rather than eliminate all potential effects. Post-construction monitoring is therefore recommended to verify the effectiveness of mitigation and to inform adaptive management where necessary.

4 SURVEY FINDINGS

4.1 PEA RESULTS

4.1.1 Structures

Searches were conducted of sheds and dwellings of highest potential for bat roosts that were within or close to the proposed project site. Where access was not possible, where possible, the surveyor attempted nighttime surveys from the road examining bats and attempting to locate commuting routes and roosts. Appendix 2 provides details of structures examined. In total 59 buildings and bridges were examined.

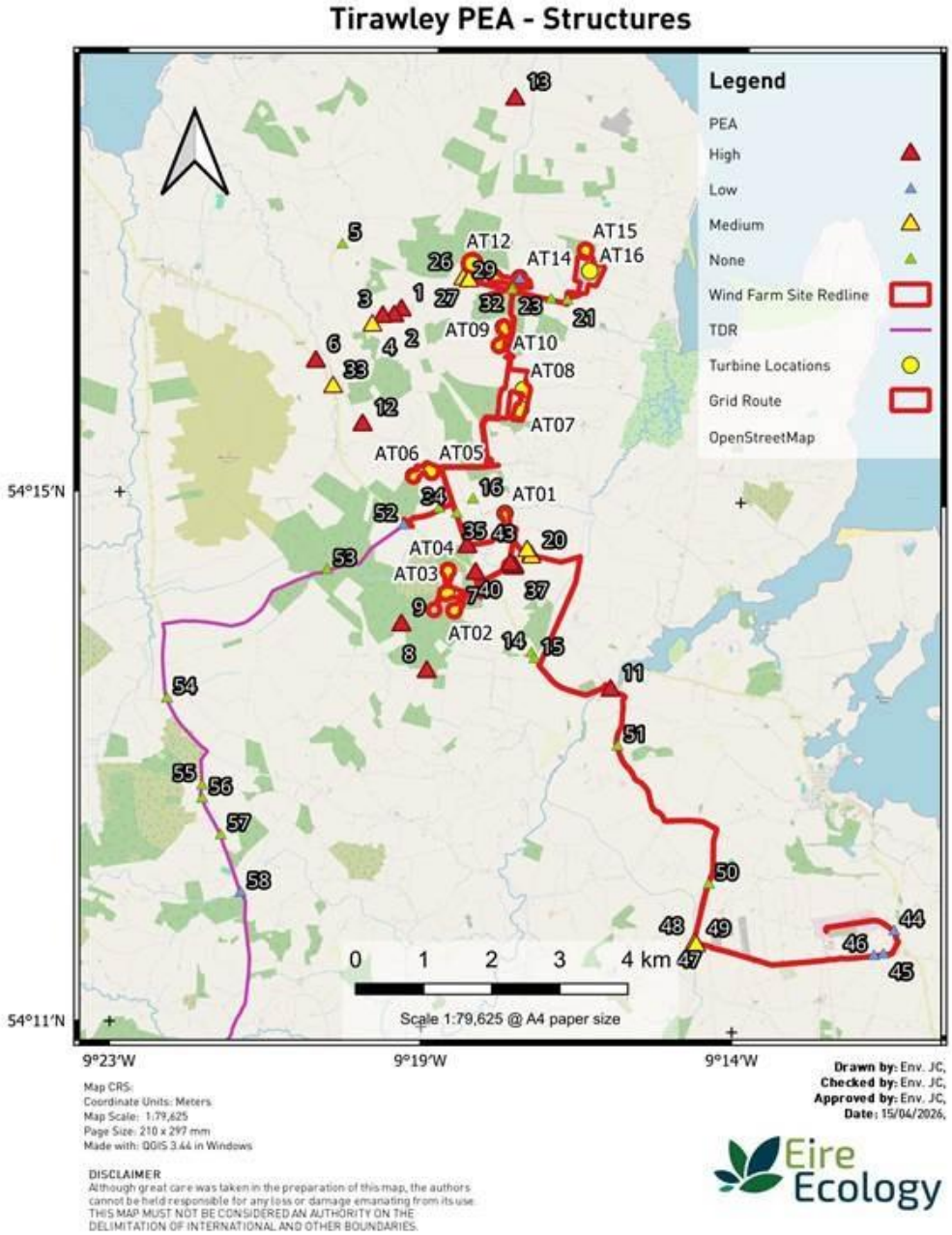

Figure 4-1: Buildings examined for bat roosting potential

4.1.2 Trees

Appendix 3 provides full details on trees assessed and lists which will be impacted by the development. Of the 273 trees and tree clusters , 48 PRF-I and 17 PRF-M trees were identified. 34 of these can be found close to Palmerstown bridge in an area now not being impacted by the development. When considering the 252m zone of influence around proposed turbines, only AT14 contains trees with PRF's. 4 x PRF-I's and 1 x PRF-M can be found here. Emergence surveys conducted in April 2026 focusing on the trees at AT14 showed no evidence of bats roosting in PRF trees here. No tree identified as having a potential roost feature will be removed as part of the application.

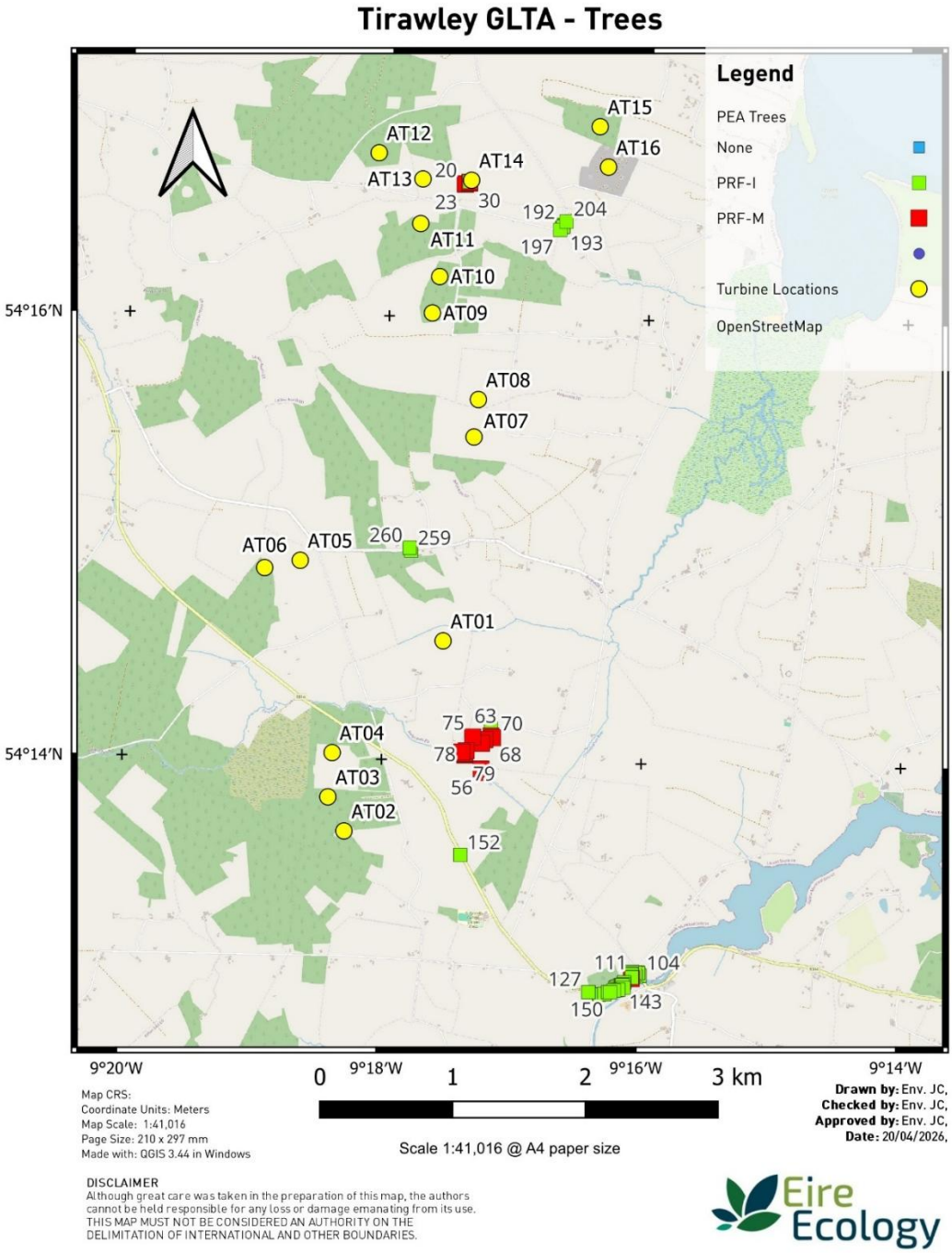

Figure 4-2: PRF tree locations

4.2 SURVEY EFFORT INCLUDING SUMMARY OF EMERGENCE RESULTS.

Table 4-1 provides a summary of all bat surveys conducted within the site and summarising if the presence of a bat roost was found.

Table 4-1: Survey effort

Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
10/05/2022	PEA								JC
Static Survey 1 (Spring) 10th to the 24th of May 2022									
27/06/2022	Emergence survey	21:20	00:20	1	Soprano Pipistrelle, Common Pipistrelle and Leiser's recorded hunting and flying. **No bat roost found.**	54.27466	-9.31735	21:50	ROR
28/06/2022	Re-entry survey	03:30	05:31	7	Soprano Pipistrelle recorded but no roost found. Last call 42 minutes before sunrise indicating **no roost in the area.**	54.24005	-9.29953	05:31	ROR
27/06/2022	Emergence survey	21:20	00:20	2	Conducting dusk emergence survey at derelict ruin with high bat potential. Slated roof (no bitumen) and block wall. Gap in fascia and window provides possible entrance. **No bat roost found.** Soprano Pipistrelle and Common Pipistrelle bats recorded flying.	54.27388	-9.31884	22:10	JC
28/06/2022	Re-entry survey	03:30	05:31	8	Soprano Pipistrelle only species recorded. Last recording at 04:47, 13 minutes prior to sunrise. Used Guide track Pro 19mm thermal scope to aid bat survey. **No bat roost found.**	54.226888	-9.310199	05:02	JC

Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
03/07/2022	Emergence survey	21:05	23:15	11	Stone bridge crossing N25. The bridge was examined during daylight and several crevices with bat potential were noted. **No bats emerged** from the bridge during the survey. Soprano Pipistrelle and Leisler's bat recorded.	54.2253	-9.26945	21:49	ROR
	Driven transect	23:25	23:35	T1	Transect from bridge, north along R314. No bats recorded	54.2408, -9.3000	54.264, -9.332		ROR
	Driven transect	23:40	00:05	T2	Along tertiary roads in the townland of Conaghra. No bats recorded	54.2752, -9.3500	54.2793, -9.3098		ROR
04/07/2022	Re-entry survey	02:56	05:35	3	Soprano Pipistrelle, Common Pipistrelle and Leisler's recorded hunting and flying. A total of 5 Soprano Pipistrelle bats were observed entering the roost. **Satellite roost confirmed.**	54.240	-9.2995	05:35	ROR
Static Survey 2 (Summer) 22nd to 31st July 2022									
31/07/2022	Emergence count	21:09	23:10	12	Derelict site with house, farm building and stone building. Stone building on visual inspection does not look suitable for bats crevices and fissures too large. Large amounts of insects at site, with very little bat activity. First bat recorded was a Soprano Pipistrelle at 22:51. **No roosting bats found.**	54.2594	-9.3256	21:39	ROR

Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
	Car transect	23:16	00:05	T3	Driven transect from site through one section of site to second across main road. Good Soprano Pipistrelle activity in townland of Ballymurphy with several recordings from multiple Soprano Pipistrelle bats feeding. A single Common Pipistrelle also recorded.	54.2590, -9.3257	54.2292, -9.296		ROR
Static Survey 3 - 30th Aug to 08th September 2022									
01/08/2022	Walked transect	03:38	04:19	T4	Walked boundary of site adjacent to stone bridge for dawn survey. Single Soprano Pipistrelle bat recorded.	54.2449, -9.2905	54.2435, -9.304	05:48	ROR
	Re-entry survey	04:19	05:48	10	Old stone bridge previously inspected. Some small fissures that looked suitable for bats. Soprano Pipistrelle observed feeding around bridge on occasions however **no roosting bats found.**	54.2439	-9.3017		ROR
22/08/2022	Emergence count	20:26	21:33	8	Derelict house with tree cover. **No emerging bats found.**	54.2267	-9.3102	20:54	ROR
	Walked transect	21:45	22:35	T5	Walked bog path on eastern section of site. A single Soprano Pipistrelle bat recorded.	54.2287, -9.3468	54.2352, -9.3343		ROR
	Car transect	22:37	23:28	T6	Driven transect across three sections of site. A single Soprano Pipistrelle bat recorded.	54.2305, -9.3438	54.2643, -9.3326		ROR
23/08/2022	Re-entry survey	04:26	06:26	25 to 31	Derelict house with associated farm buildings. No tree cover at site and exposed. **No bats roosting.**	54.2787	-9.303	06:26	ROR

Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
30/08/2022	Emergence count	19:52	22:30	9	By derelict dwelling. Soprano and Common Pipistrelle along with occasional Leisler's bat and a single unidentified Myotis species. **No roosting bats found.**	54.233	-9.316	20:22	JC
	Driven Transect	22:40	23:15	T7	Along secondary road crossing R314 between AT04 to south and AT05 to north traveling east. Only Soprano and Common Pipistrelle recorded. On one occasion two Soprano Pipistrelle observed at the one time.	54.24309, -9.32293	54.25435, -9.29528	23:15	JC
31/08/2022	Re-entry survey	04:50	06:54	13	Derelict site with house, farm building and stone shed. **No roosting bats.** Low level of Soprano Pipistrelle activity. Last bat recorded at 05:28	54.302	-9.2925	06:54	JC
09/03/2023	GLTA & PEA.			PRF survey of trees and hibernation assessment of structures. Ground level assessment within 252m of each turbine and within site boundary where there is the potential for trees and shrubs to be impacted.					JC
07/02/2024	GLTA & PEA			PRF survey of trees and hibernation assessment of structures. Ground level assessment within 252m of each turbine and within site boundary where there is the potential for trees and shrubs to be impacted. Renewed surveys based on updated turbine locations,					KI
Static Survey 4 05th to 16th October 2022									
05/06/2024	Emergence count	21:22	23:36	17 to 20	Derelict dwelling with sheds. Has good treelines and hedgerows surrounding. **Two Soprano Pipistrelle emerged from rear of building exiting through door and hole in eves.**	54.2424	-9.2872	21:52	JC

Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
Static Survey 5 01st to 11th April 2026									
01/04/2026	Emergence	19:40	21:45	25, 26, 32, 52	Emergence survey of 4 structures and PRF trees (28 and 30). Derelict dwelling (52) close to turbine AT14 showed Brown Long-Eared Bat flying however was not found emerging. Similarly, Soprano Pipistrelle was observed flying close to building 25 but not emerging. No sign of bats emerging from trees or structures 26 and 32.	54.27891 54.278921 54.278701 54.279048	-9.303016 -9.303538 -9.302197 -9.290908	20:10	JC FON
13/04/2026	Emergence	19:51	22:15	25, 26, 27, 52.	Resurvey of structures 25 and 52, and additional survey of 26 and 27. Survey found no bats emerging from any building. Some bats were seen commuting from the South.	54.27891 54.278921 54.278657 54.279048	-9.303016 -9.303538 -9.303183 -9.290908	20:21	JC FON

4.3 HABITATS ON SITE, TURBINE AND STATIC DETECTOR LOCATIONS

The subject site is situated in a variety of habitats consisting of improved agricultural grassland, conifer plantation, wet grassland and boggy wetland. Elevation on site ranges from 110m to 261m. The surrounding area is serviced by a variety of roads from primary to tertiary. Table 4-2 details habitats within 300m of each proposed turbine and details the static detector used for producing a risk assessment at this point. The table also details the positioning of each turbine, and which detector(s) results apply to each specific turbine, in terms of habitat similarity and proximity. This approach was taken due to multiple revisions of the turbine locations. This approach allows us to obtain an accurate overview of bat activity in the area, despite incongruent positioning of detectors in relation to the final turbine locations. 2022 Detectors relevant to the final proposal are listed alphabetically from

A to L while those with data now outside the site are listed i to ix. The 2026 detectors were repositioned to be more relevant to the final turbine layout and are labelled D1 to D16.

Table 4-2: Habitats surrounding proposed turbines with comments on static locations and landscape features suitable for bats

Turbine No	Survey Year	Detector	Distance between detector & turbine	Within 200m of proposed turbine								Comments on static locations and landscape features suitable for bats	Number of nights static deployed
				Habitat 1	%	Habitat 2	%	Habitat 3	%	Habitat 4	%		
AT01	2022	G & C	219m & 3.4km	GA1 / GS4	83	WD4	15	FW	2	-	-	Detector G was set within young conifer plantation close to drain. Turbine has now been repositioned in grassland in open habitats. It is likely the detector has picked up higher levels of activity than at the turbine. Detector C will also be used in the assessment given it is set within open grassland habitats similar to the turbine	47 nights
	2026	D1	At location									D1 was set within open grassland at the turbine location	13 nights
AT02	2022	H	300m	WD4	65	GA1 / GS4	30	WS1	5	-	-	AT02 to AT04 turbines are situated within conifer plantation. They lie close to each other and have similar habitat composition. The 2022 detector (H) was placed at the end of a track within conifer plantation close to the centre of these three and should provide a good representation of these turbine sites.	47 nights
	2026	D2	At location										13 nights
AT03	2022	H	180m	WD4	100	-	-	-	-	-	-		47 nights

Turbine No	Survey Year	Detector	Distance between detector & turbine	Within 200m of proposed turbine								Comments on static locations and landscape features suitable for bats	Number of nights static deployed
				Habitat 1	%	Habitat 2	%	Habitat 3	%	Habitat 4	%		
	2026	D3a & D3b	At location & 250m West									In 2026, a detector was placed at AT02 (D2), set at conifer edge. A detector was placed at the same location as H (D3b) while another was placed at the AT03 turbine, within dense conifer (D3a). This follows BCI 2026 recommendations for keyholed turbines.	13 nights
AT04	2022	H	400m	WD4	95	PB	2.5	GS4	2.5	-	-		47 nights
	2026	D3a & D3b	400m										13 nights
AT05	2022	F	75m	GA1 / GS4	90	WS1 / WL1	10	-	-	-	-	Turbine is proposed to be situated within grassland similar to where the 2022 detector was placed. The detector (F) was positioned closer to a drain and northern hedgerow thus has marginally higher bat potential. In 2026 D5 was set at the proposed turbine location.	47 nights
	2026	D5	At Location										13 nights
AT06	2022	F	310m	GA1 / GS4	20	PB	20	WD4	55	WS1 / WL1	5	Turbine is set within conifer plantation to the south of the 2022 & 2026 detector location. Turbines AT05 and AT06 are positioned close to each other with a considerable distance to other turbines.	47 nights
	2026	D5	273m										13 nights
AT07	2022	K	326m		80		15	WD4	5	-	-		47 nights

Turbine No	Survey Year	Detector	Distance between detector & turbine	Within 200m of proposed turbine								Comments on static locations and landscape features suitable for bats	Number of nights static deployed
				Habitat 1	%	Habitat 2	%	Habitat 3	%	Habitat 4	%		
	2026	D8	284m	GS4 / GA1		WL1 /WS1						Turbine is set within the centre of an improved field with less landscape features surrounding than the 2022 detector K. It is likely the detector has higher bat favourability than this turbine. For 2026, D8 will be used to assess impacts here.	13 nights
AT08	2022	K	35m	GS4 / GA1	85	WL1 /WS1	14	FW	1	-	-	Turbine located in wet grassland. 2022 detector K was positioned in ditch close to proposed turbine with marginally better landscape features.	47 nights
	2026	D8	At Location									Detector D8 was positioned at turbine location where few landscape features exist.	13 nights
AT09	2022	B	120m	WD4	50	PB	30	GS4	15	WS1 / FW	5	Both turbine 9 and 10 are located within the same block of conifer plantation and have similar habitat composition with plantation surrounded by bog. The 2022 bat detector (B) was set somewhat inside the conifer block.	47 nights
	2026	D10	257m										13 nights
AT10	2022	B	240m	WD4	60	PB	30	GS4	5	WS1 / FW	5		47 nights
	2026	D10	133m										13 nights
AT11	2022	A	40m	WD4	60	GA1 / GS4	20	PB	15	WS1	5	Turbine is proposed, set 20m within conifer plantation with wet grassland	47 nights

Turbine No	Survey Year	Detector	Distance between detector & turbine	Within 200m of proposed turbine								Comments on static locations and landscape features suitable for bats	Number of nights static deployed
				Habitat 1	%	Habitat 2	%	Habitat 3	%	Habitat 4	%		
	2026	D11	40m									towards the north. Both the 2022 (A) and 2026 (D11) detectors were set by the conifer edge.	13 nights
AT12	2022	A & B	580m and 1165m	WD4	70	GA1 / GS4	20	PB	10	-	-	Turbine location is set within conifer plantation with grassland and firebreaks providing edge habitats some 59m from the turbine. 2022 detectors used for the assessment are set within conifer and have peatland / grassland habitat mixes.	47 nights
	2026	D12a & D12b	At Location & 59m W									For 2026, 2 x detectors were deployed both at turbine location and along firebreak 59m away.	13 nights
AT13	2022	A & E	300m and 2.53km	PB	60	GA1 / GS4	30	WD4	5	WS1	5	Turbine is set within peatland with few suitable bat landscape features. While 2022 detector E is located close to the turbine, activity by the detector will be elevated due to edge habitat. 2022 detector E is set in very similar habitats to the proposed turbine and is likely to be a good representation for this location.	47 nights
	2026	D13	At Location									The 2026 detector 13 was set at turbine location.	13 nights

Turbine No	Survey Year	Detector	Distance between detector & turbine	Within 200m of proposed turbine								Comments on static locations and landscape features suitable for bats	Number of nights static deployed
				Habitat 1	%	Habitat 2	%	Habitat 3	%	Habitat 4	%		
AT14	2022	A & L	500m and 1.9km	GA1 / GS4	40	PB	50	WL1 / WS1	9	FW	1	Turbine is set within grassland with gorse hedges and peatland surrounding. Some mature trees and a small shed found close by. 2022 detector A is used for the assessment based on proximity and similarity of habitats while L has a similar habitat mix. The 2026 detector was set at the turbine location.	47 nights
	2026	D14	At Location										13 nights
AT15	2022	B	1.6km	WD4	70	PB	15	GS4	15	-	-	The turbine is set within conifer plantation block with peatland and grassland at the periphery. Habitats by Detector B were similar albeit B was set adjacent to edge habitat thus activity would likely be somewhat higher. D16 is set to the south in the quarry in marginally better bat habitat.	47 nights
	2026	D16	306m										13 nights
AT16	2022	L	1.45km	GA1	35	ER	60	WD	5	-	-	Proposed turbine is located within a quarry to the east of AT14 and is bordered to the north by a plot of conifer which contains AT15. The 2022 detector L is found within grassland and hedge habitat to the NW while the 2026 detector is set at the turbine location.	47 nights
	2026	D16	At Location										13 nights

Tirawley - Turbine & Static Locations

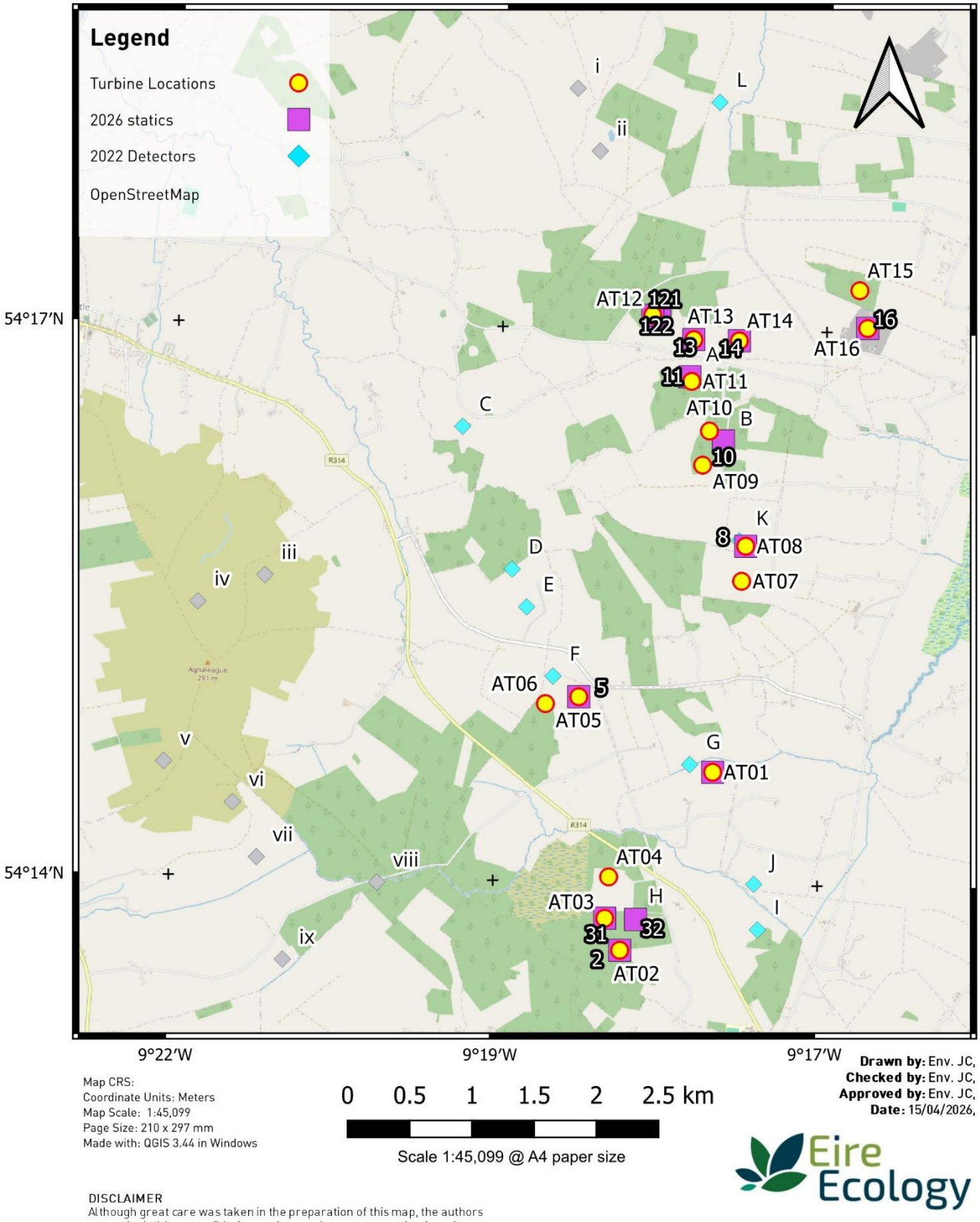

Table 4-3: Turbine and static locations

4.4 STATIC DETECTOR RESULTS

The results of the static detector surveys deployed over four survey periods (Spring, Summer and two periods in Autumn) in 2022 and one survey period in Spring 2026 are shown below. Overall, five bat species were recorded from detectors relevant to the site; Common Pipistrelle, Soprano Pipistrelle, Leisler's bat, Brown Long-eared bat and Natterer's bat, an additional two species were recorded from areas since excluded; Nathusius' pipistrelle and Lesser Horseshoe bat. Where the call could not be identified to species, the identification was determined to the highest level possible. Several registrations recorded as Myotis species were identified only to genus level.

Table 4-4 provides a breakdown of all static detector recordings during the 2022 and 2026 seasons. Table 4-5 provides a more detailed breakdown of results including an encounter rate titled "bat passes per hour" or BpHr.

More detailed results including seasonal breakdown are provided in Appendix 5.

Table 4-4: Static Results

Common Name	Species	No. of recordings (overall site)	No. of recordings from detectors used in risk assessment 2022	All data (used in risk assessment 2022 & 2026
Brown long-eared bat	*Plecotus auritus*	246	180	186
Common pipistrelle	*Pipistrellus pipistrellus*	1,469	1,116	1,287
Leisler's bat	*Nyctalus leisleri*	4,851	3,479	3,633
Nathusius' pipistrelle	*Pipistrellus nathusii*	1	0	0
Soprano pipistrelle	*Pipistrellus pygmaeus*	12,766	9,700	9,910
Natterer's	*Myotis nattereri*	168	120	168
Lesser Horseshoe	*Rhinolophus hipposideros*	1	0	0
Unidentified Myotis species		994	767	920
Total registrations		20,496	15,362	16,104

Table 4-5: Static Results: Combined data for 2022 surveys

Detector	Results	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe bat	Natterer's Bat	Unidentified Myotis	Minutes recorded	Total
A	Passes	350	62	340	0	10	0	5	66	31,412	833
	BP/Hr	0.67	0.12	0.65	0.00	0.02	0.00	0.01	0.13		1.59
B	Passes	240	58	1,825	0	11	0	4	58	31,412	2,196
	BP/Hr	0.46	0.11	3.49	0.00	0.02	0.00	0.01	0.11		4.19
C	Passes	91	34	211	0	13	0	21	191	25,227	561
	BP/Hr	0.22	0.08	0.50	0.00	0.03	0.00	0.05	0.45		1.33
D	Passes	272	232	4,753	0	20	0	34	82	31,412	5,393
	BP/Hr	0.52	0.44	9.08	0.00	0.04	0.00	0.06	0.16		10.30
E	Passes	142	37	62	0	6	0	10	48	31,412	305
	BP/Hr	0.27	0.07	0.12	0.00	0.01	0.00	0.02	0.09		0.58
F	Passes	251	53	95	0	15	0	1	17	31,412	432
	BP/Hr	0.48	0.10	0.18	0.00	0.03	0.00	0.00	0.03		0.83
G	Passes	648	305	617	0	13	0	3	80	31,412	1,666
	BP/Hr	1.24	0.58	1.18	0.00	0.02	0.00	0.01	0.15		3.18
H	Passes	144	26	941	0	10	0	10	19	31,412	1,150
	BP/Hr	0.28	0.05	1.80	0.00	0.02	0.00	0.02	0.04		2.20

Detector	Results	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe bat	Natterer's Bat	Unidentified Myotis	Minutes recorded	Total
I	Passes	634	134	305	0	41	0	21	65	31,412	1,200
	BP/Hr	1.21	0.26	0.58	0.00	0.08	0.00	0.04	0.12		2.29
J	Passes	279	49	146	0	17	0	0	11	31,412	502
	BP/Hr	0.53	0.09	0.28	0.00	0.03	0.00	0.00	0.02		0.96
K	Passes	290	37	230	0	15	0	3	67	31,412	642
	BP/Hr	0.55	0.07	0.44	0.00	0.03	0.00	0.01	0.13		1.23
L	Passes	138	89	175	0	9	0	8	63	31,412	482
	BP/Hr	0.26	0.17	0.33	0.00	0.02	0.00	0.02	0.12		0.92
i	Passes	99	9	20	1	3	0	0	5	31,412	137
	BP/Hr	0.19	0.02	0.04	0.00	0.01	0.00	0.00	0.01		0.26
ii	Passes	93	10	23	0	0	0	1	3	31,412	130
	BP/Hr	0.18	0.02	0.04	0.00	0.00	0.00	0.00	0.01		0.25
iii	Passes	90	12	27	0	12	0	1	17	31,412	159
	BP/Hr	0.17	0.02	0.05	0.00	0.02	0.00	0.00	0.03		0.30
iv	Passes	94	11	28	0	5	0	3	20	31,412	161
	BP/Hr	0.18	0.02	0.05	0.00	0.01	0.00	0.01	0.04		0.31

Detector	Results	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe bat	Natterer's Bat	Unidentified Myotis	Minutes recorded	Total
v	Passes	72	35	67	0	5	0	4	17	31,412	200
	BP/Hr	0.14	0.07	0.13	0.00	0.01	0.00	0.01	0.03		0.38
vi	Passes	79	29	41	0	2	0	0	7	24,471	158
	BP/Hr	0.19	0.07	0.10	0.00	0.00	0.00	0.00	0.02		0.39
vii	Passes	148	40	125	0	11	0	4	64	31,412	392
	BP/Hr	0.28	0.08	0.24	0.00	0.02	0.00	0.01	0.12		0.75
viii	Passes	373	125	2,581	0	11	1	34	80	31,412	3,205
	BP/Hr	0.71	0.24	4.93	0.00	0.02	0.00	0.06	0.15		6.12
ix	Passes	324	82	154	0	17	0	1	14	31,412	592
	BP/Hr	0.62	0.16	0.29	0.00	0.03	0.00	0.00	0.03		1.13
Total	Passes	4851	1469	12766	1	246	1	168	994	40,2171	20,496
	BP/Hr	0.45	0.14	1.2	0.0001	0.02	0.0001	0.02	0.09		1.9

4.4.1 Summary of 2022 static data

Highest overall activity was recorded from Detector D set in bog adjacent to conifer plantation located some 1.1km from the closest turbine (Bp/Hr rate of 10.3). Activity was highest here from the July and August / September 2022 deployments. Soprano Pipistrelle accounted for 88% of these calls.

