

7. BIRDS

7.1 Introduction

This chapter assesses the likely significant impacts of the Proposed Development on avian receptors. Particular attention has been paid to bird species with national and international protection under the Irish Wildlife Acts 1976-2022 and the European Union (EU) Birds Directive (2009/147/EC). Where potential impacts on avian receptors are identified, mitigation is described, and the residual effects are assessed.

This chapter is supported by Technical Appendices 7-1 to 7-7. Appendices 7-1 to 7-4 contain data from the surveys undertaken including full details of the survey times, weather conditions, and other relevant information together with the bird records themselves. Confidential Appendix 7-5 contains sensitive records of protected species breeding sites. Appendix 7-6 contains the Collision Risk Assessment (CRA) document which illustrates how the collision risk modelling was undertaken for the assessment of the Proposed Development. Appendix 7-7 contains the bird monitoring plan for the construction and operational phases of the Proposed Development. The Site and survey radii are provided in Figures 7.1 to 7.8 below.

The chapter is structured as follows:

- The Introduction provides a description of the Proposed Development and the relevant legislation, guidance and policy context.
- The Assessment Approach and Methodology section is a comprehensive description of the ornithological surveys and impact assessment methodology used to inform a robust assessment of the potential impacts of the Proposed Development on birds.
- The Baseline Ornithological Conditions section describes the existing bird population at the Site.
- The Receptor Evaluation section identifies key ornithological receptors and determines their sensitivity.
- The Potential Impacts section details the impact assessment (including direct habitat loss, disturbance/displacement and collision risk). Impacts are described with regard to each phase of the Proposed Development: construction, operation and decommissioning.
- The Mitigation and Best Practice Measures section describes proposed mitigation and best practice measures to ameliorate the identified impacts.
- The Monitoring section outlines a schedule for monitoring birds during each phase of the Proposed Development if planning permission is granted: commencement and construction, operation and decommissioning.
- The Residual Effects section considers the implications of the proposed mitigation, best practice and monitoring.
- Finally, the Cumulative Effects section fully assesses potential cumulative effects of the Proposed Development in combination with other projects.
- The Conclusion provides a summary statement on the overall significance of predicted effects on birds.

As detailed in Section 1.1.1 in Chapter 1 (Introduction), for the purposes of this EIAR, the various project components are described and assessed using the following references: 'Proposed Development', 'proposed turbines', the 'Site', the '2020 Application' and the 'Kealkill Wind Farm'. Please see Section 1.1.1 of this EIAR for further details. A detailed description of the Proposed Development is provided in Chapter 4 (Description of the Proposed Development) of this EIAR.

The following other definitions are used in this chapter:

- The “Study Area” will differ based on the survey type and species, these are described in detail in Section 7.2.4. These study areas are based on NatureScot (SNH, 2017) guidance.
- “Key Ornithological Receptor” (KOR) is defined as a species occurring within the study area of the Proposed Development upon which potential impacts are anticipated and assessed.

7.1.1 Description of the Proposed Development

A full description of the Proposed Development is provided in Chapter 4 of this EIAR. In brief, Wingleaf Ltd (the Applicant) is seeking a 10-year development permission and a 35-year operational life from the date of commissioning for a development consisting of 3 no. turbines, a met mast, the continued use of the existing onsite 38Kv substation and all associated works. The proposed turbines will have a tip height of 156.5m, with a rotor diameter of 133m. The Proposed Development will have an operational life of 35 years from the date of commissioning of the turbines.

7.1.2 Legislation, Guidance and Policy Context

This EIAR is prepared in accordance with the requirements of EU Environmental Impact Assessment Directive 2014/52/EU. The following key legislative provisions are applicable to habitats and fauna in Ireland:

- The Wildlife Act 1976. This Act was revised in October 2022 to present amendments since enactment.
- The Birds Directive (EU Directive 2009/147/EC on the conservation of wild birds)
- The European Communities (Birds and Natural Habitats) Regulations 2011, as amended (S.I. no. 477 of 2011). These regulations transpose the EU Birds Directive into Irish law. The regulations were amended in 2013 (290/2013 and 499/2013), 2015 (355/2015) as well as Chapter 4 of the Planning, Heritage and Broadcasting (Amendment) Act 2021 (11/2021) and in 2021 (293/2021).
- The International Convention on Wetlands of International Importance (the Ramsar Convention), 1971. This convention protects 45 wetland sites of significant value for nature in Ireland.

In the absence of specific national ornithological survey guidance for Ireland, the following guidance documents published by NatureScot (formerly Scottish Natural Heritage [SNH]) have been followed to inform this assessment:

- SNH (2000). Wind farms and birds: calculating a theoretical collision risk assuming no avoidance action. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2017-09/Guidance%20Note%20-%20Windfarms%20and%20birds%20-%20Calculating%20a%20theoretical%20collision%20risk%20assuming%20no%20avoiding%20action.pdf>
- SNH (2009). Monitoring the impact of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2017-09/Guidance%20Note%20-%20Monitoring%20the%20impact%20of%20onshore%20windfarms%20on%20birds.pdf>
- SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2018-08/Assessing%20connectivity%20with%20special%20protection%20areas.pdf>
- SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2018-06/Guidance%20Note%20-%20Recommended%20bird%20survey%20methods%20to%20inform%20impact%20assessment%20of%20onshore%20windfarms.pdf>
- SNH (2018a) Avoidance rates for the onshore SNH wind farm collision risk model. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2018->

[09/Wind%20farm%20impacts%20on%20birds%20-%20Use%20of%20Avoidance%20Rates%20in%20the%20SNH%20Wind%20Farm%20Collision%20Risk%20Model.pdf](#)

- SNH (2018b). Assessing the cumulative impacts of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2018-08/Guidance%20-%20Assessing%20the%20cumulative%20impacts%20of%20onshore%20wind%20farms%20on%20birds.pdf>
- SNH (2018c). Assessing significance of impacts from onshore wind farms outwith designated areas. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected>
- NatureScot (2024). Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms>

The following Irish guidance documents were also consulted:

- Percival, S.M. (2003). Birds and wind farms in Ireland: A review of potential issues and impact assessment. Ecology Consulting, Durham, UK. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Percival_2003.pdf
- McGuinness, D., Muldoon, C., Tierney, N., Cummins, S., Murray, A., Egan, S. and Crowe, O. (2015). Bird Sensitivity Mapping for Wind Energy Developments and Associated Infrastructure in the Republic of Ireland. Birdwatch Ireland, Wicklow, Ireland. Available at: https://birdwatchireland.ie/app/uploads/2019/09/BWI-Bird-Wind-Energy-devt-Sensitivity-Mapping-Guidance_document.pdf
- Gilbert, G., Stanbury, A. and Lewis, A. (2021). Birds of Conservation Concern in Ireland 4: 2020-2026. *Irish Birds*, 43:1-22. Available at: <https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/>

Furthermore, this assessment has been prepared with respect to the various planning policies and strategy guidance documents listed below:

- European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites. Publications Office of the European Union, Luxembourg.
- European Commission (2020). Guidance document on wind energy developments and EU nature legislation. Publications Office of the European Union, Luxembourg.
- Planning and Development Act, 2000 (as amended).
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority, Ireland.
- EPA, 2022. Guidelines on the information to be contained in Environmental Impact Statement reports. Environmental Protection Agency, Johnstown Castle Estate, Wexford.
- DoHPLG (2018). Guidelines for planning authorities and An Coimisiún Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government, Government of Ireland, Dublin.
- Cork County Development Plan 2022-2028

7.1.3 Statement of Authority and Competence

This ornithology chapter has been prepared by Patrick Manley (B.Sc., MCIEEM), Senior Ornithologist of MKO and reviewed by Pdraig Cregg (B.Sc., M.Sc., MCIEEM), Principal Ornithologist. Both are suitably qualified ornithologists with experience in completing avifaunal assessments and competent experts for the purposes of the preparation of this EIAR. The scope of works and survey methodology was devised by Principal Ornithologist, Pdraig Cregg and is fully compliant with recent NatureScot (formerly Scottish Natural Heritage) guidance (SNH, 2017). Field surveys were undertaken by Allan

Mee, Brogan Jones, Ciarán McKenna, Conor Rowlands, Edward Carty, John Meade, Ludivine Baldacchino, Sheriene Acun, Susan Doran and Thalie Konstantinidis. All surveyors are competent experts in ornithology field surveying.

7.2 Assessment Approach and Methodology

7.2.1 Desk Study

A comprehensive desk study was undertaken to search for any relevant information on species of conservation concern that may use the Site. The assessment included a thorough review of the available ornithological data including:

- › Designated sites discussed within the Natura Impact Statement which accompanies this application.
- › Review of Bird Atlases: (Sharrock, 1976; Lack, 1986; Gibbons *et al.*, 1993; Balmer *et al.*, 2013).
- › Review of online web-mappers: National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), Irish Wetland Bird Survey I-WeBS. Review of specially requested records from the National Parks and Wildlife Service Rare and Protected Species Database.
- › The EIAR for a previous wind farm application on the Site (PI Ref 20/350 / ABP-308244-20 / ABP-315656-23).
- › Review of impact assessments associated with nearby developments including wind farms.

7.2.2 Consultation

Consultation was undertaken with the relevant statutory and non-statutory organisations as part of the EIAR scoping to inform the current assessment. Full details can be found in Section 2.8 of Chapter 2 of this EIAR. Table 7-1 Consultation responses Table 7-1 below provides a list of the organisations consulted that raised queries with regard to ornithology during the scoping process and notes where scoping responses were received.

Copies of all scoping responses are included in Appendix 2-2 of this EIAR. The recommendations of the consultees have informed the EIAR preparation process and the contents of this chapter; Chapter 2 describes where the comments raised in the scoping responses received have been addressed.

Table 7-1 Consultation responses

	Consultee	Response	Issues Raised
01	An Taisce	No response received	-
02	BirdWatch Ireland	No response received	-
03	Department of Agriculture, Food and the Marine	Response received 11/03/2025	No issues raised in relation to birds
04	Department of the Environment, Climate and Communications	Response received 25/02/2025	No issues raised in relation to birds
05	Development Applications Unit (NPWS/NMS)	No response received	-
06	Irish Red Grouse Association	No response received	-
07	Irish Peatland Conservation Council	Response Received 02/04/2025	Raised concern over the decline of the Curlew species in Ireland
08	Irish Raptor Study Group	No response received	-
09	Irish Wildlife Trust	Response received 01/04/2025	No issues raised in relation to birds

7.2.3 Identification of Target Species and Key Ornithological Receptors

Following a comprehensive desk study, initial site visits and consultation, a list of “target species” likely to occur at the Proposed Development was compiled. Bird surveys conducted at the Site were then specifically designed to survey these target species, in accordance with NatureScot guidance (SNH, 2017). The target species list was drawn from:

- Species listed in Annex I of the EU Birds Directive.
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects.
- Red listed Birds of Conservation Concern in Ireland (BoCCI).
- Species that are particularly sensitive to wind farm developments, e.g. raptors.

Following analysis of field survey data (described below), a precautionary screening approach was followed to identify KORs: the list of target species observed during surveys (see Appendix 7-1) was refined to KORs, excluding those for which pathways for a significant effect could not be identified.

7.2.4 Field Surveys

Field surveys were undertaken during the survey period October 2022 to March 2025¹, consisting of two breeding seasons (April – September) and three winter seasons (October – March). Based on the results of the desk study, consultation and reconnaissance site visits described in the previous sections (Section 7.2.1 to 7.2.3), the assemblage of bird species in the Proposed Development and the likely importance of the Site for these species was ascertained. Then, adopting a precautionary approach, a site-specific scope for ornithological surveys was devised. The data provided in the field surveys is robust and allows clear, precise and definitive conclusions to be made on the avian receptors identified within the Site.

The survey work that was undertaken between October 2022 and March 2025 forms the core dataset for the assessment of impacts on ornithology. In the absence of specific national bird survey guidelines, the ornithological surveys were designed and undertaken in full accordance with the guidance document ‘Recommended bird survey methods to inform impact assessment of onshore wind farms’ (SNH, 2017). The various ornithological surveys undertaken at the Site and hinterland are described in detail below.

7.2.4.1.1 Vantage Point Surveys

Vantage point surveys were undertaken in accordance with NatureScot guidance (SNH, 2017) to monitor flight activity within the Site and within a 500m radius of the potential turbine positions. Surveys were conducted from two fixed point vantage points with comprehensive coverage of the proposed turbine layout (see Figure 7-1 below). The vantage point locations were selected by undertaking a viewshed analysis (described below) and confirmed by a reconnaissance visit and initial field surveys to ensure that the proposed turbine layout was entirely covered.

Viewsheds were calculated using the Visibility Analysis plugin (Version 1.8) over a raster digital elevation model (DEM) in QGIS (Version 3.28) using a notional layer suspended at 25m (as the minimum swept area was not known when surveys commenced), is representative of the minimum height considered for the potential collision risk area based on the selected turbine model. Note, that while the relevance of being able to view as much of the Site to ground level is acknowledged, the NatureScot guidance emphasises the importance of visibility of the ‘collision risk volume’ when the data

¹ Surveys were conducted at the site previously and are discussed in Section 7.3.6.

is to be used to estimate the risk of collision with turbines by birds. Therefore, the viewshed analysis aims to identify the most suitable locations to site vantage points such that the airspace of the turbine rotor swept area is in view using the fewest possible number of vantage points. The vantage point locations were tested for visibility coverage by creating a point 1.75m in height (to represent the height of the surveyor) on a map using 10m contours terrain data. The relative height of any surrounding landscape features (e.g. trees) and their effects on visibility was also accounted for in the analysis. The software produced a 360° viewshed 25m from ground level up to a 2km radius around the vantage point. This viewshed was then cropped to a 180° arc representing the area visible to the surveyor. Once the turbine specifications for this project were confirmed, the viewshed analysis was recalculated based on the (actual) minimum swept height of the turbines, 23.5m. There are no significant differences between the 25m and the 23.5m viewsheds. The viewshed analysis results at 23.5m are provided in Figure 7-1 below.

Survey methodology followed SNH (2017). The surveyor collected data on bird observations and flight activity from the scanning arc of 180° to a 2km radius at the fixed vantage point locations for two 3-hour watches separated by a minimum 30-minute break (i.e., 6 hours total) per month. Surveys were conducted from October 2022 to March 2025 inclusive, and were scheduled to provide a minimum of 36 hours per winter or breeding season (with one exception, see table below for details) and spread over the full daylight period, including dawn and dusk watches, to coincide with the highest periods of bird activity (

Table 7-2).

Table 7-2 Vantage point survey watch duration

Survey Season and Number of Vantage Points (VPs)	Effort per Vantage Point (VP)
Winter Season 2022/2023 (2 VPs)	30 hours per VP ²
Breeding Season 2023 (2 VPs)	36 hours per VP
Winter Season 2023/2024 (2 VPs)	42 hours per VP
Breeding Season 2024 (2 VPs)	36 hours per VP
Winter Season 2024/2025 (2 VPs)	36 hours per VP

Flight activity of target species was mapped and recorded as per defined flight bands which were chosen in relation to the dimensions of potential turbine models for the Site. Bands were split into 0-15m, 15-25m, 25-200m and >200m. Following a precautionary approach, all flight activity within height bands 15-25m and 25-200m is considered to be within the Potential Collision Height (PCH) with regard to the turbine swept area. The actual turbine dimensions (23.5-156.5m) fall within the 15-25m and 25-200m height bands. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat. The survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions.

7.2.4.1.2 Breeding Walkover Surveys

Breeding walkover surveys were undertaken to determine the presence of bird species of high conservation concern and identify probable or confirmed breeding bird activity within the Site and within a 500m radius of proposed infrastructure (with the exception of a small portion of the access

² Only 30 hours of vantage point surveys were conducted during the winter 2022/2023 season, which is below the minimum recommended survey hours of 36 hours outlined in SNH (2017). However, the minimum requirement of 36 hours were conducted in the subsequent two winter seasons (2023/2024 and 2024/2025). Therefore, this is not a limitation in the survey scope as there were three winter seasons of surveys completed at the site, which is more than the recommended two seasons in SNH (2017).

road). The methodology follows NatureScot (SNH, 2017) guidance, which recommends methods based on Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021) for dense habitats. Transect routes were walked across different habitat complexes within the survey area where access allowed³. Using binoculars, the surveyor regularly scanned the surroundings of each transect for target species. All target species were mapped and breeding status was assigned following British Trust for Ornithology (BTO) breeding status codes⁴. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Breeding walkover surveys were conducted at over four visits during the core breeding season months April to July 2023 and 2024. Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions for each survey. Figure 7-2 below shows the transect routes.

7.2.4.1.3 **Breeding Raptor Surveys**

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. Breeding raptor surveys were undertaken within the Site and within a 2km radius of proposed infrastructure. to identify occupied territories and monitor their breeding success near or within the Site. The methodology follows NatureScot (SNH, 2017) guidance, which recommends methods based on Hardey *et al.* (2013). Breeding raptor watches of 3 hours (supplemented by transects) were conducted during daylight at up to four breeding raptor locations per month. All raptor species observed were recorded and mapped and breeding status was assigned following BTO breeding status codes. Surveyors did not approach nest sites to avoid disturbance.

Each breeding raptor location was surveyed once per month during the core breeding season between April and July 2023 and 2024. Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions. Figure 7-3 below shows the breeding raptor locations.

7.2.4.1.4 **Breeding Woodcock Survey**

Breeding woodcock surveys were undertaken within suitable habitat at the Site and within a 500m radius of proposed infrastructure (with the exception of a small portion of the access road). The survey aimed to identify breeding woodcock territories within the Site by locating roding (breeding display) males. Survey methodology followed Gilbert *et al.* (1998): the surveyor walked transects within the survey area for 2 hours from dusk until last visible light during which all woodcock observations were mapped, with particular reference to roding (display) flight observations.

Each transect was surveyed three times during the core breeding season of May and June. Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions. Figure 7-4 shows the transect routes.

7.2.4.1.5 **Breeding Red Grouse Survey**

Breeding red grouse surveys were undertaken within the Site and within a 500m radius of proposed infrastructure (with the exception of a small portion of the access road). The survey aimed to identify breeding red grouse territories within the Site by using an auditory lure of a recording of a 'rival' red grouse male to elicit a response from the territory holder within the survey area. Survey methodology followed Cummins *et al.* (2010): the surveyor walked transects 150m apart through suitable bog and heath habitat, where access allowed, stopping every 100m to broadcast lure calls for 30 seconds and listening for responses. Call-back and flying by the territory holder in response to the lure were recorded and mapped. The survey was conducted in February 2023 and February 2024 and all surveys

³ The open upland area to the north of the Site was inaccessible due to the terrain present. However, this area was surveyed from a distance using binoculars from suitable vantage points outside this area.

⁴ <https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>

were conducted under National Parks and Wildlife Service license. Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions. Figure 7-5 shows the transect routes.

7.2.4.1.6 Winter Walkover Surveys

Winter walkover surveys were undertaken to record the presence of bird species on the Site and within a 500m radius of proposed infrastructure (with the exception of a small portion of the access road), including areas between vantage point locations. The methodology follows described in Bibby *et al.* (2000) and adapted Brown and Shepherd surveys. Transect routes were walked across different habitat complexes within the survey area where access allowed⁵. All target species were recorded and mapped. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Winter walkover surveys were conducted in daylight hours over multiple visits between October and March (i.e., four visits in winter 2022/2023, 2023/2024 and 2024/2025). Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions for each survey. Figure 7-6 below shows the area surveyed.

7.2.4.1.7 Hen Harrier Roost Surveys

Hen harrier roost surveys were undertaken on the Site and within a 2km radius of proposed infrastructure. These surveys aimed to identify active winter hen harrier roosts near or within the Site. Survey methodology followed Gilbert *et al.* (1998) and O'Donoghue (2019). Roost watches of 2-3 hours were conducted at two hen harrier vantage point locations from dusk until last visible light during which all hen harrier observations were recorded and mapped.

Each hen harrier vantage point was surveyed once per month during the winter season between October and March inclusive (in winter 2022/2023, 2023/2024 and 2024/2025). Survey effort is presented in Appendix 7-2, including full details of dates, times and weather conditions. Figure 7-7 shows the hen harrier vantage point locations.

