Bat Survey Report

Ballincor Wind Farm Co. Offaly & Co. Tipperary.

January 2026

Prepared for: RWE

O'DONNELL ENVIRONMENTAL

CIEEM REGISTERED PRACTICE 2025-2026

QUALITY I.S. EN ISO 9001:2015 NSAI Certified

Summary

Project: Bat survey in relation to the proposed wind farm at Ballincor, Co. Tipperary and Offaly.

Location: 53.035313, -7.946253 (WGS84)

Company Profile: O'Donnell Environmental is an independent environmental consultancy established by Tom O'Donnell in 2019. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards, accountability and the delivery of the best outcomes for biodiversity and our Clients. O'Donnell Environmental maintains an ISO 9001:2015 certified Quality Management System, ensuring consistent quality and customer focus.

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Table of Contents

1 Introduction 4
1.1 Proposed Works 4
1.2 Statement of Competence 6
1.3 Legal Status of Bats 7
2 Methodology 10
2.1 Desktop Review 10
2.2 Potential Roost Assessment 10
2.2.1 Potential Significant Roosts 12
2.3 Bat Activity Surveys 14
2.3.1 Passive Bat Surveys 14
2.3.2 Active Bat Surveys 24
2.4 Data Analysis 24
2.5 Evaluation & Impact Assessment 24
2.6 Survey Limitations 24
3 Results 26
3.1 Desktop Review 26
3.2 Wind Farm Site and GCR 27
3.3 TDR 28
3.4 Potential Roost Assessment 32
3.4.1 Roost Suitability at Proposed Windfarm 32
3.4.2 Roost Suitability along the Grid Connection Route 38
3.4.3 Roost Suitability along Turbine Delivery Route 42
3.5 Bat Activity Surveys 43
3.5.1 Passive data 2020 - 2022 43
3.5.2 Passive Bat Survey 2024 - 2025 46
3.5.3 Emergence Surveys 53
3.5.4 Bridge & Tree Surveys 54
3.5.5 Active Transect Surveys 55
3.6 Ecological Site Evaluation 58
4 Potential Impacts 59
4.1 Potential Cumulative Impacts 59
4.2 Potential Construction Phase Impacts 65
4.2.1 Wind Farm Site 66
4.2.2 Turbine Delivery Route 67
4.2.3 Grid Connection Route 68

4.3 Potential Operational Phase Impacts 68
4.3.1 Collision Risk 68
4.4 Potential Decommissioning Phase Impacts 71
5 Mitigation Measures 73
5.1 Construction Phase Mitigation 73
5.1.1 Wind Farm Site 73
5.1.2 Turbine Delivery Route Mitigation 76
5.1.3 Grid Connection Route Mitigation 76
5.1.4 Regulation 54 Derogation 77
5.2 Operational Phase Mitigation 77
5.2.1 Feature Buffers 77
5.2.2 Lighting 79
5.2.3 Post Construction Monitoring 80
5.3 Decommissioning Phase Mitigation 80
6 Residual Effects 81
7 References 82

Appendices

Appendix A - Weather Data

Appendix B - DNA Analysis Report

1 Introduction

O'Donnell Environmental Ltd. was commissioned by RWE Renewables Ireland Ltd. (RWE) to undertake bat surveys and reporting in relation to a proposed wind energy development in Co. Offaly and Tipperary. The proposed project involves the development of a 11-turbine wind farm at Ballincor, 5km southwest of the town of Birr, Co. Offaly. The proposed includes for a Turbine Delivery Route (TDR) from Foynes to site and a Grid Connection Route (GCR) to Dallow 110kV Substation. Site location maps are presented in **Figures 1.1** and **1.2**.

The aim of the current study was to determine and evaluate the likely importance of the study area and its immediate environs to bats.

1.1 PROPOSED WORKS

The 'proposed project' refers to an eleven turbine wind farm, 110 kV substation, BESS, GCR and the proposed works required on the TDR.

The 'proposed wind farm site' refers specifically to the area enclosed within the wind farm site boundary and includes the wind farm, 110 kV substation and BESS.

The proposed project is described in **Chapter 2 Description of the Proposed Project** and are summarised as follows:

- Assembly of 11 Wind Turbine Generators (including tower sections, nacelle, hub, rotor blades) with an estimated capacity of MW and a blade tip height between 179.5 and 180m, rotor diameter of up to 149 to 163m, hub height of between 98.5 and 105m metres.
    - Associated hardstanding at each turbine location;
    - Turbine foundations;
- Upgrading of existing access tracks, construction of new founded access roads and floating roads within the proposed wind farm. Total length of internal access roads is 9.7 km.
- Construction upgrades of two site entrances on R492 and L1071;
- Erection of 104 m permanent meteorological mast and including lightening pole;
- Installation of new clear span watercourse or drain crossings on proposed wind farm site;
- All associated excavation, earthworks and spoil management, Surface water drainage system and sediment control;
- Three borrow pits (borrow pit 1 to borrow pit 3);
- One peat deposition area;
- Security fencing & hut;
- Four Temporary construction compounds including site office and staff facilities;
    - Parking;
    - Lighting; and
    - Rainwater harvesting equipment;

- Installation of 33 kV medium voltage electrical and communication cabling underground between the proposed turbines and the proposed on-site substation and associated ancillary works;
- 110kV electricity on-site substation and switch rooms;
    - One EirGrid control building containing worker welfare facilities and equipment store, wastewater and rainwater holding tank;
    - One Independent Power Producer (IPP) control building containing HV switch room, site offices, kitchen facilities, storeroom and toilet amenities, wastewater holding tank;
- All electrical plant and infrastructure and grid ancillary services equipment;
- One BESS control building containing worker welfare facilities and equipment store, wastewater holding tank; 90 Battery energy storage system (BESS) container units, inverters, underground water storage tank and associated works;
- Works along the public road and private land for a 12.23 km grid connection to the existing Dallow 110 kV substation including installation of 17 joint bays along the GCR.
- Upgrading of existing access tracks, construction of new founded access roads and floating roads within the proposed wind farm and a founded road for the GCR at Clondallow, Birr, Co. Offaly.
- Electrical and communication cables, linking the turbines to the proposed grid connection point;
- Turbine Delivery Accommodation works, road surfacing works, temporary wall/vegetation removal, load bearing surface will be laid to provide a minimum 4.5 m running width and a 5.5 m clearance width for turbine delivery at Sharavogue cross roads.
- All associated infrastructure and services including site works and temporary construction signage;
- Operational stage site signage;
- All related site works and ancillary development including berms, landscaping, and soil excavation;
- Tree felling (7.2 ha) and hedgerow removal (1.1 km) to facilitate construction and operation of the proposed project;
- Biodiversity enhancement including hedgerow replanting (1.3 km), peatland enhancement, tree planting.

A full description of the proposed project is provided in **Chapter 2** (Description of the Proposed Project) of the Environmental Impact Assessment Report (EIAR).

It is estimated that the construction phase will take approximately 24 months to complete, inclusive of all works proposed along the GCR and TDR. A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm is being sought for the proposed project and does not include elements of the overall proposed project, such as works on the proposed turbine delivery route (TDR). A permanent planning permission is being sought for the proposed grid connection (GCR) and substation as these will remain as a permanent part of the national infrastructure, which will

be operated by the Transmission System Operator, EirGrid and owned by ESB the Transmission System Owner and will remain in place upon decommissioning of the wind farm. Following its operational life, the windfarm will be decommissioned and the decommissioning phase will last for approximately 12 months.

This report assesses the potential for effects on bats as a result of the current proposal. All aspects of the proposed project are considered including temporary and permanent construction works, as well as the potential for effects during the operational phase and decommissioning phase.
The potential effects on bats due to elements of the proposed project include the following:

- Vulnerability of bats to collision with turbines resulting in injury or mortality.
- Loss of features with potential for bat roosting.
- Loss of potential foraging or commuting habitat for bats.
- Displacement of individuals or populations.

1.2 STATEMENT OF COMPETENCE

O'Donnell Environmental is an independent environmental consultancy established by Tom O'Donnell in 2019. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards, accountability and the delivery of the best outcomes for biodiversity and our Clients. O'Donnell Environmental maintains an ISO 9001:2015 certified Quality Management System, ensuring consistent quality and customer focus.

Tom O'Donnell is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Environmental and Earth System Science [Applied Ecology] in 2007 and an MSc in Ecological Assessment in 2009, both from UCC. Tom has over 16 years professional experience in the environmental industry, including working on projects such as windfarms, overhead power lines, roads, cycleways and residential developments. Tom is licensed by NPWS for roost disturbance (Ref: DER/BAT 2023-16) and to capture bats (C25/2023).

Oisín O Sullivan BSc (Hons) is a Senior Ecologist a Qualifying member of the Chartered Institute of Ecology and Environmental Management Oisín has awarded a BSc in Ecology and Environmental Biology at University College Cork in 2020. Oisín has experience in bat surveys for a large variety of projects including wind farms both onshore and offshore, residential and linear infrastructure. Oisín has been licensed by NPWS to disturb (Ref: DER-BAT-2025-191) and handle bat species (C075/2025).

Claire McCarthy BSc (Hons) MSc is a Qualifying member of the Chartered Institute of Ecology and Environmental Management. She was awarded a BSc in Biological, Earth and Environmental Sciences [Zoology] in 2018 and an MSc in Marine Biology in 2022, both from UCC. Claire has contributed to the preparation of EIAR and EcIA reports for renewable energy developments and has experience in preliminary roost assessments and bat activity surveys. Claire is licensed by NPWS for bat roost disturbance (Ref: DER-BAT-2025-42) and photography of all bat species (092/2024).

Colm Breslin BSc (Hons) is a Qualifying member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Biological, Earth and Environmental Sciences [Ecology and Environmental Biology] in 2023 from UCC. Colm has experience in habitat mapping, bat activity surveys and preliminary roost assessments for a variety of windfarm and residential developments. Colm is licenced by NPWS for roost disturbance (Ref: DER/BAT 2024-09), to capture bats (C03/2024), and to photograph bats (008/2024).

1.3 LEGAL STATUS OF BATS

All bat species and their roosting sites are protected under both national and international law. The purpose of this legislation is to maintain and restore bat populations within their natural range. Where human activities have the potential to compromise bat populations, measures are required to be put in place to avoid impacts or compensate and mitigate for those impacts. A grant of planning permission does not constitute a licence or permit to disturb bats or interfere with their breeding or resting places.

The key legislation which provides protection to bats is as follows:

- Wildlife Act (1976) and subsequent amendments which makes it unlawful to intentionally disturb, injure or kill a bat or disturb its resting place without a licence to derogate from Regulation 23 of the Habitats Regulations 1997, issued by National Parks & Wildlife Service (NPWS).
- The EU Habitats Directive (which has been transposed into Irish law with the European Communities (Birds and Natural Habitats) Regulations 2011) seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bat species are listed in Annex IV, while Annex II provides additional protection for the Lesser Horseshoe Bat.

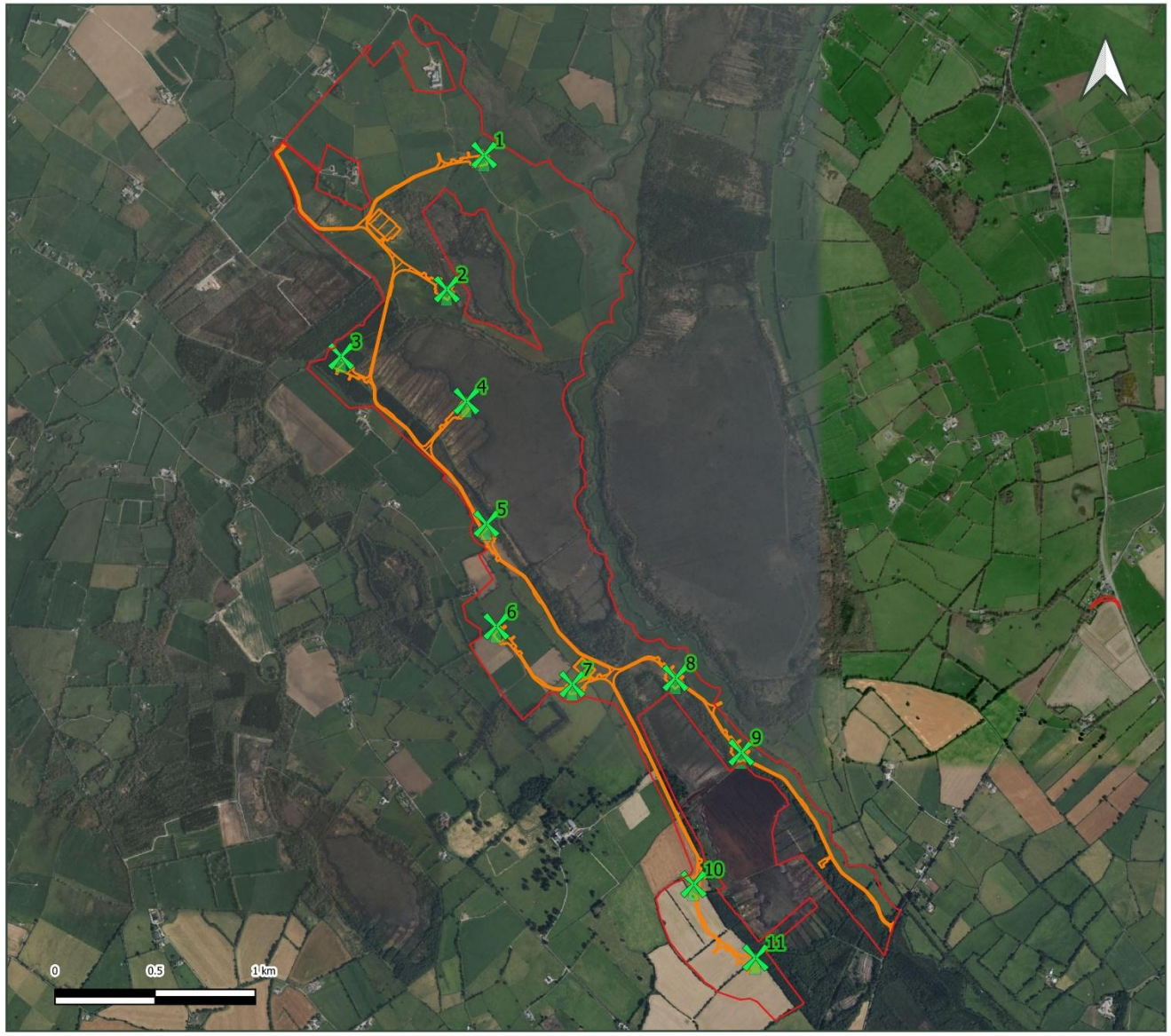

Figure 1.1
Site Layout

Project:
Ballincor Wind Farm

Prepared for:
RWE

Oisín O Sullivan
D: 13/10/2025

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Legend

- Site Boundary
- Site Footprint
- Turbine Locations

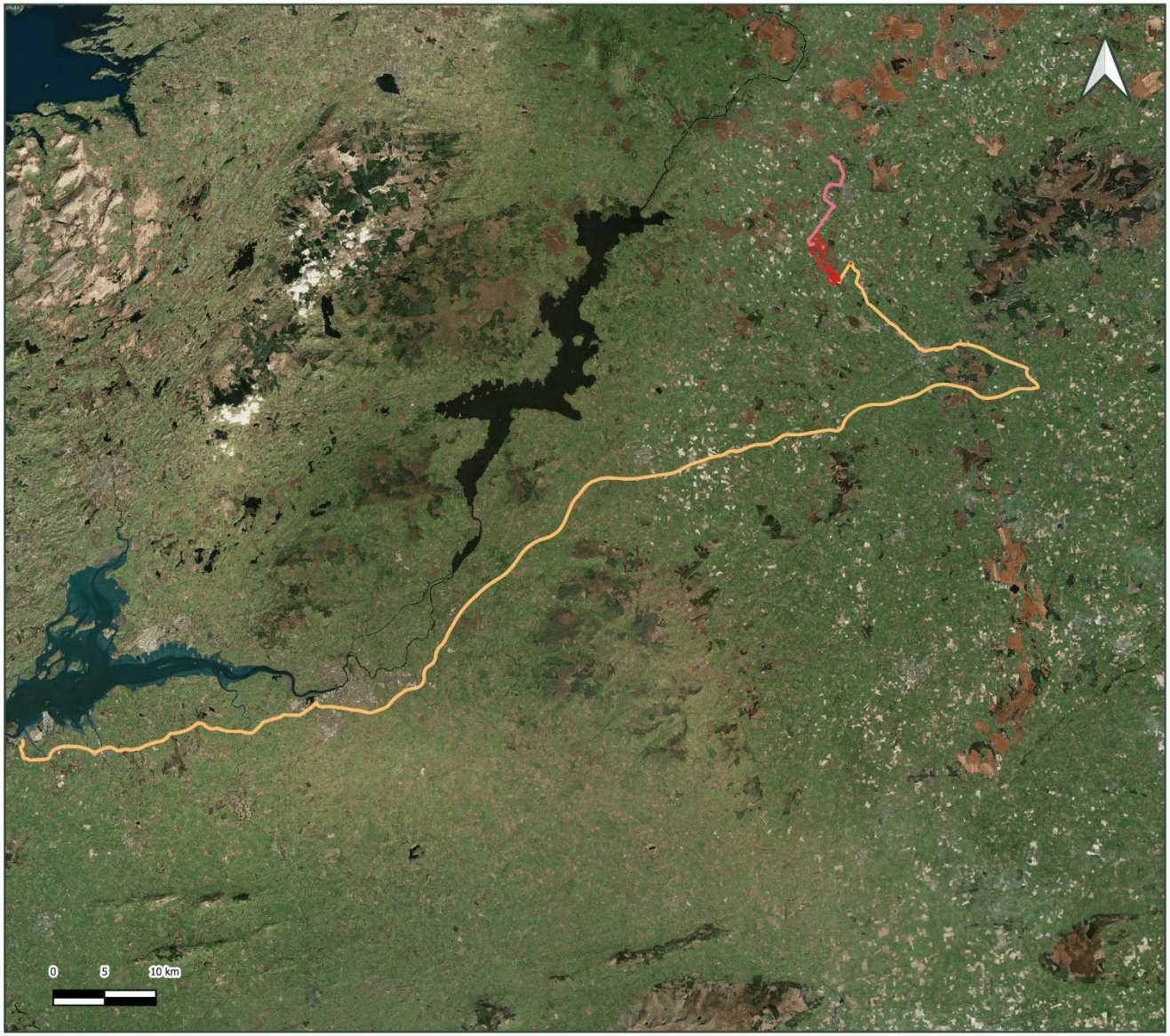

Figure 1.2
Turbine Delivery & Grid Connection Routes

Project:
Ballincor Wind Farm

Prepared for:
RWE

Oisín O Sullivan
D: 13/10/2025

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Legend

- Site Boundary
- GCR
- TDR

2 Methodology

This assessment was carried for a study area which comprises the wind farm site, a GCR and relevant points of interest (POIs) along the proposed TDR. The assessment was carried out through a desktop review, daytime visual inspection of potential bat roosting features and passive detector surveys. Each of these elements are described below.

2.1 DESKTOP REVIEW

A desktop review of publicly available relevant data was undertaken on the National Biodiversity Data Centre (NBDC)[1] and National Parks & Wildlife Service (NPWS)[2] websites. The National Biodiversity Data Centre was reviewed for relevant data, specifically i) existing species records for the 10km square in which the study site is located (S09 & N00) and ii) an indication of the relative importance of the wider landscape in which the study site is located, based on Model of Bat Landscapes for Ireland (Lundy et al., 2011). In the latter, the index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats. A protected species data request was submitted to NPWS for information not otherwise publicly available regarding protected species such as the Annex II (EU Habitats Directive) listed Lesser Horseshoe Bat.

Bat Conservation Ireland (BCI) conducted a search of their records database at the request of O'Donnell Environmental Ltd. on 5th March 2025. The relevant search area included a 30km radius from a central point within the proposed site. Known roost locations in the target area as well as activity records from BCI Volunteer based surveys and ad-hoc activity records submitted by Ecological Consultants were provided. Where roost locations occur in private dwellings the location provided refers to relevant 1km grid square. Consideration was given to the location of the study site to the 'Core Sustenance Zones' (CSZ) of all known bat roosts proximal to the site. When considering development, Collins (2023) states that the CSZ could be used to indicate:

- The area surrounding a communal roost within which development work may impact the flight-paths and foraging habitat of bats using that roost.
- The area within which it may be necessary to ensure no net reduction in the quality and availability of foraging habitat for the colony.
- In the absence of information specific to Ireland, CSZ distances provided in Collins et al., (2023) are considered to be the best available information. CSZ distances for species known to occur in Ireland range from 1km to 4km although these distances are based on limited information in some instances (Collins et al., 2023).

2.2 POTENTIAL ROOST ASSESSMENT

Preliminary Roost Assessment (PRA) and Ground Level Tree Assessment (GLTA) surveys were carried out following Collins (2023). Targeted daytime surveys were carried out by Tom O'Donnell, Colm Breslin, Oisín O Sullivan, and Aisling Natoff on the 18th of August 2022, 31st of July 2024, and 25th of February 2025, to determine the presence of bats or Potential Roosting Features (PRFs) where proposed works may impact directly or indirectly on a PRF. Features inspected included bridges, buildings and trees. Of specific interest are sites which may support significant roosts such as maternity roosts, winter roosting sites and autumn swarming sites.

[1] https://maps.biodiversityireland.ie/Map. Accessed 05/01/2026.
[2] https://www.npws.ie/protected-sites. Accessed 05/01/2026.

Potential roost assessment surveys were non-destructive, and relevant PRFs were visually inspected from ground level to identify any evidence of bat roosting. Further inspections of potential roosting features were carried out using a torch and endoscope and those at height were accessed using a 5-meter ladder where necessary and safely possible. Signs of bat use include bat droppings, feeding remains, potential bat access points identified by characteristic staining and scratches, noise made by bats etc.

The potential suitability of structures for roosting bats was classified according to the guidelines in Collins (2023), see **Table 2.1**. Selected photographs of features surveyed are shown in this section.

Table 2.1. Scheme for describing the potential suitability of structures for bats.

Suitability	Description
None	No habitat features likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

The Daytime Bat Walkover (DBW), of trees present on site follows the categorisations scheme outlined in **Table 2.2 & 2.3.** In line with Marnell et al. (2022), a risk-based approach was adopted in relation to survey of individual trees for the presence of PRFs. Marnell et al. (2022) recommends a risk-based approach, in which trees with a high probability of use by bats should be subject to survey. Factors listed as increasing the probability of trees being used by roosting bats include ancient woodland, large trees with complex growth form, visible damage etc. Factors listed as decreasing the probability of trees being used by roosting bats include "coniferous plantation with no specimen trees" and "young trees with simple growth form and little damage".

Table 2.2. Scheme for describing the potential suitability of PRFs in trees on a proposed wind farm site for bats.

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any.
FAR	Further Assessment Required to establish if PRFs are present in the tree.
PRF	A tree with at least one PRF present.