Much of the detectors located in excluded areas to the north and south-west had low activity, based primarily on open peatland without good bat landscape features. Similarly, detectors placed towards the centre of fields and bogs used in the risk assessment (detectors E, F, J and L showed activity levels average 1Bp/Hr or less).

Highest activity was recorded from Soprano (62%) and Leisler bats (24%), followed by Common Pipistrelle (7%) with lower numbers from other species.

Detector D shows elevated levels of Soprano Pipistrelle during July and August / September surveys. These peaks occurred over seven nights with high levels of activity ranging from 448 to 942 bat registrations. These peaks contain 91% of the Soprano Pipistrelle activity from the 47 nights of recording. A peak such as this can occur if a single bat hunts in circles close to the detector location.

Figure 4-4 shows the seasonal activity rates per species. Overall, activity was highest in July with an average rate of 4.1Bp/Hr, dropping to 2.5 for Summer, 1.9 for Spring and very low activity in October (0.3). When excluding detectors not used in the risk assessment the overall average Bp/hr rate increases from 1.9 to 2.5Bp/Hr.

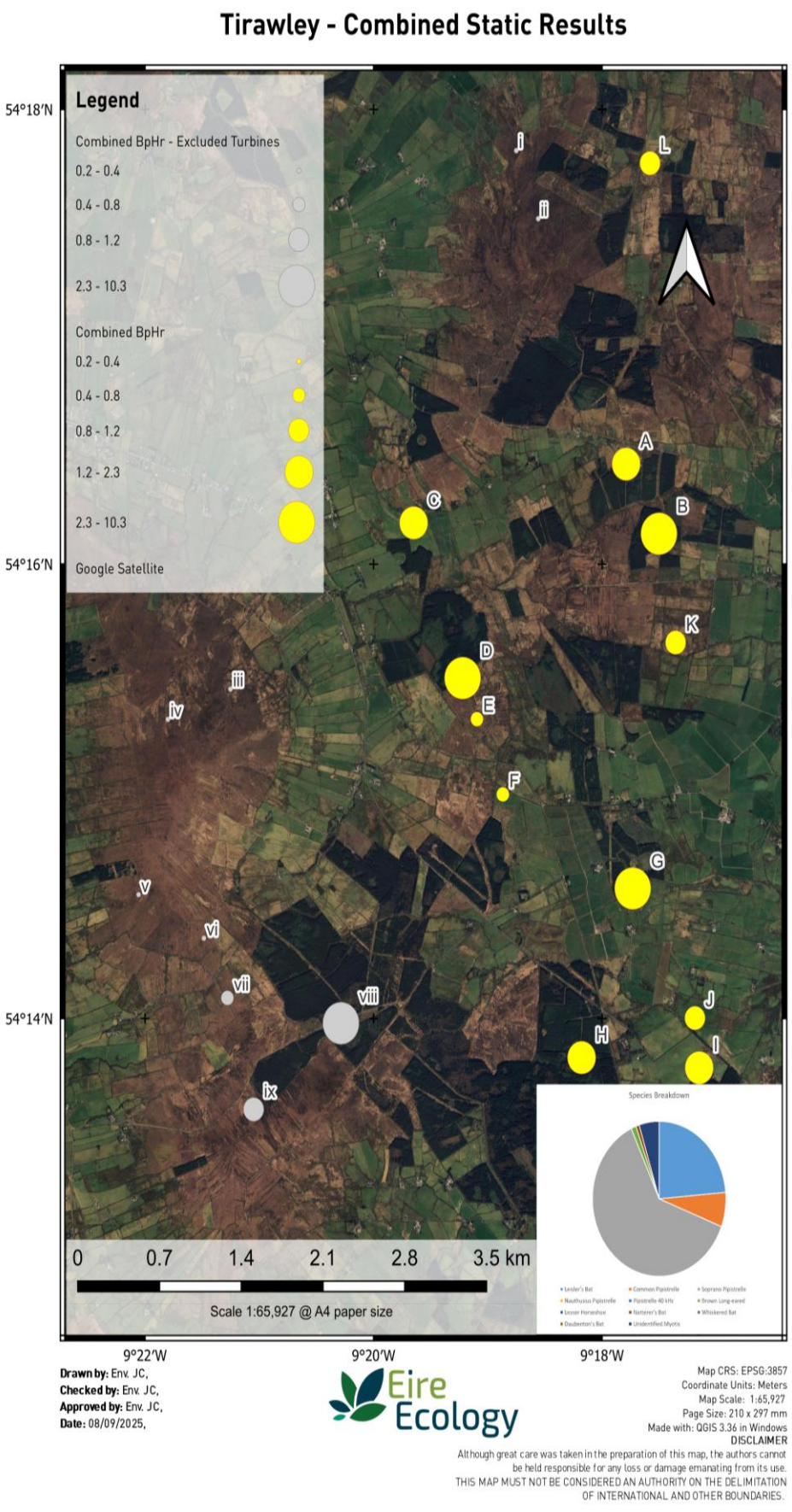

Figure 4-3: Combined activity rates - all seasons (Bp/Hr) 2022

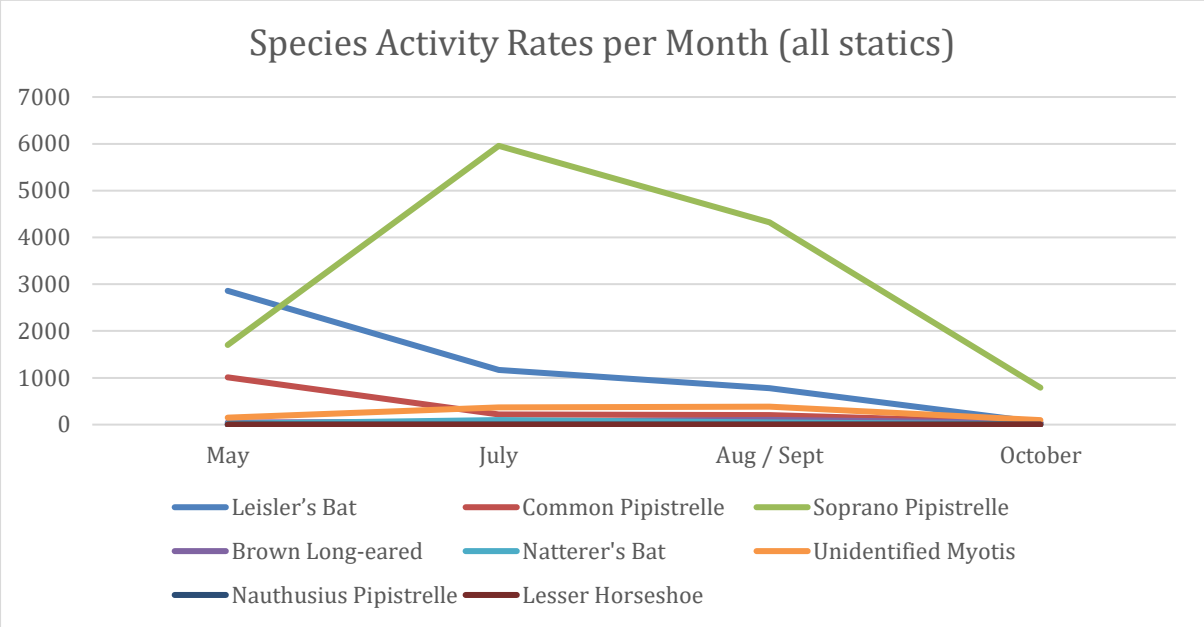

Figure 4-4: Species Activity Rates (BP/Hr) recorded per month in 2022; combined detectors.

4.5 SPRING 2026 STATIC SURVEY

Static bat activity surveys undertaken in 2022 form the primary baseline for assessment of bat activity across the site, having been conducted during the optimal survey period (May–October) and prior to refinement of the turbine layout. These data were used to characterise spatial patterns of activity and inform the original turbine risk assessment.

Following design iteration, turbine locations were modified, necessitating additional survey effort to confirm that the original assessment remained valid in the context of the final layout. Static detectors were therefore deployed in April 2026, including a combination of (i) detectors placed at locations surveyed in 2022 (table 4-6) and (ii) detectors repositioned to align with the final turbine locations.

Table 4-6: Spring static comparison for detectors placed in the same locations

2022 Detector	Spring 2022 Bp/Hr	2026 Detector	Spring 2026 Bp/Hr
H	3.8	3b	0.9
K	2.2	8	0.2
B	1.5	10	0.2
A	2.9	11	0.1
Average Bp/Hr	2.6	Average Bp/Hr	0.3

Bat activity recorded during the April 2026 survey was lower than that recorded during the 2022 baseline surveys. Analysis of four co-located detectors indicates that mean activity levels decreased from approximately 2.6 bat passes per hour (BpHr) in May 2022 to approximately 0.3 BpHr in April 2026, representing an order of magnitude reduction (mean ~8.5×; range approximately 4–29× across individual locations). This reduction is considered to reflect seasonal timing and weather variations, with early spring surveys typically associated with reduced bat activity.

In light of this, the 2026 dataset is not considered directly comparable to the 2022 baseline in terms of absolute activity levels. Accordingly, no direct scaling or correction of activity levels has been applied across the dataset. Instead, the 2026 surveys are used to provide a qualitative validation of the spatial distribution of bat activity across the site.

4.5.1 Qualitative Validation of Spatial Distribution of Bat Activity

A comparison of static detector results from the 2022 baseline surveys and the April 2026 surveys indicates that, despite lower overall activity levels recorded in 2026, the relative spatial distribution of bat activity across the site remains broadly consistent.

In both survey periods, activity is not evenly distributed but instead reflects underlying habitat structure. Locations associated with linear features such as treelines, hedgerows, or habitat edges continue to exhibit comparatively higher levels of activity, while more open or exposed areas consistently record lower activity levels. This pattern is evident in the 2022 dataset and is similarly reflected in the 2026 results.

The co-located detectors provide additional confidence in this interpretation with detectors placed within dense conifer stands (D3a and D12a), showing significantly lower activity than the nearby edge detectors. The relative differences between locations are generally maintained, indicating that the same areas of the site continue to support comparative levels of bat activity.

Furthermore, detectors deployed at or adjacent to the final turbine locations in 2026 recorded activity levels consistent with the range of habitats previously characterised in 2022. These locations do not exhibit disproportionately high levels of activity relative to the wider site, and align with areas previously identified as being of low to moderate bat activity.

Overall, the 2026 survey results provide **supporting, qualitative confirmation** of the spatial patterns of bat activity identified in 2022. On this basis, the original characterisation of bat activity across the site—and the associated turbine risk assessment—remains valid in the context of the revised turbine layout.

4.6 ECOBAT

Results from the static detector surveys were analysed to interpret bat activity into activity levels (displayed in table 4-10 with seasonal results). Inhouse assessment compares static detector data with similar datasets set in similar habitats and ranks activity levels. ECOBAT was not operational between November 2022 and January 2025 with a new version providing analysis which downplays the percentile of frequently recorded bat species. In-house assessment assigns a more

conservative assessment and is based on the original ECOBAT's percentile rates. (O'Neill, 2026) conducted a study examining old and new versions of ECOBAT and found a consistent downplaying of percentiles for at risk of collision bat species (Appendix 6)

In order to prepare the inhouse risk assessment for the site, previous ECOBAT data the author has analysed was used to derive both an activity level and a median percentile.

Data from 10 sites dating from 2018 to 2022 were examined and compared with data from the subject site. This dataset contains 145,087 bat registrations. 6 of the sites were windfarms ranging from 4 to 29 turbines. Activity level from these donor sites were examined, activity percentiles were averaged in order to create a model from which activity can be derived. The percentile rating for each nights total passes per species from the comparison sites were ranked and averaged in order to derive a percentile score for the Tirawley detectors. Following (P. Lintott., 2017) a minimum range of 200 nights with at least one night of bat passes was compiled.

An assessment was conducted only for those species identified as being art high risk of turbine collision; Leisler's bat, Common, Soprano and Nathusius Pipistrelle (following the precautionary approach all 40kHz Pipistrelle recordings were added to Nathusius Pipistrelle data). In order to ensure quality, all bat calls were manually verified including all noise files.

October data was excluded from the analysis as this low level of activity would reduce the average percentile activity. This data was useful to demonstrate that minimal bat mitigation is required at this time.

Table 4-7: Median percentile range and corresponding bat activity

Percentile	Bat Activity
81-100	High
61-80	Moderate to High
41-60	Moderate
21-40	Low to Moderate
0-20	Low

Table 4-8: Tirawley detectors grouped by habitat

Group	1	2	3
Habitats	Open grassland or bog without a landscape feature within 25m	Close to edge habitat (treeline, hedgerow or woodland)	Within conifer plantation block (excluding those at the edge)
Detectors	C, E, F, J	A, D, G, I, K L	B, H

Table 4-9: Assigned activity levels

Group	Percentile	80-100	60-79	40 - 59	20 - 39	0 - 19	Range
	Activity level	**High**	**Moderate High**	**Moderate**	**Moderate Low**	**Low**	
1	*Pipistrellus pipistrellus*	24 plus	7 to 23	3 to 6	2	0 to 1	545
	Pipistrellus pygmaeus	21 plus	7 to 20	3 to 6	2	0 to 1	552
	Nyctalus leisleri	22 plus	6 to 21	3 to 5	2	0 to 1	676
2	*Pipistrellus pipistrellus*	38 plus	8 to 37	4 to 7	2 to 3	0 to 1	369
	Pipistrellus pygmaeus	28 plus	9 to 27	3 to 8	2	0 to 1	366
	Nyctalus leisleri	32 plus	9 to 31	3 to 8	2	0 to 1	335
3	*Pipistrellus pipistrellus*	16 plus	5 to 15	3 to 4	2	0 to 1	201
	Pipistrellus pygmaeus	19 plus	6 to 18	3 to 5	2	0 to 1	215
	Nyctalus leisleri	18 plus	7 to 17	3 to 6	2	0 to 1	201

Table 4-10 Bat activity within each activity band for each species – all 2022 seasons combined (baring October)

Detector	Species/Species Group	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity	Median Percentile	Bat Activity Category	Max Percentile	Bat Activity Category
A	Common Pipistrelle	0	2	0	8	25	14	Low	73	Moderate to High
A	Leisler's bat	3	8	5	7	12	39	Low to Moderate	91	High
A	Soprano Pipistrelle	2	10	7	3	13	39	Low to Moderate	84	High
B	Common Pipistrelle	0	2	8	4	21	21	Low	75	Moderate to High
B	Leisler's bat	2	10	10	6	7	47	Moderate	89	High
B	Soprano Pipistrelle	11	8	6	1	9	57	Moderate	99	High
C	Common Pipistrelle	0	1	4	1	29	11	Low	62	Moderate to High
C	Leisler's bat	0	3	8	5	19	25	Low to Moderate	78	Moderate to High
C	Soprano Pipistrelle	3	4	9	7	12	35	Low to Moderate	88	High
D	Common Pipistrelle	2	5	6	5	17	30	Low to Moderate	90	High
D	Leisler's bat	3	3	7	5	17	31	Low to Moderate	87	High
D	Soprano Pipistrelle	11	6	2	3	13	51	Moderate	99	High
E	Common Pipistrelle	0	2	3	1	29	10	Low	74	Moderate to High
E	Leisler's bat	1	6	6	4	18	29	Low to Moderate	81	High
E	Soprano Pipistrelle	0	2	8	3	22	18	Low	73	Moderate to High
F	Common Pipistrelle	0	2	5	2	26	14	Low	74	Moderate to High
F	Leisler's bat	2	10	7	4	12	42	Moderate	86	High
F	Soprano Pipistrelle	0	3	13	2	17	27	Low to Moderate	71	Moderate to High
G	Common Pipistrelle	3	2	4	6	20	25	Low to Moderate	92	High
G	Leisler's bat	5	13	11	2	4	59	Moderate	93	High
G	Soprano Pipistrelle	5	15	6	4	5	56	Moderate	90	High
H	Common Pipistrelle	0	0	4	1	30	10	Low	53	Moderate
H	Leisler's bat	0	6	17	6	6	44	Moderate	70	Moderate to High
H	Soprano Pipistrelle	15	19	0	0	1	77	Moderate to High	95	High
I	Common Pipistrelle	0	4	3	9	19	24	Low to Moderate	71	Moderate to High
I	Leisler's bat	4	15	10	4	2	60	Moderate	94	High
I	Soprano Pipistrelle	0	8	12	8	7	43	Moderate	77	Moderate to High
J	Common Pipistrelle	0	0	8	5	22	18	Low	54	Moderate

Detector	Species/Species Group	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity	Median Percentile	Bat Activity Category	Max Percentile	Bat Activity Category
J	Leisler's bat	2	11	13	4	5	51	Moderate	81	High
J	Soprano Pipistrelle	0	5	16	2	12	36	Low to Moderate	73	Moderate to High
K	Common Pipistrelle	0	1	0	8	26	12	Low	64	Moderate to High
K	Leisler's bat	3	7	5	4	16	35	Low to Moderate	85	High
K	Soprano Pipistrelle	0	5	5	7	18	27	Low to Moderate	80	Moderate to High
L	Common Pipistrelle	0	2	6	7	20	21	Low to Moderate	76	Moderate to High
L	Leisler's bat	0	3	10	3	19	28	Low to Moderate	72	Moderate to High
L	Soprano Pipistrelle	0	5	11	7	12	35	Low to Moderate	73	Moderate to High

Table 4-11: Summary showing the number of nights recorded bat activity fell into each activity band for each species across all relevant detectors for all survey periods combined (baring October)

Species/Species Group	Nights of High Activity	Nights of Moderate/ High Activity	Nights of Moderate Activity	Nights of Low/ Moderate Activity	Nights of Low Activity	Median Percentile	Bat Activity Category
Common Pipistrelle	5	23	51	57	284	18	Low
Leisler's bat	25	95	109	54	137	41	Moderate
Soprano Pipistrelle	47	90	95	47	141	42	Moderate

5 ASSESSMENT OF POTENTIAL EFFECTS

Common, Nathusius's and Soprano Pipistrelle alongside Leisler's bats are high risk species for windfarm collisions; (SNH, Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation, 2019), (Fiona Mathews, 2015), (BCI, 2012). (NIEA, 2021) states that peaks of bat activity should be accounted for in addition to median levels to appropriately quantify risk. The report also noted the 'Leisler's bats, while fairly rare in Britain, are one of the commonest species found in Ireland. However, given their rarity in the rest of the UK, and indeed Europe, the Irish population is considered a global stronghold for the species and therefore we have an international responsibility for its protection'.

Table 2: *Level of potential vulnerability of populations of British bat species. (Adapted from Wray et al., 2010)*

Yellow = low population vulnerability

Beige = medium population vulnerability

Red = high population vulnerability

Relative abundance	England	Collision risk		
		Low collision risk	Medium collision risk	High collision risk
	Common species	Brown long eared bat		Common pipistrelle Soprano pipistrelle
	Rarer species	Daubenton's bat Natterer's bat Whiskered bat Brandt's bat Lesser horseshoe	Serotine bat	Nathusius' pipistrelle Noctule bat Leisler's bat
	Rarest species	Alcathoe bat Bechstein's bat Greater horseshoe Grey long eared bat	Barbastelle bat	

Figure 5-1: Level of potential vulnerability of populations of British bats.

5.1 RISK ASSESSMENT

A risk assessment has been completed with reference to Table 3a and b; bats and onshore wind turbine report (SNH, 2021), (SNH, 2019) while also acknowledging the recently published BCI 2026 guidelines.

5.1.1 Initial site risk assessment

An initial risk assessment is based on an assessment of habitats and the size of the development. Habitat suitability is ranked either low, moderate and high while project size is ranked from small, medium and large. Habitats surrounding the subject turbines are ranked as Moderate given connectivity to the wider landscape with the presence of hedgerows, treelines and sections of conifer plantation. While there are streams running through the site, the nearest river lies over 2.3km (from AT02). In addition, roost searches (desktop and emergence surveys) did not reveal the

presence of maternity roosts for at risk species in close proximity to the site. Two satellite roosts for Soprano Pipistrelle bats were noted, one 800m South of AT01 had two bats while a max of 5 bats were observed entering a building located 1.5km to the west of AT12.

Project size is where in-combination effects of the site alongside other windfarms are considered in the SNH 2021 guidance document. For Tirawley, there are no other commercial windfarms within 5km. Two domestic turbines, attached to the side of houses, are within a 5km buffer; 1.1km to the northwest of AT15 and 4.1km southeast. Notwithstanding this, the project is still categorised as large, as while the proposed development contains a moderate number of turbines (16), with no other operational windfarms within a 5km radius, turbines reach over 100m in height.

The proposed Tirawley windfarm thus derives an Initial Site Risk Assessment Value of 4; high site risk.

1.3.2 Overall risk assessment

At present, there is no accepted methodology for predicting bat collision rates at proposed wind energy developments. Risk assessment is therefore based on relative activity levels, species ecology, turbine characteristics and published evidence of vulnerability, with mitigation designed on a precautionary basis.

The output from the initial site risk assessment is used in the below matrix to derive an overall risk assessment based on the activity level of high collision risk species. The new BCI 2026 guidelines, risk assessment matrix has also been acknowledged in the overall risk assessment matrix. This considers Leisler's activity over the 40th percentile as being of high risk. Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle and Leisler's bat. Ireland is considered the world stronghold for Leisler's bat with an estimated population of 73,000 – 130,000 (2007-2012) (Roche N. A., 2014).

Table 5-1: Summary of bat survey data relevant to current project and assessment (based on SNH 2021).

Turbine No	Static Detector ID used for assessment	Leisler's bat		Common pipistrelle		Soprano pipistrelle		Is location of static at turbine location?	High impact based on BCI 2026 guidance?	If no mitigation is applied, what is the potential impact level?
		Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile			
AT01	G	20	12	20	8	20	12	No	No	Medium
	C	16	8	16	4	20	8			
	Combined	18	10	18	6	20	10			
AT02	H	16	12	12	4	20	16	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT03	H	16	12	12	4	20	16	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT04	H	16	12	12	4	20	16	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT05	F	20	12	16	4	16	8	Relatively close	Yes based on Leisler's percentile rate being 41 or over.	High
AT06	F	20	12	16	4	16	8	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT07	K	20	8	16	4	16	8	No	No	Medium
AT08	K	20	8	16	4	16	8	Close	No	Medium

Turbine No	Static Detector ID used for assessment	Leisler's bat		Common pipistrelle		Soprano pipistrelle		Is location of static at turbine location?	High impact based on BCI 2026 guidance?	If no mitigation is applied, what is the potential impact level?
		Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile			
AT09	B	20	12	16	4	20	12	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT10	B	20	12	16	4	20	12	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT11	A	20	8	16	4	20	8	Close	No	Medium
AT12	A	20	8	16	4	20	8	No	Yes based on Leisler's percentile rate being 41 or over.	High
	B	20	12	16	4	20	12			
	Combined	20	10	16	4	20	10			
AT13	A	20	8	16	4	20	8	No	No	Medium
	E	20	8	16	4	16	4			
	Combined	20	8	16	4	18	6			
AT14	A	20	8	16	4	20	8	No	No	Medium
	L	16	8	16	8	16	8			
	Combined	18	8	16	6	18	8			
AT15	B	20	12	16	4	20	12	No	Yes based on Leisler's percentile rate being 41 or over.	High
AT16	L	16	8	16	8	16	8	No	No	Medium

6 Discussion

Bat surveys at the proposed Tirawley wind farm were undertaken in accordance with recognised best-practice guidance for wind energy developments and were designed to provide a robust understanding of bat activity, species assemblage and site usage. Survey effort was informed by an initial risk assessment and included multiple seasons and survey methods to ensure that spatial and temporal patterns of bat activity were adequately characterised. The combination of static monitoring, activity surveys and roost assessments provides a suitable evidence base for interpreting potential effects and informing the subsequent risk assessment. Given the numerous changes and reiterations to the project, additional surveys were carried out in Spring of 2026 to verify the landscape (in relation to bats) has remained the same. These surveys confirm little has changed and the 2022 data remains valid.

Walked activity surveys recorded a range of bat species typical of the wider landscape, with activity dominated by common and widespread species. Additional Myotis activity was recorded where calls could not be reliably identified to species level, reflecting the inherent limitations of acoustic identification in cluttered habitats.

Emergence surveys confirmed the presence of several small satellite roosts within the wider landscape; however, all confirmed roosts were located beyond the defined turbine buffer distances. These roosts were associated with low numbers of individuals and are considered unlikely to be directly affected by the proposed turbine locations, based on their distance and scale. The distribution and scale of roosting activity recorded is consistent with the predominantly foraging and commuting use of the site identified during activity surveys.

The risk assessment carried out above applies a precautionary approach and while following SNH2021 guidelines also considers the new BCI 2026 guideline document which places a particular emphasis on Leisler's bat. This precautionary approach also attempts to allay concerns regarding the age of the data.

Due to the levels of nightly bat activity at each of the static locations, 9 turbines are considered of high risk to either Soprano Pipistrelle or Leisler's bats based on median results. Based on SNH 2021, turbines AT02, AT03, AT04 are considered high risk for Soprano Pipistrelle. Turbines AT05, AT06, AT09, AT10, AT12 and AT15 have now also been considered high risk for Leisler's based on the new BCI 2026 guidelines.

A single Lesser Horseshoe bat record was noted from detector viii located in the townland of Kilfian West by the Carn stream at 08:24 on the 12th of October 2022. This record is an anomaly with the closest previous record from 40km south. This is a vagrant bat recorded at a period where this species moves from summer to winter roosts. This location lies 1.87km west of the closest proposed turbine (AT03).

All bat species recorded are classified as 'Least Concern' on the Irish Red List (2019); however, all are protected under the EU Habitats Directive (Annex IV) and the Wildlife Acts.

6.1 Potential Impacts

As outlined by Scottish Natural Heritage (2021), wind farms can affect bats in the following ways:

- Collision mortality, barotrauma and other injuries
- Loss or damage to commuting and foraging habitat
- Loss of, or damage to roosts
- Displacement of individuals or populations.

Furthermore, as indicated in Richardson et al (2021) Common Pipistrelle bats may be attracted to wind turbines. The study showed Common Pipistrelle activity was 37% higher at turbines than at control locations. The study further discussed, the observed higher levels of activity could be because there are more bats around turbines, or because animals spend more time in these locations relative to controls, even if the number of individual bats remains the same. We cannot distinguish between these possibilities using acoustic data. However, either way, higher levels of activity around turbines is likely to increase fatality risks and help to explain why fatality rates are often not predicted by acoustic surveys for bat activity conducted prior to facility construction.

6.1.1 Roost located in townland of Carrickanass 800m South of AT01 (Building 20).

A max of two Soprano Pipistrelle bats were observed emerging from a bat roost located to the south of AT01. In addition, another group of buildings to the west (36 to 42) were not accessible for a nighttime survey. The proposed development will not impact on the roost building or the buildings to the west. Previously, a Turbine was positioned at the location of Detector J, which had a total of 502 registrations over the entire season or 0.96Bp/Hr. This is a low level of activity indicating the majority of bats utilising the area do not fly at the former turbine location.

6.1.2 Roost located in townland of Carrowmacshane 1.5km to the west of AT12 (Building 3).

A max of five Soprano Pipistrelle were recorded entering a bat roost in the townland of Carrowmacshane on the 04th of July 2022. The proposed development will not impact on the roost. BCT states the Core sustenance zone for this species is 3km, thus the proposed windfarm lies within this zone, comprising 10 proposed turbines within this area. Figure 20, P.44 of the Bat Mitigation Guidelines for Ireland (Marnell, 2022) describes a roost status for the different types of roosts found in Ireland. Individual bat roost for a common species lies at the lower end of roost status found in Ireland. Soprano Pipistrelle is the most common bat species in Ireland.

6.1.3 Impacts on potential tree roosts

The proposed development will not require any trees with potential roost features to be felled. While several hedge species and trees will be felled to provide access tracks and temporary clearance works, none were found to contain a potential roost feature. The only turbine found to contain PRF trees within a 252m buffer is AT14. Since the initial ground level tree assessment was carried out in 2023 and 2024, two of the trees (20 and 23) have sealed and are now not viable as roost features. Two April 2026 emergence surveys carried out by the other PRF trees (28, 30 and

32) showed no evidence of bat occupancy. Instead of felling these trees to create a bat buffer alternative mitigation (curtailment) will be introduced.

6.1.4 Impacts on scrub and semi-natural habitats by AT16

Proposed turbine AT16 is set within an existing quarry which contains a variety of semi-natural habitats including scrub. Typical mitigation for bats includes create a bat buffer of low ecological value to detract bats entering the collision zone. As an alternative, curtailment will be implemented at AT16 so that these elements can be retained and enhanced.

6.1.5 Overall Impact Assessment of Proposed Turbines on Surrounding Bat Roosts.

All of the roosts found within the surroundings were classified as satellite roosts (roosts used by males and non-breeding females). Page 46 of (Marnell, 2022) defines the status of such roosts towards the lower end of conservation significance. *It should be noted the proposed development will not impact the condition of any of these roosts.*

6.2 LIFESPAN OF DATA

Surveys were conducted in 2022, with additional surveys conducted in 2023 (GLTA and emergence survey), 2024 (updated GLTA) and again in Spring of 2026 (static surveys and emergence surveys).

The 2026 spring surveys validates the 2022 static data and demonstrate the overall bat landscape remains unchanged within the site.

7 MITIGATION & COMPENSATION

7.1 CONSTRUCTION PHASE

7.1.1 Buffer

Bats typically use woodland edge habitats for commuting and feeding purposes. Areas of conifer plantation should be felled in order to discourage bat species from flying close to turbines. Various publications provide guidelines on buffer zones surrounding turbines to reduce the favourability of the site for bat activity. Eurobats 'Guidelines for consideration of bats in wind farm projects' (Rodrigues, et al., 2015) recommend buffer zones of 200m from turbine base to high potential features whilst Natural England Bats (England, 2014) recommend 50m buffers from blade tip to tree. (NIEA, 2021) recommends a minimum buffer of 100m between the turbines at the edge of commercial forestry where wind farms are proposed to be key-holed.