7.2.4.1.8 Waterbird Distribution and Abundance Surveys

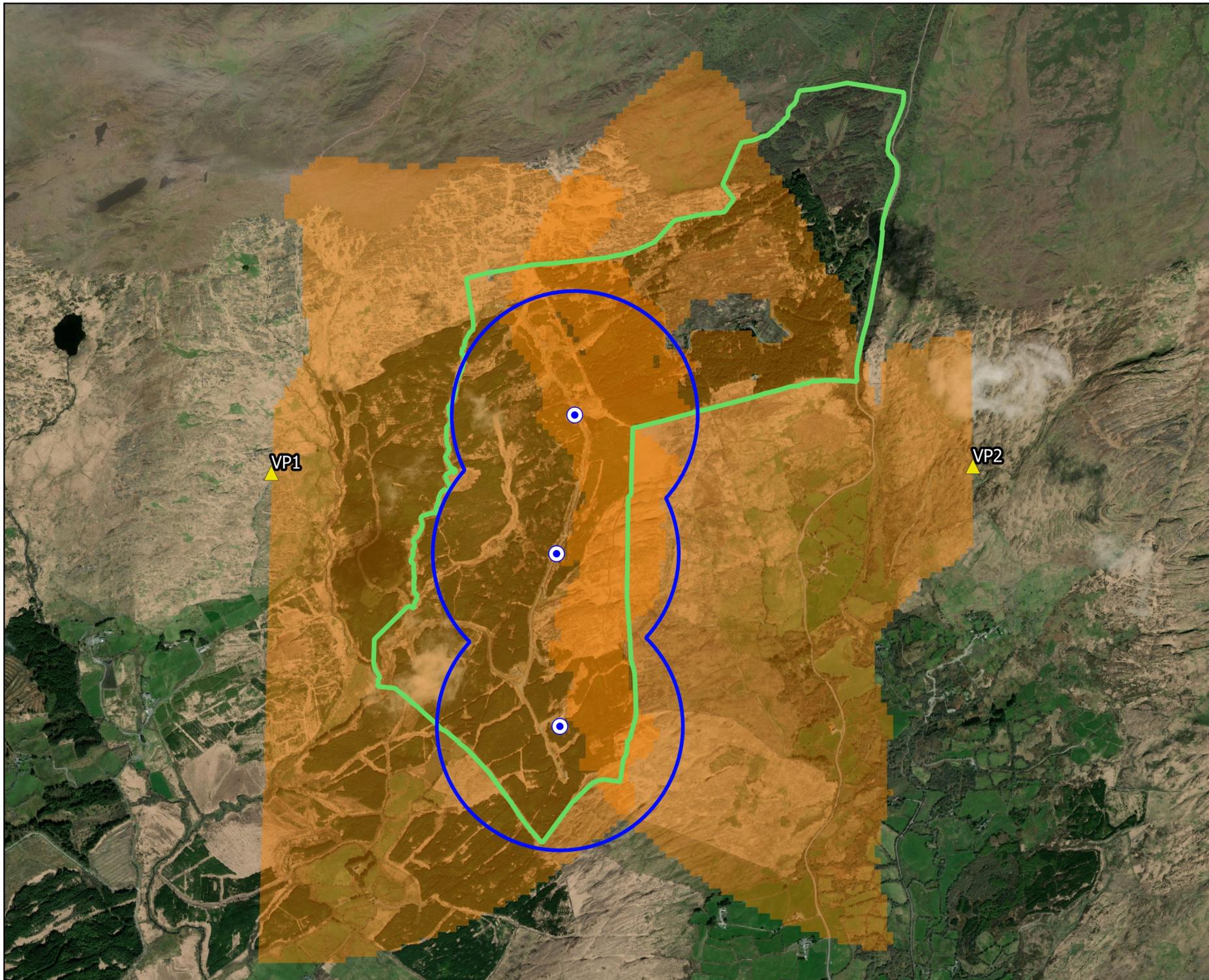
Waterbirds include: swans, geese and ducks; cormorant, shag, divers and grebes; auks and seabirds; gulls, terns and skuas; herons, egrets and crane; rails and crakes; waders; and kingfisher. Significant wetlands and waterbodies within 5km of the Site were surveyed for waterbirds during the 2022/2023, 2023/2024 and 2024/2025 winter and passage seasons (October to May inclusive) to provide information on their distribution in relation to the Proposed Development. The area surveyed exceeds the 500m from the development for foraging waterbirds and 1km for roosting waterbirds recommendation of the NatureScot guidance (SNH, 2017).

Survey methodology follows Gilbert *et al.* (1998) and the Irish Wetland Bird Survey (BirdWatch Ireland, 2021). Surveys were undertaken during daylight hours from suitable vantage points at wetlands and waterbodies. All target waterbird species were recorded and mapped. Survey effort, including details of survey duration and weather conditions, is presented in Appendix 7-2. Figure 7-8 below shows the surveyed area.

7.2.4.1.9 Multidisciplinary Walkover Survey

⁵ The open upland area to the north of the Site was inaccessible due to the terrain present. However, this area was surveyed from a distance using binoculars from suitable vantage points outside this area.

The turbine delivery route was surveyed through a multidisciplinary walkover survey on the 18th of June 2025. The area was systematically walked, while the surveyor recorded a range of protected species, including birds. Further details on this survey are available in the Biodiversity Chapter (Chapter 6 of this EIAR).



Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- 500m Buffer of Proposed Turbines
- Vantage Point Survey Location
- Viewshed



Drawing Title

Vantage Point Survey Locations

Project Title

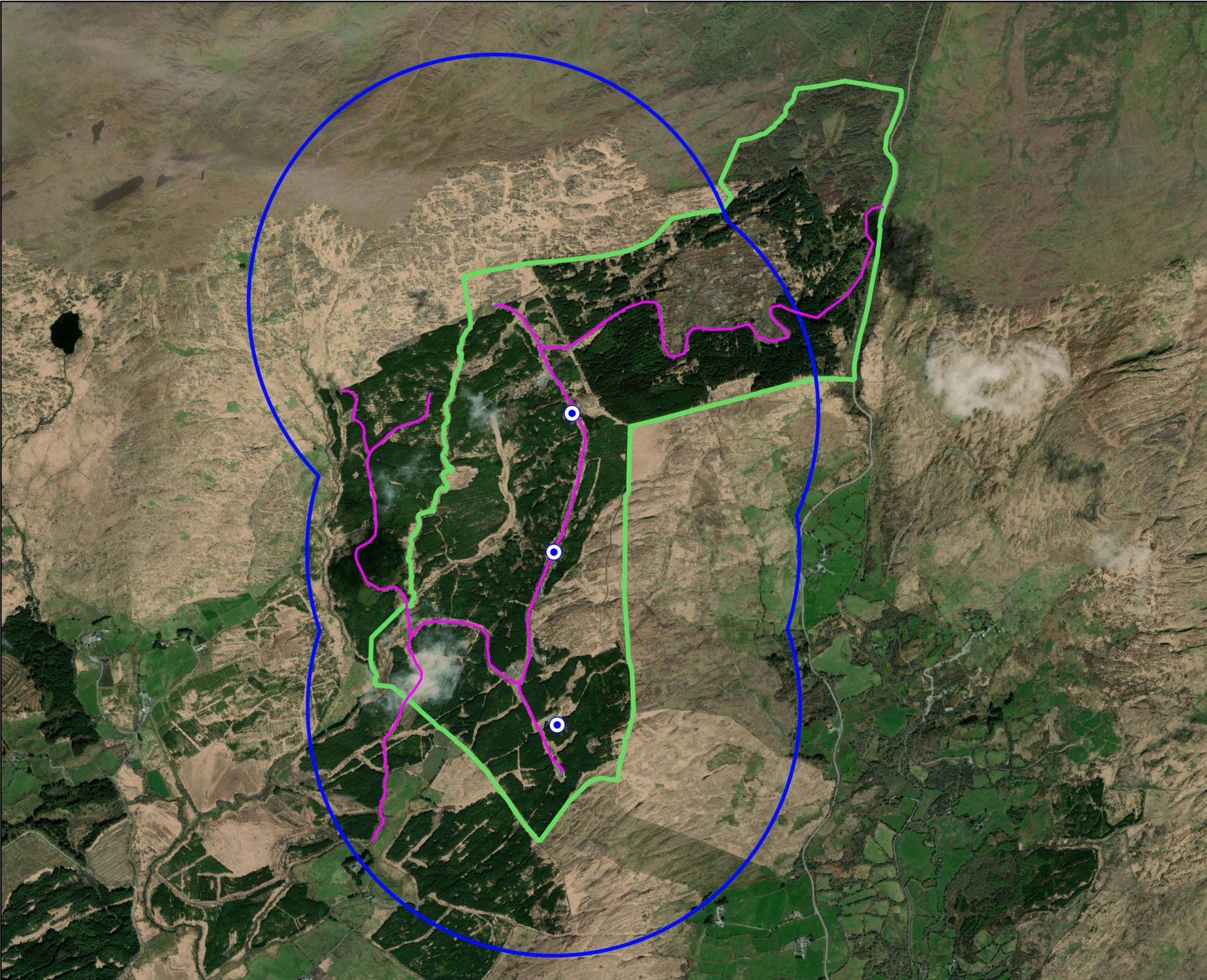
Curraglass Wind Farm

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Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Survey Area
- Transect



Drawing Title
**Breeding Walkover Survey
 Transects**

Project Title
Curraglass Wind Farm

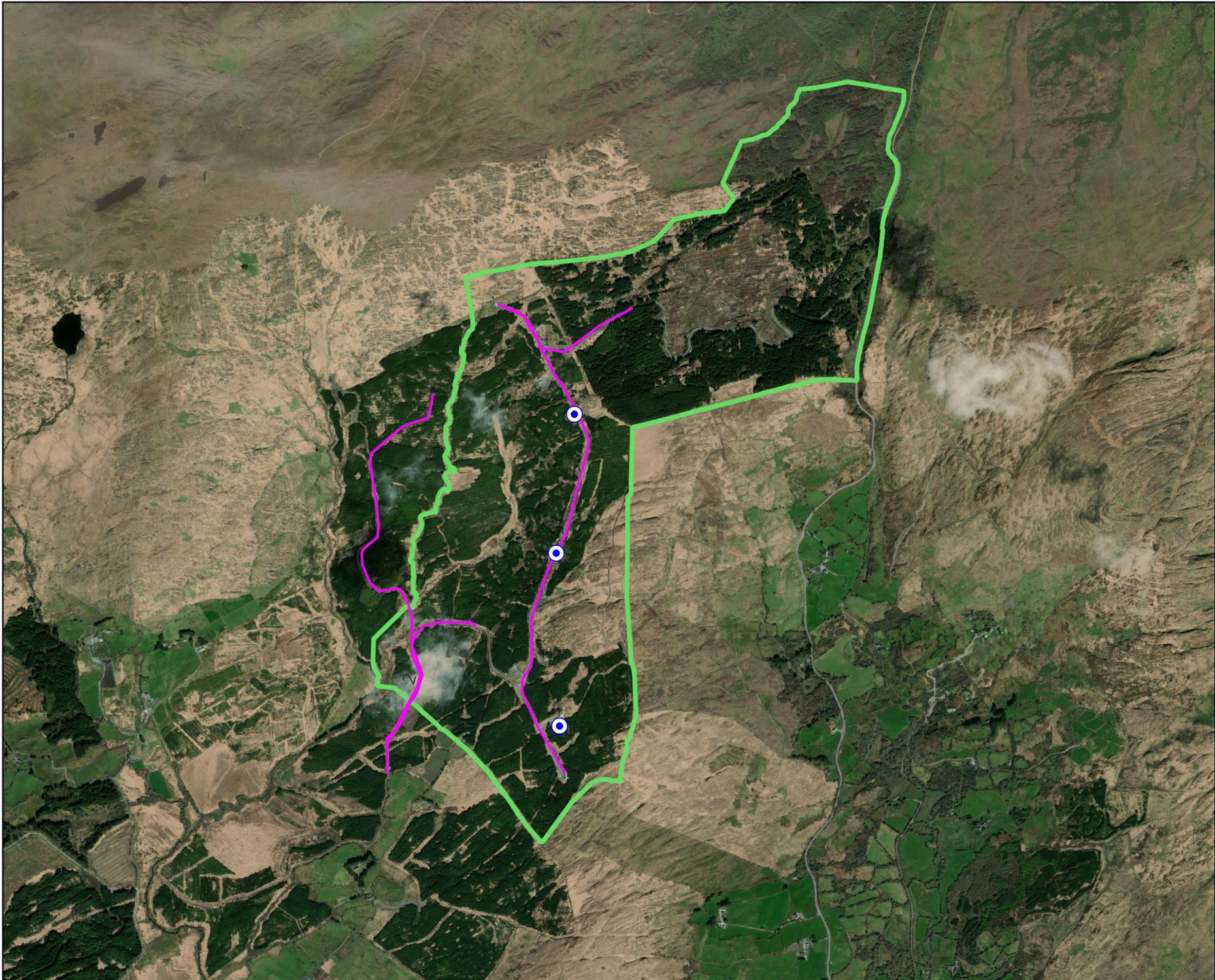
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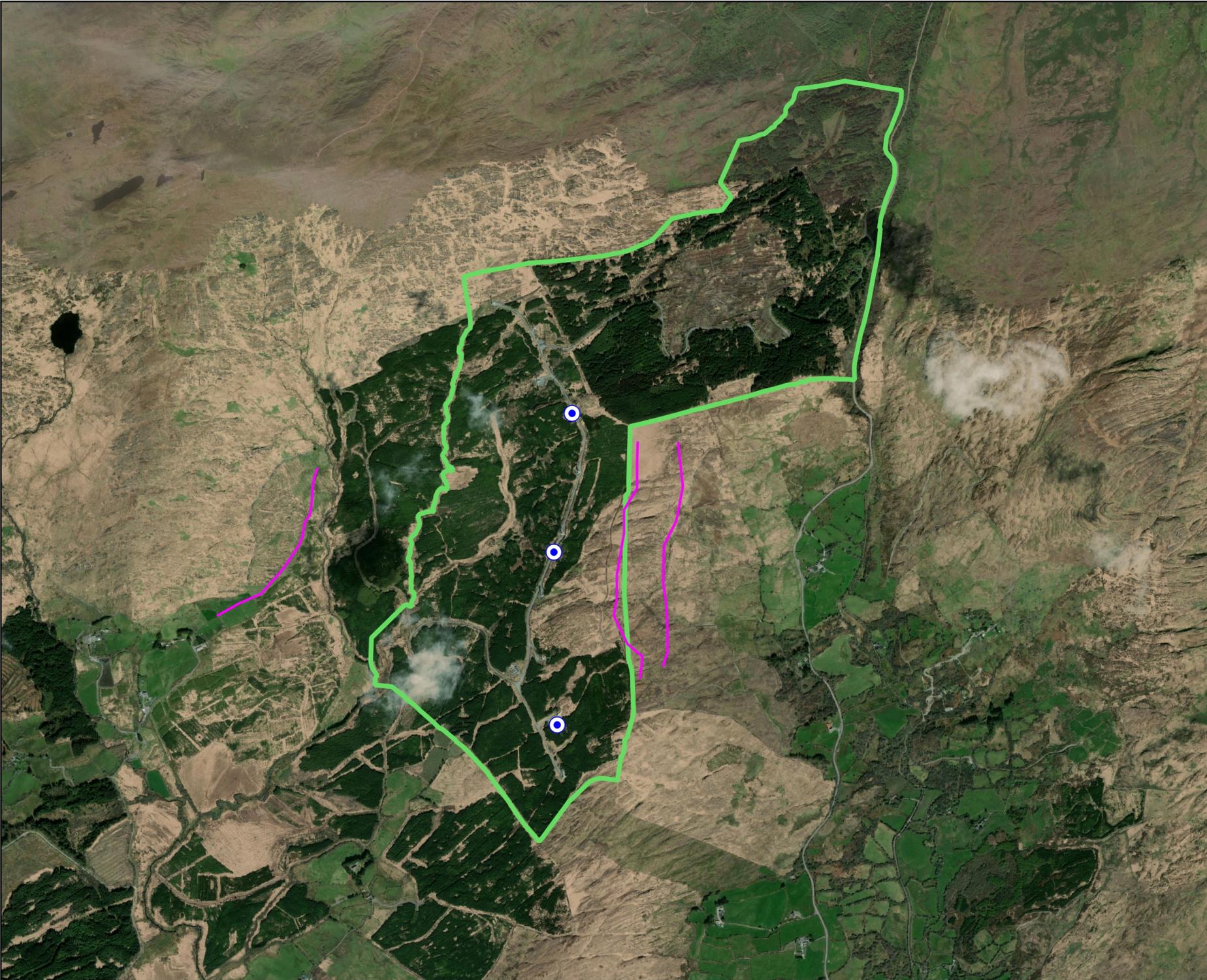
Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Transect



Drawing Title	
Breeding Woodcock Survey Transects	
Project Title	
Curraglass Wind Farm	
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Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Transect



Drawing Title
**Breeding Red Grouse Survey
 Transects**

Project Title
Curraglass Wind Farm

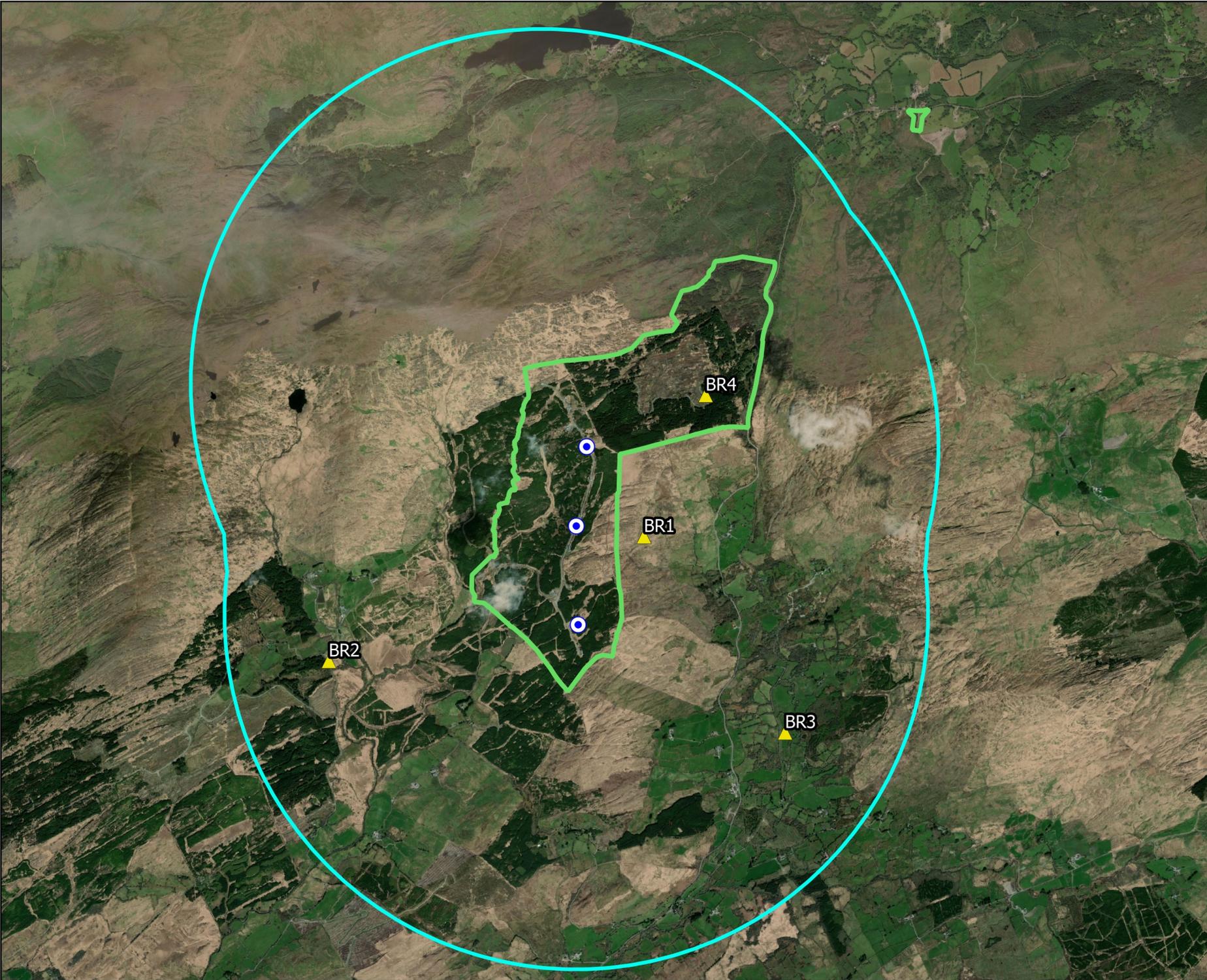
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Map Legend

