Eire Ecology

Environmental Consultants

Bat Survey Report
Tirawley Windfarm,
Co. Mayo.

DOCUMENT DETAILS

Client:	Constant Energy Ltd
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Abstract: The following report details the results of bat surveys undertaken between 2022 and 2024 for 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 site. The proposed Wind farm consists of 18 no. wind turbines.

EXECUTIVE SUMMARY

This document reports on the findings of an initial round of bat surveys conducted between 2022 and 2024 at the site of Tirawley proposed windfarm located c.14 km northwest of Ballina Town, c.5 km 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 East, Lissadrone West, Billoos, Lecarrowntemple, Lackanhill, Ballymurphy, Ballycastle, Castletown, Castlelackan Demense, Aghaleague, Carn, Cloonanass, Barnhill Lower, Barnhill Upper and Cloonavarry. 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) based on an initial proposal for forty-three turbines. As a response to Northern Irish guidance (NIEA, 2021), an additional round of static monitoring was conducted. In addition, dusk and dawn bat detector surveys were conducted examining habitats onsite alongside potential roost features of structures in the wider landscape. Finally, a preliminary tree roost survey was conducted for all trees within 200m of the proposed turbines and along access routes where trees may be affected.

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.

During the ongoing design of the proposed development, several areas previously included within the site outline were removed thus several detectors were positioned in locations now outside the site boundary. Results from locations relevant to the final layout show that activity from Soprano Pipistrelle was moderate, Leisler's bat was low to moderate and Common Pipistrelle activity was low. The overall risk assessment for Soprano Pipistrelle, Common Pipistrelle and Leisler's bat is moderate however mitigation has been proposed at several turbines where risks are highest.

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 some 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

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, both of which empty into the sea themselves.

1.2 PURPOSE OF THIS REPORT

This document reports on the findings of bat surveys conducted between 2022 and 2024. 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 (four survey periods).

All surveys adhered to SNH (2021) guidelines while also taking on board aspects of (NIEA, 2021) guidance. The bat surveys undertaken and described in this report have been undertaken with reference to guidelines outlined in the references at the end of this report. Although Bat Conservation Ireland (2012) guidelines exist, they are outdated; therefore, surveys followed SNH (2021) and NIEA (2021) guidance as the most current, research-based and regulator-aligned standards available.

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)	C014/2025
Roost disturbance (bats)	Der/Bat 2025-177
Licence to photograph / film wild animals (bats)	171-2024

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.

1.3 BATS IN IRELAND – RELEVANT LEGISLATION

There are two main pieces of legislation which cover wildlife protection in Ireland – the Wildlife Act and the Habitats Regulations. These are outlined below, with particular reference to the protection afforded to bat species in Ireland.

The Wildlife Acts 1976–2012 (as amended)

The primary pieces of national legislation for the protection of wildlife in Ireland are the Wildlife Act (1976) and the Wildlife [Amendment] Act (2000). All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

- 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

The Habitats Directive (Council Directive 92/43/EEC) is the legislative instruments which are transposed into Irish law, inter alia, by the European Communities (Birds and Natural Habitats) Regulations 2011-2021 (S.I. No. 477 of 2011 and later amendments) ('the 2011' Regulations), as amended.

All bats are listed in Annex IV to the Habitats Directive (92/43/EC) and the Lesser Horseshoe bat is further listed under Annex II to the same Directive. Article 12 of the Directive requires Member States to establish a system of strict protection for animal species listed in Annex IV. Article 16 provides for derogation from the protection under Article 12 in certain circumstances. Articles 12 and 16 are transposed into Irish law by Regulations 51 and

54, respectively, of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). These makes it an offence to:

- Deliberately capture, injure or kill a bat.
- Disturb bats, especially during critical life stages such as **hibernation, maternity, and migration**.
- Damage or destroy breeding sites or resting places (roosts).
- Possess or trade bats, alive or dead, without licence

Provision is made in the Regulations for the Minister for Housing, Local Government and Heritage to grant, in strictly specified circumstances set out in that Regulation, a derogation license permitting any of the above activities "where there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range".

The *Planning and Development Act 2000 (as amended):* this Act integrates biodiversity considerations into the planning process and requires ecological assessments, including for bats, as part of Environmental Impact Assessments (EIAs).

2 DESKTOP STUDY

2.1 SCOPE

Static detector surveys were carried out between May and October 2022 in four rounds. The survey types were determined most appropriate to establish a baseline species assemblage, along with spatial and temporal distribution of species activity within the proposed planning boundary. Bat survey work was carried out in order to provide information on bat activity within the study area at Tirawley. Surveys were carried out in May to August 2022. Wintertime assessment of trees was conducted in March 2023 and February 2024. A final dusk emergence survey was conducted in June 2024.

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

NIEA guidance states 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.

A data search was conducted in March 2022 and rechecked in August 2025 to revise existing information from the surrounds of the proposed planning boundary. The following information sources were examined:

- Known bat records within a 6 km 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 15 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.

2.3.1 Designated Sites

A search was made for designated sites within 6 km (maximum Core Sustenance Zone of resident Irish bat species) 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. Further information on the context of SACs for bats is given in section 3.1.

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 the 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 Landscape

(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.

Table 2-3 shows the BCI bat landscape model with the site divided into two sections. Section 2 to the south contains 62% of the turbines (13) and has marginally lower bat suitability. Overall suitability is low in both sections with Soprano Pipistrelle being the only bat to record high favourability.

Table 2-3: Landscape model for areas of the site (green is low suitability for bats, red is high)

Turbines	All bats result	Species	Suitability result
12 turbines AT07 to AT18 (North)	16.89	*Pipistrellus pygmaeus*	39
		Plecotus auritus	18
		Pipistrellus pipistrellus	27
		Rhinolophus hipposideros	0
		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 **Table 2-4**. The closest historical roosts are located 870m to the west and 900m to the west, both containing Brown Long-eared and Natterer's bat roosts.

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).

Table 2-4: Bat roosts recorded within 6km of development

Type of Record	Species	Distance from site	Date of last record	Details	Potential connectivity with subject site (for roost records)
Roost	*Plecotus auritus*	870m to the west of AT08	2017	10 bats noted	BCT state the CSZ[1] 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*	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*	5.0km SW of AT05	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				

[1] 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.

3 SURVEY METHODOLOGY

3.1 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.

Preliminary assessment of buildings was conducted in May 2022 and reviewed in February 2024. 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 an additional emergence survey conducted in June 2024.

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. Details of transects are shown in Figure 4-4.

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

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 temperature at 8°C and greater).

Bats were identified by their ultrasonic calls coupled with behavioural and flight observations and on computer by sound analysis of recorded echolocation and social calls with dedicated software (Wildlife Acoustic's Kaleidoscope Pro; version 2.1.0)[2].

[2] Although there are later editions to this software the surveyor manually verified all calls rather than depending on auto identification. It is the surveyors opinion that auto-id features frequently misidentify bat species

3.2 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, August/September and 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: spring (April - May), summer (July - early August) and autumn (September - October). See Section 4.4 below for further details.

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 total 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.

Many of these turbine locations were later revised, in particular, multiple peatland turbines were removed from the scope of the application. As of 2024, turbine locations have changed and 10 turbines are placed within conifer plantation, 7 within grassland / peatland and 1 located in a pre-existing quarry.

The data was analysed with Wildlife Acoustic's Kaleidoscope Pro; version 2.1.0)[3]. This software identifies many of the calls made by Irish bats. All calls were manually verified. Results presented below show some Myotis calls the surveyor is confident the bat is a Natterer'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.

Where detectors were set in open bog a timber structure was erected ensuring microphone height was set at 2.5m

3.2.1 Static Survey and Analysis Limitations

- It is not always possible to identify a bat call to species level due to the recorded call not being clear. Recorded files from automated detectors may contain only fragments of a call, or the bat may be calling from a distance (from the detector) in which case it may not be clear enough to assign the call to a specific species. In these cases the call has been assigned to genus level;

[3] There have been several updates to Kaleidoscope and the auto ID; Bats of UK 2.0.7. The author however feels auto-ID software regularly misidentifies bat calls that are not ID'ed as Common or Soprano Pipistrelle. As such all calls were manually verified. The software version used is adequate for organising data.

- Some caution must be taken when comparing activity levels between species, as bias can be shown towards those species with 'louder' or 'lower frequency' echolocation calls. For example, Nyctalus species have louder, and low frequency echolocation calls which carry further than the quieter and more broad-band brown long-eared bat echolocation calls;
- A bat contact (for static surveys) is defined as a single detector file which contains at least one bat call. Multiple contacts at any given detector location do not necessarily indicate the presence of more than one bat and should therefore be interpreted as a level of activity rather than the number of bats recorded;
- Typically, ECOBAT analysis (provides tools for the standardised, rigorous interpretation of bat activity data) is used to assign activity levels based on bat passes per night compared with environmental data such as location, weather etc. It works by contrasting the users data with previously uploaded data from other users. This tool is currently offline (since November 2022) thus the author has had to evaluate this dataset by using ECOBAT percentiles from previously used analysis on different sites that share similar attributes (upland bog and conifer plantation).
- Following the conservative approach 40kHz activity was included with Nathusius Pipistrelle.
- Following SNH 2021 guidance and based on the final layout of 18 turbines, 13 static detectors should have been used for impact assessment. While 21 detectors were used during the survey, subsequent changes to layout meant several detectors were located in positions irrelevant to the project. The final risk assessment was based on data from 12 detectors. Mitigation has been proposed to compensate for this limitation (see section 7.1.1).

4 SURVEY FINDINGS

4.1.1 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 is fairly uniform ranging from 90 to 150m. The surrounding area is serviced by a variety of roads from secondary to tertiary. Table 4-1 details habitats within 200m of each proposed turbine.

4.1.2 Detector Positioning

Table 4-1 below 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.
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.

Table 4-1: Habitats surrounding proposed turbines with comments on static locations and landscape features suitable for bats

Turbine No	Detector	Approx. distance between detector and 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	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 wet 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
AT02	H	300m	WD4	65	GA1 / GS4	30	WS1	5	-	-	These three proposed turbines are situated within conifer plantation. They lie close to each other and have similar habitat composition. The detector 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
AT03	H	180m	WD4	100	-	-	-	-	-	-		47 nights
AT04	H	400m	WD4	95	PB	2.5	GS4	2.5	-	-		47 nights
AT05	F	75m	GA1 / GS4	90	WS1 / WL1	10	-	-	-	-	Turbine is proposed to be situated within grassland similar to where the detector was placed. The detector was positioned closer to a drain and northern hedgerow thus has marginally higher bat potential.	47 nights
AT06	F	310m	GA1 / GS4	20	PB	20	WD4	55	WS1 / WL1	5	Turbine is set within conifer plantation to the south of the detector location. Turbines AT05 and AT06 are positioned close to each other with a considerable distance to other turbines.	47 nights
AT07	D	140m	WD4	75	PB	20	GS4	5	-	-	Detector was placed as close as possible to the turbine, adjacent to the conifer edge. The proposed turbine is located within a dense block of conifers. Activity at detector will likely be somewhat higher than the turbine as it sits on edge habitat.	47 nights

Turbine No	Detector	Approx. distance between detector and 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	%		
AT08	D	506m	WD4	70	PB	20	WS1	8	FW	2	Turbine is situated within the same conifer block as AT08 although somewhat closer to a stream (73m). Detector D is suitable to assess this turbine.	47 nights
AT09	K	326m	GS4 / GA1	80	WL1 /WS1	15	WD4	5	-	-	Turbine is set within the centre of an improved field with less landscape features surrounding than the detector. It is likely the detector has higher bat favourability than this turbine.	47 nights
AT10	K	35m	GS4 / GA1	85	WL1 /WS1	14	FW	1	-	-	Turbine located in wet grassland. Detector was positioned in ditch with marginally better landscape features.	47 nights
AT12	B	120m	WD4	50	PB	30	GS4	15	WS1 / FW	5	Both turbines are located within the same block of conifer plantation and have similar habitat composition with plantation surrounded by bog. The bat detector was set somewhat inside the conifer block.	47 nights
AT11	B	240m	WD4	60	PB	30	GS4	05	WS1 / FW	5		47 nights
AT13	A	40m	WD4	60	GA1 / GS4	20	PB	15	WS1	5	Turbine is proposed, set 20m within conifer plantation with wet grassland towards the north. The detector was set by the conifer edge.	47 nights
AT14	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 65m from the turbine. Both detectors used for the assessment are set within conifer and have peatland / grassland habitat mixes.	47 nights
AT15	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 detector E is located close to the turbine, activity by the detector will be elevated due to edge habitat. Detector E is set in very similar habitats	47 nights

Turbine No	Detector	Approx. distance between detector and 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	%		
											to the proposed turbine and is likely to be a good representation for this location.	
AT16	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 found close by. A is used for the assessment based on proximity and similarity of habitats while L has a similar habitat mix	47 nights
AT17	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.	47 nights
AT18	L	1.45km	GA1	35	ER	60	WD	5	-	-	Proposed turbine is located within a quarry to the east of AT16 and is surrounded by improved agricultural grassland and is bordered to the north by a plot of conifer which contains AT17.	47 nights

PB; peatland, GA1; improved grassland, GS4; wet grassland, WS1; scrub, WD4; conifer plantation, WL1; hedgerow, WL2; Treeline, FW; freshwater

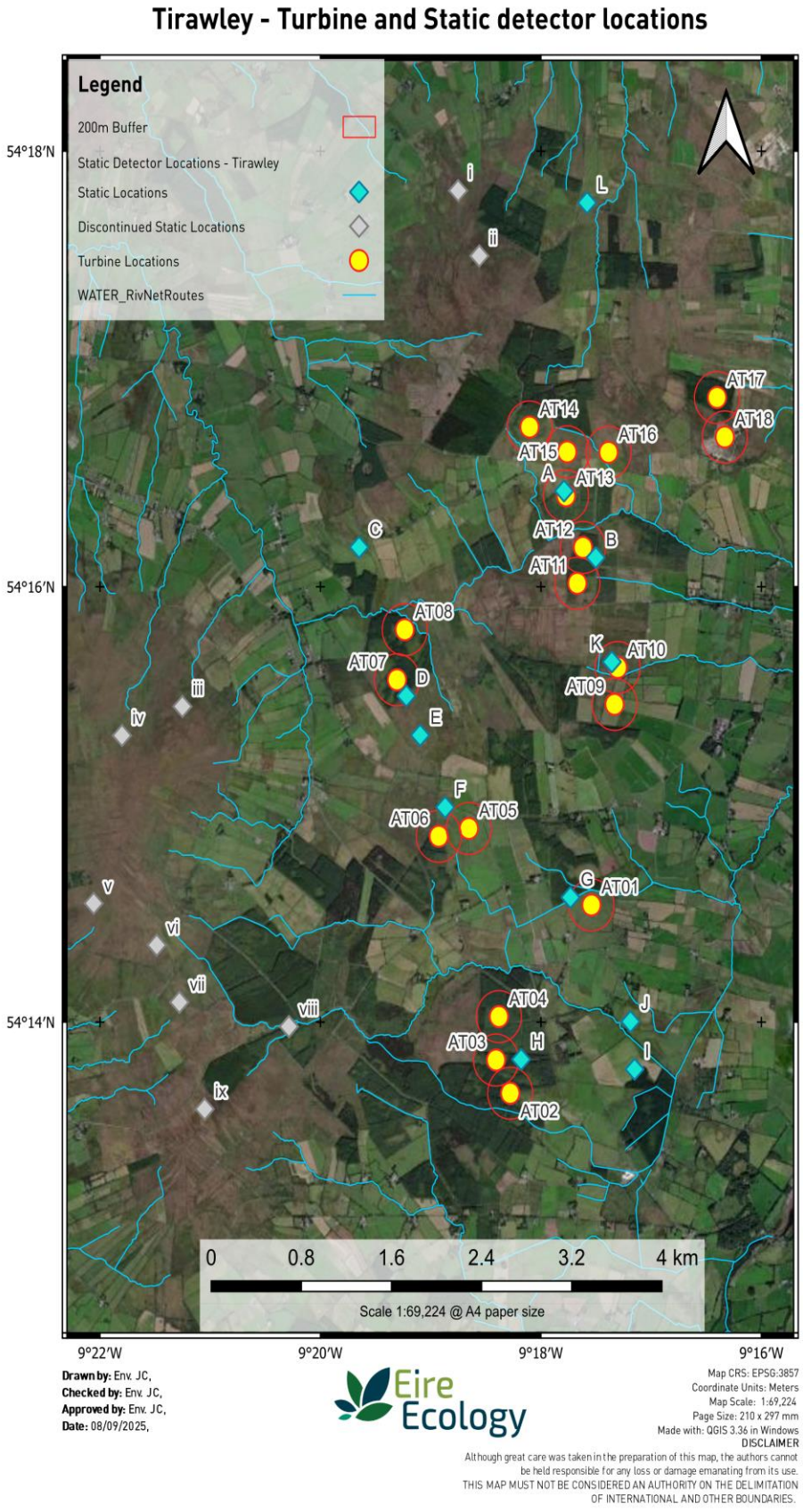

Figure 4-1: Turbine and static locations

4.2 ASSESSMENT OF POTENTIAL ROOST HABITATS

4.2.1 Trees

Trees within 200m of each turbine and along access routes (where the potential exists for felling) were examined for potential to host bat roosts on the 08th to 9th of March 2023 and the 14th to 15th of February 2024 following guidelines set out in the Bat Tree Habitat Key (Andrews, 2016) and BCT Guidelines for professional ecologists ed. 2, 3 and 4.

