Record	Species	Approx. Grid Reference	Date	Location
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*, *Pipistrellus spp.* (45kHz/55kHz), *Pipistrellus nathusii*, Unidentified bat	T017528	N/A	T05 (14) 2003-
Ad-hoc	Unidentified bat	T016490	07/07/2008	Consultancy Surveys
	Myotis mystacinus/brandtii, *Pipistrellus spp.* (45kHz/55kHz), *Plecotus auritus*, *Myotis spp.*, *Nyctalus leisleri*	S985435	07/07/2008	Consultancy Surveys
	Pipistrellus pygmaeus, *Pipistrellus pipistrellus* (45kHz), *Myotis daubentonii*	S937408	08/07/2008	Consultancy Surveys
	Pipistrellus pipistrellus (45kHz), *Nyctalus leisleri*	S971397	28/07/2010	Consultancy Surveys
	Pipistrellus pygmaeus	S9342740684	06/05/2014	Consultancy Surveys
	Nyctalus leisleri, *Myotis spp.*, *Pipistrellus spp.* (45kHz/55kHz)	S9786740773	04/05/2016	Consultancy Surveys
	Pipistrellus pipistrellus (45kHz), *Nyctalus leisleri*, *Pipistrellus spp.* (45kHz/55kHz), *Pipistrellus pygmaeus*	S9786740773	25/06/2016	Consultancy Surveys
	Myotis daubentonii, *Nyctalus leisleri*, *Myotis spp.*, *Pipistrellus pygmaeus*, *Pipistrellus pipistrellus* (45kHz), *Pipistrellus spp.* (45kHz/55kHz)	S9786740773	04/05/2016	Consultancy Surveys
	Pipistrellus pygmaeus, *Pipistrellus pipistrellus* (45kHz), *Pipistrellus spp.* (45kHz/55kHz), *Myotis spp.*	S9786740773	09/09/2016	Consultancy Surveys
	Pipistrellus pygmaeus, *Pipistrellus pipistrellus* (45kHz), *Pipistrellus spp.* (45kHz/55kHz), *Myotis spp.*	S9786740773	28/09/2016	Consultancy Surveys
	Pipistrellus pipistrellus (45kHz)	S8225057820	02/09/2008	BATLAS 2010
	Pipistrellus pygmaeus	S8519339982	11/07/2008	BATLAS 2010
	Pipistrellus pygmaeus, *Myotis spp.*, *Plecotus auritus*	S924478	04/07/2009	BATLAS 2010
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*,	S984451	04/07/2009	BATLAS 2010

Record	Species	Approx. Grid Reference	Date	Location
	Myotis daubentonii			
	Pipistrellus pygmaeus, *Nyctalus leisleri*, *Plecotus auritus*	S943415	04/07/2009	BATLAS 2010
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Myotis spp.*, *Myotis daubentonii*	S865478	04/07/2009	BATLAS 2010
	Nyctalus leisleri, *Pipistrellus pygmaeus*, *Myotis daubentonii*, *Plecotus auritus*, Unidentified bat	S869442	04/07/2009	BATLAS 2010
	Myotis daubentonii, *Pipistrellus pipistrellus* (45kHz), *Pipistrellus pygmaeus*, Unidentified bat	S933548	01/06/2009	BATLAS 2010
	Myotis daubentonii, *Nyctalus leisleri*	S914570	01/06/2009	BATLAS 2010
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*, *Myotis daubentonii*	S9727939225	16/08/2018	BATLAS 2020
	Pipistrellus pygmaeus, *Nyctalus leisleri*, *Plecotus auritus*, *Myotis natterreri*, *Myotis spp.*	S9398741867	17/08/2018	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*, *Myotis daubentonii*	S9830545101	17/08/2018	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*, *Myotis daubentonii*	T0051243215	19/06/2018	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Myotis daubentonii*, *Plecotus auritus*	S9326854857	12/06/2019	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Myotis mystacinus*	S9617450845	12/06/2019	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*	S9131156941	12/06/2019	BATLAS 2020
	Pipistrellus pipistrellus (45kHz), *Pipistrellus pygmaeus*, *Nyctalus leisleri*, *Plecotus auritus*, *Myotis daubentonii*, *Myotis natterreri*,	S9000057000	03/07/2005	Consultancy Surveys

Record	Species	Approx. Grid Reference	Date	Location
	Myotis mystacinus/brandtii			
	Pipistrellus pipistrellus (45kHz), *Plecotus auritus*, *Nyctalus leisleri*	T0000044000	08/09/2007	Consultancy Surveys
	Pipistrellus pipistrellus (45kHz), *Plecotus auritus*, *Nyctalus leisleri*	T0000042000	08/09/2007	Consultancy Surveys
	Pipistrellus pipistrellus (45kHz), *Plecotus auritus*, *Nyctalus leisleri*	T0000041000	08/09/2007	Consultancy Surveys
	Pipistrellus pygmaeus, *Nyctalus leisleri*, *Myotis daubentonii*	S9157	12/06/2015	National Biodiversity Data Centre Bat Records
	Pipistrellus pygmaeus	S973395	03/08/2022	National Biodiversity Data Centre Bat Records
	Myotis daubentonii	S974396	03/08/2022	National Biodiversity Data Centre Bat Records
	Myotis daubentonii	S974395	03/08/2022	National Biodiversity Data Centre Bat Records
	Myotis daubentonii	S974394	03/08/2022	National Biodiversity Data Centre Bat Records
	Pipistrellus spp. (45kHz/55kHz)	S992415	21/04/2021	National Biodiversity Data Centre Bat Records

National Biodiversity Data Centre

The National Bat Database of Ireland was searched for records of bat activity and roosts within the hectads close to the site (IG Ref.: S 91940 49193, last search on 8th February 2024). Six of Ireland's nine resident bat species were recorded in the hectads in the proximity of the Proposed Development. The results of the database search are provided in Table 4-2.

Table 4-2 NBDC Bat Records within the hectads near the Proposed Development

Grid Square	Species	Record Count	Latest Record	Dataset
S94	Brown Long-eared Bat (*Plecotus auritus*)	3	04/07/2009	National Bat Database of Ireland
S94	Daubenton's Bat (*Myotis daubentonii*)	13	02/09/2012	National Bat Database of Ireland
S94	Leisler's bat (Nyctalus leisleri)	2	04/07/2009	National Bat Database of Ireland
S94	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	3	07/07/2009	National Bat Database of Ireland
S94	Soprano Pipistrelle (*Pipistrellus pygmaeus*)	7	06/05/2014	National Bat Database of Ireland

Grid Square	Species	Record Count	Latest Record	Dataset
S95	Brown Long-eared Bat (*Plecotus auritus*)	1	03/07/2005	National Bat Database of Ireland
S95	Daubenton's Bat (*Myotis daubentonii*)	3	01/06/2009	National Bat Database of Ireland
S95	Leisler's bat (*Nyctalus leisleri*)	2	01/06/2009	National Bat Database of Ireland
S95	Natterer's Bat (*Myotis nattereri*)	1	03/07/2005	National Bat Database of Ireland
S95	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	2	01/06/2009	National Bat Database of Ireland
S95	Soprano Pipistrelle (*Pipistrellus pygmaeus*)	2	01/06/2009	National Bat Database of Ireland
S85	Daubenton's Bat (*Myotis daubentonii*)	1	02/09/2008	National Bat Database of Ireland
S85	Leisler's bat (*Nyctalus leisleri*)	1	02/09/2008	National Bat Database of Ireland
S85	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	1	02/09/2008	National Bat Database of Ireland
S85	Soprano Pipistrelle (*Pipistrellus pygmaeus*)	1	02/09/2008	National Bat Database of Ireland
S84	Brown Long-eared Bat (*Plecotus auritus*)	1	04/07/2009	National Bat Database of Ireland
S84	Daubenton's Bat (*Myotis daubentonii*)	2	04/07/2009	National Bat Database of Ireland
S84	Leisler's bat (Nyctalus leisleri)	1	04/07/2009	National Bat Database of Ireland
S84	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	1	04/07/2009	National Bat Database of Ireland
S84	Soprano Pipistrelle (*Pipistrellus pygmaeus*)	2	04/07/2009	National Bat Database of Ireland

4.2.2 Bat Species Range

The potential for negative impacts is likely to increase where there are high risk species at the edge of their range (NatureScot, 2021). Therefore, range maps presented in the 2019 Article 17 Reports (NWPS, 2019) were reviewed in relation to the location of the Proposed Development.

The Site is within the range for all resident bat species in Ireland, excluding Lesser horseshoe bats and Nathusius' pipistrelles. The site is within range for all other bat species.

4.2.3 Designated Sites

Within Ireland, the Lesser horseshoe bat is the only bat species requiring the designation of Special Areas of Conservation (SACs) and the Site is situated outside the current known range of this species. Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs) may be designated for any bat species. A search of NHAs and pNHAs within a 10 km radius of the EIAR Site Boundary found no sites designated for the conservation of bats.

4.2.4 Landscape Features

A review of mapping and photographs provided insight into the habitats and landscape features present at the Proposed Development site. In summary, the primary land use within the Site is agricultural.

A review of the GSI online mapper did not indicate the possible presence of any subterranean sites within the EIAR Site Boundary, and a search of the National Monuments Database did not reveal the presence of any manmade subterranean sites within the EIAR Site Boundary.

A search of the UBSS Cave Database for the Republic of Ireland found no caves within the Site or within 10 km of the EIAR Site Boundary.

A review of the NBDC bat landscape map provided a habitat suitability index of 26.56 (yellow). This indicates that the Proposed Development area has moderate habitat suitability for bat species.

4.2.5 Other EIA Developments

Table 4-3 provides an overview of wind farms within a 10 km buffer of the Proposed Development. There were no wind farms within the 5 km buffer of the Proposed Development site. Two other large infrastructure developments and proposals (e.g. roads) were identified within the vicinity of the Proposed Development.