-  EIA Site Boundary
-  Proposed Turbine Layout
-  Survey Area
-  Survey Location



Drawing Title
Breeding Raptor Survey Locations

Project Title
Curraglass Wind Farm

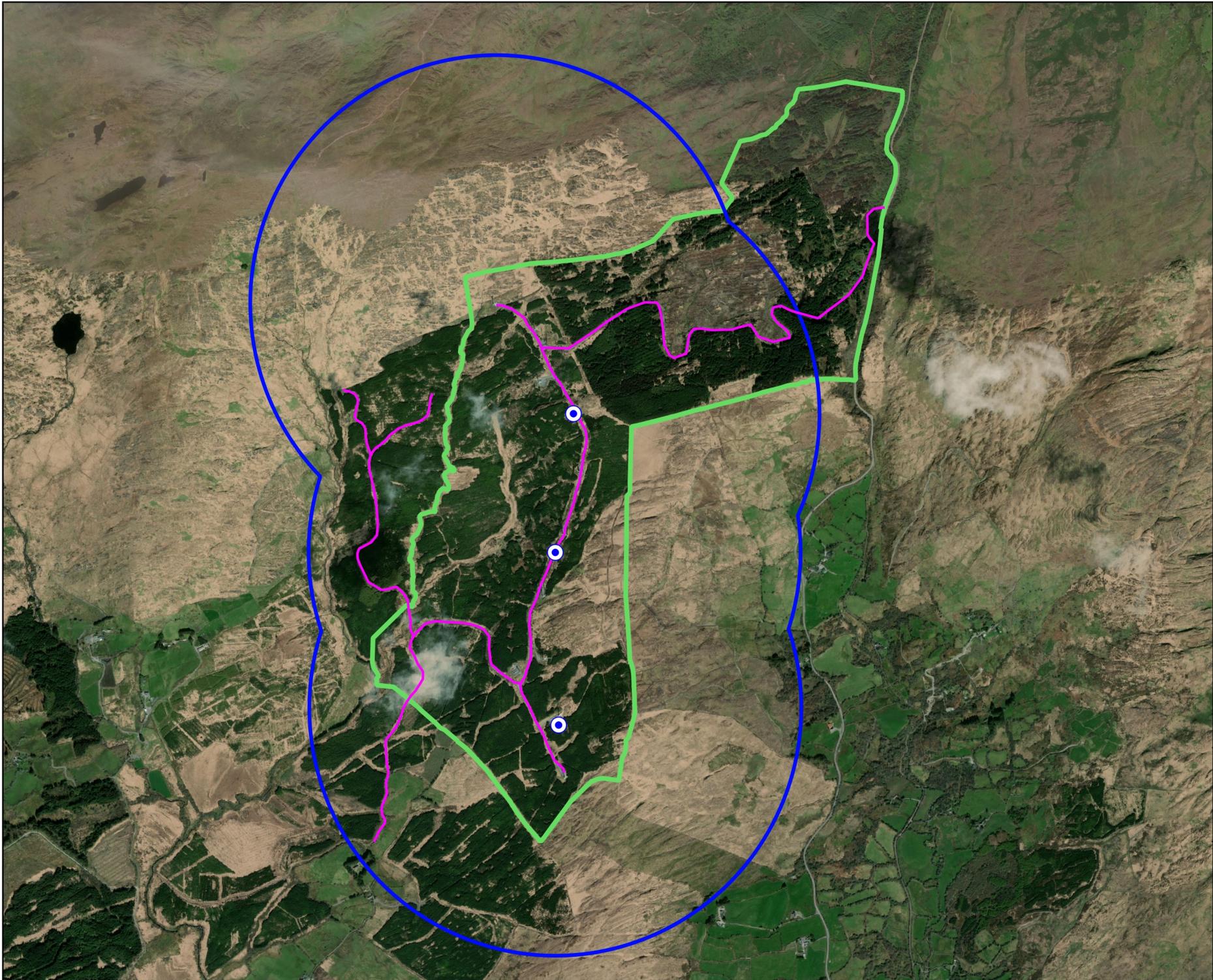
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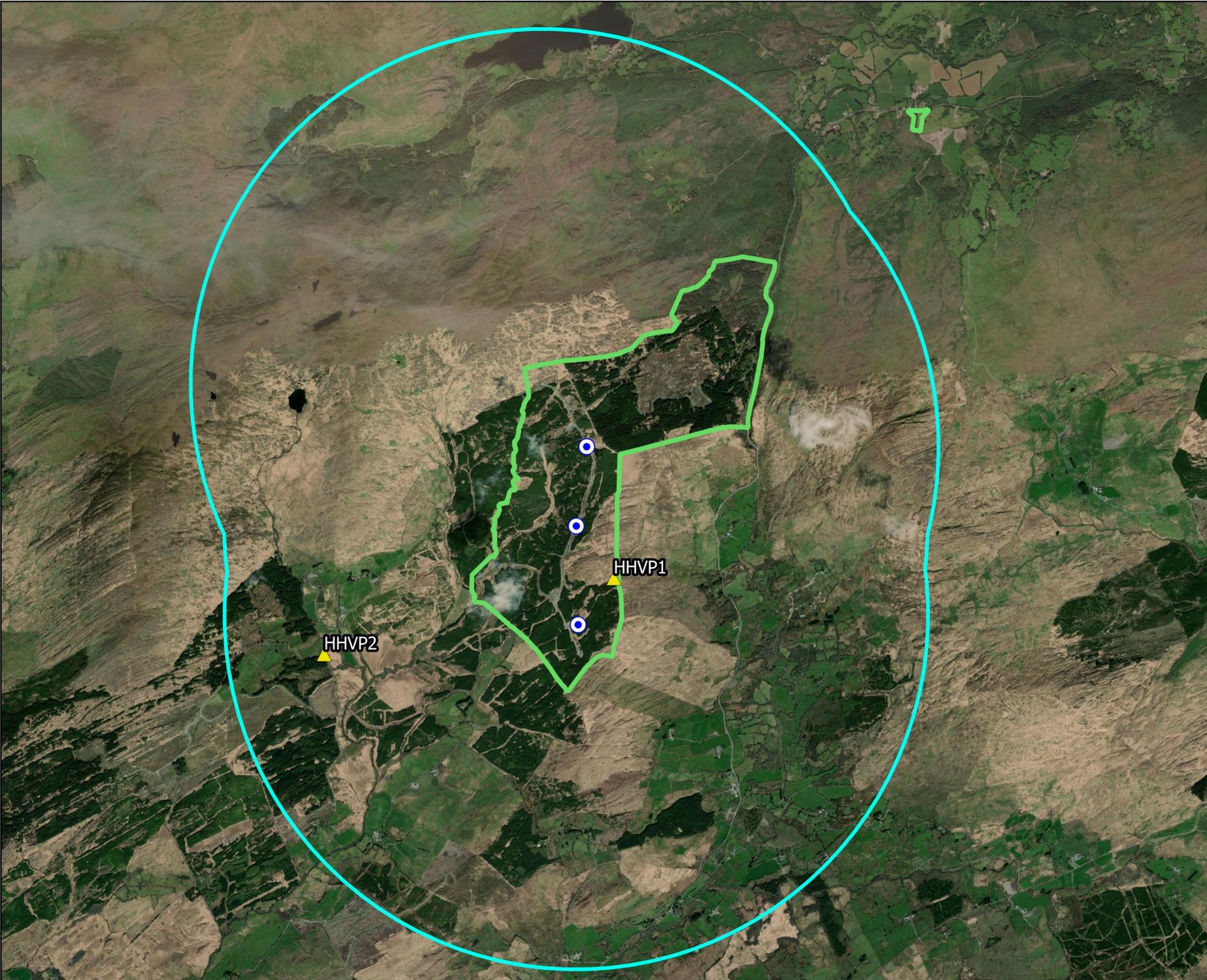
Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Survey Area
- Transect



Drawing Title	
Winter Walkover Survey Transects	
Project Title	
Curraglass Wind Farm	
Drawn By	Checked By
PM	PC
Project No.	Drawing No.
240614	Fig. 7-6
Scale	Date
1:20,000	18.06.2025
<div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p>MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VV84 +353 (0) 91 735611 email: info@mkoireland.ie Website: ww.mkoireland.ie</p> </div>	

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Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Survey Area
- Survey Location



Drawing Title
Hen Harrier Roost Survey Locations

Project Title
Curraglass Wind Farm

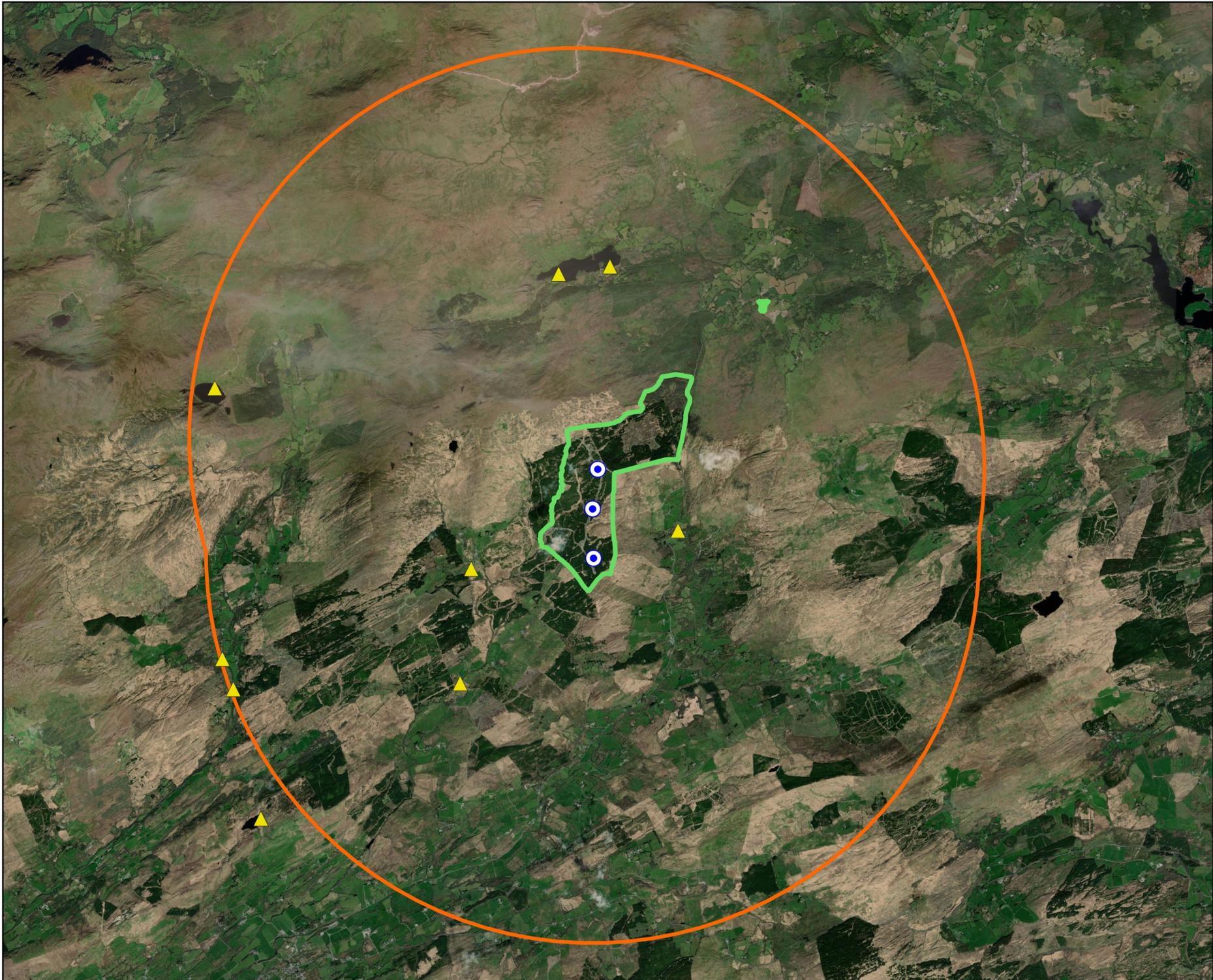
Drawn By PM	Checked By PC
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Project No. 240614	Drawing No. Fig. 7-7
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Scale 1:35,000	Date 18.06.2025
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Map Legend

- EIA Site Boundary
- Proposed Turbine Layout
- Survey Area
- Survey Location



Drawing Title	
Waterbird Distribution and Abundance Survey Locations	
Project Title	
Curraglass Wind Farm	
Drawn By	Checked By
PM	PC
Project No.	Drawing No.
240614	Fig. 7-8
Scale	Date
1:70,000	18.06.2025
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7.2.5 Receptor Evaluation and Impact Assessment

7.2.5.1 Potential Impacts Associated with the Proposed Development

Wind farms present three potential risks to birds (Drewitt and Langston 2006, 2008; *Band et al.*, 2007):

- **Direct habitat loss** due to wind farm infrastructure.
- **Disturbance/displacement** (sometimes called indirect habitat loss) if birds avoid the wind farm and its surrounding area due to construction works or turbine operation. Displacement may also include barrier effects in which birds are deterred from using normal routes to feeding or roosting grounds.
- Death through **collision** or interaction with turbine blades and other infrastructure.

For each of these three risks, the detailed knowledge of bird distribution and flight activity within and surrounding the Proposed Development has been used to predict potential impacts of the Proposed Development on birds. These impacts are also assessed cumulatively with other projects. The geographical framework and description of impacts are described below.

7.2.5.2 Geographical Framework

Guidance on Ecological Impact Assessment (CIEEM, 2019) recommends categories of ornithological value that relate to a geographical framework (e.g. international through to local). This EIAR utilises the geographical framework described in ‘Guidelines for Assessment of Ecological Impact of National Road Schemes’ (NRA, 2009). The following geographic frame of reference should be used when determining the value of a bird population:

- International Importance
- National Importance
- County Importance
- Local Importance (Higher Value)
- Local Importance (Lower Value)

Locally Important (Lower Value) receptors are habitats and species that are widespread and of low ecological significance and important only in the local area. In contrast, Internationally Important sites are designated for conservation as part of the Natura 2000 Network (Special Area of Conservation or Special Protection Area) or provide the best examples of habitats or internationally important populations of protected flora and fauna.

7.2.5.3 Description of Impacts

The sensitivity, magnitude and significance of impacts on bird populations resulting from the Proposed Development was quantified according to two assessment criteria: Percival (2003) and EPA (2022). The two assessment criteria have been used to independently characterise impacts to inform a robust assessment of potential impacts. EPA (2022) impact assessment criteria has been used for consistency between the Biodiversity and Ornithology chapters of this EIAR, while Percival (2003) has also been followed given its specific focus on birds.

Percival (2003) criteria

The Percival (2003) methodology quantifies the sensitivity of a given species to the development type, the magnitude of the effect and the significance of the potential impact.

Table 7-3, Table 7-4 and Table 7-5 outline the assessment criteria for each stage.

Table 7-3 Evaluation of sensitivity for birds (from Percival, 2003)

Sensitivity	Determining Factor
Very High	Species that form the cited interest of SPAs and other statutorily protected nature conservation areas. Cited means mentioned in the citation text for the Site as a species for which the Site is designated.
High	Species that contribute to the integrity of a SPA but which are not cited as a species for which the Site is designated. Ecologically sensitive species including the following: divers, common scoter, hen harrier, golden eagle, red necked phalarope, roseate tern and chough. Species present in nationally important numbers (>1% of the Irish population)
Medium	Species listed on Annex 1 of the EU Birds Directive. Species present in regionally important numbers (>1% county population). Other species on BirdWatch Ireland's Red List of Birds of Conservation Concern
Low	Any other species of conservation interest, including species on BirdWatch Ireland's Amber List of Birds of Conservation Concern, not covered above.

Table 7-4 Determination of magnitude of effects (from Percival, 2003)

Magnitude	Description
Very High	Total loss or very major alteration to key elements/ features of the baseline conditions, such that the post development character/composition/attributes will be fundamentally changed and may be lost from the Site altogether. Guide: < 20% of population / habitat remains
High	Major loss or major alteration to key elements/features of the baseline (pre-development) conditions such that post development character/composition/attributes will be fundamentally changed. Guide: 20-80% of population/ habitat lost
Medium	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of baseline will be partially changed. Guide: 5-20% of population/ habitat lost
Low	Minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible but underlying character/composition/attributes of baseline condition will be similar to pre-development circumstances/patterns. Guide: 1-5% of population/ habitat lost
Negligible	Very slight change from baseline condition. Change barely distinguishable, approximating to the "no change" situation. Guide: < 1% population/ habitat lost

Table 7-5 Significance matrix combining magnitude and sensitivity to assess significance (from Percival, 2003)

Significance		Sensitivity			
		Very High	High	Medium	Low
Magnitude	Very High	Very High	Very High	High	Medium
	High	Very High	Very High	Medium	Low
	Medium	Very High	High	Low	Very Low
	Low	Medium	Low	Low	Very Low
	Negligible	Low	Very Low	Very Low	Very Low

EPA 2022 Criteria

EPA (2022) uses the following terms to describe the quality of the effect:

- **Positive** - a change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
- **Neutral** - no effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
- **Negative** - a change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).

The significance of the effect is quantified as:

- **Imperceptible** - an effect capable of measurement but without significant consequences.
- **Not Significant** – an effect which causes noticeable changes in the character of the environment but without significant consequences.
- **Slight** - an effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
- **Moderate** - an effect that alters the character of the environment that is consistent with existing and emerging baseline trends.
- **Significant** - an effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment.
- **Very Significant**– an effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
- **Profound** - an effect which obliterates sensitive characteristics.

The duration of effects can be:

- **Momentary** – effects lasting from seconds to minutes.
- **Brief** – effects lasting less than a day.
- **Temporary** – effects lasting less than a year.
- **Short-term** – effects lasting 1 to 7 years.
- **Medium term** – effects lasting 7 to 15 years.
- **Long term** – effects lasting 15 to 60 years.
- **Permanent** – effects lasting over 60 years.
- **Reversible** – effects that can be undone (e.g. through remediation or restoration).

The frequency of effects (i.e. how often the effect will occur) can be:

- **Once, rarely, occasionally, frequently or constantly.**
- **Hourly, daily, weekly, monthly or annually.**

The probability of the effect may be:

- **Likely** – the effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
- **Unlikely** – the effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

The effects may also be described in relation to their extent and context. Extent describes the population affected by an effect, while context relates the effect to the established baseline conditions. Further details regarding EPA (2022) are available in the Chapter 1, Section 1.7.2 of this EIAR.

7.2.5.4 Collision Risk Assessment

Collision risk is calculated using a mathematical model to predict the number of individual birds of a particular species that may be killed by collision with moving wind turbine rotor blades. The modelling method used in this collision risk calculation follows the Band Model (Band *et al.*, 2007), as recommended by NatureScot (2024). The Band Model first determines the number of birds transits through the air space swept by the rotor blades of the wind turbines. Then it calculates the collision risk for the birds. The product of the transits multiplied by the collision risk provides a collision rate. An avoidance factor is applied to this to account for birds actively avoiding turbines, providing a final “real world” annual collision rate for each species. See Appendix 7-6 for full details on the collision risk modelling method.

7.2.6 Assessment Justification

7.2.6.1 Survey Data

A comprehensive suite of bird surveys was undertaken at the Site between October 2022 and March 2025. Results derived from a continuous 2.5 years of surveying at the Proposed Development and hinterland, undertaken in line with NatureScot guidance (SNH, 2017), are analysed to inform this assessment. As such, the surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the Proposed Development on avian receptors.

7.2.6.2 Mitigation

The Proposed Development has been designed to specifically avoid, reduce and minimise impacts on all avian receptors. Where potential impacts on KORs are predicted, mitigation has been prescribed to avoid, reduce and remove such impacts. Proposed best practice design and mitigation measures are specifically set out and are realistic in terms of cost and practicality. They have been subject to detailed design and will effectively address the effects on the identified KORs. As such, the potential impacts of the Proposed Development have been considered and assessed to ensure that all impacts on KORs are adequately addressed and no significant residual effects are likely to remain following the implementation of mitigation measures and best practices (refer to Section 7.6 for further details).