All trees were assessed from ground level using binoculars.

Examples of crevice features include:

- Natural holes;
- Cracks/splits in major limbs;
- Loose bark; and
- Hollows/cavities.

Each tree was assessed and ranked from category 1 – 4 (and comparable PRF-I & PRF-M as of Collins 2023). In total 29 category 1 and 2 trees were recorded (see Appendix 1 for details).

4.2.2 Structures

Turbine AT16 is the only turbine where buildings can be found within 200m of a turbine. AT16 has a water-tower with no bat roosting potential to the south of the turbine location. Several derelict sheds and dwellings were also examined in the wider landscape. A search was conducted of sheds and derelict dwellings of highest potential that were close to the site or showed connectivity; ie treelines, hedgerows, rivers or conifer edge linking roost structures to windfarm general area. In situations where access was not possible the surveyor conducted nighttime surveys from the road examining bats and attempting to located commuting routes and roosts. Given the sizeable changes to the site layout with large areas removed, several surveys were conducted on buildings less relevant to the current application. Appendix 2 provides details on all buildings and bridges assessed and gives details on which of these more extensive surveys have been completed.

Bridges along the proposed grid route and turbine delivery routes were assessed for bat roosting potential (Figure 4-2). Water crossings with no possibility of having any bat potential, (small drains or crossings with no large bridge structures) are not included in the map.

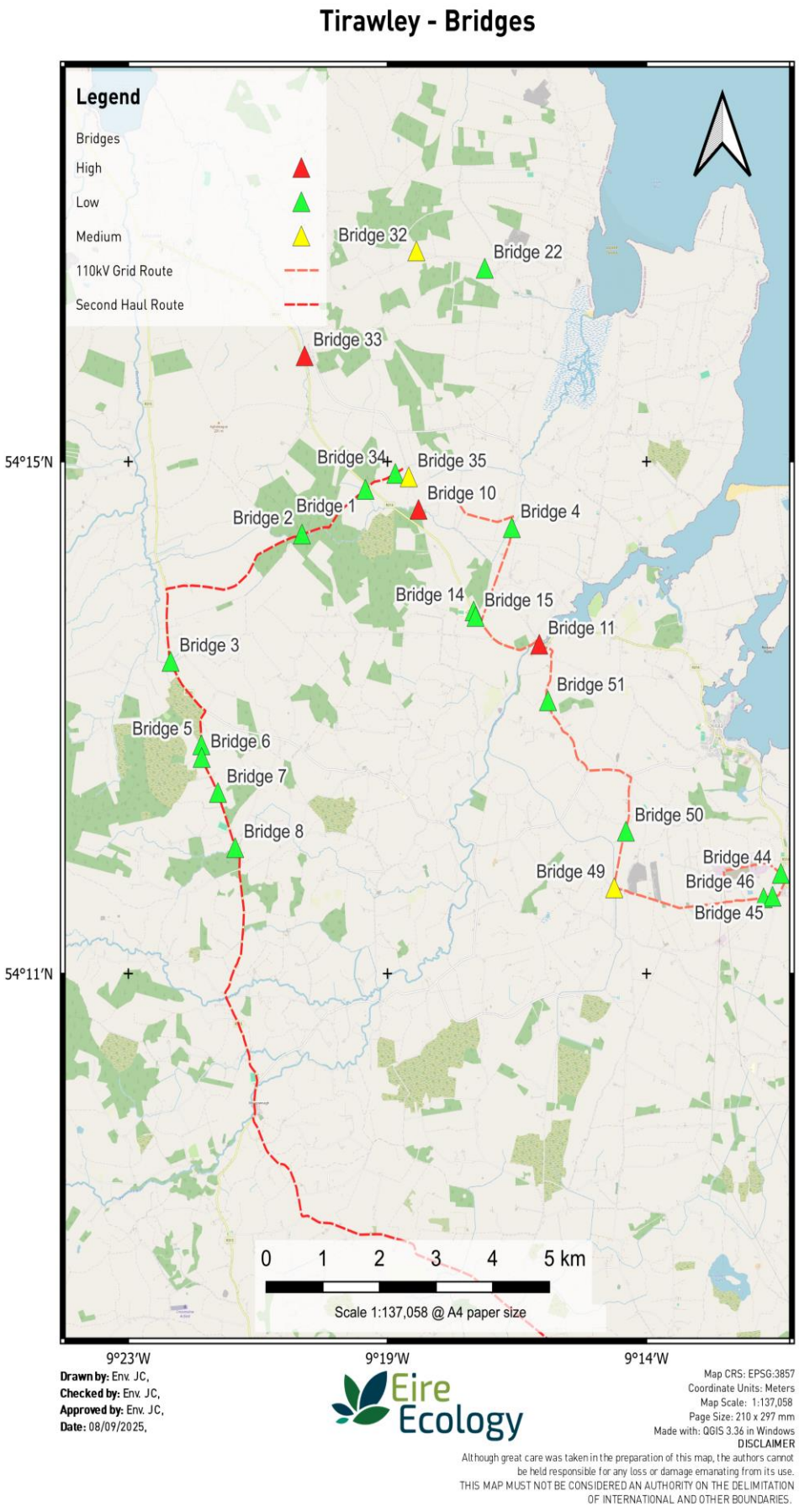

Figure 4-2: Preliminary assessment of bridges and culverts.

4.3 NIGHT TIME SURVEYS

4.3.1 Emergence survey limitations

While emergence surveys covered buildings closest to proposed turbines, some structures were not accessible given they are located on private property.

4.3.2 Emergence survey results

Table 4-2 provides a summary of results from the nighttime detector surveys. A re-entry survey conducted by building 3 found a bat roost of five Soprano Pipistrelles while two Soprano Pipistrelle were found at Building 20. Building 3 lies 760m north of AT08 while Building 20 lies 750m south of AT01. Both roosts were surveyed within the maternity period and given the number of bats, both are deemed as satellite roosts. These buildings will not be impacted by the development.

4.3.3 Transect Surveys

Seven transect surveys were conducted in the area surrounding the Tirawley proposed windfarm in 2022, along roads identified as potential commuting corridors for local bats, or those deemed to be of highest risk from the windfarm development. Two bats were identified during transect surveys, Common and Soprano Pipistrelle. Soprano Pipistrelle was the most frequently recorded species, predominantly observed using hedgerows to the east of AT05 and AT06. Common Pipistrelle were not as often observed during transect surveys, being only recorded seven times. Common pipistrelle was observed commuting along treelines on the portion of the TDR closest to R314. A summary of transect data is located below in Figure 4-4.

Table 4-2: Bat Survey Effort Summary

No.	Survey	Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
1	Dusk	27/06/2022	Emergence survey	21:20	00:20	1	Soprano Pipistrelle, Common Pipistrelle and Leisler's recorded hunting and flying. **No bat roost found**.	54.27466	-9.31735	21:50	ROR
2	Dawn	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
3	Dusk	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.	54.27466	-9.317360	22:10	JC
4	Dawn	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**.	54.27389	-9.318909	05:02	JC
5	Dusk	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	-9.269445	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
6	Dawn	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.**	54.2400	-9.2995	05:35	ROR

No.	Survey	Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
7	Dusk	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
			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, -9.2960		ROR
8	Dawn	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, -9.3040	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
9	Dusk	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
10	Dawn	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	-9.3030	06:26	ROR

No.	Survey	Date	Survey type	Start Time	End Time	Location	Details	Grid ref (ITM) Start / Finish		Sunset / sunrise	Surveyor
11	Dusk	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**.	54.2330	-9.3160	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
12	Dawn	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
13	Dusk	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

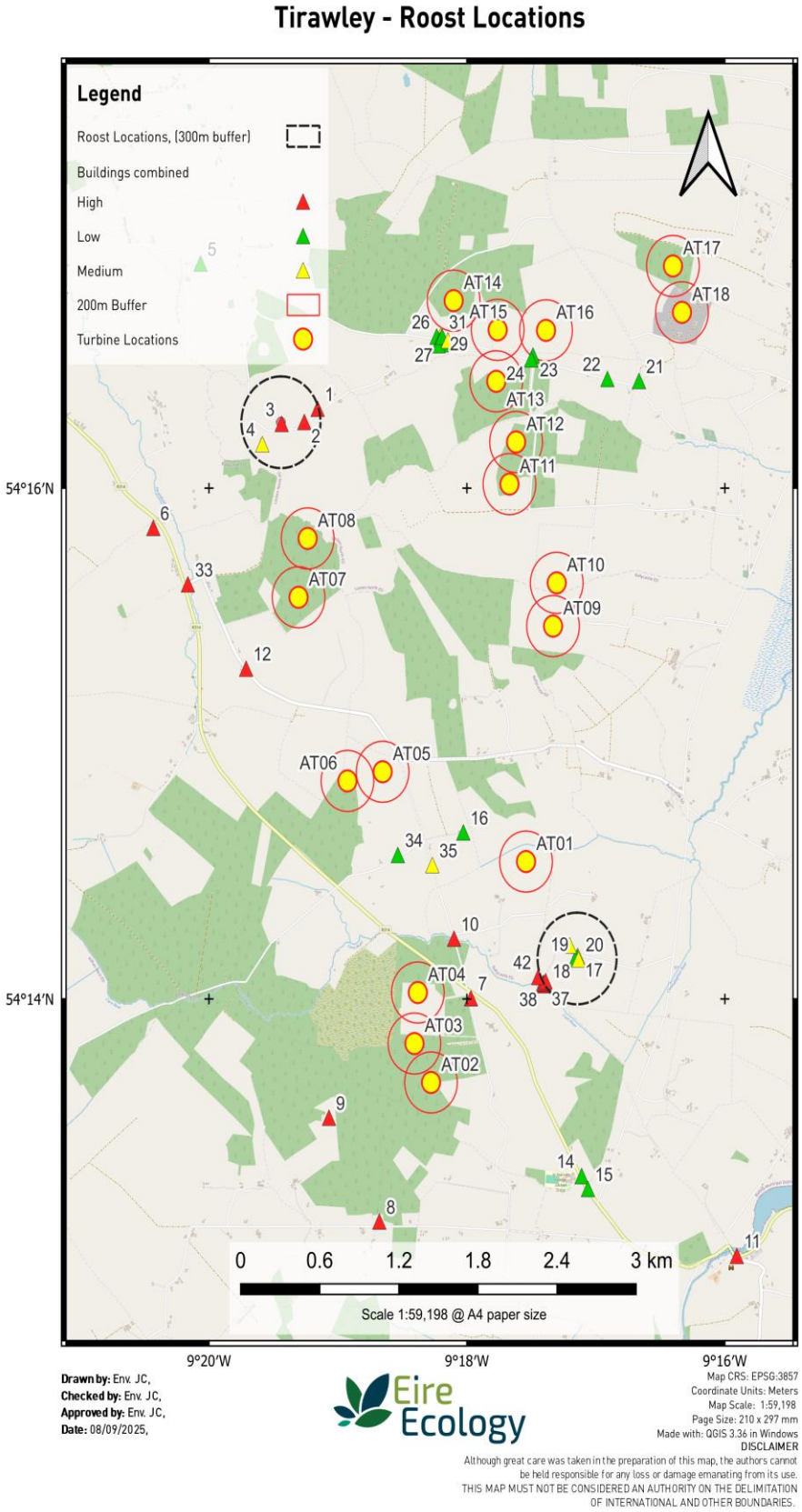

Figure 4-3: Assessment of buildings (with numbers). Location of bat roosts, proposed turbines with 200m buffer included.

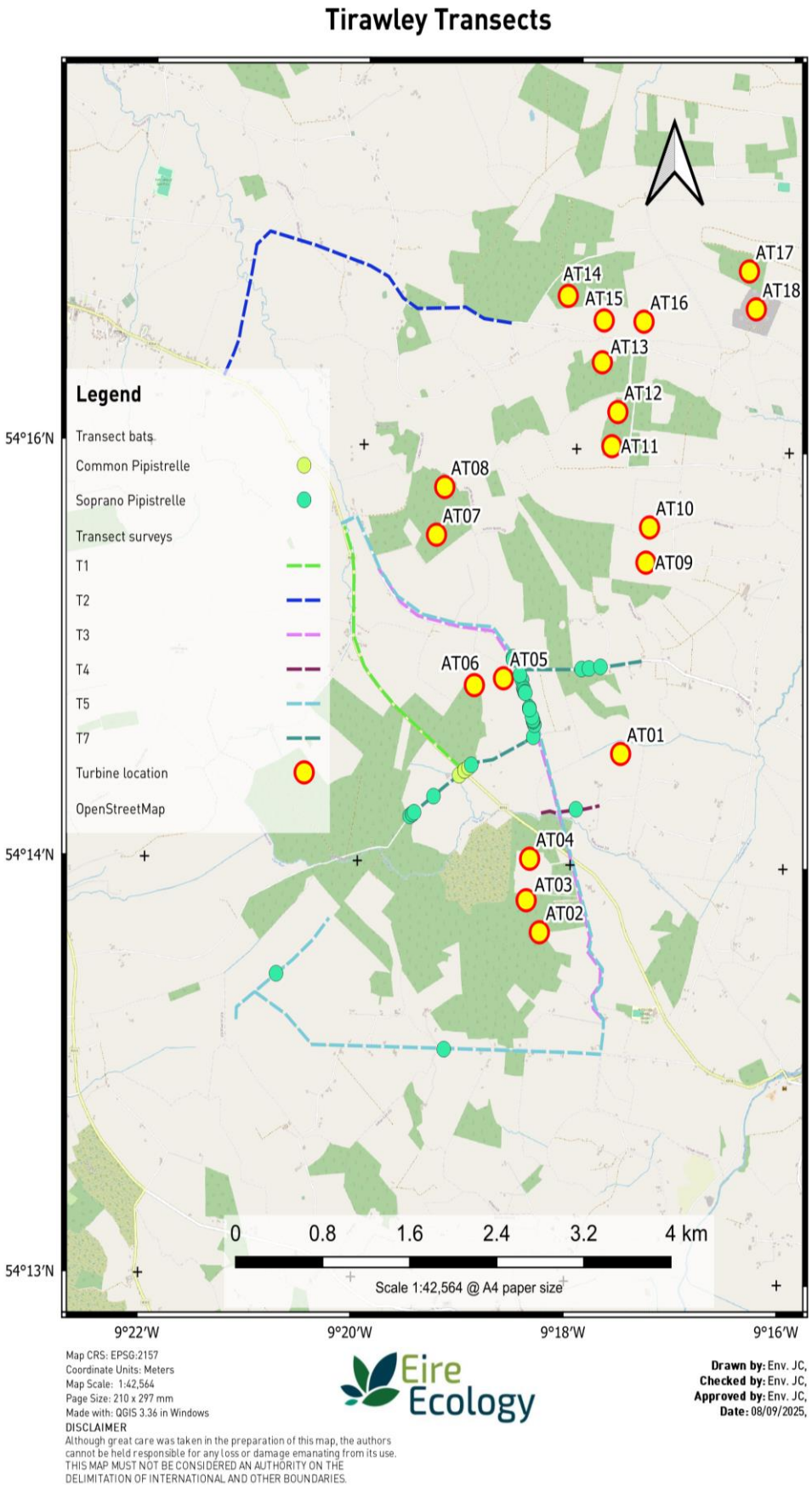

Figure 4-4: Transects.