Table 4-3 EIA Developments within 10km of the Proposed Development Site

Description	No. Turbines	Status
Ballaman Wind Farm	2	Existing
Ballycadden 1 Wind Farm	5	Existing
Ballycadden 2 Wind Farm	4	Existing
Greenoge/Kilbrannish II Wind Farm	5	Existing
Substitute consent for the as-constructed electricity grid connection elements, consisting of c. 26km of underground cable (UGC) and c.2km of 20 kV overhead line (OHL).	N/A	N/A
Materials Recovery Facility (MRF) and an Office and ancillaries. The MRF will recycle and recover waste materials. Annual processing capacity of 99,000 tonnes.	N/A	N/A

4.3 Field Surveys

4.3.1 Bat Habitat Suitability Appraisal

The habitats within the EIAR Site Boundary are dominated by Improved agricultural grassland (GA1) with areas of Arable crops (BC1), Buildings and artificial surfaces (BL3), and Hedgerow (WL1) and small areas of Earthbank (BL2), Dry meadows and grassy verges (GS2), Scrub (WS1), and Hedgerow (WL1). Chapter 6 of the main EIAR, describes the various habitats within the site in more detail.

Results from the desktop review and walkover surveys were used to assess habitats for their suitability to support foraging and commuting bats, and roosting bats, according to Collins (2016). Suitability categories, divided into *High*, *Moderate, Low* and *Negligible*, are described fully in **Appendix 1.**

With regard to foraging and commuting bats, areas of exposed agricultural land, earthbank, and artificial surfaces were considered *Negligible* suitability, i.e. negligible habitat features on site likely to be used by commuting or foraging bats (Collins, 2016). Hedgerows, scrub, and roadways show potential for foraging and commuting bats. However, these habitats are surrounded by wide expanses of agricultural grassland and are not close to known roosts. As such, these habitats were classified as *Moderate* suitability, i.e. habitat connected to the wider landscape that could be used by bats for foraging and commuting (Collins, 2016).

There are a small number of trees within the Proposed Development site, including immature broadleaf and semi-mature trees. Species primarily include, hawthorn, and willow spp. The majority of trees within the Proposed Development were assigned *Negligible* roosting potential with a small number near the entrance hut and stone structure presenting *Low* roosting potential.

Five structures within the Site were inspected for bat roosting suitability. Details of the inspection and dusk emergence surveys are presented below in Section 4.3.1.

4.3.2 Roost Surveys

Daytime Roost Inspections

A search for roosts was undertaken within 200m plus the rotor radius (i.e. 235.5m) of the Proposed Development site (NatureScot, 2021). The aim was to determine the presence of roosting bats and the need for further survey work or mitigation. The Site was visited in May, June, August and September 2023. A walkover was carried out and structures were assessed for their potential to support roosting bats (see **Appendix 1** for criteria in assessing roosting habitats).

Five structures were identified and inspected as part of the roost survey effort. These structures were identified as PRFs and inspected by Nathan Finn and Laura Gránicz on 3rd May 2023. The stone shed was inspected again on 3rd October 2023 by Nathan Finn and Laura McEntegart (Table 4-4).

Summary of Roost Survey Results

The structures were subject to interior (where accessible) and exterior inspections to search for evidence of bats. Details of the inspection surveys are presented below. All identified structures will be retained and avoided as part of the Proposed Project.

Table 4-4 Emergence and Inspection Results

Structure	Roost Survey	Date	Location (IG Ref)	Survey Results
Stone Building (1) and Portable Toilet (2)	Inspection & Dusk Emergence	3rd May 2023 and 3rd October 2023	S 92785 49461 & S 92785 49462	(1) Moderate suitability – Approx. 20 bat droppings found within the stonework and on stored items within the building. (2) Negligible – no evidence of bats.
Substation (3)	Inspection	3rd May 2023	S 92591 49660	(3) Negligible suitability - No evidence of bats or bat activity.
Small Hut (4) & Entrance Hut (5)	Inspection	3rd May 2023 and 3rd October 2023	S 90868 48528 & S 90816 48540	(4 & 5) Negligible suitability - No evidence of bats or bat activity.

Stone Building

A stone building with a corrugated iron roof) (Plate 4-1 to 4-2). The structure had a chimney, four open windows (as well as one window blocked by rocks), and a large open door. A treeline of broadleaf species exists to the south-east of the building (-30m) which runs along the yard boundary to a further linear features of hedgerows and treelines near T11.

Approximately 20 bat droppings were identified scattered on a corrugated iron sheet covering the ground near the centre of the building during the roost inspection on 3rd May 2023. It was also noted that there were many deep crevices in the stonework of the building that could be used by roosting bats. The structure was assigned a *Moderate* roosting potential. The structure is located approximately 80 m south-west of T11. Emergence survey results are shown in Table 4-4

Plate 4-1 The exterior of the structure. The door has a south-easterly aspect.

Plate 4-2 The interior of the structure (north-east wall), showing the open window, gaps in stonework and gaps under the roof.

Derelict Portable Toilets (Plate 4-3 and 4-4) located at the side of the Stone Building The structure is very open with no small gaps or cracks that would be suitable for roosting bats. No evidence of bat activity was found. The structure was assigned a *Negligible* roosting potential.

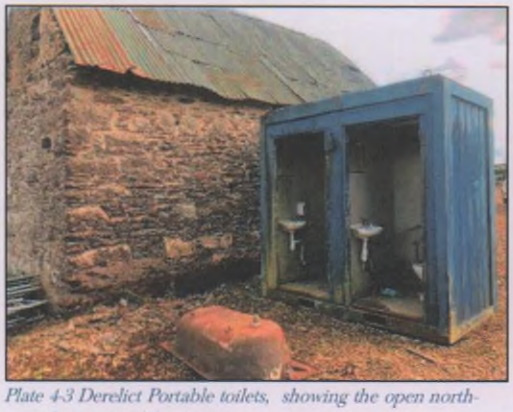

Plate 4-3 Derelict Portable toilets, showing the open north-easterly aspect of the structure.

Plate 4-4 Exterior of portable toilets, showing the north-west facing side of the structure.

Substation

The substation building located approximately 50 metres south-east of turbine T1 (Plate 4-5 to Plate 4-7) was also assessed for its potential for roosting bats. The substation buildings consisted of a larger concrete building with a slate roof. Interior access was not possible for health and safety reasons so they were assessed externally. No bats or evidence of roosting bats were identified during the inspection. Additionally, the structure had no visible bat access points or significant potential roost features and was thus assigned *Negligible* roosting potential.

Plate 4-5 External view of the main substation building. Image taken facing east

Plate 4-6 External view of the main substation building, image taken facing east

Plate 4-7 External view of the main substation building, image taken facing south-west

Entrance Hut

The entrance hut is located at the entrance to the west of the site, approximately 700 metres south-west of turbine T7. This is a small concrete building with a cement roof which is regularly used for operational purposes. No bats or evidence of roosting bats were identified during the inspection. As such, this structure was assigned a *Negligible* roost potential.

Small Hut

A small hut (Plate 4-8 Plate 4-9) located in the agricultural field near the entrance to the site, approximately 665 metres south-west of turbine T7. This is a small concrete hut with a corrugated iron roof. Access inside of this structure was not possible due to a locked door. There was a small gap above the door through which bats could access the structure. No bats or evidence of roosting bats were identified during the inspection. Bat suitability was assigned a *Negligible* roosting potential.

Plate 4-8 Small hut in the agricultural field near the wind farm entrance, showing the door with easterly aspect.

Plate 4-9 Small hut in the agricultural field near the wind farm entrance, showing the west side of the structure.

4.3.2.2 PRF Trees

The EIAR Site Boundary comprised a network of hedgerows and some treelines bordering existing tracks and roads, as well as agricultural grassland. The treelines within the Site consisted largely of sparse, immature trees with *Negligible* potential roosting features. A small number of trees contained Low potential and are located at the entrance hut (Grid Ref: S 90816 48540) and to the east of the stone building (Grid Ref: S 92785 49461). The majority of trees on the Proposed Development site were assigned *Negligible* roosting potential. No trees are planned to be felled according to the Proposed Development (Plate 4-10 and Plate 4-11).

Plate 4-10 Low and Negligible Trees located south of the Stone building (background). Highly managed beech hedge (foreground).

Plate 4-11 Example of managed hedgerow habitat within the site with a single tree.

4.3.3 Manual Activity Surveys

Manual bat activity surveys took place in the Spring, Summer, and Autumn of 2023. Bat activity was recorded on all surveys, with a total of 240 bat passes. Common pipistrelle (n=214) was the species recorded most frequently, followed by Leisler's bat (n=14), Soprano pipistrelle (n=11). *Myotis* spp. were rarely recorded with only one bat pass across all three surveys (n=1) (Plate 4-12).

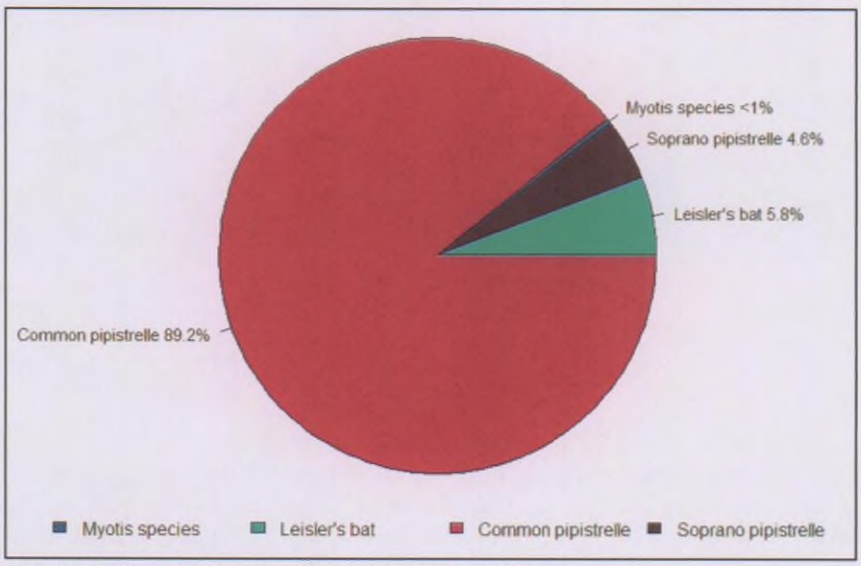

Plate 4-12 Species composition recorded during manual activity surveys.