7.2.6.3 Limitations

The information provided in this EIAR chapter accurately and comprehensively describes the baseline environment and provides an informed prediction of the likely impacts of the Proposed Development. It also prescribes mitigation as necessary and describes the predicted residual effects. Furthermore, the desk study, surveys, analysis and reporting have been undertaken in accordance with the appropriate guidelines. Therefore, no significant limitations in the scope, scale or context of the assessment have been identified.

7.3 Baseline Ornithological Conditions

7.3.1 Designated Sites

A screening assessment and Natura Impact Statement (NIS) were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Proposed Development in compliance with Article 6(3) of the EU Habitats Directive (92/43/EEC). According to EPA (2022) “A biodiversity section of an EIAR ... should not repeat the detailed assessment of potential effects on European sites contained in documentation prepared as part of the Appropriate Assessment process, but it should refer to the findings of that separate assessment”. Therefore, this section provides a summary of the key findings regarding SPAs and nationally designated sites. For a detailed assessment of any potential impacts on SPAs, refer to the Appropriate Assessment and NIS associated with Chapter 6 of this EIAR.

Sites designated for nature conservation within the potential Zone of Influence (as defined in the NIS) of the Proposed Development were identified using GIS software. In this case, no potential for direct or indirect impacts for species listed as SCIs of SPAs within the Zone of Influence was identified. However, on a precautionary basis, The Gearagh SPA was assessed with regard to hydrological connectivity.

In addition (and in the absence of any specific European or Irish guidance), the guidance document ‘Assessing Connectivity with Special Protection Areas’ (SNH, 2016) was consulted. This document provides guidance on identifying connectivity between the Proposed Development and SPAs. It considers the distances some species may travel beyond the boundary of their SPAs and outlines dispersal and foraging ranges. Potential effects on wetlands and supporting habitats associated with SPAs and potential indirect pathways in the form of surface water pollution are considered in the Appropriate Assessment and NIS.

7.3.2 Breeding and Wintering Bird Atlas Records

‘Bird Atlas 2007-11: The breeding and wintering birds of Britain and Ireland’ (Balmer *et al.*, 2013) is the most recent comprehensive work on wintering and breeding birds in Ireland. Previous bird atlases have been the primary source of information on the distribution and abundance of British and Irish birds prior to Bird Atlas 2007–11. The three previously published atlases were:

- The atlas of breeding birds in Britain and Ireland (Sharrock, 1976)
- The atlas of wintering birds in Britain and Ireland (Lack, 1986)
- The new atlas of breeding birds in Britain and Ireland: 1988-1991. (Gibbons *et al.*, 1993)

The Site lies within hectad⁶ W06 and W16. Table 7-6 and Table 7-7 present a list of species of conservation interest recorded within hectad W06 and W16, with regard to breeding and wintering respectively.

Table 7-6 Breeding Bird Atlas data for species of conservation interest for hectad W06 and W16.

Species Name	Breeding Atlas 1968-1972		Breeding Atlas 1988-1991		Breeding Atlas 2007-2011	
	W06	W16	W06	W16	W06	W16
Chough	Confirmed	-	Breeding	Breeding	Probable	-
Corncrake	-	Probable	-	-	-	-
Curlew	Confirmed	Confirmed	-	Breeding	-	-
Grey Wagtail	Confirmed	Confirmed	Breeding	Breeding	Possible	Possible

⁶ A hectad is a 10km x 10km grid square

Species Name	Breeding Atlas 1968-1972		Breeding Atlas 1988-1991		Breeding Atlas 2007-2011	
	W06	W16	W06	W16	W06	W16
Hen Harrier	-	-	-	-	-	Possible
Kestrel	Confirmed	Confirmed	Breeding	Breeding	Probable	Probable
Long-eared Owl	-	-	-	-	-	Confirmed
Meadow Pipit	Confirmed	Confirmed	Breeding	Breeding	Confirmed	Confirmed
Peregrine	-	-	-	-	Probable	Possible
Red Grouse	-	Possible	Seen	-	-	-
Snipe	-	Confirmed	-	-	-	-
Sparrowhawk	-	-	Breeding	Seen	-	Confirmed
Stock Dove	Possible	Probable	-	-	Confirmed	-
Swift	Probable	Possible	Seen	Seen	-	-
Yellowhammer	Probable	Confirmed	-	Breeding	-	-

Confirmed = confirmed breeding; Probable = probable breeding; Possible = possible breeding.

Table 7-7 Wintering Bird Atlas data for species of conservation interest for hectad W06 and W16.

Species Name	Wintering Atlas 1981-1984		Wintering Atlas 2007-2011	
	W06	W16	W06	W16
Chough	Present	-	Present	Present
Curlew	-	Present	-	-
Goldeneye	-	Present	-	-
Grey Wagtail	Present	Present		Present
Kestrel	-	Present	Present	Present
Kingfisher	-	-	-	Present
Meadow Pipit	Present	Present	Present	Present
Peregrine	Present	-	-	-
Pochard	Present	Present	-	-
Red Grouse	Present	-	-	-
Redwing	Present	Present	Present	Present
Snipe	-	Present	Present	Present
Sparrowhawk	Present	-	Present	Present
White-tailed Eagle	-	-	Present	
Whooper Swan	-	-	-	Present
Woodcock	-	-	Present	Present

7.3.3 Bird Sensitivity Mapping Tool

A Bird Sensitivity Mapping Tool for wind energy development was developed by BirdWatch Ireland to provide a measured spatial indication of where protected birds are likely to be sensitive to wind energy developments. The tool can be accessed via the National Biodiversity Data Centre Website (www.biodiversityireland.ie) and is accompanied by a guidance document (McGuinness *et al.*, 2015). The criteria for estimating a zone of sensitivity (i.e. 'low', 'medium', 'high' and 'highest') is based on a review of the behavioural, ecological and distributional data available for each species.

The Proposed Development is located partially within an area of low sensitivity for bird sensitivity to wind energy developments. This area is to the west of the Site and is sensitive with regard to red grouse. However, there are no proposed turbines located within this area. The proposed turbines are

located within an area with no data and therefore no sensitivity is provided. The Site is approximately 26km from the nearest area of high sensitivity.

7.3.4 Irish Wetland Bird Survey Records

The Irish Wetland Bird Survey (I-WeBS), coordinated by BirdWatch Ireland, monitors wintering waterbird populations at their wetland sites across Ireland. I-WeBS site locations are available at <https://birdwatchireland.ie/our-work/>. The Site is not covered by an I-WeBS site and the nearest site is located approximately 15.6km southwest of the Site – i.e., Bantry Bay. Datasets for the I-WeBS sites within 25km of the Proposed Development were sourced from www.birdwatchireland.ie and reviewed. These included:

- > Bantry Bay
- > The Gearagh
- > Kenmare Estuary

7.3.5 Rare and Protected Species Dataset

An information request was sent to the NPWS scientific data unit requesting records from the Rare and Protected Species Database on the 5th of November 2024. A follow-up request was sent on the 28th of March 2025; however, no response has been received to date. A pre-planning meeting with the NPWS was requested, but no response has been received.

7.3.6 Previous Surveys at the Site

The Site was previously surveyed from April 2018 to March 2020. Full details of the surveys undertaken and survey results are presented in the EIAR prepared for the 2020 Application. The following species were observed during surveys and discussed within the EIAR for the previous application: golden plover, hen harrier, short-eared owl, chough, peregrine, white-tailed eagle, barn owl, red grouse, herring gull, buzzard, sparrowhawk, kestrel, snipe, meadow pipit and grey wagtail. The species which were assessed to be KORs were: chough, peregrine, white-tailed eagle, red grouse, herring gull, buzzard, sparrowhawk, kestrel and snipe. Summaries of the observations for each of these species is outlined below.

It is noted that this data is a minimum of 5 years old, due to its age, this data was not relied upon for the impact assessment. Contemporary surveys were undertaken between October 2022 to March 2025, which is the core dataset which is relied upon for identifying KORs and undertaking the impact assessment. The species composition at the Site has changed over time, and therefore, the KORs differs slightly between the historic and contemporary data.

Chough

Chough were observed during on-site surveys on two occasions and twice as incidental observations up to 2.5km from the site. All observations were of one or two birds travelling, feeding or calling.

Peregrine

Peregrine were observed on two occasions during on-site surveys and twice during surveys in the wider area up to 1.8km from the Site. Observations were of individuals soaring or travelling. There was no breeding evidence observed during these surveys.

White-tailed Eagle

White-tailed Eagle were observed on two occasions during on-site surveys. Both observations were of individuals soaring.

Red Grouse

Red grouse were observed on ten occasions during on-site surveys. All observations were of one to two birds commuting, flushed or calling.

Herring Gull

Herring gull were observed on 17 occasions during on-site surveys. All observations were of 1 to 16 birds commuting.

Buzzard

Buzzard were observed on five occasions during on-site surveys and on three occasions during surveys in the wider area up to 1.5km from the Site. Observations were of one to three birds commuting, soaring and hunting. There was no breeding evidence observed during these surveys.

Sparrowhawk

Sparrowhawk were observed on 23 occasions during on-site surveys and twice during surveys in the wider area up to 700m from the Site. Observations were of one to two birds commuting, soaring and hunting. There was one observation of a pair displaying in 2018, indicating probable breeding 20m from the Site.

Kestrel

Kestrel were observed on 57 occasions during on-site surveys, on 13 occasions during surveys in the wider area and on seven occasions as incidental observations. Observations were of one to five birds commuting, soaring and hunting. There was one observation of a family group of five kestrel in 2019 which indicates successful breeding in the vicinity of the Site.

Snipe

Snipe were observed on 13 occasions during on-site surveys, on one occasion during surveys in the wider area and on 14 occasions as incidental observations. Observations were of one to three birds commuting. There was no breeding evidence observed during these surveys.

Summary

The results of the surveys from these previous surveys (April 2018 to March 2020) are not significantly different⁷ for most species from the survey results that form the core data set (October 2022 to March 2025) for this EIAR (see Section 7.3.7). This consistency in the baseline condition provides confidence that the bird distribution and abundance outlined below provides a robust basis for the impact assessment.

⁷ With the exception of the two observations of white-tailed eagle, which is discussed further in Section 7.4.1.5 below.

7.3.7 Field Survey Results

The target species recorded within the potential ZoI of the Proposed Development during field surveys carried out from October 2022 to March 2025 are listed in Table 7-8, along with a summary of breeding and winter status. The following sections describe the records of each target species under the individual survey headings.

Table 7-8 Target species recorded in the Potential ZoI of the Proposed Development

Species	Overall breeding status	Overall wintering status
Chough	Non-breeding. There was no evidence of breeding at the Site during surveys.	No regularly used roosts identified
Golden Plover	There were no observations during the breeding season.	No regularly used roosts identified
Hen Harrier	There were no observations during the breeding season.	No regularly used roosts identified
Peregrine	Confirmed Breeding. A confirmed nest was identified 1.4km from the nearest proposed turbine in 2024.	No regularly used roosts identified
Whooper Swan	There were no observations during the breeding season.	No regularly used roosts identified
Grey Wagtail	Non-breeding. There was no evidence of breeding at the Site during surveys.	No regularly used roosts identified
Kestrel	Probable Breeding. A probable territory was identified 1.8km from the nearest proposed turbine in 2024.	No regularly used roosts identified
Meadow Pipit	Probable Breeding. There were three probable territories identified in 2023, and three probable territories identified in 2024.	No regularly used roosts identified
Red Grouse	Probable Breeding. A probable territory was identified 1.2km from the nearest proposed turbine in 2024.	There were no observations during the winter season.
Redwing	There were no observations during the breeding season.	No regularly used roosts identified
Ring Ouzel	There were no observations during the breeding season.	No regularly used roosts identified
Snipe	Probable Breeding. A probable territory was identified adjacent to Site in 2024.	No regularly used roosts identified
Woodcock	Non-breeding. There was no evidence of breeding at the Site during surveys.	No regularly used roosts identified
Buzzard	Confirmed Breeding. A confirmed nest was identified 1.1km from the nearest proposed turbine in 2024.	No regularly used roosts identified
Sparrowhawk	Non-breeding. There was no evidence of breeding at the Site during surveys.	No regularly used roosts identified

A list of all bird species recorded during surveys is provided in Appendix 7-1. Appendix 7-3 presents results summary tables including:

- Summary of vantage point survey records
- Summary of breeding walkover survey records
- Summary of breeding raptor survey records
- Summary of breeding woodcock survey records

- Summary of breeding red grouse survey records
- Summary of winter walkover survey records
- Summary of hen harrier roost survey records
- Summary of waterbird distribution and abundance survey records
- Summary of non-target species recorded

7.3.7.1 Chough

Chough were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Chough were observed on 11 occasions during the vantage point surveys, or on average once every 33 hours of vantage point surveys (see Appendix 7-4, Figure 7-4-1). Observations were of one to five birds commuting, soaring and calling. There were no observations within 500m of the proposed turbine layout, with the majority of observations occurring in farmland to the east of the Site. There were five observations within the potential collision height.

Incidental Observations⁸

Chough were observed on four occasions as incidental observations. Observations were of between one and seven birds commuting, foraging or calling and were between 1.3km and 5km from the nearest proposed turbine. (see Appendix 7-4, Figure 7-4-2).

7.3.7.2 Golden Plover

Golden plover were observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Incidental Observations

Golden plover were only observed on one occasion as an incidental observation. A flock of 20 golden plover were observed commuting approximately 900m from the nearest proposed infrastructure in February (see Appendix 7-4, Figure 7-4-3).

There were no further observations of this species during any of the other comprehensive surveys.

7.3.7.3 Hen Harrier

Hen harrier were observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

There was one observation of a male commuting, within the potential collision height, in November 2024. This observation was approximately 500m from the nearest proposed turbine (see Appendix 7-4, Figure 7-4-4).

⁸ *Incidental observations are observations of species which are not the target species of a survey or were observed outside of survey times.*

Hen Harrier Roost Surveys

There were two observations of hen harrier during the hen harrier roost surveys (see Appendix 7-4, Figure 7-4-5). Both observations were on the same date, in November 2022, and were of a male and a female commuting and circling. However, there was no evidence to suggest these birds roosted in the area.

7.3.7.4 Peregrine

Peregrine were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to identified breeding territories are provided in Confidential Appendix 7-5.

Vantage Point Surveys

Peregrine were observed on 35 occasions during the vantage point surveys, or on average once every 10 hours of vantage point surveys (see Appendix 7-4, Figure 7-4-6). Observations were of between one and four birds. The majority of observations were of birds commuting or soaring and were within farmland to the east of the Site. There were 15 observations between May and July 2024, which relate to a confirmed nest located on a cliff 1.5km from the nearest proposed turbine. These observations include nest building, provisioning and observations of two fledged young. Observations relating to this nest are presented in Confidential Appendix 7-5, Figure 7-5-1. There were only two observations within 500m of the proposed turbine layout and 23 observations were within potential collision height.

Breeding Walkover Surveys

Peregrine were observed on six occasions during the breeding walkover surveys. All observations were at, or adjacent to, the 2024 confirmed nest site discussed above (see Confidential Appendix 7-5, Figure 7-5-2). Observations were of one to two birds calling, perched, soaring or a food pass during the 2024 breeding season. There were no observations during the 2023 breeding season.

Breeding Raptor Surveys

Peregrine were observed on six occasions during breeding raptor surveys. Most observations were at, or adjacent to, the confirmed nest site discussed above (see Confidential Appendix 7-5, Figure 7-5-3). Observations were of between one and three birds commuting, soaring or flying. There were two observations of fledged peregrine adjacent to the confirmed nest site. All observations were during the 2024 breeding season. Information from locally based surveyors suggested this nest site is no longer occupied (in 2025).

Incidental Observations

There were four incidental observations of peregrine. All observations were at, or adjacent to, the confirmed nest site discussed above (see Confidential Appendix 7-5, Figure 7-5-4). Observations were of one or two birds calling, flying or landing at, or adjacent to, the confirmed nest site. All observations were during the 2024 breeding season.

Breeding Summary

Breeding territories are mapped in Appendix 7-5, Figure 7-5-5. There was one confirmed breeding territory identified for peregrine during the 2024 breeding season, approximately 1.5km from the nearest proposed turbine. There were no breeding territories identified during the 2023 breeding season.

7.3.7.5 Whooper Swan

Whooper swans were observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Whooper swan were observed on only one occasion during the vantage point surveys (see Appendix 7-4, Figure 7-4-7). This observation was of four birds commuting through the Site, above the potential collision height.

Waterbird Distribution and Abundance Surveys

Whooper swan were observed on six occasions during the waterbird distribution and abundance surveys (see Appendix 7-4, Figure 7-4-8). Whooper swan were observed on 6 of the 44 survey dates, and only within the core winter months of October to March. Observations were spread across the three winter seasons surveyed and birds were not regularly observed. There were five observations of between two and six birds observed at Gougane Barra Lake, which lies approximately 1.6km north of the Site at its closest point. The remaining observation was of four birds at Lough Naman, approximately 1.9km from the nearest proposed infrastructure.

Incidental Observations

Whooper swan were observed on only one occasion as an incidental observation. There were two birds observed on the water at Gougane Barra Lake (see Appendix 7-4, Figure 7-4-9).

7.3.7.6 Grey Wagtail

Grey wagtail were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Grey wagtail were observed on only two occasions during the vantage point surveys (see Appendix 7-4, Figure 7-4-10). Both observations were of two birds commuting below the potential collision height. Neither observation was within the Site and both were greater than 500m from the nearest proposed turbine.

Breeding Walkover Surveys

Grey wagtail were observed on only one occasion during the breeding walkover surveys. This observation was of an individual foraging and was not mapped.

Waterbird Distribution and Abundance Surveys

Grey wagtail were observed on ten occasions during the waterbird distribution and abundance surveys (see Appendix 7-4, Figure 7-4-11). Grey wagtail were observed on 8 of the 44 survey dates and were observed between October and May. Observations were spread across the three winter seasons surveyed and birds were not regularly observed. Observations were of one or two birds commuting, calling or singing. There was one observation at Gouganebarra Lake, five along the Owenbeg River at Derryfadda, 2.5km from the nearest proposed infrastructure, and three observations along the Coomhola River, at Knockanecosduff, 5.3km from the nearest proposed infrastructure.

Incidental Observations

Grey wagtail were observed on only one occasion as an incidental observation. An individual was observed foraging within the Site but greater than 500m from the nearest proposed turbine. (see Appendix 7-4, Figure 7-4-12).

7.3.7.7 Kestrel

Kestrel were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to identified breeding territories are provided in Confidential Appendix 7-5.

Vantage Point Surveys

Kestrel were observed on 21 occasions during vantage point surveys (see Appendix 7-4, Figure 7-4-13). Kestrel were observed on average once every 17 hours of vantage point survey. Observations were of one or two birds commuting or hunting. There were only four observations within 500m of the proposed turbine layout, with the majority of observations being within farmland to the east of the Site. There were 20 observations within the potential collision height.

Breeding Walkover Surveys

Kestrel were observed on two occasions during breeding walkover surveys (kestrel were observed on 20% of survey days) (see Appendix 7-4, Figure 7-4-14). Both observations were of individuals hunting. There was one observation adjacent to the Site and one approximately 1.2km from the nearest proposed infrastructure.

Breeding Raptor Surveys

Kestrel were observed on 15 occasions during breeding raptor surveys (see Appendix 7-4, Figure 7-4-15). Kestrel were observed once every second survey conducted and were observed at all survey locations. The majority of observations were of one or two birds hunting or commuting. There were two observations of kestrel within the Site. There was only one observation relating to breeding behaviour, in 2024. A kestrel was observed mobbing a pair of buzzard approximately 1.8km from the nearest proposed infrastructure; this indicates probable breeding in this area. Observations relating to breeding behaviour are presented in the Confidential Appendix 7-5, Figure 7-5-6.

Winter Walkover Surveys

Kestrel were observed on only one occasion during the winter walkover surveys (see Appendix 7-4, Figure 7-4-16). This observation was of an individual hunting, approximately 500m from the nearest proposed infrastructure.

Incidental Observations

Kestrel were observed on 12 occasions as incidental observations (see Appendix 7-4, Figure 7-4-17). Observations were of individuals hunting, travelling or perched. There were three observations within the Site, the remaining observations were up to 6km from the nearest proposed infrastructure.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-7. There was one probable breeding territory identified for kestrel during the 2024 breeding season, approximately 1.7km from the

nearest proposed infrastructure. There were no breeding territories identified during the 2023 breeding season.

7.3.7.8 Meadow Pipit

Meadow pipit were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to identified breeding territories are provided in Confidential Appendix 7-5.

