

7. ORNITHOLOGY

7.1 Introduction

This chapter assesses the likely significant impacts of the Maughanaclea Renewable Energy Development on ornithological 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 ornithological receptors are identified, mitigation is described, and the residual effects are assessed.

As detailed in Section 1.1.1 in Ch. 1: Introduction, for the purposes of this EIAR, the various project components are described and assessed using the following terminology: ‘Proposed Project’, ‘Proposed Wind Farm’, ‘Proposed Grid Connection’, ‘the Site’ and ‘Proposed Wind Farm site’. The following additional definitions are used in this chapter:

- › ‘**Study Area**’ refers to the focal area during field surveys, which was defined as a 500m radius of all possible turbine locations at the outset of field surveys. This is the minimum area covered during all field surveys.

The chapter is structured as follows:

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

This chapter is supported by Appendices 7-1 to 7-7:

- › **Appendix 7-1** contains the survey effort, including full details of the survey times, weather conditions, and other relevant information.
- › **Appendix 7-2** presents a list of all species recorded during surveys.
- › **Appendix 7-3** presents a summary of bird records from surveys.
- › **Appendix 7-4** contains the raw survey data and maps
- › **Appendix 7-5** contains ecologically sensitive records of breeding territories and roosting sites.
- › **Appendix 7-6** provides the methodology and results of the collision risk assessment.

- › **Appendix 7-7** presents the proposed Bird Monitoring Programme.

7.1.1 Description of the Proposed Project

A full description of the Proposed Project is provided in Ch. 4: Description of the Proposed Project of this EIAR. In brief, the applicant is seeking planning permission for a project consisting of 14 turbines and the associated works. The turbines will be 102.5m at hub height, with 3 blades and a rotor diameter of 133m, giving a maximum blade tip height of 169m and minimum blade tip height of 36m. The Proposed Project will have an operation life of 35 years from the date of commissioning.

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 following treaties are applicable to habitats and fauna in Ireland:

- › 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 have been followed to inform this assessment:

- › 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/2025-05/guidance-note-monitoring-the-impact-of-onshore-windfarms-on-birds.pdf>
- › SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2022-12/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.
- › 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>
- › NatureScot (2025). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>
- › NatureScot (2025a). Assessing the cumulative impacts of onshore wind farms on birds. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds>
- › NatureScot (2025b). Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect>

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 and as detailed in Section 1.2 in Ch. 1: Introduction of this EIAR:

- 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 Acts 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 Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government, Government of Ireland, Dublin.
- Department of the Environment, Heritage and Local Government (2006). Wind Energy Development Guidelines for Planning Authorities. Department of the Environment, Heritage and Local Government, Government of Ireland, Dublin.
- Cork County Development Plan 2022-2028.

7.1.3

Statement of Authority

This ornithology chapter has been prepared by Ciarán McKenna (B.Sc. [Hons]), Project Ornithologist of MKO and reviewed by Susan Doyle (Ph.D.), Senior 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 Susan Doyle and is fully compliant with NatureScot guidance (SNH, 2017) which was recently revised in NatureScot (2025).

Field surveys were undertaken by André Robinson, Aran Mulvihill (B.Sc. [Hons]), Brógan Jones (B.Sc.), Ciarán Cronin (B.Sc.), Ciarán McKenna (B.Sc. [Hons]), Conor Rowlands (B.Sc. [Hons]), Dónal Moriarty (B.Sc. [Hons]), Edward Carty (QQI Level 5 Applied Ecology), Jamie Quirke (M.Sc.), John Meade (B.Sc.), Ludivine Baldacchino (B.Sc.), Róisín Towe (B.Sc. [Hons]), Sheriene Acun (B.Sc. [Hons]), Thalie Konstandinidis (B.Sc. [Hons]), Tom Siek (B.Sc. [Hons]), and Tony Kenneally (B.Sc. [Hons]). Surveyors are suitably qualified competent experts for the undertaking these field surveys.

7.2 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 Proposed Wind Farm site. The assessment included a thorough review of the available ornithological data including:

- › Designated sites within the likely Zone of Influence of the Proposed Wind Farm. The Zone of Influence is defined in the Natura Impact Statement (NIS) associated with this EIAR.
- › Bird atlases.
- › Bird sensitivity mapping tool.
- › Online web-mappers from the National Biodiversity Data Centre.
- › Irish Wetland Bird Survey data.
- › Review of specially requested records from the National Parks and Wildlife Service Rare and Protected Species Database.

7.2.2 Scoping and Consultation

Scoping and consultation were 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 Ch. 2: Background to the Proposed Project of this EIAR. Table 7-1 below provides a list of the organisations consulted 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; Ch. 2: Background to the Proposed Project describes where the comments raised in the scoping responses received have been addressed.

Table 7-1 Consultation responses related to ornithology

	Consultee	Response
01	An Taisce	No response received by the date of writing.
02	Birdwatch Ireland	No response received by the date of writing.
03	Department of the Environment, Climate and Communications	No response received by the date of writing.
04	Development Applications Unit (NPWS/NMS)	Response received on 23/07/2025. The response noted that peregrine falcon was recorded during the 2017 National Peregrine Survey (with information as to whether sites were recorded as nest sites in the previous National Survey in 2002). In Hectad W06: two occupied nest sites (known in 2002). In Hectad W15: One occupied nest sites (not known in 2002).
05	Department of Housing Local Government and Heritage	Response received on 07/04/2025.

	Consultee	Response
		<p>The Proposed Wind Farm is within the range of the recently re-introduced white-tailed sea eagle, a species listed in Annex I of the EU Birds Directive (Council Directive 2009/147/EC). Collision and mortality risk must be fully assessed for the project and it should be borne in mind that assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt. In terms of increasing the risk of collision the siting of turbines on locations on ridges above valleys where eagles are likely to use rising air currents to obtain ‘orographic lift’ to gain altitude would be an additional potential concern. It is not clear if turbine siting will be proposed in an area of higher ‘orographic lift’. It should be assessed as part of the overall assessment whether models, such as that in Hanssen et al. (2020), are applicable at this wind-farm in detecting microsite susceptibility to generating ‘orographic lift’ which may attract eagles into the rotor-swept zones of these turbines. Existing and proposed adjacent windfarms could add to the cumulative risk of collision and narrow a potential corridor of flight activity (directional flight, social behaviour, and soaring). This factor should also be considered during the collision and mortality risk assessment for the project.</p>
06	Irish Peatland Conservation Council	No response received by the date of writing.
07	Irish Raptor Study Group	No response received by the date of writing.
08	Irish Red Grouse Association	No response received by the date of writing.
09	Irish Wildlife Trust	<p>Response received on 11/03/2025.</p> <p>No information pertaining to birds provided by the date of writing.</p>

7.2.3 Field Surveys

7.2.3.1 Identification of Target Species

Based on the results of the desk study, consultation and reconnaissance visits, the assemblage of bird species in the Study Area and hinterland, and the likely importance of the Study Area for these species were ascertained. A list of ‘target species’ likely to occur at the Study Area and hinterland was compiled. The list was drawn from:

- › Species listed on 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).
- › Raptors and species that are particularly sensitive to wind farm developments.

Then, adopting a precautionary approach, a site-specific scope for field surveys was devised. These were specifically designed to survey for the target species.

7.2.3.2 Survey Methodology

Field surveys were undertaken during the survey period April 2022 – March 2025, consisting of three breeding seasons (April – September) and four winter seasons (October – March). This survey work forms the core dataset for the assessment of impacts on ornithology. The data provided in the field surveys is robust and allows clear, precise and definitive conclusions to be made on the ornithological receptors identified. 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’ from NatureScot (formerly Scottish Natural Heritage [SNH]) outlined in SNH (2017), which was revised in NatureScot (2025). Surveys remain in accordance with the updated guidance.

The various ornithological surveys undertaken are described in detail below including a description of the area surveyed and its radius from the Study Area, which depended on the methodology and focal species. All survey location maps are presented in Appendix 7-1.

7.2.3.2.1 Vantage Point Surveys

Vantage point surveys were undertaken in accordance with SNH (2017; revised in NatureScot, 2025) to monitor flight activity. The area surveyed was the Study Area, providing coverage to a 500m radius of the proposed turbine positions. Surveys were conducted from nine fixed point vantage points (VP1-VP9). 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 sufficiently covered.

Over the course of the surveys, the turbine layout was altered, and, because of this, vantage points were ceased or added as necessary to ensure continued coverage of the layout. VP1 and VP6 were surveyed from April 2022 to September 2023 inclusive. VP9 was surveyed from April 2024 to March 2025 inclusive. All other vantage points (VP2, VP3, VP4, VP5, VP7, and VP8) were surveyed between April 2022 to March 2025 inclusive. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions for each survey.

Viewsheds were calculated using the Visibility Analysis plugin (Version 1.8) over a raster digital terrain model (DTM) in QGIS (Version 3.28) 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 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. As no specific turbine model was confirmed at the outset of surveys, the viewsheds were based on a notional layer suspended 20m above the ground. 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 360° viewsheds 20m above ground level up to a 2km radius around the vantage points. These viewsheds were then cropped to a 180° arc representing the area visible to the surveyor. Once the turbine model was confirmed to have a lowest swept height of 36m, the viewsheds were recalculated using a notational layer suspended at 36m. The viewsheds provided adequate coverage of the Proposed Wind Farm site for a collision risk assessment to be undertaken.

Survey methodology followed SNH (2017; revised in NatureScot, 2025). 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 April 2022 to March 2025 inclusive, and were scheduled to provide a minimum of 36 hours per winter or breeding season 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	Effort per Vantage Point
Breeding Season 2022 (8 vantage points)	36 hours per vantage point
Winter Season 2022/2023 (8 vantage points)	36 hours per vantage point
Breeding Season 2023 (8 vantage points)	36 hours per vantage point
Winter Season 2023/2024 (6 vantage points)	36 hours per vantage point
Breeding Season 2024 (7 vantage points)	36 hours per vantage point
Winter Season 2024/2025 (7 vantage points)	36 hours per vantage point

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 at the outset of surveys. Bands were split into 0-15m, 15-25m, 25-200m and >200m. All flight activity within Band 25-200m is considered to be within the Potential Collision Height (PCH) with regard to the turbine swept area. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat

7.2.3.2.2 Winter Walkover Surveys

Winter walkover surveys were undertaken to record the presence of bird species within or in proximity to the Study Area. The area surveyed was the Study Area to a 500m radius, including areas between vantage point locations. The methodology was adapted from the breeding walkover methodology outlined in Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021). Transect routes were walked across different habitat complexes within the survey area where access allowed. 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 four visits between October and March (i.e., four visits in winter 2022/2023, four visits in winter 2023/2024, and four visits in winter 2024/2025). Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions for each survey.

7.2.3.2.3 Breeding Walkover Surveys

Breeding walkover surveys were undertaken to determine possible, probable or confirmed breeding bird activity within or in proximity to the Study Area. The area surveyed was the Study Area to a 500m radius. The methodology was based on Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021) for dense habitat. Transect routes were walked across different habitat complexes within the survey area where access allowed. 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 codes (<https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>). In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Breeding walkover surveys were conducted in daylight over four visits during the core breeding season months April to July. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions for each survey.

7.2.3.2.4 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. Due to their strong association with aquatic habitats, dipper was also considered a waterbird for the purpose of these surveys. Wetlands and waterbodies within 1km of the Study Area, as well as Carriganass Bridge (which was just outside this radius) were surveyed for waterbirds. Surveys took place from August to May inclusive during the winter and passage season 2022/2023. Due to very low numbers of waterbirds and limited suitable habitat, surveys took place from October to May inclusive during the winter and passage season 2023/2024 and 2024/2025. Surveys provided information on waterbird distribution in relation to the Proposed Wind Farm. The area surveyed exceeds the 500m for foraging waterbirds and meets the 1km for roosting waterbirds required in SNH (2017) and follows the recommendations of SNH (2016).