Following the confirmation of the possible presence of PRFs in trees, the assessment of suitability is further refined during the GLTA, whereby the potential suitability of such PRFs is now categorised according to the system detailed in **Table 2.3**.

Table 2.3. Scheme for describing the potential suitability of PRFs in trees for bats.

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Winter is the optimal season to survey trees for PRFs. In winter reduced leaf cover maximises light penetration and minimises obstruction of vision (BTHK (2018), Collins (2023)). While ground-level tree surveys can confirm the presence of roosting bats, they often cannot conclusively confirm the absence of roosting bats (Collins, 2023). In trees, evidence of recent bat occupation can rapidly disappear. For example, droppings can persist in buildings for many years while they generally do not persist for long in tree roosts.

Tree roosts have been shown to be used in a more transient manner than buildings with many species exhibiting roost switching behaviour (Collins, 2023). For example, Waters et al. (1999) observed roost switching in Leisler's Bats every 2 to 10 days during the active season.

For the above reasons, this report takes a conservative approach when considering bat roosting potential of trees. This approach reflects the fact that any tree with bat potential may be used at some point or another and the conservation importance of multiple roosting opportunities is poorly understood

2.2.1 Potential Significant Roosts

NatureScot et al., (2021) recommends that key roosting features which could support maternity roosts and significant hibernation and/or swarming sites on the wind farm site be identified in a search area extending to 200m plus one rotor radius from the "site boundary". The potential for significant roosts was investigated within an area extending to a minimum of 300m from the 'redline' boundary (as it relates to turbines). Features with potential to accommodate significant bat roosts were identified through examination of OSi historic 6" mapping, aerial imagery as well as ground truthing. Some of the historic features identified no longer exist. Remaining features were surveyed for the presence of bats and their suitability to roosting bats was assessed according to the scheme outlined in Collins (2023). Features considered included bridges, culverts, buildings and trees. Information on known mines and caves was identified through the examination of publicly available information produced by Geological Survey Ireland.

All potentially significant roosting features which required further consideration were identified, consisting of three structures and one tree.

Daytime roost inspection surveys were carried out on bridges with suitability for roosting bats identified along the GCR on 06th August 2025. Daytime roost inspections involved searching for signs of PRFs and any evidence of current or historic roosting by bats thorough inspection of suitable voids and crevices with an endoscope.

Targeted emergence surveys were conducted on three structures and one tree associated with the proposed project during the active bat season in 2025. Two emergence (dusk) surveys were conducted on structures S02 and S04. One emergence (dusk) survey was conducted S05 as it lies outside the search area for specific turbine locations. The goal of the single survey was to identify the presence or

absence of a significant roost. These surveys were conducted by six surveyors, Tom O'Donnell, Colm Breslin, Claire McCarthy, Oisin O Sullivan, Aisling Natoff and Ryan O'Sullivan.
Surveyors were positioned to maximise views of the structures, in combination with night vision aids (NVAs) following best practice guidelines (Collins, 2023). Particular attention was applied to any identified access/egress points noted during previous daytime visual roost assessments. Guide IR Pro 19 thermal imaging cameras were positioned to optimise views of structures, following Collins (2023). Echolocation recordings were made on handheld Echo Touch Meter Pro 2 and Anabat Scout full spectrum recorders. Additionally, WA Song Meter Mini full-spectrum detectors were placed within the viewsheds of night vision aids to correlate any potential emergence with echolocation data. Surveys were carried out during suitable weather conditions. Surveys are detailed in **Table 2.4**, below. Images showing the field of views from camera placements are shown in **Plate 2.1** to **Plate 2.5**.

Table 2.4 – Bat roost survey details.

Date	Survey	Structure/Bridge	From - To Times	Sunrise / Sunset Time	Weather	Surveyors
04/03/2025	Endoscope inspection	B03, B05, B08, B09	NA	NA	NA.	OOS, CB
23/06/2025	Emergence	S02, S04, S05	21:45 – 23:30	22:02	16°C, F2, 7 Oktas, Light intermittent rain	OOS, CB, AN, TOD, CMC
05/08/2025	Emergence	S02, S04	21:00 – 22:45	21:16	13°C, F1, 6 Oktas, No Rain	OOS, CB, ROS
06/08/2025	Endoscope inspection	B03, B08	NA	NA	NA	OOS, CB, ROS

Plate 2.1 – Thermal camera coverage of S02.

Plate 2.2 – Alternate thermal camera coverage of S02.

Plate 2.3 – Thermal camera coverage of S04.

Plate 2.4 – Thermal camera coverage of S05.

Plate 2.5 – Trail camera deployed on tree T716 with PRF-M feature.

On the PRF-M tree ('T716') a trail-camera was deployed covering the primary feature on the tree between 23rd June 2025 and 26th of June 2025 (**Plate 2.5**). A night fox infra-red camera was also deployed on this feature concurrent with the survey carried out on the 5th August 2025.

2.3 BAT ACTIVITY SURVEYS

Bat activity at the proposed wind farm site was investigated through the use of passive bat detection and an active driven transect survey conducted on the GCR

2.3.1 Passive Bat Surveys

A full suite of passive detection surveys was carried out in summer and autumn 2024 and spring 2025 in compliance with NatureScot et al., 2021. Survey data recorded during previous monitoring campaigns between 2020 and 2022 are also discussed and this data provides useful additional context and strengthens baseline understanding of the site.

2.3.1.1 2020 to 2022 Passive Bat Monitoring

An ultrasonic passive detector survey was carried out at the site to record bat activity in the area from which information on species composition, relative abundance and landscape usage could be derived. Surveys were conducted between 2020 and 2022 and while the survey methodology was compliant with NatureScot et al., 2021, not all recording locations used in 2020 to 2022 are particularly relevant to the currently proposed layout. Data from some selected relevant locations were examined. Historic deployments are shown in **Figure 2.2**.

Overlaying the current proposed turbine layout with the position of previous survey points, the previous data provides at least six comparable recording locations (i.e. similar habitat and <200 m from the current turbine location). Turbines with approximate coverage refers to those for which historic data was gathered in similar habitat but >200 m from the current turbine location. In the case of five turbines the nearest historical recording location was too far to provide approximate coverage. The level of coverage of the current turbine in historic data is shown in **Table 2.5**

Table 2.5 - Coverage of surveys between 2020 and 2022.

Turbines covered sufficiently	Turbines with approximate coverage	Turbines not covered
T4	T7	T1
T6	T8	T2
T9		T3
T10		T5
		T11

2.3.1.2 Current Passive Bat Monitoring

The most recent multi-season passive detector survey was carried out from summer 2024 until spring 2025 following NatureScot et al., (2021) guidelines, with modifications for an Irish context, and NIEA (2024).

Based on the proposed project size, a minimum of 10 passive monitoring locations is required to meet the guidance of NatureScot et al., (2021). Passive bat detectors were deployed at 11 monitoring stations within the wind farm site for two seasonal periods in 2024 (summer and autumn) and one seasonal period in 2025 (spring) to record general bat activity in locations corresponding to the proposed design available at the time of deployment (**Figure 2.1**). The likelihood of design changes is acknowledged in NatureScot et al., (2021) and in this instance, one minor change occurred when the proposed position of T4 was moved northeast. This turbine was moved 70 m northeast, however, it remains in similar habitat with no features. For this reason the same recording location was used for consistency of data gathered while still fully contextualising the open bag habitat. Wildlife Acoustic's SM4 full-spectrum bat detectors and Song Meter Mini Bat Ultrasonic full-spectrum detectors were deployed at the locations detailed in in **Figure 2.1**. Detectors were set to record from 30 minutes before sunset until 30 minutes after sunrise and the GPS locations were set on each detector. The detectors automatically adjust their start and finish times based on sunrise and sunset.

The locations of detectors deployed are provided in **Table 2.6** below and shown in **Figure 2.1.** Details of the survey periods are shown in **Table 2.7.**

Table 2.6 Passive Bat Monitoring Survey Locations 2024 - 2025

	Ref.	Latitude	Longitude
2024 / 2025	T01	53.0527884	-7.9471545
	T02	53.0470113	-7.9499932
	T03	53.0436779	-7.9577687
	T04	53.0414920	-7.9494334
	T05	53.0363750	-7.9472123
	T06	53.0314528	-7.9465228
	T07	53.0290130	-7.9406123
	T08	53.0293308	-7.9330477
	T09	53.0261286	-7.9283121
	T10	53.0200892	-7.9316444
	T11	53.0168171	-7.9270489

Individual bats of the same species cannot be distinguished by their echolocation alone and therefore 'bat registrations' are used as a measure of activity. A bat registration is defined as the presence of an individual species echolocation within a recording of maximum 15 seconds duration. All bat registrations recorded during this study follow these criteria, allowing comparison between monitoring stations. It is important to note that bat registrations do not equate to number of individuals.

Based on knowledge of the site from previous years surveys enclosures were constructed at the proposed turbine locations where livestock could potentially interfere with recording for the 2024 and 2025 survey periods. All detectors were deployed at the locations corresponding the design available at the time. (see **Plate 2.6**).

A Davis 'EnviroMonitor' weather monitoring station was erected at a suitable location (53.02512433, -7.93490563) (see **Plate 2.7**), which was considered to record weather conditions representative of those at the proposed site. Relevant parameters (temperature, wind speed, rainfall) were recorded to demonstrate that weather conditions on each survey night were suitable, as set out in the NIEA (2024).

Plate 2.6 – Song Meter Mini Bat Ultrasonic full-spectrum detector deployed at a proposed Turbine location.

Plate 2.7 - Weather station erected at a suitably safe location within the proposed wind farm development site.

Monitoring periods follow guidance in NatureScot et al., (2021) and NIEA (2024). Autumn was chosen as the high-risk period based on the historic data and was subject to the additional 10 nights recording as prescribed in NIEA 2024 guidance. Full recording periods are shown in **Table 2.5**. The minimum number of survey nights for each of the three seasonal surveys was:

- Summer 2024 - 10 nights
- Autumn 2024 - 20 nights
- Spring 2025 - 10 nights

Appropriate weather conditions for bat activity in lowland sites (<200m) are described as temperatures of 10°C and above for most of the survey period, maximum ground level wind speed of 18km/hr and no

heavy rainfall (NIEA, 2024). Appropriate weather conditions prevailed during the three survey periods, for both years. It is considered that appropriate coverage was achieved in the passive bat detection surveys.

Although commonly applied in Ireland, the NatureScot et al., (2021) guidelines 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation' were written for a Scottish context. While survey effort and design are carried out according to the guidelines in this study, the guidelines were adapted to an Irish context in the following ways:

- NatureScot et al., (2021) recommends the use of an online tool, 'Ecobat' to provide a measure of relative bat activity. The tool compares site specific inputted data to a comparator database to provide an interpretation of the level of bat activity compared to other sites in Britain. The tool is not considered to be appropriate for use as yet in an Irish context (data is heavily weighted by data collected in the UK where there are a different range of bat species and differing ecology). In relation to Ecobat, NIEA (2024) states that "*caution should be exercised when using the tool as it has a significant bias towards results from Great Britain and there is a paucity of data from Northern Ireland or Ireland where we have a significantly different species assemblage. Therefore, it is currently unlikely to produce results which accurately reflect the species composition and bat activity levels normally encountered on wind turbine sites in Northern Ireland*". Interpretation of relative activity levels at the proposed site versus other similar sites in Ireland relies on the expertise and experience of the authors.
- Assessment of vulnerability of bats to wind farms, including assessment of collision risk, generally follows the procedure outlined in NatureScot et al., (2021) but with amendments in line with NIEA (2024) to reflect the Irish species assemblage and the different relative abundance of individual species (e.g. Leisler's Bat) in an Irish context.

Table 2.7 Details of passive monitoring periods.

	Date [Night Of]	Sunset	Sunrise	Appropriate Weather	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11
Summer 2024	31/07/2024	21:26	05:50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	01/08/2024	21:25	05:51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	02/08/2024	21:23	05:53		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	03/08/2024	21:21	05:54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	04/08/2024	21:19	05:56	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	05/08/2024	21:17	05:58	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	06/08/2024	21:15	05:59	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	07/08/2024	21:13	06:01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	08/08/2024	21:11	06:03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	09/08/2024	21:10	06:04	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	10/08/2024	21:08	06:06		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	11/08/2024	21:06	06:08	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	12/08/2024	21:03	06:10	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	13/08/2024	21:01	06:11	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Autumn 2024	27/08/2024	06:35	20:31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	28/08/2024	06:37	20:28	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	29/08/2024	06:39	20:26		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	30/08/2024	06:40	20:24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	31/08/2024	06:42	20:21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	01/09/2024	06:44	20:19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	02/09/2024	06:45	20:17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	03/09/2024	06:47	20:14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	04/09/2024	06:49	20:12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	05/09/2024	06:50	20:10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	06/09/2024	06:52	20:07	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	07/09/2024	06:54	20:05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	08/09/2024	06:56	20:02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	09/09/2024	06:57	20:00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	10/09/2024	06:59	19:58		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11/09/2024	07:01	19:55		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓

	Date [Night Of]	Sunset	Sunrise	Appropriate Weather	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11
	12/09/2024	07:02	19:53		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	13/09/2024	07:04	19:50	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	14/09/2024	07:06	19:48	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	15/09/2024	07:08	19:46	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	16/09/2024	07:09	19:43	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	17/09/2024	07:11	19:41	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	18/09/2024	07:13	19:38	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	19/09/2024	07:14	19:36		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	20/09/2024	07:16	19:34	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	21/09/2024	07:18	19:31	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	22/09/2024	07:20	19:29	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	23/09/2024	07:21	19:26	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	24/09/2024	07:23	19:24		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	25/09/2024	07:25	19:21	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	26/09/2024	07:26	19:19	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	27/09/2024	07:28	19:17		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	28/09/2024	07:30	19:14	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	29/09/2024	07:32	19:12	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	30/09/2024	07:33	19:09	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	01/10/2024	07:35	19:07		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	02/10/2024	07:37	19:05	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	03/10/2024	07:39	19:02	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	04/10/2024	07:40	19:00	✓		✓	✓	✓		✓	✓	✓	✓	✓	
	05/10/2024	07:42	18:58	✓		✓	✓	✓		✓	✓	✓	✓	✓	
	06/10/2024	07:44	18:55	✓		✓	✓	✓		✓	✓	✓	✓	✓	
	07/10/2024	07:46	18:53	✓		✓	✓	✓		✓	✓	✓	✓	✓	
	08/10/2024	07:48	18:51	✓		✓	✓	✓		✓	✓			✓	
	09/10/2024	07:49	18:48			✓	✓	✓		✓	✓			✓	
Spring 2025	03/04/2025	07:00	20:10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	04/04/2024	06:57	20:12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	05/04/2025	06:55	20:14		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	06/05/2025	06:53	20:15		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

	Date [Night Of]	Sunset	Sunrise	Appropriate Weather	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11
	07/05/2025	06:50	20:17		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	08/04/2025	06:48	20:19		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	09/04/2025	06:46	20:21		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	10/04/2025	06:43	20:23		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	11/04/2025	06:41	20:24		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	12/04/2025	06:39	20:26		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	13/04/2025	06:36	20:28		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	14/04/2025	06:34	20:30	*	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	15/04/2025	06:32	20:32	*	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	16/04/2025	06:30	20:33	*	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	17/04/2025	06:27	20:35	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	18/04/2025	06:25	20:37		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	19/04/2025	06:23	20:39	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	20/04/2025	06:21	20:40	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	21/04/2025	06:18	20:42	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	22/04/2025	06:16	20:44	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	23/04/2025	06:14	20:46	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	24/04/2025	06:12	20:48	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	25/04/2025	06:10	20:49	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	26/04/2025	06:08	20:51	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	27/04/2025	06:06	20:53	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	28/04/2025	06:04	20:55	✓	✓	✓	✓	✓		✓	✓	✓		✓	

Note 1: ✓ Appropriate weather conditions achieved for lowland sites parameters outlined in NIEA, 2024.

*Note 2: * Weather station interference.*

Note 3: Additionally the redeployment at T11 recorded from 28/04/2025 – 21/05/2025.

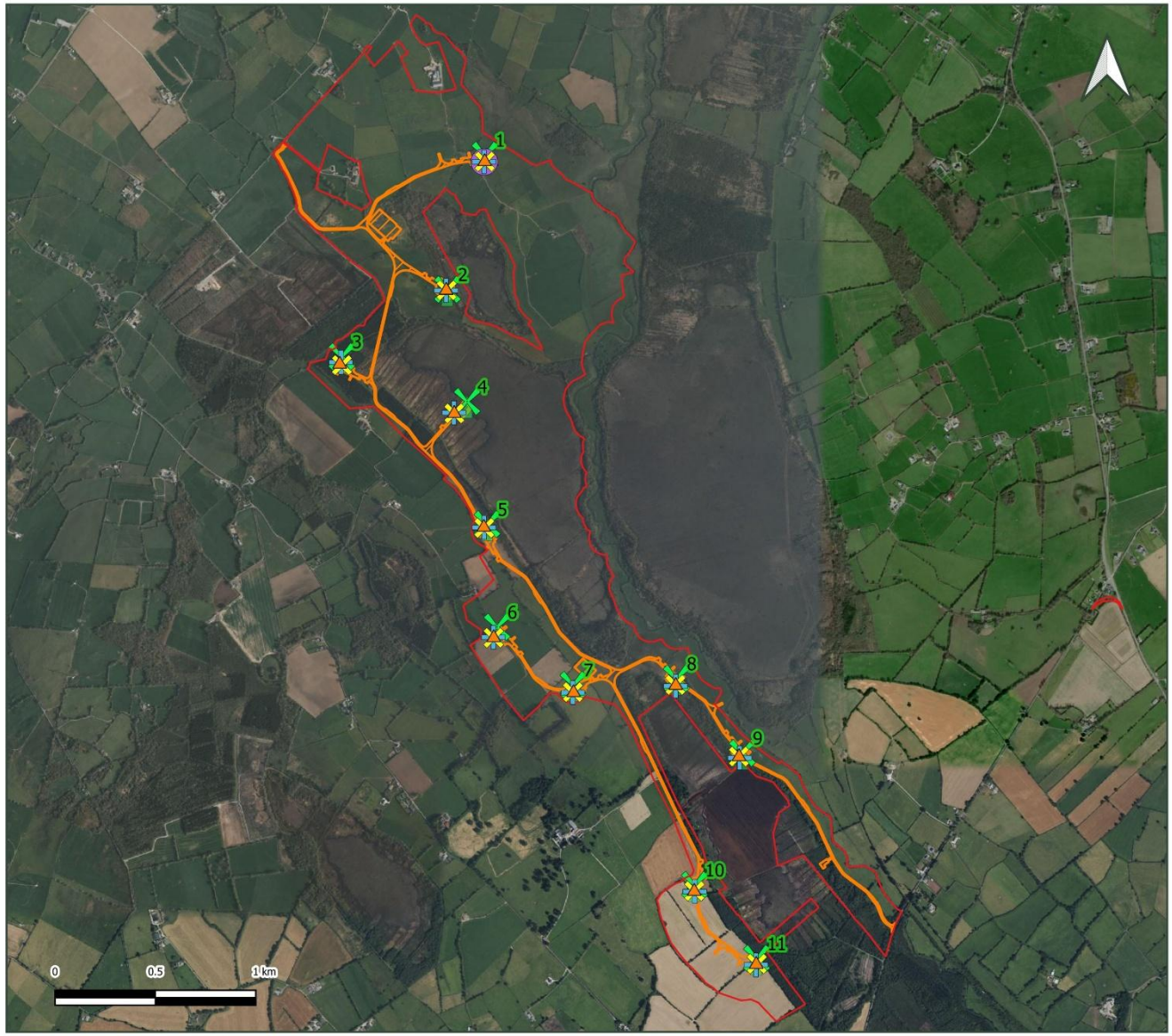

Figure 2.1

Detector Deployment Locations

Project:

Ballincor Wind Farm

Prepared for:

RWE

Oisín O Sullivan
D: 13/10/2025

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O'DONNELL ENVIRONMENTAL

Legend

- Site Boundary
- Turbine Locations
- Site Footprint

2024

- Summer
- Autumn

2025

- Spring
- Weather Station

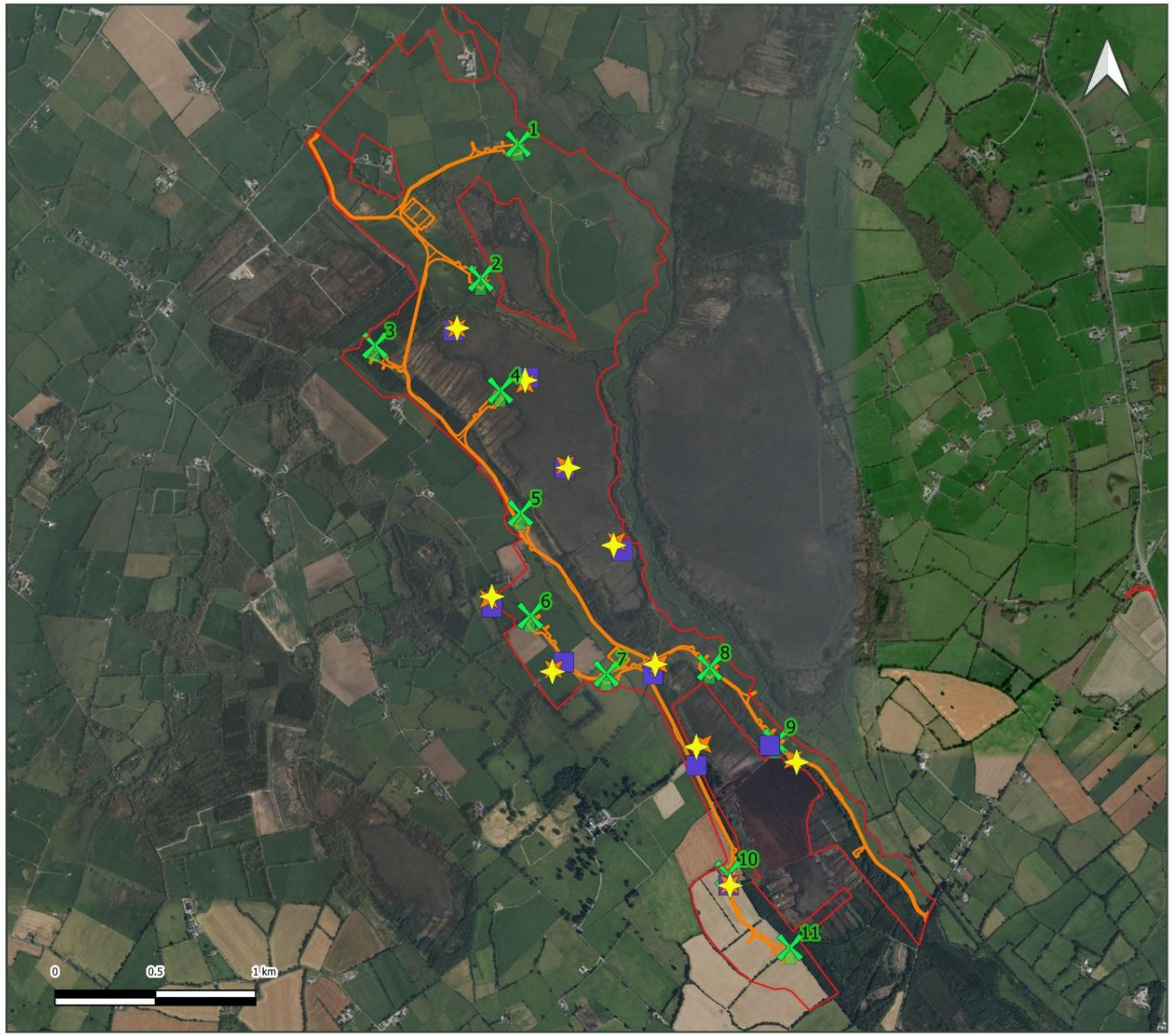

Figure 2.2

Detector Deployment Locations

Project:

Ballincor Wind Farm

Prepared for:

RWE

Oisín O Sullivan
D: 13/10/2025

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O'DONNELL ENVIRONMENTAL

Legend

- Site Boundary
- Turbine Locations
- Site Footprint
- 2022 Deployment
- 2021 Deployment
- 2020 Deployment

2.3.2 Active Bat Surveys

An active bat survey was used to characterise bat activity along the proposed GCR of the proposed wind farm. The active survey was carried out for approximately 1.5 hours from dusk on 22nd September 2025. As this proposed infrastructure is confined to inroad works on public roadways, the zone of influence is generally limited, and this survey effect was considered appropriate and no further surveys were considered to be warranted.