Vantage Point Surveys

Meadow Pipit were observed on 34 occasions during vantage point surveys (see Appendix 7-4, Figure 7-4-18). Meadow pipit were observed on average once every 10.5 hours of vantage point survey. Observations were of between 1 and 15 birds commuting or calling. There were two observations of birds singing or alarm calling, indicating probable breeding in these areas. There only two observations of meadow pipit within the Site, with the majority of observations being in the open habitats to the east and west of the Site. There were four observations within the potential collision height.

Breeding Walkover Surveys

Meadow pipit were observed on 11 occasions during breeding walkover surveys (meadow pipit were observed on 80% of survey days) (see Appendix 7-4, Figure 7-4-19). Observations were of between one and three birds commuting, calling, displaying or perched. There were three observations relating to breeding behaviour, all of which were within the Site. There were ten observations within the Site, the majority of which were within more open habitats within the Site, along tracks, open bog areas and clearfell areas.

Winter Walkover Surveys

Meadow pipit were observed on seven occasions during winter walkover surveys (meadow pipit were observed on 54% of survey days) (see Appendix 7-4, Figure 7-4-20). Observations were of between one and four birds commuting or calling. There were three observations relating to breeding behaviour, all of which were within the Site. There were six observations within the Site, the majority of which were within more open habitats within the Site, along tracks, open bog areas and clearfell areas.

Incidental Observations

Meadow pipit were observed on four occasions as incidental observations (see Appendix 7-4, Figure 7-4-21). Observations were of between one and five birds commuting, calling and displaying. There were two observations within the Site, the remaining observations were up to 800m from the Site.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-8. There was three probable breeding territories identified during the 2023 breeding season and three probable breeding territories identified during the 2024 breeding season. During both seasons the two probable breeding territories were within the Site. The remaining 2023 probable breeding territory was approximately 900m from the nearest proposed infrastructure and the 2024 territory was approximately 1km from the nearest proposed infrastructure.

7.3.7.9 Red Grouse

Red grouse were observed in the breeding season. Raw survey data and maps are provided in Confidential Appendix 7-5.

Breeding Red Grouse Surveys

Red grouse were observed on one occasion during the breeding red grouse surveys (see Confidential Appendix 7-5, Figure 7-5-9). A pair were observed responding to a recording during the survey, indicating probable breeding in this area, 800m from the nearest proposed infrastructure.

There were no further observations of this species during any of the other comprehensive surveys.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-10. There was one probable breeding territory identified in 2024, 800m from the nearest proposed infrastructure.

7.3.7.10 Redwing

Redwing were observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Redwing were observed on five occasions during vantage point surveys (see Appendix 7-4, Figure 7-4-22). Redwing were observed on average once every 72 hours of vantage point survey. Observations were of between 1 and 30 birds commuting or calling. There were no observations of redwing within the Site, with the majority of observations being in the open habitats to the east of the Site. There was one observation within the potential collision height.

There were no further observations of this species during any of the other comprehensive surveys.

7.3.7.11 Ring Ouzel

Ring ouzel were observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Ring ouzel were observed on only one occasion during the vantage point surveys (see Appendix 7-4, Figure 7-4-23). This observation was of an individual commuting approximately 300m east of the Site.

There were no further observations of this species during any of the other comprehensive surveys.

7.3.7.12 Snipe

Snipe were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to identified breeding territories are provided in Confidential Appendix 7-5.

Vantage Point Surveys

Snipe were observed on seven occasions during vantage point surveys (see Appendix 7-4, Figure 7-4-24). Snipe were observed on average once every 51 hours of vantage point survey. The majority of observations were during the winter season, with one observation in March. Observations were of individuals flying or calling. There were no observations within the Site, or within 500m of the proposed turbines. There were only two observations within the potential collision height. There was one observation of an individual displaying adjacent to the Site, indicating probable breeding in this area (see Confidential Appendix 7-5, Figure 7-5-11).

Winter Walkover Surveys

Snipe were observed on only one occasion during winter walkover surveys (see Appendix 7-4, Figure 7-4-25). This observation was of an individual commuting 600m west of the nearest proposed infrastructure.

Incidental Observations

Snipe were observed on three occasions as incidental observations (see Appendix 7-4, Figure 7-4-26). Observations were of between one and four birds commuting or flushed. There were no observations within the Site, observations were within open areas of upland to the west and north of the Site.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-12. There was one probable breeding territory identified in 2024, adjacent to the Site to the west.

7.3.7.13 Woodcock

Woodcock were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Woodcock were observed on only one occasion during the vantage point surveys (see Appendix 7-4, Figure 7-4-27). This observation was of an individual commuting approximately 600m west of the Site in December.

Breeding Woodcock Surveys

Woodcock were observed on only one occasion during the breeding woodcock surveys (see Appendix 7-4, Figure 7-4-28). This observation was of an individual commuting approximately 650m from the nearest proposed infrastructure. There was no breeding evidence observed during these surveys.

Winter Walkover Surveys

Woodcock were observed on only one occasion during the winter walkover surveys (see Appendix 7-4, Figure 7-4-29). This observation was of an individual flushed by the surveyor within the Site.

Waterbird Distribution and Abundance Surveys

Woodcock were observed on only one occasion during the waterbird distribution and abundance surveys (see Appendix 7-4, Figure 7-4-30). This observation was of an individual commuting at Currakeal, 3.8km from the nearest proposed infrastructure.

Incidental Observations

Woodcock were observed on four occasions as incidental observations (see Appendix 7-4, Figure 7-4-31). Observations were of individuals commuting or flushed. There were three observations within the Site and one observation adjacent to the Site. All observations were during the winter season.

7.3.7.14 Buzzard

Buzzard were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to identified breeding territories are provided in Confidential Appendix 7-5.

Vantage Point Surveys

Buzzard were observed on nine occasions during vantage point surveys (see Appendix 7-4, Figure 7-4-32). Buzzard were observed on average once every 40 hours of vantage point survey. Observations were of one or two birds commuting, hunting or calling. There was only one observation within 500m of the proposed turbine layout, with the majority of observations being within farmland to the east of the Site. All observations within the potential collision height.

Breeding Walkover Surveys

Buzzard were observed on two occasions during breeding walkover surveys (buzzard were observed on 20% of survey days) (see Appendix 7-4, Figure 7-4-33). Observations were of one or two birds commuting. Both observations were within the Site.

Breeding Raptor Surveys

Buzzard were observed on 17 occasions during breeding raptor surveys (see Appendix 7-4, Figure 7-4-34). Buzzard were observed once every second survey conducted and were observed at three of the four survey locations. The majority of observations were of one or two birds hunting, soaring or commuting. There were four observations of buzzard within the Site. There were four observations relating to breeding behaviour, all on the same day in 2023. These observations were of an adult carrying prey into a nest where begging calls from chicks were also heard. This confirmed nest was approximately 1.1km from the nearest proposed infrastructure. Observations relating to breeding behaviour are presented in the Confidential Appendix 7-5, Figure 7-5-13.

Winter Walkover Surveys

Buzzard were observed on two occasions during winter walkover surveys (on average, one bird every four surveys) (see Appendix 7-4, Figure 7-4-35). All observations were of individuals commuting or soaring between 450m and 1.2km from the nearest proposed infrastructure.

Incidental Observations

Buzzard were observed on seven occasions as incidental observations (see Appendix 7-4, Figure 7-4-36). Observations were of individuals hunting or soaring. There was one observation within the Site. The remaining observations were between 400m and 4.9km from the nearest proposed infrastructure.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-14. There was one confirmed breeding territory identified for buzzard during the 2023 breeding season, approximately 1.1km from the nearest proposed infrastructure. There were no breeding territories identified during the 2024 breeding season.

7.3.7.15 Sparrowhawk

Sparrowhawk were observed in the breeding and winter seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point Surveys

Sparrowhawk were observed on two occasions during the vantage point surveys, or on average once every 180 hours of vantage point survey (see Appendix 7-4, Figure 7-4-37). There was one observation of an individual commuting and one observation of an individual displaying, indicating probable breeding in this area, 700m from the nearest proposed infrastructure. There were no observations within the Site and one observation at the potential collision height. Observations relating to breeding behaviour are presented in the Confidential Appendix 7-5, Figure 7-5-15.

Winter Walkover Surveys

Sparrowhawk were observed on two occasions during breeding walkover surveys, or on average 20% of surveys (see Appendix 7-4, Figure 7-4-38). All observations were of individuals hunting or commuting within the Site.

Incidental Observations

Sparrowhawk was observed on three occasions as an incidental observation (see Appendix 7-4, Figure 7-4-39). Observations were of one or two birds commuting or perched between 1km and 1.9km from the nearest proposed infrastructure.

Breeding Summary

Breeding territories are mapped in Confidential Appendix 7-5, Figure 7-5-16. There was one probable breeding territory identified for sparrowhawk in March 2025, approximately 700m from the nearest proposed infrastructure. There were no breeding territories identified during the 2023 or 2024 breeding seasons.

7.4 Receptor Evaluation

7.4.1 Determination of Population Importance

A determination of population importance for birds within the study area is provided below, following criteria described in Section 7.2.5. Estimates of national population sizes were obtained from the most

recent species-specific national survey, or national surveys by Burke *et al.* (2018) or Ireland's Article 12 Reporting 2013-2018 (EU, 2022), depending on what literature was available for each species. Estimates for mean county population sizes were obtained from species-specific surveys, a review of I-WeBS sites within 25km of the Site⁹, or derived from national estimates, according to what literature was available.

Following NRA (2009), a population of National Importance is a regularly occurring population that exceeds 1% of the national population. Similarly, a population of County Importance is a regularly occurring population that exceeds 1% of the county population. Locally Important (Higher Value) populations are resident or regularly occurring species of conservation concern of importance at the local level, while Locally Important (Lower Value) populations are resident or regularly occurring species of some local importance.

7.4.1.1 Chough

Chough were only observed on one occasion within the Site, however there were regular observations within farmland adjacent to the Site. Populations recorded at the Site were deemed to be of no greater than **Local Importance (Lower Value)**.

7.4.1.2 Golden Plover

Golden plover were not recorded within the Site, and only once during the comprehensive suite of surveys undertaken at the Site and its hinterland. The Site is of **No Ecological Importance** to this species given how infrequently the Site is utilised and that the habitats on site are sub-optimal compared to the surrounding landscape.

7.4.1.3 Hen Harrier

Hen harrier were recorded on three occasions during the comprehensive suite of surveys undertaken at the Site and its hinterland, two of which were partially within the Site. Three observations over 2.5 years of surveying is a very low rate of occurrence (on 2 out of 176 survey days). There was no evidence to suggest hen harrier utilised the habitats at, or adjacent to, the Site for breeding or roosting. The Site is of **No Ecological Importance** to this species given how infrequently the Site is utilised by this species and that the habitats on site are sub-optimal compared to the surrounding landscape.

7.4.1.4 Peregrine

As per NPWS Article 12 Reporting (2013-2018), the estimated population of peregrine is 425 pairs. Therefore, as per NRA (2009) criteria, a regularly occurring population of four pairs of peregrine is required for classification as Nationally Important.

The Site is in County Cork and there are no published figures for the county population of peregrine. Using the distribution of peregrine across Ireland from the breeding bird atlas¹⁰ (2007-2011) the Cork population of peregrine is estimated to be 63 pairs. Therefore, a resident population of one bird is required to qualify as being of county importance. Peregrine were observed regularly during surveys and a nest was identified 350m from the Site during the 2024 breeding season.

Taking a precautionary approach, the peregrine observed at the Site are likely associated with a breeding territory/resident pair which is of **County Importance**.

⁹ Please note that these figures are estimates based on the best available information but should be interpreted with a degree of caution.

¹⁰ Bird Atlas data from the National Biodiversity Data Centre was used to estimate the county population. Presence/absence hectad data was used to estimate the proportion of the national population that occurs in the county. The national population was then multiplied by this percentage to give a county population estimate.

7.4.1.5 White-tailed Eagle

White-tailed eagle were not observed during the surveys conducted between October 2022 and March 2025, however there were two observations during the previous surveys at the Site (please see Section 7.3.6). Taking a highly precautionary approach, given the sensitivity of this species, that it has only recently been reintroduced to Ireland and the southwest of Ireland is a stronghold for the species, it is assumed that the white-tailed eagle observed at the Site previously are associated with a population that is of **National Importance**.

7.4.1.6 Whooper Swan

Whooper swan were recorded on only one occasion within the Site. The remaining observations were between 1.5km and 2.5km from the Site. There was no evidence to suggest whooper swan utilised the habitats at, or adjacent to, the Site and no regular commuting corridors over the Site were identified. The Site is of **No Ecological Importance** to this species given how infrequently the Site is utilised by this species and that the habitats on site are unsuitable for this species.

7.4.1.7 Kestrel

As per NPWS Article 12 Reporting (2013-2018), the national breeding population estimates of kestrel in the Republic of Ireland is 13,500 birds. Using these latest figures, 1% of the national population of kestrel is 135 birds. Therefore, as per NRA (2009) criteria, a regularly occurring population of 135 birds is required for classification as Nationally Important.

The Site is located in County Cork and there are no published figures for the county population of kestrel. Using the distribution of kestrel across Ireland from the breeding bird atlas¹¹ (2007-2011) the Cork population of peregrine is estimated to be 1,431 birds. Therefore, a regularly occurring population of 14 birds is required for classification of County Importance.

Kestrel was observed within the Site on 11 occasions. There was a maximum of one breeding territory identified, 1.2km from the Site. It is assumed that the kestrel population observed at the Site are associated with this territory. This indicates a resident population of two adult birds during the breeding season which have the potential to utilise the Site. This population would be bolstered by fledglings at the end of the breeding season, which will remain present at the Site until the start of the next breeding season, when birds become territorial again. Given that kestrel have brood sizes of four to five chicks, and a survival rate of 30% in their first year¹², it is likely that there would be a population of approximately two adults and one to two juvenile birds by the end of each winter season.

The population recorded at the Site was assigned **Local Importance (Higher Value)** on the basis of a resident/regularly occurring population assessed to be important at the local level.

7.4.1.8 Red Grouse

Red grouse were not recorded within the Site, and only once during the comprehensive suite of surveys undertaken at the Site and its hinterland. The Site is of **No Ecological Importance** to this species given how infrequently the Site is utilised and that the habitats on site are sub-optimal compared to the surrounding landscape.

¹¹ Bird Atlas data from the National Biodiversity Data Centre was used to estimate the county population. Presence/absence hectad data was used to estimate the proportion of the national population that occurs in the county. The national population was then multiplied by this percentage to give a county population estimate.

¹² <https://app.bto.org/birdfacts/results/bob3040.htm>

7.4.1.9 Snipe

As reported (2013-2018) under Article 12 of the Birds Directive (Directive 2009/147/EC), the national breeding population estimate of snipe in the Republic of Ireland is 4,275 breeding pairs. Using these latest figures, 1% of the National population of snipe is 43 pairs. Therefore, as per NRA 2009, a regularly occurring population of 43 pairs is required for classification as Nationally Important.

The Site is in County Cork and there are no published figures for the county population of snipe. Using the distribution of snipe across Ireland from the breeding bird atlas¹³ (2007-2011) the cork population of snipe is estimated to be 339 pairs. Therefore, a regularly occurring population of 3 pairs is required for classification of County Importance.

Snipe were not observed within the Site, however they were observed on seven occasions within 500m of the Site. Furthermore, there was a probable breeding territory identified within 500m of the Site. There is a resident population of snipe within the open upland habitats adjacent to the Site. Snipe are an abundant species in Ireland, however this species can be cryptic and under recorded. The population recorded at the Site was assigned **Local Importance (Higher Value)** on the basis of a resident/regularly occurring population assessed to be important at the local level.

7.4.1.10 Woodcock

Woodcock is a BoCCI Red Listed species for the breeding season only in Ireland. Woodcock were only observed on one occasion during the breeding season, and no evidence of breeding was observed despite undertaking breeding woodcock surveys during the 2023 and 2024 breeding seasons. The remaining observations were during the winter season, when the Irish population is bolstered by migrants from Eastern Europe and Russia. Given the infrequency of observations during the breeding season and no evidence of breeding was observed, the Site is considered to be of **No Ecological Importance** to the resident Irish population of woodcock.

7.4.1.11 Buzzard

Buzzard is not listed on Annex I of the Birds Directive. The species is Green listed in Ireland (BoCCI). The population recorded across the seasons was assigned **Local Importance (Higher Value)** on the basis of a resident/regularly occurring population assessed to be important at the local level.

7.4.1.12 Sparrowhawk

Sparrowhawk is not listed on Annex I of the Birds Directive. The species is Green listed in Ireland (BoCCI). The population recorded was assigned **Local Importance (Higher Value)** on the basis of a resident/regularly occurring population assessed to be important at the local level.

7.4.1.13 Passerines (Red Listed)

Grey wagtail, meadow pipit, redwing and ring ouzel are BoCCI Red Listed species in Ireland. Populations recorded at the Site were deemed to be of no greater than **Local Importance (Lower Value)**.

¹³ Bird Atlas data from the National Biodiversity Data Centre was used to estimate the county population. Presence/absence hectad data was used to estimate the proportion of the national population that occurs in the county. The national population was then multiplied by this percentage to give a county population estimate.

7.4.2 Identification of Key Ornithological Receptors

Table 7-9 outlines the rationale for including or excluding each target species recorded during field surveys as a KOR. The conservation status, population importance evaluation following NRA (2009) and a detailed explanation for inclusion/exclusion as a KOR is provided. The sensitivity of species included as KORs are then evaluated in the following section.

Table 7-9 Receptor evaluation and selection criteria rationale

Species	Conservation Status or Sensitivity	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Chough	Annex I Birds Directive	<u>All Seasons</u> Local Importance (lower value)	Chough were recorded during surveys at the Site and its hinterland. However, as per NatureScot guidance (SNH, 2017), it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology and large populations. Furthermore, the dominant habitat onsite, forestry, is not favoured by chough. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Proposed Development will have a significant effect on this species. No pathways for significant effects were identified.	No
Golden Plover	Annex I Birds Directive & Red List	<u>Winter</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Site is of significance to this species. No pathways for significant effects were identified.	No
Hen Harrier	Annex I Birds Directive	<u>All Seasons</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Site is of significance to this species. No pathways for significant effects were identified.	No

Species	Conservation Status or Sensitivity	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Peregrine	Annex I Birds Directive	<u>All Seasons</u> Country Importance	<p>This species was recorded within the Site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded flying over the Site and within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p> <p>This species was recorded flying within the potential collision risk zone during vantage point surveys. Potential for collision risk cannot be excluded.</p> <p>As such, an assessment of direct habitat loss, disturbance/displacement and collision risk has been completed for Peregrine (see Section 7.5.2.1).</p>	Yes
White-tailed Eagle	Annex I Birds Directive	<u>All Seasons</u> National Importance	<p>This species was recorded within the Site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded flying over the Site. Potential for disturbance/displacement cannot be excluded.</p> <p>This species was not recorded flying within the potential collision risk zone during vantage point surveys. This limits the potential for significant collision risk for this species.</p> <p>As such, an assessment of direct habitat loss and disturbance/displacement has been completed for white-tailed eagle (Section 7.5.2.2).</p>	Yes
Whooper Swan	Annex I Birds Directive	<u>Winter</u>	<p>No population of ecological significance was recorded utilising the Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there</p>	No

Species	Conservation Status or Sensitivity	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No population of ecological significance recorded.	is no evidence to suggest that the Site is of significance to this species. No pathways for significant effects were identified.	
Kestrel	Red List & Raptor	<u>All Seasons</u> Local Importance (higher value)	This species was recorded hunting within the Site. Potential for direct habitat loss cannot be excluded. Birds were recorded flying over the Site and within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded. This species was recorded flying within the potential collision risk zone during vantage point surveys. Potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk has been completed for kestrel (Section 7.5.2.3).	Yes
Red Grouse	Red List	<u>All Seasons</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Site is of significance to this species. No pathways for significant effects were identified.	No
Snipe	Red List	<u>All Seasons</u> Local Importance (higher value)	This species was occasionally recorded utilising habitats adjacent to the Site. Potential for direct habitat loss cannot be excluded. Birds were recorded flying over the Site and within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.	Yes

Species	Conservation Status or Sensitivity	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			<p>This species was recorded flying within the potential collision risk zone during vantage point surveys. Potential for collision risk cannot be excluded.</p> <p>As such, an assessment of direct habitat loss, disturbance/displacement and collision risk has been completed for snipe (Section 7.5.2.4).</p>	
Woodcock	Red List	<p><u>Breeding</u></p> <p>No population of ecological significance recorded.</p>	<p>No population of ecological significance was recorded utilising the Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Site is of significance to this species. No pathways for significant effects were identified.</p>	No
Buzzard	Raptor	<p><u>All Seasons</u></p> <p>Local Importance (higher value)</p>	<p>This species was occasionally recorded hunting adjacent to the Site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded flying over the Site and within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p> <p>This species was recorded flying within the potential collision risk zone during vantage point surveys. Potential for collision risk cannot be excluded.</p> <p>As such, an assessment of direct habitat loss, disturbance/displacement and collision risk has been completed for buzzard (Section 7.5.2.5)</p>	Yes
Sparrowhawk	Raptor	<p><u>All Seasons</u></p> <p>Local Importance (higher value)</p>	<p>This species was occasionally recorded hunting within the Site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded flying over the Site and within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p>	Yes

Species	Conservation Status or Sensitivity	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			<p>This species was recorded flying within the potential collision risk zone during vantage point surveys. Potential for collision risk cannot be excluded.</p> <p>As such, an assessment of direct habitat loss, disturbance/displacement and collision risk has been completed for sparrowhawk (Section 7.5.2.6).</p>	
Passerines	Red List	<p><u>All Seasons</u></p> <p>Local Importance (lower value)</p>	<p>Grey wagtail, meadow pipit, redwing and ring ouzel were recorded during surveys at the Site and its hinterland. However, as per NatureScot guidance (SNH, 2017), it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology and large populations. Furthermore, the dominant habitat onsite, forestry, is not favoured by the recorded passerines. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Proposed Development will have a significant effect on these species. No pathways for significant effects were identified.</p>	No

7.4.3 Key Ornithological Receptor Sensitivity Determination

Criteria developed by Percival (2003) for assessing bird sensitivity is presented in

Table 7-3 (Section 7.2.5). The sensitivity of the KORs, as per Percival (2003), are listed below, including the rationale (population importance, conservation status and/or susceptibility to impact from this type of development) for their respective sensitivity classification.