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 overlooking 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 7-1.

7.2.3.2.5 Hen Harrier Roost Surveys

Hen harrier roost surveys were undertaken within a 2km of the Study Area. These surveys aimed to identify active winter hen harrier roosts near or within the Proposed Wind Farm site. Survey methodology followed Gilbert *et al.* (1998) and O'Donoghue (2019). Roost watches of 2-3 hours were conducted at eight 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 location was surveyed once per month during the winter season between October and March inclusive (winter 2022/2023, winter 2023/2024, and winter 2024/2025). Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions.

7.2.3.2.6 Breeding Raptor and Chough Surveys

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. In breeding season 2024, chough was also included as target species during breeding raptor surveys, as they were observed on other surveys and the desk study showed previous records in this area, and the methodology for both species groups is similar. Breeding raptor and chough surveys were undertaken within 2km of the Study Area to identify occupied territories and monitor their breeding success near

or within the Study Area. Survey methodology followed Hardey *et al.* (2013). Watches of 3 hours (supplemented by transects if necessary e.g., if the surveyor investigated potentially interesting activity further) were conducted during daylight at eight breeding raptor survey locations. All raptor species and chough 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 survey location was surveyed once per month during the core breeding season between April and July. In April 2024 the survey area was split into north, south, east and west areas and a 6-hour survey was conducted in each, providing additional coverage across the Study Area and surrounds. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions.

7.2.3.2.7 **Breeding Woodcock Surveys**

Breeding woodcock surveys were undertaken to identify breeding woodcock territories within or in proximity to the Study Area by locating roding (breeding display) males. The area surveyed was the Study Area to a 500m radius. 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 observations.

Two transects were conducted in 2022 and this was extended to three in 2023. Each transect was surveyed three times during the core breeding season of May and June. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions.

7.2.3.2.8 **Breeding Red Grouse Surveys**

Breeding red grouse surveys were undertaken to identify breeding red grouse territories within or in proximity to the Study Area by using an auditory lure of a recording of a ‘rival’ red grouse male to elicit a response from the territory holder. The area surveyed was the Study Area to a 500m radius. Survey methodology followed Cummins *et al.* (2010): the surveyor walked transects 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.

Three transect routes through suitable breeding habitat were surveyed in February 2023 and February 2024. All surveys were conducted under a National Parks and Wildlife Service license. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, as well as a copy of the licence.

7.2.3.2.9 **Chough Roost Surveys**

Dedicated chough roost surveys were undertaken within 2km of the Study Area. These surveys aimed to identify chough roost sites near or within the Proposed Wind Farm site. Four chough vantage point survey locations were placed overlooking suitable roosting habitat. Roost watches of 2-3 hours were conducted at these chough vantage point survey locations from 1.5 hours before sunset until last visible light, during which all chough observations were recorded and mapped.

Each chough vantage point was surveyed once per month during the winter season October to March inclusive during winter 2022/2023 and winter 2023/2024 only. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions.

7.2.3.2.10 **Owngar River Habitat Survey**

In July 2025, a habitat assessment was undertaken on the section of the Owngar River where a new crossing is proposed to facilitate the proposed site entrance and delivery of turbine components to the

Proposed Wind Farm’s northern cluster, as well as the 38kV cable connecting the Proposed Wind Farm’s northern and southern clusters. The surveyor assessed the suitability of the habitat to support birds, in particular waterbird and riparian species.

7.2.3.2.11 **Multidisciplinary Walkover Survey**

The Proposed Grid Connection was surveyed through a multidisciplinary walkover survey on the following dates: 17/07/2024, 18/07/2024, 28/08/2024, 12/09/2024, 12/05/2025, 13/05/2025 and 14/05/2025. The route was systematically walked, while the surveyor recorded a range of protected species, including birds. Further details on this survey are available in the Ch. 6: Biodiversity of this EIAR.

7.2.4 **Receptor Evaluation and Impact Assessment**

7.2.4.1 **Geographical Context**

‘Guidelines for Ecological Impact Assessment in the UK and Ireland’ (CIEEM, 2024) recommends categories of ornithological value that relate to a geographical context (e.g., international through to local). This EIAR utilises the geographical context 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.

7.2.4.2 **Identification of Key Ornithological Receptors**

Following the analysis of field survey data, a precautionary screening approach was followed to identify Key Ornithological Receptors (KOR). A KOR is defined as a species occurring within the Proposed Wind Farm site or hinterland upon which potential impacts are anticipated and assessed. All target species recorded during surveys are described in Section 7.3.7 and listed in Appendix 7-2. The list of target species was refined to KORs, excluding those for which pathways for a significant effect could not be identified.

7.2.4.3 **Potential Impacts**

Wind farms present three potential risks to birds (Drewitt and Langston 2006, 2008; Band, 2024):

- › **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 risks, the detailed knowledge of bird distribution and activity within and surrounding the Proposed Wind Farm site has been used to predict potential impacts of the Proposed Wind Farm on birds.

7.2.4.4 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, 2024), as recommended by NatureScot (2024) guidance. 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 rate modelling method.

7.2.4.5 Description of Impacts

The sensitivity, magnitude and significance of impacts on bird populations resulting from the Proposed Wind Farm was quantified according to two assessment criteria: Percival (2003) and the Environmental Protection Agency (EPA, 2022). The two assessment criteria have been used to independently characterise impacts to inform a robust assessment of potential effects. EPA impact assessment criteria have 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.

7.2.4.5.1 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 (Sensitivity),

Table 7-4 (Magnitude of effect) and Table 7-5 (Determination of significance) 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)

Sensitivity	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

7.2.4.5.2 EPA 2022 Criteria

EPA criteria use 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.

7.2.4.6 Cumulative Assessment

As per NatureScot guidance ‘Assessing the Cumulative Impacts of onshore Wind Energy Developments’ (NatureScot, 2025a; and SNH 2012; 2018), 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.

NatureScot (2025a) guidance was consulted while undertaking a cumulative impact assessment. This guidance 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)’. Following this, the cumulative assessment has

been carried out at the geographical scale of the importance rating of the KOR. For the purposes of this cumulative assessment, the regional/county scale is considered to be a 25km radius of the proposed turbine locations and the local scale is considered to be a 5km radius.

Assessment material was compiled for other plans and projects within 25km of the proposed turbines, as described in Ch. 2: Background to the Proposed Project of this EIAR. The material was gathered through a search of relevant online Planning Registers, reviews of relevant EIS/EIAR or other ecological reports. These are then considered for in-combination or cumulative effects with the Proposed Wind Farm.

7.2.5 Assessment Justification

7.2.5.1 Survey Data

A comprehensive suite of bird surveys was undertaken at the Proposed Wind Farm site between April 2022 and March 2025. Results derived from a continuous three years of surveying at the Proposed Wind Farm site and hinterland, undertaken in line with NatureScot guidance, 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 Wind Farm on ornithological receptors.

7.2.5.2 Mitigation

The development has been designed to specifically avoid, reduce and minimise impacts on all ornithological 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 Project 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).

7.2.5.3 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 Project. 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. No significant limitations on the survey scope were identified.

Some areas of the Proposed Wind Farm site were inaccessible during Breeding and Winter Walkover Surveys, but these areas were surveyed with as much coverage as possible through short point counts and watches over these areas and achieved good coverage during Vantage Point Surveys. 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 NIS were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Proposed Wind Farm 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. For a detailed assessment of any potential impacts on SPAs, refer to the Appropriate Assessment and NIS associated with this EIAR.

The potential for likely significant effects was identified for Mullaghanish to Musheramore Mountains SPA. The potential for adverse effects was identified for the SCI hen harrier.

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 Proposed Wind Farm site lies within hectad W05 and W15, while the Proposed Grid Connection also extends into hectad W25. Table 7-6 and Table 7-7 present a list of species of conservation interest recorded from the relevant hectads, with regard to breeding and wintering respectively.

Table 7-6 Breeding Bird Atlas data.

Species Name	Breeding Atlas 1968-1972			Breeding Atlas 1988-1991			Breeding Atlas 2007-2011		
	W05	W15	W25	W05	W15	W25	W05	W15	W25
Barn Owl	-	-	-	-	-	-	Conf	Conf	Poss
Chough	-	-	-	-	-	-	Conf	Poss	
Coot	Conf	-	-	Conf	-	-	Prob	-	Prob
Corncrake	Prob	Prob	-	-	-	-	-	-	
Curlew	Poss	Conf	Prob	Poss	-	-	-	-	
Grey Wagtail	Conf	Conf	Conf	Conf	Conf	Conf	Prob	Prob	Poss
Hen Harrier	-	Prob	-	-	-	-	-	-	Poss
Kestrel	Conf	Conf	Conf	Conf	Pres	Pres	Conf	Conf	Prob
Kingfisher	Poss	-	Poss	-	-	Conf	Poss	-	Poss
Lapwing	-	Prob	Conf		-	-		-	
Little Egret	-	-	-	-	-	-	Prob	-	
Long-eared Owl	-	-	-	Conf	-	-	Conf	Poss	Conf

Species Name	Breeding Atlas 1968-1972			Breeding Atlas 1988-1991			Breeding Atlas 2007-2011		
	W05	W15	W25	W05	W15	W25	W05	W15	W25
Meadow Pipit	Conf	Conf	Conf	Conf	Conf	Conf	Conf	Poss	Prob
Merlin	-	-	-	Poss	-	-	Poss	-	Poss
Oystercatcher	-	-	-	-	-	-	Poss	-	-
Red Grouse	Poss	-	-	-	-	-	Poss	Prob	-
Red-breasted Merganser	Conf	-	-	-	-	-	-	-	-
Redshank	-	-	-	-	-	-	Prob	-	-
Ringed Plover	-	-	-	-	-	-	Poss	-	-
Snipe	Prob	Conf	Conf	Poss	-	-	Poss	Prob	Prob
Sparrowhawk	Poss	Prob	Poss	Conf	Pres	-	Conf	Conf	Prob
Stock Dove	Poss	Poss	Poss	-	-	-	Prob	-	-
Swift	Poss	Conf	Conf	Poss	Pres	Conf	Conf	-	Prob
Woodcock	Prob	Prob	-	-	-	-	-	-	-
Yellowhammer	Conf	Conf	Conf	Poss	-	Conf	-	-	Poss

Pres = recorded; Poss = possible breeding; Prob = probable breeding; Conf = confirmed breeding; - = not-recorded.

Table 7-7 Wintering Bird Atlas data.