For Tirawley turbine hub height will be 76.5m while blade length is 58.7m. A separate calculation has been completed for turbines surrounded by hedgerows (feature height 13m) and treelines (24m). The following formula is used to calculate the distance required from the turbine base.

$$b = \sqrt{(50 + Bl)^2 - (HH - FH)^2}$$

Where: bl = blade length, hh = hub height, fh = feature height (all in metres).

Thus turbines will have either a 88m or 94m buffer (see Table 7-1 and Appendix 7) .

While the creation of buffers has been used as a mitigation measure extensively, (Berthinussen, 2021) shows that no detailed study has been conducted showing its effectiveness. (Barré, 2018) highlights habitat loss (potentially due to creation of buffers) impacts can be considerable in windfarm development and proposes no net loss of high biodiversity value landscape features. As an alternative to the loss of the trees and scrub adjacent to AT14 and AT16 it is proposed to strengthen curtailment at these locations (see below).

Table 7-1: Length of landscape features to be removed

Turbine	Buffer (m)	Details	Mitigation	Linear feature loss (m)	Woodland / scrub loss (Ha)
AT01	88	No hedgerows impacted	N/A	0	0
AT02	94	Edge of conifer lost to N and S	Buffer will create similar amount of edge habitat	0	0

Turbine	Buffer (m)	Details	Mitigation	Linear feature loss (m)	Woodland / scrub loss (Ha)
AT03	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT04	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT05	88	Scrubby hedge to W will be removed.	Compensatory woodland creation within the site required.	164	0
AT06	94	Turbine located within conifer plantation. Forestry clearing will leave 195m of edge habitat.	Edge habitat will be reduced at AT06 by 53m thus compensation required elsewhere within site	53	0
AT07	88	Sections of gorse and hawthorn hedgerow will be removed to the E and NW	Compensatory woodland creation within the site required.	109	0
AT08	88	Loss of considerable amount of thick hedges particularly to south by stream.	Rather than removing all these features, curtailment similar to turbine AT02, AT03 and AT04 will be implemented here.	0	0
AT09	94	While conifer clearing will create new edge habitat a section of scrub will be lost to the south of the turbine.	Compensatory woodland creation within the site required.	0	0.227
AT10	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT11	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT12	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT13	88	Hedgerow of gorse to W and small willow scrub patch will be removed.	Compensatory woodland creation within the site required.	123	0.064
AT14	94	Loss of considerable amount of trees, hedges and scrubby woodland.	Rather than removing all these features, curtailment similar to turbine AT02, AT03 and AT04 will be implemented here.	0	0
AT15	94	Conifer clearing will result in more edge habitat	N/A	0	0

Turbine	Buffer (m)	Details	Mitigation	Linear feature loss (m)	Woodland / scrub loss (Ha)
AT16	94	Loss of considerable scrub and hedge line located within the quarry.	Alternative mitigation (curtailment) is proposed in order to retain scrub and hedges here.	0	0
Total loss from creation of buffers (includes edge of conifers where not directly replaced).				449m	0.291ha
Additional hedgerow / treelines to be removed (new entrances from public roads and internal breaches of hedgerows by infrastructure)				800m	0
Loss of hedgerows due to infrastructure				355m	0
Loss of hedgerows along TDR (to facilitate road widening). This will be replanted along the extended road edge.				495m	0
Loss of hedgerows along public roads (to facilitate road widening). This will be replanted along the extended road edge.				2,009m	0
Total loss temporary				2,504m	0
Total loss permanent (linear features in km and scrub sections in ha)				**1.604km and**	
				0.291ha	

7.1.2 Vegetation removal

An ecologist/ECoW will supervise areas where vegetation, scrub and hedgerow removal will occur prior to and during construction Should an issue be identified the NPWS will be contacted, and the relevant guidelines will be implemented as appropriate (e.g. NRA guidelines).

7.1.3 Habitat retention, replacement and landscaping

Habitat replacement and landscaping could compensate for or add to the wildlife value of the area and also provide areas of aesthetic as well as wildlife interest. In general, best practice design should aim to retain the quality of the landscape and ensure its protection within the landscaping programme. Existing hedgerows and semi-natural scrub or semi-natural grasslands within the study area outside of the footprint of the development will be retained and incorporated into the landscaping. Disturbed areas will be allowed to recolonise naturally.

In total, it is proposed to plant 1.4141Ha of woodland, treelines and hedgerows, in three main sections distributed throughout the site;

- AT01 location/substation 1.11 ha
- AT06 location 0.67 ha
- AT16 location 1.01 ha

In addition, a BEMP area located at Castlelackan Demense will provide mixed habitats including willow scrub which will have benefit to bats in the locality. This is to offset the loss of bog habitats to infrastructure.

The following measures on hedgerow and woodland planting will be followed:

- As soon as planning permission is approved the first step of construction will be the planting of new hedgerows and woodlands. This will allow time for these features to establish prior to the loss of existing features.
- Hedgerow and woodland will consist of native Irish species from Irish genetic stock.
- Hedgerows will be planted in staggered double row strips 3m wide with a spacing of 20-30cm of 60—90cm high 'whips'. Hedgerows should consist of a variety of species including hawthorn, blackthorn, grey willow and hazel (20-50% each), with holly, rowan, alder, spindle, guelder rose, dog rose and Alder buckthorn as supporting species (less than 10% each). Alder and willow would be particularly useful if along watercourses.
- Tall trees should be planted at 15-30m intervals and consist of sessile oak, with alder and willows where close to streams.

7.1.3.1 Turbine AT08

Turbine AT08 has a thick southern hedge bordering a stream to the south within the 88m buffer. Instead of felling these areas, curtailment will be implemented, offering an alternative protection to bat species.

7.1.3.2 Turbine AT14

Turbine AT14 has a number of trees and scrubby woodland of good quality within the 94m buffer. Instead of felling these areas, curtailment will be implemented, offering an alternative protection to bat species.

7.1.3.3 Turbine AT16

Turbine AT16 is located within a pre-existing quarry that contains scrub around its border and within the quarry itself. Instead of felling a buffer around the turbine, additional curtailment measures will be implemented to offset potential impacts on bats and monitoring will be conducted post construction to maintain this quarry as a wildlife diversity area.

7.1.4 Lighting restrictions

Where possible construction will take place during daylight hours in order to minimise light disturbance on bats. Should fixed lighting be required these will consist of LED luminaires using warm white colours < than 2700 Kelvins. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Lighting will be directional and avoid lighting key features suitable for bat activity such as treelines or woodland edge. Some works along the cable route and wind farm site may occur at night but the project ecologist/ECoW shall limit night-time works to sections of the route / site which avoid sensitive features (e.g. mature treelines).

7.2 MONITORING DURING CONSTRUCTION PHASE

7.2.1 Pre-construction Surveys

If three years lapse from between planning-stage surveys and installation of the wind turbines, it will be necessary to repeat one season of surveys during the activity period (EUROBATS, 2014). Future survey work will be completed according to best practice guidelines available (Hundt, 2012; Collins, 2016; SNH, 2019; 2021) and includes static detector, activity and roost inspection surveys.

7.2.2 Pre-felling survey of trees

A preliminary survey of trees within a 252m zone of each turbine was undertaken on the 8th and 9th of March 2023 and the 14th to 15th of February 2024, the correct times of year to carry out such survey. This has identified 65 trees and shrubs with a potential roost feature (PRF) (see Appendix 3 below for details on all records). It should be noted many of these trees are not now within the zone of influence of the development and will not be impacted. All trees will require at-height surveys conducted by a suitably qualified ecologist with roost disturbance and inspection camera licences should felling or trimming be required. Should PRF's be found above ladder height the use of tree climbing / cherry pickers, scaffolding will be required in order to gain access to PRFs for detailed examination with the use of recording inspection cameras.

Surveyors should carry out a detailed internal inspection using a torch, mirror and endoscope. Data such as internal dimensions particularly length of cavity should be gathered. Should the removal of the roost be required at a later stage these dimensions will be vital. Should a bat roost be found a derogation licence will be sought from the NPWS seeking permission for the roost's translocation (if possible).

Evidence of bat usage sought during the surveys should include:

- Bat droppings (these will accumulate under an established roost or under access points);
- Live bats;
- Insect remains (under feeding perches);
- Oil (from fur) and urine stains;
- Scratch marks; and
- Bat corpses.

7.3 OPERATIONAL PHASE MITIGATION

7.3.1 Lighting restrictions

Fixed lighting are required at the BESS, Substation and Permanent Ops building. Outdoor lights here will consist of LED luminaires using warm white colours < than 2400 Kelvins. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

Lighting will be directional and avoid lighting key features suitable for bat activity such as treelines or woodland edge. Lights will also be sensored thus only turned on when required.

7.3.2 Feathering of Blades

All turbines should enact a feathering protocol when wind speeds are below the cut-in speed of the turbine. Feathering entails pitching turbine blades at 90 degrees or parallel to the wind to reduce their rotation speed while idling to below two revolutions per minute. This measure does not reduce economic output as electricity is not generated below the cut-in speed of wind turbines and is shown to reduce bat mortality (NIEA, 2021), (SNH, Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation, 2019) (Wellig S.D., 2018), (Rydell J., 2010).

1.3.3 Cut-in Speeds/Curtailment

Curtailment refers to the practice of increasing the cut-in speed of wind turbines and feathering the blades to reduce their operation during periods of high bat activity. The typical manufacturer's set cut-in speed is between 3.0 and 4.0 m/s (SNH, Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation, 2019).

Increasing the cut-in speed above that set by the manufacturer can reduce the potential for bat/turbine collisions. (Arnett, 2011) showed increasing the cut-in speed reduces bat fatalities.

Turbines AT02, AT03, AT04, AT05, AT06, AT09, AT10, AT12 AT15 require curtailment due to either Soprano Pipistrelle or Leisler's activity.

Turbines AT08, AT14 and AT16 require curtailment as an alternative to clearing good landscape features.

Cut-in speeds restrictions will be operated according to specific weather conditions

1. When the air temperature is above 10°C at nacelle height.
2. Wind speeds below 5.5m/s (at nacelle height).

7.3.2.1 Alternative smart curtailment option

Due to the considerable unnecessary down time resulting from the proposed "blanket curtailment" (above) and the advances in smart curtailment a focused curtailment regime is further proposed from the year two of operation.

This will focus on times and dates, corresponding with periods when the highest level of bat activity occur within the site. This includes the use of the SCADA (Supervisory Control and Data Acquisitions) operating system (or equivalent) to only pause/feather the blades below a specified wind speed and above a specified temperature within specified time periods.

Post-constructions surveys will be undertaken for the first three years of operation to confirm if blanket curtailment restrictions can be amended in line with post-construction activity levels. The post construction surveys will be used to update the current curtailment regime (blanket curtailment) designed around the values for the key weather parameters and other factors that are known to influence collision risk. This will include all of the following:

- Wind speed in m/s (measured at nacelle height)
- Time after sunset

- Month of the year
- Temperature (ºC)
- Precipitation (mm/hr)

7.3.3 Buffer zones

The vegetation-free buffer zones around the identified turbines will be managed and maintained during the operational life of the development. The immediate surroundings of individual turbines should be managed and maintained so that they do not attract insects (i.e. the concentration of insects in the wind turbine vicinity should be reduced as much as possible, but not such that insect abundancies affected elsewhere on the site). This should be achieved through physical management of habitats without the use of toxic substances.

7.3.4 Operational Phase Monitoring

Monitoring of operating wind farms is essential to increase our understanding of their potential impacts on different bat species (Rodrigues, et al., 2015). Surveys will include monitoring of mortality; searches from April to October for three years and every five years thereafter. Due to the small size of bat corpses and the difficulty for detection by humans a trained sniffer dog will be employed in fatality searches. In keeping with consultation recommendations best practice guidance, all fatality estimates will incorporate searcher efficiency and scavenger removal trials, specific to the site, as well as the impact of search plot size ((Rodrigues, et al., 2015), (Fiona Mathews, 2015). Survey frequency should reflect results from the onsite predation levels whilst the predation trial should be conducted in such a way as to not be influenced by predator swarming effects; placing too many carcasses for the predation local predation level; see (Smallwood, 2010).

Annual monitoring reports should be submitted to the local authority and the NPWS. Should significant casualties be found at a particular turbine(s) additional mitigation may be required to prevent further fatalities. (Wellig, 2018). The definition of significant in this respect should reflect the most up to date research at the time of commencement of operation with particular reference to Eurobat guidance.

Discussion of the results of the curtailment program for turbines 1 and 2 will be conducted with the determining authority (involving NPWS). This will include a review of the adequacy of the monitoring effort (in light of the results) and discussion of whether turbine curtailment parameters should be varied based on any fatalities, activity and weather conditions recorded. Any variations to the mitigation will be monitored to confirm the mitigation is effective.

8 Residual Impacts after Mitigation

As long as the mitigation measures presented above are implemented fully, the resulting impact of the proposed development on local bat populations is considered to be a slight to imperceptible residual adverse effect. The conservation status of each of the local bat species will remain unaffected.

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1 APPENDIX – HISTORICAL ROOST RECORDS WITHIN 10KM (REVISED APRIL 2026)

Type of Record	*Species*	Distance from site	Date of last record	Details	Potential connectivity with subject site (for roost records)
Roost	*Plecotus auritus*	900m east from AT11	2009	Record from NBDC which does not give details on numbers of bats.	BCT state the CSZ for Brown Long-eared bats is 3km and Natterer's bats is 4km thus the subject site lies within the CSZ for this roost.
	Myotis natterreri				
Roost	*Plecotus auritus*	2.3km to the west of AT09	2017	10 bats noted	BCT state the CSZ[2] for Brown Long-eared bats is 3km and Natterer's bats is 4km thus the subject site lies within the CSZ for this roost. Both Brown Long-eared bat and Natterers bat are low flying species that typically do not get hit by turbine blades although loss of connective features can impact commuting and feeding grounds.
	Myotis natterreri			3 bats noted	
	Nyctalus leisleri			These three species were recorded on a bat detector rather than seen emerging – roost for these species is not confirmed.	
	Pipistrellus pipistrellus				
	Pipistrellus pygmaeus				
Roost	*Plecotus auritus*	5.5km SW of AT06	2010	A single brown long-eared was recorded from farm buildings	BCT states the CSZ for this species is 3km thus the site lies outside the CSZ for this species. The low level of bats recorded and age of record lowers ecological impact on the development.
	Pipistrellus pygmaeus			These two species were recorded on a bat detector rather than seen emerging – roost for these species is not confirmed.	
	Nyctalus leisleri				

[2] A core sustenance zone (CSZ), as applied to bats, refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. (BCT, Core Sustenance Zones and habitats of importance for designing Biodiversity Net Gain for bats, 2020) provide distances for UK Bats.

2 APPENDIX – PEA STRUCTURES

No.	Lat	Lon	Structure	Description	Potential	Emergence survey results	Bat roost?	Distance to turbine	Nearest turbine
1	54.27467	-9.3173	Building	Derelict dwelling with roof. Treeline	High	Survey conducted, no bat roost found	No	1.24km W	AT12
2	54.27389	-9.3189	Building	Derelict dwelling with roof	High	Survey conducted, no bat roost found	No	1.38km W	AT12
3	54.27378	-9.3215	Building	farmstead, could be derelict	High	Survey conducted, roost found.	Yes - Soprano Pipistrelle	1.53km W	AT12
4	54.27259	-9.3238	Building	derelict dwelling	Medium	Survey conducted, no bat roost found	No	1.72km W	AT12
5	54.28319	-9.3309	Building	derelict house roof fallen in	None	No	N/A	1.9km W	AT12
6	54.26768	-9.3364	Building	Manor house derelict	High	No access possible	N/A	2.71km W	AT09
7	54.24005	-9.2995	Building	Derelict dwelling	High	Survey conducted, no bat roost found	No	390m E	AT04
8	54.22693	-9.3101	Building	derelict dwelling lots of tree cover	High	Survey conducted, no bat roost found	No	990m SW	AT02
9	54.23304	-9.3160	Building	derelict house with tree lines	High	Survey conducted, no bat roost found	No	785m W	AT02
10	54.24355	-9.3015	Bridge	Stone bridge with crevices.	High	Survey conducted, no bat roost found	No	445m NE	AT04
11	54.22491	-9.2686	Bridge	Palmerstown Bridge	High	Survey conducted, no bat roost found	No	2.5km	AT02
12	54.25941	-9.3256	Building	Derelict site with house, farm building and stone building	High	Survey conducted, no bat roost found	No	1.05km NW	AT06
13	54.30284	-9.2925	Building	Derelict dwelling	High	Survey conducted, no bat roost found	No	2.04km N	AT15
14	54.22961	-9.2866	Bridge	Culvert with drain	None	No	N/A	710m S	AT02
15	54.22885	-9.2859	Bridge	Open drain along field. culvert no visible	None	No	N/A	800m S	AT02
16	54.24979	-9.3004	Building	Sheds; metal	None	No	N/A	505m NW	AT02

No.	Lat	Lon	Structure	Description	Potential	Emergence survey results	Bat roost?	Distance to turbine	Nearest turbine
17	54.24254	-9.2871	Building	Cottage with new galvanised roof. lots of openings	Medium	Survey conducted. Satellite Soprano Pipistrelle roost (2 bats)	Yes	735m SE	AT01
18	54.24247	-9.2871	Building	Shed plastered with galvanised roof	Low				
19	54.24236	-9.2873	Building	Old open hay barn	Low				
20	54.24233	-9.2870	Building	Cottage with windows, synthetic slatted roof with concreted eaves, plastered, some small gaps under fascia. windows and doors sealed	Medium				
21	54.2763	-9.2799	Building	Stone ruin no roof, no potential	None	No	N/A	770m SE	AT16
21	54.27905	-9.2908	Building	Stone ruin, openings with partial roof	Low	Yes		25m S	AT14
22	54.27642	-9.2836	Bridge	Low culvert under road	None	No	N/A	560m SE	AT14
23	54.27779	-9.2923	Building	Plastered reservoir. no cracks	None	No	N/A	180m SW	AT14
24	54.27757	-9.2925	Building	low. culvert	None	No	N/A	220m SW	AT14
25	54.27891	-9.3030	Building	Stone shed with lots of gaps in some work. partially plastered. gappy galvanised roof. windows and doors open	Low	Survey conducted, no bat roost found		250m SW	AT12
26	54.27891	-9.3035	Building	Bungalow, plastered finish. pvc windows and fascia in good condition. Minor gaps	Medium	Survey conducted, no bat roost found		260m SW	AT12
27	54.27866	-9.3031	Building	Block shed with galvanised roof. Minimal openings. used as animal shed	Low	Survey conducted, no bat roost found	N/A	280m S	AT12
28	54.27849	-9.3030	Building	Large open galvanised hay barn	Low	Survey conducted, no bat roost found	N/A	290m S	AT12
29	54.27846	-9.3028	Building	Open horse shed	Low	Survey conducted, no bat roost found	N/A	290m S	AT12
30	54.2784	-9.303	Building	Concrete walls storage shed	Low	Survey conducted, no bat roost found	N/A	305m S	AT12
31	54.2789	-9.3028	Building	Mobile home	None	Survey conducted, no bat roost found	N/A	250m S	AT12

No.	Lat	Lon	Structure	Description	Potential	Emergence survey results	Bat roost?	Distance to turbine	Nearest turbine
32	54.27868	-9.3022	Bridge	Small stone bridge with lots of deep cervices located by stream. Bridge has good potential but lacks connective features. No hedgerows or treelines surrounds.	Medium	Survey conducted, no bat roost found		260m S	AT12
33	54.26436	-9.3324	Bridge	Old stone bridge which has lots of fallen out stones. Lots of cervices but low bridge so couldn't climb under when water is high. Located by treelines. Low nature of bridge reduces potential from high to medium.	Medium	Not on final TDR or grid route so further surveys not required.	N/A	1.74km NW	AT06
34	54.24847	-9.3080	Bridge	Culvert under road	None	No	N/A	570m S	AT05
35	54.24787	-9.3040	Bridge	Small stone culvert. no gaps inside	None	No	N/A	715m N	AT01
36	54.24088	-9.2908	Building	Stone cottage. half of stone roof missing. lots of crevices	Medium	Survey started but cut short as access permission was revoked	Unknown	800m S	AT01
37	54.24085	-9.2909	Building	Stone shed with lots of cervices. Corrugated roof without bitumen slightly reduces potential.	High				
38	54.24082	-9.2910	Building	Stone shed with tin roof. gaps in windows	High				
39	54.24093	-9.2910	Building	Stone shed, slate roof	High				
40	54.24094	-9.2911	Building	Stone building, tin roof. roof lined with mesh and bitumen. ivy on walls	High				
41	54.24105	-9.2908	Building	Plastered house with natural slate roof. small gaps in wooden fascia	High				
42	54.2413	-9.2917	Building	Natural slatted roof with timber ceiling inside. lots of cervices in plaster. 4 chimneys	High				
43	54.24315	-9.2880	Building	Stone and block with tin roof and ivy cover. open gaps	Medium	Yes	Unknown	290m N	AT02
44	54.19368	-9.2038	Bridge	Culvert under road	Low				-

No.	Lat	Lon	Structure	Description	Potential	Emergence survey results	Bat roost?	Distance to turbine	Nearest turbine
45	54.19059	-9.2061	Bridge	Culvert - drain	Low	No works required to bridges so no need for further surveys	N/A	Along grid route	-
46	54.19038	-9.2083	Bridge	Concrete bridge plastered. one end overgrown with briars	Low				
47	54.19179	-9.2486	Bridge	very low opening at one side. stone arch at another end but could not get down to look in. deep water	Low				
48	54.19167	-9.2486	Bridge	Stone arched Bridge. Well maintained and pointed. no obvious cracks visible. could not get underneath as deep water	Medium				
49	54.19134	-9.2483	Bridge	Other side of natural stone arch Bridge. pointed well maintained	Medium				
50	54.19943	-9.2457	Bridge	Large diameter smooth concrete pipe culvert with stone wall above (pointed)	None				
51	54.21747	-9.2668	Bridge	Culvert under road. opening under water on both sides	None				
52	54.24622	-9.3159	Bridge	Bridge	Low	No works required to bridges so no need for further surveys	N/A	Along TDR	-
53	54.24011	-9.333	Bridge	Culvert	None				
54	54.22271	-9.3685	Bridge	Culvert	None				
55	54.2113	-9.3602	Bridge	Culvert	None				
56	54.20957	-9.3601	Bridge	Culvert	None				
57	54.20478	-9.3558	Bridge	Culvert	None				
58	54.19724	-9.3511	Bridge	Bridge	Low				

No.	Lat	Lon	Structure	Description	Potential	Emergence survey results	Bat roost?	Distance to turbine	Nearest turbine
59	54.27904	-9.2908	Shed	Gappy low stone derelict single room dwelling with metal roof. Stone has patches of remnant plaster but has multiple crevices. No doors or windows and is exposed.	Low	Two surveys conducted in April 2026. No bats found emerging	No	22m	AT14

3 Appendix – Initial Tree Roost Inspection

Tree survey results. Includes ground level category

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
1	54.25332	-9.31003	AT05	None	No trees visible, just gorse hedge with no potential	No potential	Yes	Hedge to be removed
2	54.2548	-9.31162	AT06	None	Hedgerow	No potential	No	-
3	54.25285	-9.31401	AT06	None	Spruce	No potential	Yes	Conifer to be removed.
4	54.26262	-9.31808	Discontinued turbine	None	Group of willow	No potential	No	-
5	54.26312	-9.31698	Discontinued turbine	None	Line of willow	No potential	No	-
6	54.26423	-9.31968	Discontinued turbine	None	Spruce	No potential	No	-
7	54.26731	-9.31943	Discontinued turbine	None	Spruce	No potential	No	-
8	54.28255	-9.30272	AT12	None	Willow	No potential	No	-
9	54.28227	-9.30358	AT12	None	Spruce	No potential	No	-
10	54.28255	-9.30074	AT12	None	Spruce	No potential	No	-
11	54.28118	-9.30228	AT12	None	Spruce	No potential	Yes	Conifer to be removed.
12	54.27765	-9.29321	AT14	None	Willow	No potential	Yes	Access track
13	54.27588	-9.29776	AT11	None	Spruce	No potential	Yes	Conifer to be removed.
14	54.27522	-9.29568	AT11	None	Spruce	No potential	No	-
15	54.27875	-9.29542	AT13	None	No trees	No potential	No	-
16	54.28066	-9.29443	AT13	None	Spruce	No potential	No	-
17	54.27987	-9.2966	AT13	None	Willow	No potential	No	-
18	54.27889	-9.29145	AT14	None	Sycamore	No potential	No	--
19	54.27898	-9.29144	AT14	None	Ash	No potential	No	
20	54.27899	-9.29149	AT14	PRF-M	Ash	One deep cavity, good potential	No	-
21	54.27904	-9.29151	AT14	None	Ash	No potential	No	-
22	54.27902	-9.29152	AT14	None	Ash	No potential	No	-
23	54.27902	-9.29152	AT14	PRF-M	Ash	2 cavities with good potential. Branch loss and tear.	No	-
24	54.2791	-9.2915	AT14	None	Ash	No potential	No	-
25	54.27921	-9.29152	AT14	None	Small group of ash	No potential	No	-
26	54.27902	-9.29091	AT14	None	Ash	No potential	No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
27	54.27901	-9.29111	AT14	None	Sycamore	No potential	No	-
28	54.27907	-9.29101	AT14	PRF-M	Sycamore	One deep cavity from branch loss, good potential	No	-
29	54.2791	-9.29093	AT14	None	Sycamore	No potential	No	-
30	54.27913	-9.291	AT14	PRF-M	Ash	2 cavities due to decay, good potential	No	-
31	54.27917	-9.29102	AT14	None	Group of sycamore	No potential	No	-
32	54.27917	-9.29102	AT14	PRF-I	Ash	One cavity near base of tree.	No	-
33	54.27924	-9.29107	AT14	None	Ash/sycamore	No potential	No	-
34	54.27919	-9.29079	AT14	None	Ash	No potential	Yes	Access
35	54.27911	-9.29056	AT14	None	Ash	No potential	Yes	Access
36	54.27911	-9.29033	AT14	None	2 small ash	No potential	Yes	Access
37	54.27248	-9.29147	AT10	None	Small spruce	No potential	No	-
38	54.2728	-9.29201	AT10	None	Willow	No potential	No	-
39	54.27272	-9.29356	AT10	None	Spruce	No potential	Yes	Conifer to be removed.
40	54.2713	-9.29433	AT09	None	Spruce	No potential	Yes	Conifer to be removed.
41	54.27023	-9.29187	AT09	None	Spruce	No potential	No	
42	54.27028	-9.29528	AT09	None	Spruce	No potential	Yes	Conifer to be removed.
43	54.26894	-9.29382	AT09	None	Mix of willow and ash	No potential	No	-
44	54.2844	-9.27956	AT15	None	Spruce	No potential	No	-
45	54.28328	-9.27669	AT15	None	Spruce	No potential	Yes	Conifer to be removed.
46	54.26489	-9.2921	AT08	None	Spruce X 2	No potential	No	-
47	54.26592	-9.28923	AT08	None	Willow	No potential	Possibly	-
48	54.26587	-9.28881	AT08	None	Willow	No potential	No	-
49	54.26003	-9.28903	Discontinued turbine	None	Spruce	No potential	No	-
50	54.23897	-9.28756	Discontinued turbine	None	Line of spruce	No potential	No	-
51	54.23602	-9.28648	Discontinued turbine	None	Spruce	No potential	No	-
52	54.23562	-9.2842	Discontinued turbine	None	Line of birch	No potential	No	-
54	54.23918	-9.28804	Discontinued turbine	None	Line of alder		No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
55	54.23923	-9.28809	Discontinued turbine	PRF-M	Alder	Large hollow in tree due to decay	No	-
56	54.23947	-9.28846	Discontinued turbine	PRF-M	Alder	1 deep cavity, some smaller ones	No	-
57	54.23933	-9.28854	Discontinued turbine	None	Mix of alder, sycamore ash	No potential	No	-
58	54.2395	-9.28845	Discontinued turbine	None	Unknown, 3 small trees	No potential	No	-
59	54.23968	-9.28672	Discontinued turbine	None	Ash	No potential	No	-
60	54.24129	-9.287	Discontinued turbine	None	Line of willow/whitethorn	No potential	No	-
61	54.24155	-9.28699	Discontinued turbine	None	Whitethorn	No potential	No	-
62	54.2422	-9.28689	Discontinued turbine	None	Line of spruce	No potential	No	-
63	54.24219	-9.28739	Discontinued turbine	PRF-I	Whitethorn	Cavity due to split	No	-
64	54.24212	-9.28763	Discontinued turbine	None	Group of whitethorn	No potential	No	-
65	54.24192	-9.28768	Discontinued turbine	None	Willow	No potential	No	-
66	54.24178	-9.28757	Discontinued turbine	None	Ash	No potential	No	-
67	54.24177	-9.28753	Discontinued turbine	None	Ash	No potential	No	-
68	54.2417	-9.28739	Discontinued turbine	PRF-M	Ash	1 deep cavity due to decay	No	-
69	54.24165	-9.28737	Discontinued turbine	None	Ash	No potential	No	-
70	54.24159	-9.2872	Discontinued turbine	PRF-M	Whitethorn	1 deep fissure	No	-
71	54.24141	-9.28806	Discontinued turbine	None	Willow	No potential	No	-
72	54.24144	-9.28808	Discontinued turbine	PRF-M	Willow	Deep cavity from saw cut	No	-
73	54.24119	-9.28847	Discontinued turbine	PRF-M	Willow	2 cavities from decay	No	-
74	54.24116	-9.28847	Discontinued turbine	None	Ash/whitethorn		No	
75	54.24162	-9.2895	Discontinued turbine	PRF-M	Ash	Hollow in tree due to decay	No	-
76	54.24149	-9.28984	Discontinued turbine	None	Willow/ash	No potential	No	-
77	54.24109	-9.29033	Discontinued turbine	None	Mix of trees round old farmhouse		No	-
78	54.24054	-9.29062	Discontinued turbine	PRF-I	Ash	Large cavity due to split	No	At pinch point