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 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, Natterer's bat while 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 4-3 provides combined results for the initial deployment and also those detectors used in the site risk assessment. Table 4-4 provides a breakdown from each static detector location with total bat passes and an activity level; bat passes per hour of recording (BpHr). Figure 4-5 provides the location of each static with size of circle graduated by overall activity levels (BpHr). Detectors now not used in the windfarm risk assessment are coloured grey. Figure 4-6 shows the seasonal variation in activity across the site.

More detailed results are provided in Appendix 4.

Table 4-3: Static Results

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

Table 4-4: Static Results: Combined data

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
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

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
	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
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

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
	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

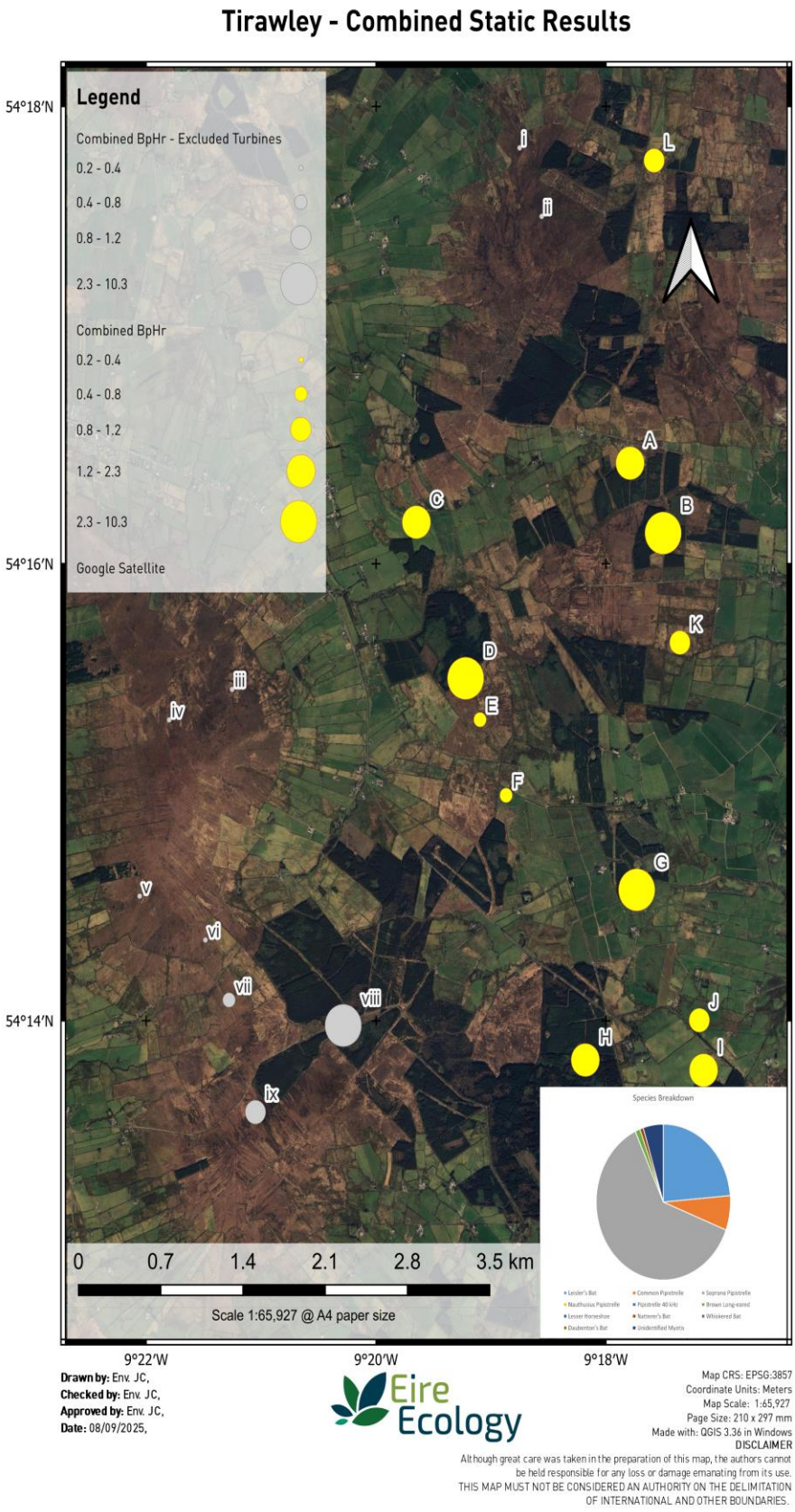

Figure 4-5: Combined activity rates - all seasons (Bp/Hr)

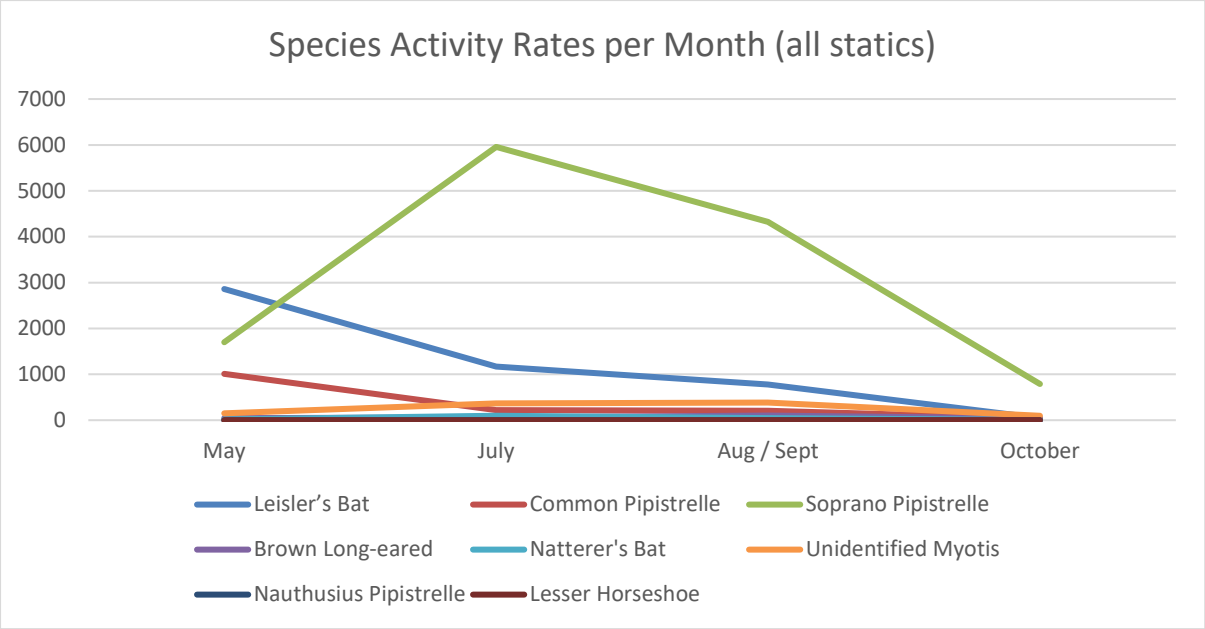

Figure 4-6: Species Activity Rates (BP/Hr) recorded per month; combined detectors.

Highest overall activity was recorded from Detector D set in bog adjacent to conifer plantation close to proposed turbine AT07 and AT08 (Bp/Hr rate of 10.3). Activity was highest here from the July and August / September 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 4-6 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.

4.5 ECOBAT

In order to ensure quality, all bat calls were manually verified. In addition, noise files were also examined manually. The data was then interpreted through ECOBAT type analysis. Ecobat is an online tool which makes assessments of bat activity levels by comparing data entered by the user with bat survey information from similar areas. Specifically, a median bat activity level is calculated which corresponds to a bat activity category (Table 4-5).

Table 4-5: 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

In order to prepare a 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 numerous sites with similar habitat types were examined and compared with data from the subject site. Activity level from these donor sites were examined, activity percentiles were averaged in order to create a model from which activity can be derived. Tirawley detectors were condensed into three groups; open grassland or bog habitats without a landscape feature within 25m of the turbine, locations close to edge habitat (be that hedgerow, treeline or conifer edge) and finally turbines based within stands of conifers. The percentile rating for each night's 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.

All recordings were made in full spectrum, retaining all amplitude and harmonic information from the original bat call for subsequent analysis. Bat calls were analysed using Kaleidoscope Pro (2.1.0) Software. All files were split to a maximum duration of 15 seconds and automatically identified to species level, or genus level as appropriate, using auto-ID bat classifiers (Bats of UK 2.0.7)[4].

An assessment was conducted only for those species identified as being at high risk of turbine collision; Leisler's bat, Common and Soprano Pipistrelle. No Nathusius Pipistrelle or 40kHz Pipistrelle calls were recorded from detectors used in the risk assessment thus this species was excluded.

October's data was not added to the assessment. Activity was very low thus adding this data would skew overall median results lower. The October data does demonstrate that activity significantly drops off and mitigation such as curtailment is not required at this time.

Table 4-6: 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

[4] There have been several updates to Kaleidoscope and the auto ID; Bats of UK 2.0.7. The author however feels auto-ID software regularly misidentifies bat calls thus it is more accurate to manually verify all bat calls. The software version used is adequate for organising data.

Table 4-7: 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[5]
	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[6]

Results demonstrate that overall activity within the site from high collision risk species varied from Moderate to Low based on median results for the whole windfarm. Soprano Pipistrelle had highest activity with Moderate activity levels, Leisler4's bat was Moderate Low and Common Pipistrelle had Low activity. Detector H had highest median activity with a moderate high median rate. Peaks of high activity did occur on occasion at several detector sites. See Tables 4-9 and 4-10 below for results.

[5] Had to add 2 records from edge woodland to reach a range of over 200.

[6] Had to add 11 records from edge habitats to reach a range of over 200.

Table 4-8 Bat activity within each activity band for each species – all 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 4-9: **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	Low to 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).

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 750m from AT01 had two bats while a max of 5 bats were observed entering a building located 765m north of AT08.
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 AT17 and 4.1km southeast. Notwithstanding this, the project is still categorised as large, as while the proposed development contains a moderate number of turbines (21), 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*.

5.1.2 Overall risk assessment

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. Common Pipistrelle, Soprano 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, 2014). Nathusius's Pipistrelle were not assessed as this species was not recorded thus will not be impacted.

Table 5-1: Summary of bat survey data relevant to current project and assessment

Turbine No	Static Detector ID used for assessment	Leisler's bat		Common pipistrelle		Soprano pipistrelle		Is location of static at turbine location?	Bat Habitat within 200m of turbine	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	Yes, but at some distance	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, at some distance. Set within block of forestry	High
AT03	H	16	12	12	4	20	16	No	Yes, at some distance. Set within block of forestry	High
AT04	H	16	12	12	4	20	16	No	Yes, set close to edge of forestry	High
AT05	F	20	12	16	4	16	8	Relatively close	Yes, but at a distance. Turbine proposed for centre of field	Medium
AT06	F	20	12	16	4	16	8	No	Set within Conifer block, 25m from conifer edge	Medium
AT07	D	20	8	20	8	20	12	No	Turbine proposed within dense conifer block with edge habitats to periphery	Peaks of Soprano Pipistrelle activity can occur here in July to early September.
AT08	D	20	8	20	8	20	12	No	Turbine proposed within dense conifer block with edge habitats to periphery	Peaks of Soprano Pipistrelle activity can occur here in July to early September.
AT09	K	20	8	16	4	16	8	No	Yes, but at a distance. Turbine proposed for centre of field	Medium
AT10	K	20	8	16	4	16	8	Close	Yes but at a distance. Turbine proposed for centre of field	Medium

Turbine No	Static Detector ID used for assessment	Leisler's bat		Common pipistrelle		Soprano pipistrelle		Is location of static at turbine location?	Bat Habitat within 200m of turbine	If no mitigation is applied, what is the potential impact level?
		Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile	Maximum Percentile	Median Percentile			
AT11	B	20	12	16	4	20	12	No	Turbine proposed within dense conifer block with edge habitats to periphery	Medium
AT12	B	20	12	16	4	20	12	No	Turbine proposed within dense conifer block with edge habitats to periphery	Medium
AT13	A	20	8	16	4	20	8	Close	Turbine located within conifers close to edge habitat	Medium
AT14	A	20	8	16	4	20	8	No	Turbine proposed within dense conifer block with edge habitats to periphery	Medium
	B	20	12	16	4	20	12			
	Combined	20	10	16	4	20	10			
AT15	A	20	8	16	4	20	8	No	Set within open peatland with few features surrounding	Medium
	E	20	8	16	4	16	4			
	Combined	20	8	16	4	18	6			
AT16	A	20	8	16	4	20	8	No	Some gorse scrub and treelines provide landscape features	Medium
	L	16	8	16	8	16	8			
	Combined	18	8	16	6	18	8			
AT17	B	20	12	16	4	20	12	No	Set within conifer block. Edge habitats found at periphery	Medium
AT18	L	16	8	16	8	16	8	No	Set within Existing Quarry, 300m SE of AT17	Medium

6 DISCUSSION

The methodology for the bat surveys at Tirawley proposed wind farm adhered to SNH (2019) and (SNH, 2021) guidance for assessing the impact of proposed wind farm developments on local bat species while also following elements of the (NIEA, 2021) guidance document. Based on Northern Ireland guidance an additional, fourth round of static monitoring was conducted based on an initial risk assessment. Initial roost assessment (structures and initial tree surveys), emergence surveys and activity surveys were undertaken between May and August 2022 with winter-time assessments conducted in March 2023 and February 2024.

During nighttime surveys, a total of four species of bats were recorded: Common Pipistrelle, Soprano Pipistrelle, Leisler's bat and Brown Long-eared bat. In addition, Unidentified Myotis species were recorded. Where the call could not be identified to species, the identification was determined to the highest possible level. The most commonly recorded species was Soprano Pipistrelle (86%), followed by Common Pipistrelle (10%) and Leisler's bat (2.3%), with lower levels from other species. The only bat roosts discovered was a Soprano Pipistrelle satellite roosts located 800m from AT01 and 770m north of AT08.

During static surveys, a total of seven species of bats were recorded: Common Pipistrelle, Soprano Pipistrelle, Leisler's bat, Brown Long-eared bat and Natterer's bat were recorded from detectors associated with the current site while single recordings from both Nathusius's Pipistrelle and Lesser Horseshoe bat from detectors based outside the site. Where the call could not be identified to species, the identification was determined to the highest possible level. The most commonly recorded species was Soprano Pipistrelle followed by Common Pipistrelle and Leisler's bat, with lower levels from other species.

All bats recorded are classified as 'Least Concern' on the Irish Red List (2019) and protected under the EU Habitats Directive Annex IV and Wildlife Acts.

Due to the levels of nightly bat activity at each of the static locations, three turbines are considered of high risk to Soprano Pipistrelle based on median results; turbines AT02, AT03 and AT04 while turbines AT07 and AT08 are of concern based on peaks of activity confined to July, August and early September. Common pipistrelle and Leisler's bats are of low to moderate concern.

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).

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 770m to the north of AT08 (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 13 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.

Additional Nighttime surveys should be conducted at these locations post-construction to assess the potential impact of turbine construction on these satellite roosts, or whether or not these roosts are still in use.

6.1.3 PRF Trees impacted by development.

Three trees (tree number 193, 194 and 197) recorded as having potential roost features will be felled to allow for an access track leading to T18. These trees will require an at height PRF survey before removal.

7 MITIGATION & COMPENSATION

7.1 MITIGATION PRIOR TO CONSTRUCTION PHASE

7.1.1 Re-establishment of baseline data

Once planning permission is received, a fresh assessment of bat activity levels at each turbine location will be required. Surveys will follow the most up-to-date guidelines and an ECOBAT type assessment will be completed. This data will be used to verify the above risk assessment and adjustments to curtailment will be implemented if active increases above the baseline to an extent other turbines achieve a high-risk status.

Potential roost features in trees can develop over time. Prior to commencement all trees that may be impacted by the development will be reassessed. All prf features will be examined to see if they are occupied by bats. Should a bat roost be found, a derogation license from the NPWS be required for its removal.

7.2 MITIGATION DURING CONSTRUCTION PHASE

7.2.1 Buffer Zone

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. A minimum buffer of 50m from wing tip to tree / shrub will be created prior to the powering of the windfarm and maintained throughout the lifetime of the wind farm.