Species Name	Wintering Atlas 1981-1984			Breeding Atlas 2007-2011		
	W05	W15	W25	W05	W15	W25
Barn Owl	-	-	Pres	Pres	Pres	-
Barnacle Goose	-	-	-	-	-	Pres
Buzzard	-	-	-	-	-	Pres
Chough	-	-	-	Pres	Pres	-
Curlew	-	-	Pres	Pres	-	Pres
Golden Plover	-	-	Pres	-	-	Pres

Species Name	Wintering Atlas 1981-1984			Breeding Atlas 2007-2011		
	W05	W15	W25	W05	W15	W25
Great Northern Diver	-	-	-	Pres	-	-
Grey Wagtail	Pres	Pres	Pres	Pres	Pres	Pres
Hen Harrier	-	-	-	Pres	-	-
Kestrel	Pres	-	Pres	Pres	Pres	Pres
Kingfisher	-	-	Pres	Pres	-	Pres
Lapwing	Pres	Pres	Pres	-	-	Pres
Little Egret	-	-	-	Pres	-	Pres
Long-eared Owl	-	-	-	Pres	-	-
Long-tailed Duck	-	-	-	Pres	-	-
Meadow Pipit	Pres	Pres	Pres	Pres	Pres	Pres
Merlin	-	-	Pres	Pres	Pres	Pres
Oystercatcher	Pres	-	-	Pres	-	-
Peregrine Falcon	-	Pres	-	-	-	Pres
Pochard	Pres	-	Pres	-	-	-
Red Grouse	-	-	-	Pres	Pres	-
Redshank	Pres	-	-	Pres	-	-
Redwing	Pres	Pres	Pres	Pres	Pres	Pres
Ringed Plover	-	-	-	Pres	-	-
Scaup	-	-	-	Pres	-	Pres
Snipe	Pres	Pres	Pres	Pres	Pres	Pres
Sparrowhawk	-	Pres	Pres	Pres	Pres	Pres
Stock Dove	-	-	-	-	-	-
Swift	-	-	-	-	-	-

Species Name	Wintering Atlas 1981-1984			Breeding Atlas 2007-2011		
	W05	W15	W25	W05	W15	W25
Whooper Swan	-	-	-	-	-	Pres
Woodcock	-	-	Pres	Pres	Pres	Pres
Yellowhammer	-	-	Pres	Pres	-	-

Pres = recorded; - = not-recorded.

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’) are based on a review of the behavioural, ecological and distributional data available for each species.

The Proposed Wind Farm site is located within areas of **low** bird sensitivity to wind energy developments. The Proposed Wind Farm site boundary is 23.5km from the nearest area of high sensitivity. The Proposed Grid Connection is also within areas of low sensitivity and is 25km from the nearest area of high sensitivity.

7.3.4 National Biodiversity Data Centre Records

The National Biodiversity Data Centre (NBDC) Biodiversity Maps provide records of flora and fauna within 10km hectads across Ireland. Data is available from the map viewer on the NBDC website (<https://maps.biodiversityireland.ie/Map>). The Site lies within hectads W05, W15, and W25. Table 7-8 lists the bird species have been recorded in these 10km Grids.

Table 7-8 National Biodiversity Data Centre records

Common Name	NBDC Dataset
Barn Owl	Birds of Ireland
Barnacle Goose	Bird Atlas 2007 - 2011
Bewick’s Swan	Bird Atlas 2007 - 2011
Buzzard	Birds of Ireland
Chough	Birds of Ireland
Coot	Bird Atlas 2007 - 2011
Corncrake	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Crane	Rare birds of Ireland
Curlew	Birds of Ireland
Golden Plover	Bird Atlas 2007 - 2011
Great Northern Diver	Bird Atlas 2007 - 2011
Grey Wagtail	Bird Atlas 2007 - 2011
Hen Harrier	Bird Atlas 2007 - 2011
Kestrel	Birds of Ireland
Kingfisher	Bird Atlas 2007 - 2011
Lapwing	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.

Common Name	NBDC Dataset
Little Egret	Birds of Ireland
Long-eared Owl	Bird Atlas 2007 - 2011
Mallard	Bird Atlas 2007 - 2011
Meadow Pipit	Bird Atlas 2007 - 2011
Merlin	Bird Atlas 2007 - 2011
Oystercatcher	Bird Atlas 2007 - 2011
Peregrine Falcon	Birds of Ireland
Red Grouse	Birds of Ireland
Redwing	Birds of Ireland
Scaup	Bird Atlas 2007 - 2011
Short-eared Owl	Birds of Ireland
Snipe	Bird Atlas 2007 - 2011
Sparrowhawk	Bird Atlas 2007 - 2011
Stock Dove	Bird Atlas 2007 - 2011
Swift	Birds of Ireland
Teal	Bird Atlas 2007 - 2011
White-tailed Eagle	Birds of Ireland
Whooper Swan	Birds of Ireland
Wigeon	Bird Atlas 2007 - 2011
Woodcock	Bird Atlas 2007 - 2011
Yellowhammer	Bird Atlas 2007 - 2011

7.3.5

Irish Wetland Bird Survey Records

The Irish Wetland Bird Survey (IWeBS), coordinated by BirdWatch Ireland, monitors wintering waterbird populations at their wetland sites across Ireland. IWeBS site locations are available at <https://birdwatchireland.ie/our-work/>. Datasets for the following sites were sourced from www.birdwatchireland.ie and reviewed:

- > Adrigole Harbour
- > Argideen River
- > Ballin Lough
- > Ballybranagan
- > Ballybutler (Butlerstown) Lake
- > Ballycotton Shanagarry
- > Ballycrenane/Warren
- > Ballydehob Estuary
- > Ballyhea Gravel Pit
- > Ballyhonock Lough
- > Ballymacoda
- > Ballynacarriga Lake
- > Bandon Estuary
- > Bandon River
- > Bantry Bay
- > Barley Cove Bay
- > Bear Haven
- > Blackwater Valley
- > Blarney Fen - Clogheenmilcon
- > Blarney Lake
- > Carrigillihy Lake

- > Castlemartyr Lake
- > Castlenalact Lake
- > Charleville Lagoons
- > Classes Lakes/Gravel Pits
- > Clonakilty Bay
- > Cloonties Lake
- > Cork Harbour
- > Corran Lake
- > Courtmacsherry Bay, Broadstrand Bay & Dunworley
- > Croagh Bay
- > Crookhaven
- > Curraghlicky Lake
- > Gallanes Lough, Clonakilty
- > Garryhesta Gravel Pit
- > Glandore Harbour/Union Hall
- > Illen Estuary
- > Inishcarra Reservoirs
- > Kilcolman Marsh
- > Kilkeran Lake
- > Lissagriffin Lake
- > Lough Aderry
- > Lough Atarriff
- > Lough Cluhir
- > Lough Gorm
- > Madame Lough (Bateman's Lough)
- > Mahona Lough
- > Myross Island & Inlet (Blind Harbour)
- > Nohoval Lake
- > Ringabella Creek
- > Roaringwater Bay
- > Rosbrin Cove
- > Rosscarbery
- > Sherkin Island
- > Shreeland Lakes (incl. Lough Doo)
- > Stick Estuary (Oysterhaven)
- > The Lough Cork
- > Toormore Bay

7.3.6 Rare and Protected Species Dataset

An information request was sent to NPWS requesting records from the Rare and Protected Species Database. The following records were obtained from the NPWS on the 23/07/2025. This includes records from the hectads in which the Proposed Wind Farm lies, as well as adjacent hectads, all of which are presented below.

Peregrine Falcon

Peregrine falcon was recorded during the 2017 National Peregrine Survey (with information as to whether sites were recorded as nest sites in the previous National Survey in 2002). This species was recorded in the following hectads:

- > Hectad W06: Two occupied nest sites (known in 2002).
- > Hectad W15: One occupied nest sites (not known in 2002).

7.3.7 Field Survey Results

A list of all bird species recorded during surveys is provided in Appendix 7-2. Appendix 7-3 presents a summary of the results for each survey type.

The target species recorded within 500m of the Proposed Wind Farm site during field surveys are listed in Table 7-9, along with a summary of key findings. Detailed species accounts are then provided under individual headings. This includes incidental records of species which were not the target species of a survey or were observed outside of survey times.

Target species only recorded greater than 500m from the Proposed Wind Farm site are summarised in Table 7-10.

Table 7-9 Target species recorded within 500m of the Proposed Wind Farm site

Species	Overall breeding status	Overall wintering status
Chough	Confirmed Breeding. Adults with chicks were observed. There were six observations related to breeding behaviour within the Proposed Wind Farm site. Five of these were clustered together approximately 1km from the nearest proposed turbine. The final one was within 300m of a proposed turbine location.	Roosting recorded. There were five observations of roosting behaviour, three of which were within the Proposed Wind Farm site. None were within 500m of a proposed turbine.
Golden Plover	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Goshawk	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of regular roosting at the Proposed Wind Farm site during surveys.
Hen Harrier	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys. A male bird in January 2024 made a 'half-hearted skydance' in the Proposed Wind Farm site. However, the behaviour suggests that this bird could have been practicing display rather than initiating a territory. There was one record of a likely dispersing juvenile in the post-breeding period in September 2022. It is possible that hen harrier may have bred in the wider surroundings, beyond the area surveyed, but the origin of this juvenile bird is not known, as juvenile hen harrier may be dispersing from their natal area by September.	No regularly used roosts identified. There was one incidental record of a male and a ringtail possibly roosting in November 2023. This was outside the Proposed Wind Farm site, and approximately 850m from the nearest proposed turbine.

Species	Overall breeding status	Overall wintering status
Merlin	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of regular roosting at the Proposed Wind Farm site during surveys.
Peregrine Falcon	Confirmed Breeding. Breeding behaviour was observed, within and in proximity, to the Proposed Wind Farm site but a territory was not located. There is likely a territory in the wider area, given the presence of displaying birds, probable provisioning and juveniles in the breeding season.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Curlew	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Goldeneye	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of regular roosting at the Proposed Wind Farm site during surveys.
Grey Wagtail	Confirmed Breeding. There were two breeding territories identified within the Proposed Wind Farm site. A breeding pair and two juveniles were observed in June 2022, and in May 2023 adults were observed carrying food and young were heard begging.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Kestrel	Confirmed Breeding. One breeding territory was identified in 2022 and one in 2023. Both territories were in the wider area.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Meadow Pipit	Confirmed Breeding. There were occupied nests with eggs found on the Proposed Wind Farm site.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Red Grouse	Confirmed Breeding. Birds returned calls during the tape lure survey. Two of the calls were within the Proposed Wind Farm site, and within 500m of proposed turbines. A family unit were outside the Proposed Wind Farm site and approximately 700m from the nearest proposed turbine.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Redwing	Does not breed in Ireland.	No regularly used roosts identified. There was no evidence of regular roosting during surveys, however there was a single observation of 30 birds roosting in trees in

Species	Overall breeding status	Overall wintering status
		December 2024, outside the Proposed Wind Farm site.
Ring Ouzel	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Snipe	Probable Breeding. Alarm calls and display flights observed within 500m of a proposed turbine.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Stock Dove	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Swift	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	Do not overwinter in Ireland
Woodcock	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm site during surveys.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Buzzard	Confirmed Breeding. Breeding activity observed in all years, and one territory identified in 2022 and 2024.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.
Sparrowhawk	Confirmed Breeding. Breeding territories were located in 2022 and 2024 within the Proposed Wind Farm site. A second territory was located outside the Proposed Wind Farm site in 2024.	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm site during surveys.

Table 7-10 Target species recorded greater than 500m from the Proposed Wind Farm site

Species	Observations
Little Egret	There was one observation of this species. During a winter walkover survey in October 2024, a single bird was flying approximately 710m the Proposed Wind Farm site.
White-tailed Eagle	There were two observations of this species. The first was approximately 3.2km from the Proposed Wind Farm site. A single individual was observed soaring at a height over 200m in August 2022. The other observation was a single immature bird being mobbed by a raven approximately 750m from the Proposed Wind Farm site in February 2023.
Whooper Swan	There were two incidental records of whooper swan. In February 2022 a flock of 10 birds was recorded flying south approximately 1.8km from the Proposed Wind Farm site. Then in October 2024 a flock of 10 was recorded flying approximately 3.3km from the Proposed Wind Farm site.

Species	Observations
Barn Owl	There were two observations of barn owl. Both observations were in February 2025. The first was a single bird calling and flying approximately 660m from the Proposed Wind Farm site. The second was an incidental record of a bird flying approximately 780m from the Proposed Wind Farm site.
Long-eared Owl	There was a single incidental record of this species. A bird was heard calling approximately 1.2km from the Proposed Wind Farm site.

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. Survey data and maps relating to breeding territories and roosts are provided in Appendix 7-5.