Dusk Emergence Surveys

One structure with *Moderate* roosting potential was identified within the EIAR Site Boundary during surveys carried out at early design stages. All other structures were assigned *Negligible* roosting potential. Table 4-5 details the survey effort in relation to dusk emergence surveys carried out on the building with *Moderate* roosting potential. The stone building.

On 11th July 2023, *Pipistrelle spp.* were seen utilising the treeline east of the stone building to forage and commute north-south and south-north. Foraging was also observed in the courtyard. On the 3rd

October 2023, similar commuting and foraging activity was recorded of *Pipistrelle spp.* Bats were mostly recorded foraging during the first survey, while in autumn most of the activity recorded consisted of bats commuting along the treeline to the east of the PRF.

The adjacent portable toilets were also assessed as part of the emergence surveys; however, no evidence of roosting bats were identified.

Table 4-5 Manual activity surveys at PRFs in 2023

PRF	IG Ref.	Date	Survey Type	Results
Stone Building	S 92785 49461	11th July	Dusk Emergence	Confirmed roost. Five Common pipistrelles observed emerging.
		3rd October	Dusk Emergence	Two bats seen emerging by surveyors. One common pipistrelle and one unidentified species. Approximately eight bats recorded emerging on thermal camera.

Manual Transect Surveys

Manual activity surveys also comprised walked and driven transects at dusk. One standalone transect survey was conducted and two transect surveys followed dusk emergence surveys at PRFs and were aimed at assessing the use of linear features and other habitats by bats. Transects and results are shown in Figures 4-1 to 4-3 below. Table 4-6 shows total bat passes per species, per survey.

All activity noted by surveyors on the transect was foraging and commuting activity. All of the activity on the transect occurred at the south of the site, along the access road into the Proposed Development, where bats commuted along the adjoining treeline. (Figure 4-2).

All activity noted by surveyors on the transect was commuting activity and no foraging activity was recorded during the manual transects. Additionally, the majority of activity on the transects occurred in the south of the site, along access road into the Proposed Development, where both common pipistrelle and soprano pipistrelle were observed commuting along the treeline east of the stone building. Bat passes per season, per species is shown in Table 4-6 below.

Table 4-6 Static Detector Surveys: Species Composition Across All Deployments (Total Bat Passes)

Species	Spring	Summer	Autumn
Myotis spp.	53	40	320
Leisler's bat	13,663	5,179	12,213
Nathusius' pipistrelle	368	572	397
Common pipistrelle	7,405	10,867	37,637
Soprano pipistrelle	455	314	2,694
Brown long-eared bat	265	412	638
Total Bat Passes	**22,209**	**17,384**	**53,899**

Map Legend

- Site Boundary
- Static Detector Locations
- Spring Transect 2023.05.03

Species

- Leisler's bat
- Common pipistrelle

N

Drawing Title	Spring Manual Survey Results
Project Title	Castledockrell Wind Farm Extension of Operational Life
Drawn By: DC	Checked By: LM
Project No.: 210847	Drawing No.: Figure 4-1
Scale: 1:12,000	Date: 04.01.2024

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Planning and Environmental Consultants
Tuam Road, Galway
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Map Legend
Site Boundary
Turbine Layout
Emergence Survey
Surveyor Locations
Summer Transect 2023.07.11
Manual Survey Results
Common pipistrelle
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
Stone Building
1:1,000
N
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Drawing Title
Summer Manual Survey Results
Project Title
Castledockrell Wind Farm Extension of Operational Life
Drawn By
DC
Checked By
LM
Project No.
210847
Drawing No.
Figure 4-2
Scale
1:12,000
Date
04.01.2024
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Map Legend
Site Boundary
Turbine Layout
Emergence Survey
Surveyor Locations 2023.10.03
Autumn Transect 2023.10.03
Manual Results
Common pipistrelle
Soprano pipistrelle
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
Stone Building
1:1,000
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Drawing Title
Autumn Manual Survey Results
Project Title
Castledockrell Wind Farm Extension of Operational Life
Drawn By
DC
Checked By
LM
Project No.
210847
Drawing No.
Figure 4-3
Scale
1:12,000
Date
04.01.2024
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4.3.4 Ground-level Static Surveys

In total, 98,311 bat passes were recorded across all deployments. In general, common pipistrelle (n=57,430) occurred most frequently, with Leisler's bat also occurring frequently (n=33,933), while soprano pipistrelle (n=3,702), brown long-eared bat (n=1,417), Nathusius' pipistrelle (n=1,386) and *Myotis spp.* (n=443) were significantly less frequent. Plate 4-13 presents bat species composition across all ground-level static detectors.

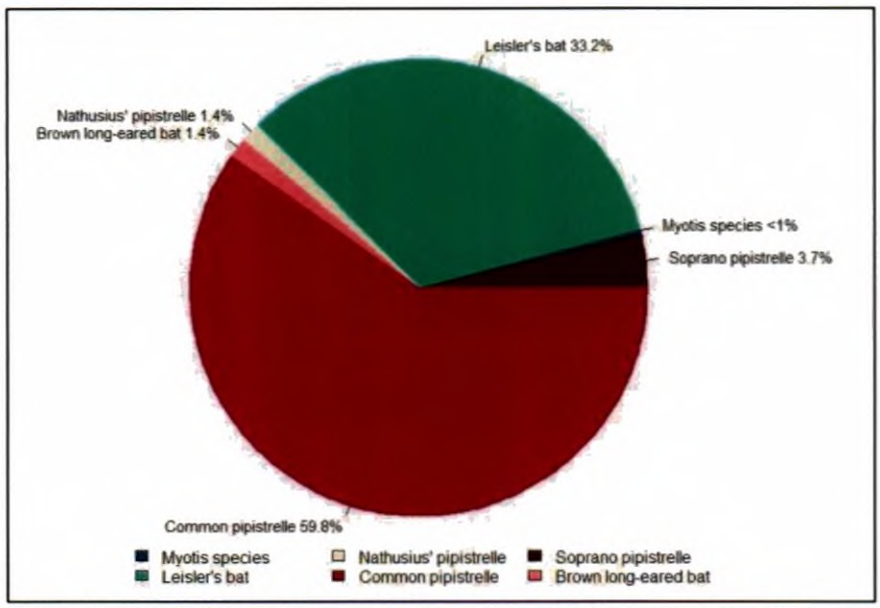

Plate 4-13 Pie chart displaying the bat species composition of the ground-level static surveys in 2023.

Bat activity was calculated as total bat passes per hour (bpph) per season to account for any bias in survey effort, resulting from varying night lengths between seasons. Plate 4-14 and Table 4-7 presents these results for each species.

During 2023, bat activity in general was dominated by Common pipistrelle and Leisler's bat. Autumn saw the most activity when averaged across species, a change is species composition is shown by a large increase in Common pipistrelle activity in Autumn. Leisler's bat activity was predominant in Spring, while Common pipistrelle activity dominated in Summer and Autumn. *Myotis spp.* activity was low in Spring and Summer, with increased activity recorded in Autumn. Soprano pipistrelle activity was relatively low in Spring and Summer, with a large relative increase in activity in Autumn. Nathusius' pipistrelle and Brown long-eared bat activity remained relatively low across all three seasons.

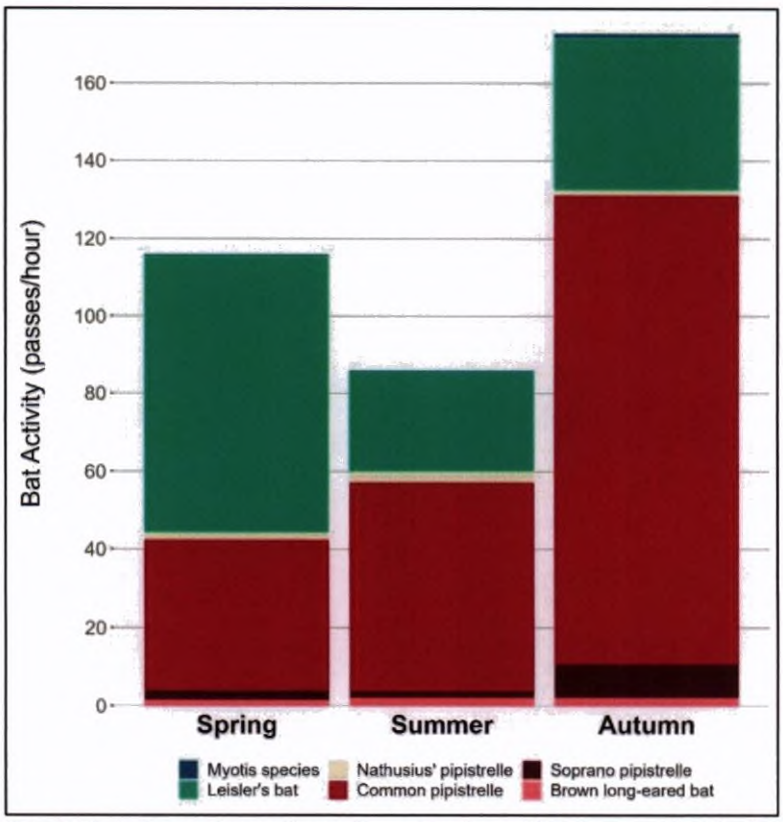

Plate 4-14 Static Detector Surveys: Species Composition Across All Deployments (Total Bat Passes Per Hour, All Nights)

Table 4-7 Static Detector Surveys: Species Composition Across All Deployments (Total Bat Passes Per Hour, All Nights)

	2023		
	Spring	Summer	Autumn
Total survey hours	**191.7**	**202.6**	**312.2**
Myotis spp.	0.3	0.2	1
Leisler's bat	71.3	25.6	39.1
Nathusius' pipistrelle	1.9	2.8	1.3
Common pipistrelle	38.6	53.6	120.6
Soprano pipistrelle	2.4	1.6	8.6
Brown long-eared bat	1.4	2	2

The Nightly Pass Rate (i.e. total bat passes per hour, per night) was used to determine typical bat activity at the Site. The results of this are shown in Plates: 4-16 and Plate 4-17 with varying y-axis, Plate 4-15 shows the same y-axis. Activity is often variable between survey nights. Therefore, the median Nightly Pass Rate was used as the most appropriate measure of bat activity (Lintott & Mathews, 2018). Zero data, when a species was not detected on a night, was also included.