The proposed wind turbines have a hub height of 76.5m and has a blade length of 57.2m.
The following formula is used to calculate the distance required from the turbine base.

$$b = \sqrt{(65 + BL)^2 - (HH - FL)^2}$$

The following formula is used to calculate the distance required from the turbine base.

Where: bl = blade length, hh = hub height, fh = feature height (all in metres). This will require a buffer of 94 m from the turbine base where treelines or woodland are affected and 88 m buffer when hedgerows are impacted.

Based on a review of aerial photographs, a review of the habitat map and ground truthing the following buffers are required.
Thus, turbines AT01, AT05, AT09, AT10 and AT15 should have a clearing of 88 m, while turbines AT02, AT03, AT04, AT06, AT07, AT08, AT11, AT12, AT13, AT14, AT16, AT17 and AT18 require a 94 m buffer (see table 7-1 below).

Table 7-1: Loss of treelines, hedgerow and edge habitats complying with bat buffer

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
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

Turbine	Buffer (m)	Details	Mitigation	Linear feature loss (m)	Woodland / scrub loss (Ha)
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	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT08	94	Section of conifer edge adjacent to Barnhill Upper stream will be removed. Overall, buffer will add more edge habitat than will be lost.	N/A	0	0
AT09	88	Sections of gorse and hawthorn hedgerow will be removed to the E and NW	Compensatory woodland creation within the site required.	109	0
AT10	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
AT11	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
AT12	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT13	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT14	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT15	88	Hedgerow of gorse to W and small willow scrub patch will be removed.	Compensatory woodland creation within the site required.	123	0.064
AT16	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
AT17	94	Conifer clearing will result in more edge habitat	N/A	0	0
AT18	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

Turbine	Buffer (m)	Details	Mitigation	Linear feature loss (m)	Woodland / scrub loss (Ha)
Additional hedgerow / treelines to be removed (new entrances from public roads and internal breaches of hedgerows by infrastructure)				820m	0
Loss of hedgerows along TDR (to facilitate road widening). This will be replanted along the extended road edge.				340m	0
Loss of hedgerows along public roads (to facilitate road widening). This will be replanted along the extended road edge.				2.39km	0
Total loss temporary				1.67km	0
Total loss permanent (linear features in km and scrub sections in ha)				1.76km and 0.291ha	

In addition, the following specific mitigation measures for bats are also now recommended:

7.2.2 Retention of trees

Any trees and treelines along approach roads and planned site access tracks will be retained unless felling is unavoidable. Retained trees should be protected from root damage by an exclusion zone of at least 7 metres or equivalent to canopy height. Such protected trees will be fenced off by adequate temporary fencing prior to other works commencing.

7.2.3 Compensation for loss of commuting routes and woodland

Linear features such as hedgerows and treelines serve as commuting corridors for bats (and other wildlife). Measures are recommended to compensate for the loss of features that are used by bats as commuting routes. These measures will also compensate for habitat loss and provide continuity in the landscape.

An example will be to reconnected hedgerows to compensate for the loss of hedgerows currently used by bats. Native species of Irish provenance should be used as they support more insect life than non-native varieties.

7.2.4 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 1.65Ha 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 (other than the part of quarry required to facilitate the usual operation of AT18) will provide mixed habitats including willow scrub which will have benefit to bats in the locality.
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 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.

7.2.5 Turbine AT10

Turbine AT10 has a thick southern hedge bordering a stream to the south within the 88 m buffer. Instead of felling these areas, curtailment will be implemented, offering an alternative protection to bat species.

7.2.6 Turbine AT16

Turbine AT16 has a number of trees and scrubby woodland of good quality within the 94 m buffer. Instead of felling these areas, curtailment will be implemented, offering an alternative protection to bat species.

7.2.7 Turbine AT18

Turbine AT18 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.

7.3 MONITORING DURING CONSTRUCTION PHASE

7.3.1 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.

7.3.2 Pre-felling survey of trees

A preliminary survey of trees within a 200m 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 a survey. This has identified 65 trees and shrubs with a potential roost feature (PRF) (see Appendix 10 below for details on all 211 record). 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.

7.4 Mitigation during Operational Phase

7.4.1 Feathering of Blades

Turbines should operate in a manner which restricts the rotation of the blades as far as is practicably possible below the manufacturer's specified cut-in speed. This is usually achieved by feathering the blades during low wind speeds; the angle of the blades is rotated to present the slimmest profile possible towards the wind, ensuring they do not rotate or 'idle' when not generating power. Automatic 'feathering' of idling blades will be implemented (through SCADA) to reduce rotation speed of blades to below 1 RPM while idling (as recommended in (Arnett E. H., 2011)).

Turbine blades spinning in low wind can kill bats, however bats cannot be killed by feathered blades which are not spinning (Horn *et al*., 2008). The feathering of turbine blades combined with increased cut-in speeds have been shown to reduce bat fatalities from 30% to 90% (NIEA, 2021), (SNH, Bats and Onshore Wind Turbines – Survey, Assessment and Mitigation., 2021), (Wellig S.D., 2018), (Rydell J., 2010), (Arnett, 2011) and (Baerwald, 2009).

As such, the feathering of blades to prevent 'idling' during low wind speeds is recommended for all turbines.

7.4.2 Cut-in Speeds/Curtailment

Increasing the cut-in speed above that set by the manufacturer can reduce the potential for bat/turbine collisions. A study by Arnett *et al*., (2011) showed a 50% decrease in bat fatality can be achieved by increasing the cut-in speed by 1.5 m/s.

The feathering of turbine blades combined with increased cut-in speeds have been shown to reduce bat fatalities from 30% to 90% (Adams et al., 2021, Arnett et al., 2008, 2011, 2013; Baerwald et al., 2009). The most recent of studies showed a 63% decrease in fatalities (Adams et al., 2021).

Species with elevated risk of collision (Leisler's bat, Soprano and Common Pipistrelle) in particular, would benefit from increasing the cut-in speed of turbines, as dictated on a case-by case basis depending on the activity levels recorded at each turbine.

Increased cut-in speeds will be implemented from commencement of operation. Cut-in speeds will be increased during the bat activity season (April-September inclusive) where weather conditions are optimal for bat activity (see below) from 30 minutes prior to sunset and to 30 minutes after sunrise at all turbines.

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

For turbines AT02, AT03, AT04, AT10, AT16 and AT18

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

- For AT07 and AT08 the same curtailment parameters will be implemented from July to 15th of September inclusive.
- In the case of AT18, effects of curtailment should be subsequently monitored and updated of measures are found to be insufficient to prevent bat fatalities.

7.4.2.1 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)

7.4.3 Buffer zones

The vegetation-free buffer zones (refer to section 7.1.1 above) around the identified turbines will be managed and maintained during the operational life of the development.

Due to mitigation by design, turbines are proposed to be sited at a separation distance from trees where impacts on treelines, hedgerows and woodland is minimised.

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.

Scrub will not be cleared surrounding AT16 and AT18, with the hopes of retaining scrub woodland located at these turbines. As stated above in section 7.3.2, curtailment will be implemented at these locations to facilitate this.

7.5 POST CONSTRUCTION MONITORING

Monitoring will take place for at least 3 years after construction, providing sufficient data to detect any significant change in bat activity relative to pre-construction levels. It will assess changes in bat activity patterns and the efficacy of mitigation to inform any changes to curtailment.

During years one to three of operation (under blanket curtailment restrictions) bat activity will be measured at each turbine location, in combination with carcass surveys. In addition, wind speed and temperature data will be continuously recorded at the nacelle height of each turbine.

Modern remotely operated wind turbines as proposed here allow cut-in speeds to be controlled centrally/automatically, facilitating an operation regime designed to minimise harmful impacts to bats.

7.5.1 Monitoring Curtailment

If, following the initial 3 years of post-construction surveys, bat activity increases above the baseline and/or remains consistently high and carcass searches indicate fatalities are occurring (refer below), increased cut-in speeds will continue. This will subsequently be monitored in years 5, 7, 10, 15, 20, 25 and 30 with further review after each monitoring period.

Alternatively, if it is found that the results of bat activity surveys and fatality searches confirm that the level of bat activity at turbine locations is low then consent will be sought from Mayo County Council (in consultation with NPWS) for the cessation in the requirement for these cut-in speeds / curtailment measures, or a reduction on the timing restrictions for these measures.

Where post construction acoustic surveys are undertaken, they will utilise full spectrum automatic detectors deployed, as a minimum, for one complete bat activity season.

Acoustic monitoring will be supplemented with thermal imaging cameras etc. to provide more detailed information on bat activity in the vicinity of turbines.

An assessment of static data gathered during operational surveillance will be completed using Ecobat type analysis as recommended by SNH (2021) as a minimum, or other equivalent guidance as dictated by up-to date standards and practices.

7.5.2 Monitoring of mitigation measures

The success of the implemented mitigation measures for bats on the project should be monitored for a period of three years after construction and appropriate measures taken to enhance these if and where required. Should bat fatalities be found within the first three years of surveys additional mitigation measures will be implemented in order to prevent this from reoccurring. Buffer zones surrounding the turbines will be increased from 50m to 65m and or curtailment parameters will be tweaked to increase cut-off times.

A recommended schedule for monitoring is given in Table 7-2 below.

7.5.2.1 Bat fatality monitoring

Although curtailment is a mitigation proven to lower bat fatalities it is recommended that the scheme be monitored for bat fatalities for the first three years of operation (post construction surveys) and subsequently in years 5, 7, 10, 15, 20, 25 and 30 as part of the additional curtailment monitoring schedule. A comprehensive onsite fatality monitoring programme is to be undertaken following published best practice (e.g. SNH 2021 or equivalent at the time of operation).

a) Carcass removal trials to establish levels of predator removal of possible fatalities. This should be done following best recommended practice and with due cognisance of published effects such as predator swamping, whereby excessive placement of carcasses increases predator presence and consequently skews results. At the time of writing (2025), predation trials set using trail cameras following guidance set out in (Smallwood, 2010) provides the most accurate results.
b) Turbine searches for fatalities should be undertaken with the use of conservation dogs following best practice in terms of search area (minimum radius hub height) and at intervals selected to effectively sample fatality rates as determined by carcass removal trials in (a) above. At the time of writing (2025), the typical search area surrounding the turbine bases follow (Edkins, 2014) Impacts Of Wind Energy Developments On Birds And Bats: Looking Into The Problem, who recommends the ''search width should be equal to the maximum rotor tip height'', e.g. turbines at Tirawley have a max tip height of 175m thus the spread of searched area, as a rectangle, square or circle, should be 87.5m in either direction form the turbine base.''
c) Search intervals would follow (SNH, 2021) - Appendix 4.
d) Recorded fatalities should be calibrated against known predator removal rates to provide an estimate of overall fatality rates.
e) Monitoring report to be submitted annually to Mayo County Council and the NPWS.

Table 7-2: Monitoring schedule recommended for bat mitigation measures

Mitigation measure	Monitoring required	Description	Duration
Bat boxes, tubes	Monitor bat use	Bat boxes, rocket boxes and tubes to be placed at locations removed from wind farm as determined by project ecologist/ECoW at least 1 season before construction start. These shall be examined by a licensed bat specialist according to NPWS recommendations. Records should be submitted to *Bat Conservation Ireland* for inclusion in its bat distribution database. If the boxes / tubes are not used within the first three years of deployment re-site if necessary. Annual cleaning required if well used by bats or if used by birds. Replacement if damaged/lost.	From mounting to 3 years post construction.

Mitigation measure	Monitoring required	Description	Duration
Mortality study	Fatality monitoring	Corpse searches beneath turbines to assess the impact of operation on bats.	From initial operation conducted during years 1, 2, 3, 5, 7, 10, 15, 20 and 25 post construction.

8 RESIDUAL IMPACTS AFTER MITIGATION

Following extensive surveys within and surrounding the site, it is the authors opinion the landscape in which the proposed wind farm is situated is of medium risk for Soprano Pipistrelle, Leisler's bat and Common Pipistrelle based on median percentiles and SNH 2021 Table 3b when averaging results from all turbines. Of these species, Soprano Pipistrelle have the highest risk with a score of 10.4, Leisler's are rated 10.1 and Common Pipistrelle are 5.0 (5 is the cutoff between low and medium risk while high risk is 15). Activity values for high collision risk species ranked from moderate (Soprano Pipistrelle), moderate low (Leisler's bat) to low (Common Pipistrelle) again based on median percentiles.

With the implementation of the mitigation outlined above the potential risk of fatality from collision and/or barotrauma events to foraging and/or commuting high risk species such as pipistrelle and Leisler have been significantly reduced and the surveyor feels the development will not have a long-term negative impact on the local bat populations.

Impacts on other bat species have also been assessed. While these species are not at high risk from collision, they can be impacted by loss of connectivity features and loss of roosting sites. The proposed development will see hedgerows replanted and the creation of new native woodland within the vicinity of the site. These are proposed in strips that will aid connecting the existing rivers and woodlands thus the overall impacts on bats should be neutral.

9 APPENDIX 1 - INITIAL TREE ROOST INSPECTION

Table 9-1 Categorise each tree according to Bat Conservation Trust 4th ed. (Collins, 2023)

Tree Category		Description
PRF	PRF-M	Potential roost feature – maternity. A Tree containing at least one feature of a size capable of hosting a maternity roost
	PRF-I	Trees with definite bat potential features suitable for use by singleton bats;
FAR		Further Assessment Required. Trees have no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found.
None		Trees have no potential.

Table 9-2 Categorise each tree according to Bat Conservation Trust 2 ed. (Hundt *et al*, 2012):

Tree Category	Description
1	Trees with multiple, highly suitable features capable of supporting larger roosts
2	Trees with definite bat potential but supporting features suitable for use by singleton bats;
3	Trees have no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features which may have limited potential to support bats;
4	Trees have no potential.

Table 9-3: Category 1 and 2 trees recorded surrounding turbines and along supply route.

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
1	54.25332	-9.31003	AT05	4	None	No trees visible	No potential
2	54.2548	-9.31162	AT06	4	None	Hedgerow	No potential
3	54.25285	-9.31401	AT06	4	None	Spruce	No potential
4	54.26262	-9.31808	AT07	4	None	Group of willow	No potential
5	54.26312	-9.31698	AT07	4	None	Line of willow	No potential
6	54.26423	-9.31968	AT07	4	None	Spruce	No potential
7	54.26731	-9.31943	AT08	4	None	Spruce	No potential
8	54.28255	-9.30272	AT15	4	None	Willow	No potential
9	54.28227	-9.30358	AT15	4	None	Spruce	No potential
10	54.28255	-9.30074	AT15	4	None	Spruce	No potential
11	54.28118	-9.30228	AT15	4	None	Spruce	No potential
12	54.27765	-9.29321	AT15	4	None	Willow	No potential
13	54.27588	-9.29776	AT14	4	None	Spruce	No potential
14	54.27522	-9.29568	AT14	4	None	Spruce	No potential
15	54.27875	-9.29542	AT16	4	None	No trees	No potential
16	54.28066	-9.29443	AT16	4	None	Spruce	No potential

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
17	54.27987	-9.2966	AT16	4	None	Willow	No potential
18	54.27889	-9.29145	AT17	4	None	Sycamore	No potential
19	54.27898	-9.29144	AT17	4	None	Ash	No potential
20	54.27899	-9.29149	AT17	1	PRF-M	Ash	One deep cavity, good potential
21	54.27904	-9.29151	AT17	4	None	Ash	No potential
22	54.27902	-9.29152	AT17	4	None	Ash	No potential
23	54.27902	-9.29152	AT17	1	PRF-M	Ash	2 cavities with good potential. Branch loss and tear.
24	54.2791	-9.2915	AT17	4	None	Ash	No potential
25	54.27921	-9.29152	AT17	4	None	Small group of ash	No potential
26	54.27902	-9.29091	AT17	4	None	Ash	No potential
27	54.27901	-9.29111	AT17	4	None	Sycamore	No potential
28	54.27907	-9.29101	AT17	1	PRF-M	Sycamore	One deep cavity from branch loss, good potential
29	54.2791	-9.29093	AT17	4	None	Sycamore	No potential
30	54.27913	-9.291	AT17	1	PRF-M	Ash	2 cavities due to decay, good potential
31	54.27917	-9.29102	AT17	4	None	Group of sycamore	No potential
32	54.27917	-9.29102	AT17	2	PRF-I	Ash	One cavity near base of tree.
33	54.27924	-9.29107	AT17	4	None	Ash/sycamore	No potential
34	54.27919	-9.29079	AT17	4	None	Ash	No potential
35	54.27911	-9.29056	AT17	4	None	Ash	No potential
36	54.27911	-9.29033	AT17	4	None	2 small ash	No potential
37	54.27248	-9.29147	AT13	4	None	Small spruce	No potential
38	54.2728	-9.29201	AT13	4	None	Willow	No potential
39	54.27272	-9.29356	AT13	4	None	Spruce	No potential
40	54.2713	-9.29433	AT12	4	None	Spruce	No potential
41	54.27023	-9.29187	AT12	4	None	Spruce	No potential
42	54.27028	-9.29528	AT12	4	None	Spruce	No potential