Vantage Point Surveys

Chough were observed 186 times during vantage point surveys, or on average once every eight hours of vantage point survey. Observations were of 1 to 25 birds flying, calling, foraging and feeding young, in both the breeding and winter seasons. Of these records, 29 were within 500m of the proposed turbine locations. The average flock size was 13 birds.

In May 2022 a pair of birds were observed on the Proposed Wind Farm site, on grassland, and noted as possibly breeding. Later, in July 2022, there were two observations of a pair of adults feeding two juveniles, and in August 2022 there was an observation of a family party, confirming breeding within the Proposed Wind Farm site. This territory is mapped as CF-3 in Appendix 7-5. These observations were over 500m from the nearest proposed turbine. The following breeding season, in April 2023, two adult pairs were observed on two occasions, and, in June 2023, a family party was noted near a known traditional nest site, approximately 1.5km from the nearest proposed turbine. This territory is mapped as CF-1 in Appendix 7-5. Finally in April 2024 there were two observations of adult pairs, between 800m and 900m from the nearest proposed turbine.

In September 2022 birds were observed entering and exiting the roof of a shed, in the early morning, suggesting a roost, this was outside the Proposed Wind Farm site, approximately 850m from the nearest proposed turbine.

Winter Walkover Surveys

Chough were observed 28 times during winter walkover surveys, on 14 of the 62 survey dates (23%) of winter walkover survey. Observations were of between 1 and 12 birds flying, calling and foraging. Of these records, one was within the Proposed Wind Farm site. The average flock size was seven.

In December 2023, two birds were disturbed roosting in a conifer and went on to forage in a nearby field, outside the Proposed Wind Farm site. In total there were 22 observations of chough during winter walkovers around this location (near CF-1). There were observations in every year from 2022 to 2025 inclusive. The closest flights were over 800m from the Proposed Wind Farm site, and the centre of the cluster of flights is approximately 1.3km from the Proposed Wind Farm site.

Breeding Walkover Surveys

Chough were observed 35 times during breeding walkover surveys, on 25 of the 60 survey dates (42%) of breeding walkover survey. Observations were of between 1 and 20 birds flying, calling and foraging. Of these records, eight were within the Proposed Wind Farm site. The average flock size was 11.

In April 2022 three birds were observed carrying nesting material within the Proposed Wind Farm site, near proposed turbine T14. The following breeding season, in April 2023, adult pairs were observed together, then in July of the same year begging was observed on one occasion and begging calls were heard on another, again on the Proposed Wind Farm site, over 1km from the nearest proposed turbine (CF-3). Also in 2023, in May, adults were observed feeding young outside the Proposed Wind Farm site (CF-1). Finally, in June 2024 fledged young were recorded near an open shed suggesting a possible nest site approximately 1.3km from the Proposed Wind Farm site (CF-1).

Chough Roost Surveys

Chough were observed 11 times during chough roost surveys. Observations were of between one and eight birds, calling, flying or foraging. The average flock size was five. In March 2023 a flock of eight birds were displaying in pairs and feeding, over 1km from the Proposed Wind Farm site (near CF-1). No roosting behaviour was recorded.

Breeding Raptor and Chough Surveys

Chough were observed 24 times during breeding raptor and chough surveys, on 5 of 55 survey dates (9%). Observations were of between one and five birds travelling, foraging, preening and calling. The average flock size was three. In June 2024 two adults and a fully-fledged chick were observed on the chimney of an old cottage. This is mapped as CF-2 in Appendix 7-5. The birds were present for the entire survey foraging around the survey location. This was over 2km from the nearest proposed turbine. There were seven additional observations of birds foraging, two of which were within the Proposed Wind Farm site.

Incidental Records

There were 51 incidental records of chough. Observations were of between one and at least seven birds and were recorded during all survey types. The average flock size was four. Of the 51 observations, 8 were within the Proposed Wind Farm site. In October 2024 during a hen harrier roost survey, a pair of birds were likely going to roost in nearby sheds however, there were several open sheds they could use in the area, and a roost was not located. This was approximately 1.5km from the Proposed Wind Farm site.

Breeding Summary

To summarise, chough were confirmed breeding within the Proposed Wind Farm site in 2022 and 2023. The territory within the Proposed Wind Farm site (CF-3) was approximately 1km from the nearest proposed turbine. There were a further two territories outside the Proposed Wind Farm site (CF-1, approximately 1.2km from the boundary, and CF-2, approximately 2.4km).

7.3.7.2 Golden Plover

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

Vantage Point Surveys

There were six observations of golden plover during vantage point surveys, or on average every 263 hours of surveys. Observations were of 2 to 32 birds, flying or circling. The average flock size was 17. All flights were within 500m of the proposed turbine locations. There were no observations of foraging, roosting or breeding behaviour.

Winter Walkover Surveys

There were 2 observations of golden plover, on 1 of the 62 survey dates (2%) of winter walkover survey. The observations were in October 2022, of a single bird and two birds on the ground and flying on the Proposed Wind Farm site (note that one observation was not mapped but the other was within the Proposed Wind Farm site).

Incidental Records

There was a single incidental record of golden plover during a hen harrier roost survey in March 2025. Two individuals were calling from a bog approximately 1.7km from the nearest proposed turbine.

7.3.7.3 Goshawk

Goshawk 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 goshawk during vantage point surveys, outside the Proposed Wind Farm site and approximately 505m from the nearest proposed turbine. A bird was being mobbed by a peregrine falcon in October 2023.

7.3.7.4 Hen Harrier

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

Vantage Point Surveys

There were 19 observations of hen harrier during vantage point surveys, or on average every 56 hours of surveys. Of these records, ten were within 500m of the proposed turbine locations. All of the observations were of a single bird. Birds were mainly flying, hunting or foraging.

In September 2022, a juvenile bird was observed foraging on the Proposed Wind Farm site. Given the time of year, this bird may have been dispersing from its natal site, and its origin is unknown, as no hen harrier breeding territories were identified during surveys. In January 2024 there was an observation of a 'half-hearted skydance' by a male hen harrier on the Proposed Wind Farm site. However, this was during mid-winter, and there was no female bird present, and no other observations of breeding behaviour or juveniles later that year, suggesting that this bird could have been practicing display rather than initiating a territory.

Winter Walkover Survey

There were 3 observations of hen harrier on 3 of the 62 survey dates (5%) of winter walkover survey. Observations were of individual birds hunting, flying and chasing hooded crows. None of the observations were within the Proposed Wind Farm site.

Breeding Walkover Surveys

There was a single observation of hen harrier during breeding walkover surveys. A ringtail was observed flying in proximity to the Proposed Wind Farm site boundary.

Hen Harrier Roost Surveys

There were five observations of hen harrier on 4 of the 110 survey dates (4%) of the hen harrier roost survey. Observations were all of a single bird, flying or soaring, outside the Proposed Wind Farm site. There was no evidence of roosting behaviour.

Incidental Records

There were five incidental records of hen harrier: three during chough roost surveys, one during a waterbird distribution survey, and one from an ecology survey. Of these, only one was within the Proposed Wind Farm site; in January 2024 a ringtail was observed soaring. In November 2023, a male and a ringtail were observed together before dusk. The male perched on a fence post for over 25 minutes before flying away close to the ground, possibly to roost, but not this was not confirmed. The flight was outside the Proposed Wind Farm site and ended approximately 1.03km from the nearest proposed turbine.

7.3.7.5 Merlin

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

Incidental Records

There was one incidental record of merlin. A single bird was perched and flying within the Proposed Wind Farm site, approximately 1.2km from the nearest proposed turbine, in December 2024

7.3.7.6 Peregrine Falcon

Peregrine falcon 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 breeding territories are provided in Appendix 7-5.

Vantage Point Surveys

There were 28 observations of peregrine falcon during vantage point surveys, or on average every 56 hours of surveys. Of these records, 14 were within 500m of the proposed turbine locations. Observations were of either one or two birds, mainly hunting, flying, circling or perched.

In June 2022, a female and juvenile bird were observed together flying and alarm calling, suggesting they were near a nest. This is mapped as PE-1 in Appendix 7-5. This was approximately 1.8km from the Proposed Wind Farm site and 2.3km from the proposed turbine locations. In July 2022 a juvenile female was recorded foraging within 500m of the proposed turbine locations, and it is possible that this is the same juvenile as observed in June. In January 2024 there was a bird displaying outside of the

Proposed Wind Farm site, approximately 1.2km from the nearest proposed turbine location. This is mapped as PE-2 in Appendix 7-5.

Breeding Walkover Surveys

There were 2 observations of peregrine falcon on 2 of the 60 survey dates (3%) of breeding walkover survey. Both were in April 2024. A juvenile bird, likely from the previous year given how early in the breeding season it was recorded, was observed being mobbed by a raven approximately 500m from the Proposed Wind Farm site, and later in the month two adults were recorded flying through the Proposed Wind Farm site.

Breeding Raptor Surveys

There were 2 observations of peregrine falcon on 2 of the 55 survey dates (4%) of breeding raptor survey. One was a single bird flying outside the Proposed Wind Farm in June 2022. Then in April 2024 an adult was observed carrying prey approximately 2.6km west of the Proposed Wind Farm site, suggesting breeding in this area. This is mapped as PE-3 in Appendix 7-5, and is proximity to PE-1, therefore could be a single territory.

Incidental Records

There were three incidental records of peregrine falcon: two during hen harrier roost surveys and one during a waterbird distribution survey. Observations were of individuals flying or calling. One of these observations was on the Proposed Wind Farm site.

7.3.7.7 Curlew

Curlew were observed in the post-breeding season. Raw survey data and maps are provided in Appendix 7-4.

Breeding Walkover Survey

There was one observation of curlew during breeding walkover surveys. Three birds were seen feeding in a field in August 2022. These were likely migrants, not breeding birds. The observation was approximately 415m from the Proposed Wind Farm site, but was not within 500m of a proposed turbine.

7.3.7.8 Goldeneye

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

Waterbird Distribution Surveys

There were four observations of goldeneye on 4 of the 58 survey dates (7%) of waterbird distribution survey. All observations were in winter 2023/2024 and were of a single female bird (it was noted that it was likely the same bird). The observations were in December, January and February and were all in the same lake on the Proposed Wind Farm site, approximately 230m from the nearest proposed turbine. In March the bird moved to a lake further away and after that it was not seen again.

7.3.7.9 Grey Wagtail

Grey wagtail were observed in the winter and breeding seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Appendix 7-5.

Vantage Point Surveys

There were 31 observations of grey wagtail during vantage point surveys, or on average once every 53 hours of surveys. Of these records, none were within 500m of the proposed turbine locations, though four were within the Proposed Wind Farm site. Observations were of birds flying and calling.

Winter Walkover Surveys

There were 8 observations of grey wagtail on 7 of the 62 survey dates (11%) during winter walkover surveys. Observations were of between one and three birds, flying, calling and foraging. One of these observations was within the Proposed Wind Farm site.

Breeding Walkover Surveys

There were 6 observations of grey wagtail on 6 of the 60 survey dates (10%) during breeding walkover survey. Observations were of between 1 and 4 birds and 4 of the observations were within the Proposed Wind Farm site. In June 2022, a breeding pair and two juveniles were observed on the Proposed Wind Farm site, within 500m of a proposed turbine, and there were three other observations of grey wagtail in this general area, in April, May and August 2022. In May 2023 two adults were seen carrying food and begging calls were heard approximately 550m from the nearest proposed turbine.

Waterbird Distribution Surveys

There were 11 observations of grey wagtail on 11 of the 58 (19%) survey dates during waterbird distribution surveys. Observations were of one or two birds flying, calling and foraging. None of the observations were on the Proposed Wind Farm site.