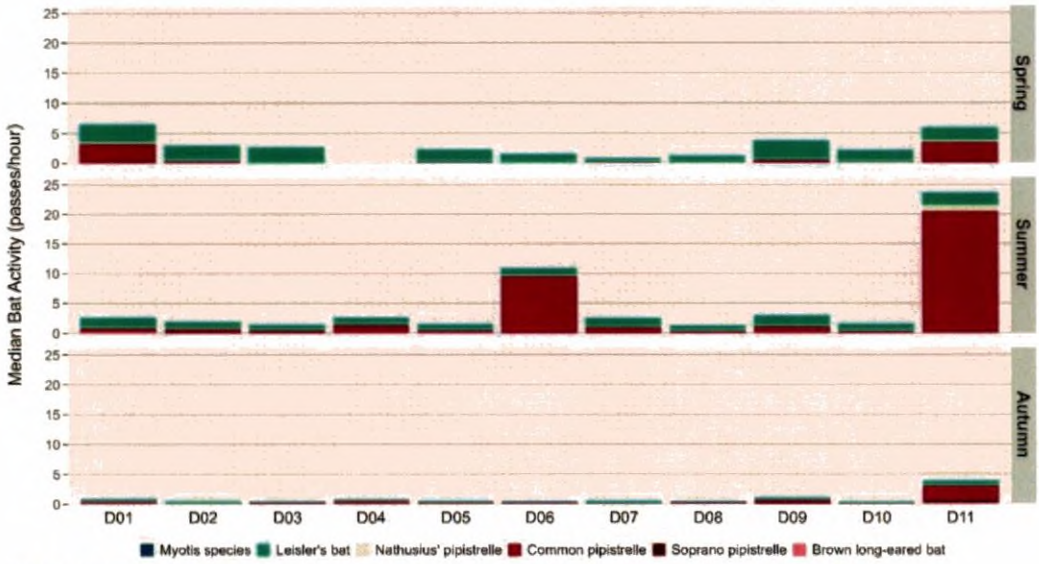

Plate 4-15 Median bat activity per detector across all nights in each season, plots with identical y-axis scales.

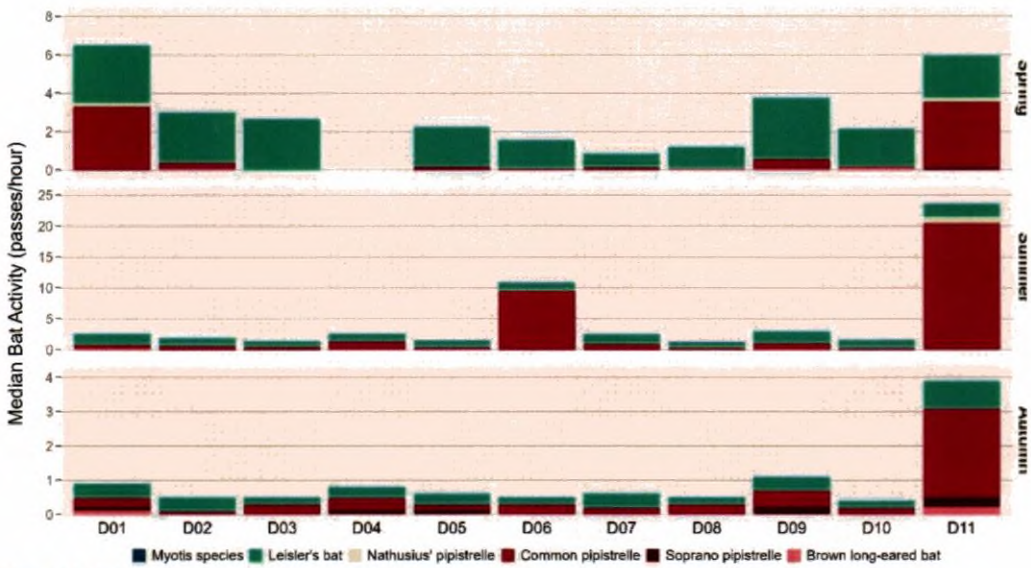

Plate 4-16 Median bat activity per detector across all nights in each season, plots shown with variable y-axis scales.

D11 (corresponding to turbine T11), had the highest median bat activity in any season, and recorded consistently high activity across all seasons surveyed. D01 recorded high activity in Spring, followed by higher activity in comparison to other detectors in Autumn. There was an increase in the amount of Nathusius' pipistrelle and Common pipistrelle activity in summer at D01 and D11 when compared to other detectors and seasons. The median bat passes per hour was zero for all species at D04 in Spring (Plate 4-19). Bat species activity per day is shown for Spring, Summer and Autumn in Plates 4-17 to Plates 4-19.

The three busiest nights across all nights surveyed were the 7th September, 8th September and 9th September, with 43.1% of all bat passes occurring across these 3 nights (just 4% of all nights). Activity varied across nights in Spring and Summer in Plate 4-17 and Plate 4-18. Details of bat pass activity are displayed in Plate-21 for all seasons. Plate-21 and Plate-22 show the activity recorded at each detector, including the 'high' activity recorded within the site over a period of three days in Autumn.

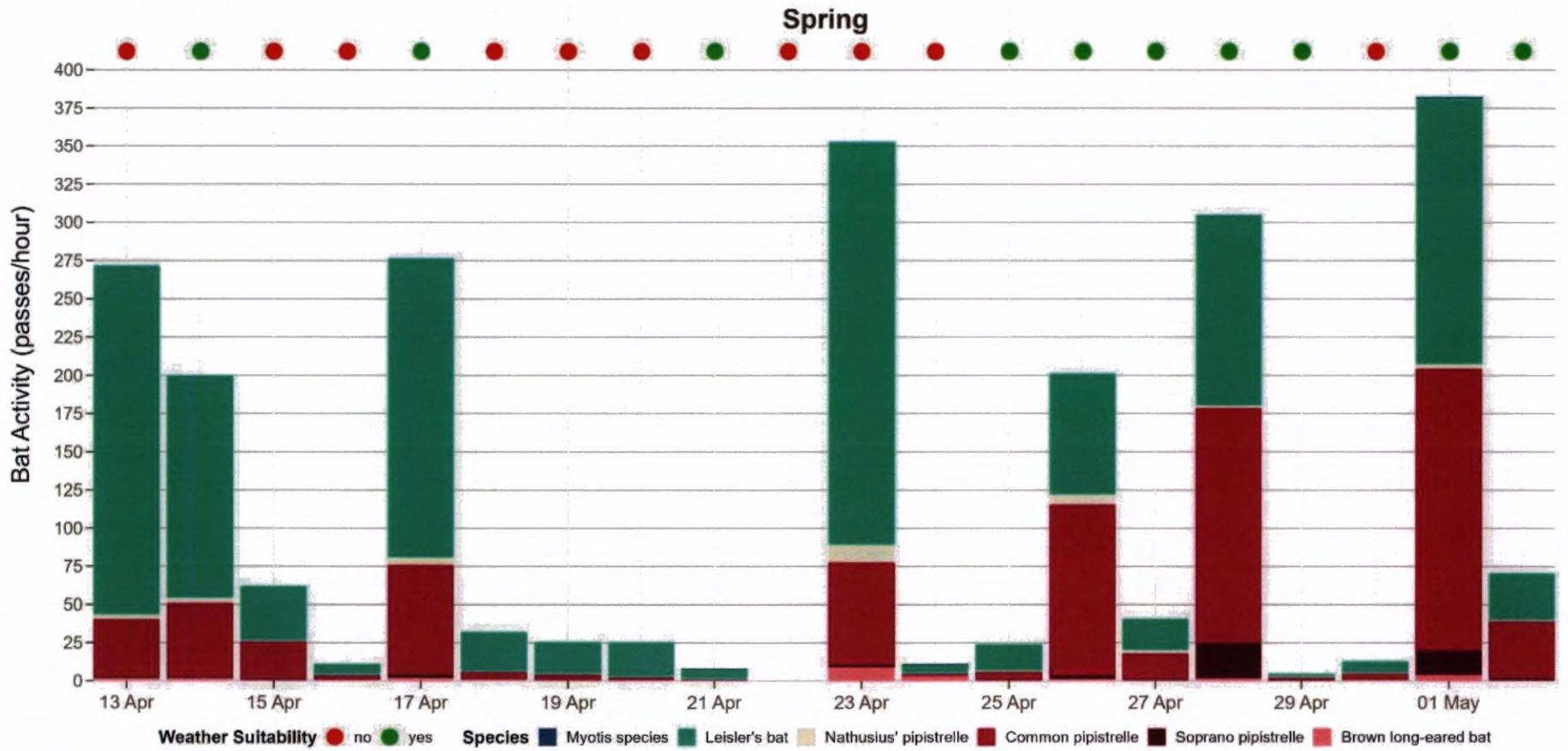

Plate 4-17 Bat activity for each night in the spring survey period including weather suitability for bats.