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
43	54.26894	-9.29382	AT12	4	None	Mix of willow and ash	No potential
44	54.2844	-9.27956	AT09	4	None	Spruce	No potential
45	54.28328	-9.27669	AT18	4	None	Spruce	No potential
46	54.26489	-9.2921	AT10	4	None	Spruce X 2	No potential
47	54.26592	-9.28923	AT10	4	None	Willow	No potential
48	54.26587	-9.28881	AT10	4	None	Willow	No potential
49	54.26003	-9.28903	AT09	4	None	Spruce	No potential
50	54.23897	-9.28756	Discontinued T2	4	None	Line of spruce	No potential
51	54.23602	-9.28648	Discontinued T1	4	None	Spruce	No potential
52	54.23562	-9.2842	Discontinued T1	4	None	Line of birch	No potential
54	54.23918	-9.28804	Discontinued T2	0	None	Line of alder	
55	54.23923	-9.28809	Discontinued T2	1	PRF-M	Alder	Large hollow in tree due to decay
56	54.23947	-9.28846	Discontinued T2	1	PRF-M	Alder	1 deep cavity, some smaller ones
57	54.23933	-9.28854	Discontinued T2	4	None	Mix of alder, sycamore ash	No potential
58	54.2395	-9.28845	Discontinued T2	4	None	Unknown, 3 small trees	No potential
59	54.23968	-9.28672	Discontinued T2	4	None	Ash	No potential
60	54.24129	-9.287	Discontinued T2	4	None	Line of willow/whitethorn	No potential
61	54.24155	-9.28699	Discontinued T2	4	None	Whitethorn	No potential
62	54.2422	-9.28689	Discontinued T2	4	None	Line of spruce	No potential
63	54.24219	-9.28739	Discontinued T2	2	PRF-I	Whitethorn	Cavity due to split
64	54.24212	-9.28763	Discontinued T2	4	None	Group of whitethorn	No potential
65	54.24192	-9.28768	Discontinued T2	4	None	Willow	No potential

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
66	54.24178	-9.28757	Discontinued T2	4	None	Ash	No potential
67	54.24177	-9.28753	Discontinued T2	4	None	Ash	No potential
68	54.2417	-9.28739	Discontinued T2	1	PRF-M	Ash	1 deep cavity due to decay
69	54.24165	-9.28737	Discontinued T2	4	None	Ash	No potential
70	54.24159	-9.2872	Discontinued T2	1	PRF-M	Whitethorn	1 deep fissure
71	54.24141	-9.28806	Discontinued T2	4	None	Willow	No potential
72	54.24144	-9.28808	Discontinued T2	1	PRF-M	Willow	Deep cavity from saw cut
73	54.24119	-9.28847	Discontinued T2	1	PRF-M	Willow	2 cavities from decay
74	54.24116	-9.28847	Discontinued T2	0	None	Ash/whitethorn	
75	54.24162	-9.2895	Discontinued T2	1	PRF-M	Ash	Hollow in tree due to decay
76	54.24149	-9.28984	Discontinued T2	4	None	Willow/ash	No potential
77	54.24109	-9.29033	Discontinued T2	0	None	Mix of trees round old farmhouse	
78	54.24054	-9.29062	Discontinued T2	2	PRF-I	Ash	Large cavity due to split
79	54.24038	-9.29037	Discontinued T2	1	PRF-M	Ash	Large cavity due to decay
80	54.24043	-9.29036	Discontinued T2	1	PRF-M	Sycamore	Deep cavity due to branch loss
81	54.24049	-9.29042	Discontinued T2	1	PRF-M	Ash	Large cavities due to decay
82	54.2406	-9.29029	Discontinued T2	2	PRF-I	Ash	Cavity due to decay
83	54.24068	-9.29022	Discontinued T2	1	PRF-M	Sycamore	Deep cavity due to fork in tree
84	54.2404	-9.2903	Discontinued T2	4	None	Group of ash	No potential
85	54.24059	-9.29073	Discontinued T2	1	PRF-M	Alder	Hollow in tree from decay

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
86	54.24068	-9.29102	Discontinued T2	4	None	Line of ash	No potential
87	54.2408	-9.29087	Discontinued T2	4	None	Ash/sycamore	No potential
88	54.23698	-9.30558	AT03	4	None	Spruce	No potential
89	54.23465	-9.30416	AT02	4	None	Spruce	No potential
90	54.24219	-9.30463	AT04	4	None	Line of birch	No potential
91	54.24163	-9.30617	AT04	4	None	Spruce	No potential
92	54.24117	-9.30483	AT04	4	None	Mix of ash and alder	
93	54.24099	-9.30542	AT04	4	None	Line of alder	No potential
94	54.24949	-9.29349	AT01	4	None	Spruce	No potential
95	54.2469	-9.29301	AT01	4	None	No trees visible	
96	54.20702	-9.24485	ET & PP	4	None	Planted row of pine	No potential
97	54.20694	-9.24454	ET & PP	4	None	Bramble	
98	54.20656	-9.24425	ET & PP	4	None	Hawthorn	A few hawthorn, clipped very short
99	54.22421	-9.26544	PP 1	4	None	Ash 5, fuscia 6, hawthorn 1	Immature cut hedgerow
100	54.2245	-9.26643	PP 1	4	None	Leylandii	Outgrown hedge front of house
101	54.22466	-9.26828	PP 2	4	None	Alder, ash	
103	54.22483	-9.26863	PP 2	4	None	Snowberry	Patch of snowberry clipped short
104	54.22567	-9.26973	PP 3/4	3	PRF-I	Ash, sycamore.	Several trees with thick ivy cover
105	54.22567	-9.26973	PP 3/4	3	PRF-I	Alder, ash	Mature & semi with thick ivy cover
106	54.22595	-9.27004	PP 3/4	4	None	Willow	Some ivy
107	54.22589	-9.26995	PP 3/4	3	PRF-I	Sycamore	Mature with thick ivy
108	54.22585	-9.26989	PP 3/4	3	PRF-I	Ash	Mature with ivy
109	54.2256	-9.27015	PP 3/4	3	PRF-I	Ash	Mature with ivy
110	54.22568	-9.27025	PP 3/4	4	None	Sycamore	Mature but no cracks
111	54.2257	-9.27033	PP 3/4	3	PRF-I	Hawthorn	Mature with ivy

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
112	54.22586	-9.27026	PP 3/4	3	PRF-I	Stump	Old tree stump with cervices and loose bark
113	54.22592	-9.27062	PP 3/4	2	PRF-I	Horse chestnut	Very mature tree with deep cervices
114	54.22582	-9.27076	PP 3/4	2	PRF-I	Beech	Mature beech with deep cervices, branch holes
115	54.22574	-9.27064	PP 3/4	2	PRF-I	Fallen tree	Deep cervices
116	54.22554	-9.27051	PP 3/4	3	PRF-I	Ash	Think ivy cover
117	54.22547	-9.27066	PP 3/4	1	PRF-M	Beech	Very mature. Large deep cervices where branches broke
118	54.22554	-9.27062	PP 3/4	2	PRF-I	Beech	Mature with branch holes & ivy
119	54.22521	-9.27149	PP 3/4	2	PRF-I	Beech	Mature with ivy. Branch holes high up
120	54.22506	-9.27154	PP 3/4	2	PRF-I	Beech	Very mature tree with high up cervices
121	54.22494	-9.27152	PP 3/4	4	None	Mixed	Lots of smaller trees on slope with some ivy
122	54.22435	-9.27439	PP 3/4	3	PRF-I	Ash	Thick ivy
123	54.22439	-9.27439	PP 3/4	4	None	Ash	Immature ash
124	54.22436	-9.2743	PP 3/4	3	PRF-I	Hawthorn	Ivy
125	54.22438	-9.27375	PP 3/4	3	PRF-I	Ash	Treeline ash along road with ivy cover
126	54.22446	-9.27491	PP 3/4	4	None	Sycamore	Mature but no cervices or ivy
127	54.2245	-9.2756	PP 3/4	3	PRF-I	Ash	Treeline of ash by road with ivy cover
128	54.22449	-9.2754	PP 3/4	4	None	Ash and sycamore	Trees away from no ivy
129	54.22453	-9.27331	PP 3/4	3	PRF-I	Hawthorn	Ivy in treeline along road
130	54.22466	-9.2724	PP 3/4	3	PRF-I	Ash	Ivy in trees along road
131	54.22482	-9.27248	PP 3/4	3	PRF-I	Pine	Mature tree with ivy
132	54.22477	-9.27226	PP 3/4	4	None	Ash	
133	54.22487	-9.27237	PP 3/4	3	PRF-I	Pine	Thick ivy cover

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
134	54.22486	-9.27225	PP 3/4	3	PRF-I	Beech	Ivy
135	54.22479	-9.27221	PP 3/4	3	PRF-I	Beech	Falling over, thick ivy
136	54.2249	-9.27228	PP 3/4	3	PRF-I	Pine	2 mature pine with ivy
137	54.22493	-9.27211	PP 3/4	3	PRF-I	Beech	Small holes
138	54.22493	-9.27211	PP 3/4	3	PRF-I	Pine	Ivy
139	54.22499	-9.27195	PP 3/4	3	PRF-I	Beech	Ivy and loose bark
140	54.22499	-9.27186	PP 3/4	3	PRF-I	Ash	Ivy
141	54.22483	-9.27201	PP 3/4	4	None	Ash	Spindle ash form road buffer
142	54.22502	-9.27178	PP 3/4	3	PRF-I	Sycamore	Mature tree with ivy
143	54.22503	-9.27173	PP 3/4	3	PRF-I	Ash	Mature ash with top broken off, thick ivy
144	54.225	-9.27169	PP 3/4	3	PRF-I	Pine	Mature tree with thick ivy cover
145	54.22488	-9.27174	PP 3/4	4	None	Ash	Immature trees
146	54.22511	-9.27111	PP 3/4	4	None	Ash	Mainly immature ash
147	54.22483	-9.27155	PP 3/4	3	PRF-I	Ash	Treeline between road and river. Mainly as with ivy
148	54.2247	-9.27215	PP 3/4	3	PRF-I	Ash	Ash with ivy
149	54.22464	-9.27267	PP 3/4	3	PRF-I	Ash	Ivy
150	54.22452	-9.27308	PP 3/4	3	PRF-I	Ash	Treeline along road has several trees with thick ivy cover
151	54.23362	-9.29068	ET & PP	4	None	Willow	
152	54.23362	-9.29068	ET & PP	3	PRF-I	Willow	Broken branches
153	54.23414	-9.2871	Discontinued T1	4	None	Alder	Treeline of small alder along Coillte plantation
154	54.23431	-9.28714	Discontinued T1	4	None	Alder	Treeline
155	54.23455	-9.28729	Discontinued T1	4	None	Willow	
156	54.23471	-9.28746	Discontinued T1	4	None	Willow	
157	54.23485	-9.28728	Discontinued T1	4	None	Willow	

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
158	54.23512	-9.2861	Discontinued T1	4	None	Willow	
159	54.23524	-9.28576	Discontinued T1	4	None	Willow	
160	54.23533	-9.28715	Discontinued T1	4	None	Alder	Some broken with digger but no potential
161	54.23541	-9.28784	Discontinued T1	4	None	Alder	Treeline beside Coillte
162	54.2353	-9.28671	Discontinued T1	4	None		
163	54.23544	-9.28855	Discontinued T1	4	None	Hawthorn	
164	54.2355	-9.28928	Discontinued T1	4	None	Hawthorn	Hedgerow of hawthorn with open fields either side
165	54.24023	-9.29957	ET & PP[1]	4	None	Alder	
166	54.24023	-9.29935	ET & PP	4	None	Alder	A few small alder
167	54.23791	-9.29864	ET & PP	4	None	Ash	
168	54.23759	-9.29858	ET & PP	4	None	Birch	Treeline of low potential
169	54.23753	-9.29847	ET & PP	4	None	Ash	Mature
170	54.23743	-9.30047	ET & PP	4	None	Spruce	Spruce plantation with a few sally saplings at edge
171	54.23766	-9.29883	ET & PP	4	None	Birch, willow, ash	Saplings
172	54.24385	-9.30162	ET & PP	4	None	Hawthorn	Hedgerow
173	54.24388	-9.30087	ET & PP	4	None	Hawthorn	
174	54.24409	-9.30174	ET & PP	4	None	Willow	
175	54.24432	-9.29621	ET & PP	4	None	Hazel	Single hazel sapling
176	54.24477	-9.29502	ET & PP	4	None	Hawthorn	
177	54.24489	-9.29471	ET & PP	4	None	Willow	
178	54.24488	-9.29442	ET & PP	4	None	Willow	
179	54.24502	-9.29157	ET & PP	4	None	Willow	
180	54.2447	-9.29145	ET & PP	4	None	Hawthorn	
181	54.27879	-9.27579	ET & PP	4	None	Gorse, willow	

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
182	54.27877	-9.27613	ET & PP	4	None	Willow	
183	54.28156	-9.27519	AT18	4	None	Willow	
184	54.28149	-9.27422	AT18	4	None	Spruce	
185	54.28155	-9.27581	AT18	4	None	Gorse	
186	54.27829	-9.27603	ET & PP	4	None	Willow	
187	54.27781	-9.27598	ET & PP	4	None	Willow	
188	54.27685	-9.28002	ET & PP	4	None	Sycamore	Few small trees along road
189	54.27699	-9.28	ET & PP	4	None	Ash	
190	54.27652	-9.28001	ET & PP	4	None	Fuscia	
191	54.27638	-9.2801	ET & PP	4	None	Sycamore	
192	54.27637	-9.28024	ET & PP	2	PRF-I	Ash	Old tree with branch holes
193	54.27629	-9.28012	ET & PP	2	PRF-I	Sycamore	Numerous branch holes
194	54.27623	-9.2801	ET & PP	3	PRF-I	Sycamore	One branch hole
195	54.27608	-9.28007	ET & PP	4	None	Hawthorn	Some possible cervices
196	54.27602	-9.2801	ET & PP	4	None	Elder	
197	54.27602	-9.28044	ET & PP	3	PRF-I	Sycamore	Branch holes
198	54.27604	-9.28064	ET & PP	4	None	Sycamore	
199	54.27606	-9.28077	ET & PP	4	None	Fuscia	
200	54.27708	-9.27897	ET & PP	4	None		
201	54.27725	-9.27723	ET & PP	4	None	Gorse	
202	54.27716	-9.27738	ET & PP	4	None	Willow	
203	54.27681	-9.27928	ET & PP	4	None	Willow	
204	54.27659	-9.27974	ET & PP	3	PRF-I	Ash	Shallow holes
205	54.27732	-9.29072	ET & PP	4	None	Hawthorn	Mature tree but no cervices seen
206	54.27725	-9.29052	ET & PP	4	None	Hawthorn	
207	54.27726	-9.29033	ET & PP	4	None	Willow	
208	54.27723	-9.29022	ET & PP	4	None	Fuscia	
209	54.27734	-9.29089	ET & PP	4	None	Hawthorn	
210	54.27744	-9.29116	ET & PP	4	None	Willow	