The survey was driven following methodology outlined in Roche et al. (2008). Wildlife Acoustics full-spectrum Echo Meter Touch handheld detector was used to perform the active survey. The location of the active survey routes followed the GCR as shown in **Figure 1.2**.

The 4th Edition of 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Collins 2023) places less emphasis on active bat (transect) surveys as a means to sample bat activity. Such surveys were not considered warranted in 2025 on the wind farm site itself as passive surveys provides suitable coverage of all key habitats.

2.4 DATA ANALYSIS

Species identification was aided by post hoc sonogram analysis using Wildlife Acoustics' Kaleidoscope Professional software (v. 5.4.8) and British Trust for Ornithology (BTO) 'Acoustic Pipeline' sound analysis tool. Automatic identifications were manually verified following the parameters set out in Russ (2012; 2021) and Middleton et al. (2022). Average nightly activity is generated from sub-sampled nights with compliant weather.

2.5 EVALUATION & IMPACT ASSESSMENT

Evaluation of ecological features follows the NRA (now TII) publication 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (2009). Impact assessment follows 'Guidelines on The Information to be Contained in Environmental Impact Assessment Reports' published by the EPA (2022). Reporting generally follows Chartered Institute of Ecology and Environmental Management (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine'.

2.6 SURVEY LIMITATIONS

The grid connection route was surveyed in its entirety. All structures with potential to support significant bat roosts, that could potentially be impacted by the proposed works were suitably surveyed. The section of the TDR along which facilitation works involves the removal of trees was surveyed.

During the spring 2025 deployment the detector at T5 experienced a technical failure after 5 nights of recording. However, given that this is below the requisite number of compliant nights T5 still recorded high levels of activity in sub-optimal conditions. The detector at T9 stopped recording after 15 nights due to interference by livestock. Furthermore, detectors at T1 to T10 recorded for 26 nights collecting 13 nights of compliant data during the deployment period (**Table 2.5**). However, the detector at T11 suffered a technical malfunction after 3 nights, this which was identified in the field and immediately redeployed, recording 21 nights of data in late April to mid-May.

From the 14th April 2025 to 16th April 2025 there was data transmission malfunction with the weather station. This was fixed on the 16th April 2025 after which 10 nights with compliant weather conditions were recorded.

The characterisation of this site is not limited by the technical issues given the level of data gathered across this site during the spring period and with reference to the ecological context established in the extensive 3 years of coverage with historic deployments. Overall, the study was not limited in any significant way.

3 Results

The results of the desktop review and field surveys outlined are presented in detail below.

3.1 DESKTOP REVIEW

The wind farm site itself is not located within any internationally or nationally designated sites. Following NatureScot et al., (2021), a search was undertaken for nationally and internationally designated bat roosting sites within 10km of the proposed wind farm site. Six proposed National Heritage Areas (pNHA) which include bats in their conservation interests are present within 10km of the proposed wind farm site (**Table 3.1**) and are considered relevant to the current assessment. No Special Areas of Conservation (SAC) are considered relevant to the current assessment.

Table 3.1 pNHAs present within 10km of the proposed wind farm site designated for bats.

Site Name	Species	Site Code	Distance (km)*
Birr (Domestic Dwelling No.2, Occupied)	Leisler's Bat	000569	5
Birr (Domestic Dwelling No.1, Occupied)	Leisler's Bat	000568	5.1
Bracken's Dwelling, Near Whiteford	Leisler's Bat	002058	5.2
Miltown, Shinrone	Natterer's Bat	002065	6
St Joseph's Mountheaton	Brown Long-eared Bat	002063	7.5
Drumakeenan National School	Brown Long-eared Bat	002064	7.8

**Where distance is relevant to the closest proposed turbine location.*

National Biodiversity Data Centre (NBDC) holds previous records of bat presence from within the 10km squares (S09 & N00) in which the proposed site and GCR are located. These records are for the following species:

- Brown Long-eared Bat (*Plecotus auritus*)
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Daubenton's Bat (*Myotis daubentonii*)
- Leisler's Bat (*Nyctalus leisleri*)
- Nathusius' Pipistrelle (*Pipistrellus nauthusii*)
- Natterer's Bat (*Myotis nattereri*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Whiskered Bat (*Myotis mystacinus*).

It is important to note that an absence of other bat species records is reflective of a lack of surveys undertaken to date rather than absence of bat species.

The overall bat suitability index value (*31.44*) according to 'Model of Bat Landscapes for Ireland' (Lundy et al., 2011) suggests the landscape in which the proposed site is located is of moderate to high suitability for bats in general. Species specific scores are provided in **Table 3.2**.

Table 3.2 - Suitability of the study area for the bat species according to 'Model of Bat Landscapes for Ireland' (Lundy et al., 2011).

Common name	Scientific name	Suitability index
All bats	-	*31.44*
Soprano pipistrelle	*Pipistrellus pygmaeus*	40
Brown long-eared bat	*Plecotus auritus*	42
Common pipistrelle	*Pipistrellus pipistrellus*	46
Lesser horseshoe bat	*Rhinolophus hipposideros*	4
Leisler's bat	*Nyctalus leisleri*	44
Whiskered bat	*Myotis mystacinus*	27
Daubenton's bat	*Myotis daubentonii*	30
Nathusius pipistrelle	*Pipistrellus nathusii*	3
Natterer's bat	*Myotis nattereri*	47

Available bat records were provided by Bat Conservation Ireland (BCI) from their database of roost locations and other bat records. Details of known roost locations in the target area as well as results from BCI Volunteer based surveys and records submitted by Ecological Consultants were provided and reviewed. The relevant search area consisted of a 30km radius from a central point within the proposed wind farm site. Where roost locations occur in private dwellings the location shown refers to the 1km grid square in which the roost is located. Roost records are summarised in **Table 3.2** and shown in **Figure 3.1**.

Consideration was given to the location of the proposed site relative to the 'Core Sustenance Zones' (CSZ) of all known bat roosts proximal to the site. When considering development, Collins (2023) states that the CSZ could be used to indicate:

- The area surrounding a communal roost within which development work may impact the flight-paths and foraging habitat of bats using that roost.
- The area within which it may be necessary to ensure no net reduction in the quality and availability of foraging habitat for the colony.

In the absence of information specific to Ireland, CSZ distances provided in Collins (2023) are considered to be best available information. CSZ distances for species known to occur in Ireland range from 1km to 4km although these distances are based on limited information in some instances (Collins, 2023). Based on this best available scientific information roost records were considered within a search area extending to 4km from proposed turbine locations and the proposed GCR.

3.2 WIND FARM SITE AND GCR

Nine BCI roost records are present within 4km of the closest turbine and the GCR. The most proximal roost to any proposed turbine is present approx. 1.6km southeast of Turbine 11 (S0694) (see **Figure 3.1**). Species recorded at this roost location are Brown Long-eared Bat, Common Pipistrelle and Soprano Pipistrelle. The proposed wind farm site is located within the CSZs for all species of this roost (Collins, 2023). There is one Brown Long-eared Bat roost recorded approximately 2 km southeast of the site which is part of the BCI Brown Long-eared roost monitoring scheme. A further two Brown Long-eared Bat roosts lie within 2 km of the GCR and TDR. One of these roosts is situated in Borris-in-Ossory, while the other is situated in a structure outside of Birr.

Eight roost records are present proximal to the proposed grid route to Dallow 110kv Substation (**Figure 3.1**). The details of these roosts are shown in **Table 3.3**. The N0505 grid square overlaps the proposed GCR. This roost consists of a Soprano Pipistrelle tree roost within the ground of Birr Castle.

Based on a review of Geological Survey Ireland data there were no mines and caves found within 10 km of the site that could support a potentially significant roost.

3.3 TDR

A 145 km long TDR will be utilised between Foynes Port and the proposed site. Turbine delivery will generally consist of the use of existing roads, but 27 Points of Interest (POIs) have been identified where works will take place. With the possible exception of works at the proposed POIs, the unloading and transport of turbines does not give rise to any potential for new or exacerbated impacts relative to normal usage.

There are 12 BCI roost record records within 4 km of the TDR which are detailed in **Table 3.3**. Species recorded within these roosts include Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, Natterer's Bat, and Daubenton's Bat. The only grid square which the TDR intersects is S1985. This roost consists of a Brown Long-eared Bat roost for which details are private. No dwellings or trees will be impacted along this section of the TDR which is on the M7 motorway.

BCI Volunteer based surveys and activity records submitted by Ecological Consultants (Ad-hoc records) were provided and analysed for the presence of the Annex II (EU Habitats Directive) listed Lesser Horseshoe Bat. No Ad-hoc records of Lesser Horseshoe Bat activity were submitted to the BCI database.

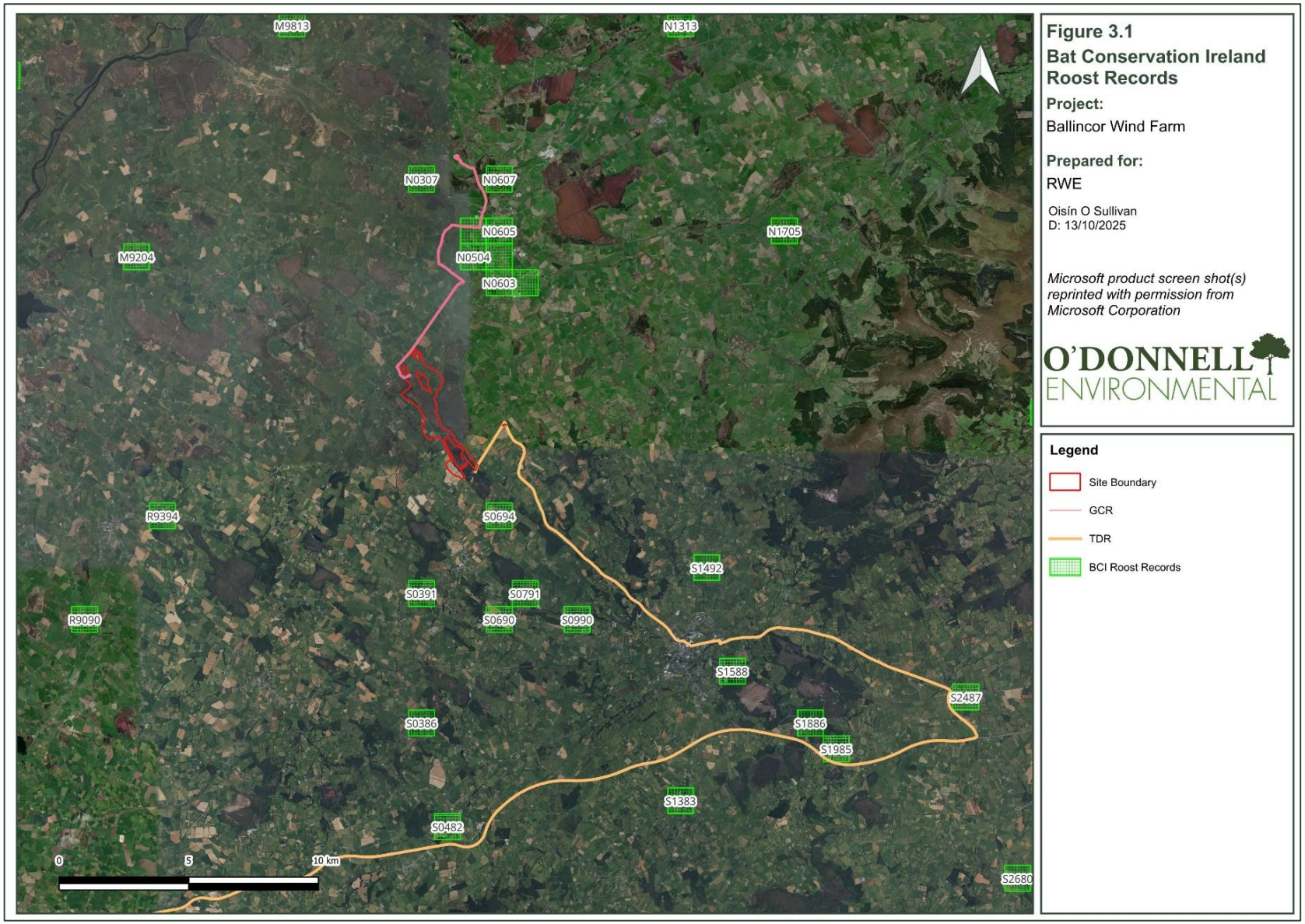
No NPWS records are held for the Annex II listed Lesser Horseshoe Bat within 30 km of the wind farm site boundary (NPWS, 2019).

Table 3.3 – Bat Conservation Ireland bat roost locations within a 30km radius of the proposed windfarm site.

Grid Reference (1km)	Record	Species
S2993	Annagh Bridge	Unidentified bat
R8384	Annaghbeg Bridge	Daubenton's Bat
N0505	Birr Castle Tree Roost	Soprano Pipistrelle
S2798	Cardtown Bridge Roost	Natterer's Bat, Unidentified bat
M9621	Clonfert Cathedral	Brown Long-eared Bat, Natterer's Bat
N0307	Derrinasallow Bridge	Daubenton's Bat
R8398	Drominagh Bridge	Daubenton's Bat
R9394	Eminiska Bridge	Unidentified bat
N2420	Esker II Bridge	Unidentified bat
R7499	Bat Boxes	Soprano Pipistrelle, Common Pipistrelle, Unidentified bat, Leisler's Bat
R7398	Bat Boxes	Soprano Pipistrelle, Common Pipistrelle, Unidentified bat
R7399	Bat Boxes	Brown Long-eared Bat, Unidentified bat, Soprano Pipistrelle, Leisler's Bat, Pip50

Grid Reference (1km)	Record	Species
S0990	Lisnageeragh Bridge	Daubenton's Bat
S2992	Mill Bridge Roost, Derrynaseera Bridge	Daubenton's Bat, Unidentified bat
S0690	Milltown Bridge	Unidentified bat
R8397	Private	Whiskered Bat, Brown Long-eared Bat, Soprano Pipistrelle, Pip50, Natterer's Bat, Myotis spp.
N0604	Private	Whiskered Bat, Leisler's Bat
M8711	Private	Unidentified bat
R7896	Private	Unidentified bat
S0482	Private	Unidentified bat
S3391	Private	Unidentified bat
M8500	Private	Soprano Pipistrelle, Common Pipistrelle, Daubenton's Bat
S0694	Private	Soprano Pipistrelle, Brown Long-eared Bat, Common Pipistrelle
N0603	Private	Soprano Pipistrelle
R7996	Private	Soprano Pipistrelle
R8293	Private	Soprano Pipistrelle
R9090	Private	Soprano Pipistrelle
S2680	Private	Pip50, Common Pipistrelle, Brown Long-eared Bat
M9126	Private	Pip50
M9320	Private	Natterer's Bat, Brown Long-eared Bat, Common Pipistrelle, Soprano Pipistrelle
M8419	Private	Natterer's Bat, Brown Long-eared Bat
N3122	Private	Natterer's Bat, Brown Long-eared Bat
R8368	Private	Natterer's Bat
S0791	Private	Natterer's Bat
S1383	Private	Natterer's Bat
N0504	Private	Leisler's Bat, Daubenton's Bat
M9813	Private	Leisler's Bat
N0703	Private	Leisler's Bat
N1705	Private	Leisler's Bat
R8471	Private	Leisler's Bat
S1588	Private	Leisler's Bat
N2525	Private	Daubenton's Bat, Natterer's Bat
N0605	Private	Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat
M9204	Private	Common Pipistrelle, Brown Long-eared Bat
S3186	Private	Common Pipistrelle
N0607	Private	Brown Long-eared Bat, Whiskered Bat
S1492	Private	Brown Long-eared Bat, Soprano Pipistrelle
S0386	Private	Brown Long-eared Bat, Common Pipistrelle, Leisler's Bat

Grid Reference (1km)	Record	Species
R8392	Private	Brown Long-eared Bat, Common Pipistrelle
S2487	Private	Brown Long-eared Bat, Common Pipistrelle
S3384	Private	Brown Long-eared Bat, Common Pipistrelle
M8915	Private	Brown Long-eared Bat
N1313	Private	Brown Long-eared Bat
N3111	Private	Brown Long-eared Bat
S1886	Private	Brown Long-eared Bat
S1985	Private	Brown Long-eared Bat
S3379	Private	Brown Long-eared Bat
N3222	Private, Charleville Lough Tree Roost	Soprano Pipistrelle, Leisler's Bat
M8504	Private,	Soprano Pipistrelle, Common Pipistrelle, Leisler's Bat, Natterer's Bat, Daubenton's Bat, Brown Long-eared Bat, Whiskered Bat, Whiskered Bat/Brandt's
S0391	Weir Bridge Roost	Brown Long-eared Bat


M9813
N1313
N0307
N0607
N0605
N0504
N0603
N1705
M9204
R9394
S0694
S1492
S0391
S0791
S0690
S0990
R9090
S1588
S2487
S0386
S1886
S1985
S1383
S0482
S2680
0
5
10 km
Figure 3.1
Bat Conservation Ireland Roost Records
Project:
Ballincor Wind Farm
Prepared for:
RWE
Oisín O Sullivan
D: 13/10/2025
Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation
Legend
Site Boundary
GCR
TDR
BCI Roost Records

3.4 POTENTIAL ROOST ASSESSMENT

Surveys were carried out to identify and investigate potential bat roosting features at the following locations:

- Proposed wind farm site (see **Figure 3.2**).
- Proposed GCR to Dallow 110kV Substation. (**Figure 3.3**)
- Proximal to the facilitation works along the proposed TDR (see **Table 3.6** & Abnormal Indivisible Load Route Survey, Pell Frischmann 2023).

During these surveys, all trees and structures (incl. bridges) within the zone of influence of the proposed works were inspected visually. The aim of this survey was to assess suitability for roosting bats in order to identify if a potential for negative effects on any roosting bats which may be present could occur. Preliminary ground level assessment of trees and inspection of structures was carried out following guidance set out in 'Bat Surveys for Professional Ecologists: Good Practice Guidelines', Collins (2023).

3.4.1 Roost Suitability at Proposed Windfarm

Tree roosts are reliant upon the presence of specific features which can provide suitable shelter for roosting bats (BTHK, 2018). PRFs in trees form as a result of disease and decay from pruning, cankers, knot-holes, woodpecker-holes, tear-outs, subsidence cracks, lightning strikes, welds, lifting bark etc.The roosting potential of trees on the proposed wind farm site was considered. Within the wind farm site there were 18 trees classified as PRF-I (**Table 3.4**) and a single tree classified as PRF-M (**Plate 3.5**, **Figure 3.3**).

Features with potential to accommodate significant bat roosts extending to a minimum of a precautionary 300 m from turbine locations, were considered as part of this assessment.

Overall, the desk study identified 13 structures as potential roosting sites on site and in the wider area. Only three structures were identified within the relevant search area (see **Table 3.4**, **Figure 3.2** and **Figure 3.3**). S01 and S05 were outside the zone of influence but were well connected to the site. The structure identified as S03 no longer exists. within the relevant search area. S02, S04, and S05 (**Plates 3.2 – 3.5**) were classified as having moderate or high roost suitability. The structure S.01 was classed as having low roosting suitability (**Figure 3.4; Plate 3.1**). Considering it is a sub-optimal feature not suitable for significant roosting and separation distances from turbine locations involved no targeted surveys were considered warranted. The remaining three structures were targeted for emergence surveys to determine the level of roosting potentially occurring in the structures.