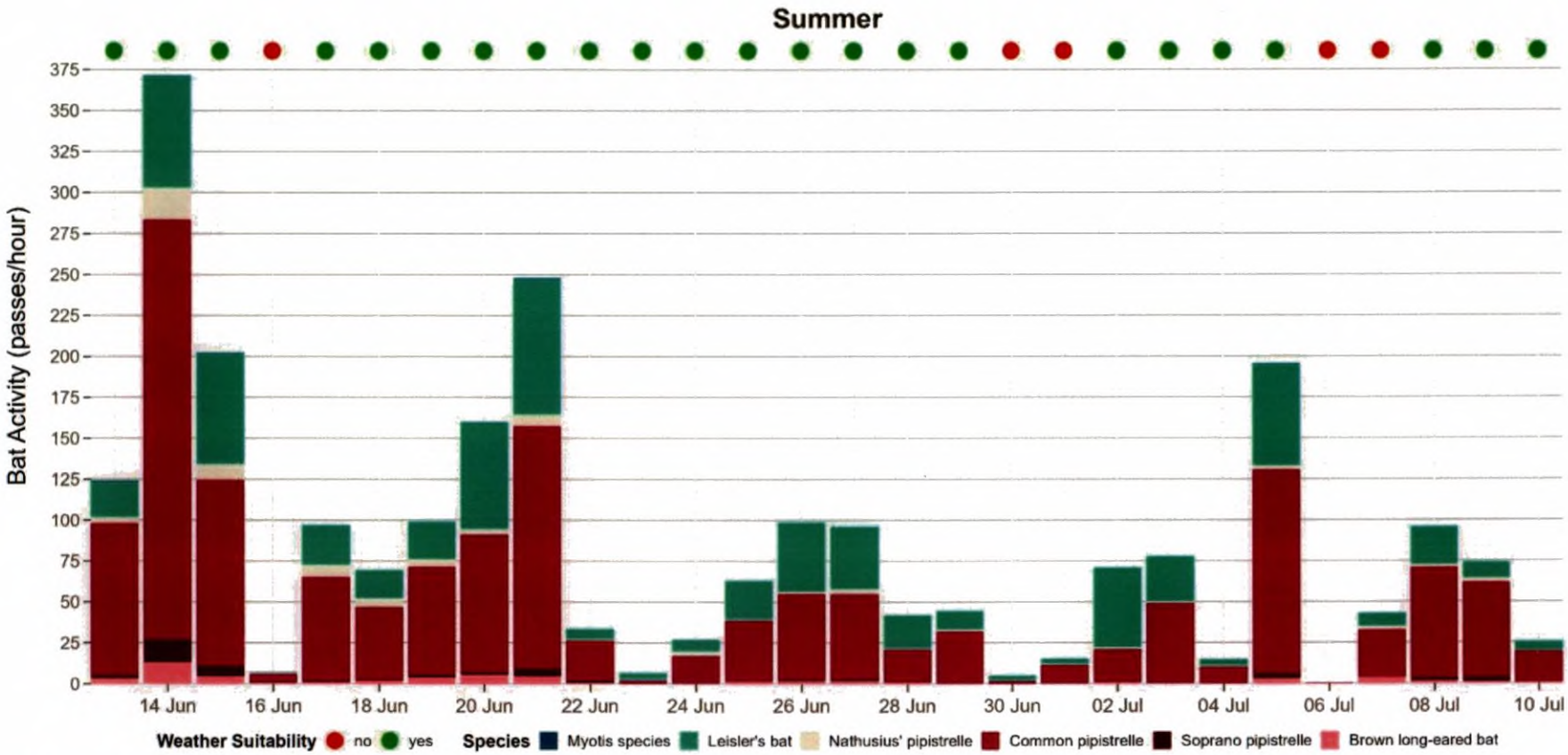

Plate 4-18 Bat activity for each night in the summer survey period including weather suitability for bats.

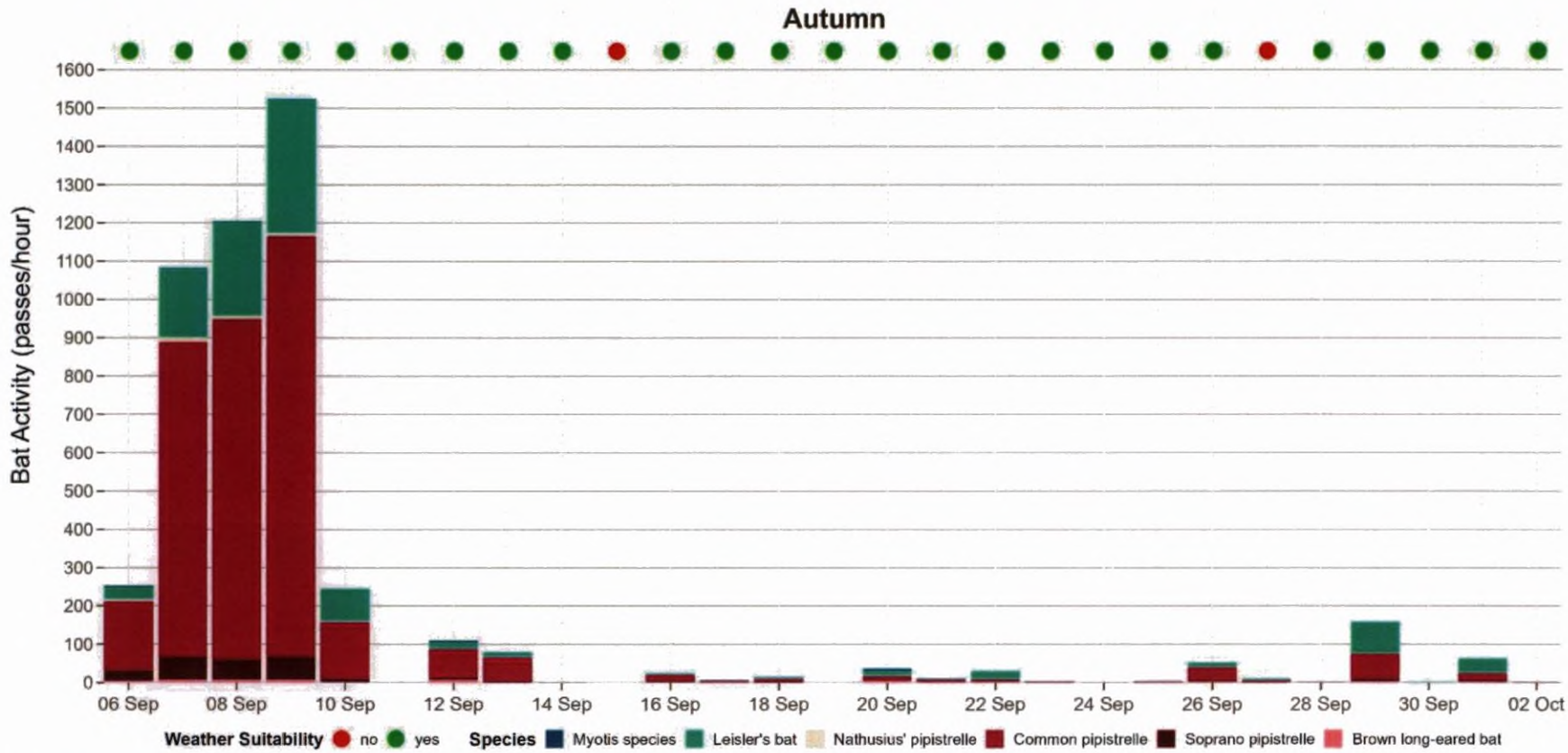

Plate 4-19 Bat activity for each night in the autumn survey period including weather suitability for bats.