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
79	54.24038	-9.29037	Discontinued turbine	PRF-M	Ash	Large cavity due to decay	No	At pinch point
80	54.24043	-9.29036	Discontinued turbine	PRF-M	Sycamore	Deep cavity due to branch loss	No	At pinch point
81	54.24049	-9.29042	Discontinued turbine	PRF-M	Ash	Large cavities due to decay	No	At pinch point
82	54.2406	-9.29029	Discontinued turbine	PRF-I	Ash	Cavity due to decay	No	At pinch point
83	54.24068	-9.29022	Discontinued turbine	PRF-M	Sycamore	Deep cavity due to fork in tree	No	At pinch point
84	54.2404	-9.2903	Discontinued turbine	None	Group of ash	No potential	No	At pinch point
85	54.24059	-9.29073	Discontinued turbine	PRF-M	Alder	Hollow in tree from decay	No	At pinch point
86	54.24068	-9.29102	Discontinued turbine	None	Line of ash	No potential	No	At pinch point
87	54.2408	-9.29087	Discontinued turbine	None	Ash/sycamore	No potential	No	Entrance to AT03
88	54.23698	-9.30558	AT03	None	Spruce	No potential	Yes	Entrance to AT03
89	54.23465	-9.30416	AT02	None	Spruce	No potential	Yes	Entrance to AT03
90	54.24219	-9.30463	AT04	None	Line of birch	No potential	No	Entrance to AT03
91	54.24163	-9.30617	AT04	None	Spruce	No potential	No	Entrance to AT03
92	54.24117	-9.30483	AT04	None	Mix of ash and alder		No	Situated on access track
93	54.24099	-9.30542	AT04	None	Line of alder	No potential	Yes	Situated on access track
94	54.24949	-9.29349	AT01	None	Spruce	No potential	No	-
95	54.2469	-9.29301	AT01	None	No trees visible		No	N/A
96	54.20702	-9.24485	Access road	None	Planted row of pine	No potential	No	-
97	54.20694	-9.24454	Access road	None	Bramble		No	-
98	54.20656	-9.24425	Access road	None	Hawthorn	A few hawthorn, clipped very short	No	-
99	54.22421	-9.26544	Access road	None	Ash 5, fuscia 6, hawthorn 1	Immature cut hedgerow	No	-
100	54.2245	-9.26643	Access road	None	Leylandii	Outgrown hedge front of house	No	-
101	54.22466	-9.26828	Access road	None	Alder, ash		No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
103	54.22483	-9.26863	Access road	None	Snowberry	Patch of snowberry clipped short	No	-
104	54.22567	-9.26973	Access road	PRF-I	Ash, sycamore.	Several trees with thick ivy cover	No	-
105	54.22567	-9.26973	Access road	PRF-I	Alder, ash	Mature & semi with thick ivy cover	No	-
106	54.22595	-9.27004	Access road	None	Willow	Some ivy	No	-
107	54.22589	-9.26995	Access road	PRF-I	Sycamore	Mature with thick ivy	No	-
108	54.22585	-9.26989	Access road	PRF-I	Ash	Mature with ivy	No	-
109	54.2256	-9.27015	Access road	PRF-I	Ash	Mature with ivy	No	-
110	54.22568	-9.27025	Access road	None	Sycamore	Mature but no cracks	No	-
111	54.2257	-9.27033	Access road	PRF-I	Hawthorn	Mature with ivy	No	-
112	54.22586	-9.27026	Access road	PRF-I	Stump	Old tree stump with cervices and loose bark	No	-
113	54.22592	-9.27062	Access road	PRF-I	Horse chestnut	Very mature tree with deep cervices	No	-
114	54.22582	-9.27076	Access road	PRF-I	Beech	Mature beech with deep cervices, branch holes	No	-
115	54.22574	-9.27064	Access road	PRF-I	Fallen tree	Deep cervices	No	-
116	54.22554	-9.27051	Access road	PRF-I	Ash	Think ivy cover	No	-
117	54.22547	-9.27066	Access road	PRF-M	Beech	Very mature. Large deep cervices where branches broke	No	-
118	54.22554	-9.27062	Access road	PRF-I	Beech	Mature with branch holes & ivy	No	-
119	54.22521	-9.27149	Access road	PRF-I	Beech	Mature with ivy. Branch holes high up	No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
120	54.22506	-9.27154	Access road	PRF-I	Beech	Very mature tree with high up cervices	No	-
121	54.22494	-9.27152	Access road	None	Mixed	Lots of smaller trees on slope with some ivy	No	-
122	54.22435	-9.27439	Access road	PRF-I	Ash	Thick ivy	No	-
123	54.22439	-9.27439	Access road	None	Ash	Immature ash	No	-
124	54.22436	-9.2743	Access road	PRF-I	Hawthorn	Ivy	No	-
125	54.22438	-9.27375	Access road	PRF-I	Ash	Treeline ash along road with ivy cover	No	-
126	54.22446	-9.27491	Access road	None	Sycamore	Mature but no cervices or ivy	No	-
127	54.2245	-9.2756	Access road	PRF-I	Ash	Treeline of ash by road with ivy cover	No	-
128	54.22449	-9.2754	Access road	None	Ash and sycamore	Trees away from no ivy	No	-
129	54.22453	-9.27331	Access road	PRF-I	Hawthorn	Ivy in treeline along road	No	-
130	54.22466	-9.2724	Access road	PRF-I	Ash	Ivy in trees along road	No	-
131	54.22482	-9.27248	Access road	PRF-I	Pine	Mature tree with ivy	No	-
132	54.22477	-9.27226	Access road	None	Ash		No	-
133	54.22487	-9.27237	Access road	PRF-I	Pine	Thick ivy cover	No	-
134	54.22486	-9.27225	Access road	PRF-I	Beech	Ivy	No	-
135	54.22479	-9.27221	Access road	PRF-I	Beech	Falling over, thick ivy	No	-
136	54.2249	-9.27228	Access road	PRF-I	Pine	2 mature pine with ivy	No	-
137	54.22493	-9.27211	Access road	PRF-I	Beech	Small holes	No	-
138	54.22493	-9.27211	Access road	PRF-I	Pine	Ivy	No	-
139	54.22499	-9.27195	Access road	PRF-I	Beech	Ivy and loose bark	No	-
140	54.22499	-9.27186	Access road	PRF-I	Ash	Ivy	No	-
141	54.22483	-9.27201	Access road	None	Ash	Spindle ash form road buffer	No	-
142	54.22502	-9.27178	Access road	PRF-I	Sycamore	Mature tree with ivy	No	-
143	54.22503	-9.27173	Access road	PRF-I	Ash	Mature ash with top broken off, thick ivy	No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
144	54.225	-9.27169	Access road	PRF-I	Pine	Mature tree with thick ivy cover	No	-
145	54.22488	-9.27174	Access road	None	Ash	Immature trees	No	-
146	54.22511	-9.27111	Access road	None	Ash	Mainly immature ash	No	-
147	54.22483	-9.27155	Access road	PRF-I	Ash	Treeline between road and river. Mainly as with ivy	No	-
148	54.2247	-9.27215	Access road	PRF-I	Ash	Ash with ivy	No	-
149	54.22464	-9.27267	Access road	PRF-I	Ash	Ivy	No	-
150	54.22452	-9.27308	Access road	PRF-I	Ash	Treeline along road has several trees with thick ivy cover	No	-
151	54.23362	-9.29068	Discontinued turbine	None	Willow		No	-
152	54.23362	-9.29068	Discontinued turbine	PRF-I	Willow	Broken branches	No	-
153	54.23414	-9.2871	Discontinued turbine	None	Alder	Treeline of small alder along Coillte plantation	No	-
154	54.23431	-9.28714	Discontinued turbine	None	Alder	Treeline	No	-
155	54.23455	-9.28729	Discontinued turbine	None	Willow		No	-
156	54.23471	-9.28746	Discontinued turbine	None	Willow		No	-
157	54.23485	-9.28728	Discontinued turbine	None	Willow		No	-
158	54.23512	-9.2861	Discontinued turbine	None	Willow		No	-
159	54.23524	-9.28576	Discontinued turbine	None	Willow		No	-
160	54.23533	-9.28715	Discontinued turbine	None	Alder	Some broken with digger but no potential	No	-
161	54.23541	-9.28784	Discontinued turbine	None	Alder	Treeline beside Coillte	No	-
162	54.2353	-9.28671	Discontinued turbine	None			No	-
163	54.23544	-9.28855	Discontinued turbine	None	Hawthorn		No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
164	54.2355	-9.28928	Discontinued turbine	None	Hawthorn	Hedgerow of hawthorn with open fields either side	No	-
165	54.24023	-9.29957	Pinch point	None	Alder		Yes	
166	54.24023	-9.29935	Pinch point	None	Alder	A few small alder	Yes	
167	54.23791	-9.29864	Existing road	None	Ash		Yes	
168	54.23759	-9.29858	Existing road	None	Birch	Treeline of low potential	Yes	
169	54.23753	-9.29847	Existing road	None	Ash	Mature	Yes	
170	54.23743	-9.30047	Entrance track	None	Spruce	Spruce plantation with a few sally saplings at edge	Yes	
171	54.23766	-9.29883	Entrance track	None	Birch, willow, ash	Saplings	Yes	
172	54.24385	-9.30162	Existing road	None	Hawthorn	Hedgerow	Yes	
173	54.24388	-9.30087	Existing road	None	Hawthorn		Yes	
174	54.24409	-9.30174	Existing road	None	Willow		Yes	
175	54.24432	-9.29621	Existing road	None	Hazel	Single hazel sapling	Unlikely	-
176	54.24477	-9.29502	Existing road	None	Hawthorn		Yes	
177	54.24489	-9.29471	Existing road	None	Willow		Yes	
178	54.24488	-9.29442	Existing road	None	Willow		Yes	
179	54.24502	-9.29157	Existing road	None	Willow		Yes	
180	54.2447	-9.29145	Existing road	None	Hawthorn		Unlikely	-
181	54.27879	-9.27579	AT16	None	Gorse, willow		Yes	Access track
182	54.27877	-9.27613	AT16	None	Willow		No	
183	54.28156	-9.27519	AT16	None	Willow		Partial	Access track
184	54.28149	-9.27422	AT16	None	Spruce		No	
185	54.28155	-9.27581	AT16	None	Gorse		No	
186	54.27829	-9.27603	AT16	None	Willow		Partial	Access track
187	54.27781	-9.27598	Access to AT15 & AT16	None	Willow		Partial	Access track
188	54.27685	-9.28002	Access to AT15 & AT16	None	Sycamore	Few small trees along road	Partial	Access track
189	54.27699	-9.28	Access to AT15 & AT16	None	Ash		No	-
190	54.27652	-9.28001	Access to AT15 & AT16	None	Fuscia		Partial	Access track
191	54.27638	-9.2801	Access to AT15 & AT16	None	Sycamore		Partial	Access track
192	54.27637	-9.28024	Access to AT15 & AT16	PRF-I	Ash	Old tree with branch holes	No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
193	54.27629	-9.28012	Access to AT15 & AT16	PRF-I	Sycamore	Numerous branch holes	No	Adjacent to access track but should be fine
194	54.27623	-9.2801	Access to AT15 & AT16	PRF-I	Sycamore	One branch hole	Partial	Adjacent to access track but should be fine
195	54.27608	-9.28007	Access to AT15 & AT16	None	Hawthorn	Some possible cervices	Partial	Access track
196	54.27602	-9.2801	Access to AT15 & AT16	None	Elder		Partial	Access track
197	54.27602	-9.28044	Access to AT15 & AT16	PRF-I	Sycamore	Branch holes	Possibly	Access track
198	54.27604	-9.28064	Access to AT15 & AT16	None	Sycamore		Partial	Access track
199	54.27606	-9.28077	Access to AT15 & AT16	None	Fuscia		Partial	Access track
200	54.27708	-9.27897	Access to AT15 & AT16	None			No	
201	54.27725	-9.27723	Access to AT15 & AT16	None	Gorse		Partial	Access track
202	54.27716	-9.27738	Access to AT15 & AT16	None	Willow		Partial	Access track
203	54.27681	-9.27928	Access to AT15 & AT16	None	Willow		Partial	Access track
204	54.27659	-9.27974	Access to AT15 & AT16	PRF-I	Ash	Shallow holes	No	-
205	54.27732	-9.29072	ET & PP	None	Hawthorn	Mature tree but no cervices seen	No	-
206	54.27725	-9.29052	ET & PP	None	Hawthorn		Yes	Access track
207	54.27726	-9.29033	ET & PP	None	Willow		No	-
208	54.27723	-9.29022	ET & PP	None	Fuscia		No	-
209	54.27734	-9.29089	ET & PP	None	Hawthorn		No	-
210	54.27744	-9.29116	ET & PP	None	Willow		No	-
211	54.2773	-9.29119	Pinch point	None	Hawthorn	Mature but no cervices seen	Yes	Cleared for access
212	54.27735	-9.2916	Pinch point	None	Willow		Yes	Cleared for access
213	54.27726	-9.29212	Pinch point	None	Willow	Scrub	Yes	Cleared for access

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
214	54.27689	-9.29227	Access tracks	None	Willow		Yes	Cleared for access
215	54.27701	-9.29242	Access tracks	None	Elder	Small	No	-
216	54.27728	-9.29244	Access tracks	None	Spruce	Immature	Yes	Cleared for access
217	54.27738	-9.29254	Access tracks	None	Willow		Yes	Cleared for access
218	54.27744	-9.2923	Access tracks	None	Hawthorn		Yes	Cleared for access
219	54.27743	-9.29262	Access tracks	None	Birch		Yes	Cleared for access
220	54.27805	-9.29268	Access tracks	None	Willow	Patch of low sally	Yes	Cleared for access
221	54.2776	-9.29318	ET & PP	None	Willow		Yes	Cleared for access
222	54.27765	-9.29416	AT11	None	Alder	Immature alder and birch plantation	No	-
223	54.27769	-9.29468	AT11	None	Willow	Sally and gorse	Yes	Cleared for access
224	54.27829	-9.29813	AT16	None	Willow	Sally hedge	Possibly	May need to be cleared for access
225	54.27835	-9.29895	AT16	None	Hawthorn		Possibly	May need to be cleared for access
226	54.28021	-9.2972	AT16	None	Willow		No	-
227	54.28072	-9.29795	AT16	None	Willow		No	-
228	54.28089	-9.2979	AT16	None	Blackthorn	Blackthorn with some gorse growing also	No	-
229	54.2809	-9.29762	AT16	None	Whitethorn		No	-
230	54.27854	-9.29962	Access tracks	None	Willow		Yes	Cleared for access

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
231	54.27858	-9.29991	Access tracks	None	Hawthorn		Yes	Cleared for access
232	54.27478	-9.29259	AT10	None	Willow		No	-
233	54.27454	-9.29259	AT10	None	Willow		No	-
234	54.27438	-9.29242	AT10	None	Leyladii		No	-
235	54.27372	-9.29197	AT10	None	Willow		No	-
236	54.26905	-9.29276	AT09	None	Willow		No	-
237	54.26897	-9.29255	AT09	None	Ash	Immature ash and birch plantation	Yes	Cleared for access
238	54.26879	-9.29259	AT09	None	Fuscia		Yes	Cleared for access
239	54.26719	-9.29292	Access tracks	None	Willow		Yes	Cleared for access
240	54.26701	-9.29171	Access tracks	None	Hawthorn		Yes	Cleared for access
241	54.2671	-9.29209	Access tracks	None	Gorse	Line of gorse	No	-
242	54.26875	-9.29395	ET & PP	None	Bamboo	Invasive species	No	-
243	54.26225	-9.28707	AT07	None	Hawthorn	Low growing hawthorn hedge on bank	No	-
244	54.26234	-9.28807	AT07	None	Hawthorn	Low hawthorn with some ivy growth	No	-
245	54.26235	-9.28851	AT07	None	Hawthorn		No	-
246	54.26236	-9.28858	AT07	None	Willow		No	-
247	54.26279	-9.28854	AT07	None	Willow, gorse, hawthorn	Mixed hedgerow of small trees and scrubs	No	-
248	54.2633	-9.28819	AT07	None	Hawthorn	Mature hawthorn	No	-
249	54.26184	-9.28883	AT07	None	Willow	Mixed hedgerow of sally, gorse and hawthorn. No ivy	No	-
250	54.26145	-9.28865	AT07	None	Willow		No	-
251	54.26132	-9.28772	AT07	None	Hawthorn	Mainly small hawthorn and gorse. No ivy	No	-

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
252	54.26093	-9.28828	AT07	None	Fence	Wire fence	No	-
253	54.26081	-9.28938	AT07	None	Gorse		No	-
254	54.26112	-9.29182	AT07	None	Gorse	Mainly gorse hedgerow	No	-
255	54.26152	-9.29158	AT07	None	Willow		No	-
256	54.26227	-9.29121	AT07	None	Hawthorn	Hedge with odd hawthorn and gorse in between	No	-
257	54.26301	-9.29012	AT07	None	Willow	Some sally, but mainly gorse	No	-
258	54.25432	-9.29671	Pinch point	None	Ash		Yes	Access road here
259	54.25415	-9.29702	Pinch point	PRF-I	Hawthorn	Hedge with lots of ivy	No	This hedge is on the opposite side of the road and wont be impacted
260	54.25434	-9.29718	Pinch point	PRF-I	Ash	Branch holes and ivy	No	Track close but not impacting
261	54.2543	-9.29738	Pinch point	None	Ash		No	Track close but not impacting
262	54.25997	-9.29821	Pinch point	None	Spruce and pine	Plantation	Yes	Some clearance required
263	54.25998	-9.29848	Pinch point	None	Alder	Planted semi mature alder	Yes	Some clearance required
264	54.25986	-9.29861	Pinch point	None	Gorse		Yes	Some clearance required
265	54.26191	-9.3215	Discontinued turbine	None	Willow		No	-
266	54.26234	-9.32216	Discontinued turbine	None	Hawthorn	No ivy	No	-
267	54.2686	-9.31833	Discontinued turbine	None	No trees		No	-
268	54.24636	-9.31452	Pinch point	None	Elder		Yes	
269	54.24631	-9.31442	Pinch point	None	Hawthorn		Yes	
270	54.24628	-9.31433	Pinch point	None	Hawthorn		Yes	

Tree No:	Lat	Lon	Turbine No:	Collins 2023 Category	Species	Details	Impacted?	Details on impact
271	54.24621	-9.31421	Pinch point	None	Hawthorn	Cut hedgerow elder and hawthorn	Yes	
272	54.24899	-9.30593	Pinch point	None	Willow	Hedgerow with sally	Yes	
273	54.24907	-9.30546	Pinch point	None	Ash	Hedge with small sally and ash	Yes	
274	54.24893	-9.30486	Pinch point	None	Willow	Hedge mainly gorse, few sally	Yes	
275	54.24893	-9.30486	Pinch point	None	Willow		Yes	

4 Appendix – Night time emergence & transect tables.

Transect results

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
31/07/2022	23:34:22	Soprano Pipistrelle	T3	54.25488	-9.3085	RO'R
31/07/2022	23:34:30	Common Pipistrelle	T3	54.25488	-9.3085	RO'R
31/07/2022	23:34:30	Soprano Pipistrelle	T3	54.25488	-9.3085	RO'R
31/07/2022	23:35:07	Soprano Pipistrelle multiple bats	T3	54.25472	-9.3085	RO'R
31/07/2022	23:36:10	Soprano Pipistrelle multiple bats	T3	54.25472	-9.3085	RO'R
31/07/2022	23:36:53	Soprano Pipistrelle multiple bats	T3	54.25362	-9.3075	RO'R
31/07/2022	23:37:19	Soprano Pipistrelle	T3	54.25327	-9.3072	RO'R
31/07/2022	23:37:25	Soprano Pipistrelle	T3	54.25327	-9.3072	RO'R
31/07/2022	23:37:46	Soprano Pipistrelle	T3	54.2527	-9.3070	RO'R
31/07/2022	23:38:01	Soprano Pipistrelle multiple bats	T3	54.25256	-9.3069	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
31/07/2022	23:38:32	Soprano Pipistrelle multiple bats	T3	54.25239	-9.3068	RO'R
31/07/2022	23:38:57	Soprano Pipistrelle multiple bats	T3	54.25234	-9.3067	RO'R
31/07/2022	23:40:25	Soprano Pipistrelle	T3	54.25117	-9.30606	RO'R
31/07/2022	23:41:03	Soprano Pipistrelle	T3	54.25117	-9.30606	RO'R
31/07/2022	23:41:08	Soprano Pipistrelle	T3	54.25117	-9.30606	RO'R
31/07/2022	23:41:22	Soprano Pipistrelle	T3	54.25117	-9.30606	RO'R
31/07/2022	23:41:36	Soprano Pipistrelle	T3	54.25117	-9.30606	RO'R
31/07/2022	23:41:53	Soprano Pipistrelle multiple bats	T3	54.25117	-9.30606	RO'R
01/08/2022	03:48:39	Soprano Pipistrelle	T4	54.24402	-9.2993	RO'R
22/08/2022	22:19:52	Soprano Pipistrelle	T5	54.23174	-9.34119	RO'R
22/08/2022	22:47:55	Soprano Pipistrelle	T6	54.22653	-9.31738	RO'R
30/08/2022	22:58:10	Soprano Pipistrelle	T7	54.24329	-9.32272	JC
30/08/2022	22:58:16	Soprano Pipistrelle	T7	54.24344	-9.32236	JC
30/08/2022	22:58:23	Soprano Pipistrelle	T7	54.24344	-9.32236	JC
30/08/2022	22:58:41	Soprano Pipistrelle	T7	54.24344	-9.32236	JC
30/08/2022	22:58:57	Common Pipistrelle	T7	54.24344	-9.32236	JC
30/08/2022	22:58:57	Soprano Pipistrelle	T7	54.24344	-9.32236	JC
30/08/2022	22:59:13	Soprano Pipistrelle	T7	54.24356	-9.32211	JC
30/08/2022	23:00:12	Soprano Pipistrelle	T7	54.24475	-9.31941	JC
30/08/2022	23:01:40	Common Pipistrelle	T7	54.2463	-9.31584	JC
30/08/2022	23:02:14	Common Pipistrelle	T7	54.24665	-9.31509	JC
30/08/2022	23:02:32	Common Pipistrelle	T7	54.24665	-9.31509	JC
30/08/2022	23:02:48	Common Pipistrelle	T7	54.24687	-9.31454	JC

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
30/08/2022	23:02:59	Soprano Pipistrelle	T7	54.24706	-9.31416	JC
30/08/2022	23:05:38	Soprano Pipistrelle	T7	54.24918	-9.30548	JC
30/08/2022	23:06:09	Common Pipistrelle	T7	54.25005	-9.30535	JC
30/08/2022	23:06:09	Soprano Pipistrelle	T7	54.25005	-9.30535	JC
30/08/2022	23:06:25	Common Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:06:25	Soprano Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:06:45	Common Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:06:45	Soprano Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:07:03	Common Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:07:03	Soprano Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:07:22	Common Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:07:22	Soprano Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:07:46	Soprano Pipistrelle	T7	54.25032	-9.30553	JC
30/08/2022	23:08:02	Soprano Pipistrelle	T7	54.25041	-9.30556	JC
30/08/2022	23:08:20	Soprano Pipistrelle	T7	54.25062	-9.3057	JC
30/08/2022	23:08:52	Soprano Pipistrelle	T7	54.25127	-9.3061	JC
30/08/2022	23:08:59	Soprano Pipistrelle	T7	54.25127	-9.3061	JC
30/08/2022	23:11:58	Soprano Pipistrelle	T7	54.25414	-9.29882	JC
30/08/2022	23:12:09	Soprano Pipistrelle	T7	54.25419	-9.29779	JC

Emergence / re-entry results

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:43:19	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:43:34	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:43:41	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:44:22	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:44:35	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:47:31	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:49:18	Soprano Pipistrelle	1	54.27447	-9.31723	JC

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:49:45	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:49:51	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:50:35	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	22:52:34	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:10:45	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:10:49	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:10:54	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:05	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:21	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:40	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:48	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:54	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:12:03	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:13:15	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:13:27	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:13:43	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:13:47	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:14:07	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:14:24	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:14:37	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:14:42	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:15:17	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:16:03	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:16:19	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:16:36	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:16:43	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:16:49	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:17:00	Soprano Pipistrelle	1	54.27447	-9.31723	JC
28/06/2022	04:00:10	Soprano Pipistrelle	9	54.23299	-9.31535	JC
28/06/2022	04:21:20	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:22:13	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:22:20	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:25:43	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:30:28	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:30:39	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:31:04	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:31:18	Common Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:31:25	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:32:36	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:32:44	Soprano Pipistrelle	8	54.22672	-9.30993	JC
28/06/2022	04:39:17	Soprano Pipistrelle	8	54.24042	-9.29988	JC
28/06/2022	04:47:08	Soprano Pipistrelle	8	54.22672	-9.30993	JC
27/06/2022	22:14:56	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:21:20	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:21:38	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:02	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:18	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:34	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:43	Leisler's bat	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:43	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:48	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:54	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:22:59	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:07	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:07	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:16	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:24	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:31	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:37	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:23:51	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:24:07	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:24:23	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:24:55	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:25:18	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:25:32	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:25:49	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:25:56	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:26:08	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:26:56	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:27:06	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:27:12	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:27:20	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:27:37	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:27:53	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:09	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:09	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:26	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:42	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:58	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:28:58	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:29:18	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:29:34	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:29:42	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:30:30	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:30:46	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:31:05	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:31:21	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:31:27	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:31:53	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:32:09	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:32:25	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:32:43	Leisler's bat	2	54.273889	-9.319003	RO'R
27/06/2022	22:42:47	Myotis species	2	54.273889	-9.319003	RO'R
27/06/2022	22:45:09	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:47:05	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:47:14	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:47:20	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:51:54	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:52:06	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	22:52:16	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:04:45	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:05:20	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:05:33	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:05:49	Common Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:07:18	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:07:38	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:07:54	Leisler's bat	2	54.273889	-9.319003	RO'R
27/06/2022	23:08:06	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:09:15	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:09:29	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:09:39	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:09:51	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:10:05	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:10:22	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:10:27	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:10:43	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:10:58	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:11:13	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:11:30	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:11:36	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:11:49	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:12:02	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:12:07	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:13:17	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:13:22	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:13:53	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:14:09	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:14:20	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:14:31	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	23:14:53	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:15:17	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:15:33	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:15:44	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:15:52	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:16:08	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:16:34	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
27/06/2022	23:16:42	Soprano Pipistrelle	2	54.273889	-9.319003	RO'R
28/06/2022	03:58:39	Soprano Pipistrelle	7	54.24008	-9.29944	RO'R
28/06/2022	04:04:34	Soprano Pipistrelle	7	54.24002	-9.29948	RO'R
28/06/2022	04:17:24	Soprano Pipistrelle	7	54.24007	-9.29954	RO'R
03/07/2022	22:04:21	Leisler's bat	11	54.22489	-9.26907	RO'R
03/07/2022	22:24:48	Leisler's bat	11	54.22534	-9.2694	RO'R
03/07/2022	23:07:36	Soprano Pipistrelle	11	54.22531	-9.26944	RO'R
04/07/2022	03:04:41	Soprano Pipistrelle	3	54.27378	-9.32145	RO'R
04/07/2022	03:08:03	Soprano Pipistrelle	3	54.27375	-9.32147	RO'R
04/07/2022	03:23:54	Soprano Pipistrelle	3	54.27376	-9.32145	RO'R
04/07/2022	03:24:04	Soprano Pipistrelle	3	54.27375	-9.32143	RO'R
04/07/2022	03:40:38	Soprano Pipistrelle	3	54.27375	-9.32145	RO'R
04/07/2022	04:19:19	Soprano Pipistrelle	3	54.27374	-9.32146	RO'R
04/07/2022	04:19:28	Soprano Pipistrelle	3	54.27374	-9.32147	RO'R
04/07/2022	04:19:38	Soprano Pipistrelle	3	54.27374	-9.32147	RO'R
04/07/2022	04:32:26	Soprano Pipistrelle	3	54.27373	-9.32148	RO'R
04/07/2022	04:32:34	Soprano Pipistrelle	3	54.27373	-9.32148	RO'R
04/07/2022	04:35:26	Soprano Pipistrelle	3	54.27372	-9.32148	RO'R
04/07/2022	04:35:33	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:35:42	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:35:49	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:35:56	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:36:02	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:36:07	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:36:23	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:36:39	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:36:54	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:37:23	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:37:28	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:38:06	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:38:21	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:38:32	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:38:49	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:39:05	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:39:13	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:39:25	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
04/07/2022	04:39:43	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:39:58	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:40:13	Common Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:40:13	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:40:29	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:40:44	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:40:53	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:41:22	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:41:37	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:41:53	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:42:08	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:42:21	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:42:36	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:42:42	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:43:02	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:43:16	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:43:28	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:43:43	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:43:58	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:44:13	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:44:21	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:44:31	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:44:48	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:45:03	Common Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:45:03	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:47:16	Soprano Pipistrelle	3	54.27373	-9.32147	RO'R
04/07/2022	04:47:46	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:48:02	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:48:56	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:49:39	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:49:55	Leisler's bat	3	54.27373	-9.32146	RO'R
04/07/2022	04:50:11	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:54:31	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
04/07/2022	04:54:46	Soprano Pipistrelle	3	54.27373	-9.32146	RO'R
31/07/2022	22:51:28	Soprano Pipistrelle	12	54.2594	-9.3261	RO'R
31/07/2022	22:51:41	Soprano Pipistrelle	12	54.25939	-9.3261	RO'R
31/07/2022	22:56:41	Soprano Pipistrelle	12	54.2594	-9.3262	RO'R
31/07/2022	23:01:19	Soprano Pipistrelle	12	54.2594	-9.3261	RO'R
31/07/2022	23:05:08	Soprano Pipistrelle	12	54.25932	-9.3263	RO'R
01/08/2022	04:21:32	Soprano Pipistrelle	10	54.24352	-9.3019	RO'R
01/08/2022	04:21:49	Soprano Pipistrelle	10	54.24352	-9.3019	RO'R
01/08/2022	04:22:58	Soprano Pipistrelle	10	54.24345	-9.3016	RO'R
01/08/2022	04:23:16	Soprano Pipistrelle	10	54.24345	-9.3016	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
01/08/2022	04:24:14	Soprano Pipistrelle	10	54.24345	-9.3016	RO'R
01/08/2022	04:24:25	Soprano Pipistrelle	10	54.24345	-9.3016	RO'R
01/08/2022	04:24:30	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:24:38	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:24:47	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:25:21	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:25:33	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:26:13	Soprano Pipistrelle	10	54.24353	-9.3017	RO'R
01/08/2022	04:28:12	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:29:00	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:29:44	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:29:56	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:31:14	Common Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:31:41	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:31:47	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:31:53	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:32:42	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:33:12	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:33:18	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:34:43	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:35:10	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:36:28	Soprano Pipistrelle	10	54.24351	-9.3016	RO'R
01/08/2022	04:36:52	Soprano Pipistrelle	10	54.24352	-9.3017	RO'R
01/08/2022	04:37:04	Soprano Pipistrelle	10	54.24352	-9.3017	RO'R
01/08/2022	04:37:16	Soprano Pipistrelle	10	54.24352	-9.3017	RO'R
01/08/2022	04:38:12	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:38:25	Soprano Pipistrelle	10	54.24351	-9.3017	RO'R
01/08/2022	04:39:40	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:40:02	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:41:21	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:42:52	Common Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:43:45	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:43:51	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:44:08	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:44:31	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:44:41	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:44:46	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:45:35	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:45:43	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:45:50	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:46:06	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:46:25	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:47:03	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
01/08/2022	04:47:53	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:49:01	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:49:05	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:49:20	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:52:46	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	04:57:50	Soprano Pipistrelle	10	54.24373	-9.3018	RO'R
01/08/2022	04:57:56	Soprano Pipistrelle	10	54.2437	-9.3017	RO'R
01/08/2022	04:58:02	Soprano Pipistrelle	10	54.2437	-9.3017	RO'R
01/08/2022	04:58:17	Soprano Pipistrelle	10	54.24369	-9.3017	RO'R
01/08/2022	04:58:24	Soprano Pipistrelle	10	54.24369	-9.3017	RO'R
01/08/2022	04:58:47	Soprano Pipistrelle	10	54.24369	-9.3017	RO'R
01/08/2022	05:00:49	Soprano Pipistrelle	10	54.24358	-9.3016	RO'R
01/08/2022	05:01:01	Soprano Pipistrelle	10	54.24358	-9.3016	RO'R
01/08/2022	05:04:05	Soprano Pipistrelle	10	54.24359	-9.3017	RO'R
01/08/2022	05:04:45	Soprano Pipistrelle	10	54.24361	-9.3017	RO'R
01/08/2022	05:04:59	Soprano Pipistrelle	10	54.2436	-9.3017	RO'R
01/08/2022	05:05:05	Soprano Pipistrelle	10	54.2436	-9.3017	RO'R
01/08/2022	05:06:20	Soprano Pipistrelle	10	54.24359	-9.3017	RO'R
01/08/2022	05:06:32	Soprano Pipistrelle	10	54.24359	-9.3017	RO'R
01/08/2022	05:06:36	Soprano Pipistrelle	10	54.24359	-9.3017	RO'R
01/08/2022	05:08:55	Soprano Pipistrelle	10	54.24358	-9.3016	RO'R
01/08/2022	05:09:18	Soprano Pipistrelle	10	54.24358	-9.3016	RO'R
01/08/2022	05:10:32	Soprano Pipistrelle	10	54.24356	-9.3016	RO'R
01/08/2022	05:10:50	Soprano Pipistrelle	10	54.24356	-9.3017	RO'R
01/08/2022	05:11:27	Soprano Pipistrelle	10	54.24354	-9.3016	RO'R
01/08/2022	05:11:46	Soprano Pipistrelle	10	54.24354	-9.3016	RO'R
01/08/2022	05:13:16	Leisler's bat	10	54.24354	-9.3016	RO'R
01/08/2022	05:14:08	Soprano Pipistrelle	10	54.24353	-9.3016	RO'R
01/08/2022	05:16:13	Soprano Pipistrelle	10	54.24352	-9.3016	RO'R
01/08/2022	05:19:32	Soprano Pipistrelle	10	54.2435	-9.3016	RO'R
01/08/2022	05:19:45	Soprano Pipistrelle	10	54.2435	-9.3016	RO'R
01/08/2022	05:23:27	Soprano Pipistrelle	10	54.24353	-9.3016	RO'R
22/08/2022	21:10:07	Soprano Pipistrelle	8	54.22676	-9.31023	RO'R
22/08/2022	21:13:55	Common Pipistrelle	8	54.22676	-9.31024	RO'R
22/08/2022	21:15:50	Soprano Pipistrelle	8	54.22676	-9.31024	RO'R
22/08/2022	21:16:50	Brown Long-eared	8	54.22677	-9.31023	RO'R
22/08/2022	21:17:02	Brown Long-eared	8	54.22677	-9.31023	RO'R
22/08/2022	21:17:47	Soprano Pipistrelle	8	54.22677	-9.31023	RO'R
22/08/2022	21:18:42	Common Pipistrelle	8	54.22677	-9.31023	RO'R
22/08/2022	21:19:49	Soprano Pipistrelle	8	54.22677	-9.31023	RO'R
22/08/2022	21:20:33	Soprano Pipistrelle	8	54.22677	-9.31023	RO'R
22/08/2022	21:20:45	Soprano Pipistrelle	8	54.22677	-9.31023	RO'R
22/08/2022	21:20:56	Soprano Pipistrelle	8	54.22677	-9.31023	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
22/08/2022	21:25:04	Soprano Pipistrelle	8	54.22677	-9.31021	RO'R
22/08/2022	21:27:19	Soprano Pipistrelle	8	54.22677	-9.31021	RO'R
22/08/2022	21:28:04	Soprano Pipistrelle	8	54.22677	-9.31021	RO'R
22/08/2022	21:28:10	Soprano Pipistrelle	8	54.22677	-9.31021	RO'R
22/08/2022	21:29:50	Soprano Pipistrelle	8	54.22677	-9.31021	RO'R
22/08/2022	21:31:13	Soprano Pipistrelle	8	54.22678	-9.31021	RO'R
23/08/2022	04:34:58	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:35:39	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:37:56	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:38:07	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:39:51	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:46:43	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	04:57:42	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
23/08/2022	05:10:08	Soprano Pipistrelle	25 to 31	54.278663	-9.302998	RO'R
30/08/2022	20:58:04	Leisler's bat	9	54.23304	-9.31604	JC
30/08/2022	21:04:30	Leisler's bat	9	54.23304	-9.31604	JC
30/08/2022	21:24:51	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:32:13	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:32:19	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:32:35	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:32:52	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:33:10	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:33:28	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	21:45:38	Common Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	22:07:02	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	22:11:49	Common Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	22:13:39	Myotis species	9	54.23304	-9.31604	JC
30/08/2022	22:18:48	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	22:27:04	Soprano Pipistrelle	9	54.23304	-9.31604	JC
30/08/2022	22:27:33	Soprano Pipistrelle	9	54.23304	-9.31604	JC
31/08/2022	05:09:03	Soprano Pipistrelle	13	54.30281	-9.29253	JC
31/08/2022	05:16:33	Soprano Pipistrelle	13	54.30281	-9.29253	JC
31/08/2022	05:20:10	Soprano Pipistrelle	13	54.30281	-9.29253	JC
31/08/2022	05:26:32	Soprano Pipistrelle	13	54.30281	-9.29253	JC
31/08/2022	05:27:42	Soprano Pipistrelle	13	54.30281	-9.29253	JC
31/08/2022	05:28:35	Soprano Pipistrelle	13	54.30281	-9.29253	JC