Plate 3.1 Structure S01

Plate 3.2 Structure S02

Plate 3.3 Structure S04

Plate 3.4 Structure S05

Plate 3.5 Tagged PRF- M tree T717

Table 3.4 Suitability of features within or connected to the proposed project for potential roosting bats

Ref	Type		Description	Latitude	Longitude	Suitability
S01	Building		Farm buildings with corrugate metal roof. Exposed to elements and no internal attic space.	53.04119	-7.95613	Low
S05	Building		Historic residence, outside 300m but there is connectivity from this location to site.	53.02244	-7.94174	High
S02	Building		Derelict residence and adjoining agricultural building. Slate roof shed on south. Two story slate roof derelict residence with attic void (middle). Two story corrugated over thatch residence (North) with upstairs section.	53.03351	-7.9483	High
S03	Building		No longer exists.	53.03204	-7.9431	N/A
S04	Building		Intact roof with no discernible light or water ingress. Inaccessible dark loft portion. No obvious evidence of roosting but moderate suitability in terms of structural integrity	53.02845	-7.94304	Moderate
T704	Tree		Mature multi-stem ash. Compression twist from fallen co-dominant stem in recent storm at ground level with fractures throughout. Hollow in main stem at 6m facing south extending approx. 35 cm upwards. Both features inspected fully with endoscope.	53.05244	-7.94794	PRF-I
T705	Tree		Mature single-stem oak. Two tear-offs at 7m facing south with minor fissures. Potential for features to increase in roosting suitability.	53.05234	-7.94688	PRF-I
T706	Tree		Mature multi-stem ash. Co-dominant stem splitting off at base with fissure at ground level. Thick interweaving ivy stems extending up main stem. Minor fissure associated with fallen ancillary	53.05095	-7.9553	PRF-I

Ref	Type		Description	Latitude	Longitude	Suitability
			stem facing south at ground level. Features inspected with endoscope			
T707	Tree		Mature single-stem oak. Large tear-off between 1-4m facing south with associated minor fissures.	53.0509	-7.95487	PRF-I
T710	Tree		Mature single-stem ash. Large fissure at base facing northeast extending upwards into main stem approx. 35 cm. Fully inspected with endoscope. Evidence of bird and wasp activity in cavity.	53.05018	-7.95598	PRF-I
T708	Tree		Mature multi-stem oak. Thick interweaving ivy stems at base facing west.	53.04865	-7.95434	PRF-I
T709	Tree		Semi-mature single-stem oak. Large portions of peeling bark extending up majority of main stem. Accessible portions surveyed with endoscope.	53.04716	-7.95139	PRF-I
T712	Tree		Mature single-stem oak. Two tear-offs at with minor fissures at 3m facing northeast and 6m facing south.	53.03647	-7.94737	PRF-I
T713	Tree		Mature single-stem oak. Minor tear-offs at 5m facing north	53.03657	-7.9471	PRF-I
T714	Tree		Mature single-stem oak. Minor tear-offs at 4-6m facing north. Thick interweaving ivy stems in portions.	53.0366	-7.94698	PRF-I
T711	Tree		Over-mature single-stem ash. Two tear-offs at 6m facing north with minor fissures. Cavity from tear-off at 7m facing east.	53.03501	-7.94634	PRF-I
T715	Tree		Mature single-stem oak Thick interweaving ivy stems. Minor fissure at 8m facing south on ancillary limb.	53.03163	-7.94712	PRF-I
T718	Tree		Mature single-stem oak. Tear-off at 10m facing east with minor fissures.	53.02848	-7.94172	PRF-I
T719	Tree		Mature sweet chestnut, Weld of ancillary stem at 8m facing north which extends into main stem.	53.02844	-7.94168	PRF-I
T717	Tree		Mature single-stem oak. Tear-off at 8m on ancillary stem facing east.	53.02819	-7.9413	PRF-I
T720	Tree		Dead pine. Minor fissure at 8m facing south on ancillary stem. Peeling bark at base.	53.02995	-7.9376	PRF-I
T716	Tree		Mature multi-stem ash. Large weld and associated fissure extending from base to 10m facing southeast. Large cavity entrance associated with fissure at 8m facing southeast.	53.0275	-7.93683	PRF-M
T721	Tree		Semi-mature single-stem birch. Tear-off with open cavity extending into main stem at 7m facing south.	53.02912	-7.9334	PRF-I
T722	Tree		Mature single-stem oak. Tear-off at 6m facing northeast extending into ancillary limb. Weld from previous prune with minor fissures at 5m facing south. Tear-off central within main stem at 6m facing upwards. Tear-off with cavity extending approx. 25 cm	53.01707	-7.927	PRF-I

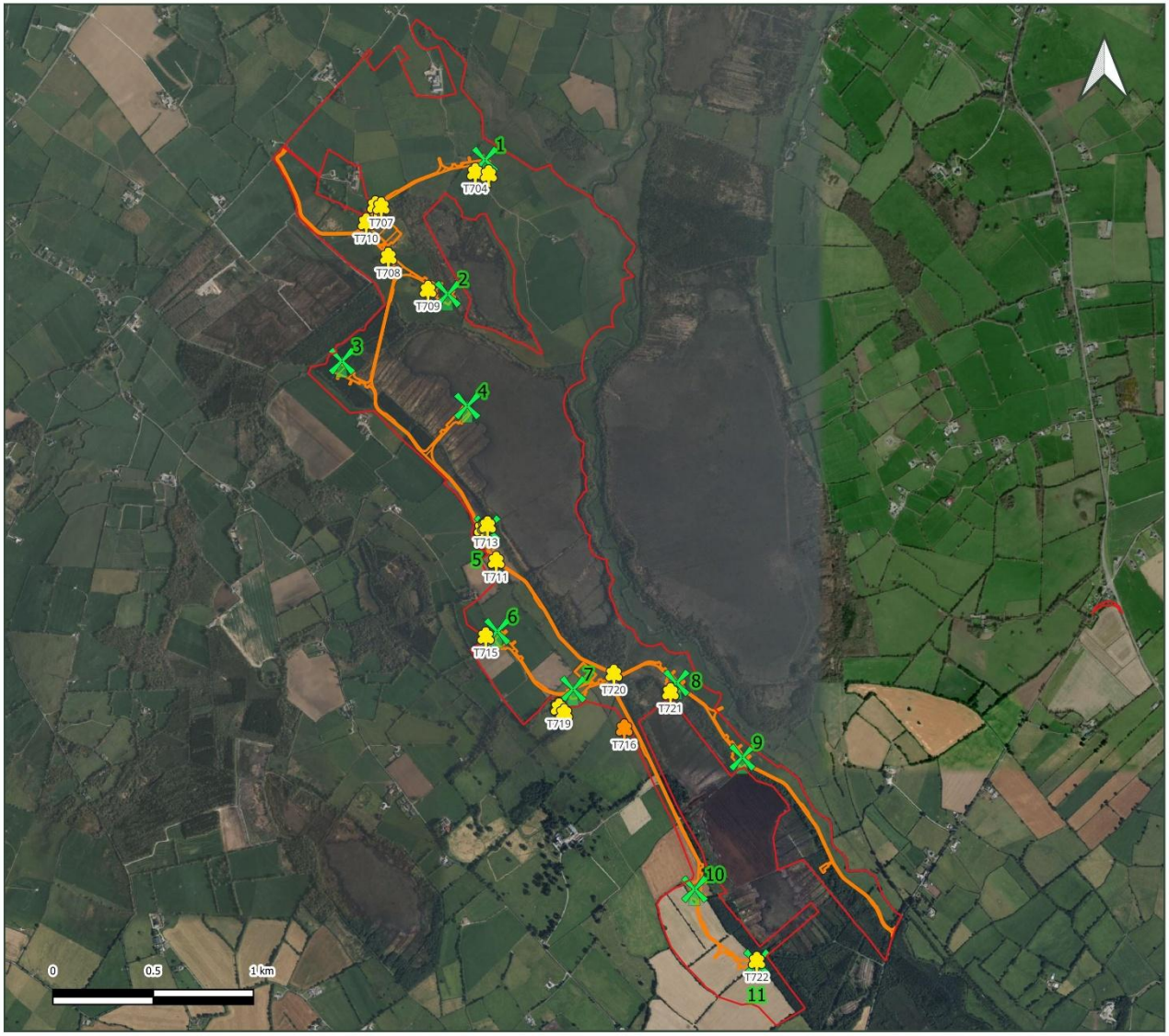


Figure 3.2
PRF Survey Results Trees

Project:
Ballincor Wind Farm

Prepared for:
RWE

Oisín O Sullivan
D: 13/10/2025

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Legend

Site Boundary

Turbine Locations

Site Footprint

Bat Roosting Suitability - Trees

PRF-I

PRF-M

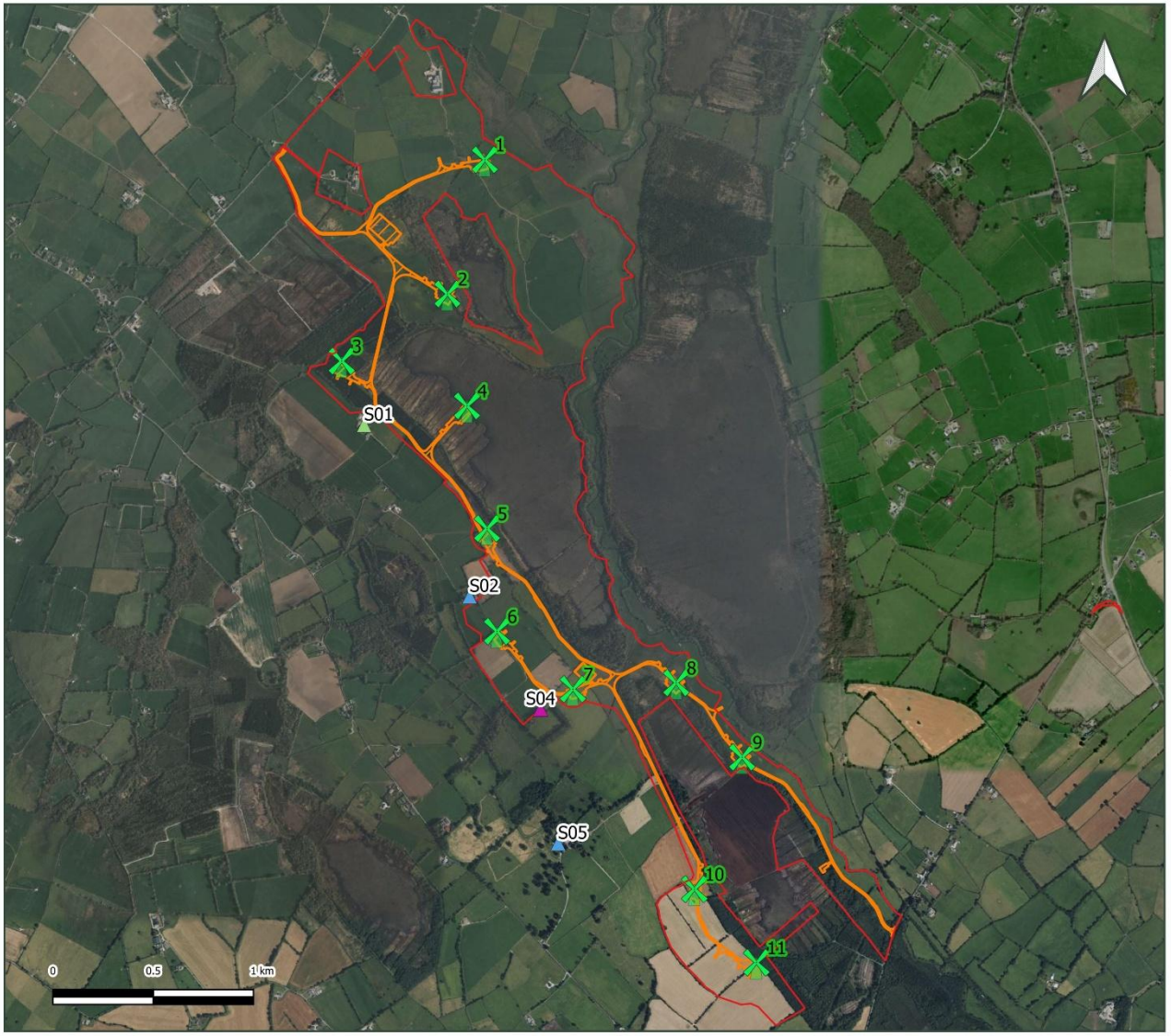

Figure 3.3
PRF Survey Results Structures

Project:
Ballincor Wind Farm

Prepared for:
RWE

Oisín O Sullivan
D: 13/10/2025

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Legend

Site Boundary
Turbine Locations

Bat Roosting Suitability - Structures

High
Moderate
Low

3.4.2 Roost Suitability along the Grid Connection Route

Visual survey and inspection of PRFs which may be directly or indirectly impacted by the proposed grid connection works was carried out. Trees and structures, including bridges, recorded along the GCR were assessed in terms of their suitability to support roosting bats.

Buildings, bridges and other structures can provide bats with ample shelter, stable temperatures and dry conditions considered necessary for the formation of significant roosts (i.e. maternity roosts). Bridges often present suitable crevices for roosting bats which offer suitable conditions and are in an optimal location for foraging bats, being located above a watercourse. Being linear features, river corridors connect habitats within the wider landscape and may be used by bats for commuting. A grid connection to Dallow 110kV Station is proposed and will be approx. 12.23 km in length (see **Figure 3.2**). All structures and trees along the proposed route, thought to have potential to support roosting bats, which might be impacted directly or indirectly by the proposed works were considered as part of this assessment.

The proposed grid route will contain a total of nine bridges and culverts were assessed and are discussed in further detail in **Table 3.5**. None of the bridges were suitable for significant roosting such as maternity roosts or large hibernation roosts. Bridges were assessed as 'Negligible' or 'Low' which classifies them as being suitable at most for individual bats on a transitional basis.

A total of four bridges of low roosting suitability and five bridges of negligible roosting suitability were identified along the GCR. Two PRF-I trees were identified along the grid connection route. These locations are displayed in **Figure 3.5** and **Plates 3.5 - 3.10**.

Table 3.5 – Suitability of potential roost features along GCR

Ref.	Type	Description	Latitude	Longitude	Suitability
T702	Tree	Over-mature multi-stem oak. Dog-leg ancillary limb overhanging GCR with fissure extending up stem at 8m facing north.	53.0987789	-7.9360299	PRF-I
T703	Tree	Over-mature multi-stem oak. Tear off at 6m facing east with minor fissures extending inwards.	53.09541686	-7.93751172	PRF-I
B01	Culvert	Small round culvert. No suitability for roosting bats.	53.1222347	-7.9200707	Negligible
B02	Culvert	Small round culvert. No suitability for roosting bats.	53.1199184	-7.9172272	Negligible
B03	Bridge	Single span masonry bridge with culvert on downstream end. Recent maintenance of upstream arch face and some portions of arch itself. Abundant minor crevices in arch apex, some lead to large voids. Larger crevices lower down.	53.1073997	-7.9125931	Low
B04	Bridge	Three arch masonry bridge. All arches recently 'shot-creted' with no crevices. Some gaps in the north face brickwork west of the river.	53.1017103	-7.9205960	Negligible
B05	Underpass	Single span concrete arch cattle underpass. Some minor crevices along expansion joints but very open.	53.1022654	-7.9288880	Low

B06	Culvert	Small round culvert. No suitability for roosting bats.	53.0849183	-7.9288709	Negligible
B07	Bridge	Single arch dry bridge composed of limestone masonry. Entire arch and face well maintained with no crevices between masonry.	53.0819104	-7.9272503	Negligible
B08	Bridge	Single span concrete arch. Horizontal 10cm gap running along river left side of arch and sidewall. Extends a maximum of 1.5m horizontally.	53.0776364	-7.9324927	Roost confirmed with DNA
B09	Bridge	Single arch concrete span bridge with steel beams. Minor crevices at joints of concrete and steel. Large portion of eastern arch face base has given away with considerable void, of which a portion extends up into bridge.	53.0531161	-7.9629316	Low

Plate 3.5 Tagged tree T702

Plate 3.6 Tagged tree T703

Plate 3.7 Bridge B03

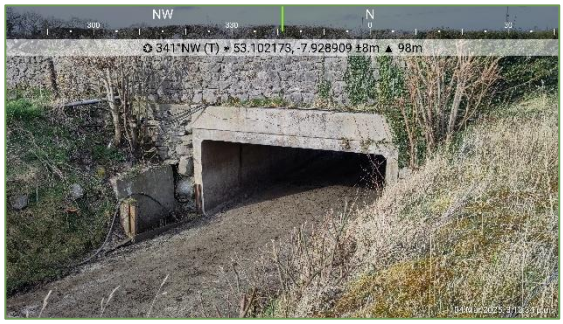


Plate 3.8 Underpass B05

Plate 3.9 Bridge B08

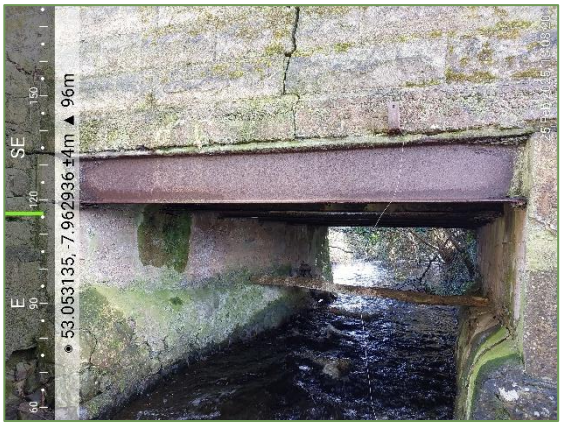
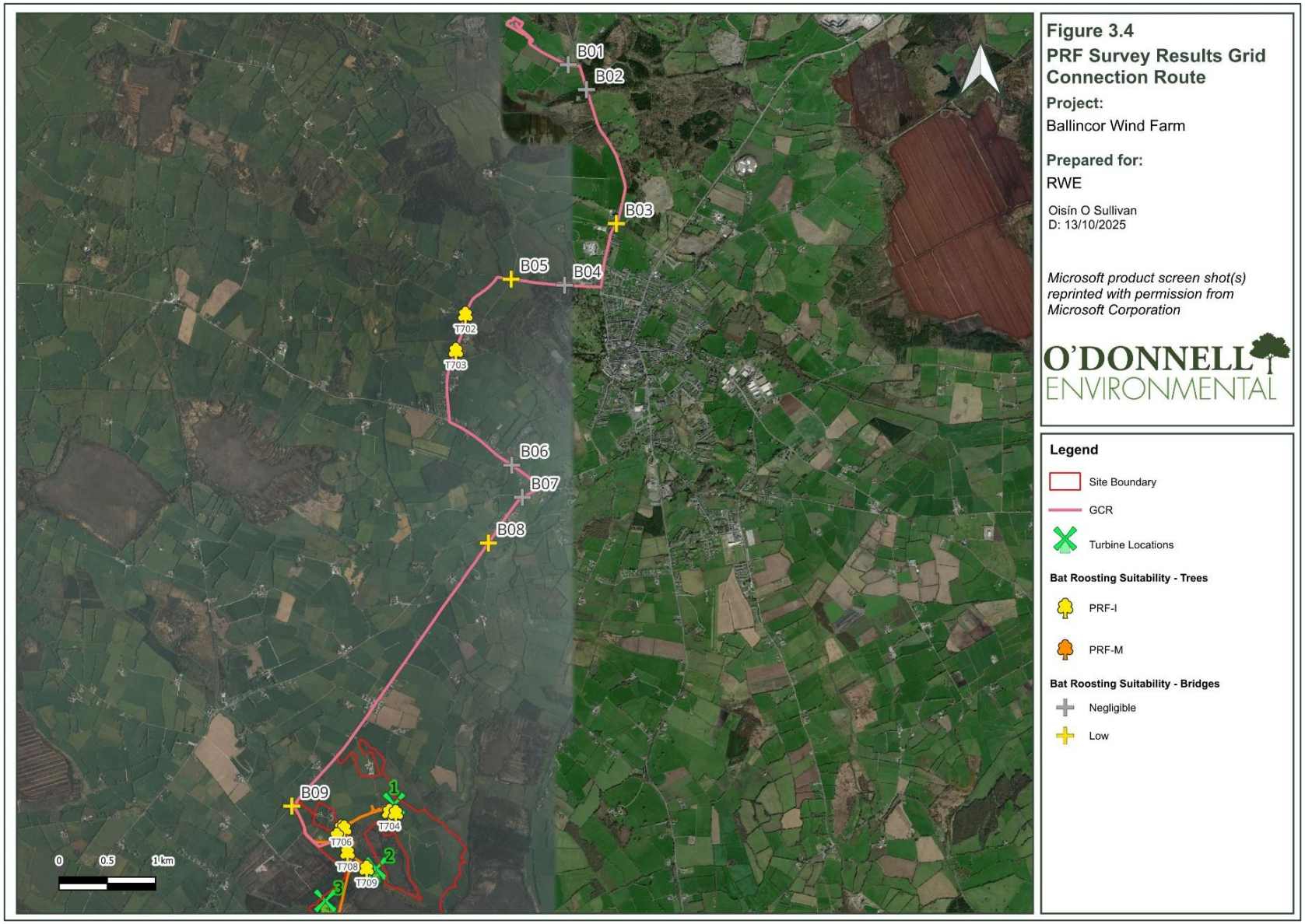


Plate 3.10 Bridge B09


B01
B02
B03
B04
B05
B06
B07
B08
B09
T702
T703
T704
T706
T708
T709
1
2
3
0
0.5
1 km
Figure 3.4
PRF Survey Results Grid Connection Route
Project:
Ballincor Wind Farm
Prepared for:
RWE
Oisín O Sullivan
D: 13/10/2025
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O'DONNELL ENVIRONMENTAL
Legend
Site Boundary
GCR
Turbine Locations
Bat Roosting Suitability - Trees
PRF-I
PRF-M
Bat Roosting Suitability - Bridges
Negligible
Low

3.4.3 Roost Suitability along Turbine Delivery Route

Although not included in the 'redline' boundary, the TDR is an essential component of the overall wind farm development, and the potential impact of associated facilitation works is therefore considered.

A 145 km long TDR will be utilised between Foynes Port and the proposed site. Turbine delivery will generally consist of the use of existing roads, but 27 Points of Interest (POIs) have been identified where works will take place. For the remainder of the route, the proposal consists of the carriage of vehicles along public roads, and no works are proposed.

Visual survey and inspection of PRFs which may be directly or indirectly impacted by the proposed works was carried out.

The zone of influence of the proposed works is limited, confined to the immediate works area and is temporary in nature. Vegetation clearance, trimming, and tree removal is required at 14 locations (**Table 3.6** adapted from the Abnormal Indivisible Load Route Survey, Pell Frischmann 2023).

Table 3.6 Locations along TDR where vegetation removal, trimming or tree clearance is required.

POI	Swept Path Analysis Reference	Works required
POI 3	SK01	Hedgerow clearance
POI 4	SK02	Hedgerow trim
POI 7	N/A	Vegetation trim
POI 9	N/A	Canopy trim
POI 14	SK09	Immature trees removal in centre of roundabout
POI 16	SK10	Immature trees removal in centre of roundabout
POI 17	SK11	Immature trees removal adjacent roundabout
POI 18	SK12	Immature trees removal adjacent roundabout
POI 19	SK13	Immature trees removal in centre of roundabout
POI 21	SK15	Tree removal adjacent roundabout, scoped in for survey
POI 24	SK17	Vegetation trim
POI 25	N/A	Vegetation trim
POI 26	SK18	Hedgerow removal, scoped in for survey
POI 27	N/A	Vegetation removal

Although the proposed works are limited in extent and nature, and temporary, the potential for indirect effects on any PRFs was considered. The relevant features considered in relation to the proposed works at POIs along the TDR consisted of trees and structures. The sections of the TDR assessed for a likelihood of roosting suitability were SK15 and SK18. These locations did not contain trees or structures with bat roost suitability which are proposed for removal to facilitate the delivery of turbine components. No features with above 'negligible' suitability for roosting bats were identified at or proximal to proposed POIs.

3.5 BAT ACTIVITY SURVEYS

Bat activity within the zone of influence of the wind farm site was assessed through the use of passive detection. The results of these surveys are described in detail below.

3.5.1 Passive data 2020 - 2022

As detailed in Section 2.3 passive monitoring was conducted in 2020, 2021, and 2022 active bat seasons. Although no longer directly valid following NIEA (2024) (which specifies a two-year lifespan for bat survey data in the context of onshore wind energy developments) the data is useful contextually to demonstrate any changes or lack thereof in baseline bat activity. The deployment locations relevant to the updated turbine design are outlined in **Section 2.3.1**, **Table 2.4**. A summary of activity levels is presented in **Table 3.7**.