Incidental Records

There were two incidental records of grey wagtail. During a breeding raptor survey in 2022, a single bird was observed flying. This was not on the Proposed Wind Farm site. During a break on a vantage point survey, a single bird was observed perched and flying within the Proposed Wind Farm site, in June 2022 and in November 2024.

7.3.7.10 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 nests are provided in Appendix 7-5.

Vantage Point Surveys

There were 327 kestrel observations recorded during vantage point surveys, or on average once every 5 hours of surveys. These included birds observed hunting, hovering, calling and perched. Of these, 306 involved a single bird, 18 involved 2 birds, 2 observations recorded 3 birds, and 1 observation included 4 birds. Notably, the July 2024 observation of four kestrels comprised two adults actively mobbing a raven, accompanied by two probable juveniles, confirming breeding (mapped as K-1 in Appendix 7-5). This observation was approximately 650m from the Proposed Wind Farm site and approximately 1km

from the proposed turbine locations. In June 2023 a bird was observed carrying prey confirming breeding (K-1) In total, 89 observations occurred within 500m of the proposed turbines.

Winter Walkover Surveys

There were 13 observations of kestrel on 12 of the 62 (19%) survey dates of winter walkover survey. All the observations were of a single bird flying, calling, hunting or perched. Seven of the observations were within the Proposed Wind Farm site.

Breeding Walkover Surveys

There were 35 observations of kestrel on 22 of the 60 (37%) survey dates of breeding walkover survey. Observations were of 1 to 2 birds, apart from 1 observation of 5 birds, and 12 of the observations were within the Proposed Wind Farm site. In July 2023, a family part of two adults and three juveniles were observed at the edge of a forestry approximately 620m south of the Proposed Wind Farm site, confirming breeding in the area, mapped as K-2 in Appendix 7-5.

Breeding Raptor Surveys

There were 57 observations of kestrel on 23 of 55 survey dates (42%) of breeding raptor survey. Most observations were of a single bird, while 4 observations were of 2 birds, and 1 was of 4 birds. There was evidence of breeding during these surveys. In June 2022 a family party was observed - two adults were feeding two fledged young, approximately 3.4km east of The Proposed Wind Farm site. This area is mapped as K-3 in Appendix 7-5. Later in the same day in the same area, a male was perched and making agitated calls, suggesting that a nest was nearby. The following year, in June 2023 a chick was heard making a begging call approximately 1.3km west of The Proposed Wind Farm site, which is mapped as K-4 in Appendix 7-5. Finally, in July 2024 a juvenile bird was observed interacting with an adult, and then hunting, approximately 900m from The Proposed Wind Farm site. Only one of the observations was within The Proposed Wind Farm site.

Incidental Records

There were 47 incidental records of kestrel. All but one of the observations was of a single bird, flying, hunting or calling. Nine observations were within the Proposed Wind Farm site.

Breeding Summary

Kestrel are resident and breeding in the area (K-1, K-2, K-3 and K-4), however there was no territory located within the Proposed Wind Farm site. Breeding behaviour was recorded in 2022, 2023 and 2024.

7.3.7.11 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 nests are provided in Appendix 7-5.

Vantage Point Surveys

There were 305 observations of meadow pipit during vantage point surveys, or on average once every 5 hours of surveys. Observations were of between 1 and 40 birds flying, calling, foraging, feeding young, alarm calling and displaying. The average flock size was 21. There were 24 observations within 500m of the proposed turbine locations, two of which were display flights.

Winter Walkover Surveys

There were 163 observations of meadow pipit on 53 of 62 (85%) survey dates of winter walkover survey. Of these, 58 were within the Proposed Wind Farm site. Observations were of between 1 and 30 birds, with the average flock size being 4 birds. All but one of the observations were of birds flying, calling, feeding or singing; the remaining observation was a display flight by two individuals in February 2025, within the Proposed Wind Farm site.

Breeding Walkover Surveys

There were 136 observations of meadow pipit on 47 of 60 (78%) survey dates of breeding walkover survey, 81 of which were within the Proposed Wind Farm site. There were 31 observations of breeding behaviour such as display flights or alarm calls, with flocks of up to 46 individuals. This included four observations of nests with eggs within the Proposed Wind Farm site in June 2022.

Incidental Records

There were 76 incidental records of meadow pipit flying, calling, singing, foraging and there were 4 observations of displaying. On three occasions in June 2024 during breeding raptor surveys there were three records of displaying flights. One of these was within the Proposed Wind Farm site, while the other two were 1.6km to the north and 1.8km to the east. In March 2025 during a waterbird distribution survey an individual was recorded displaying within the Proposed Wind Farm site.

7.3.7.12 Red Grouse

Red grouse 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 breeding territories are provided in Appendix 7-5.

Vantage Point Surveys

There was a single observation of red grouse during vantage point surveys. In December 2022, four birds were observed flying and foraging approximately 2.2km west of the nearest proposed turbine location.

Winter Walkover Surveys

There were 6 observations of red grouse on 4 of 62 (6%) of survey dates of winter walkover survey. Observations were of between one and three birds, flying or flushed. Five of the observations were on the Proposed Wind Farm site.

Three of these observations were in November 2022: two were one individual flying, and the last was three birds flying. In October 2024 there were two observations of a single bird being flushed. Finally, in January 2025 a bird was heard calling.

Breeding Walkover Surveys

There was a single observation of red grouse during breeding walkover surveys. In July 2024 two adults and five juveniles were recorded flying and calling, confirming breeding. This was outside the Proposed Wind Farm site and is mapped as RG-1 in Appendix 7-5.

Breeding Red Grouse Surveys

There were three observations of red grouse during dedicated breeding red grouse surveys. Observations were of either one or two birds. In February 2024, on three occasions, red grouse responded to the tape and lure. One observation was in the area of RG-1. The other observation was of two individuals flying within the Proposed Wind Farm site, which is mapped as RG-2 in Appendix 7-5. This indicates that red grouse potentially held breeding territories at the Proposed Wind Farm site.

7.3.7.13 Redwing

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

Vantage Point Surveys

There were 37 observations of redwing during vantage point surveys, or on average once every 43 hours of surveys. Observations were of between 1 and 60 individuals flying, calling, foraging and perched. The average flock size was 31. Only one of the observations was within 500m of the proposed turbine locations: in December 2023 19 birds were recorded flying.

Winter Walkover Surveys

There were 9 observations of redwing on 6 of 62 (10%) of survey dates during winter walkover surveys. Observations were of between 1 and 20 individuals flying, calling, and perched. Only one of the observations was within the Proposed Wind Farm site: a flock of 20 birds was recorded flying over bog and woodland.

Incidental Records

There were eight incidental records of redwing. There was one observation of a single bird, and the other 8 were flocks of between 13 and 50 birds. Two of the records were within the Proposed Wind Farm site. In November 2022, a flock of 50 redwing were observed flying during a chough roost survey. In December 2022 a flock of 15 redwing were observed flying within 500m of a proposed turbine during a waterbird distribution survey. In December 2024 a flock of 30 redwing were recorded flying and roosting in trees approximately 950m from the nearest proposed turbine.

7.3.7.14 Ring Ouzel

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

Vantage Point Surveys

There was a single observation of ring ouzel during vantage point surveys. In April 2022, an individual was observed flying approximately 1km from the nearest proposed turbine. It was noted that it was a non-breeding migrating bird.

7.3.7.15 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 breeding territories are provided in Appendix 7-5.

Vantage Point Surveys

There were 19 observations of snipe during vantage point surveys, or on average once every 83 hours of surveys. Observations were of between one and two birds flying, calling, or being flushed and on one occasion, displaying. Two observations were in the Proposed Wind Farm site: in November 2023 a single bird was observed flying within 500m of a proposed turbine, and in June 2022 an individual was observed in a display flight within 500m of a proposed turbine. This is mapped as SN-1 in Appendix 7-5.

Winter Walkover Surveys

There were 25 observations of snipe on 16 of 62 (26%) survey dates of winter walkover survey. Observations were of between 1 and 15 birds flying, calling, or flushed. The average flock size was eight. Ten of the records were on the Proposed Wind Farm site. In February 2025 a bird was flushed and made alarm calls approximately 250m from the nearest proposed turbine, this is likely too early for snipe to have established a nest and the bird was probably just startled.

Breeding Walkover Surveys

There were four observations of snipe on 3 of 60 (5%) survey dates of breeding walkover survey. Observations were of between one and two birds flying, calling or flushed. Two of the records were within the Proposed Wind Farm site. Of note, in June 2022 an individual was flushed and made alarm calls, however there were no other observations of snipe around that area during the breeding season that year suggesting that these alarm calls were due to being startled rather than protecting a nest.

Waterbird Distribution Surveys

There were 26 observations of snipe on 19 of 58 (33%) of survey dates during waterbird distribution surveys. Observations were mainly of between 1 and 3 birds, with one observation of 20 birds. Three observations were in the Proposed Wind Farm site, notably in October 2023 a flock of 20 birds was observed flying.

Incidental Records

There were five incidental records of snipe, none of which were within the Proposed Wind Farm site. Records were of birds being flushed or calling.

7.3.7.16 Stock Dove

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

Vantage Point Surveys

There were two observations of stock dove during vantage point surveys. The observations were of one and two birds flying and perched. In June 2022 there was a flight on the Proposed Wind Farm site, two birds were flying over grassland, it was approximately 1km from the nearest proposed turbine location.

Winter Walkover Surveys

There was a single observation of stock dove during winter walkover surveys. In October 2024, approximately 1.3km west of the Proposed Wind Farm site, four birds were recorded flying and perched.

Breeding Walkover Surveys

There was a single observation of stock dove during breeding walkover surveys. In August 2022, two birds were recorded flying within 500m of the Proposed Wind Farm site. There was no breeding behaviour observed.

7.3.7.17 **Swift**

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

Vantage Point Surveys

There was a single observation of swift during vantage point surveys. In July 2022, three birds were flying within 500m of a proposed turbine.

Breeding Walkover Surveys

There were 3 observations of swift on 3 of 60 (5%) survey dates of breeding walkover survey. Observations were of one or two birds flying and feeding. One of the flights was within the Proposed Wind Farm site: in April 2022, a single bird noted as a non-breeding migrant.

7.3.7.18 **Woodcock**

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

Vantage Point Surveys

There were two observations of woodcock during vantage point surveys. Both were 600m outside the Proposed Wind Farm site, and further than 500m from the proposed turbine locations. One was in March and the other in November 2023.

Winter Walkover Surveys

There were 6 observations of woodcock on 4 of 62 (6%) survey dates of winter walkover survey. The observations were of one or two birds, all of which were flushed. None of the observations were within the Proposed Wind Farm site; the closest was approximately 125m away.

Incidental Records

There were two incidental records of woodcock. The first was of a single bird during a chough roost survey, flying and flew to the ground. The second was three total birds observed flying before sunrise, during a hen harrier roost survey flying over bog habitat adjacent to conifer plantations. Neither were within the Proposed Wind Farm site; the closest observation was 1.5km away.

7.3.7.19 **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 nest are provided in Appendix 7-5.

Vantage Point Surveys

There were 76 observations of buzzard during vantage point surveys, or once every 21 hours of survey. Observations were of either one or two birds circling, calling, perched, hunting, soaring or displaying. There were 21 observations within 500m of the proposed turbines.

There were two observations of displaying flights or a pair of birds interacting with each other, indicating probable breeding territories. In May 2022, two birds were circling and displaying together approximately 1km east of the Proposed Wind Farm site and 1.3km from the nearest proposed turbine location, which is mapped as BZ-1 in Appendix 7-5. In January 2025, two birds were circling and displaying together within the Proposed Wind Farm Site. Furthermore, in August 2023, a juvenile bird was observed being mobbed by swallows just outside the Proposed Wind Farm site and 920m from the nearest proposed turbine location. In February 2025 an individual was observed displaying within the Proposed Wind Farm site and is mapped as BZ-2 in Appendix 7-5.