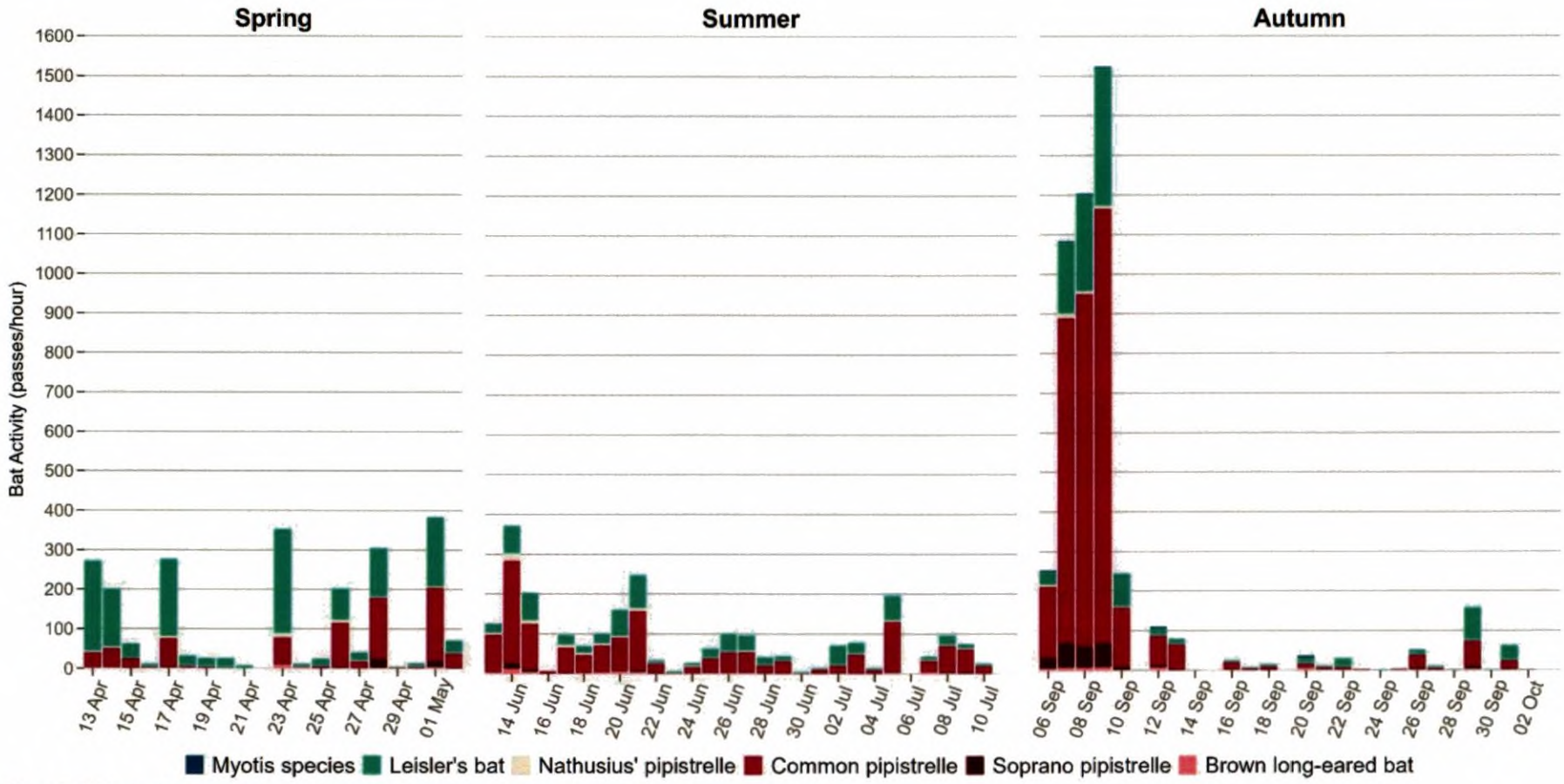

Plate 4-20 2023 static detector surveys: nightly pass rate (bat passes per hour) per detector in each survey period.

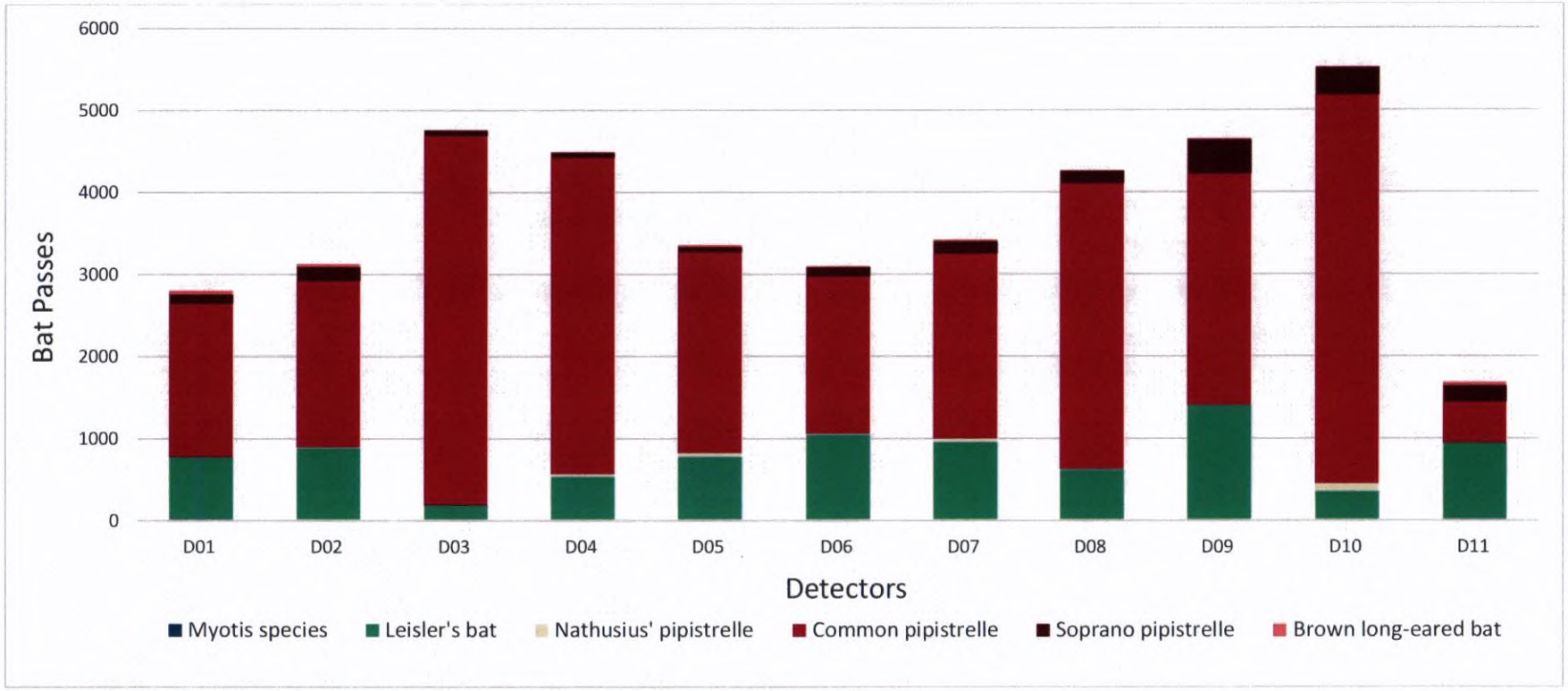

Plate 4-21 Stacked bar chart displaying the species distribution of bat passes across the three busiest nights (7th - 9th September).

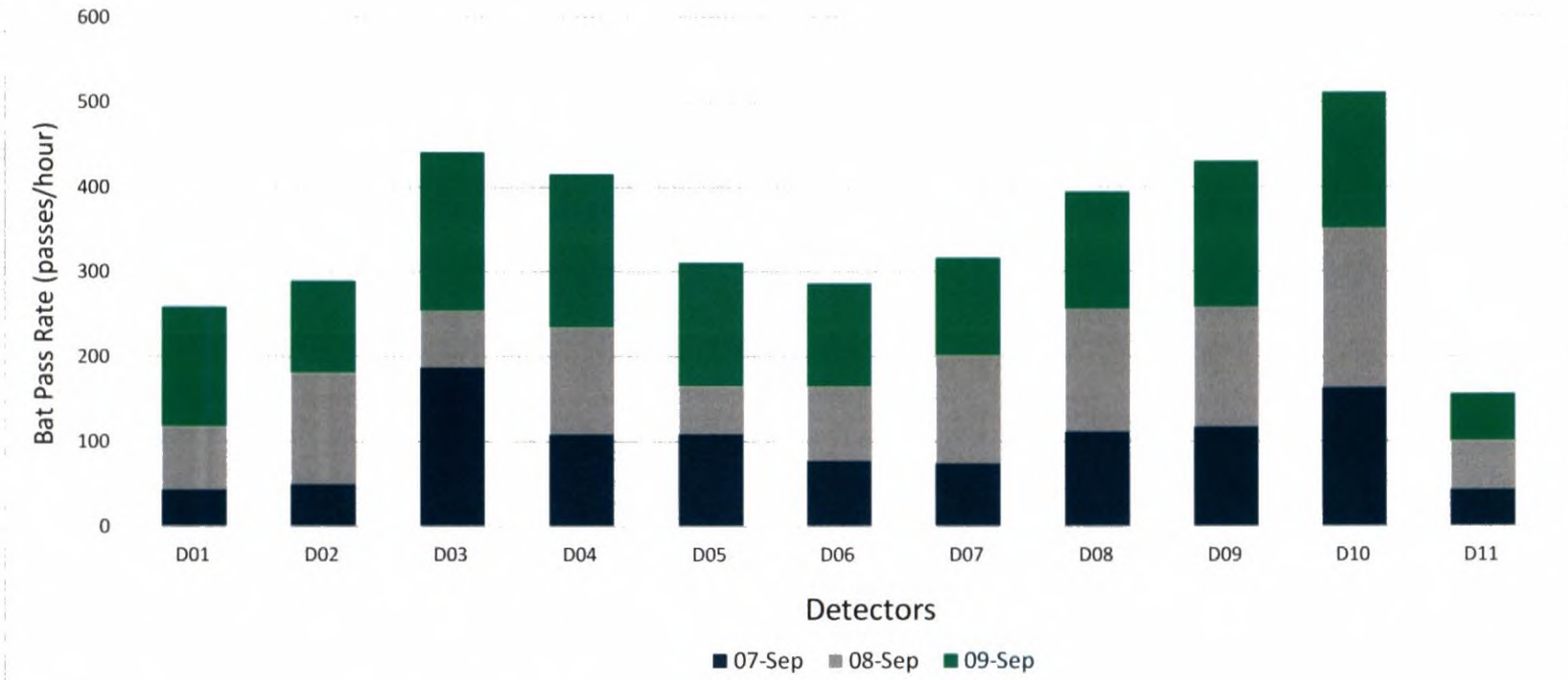

Plate 4-22 Stacked bar chart displaying the distribution of activity across the nights in the three busiest nights (7th - 9th September).

4.3.5 Discussion

4.3.5.1 Assessment of Bat Activity Levels

The Site is located predominantly in agricultural grassland. Table 4 8 shows the Median Nightly Bat Activity (bpph) per Species, per Season, per Detector Location. Open agricultural lands do not typically provide significant suitable habitat for bat species, and there are not many suitable bat habitat features surrounding the site. However, the stone shed at the north-east of the site, near turbine T11, was confirmed as a roost during the 2023 surveys. The courtyard and treeline near this PRF also provide potential commuting and foraging habitat, as observed by surveyors during surveys, and as noted on the ground-level static detectors near T11, which picked up higher Common pipistrelle activity. The treeline along the entrance to the wind farm at the south of the site was also shown to provide suitable commuting habitat for bats, as observed on the dusk transect surveys.

In terms of bat passes, the detector near turbine T11 (i.e. D11) recorded the most overall activity in 2023 (n=11,626), followed by D09 (n=10,532), and D10 (n=10,037). The sum of median bat activity across all of the 2023 surveys was dominated by D11 (sum of median bat activity=33.4 bpph), followed by D06 with a sum of median bat activity equal to 12.9 bpph.