Generally, the data recorded between 2020 to 2022 is consistent with that recorded in 2024 and 2025, and this likely reflects the absence of any significant changes in land-use in the wider area in the intervening period. The following points are a high-level comparison of the historic data and that captured in 2024. They examine the change in 'Maximum Nightly Average' number of registrations with reference to the highest activity level measured across the seasonal deployments. The discussion focuses on the species considered to be at high risk of collision with turbine blades, following NatureScot et al., (2021). Key points of comparison between 2020 to 2022 data, and current data are:

- Leisler's activity recorded historically is similar at all locations to data recorded in summer and autumn 2024 with 'Moderate' or 'Moderate to Low' levels of activity recorded overall.
- Soprano and Common Pipistrelle activity at both T6 and T7 decreased slightly from 'Moderate' (historic data) to 'Moderate-Low' (2024 data) but was 'High' at T8 and T9 in historic data.
- Where turbine locations occur in fields (away from linear features, woodland etc.), the placement of detectors in fenced-off detector deployment locations in 2025/2024 (e.g. at T6 and T7), resulted in lower levels of activity more representative of actual proposed turbine locations and this follows NIEA (2024) guidance on placement of detectors.
- Common and Soprano Pipistrelles had moderate activity levels at T6 in the historic data. Subsequent recordings have not had pipistrelles reach these levels. There are variations in locations where Myotis spp. (Whiskered Bat, Daubenton's Bat, and Natterer's Bat) and Brown Long-eared Bat activity which peaked at 'moderate' but overall, there were no significant differences.

Table 3.7 Results of passive monitoring across 2020, 2021, and 2022

Year	Season	Common Name	T4	T6	T7	T8	T9a	T10
2020	Autumn	Soprano Pipistrelle	3.27 [10]	155.00 [790]	41.09 [151]	248.55 [630]	0.36[2]	59.18 [199]
		Common Pipistrelle	3.00 [13]	71.27 [363]	16.09 [93]	49.55 [210]	4.73[29]	69.91 [389]
		Leisler's Bat	12.82 [49]	3.18 [8]	2.64 [7]	3.36 [7]	1.91[4]	89.91 [775]
		Nathusius' Pipistrelle	0.09 [1]	0.00 [0]	0.00 [0]	0.00 [0]	1.09[4]	1.55 [13]
		Daubenton's Bat	0.18 [3]	3.27 [7]	1.55 [5]	10.36 [19]	0.18[1]	0.55 [3]
		Natterer's Bat	11.18 [37]	2.73 [7]	2.55 [6]	2.55 [6]	0.27[2]	1.45 [4]
		Brown Long-eared Bat	0.55 [3]	3.09 [14]	1.82 [7]	0.91 [3]	22.00[98]	3.00 [8]
		Whiskered Bat	0.00 [0]	0.64 [3]	0.27 [2]	4.09 [12]	0.36[2]	0.18 [1]
2021	Spring	Soprano Pipistrelle	2.27 [8]	1.36 [5]	9.27 [35]	2.64 [9]		
		Common Pipistrelle	3.27 [6]	2.09 [5]	12.00 [34]	13.82 [43]		
		Leisler's Bat	31.18 [143]	5.82 [16]	8.91 [17]	8.18 [20]		
		Nathusius' Pipistrelle	0.00 [0]	0.09 [1]	0.00 [0]	0.00 [0]		
		Daubenton's Bat	0.27 [2]	0.27 [1]	1.00 [2]	0.45 [1]		
		Natterer's Bat	0.09 [1]	0.09 [1]	1.09 [3]	0.36 [2]		
		Brown Long-eared Bat	0.00 [0]	0.00 [0]	0.64 [1]	0.18 [1]		
		Whiskered Bat	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]		
	Summer	Soprano Pipistrelle	4.82 [15]	65.27 [190]	30.00 [105]	7.27 [24]	136.91 [533]	63.09 [260]
		Common Pipistrelle	5.45 [19]	45.55 [72]	31.40 [72]	107.73 [419]	126.18 [493]	68.91 [246]
		Leisler's Bat	41.55 [78]	21.45 [45]	23.10 [58]	104.18 [238]	43.73 [77]	31.36 [113]
		Nathusius' Pipistrelle	0.18 [1]	0.09 [1]	0.00 [0]	0.00 [0]	5.27 [46]	0.55 [4]
		Daubenton's Bat	0.09 [1]	1.36 [4]	2.00 [7]	2.82 [8]	6.00 [19]	0.55 [3]
		Natterer's Bat	0.09 [1]	1.00 [4]	0.80 [4]	2.09 [8]	1.00 [9]	0.09 [1]
		Brown Long-eared Bat	5.73 [18]	5.91 [15]	0.50 [3]	2.73 [9]	1.45 [5]	0.45 [2]
		Whiskered Bat	0.00 [0]	0.18 [1]	0.00 [0]	0.00 [0]	0.18 [1]	0.27 [1]
	Autumn	Soprano Pipistrelle	7.20 [22]	185.00 [468]	14.70 [37]	12.36 [35]	1.73[6]	19.18 [92]
		Common Pipistrelle	4.20 [15]	146.71 [394]	12.30 [102]	27.73 [74]	120.00[988]	24.73 [132]
		Leisler's Bat	5.20 [13]	4.57 [8]	1.70 [13]	23.91 [69]	12.55[38]	1.64 [6]
		Nathusius' Pipistrelle	0.00 [0]	0.14 [1]	0.00 [0]	0.00 [0]	5.91[30]	0.00 [0]

Year	Season	Common Name	T4	T6	T7	T8	T9a	T10
		Daubenton's Bat	0.00 [0]	4.71 [9]	0.30 [1]	1.09 [4]	6.45[64]	0.09 [1]
		Natterer's Bat	0.70 [3]	3.71 [6]	0.20 [1]	1.18 [3]	3.45[8]	0.09 [1]
		Brown Long-eared Bat	1.18 [3]	4.14 [8]	0.20 [1]	2.36 [7]	104.55[383]	0.91 [2]
		Whiskered Bat	0.00 [0]	0.43 [1]	0.00 [0]	0.00 [0]	3.27[6]	0.18 [1]
2022	Spring	Soprano Pipistrelle	4.00 [12]	49.64 [145]	27.73 [109]	12.55 [26]	51.91 [215]	17.30 [48]
		Common Pipistrelle	5.56 [21]	176.55 [509]	19.64 [58]	58.27 [185]	26.18 [77]	53.70 [193]
		Leisler's Bat	37.78 [99]	10.73 [23]	4.09 [7]	11.36 [27]	6.91 [16]	15.60 [37]
		Nathusius' Pipistrelle	0.00 [0]	0.18 [1]	0.00 [0]	0.00 [0]	0.73 [3]	0.00 [0]
		Daubenton's Bat	0.22 [1]	1.91 [4]	1.55 [6]	1.55 [4]	3.82 [11]	0.30 [1]
		Natterer's Bat	0.00 [0]	1.73 [5]	2.00 [5]	1.36 [4]	1.09 [6]	0.30 [1]
		Brown Long-eared Bat	0.33 [1]	1.91 [4]	0.00 [0]	0.45 [2]	0.18 [1]	0.30 [1]
		Whiskered Bat	0.00 [0]	0.09 [1]	0.00 [0]	0.09 [1]	0.09 [1]	0.00 [0]
	Summer	Soprano Pipistrelle	14.00 [32]	146.64 [295]	32.55 [71]	604.40 [1048]	1129.00 [1338]	25.89 [62]
		Common Pipistrelle	14.00 [54]	324.36 [1126]	24.00 [53]	881.20 [1655]	787.00 [1037]	74.22 [217]
		Leisler's Bat	38.91 [104]	23.55 [50]	15.55 [25]	61.00 [110]	20.67 [24]	4.00 [8]
		Nathusius' Pipistrelle	0.18 [1]	0.09 [1]	0.00 [0]	0.00 [0]	2.00 [5]	0.00 [0]
		Daubenton's Bat	0.27 [1]	3.18 [9]	0.73 [3]	13.20 [38]	29.00 [47]	0.78 [2]
		Natterer's Bat	6.36 [14]	3.64 [8]	2.18 [6]	7.20 [11]	11.67 [19]	2.89 [7]
		Brown Long-eared Bat	1.27 [3]	6.91 [12]	1.82 [4]	4.20 [9]	3.33 [4]	1.22 [4]
		Whiskered Bat	0.09 [1]	1.36 [3]	0.00 [0]	3.60 [8]	12.33 [22]	0.11 [1]

(Note: Data is presented as "average [peak]" where average is the average number of registrations per night on 10 selected nights from each season. Peak data represents the maximum number of nightly registrations from any night in the relevant recording period).

3.5.2 Passive Bat Survey 2024 - 2025

Ultrasonic detector surveys were carried out at the proposed wind farm site from summer 2024 to spring 2025 to record bat activity in the area, from which information on species composition, relative abundance and landscape usage could be derived. The surveys were carried out at 11 monitoring locations.

Overall, a 'moderate to high' level of activity was recorded at the site in terms of total registrations. A total of 8 bat species were recorded (possibly nine as Whiskered Bats and Brandt's Bats are indistinguishable through ultrasonic detection). Activity was categorised as 'high' at three locations for Soprano Pipistrelle in summer and one location in autumn. Common pipistrelle activity was 'high' in six locations during both summer and autumn deployments in 2024. The highest average activity recorded per night was 1,179 registrations recorded for Common pipistrelles at T5 in autumn. Leisler's bat activity was assessed as having 'moderate' activity in three locations in summer and one location in autumn. Activity in Spring 2025 was recorded as high at three locations for Common Pipistrelle and one location for Soprano Pipistrelle. Matching the results recorded in 2024, the highest level of average nightly activity was recorded at T5 for Common Pipistrelles at 508.5 registrations. Leisler's Bat activity was moderate at four locations in spring 2025.

Monitoring locations in 2024 and 2025 for all turbines were considered representative of the habitats within which the turbines will be located with all detectors within 15 m of turbine locations with the exception of T4 deployed 70 m southeast in similar habitat to maintain comparability with previous surveys. The results of passive monitoring are presented in **Table 3.8**. The total count of registrations recorded in 2024 was 158,472, with the highest level of activity recorded in autumn at T5 (peak = 3,967), with a nightly average of 2,338.86. Of all turbine locations activity was lowest at T2 in spring with a nightly average of 45.85 registrations, peaking at 85. The total count of registrations recorded in 2025 was 50,865. The highest peak of activity was recorded at T11 (peak = 2,226) with a nightly average of 719.60. The lowest activity in 2025 was recorded at T6 at a peak of 98 registrations recorded and a nightly average of 40.64.

Four species comprised the majority of registrations across the site and across all survey seasons. These species include Common Pipistrelle (50.5%), Soprano Pipistrelle (35.1%), Leisler's Bat (9.5%), These species are all considered common and widespread within and Irish context and are largely considered generalist foraging species, despite their general avoidance of peatland habitat (Roche et al., 2014; Lundy et al., 2011). All other species accounted for less than 5% of total registration: Natterer's Bat (1.82%), Brown Long-eared Bat (1.53%), Whiskered Bat (0.84%), Daubenton's Bat (0.69%), Nathusius' Pipistrelle (0.05%), and *Myotis* sp. (0.01%). These species were also not present across all location in all seasons.

3.5.2.1 Summer 2024 Passive Monitoring Survey

A high level of species diversity was recorded during the summer 2024 monitoring period, with a total of eight species confirmed (with a small subset of calls being classified to a genus level in the case of *Myotis* spp., n = 3). A high level of activity was recorded across the 14-night survey with a nightly average of 3,675.14 registrations recorded. This was primarily a result of high Pipistrelle species activity. T8 accounted for 25.8% of all activity recorded during this period. T5, T9, T10, and T11 accounted for between 12% - 14% each during this period. T3 accounted for 8.3% of activity, while the remaining locations accounted for less than 4% each.

Common Pipistrelle was the most abundantly recorded species at each of the monitoring stations and accounted for 55.9% of all registrations recorded during the summer season. Common Pipistrelle nightly average activity was 2,054 registrations. Common Pipistrelle activity was highest at monitoring stations at T5 and T8, accounting for 18.3% and 29.4% of all Common Pipistrelle registrations recorded respectively. A peak of 1,319 Common Pipistrelle registrations was recorded at T8 on the 12th August, the highest peak of any species recorded during the summer recording period.

Soprano Pipistrelle was the next most commonly recorded species, accounting for 31.5% of all recorded registrations. A nightly average of 1,157 registrations was recorded during the season. 23.5% of all Soprano Pipistrelle registrations were recorded at T8 and 20.3% were recorded at T9. These were the two locations with the highest Soprano Pipistrelle activity recorded this season. Soprano Pipistrelle activity also peaked at T8 with 723 registrations recorded on 11th August.

Leisler's Bat were recorded as the third most common species across the site accounting for 9.54% of all registrations recorded during this passive monitoring season. A nightly average of 350.5 Leisler's Bat registrations were recorded for this monitoring period across all monitoring stations. The nightly average ranged from 17.00 to 86.10 nightly registrations across recording locations. The highest activity was at T1 (mean 86.10 nightly registrations and a peak of 149).

Natterer's Bat was recorded at all monitoring stations. Two peaks in Natterer's activity were recorded at T3 and T8, at which 21.1% and 26.6% of all Natterer's registrations in this season were recorded. On average, across all monitoring stations, 25.8 Natterer's Bat registrations were recorded per night. Nathusius' Pipistrelle was recorded at three locations, with a total of only 11 registrations and a nightly average of 1.8 registrations. Nathusius' Pipistrelle activity was limited to T3 (9 registrations), T6, and T7 (1 registration at each). Nathusius' Pipistrelle is also considered to be of relatively high risk of collision with wind turbine blades.

Brown Long-eared Bat registrations were recorded at all locations. This species is often underrepresented in ultrasonic detection surveys due to their weak echolocation call, which is often only detected within 5m of an individual (Russ, 2012). A nightly average of 36.3 registrations was recorded during the summer season. The locations with the highest activity for this species were T5, T6, and T8 accounting for 18.9%, 16.1%, and 18.3% of this species activity. Low levels of Daubenton's Bat activity were recorded this monitoring season across all locations, with a nightly average of 18 registrations. Whiskered Bat was recorded sporadically as individual or two passes at T2, T4, T5, and T6. There were two locations with notably higher levels of whiskered bat activity; T3 and T8. These locations recorded 35.5% and 58.4% of the calls for this species respectively (n=445). Together these five species accounted for <3.1% of all registrations recorded.

3.5.2.2 Autumn 2024 Passive Monitoring Survey

A high level of species diversity was recorded during this monitoring period, with a total of eight species confirmed (5 registrations being classified to a genus level in the case of *Myotis* spp.). A total of 75,496 bat registrations were recorded across the 20-night survey and a nightly average of 3,774.8 registrations. Activity levels recorded at T5 were highest for this season (36% of all registrations), T3, T9, and T11 accounted for 10% - 11% of registrations each. This autumn monitoring recorded a higher nightly level of activity than the summer deployment.

Common pipistrelle was the most active species recorded during this season, accounting for 50.16% of all registrations. T5 accounted for 35.7% of all Common pipistrelles recorded in this period. T3 and T8 to T11 accounted for 10% - 15% each of Common Pipistrelle activity. All other locations accounted

for 5% of seasonal Common Pipistrelle activity. Mean nightly passes for Common Pipistrelles were 1,893.5 for the autumn period, constituting high activity levels. The peak in Common Pipistrelle activity for autumn occurred at T5 on 09th September with 1,893.5 registrations being recorded. At this location there were six consecutive nights with more than 1,200 registrations being recorded per night between 03rd September and 08th September for Common Pipistrelle.

Soprano Pipistrelle were the second most active species on site during the autumn period. They accounted for 35.7% of all registrations during this period. The majority of registrations for this Soprano Pipistrelle were recorded at T5, with 47% of registrations for this species being recorded there. In autumn the average nightly registrations for this species were 1,345.7. Matching the results for Common Pipistrelle, the peak in autumn's Soprano Pipistrelle activity occurred at T5, with a slightly higher peak of 1,939 registrations recorded on the 9th September. The period of 03rd September to 08th September also had consistent high activity with nightly registrations ranging from 1,286 to 1,785 throughout.

Leisler's Bat was the third most active species recorded during this season, accounting for 9.7% of the registrations recorded. This species was most active at T1 with 46.5% of species registrations recorded at this location. The nightly average passes for this species were 365.3 during the autumn period. The peak in Leisler's Bat activity occurred at T1 with 633 registrations being recorded on 15th September. The mean nightly activity at T1 was 163 registrations constituting moderate activity. Overall, the mean nightly activity was lower at all other locations ranging from 4.9 to 45.9 registrations, which constitutes low activity.

Natterer's Bat was recorded at all monitoring stations, with the highest proportion of registrations recorded at T7 accounting for 7.5% of all Natterer's bat registrations in this season. Natterer's Bat accounted for 1.69% of all registrations recorded this season. On average, across all monitoring stations, 63.7 Natterer's Bat registrations were recorded per night, higher than the average recorded for summer. Nathusius' Pipistrelle was recorded at all locations except T4 during the autumn season, with a total of only 71 registrations and a nightly average of 3 registrations. The majority of registrations were recorded at T3 consisting of 29.6% of registrations for this species. While this is still considered low levels of activity it constitutes a notable increase from the activity of Nathusius' pipistrelle in summer.

Brown Long-eared Bat registrations were recorded across all the monitoring locations (n=1,922) and represented <2% of the total registrations recorded during this passive monitoring season. As mentioned previously, Brown Long-eared Bat can be under-recorded due to the low volume of their calls and thus it is a possibility that this species has been under-recorded in this instance. Brown Long-eared Bat activity was highest at T11, accounting for 22.58% of registrations, followed by T6, T5 and T7 which accounted for 15%, 13.5% and 13% of registrations respectively. T11 having the highest level of activity is likely related to the multi species roost noted in the Desktop Review within 1.6 km of T11. One of the species listed in the BCI data as occupying this roost is Brown Long-eared bat. However, the summer results do contradict this with T11 not being one of the most active locations.

Daubenton's Bat and Whiskered Bat registrations accounted for <2% of all the registrations recorded. 26.5% of the total Daubenton's Bat registrations recorded were recorded at T9. The nightly average registrations for Daubenton's Bat across all locations was 24.6. Whiskered Bat was recorded at a similar rate, with an average 20.4 nightly passes being recorded across all locations. However, Whiskered Bat activity was much concentrated in terms of location with 83% of activity being recorded at T3.

3.5.2.3 Spring 2025 Passive Monitoring Survey

A moderate level of species diversity was recorded during the spring 2025 monitoring period, with a total of seven bat species confirmed

A high level of species aggregated activity was recorded with a total of 50,865 bat registrations across the 26-night survey period. A site-wide nightly average of 1,956.35 registrations was recorded across all detector locations. Fewer locations had high activity than recordings made in the previous two seasons. Similar locations showed higher levels of activity such as T5, T8, T9, and T11. T11 accounted for the highest proportion of registrations recorded in this season making up 32% of all registrations. Despite other locations having higher nightly averages and peaks T3 had the second highest proportion of the total registrations amounting to 22.5%. The turbine locations T5, T8, and T10 accounted for 8%, 11%, and 8.6% of the total respectively. All other locations accounted for <5% of the total registrations.

As in previous seasons Common Pipistrelle accounted for the highest proportion of the registrations recorded making up 46.1%. Common pipistrelle activity was only considered high at T5. The turbine locations T3, T4, T8, T9, and T11 were characterised as moderate activity. T11 accounted for 35.5% of all Common Pipistrelle registrations. However, this is likely influenced by more suitable weather occurring in May on the redeployment resulting in the second highest nightly average for Common pipistrelles (439.5). The detector at T3 recorded 19.2% of all Common Pipistrelle registrations. The turbine locations T8 and T10 accounted for 13.6 and 13.7% of Common Pipistrelle activity respectively. The two highest nightly registration peaks across all locations and species were produced by Common Pipistrelles at T8 (1179) and T11 (1603).

Soprano Pipistrelle were the second most active species accounting for 23.7% of registrations recorded during the season. The majority of registrations were recorded at T3 and T8 (41% and 16.5% respectively). The detectors at T4 and T5 accounted for 8.7% and 9.4% of registrations respectively. All other locations accounted for less than 5.5% of registrations each. The location with the highest activity for Soprano Pipistrelles was also T5, the only location with activity characterised as high (448.8 nightly average). There were also peaks in Soprano Pipistrelle at T3 and T8 (549 and 521). While T11 recorded the highest proportion of Soprano Pipistrelle registrations the nightly average was characterised as moderate (64.7 nightly average).

Leisler's bat accounted for 22.3% of all registrations. Of Leisler's registrations 58.89% were recorded at T11. This turbine location had activity characterised as high with a nightly average of 226.3 registrations. This is the only period and location for which high Leisler's bat activity was recorded. The peak nightly activity at this location was 801 registrations for Leisler's bat. T1, T3, and T4, accounted for 9.3%, 11.8%, and 10.4% of Leisler's activity. All other locations accounted for <5% of registrations each.

Nathusius' Pipistrelle was not recorded during this period. Daubenton's Bat registrations accounted for <1% of all bats recorded. Daubenton's Bat activity at all locations was characterised as low with no nightly peak exceeding 21 registrations and average nightly registrations not exceeding 5.3 at any locations. Natterer's Bat activity was also characterised as low on a site wide basis. Natterer's bat accounted for 3.8% of all registrations. The two locations with the highest activity were T2 and T3 which had nightly average registrations of 21.7 and 30.7. Whiskered Bat overall had low activity and were only recorded at 5 turbine locations (T1, T2, T3, T8, and T9). However, T3 had moderate Whiskered Bat activity with 32.2 nightly average registrations being recorded. The peak number of nightly registrations for this species was 187 and occurred on the 9th April 2025. There were and additional five nights during

this season for which >100 registrations for Whiskered Bat was recorded (08th April, 12th April, 17th April, and 28th April). This species accounted for 2.1% of all registrations recorded. Brown Long-eared Bat were recorded at all locations in low numbers. In total this species accounted for 1.2% of all registrations recorded. Brown Long-eared Bats had activity characterised as low or moderate-low at all locations.

Overall, a moderate to high level of activity was recorded at the wind farm site for the 2024 to 2025 monitoring period and a moderate level of species diversity, with eight of the nine resident species recorded. The Annex II species Lesser Horseshoe Bat was not recorded during any of the passive surveys.

Table 3.8 Results of passive bat monitoring 2024/2025.