Emergence survey 5th June 2024 Building 20 (54.2423498, -9.2870353)

Contact number	Time	Species	Details
1	22:27	Soprano Pipistrelle	Heard but not seen

2	22:44	Soprano Pipistrelle	Heard but not seen
3	22:58	Myotis Bat	Myotis Call Recorded but not observed.
4	23:10	Myotis Bat	Myotis Call Recorded but not observed.
5	23:11	Soprano Pipistrelle	Seen leaving at the house, flying from wooden flashing and then to hunt in the woods surrounding building
6	23:17	Soprano Pipistrelle	Soprano pipistrelle seen flying in and out of doorway. Flew along hedgerow
7	23:17	Myotis Bat	Unidentified Myotis bat recorded in same call as Soprano Pipistrelle

EMERGENCE SURVEY 1ST OF APRIL 2026

Building 59. Tree nos. 28, 30 & 32 (54.279068, -9.29085) NVA; Pixfra

Contact number	Time	Species	Details
1	20:23	Bird	Passes in front of scope
2	20:50	Common Pipistrelle	Heard and not seen
3	20:04	Unknown Bat	Flys by shed
4	21:06	Unknown Bat	Flies from West/Northwest
5	21:07	Unknown Bat	Flies from West/Northwest
5	21:07	Brown Long-Eared	Bat appears from behind shed (from W)
6	21:08	Brown Long-Eared	Flies from West/Northwest
No emerging bats found			

Building 25 (54.278925 -9.3030962) NVA; Thermal TK

Contact number	Time	Species	Details
1	20:43	Brown Long-Eared	Bat flies from South, around shed and towards dwelling
2	21:11	Soprano Pipistrelle	Flew past shed
No emerging bats found			

Building 31 (54.278779, -9.3022156) NVA; Thermal 19mm

Contact number	Time	Species	Details
1	20:19	Unknown	Bird flies in front of bridge entrance
No emerging bats found			

Building 26 (54.278892 -9.3037032) NVA; Canon IR

Contact number	Time	Species	Details
1	21:10	None	No Bats seen emerging during emergence survey on building 26
No emerging bats found			

Bat Detector recordings

Shed Building 25. 1st April 2026		
Recording	**Time**	**Species**
1	20:43:31	Brown Long-Eared Bat
2	21:12:12	Soprano Pipistrelle
Tree behind Building 59. 1st April 2026		
Recording	**Time**	**Species**
1	20:50:25	Common Pipistrelle
2	21:08:04	Brown Long-Eared Bat

Plate 1: Building 59, trees no 28, 30 & 32

Plate 2: Building 25

Plate 3: Building 32, bridge

Plate 4: Building 26

EMERGENCE SURVEY 13TH OF APRIL 2026

Building 25. NVA; Pixfra

Contact number	Time	Species	Details
1	21:22	Soprano Pipistrelle	Flies past shed from the West
2	21:28	Soprano Pipistrelle	Flies from across the road
3	21:30	Soprano Pipistrelle	Flies from Road side
4	21:41	Unidentified Myotis	Flies from across the road and enters shed second door
5	21:41	Unidentified Myotis	Emerges from First doorway
5	21:53	Soprano Pipistrelle	From South
No emerging bats found			

Building 27. NVA; Thermal TK

Contact number	Time	Species	Details
1	21:00	Unknown	Flies from South West
2	21:29	Soprano Pipistrelle	From South West
3	21:31	Soprano Pipistrelle	Flies from South, behind shed
4	21:41	Natterer's Bat	Flies from South, behind shed
5	21:56	Natterer's Bat	From the South
6	21:57	Natterer's Bat	From the South
7	21:59	Soprano Pipistrelle	Flies from south
8	22:09	Soprano Pipistrelle	Flies over scope from South West
9	22:13	Soprano Pipistrelle	Flies back over the road, heading South East

No emerging bats found

Building 26. NVA; Thermal TK

Contact number	Time	Species	Details
1	20:36	Soprano Pipistrelle	Passes shed
No emerging bats found			

Building 59. NVA; Canon IR and Thermal 19mm

Contact number	Time	Species	Details
1	21:10	Unknown	No Bats seen emerging during emergence survey on building 59
No emerging bats found			

Bat Detector recordings

Shed Building 25 13th April			Farm Building 27 13th April		
Contact number	Time	Species	Contact number	Time	Species
1	20:18:24	Common Pipistrelle	1	21:08:10	Soprano Pipistrelle
2	21:08:10	Soprano Pipistrelle	2	21:22:38	Soprano Pipistrelle
3	21:22:40	Soprano Pipistrelle	3	21:22:53	Soprano Pipistrelle
4	21:22:57	Soprano Pipistrelle	4	21:28:20	Unidentified Myotis
5	21:23:44	Soprano Pipistrelle	5	21:28:34	Unidentified Myotis
6	21:23:50	Soprano Pipistrelle	6	21:28:40	Natterer's Bat

7	21:29:30	Soprano Pipistrelle	7	21:29:29	Soprano Pipistrelle
8	21:29:45	Soprano Pipistrelle	8	21:29:36	Soprano Pipistrelle
9	21:30:10	Soprano Pipistrelle	9	21:32:09	Leisler's Bat
10	21:32:14	Leisler's Bat	10	21:32:14	Leisler's Bat
11	21:35:36	Soprano Pipistrelle	11	21:35:35	Soprano Pipistrelle
12	21:39:19	Leisler's Bat	12	21:39:17	Leisler's Bat
13	21:42:12	Unidentified Myotis	13	21:42:10	Natterer's Bat
14	21:42:38	Unidentified Myotis	14	21:53:04	Soprano Pipistrelle
15	21:52:40	Common Pipistrelle	15	21:53:50	Soprano Pipistrelle
16	21:52:49	Common Pipistrelle	16	21:57:34	Natterer's Bat
17	21:53:06	Soprano Pipistrelle	17	22:00:19	Soprano Pipistrelle
18	21:53:52	Soprano Pipistrelle	18	22:00:43	Common Pipistrelle
19	21:57:33	Natterer's Bat	19	22:01:03	Soprano Pipistrelle
20	22:00:19	Soprano Pipistrelle	20	22:01:11	Soprano Pipistrelle
21	22:00:43	Common Pipistrelle	21	22:01:22	Brown Long-Eared
22	22:01:03	Soprano Pipistrelle	22	22:01:30	Soprano Pipistrelle
23	22:01:19	Soprano Pipistrelle	23	22:01:35	Soprano Pipistrelle
24	22:01:23	Soprano Pipistrelle	24	22:01:55	Soprano Pipistrelle
25	22:01:38	Soprano Pipistrelle	25	22:02:10	Soprano Pipistrelle
26	22:01:53	Soprano Pipistrelle	26	22:02:39	Soprano Pipistrelle
27	22:02:08	Soprano Pipistrelle	27	22:02:54	Soprano Pipistrelle
28	22:02:37	Soprano Pipistrelle	28	22:03:09	Soprano Pipistrelle
29	22:02:47	Soprano Pipistrelle	29	22:03:19	Soprano Pipistrelle
30	22:03:02	Soprano Pipistrelle	30	22:03:33	Soprano Pipistrelle
31	22:03:30	Soprano Pipistrelle	31	22:04:42	Soprano Pipistrelle

32	22:04:50	Soprano Pipistrelle	32	22:04:58	Soprano Pipistrelle
33	22:05:14	Soprano Pipistrelle	33	22:05:17	Soprano Pipistrelle
34	22:05:45	Soprano Pipistrelle	34	22:05:31	Soprano Pipistrelle
35	22:06:02	Soprano Pipistrelle	35	22:05:46	Soprano Pipistrelle
36	22:06:23	Soprano Pipistrelle	36	22:06:01	Soprano Pipistrelle
37	22:09:51	Soprano Pipistrelle	37	22:06:21	Soprano Pipistrelle
38	22:10:15	Soprano Pipistrelle	38	22:09:50	Soprano Pipistrelle
39	22:10:22	Soprano Pipistrelle	39	22:10:21	Brown Long-Eared
40	22:10:45	Soprano Pipistrelle	40	22:10:45	Soprano Pipistrelle
41	22:11:10	Common Pipistrelle	41	22:11:09	Soprano Pipistrelle
42	22:13:57	Soprano Pipistrelle	42	22:11:22	Soprano Pipistrelle
43	22:18:23	Soprano Pipistrelle	43	22:13:57	Soprano Pipistrelle
44	22:19:18	Soprano Pipistrelle	44	22:18:22	Soprano Pipistrelle

Tree behind Building 59 13th April		
Contact number	**Time**	**Species**
1	21:17:24	Leisler's Bat
2	21:26:07	Soprano Pipistrelle
3	21:26:13	Soprano Pipistrelle
4	21:48:42	Soprano Pipistrelle
5	21:59:29	Soprano Pipistrelle
6	22:00:58	Soprano Pipistrelle
7	22:29:52	Soprano Pipistrelle
8	22:30:07	Soprano Pipistrelle
9	22:30:24	Soprano Pipistrelle

10	22:30:40	Soprano Pipistrelle
11	22:31:11	Soprano Pipistrelle
12	22:31:26	Soprano Pipistrelle
13	22:31:41	Soprano Pipistrelle
14	22:32:50	Soprano Pipistrelle
15	22:33:05	Leisler's Bat
16	22:34:43	Leisler's Bat
17	22:39:43	Leisler's Bat
18	22:40:30	Leisler's Bat
19	22:40:57	Leisler's Bat
20	22:43:59	Leisler's Bat
21	22:45:19	Leisler's Bat
22	22:46:25	Leisler's Bat
23	22:48:25	Leisler's Bat
24	22:48:46	Leisler's Bat
25	22:50:37	Leisler's Bat
26	22:51:02	Leisler's Bat

Shed Building 59 13th april		
Contact number	Time	Species
1	21:26:04	Soprano Pipistrelle

Plate 5: Building 59

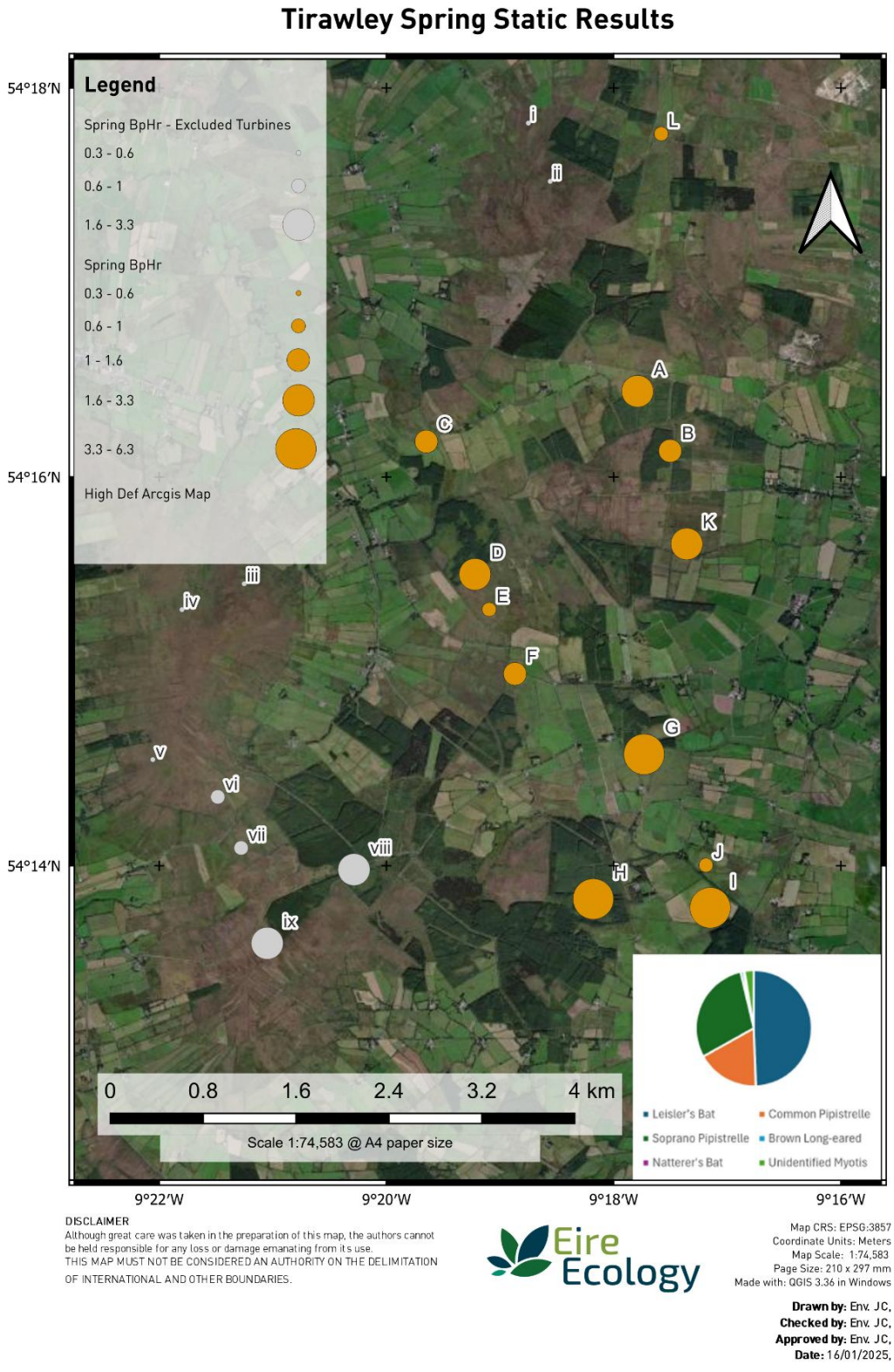
Plate 6: Building 59

Plate 7: Building 26

Plate 8: Building 27 and facing bridge 32

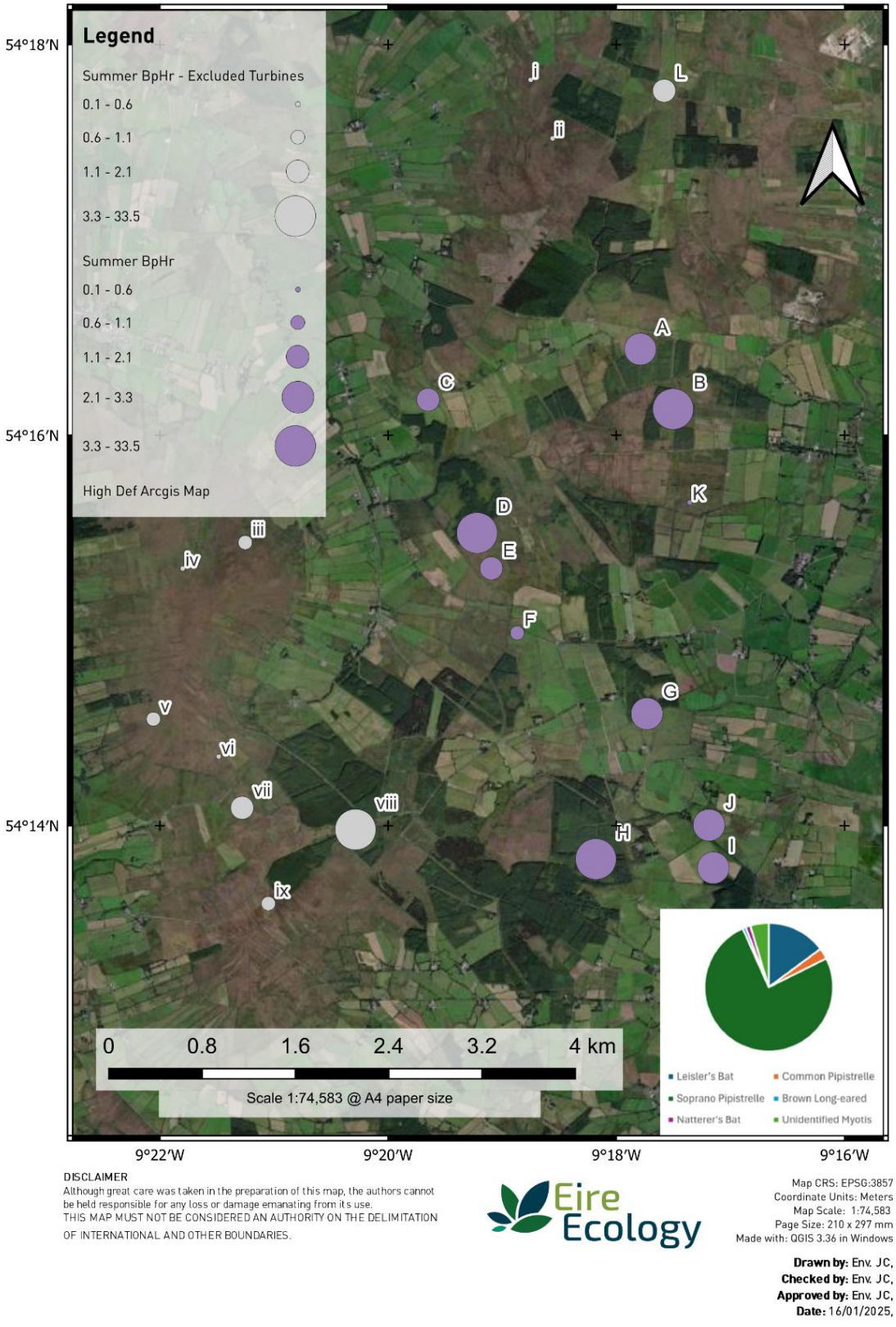
Plate 9: Building 25

5 APPENDIX – STATIC DETECTOR RESULTS



Combined Spring activity rates (Bp/Hr) 2022

Tirawley Summer Static Results



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THIS MAP MUST NOT BE CONSIDERED AN AUTHORITY ON THE DELIMITATION OF INTERNATIONAL AND OTHER BOUNDARIES.

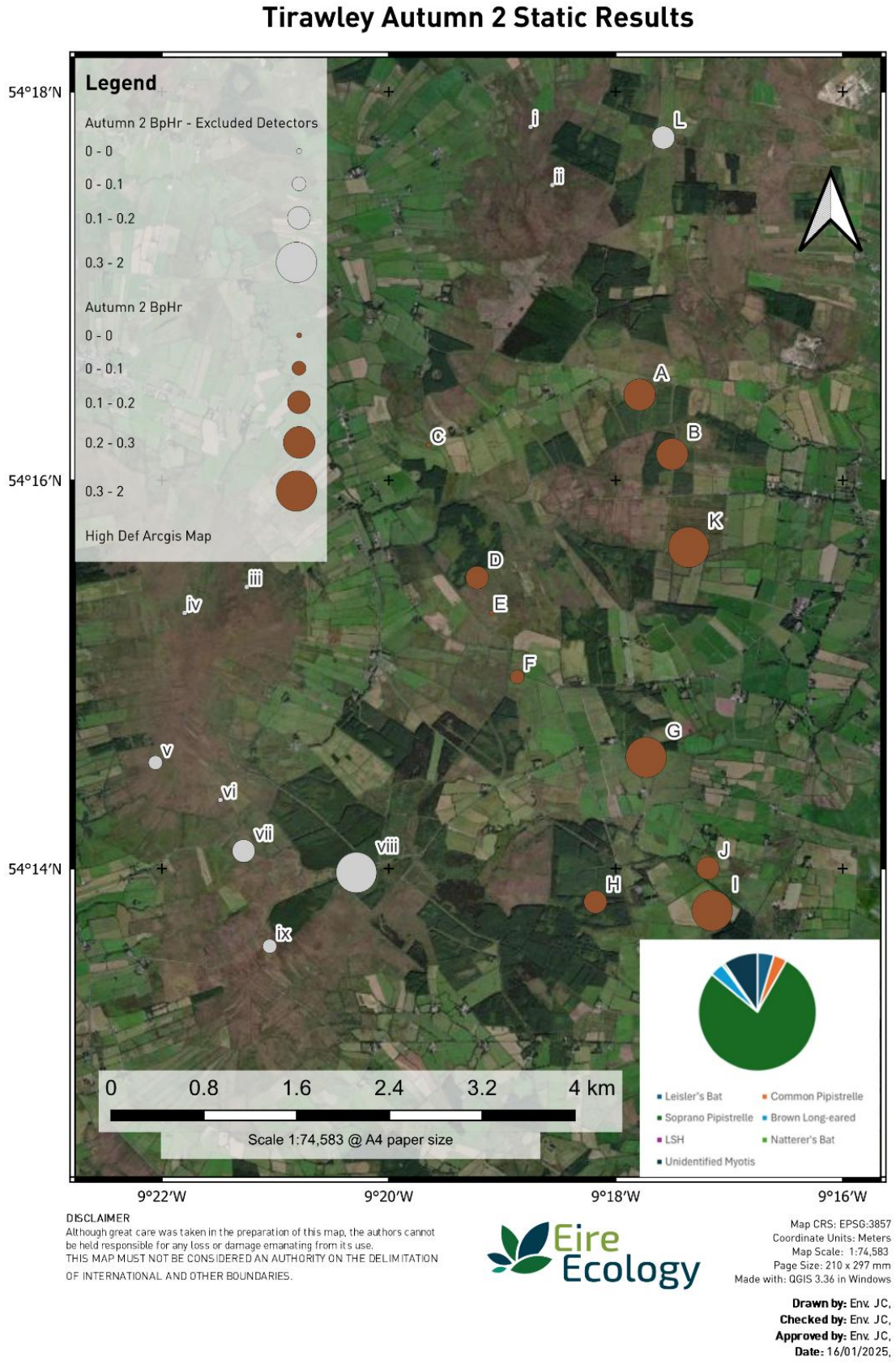
Map CRS: EPSG:3857
Coordinate Units: Meters
Map Scale: 1:74,583
Page Size: 210 x 297 mm
Made with: QGIS 3.36 in Windows

Drawn by: Env. JC,
Checked by: Env. JC,
Approved by: Env. JC,
Date: 16/01/2025,

Combined July 2022 activity rates (Bp/Hr)

Tirawley Autumn 1 Static Results

Combined August to Sept 2022 activity rates (Bp/Hr)



Combined October 2022 activity rates (Bp/Hr)

Combined Spring 2026 activity rates (Bp/Hr)

Combined static results per season

Spring 10th to 24th May											
Detector	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total	Minutes recorded	Bat passes per hour
A	259	51	110	0	2	0	1	6	429	8831	2.9
B	128	14	64	0	1	0	1	6	214	8831	1.5
C	46	21	158	0	5	0	0	2	232	8831	1.6
D	227	111	112	0	2	0	3	25	480	8831	3.3
E	46	34	23	0	0	0	0	2	105	8831	0.7
F	134	41	27	0	1	0	0	0	203	8831	1.4
G	383	278	231	0	6	0	3	24	925	8831	6.3
H	69	16	463	0	9	0	0	3	560	8831	3.8
I	418	87	98	0	1	0	0	1	605	8831	4.1
J	50	35	66	0	1	0	0	2	154	8831	1.0
K	198	25	47	0	5	0	2	52	329	8831	2.2
L	30	63	51	0	2	0	0	8	154	8831	1.0
i	56	7	7	0	2	0	0	1	73	8831	0.5
ii	77	8	5	0	0	0	0	0	90	8831	0.6
iii	19	11	13	0	1	0	0	2	46	8831	0.3
iv	33	10	8	0	1	0	0	0	52	8831	0.4
v	19	20	19	0	0	0	0	1	59	8831	0.4
vi	52	23	18	0	2	0	0	1	96	8831	0.7
vii	65	25	16	0	1	0	0	3	110	8831	0.7
viii	305	67	102	0	4	0	8	6	492	8831	3.3
ix	245	63	63	0	0	0	0	4	375	8831	2.5
Total	2859	1010	1701	0	46	0	18	149	5783	185451	1.9
Bat	19.4	6.9	11.6	0.0	0.3	0.0	0.1	1.0			

Summer - 22nd to 31st July											
Detector	**Leisler's**	**Common**	**Soprano**	**Nathusius**	**Brown**	**Lesser**	**Natterer's**	**Unidentified**	**Total**	**Minutes**	**Bat**
A	70	5	117	0	3	0	0	16	211	5475	2.3
B	72	24	1323	0	2	0	1	10	1432	5475	15.7
C	29	2	26	0	3	0	17	115	192	5475	2.1
D	35	76	2880	0	3	0	27	34	3055	5475	33.5
E	62	2	21	0	2	0	4	19	110	5475	1.2
F	56	2	28	0	4	0	1	10	101	5475	1.1
G	163	11	116	0	0	0	0	10	300	5475	3.3
H	41	6	325	0	0	0	5	14	391	5475	4.3
I	150	6	36	0	14	0	3	2	211	5475	2.3
J	167	7	32	0	11	0	0	5	222	5475	2.4
K	2	1	31	0	0	0	0	0	34	5475	0.4
L	102	12	48	0	1	0	5	11	179	5475	2.0
i	2	0	2	0	1	0	0	0	5	5475	0.1
ii	10	0	5	0	0	0	0	0	15	5475	0.2
iii	52	0	3	0	0	0	1	12	68	5475	0.7
iv	10	0	6	0	2	0	3	12	33	5475	0.4
v	30	8	32	0	3	0	1	4	78	5475	0.9
vi	27	6	21	0	0	0	0	2	56	5475	0.6
vii	29	9	45	0	6	0	3	30	122	5475	1.3
viii	27	31	813	0	5	0	25	56	957	5475	10.5
ix	32	11	47	0	1	0	1	3	95	5475	1.0
Total	1168	219	5957	0	61	0	97	365	7867	114975	4.1
Bat	12.8	2.4	65.3	0.0	0.7	0.0	1.1	4.0			

30th Aug to 08th September											
Detector	**Leisler's**	**Common**	**Soprano**	**Nathusius**	**Brown**	**Lesser**	**Natterer's**	**Unidentified**	**Total**	**Minutes**	**Bat**
A	19	6	76	0	4	0	2	31	138	6941	1.2
B	40	20	396	0	5	0	1	32	494	6941	4.3
C	16	11	27	0	5	0	4	74	137	6941	1.2
D	10	45	1721	0	14	0	4	22	1816	6941	15.7
E	33	1	14	0	4	0	6	25	83	6941	0.7
F	55	7	35	0	8	0	0	7	112	6941	1.0
G	96	15	195	0	6	0	0	33	345	6941	3.0
H	30	4	130	0	1	0	4	0	169	6941	1.5
I	60	13	72	0	24	0	18	59	246	6941	2.1
J	58	7	30	0	4	0	0	0	99	6941	0.9
K	86	10	78	0	1	0	1	13	189	6941	1.6
L	6	14	67	0	2	0	1	26	116	6941	1.0
i	41	2	11	1	0	0	0	2	57	6941	0.5
ii	6	2	12	0	0	0	1	3	24	6941	0.2
iii	19	1	8	0	9	0	0	3	40	6941	0.3
iv	49	1	14	0	2	0	0	6	72	6941	0.6
v	20	7	13	0	1	0	2	8	51	6941	0.4
vi	0	0	0	0	0	0	0	0	0	0	0.0
vii	48	6	47	0	3	0	1	23	128	6941	1.1
viii	39	23	1336	0	2	0	1	10	1411	6941	12.2
ix	47	8	37	0	6	0	0	7	105	6941	0.9
Total	778	203	4319	1	101	0	46	384	5832	138820	2.5
Bat	6.7	1.8	37.3	0.0	0.9	0.0	0.4	3.3			