Winter Walkover Surveys

There were 4 observations of buzzard on 3 of 62 (5%) survey dates of winter walkover survey. Observations were of either one or two birds soaring, interacting with each other, perched, flying or displaying. One of the observations was within the Proposed Wind Farm site. In March 2025 a bird was observed displaying just outside the Proposed Wind Farm site, within 500m of a proposed turbine, adjacent to BZ-2.

Breeding Walkover Surveys

There were 15 observations of buzzard on 14 of 60 (23%) of the survey dates during breeding walkover surveys. Observations were of either one or two birds soaring, flying, foraging or being mobbed. Five of the observations were within The Proposed Wind Farm site. In August 2022, a pair of birds were recorded hunting together. The flight began within the Proposed Wind Farm, and then they flew west out of it, but remained within 500m of a proposed turbine for some of the remainder of the observed flight.

Breeding Raptor Surveys

There were 25 observations of buzzard on 15 of 55 (27%) survey dates of breeding raptor survey. Observations were of either one or two birds flying, circling, feeding, flying, soaring, or perched. Four of the flights were within the Proposed Wind Farm Site.

In June 2024, there were four observations of a pair of buzzards on the same day in the same general area. They were circling, flying feeding and perching, suggesting that there was likely a territory nearby, approximately 1km west of the Proposed Wind Farm site (BZ-1).

Incidental Records

There were 15 incidental records of buzzard. Observations were of either one or two birds flying, soaring, calling or hunting. There were five observations on the Proposed Wind Farm site.

Breeding Summary

Breeding behaviour was observed in breeding seasons 2022, 2023, 2024, and in early 2025. In 2022 and 2024 birds were exhibiting breeding behaviour in the same area of conifer forestry, to the east of the Proposed Wind Farm site, indicating a likely breeding territory. In March 2025 buzzards were displaying within the Proposed Wind Farm site.

7.3.7.20 Sparrowhawk

Sparrowhawk 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 nest are provided in Appendix 7-5.

Vantage Point Surveys

There were 54 observations of sparrowhawk during vantage point surveys, or once every 29 hours of surveys. Observations were of either one or two individuals. There were 12 observations within 500m of the proposed turbines.

Two observations indicated breeding activity. In June 2024 a bird was recorded carrying prey towards a nest, confirming breeding. The flight ended near the Proposed Wind Farm site boundary, suggesting the breeding territory was located in this area. Later the same year, in July 2024 a probable juvenile was recorded flying approximately in the same area and it is possible that this bird originated from this territory. This is mapped as SH-1 in Appendix 7-5.

Winter Walkover Surveys

There were 5 observations of sparrowhawk on 5 of 62 (8%) survey dates of winter walkover survey. Observations were of either one or two birds. None of the observations were within the Proposed Wind Farm site. In January 2023, a pair were observed flying together. The flight was over an area of forestry approximately 500m west of the Proposed Wind Farm site.

Breeding Walkover Surveys

There were 12 observations of sparrowhawk on 10 of 60 (17%) survey dates of breeding walkover survey. Observations were of between one and three birds. Seven observations were within the Proposed Wind Farm site.

In July 2022, a bird emerged from a forestry as the surveyor approached, then called and circled overhead. This type of behaviour can indicate a nest nearby. A bird was also observed carrying prey at this location. It was in a stand of forestry, which straddles the Proposed Wind Farm site on the western boundary (SH-1). Approximately 20 minutes later, just south of this location, an adult female was observed with a juvenile (SH-1). Also, in July 2022, a juvenile male was recorded flying through the Proposed Wind Farm site.

In July 2024 two adults were observed with a fledgling flying and calling over a patch of forestry suggesting a nearby nest. This is mapped as SH-2 in Appendix 7-5. This was along the eastern Proposed Wind Farm site boundary. It is possible that this was the same pair as in 2022, although the territories were approximately 2km apart, indicating it could also be a separate pair.

Breeding Raptor Surveys

There were 4 observations of sparrowhawk on 4 of 55 (7%) survey dates of breeding raptor survey. All were of a single bird. None of the observations were within the Proposed Wind Farm site. Of note, in April 2024, an adult female was recorded flying with food along a patch of forestry, indicating breeding. The flight was approximately 250m south of the Proposed Wind Farm site.

Incidental Records

There were eight incidental records of sparrowhawk. All were of a single bird. One of the observations was within the Proposed Wind Farm site: in November 2022 during a hen harrier roost survey a bird was recorded flying through.

Breeding Summary

In 2022 sparrowhawk were confirmed breeding and the territory was likely within the Proposed Wind Farm site, within 320m of a proposed turbine (SH-1). In 2024 there was confirmed breeding approximately 2km east (SH-2), and, given this distance, it is possible this was the same or a separate pair. Also, an adult sparrowhawk was observed carrying prey into a patch of forestry approximately 900m south of the closest proposed turbine suggesting a territory (SH-3).

7.3.7.21 Owngar River Habitat Assessment

The section of the Owngar River where a new crossing is proposed is an eroding upland river. The banks were vegetated with trees and scrub. No target bird species were recorded by the surveyor during the visit, although a mallard with ducklings was observed upstream of this location.

The river banks in this section were not suitable for nesting kingfisher: they were not high enough above the water level and were thickly vegetated or had unsuitable rocky substrate in some places (Plate 7-1 and 7-2). The water was fast flowing and did not provide optimal hunting conditions for kingfisher.

There were exposed rocks in the channel and some rocky banks (Plate 7-3). These provide suitable habitat for foraging dipper and grey wagtail.



Plate 7 - 1 Banks of the Owngar River in the section where a new crossing is proposed



Plate 7 - 2 Banks of the Owngar River in the section where a new crossing is proposed



Plate 7 - 3 Exposed rocks within the Owngar River in the section where a new crossing is proposed

7.4 Impact Assessment

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

- › Assessment of ‘Do-Nothing’ scenario;
- › Assessment of the likely effects of the Proposed Wind Farm during construction, operation and decommissioning;
- › Assessment of the likely effects associated with the Proposed Grid Connection;
- › Assessment of the likely effects associated with the turbine delivery route;
- › Assessment of the likely effects on designated sites.

7.5 Receptor Evaluation

7.5.1 Determination of Population Importance

A determination of population importance for birds within the Proposed Wind Farm site is provided below, following the criteria described in Section 7.2.4. Estimates of national population sizes were obtained from the most recent species-specific survey, national surveys or Ireland’s Article 12 Reporting 2013-2018 (EU, 2022), depending on what literature was available. Estimates for mean county population sizes were obtained from species-specific surveys 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.

7.5.1.1 Chough

The 2021 chough census (Colhoun *et. al*, 2024) found there were a total of 630 possible breeding pairs nationally, with Cork holding 228 of those breeding pairs. Additionally, there were birds counted as NBE (no breeding evidence) - with these included the national number increases to 900 possible breeding pairs nationally, and 269 pairs in Cork. Using these figures, 1% of the national breeding population of chough is six pairs. Therefore, as per NRA (2009) criteria, a regularly occurring breeding population of six pairs is required for classification as Nationally Important. Using the figure of 228 breeding pairs, a regularly occurring breeding population of 2 pairs is required for classification of County Importance.

Chough were regularly observed throughout the year. There was confirmed breeding within the Proposed Wind Farm site and wider surrounds. Breeding was in two distinct locations and over multiple years suggesting the species is resident and utilising the area for breeding. One to two pairs were confirmed each year. Thus, this species is considered to be a breeding population of **County Importance**.

In 2021 a total of 1,004 non-breeding chough were recorded, with 358 of these individuals in Cork. Using these figures, 1% of the national non-breeding population of chough is 100 birds. Therefore, as per NRA (2009) criteria, a regularly occurring non-breeding population of 100 chough is required for classification as Nationally Important. Using the figure of 358 individuals, a regularly occurring non-breeding population of 4 chough is required for classification of County Importance.

The peak count for cough on any one survey was 25 and the mean of the average flock size across all surveys was 8 birds. Thus, this species is considered to be a non-breeding population of **County Importance**

7.5.1.2 Golden Plover

Golden plover were recorded on eight occasions within the Proposed Wind Farm site and once in the wider area during the comprehensive suite of surveys undertaken. Nine records over three years of surveying is a low rate of occurrence for this species (on 7 of 474 survey dates). The records were also mainly of birds flying and not utilising habitats within the area. The Proposed Wind Farm site is considered to be of **No Ecological Importance** to this species given how infrequently it is utilised.

7.5.1.3 Goshawk

Goshawk were observed on one occasion, outside the Proposed Wind Farm site. The Proposed Wind Farm site is of **No Ecological Importance** to this species given that they were not observed within it and the infrequency of observations.

7.5.1.4 Hen Harrier

Based on the latest National Survey of Breeding Hen Harrier in Ireland (Ruddock *et al.*, 2024), the Republic of Ireland national breeding population of hen harrier is in the range of 85 – 106 pairs. Therefore, a single breeding pair is considered to be of National Importance, as per NRA criteria. The estimated national wintering population of hen harrier in Ireland is 311-435, therefore 1% of the Republic of Ireland national wintering population is 3-4 birds. Thus, a regularly occurring wintering population of 3-4 hen harrier is required for classification as National Importance.

The Mullaghanish to Musheramore Mountains SPA is approximately 20km north-east of the Proposed Wind Farm site. The separation distance between the SPA and the Proposed Wind Farm site exceeds the maximum foraging range for breeding hen harrier (10km; SNH [2016]), therefore it is unlikely that hen harrier breeding within the SPA are utilising the Proposed Wind Farm site to support breeding activity. The data collected during field surveys supported this: hen harrier were not recorded during the early- and mid-breeding season (April, May and June) when peak nest building, egg laying, incubating and hatching occurs (Hardey *et al.*, 2013). In July, there was a single observation of a bird flying outside the Proposed Wind Farm site boundary. There were no records of breeding behaviour such as territory defence or nest provisioning during these months. As such, there is no evidence to suggest that hen harrier breeding within the SPA utilise the Proposed Wind Farm site to support breeding activity.

During the post-breeding period (August and September), hen harrier disperse from their breeding area into lowland areas to overwinter where there is greater resource availability. Juvenile birds have typically left the nest and are dispersing from their natal areas at this time (Hardey *et al.*, 2013). A study of juvenile hen harrier dispersal using satellite tags showed that dispersal can be variable, but typically involves a sudden, long-distance (>25km) initial movement away from the natal area, followed by shorter exploratory movements and the use of temporary settlement areas (McCarthy, 2022). During field surveys, hen harrier were recorded utilising the Proposed Wind Farm site during the post-breeding period: there were individual records of an adult male, an adult female and a juvenile hunting during August and September.

In addition, hen harrier were recorded utilising the Proposed Wind Farm site throughout the winter season (October to March). There were individual records of an adult male, an adult female and a possible juvenile bird. It is reasonable to conclude that these were the same individuals observed during the post-breeding period, and that they remained in the vicinity of the Proposed Wind Farm to overwinter. During field surveys, birds were recorded hunting within the Proposed Wind Farm site. Two birds were also recorded possibly roosting together outside the Proposed Wind Farm site on one

occasion, approximately 540m from the Proposed Wind Farm site boundary and 1.03km from the nearest proposed works and infrastructure (a turbine foundation edge). It cannot be known where these birds originated from or bred using observational data alone - it is possible that they originated from the Mullaghanish to Musheramore Mountains SPA, a different SPA, or a non-designated area.

Taken together, these records suggest that the Proposed Wind Farm site was being used in the winter months by up to three birds for hunting. Thus, they are considered to be a population of **National Importance**.