	Common Name	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
Summer 2024	Soprano Pipistrelle	36.80 [58]	46.30 [124]	142.80 [197]	51.90 [77]	225.13 [412]	17.70 [34]	35.50 [54]	360.00 [723]	298.80 [564]	138.30 [356]	161.50 [463]
	Common Pipistrelle	19.20 [37]	49.00 [149]	136.10 [397]	40.30 [66]	659.13 [1169]	13.40 [28]	11.30 [19]	758.60 [1319]	278.40 [694]	429.20 [902]	368.40 [803]
	Leisler's Bat	86.10 [149]	27.60 [73]	28.80 [47]	35.20 [60]	47.38 [72]	26.10 [50]	58.90 [116]	41.30 [102]	40.20 [75]	17.00 [43]	18.60 [38]
	Nathusius' Pipistrelle	0.00 [0]	0.00 [0]	0.80 [3]	0.00 [0]	0.00 [0]	0.10 [1]	0.10 [1]	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]
	Myotis sp.	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]	0.20 [1]	0.00 [0]	0.10 [1]	0.10 [1]
	Daubenton's Bat	0.90 [3]	0.10 [1]	0.70 [2]	0.00 [0]	1.00 [3]	0.30 [1]	2.40 [3]	7.30 [13]	8.00 [18]	1.20 [5]	0.70 [2]
	Natterer's Bat	0.10 [1]	1.00 [3]	4.70 [9]	0.40 [2]	1.50 [5]	2.40 [6]	1.30 [3]	8.70 [17]	1.80 [4]	3.50 [10]	5.10 [13]
	Brown Long-eared Bat	1.50 [4]	1.30 [5]	2.30 [4]	2.00 [4]	12.00 [21]	7.60 [28]	2.50 [6]	7.90 [16]	2.30 [7]	2.20 [7]	6.20 [14]
	Whiskered Bat	0.00 [0]	0.20 [2]	7.90 [16]	0.10 [1]	0.13 [1]	0.10 [1]	0.00 [0]	25.10 [124]	2.10 [4]	0.00 [0]	0.00 [0]
Autumn 2024	Soprano Pipistrelle	33.45 [72]	24.65 [39]	110.15 [349]	28.00 [114]	1069.86 [1939]	16.35 [56]	34.15 [93]	76.40 [193]	180.05 [841]	144.55 [753]	99.25 [270]
	Common Pipistrelle	22.40 [54]	13.35 [41]	212.55 [624]	31.75 [198]	1178.71 [1897]	27.80 [116]	8.50 [17]	231.65 [998]	200.95 [804]	205.15 [1523]	274.45 [952]
	Leisler's Bat	168.60 [633]	4.85 [11]	33.50 [165]	23.50 [71]	45.86 [120]	17.70 [43]	25.80 [44]	12.50 [31]	26.30 [115]	8.95 [20]	15.05 [38]
	Nathusius' Pipistrelle	0.35 [2]	0.15 [0]	0.60 [3]	0.00 [0]	1.44 [3]	0.25 [2]	0.15 [2]	0.20 [1]	0.15 [2]	0.00 [0]	0.10 [1]
	Myotis sp.	0.05 [1]	0.00 [0]	0.00 [0]	0.00 [0]	1.00 [1]	0.05 [1]	0.00 [0]	0.05 [1]	0.00 [0]	0.00 [0]	0.05 [1]
	Daubenton's Bat	0.45 [2]	0.65 [2]	3.00 [23]	0.35 [3]	9.46 [46]	0.50 [1]	3.00 [8]	2.30 [6]	6.20 [17]	0.55 [2]	3.20 [10]
	Natterer's Bat	1.60 [6]	1.05 [5]	18.30 [48]	1.40 [4]	15.64 [36]	11.25 [69]	6.30 [21]	6.95 [24]	3.85 [12]	4.05 [12]	4.30 [12]
	Brown Long-eared Bat	1.70 [6]	1.10 [2]	1.45 [5]	1.45 [7]	18.57 [31]	8.25 [23]	6.35 [17]	6.15 [20]	3.85 [8]	4.15 [9]	12.70 [45]
	Whiskered Bat	0.00 [0]	0.05 [0]	16.80 [68]	0.00 [0]	2.00 [3]	0.00 [0]	0.00 [0]	2.25 [9]	1.75 [7]	0.00 [0]	0.00 [0]
Spring 2025	Soprano Pipistrelle	15.55 [38]	9.45 [34]	97.36 [549]	28.64 [135]	448.75 [489]	6.55 [24]	17.36 [40]	181.20 [521]	49.50 [150]	18.20 [94]	64.70 [163]
	Common Pipistrelle	12.45 [33]	10.45 [36]	140.91 [462]	45.55 [235]	508.50 [729]	9.91 [63]	11.64 [30]	295.90 [1179]	196.13 [549]	26.20 [98]	452.40 [1603]
	Leisler's Bat	63.73 [184]	25.00 [90]	76.00 [344]	84.73 [351]	29.75 [60]	21.73 [68]	12.73 [34]	10.90 [35]	22.50 [52]	16.00 [62]	176.00 [801]

	Common Name	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
	Daubenton's Bat	0.73 [3]	5.27 [16]	4.00 [18]	0.09 [1]	4.00 [9]	0.27 [3]	2.73 [14]	1.70 [6]	2.25 [5]	0.30 [1]	2.60 [21]
	Natterer's Bat	0.18 [1]	21.73 [74]	30.73 [104]	0.00 [1]	8.50 [20]	1.09 [8]	2.27 [24]	8.20 [52]	2.75 [16]	0.60 [2]	6.50 [22]
	Brown Long-eared Bat	0.27 [1]	1.27 [6]	0.64 [3]	0.36 [2]	11.75 [18]	1.09 [6]	0.27 [2]	7.80 [28]	0.50 [3]	1.20 [5]	17.40 [46]
	Whiskered Bat	0.09 [1]	0.00 [3]	32.18 [178]	0.00 [0]	0.00 [0]	0.00 [0]	0.00 [0]	0.90 [8]	0.75 [5]	0.00 [0]	0.00 [0]

(Note: Data is presented as “average [peak]” where average is the average number of registrations per night on 10 good-weather nights in the spring and summer seasons and 20 good-weather nights in the autumn season. Peak data represents the maximum number of nightly registrations from any night in the relevant recording period).

3.5.3 Emergence Surveys

Emergence surveys were conducted during summer 2025 to determine if maternity roosting occurs at structures within the environs of the proposed wind farm site. The results for each of the structures surveyed are described separately below. Emergence locations and confirmed roosting features are shown in **Plate 3.1 – 3.4**.

3.5.3.1 Derelict building (S02)

The derelict building S02 was confirmed as a roost for a small number of Common Pipistrelle and Brown Long-eared Bat.

The survey on 23rd June 2025 recorded an individual Common Pipistrelle light sampling and emerging from the door of the building at 22:33.

Prior to the emergence survey conducted on the 5th August 2025 a total of three Brown Long-eared Bats were recorded on an internal inspection roosting in two separate attic sections of the structure. During the emergence survey there were 10 emergences and three re-entries recorded as bats light sampled in and out of the building and surrounding sheds. It is likely the three Brown Long-eared Bats were recorded as three of these ten and were underrepresented in the calls recorded on detectors. It is estimated that approximately four Soprano Pipistrelles were also roosting in the building. These results show there is not significant roosting in this building.

The survey of this building on 23rd June 2025 also recorded constant Swift activity, with individuals emerging and re-entering the building.

3.5.3.2 Derelict building (S04)

The survey on 23rd June 2025 did not record bats emerging from the structure. In the wider area surrounding the roost the surveyor noted there was early but limited activity in the form of commuting Common Pipistrelles and Leisler's Bat. The surveyor noted one Common Pipistrelle entering and investigating the entrance of structure at 22:58 and 23:13 before commuting away.

The survey on 05th August 2025 also recorded foraging Common Pipistrelle and Leisler's Bat in the area with more Common Pipistrelles recorded than the previous survey. Two Common Pipistrelles investigated the entrance, briefly entered and exited the building at 21:58.

While roosting was not recorded during these surveys, given the investigative behaviour exhibit at this feature there is potential for it to be used as a night roost on a temporary basis. However, it's concluded that there is no significant roosting in this structure.

On both surveys the surveyor also recorded Barn Owls nesting within the structure noting their presence likely reduces the roost suitability for bats.

3.5.3.3 Private Residence (S05)

During the survey of this building on the 23rd June 2025, a small Common Pipistrelle roost consisting of two individuals was recorded in the eastern corner of the building. These individuals were recorded on the thermal and static detector covering this side of the building with both emergences occurring at 22:30.

A surveyor also noted two emergences of Soprano Pipistrelles from a shed adjacent to the main building being surveyed at 22:16. On completion of the survey a single Natterer's Bat was recorded inside a

separate shed in the farmyard adjacent to S05. This shed is likely used as a night roost. These structures are all >600 m from any turbine locations.

While small roosts were recorded during this survey further investigation is not warranted given the separation distances and that there is no evidence of significant roosting i.e. a maternity roost.

It was also noted that there is a swift colony of approximately 30 individuals in the structure S05, nesting predominantly in the southern and western fascia-soffit of the house.

3.5.4 Bridge & Tree Surveys

3.5.4.1 Bridges

Daytime inspection of suitable bridge features were carried out during February and August 2025 covering the Winter and Summer seasons. During the Winter inspection bridges B03, B05, B08, and B09 were inspected. During these inspections no bats were found roosting in suitable features. Faecal samples were found and collected at B08 and DNA analysis confirmed that Brown Long-eared bat droppings were present. It was determined that given the suitability of features only B03 and B08 would be subject to further inspections during the summer season. Neither presence nor additional evidence of roosting bats was found in the bridges B03 or B08 during the active season inspection.

3.5.4.2 Tree T716

The trail camera deployed on this feature recorded between 23rd and 26th of June 2025. On the night of 24th June 2025 the camera recoded bats investigating the feature were recorded but no evidence of roosting (e.g. access / egress) was recorded. Brown Long-eared Bat was recorded possibly investigating the feature on this tree(**Plate 3.5**). At 01:03 an unidentified bat perches on the tree trunk for a second before resuming flight. No roosting was recorded by the night vision aid deployed on 05th August 2025.

It is likely that this feature is used occasionally as a roost by individual bats but there is no evidence of significant roosting occurring.

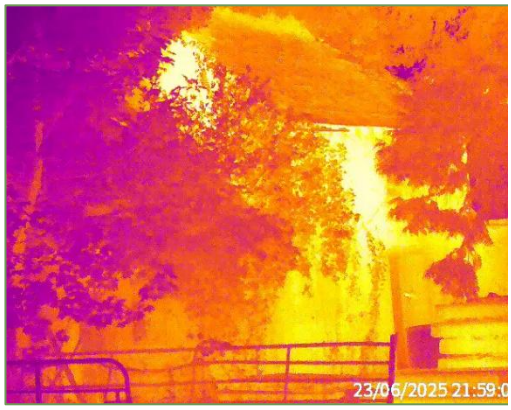

Plate 3.1 – Derelict building S02, swift visible entering building.

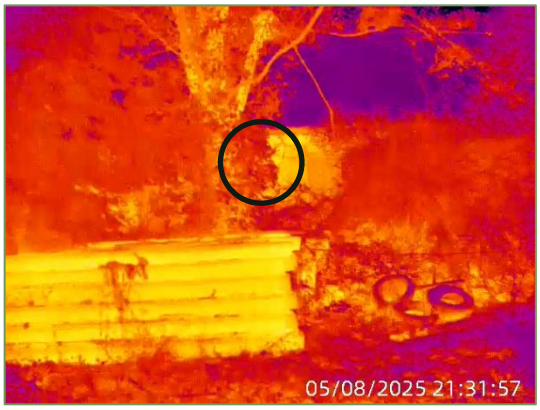

Plate 3.2 – Alternate camera for S02, door where emergences were recorded circled.

Plate 3.3 –Brown Long-eared Bats roosting in S02 on internal inspection.

Plate 3.4 – Thermal camera coverage of S04.

Plate 3.4 – Emergence location S05 (arrow).

Plate 3.5 – Brown Long-eared Bat investigating PRF-M feature on Tree T716.

3.5.5 Active Transect Surveys

A driven (dusk) transect survey of the GCR was carried out on the 22nd September 2025. See **Figure 3.5** for registration locations.

A moderate level of bat activity was recorded during the activity surveys overall, however, there were peaks of high activity which was concentrated around the vegetated landscape features along the GCR, such as the hedgerows and treelines that bordered the road. Behaviour noted consisted of foraging and commuting. The results of the analysis of the data collected during the transect survey are presented in **Figure 3.2**. It should be noted that the location of bat records shown in these drawings indicate the position of the surveyor at the time of detection, as opposed to the actual location of the bat recorded. The range of the microphone can be in excess of 50m dependant on the species.

A total of 167 bat registrations were recorded: Soprano Pipistrelle (42.5%) and Common Pipistrelle (54.5%) were the most frequently recorded. Three Leisler's Bat registrations were recorded during the transect. One was recorded at the substation location while the other two were approximately a kilometre from the substation on the section of GCR directly east of Birr. A single Brown Long-eared Bat was recorded on the Croghan Road (L1077). This is also where the highest density of Pipistrelle activity was recorded. This activity is likely due to suitable foraging habitat of mature woodland and river within the Birr Castle estate. It is worth noting that this high activity stretch aligns with a higher density of known roost locations directly east of this section of GCR discovered during the desk study (**Figure**

3.1). An individual Myotis sp. bat registration was recorded along the R439 north of Birr. This recording could only be identified to genus level.

Active transect surveys provide a 'snapshot' of activity over a fixed period of a single survey night. Registrations of individual bats cannot be distinguished, and number of registrations should not be inferred as numbers of individuals.

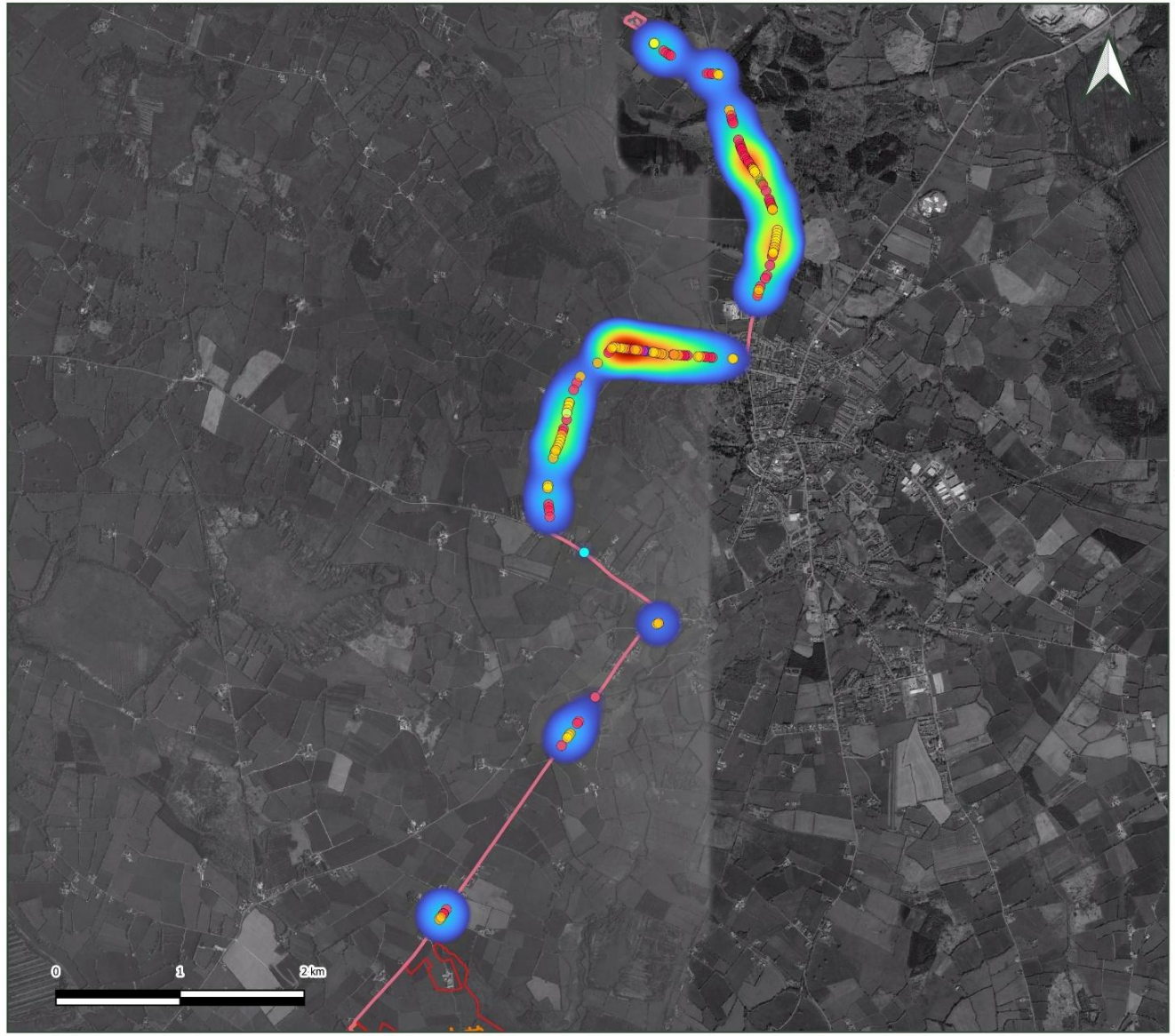

Figure 3.5
Transect Survey Results

Project:
Ballincor Wind Farm

Prepared for:
RWE

Oisín O Sullivan
D: 13/10/2025

Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

O'DONNELL ENVIRONMENTAL

Legend

Site Boundary
GCR

Species

Common Pipistrelle
Soprano Pipistrelle
Leisler's Bat
Brown Long-eared Bat
Myotis sp.

Activity Density
High
Medium
Low

3.6 ECOLOGICAL SITE EVALUATION

The current report describes the proposed study area in terms of bat activity and bat habitat suitability for both roosting and foraging within the site.

Suitable foraging and roosting habitat exists within the proposed wind farm site. Moderate to high levels of bat activity were recorded overall, and the site is not considered remarkable in a local context in terms of its value to foraging bats. S02 containing a Brown Long-eared Bat roost was identified containing approximately three individuals. Within the same structure an individual Common Pipistrelle was also recorded and approximately four Soprano Pipistrelles.

Over 600 m from site in S05 two Common Pipistrelles were recorded emerging. Other minor roosts include two Soprano Pipistrelles emerging and a Natterer's Bat were recorded in sheds adjacent to S05. The Annex II (EU Habitats Directive) listed Lesser Horseshoe Bat was not recorded. The surveys determined that there are no significant roosts were present within the zone of influence of the site.

Taking into account the results of surveys described in this report, the modified nature of the site resulting from turbary, forestry, and agricultural management, the lack of significant roost sites, the presence small roosts, and considering its local context, the study site is considered to be of **Local Importance (Higher Value)** for bats following NRA (2009).

4 Potential Impacts

The potential impacts of the proposed wind energy development on the bat species recorded at the Ballincor Wind Farm are discussed in detail below.

4.1 POTENTIAL CUMULATIVE IMPACTS

While a single development may only result in a minor environmental impact, when considered in combination with other impacts it may result in a cumulative impact which could be considered significant (EPA, 2022).

Ecological Impact Assessment aims to determine what if any effects a proposed project would have on ecological conditions, relative to baseline conditions. As part of this process, the potential for cumulative effects is considered. Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2022).

Projects to be considered in an assessment of cumulative effects would include the following types of future development within the same zone of influence:

- Proposals for which consent has been applied which are awaiting determination in any regulatory process (not necessarily limited to planning permission)
- Projects which have been granted consent (not limited to planning permissions) but which have not yet been started or which have been started but are not yet completed (i.e. under construction)
- Proposals which have been refused permission, but which are subject to appeal and the appeal is undetermined to the extent that their details are in the public domain,
- Proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority (CIEEM, 2022).

In some situations, it may be necessary to also consider:

- Constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline.
- Developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan (draft or adopted) (CIEEM, 2022).

The projects considered in relation to the potential for cumulative effects and for which all relevant data was reviewed include those planning applications listed in **Table 4.1**, and relevant ongoing activities in the area, as described below.
For the purpose of the evaluation of potential cumulative effects, the term development has been taken to include:

- Any permitted electricity transmission developments, or proposed developments currently in the planning process, located within Offaly and Tipperary and surrounding areas of adjoining counties.
- Permitted or proposed developments with the potential for significant cumulative effects with the proposed project, e.g., major linear infrastructure development, such as proposed road development, windfarms, other Strategic Infrastructure Development (SID), or public utilities and services along the GCR.

The review of the relevant local authorities planning registers documented in Offaly and Tipperary County Council's and ACP's websites was conducted. These existing, approved and proposed planning projects have also been taken into account in describing the baseline environment and in the relevant assessments. A complete list of other major developments within 10km of the proposed wind farm is shown in **Table 4.1**

Table 4.1 List of Select Granted/Undecided Applications within 10 km from the proposed wind farm site between January 2015 and March 2025

Planning Authority	Application number	Proposal	Address	Decision Date
Solar farm				
Tipperary county council	16600136	a solar PV energy development of maximum export capacity 4 MW, to include one ESB Networks substation building with a height of 4m, two electrical transformer stations with a height of 2.7m, site access roads and solar PV panels mounted on steel support structures with a height of 2.5m, associated cabling and ducting.	Lacka , Carrig , Birr	23/08/2016
Offaly county council	21227	A 10-year permission for the construction of a solar PV development with a maximum export capacity (MEC) of up to 40MW.	Ballindown Bogderries , Ballywilliam and Ballynaguilsha , Co. Offaly	10/08/2021
Electricity and telecoms				
Offaly county council	ABP ref. 304056	Install approximately 12.5km of 38kv electricity transmission line from the permitted (windfarm) substation in Stonestown, County Offaly to the electricity substation in Clondallow, County Offaly.	Across The Townlands Of Stonestown, Kilcamin, Crancreagh, Derrinlough, Clooneen, Whigsborough, Galros East, Galros West, Cush, Boolinarig Big, Conspark, Ballaghanoher, Ross And Clondallow, Co Offaly	25/05/2020
Offaly county council	2360140	The development involves a ten-year planning permission for underground electrical cabling (38kV) from Townparks to the Dallow 110kV substation in Clondallow, facilitating the connection of the proposed Carrig Renewables Wind Farm to the national grid. It includes joint bays, communication chambers, earth sheath links, road reinstatement, and associated site works,	In the townlands of Townparks (Birr) Dovegrove , Woodfield or Tullynisk , and Clondallow Co. Offaly	07/06/2024
Other				
Tipperary county council	15600881	Horticultural Park containing an amphitheatre incorporating audience seating and a stage and all associated landscaping and ancillary works.	The Ecovillage , Oxpark , Cloughjordan	25/04/2016
Offaly county council	15349	Construction of new innovation centre and training building, construction of new stores extension with loading bay canopy, extend concrete yards, additional parking area, form new opening in west boundary wall for goods entrance / exit and all associated works.	Grant Engineering , Crinkill , Birr	31/03/2016