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
211	54.2773	-9.29119	ET & PP	4	None	Hawthorn	Mature but no cervices seen
212	54.27735	-9.2916	ET & PP	4	None	Willow	
213	54.27726	-9.29212	ET & PP	4	None	Willow	Scrub
214	54.27689	-9.29227	ET & PP	4	None	Willow	
215	54.27701	-9.29242	ET & PP	4	None	Elder	Small
216	54.27728	-9.29244	ET & PP	4	None	Spruce	Immature
217	54.27738	-9.29254	ET & PP	4	None	Willow	
218	54.27744	-9.2923	ET & PP	4	None	Hawthorn	
219	54.27743	-9.29262	ET & PP	4	None	Birch	
220	54.27805	-9.29268	AT17	4	None	Willow	Patch of low sally
221	54.2776	-9.29318	ET & PP	4	None	Willow	
222	54.27765	-9.29416	ET & PP	4	None	Alder	Immature alder and birch plantation
223	54.27769	-9.29468	AT14	4	None	Willow	Sally and gorse
224	54.27829	-9.29813	AT16	4	None	Willow	Sally hedge
225	54.27835	-9.29895	AT16	4	None	Hawthorn	
226	54.28021	-9.2972	AT16	4	None	Willow	
227	54.28072	-9.29795	AT16	4	None	Willow	
228	54.28089	-9.2979	AT16	4	None	Blackthorn	Blackthorn with some gorse growing also
229	54.2809	-9.29762	AT16	4	None	Whitethorn	
230	54.27854	-9.29962	ET & PP	4	None	Willow	
231	54.27858	-9.29991	ET & PP	4	None	Hawthorn	
232	54.27478	-9.29259	ET & PP	4	None	Willow	
233	54.27454	-9.29259	ET & PP	4	None	Willow	
234	54.27438	-9.29242	ET & PP	4	None	Leylandii	
235	54.27372	-9.29197	AT13	4	None	Willow	
236	54.26905	-9.29276	AT12	4	None	Willow	
237	54.26897	-9.29255	AT12	4	None	Ash	Immature ash and birch plantation
238	54.26879	-9.29259	AT12	4	None	Fuscia	
239	54.26719	-9.29292	ET & PP	4	None	Willow	

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
240	54.26701	-9.29171	ET & PP	4	None	Hawthorn	
241	54.2671	-9.29209	ET & PP	4	None	Gorse	Line of gorse
242	54.26875	-9.29395	ET & PP	4	None	Bamboo	Invasive species
243	54.26225	-9.28707	AT09	4	None	Hawthorn	Low growing hawthorn hedge on bank
244	54.26234	-9.28807	AT09	4	None	Hawthorn	Low hawthorn with some ivy growth
245	54.26235	-9.28851	AT09	4	None	Hawthorn	
246	54.26236	-9.28858	AT09	4	None	Willow	
247	54.26279	-9.28854	AT09	4	None	Willow, gorse, hawthorn	Mixed hedgerow of small trees and scrubs
248	54.2633	-9.28819	AT09	4	None	Hawthorn	Mature hawthorn
249	54.26184	-9.28883	AT09	4	None	Willow	Mixed hedgerow of sally, gorse and hawthorn. No ivy
250	54.26145	-9.28865	AT09	4	None	Willow	
251	54.26132	-9.28772	AT09	4	None	Hawthorn	Mainly small hawthorn and gorse. No ivy
252	54.26093	-9.28828	AT09	4	None	Fence	Wire fence
253	54.26081	-9.28938	AT09	4	None	Gorse	
254	54.26112	-9.29182	AT09	4	None	Gorse	Mainly gorse hedgerow
255	54.26152	-9.29158	AT09	4	None	Willow	
256	54.26227	-9.29121	AT09	4	None	Hawthorn	Hedge with odd hawthorn and gorse in between
257	54.26301	-9.29012	AT09	4	None	Willow	Some sally, but mainly gorse
258	54.25432	-9.29671	ET & PP	4	None	Ash	
259	54.25415	-9.29702	ET & PP	3	PRF-I	Hawthorn	Hedge with lots of ivy
260	54.25434	-9.29718	ET & PP	3	PRF-I	Ash	Branch holes and ivy
261	54.2543	-9.29738	ET & PP	4	None	Ash	
262	54.25997	-9.29821	ET & PP	4	None	Spruce and pine	Plantation
263	54.25998	-9.29848	ET & PP	4	None	Alder	Planted semi mature alder

Tree No:	Lat	Lon	Turbine No:	Category	Collins 2023 Category	Species	Details
264	54.25986	-9.29861	ET & PP	4	None	Gorse	
265	54.26191	-9.3215	AT07	4	None	Willow	
266	54.26234	-9.32216	AT07	4	None	Hawthorn	No ivy
267	54.2686	-9.31833	AT08	4	None	No trees	
268	54.24636	-9.31452	ET & PP	4	None	Elder	
269	54.24631	-9.31442	ET & PP	4	None	Hawthorn	
270	54.24628	-9.31433	ET & PP	4	None	Hawthorn	
271	54.24621	-9.31421	ET & PP	4	None	Hawthorn	Cut hedgerow elder and hawthorn
272	54.24899	-9.30593	ET & PP	4	None	Willow	Hedgerow with sally
273	54.24907	-9.30546	ET & PP	4	None	Ash	Hedge with small sally and ash
274	54.24893	-9.30486	ET & PP	4	None	Willow	Hedge mainly gorse, few sally
275	54.24893	-9.30486	ET & PP	4	None	Willow	

PP; Pinch point; ET; Entrance track

10 APPENDIX 2 - INITIAL ASSESSMENT OF STRUCTURES

Table 10-1: Assessment of structures

No.	Lat	Lon	Structure	Description	Potential	Emergence survey conducted?	Bat roost?	Distance to turbine	Nearest turbine
1	54.27467	-9.31736	Building	Derelict dwelling with roof. Treeline	High	Survey conducted, no bat roost found	No	850m N	AT08
2	54.27389	-9.31891	Building	Derelict dwelling with roof	High	Survey conducted, no bat roost found	No	755m N	AT08
3	54.27378	-9.32155	Building	Farmstead, could be derelict	High	Survey conducted, roost found.	Yes - Soprano Pipistrelle	760m N	AT08
4	54.27259	-9.3238	Building	Derelict dwelling	Medium	Survey conducted, no bat roost found	No	710m N	AT08
5	54.28319	-9.33098	Building	Derelict house roof fallen in	Low	No	N/A	1.9km W	AT14
6	54.26768	-9.33647	Building	Manor house derelict	High	No access possible	N/A	1.17km W	AT08
7	54.24005	-9.29953	Building	Derelict dwelling	High	Survey conducted, no bat roost found	No	390m E	AT04
8	54.22693	-9.31018	Building	Derelict dwelling lots of tree cover	High	Survey conducted, no bat roost found	No	975m SW	AT02
9	54.23304	-9.31604	Building	Derelict house with tree lines	High	Survey conducted, no bat roost found		830m SW	AT03
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	1.66km	Discontinued T1

No.	Lat	Lon	Structure	Description	Potential	Emergence survey conducted?	Bat roost?	Distance to turbine	Nearest turbine
12	54.25941	-9.32568	Building	Derelict site with house, farm building and stone building	High	Survey conducted, no bat roost found	No	560m SW	AT07
13	54.30284	-9.29257	Building	Derelict dwelling	High	Survey conducted, no bat roost found	No	2.07km NW	AT17
14	54.22961	-9.28665	Bridge	Culvert with drain	Low	No	N/A	710m S	Discontinued T1
15	54.22885	-9.28592	Bridge	Open drain along field. Culvert no visible	Low	No	N/A	800m S	Discontinued T1
16	54.24979	-9.30041	Building	Sheds; metal	Low	No	N/A		
17	54.24254	-9.2871	Building	Cottage with new galvanised roof. Lots of openings	Medium	No	Unknown	210m N	Discontinued T2
18	54.24247	-9.28717	Building	Shed plastered with galvanised roof	Low	No	N/A	210m N	Discontinued T2
19	54.24236	-9.28739	Building	Old open hay barn	Low	No	N/A	190m N	Discontinued T2
20	54.24233	-9.28701	Building	Cottage with windows, synthetic slatted roof with concreted eaves, plastered, some small gaps under fascia. Windows and doors sealed	Medium	Yes	Yes - Soprano Pipistrelle	190m N	Discontinued T2
21	54.2763	-9.27998	Building	Stone ruin no roof	Low	No	N/A	770m SE	AT16
22	54.27642	-9.28365	Bridge	Low culvert under road	Low	No	N/A	550m SE	AT16
23	54.27779	-9.29231	Building	Plastered reservoir. No cracks	Low	No	N/A	180m SW	AT16
24	54.27757	-9.29252	Building	Low. Culvert	Low	No	N/A	220m SW	AT16

No.	Lat	Lon	Structure	Description	Potential	Emergence survey conducted?	Bat roost?	Distance to turbine	Nearest turbine
25	54.27891	-9.30305	Building	Stone shed with lots of gaps in some work. Partially plastered. Gappy galvanised roof. Windows and doors open	Medium	Survey conducted, no bat roost found	No	270m SW	AT14
26	54.27891	-9.30351	Building	Bungalow, plastered finish. Pvc windows and fascia in good condition. No gaps	Low	Survey conducted, no bat roost found	N/A	270m SW	AT14
27	54.27866	-9.30317	Building	Block shed with galvanised roof. Small openings. Used as animal shed	Low	Survey conducted, no bat roost found	N/A	315m S	AT14
28	54.27849	-9.30305	Building	Large open galvanised hay barn	Low	Survey conducted, no bat roost found	N/A	315m S	AT14
29	54.27846	-9.30281	Building	Open horse shed	Low	Survey conducted, no bat roost found	N/A	315m S	AT14
30	54.2784	-9.3033	Building	Concrete walls storage shed	Low	Survey conducted, no bat roost found	N/A	315m S	AT14
31	54.2789	-9.30288	Building	Mobile home	Low	Survey conducted, no bat roost found	N/A	260m S	AT14
32	54.27868	-9.30221	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	No. Emergence survey of bridge will be conducted if upgrades (pointing) are required.	Unknown	260m S	AT14
33	54.26436	-9.33245	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	High	No. Emergence survey of bridge will be conducted if upgrades (pointing) are required.	Unknown	810m W	AT07

No.	Lat	Lon	Structure	Description	Potential	Emergence survey conducted?	Bat roost?	Distance to turbine	Nearest turbine
				reduces potential from high to medium.					
34	54.24847	-9.30803	Bridge	Culvert under road	Low	No	N/A	500m S	AT05
35	54.24787	-9.30401	Bridge	Small stone culvert. No gaps inside but gaps in walls	Medium	No	Unknown	440m NE	AT04
36	54.24088	-9.29088	Building	Stone cottage. Half of stone roof missing. Lots of crevices.	Medium	No access	No	190m W	Discontinued T2
37	54.24085	-9.29095	Building	Stone shed with lots of cervices. Corrugated roof without bitumen slightly reduces potential.	High	No access	Unknown	190m W	Discontinued T2
38	54.24082	-9.29103	Building	Stone shed with tin roof. Gaps in windows	High	No access	Unknown	190m W	Discontinued T2
39	54.24093	-9.29103	Building	Stone shed, slate roof	High	No access	Unknown	200m W	Discontinued T2
40	54.24094	-9.29113	Building	Stone building, tin roof. Roof lined with mesh and bitumen. Ivy on walls	High	No access	Unknown	210m W	Discontinued T2
41	54.24105	-9.29085	Building	Plastered house with natural slate roof. Small gaps in wooden fascia	High	No access	Unknown	190m W	Discontinued T2
42	54.2413	-9.2917	Building	Natural slatted roof with timber ceiling inside. Lots of cervices in plaster. 4 chimneys	High	No access	Unknown	250m W	Discontinued T2
43	54.24315	-9.28804	Building	Block shed with corrugated roof/ Large gap between roof and wall thus its drafty.	Low	No	Unknown	290m N	Discontinued T2

No.	Lat	Lon	Structure	Description	Potential	Emergence survey conducted?	Bat roost?	Distance to turbine	Nearest turbine
44	54.19368	-9.20382	Bridge	Culvert under road	Low	No	N/A	Along TDR route	-
45	54.19059	-9.2061	Bridge	Culvert - drain	Low	No	N/A	Along TDR route	-
46	54.19038	-9.20836	Bridge	Concrete bridge plastered. One end overgrown with briars	Low	No	N/A	Along TDR route	-
47	54.19179	-9.24862	Bridge	Very low opening at one side. Stone arch at another end but could not get down to look in. Deep water	Low	No	N/A	Along TDR route	-
48	54.19167	-9.24861	Bridge	Stone arched Bridge. Well maintained and pointed. No obvious cracks visible. Could not get underneath as deep water	Medium	No. Emergence survey of bridge will be conducted if upgrades (pointing) are required.	Unknown	Along TDR route	-
49	54.19134	-9.24834	Bridge	Other side of natural stone arch Bridge. Pointed well maintained	Medium	No. Emergence survey of bridge will be conducted if upgrades (pointing) are required.	Unknown	Along TDR route	-
50	54.19943	-9.24574	Bridge	Large diameter smooth concrete pipe culvert with stone wall above (pointed)	Low	No	N/A	Along TDR route	-
51	54.21747	-9.26687	Bridge	Culvert under road. Opening under water on both sides	Low	No	N/A	Along TDR route	-

11 APPENDIX 3 - NIGHT TIME SURVEYS.

Table 11-1: 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
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
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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
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

Table 11-2: Emergence / re-entry results

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:43:19	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:43:34	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:43:41	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:44:22	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:44:35	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:47:31	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:49:18	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:49:45	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:49:51	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:50:35	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	22:52:34	Soprano Pipistrelle	1	53.28578	-6.19056	JC
27/06/2022	23:10:45	Soprano Pipistrelle	1	54.27404	-9.3189	JC
27/06/2022	23:10:49	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:10:54	Soprano Pipistrelle	1	54.27404	-9.3189	JC
27/06/2022	23:11:05	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:11:21	Soprano Pipistrelle	1	54.27447	-9.31723	JC
27/06/2022	23:11:40	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:11:48	Soprano Pipistrelle	1	54.27456	-9.31718	JC
27/06/2022	23:11:54	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:12:03	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:13:15	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:13:27	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:13:43	Soprano Pipistrelle	1	54.27396	-9.31899	JC