7.5.1.5 Merlin

Merlin were observed on one occasion during the survey period, during mid-winter. No breeding or roosting behaviour was recorded. Thus, the Proposed Wind Farm site is of **No Ecological Importance** to this species given how infrequently the Site is utilised.

7.5.1.6 Peregrine Falcon

As per NPWS Article 12 Reporting (2013-2018), the estimated national population of peregrine falcon is 425 pairs. Therefore, as per NRA (2009) criteria, a regularly occurring population of four pairs of peregrine falcon is required for classification as National Importance. There are no published figures for the county Cork population. However, according to the distribution of peregrine falcon across Ireland in the breeding bird atlas, 14.8% of the breeding population is found in Cork. Extrapolating this, the Cork population is estimated to be 63 pairs. Therefore, a regularly occurring population of one pair is required for classification as County Importance.

Peregrine falcon were observed regularly during surveys. There was evidence of peregrine breeding in the wider area of the Proposed Wind Farm site, although no nest was located. Thus, the peregrine falcon observed at the Proposed Wind Farm site are likely associated with a breeding territory pair, which is of **County Importance**.

7.5.1.7 White-tailed eagle

Although white-tailed eagle were not recorded within 500m of the Proposed Wind Farm site, given their conservation status as a recently re-introduced species, they are discussed here. The white-tailed eagle range in Ireland is expanding, and it is therefore reasonable to assume that this species will become more widespread and frequently observed in the vicinity of the Proposed Wind Farm site. On a precautionary basis, the population in the area is likely to become one of **County Importance** over the lifetime of the Proposed Project.

7.5.1.8 Curlew

Curlew were only observed on one occasion in the wider surroundings. The Site is of **No Ecological Importance** to this species given that they were not observed within the Proposed Wind Farm site and the low number of birds recorded.

7.5.1.9 Goldeneye

Goldeneye were recorded during one winter on the site. A single bird was recorded for three months and then left the area and did not return subsequently. The Proposed Wind Farm site is of **No Ecological Importance** to this species given how infrequently the Site is utilised and the low number of birds recorded.

7.5.1.10 Grey Wagtail

Grey wagtail was recorded in the breeding and winter seasons. Birds were resident and breeding at the Proposed Wind Farm site. However, this species is abundant (the national population is estimated to be 50,768 birds; Lewis *et al.*, 2019) and widespread across Ireland (NBDC Biodiversity Maps). As such, the population recorded at the Proposed Wind Farm site is considered to be of **Local Importance (Lower Value)**.

7.5.1.11 Kestrel

As per NPWS Article 12 Reporting (2013-2018), the national breeding population of kestrel in the Republic of Ireland is 13,500 birds. Using these 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.

There are no published figures for the county Cork population. However, according to the distribution of kestrel across Ireland from the bird atlas, 10.66% of the population is found in Cork. Extrapolating this, the Cork population is estimated to be 1,431 birds. Therefore, a regularly occurring population of 14 birds is required for classification of County Importance.

Kestrel were observed regularly on the Proposed Wind Farm site and in the wider surrounds. Observations indicate that kestrel are resident and utilising the area for foraging and breeding however no territory was identified within the Proposed Wind Farm site. There was possibly one territory to the east in 2022, over 1km from the Proposed Wind Farm site, and another to the south in 2023, over 600m from the Proposed Wind Farm site. This species is considered to be a population of **Local Importance (Higher Value)**.

7.5.1.12 Meadow Pipit

Meadow pipit was recorded in the breeding and winter seasons. Birds were resident and breeding at the Proposed Wind Farm site. However, this species is a habitat generalist and is abundant (the national population is estimated to be 1,351,995 birds; Lewis *et al.*, 2019) and widespread across Ireland (NBDC Biodiversity Maps). As such, populations recorded at the Proposed Wind Farm site is considered to be of **Local Importance (Lower Value)**.

7.5.1.13 Red Grouse

The national population of red grouse is estimated to be 4,218 (Cummins *et al.*, 2010) and the population in the southwest region is estimated to be 132. Therefore, as per NRA (2009) criteria) a regularly occurring population of 42-43 birds is required for classification as National Importance and of 1-2 birds for classification as County Importance.

Red grouse were confirmed to be utilising the Proposed Wind Farm site for breeding on one occasion, and had the potential on another occasion, suggesting two territories. Therefore, this species is considered to be a population of **County Importance**.

7.5.1.14 Redwing

Redwing was recorded in the winter season. Birds were foraging and roosting in the Proposed Wind Farm site and surrounds. However, this species is a habitat generalist and is abundant (while estimates for the national wintering population are not available, the estimate for Europe is 26,300,000-40,300,000 birds, a proportion of which visit Ireland in winter) and widespread across Ireland (NBDC Biodiversity Maps). As such, populations recorded at the Proposed Wind Farm site is considered to be of **Local Importance (Lower Value)**.

7.5.1.15 Ring Ouzel

Ring ouzel is a scarce breeding and wintering species in Ireland (Balmer *et al.*, 2013). There was a single observation of ring ouzel during the comprehensive suite of surveys conducted. This observation was of a single bird in April 2022, approximately 1km from the nearest proposed turbine, and was likely to be a migrating bird. Thus, the Proposed Wind Farm site is considered to be of **No Ecological Importance** to this species.

7.5.1.16 Snipe

As per NPWS Article 12 Reporting (2013-2018), the national breeding population of snipe in the Republic of Ireland is 4,275 breeding pairs. Using these figures, 1% of the national population of snipe is 43 pairs. Therefore, as per NRA (2009) criteria, a regularly occurring population of 43 pairs is required for classification as National Importance. There are no published figures for the county Cork population. However, according to the distribution of snipe across Ireland in the bird atlas, 7.92% of the population is found in Cork. Extrapolating this, the Cork population is estimated to be 339 pairs. Therefore, a regularly occurring population of 3 pairs is required for classification as County Importance.

Snipe were recorded in the breeding and winter months. There were two records that indicated breeding within the Proposed Wind Farm site; however, no nests were located. The average flock size was five, however 59 of the 79 (74.7%) of the records were of a single bird. Thus, this species is considered to be a population of **Local Importance (Higher Value)**.

7.5.1.17 Stock Dove

Stock dove were recorded on five occasions during the comprehensive suite of surveys undertaken. One record was within the Proposed Wind Farm site. The records were also mainly of birds flying. The Proposed Wind Farm site is considered to be of **No Ecological Importance** to this species given how infrequently it is utilised.

7.5.1.18 Swift

Swift were recorded on four occasions during the comprehensive suite of surveys undertaken, with a peak count of three birds. Two records were within the Proposed Wind Farm site. The Proposed Wind Farm site is considered to be of **No Ecological Importance** to this species given how infrequently it is utilised.

7.5.1.19 Woodcock

Woodcock is a Red Listed species for the breeding season only in Ireland. Woodcock were not observed during the breeding season, and no evidence of breeding was observed despite undertaking dedicated breeding woodcock surveys during the 2022 and 2023 breeding seasons. Observations were during the winter season, when the Irish population is bolstered by migrants from Eastern Europe and Russia. Given that there were no observations during the breeding season and no evidence of breeding was observed, the site is considered to be of **No Ecological Importance** to this species.

7.5.1.20 Buzzard

Buzzard was recorded during the breeding and winter season. As per NPWS Article 12 Reporting (2013-2018), the estimated national population is 1,938 pairs. Buzzard has recently undergone range expansion westwards in Ireland and it is likely that the population has increased considerably since this count was made. However, there are no updated figures available, therefore the value presented in Article 12 Reporting will be used. Based on this, a regularly occurring population of 19 pairs is required

for classification as National Importance. In the absence of more detailed county-level information, the county population is estimated to be 75 breeding pairs, assuming an even spatial distribution across the 26 counties of Ireland covered by these data.

Buzzard is resident at the Proposed Wind Farm site. Evidence of breeding was recorded within the Proposed Wind Farm site, and in the wider surroundings. However, buzzard is Green Listed, indicating it is of lower conservation priority. It is a habitat generalist and is widespread across Ireland (NBDC Biodiversity Maps). As such, it is considered to be a population of **Local Importance (Higher Value)**.

7.5.1.21 Sparrowhawk

Sparrowhawk was recorded during the breeding and winter season. As per NPWS Article 12 Reporting (2013-2018), the estimated national population is 11,859 individuals. Therefore, a regularly occurring population of 119 birds is required for classification as of National Importance. In the absence of more detailed county-level information, the county population is estimated to be 456 birds, assuming an even spatial distribution across the 26 counties of Ireland covered by these data. Therefore, a regularly occurring population of five birds is required for the classification of County Importance.

Sparrowhawk is a resident at the Proposed Wind Farm site and there was evidence of breeding within the Proposed Wind Farm and in the wider surroundings, though a nest was not located. However, sparrowhawk is Green Listed, indicating it is of lower conservation priority. It is a habitat generalist and is widespread across Ireland (NBDC Biodiversity Maps). As such, it is considered to be a population of **Local Importance (Higher Value)**.

7.5.2 Identification of Key Ornithological Receptors

Table 7-11 outlines the rationale for including or excluding each target species recorded during field surveys as a KOR. The 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 7-11 Receptor evaluation and selection criteria rational

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Chough	Annex I Birds Directive	<u>All Seasons</u> County Importance	<p>This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded 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 chough.</p>	Yes
Golden Plover	Annex I Birds Directive & Red List (breeding & wintering)	<u>All Seasons</u> No population of ecological significance recorded	No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.	No
Goshawk	Annex I Birds Directive & Raptor	<u>All Seasons</u>	No population of ecological significance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No population of ecological significance recorded	there is no evidence to suggest that the development site is of significance to this species.	
Hen Harrier	Annex I Birds Directive & Raptor	<u>Post-breeding and Winter Seasons</u> National Importance	<p>This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p> <p>There were no birds recorded flying at PCH within 500m of the proposed turbine locations 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 hen harrier.</p>	Yes
Merlin	Annex I Birds Directive & Raptor	<u>All Seasons</u> No population of ecological significance recorded	No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.	No
Peregrine Falcon	Annex I Birds Directive & Raptor	<u>All Seasons</u> County Importance	<p>This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p>	Yes

Species	Status	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 peregrine falcon.</p>	
White-tailed Eagle	Annex I Birds Directive & Raptor	<p><u>All Seasons</u></p> <p>County Importance</p>	<p>On a precautionary basis, given that the white-tailed eagle range in Ireland is expanding, an assessment of direct habitat loss and disturbance/displacement has been completed for this species. There were no birds recorded flying at PCH within 500m of the proposed turbine locations during vantage point surveys, therefore a collision risk assessment has not been conducted.</p>	Yes
Curlew	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 Wind Farm 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 development site is of significance to this species.</p>	No
Goldeneye	Red List	<p><u>Wintering</u></p> <p>No population of ecological significance recorded.</p>	<p>No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.</p>	No
Grey Wagtail	Red List	<p><u>All Seasons</u></p> <p>Local Importance (Lower Value)</p>	<p>Grey wagtail were found to be breeding on the Proposed Wind Farm site. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.</p>	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Kestrel	Red List	<u>All Seasons</u> Local Importance (Higer Value)	<p>This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded 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 kestrel.</p>	Yes
Meadow Pipit	Red List	<u>All Seasons</u> Local Importance (Lower Value)	<p>Meadow pipit were found to be breeding on the Proposed Wind Farm site. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.</p>	No
Red Grouse	Red List	<u>All Seasons</u> County Importance	<p>This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.</p> <p>Birds were recorded within 500m of the proposed turbine layout. Potential for disturbance/displacement cannot be excluded.</p> <p>There were no birds recorded flying at PCH within 500m of the proposed turbine locations during vantage point surveys. This limits the potential for significant collision risk for this species.</p>	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			As such, an assessment of direct habitat loss and disturbance/displacement has been completed for red grouse.	
Redwing	Red List	<u>All Seasons</u> Local Importance (Lower Value)	Redwing were found to be using the Proposed Wind Farm site. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.	No
Ring Ouzel	Red List	<u>Passage Season</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.	No
Snipe	Red List	<u>All Seasons</u> Local Importance (Higer Value)	This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded. Birds were recorded 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 snipe.	Yes
Stock Dove	Red List	<u>All Seasons</u>	No population of ecological significance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the potential for	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No population of ecological significance recorded.	direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	
Swift	Red List	<u>Breeding</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.	No
Woodcock	Red List	<u>All Seasons</u> No population of ecological significance recorded.	No population of ecological significance was recorded utilising the Wind Farm 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 development site is of significance to this species.	No
Buzzard	Raptor	<u>All Seasons</u> Local Importance (Higher Value)	This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded. Birds were recorded 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 buzzard.	Yes
Sparrowhawk	Raptor	<u>All Seasons</u>	This species was recorded within the Proposed Wind Farm site. Potential for direct habitat loss cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		Local Importance (Higher Value)	<p>Birds were recorded 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 sparrowhawk.</p>	

7.5.3 Determination of Sensitivity

Criteria developed by Percival (2003) for assessing bird sensitivity within the Proposed Wind Farm site is presented in Table 7-3 (Section 7.2.4). The sensitivity of the KORs, as per Percival (2003), are listed below, including the rationale for their respective sensitivity classification.