Autumn 2 - 05th to 16th October											
Detector	**Leisler's**	**Common**	**Soprano**	**Nathusius**	**Brown**	**Lesser**	**Natterer's**	**Unidentified**	**Total**	**Minutes**	**Bat**
A	2	0	37	0	1	0	2	13	55	10165	0.3
B	0	0	42	0	3	0	1	10	56	10165	0.3
C	0	0	0	0	0	0	0	0	0	3980	0.0
D	0	0	40	0	1	0	0	1	42	10165	0.2
E	1	0	4	0	0	0	0	2	7	10165	0.0
F	6	3	5	0	2	0	0	0	16	10165	0.1
G	6	1	75	0	1	0	0	13	96	10165	0.6
H	4	0	23	0	0	0	1	2	30	10165	0.2
I	6	28	99	0	2	0	0	3	138	10165	0.8
J	4	0	18	0	1	0	0	4	27	10165	0.2
K	4	1	74	0	9	0	0	2	90	10165	0.5
L	0	0	9	0	4	0	2	18	33	10165	0.2
i	0	0	0	0	0	0	0	2	2	10165	0.0
ii	0	0	1	0	0	0	0	0	1	10165	0.0
iii	0	0	3	0	2	0	0	0	5	10165	0.0
iv	2	0	0	0	0	0	0	2	4	10165	0.0
v	3	0	3	0	1	0	1	4	12	10165	0.1
vi	0	0	2	0	0	0	0	4	6	10165	0.0
vii	6	0	17	0	1	0	0	8	32	10165	0.2
viii	2	4	330	0	0	1	0	8	345	10165	2.0
ix	0	0	7	0	10	0	0	0	17	10165	0.1
Total	46	37	789	0	38	1	7	96	1014	207280	0.3
Bat	0.3	0.2	4.7	0.0	0.2	0.0	0.0	0.6			

Static results 1st April to the 13th of April 2026

Detector	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Brown Long-eared	Natterer's Bat	Unidentified Myotis	Total	Minutes recorded	BpHr
1	4	6	25	1	0	0	36	9013	0.2
2	8	10	15	0	5	30	68	9013	0.5
3a	1	1	0	0	0	0	2	9013	0.0
3b	65	10	51	1	4	11	142	9013	0.9
5	21	136	69	0	5	9	240	9013	1.6
8	2	1	1	0	4	16	24	9013	0.2
10	0	0	4	0	10	12	26	9013	0.2
11	1	0	2	3	5	2	13	9013	0.1
12a	0	0	0	0	0	0	0	9013	0.0
12b	0	1	14	0	1	6	22	9013	0.1
13	0	0	2	1	1	0	4	9013	0.0
14	51	2	17	0	12	63	145	9013	1.0
16	1	4	10	0	1	4	20	9013	0.1
Total	**154**	**171**	**210**	**6**	**48**	**153**	**742**	117169	0.3
Bat passes per hour	0.1	0.1	0.1	0.003	0.025	0.078			

Static Results by Night 2022

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
A	1	1	10th May	1	2	5	0	0	0	1	2	11
A	2	2	11th May	4	0	2	0	0	0	0	0	6
A	3	3	12th May	57	21	22	0	0	0	0	2	102
A	4	4	13th May	28	15	30	0	0	0	0	0	73
A	5	5	14th May	23	2	35	0	1	0	0	0	61
A	6	6	15th May	37	3	1	0	0	0	0	0	41
A	7	7	16th May	14	1	2	0	0	0	0	0	17
A	8	8	17th May	0	0	0	0	0	0	0	0	0
A	9	9	18th May	69	0	0	0	0	0	0	0	69
A	10	10	19th May	15	2	8	0	1	0	0	1	27
A	11	11	20th May	3	0	0	0	0	0	0	0	3
A	12	12	21st May	7	1	1	0	0	0	0	1	10
A	13	13	22nd May	0	3	4	0	0	0	0	0	7
A	14	14	23rd May	0	0	0	0	0	0	0	0	0
A	15	15	24th May	1	1	0	0	0	0	0	0	2

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
A	16	1	22nd July	14	0	1	0	1	0	0	0	16
A	17	2	23rd July	10	0	0	0	0	0	0	0	10
A	18	3	24th July	0	0	0	0	0	0	0	0	0
A	19	4	25th July	4	0	4	0	0	0	0	2	10
A	20	5	26th July	3	1	11	0	0	0	0	3	18
A	21	6	27th July	3	2	27	0	0	0	0	1	33
A	22	7	28th July	19	1	23	0	2	0	0	5	50
A	23	8	29th July	0	0	0	0	0	0	0	0	0
A	24	9	30th July	2	0	9	0	0	0	0	1	12
A	25	10	31st July	15	1	42	0	0	0	0	4	62
A	26	1	30th August	5	3	10	0	2	0	0	12	32
A	27	2	31st August	0	0	12	0	0	0	0	5	17
A	28	3	1st September	2	2	21	0	0	0	0	8	33
A	29	4	2nd September	0	0	1	0	0	0	0	0	1
A	30	5	3rd September	1	0	8	0	2	0	1	2	14
A	31	6	4th September	5	1	5	0	0	0	0	1	12

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
A	32	7	5th September	1	0	0	0	0	0	0	0	1
A	33	8	6th September	2	0	10	0	0	0	1	3	16
A	34	9	7th September	0	0	2	0	0	0	0	0	2
A	35	10	8th September	3	0	7	0	0	0	0	0	10
A	36	1	5th October	0	0	8	0	0	0	0	1	9
A	37	2	6th October	0	0	0	0	0	0	0	0	0
A	38	3	7th October	0	0	9	0	1	0	0	0	10
A	39	4	8th October	1	0	5	0	0	0	1	2	9
A	40	5	9th October	0	0	3	0	0	0	0	0	3
A	41	6	10th October	0	0	7	0	0	0	1	1	9
A	42	7	11th October	0	0	0	0	0	0	0	0	0
A	43	8	12th October	0	0	2	0	0	0	0	8	10
A	44	9	13th October	1	0	3	0	0	0	0	1	5
A	45	10	14th October	0	0	0	0	0	0	0	0	0
A	46	11	15th October	0	0	0	0	0	0	0	0	0
A	47	12	16th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
B	1	1	10th May	4	0	4	0	0	0	0	0	8
B	2	2	11th May	1	0	3	0	0	0	0	0	4
B	3	3	12th May	37	4	10	0	0	0	0	2	53
B	4	4	13th May	14	3	11	0	0	0	0	3	31
B	5	5	14th May	17	0	5	0	1	0	0	1	24
B	6	6	15th May	11	0	2	0	0	0	1	0	14
B	7	7	16th May	21	0	1	0	0	0	0	0	22
B	8	8	17th May	0	0	0	0	0	0	0	0	0
B	9	9	18th May	4	0	0	0	0	0	0	0	4
B	10	10	19th May	2	0	5	0	0	0	0	0	7
B	11	11	20th May	8	0	1	0	0	0	0	0	9
B	12	12	21st May	6	3	12	0	0	0	0	0	21
B	13	13	22nd May	3	1	10	0	0	0	0	0	14
B	14	14	23rd May	0	0	0	0	0	0	0	0	0
B	15	15	24th May	0	3	0	0	0	0	0	0	3
B	16	1	22nd July	12	1	4	0	0	0	0	0	17

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
B	17	2	23rd July	7	1	6	0	0	0	0	3	17
B	18	3	24th July	1	1	88	0	0	0	0	0	90
B	19	4	25th July	2	2	61	0	0	0	0	2	67
B	20	5	26th July	7	4	528	0	1	0	0	2	542
B	21	6	27th July	3	7	357	0	0	0	0	1	368
B	22	7	28th July	13	2	155	0	0	0	0	0	170
B	23	8	29th July	2	0	11	0	0	0	1	0	14
B	24	9	30th July	6	2	24	0	0	0	0	2	34
B	25	10	31st July	19	4	89	0	1	0	0	0	113
B	26	1	30th August	4	4	170	0	0	0	0	2	180
B	27	2	31st August	11	2	92	0	0	0	0	4	109
B	28	3	1st September	8	10	74	0	0	0	1	3	96
B	29	4	2nd September	0	0	0	0	0	0	0	0	0
B	30	5	3rd September	4	0	26	0	2	0	0	0	32
B	31	6	4th September	0	0	0	0	0	0	0	3	3
B	32	7	5th September	0	0	1	0	0	0	0	1	2

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
B	33	8	6th September	12	0	13	0	0	0	0	9	34
B	34	9	7th September	0	0	4	0	2	0	0	2	8
B	35	10	8th September	1	4	16	0	1	0	0	8	30
B	36	1	5th October	0	0	4	0	0	0	1	0	5
B	37	2	6th October	0	0	0	0	0	0	0	0	0
B	38	3	7th October	0	0	8	0	0	0	0	2	10
B	39	4	8th October	0	0	6	0	1	0	0	1	8
B	40	5	9th October	0	0	2	0	1	0	0	1	4
B	41	6	10th October	0	0	13	0	0	0	0	2	15
B	42	7	11th October	0	0	0	0	0	0	0	0	0
B	43	8	12th October	0	0	4	0	0	0	0	3	7
B	44	9	13th October	0	0	3	0	1	0	0	0	4
B	45	10	14th October	0	0	1	0	0	0	0	0	1
B	46	11	15th October	0	0	1	0	0	0	0	1	2
B	47	12	16th October	0	0	0	0	0	0	0	0	0
C	1	1	10th May	0	0	6	0	0	0	0	0	6

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
C	2	2	11th May	1	0	2	0	0	0	0	0	3
C	3	3	12th May	4	5	24	0	0	0	0	0	33
C	4	4	13th May	20	4	21	0	1	0	0	1	47
C	5	5	14th May	9	1	7	0	1	0	0	0	18
C	6	6	15th May	0	1	4	0	0	0	0	0	5
C	7	7	16th May	5	0	4	0	0	0	0	0	9
C	8	8	17th May	0	0	4	0	1	0	0	0	5
C	9	9	18th May	0	0	2	0	2	0	0	1	5
C	10	10	19th May	1	4	16	0	0	0	0	0	21
C	11	11	20th May	1	1	0	0	0	0	0	0	2
C	12	12	21st May	3	0	6	0	0	0	0	0	9
C	13	13	22nd May	2	0	61	0	0	0	0	0	63
C	14	14	23rd May	0	0	1	0	0	0	0	0	1
C	15	15	24th May	0	5	0	0	0	0	0	0	5
C	16	1	22nd July	2	0	0	0	0	0	0	0	2
C	17	2	23rd July	2	0	0	0	0	0	0	0	2

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
C	18	3	24th July	0	0	0	0	0	0	0	0	0
C	19	4	25th July	0	0	1	0	0	0	0	17	18
C	20	5	26th July	11	1	1	0	1	0	4	7	25
C	21	6	27th July	2	0	2	0	0	0	3	31	38
C	22	7	28th July	5	0	16	0	1	0	6	21	49
C	23	8	29th July	0	0	0	0	0	0	0	0	0
C	24	9	30th July	1	0	2	0	1	0	3	8	15
C	25	10	31st July	6	1	4	0	0	0	1	31	43
C	26	1	30th August	4	2	4	0	2	0	0	4	16
C	27	2	31st August	0	1	9	0	0	0	0	29	39
C	28	3	1st September	5	7	5	0	2	0	2	17	38
C	29	4	2nd September	1	0	2	0	1	0	1	19	24
C	30	5	3rd September	1	0	0	0	0	0	0	0	1
C	31	6	4th September	0	0	2	0	0	0	0	0	2
C	32	7	5th September	0	0	0	0	0	0	0	0	0
C	33	8	6th September	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
C	34	9	7th September	2	0	2	0	0	0	1	3	8
C	35	10	8th September	3	1	3	0	0	0	0	2	9
C	36	1	5th October	0	0	0	0	0	0	0	0	0
C	37	2	6th October	0	0	0	0	0	0	0	0	0
D	1	1	10th May	18	1	7	0	0	0	0	3	29
D	2	2	11th May	0	0	1	0	0	0	0	0	1
D	3	3	12th May	23	69	68	0	0	0	1	4	165
D	4	4	13th May	29	21	11	0	1	0	1	2	65
D	5	5	14th May	46	5	10	0	0	0	0	4	65
D	6	6	15th May	8	1	2	0	1	0	0	10	22
D	7	7	16th May	5	0	1	0	0	0	0	0	6
D	8	8	17th May	1	0	0	0	0	0	0	0	1
D	9	9	18th May	1	4	1	0	0	0	0	1	7
D	10	10	19th May	2	3	2	0	0	0	0	1	8
D	11	11	20th May	0	0	1	0	0	0	0	0	1
D	12	12	21st May	46	1	1	0	0	0	0	0	48

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
D	13	13	22nd May	48	1	6	0	0	0	1	0	56
D	14	14	23rd May	0	0	1	0	0	0	0	0	1
D	15	15	24th May	0	5	0	0	0	0	0	0	5
D	16	1	22nd July	1	0	0	0	0	0	2	0	3
D	17	2	23rd July	0	0	1	0	0	0	0	3	4
D	18	3	24th July	1	0	25	0	0	0	5	9	40
D	19	4	25th July	3	2	26	0	0	0	7	3	41
D	20	5	26th July	6	2	942	0	0	0	5	5	960
D	21	6	27th July	6	17	665	0	0	0	5	1	694
D	22	7	28th July	9	42	695	0	1	0	2	2	751
D	23	8	29th July	0	0	0	0	0	0	1	0	1
D	24	9	30th July	3	3	73	0	0	0	0	4	83
D	25	10	31st July	6	10	453	0	2	0	0	7	478
D	26	1	30th August	0	5	550	0	5	0	0	2	562
D	27	2	31st August	0	4	568	0	0	0	0	2	574
D	28	3	1st September	4	6	448	0	1	0	1	0	460

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
D	29	4	2nd September	0	0	0	0	0	0	0	0	0
D	30	5	3rd September	2	3	22	0	4	0	1	5	37
D	31	6	4th September	1	0	3	0	0	0	1	2	7
D	32	7	5th September	0	0	1	0	0	0	0	0	1
D	33	8	6th September	2	0	19	0	1	0	0	2	24
D	34	9	7th September	1	17	39	0	2	0	0	5	64
D	35	10	8th September	0	10	71	0	1	0	1	4	87
D	36	1	5th October	0	0	1	0	0	0	0	0	1
D	37	2	6th October	0	0	0	0	0	0	0	0	0
D	38	3	7th October	0	0	15	0	1	0	0	0	16
D	39	4	8th October	0	0	0	0	0	0	0	0	0
D	40	5	9th October	0	0	0	0	0	0	0	0	0
D	41	6	10th October	0	0	2	0	0	0	0	0	2
D	42	7	11th October	0	0	0	0	0	0	0	0	0
D	43	8	12th October	0	0	20	0	0	0	0	0	20
D	44	9	13th October	0	0	2	0	0	0	0	1	3

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
D	45	10	14th October	0	0	0	0	0	0	0	0	0
D	46	11	15th October	0	0	0	0	0	0	0	0	0
D	47	12	16th October	0	0	0	0	0	0	0	0	0
E	1	1	10th May	0	0	0	0	0	0	0	0	0
E	2	2	11th May	0	0	0	0	0	0	0	0	0
E	3	3	12th May	1	15	13	0	0	0	0	0	29
E	4	4	13th May	11	7	3	0	0	0	0	0	21
E	5	5	14th May	17	4	0	0	0	0	0	0	21
E	6	6	15th May	11	3	1	0	0	0	0	0	15
E	7	7	16th May	1	0	0	0	0	0	0	0	1
E	8	8	17th May	0	2	1	0	0	0	0	1	4
E	9	9	18th May	1	0	0	0	0	0	0	0	1
E	10	10	19th May	2	0	3	0	0	0	0	0	5
E	11	11	20th May	1	0	0	0	0	0	0	0	1
E	12	12	21st May	0	0	2	0	0	0	0	1	3
E	13	13	22nd May	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
E	14	14	23rd May	0	0	0	0	0	0	0	0	0
E	15	15	24th May	1	3	0	0	0	0	0	0	4
E	16	1	22nd July	1	0	0	0	0	0	0	0	1
E	17	2	23rd July	1	0	0	0	0	0	0	0	1
E	18	3	24th July	0	0	0	0	0	0	0	0	0
E	19	4	25th July	2	0	0	0	0	0	0	0	2
E	20	5	26th July	3	0	2	0	0	0	1	3	9
E	21	6	27th July	26	1	5	0	0	0	0	5	37
E	22	7	28th July	5	0	3	0	0	0	0	4	12
E	23	8	29th July	2	0	0	0	0	0	0	1	3
E	24	9	30th July	4	0	4	0	0	0	0	2	10
E	25	10	31st July	18	1	7	0	2	0	3	4	35
E	26	1	30th August	5	0	4	0	1	0	4	10	24
E	27	2	31st August	6	0	4	0	0	0	0	2	12
E	28	3	1st September	0	0	2	0	2	0	0	5	9
E	29	4	2nd September	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
E	30	5	3rd September	9	0	1	0	1	0	2	3	16
E	31	6	4th September	2	0	0	0	0	0	0	0	2
E	32	7	5th September	0	0	0	0	0	0	0	0	0
E	33	8	6th September	0	0	0	0	0	0	0	0	0
E	34	9	7th September	7	0	0	0	0	0	0	3	10
E	35	10	8th September	4	1	3	0	0	0	0	2	10
E	36	1	5th October	0	0	1	0	0	0	0	1	2
E	37	2	6th October	0	0	0	0	0	0	0	0	0
E	38	3	7th October	0	0	0	0	0	0	0	0	0
E	39	4	8th October	1	0	0	0	0	0	0	0	1
E	40	5	9th October	0	0	0	0	0	0	0	0	0
E	41	6	10th October	0	0	0	0	0	0	0	0	0
E	42	7	11th October	0	0	0	0	0	0	0	0	0
E	43	8	12th October	0	0	1	0	0	0	0	1	2
E	44	9	13th October	0	0	2	0	0	0	0	0	2
E	45	10	14th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
E	46	11	15th October	0	0	0	0	0	0	0	0	0
E	47	12	16th October	0	0	0	0	0	0	0	0	0
F	1	1	10th May	0	0	1	0	0	0	0	0	1
F	2	2	11th May	6	0	0	0	0	0	0	0	6
F	3	3	12th May	7	5	4	0	0	0	0	0	16
F	4	4	13th May	18	5	4	0	0	0	0	0	27
F	5	5	14th May	44	14	11	0	1	0	0	0	70
F	6	6	15th May	26	7	1	0	0	0	0	0	34
F	7	7	16th May	15	0	1	0	0	0	0	0	16
F	8	8	17th May	0	0	0	0	0	0	0	0	0
F	9	9	18th May	11	4	3	0	0	0	0	0	18
F	10	10	19th May	3	2	2	0	0	0	0	0	7
F	11	11	20th May	1	0	0	0	0	0	0	0	1
F	12	12	21st May	2	1	0	0	0	0	0	0	3
F	13	13	22nd May	1	0	0	0	0	0	0	0	1
F	14	14	23rd May	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
F	15	15	24th May	0	3	0	0	0	0	0	0	3
F	16	1	22nd July	9	0	0	0	0	0	0	0	9
F	17	2	23rd July	2	0	0	0	0	0	0	0	2
F	18	3	24th July	1	0	1	0	0	0	0	0	2
F	19	4	25th July	4	0	2	0	1	0	1	5	13
F	20	5	26th July	6	1	4	0	0	0	0	1	12
F	21	6	27th July	10	0	6	0	0	0	0	1	17
F	22	7	28th July	9	1	4	0	1	0	0	1	16
F	23	8	29th July	1	0	0	0	0	0	0	0	1
F	24	9	30th July	5	0	5	0	0	0	0	1	11
F	25	10	31st July	9	0	6	0	2	0	0	1	18
F	26	1	30th August	2	2	10	0	0	0	0	2	16
F	27	2	31st August	4	0	4	0	2	0	0	0	10
F	28	3	1st September	18	0	7	0	3	0	0	1	29
F	29	4	2nd September	1	0	0	0	0	0	0	0	1
F	30	5	3rd September	21	0	0	0	1	0	0	0	22

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
F	31	6	4th September	1	0	3	0	0	0	0	2	6
F	32	7	5th September	1	0	0	0	0	0	0	1	2
F	33	8	6th September	0	1	4	0	1	0	0	0	6
F	34	9	7th September	2	3	4	0	1	0	0	1	11
F	35	10	8th September	5	1	3	0	0	0	0	0	9
F	36	1	5th October	0	0	1	0	1	0	0	0	2
F	37	2	6th October	0	0	0	0	0	0	0	0	0
F	38	3	7th October	0	0	0	0	0	0	0	0	0
F	39	4	8th October	3	1	1	0	0	0	0	0	5
F	40	5	9th October	1	0	0	0	0	0	0	0	1
F	41	6	10th October	0	1	2	0	0	0	0	0	3
F	42	7	11th October	0	0	1	0	0	0	0	0	1
F	43	8	12th October	1	0	0	0	1	0	0	0	2
F	44	9	13th October	1	1	0	0	0	0	0	0	2
F	45	10	14th October	0	0	0	0	0	0	0	0	0
F	46	11	15th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
F	47	12	16th October	0	0	0	0	0	0	0	0	0
G	1	1	10th May	4	1	7	0	0	0	0	2	14
G	2	2	11th May	13	0	3	0	0	0	0	0	16
G	3	3	12th May	60	42	71	0	2	0	0	3	178
G	4	4	13th May	29	90	39	0	3	0	1	4	166
G	5	5	14th May	41	92	31	0	1	0	0	3	168
G	6	6	15th May	85	12	26	0	0	0	0	1	124
G	7	7	16th May	18	5	9	0	0	0	0	4	36
G	8	8	17th May	1	0	2	0	0	0	0	0	3
G	9	9	18th May	73	7	9	0	0	0	1	4	94
G	10	10	19th May	19	29	30	0	0	0	1	3	82
G	11	11	20th May	7	0	2	0	0	0	0	0	9
G	12	12	21st May	26	0	1	0	0	0	0	0	27
G	13	13	22nd May	7	0	1	0	0	0	0	0	8
G	14	14	23rd May	0	0	0	0	0	0	0	0	0
G	15	15	24th May	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
G	16	1	22nd July	12	0	13	0	0	0	0	1	26
G	17	2	23rd July	3	1	4	0	0	0	0	0	8
G	18	3	24th July	4	0	5	0	0	0	0	3	12
G	19	4	25th July	32	2	13	0	0	0	0	0	47
G	20	5	26th July	8	1	13	0	0	0	0	0	22
G	21	6	27th July	10	1	12	0	0	0	0	2	25
G	22	7	28th July	8	2	8	0	0	0	0	0	18
G	23	8	29th July	66	0	2	0	0	0	0	2	70
G	24	9	30th July	5	2	11	0	0	0	0	2	20
G	25	10	31st July	15	2	35	0	0	0	0	0	52
G	26	1	30th August	10	3	27	0	1	0	0	1	42
G	27	2	31st August	8	0	18	0	0	0	0	6	32
G	28	3	1st September	5	6	50	0	1	0	0	6	68
G	29	4	2nd September	1	0	0	0	0	0	0	0	1
G	30	5	3rd September	3	0	7	0	0	0	0	6	16
G	31	6	4th September	20	0	35	0	0	0	0	0	55

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
G	32	7	5th September	18	0	7	0	0	0	0	0	25
G	33	8	6th September	17	4	22	0	3	0	0	7	53
G	34	9	7th September	7	0	10	0	1	0	0	2	20
G	35	10	8th September	7	2	19	0	0	0	0	5	33
G	36	1	5th October	1	0	1	0	0	0	0	2	4
G	37	2	6th October	0	0	0	0	0	0	0	0	0
G	38	3	7th October	0	0	5	0	0	0	0	2	7
G	39	4	8th October	1	0	27	0	0	0	0	2	30
G	40	5	9th October	1	0	0	0	0	0	0	3	4
G	41	6	10th October	1	1	36	0	0	0	0	0	38
G	42	7	11th October	0	0	0	0	0	0	0	0	0
G	43	8	12th October	1	0	5	0	1	0	0	2	9
G	44	9	13th October	0	0	0	0	0	0	0	2	2
G	45	10	14th October	0	0	1	0	0	0	0	0	1
G	46	11	15th October	0	0	0	0	0	0	0	0	0
G	47	12	16th October	1	0	0	0	0	0	0	0	1

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
H	1	1	10th May	3	0	10	0	0	0	0	0	13
H	2	2	11th May	3	3	107	0	1	0	0	0	114
H	3	3	12th May	7	3	24	0	0	0	0	0	34
H	4	4	13th May	10	0	22	0	0	0	0	0	32
H	5	5	14th May	8	0	13	0	0	0	0	0	21
H	6	6	15th May	9	0	13	0	1	0	0	1	24
H	7	7	16th May	9	0	8	0	1	0	0	0	18
H	8	8	17th May	1	1	108	0	0	0	0	1	111
H	9	9	18th May	4	0	41	0	3	0	0	1	49
H	10	10	19th May	0	0	19	0	0	0	0	0	19
H	11	11	20th May	2	0	19	0	0	0	0	0	21
H	12	12	21st May	7	4	33	0	1	0	0	0	45
H	13	13	22nd May	6	2	28	0	2	0	0	0	38
H	14	14	23rd May	0	0	18	0	0	0	0	0	18
H	15	15	24th May	0	3	0	0	0	0	0	0	3
H	16	1	22nd July	1	1	32	0	0	0	1	2	37

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
H	17	2	23rd July	4	1	43	0	0	0	0	2	50
H	18	3	24th July	5	0	27	0	0	0	0	1	33
H	19	4	25th July	4	1	22	0	0	0	1	1	29
H	20	5	26th July	3	0	34	0	0	0	1	2	40
H	21	6	27th July	2	0	51	0	0	0	0	1	54
H	22	7	28th July	4	1	40	0	0	0	1	0	46
H	23	8	29th July	3	0	25	0	0	0	0	2	30
H	24	9	30th July	10	1	27	0	0	0	0	2	40
H	25	10	31st July	5	1	24	0	0	0	1	1	32
H	26	1	30th August	3	1	15	0	0	0	0	0	19
H	27	2	31st August	1	1	12	0	0	0	0	0	14
H	28	3	1st September	5	1	22	0	0	0	1	0	29
H	29	4	2nd September	0	0	7	0	0	0	0	0	7
H	30	5	3rd September	0	0	7	0	1	0	0	0	8
H	31	6	4th September	2	0	19	0	0	0	1	0	22
H	32	7	5th September	5	0	18	0	0	0	0	0	23

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
H	33	8	6th September	4	0	8	0	0	0	0	0	12
H	34	9	7th September	0	0	6	0	0	0	0	0	6
H	35	10	8th September	10	1	16	0	0	0	2	0	29
H	36	1	5th October	1	0	2	0	0	0	0	0	3
H	37	2	6th October	0	0	0	0	0	0	0	0	0
H	38	3	7th October	0	0	0	0	0	0	0	0	0
H	39	4	8th October	0	0	6	0	0	0	0	0	6
H	40	5	9th October	1	0	5	0	0	0	0	1	7
H	41	6	10th October	2	0	7	0	0	0	1	1	11
H	42	7	11th October	0	0	0	0	0	0	0	0	0
H	43	8	12th October	0	0	1	0	0	0	0	0	1
H	44	9	13th October	0	0	0	0	0	0	0	0	0
H	45	10	14th October	0	0	0	0	0	0	0	0	0
H	46	11	15th October	0	0	0	0	0	0	0	0	0
H	47	12	16th October	0	0	2	0	0	0	0	0	2
I	1	1	10th May	3	0	0	0	0	0	0	0	3

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
I	2	2	11th May	8	14	13	0	0	0	0	0	35
I	3	3	12th May	89	16	12	0	0	0	0	0	117
I	4	4	13th May	14	15	11	0	0	0	0	0	40
I	5	5	14th May	30	3	12	0	0	0	0	0	45
I	6	6	15th May	46	7	16	0	0	0	0	1	70
I	7	7	16th May	100	2	2	0	0	0	0	0	104
I	8	8	17th May	5	1	3	0	0	0	0	0	9
I	9	9	18th May	28	5	8	0	1	0	0	0	42
I	10	10	19th May	30	3	8	0	0	0	0	0	41
I	11	11	20th May	41	2	3	0	0	0	0	0	46
I	12	12	21st May	11	17	9	0	0	0	0	0	37
I	13	13	22nd May	13	2	1	0	0	0	0	0	16
I	14	14	23rd May	0	0	0	0	0	0	0	0	0
I	15	15	24th May	0	0	0	0	0	0	0	0	0
I	16	1	22nd July	29	0	3	0	0	0	0	0	32
I	17	2	23rd July	32	2	3	0	1	0	0	0	38

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
I	18	3	24th July	10	1	0	0	0	0	0	0	11
I	19	4	25th July	3	0	2	0	0	0	0	0	5
I	20	5	26th July	16	0	7	0	2	0	1	0	26
I	21	6	27th July	11	2	5	0	2	0	1	1	22
I	22	7	28th July	16	0	5	0	1	0	1	1	24
I	23	8	29th July	17	0	3	0	2	0	0	0	22
I	24	9	30th July	8	0	4	0	5	0	0	0	17
I	25	10	31st July	8	1	4	0	1	0	0	0	14
I	26	1	30th August	2	1	14	0	1	0	0	0	18
I	27	2	31st August	5	0	7	0	3	0	2	5	22
I	28	3	1st September	6	3	7	0	1	0	0	2	19
I	29	4	2nd September	3	0	0	0	0	0	0	0	3
I	30	5	3rd September	6	2	1	0	3	0	5	7	24
I	31	6	4th September	7	1	6	0	4	0	6	16	40
I	32	7	5th September	5	1	6	0	2	0	5	20	39
I	33	8	6th September	10	1	8	0	7	0	0	6	32

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
I	34	9	7th September	5	0	2	0	1	0	0	2	10
I	35	10	8th September	11	4	21	0	2	0	0	1	39
I	36	1	5th October	0	0	4	0	0	0	0	0	4
I	37	2	6th October	0	0	0	0	0	0	0	0	0
I	38	3	7th October	0	0	0	0	0	0	0	0	0
I	39	4	8th October	1	17	86	0	1	0	0	0	105
I	40	5	9th October	0	0	1	0	1	0	0	0	2
I	41	6	10th October	0	0	2	0	0	0	0	0	2
I	42	7	11th October	0	0	0	0	0	0	0	0	0
I	43	8	12th October	4	11	4	0	0	0	0	3	22
I	44	9	13th October	0	0	0	0	0	0	0	0	0
I	45	10	14th October	1	0	2	0	0	0	0	0	3
I	46	11	15th October	0	0	0	0	0	0	0	0	0
I	47	12	16th October	0	0	0	0	0	0	0	0	0
J	1	1	10th May	1	1	4	0	1	0	0	0	7
J	2	2	11th May	2	1	4	0	0	0	0	1	8