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	23:13:47	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:14:07	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:14:24	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:14:37	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:14:42	Soprano Pipistrelle	1	54.27396	-9.31899	JC
27/06/2022	23:15:17	Soprano Pipistrelle	1	54.27401	-9.31875	JC
27/06/2022	23:16:03	Soprano Pipistrelle	1	54.27399	-9.31907	JC
27/06/2022	23:16:19	Soprano Pipistrelle	1	54.2738	-9.31883	JC
27/06/2022	23:16:36	Soprano Pipistrelle	1	54.27399	-9.31907	JC
27/06/2022	23:16:43	Soprano Pipistrelle	1	54.27357	-9.31955	JC
27/06/2022	23:16:49	Soprano Pipistrelle	1	54.27352	-9.32054	JC
27/06/2022	23:17:00	Soprano Pipistrelle	1	54.27354	-9.3202	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	54.27375	-9.32148	RO'R
27/06/2022	22:21:20	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:21:38	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:02	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:18	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:34	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:43	Leisler's bat	2	54.27375	-9.32148	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:22:43	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:48	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:54	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:22:59	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:07	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:07	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:16	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:24	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:31	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:37	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:23:51	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:24:07	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:24:23	Common Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:24:55	Soprano Pipistrelle	2	54.27375	-9.32148	RO'R
27/06/2022	22:25:18	Soprano Pipistrelle	2	54.27376	-9.32158	RO'R
27/06/2022	22:25:32	Soprano Pipistrelle	2	54.27376	-9.32161	RO'R
27/06/2022	22:25:49	Soprano Pipistrelle	2	54.27374	-9.32154	RO'R
27/06/2022	22:25:56	Soprano Pipistrelle	2	54.27374	-9.32154	RO'R
27/06/2022	22:26:08	Soprano Pipistrelle	2	54.27378	-9.32152	RO'R
27/06/2022	22:26:56	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:27:06	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:27:12	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:27:20	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:27:37	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:27:53	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:28:09	Common Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:28:09	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:28:26	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:28:42	Soprano Pipistrelle	2	54.27378	-9.32153	RO'R
27/06/2022	22:28:58	Common Pipistrelle	2	54.27378	-9.32153	RO'R
27/06/2022	22:28:58	Soprano Pipistrelle	2	54.27378	-9.32153	RO'R
27/06/2022	22:29:18	Soprano Pipistrelle	2	54.27378	-9.32153	RO'R
27/06/2022	22:29:34	Soprano Pipistrelle	2	54.27378	-9.32153	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	22:29:42	Soprano Pipistrelle	2	54.27378	-9.32153	RO'R
27/06/2022	22:30:30	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:30:46	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:31:05	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:31:21	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:31:27	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:31:53	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:32:09	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:32:25	Soprano Pipistrelle	2	54.27378	-9.32154	RO'R
27/06/2022	22:32:43	Leisler's bat	2	54.27399	-9.32139	RO'R
27/06/2022	22:42:47	Myotis species	2	54.27373	-9.32144	RO'R
27/06/2022	22:45:09	Soprano Pipistrelle	2	54.27376	-9.32155	RO'R
27/06/2022	22:47:05	Soprano Pipistrelle	2	54.27376	-9.32155	RO'R
27/06/2022	22:47:14	Common Pipistrelle	2	54.27375	-9.32151	RO'R
27/06/2022	22:47:20	Common Pipistrelle	2	54.27375	-9.32151	RO'R
27/06/2022	22:51:54	Soprano Pipistrelle	2	54.27374	-9.32129	RO'R
27/06/2022	22:52:06	Common Pipistrelle	2	54.27372	-9.3212	RO'R
27/06/2022	22:52:16	Soprano Pipistrelle	2	54.27372	-9.32121	RO'R
27/06/2022	23:04:45	Common Pipistrelle	2	54.27373	-9.32151	RO'R
27/06/2022	23:05:20	Common Pipistrelle	2	54.27375	-9.3215	RO'R
27/06/2022	23:05:33	Common Pipistrelle	2	54.27375	-9.3215	RO'R
27/06/2022	23:05:49	Common Pipistrelle	2	54.27381	-9.32147	RO'R
27/06/2022	23:07:18	Soprano Pipistrelle	2	54.27381	-9.32144	RO'R
27/06/2022	23:07:38	Soprano Pipistrelle	2	54.27381	-9.32144	RO'R
27/06/2022	23:07:54	Leisler's bat	2	54.27381	-9.32144	RO'R
27/06/2022	23:08:06	Soprano Pipistrelle	2	54.27381	-9.32144	RO'R
27/06/2022	23:09:15	Soprano Pipistrelle	2	54.27377	-9.32147	RO'R
27/06/2022	23:09:29	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:09:39	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:09:51	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:10:05	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:10:22	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:10:27	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
27/06/2022	23:10:43	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:10:58	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:11:13	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:11:30	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:11:36	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:11:49	Soprano Pipistrelle	2	54.27377	-9.32146	RO'R
27/06/2022	23:12:02	Soprano Pipistrelle	2	54.27376	-9.32146	RO'R
27/06/2022	23:12:07	Soprano Pipistrelle	2	54.27376	-9.32146	RO'R
27/06/2022	23:13:17	Soprano Pipistrelle	2	54.27379	-9.32149	RO'R
27/06/2022	23:13:22	Soprano Pipistrelle	2	54.27383	-9.32147	RO'R
27/06/2022	23:13:53	Soprano Pipistrelle	2	54.27387	-9.32155	RO'R
27/06/2022	23:14:09	Soprano Pipistrelle	2	54.27389	-9.3214	RO'R
27/06/2022	23:14:20	Soprano Pipistrelle	2	54.27388	-9.32142	RO'R
27/06/2022	23:14:31	Soprano Pipistrelle	2	54.27388	-9.32142	RO'R
27/06/2022	23:14:53	Soprano Pipistrelle	2	54.27386	-9.32145	RO'R
27/06/2022	23:15:17	Soprano Pipistrelle	2	54.27386	-9.32145	RO'R
27/06/2022	23:15:33	Soprano Pipistrelle	2	54.27387	-9.32145	RO'R
27/06/2022	23:15:44	Soprano Pipistrelle	2	54.27389	-9.32146	RO'R
27/06/2022	23:15:52	Soprano Pipistrelle	2	54.27389	-9.32148	RO'R
27/06/2022	23:16:08	Soprano Pipistrelle	2	54.27387	-9.32143	RO'R
27/06/2022	23:16:34	Soprano Pipistrelle	2	54.27384	-9.32146	RO'R
27/06/2022	23:16:42	Soprano Pipistrelle	2	54.27391	-9.32147	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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
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
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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
01/08/2022	04:23:16	Soprano Pipistrelle	10	54.24345	-9.3016	RO'R
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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
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
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

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
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
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	54.2745	-9.31743	RO'R
23/08/2022	04:35:39	Soprano Pipistrelle	25 to 31	54.27461	-9.31628	RO'R
23/08/2022	04:37:56	Soprano Pipistrelle	25 to 31	54.2741	-9.31783	RO'R
23/08/2022	04:38:07	Soprano Pipistrelle	25 to 31	54.27406	-9.31793	RO'R
23/08/2022	04:39:51	Soprano Pipistrelle	25 to 31	54.27338	-9.31998	RO'R
23/08/2022	04:46:43	Soprano Pipistrelle	25 to 31	54.27285	-9.32376	RO'R

DATE	TIME	ID	Location	LATITUDE	LONGITUDE	Surveyor
23/08/2022	04:57:42	Soprano Pipistrelle	25 to 31	54.27289	-9.32382	RO'R
23/08/2022	05:10:08	Soprano Pipistrelle	25 to 31	54.27288	-9.32383	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

Table 11-3: Emergence survey 5th June 2024 Building 20

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

12 APPENDIX 4 - STATIC DETECTOR RESULTS

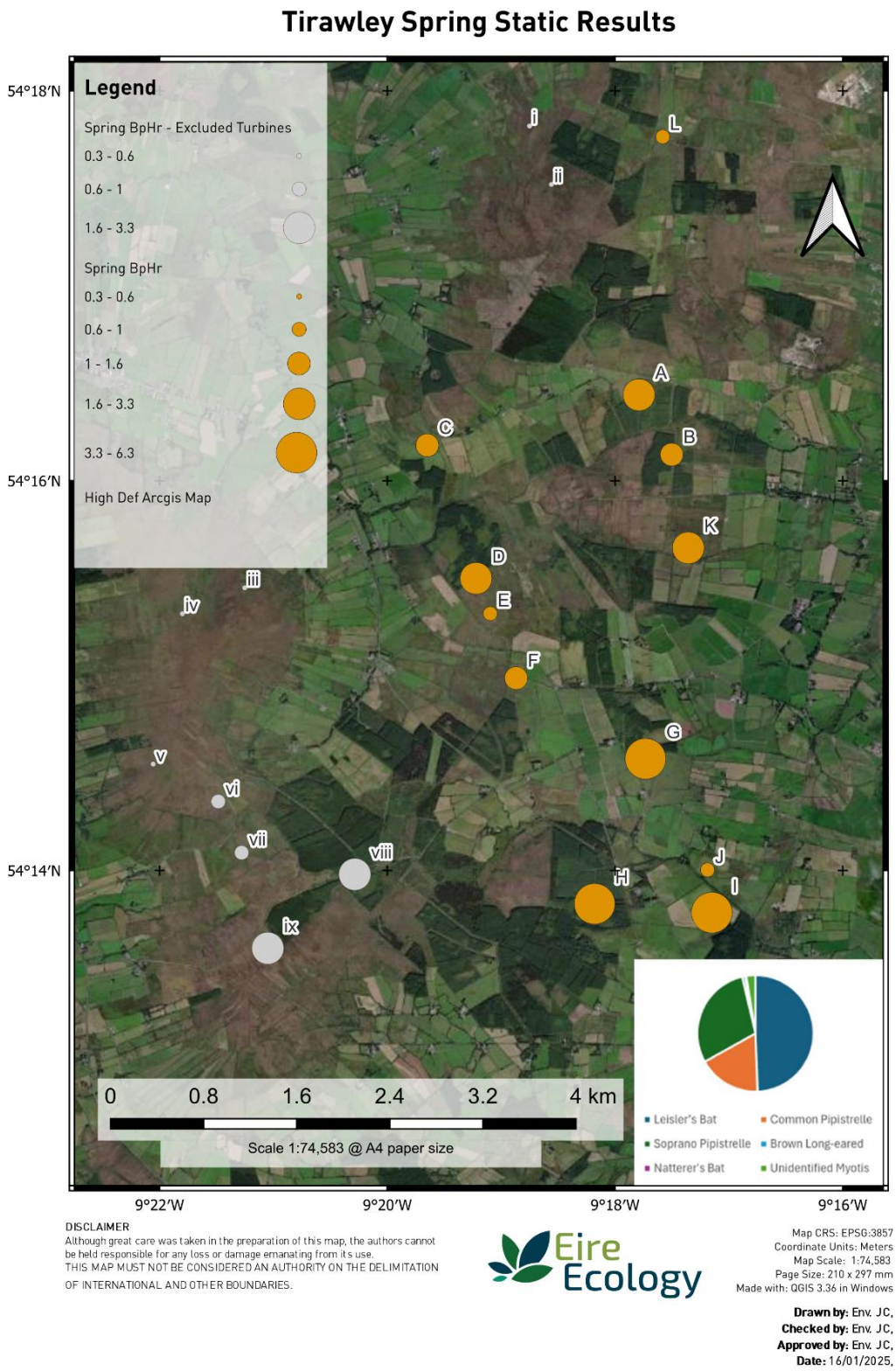

Figure 12-1Combined Spring activity rates (Bp/Hr)

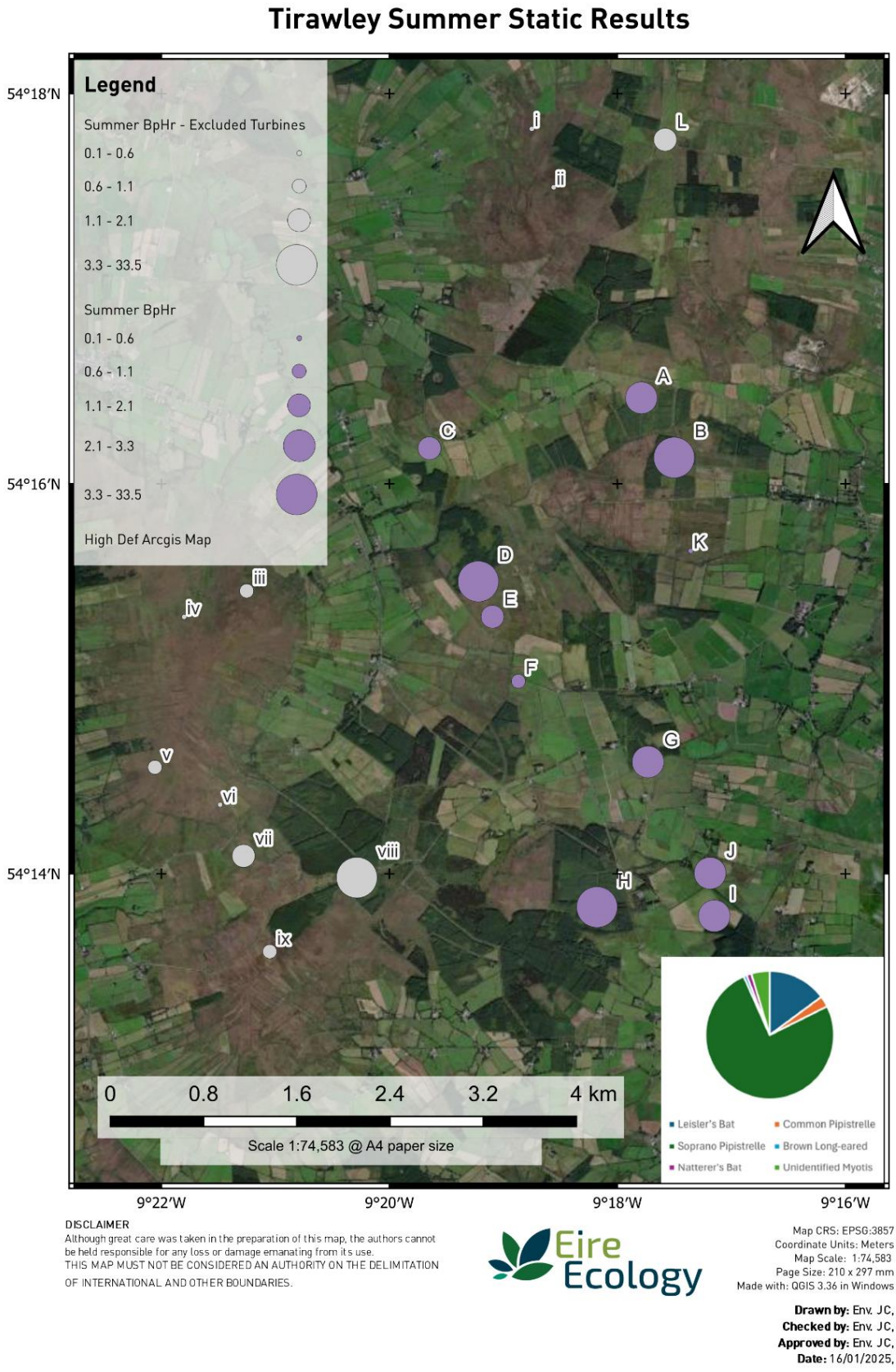

Figure 12-2 Combined July activity rates (Bp/Hr)

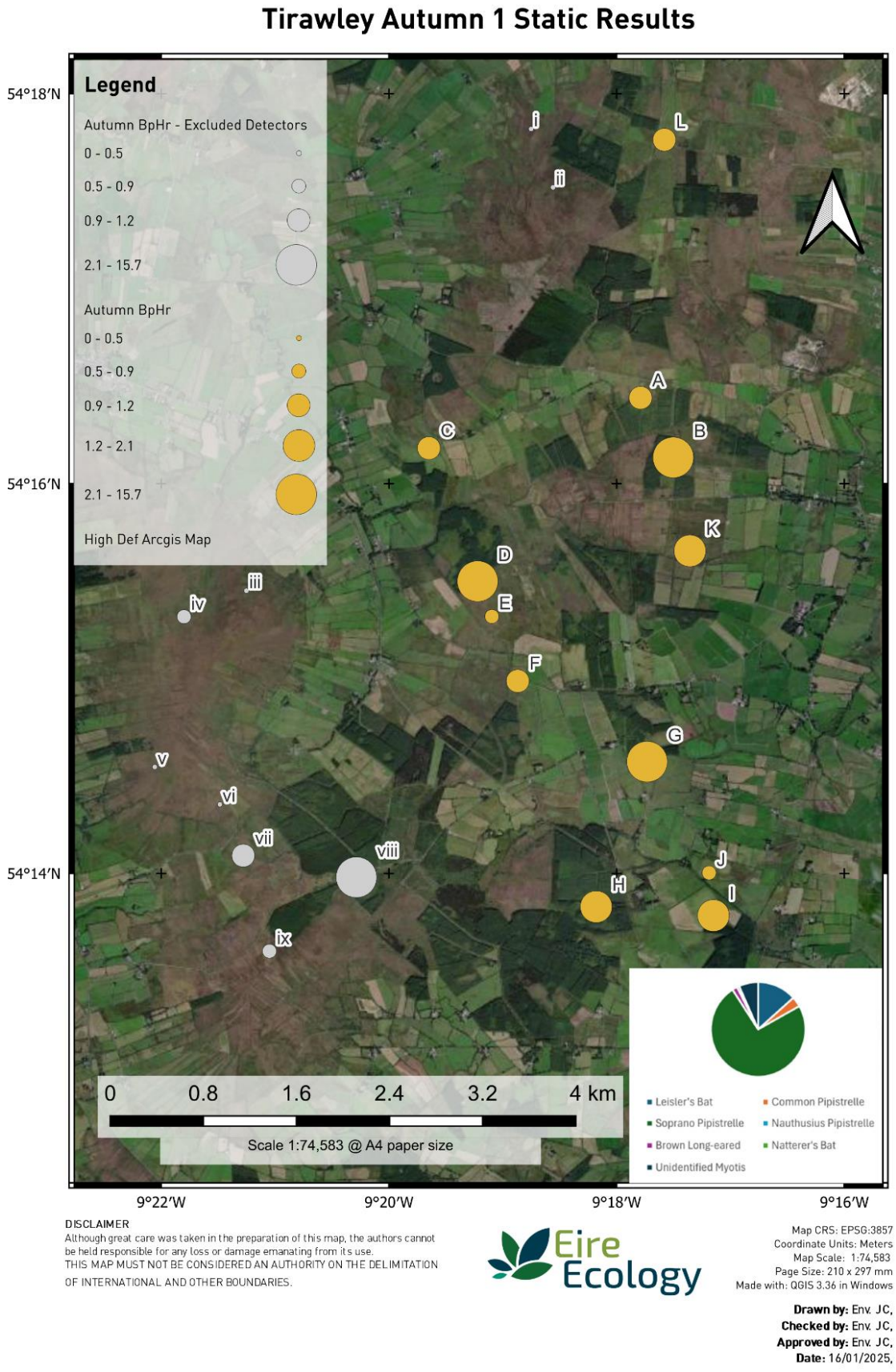

Figure 12-3 Combined August to Sept activity rates (Bp/Hr)