High Sensitivity KORs are:

- White-tailed Eagle (Nationally Important population)

Medium Sensitivity KORs are:

- Peregrine (Regionally Important population and Annex I; EU Birds Directive)
- Kestrel (BoCCI Red Listed)
- Snipe (BoCCI Red Listed)

Low Sensitivity KORs are:

- Buzzard (resident population of local importance identified)
- Sparrowhawk (resident population of local importance identified)

7.5 Potential Impacts

All elements of the Proposed Development have been considered in assessing impacts on KORs. This section is structured as follows:

- Assessment of 'Do Nothing' Effect
- Assessment of impacts in relation to KORs during construction and operation
- Assessment of impacts in relation to KORs during decommissioning
- Assessment of impacts on designated areas

7.5.1 Do-Nothing Effect

If the Proposed Development were not to proceed, no changes would be made to the current land-use practice of commercial forestry, and the Site would continue to be managed under the existing commercial forestry arrangements. The bird assemblage on the Site would likely remain similar to its current state as activity levels and land use would not change significantly.

In the specific case of forestry within the Site, its value and suitability for local avian receptors will vary with the management of the forestry. Forestry plantations in their initial years prior to canopy closure have the potential to support certain species (e.g., foraging raptors), and as the forestry matures it is utilised by other species that favour (closed canopy) woodland conditions. Therefore, as forestry matures/is felled there is potential for ongoing loss/creation of supporting habitat.

However, if the Proposed Development doesn't proceed, the opportunity to capture part of Cork's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable

resources and the reduction of greenhouse gas emissions. An alternative land use option to developing a renewable energy project at the Site would be to leave the Site as it is, with no changes made to the current land use compromises of commercial forestry, agricultural land and unutilised existing wind farm infrastructure that remains at the Site from the Kealkill Wind Farm. The opportunity to generate local employment and investment and to diversify the local economy would be lost.

Furthermore, as this application includes a Biodiversity Management and Enhancement Plan to be implemented during the development's operation, the opportunity to enhance the Site for biodiversity, at a local scale, would also be lost.

At a global scale, climate change has been proven to have negative impacts on biodiversity, either through reduced quality of habitat, displacement due to the changing baselines, and reduced or altered food sources. With Irelands climate action plans in mind and the potential contribution of the Proposed Development in reducing dependency of fossil fuels, should it not proceed, this would inhibit the national targets in reducing greenhouse gas emissions in Ireland.

7.5.2 Effects on Key Ornithological Receptors during Construction and Operation

The boxes in the following sections describe potential effects on KORs that may occur during the construction and operation of the wind farm. The magnitude and significance of these effects are then defined according to Percival (2003) and EPA (2022) criteria.

7.5.2.1 Peregrine (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Peregrine were recorded on three occasions within the Site during surveys. These observations were of birds commuting within the Site. The construction of the Proposed Development will not result in the loss of a significant amount of foraging habitat given the development footprint is small (i.e. 4.7 ha or 1.7% of the Site) relative to the total area within the Site and that a large proportion of the development footprint is preexisting (48.6% of the permanent development footprint) and will not result in further habitat loss. Furthermore, this species is unlikely to be dependent on the onsite habitats, given the wide-ranging nature of the species and that the on-site habitats where the infrastructure will be situated is suboptimal foraging or breeding habitats for this species (commercial forestry). Extensive areas of suitable foraging habitat will remain post construction and there is an abundance of suitable habitat in the surrounding area.</p> <p>No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.</p>	<p>Long-term slight negative effect, which is Not Significant</p>
Disturbance	<p>This species was recorded on 37 occasions within, or partially within, 500m of the Site during the breeding and winter seasons. There was a confirmed nest site approximately 350m from the Site in 2024.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i></p>	<p>Short-term slight negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>No new infrastructure is proposed within 1.4km of the nest site. This limits the potential for construction activity to impact on the nest site. Furthermore, there is mature conifer forestry between the construction activity and the nest site which will obscure the activity and there will be no line of sight between the nest and construction activity. Owing to the separation distance and the obscuring mature forestry which will be present during the construction phase, no significant disturbance impacts are predicted. Furthermore, peregrine has been documented to become accustomed to various sources of human disturbance (Ruddock <i>et al.</i>, 2007).</p> <p>No significant effects of disturbance are anticipated at the county, national or international level.</p>	<p>impact corresponds to a Low effect significance.</p>	
Operational Phase			
Direct Habitat Loss	<p>Direct habitat loss effects are not anticipated.</p>	No Effect	No Effect
Displacement and Barrier Effect	<p>As previously discussed, this species was recorded on 37 occasions within, or partially within, 500m, of the Site during the survey period and a nest was located 350m from the Site (1.5km from the nearest proposed turbine) in 2024. The suboptimal nature of the on-site habitats for this species and the availability of alternative more suitable habitat in the surroundings, limit the potential for significant displacement effects. Furthermore, peregrine has been documented to become accustomed to various sources of human disturbance (Ruddock <i>et al.</i>, 2007). It is, therefore, reasonable to conclude that following a period of habituation, the population will become accustomed to the wind farm in the landscape.</p> <p>No significant effects of displacement are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a Medium sensitivity species and Low impact corresponds to a Low effect significance.</p>	<p>Long-term slight negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A “Random” collision risk analysis has been undertaken (full details provided in Appendix 7-6).</p> <p>The collision risk has been calculated at a rate of 0.221 collisions per year, or one bird every 5 years. Annual mortality of adult Peregrine has been calculated at 19% per annum (Smith <i>et al.</i>, 2015). If 0.221 collisions were to occur per year, it would mean that the losses at the Site would increase the annual mortality of the county population (c. 126) by 0.92%. The predicted collision risk is negligible. No significant effects are anticipated.</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	<p>Long-term imperceptible negative effect, which is Not Significant</p>

7.5.2.2 White-tailed Eagle (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>This species was not observed during surveys between October 2022 and March 2025, however there were two observations of this species during the previous surveys at the Site.</p> <p>The construction of the Proposed Development will not result in the loss of a significant amount of foraging habitat given the development footprint is small (i.e. 4.7 ha or 1.7% of the Site) relative to the total area within the Site and that a large proportion of the development footprint is preexisting (48.6% of the permanent development footprint) and will not result in further habitat loss.</p> <p>Additionally, the habitats within the Site (primarily commercial forestry) are suboptimal foraging habitat for white-tailed eagle. Furthermore, the habitats onsite are not unique to the Site and are not a rare resource in the wider area. Significant loss of potential foraging habitat is not anticipated.</p> <p>No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>High</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	<p>Long-term imperceptible negative effect, which is Not Significant</p>
Disturbance	<p>As previously discussed, this species was not observed during surveys between October 2022 and March 2025, however there were two observations of this species during the previous surveys at the Site.</p> <p>The construction of the Proposed Development has limited potential to give rise to disturbance impacts, given the Site is rarely visited by this species (no observations in most recent 2.5 years of surveys). Furthermore, the Site is primarily commercial forestry which is a habitat of low ecological value. Therefore, were disturbance to occur it would not result in the loss of a scarce resource for the local white-tailed eagle population.</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>High</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	<p>Short-term imperceptible negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Significant effects are not anticipated, given that extensive areas of suitable foraging habitat exist and will remain in the wider area. Onsite habitats are not considered unique to the Site.</p> <p>No significant effects of disturbance are anticipated at the county, national or international level.</p>		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>As previously discussed, this species was not observed during surveys between October 2022 and March 2025, however there were two observations of this species during the previous surveys at the Site.</p> <p>Onsite habitats are predominantly mature forestry plantations, which are considered to be suboptimal for foraging white-tailed eagle. Moreover, significant effects are not anticipated, given that extensive areas of more suitable foraging habitat exist and will remain in the wider area (e.g., bog and grassland habitats). Onsite habitats are not considered unique to the Site.</p> <p>Significant displacement effects are not predicted.</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>High</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	Long-term imperceptible negative effect, which is Not Significant
Collision Risk	This species was not recorded flying at potential collision height during the extensive vantage point survey work undertaken at the Site. Collision related mortality is not likely to significantly impact this species.	No Effect	No Effect

7.5.2.3 Kestrel (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>This species was frequently recorded within the Site during the breeding and winter seasons. The construction of the Proposed Development will not result in the loss of a significant amount of foraging or breeding habitat given the development footprint is small (i.e. 4.7 ha or 1.7%) relative to the total area within the Site. Furthermore, a large proportion of the development footprint is preexisting (48.6% of the permanent development footprint) and will not result in further habitat loss.</p> <p>There was no breeding activity recorded within the Site. Foraging kestrel were observed frequently within the Site. There will be minimal loss of suitable foraging habitat, given the extent of suitable habitat outside of the development footprint. Furthermore, the habitats onsite are not unique to the Site and are not a rare resource in the wider area. Significant loss of potential foraging habitat is not anticipated.</p> <p>No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.</p>	<p>Long-term slight negative effect, which is Not Significant</p>
Disturbance	<p>The construction of the Proposed Development has the potential to give rise to disturbance impacts; however, significant impacts are not predicted based on the following rationale. While this species was frequently recorded within the Site during the breeding and winter seasons, the Site does not contain habitats that are unique to the local area. Furthermore, the Site is primarily commercial forestry which is a habitat of low ecological value. Therefore, were disturbance to occur it would not result in the loss of a scarce resource for the local kestrel population.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.</p>	<p>Short-term slight negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Significant effects are not anticipated, given that extensive areas of suitable foraging and breeding habitat exist and will remain in the wider area. Onsite habitats are not considered unique to the Site.</p> <p>No significant effects of disturbance are anticipated at the county, national or international level.</p>		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>Raptor studies have generally found only low levels of turbine avoidance (Hötker <i>et al.</i>, 2006; Madders and Whitfield, 2006), with some species, such as kestrels, known to continue foraging activity close to turbines (Pearce-Higgins <i>et al.</i>, 2009).</p> <p>Onsite habitats are predominately mature forestry plantations, which are considered to be suboptimal for foraging kestrel. Moreover, significant effects are not anticipated, given that extensive areas of more suitable foraging habitat exist and will remain in the wider area (e.g., bog and grassland habitats). Onsite habitats are not considered unique to the Site.</p> <p>Significant displacement effects are not predicted.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.</p>	Long-term slight negative effect, which is Not Significant
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A “Random” collision risk analysis has been undertaken (full details provided in Appendix 7-6).</p> <p>The collision risk has been calculated at a rate of 0.28 collisions per year, or one bird every 6 years. Annual mortality of adult kestrel has been calculated at 35% per annum (Orta <i>et al.</i>, 2020). If 0.28 collisions were to occur per year, it would</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	Long-term imperceptible negative effect, which is Not Significant

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	mean that the losses at the Site would increase the annual mortality of the county population (c. 1,431) by 0.06%. The predicted collision risk is negligible. No significant effects are anticipated.		

7.5.2.4 Snipe (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Snipe was not observed utilising habitats within the Site. All observations of snipe were outside the Site in areas of bog. The construction of the Proposed Development will not result in the loss of a significant amount of suitable habitat given that the majority of the Site is commercial forestry which is of very limited value to this species. Furthermore, there is an abundance of suitable habitat in the surrounding area. Significant habitat loss effects are not predicted.	The magnitude of the effect is assessed as Negligible . The cross tabulation of a <i>Medium</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.	Long-term imperceptible negative effect, which is Not Significant
Disturbance	This species was recorded on eight occasions within, or partially within, 500m of the Site during the winter and breeding seasons. These observations were within bog habitats and along the margins of commercial forestry adjacent to the Site. Disturbance associated with construction works has limited potential to result in a significant effect given that there was no snipe activity on-site due to the lack of suitable habitat and that there is mature forestry that will obscure the activity and there will be no line of sight between areas of suitable habitat and construction activity. Owing to the separation distance and the obscuring mature forestry which will be present during the construction phase, no significant disturbance impacts are predicted. Furthermore, the habitats on-site and adjacent to the Site are abundant in the wider area and are not unique to the Site. Therefore, were disturbance to occur it would not result in the loss of a scarce resource for the local snipe population.	The magnitude of the effect is assessed as Low . The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.	Short-term slight negative effect, which is Not Significant

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	No significant effects of disturbance are anticipated.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>As outlined above, snipe were not recorded utilising habitats within the Site over the 2.5 years of surveying, and there were eight records of birds utilising habitats within 500m of the Site.</p> <p>Pearce-Higgins <i>et al.</i> (2009) found that breeding snipe showed significant avoidance of turbines extending to a distance of 400m, with breeding density reduced by up to 50% within this area. There is also evidence of avoidance of access tracks. There were only three observations of birds within 400m of the development footprint, including one breeding territory 60m from an existing access track.</p> <p>The above study relates to breeding snipe. There was only one breeding territory identified for snipe during the survey period. Wintering non-breeding birds are assumed to be at less risk of disturbance effects, as they are not tied to a fixed location (i.e. nest site) and are therefore less restricted in their selection of habitats. The habitats within the Site have limited value to snipe and habitats within 500m radius of the snipe comprise bog and farmland habitats. These are abundant habitat types in the surrounding landscape and are not unique to the Site or its immediate surroundings.</p> <p>No significant effects of displacement or barrier effect are anticipated.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Medium</i> sensitivity species and <i>Low</i> impact corresponds to a Low effect significance.</p>	<p>Long-term slight negative effect, which is Not Significant</p>
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A “Random” collision risk analysis has been undertaken. To account for the crepuscular flight activity of golden plover, the collision risk analysis for this</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>Medium</i></p>	<p>Long-term imperceptible negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>species has assumed nocturnal flight activity occurred for 25% of the night. Please see Appendix 7-6 for further discussion.</p> <p>The collision risk has been calculated at a rate of 0.006 collisions per year, or one bird every 168 years. The predicted collision risk is insignificant over the 35-year life-time of the Proposed Development.</p>	<p>sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	

7.5.2.5 Buzzard (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>This species was occasionally recorded within the Site during the breeding and winter seasons. The construction of the Proposed Development will not result in the loss of a significant amount of suitable habitat given the development footprint is small (i.e. 4.7 ha or 1.7% of Site) relative to the total area within the Site. Furthermore, a large proportion of the development footprint is preexisting (48.6% of the permanent development footprint) and will not result in further habitat loss.</p> <p>There were no breeding territories identified within or adjacent to the Site during the breeding seasons surveyed. The nearest breeding territory was approximately 800m from the Site (see Confidential Appendix 7-5, Figure 7-5-14). Buzzard were observed foraging within the Site. However, the habitat types found within the Site are not unique to the Site and are not a rare resource in the wider area. Significant loss of potential breeding and foraging habitat is not anticipated. Direct loss of potential foraging habitat to the footprint of the Proposed Development will be minimal.</p> <p>No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of <i>Low</i> sensitivity species and <i>Low</i> Impact corresponds to a Very Low effect significance</p>	<p>Long-term slight negative effect, which is Not Significant</p>
Disturbance	<p>The construction of the Proposed Development has the potential to give rise to disturbance impacts; however, significant impacts are not predicted based on the following rationale. While this species was occasionally recorded within the Site during the breeding and winter seasons, the Site does not contain habitats that are unique to the local area. Therefore, were disturbance to occur it would not result in the loss of a scarce resource for the local kestrel population.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Low</i> sensitivity species and <i>Low</i> impact corresponds to a Very Low effect significance.</p>	<p>Short-term slight negative effect, which is Not Significant</p>

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Significant effects are not anticipated, given that extensive areas of suitable foraging and breeding habitat exist and will remain in the wider area. Onsite habitats are not considered unique to the Site.</p> <p>No significant effects of disturbance are anticipated at the county, national or international level.</p>		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>This species was occasionally recorded within the Site during the breeding and winter seasons. As previously discussed, buzzard are resident in the area with a breeding territory identified approximately 800m from the Site.</p> <p>Pearce-Higgins <i>et al.</i> (2009) describes that buzzard has been found to show significant turbine avoidance extending to at least 500m. There were no breeding territories identified within 500m of the proposed turbine layout, and only six observations of buzzard within 500m of the proposed turbine layout. Extensive areas of suitable foraging and breeding habitat exist and will remain in the wider area (i.e., outside 500m from the proposed turbine layout).</p> <p>Furthermore, onsite habitats are not considered unique to the Site and there is an abundance of suitable habitat for this species greater than 500m from the proposed turbine layout within the Site and its surroundings.</p> <p>No significant effects of displacement or barrier effect are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a Low sensitivity species and Low impact corresponds to a Very Low effect significance.</p>	Long-term slight negative effect, which is Not Significant

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A “Random” collision risk analysis has been undertaken (full details provided in Appendix 7-6).</p> <p>The collision risk has been calculated at a rate of 0.038 collisions per year, or one bird every 26 years. The favourable conservation status of this species (Green-listed BoCCI) limits the potential for ecologically significant effects to result. The loss of one bird over the lifetime of the wind farm from the local population of a Green-listed (BoCCI) species is considered not to be significant. No significant effects are anticipated.</p>	<p>The magnitude of the effect is assessed as Negligible. The cross tabulation of a <i>Low</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.</p>	<p>Long-term imperceptible negative effect, which is Not Significant</p>

7.5.2.6 Sparrowhawk (All Seasons)

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>This species was recorded on three occasions within, or partially within, the Site during the breeding and winter seasons. The construction of the Proposed Development will not result in the loss of a significant amount of foraging habitat given the development footprint is small (i.e. 4.7 ha or 1.7% of Site) relative to the total area within the Site and a large proportion of the development footprint is preexisting (48.6% of the permanent development footprint) and will not result in further habitat loss. There is the potential for the loss of foraging habitat within the Site. However, these lands (e.g. open areas along the margins of conifer plantations, clear fell and along existing tracks) are not considered unique to the Site or rare in the wider surroundings. Furthermore, there is an abundance of more suitable habitat outside the Site (e.g. bog and farmland habitats).</p> <p>No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Low</i> sensitivity species and <i>Low</i> impact corresponds to a Very Low effect significance.</p>	<p>Long-term slight negative effect, which is Not Significant</p>
Disturbance	<p>This species was recorded on three occasions within, or partially within, the Site during the breeding and winter seasons. There was no evidence of breeding sparrowhawk at, or adjacent to, the Site. Therefore, construction activity is unlikely to cause disturbance to nesting sparrowhawk. There may be some disturbance to foraging and commuting sparrowhawk within the Site, however if disturbance were to occur, there are extensive areas of suitable habitat in the wider area and it will not result in the loss of a scarce resource for the local sparrowhawk population.</p> <p>No significant effects of disturbance are anticipated at the county, national or international level.</p>	<p>The magnitude of the effect is assessed as Low. The cross tabulation of a <i>Low</i> sensitivity species and <i>Low</i> impact corresponds to a Very Low effect significance.</p>	<p>Short-term slight negative effect, which is Not Significant</p>
Operational Phase			

Potential effects during the construction and operational phases of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>As previously discussed, the Site hosts foraging and commuting sparrowhawk. Displacement from turbines is not reported for sparrowhawk, however, it is assumed for the purposes of the assessment that sparrowhawk show avoidance to a distance of 500m from turbines as with other raptors (Pearce-Higgins <i>et al.</i>, 2009). The availability of alternative suitable habitat in the surroundings, limit the potential for significant displacement effects.</p> <p>No significant effects of displacement or barrier effect are anticipated at the county, national or international level.</p>	The magnitude of the effect is assessed as Low . The cross tabulation of a <i>Low</i> sensitivity species and <i>Low</i> impact corresponds to a Very Low effect significance.	Long-term slight negative effect, which is Not Significant
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A “Random” collision risk analysis has been undertaken (full details provided in Appendix 7-6).</p> <p>The collision risk has been calculated at a rate of 0.004 collisions per year, or one bird every 235 years. The predicted collision risk is insignificant over the 35-year life-time of the Proposed Development.</p>	The magnitude of the effect is assessed as Negligible . The cross tabulation of a <i>Low</i> sensitivity species and <i>Negligible</i> impact corresponds to a Very Low effect significance.	Long-term imperceptible negative effect, which is Not Significant

7.5.3 Effects on Key Ornithological Receptors during Decommissioning

Potential effects on KORs that may occur during the decommissioning of the wind farm are described below. The magnitude and significance of these effects are then defined according to Percival (2003) and EPA (2022).