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
J	3	3	12th May	3	1	5	0	0	0	0	0	9
J	4	4	13th May	2	4	4	0	0	0	0	0	10
J	5	5	14th May	5	4	13	0	0	0	0	1	23
J	6	6	15th May	10	5	9	0	0	0	0	0	24
J	7	7	16th May	3	1	4	0	0	0	0	0	8
J	8	8	17th May	1	0	1	0	0	0	0	0	2
J	9	9	18th May	3	2	3	0	0	0	0	0	8
J	10	10	19th May	3	5	8	0	0	0	0	0	16
J	11	11	20th May	5	5	5	0	0	0	0	0	15
J	12	12	21st May	8	2	5	0	0	0	0	0	15
J	13	13	22nd May	3	0	1	0	0	0	0	0	4
J	14	14	23rd May	0	0	0	0	0	0	0	0	0
J	15	15	24th May	1	4	0	0	0	0	0	0	5
J	16	1	22nd July	22	1	6	0	0	0	0	1	30
J	17	2	23rd July	24	3	5	0	1	0	0	0	33
J	18	3	24th July	5	0	0	0	0	0	0	0	5

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
J	19	4	25th July	13	0	0	0	2	0	0	0	15
J	20	5	26th July	21	0	4	0	1	0	0	1	27
J	21	6	27th July	17	0	2	0	1	0	0	0	20
J	22	7	28th July	27	2	3	0	2	0	0	1	35
J	23	8	29th July	10	0	0	0	0	0	0	0	10
J	24	9	30th July	12	1	6	0	3	0	0	1	23
J	25	10	31st July	16	0	6	0	1	0	0	1	24
J	26	1	30th August	6	2	7	0	0	0	0	0	15
J	27	2	31st August	2	2	3	0	2	0	0	0	9
J	28	3	1st September	4	0	9	0	1	0	0	0	14
J	29	4	2nd September	1	0	2	0	1	0	0	0	4
J	30	5	3rd September	2	0	0	0	0	0	0	0	2
J	31	6	4th September	22	0	1	0	0	0	0	0	23
J	32	7	5th September	4	0	0	0	0	0	0	0	4
J	33	8	6th September	4	0	1	0	0	0	0	0	5
J	34	9	7th September	3	0	1	0	0	0	0	0	4

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
J	35	10	8th September	10	3	6	0	0	0	0	0	19
J	36	1	5th October	0	0	3	0	0	0	0	0	3
J	37	2	6th October	0	0	0	0	0	0	0	0	0
J	38	3	7th October	0	0	1	0	0	0	0	1	2
J	39	4	8th October	1	0	6	0	0	0	0	1	8
J	40	5	9th October	0	0	1	0	0	0	0	0	1
J	41	6	10th October	0	0	1	0	0	0	0	0	1
J	42	7	11th October	0	0	2	0	0	0	0	0	2
J	43	8	12th October	3	0	1	0	1	0	0	2	7
J	44	9	13th October	0	0	3	0	0	0	0	0	3
J	45	10	14th October	0	0	0	0	0	0	0	0	0
J	46	11	15th October	0	0	0	0	0	0	0	0	0
J	47	12	16th October	0	0	0	0	0	0	0	0	0
K	1	1	10th May	2	0	2	0	0	0	0	0	4
K	2	2	11th May	3	0	1	0	0	0	0	3	7
K	3	3	12th May	40	3	7	0	0	0	1	17	68

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
K	4	4	13th May	38	2	3	0	0	0	0	9	52
K	5	5	14th May	39	10	18	0	2	0	0	0	69
K	6	6	15th May	29	1	4	0	2	0	0	6	42
K	7	7	16th May	13	3	3	0	1	0	0	0	20
K	8	8	17th May	1	0	0	0	0	0	0	0	1
K	9	9	18th May	9	0	1	0	0	0	0	9	19
K	10	10	19th May	5	2	5	0	0	0	1	7	20
K	11	11	20th May	8	0	0	0	0	0	0	0	8
K	12	12	21st May	9	1	2	0	0	0	0	1	13
K	13	13	22nd May	1	0	1	0	0	0	0	0	2
K	14	14	23rd May	0	0	0	0	0	0	0	0	0
K	15	15	24th May	1	3	0	0	0	0	0	0	4
K	16	1	22nd July	1	0	28	0	0	0	0	0	29
K	17	2	23rd July	0	0	0	0	0	0	0	0	0
K	18	3	24th July	0	0	0	0	0	0	0	0	0
K	19	4	25th July	0	0	1	0	0	0	0	0	1

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
K	20	5	26th July	0	0	0	0	0	0	0	0	0
K	21	6	27th July	0	0	0	0	0	0	0	0	0
K	22	7	28th July	0	0	1	0	0	0	0	0	1
K	23	8	29th July	0	0	0	0	0	0	0	0	0
K	24	9	30th July	0	0	0	0	0	0	0	0	0
K	25	10	31st July	1	1	1	0	0	0	0	0	3
K	26	1	30th August	23	3	25	0	0	0	0	3	54
K	27	2	31st August	11	0	14	0	0	0	0	3	28
K	28	3	1st September	16	3	20	0	0	0	0	3	42
K	29	4	2nd September	1	1	2	0	0	0	0	0	4
K	30	5	3rd September	1	0	0	0	0	0	0	0	1
K	31	6	4th September	5	0	7	0	0	0	0	0	12
K	32	7	5th September	2	0	1	0	0	0	0	0	3
K	33	8	6th September	2	0	2	0	0	0	0	0	4
K	34	9	7th September	12	0	4	0	0	0	0	1	17
K	35	10	8th September	13	3	3	0	1	0	1	3	24

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
K	36	1	5th October	1	0	11	0	1	0	0	0	13
K	37	2	6th October	0	0	17	0	0	0	0	0	17
K	38	3	7th October	2	0	0	0	1	0	0	0	3
K	39	4	8th October	1	0	4	0	0	0	0	0	5
K	40	5	9th October	0	0	1	0	0	0	0	0	1
K	41	6	10th October	0	0	3	0	3	0	0	0	6
K	42	7	11th October	0	0	1	0	0	0	0	0	1
K	43	8	12th October	0	0	4	0	2	0	0	0	6
K	44	9	13th October	0	0	12	0	2	0	0	1	15
K	45	10	14th October	0	0	17	0	0	0	0	0	17
K	46	11	15th October	0	1	4	0	0	0	0	1	6
K	47	12	16th October	0	0	0	0	0	0	0	0	0
i	1	1	10th May	0	0	0	0	0	0	0	0	0
i	2	2	11th May	0	0	0	0	0	0	0	0	0
i	3	3	12th May	1	1	0	0	0	0	0	0	2
i	4	4	13th May	41	3	3	0	0	0	0	1	48

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
i	5	5	14th May	2	0	1	0	1	0	0	0	4
i	6	6	15th May	1	0	0	0	0	0	0	0	1
i	7	7	16th May	0	0	0	0	1	0	0	0	1
i	8	8	17th May	0	0	0	0	0	0	0	0	0
i	9	9	18th May	0	0	0	0	0	0	0	0	0
i	10	10	19th May	1	0	2	0	0	0	0	0	3
i	11	11	20th May	1	0	0	0	0	0	0	0	1
i	12	12	21st May	0	0	0	0	0	0	0	0	0
i	13	13	22nd May	8	1	1	0	0	0	0	0	10
i	14	14	23rd May	0	0	0	0	0	0	0	0	0
i	15	15	24th May	1	2	0	0	0	0	0	0	3
i	16	1	22nd July	0	0	0	0	0	0	0	0	0
i	17	2	23rd July	0	0	0	0	0	0	0	0	0
i	18	3	24th July	0	0	1	0	0	0	0	0	1
i	19	4	25th July	0	0	0	0	0	0	0	0	0
i	20	5	26th July	2	0	1	0	1	0	0	0	4

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
i	21	6	27th July	0	0	0	0	0	0	0	0	0
i	22	7	28th July	0	0	0	0	0	0	0	0	0
i	23	8	29th July	0	0	0	0	0	0	0	0	0
i	24	9	30th July	0	0	0	0	0	0	0	0	0
i	25	10	31st July	0	0	0	0	0	0	0	0	0
i	26	1	30th August	13	0	5	0	0	0	0	0	18
i	27	2	31st August	1	0	3	0	0	0	0	0	4
i	28	3	1st September	21	1	2	1	0	0	0	0	25
i	29	4	2nd September	0	0	1	0	0	0	0	0	1
i	30	5	3rd September	0	0	0	0	0	0	0	0	0
i	31	6	4th September	0	0	0	0	0	0	0	0	0
i	32	7	5th September	0	0	0	0	0	0	0	0	0
i	33	8	6th September	0	0	0	0	0	0	0	0	0
i	34	9	7th September	1	0	0	0	0	0	0	0	1
i	35	10	8th September	5	1	0	0	0	0	0	2	8
i	36	4	5th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
i	37	5	6th October	0	0	0	0	0	0	0	0	0
i	38	6	7th October	0	0	0	0	0	0	0	1	1
i	39	7	8th October	0	0	0	0	0	0	0	1	1
i	40	8	9th October	0	0	0	0	0	0	0	0	0
i	38	6	10th October	0	0	0	0	0	0	0	0	0
i	39	7	11th October	0	0	0	0	0	0	0	0	0
i	40	8	12th October	0	0	0	0	0	0	0	0	0
i	41	9	13th October	0	0	0	0	0	0	0	0	0
i	42	10	14th October	0	0	0	0	0	0	0	0	0
i	43	11	15th October	0	0	0	0	0	0	0	0	0
i	44	12	16th October	0	0	0	0	0	0	0	0	0
L	1	1	10th May	0	2	1	0	0	0	0	0	3
L	2	2	11th May	0	0	0	0	0	0	0	0	0
L	3	3	12th May	6	5	5	0	0	0	0	0	16
L	4	4	13th May	9	31	13	0	1	0	0	2	56
L	5	5	14th May	1	6	5	0	1	0	0	0	13

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
L	6	6	15th May	1	0	3	0	0	0	0	2	6
L	7	7	16th May	0	0	3	0	0	0	0	1	4
L	8	8	17th May	1	0	2	0	0	0	0	1	4
L	9	9	18th May	0	0	0	0	0	0	0	0	0
L	10	10	19th May	3	3	6	0	0	0	0	1	13
L	11	11	20th May	1	0	0	0	0	0	0	0	1
L	12	12	21st May	5	8	7	0	0	0	0	1	21
L	13	13	22nd May	2	4	4	0	0	0	0	0	10
L	14	14	23rd May	0	0	1	0	0	0	0	0	1
L	15	15	24th May	1	4	1	0	0	0	0	0	6
L	16	1	22nd July	8	0	2	0	0	0	0	0	10
L	17	2	23rd July	9	0	1	0	0	0	1	1	12
L	18	3	24th July	5	1	2	0	0	0	1	1	10
L	19	4	25th July	9	0	7	0	1	0	0	0	17
L	20	5	26th July	20	3	4	0	0	0	0	3	30
L	21	6	27th July	9	1	7	0	0	0	0	0	17

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
L	22	7	28th July	14	2	13	0	0	0	1	1	31
L	23	8	29th July	8	0	2	0	0	0	0	2	12
L	24	9	30th July	12	4	2	0	0	0	2	1	21
L	25	10	31st July	8	1	8	0	0	0	0	2	19
L	26	1	30th August	1	2	17	0	0	0	0	3	23
L	27	2	31st August	0	3	19	0	0	0	0	1	23
L	28	3	1st September	1	6	16	0	0	0	1	12	36
L	29	4	2nd September	1	0	4	0	0	0	0	2	7
L	30	5	3rd September	0	0	0	0	0	0	0	0	0
L	31	6	4th September	0	0	1	0	0	0	0	3	4
L	32	7	5th September	0	0	1	0	0	0	0	2	3
L	33	8	6th September	1	0	1	0	1	0	0	0	3
L	34	9	7th September	2	0	0	0	1	0	0	1	4
L	35	10	8th September	0	3	8	0	0	0	0	2	13
L	36	1	5th October	0	0	2	0	0	0	0	1	3
L	37	2	6th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
L	38	3	7th October	0	0	1	0	1	0	0	1	3
L	39	4	8th October	0	0	0	0	0	0	0	1	1
L	40	5	9th October	0	0	0	0	0	0	0	0	0
L	41	6	10th October	0	0	1	0	2	0	1	2	6
L	42	7	11th October	0	0	0	0	0	0	0	0	0
L	43	8	12th October	0	0	1	0	1	0	1	7	10
L	44	9	13th October	0	0	1	0	0	0	0	4	5
L	45	10	14th October	0	0	2	0	0	0	0	0	2
L	46	11	15th October	0	0	1	0	0	0	0	2	3
L	47	12	16th October	0	0	0	0	0	0	0	0	0
ii	1	1	10th May	0	0	0	0	0	0	0	0	0
ii	2	2	11th May	0	0	0	0	0	0	0	0	0
ii	3	3	12th May	7	2	0	0	0	0	0	0	9
ii	4	4	13th May	51	1	4	0	0	0	0	0	56
ii	5	5	14th May	0	0	0	0	0	0	0	0	0
ii	6	6	15th May	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
ii	7	7	16th May	0	0	0	0	0	0	0	0	0
ii	8	8	17th May	0	0	0	0	0	0	0	0	0
ii	9	9	18th May	1	0	0	0	0	0	0	0	1
ii	10	10	19th May	0	0	0	0	0	0	0	0	0
ii	11	11	20th May	0	0	0	0	0	0	0	0	0
ii	12	12	21st May	4	0	0	0	0	0	0	0	4
ii	13	13	22nd May	13	0	1	0	0	0	0	0	14
ii	14	14	23rd May	0	0	0	0	0	0	0	0	0
ii	15	15	24th May	1	5	0	0	0	0	0	0	6
ii	16	1	22nd July	0	0	0	0	0	0	0	0	0
ii	17	2	23rd July	0	0	0	0	0	0	0	0	0
ii	18	3	24th July	0	0	0	0	0	0	0	0	0
ii	19	4	25th July	0	0	0	0	0	0	0	0	0
ii	20	5	26th July	1	0	1	0	0	0	0	0	2
ii	21	6	27th July	1	0	1	0	0	0	0	0	2
ii	22	7	28th July	4	0	3	0	0	0	0	0	7

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
ii	23	8	29th July	0	0	0	0	0	0	0	0	0
ii	24	9	30th July	1	0	0	0	0	0	0	0	1
ii	25	10	31st July	3	0	0	0	0	0	0	0	3
ii	26	1	30th August	1	0	1	0	0	0	0	0	2
ii	27	2	31st August	0	0	6	0	0	0	0	0	6
ii	28	3	1st September	3	0	4	0	0	0	0	2	9
ii	29	4	2nd September	0	0	0	0	0	0	0	0	0
ii	30	5	3rd September	1	0	0	0	0	0	1	1	3
ii	31	6	4th September	1	0	1	0	0	0	0	0	2
ii	32	7	5th September	0	0	0	0	0	0	0	0	0
ii	33	8	6th September	0	0	0	0	0	0	0	0	0
ii	34	9	7th September	0	0	0	0	0	0	0	0	0
ii	35	10	8th September	0	2	0	0	0	0	0	0	2
ii	36	1	5th October	0	0	0	0	0	0	0	0	0
ii	37	2	6th October	0	0	0	0	0	0	0	0	0
ii	38	3	7th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
ii	39	4	8th October	0	0	1	0	0	0	0	0	1
ii	40	5	9th October	0	0	0	0	0	0	0	0	0
ii	41	6	10th October	0	0	0	0	0	0	0	0	0
ii	42	7	11th October	0	0	0	0	0	0	0	0	0
ii	43	8	12th October	0	0	0	0	0	0	0	0	0
ii	44	9	13th October	0	0	0	0	0	0	0	0	0
ii	45	10	14th October	0	0	0	0	0	0	0	0	0
ii	46	11	15th October	0	0	0	0	0	0	0	0	0
ii	47	12	16th October	0	0	0	0	0	0	0	0	0
iii	1	1	10th May	0	0	0	0	0	0	0	1	1
iii	2	2	11th May	0	0	0	0	0	0	0	0	0
iii	3	3	12th May	0	0	1	0	1	0	0	0	2
iii	4	4	13th May	16	1	6	0	0	0	0	1	24
iii	5	5	14th May	2	2	1	0	0	0	0	0	5
iii	6	6	15th May	0	0	1	0	0	0	0	0	1
iii	7	7	16th May	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iii	8	8	17th May	0	0	1	0	0	0	0	0	1
iii	9	9	18th May	0	1	0	0	0	0	0	0	1
iii	10	10	19th May	0	1	1	0	0	0	0	0	2
iii	11	11	20th May	0	0	0	0	0	0	0	0	0
iii	12	12	21st May	0	1	1	0	0	0	0	0	2
iii	13	13	22nd May	0	0	1	0	0	0	0	0	1
iii	14	14	23rd May	0	0	0	0	0	0	0	0	0
iii	15	15	24th May	1	5	0	0	0	0	0	0	6
iii	16	1	22nd July	1	0	0	0	0	0	0	0	1
iii	17	2	23rd July	0	0	0	0	0	0	0	0	0
iii	18	3	24th July	0	0	0	0	0	0	0	0	0
iii	19	4	25th July	14	0	0	0	0	0	0	3	17
iii	20	5	26th July	10	0	1	0	0	0	0	2	13
iii	21	6	27th July	0	0	0	0	0	0	0	1	1
iii	22	7	28th July	6	0	0	0	0	0	0	2	8
iii	23	8	29th July	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iii	24	9	30th July	14	0	1	0	0	0	1	2	18
iii	25	10	31st July	7	0	1	0	0	0	0	2	10
iii	26	1	30th August	4	0	1	0	3	0	0	1	9
iii	27	2	31st August	9	0	2	0	2	0	0	1	14
iii	28	3	1st September	2	1	0	0	3	0	0	1	7
iii	29	4	2nd September	0	0	0	0	0	0	0	0	0
iii	30	5	3rd September	0	0	1	0	0	0	0	0	1
iii	31	6	4th September	1	0	1	0	0	0	0	0	2
iii	32	7	5th September	0	0	0	0	0	0	0	0	0
iii	33	8	6th September	0	0	2	0	0	0	0	0	2
iii	34	9	7th September	1	0	0	0	0	0	0	0	1
iii	35	10	8th September	2	0	1	0	1	0	0	0	4
iii	36	4	5th October	0	0	0	0	0	0	0	0	0
iii	37	5	6th October	0	0	0	0	0	0	0	0	0
iii	38	6	7th October	0	0	3	0	0	0	0	0	3
iii	39	7	8th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iii	40	8	9th October	0	0	0	0	0	0	0	0	0
iii	38	6	10th October	0	0	0	0	0	0	0	0	0
iii	39	7	11th October	0	0	0	0	0	0	0	0	0
iii	40	8	12th October	0	0	0	0	2	0	0	0	2
iii	41	9	13th October	0	0	0	0	0	0	0	0	0
iii	42	10	14th October	0	0	0	0	0	0	0	0	0
iii	43	11	15th October	0	0	0	0	0	0	0	0	0
iii	44	12	16th October	0	0	0	0	0	0	0	0	0
iv	1	1	10th May	0	1	0	0	0	0	0	0	1
iv	2	2	11th May	0	0	0	0	0	0	0	0	0
iv	3	3	12th May	0	0	0	0	0	0	0	0	0
iv	4	4	13th May	10	5	4	0	1	0	0	0	20
iv	5	5	14th May	4	0	2	0	0	0	0	0	6
iv	6	6	15th May	1	0	0	0	0	0	0	0	1
iv	7	7	16th May	0	0	0	0	0	0	0	0	0
iv	8	8	17th May	0	0	1	0	0	0	0	0	1

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iv	9	9	18th May	0	1	1	0	0	0	0	0	2
iv	10	10	19th May	0	0	0	0	0	0	0	0	0
iv	11	11	20th May	0	0	0	0	0	0	0	0	0
iv	12	12	21st May	18	0	0	0	0	0	0	0	18
iv	13	13	22nd May	0	0	0	0	0	0	0	0	0
iv	14	14	23rd May	0	0	0	0	0	0	0	0	0
iv	15	15	24th May	0	3	0	0	0	0	0	0	3
iv	16	1	22nd July	2	0	0	0	0	0	0	0	2
iv	17	2	23rd July	0	0	0	0	0	0	0	0	0
iv	18	3	24th July	0	0	0	0	0	0	0	0	0
iv	19	4	25th July	0	0	0	0	0	0	0	0	0
iv	20	5	26th July	3	0	1	0	0	0	0	4	8
iv	21	6	27th July	0	0	0	0	0	0	3	4	7
iv	22	7	28th July	1	0	1	0	0	0	0	4	6
iv	23	8	29th July	0	0	0	0	0	0	0	0	0
iv	24	9	30th July	2	0	1	0	0	0	0	0	3

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iv	25	10	31st July	2	0	3	0	2	0	0	0	7
iv	26	1	30th August	2	0	5	0	0	0	0	3	10
iv	27	2	31st August	11	0	1	0	1	0	0	1	14
iv	28	3	1st September	31	0	1	0	1	0	0	2	35
iv	29	4	2nd September	0	0	0	0	0	0	0	0	0
iv	30	5	3rd September	0	0	0	0	0	0	0	0	0
iv	31	6	4th September	1	0	0	0	0	0	0	0	1
iv	32	7	5th September	1	0	0	0	0	0	0	0	1
iv	33	8	6th September	0	0	0	0	0	0	0	0	0
iv	34	9	7th September	0	0	0	0	0	0	0	0	0
iv	35	10	8th September	3	1	7	0	0	0	0	0	11
iv	36	1	5th October	1	0	0	0	0	0	0	0	1
iv	37	2	6th October	0	0	0	0	0	0	0	0	0
iv	38	3	7th October	1	0	0	0	0	0	0	0	1
iv	39	4	8th October	0	0	0	0	0	0	0	0	0
iv	40	5	9th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
iv	41	6	10th October	0	0	0	0	0	0	0	0	0
iv	42	7	11th October	0	0	0	0	0	0	0	0	0
iv	43	8	12th October	0	0	0	0	0	0	0	1	1
iv	44	9	13th October	0	0	0	0	0	0	0	0	0
iv	45	10	14th October	0	0	0	0	0	0	0	0	0
iv	46	11	15th October	0	0	0	0	0	0	0	1	1
iv	47	12	16th October	0	0	0	0	0	0	0	0	0
v	1	1	10th May	0	3	6	0	0	0	0	1	10
v	2	2	11th May	0	0	0	0	0	0	0	0	0
v	3	3	12th May	1	4	3	0	0	0	0	0	8
v	4	4	13th May	5	6	2	0	0	0	0	0	13
v	5	5	14th May	9	2	0	0	0	0	0	0	11
v	6	6	15th May	1	2	3	0	0	0	0	0	6
v	7	7	16th May	1	0	0	0	0	0	0	0	1
v	8	8	17th May	0	0	0	0	0	0	0	0	0
v	9	9	18th May	1	0	0	0	0	0	0	0	1

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
v	10	10	19th May	0	0	3	0	0	0	0	0	3
v	11	11	20th May	0	0	0	0	0	0	0	0	0
v	12	12	21st May	0	0	1	0	0	0	0	0	1
v	13	13	22nd May	1	0	1	0	0	0	0	0	2
v	14	14	23rd May	0	0	0	0	0	0	0	0	0
v	15	15	24th May	0	3	0	0	0	0	0	0	3
v	16	1	22nd July	1	0	1	0	0	0	0	0	2
v	17	2	23rd July	2	0	0	0	0	0	0	0	2
v	18	3	24th July	1	0	1	0	0	0	0	0	2
v	19	4	25th July	0	0	2	0	0	0	0	0	2
v	20	5	26th July	5	1	13	0	1	0	0	1	21
v	21	6	27th July	8	2	2	0	1	0	0	0	13
v	22	7	28th July	8	2	5	0	0	0	1	1	17
v	23	8	29th July	0	0	0	0	0	0	0	0	0
v	24	9	30th July	0	0	1	0	0	0	0	1	2
v	25	10	31st July	5	3	7	0	1	0	0	1	17

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
v	26	1	30th August	2	2	3	0	0	0	0	1	8
v	27	2	31st August	0	2	2	0	0	0	0	1	5
v	28	3	1st September	15	1	5	0	1	0	2	5	29
v	29	4	2nd September	0	0	1	0	0	0	0	0	1
v	30	5	3rd September	3	2	1	0	0	0	0	1	7
v	31	6	4th September	0	0	1	0	0	0	0	0	1
v	32	7	5th September	0	0	0	0	0	0	0	0	0
v	33	8	6th September	0	0	0	0	0	0	0	0	0
v	34	9	7th September	0	0	0	0	0	0	0	0	0
v	35	10	8th September	0	0	0	0	0	0	0	0	0
v	36	1	5th October	0	0	0	0	0	0	0	0	0
v	37	2	6th October	0	0	0	0	0	0	0	0	0
v	38	3	7th October	0	0	0	0	0	0	0	0	0
v	39	4	8th October	2	0	2	0	1	0	0	0	5
v	40	5	9th October	0	0	1	0	0	0	0	0	1
v	41	6	10th October	0	0	0	0	0	0	0	1	1

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
v	42	7	11th October	1	0	0	0	0	0	0	0	1
v	43	8	12th October	0	0	0	0	0	0	0	1	1
v	44	9	13th October	0	0	0	0	0	0	1	2	3
v	45	10	14th October	0	0	0	0	0	0	0	0	0
v	46	11	15th October	0	0	0	0	0	0	0	0	0
v	47	12	16th October	0	0	0	0	0	0	0	0	0
vi	1	1	10th May	0	0	0	0	0	0	0	0	0
vi	2	2	11th May	0	1	1	0	0	0	0	0	2
vi	3	3	12th May	12	4	3	0	0	0	0	0	19
vi	4	4	13th May	19	6	4	0	1	0	0	0	30
vi	5	5	14th May	6	4	1	0	0	0	0	1	12
vi	6	6	15th May	7	0	3	0	1	0	0	0	11
vi	7	7	16th May	5	0	2	0	0	0	0	0	7
vi	8	8	17th May	0	0	1	0	0	0	0	0	1
vi	9	9	18th May	0	0	0	0	0	0	0	0	0
vi	10	10	19th May	0	3	2	0	0	0	0	0	5

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
vi	11	11	20th May	3	1	0	0	0	0	0	0	4
vi	12	12	21st May	0	0	1	0	0	0	0	0	1
vi	13	13	22nd May	0	0	0	0	0	0	0	0	0
vi	14	14	23rd May	0	0	0	0	0	0	0	0	0
vi	15	15	24th May	0	4	0	0	0	0	0	0	4
vi	16	1	22nd July	1	0	0	0	0	0	0	0	1
vi	17	2	23rd July	1	0	1	0	0	0	0	0	2
vi	18	3	24th July	0	1	0	0	0	0	0	0	1
vi	19	4	25th July	0	0	0	0	0	0	0	0	0
vi	20	5	26th July	3	0	3	0	0	0	0	0	6
vi	21	6	27th July	1	1	3	0	0	0	0	0	5
vi	22	7	28th July	12	3	3	0	0	0	0	2	20
vi	23	8	29th July	0	0	0	0	0	0	0	0	0
vi	24	9	30th July	1	1	1	0	0	0	0	0	3
vi	25	10	31st July	8	0	10	0	0	0	0	0	18
vi	36	1	5th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
vi	37	2	6th October	0	0	0	0	0	0	0	1	1
vi	38	3	7th October	0	0	0	0	0	0	0	0	0
vi	39	4	8th October	0	0	0	0	0	0	0	1	1
vi	40	5	9th October	0	0	0	0	0	0	0	0	0
vi	41	6	10th October	0	0	0	0	0	0	0	1	1
vi	42	7	11th October	0	0	0	0	0	0	0	0	0
vi	43	8	12th October	0	0	1	0	0	0	0	1	2
vi	44	9	13th October	0	0	1	0	0	0	0	0	1
vi	45	10	14th October	0	0	0	0	0	0	0	0	0
vi	46	11	15th October	0	0	0	0	0	0	0	0	0
vi	47	12	16th October	0	0	0	0	0	0	0	0	0
vii	1	1	10th May	0	0	0	0	0	0	0	0	0
vii	2	2	11th May	0	0	0	0	0	0	0	0	0
vii	3	3	12th May	6	5	2	0	0	0	0	1	14
vii	4	4	13th May	5	8	4	0	1	0	0	1	19
vii	5	5	14th May	6	3	5	0	0	0	0	0	14

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
vii	6	6	15th May	3	1	2	0	0	0	0	0	6
vii	7	7	16th May	15	0	0	0	0	0	0	0	15
vii	8	8	17th May	0	0	0	0	0	0	0	0	0
vii	9	9	18th May	7	1	0	0	0	0	0	0	8
vii	10	10	19th May	8	0	0	0	0	0	0	0	8
vii	11	11	20th May	0	0	0	0	0	0	0	0	0
vii	12	12	21st May	9	3	2	0	0	0	0	0	14
vii	13	13	22nd May	6	1	1	0	0	0	0	1	9
vii	14	14	23rd May	0	0	0	0	0	0	0	0	0
vii	15	15	24th May	0	3	0	0	0	0	0	0	3
vii	16	1	22nd July	0	0	1	0	0	0	0	1	2
vii	17	2	23rd July	1	0	3	0	0	0	0	0	4
vii	18	3	24th July	0	1	0	0	0	0	0	0	1
vii	19	4	25th July	4	0	1	0	0	0	0	0	5
vii	20	5	26th July	3	1	7	0	4	0	0	3	18
vii	21	6	27th July	3	0	4	0	1	0	0	5	13

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
vii	22	7	28th July	13	1	15	0	0	0	0	8	37
vii	23	8	29th July	0	0	1	0	0	0	0	0	1
vii	24	9	30th July	2	2	5	0	0	0	1	6	16
vii	25	10	31st July	3	4	8	0	1	0	2	7	25
vii	26	1	30th August	4	2	11	0	1	0	0	5	23
vii	27	2	31st August	2	0	5	0	1	0	0	9	17
vii	28	3	1st September	19	2	19	0	1	0	1	5	47
vii	29	4	2nd September	1	0	0	0	0	0	0	0	1
vii	30	5	3rd September	2	0	0	0	0	0	0	1	3
vii	31	6	4th September	3	0	0	0	0	0	0	0	3
vii	32	7	5th September	6	0	0	0	0	0	0	0	6
vii	33	8	6th September	1	0	0	0	0	0	0	0	1
vii	34	9	7th September	0	0	0	0	0	0	0	1	1
vii	35	10	8th September	10	2	12	0	0	0	0	2	26
vii	36	1	5th October	0	0	0	0	0	0	0	2	2
vii	37	2	6th October	0	0	0	0	0	0	0	0	0

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
vii	38	3	7th October	1	0	1	0	0	0	0	1	3
vii	39	4	8th October	1	0	4	0	1	0	0	0	6
vii	40	5	9th October	2	0	0	0	0	0	0	0	2
vii	41	6	10th October	2	0	2	0	0	0	0	1	5
vii	42	7	11th October	0	0	0	0	0	0	0	0	0
vii	43	8	12th October	0	0	7	0	0	0	0	2	9
vii	44	9	13th October	0	0	3	0	0	0	0	1	4
vii	45	10	14th October	0	0	0	0	0	0	0	1	1
vii	46	11	15th October	0	0	0	0	0	0	0	0	0
vii	47	12	16th October	0	0	0	0	0	0	0	0	0
viii	1	1	10th May	2	0	3	0	0	0	2	1	8
viii	2	2	11th May	0	0	0	0	0	0	0	0	0
viii	3	3	12th May	43	20	21	0	0	0	1	0	85
viii	4	4	13th May	30	22	7	0	0	0	2	0	61
viii	5	5	14th May	42	5	4	0	1	0	0	2	54
viii	6	6	15th May	36	6	19	0	1	0	0	1	63