It should be noted that most of the activity recorded in the ground-level static surveys during autumn occurred across just 3 nights (7th - 9th September 2023). A total of 41,246 bat passes were recorded during these 3 nights. This equates to a bat pass rate of 1,271 passes per hour. Of the 41,246 bat passes, 73.6% of these were identified as Common pipistrelle (n=30,356) and 20.2%% of these were identified as Leisler's bat (n=8,330). The bat passes recorded on this night were spread across all 11 no. detectors, with none having activity significantly different from the others. Given that the high numbers across these nights occurred in September, it is possible that there was swarming and/or mating activity occurring within the Proposed Development site.

Details on activity assessment per detector are presented below in Section 4.3.7.2. Activity was assessed as Low, Medium or High based on the methodology described in Section 3.4.1. The activity levels identified inform the impact assessment included in Chapter 6 of the EIAR, together with the results of the desktop study, habitat appraisal and roost assessment.

4.3.5.2 Adapted Site-specific Ranges

Low, Medium and High activity levels were assigned to median and maximum pass rates (bpph) identified during Spring, Summer and Autumn at the detectors deployed across the site as adapted from Mathews *et al.* (2016).

Leisler's bat

Leisler's bat activity was generally Low, with High activity peaks recorded in Spring at D02, D09, and D10 and at D06 and D09 in Autumn. Leisler's bat are considered to be a species at high-risk of collision due to their higher altitude of flying, particularly at the height of wind turbine sweep areas. Ireland is considered a stronghold for the species, which is relatively rare in other areas of Europe: adaptive risk mitigation measures and monitoring at height is particularly important for this species. No monitoring at height was conducted. Nights that were relatively high for Leisler's bat activity were the three busy nights in September (7th, 8th, and 9th September) and 13th April, 14th April, 17th April, 23rd April, 28th April, and the 1st May.

Common pipistrelle

Common pipistrelle median bat activity was generally low throughout the Proposed Development site, with high maximum activity, implying most activity occurred on a small number of nights, which is

confirmed by Plates 4-17 to 4-22. This species recorded *Moderate* median activity at D06 in Summer and *High* median activity at D11 in summer. In terms of nightly Common pipistrelle activity, the 7th, 8th, and 9th September recorded activity way higher than any other nights. Other notably busy nights were: 28th April, 1st May, 14th June, 21st June, 6th September, and 10th September.

Soprano pipistrelle

Soprano pipistrelle median bat activity was very low across all detectors and all seasons surveyed. Maximum activity was generally Low, with higher maximum activity recorded during the autumn period. Maximum activity for this species was recorded as moderate for D11 in Spring, and for D01, D02, D08, D10, and D11 for Autumn, while D09 recorded high activity in Autumn. Soprano pipistrelle activity was generally low across all the dates in the summer period with the three busiest nights being the 7th, 8th, and 9th of September, with extraordinarily high activity. Other nights with relatively high activity were: 28th April, 1st May, 14th June and the 6th of September.

Nathusius' pipistrelle

This species recorded very low median activity at all detectors, across all seasons surveyed (zero for most). High peak activity was recorded at one detector in each season; D11 in Spring, D06 in Summer, D10 in Autumn. Moderate peak activity was recorded at D01 in spring, D10 and D11 in summer, and at D04, D05, and D07 in autumn. A moderate amount of Nathusius' pipistrelle passes were recorded during the static surveys (n=1,386), because this is outside the known range of Nathusius' pipistrelle, it is likely that the local population is particularly vulnerable. In terms of nightly Nathusius' pipistrelle activity, the night which recorded the highest activity was 14th June. Other notable nights of activity were the 23rd April and 7th September.

These species are considered at high-risk of collision with wind turbines. During the dusk emergence surveys, Soprano and Common pipistrelles were observed commuting and foraging in the area surrounding the stone shed, near turbine T11, with multiple bats regularly recorded at once. A small Common pipistrelle roost was identified within the site approximately 80 metres south of turbine T11. No other suitable roosting structure was identified within the site. Commuting activity was also observed by Common pipistrelle, Soprano pipistrelle, and Leisler's bat along the treeline at the wind farm entrance.

Woodland Species

Myotis spp. activity was very low on site, with all median and maximum bat activity being recorded as low for each detector and season, besides for D01 in Autumn, which recorded high maximum activity. Nights which recorded the highest *Myotis* spp. activity were: 6th, 7th, 8th, 9th, 12th, and 20th September.

Median Brown long-eared bat activity was recorded as low across all seasons surveyed and detectors. High peak activity levels for this species were recorded at D09 in Spring, and at D01 in Summer. Nights of relatively high activity for the Brown long-eared bat were: 23rd April, 14th June, and the 7th, 8th, 9th, and 12th of September.

Myotis spp. bats and brown long-eared bats are not considered to be at high risk of collision with wind turbines, as they tend to commute and forage at low altitudes in proximity of linear features and within woodland environments. The site provides suitable commuting habitat but has little foraging or roosting potential.

Lesser Horseshoe Bat

No Lesser horseshoe bat activity was recorded on site. The site is outside the known range for this species' known range.

Table 4-8 Median Nightly Bat Activity (bpph) per Species, per Season, per Detector Location 2023 Low, Moderate, High

Species	Season	Bat activity (bpph)	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11
Myotis sp.	Spring	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Maximum	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.6	0.8	0.1
	Summer	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Maximum	0.1	0.1	0.1	0.4	0.3	0.1	0.3	0.0	0.1	0.1	0.1
	Autumn	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Maximum	4.3	0.3	0.4	0.2	0.5	0.5	0.5	1.0	0.5	0.4	0.8
Leisler's bat	Spring	Median	3.0	2.6	2.7	0.0	2.1	1.4	0.7	1.1	3.2	1.9	2.2
		Maximum	36.7	52.5	37.2	8.6	14.0	19.7	28.2	19.2	66.9	69.4	35.0
	Summer	Median	1.8	1.2	0.9	1.2	1.0	1.3	1.5	0.9	1.8	1.2	2.1
		Maximum	12.4	13.6	4.4	10.7	12.7	10.5	9.6	8.4	15.2	8.2	10.6
	Autumn	Median	0.4	0.4	0.2	0.3	0.3	0.2	0.4	0.2	0.4	0.2	0.8
		Maximum	31.2	34.2	8.7	19.6	42.9	60.4	46.5	32.9	58.6	11.7	37.2
Nathusius' pipistrelle	Spring	Median	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
		Maximum	3.3	1.0	0.3	0.0	0.5	0.3	0.1	0.2	1.0	0.5	6.7
	Summer	Median	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.0
		Maximum	0.6	0.1	0.3	0.3	1.0	10.7	1.3	0.4	0.7	2.2	4.9
	Autumn	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Maximum	0.3	1.2	0.1	2.2	3.4	1.3	2.4	1.1	0.7	5.3	0.7
Common pipistrelle	Spring	Median	3.3	0.4	0.0	0.0	0.2	0.1	0.2	0.0	0.6	0.1	3.4
		Maximum	50.7	22.8	5.9	3.0	6.7	8.6	10.2	5.4	35.7	14.0	45.9
	Summer	Median	0.6	0.7	0.5	1.4	0.4	9.5	1.0	0.4	1.0	0.4	20.2
		Maximum	15.3	19.9	32.9	33.4	25.7	49.3	21.4	24.6	9.9	24.9	44.3
	Autumn	Median	0.3	0.1	0.3	0.4	0.2	0.3	0.2	0.3	0.5	0.2	2.6
		Maximum	121.4	87.4	181.2	157.1	98.9	60.8	104.2	132.6	97.0	167.4	17.8
Soprano pipistrelle	Spring	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
		Maximum	1.3	3.9	2.2	0.1	0.4	2.1	1.3	0.2	2.3	1.4	10.0
	Summer	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
		Maximum	1.1	0.7	0.7	2.6	1.5	2.8	3.1	0.8	0.7	0.6	1.3
	Autumn	Median	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.3
		Maximum	6.7	8.1	2.8	2.6	2.6	5.4	6.0	8.4	27.1	16.6	9.7
Brown long-eared bat	Spring	Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
		Maximum	0.3	1.8	0.2	0.1	0.7	0.4	0.3	0.3	4.9	3.0	0.5
	Summer	Median	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1
		Maximum	6.5	1.0	1.1	0.8	0.8	1.0	1.0	0.4	0.8	0.6	2.4
	Autumn	Median	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
		Maximum	4.7	1.6	0.6	0.5	1.2	1.0	1.1	0.8	1.2	0.6	1.7

4.1 Importance of Bat Population Recorded at the Site

Ecological evaluation within this section follows a methodology that is set out in Chapter three of the *'Guidelines for Assessment of Ecological Impacts of National Roads Schemes'* (NRA, 2009).

All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Acts 1976, as amended. One bat roost was identified within the Site. Bats as an Ecological Receptor have been assigned ***Local Importance (Higher value)*** on the basis that the habitats within the site are utilized by a regularly occurring bat population of Local Importance.

A small common pipistrelle bat roost has been identified within the Site in the Stone building. In addition, four structures with *Negligible* potential to host roosting bats with no evidence of use by bats have been identified. None of these structures are due to be demolished or altered in any way as part of the Proposed Development.

5. RISK AND IMPACT ASSESSMENT

This risk and impact assessment has been undertaken in accordance with NatureScot Guidance. As per the NatureScot Guidance, wind farms present four potential risks to bats:

- 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 Site has been utilized to predict the potential effects of the Proposed Project on bats.

5.1 Collision Mortality

5.1.1 Assessment of Site-Risk

The likely impact of a proposed development on bats is related to site-based risk factors, including habitat and development features. The site risk assessment, as per Table 3a of the NatureScot guidance, is provided in Table 5-1 below.