Potential impacts during the decommissioning phase of the Proposed Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase for each species in Section 7.5.2.	As above for the construction phase for each species in Section 7.5.2.	As above for the construction phase for each species in Section 7.5.2.

7.5.4 Effect Associated with the Turbine Delivery Route

The proposed turbine delivery route includes a turbine component turning area along the R584, in order to perform a reversing manoeuvre. The turbine component turning area is located 2.2km northeast of the Site entrance. The turbine component turning area will require removal of fencing and vegetation and the temporary placement of hardcore, so the area can be used during the delivery of large turbine components. Once the turbines have been delivered, the roadside boundary removed for the accommodation works will be reinstated, and the upgraded private access track will remain in place (full details in Chapter 4 of this EIAR).

For the turbine delivery route, the existing habitats (i.e. existing roads and adjacent vegetation and hedgerows) do not have the potential to support other species of conservation interest in the area. On a precautionary basis, it is assumed that some temporary disturbance may occur during works. However, given the extent of suitable habitat in the wider area, significant disturbance effects are not predicted. The effect significance for all KORs is classed as no greater than **Low** (Percival, 2003) or a **short-term slight negative effect** (EPA, 2022) and is Not Significant.

7.5.5 Effects on Designated Areas

The Proposed Development is not located within the boundaries of any European Sites (see Section 7.3.1). An Appropriate Assessment screening was prepared to provide the information necessary to complete an Appropriate Assessment for the Proposed Development. The screening identified and assessed a potential pathway for indirect effects on The Gearagh SPA.

Following the screening, a Natura Impact Statement was prepared which concluded that:

“Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction, operation and decommissioning of the Proposed Development does not adversely affect the integrity of European sites. Therefore, it can be objectively concluded that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site”.

As such, it can be concluded that the Proposed Development will not have an adverse impact on any European Sites designated for birds, either alone or in combination with other plans or projects.

No proposed National Heritage Area or National Heritage Area within the Zone of Influence (as defined in the NIS) were considered as ornithological ecological receptors in their own right due to the separation distance from the Proposed Development and the absence of connectivity.

7.6 Mitigation and Best Practice Measures

This section describes the measures that are in place to mitigate potential negative effects associated with the Proposed Development on avian receptors. Effects on avian receptors have been addressed in two ways:

- Design of the Proposed Development.
- Management of the development phases.

7.6.1 Design of the Proposed Development

The project design has followed the basic principles outlined below to avoid the potential for significant effects on avian receptors:

- The Proposed Development avoids wildlife refuge sites (e.g., waterbodies)
- Hard standing areas have been designed to the minimum size necessary to accommodate the turbine model that is selected.
- The turbine delivery route has been selected to utilise built infrastructure i.e., public roads.
- The Biodiversity Management and Enhancement Plan has been designed to not have a negative effect on avian receptors.

7.6.2 Management of the Proposed Development Phases

The following section describes the mitigation and best practice measures to be implemented during each phase of the Proposed Development.

7.6.2.1 Construction Phase

A Construction and Environmental Management Plan (CEMP) has been prepared and will be in place prior to the start of the construction phase. Full details of the CEMP are available in Appendix 4-3 of this EIAR, while details pertinent to birds are summarised below. Note that these measures are proposed as industry best practice rather than to mitigate any identified significant effect and will be updated as required to address any conditions of a grant of permission or findings of any pre-construction survey results.

- Works will commence outside the bird nesting season (1st of March to 31st of August inclusive). Any requirement for construction works to run into the subsequent breeding season following commencement will be informed by pre-construction bird surveys.
- During the construction phase, noise limits, noise control measures, hours of operation (i.e. dusk and dawn is high faunal activity time) and selection of plant items will be considered in relation to disturbance of birds. All plant and equipment for use will comply with the European Communities (Noise Emission By Equipment For Use Outdoors) Regulations, 2001, as amended (SI 632/2001). Plant machinery will also be turned off when not in use.
- Water protection measures will be implemented around existing watercourses as outlined in Chapter 9 of this EIAR, to protect the use of watercourses by birds.
- If winter roosting or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located and no works shall be undertaken within a species-specific disturbance buffer in line with industry best practice (e.g. Goodship and Furness, 2022). No works shall be permitted within the buffer until it can be demonstrated that the roost/nest is no longer occupied.
- An Environmental Clerk of Works and Project Ecologist will be appointed. Duties will include:
 - Organise the undertaking of a pre-construction and construction phase walkover bird survey to ensure that significant effects on birds will be avoided.
 - Inform and educate on-site personnel of the ornithological and ecological sensitivities within the Proposed Development.
 - Oversee management of ornithological issues during the construction period and advise on ornithological issues as they arise.
 - Provide guidance to contractors to ensure legal compliance with respect to protected species onsite.
 - Liaise with officers of consenting authorities and other relevant bodies with regular updates in relation to construction progress as necessary.

7.6.2.2 Operational Phase

No significant operational phase impacts requiring mitigation were identified.

7.6.2.3 Decommissioning Phase

During the decommissioning phase, disturbance limitation measures will be as per the construction phase described in Section 7.6.2.1 and within the Decommissioning Plan which accompanies this application.

7.7 Monitoring

The following monitoring measures are proposed as industry best practice rather than in response to any identified impacts associated with the Proposed Development.

7.7.1 Pre-Construction and Construction Surveys

Pre-commencement confirmatory surveys will be undertaken within one month prior to the initiation of works at the Proposed Development to identify sensitive sites (e.g. roosts). Any requirement for construction works to run into the subsequent breeding and winter seasons following commencement will be subject to a repeat of the pre-commencement bird surveys to confirm the absence of breeding birds of conservation concern once per month during the breeding season (April to July) and once during the winter season (October). The survey will aim to identify sensitive sites e.g., nests or roosts depending on the season in question.

The surveys will be undertaken by a suitably qualified ornithologist. The surveys will comprise a thorough walkover survey of the development footprint and/or all works areas to a 500m radius, where access allows. If winter roosts or nests of birds of high conservation concern are identified, the roost/nest will be earmarked for continued monitoring during works. If the roost/nest is found to be active during works, works will cease within a species-specific buffer of its location in line with best practice guidance (e.g. Forestry Commission Scotland, 2006; Goodship and Furness 2022; Ruddock and Whitfield, 2007) to avoid disturbance. No works shall be permitted within the buffer until it can be demonstrated that the roost/nest is no longer occupied.

All site staff and subcontractors will be made aware of any restrictions to be imposed by means of a toolbox talk and a map of the 'no-work zone' will be made available to all construction staff. The restricted area will also be marked to alert all personnel on site to the suspension of works within that area.

7.7.2 Operational Phase Surveys

In line with best practice measures, a detailed operational phase Bird Monitoring Programme has been prepared for the Proposed Development, please refer to Appendix 7-7 for further details. The programme of works will monitor parameters associated with collision, displacement/barrier effects and habituation during the lifetime of the wind farm. Surveys will be scheduled to coincide with years 1, 2, 3, 5, 10 & 15 of the lifetime of the wind farm. Monitoring measures are broadly based on guidelines issued by the NatureScot (SNH, 2009). The following individual components are proposed:

- Monthly flight activity surveys: vantage point surveys.
- Targeted bird collision surveys (corpse searches) will be undertaken with trained dogs. The surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.

The proposed programme of monitoring is proposed as a best practice measure (as per guidance outlined in NatureScot, 2009). The monitoring is comprehensive and considered entirely adequate in this regard. The results of this monitoring will be reported to the Planning Authority following each monitoring year and will include recommendations that may inform additional mitigation or adaptation if required.

7.7.3 **Decommissioning**

The same measures will be followed for decommissioning as outlined for the construction phase in Section 7.7.1.

Residual Effects

The following species were identified as KORs and were subject to detailed impact assessment:

- > Peregrine (all seasons)
- > White-tailed Eagle (all seasons)
- > Kestrel (all seasons)
- > Snipe (all seasons)
- > Buzzard (all seasons)
- > Sparrowhawk (all seasons)

Following the measures described in Section 7.6, no effect significance greater than **Low**, as per Percival (2003) criteria, or **Slight**, as per EPA (2022) criteria, was identified for any KOR. Taking into consideration the effect significance levels identified and the proposed best practice and mitigation, significant residual effects on the KORs with regard to direct habitat loss, disturbance/displacement or collision mortality are not anticipated.

The Site is characterised primarily by commercial forestry. Commercial forestry is typically considered to be of low ecological value. Commercial forestry habitat is common throughout Ireland and is neither rare locally or uniquely occurs within the Site. As outlined in Section 7.2.5.1, wind farms have the potential to impact birds. The Proposed Development will likely give rise to a measurable reduction in the distribution and abundance of birds locally within the Site. However, no significant effects are predicted at the county, national or international level.

7.9 Cumulative Effects

As per NatureScot guidance “Assessing the Cumulative Impacts of onshore Wind Energy Developments” (SNH, 2012), cumulative effects arising from two or more developments may be:

- **Additive** (a multiple independent additive model)
- **Antagonistic** (the sum of impacts are less than in a multiple independent additive model)
- **Synergistic** (the cumulative impact is greater than the sum of the multiple individual effects)

This section first identifies other plans and projects in the vicinity of the Proposed Development and then assesses the potential for additive, antagonistic or synergistic impacts to occur.

7.9.1 Other Plans and Projects

Assessment material was compiled for relevant developments within the vicinity of the Proposed Development. The material was gathered through a search of relevant online Planning Registers, reviews of relevant EIS/EIAR documents, planning application details and planning drawings. It served to identify past and future plans and projects, their activities and their environmental impacts. These are then considered for in-combination or cumulative effects with the Proposed Development. All plans and projects reviewed are outlined below.

7.9.1.1 Plans Considered in the Cumulative Impact Assessment

The following plans were considered in the cumulative impact assessment:

- Cork County Development Plan 2022-2028
- National Biodiversity Action Plan 2023-2030

7.9.1.2 Projects Considered in the Cumulative Impact Assessment

NatureScot guidance (SNH, 2012; 2018) was consulted while undertaking the cumulative assessment. NatureScot emphasises that its priority is to ‘maintain the conservation status of the species population at the national level.’ However, it is acknowledged that consideration should also be allowed for impacts at the regional level ‘where regional impacts have national implications (for example where a specific region holds the majority of the national population)’. A 25km radius of the Proposed Development was considered a reasonable approximation of the size of a county and a 5km radius of the Proposed Development was considered a reasonable approximation for the local level.

To conduct the cumulative impact assessment, County Council and An Coimisiún Pleanála online planning registers, relevant EIAR (or EIS) documents, planning application details and planning drawings within 25km of the Proposed Development and all associated works were reviewed to identify past and future projects, their activities and their environmental impacts. The findings of this review are outlined in the following sections.

7.9.1.2.1 Developments and Land Uses

The review of the County Council planning register identified relevant general development planning applications within 25km of the Proposed Development. Most of these relate to the provision and/or alteration of one-off rural housing and agriculture-related structures, as described in Chapter 2 of the EIAR. Owing to the scale and nature of these developments, significant cumulative impacts are not anticipated.

7.9.1.3 Forestry and Agricultural Practices

Some areas within the Site and the surrounding area are planted with commercial forestry. The forestry works (felling/planting) associated with the forestry in the wider surroundings of the Proposed Development and replanting associated with the felling licence for this application will be subject to relevant licencing and guidance from the Forestry Service.

The remaining land use in the surrounding area is predominantly agriculture in the form of livestock grazing. These applications and land uses have also been taken into account in this cumulative assessment.

7.9.1.3.1 Other Wind Farm Developments

Wind farm projects within 25km of the Site are provided in Table 7-, including details of their planning status. A full list of wind farm projects within 25km are detailed in Appendix 2-3. A total of 213 existing turbines and 97 permitted or proposed turbines were identified for consideration. The environmental impacts of each existing, permitted, or proposed wind farm are outlined in detail in this section.

Table 7-10 Wind energy developments within 25km of the Site

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork	Maughanaclea Wind Farm	Proposed	14	3.9km
Kerry	Grousemount Wind Farm	Existing	38	5.3km
Cork	Gortloughra Wind Farm	Proposed	8	5.4km
Cork	Shehy More Wind Farm	Existing	11	5.5km
Kerry	Sillahertane-Coomagearlaghy II	Existing	10	8km
Cork	Dreenacreenig/Derreenacrinning West Wind Farm ¹⁴	Proposed	3	10.2km
Cork	Derragh Wind Farm	Existing	6	10.3km
Cork	Gortyrhilly Wind Farm	Permitted	13	10.3km
Kerry	Midas Wind Farm	Existing	23	10.7km
Cork	Carrigarierk Wind Farm	Existing	5	11.7km
Cork	Carrigarierk Extension	Permitted	3	12.1km
Cork	Cleanrath Wind Farm	Existing	9	12.1km
Cork/Kerry	Kilgarvan II Wind Farm	Existing	13	12.6km
Kerry	Kilgarvan Wind Farm	Existing	15	12.7km
Kerry	Kilgarvan Repowering	Permitted	11	12.8km
Cork	Dromleena Wind Farm	Permitted	11	13.5km
Cork	Milane Hill Wind Farm	Existing	9	14.4km
Cork/Kerry	Inchamore Wind Farm	Permitted	4	15.7km
Cork	Killaveenoge Wind Farm	Existing	10	17.7km
Cork	Lahanaght Hill Wind Farm	Existing	5	18.1km
Cork	Ballybane Wind Farm	Existing	21	18.9km
Cork	Currabwee Wind Farm	Existing	7	19.3km
Cork	Knocknamork Wind Farm	Permitted	7	19.8km

¹⁴ It should be noted that the site of the proposed 3 no. turbine wind farm (Cork CC Ref. 25/6052) is subject to a previous planning application for 7 no. wind turbines – Dereenacreenig / Dreenacreenig West (Cork CC Ref. 10857, 22153, ABP Ref. PL88.239767). Please refer to Table 2-5 in Chapter 2 (Background to the Proposed Development) for further details.

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork/Kerry	Cummeenabuddoge Wind Farm	Proposed	17	20.5km
Kerry	Clydraghroe Wind Farm	Existing	5	21.5km
Cork	Coomatallin Wind Farm	Existing	4	22.6km
Cork	Barnadivane Wind Farm	Proposed	6	24.6km
Cork	Kilvinane Wind Farm	Existing	3	24.6km
Cork	Coomacheo Wind Farm	Existing	15	24.7km
Cork	Caherdowney Wind Farm	Existing	4	24.7km

Maughanaclea Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Maughanaclea Wind Farm, which is 3.6km south of the Site. Maughanaclea Wind Farm is at the preplanning stage and therefore no planning application has been lodged and no impact assessment has been completed. Maughanaclea Wind Farm is located within open upland habitats and commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Maughanaclea Wind Farm.

Grousemount Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Grousemount Wind Farm, which is 5.3km from the nearest Proposed Development turbine, was considered. The EIS and inspectors report for the Grousemount Wind Farm was consulted.

The EIS concluded that *'the loss of relatively small amounts of habitat due to the Proposed Development would not be expected to have any significant impacts on the populations of any of the bird species that currently frequent the Site or its surroundings'*. There was no evidence to show that the Site was within a regularly used migration route by birds or a route used by wintering waterfowl. Furthermore, from the area's location and topography there was no reason to believe it would be used by significant numbers of migrating birds or waterfowl. High concentrations of birds were not recorded on or near the windfarm during surveys. The presence of turbines was not expected to have any effects on birds of conservation importance recorded on Grousemount site (i.e. chough, red grouse, peregrine, hen harrier and golden plover). Therefore, the possibility of an impact by disturbance on migrating birds was disregarded.

The Inspector's Report from An Coimisiún Pleanála focuses, on a precautionary approach, on white-tailed eagles flying over site. However, survey results showed that the Site is not used on a regular basis and there is no flight path over the Site (i.e. between feeding and roosting sites). Furthermore, it highlights the absence of suitable breeding habitat for the species on Site. The report concludes that *'the Proposed Development would not have a significant adverse effect on any sensitive habitats, protected species or areas of nature conservation interest within the Site or the surrounding area subject to the full implementation of mitigation measures and planning conditions. The Proposed Development would not give rise to any significant adverse cumulative impacts in-combination with other windfarms, the grid connection route, or plans and projects in the area.'*

Gortloughra Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Gortloughra Wind Farm, which is 5.4km from the nearest

Proposed Development turbine, was considered. The EIAR for the Gortloughra Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors: buzzard, chough, dunlin, golden plover, grey wagtail, hen harrier, kestrel, meadow pipit, peregrine, red grouse, redwing, snipe, sparrowhawk, swift and whinchat. This EIAR assessed habitat loss, displacement/barrier effect and collision risk for this development. Habitat loss was assessed to be no greater than Medium (Percival, 2003) or long-term slight-moderate negative effect (EPA, 2022). Displacement/barrier effect were assessed to be no greater than Medium (Percival, 2003) or long-term slight-moderate negative effect (EPA, 2022). Collision risk was assessed to be no greater than Low (Percival, 2003) or long-term slight negative effect (EPA, 2022). A cumulative impact assessment was undertaken for wind farms within 20km of the Gortloughra Wind Farm. The cumulative impacts were assessed to be of no greater than a long-term moderate effect (EPA, 2022).

The EIAR concluded that *'it is considered that with the implementation of mitigation, the proposed development will have an imperceptible to slight reversible residual effect in the local context on birds.'* The conclusion also states, in terms of the species with moderate effects predicted, that *'habituation over the lifetime of the wind farm is likely to reduce these effects.'*

Sheehy More Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Sheehy More Wind Farm, which is 5.5km from the nearest Proposed Development turbine, was considered. The EIS for the Sheehy More Wind Farm was consulted.

The EIS outlined that *'no species listed in the BoCCI Red list were recorded during the bird survey work.'* Hen harrier, golden plover and chough (Annex I; EU Birds Directive) were occasionally recorded on site or in its vicinity, in low numbers. The nature of the habitat on site, i.e. conifer plantation, were widespread and abundant within the surrounding areas resulting in a predicted low effect significance for both habitat loss and displacement for all bird species within the development site. It was therefore predicted that the Site would have no significant impacts on bird populations. It was concluded that *'in the longer term, the cumulative impact of wind energy developments (both in Counties Cork and Kerry and in the state as a whole) may contribute to the amelioration of climate change events that threaten to make the hen harrier and other upland birds as breeding birds in the Republic of Ireland.'*

Sillahertane-Coomagearlaghy II Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Sillahertane-Coomagearlaghy II Wind Farm, which is 8km from the nearest Proposed Development turbine, was considered. The EIS for the Sillahertane-Coomagearlaghy II Wind Farm was consulted.