Planning Authority	Application number	Proposal	Address	Decision Date
Offaly county council	16433	Demolition of the existing two storey water treatment plant building, construction of a 2,000 m3 water storage reservoir including associated site development works and services.	Birr Water Treatment Plant , Seefin , Birr	11/04/2017
Offaly county council	16145	The upgrade to Birr water supply scheme which will comprise the following at the existing birr water treatment plant (WTP) site: refurbishment of the existing two storey masonry WTP building, demolition of the existing open sludge lagoon, construction of a new WTP process building with gross floor area 660sqm approximately, new tank structures, new sludge treatment and storage structures, underground watermains and service connections, together with improvements to existing boundaries, landscaping and all associated site works.	Seefin , Birr , Co. Offaly	09/11/2016
Offaly county council	16144	The upgrade to Birr water supply scheme which will comprise the following at the existing intake (for birr water treatment plant): provision of a new pumphouse building with gross floor area 37.50sqm approximately, upgrade of the existing river bankside intake structure with underground watermains and service connections, refurbishment of existing pumphouse structure, new roadside boundary setback and relocation of access to site, extension of overall site area together with improvements to existing boundaries including the existing access walkway to the Camcor river, new boundary treatment, landscaping and all associated site works.	Clonoghil Upper , Birr , Co. Offaly	17/08/2016
Tipperary county council	17601366	As-built standalone furniture manufacturing building, as built storage building, demountable office building, single storey spray building, use of portion of existing yard as open storage, together with all associated site works.	Sopwell , Cloughjordan , Co Tipperary	19/03/2018
Offaly county council	20592	The filling of lands with inert waste consisting of concrete, bricks, tiles and ceramics, soil and stone for the purpose of land reclamation, the setting up of a temporary portacabin & portaloo, weighbridge, construction of site entrance, access road and associated works.	Ballystanley , Roscrea , Co. Offaly	15/02/2022
Offaly county council	ABP ref. 306246	Application for leave to apply for substitute consent under section 177c of the planning and development act 2000, (as amended) to regularise the planning status of bord na mona's historic peat extraction (and ancillary works) on the milled peat production bogs.	Boora Bog Group Located Predominantly In County Offaly.	30/04/2020
Offaly county council	ABP ref. 314549	Application for an extension of time to apply for substitute consent in relation to peat harvesting.	Coole And Clonbeale Mor, Near Birr, Co. Offaly	28/09/2022
Offaly county council	ABP ref. 306863	Peat harvesting.	Coole And Clonbeale Mor, Near Birr, Co. Offaly.	16/06/2021
Offaly county council	21599	Filling quarried land with topsoil, subsoil to raise level of land for agricultural purposes.	Glasshouse , Shinrone , Co. Offaly	30/03/2023
Offaly county council	22449	(1) carry out of civil engineering works to adjust the ground levels of the existing rugby training pitch and provide an underground pitch drainage system (2) erect	Scurragh , Townparks Birr , Co. Offaly	25/04/2023

Planning Authority	Application number	Proposal	Address	Decision Date
		6 no. Columns and floodlights to existing training pitch and all associated site works.		
Offaly county council	22404	Development consisting of the construction of: (1) a 4060m2 three storey primary care centre to accommodate (a) HSE facilities comprising consulting rooms, treatment areas, meeting rooms, offices and support spaces (b) surgery space totalling 807m2 for general practitioners (c) a 138m2 pharmacy with two consulting rooms totalling 34m2; (2) a 175m2 single storey ancillary structure at the rear of primary care centre for stores, waste, back-up generator and associated external plant; (3) a 397.5m2 two storey ambulance base with single storey garage and external canopy; (4) 157 no. Car parking area including provision for 6 no. Motorcycle parking spaces, 50 no. Bicycle spaces, 16 no. Electrical charge points and traffic control barriers for employee parking; (5) section of new access distributor road 165m long with footways; (6) all associated site development works to serve the proposal including site and distributor road lighting, hard and soft landscaping, rail and fence boundary treatment and all associated signage.	Railway Road , Townparks Birr , Co. Offaly	14/04/2023
Offaly county council	22386	The construction of 7 no. Industrial units, entrance and all ancillary site works located to the rear and side of existing industrial units.	Units 1-6 Syngefield Industrial Estate , Clonoghil Upper , Birr Co. Offaly	31/08/2023
Tipperary County Council	NA0617 (ABP Ref. 318213)	Whether the permanent removal of 3.9 hectares of coniferous Sitka Spruce forestry for the purposes of nature conservation and environmental protection at Scohaboy Bog Natural Heritage Area (NHA) (site code 00937) Co. Tipperary is development and if it is development whether or not it is exempted development or requires consent of the local authority.	Scohaboy Bog Natural Heritage Area, Co. Tipperary.	Case is due to be decided by 29/01/2024
Offaly County Council	21599 (ABP Ref. 312650)	Filling quarried land with topsoil, subsoil to raise level of land for agricultural purposes.	Glasshouse, Shinrone, Co. Offaly.	21/03/2023
Offaly County Council	16/145 (ABP Ref. 247027)	Upgrade Birr Water Supply Scheme comprising refurbishment of 2-storey masonry WTP building, demolition of open sludge lagoon, construct new WTP process building, new tank structures.	Seefin, Birr, Co. Offaly.	03/11/2016
Housing developments				
Offaly county council	22274	The following: erection of a fully serviced residential housing development of 40 units, consisting of 4.no single storey semi-detached 2 bedroom bungalows, 2 no. Single storey mid-terrace 1 bedroom bungalows, 20.no. 3 bedroom 2 storey semi-detached houses, 6.no. 3 bedroom 2 storey mid-terrace houses and 8. No. 1 bedroom apartments in 4 no. 2 storey semi-detached blocks, with all associated site services, landscaping, site works, boundary treatments, and new access.	Lands To The East Of And Accessed Via The Existing Development At Forest View , Banagher Road R439 Townparks Birr , Co. Offaly	26/10/2023
Offaly county council	22356	Change of use of the former three-storey over basement mill building, from resource and leisure use to 12 no. Self-contained apartments comprised of 5 no.	The Maltings Castle Street Townparks , Birr , Co. Offaly	09/03/2023

Planning Authority	Application number	Proposal	Address	Decision Date
		One bed apartments and 7 no. Studio units, with alterations to existing elevations and layout.		
Tipperary County Council	20612 (ABP Ref, 310643)	Construction of 6 no. two-storey semi-detached dwelling houses, new boundaries, inclusive of connection to the existing estate foul and storm drainage and all associated site works.	Ballyloughnane , Riverstown , Birr Co. Tipperary.	17/11/2021
Tipperary County Council	20614 (ABP Ref. 310679)	Construction of 4 no. two storey semi-detached dwelling houses, new boundaries inclusive of connection to the existing estate foul and storm drainage and all associated site works.	Ballyloughnane , Riverstown , Birr Co. Tipperary.	21/10/2021
Offaly County Council	2460120	The construction of 58 total no. residential units comprising of: (A) 2no. three-bedroom two-storey semi-detached (Type H); 1no. 2-bedroom bungalow (Type L2); 10no. 1&2-bedroom terraced bungalows in three blocks (Type L3/L4); 12no. two-bedroom two-storey	Townparks & Seffin , Birr , Co. Offaly	Undecided
Offaly County Council	2460122	The construction of 66 total no. residential units comprising of: (A) 20no. dwellings, comprising of 8no. four-bedroom two-storey detached houses (Type A); 8no. four-bedroom two-storey semi-detached houses (Type B1/B2); 2no. two-storey three-bedroom dual	Railway Road Townparks & Seffin , Birr , Co. Offaly	Undecided

Note: 'Development Description' field was truncated by the Planning Authority when providing data to the NPD

A separate review of all existing, permitted and undecided wind farms has been conducted to provide a list of wind farm development across Offaly and Tipperary and are listed in **Table 4.2**.

Table 4.2: Pending and Determined Wind Farm Planning Applications 20km from the Site.

Wind Farm	Consenting Authority	Planning Reference	Decision	No. Turbines	Distance from site approx. km
Carrig Wind Farm	ACP	318689	Granted July 2025	7	c.1.5 km
Skehanagh/Lacka Wind Farm	Tipperary	5123495/5123496	Granted (Conditional)	8	c.2.8 km
Meenwaun Wind Farm	ACP	PL.19.2449	Granted (Conditional)	5	c.13 km
Domestic	Offaly	06/1508	Granted (Conditional)	1	c.17.5 km
Derrinlough Wind Farm	ACP	306706	Granted (Conditional)	21	c.17.5 km
Cush Wind Farm	ACP	318816-24	Granted November 2024	8	c.17.5 km
Cloghan Wind Farm	ACP	244053, PL19.24405	Grant permission with revised conditions	9	c.17.5 km
Monaincha Bog wind Farm	Tipperary	3510957	Granted (Conditional)	10	c.17.5 km

The nearest proposed Wind Farm to the site is Carrig Wind Farm located 3.9 km northwest of the proposed wind farm site. Conditional planning was granted in June 2025. The 7 turbines will have a maximum height of 185 m, maximum rotor diameter of 163 m and a minimum hub height of 103.5 m.

The nearest operational wind farm to the proposed wind farm is Skehanagh/Lacka, located approximately 1.7 km -2.7 km southwest. Skehanagh Wind Farm has been in operation since 2006. The site consists of 8 Vestas V52 turbines.

The next most proximal operational wind farm is Meenwaun Wind Farm 13 km to the north. All other entries in **Table 4.2**, directly north of Meenwaun, are all directly adjacent to one another and are approximately 17.5 km north of the site.

Projects other than Wind Farms within 10 km in **Table 4.2** have been considered and cumulative effects are not anticipated based on the nature of works and potential impacts on bats.

These sites have been considered in terms of determining the site size for collision risk, cognisant of Table 3a NatureScot et al., 2021. This considers the size, number and proximity of neighbouring Wind Farm sites when determining site size for collision risk assessment in **Section 4.3.1**.

4.2 POTENTIAL CONSTRUCTION PHASE IMPACTS

Wind energy developments present four potential risks to bats (NatureScot et al, 2021):

- 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.

For each of these four risks, the detailed knowledge of bat distribution and activity within the study area gained during the current assessment is used to predict the potential effects of the wind farm on bats. Several

bat species were noted within the proposed site, all of which are legally protected under the Irish Wildlife Acts (1976 as amended) and listed on the EU Habitats Directive.

4.2.1 Wind Farm Site

4.2.1.1 Vegetation clearance

While the site mostly consists of land used for turbary and improved agricultural grassland habitat, with a general lack of roosting opportunities, there exists low productivity foraging habitat and suitable commuting habitat with good connectivity to the surrounding environment. There exists highly localized, higher productivity foraging habitat within the context of the site in the form of wet drainage ditches, plantation edge, and small areas of woodland habitats. Pasture-based agriculture, forestry activities, and peat extraction will continue in undeveloped areas of the site post-construction.

Vegetation removal will also be required for the construction of the proposed project and associated infrastructure including; access tracks/routes, temporary compounds, turbine hard standing, met mast, onsite BESS, underground grid connection, bridges, culverts and construction works associated with the turbine delivery route and site entrance. The turbine set down area has been incorporated into existing hardstand locations. The impact of this vegetation loss will be reduced foraging and fragmented commuting habitat for bats. Loss of such habitat function has the potential to disturb or displace bats that forage at the site or commute through the site. While coniferous plantations that lack specimen trees and are considered less likely to provide potential roosting opportunities for bats (Marnell et al., 2022), this increase in forest edge habitat is likely to increase foraging and commuting locally.

There will be a loss of foraging and commuting habitat to facilitate the implementation of bat buffers detailed in **Section 5.4.1**. This involves the clearance of 0.12 ha of treelines and hedgerows, and 5.76 ha of woodland and scrub.

Surveys were characterised by moderate to high levels of activity. While it is considered that there is no potential for a significant bat roost to occur within the relevant distance of the proposed wind farm development (NatureScot et al., 2021), it is possible that individual bats or small numbers of bats may roost in trees or existing structures at least occasionally and mitigation measures will be applied to minimise the potential impacts on bats associated with construction related disturbance. No roosting features within trees capable of supporting significant numbers of bats or a maternity colony were noted along either grid connection route and thus the potential for impacts arising are limited. Similarly, considering the scale of the proposed works along the grid connection routes and turbine delivery route, impacts to both private and disused structures are limited.

There were also no trees or structures capable of supporting significant numbers of bats or a maternity colony within the areas for clearance of bat buffers detailed in **Section 5.4.1**. Within the bat buffers are PRF-I trees that will require removal. At T1 there are two trees with PRF-I features (T704 and T705). Buffers at T5 will require the removal of T712, T713, and T714. At T6 one PRF-I will be removed (T715). The buffer at T8 will require the removal of T721 while the clearance of buffers at T11 will require the removal of T722. The locations of all these features are detailed in **Figure 3.1 and Table 3.4**.

In the absence of mitigation, the loss of habitat will result in the **'permanent negative effect'** on commuting and foraging bats at a local geographical scale.

4.2.1.2 Structures

A comprehensive survey effort was carried out in relation to potential roost features in structures following Collins (2023). Minor small population roosts of Brown Long-eared Bat, Soprano Pipistrelle and Common Pipistrelle have been identified on site in S02. In the wider area minor small roosting populations of Common Pipistrelle, Soprano Pipistrelle, and Natterer's bat have been identified in S05 and adjacent sheds. No significant roosting in the form of maternity or hibernation roosts are present on site. There is currently no plan to remove any of the structures suitable for, or containing roosting bats within the proposed wind farm. S02 is >200 m from the nearest turbine (T6). S05 is >600 m from the nearest turbine (T7). Given the separation distances from areas being developed no disturbance of the roosts are anticipated.

The proposed wind farm is considered likely to have a **neutral** effect on the identified roosts S02 and S05.

4.2.1.3 Lighting

Construction phase lighting has the potential to attract certain bat species and displace others and floodlighting can be a significant source of disturbance to bat species. However, this impact will be temporary in nature and localized to areas around the site compound. There is no lighting proposed in the areas surrounding confirmed roosts.

In the absence of mitigation lighting associated with construction will result in a temporary **'slight temporary negative effect'** on foraging and commuting bats.

4.2.1.4 Hydrological features

Construction related run-off or degradation of aquatic habitats through hydrological links could potentially lead to a deterioration of the feeding resource for bats associated with watercourses within the site boundary and in the wider area. Assessment of potential water quality impacts is addressed elsewhere in the EIAR.

4.2.2 Turbine Delivery Route

4.2.2.1 Vegetation clearance

The locations where vegetation clearance, trimming, and tree removal are highlighted in the Abnormal Indivisible Load Route Survey (Pell Frischmann 2023). Enabling works along the TDR will result in the loss of 22 m of treeline and 83 m of hedgerow. There will also be removal of approximately 0.07 ha of scrub habitat (WS1), 0.07 ha of improved grassland (GA1), and 0.03 ha of arable crops/horticultural land (BC1/BC2).

While hedgerows and treelines are common features in the wider landscape, the loss of commuting habitat will potentially displace some bats in the immediate locality of works and marginally reduce habitat connectivity locally. In the absence of mitigation this will result in a '**temporary slight negative'** effect on foraging and commuting bats at a local scale.

4.2.2.2 Bridges

There are no works required on bridges to facilitate the delivery of turbines as detailed in the Abnormal Indivisible Load Route Survey Report (Pell Frischmann 2023). Therefore, it is concluded a **neutral effect** will occur on any bats potentially roosting in bridges along the route.

4.2.3 Grid Connection Route

4.2.3.1 Vegetation clearance

The zone of influence of the proposed grid connection route is limited, confined to the immediate works area and is temporary in nature. In the event a bat roost was present within a private residential dwelling along the route, no potential impacts are likely to arise during the construction or operation of the cable route.

Two PRF-I trees were identified and three bridges of low roosting suitability were identified along the GCR. There will be a **neutral effect** on bats which may make use of PRF-I tree features.

4.2.3.2 Bridges

Bridge 'B08' was confirmed as a roost with the collection of faecal samples which were confirmed as Brown Long-eared bat. Horizontal Directional Drilling (HDD) is proposed for the section of GCR adjacent to B08. This will avoid direct impacts to the structure of the bridge itself. There is still potential for indirect disturbance of roosting bats in this bridge through noise and vibrations with works associated with the HDD. In the absence of mitigation there will be a '**slight temporary negative effect'** on roosting bats as a result of noise and visual cues.

4.2.3.3 Overall site level impact

Considering all impacts addressed in this section, in the absence of mitigation, potential effects resulting from the construction phase on bats would have a **'permanent, slight negative'** effect at a local level following EPA (2022).

4.3 POTENTIAL OPERATIONAL PHASE IMPACTS

Habitat loss experienced during the construction phase (described above) will continue to persist through the operational phase. The operation of the wind farm at this site has the potential to result in disturbance to commuting and foraging bats. Bat activity at the site was variable with periods of moderate activity occurring for some high collision-risk species. Decreased connectivity resulting from removal of commuting features likely to be used by many bat species (e.g. hedgerows) will persist during the operational phase, but decreased connectivity to proposed turbine locations is desirable in terms of reducing risk of fatality or injury as a result of contact with rotating turbine blades. Collision risk is discussed further below.

4.3.1 Collision Risk

There is little or no published evidence available on prevalence of bat fatalities at wind farms in an Irish context. Where fatalities have been monitored at wind farms in the USA, most losses have been related to periods of migration (www.nationalwind.org).

Both direct collision with turbine blades and barotrauma resulting from close contact with blades have been reported as an issue for bats at wind farms (e.g. Cryan et al., 2009, Matthews et al., 2016). The susceptibility of bat species likely to be at risk of impacts from wind turbines is partly associated with the likelihood of different species flying at rotor blade height. In an Irish context, Leisler's Bat is considered to have a somewhat greater mortality risk at wind farms than the other species recorded on (or adjacent to) the site, as this species is a relatively large and high-flying species. Leisler's Bats typically do not follow landscape features such as treelines or woodland edges when foraging.

4.3.1.1 Assessment of Collision Risk

A general assessment of vulnerability of bat populations to collision with wind turbines, based on best available scientific information, is provided below. This adapts for use in an Irish context a collision risk scheme provided in NatureScot et al., (2021). NatureScot et al., (2021) provides a generic assessment of bat collision risk for UK species, based on species behaviour and flight categorisation as well as evidence of casualty rates in the UK and Europe. This bat species collision risk assessment is considered to represent best available information for use in an Irish context. For the purposes of this assessment, the results of the most recently completed surveys in 2024 will be considered for the collision risk assessment. The location of the monitoring stations for this survey period are considered more accurate in terms of representing activity levels at proposed turbine locations.

This species collision risk categorisation is used in combination with relative abundance to indicate the potential vulnerability of bat populations. Relative abundance for Irish species was determined in accordance with a scheme for rarity of bat species provided in Wray et al. (2010) in combination with best available population data provided in recent Article 17 reports (NPWS, 2019). The limitations in terms of Irish bat population data is acknowledged in the latter report.

The collision risk estimation scheme for Irish bat species is presented in **Table 4.3**.

Table 4.3 Scheme for estimation of Irish bat species' population vulnerability to wind energy development.

Relative Abundance	Collision-Risk		
	Low	Medium	High
Common (100,000 plus)			Common Pipistrelle Soprano Pipistrelle
Rarer (10,000 – 100,000)	Daubenton's Bat Brown Long-eared Bat Lesser Horseshoe Bat		Leisler's Bat
Rarest (under 10,000)	Natterer's Bat Whiskered Bat		Nathusius Pipistrelle

Population vulnerability: yellow = low, orange = medium, red = high.

In determining the project specific potential risk to bats, NatureScot et al., (2021) recommends a two-stage process as follows:

- **Stage 1:** Indicatively assess potential site risk based on consideration of habitat present and development related features (i.e. number of turbines, size of turbines and proximity to other wind farms).
- **Stage 2:** Overall assessment of risk for high collision-risk species, considering bat activity results and the relative vulnerability of species.

Initially an assessment of the general site risk based on habitats present was carried out following the scheme presented in NatureScot et al., (2021). No trees of potential roosting suitability were recorded local to the proposed wind farm site. The site represents a low productivity foraging habitat which could be used by a small number of foraging bats. Given that there are areas of woodland coverage within the site and several features with moderate to high roost suitability the site as habitat within the site is of Moderate suitability overall.

The proposed wind farm consists of 11 turbines and as detailed in **Section 4.1** there is one operational and one consented site within 5 km (Skehanagh Wind Farm and Carraig Wind Farm; **Table 4.2**). Both of these projects would be classified as small in terms of project size with 5 and 7 turbines respectively (NatureScot et al., 2021). There are no other sites which would influence the site size relative to the collision risk assessment (within 10 km / 5 km as detailed in Table 3a Nature Scot et al., 2021).

According to the project size categories in NatureScot et al., (2021), turbines of height >100m are included in the 'Large' project category. This height refers to the 'tip height' of the turbine (P. Taylor (NatureScot), Pers. Comm.). The maximum tip height of the turbines proposed for the three turbine models considered in this design (Vestas V150, Nordex N163, and Nordex N149) are 180 m, 180 m, and 179 m respectively. However, given the number of turbines (significantly less than the threshold for a large site >40 no. turbines) it is considered that for all turbine designs 'Medium' remains the appropriate project size category. Based on the above initial site risk assessment, the proposed project is considered to be 'Medium Risk' to bats and a site risk score of 2 is applicable.

The next stage of the process is applicable to 'high collision-risk' species only and utilises information on the activity level recorded on site in each monitoring period. This assessment is intended to identify projects which are of greatest concern in terms of bat collision risk. Results are described in this section and in **Table 4.4**. The following high collision-risk species have been recorded at the current site:

- Leisler's Bat
- Common Pipistrelle
- Soprano Pipistrelle
- Nathusius' Pipistrelle

Leisler's bats are considered to be a high-collision risk species due to their foraging ecology and flight characteristics. While Leisler's Bat is rare in a European context, Ireland is a stronghold for the species. Leisler's Bats are a relatively large and fast-flying species and have been recorded to have relatively large territories and to travel significant distances to reach preferred foraging habitats (Shiel et al., 2006). While strong habitat associations for the species have been difficult to identify in an Irish context, there is evidence to suggest a positive association with pasture and freshwater habitats (Roche et al., 2014). They are classified as 'Rarer' for the purposes of this assessment but the minimum population range for the species in Ireland is estimated at 63,000 to 113,000 (NPWS, 2019) and therefore the species may be 'Common'. Leisler's Bats were recorded during activity surveys across the site (see **Table 3.7 & Table 3.8**). Overall activity levels for Leisler's Bat in the context of the proposed wind farm are considered moderate.

Common Pipistrelle are a common and widespread species in Ireland and considered to be a high-collision risk species due to their foraging ecology and flight characteristics. Common Pipistrelles were one of the most commonly recorded species across the site. Overall activity levels for Common Pipistrelles in the context of the proposed wind farm is considered moderate to high.

Soprano Pipistrelle are another common and widespread species in Ireland which are considered to be a high-collision risk species due to their foraging ecology and flight characteristics. Overall activity levels for Soprano Pipistrelles in the context of the proposed wind farm are considered to be moderate to high.

It is known that Common and Soprano Pipistrelle are common and widespread in Ireland and are present in a wide variety of habitat types, and so higher activity levels for these species when compared with others is considered typical.

Nathusius' Pipistrelle has a fast flight and is slightly less agile in flight than the other Pipistrelle species and is positively associated with broadleaf woodland and areas where pasture is less extensive (Roche et al., 2014). This species is considered to be of high-collision risk due to their foraging ecology and flight characteristics. Nathusius' Pipistrelle was only recorded in spring and autumn, yielding an overall low activity category.

Table 4.4 Overall collision risk assessment of relevant (high collision-risk) species on a wind farm development assessed as a Medium Risk Level (NatureScot et al., 2021).

	Species	Site Risk Score	Activity Category	Overall Assessment
Summer 2024	Leisler's Bat	3	Moderate (3)	9
	Common Pipistrelle	3	Moderate – High (4)	12
	Soprano Pipistrelle	3	Moderate – High (4)	12
	Nathusius' Pipistrelle	3	Low (1)	3
Autumn 2024	Leisler's Bat	3	Moderate (3)	9
	Common Pipistrelle	3	Moderate – High (4)	12
	Soprano Pipistrelle	3	Moderate – High (4)	12
	Nathusius' Pipistrelle	3	Low (1)	3
Spring 2025	Leisler's Bat	3	Moderate (3)	9
	Common Pipistrelle	3	Moderate – High (4)	12
	Soprano Pipistrelle	3	Moderate – High (4)	12
	Nathusius' Pipistrelle	3	Low (1)	3

Overall collision risk assessment: Low (green), medium (amber), high (red) (following SNH, 2019).