Table 5-1 Site-risk Level Determination for the Proposed Development Site (Adapted from NatureScot 2021)

Criteria	Site-specific Evaluation	Site Assessment
Habitat Risk	One small bat roost of Common pipistrelle species was recorded on the site. Additionally, a small number of trees with Low potential are present on the Site. The habitats within the site provide low quality limited foraging and commuting habitat for bats but is connected to the wider landscape via numerous hedgerows. However, it does not provide an extensive and diverse habitat mosaic of high quality for foraging bats or meet any of the criteria of a high-risk site as set out in Table 3a of NatureScot, 2021.	Moderate
Project Size	Following the criteria set out in NatureScot, 2021 the project is of Medium scale as it consists of 11 no. turbines. Whilst those turbines are over 100m in height, it is below the number of turbines that would constitute a Large development (NatureScot, 2021). A small number of wind energy developments present within 10 km. These contain less than 4 Turbines per project.	Medium
Site Risk Assessment (from criteria in Plate 3.3)		**Medium Site Risk (9)**

The site of the Proposed Development is located in an area of predominantly agricultural grassland. As per table 3a of the NatureScot Guidance (2021), it has a Moderate habitat risk score and a Medium project size (12 existing turbines). The cross tabulation of a Medium project on a Moderate risk site results in an overall risk score of **Medium** (NatureScot Table 3a).

5.1.2 Assessment of Collision Risk

The following high-risk species were recorded during the dedicated surveys:

- Leisler's bat
- Common pipistrelle
- Soprano pipistrelle
- Nathusius' pipistrelle

The Overall Risk Assessment for high collision risk species is provided in the sections below. Overall Risk was determined, in accordance with Table 3b of NatureScot 2021 guidance (**Appendix 3**), by a cross-tablature of the site risk level (i.e. Medium). The assessment was carried out for both median and maximum activity categories in order to provide insight into typical bat activity (i.e. median values) and activity peaks (i.e. maximum values). NatureScot recommends that the most appropriate activity level (i.e. median or maximum) be utilised to determine the overall risk assessment for a species.

As per NatureScot guidance there is no requirement to complete an Overall Risk Assessment for low-risk species. During the extensive suite of surveys undertaken the following low risk species were recorded:

- *Myotis spp.*
- Brown long-eared bat

Overall activity levels were low for the above species; therefore, no significant collision related effects are anticipated. Activity levels for these species will continue to be assessed during operational monitoring following the implementation of best practice mitigations provided. Further mitigation will be implemented after Year 2 monitoring if deemed necessary.

5.1.2.1 Leisler's bat

This site is within the current range of the Leisler's bat (NPWS, 2019). Leisler's bats are classed as a rarer species of a high population risk which have a high collision risk (Plate 3-2). Leisler's bats were recorded during activity surveys across the Site. When assessed in the context of the identified site risk and in line with Table 3b (NatureScot 2021), overall activity risk for Leisler's bat in 2023 was found to be ***Low*** at low typical activity levels during the 2023 bat season. Peak activity levels were ***Medium*** in Spring and ***High*** in Summer and Autumn for Leisler's bat (See Table 5-2 below).

Based on site visit and survey data, including walked transects and driven transects, it is determined that the Typical Activity (i.e. Median) is reflective of the nature of the site, which is agricultural grassland, with some arable crops and treelines and hedgerows, with low levels of bat activity recorded during the walked transects undertaken.

Thus, there is a ***Low*** collision risk level assigned to the local population of Leisler's bat.

Table 5-2 Leisler's Bat - Overall Risk Assessment

Survey Period	Site Risk	Typical Activity (Median)	Typical Risk Assessment (as per Table 3b NatureScot 2021)	Activity Peaks (Maximum)	Peak Risk Assessment (as per Table 3b NatureScot 2021)
Spring 2023	Medium (3)	Low (1)	Typical Risk is Low (3)	High (5)	Peak Risk is High (15)
Summer 2023		Low (1)	Typical Risk is Low (3)	Moderate (3)	Peak Risk is Medium (9)
Autumn 2023		Low (1)	Typical Risk is Low (3)	High (5)	Peak Risk is High (15)

5.1.2.2 Soprano Pipistrelle

This site is within the current range of the Soprano pipistrelle bat (NPWS, 2019). Soprano pipistrelles are classed as a common species of a medium population risk which have a high potential collision risk (Plate 3-2). Soprano pipistrelles were recorded during activity surveys across the Site. When assessed in the context of the identified site risk and in line with Table 3b (NatureScot 2021), overall activity risk for Soprano pipistrelle in 2019 was found to be ***Low*** at low typical activity levels across all seasons surveyed. Peak activity levels were ***Low*** typical activity levels across all seasons for Soprano pipistrelle (See Table 5-3 below).

Based on site visit and survey data, including walked transects, it is determined that the Typical Activity (i.e. Median) is reflective of the nature of the site, which is agricultural grassland, with some arable crops and treelines and hedgerows, with low levels of bat activity recorded during the walked transects and driven transects undertaken.

Thus, there is ***Low*** collision risk level assigned to the local population of Soprano pipistrelle.

Table 5-3 Soprano Pipistrelle - Overall Risk Assessment

Survey Period	Site Risk	Typical Activity (Median)	Typical Risk Assessment (as per Table 3b NatureScot 2021)	Activity Peaks (Maximum)	Peak Risk Assessment (as per Table 3b NatureScot 2021)
Spring 2023	Medium (3)	Low (1)	Typical Risk is Low (3)	Low (1)	Peak Risk is Low (3)
Summer 2023		Low (1)	Typical Risk is Low (3)	Low (1)	Peak Risk is Low (3)
Autumn 2023		Low (1)	Typical Risk is Low (3)	Low (1)	Peak Risk is Low (3)

5.1.2.3 Common pipistrelle

This site is within the current range of the Common pipistrelle bat (NPWS, 2019). Common pipistrelle are classed as a common species of a medium population risk which have a high collision risk (Plate 3-2). Common pipistrelle were recorded during activity surveys across the Site.

When assessed in the context of the identified site risk and in line with Table 3b (NatureScot 2021), overall activity risk for Common pipistrelle in 2023 was found to be ***Low*** at typical low activity levels in all seasons surveyed. Peak activity levels were ***Moderate-High*** in Spring and ***High*** during Summer and Autumn for Common pipistrelle (See Table 5-4 below).

Based on site visit and survey data, including walked transects, it is determined that the Typical Activity (i.e. Median) is reflective of the nature of the site, which is agricultural grassland, with some arable crops and treelines and hedgerows, with low levels of bat activity recorded during the walked transects and driven transects undertaken.

Detector D11 registered nights with High levels of median Common pipistrelle activity in summer 2023. This detector corresponds to turbine T11.No other detectors recorded High levels of median Common pipistrelle activity across any other season in 2023.

Thus, there is ***Low*** collision risk level assigned to the local population of Common pipistrelle.

Table 5-4 Common Pipistrelle - Overall Risk Assessment

Survey Period	Site Risk	Typical Activity (Median)	Typical Risk Assessment (as per Table 3b NatureScot 2021)	Activity Peaks (Maximum)	Peak Risk Assessment (as per Table 3b NatureScot 2021)
Spring 2023	Medium (3)	Low (1)	Typical Risk is Low (3)	Moderate-High (4)	Peak Risk is Medium (12)
Summer 2023		**Low (1)**	**Typical Risk is Low (3)**	**High (5)**	**Peak Risk is High (15)**
Autumn 2023		Low (1)	Typical Risk is Low (3)	High (5)	Peak Risk is High (15)

5.12.4 Nathusius' pipistrelle

This site is within the current range of the Nathusius' pipistrelle bat (NPWS, 2019). Nathusius' pipistrelle are classed as a rarer species of a high population risk which have a high collision risk (Plate 3-2). Nathusius' pipistrelle were recorded during activity surveys across the Site.

When assessed in the context of the identified site risk and in line with Table 3b (NatureScot 2021), overall activity risk for Nathusius' pipistrelle in 2023 was found to be ***Low*** at typical low activity levels in all seasons surveyed. Peak activity levels were ***Low*** in Spring and ***Low – Moderate*** during Summer and Autumn for Nathusius' pipistrelle (See Table 5-5 below).

Based on site visit and survey data, including walked transects and driven transects, it is determined that the Typical Activity (i.e. Median) is reflective of the nature of the site, which is agricultural grassland, with some arable crops and treelines and hedgerows, with no Nathusius' pipistrelle activity recorded during the walked transects and driven undertaken.

Thus, there is ***Low*** collision risk level assigned to the local population of Nathusius' pipistrelle.

Table 5-5 Nathusius' Pipistrelle - Overall Risk Assessment

Survey Period	Site Risk	Typical Activity (Median)	Typical Risk Assessment (as per Table 3b NatureScot 2021)	Activity Peaks (Maximum)	Peak Risk Assessment (as per Table 3b NatureScot 2021
Spring 2023	Medium (3)	Low (1)	Typical Risk is Low (3)	Low (1)	Peak Risk is Low (2)
Summer 2023		**Low (1)**	**Typical Risk is Low (3)**	**Low-moderate (2)**	**Peak Risk is Low (4)**
Autumn 2023		Low (1)	Typical Risk is Low (3)	Low-moderate (2)	Peak Risk is Low (4)

5.13 Collision Risk Summary

Site-level collision risk for all high collision risk bat species was *Low*. Overall bat activity levels were typical of the nature of the site, which is agricultural grassland, with some arable crops and treelines and hedgerows, with low levels of bat activity recorded during the transects undertaken.

However, following per detector R-analysis, detectors across the site detector showed High peaks in Common pipistrelle activity in Autumn over a small number of days (Table 5-6). Taking a precautionary approach and given the potential for high collision risk was recorded at median activity levels, an adaptive monitoring and mitigation strategy has been devised for the Proposed Development, in line with the case study example provided in Appendix 5 of the NatureScot 2021) Guidance and based on the site-specific data. This will involve curtailment during periods with high Common pipistrelle activity (i.e. Summer and Autumn at T11), with simultaneous activity monitoring taking