The EIS was consulted to determine cumulative impacts from the development site. The EIS concluded that *'with the exception of one turbine which is sited in a small area of cutover peatland, all turbines are proposed to be sited in the newly planted coniferous plantation or its associated fire breaks. These areas are of low habitat value. The choice of these locations will ensure that peatland hydrology or wildlife will not be adversely affected by the development.'* It was anticipated that the proposed development consisting of ten turbines on solid tubular steel towers located in commercially planted and degraded areas would have no significant impact on the flora and fauna of the area.

Dreenacreenig/Derreencrinnig West Wind Farm¹⁵

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Dreenacreenig/Derreencrinnig West Wind Farm (hereafter, Dreenacreenig West Wind Farm), which is 10.2km from the nearest Proposed Development turbine, was considered. The EIAR for the Dreenacreenig West Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors: buzzard, kestrel, hen harrier, meadow pipit, peregrine, snipe and sparrowhawk. This EIAR assessed displacement and collision risk during the operational phase of this development. Displacement/barrier and collision risk effects were assessed to not be significant for all species. A cumulative impact assessment was undertaken, and it was concluded that there would be no significant cumulative impact in relation to habitat loss or collision risk.

The EIAR concluded that *'the risk posed by the proposed wind farm to avian receptors is assessed to be of very low significance.'*

Derragh Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Derragh Wind Farm, which is 10.3km from the nearest Proposed Development turbine, was considered. The EIS for the Derragh Wind Farm was consulted.

The EIS concluded that *'the extent of habitat loss is less than 1% of the total area of the Site. The habitats that will be affected are of low ecological value and the overall impact of the loss of these habitats are negligible.'* No wintering or breeding birds of high conservation concern were recorded on the Site. It was therefore predicted that the Site would have no significant impacts on bird populations.

Midas Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Midas Wind Farm, which is 10.7km from the nearest Proposed Development turbine, was considered. The planning file for the Midas Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Midas Wind Farm is located within open habitats, adjacent to commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Midas Wind Farm.

Carrigarierk Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Carrigarierk Wind Farm, which is 11.7km from the nearest Proposed Development turbine, was considered. The EIS for the Carrigarierk Wind Farm was consulted.

The EIS identified peregrine, hen harrier and golden plover as Key Ornithological Receptors. However, the EIS concluded that collision risk would be no greater than negligible on birds of conservation concern. In addition, the EIS did not predict habitat loss and disturbance impacts to be greater than slight negative.

¹⁵ It should be noted that on the 02/09/2025 notification of a 3 turbine, 119.3 m tip height wind farm development was uploaded on the EIA portal (<https://housingovie.maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71...>). A 7 turbine wind farm at this location is part of the overall cumulative assessment.

Carrigarierk Extension Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Carrigarierk Extension Wind Farm, which is 12.1km from the nearest Proposed Development turbine, was considered. The EIAR for the Carrigarierk Extension Wind Farm was consulted.

Carrigriek Extension shared the following KORs with the Proposed Development: snipe, kestrel and sparrowhawk. The EIAR concluded that the wind farm is '*not predicted to result in any significant effects on any of the identified KORs.*' Furthermore, significant cumulative impacts were not predicted for any of these species between Carrigriek and any other wind farms within 20km.

Cleanrath Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Cleanrath Wind Farm, which is 12.1km from the nearest Proposed Development turbine, was considered. The EIAR for the Cleanrath Wind Farm was consulted.

The EIAR identified the following species as Key Ornithological Receptors: hen harrier, cough, golden plover, merlin, peregrine, kestrel, sparrowhawk and common snipe. However, the EIAR concluded that '*no significant effects are predicted on birds due to direct habitat loss or displacement during the construction, operational or decommissioning phases of the proposed development. The development will not have significant effects on any KOR recorded either in isolation or cumulatively with other plans and projects.*'

Kilgarvan II Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Kilgarvan II Wind Farm, which is 12.6km from the nearest Proposed Development turbine, was considered. Kilgarvan II Wind Farm is split into two clusters: Lettercannon and Inchicoosh. The EIS for both of these clusters was consulted.

The EIS for Lettercannon concluded that '*ecological assessments for the development predicted no likely significant impact on the ecology of the Site.*' No further information in relation to bird species recorded at the Site was provided.

The EIS for Inchicoosh stated that '*the extent of habitat loss is generally considered to be insignificant in the context of the size of the development*', that the '*additional impacts to bird life from the frequency of human activity directly relating to windfarm operations post construction at the Site are not anticipated to be of great significance.*' It added that '*none of the species recorded at the development site or within the buffer zone surrounding the Site are considered to be at high risk of collision, giving consideration both to the species at the location and the relatively low densities of birds involved.*'

Kilgarvan Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Kilgarvan Wind Farm, which is 12.7km from the nearest Proposed Development turbine, was considered. The EIS for the Kilgarvan Wind Farm was consulted.

The EIS concludes that '*the Site is of limited biological interest*' and that '*evidence suggests the risk of collision between moving turbine blades and birds is minimal both migratory birds and local habitats.*' No further details were given on the bird species recorded at the Site.

Kilgarvan Repowering Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Kilgarvan Repowering Wind Farm, which is 12.8km from the nearest Proposed Development turbine, was considered. The EIAR for the Kilgarvan Repowering Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors: Chough, hen harrier, merlin, peregrine, white-tailed eagle, meadow pipit, kestrel, goshawk, red grouse, snipe and golden plover. This EIAR assessed displacement and collision risk for this development. Displacement/barrier and collision risk effects were assessed to not be significant for all species. A cumulative impact assessment was undertaken, and it was concluded that *'no wind farm projects were identified which are considered likely to result in significant cumulative effects upon the local terrestrial ecology.'*

The EIAR concluded that *'the residual impacts are likely to be slight negative (local) in the temporary to short-term upon the terrestrial habitats and species that occur in the receiving environment.'*

Dromleena Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Dromleena Wind Farm, which is 13.5km from the nearest Proposed Development turbine, was considered. The planning file was consulted; however the EIS could not be accessed. Dromleena Wind Farm is located within open habitats and farmland, adjacent to commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Dromleena Wind Farm.

Milane Hill Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Milane Hill Wind Farm, which is 14.4km from the nearest Proposed Development turbine, was considered. The planning file for the Milane Hill Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Milane Hill Wind Farm is located within open habitats, adjacent to commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Milane Hill Wind Farm.

Inchamore Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Inchamore Wind Farm, which is 15.7km from the nearest Proposed Development turbine, was considered. The EIAR for the Inchamore Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors and assessed: white-tailed eagle, sparrowhawk, hen harrier, buzzard, merlin, kestrel, peregrine, red grouse and golden plover. This EIAR assessed habitat loss, displacement/barrier effect and collision risk for this development. Habitat loss was assessed to be no greater than slight (EPA, 2022). Displacement/barrier effect were assessed to be not significant for all species. Collision risk was assessed to be no greater than long-term adverse effect of moderate significance (EPA, 2022). A cumulative impact assessment was undertaken for wind farms within 20km of the Inchamore Wind Farm. The cumulative impact assessment concluded that *'the construction of the development will contribute to an existing and ongoing (unquantified) adverse effect on birds species associated with loss of peatland habitat.'*

Killayeenoge Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Killayeenoge Wind Farm, which is 17.7km from the nearest Proposed Development turbine, was considered. The EIS for the Killayeenoge Wind Farm was consulted.

The EIS outlined that *'there was no red listed or Annex I bird species recorded within the study area during the course of the study.'* It concluded that *'the impact on the bird population is deemed to be low and therefore should not be of concern.'*

Lahanght Hill Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Lahanght Hill Wind Farm, which is 18.1km from the nearest Proposed Development turbine, was considered. The original planning file and the recent retention planning application for the Lahanght Hill Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Lahanght Hill Wind Farm is located within farmland, adjacent to commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Lahanght Hill Wind Farm.

Ballybane Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Ballybane Wind Farm, which is 18.9km from the nearest Proposed Development turbine, was considered. The EIS for the Ballybane Wind Farm was consulted.

The EIS concluded that *'based on the Site survey observations and published literature regarding habitat suitability for bird species an evaluation of ecological value of the habitats present within the Site for birds, the Site is considered to be of Low – Moderate value, local importance for birds.'* No birds of high conservation concern were recorded on site.

Currabwee Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Currabwee Wind Farm, which is 19.3km from the nearest Proposed Development turbine, was considered. The planning file for the Currabwee Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Currabwee Wind Farm is located within farmland habitats. There is potential for some KOR species of the Proposed Development to occur at the Currabwee Wind Farm as they will also utilise farmland habitats.

Knocknamork Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Knocknamork Wind Farm, which is 19.8km from the nearest Proposed Development turbine, was considered. The EIAR for the Knocknamork Wind Farm was consulted.

The EIAR recorded the following species as KORs: hen harrier (on a precautionary basis), golden plover (wintering), merlin, red grouse, sparrowhawk and kestrel. However, the EIAR concluded that *'taking into consideration the effect significance levels identified and the proposed best practice and mitigation, significant residual effects on KORs with regard to direct habitat loss, displacement or collision mortality are not anticipated.'*

Cummeenabuddoge Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Cummeenabuddoge Wind Farm, which is 20.5km from the nearest Proposed Development turbine, was considered. The EIAR for the Cummeenabuddoge Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors: hen harrier, golden plover, red grouse and woodcock. This EIAR assessed displacement/barrier effect and collision risk during the operational phase of this development. Displacement/barrier effect were assessed to be not significant for all species, apart from red grouse where a significant for woodcock. Collision risk was assessed not significant for all species. A cumulative impact assessment was undertaken for wind farms within 10km of the Cummeenabuddoge Wind Farm. The cumulative impact assessment concluded that *'there are no effects on ornithological receptors which would rise to significant as a result of in combination or cumulative effects.'*

The EIAR concluded that *'On the basis of adoption of measures outlined ... one significant residual effect on IOFs was identified on Woodcock due to uncertainty about the effects of disturbance from the operational wind farm as a result of the proposed development.'*

Clydraghroe Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Clydraghroe Wind Farm, which is 21.5km from the nearest Proposed Development turbine, was considered. The EIAR for the Clydraghroe Wind Farm was consulted.

There were no bird species discussed within the EIAR, however no significant effects on fauna were predicted. The EIAR concluded that *'the existence of a wind farm may, in fact, be beneficial to the ecology of the Site, by providing the landowner with an income from a new and sustainable land use.'*

Coomatallin Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Coomatallin Wind Farm, which is 22.6km from the nearest Proposed Development turbine, was considered. The planning file for the Coomatallin Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Coomatallin Wind Farm is located within farmland and open habitats, adjacent to commercial forestry. As such, there is potential for KOR species of the Proposed Development to occur at the Coomatallin Wind Farm.

Barnadivane Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Barnadivane Wind Farm, which is 24.6km from the nearest Proposed Development turbine, was considered. The EIAR for the Barnadivane Wind Farm was consulted.

The EIAR assessed the following high conservation concern species as key ornithological receptors: buzzard, golden plover, grey wagtail, hen harrier, kestrel, meadow pipit, peregrine, redwing, snipe, sparrowhawk, swift and yellowhammer. This EIAR assessed habitat loss, displacement/barrier effect and collision risk for this development. Habitat loss was assessed to be no greater long-term moderate effect (EPA, 2022). Displacement/barrier effect were assessed to be no greater than Medium (Percival, 2003) or long-term moderate long-term effect (EPA, 2022). Collision risk was assessed to be no greater than long-term not significant effect (EPA, 2022). A cumulative impact assessment was undertaken for

wind farms within 20km of the Barnadivane Wind Farm. The cumulative impacts were assessed to be of no greater than a long-term imperceptible cumulative effect (EPA, 2022).

The EIAR concluded that *'it is considered that with the implementation of mitigation, the proposed development will have a slight-imperceptible reversible residual impact on birds.'*

Kilvinane Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Kilvinane Wind Farm, which is 24.6km from the nearest Proposed Development turbine, was considered. The planning file for the Kilvinane Wind Farm was consulted. However, the EIS was not available. Kilvinane Wind Farm is located within farmland. However, there is potential for some KOR species of the Proposed Development to occur at the Kilvinane Wind Farm as they will utilise farmland for hunting.

Coomacheo Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Coomacheo Wind Farm, which is 24.7km from the nearest Proposed Development turbine, was considered. The planning file for the Coomacheo Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Coomacheo Wind Farm is located within commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Coomacheo Wind Farm.

Caherdowney Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside the existing Caherdowney Wind Farm, which is 24.7km from the nearest Proposed Development turbine, was considered. The planning file for the Caherdowney Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Caherdowney Wind Farm is located within open habitat adjacent to commercial forestry. As such, applying the precautionary principle, there is potential for KOR species of the Proposed Development to occur at the Caherdowney Wind Farm.

7.9.2 Assessment of Cumulative Effects

There were six KORs identified at the Proposed Development: peregrine, white-tailed eagle, kestrel, snipe, buzzard and sparrowhawk. A key consideration in the assessment of the potential for cumulative impacts to result in significant effects on KORs is proximity. For the purposes of this cumulative assessment, the local scale is considered to be a 5km radius of the Proposed Development. There was no existing or permitted wind farm within 5km of the Proposed Development, only one proposed wind farm is located within 5km of the Proposed Development (Maughanaclea); there were a further 16 wind farms between 5-15km, the remaining were within 15-25km.

Following SNH (2012) guidance, the cumulative impact assessment has been carried out at the scale of the importance rating of the receptor: National Importance (White-tailed Eagle), County Importance (peregrine), and Local Importance Higher Value (kestrel, snipe buzzard and sparrowhawk). The assessment of cumulative effects on KORs is provided below. In particular, cumulative habitat loss and displacement associated with operational turbines is assessed. Short-term impacts (e.g. construction disturbance) are highly unlikely to give rise to significant cumulative impacts. For this reason, no significant cumulative effects are predicted, and it is not considered further.

7.9.2.1 Peregrine (County Importance)

The potential for developments at a county scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. Ballybane, Coomatallin, Currabwee, Dromleena, Kilvinane and Lahanaght Hill are all located within, or partially within agricultural grassland habitats. Barnadivane, Carrigarierk Extension, Carrigarierk, Cleanrath, Coomacheo, Cummeenabuddoge, Derragh, Gortyrhilly, Inchamore, Killaveenoge, Knocknamork, Maughanaclea, Sheehy More and Sillahertane-Coomagearlachy II are all located within, or partially within commercial forestry. These habitats are of limited value to foraging peregrine, therefore significant cumulative impacts with these developments are not anticipated. Ballybane, Barnadivane, Caherdowney, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Dromleena, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Maughanaclea, Midas, Milane Hill, Sheehy More and Sillahertane-Coomagearlachy II are located within, or partially within upland habitats (bog/wet grassland). This habitat type is suitable for foraging peregrine. However, upland habitats are not considered to be a scarce resource in the area. Extensive areas of suitable foraging and breeding habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area. Furthermore, the Proposed Development is primarily located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and within 25km of the Site. While there will be a measurable reduction in available habitat onsite, it is of low ecological value. Given the habitats value and its abundance within 25km of the Site, no significant cumulative habitat loss or displacement effects are predicted.

The maximum foraging range of peregrine is 18km (SNH, 2016). There are 19 wind energy developments located within the maximum foraging range of peregrine: Maughanaclea, Grousemount, Gortloughra, Sheehy More, Sillahertane-Coomagearlachy II, Dreenacreenig West, Derragh, Gortyrhilly, Midas, Carrigarierk, Carrigarierk Extension, Cleanrath, Kilgarvan II, Kilgarvan, Kilgarvan Repowering, Dromleena, Milane Hill, Inchamore and Killaveenoge. No significant impacts on peregrine were anticipated from any of these developments. The majority of turbines at Maughanaclea, Gortloughra, Sheehy More, Sillahertane-Coomagearlachy II, Derragh, Gortyrhilly, Carrigarierk, Carrigarierk Extension, Cleanrath, Inchamore and Killaveenoge are located within commercial forestry, a habitat of very limited ecological value for peregrine. The remaining turbines within the wind farms within 18km of the Site are within upland habitats, a habitat suitable for foraging and breeding peregrine. However, these habitats are abundant within 18km of the Site.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of similar habitat found within the wind farms in the wider area. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.2 White-tailed Eagle (National Importance)

The potential for developments at a county scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. Ballybane, Coomatallin, Currabwee, Dromleena, Kilvinane and Lahanaght Hill are all located within, or partially within agricultural grassland habitats. Barnadivane, Carrigarierk Extension, Carrigarierk, Cleanrath, Coomacheo, Cummeenabuddoge, Derragh, Gortyrhilly, Inchamore, Killaveenoge, Knocknamork, Maughanaclea, Sheehy More and Sillahertane-Coomagearlachy II are all located within, or partially within commercial forestry. These habitats are of limited value to foraging white-tailed eagle, therefore

significant cumulative impacts with these developments are not anticipated. Ballybane, Barnadivane, Caherdowney, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Dromleena, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Maughanaclea, Midas, Milane Hill, Sheehy More and Sillahertane-Coomagearlaghy II are located within, or partially within upland habitats (bog/wet grassland). This habitat type is suitable for foraging white-tailed eagle. However, upland habitats are not considered to be a scarce resource in the area. Extensive areas of suitable foraging and breeding habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area. Furthermore, the Proposed Development is primarily located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and within 25km of the Site. While there will be a measurable reduction in available habitat onsite, it is of low ecological value. Given the habitats value and its abundance within 25km of the Site, no significant cumulative habitat loss or displacement effects are predicted.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of similar habitat found within the wind farms in the wider area. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.3 Kestrel (Local Importance)

The potential for local developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered.

There are no wind energy developments located within the foraging range of 1.8km for kestrel (based off a maximum home range of 10km² [Village, 1990]). Furthermore, the Proposed Development is located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and in the wider area surrounding the Site. While there will be a measurable reduction in available habitat onsite, it is of low ecological value. Given the habitats value and its abundance in the wider area surrounded the Site, no significant cumulative habitat loss or displacement effects are predicted.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of suitable habitat. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.4 Snipe (Local Importance)

The potential for local developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered.

There was no existing or permitted wind farm within 5km of the Proposed Development, only one proposed wind farm is located within 5km of the Proposed Development (Maughanaclea), approximately 3.6km south of the Site. Furthermore, the Proposed Development is located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and in the wider area surrounding the Site. While there will be a measurable reduction in available habitat onsite, it is of low ecological value. Given the habitats value and its abundance in the wider area surrounded the Site, no significant cumulative habitat loss or displacement effects are predicted.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of suitable habitat. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.5 Buzzard (Local Importance)

The potential for local developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered.

There are no wind energy developments located within the foraging range of 1km for buzzard (based off a maximum home range of 3km² (Walls & Kenward, 2001)). Furthermore, the Proposed Development is located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and in the wider area surrounding the Site. While there will be a measurable reduction in available habitat onsite, it is of low ecological value. Given the habitats value and its abundance in the wider area surrounded the Site, no significant cumulative habitat loss or displacement effects are predicted.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of suitable habitat. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.6 Sparrowhawk (Local Importance)

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered.

There are no wind energy developments located within the foraging range of 3.3km for sparrowhawk (based on a maximum home range of 3,528ha (Marquiss and Newton, 1981)). Furthermore, the Proposed Development is located within commercial forestry which is a monoculture crop of low ecological value for this species. This habitat type is abundant in Ireland, and in the wider area surrounding the Site. While there will be a measurable reduction in available habitat onsite, it is of low

ecological value. Given the habitats value and its abundance in the wider area surrounded the Site, no significant cumulative habitat loss or displacement effects are predicted.

No significant impacts on this species were identified at the local scale (5km), given the low density of turbines located within 5km of the Proposed Development and the abundance of suitable habitat. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

Taking into consideration the above reported effects and the predicted effects with the Proposed Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality.

Significant cumulative impacts are not predicted.

7.9.2.7 Summary

In summary, no significant cumulative impacts are anticipated for the KORs identified at the Site. Taking into consideration residual effects at the Site and other wind farm sites within 25km of the Site, significant cumulative effects on the KORs with regard to direct habitat loss, disturbance/displacement or collision mortality are not anticipated.

7.10 Conclusion

Following consideration of the residual effects (post-mitigation), it is concluded that the Proposed Development will not result in any significant effects on any of the identified Key Ornithological Receptors. No significant effects on receptors of International, National or County Importance were identified. Provided that the Proposed Development is constructed, operated and decommissioned in accordance with the design and best practice mitigation that are described within this application, significant individual or cumulative effects on the identified Key Ornithological Receptors are not anticipated.