While activity levels of the above species varied between survey locations (corresponding to proposed turbine locations) it is not possible to determine with any accuracy the different levels of collision risk presented by individual turbines (NatureScot et al., 2021).

As per NatureScot et al., (2021) there is no requirement to complete an overall risk assessment for low-risk species. The low-risk species recorded at this proposed wind farm site were Brown Long-eared Bat, Daubenton's Bat, Natterer's Bat and Whiskered Bat. Overall activity levels were low for these species and by the virtue of their low potential vulnerability to wind energy developments, no significant collision related risk is likely.

No additional loss of foraging and commuting habitat, relative to that discussed above in relation to the construction phase, will occur during the operational phase. No other significant impacts are likely to occur on bats during the operations phase of the proposed wind farm.

Overall, in the absence of mitigation, the proposed wind farm in its operational phase would likely have a **'permanent, slight, negative'** effect on bats at a local level (following EPA, 2022).

4.4 POTENTIAL DECOMMISSIONING PHASE IMPACTS

No other potential impacts other than those already discussed above for the construction and operational phases are likely to occur during decommissioning. Decommissioning activities are assumed to be similar to construction activities, having similar type risks and sensitive receptors associated with them. However, they are considerably less intrusive.

Overall, the effect of potential impacts on bats during decommissioning of the proposed wind farm is considered to be **'neutral'** at a local level following EPA (2022).

5 Mitigation Measures

The proposed mitigation measures applicable to the construction and operational phases of the proposed wind energy development at Ballincor are discussed in detail below.

5.1 CONSTRUCTION PHASE MITIGATION

Measures which will be implemented as part of the construction phase are outlined below, in relation to the wind farm site, the TDR and GCR.

5.1.1 Wind Farm Site

5.1.1.1 Structures

NatureScot et al., (2021) recommends that key roosting features which could support maternity roosts and significant hibernation and/or swarming sites on a wind farm site be identified in a search area extending to 200m plus one rotor radius from the "site boundary". The potential for significant roosts was investigated within an area extending to a minimum of 300m from the 'redline' boundary (as it relates to turbines).

A comprehensive survey effort was carried out in relation to potential roost features in structures following Collins (2023). No significant roosting in the form of maternity or hibernation roosts was identified (**Section 3.3.3**). Structures identified with small roosts detailed in **Section 3.3.3** are not proposed for removal as part of the current design. Given that there will be no impact on the roosts with the current site design (**Section 4.2.1.2**) there is no need for mitigation or Derogation under Regulation 54 required.

5.1.1.2 Vegetation clearance

Sections of hedgerow (WL1) and coniferous plantation (WD4) habitat removal is required to accommodate the development of the new site access roads. The implementation of the bat buffers will require the removal of coniferous plantation at T3 and T1. There will be removal of mixed woodland required at T8 and T9, For the purpose of bat buffers hedgerow and treelines (linear features) will be removed at T1, T5, T6, T7 T10, and T11. Linear features which will be removed to establish bat buffers and areas for the replanting of linear features are shown in **Figure 5.1**

The removal of trees in order to implement the bat mitigation buffers will result in the loss of 12 trees containing PRF-I features. Following Collins (2023) no further survey is warranted in relation to PRF-I features in trees. However, PRF-I features in trees may be used on a transitory basis by a small number of bats exhibiting fission-fusion behaviour during which they can occupy roosts for only a small number of days/nights (Kaňuch et al. 2022). The absence of roosting bats will be confirmed immediately prior to the removal of these trees with an internal inspection of the potential roost features. These trees will not be removed during the hibernation period (November – March inclusive) to avoid the potential for disturbance effects on any bats which may be in torpor.

To mitigate the removal of roosting features suitable for roosting by small numbers of bats, eight bat boxes will be erected at suitable locations outside of the buffer zones identified above, in consultation with a bat-licensed Ecologist. 'Woodcrete' bat boxes will be used as they are durable and long-lasting and do not require maintenance. A mixture of bat box types should be used to cater for seasonal and species requirements. The following products (or similar) are suitable:

- Schwegler 1FS Colony Bat Box 95

- Schwegler 2F Universal Bat Box
- Schwegler 2FN Bat Box 55.

Bat boxes should be installed on suitably large trees or specially installed poles in consultation with a bat-licensed Ecologist. Boxes should be installed at a minimum height of 4 meters above ground level, at suitable aspects (not northern) and in locations which are inaccessible to unaided climbing (to minimise the risk of vandalism) and not vulnerable to artificial light or noise pollution.

As outlined above, a robust and appropriate survey effort was carried out and no evidence of bat roosting, current or historic, was identified within trees scheduled for removal. However, given the potential for delays between reporting and the commencement of construction, and with cognisance of the recommended lifespan of ecological data in relation to mobile species, pre-construction surveys are appropriated to establish if the baseline conditions reported herein remain valid. Prior to commencement of tree felling, survey will be carried out following Collins (2023) by a bat-licensed Ecologist. If required, a derogation license will be secured in advance of any tree-felling works, if any, and appropriate mitigation measures will be put in place to avoid or reduce impacts on bats.

5.1.1.3 Lighting

Construction operations will take place during the hours of daylight in as far as possible to minimise disturbances to bats and other wildlife. It is recognised that key works such as turbine delivery and erection may require night-time working. Where working at night is required the reduction of light levels or application of motion sensor lights will be used where bat foraging habitat is present. All construction phase lighting systems will be designed to minimise nuisance through light spillage and follow ILP (2023) guidance. Shielded, downward directed lighting will be used wherever possible and all non-essential lighting will be switched off during the hours of darkness.

Directional lighting will be used to prevent overspill on to forestry/woodland edges, riparian zones or other habitat features of importance to bats. This will be achieved with the use of covers and shields (baffles, hoods or louvres) to reduce light spill and direct lighting to the intended area only. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Only luminaires with an upward light ratio of 0% and with good optical control will be used. Luminaires will be mounted on the horizontal, i.e. no upward tilt.

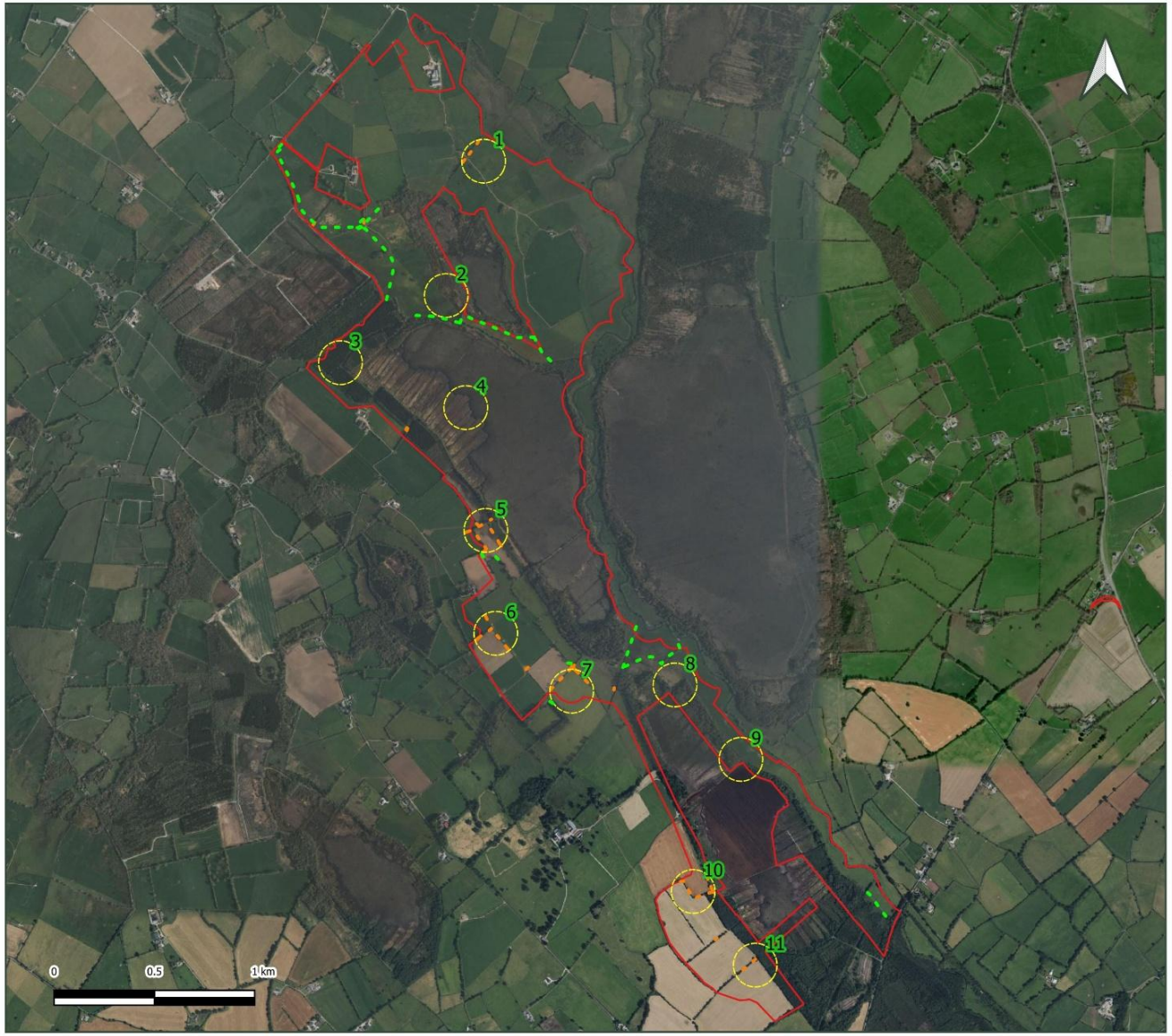

Figure 5.1

Linear Feaure Felling and Replanting

Project:

Ballincor Wind Farm

Prepared for:

RWE

Oisín O Sullivan
D: 13/10/2025

Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

O'DONNELL ENVIRONMENTAL

Legend

- Site Boundary
- Blade Tip 50 m buffer
- Linear Feature Replanting
- Linear Feature Felling

5.1.2 Turbine Delivery Route Mitigation

Enabling works along the proposed TDR will result in the loss of 22m of tree line to facilitate the construction. Although no evidence of current or historic roosting by bats was recorded along the TDR at the time of survey, the assessment was based on the design information to date and will be subject to future assessment and application.

The majority of the TDR is composed of the M7 Motorway and N69 National Road. The final section of the route is along the R445, N62, and R492. While there are many river crossings and bridges along this route there are no works required on bridges or other features likely to support roosting bats in order to facilitate the delivery. No impact is anticipated on roosting bats as a result of future works along the TDR.

5.1.3 Grid Connection Route Mitigation

No trees of 'PRF-M' suitability were recorded along either grid connection route assessed. Additionally, no tree clearance or tree trimming works are proposed to facilitate the grid connection. Due to the limited and temporary nature of the works proposed, no further surveys or other mitigation measures are considered necessary. Should a delay of more than 24 months occur between survey and the proposed works, it is recommended that a repeat assessment be carried out given the potential for ecological context to change over time. Horizontal Directional Drilling (HDD) is proposed for bridges B04 and B08.

Bat roosting has been confirmed within a fissure within the bridge B08 along the grid connection route. Droppings were identified within the fissure and these confirmed as Brown Long-eared Bat droppings through subsequent DNA analysis (**Appendix B**).

Information on the ecological sensitivity of bridge 'B08' was communicated to the Client and TOBIN Consulting Engineers, with a 'mitigate-by-design' approach adopted in order to avoid potential noise and disturbance effects on this roosting space. A drilling profile was developed which avoids any likely disturbance on roosting bats.

Based on the bridge design and experience of TOBIN Engineers, Bridge 'B08' is assumed to have a foundation depth of 1 m below the drainage channel level. A minimum separation distance between the drill trajectory and the foundation of the bridge is 4 metres in order to further minimise the potential for impacts on roosting bats as a result of vibration being carried through the bridge structure. Within **Chapter 12 Noise and Vibrations**, the potential for noise and vibration to impact structures including Bridge B08 during directional drilling was considered and concluded that the proposed work is not expected to give rise to vibration that is capable of giving rise to structural or cosmetic damage to nearby buildings, protected structures or bridges along the grid connection route.

A minimum separation of 45m between the launch and receptor pits is available and this is considered sufficient to minimise potential for noise and vibrational impacts on any bats roosting within the bridge during directional drilling. No other works will take place within the area between the launch and receptor pits (i.e., an approximately 45m exclusion area surrounding bridge 'B08') and no sources of noise and vibration disturbances, such as generators, welfare facilities etc. will be located within the areas between the launch and receptor pits. Hoarding or acoustic blankets to a height of the parapet wall will be provided prior to the commencement of work between both pits and the barrel facing the proposed works to reduce noise and visual cues.

The effect of the HDD considering the above avoidance and mitigation measures is to reduce noise and vibration levels during the directional drilling process to below that level already experienced on an ongoing basis as a result of existing road traffic etc.

In order to ensure the above measures are implemented as outlined, an Ecologist will supervise the directional drill at this location. No further measures are considered warranted.

Given this separation distance allowed between source and receptor, and the locations of roosts within enclosed crevices within the barrels of the bridge, the likelihood of disturbance effects on roosting bats as a result of the installation of the grid cable at Bridge 'B08' is considered to be negligible.

5.1.4 Regulation 54 Derogation

A 'Regulation 54 Derogation' issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011-2021 is required where deliberate disturbance to bats or their roosts is likely to occur (Marnell et al., 2022). Based on current information and proposed avoidance measures, a derogation license issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 is not required to facilitate the proposed works.

5.2 OPERATIONAL PHASE MITIGATION

A 'High' level of overall collision risk has not been identified for any bat species in any of the bat activity seasons. Based on best available scientific information, a 'Medium' overall collision risk level has been identified in relation to high-collision-risk bat species, across all three activity seasons, with the exception of a 'Low' risk for Nathusius' Pipistrelle. The limitations of the assessment procedure and knowledge gaps in relation to bats and wind farms are acknowledged herein, particularly in an Irish context.

5.2.1 Feature Buffers

NatureScot et al., (2021) recommends a minimum 50m buffer from the blade tip to the nearest key habitat features (e.g. woodland, hedgerow etc.) to be implemented to avoid encouraging bat activity within the 'blade-swept' area. These areas will be maintained vegetation-free during the operational life of the development. A methodology for determining the clearance area at ground level is presented in NatureScot et al., (2021). The clearance area surrounding each individual turbine was calculated using the formula presented in **Figure 5.2.** Given that the buffer of turbines from features must be maintained for the lifetime of the projects, areas of plantation were assessed based on a potential final harvest height of trees (25 m). All three turbine iterations assessed in this project are considered in **Table 5.1**. Given that the prescribed buffer from NatureScot et al 2021 is a minimum stand-off to reduce bat foraging, the largest buffer in each case is applied as mitigation to ensure this minimum standard is met regardless of the final turbine design.

Calculate the distance between the edge of the feature and the centre of the tower (b) using the formula:

$$b = \sqrt{(50 + bl)^2 - (hh - fh)^2}$$

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

For the example shown, b = 69.3m.

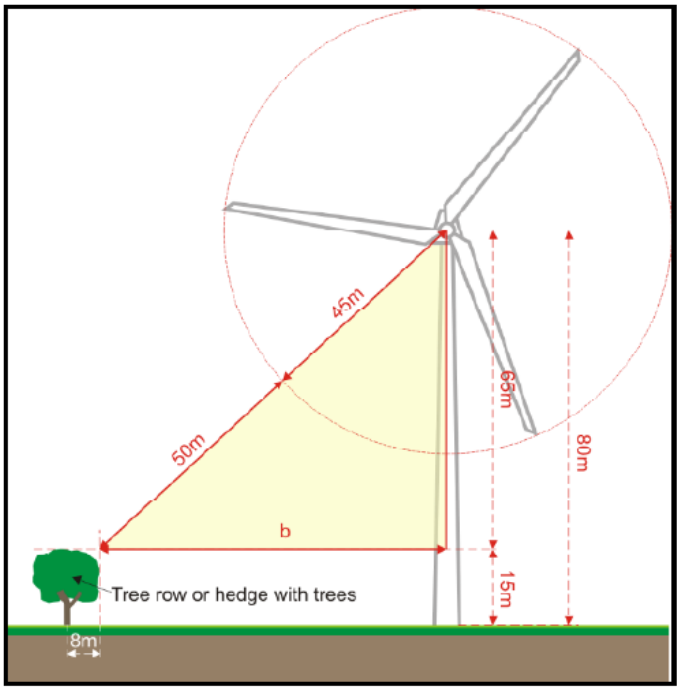

Illustration © Entec Ltd.

Figure 5.2 Methodology for determining the clearance area at ground level (NatureScot et al., 2021).

Based on the turbine dimensions proposed, the buffers required for features on site are outlined in **Table 5.1**. These buffers were then applied to each turbine location and relevant habitat features within these buffers were identified. Vegetation clearance and the culverting or realignment of drainage ditches will be implemented to the specifications in **Table 5.2**. O'Donnell Environmental Ecologists engaged with the project design team to design a treeline and hedgerow planting strategy to maintain landscape connectivity for bats following clearance of vegetation for 'bat-buffers'. The linear features which will be felled, and areas for replanting, are shown in **Figure 5.1**. This linear feature replanting will be carried out in the first planting season (winter) following commencement of works.

Table 5.1 Required vegetation clearance buffer based on NatureScot et al. (2021).

Feature height(m)	N149	N150	N163
0	67.37	67.82	87.12
5	74.57	75.00	92.47
10	80.82	81.24	97.26
15	86.34	86.75	101.59
20	91.25	91.65	105.50
25	95.65	96.05	109.04

Table 5.2 Minimum buffers required at turbine locations based on the surrounding habitats

Turbine	Nearest feature(s) & estimate potential max final height	Feature Buffer	Extension of Feature Buffer (for areas with taller feature)
T1	Treeline 15 m	101.50 m	N/A
T2	Scrub 5 m	92.47 m	N/A
T3	Sitka spruce plantation 25 m	109.04 m	N/A
T4	No features within any buffer distance	N/A	N/A
T5	Treeline & Woodland 20 m	105.50 m	N/A
T6	Treeline & Hedgerow 15 m	101.59 m	N/A
T7	Hedgerow 5 m & Trees 15 m	92.47 m	101.59 m
T8	Drainage Ditch 0 m & Woodland 20 m	91.65 m	101.59 m
T9	Drainage Ditch 0 m & Woodland 20 m	91.65 m	101.59 m
T10	Hedgerow 5 m & Woodland 15 m	92.47 m	97.26 m
T11	Treeline 15 m & Mixed Plantation 25 m	97.26 m	109.04 m

In addition to the creation of buffers between the proposed turbines and surrounding vegetation (discussed above) reduced rotation speed will be implemented when turbines are idling. 'Feathering' of idling blades may reduce incidental fatality rates by up to 50% and does not result in loss of output (NatureScot et al., 2021). No additional control measures to avoid/reduce collision related bat fatalities are considered warranted in this instance.

5.2.2 Lighting

With the exception of aviation lighting (Chapter 2) no external lighting is proposed with the exception of security lighting at the proposed substation. All permanent lighting systems will be designed in accordance with ILP (2023)[3] in order to minimise nuisance through light spillage. All non-essential lighting will be switched off during the hours of darkness. No artificial lighting will illuminate any trees or structures with potential to be used by roosting bats to prevent disturbance upon emergence and re-entry. To reduce the ecological disturbance from artificial lighting, the following guidance is recommended:

- Reduce non-essential external night lighting.
- Lower the angle of external night lighting.
- Use of LEDs, as these emit minimal ultra-violet light.
- White and blue wavelengths should be avoided; wavelength will be <2,700 kelvin.

[3] https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

- Lights should peak higher than 550nm.

5.2.3 Post Construction Monitoring

NatureScot et al., (2021) recommends post-construction monitoring is carried out in at least three years post- construction, but not necessarily consecutive years. Post-construction monitoring aims to assess changes in bat activity patterns relative to baseline level (e.g. in response to landscape changes such as land management and forestry rotation) and the efficacy of mitigation to inform any changes which may be required to curtailment strategy.

Post-construction monitoring requires a robust pre-construction baseline dataset for comparison, and NIEA (2024) recommends a 2-year validity period in relation to bat activity data at onshore wind farms. A 10-year permission is sought, and therefore to ensure a robust and reliable baseline dataset is available for future comparison, the passive bat survey methodology outlined above (three seasonal rounds of passive surveys utilising at least 10 monitoring points) will be repeated in advance of commencement of significant construction should construction commence in 2028 or beyond.

Post-construction fatality monitoring and activity surveys will be carried out in years 1, 2, 3, 5 and 10 post-construction, and will consist of:

- Passive bat monitoring at all turbine locations in order to monitor changes in activity levels relative to pre-construction baseline information (presented herein).
- Fatality monitoring following the methodology presented in Appendix 4 of NatureScot et al. (2021) or subsequent updates.
- Monitoring of proposed bat boxes by a bat-licensed Ecologist, and relocation of any boxes with no evidence of use in the first year after construction.

Monitoring of linear replanting features (see **Figure 5.1**) will be carried out in the above years to ensure successful establishment of replacement linear features. Any failed plants will be replaced in the first planting season following each monitoring inspection.

Post-construction monitoring data will be analysed and presented in report format to the planning authority. Recommendations will be made in relation to a curtailment strategy if required.

5.3 DECOMMISSIONING PHASE MITIGATION

The potential for impacts during decommissioning is similar in nature, if not in scope, to those assessed for the Construction Phase. All decommissioning works will be governed by the same requirements to control run-off or potential pollution to watercourses (feeding resources for bats) as have been implemented during the construction phase. Any site compound will need to conform to the construction phase mitigation measures including those related to lighting design. Decommissioning phase works will include the reestablishment of woodland and linear features removed during the construction phase.

6 Residual Effects

The avoidance and mitigation measures described for the proposed Ballincor Wind Farm have been designed to minimise the impact of the development on the local bat population, from the construction of the wind farm infrastructure including the grid connection route and turbine delivery, through the operational phase and onto decommissioning. In the absence of mitigation, the proposed project would have a **'slight' negative effect** on bats at a local level during both the construction and operational phases (EPA, 2022).

The proposed measures are expected to avoid or significantly reduce the likelihood of any significant impacts occurring on bats as a result of the construction and operation of the proposed wind farm. Ongoing monitoring and implementation of the mitigation measures will ensure the preservation and future stability of the surrounding foraging and commuting habitats for bats.

With the implementation of the above detailed mitigation measures it is concluded that the development will have an '**imperceptible' negative effect** on the bat population at a local level, following EPA (2022). This effect is fully reversible following decommissioning and reinstatement.

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Appendix A – Weather Data

Appendix B – DNA Analysis Report

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