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	7	7	16th May	29	1	4	0	1	0	2	0	37
viii	8	8	17th May	0	0	1	0	0	0	0	0	1
viii	9	9	18th May	53	1	11	0	1	0	0	0	66
viii	10	10	19th May	20	7	12	0	0	0	0	0	39
viii	11	11	20th May	15	0	0	0	0	0	0	1	16
viii	12	12	21st May	32	2	1	0	0	0	0	0	35
viii	13	13	22nd May	3	0	19	0	0	0	1	1	24
viii	14	14	23rd May	0	0	0	0	0	0	0	0	0
viii	15	15	24th May	0	3	0	0	0	0	0	0	3
viii	16	1	22nd July	6	2	135	0	0	0	2	2	147
viii	17	2	23rd July	0	0	37	0	0	0	0	12	49
viii	18	3	24th July	1	1	16	0	0	0	2	5	25
viii	19	4	25th July	0	2	222	0	0	0	5	7	236
viii	20	5	26th July	5	7	77	0	3	0	3	4	99
viii	21	6	27th July	7	10	153	0	1	0	2	6	179
viii	22	7	28th July	8	8	120	0	0	0	3	8	147

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	23	8	29th July	0	1	53	0	1	0	8	12	75
viii	24	9	30th July	0	0	0	0	0	0	0	0	0
viii	25	10	31st July	0	0	0	0	0	0	0	0	0
viii	26	1	30th August	4	4	304	0	0	0	0	0	312
viii	27	2	31st August	2	3	136	0	0	0	0	3	144
viii	28	3	1st September	6	8	266	0	0	0	0	2	282
viii	29	4	2nd September	0	0	0	0	0	0	0	0	0
viii	30	5	3rd September	6	1	153	0	0	0	0	0	160
viii	31	6	4th September	7	4	174	0	0	0	0	0	185
viii	32	7	5th September	3	0	76	0	2	0	0	2	83
viii	33	8	6th September	6	0	28	0	0	0	0	0	34
viii	34	9	7th September	2	1	0	0	0	0	0	0	3
viii	35	10	8th September	3	2	199	0	0	0	1	3	208
viii	36	1	5th October	2	0	59	0	0	0	0	2	63
viii	37	2	6th October	0	0	31	0	0	0	0	2	33
viii	38	3	7th October	0	0	55	0	0	0	0	0	55

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	39	4	8th October	0	0	89	0	0	0	0	2	91
viii	40	5	9th October	0	0	20	0	0	0	0	1	21
viii	41	6	10th October	0	1	19	0	0	0	0	0	20
viii	42	7	11th October	0	0	5	0	0	0	0	0	5
viii	43	8	12th October	0	3	52	0	0	1	0	1	57
viii	44	9	13th October	0	0	0	0	0	0	0	0	0
viii	45	10	14th October	0	0	0	0	0	0	0	0	0
viii	46	11	15th October	0	0	0	0	0	0	0	0	0
viii	47	12	16th October	0	0	0	0	0	0	0	0	0
viii	1	1	10th May	0	0	0	0	0	0	0	0	0
viii	2	2	11th May	1	0	0	0	0	0	0	0	1
viii	3	3	12th May	10	4	6	0	0	0	0	0	20
viii	4	4	13th May	12	12	10	0	0	0	0	0	34
viii	5	5	14th May	110	30	29	0	0	0	0	1	170
viii	6	6	15th May	25	5	7	0	0	0	0	0	37
viii	7	7	16th May	13	0	0	0	0	0	0	0	13

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	8	8	17th May	1	0	0	0	0	0	0	0	1
viii	9	9	18th May	38	2	0	0	0	0	0	0	40
viii	10	10	19th May	4	4	3	0	0	0	0	2	13
viii	11	11	20th May	15	3	2	0	0	0	0	0	20
viii	12	12	21st May	9	0	2	0	0	0	0	0	11
viii	13	13	22nd May	7	0	3	0	0	0	0	1	11
viii	14	14	23rd May	0	0	0	0	0	0	0	0	0
viii	15	15	24th May	0	3	1	0	0	0	0	0	4
viii	16	1	22nd July	0	0	1	0	0	0	0	0	1
viii	17	2	23rd July	3	0	0	0	0	0	0	0	3
viii	18	3	24th July	0	0	0	0	0	0	0	0	0
viii	19	4	25th July	0	1	3	0	1	0	0	1	6
viii	20	5	26th July	4	3	6	0	0	0	1	0	14
viii	21	6	27th July	4	1	8	0	0	0	0	0	13
viii	22	7	28th July	7	0	7	0	0	0	0	0	14
viii	23	8	29th July	6	0	0	0	0	0	0	0	6

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	24	9	30th July	5	2	11	0	0	0	0	2	20
viii	25	10	31st July	3	4	11	0	0	0	0	0	18
viii	26	1	30th August	2	2	9	0	2	0	0	1	16
viii	27	2	31st August	5	1	3	0	0	0	0	0	9
viii	28	3	1st September	9	1	11	0	3	0	0	1	25
viii	29	4	2nd September	3	0	2	0	1	0	0	3	9
viii	30	5	3rd September	10	0	0	0	0	0	0	0	10
viii	31	6	4th September	2	0	1	0	0	0	0	0	3
viii	32	7	5th September	0	0	0	0	0	0	0	0	0
viii	33	8	6th September	7	0	1	0	0	0	0	0	8
viii	34	9	7th September	6	1	1	0	0	0	0	1	9
viii	35	10	8th September	3	3	9	0	0	0	0	1	16
viii	36	1	5th October	0	0	0	0	0	0	0	0	0
viii	37	2	6th October	0	0	0	0	0	0	0	0	0
viii	38	3	7th October	0	0	1	0	0	0	0	0	1
viii	39	4	8th October	0	0	2	0	0	0	0	0	2

Turbine	Total days per turbine	Days per season	Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Nathusius Pipistrelle	Brown Long-eared	Lesser Horseshoe	Natterer's Bat	Unidentified Myotis	Total
viii	40	5	9th October	0	0	1	0	0	0	0	0	1
viii	38	6	10th October	0	0	1	0	6	0	0	0	7
viii	39	7	11th October	0	0	0	0	0	0	0	0	0
viii	40	8	12th October	0	0	1	0	2	0	0	0	3
viii	41	9	13th October	0	0	1	0	1	0	0	0	2
viii	42	10	14th October	0	0	0	0	1	0	0	0	1
viii	43	11	15th October	0	0	0	0	0	0	0	0	0
viii	44	12	16th October	0	0	0	0	0	0	0	0	0

6 APPENDIX – ASSESSING ECOBAT NEW & OLD VERSIONS

Re-analysis of bat activity data using revised ECOBAT outputs: implications for wind farm curtailment

Fionn O'Neill & John Curtin

Background

- ECOBAT is widely used as best practice in Ireland/UK to contextualise bat activity for wind farm assessments.
- Percentile-based classifications directly influence collision risk assessments and curtailment decisions.
- ECOBAT was redeveloped and relaunched in 2025 after a period offline.
- Comparability between old and new outputs is uncertain.
- Multi-site datasets allow assessment of consistency across different landscapes and bat communities.

Raw Data → ECOBAT → Percentile Classification → Curtailment Decision

Objectives

- Compare outputs from the former and revised ECOBAT versions using identical datasets across four Irish wind farm sites.
- Quantify changes in activity classification for key collision-risk species.
- Assess implications for turbine curtailment and planning decisions.
- Evaluate whether observed changes are consistent across sites of differing activity and scale.

Methods

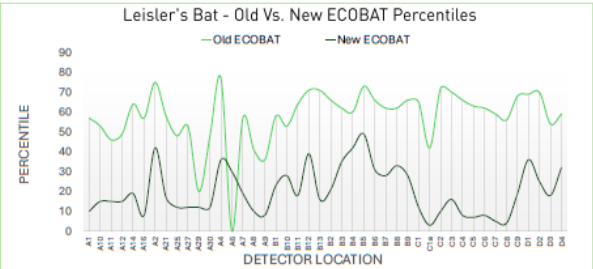
- Identical raw data processed through both ECOBAT versions.
- Extracted percentile classifications for each species-night.
- Compared turbine-level curtailment triggers under both versions.
- Summarised within and across sites.

Datasets

Site	County	Years	Detectors	Nights	Main habitat types	Preliminary Habitat risk Level
A	Co. Offaly	2022	17	30	Open habitats, lowland conifer plantation and quarry lakes.	5
B	Co. Mayo	2022	13	44	Upland Blanket Bog with adjacent conifer plantations.	4
C	Co. Cork	2022	9	50	Improved agricultural grassland and tillage fields with	4
D	Co. Tipperary	2022	4	55	Improved agricultural grassland	3

Results

- Percentile Categories decreased for High risk-Species:
  - Leisler's Bat
  - Common Pipistrelle
  - Soprano Pipistrelle
- Percentile Categories for Myotis and Woodland bat Species increased on the same sites.

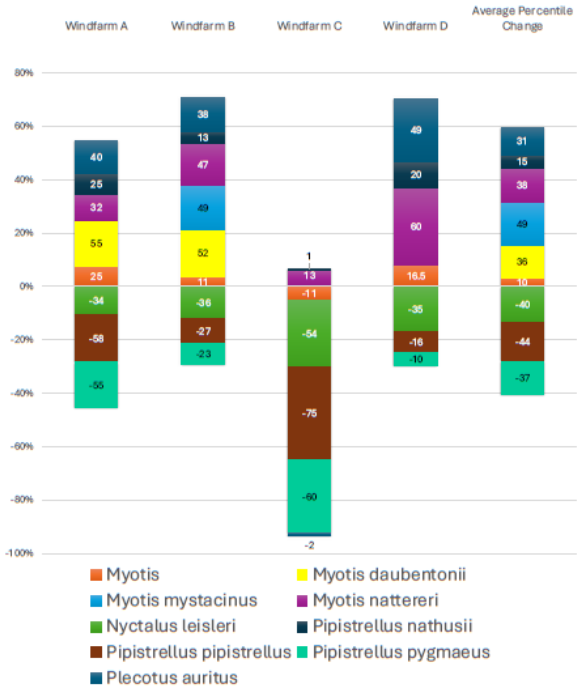


- Site B had low activity, this leads to a higher variation in activity percentiles.
- Summary of all percentile shifts across all sites is shown above.

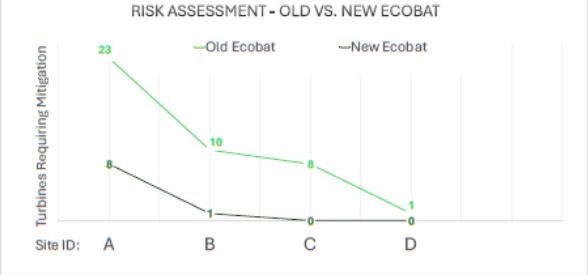
Policy Implications

- Current guidelines operate on a threshold risk category system to assess potential collision risk and is vulnerable to small changes generating large differences in practice.
- Guidelines should be rigorous in their assessments, and changes to this system must be justified to a high level of confidence to ensure the best outcomes for bats.
- Changes to ECOBAT will drastically alter mitigation that will be implemented on sites across the country without sufficient evidence that this is the best practice for bats in Ireland.

Percentile Changes per Species



Turbine-Level Curtailment Impact



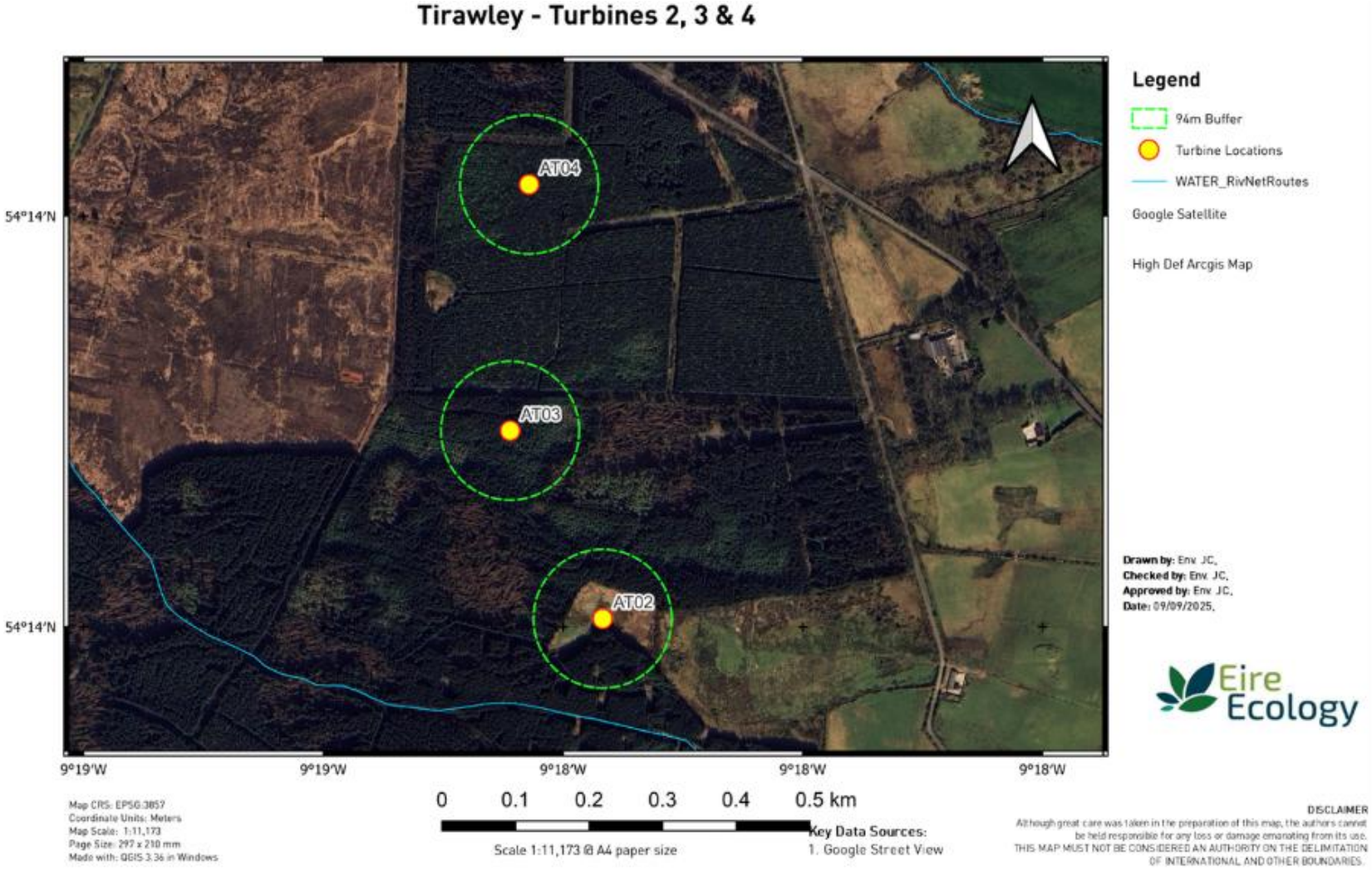
Discussion

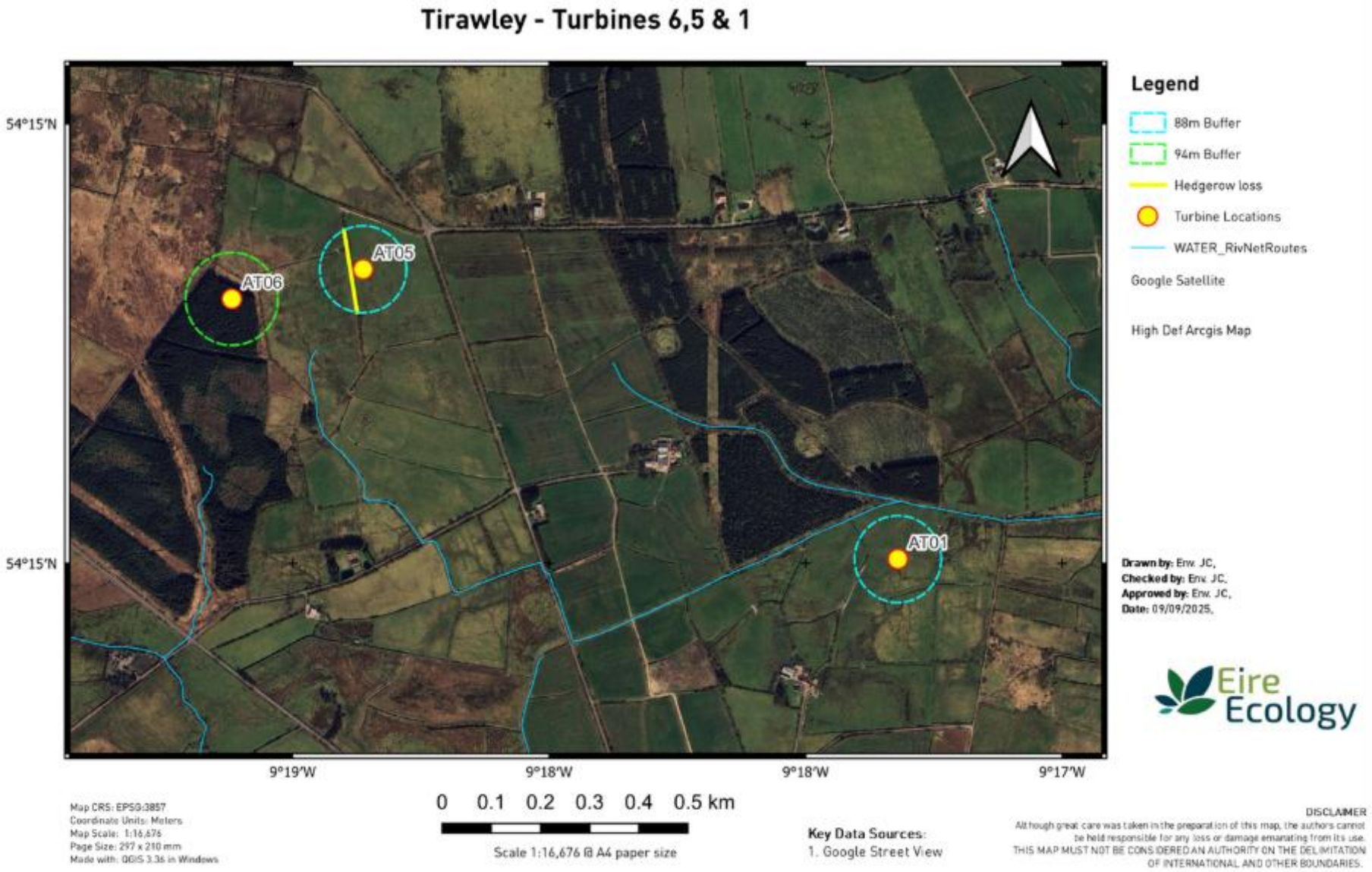
- Downward reclassification is **consistent across four sites**, suggesting a systematic effect.
- Likely reflects changes to the reference dataset or analytical framework.
- Because ECOBAT is a **relative comparison tool**, lower percentiles do **not** indicate lower collision risk.
- High-risk species (*N. leisleri, Pipistrellus Sp*) may be under-protected if curtailment is reduced.

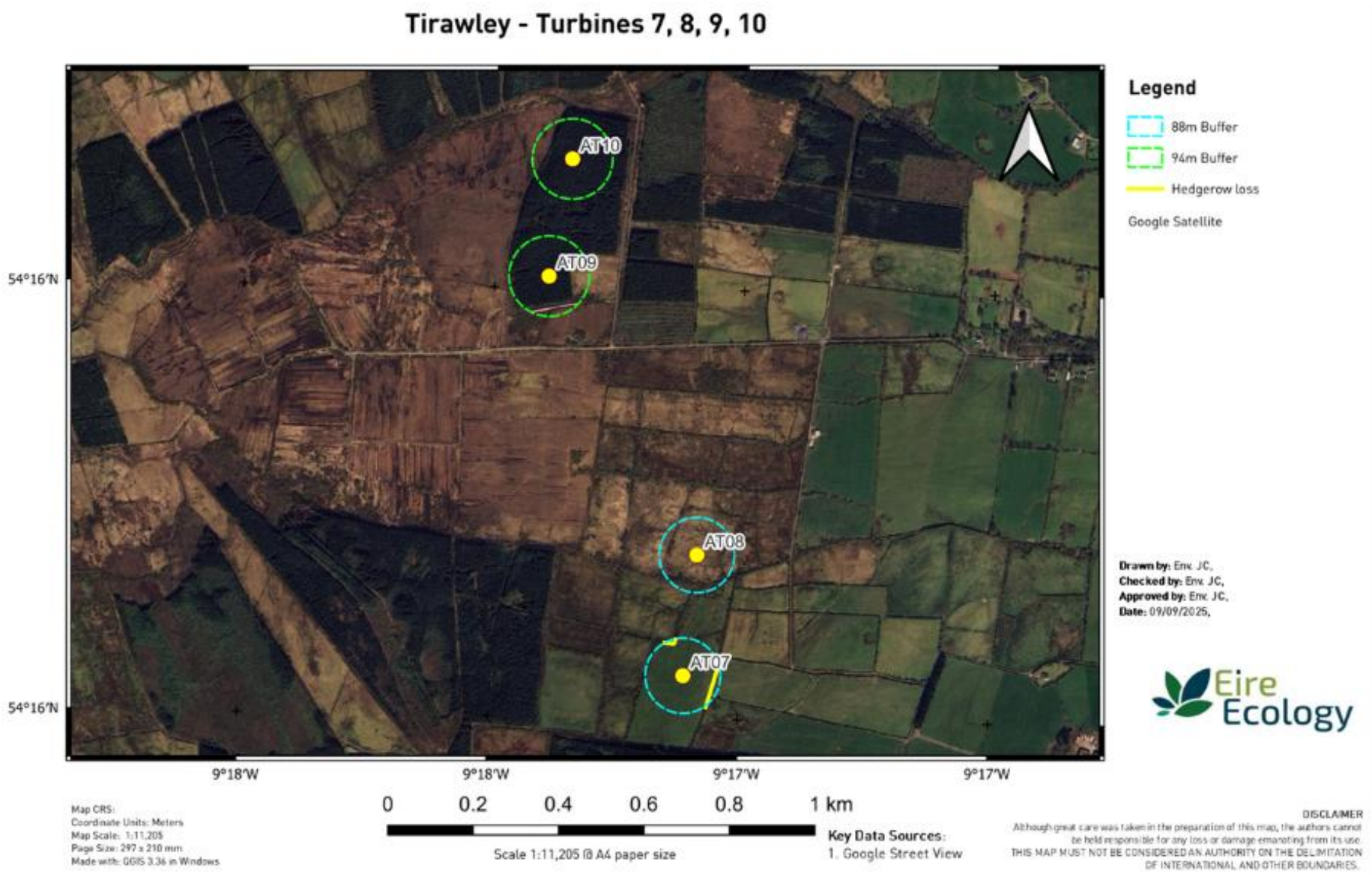
Conclusion

- The use of ECOBAT in recent years has been a useful tool for conducting analysis on activity levels on windfarm sites.
- Updates to this software in the last two years have drastically altered the activity levels that original guidelines used, and are inconsistent across species.
- Multiple sites showed a loss of mitigation for high risk species too severe to accept simply on the basis that the previous ECOBAT system was sufficient for this task.
- Further investigation must be done to ensure these changes are accurate, reasonable and rigorous enough for its role in determining adequate mitigation.

7 APPENDIX – BAT BUFFER AERIALS WITH FEATURE LOSS




Tirawley - Turbines 6,5 & 1
54°15'N
54°15'N
AT06
AT05
AT01
9°19'W
9°18'W
9°18'W
9°17'W
Legend
88m Buffer
94m Buffer
Hedgerow loss
Turbine Locations
WATER_RivNetRoutes
Google Satellite
High Def Arcgis Map
Drawn by: Env. JC,
Checked by: Env. JC,
Approved by: Env. JC,
Date: 09/09/2025.
Eire Ecology
0 0.1 0.2 0.3 0.4 0.5 km
Scale 1:16,676 @ A4 paper size
Map CRS: EPSG:3857
Coordinate Units: Meters
Map Scale: 1:16,676
Page Size: 297 x 210 mm
Made with: QGIS 3.36 in Windows
Key Data Sources:
1. Google Street View
DISCLAIMER
Although great care was taken in the preparation of this map, the authors cannot be held responsible for any loss or damage emanating from its use.
THIS MAP MUST NOT BE CONSIDERED AN AUTHORITY ON THE DELIMITATION OF INTERNATIONAL AND OTHER BOUNDARIES.


Tirawley - Turbines 7, 8, 9, 10
AT10
AT09
AT08
AT07
54°16'N
54°16'N
9°18'W
9°18'W
9°17'W
9°17'W
Legend
88m Buffer
94m Buffer
Hedgerow loss
Google Satellite
Drawn by: Env. JC,
Checked by: Env. JC,
Approved by: Env. JC,
Date: 09/09/2025,
Eire Ecology
Map CRS:
Coordinate Units: Meters
Map Scale: 1:11,205
Page Size: 297 x 210 mm
Made with: QGIS 3.36 in Windows
0 0.2 0.4 0.6 0.8 1 km
Scale 1:11,205 @ A4 paper size
Key Data Sources:
1. Google Street View
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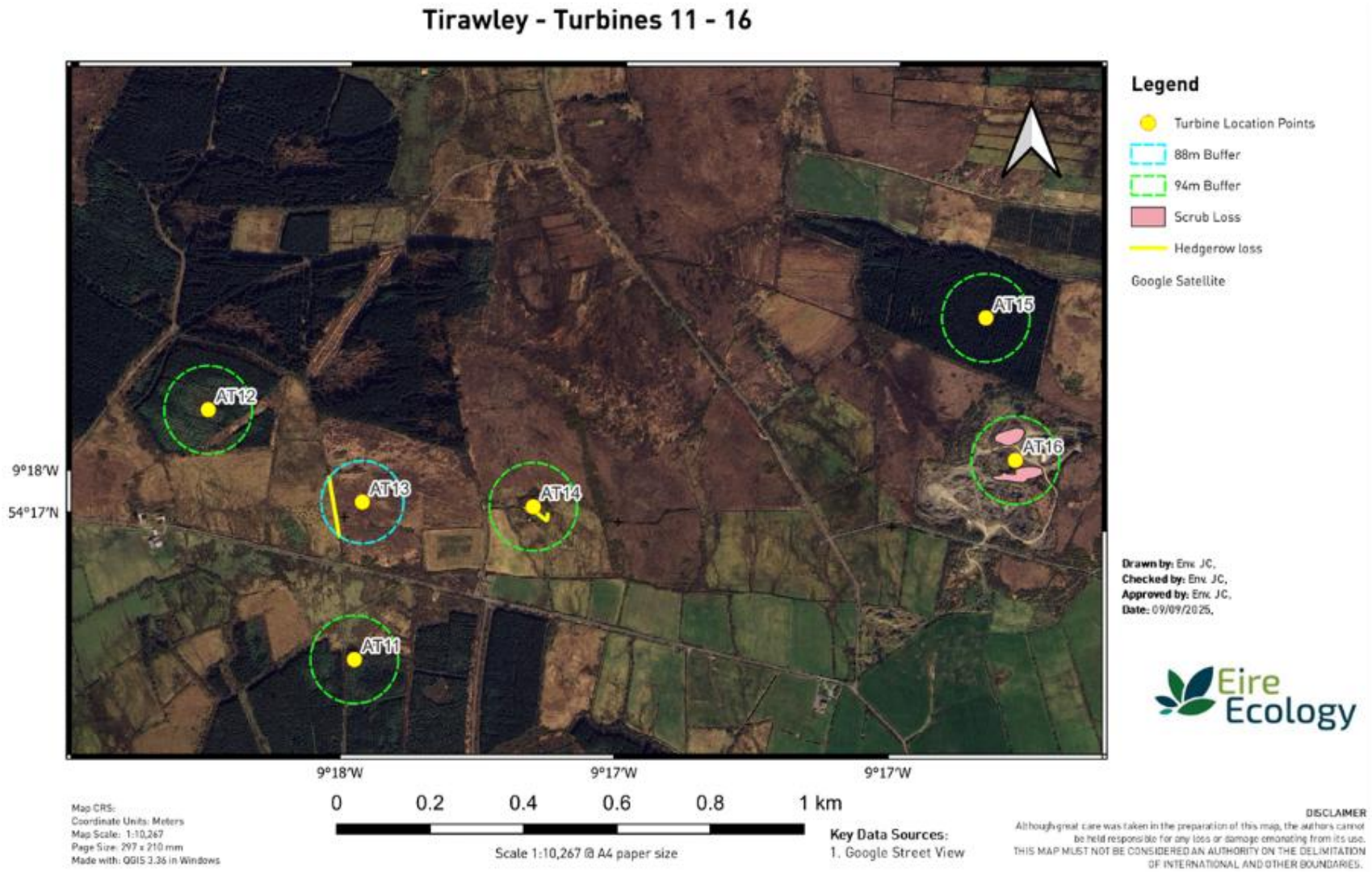

(note some sections of scrub / trees within buffers will be retained and alternative mitigation applied. See table 7-1)

8 APPENDIX - CURTAILMENT CASE STUDY

John Curtin, the author of this report has previously taken part in a study at a west of Ireland windfarm where blanket curtailment was implemented. Below is a summary of surveys conducted within the site, key findings along with an evaluation on the effectiveness of this mitigation type.

The subject site consisted of an existing windfarm in upland blanket bog and conifer plantation. A monitoring program was initiated in the summer of 2020 prior to curtailment and continued into 2021. The monitoring program consisted of two parts; placement of static bat detectors at turbine bases for 10 nights following Appendix 4 of SNH 2019. In addition to the placement of statics, dog lead collision monitoring was conducted at each of the turbine bases where statics were placed (again for ten days in a row). Weather data was also recorded from the onsite met mast. In this way fatalities could be linked with bat activity and weather conditions. Searcher efficiency and predation removal trials were also conducted.

Surveys were conducted at 32 turbines during the summer and autumn of 2020 with three bat fatalities found (prior to the implementation of curtailment). Curtailment commenced in September 2020 which stopped the operation of turbines when temperatures rose above 11 degrees Celsius and wind speed below 5 m/s between dusk and dawn each night (74% of total bat activity). No further bat fatalities occurred during the Autumn 2020 period despite levels of bat activity across the site higher than in summer.

In order to assess the effectiveness of the curtailment, surveys were repeated in 2021. The 32 turbines were again monitored for ten nights in a row for the spring, summer and autumn periods of 2021. In total 120 days of carcase searches were conducted in 2021 (in addition to the 80 conducted in 2020). No bat fatalities were found in 2021.

Evidence of Absence V2 was used to estimate a maximum predicted overall number of fatalities from 2020 and 2021. The software predicted an overall fatality rate of no more than 31 bats over the entire windfarm in 2020 (90% confidence) reducing to no more than 13 bats over the entire windfarm in 2021 (90% confidence); a 58% decrease in upper limits of estimated fatalities.

The windfarm in question was installed before buffer zones were used as a mitigation. An analysis of distances from landscape features shows many of the turbines were located close to landscape features (73% of turbines had landscape features located within the recommended 50m buffer from wing tip to landscape feature); see table below. This appears to indicate that curtailment can work an alternative to buffer zones in some cases.