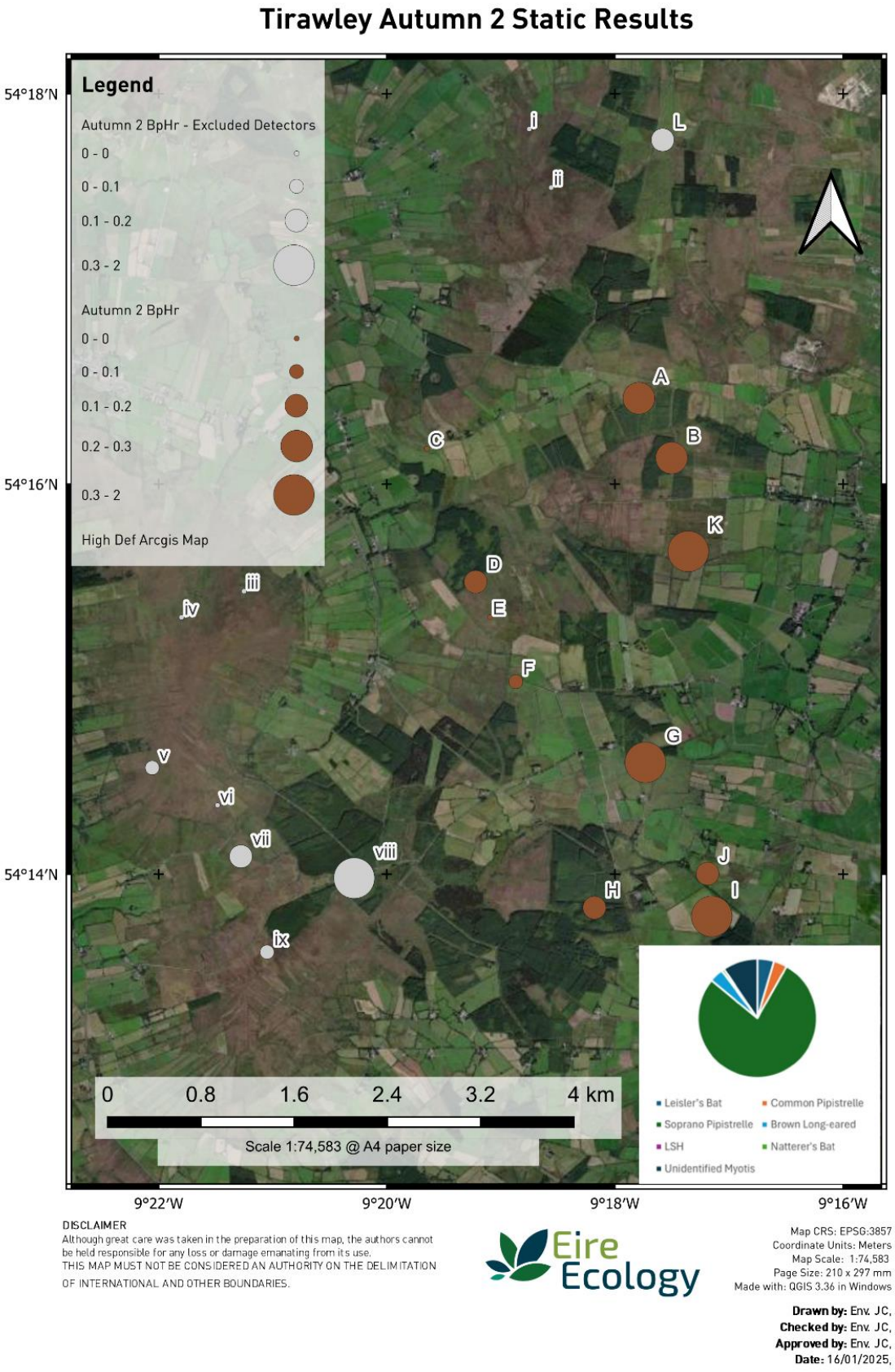

Figure 12-4 Combined October activity rates (Bp/Hr)

Table 12-1: 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 passes per hour	19.4	6.9	11.6	0.0	0.3	0.0	0.1	1.0			
Summer - 22nd to 31st July											

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	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 passes per hour	12.8	2.4	65.3	0.0	0.7	0.0	1.1	4.0			

30th Aug to 08th September

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	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 passes per hour	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 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	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 passes per hour	0.3	0.2	4.7	0.0	0.2	0.0	0.0	0.6			

Table 12-2: 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

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	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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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
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
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

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	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
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

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	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
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
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

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	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

13 BAT BUFFER AERIALS

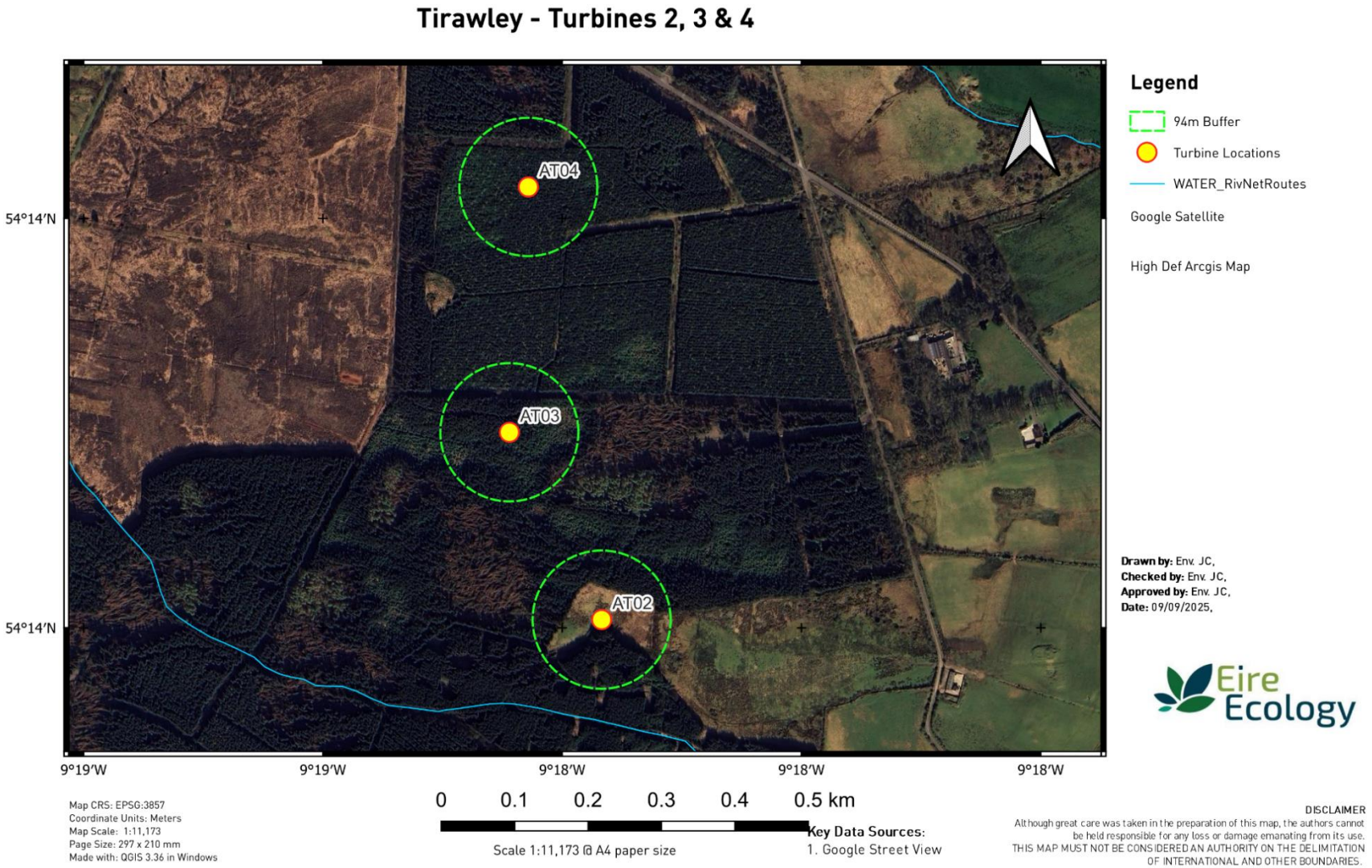

Figure 13-1: Bat Buffers T2, 3, 4

Figure 13-2: Bat Buffers T1, 5 and 6

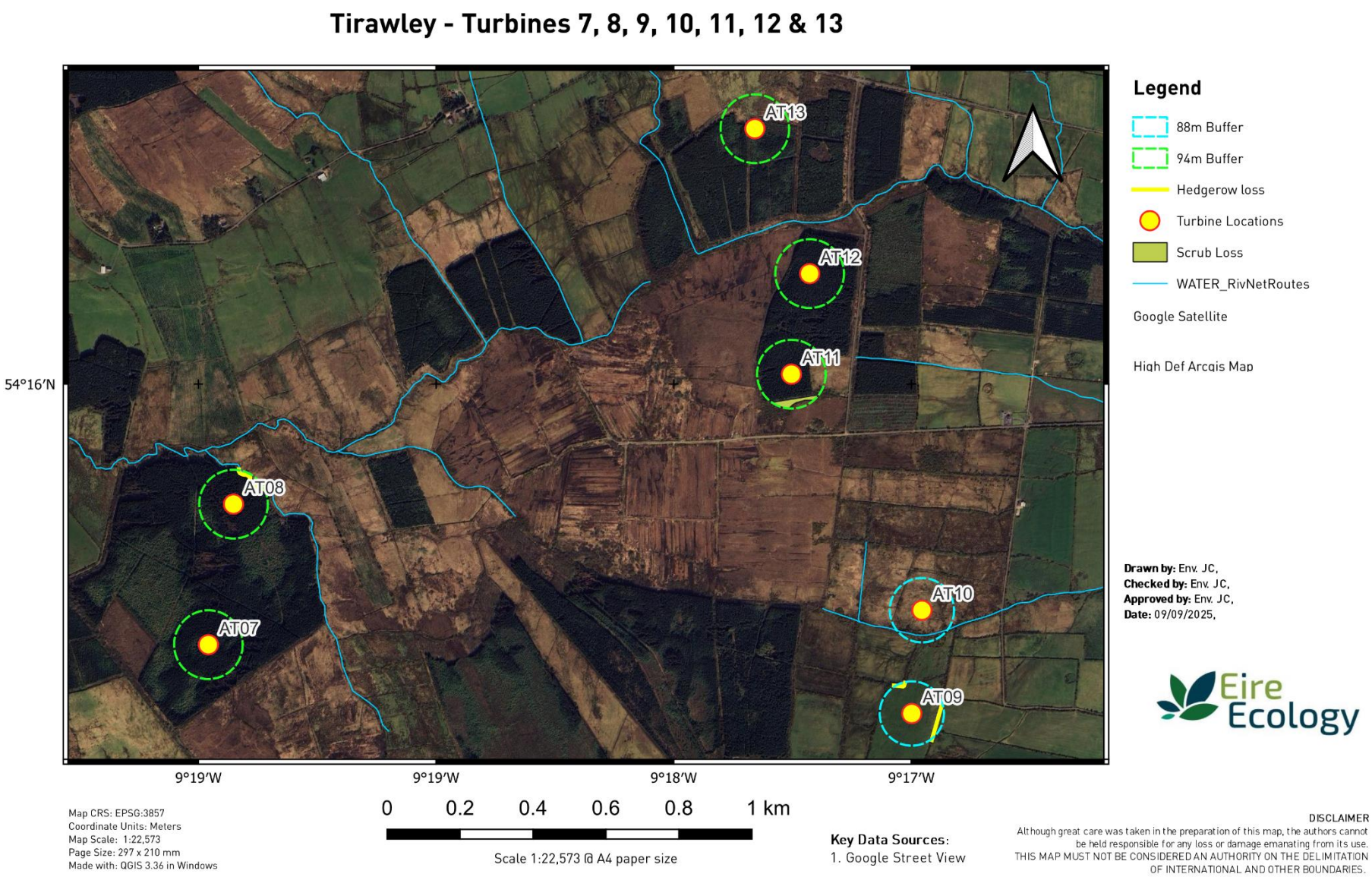

Figure 13-3: Bat buffers T9 to 13.

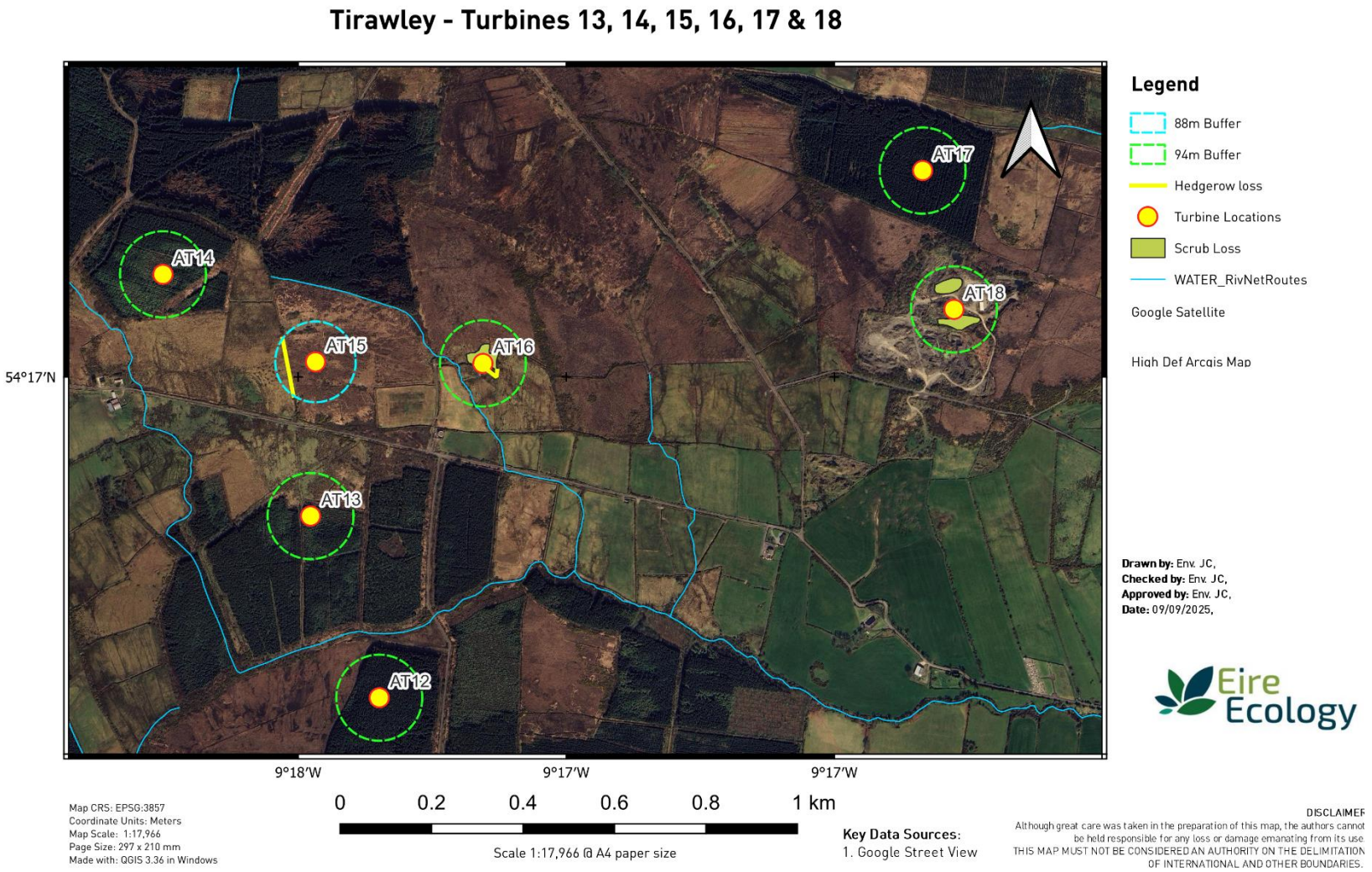

Figure 13-4: Buffers AT11 to AT18 (note some sections of scrub / trees within buffers will be retained and alternative mitigation applied. See table 7-1)

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