High Sensitivity KORs are:

- > Chough (ecologically sensitive species)
- > Hen harrier (ecologically sensitive species)
- > White-tailed eagle (ecologically sensitive species)

Medium Sensitivity KORs are:

- > Peregrine (Annex I Birds Directive)
- > Kestrel (BoCCI Red Listed)
- > Red Grouse (BoCCI Red Listed)
- > Snipe (BoCCI Red Listed)

Low Sensitivity KORs are:

- > Buzzard (conservation interest)
- > Sparrowhawk (conservation interest)

7.5.4 ‘Do-Nothing’ Scenario

If the Proposed Project were not to proceed, the existing use of small-scale agriculture and commercial forestry, as well as turbary activity would continue. The other habitats identified within the Site including hedgerow, watercourses and associated habitats, would likely remain in a similar condition. The general avian diversity on the Site, as described in this chapter, would likely remain similar to its current state as activity levels and land use would not change significantly.

The opportunity to harness the wind energy resource of County Cork 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. The opportunity to generate local employment and investment would also be lost.

If the Proposed Project were not to proceed, the opportunity to implement an enhancement and management plan for Biodiversity of the area through habitat enhancement, would be lost (refer to BMEP Appendix 6-4, for details).

7.5.5 Likely Effects of the Proposed Wind Farm

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

7.5.5.1 Chough (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Breeding was confirmed within the Proposed Wind Farm site near the Owngar River (CF-3). This was approximately 1km from the nearest proposed turbine location, however a section of road and internal cabling is proposed in proximity to this area. Breeding was also recorded in the wider area outside the Proposed Wind Farm site (CF-2 and at a known traditional nest site CF-1) in 2022, 2023 and 2024. Works are not proposed in these areas.</p> <p>Roosting chough were recorded within the Proposed Wind Farm site near the Owngar River (where the breeding territory CF-3 was located) and at a shed approximately 850m from the nearest proposed turbine, and possibly in an old building. Likely roosting was also observed in a conifer plantation on the Proposed Wind Farm site boundary, and roosting birds were in a conifer approximately 1.5km outside the Proposed Wind Farm site.</p> <p>Chough were frequently observed foraging within and in proximity to the Proposed Wind Farm site throughout the survey period. The majority of these observations were close to the Owngar River (where the breeding territory CF-3 was located), and around the northern cluster of turbines. Additionally, there was an aggregation of foraging observations to the southwest of the Proposed Wind Farm site (near breeding territory CF-1 and southeast of this),</p>	<p>The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.</p>	<p>Likely long-term constant slight negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>approximately 500m to 1km outside the Proposed Wind Farm site or 800m to 2.5km from the nearest proposed turbine.</p> <p>Breeding chough utilise habitats up to 1km from a nest for foraging (Trewby <i>et al.</i>, 2006; Reid <i>et al.</i>, 2008). CF-3 is further than 1km from major works (proposed turbine locations). Minor works (a section of internal roads and cabling) are proposed in proximity to CF-3, however the footprint of these works is small and partially within an already existing road, therefore the scale or direct habitat loss will be limited.</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where chough were observed roosting or foraging. Furthermore, the habitats utilised by chough are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of chough foraging and roosting in the wider surroundings. No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>		
Disturbance	<p>As described in detail above, chough utilise the Proposed Wind Farm site and surrounds for breeding, roosting and foraging.</p> <p>Displacement from construction activity is not reported in the literature for chough. Therefore, in this assessment, a disturbance distance of 500m for breeding birds and 200m for wintering birds following guidance on disturbance to chough during forestry works by BioSphere Environmental Services (2020) provides the best available information.</p> <p>CF-3 is further than 1km from major works (proposed turbine locations). Given the separation distance, disturbance to breeding chough during construction of turbines is unlikely. Minor works (a section of internal roads and cabling) are proposed within CF-3. However, these works will be minor in scale and short</p>	<p>The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.</p>	<p>Likely short-term frequent slight negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>in duration. The proposed road is also to the far west of the CF-3 area. As such, a proportion of this area of habitat will remain further than the disturbance distance of 500m from construction works.</p> <p>It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site where chough were observed roosting or foraging. However, the habitats utilised by chough are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of chough foraging and roosting in the wider surroundings. 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 described in detail above, chough utilise the Proposed Wind Farm site and the surrounds for breeding, roosting and foraging.</p> <p>Displacement from wind turbines is not reported in the literature for chough. Therefore, for this assessment, an avoidance distance of 500m for breeding birds and 200m for wintering birds following guidance on disturbance to birds during forestry works by BioSphere Environmental Services (2020) provides the best available information.</p> <p>CF-3 is further than 1km from the nearest proposed turbine locations. Given the separation distance, displacement of breeding chough during turbine operation is unlikely. A section of internal road is proposed in the far west of the CF-3 area. However, human activity and traffic on this road will be very low during operation, therefore significant disturbance is not anticipated. The habitats utilised by foraging and roosting chough within 500m of the proposed turbines are not unique to the Proposed Wind Farm site and are abundant in</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	the wider surrounds. This is supported by regular observations of chough foraging and roosting in the wider surroundings. No significant effects of displacement are anticipated at the county, national or international level.		
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The breeding and winter populations of chough have been assessed separately for the collision risk assessment to account for potential differences in flight activity during nesting. Annual mortality of adult chough is not known, therefore for the purposes of this assessment, a similar species, the alpine chough will be used instead. Alpine chough mortality has been calculated at 8-17% per annum (Delestrade and Stoyanov, 1995). Taking a precautionary approach the lower figure of 8% will be used here.</p> <p>Breeding</p> <p>The collision rate for breeding chough has been calculated at 0.088 collisions per year, or one bird every 11 years. If 0.088 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm site would increase the annual mortality of the county population (c.456) by 0.24%. The predicted collision risk is negligible. No significant effects are anticipated.</p> <p>Winter</p> <p>The collision rate for wintering chough has been calculated at 0.014 collisions per year, or less than one collision over the lifetime of the Proposed Wind Farm. If 0.014 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm site would increase the annual mortality of the county population (c.358) by 0.05%. The predicted collision risk is negligible. No significant effects are anticipated.</p>	<p>Breeding</p> <p>The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact corresponds to a very low effect significance.</p> <p>Winter</p> <p>The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact corresponds to a very low effect significance.</p>	<p>Breeding</p> <p>Likely long-term constant imperceptible negative effect, which is not significant.</p> <p>Winter</p> <p>Likely long-term constant imperceptible negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.2 Hen Harrier (Post-breeding and Wintering)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Hen harrier were recorded hunting within the Proposed Wind Farm site and surrounds, predominantly in the post-breeding and winter season (typically in the Coomglogh/Ballynamought area of the northern cluster of turbines). There was a single potential irregularly used roost approximately 1.03km from the nearest proposed turbine, in Maularaha, outside the Proposed Wind Farm site.</p> <p>No works are proposed in the area of the potential roost, as it is outside the Proposed Wind Farm site boundary. The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where hen harrier were observed hunting. Furthermore, the habitats utilised by hen harrier are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and potentially roosting, in the wider surroundings. No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .
Disturbance	As described in detail above, hen harrier were recorded hunting within the Proposed Wind Farm site during the non-breeding season and were potentially	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity	Likely short-term frequent slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>roosting outside the Proposed Wind Farm site, approximately 1.03km from the nearest proposed turbine.</p> <p>During wind farm construction, displacement has been suggested to potentially occur up to 500m around construction works, with some disruption up to 1km, depending on lines of visibility (Madders, 2004, cited in Bright <i>et al.</i>, 2006). It is assumed that some temporary disturbance will occur during construction.</p> <p>No works are proposed within 1km of the area of the potential roost, as it is outside the Proposed Wind Farm site boundary. Given the separation distance, disturbance to roosting hen harrier during construction is unlikely. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site where hen harrier were observed hunting. However, the habitats utilised by hen harrier are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and potentially roosting, in the wider surroundings. No significant effects of disturbance are anticipated at the county, national or international level.</p>	species and low impact corresponds to a low effect significance.	
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>As described in detail above, hen harrier were recorded hunting within the Proposed Wind Farm site during the non-breeding season and were potentially roosting outside the Proposed Wind Farm site, approximately 1.03km from the nearest proposed turbine.</p> <p>Pearce-Higgins <i>et al.</i> (2009) found significant avoidance of turbines by hen harrier within 250m, and reduced flight activity (52%) by hen harrier within 500m of turbines at operating wind farms. Goodship and Furness (2022, also</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>reviewed in NatureScot, 2022) also found that disturbance may occur between 500-750m.</p> <p>The nearest proposed turbine location is over 1km from the area of the potential roost. Given the separation distance, displacement of roosting hen harrier during turbine operation is unlikely. Hen harrier were recorded hunting within 500m of the proposed turbine locations. However, the habitats utilised by hen harrier are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and potentially roosting, in the wider surroundings. No significant effects of displacement are anticipated at the county, national or international level.</p>		
Collision Risk	This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.	No Effect	No Effect
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.3 Peregrine Falcon (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Peregrine falcon were likely breeding in the wider surroundings, potentially within 1.6km of the Proposed Wind Farm site boundary, although a nest site was not located. Peregrine falcon were also observed hunting at the Proposed	The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Wind Farm site, and, given the separation distance, it is likely that these were birds associated with possible breeding territories.</p> <p>No works are proposed in the possible breeding territory, as this is outside the Proposed Wind Farm site boundary. The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where peregrine falcon were observed hunting. Furthermore, the habitats utilised by peregrine falcon are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and possible breeding, in the wider surroundings. No significant effects of direct habitat loss are anticipated at the county, national or international level.</p>	<p>species and low impact corresponds to a low effect significance.</p>	
Disturbance	<p>As described in detail above, peregrine falcon were hunting at the Proposed Wind Farm site and were likely breeding in the wider surroundings, potentially within 1.6km of the Proposed Wind Farm site.</p> <p>NatureScot (2022) indicates that breeding peregrine falcons can be disturbed up to 750m.</p> <p>The potential breeding location was approximately 1.6km from the Proposed Wind Farm site. Given the separation distance, disturbance to breeding peregrine falcon during construction is unlikely. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site where peregrine falcon were observed hunting. However, the habitats utilised by peregrine falcon are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and potentially breeding, in the wider surroundings. 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 medium sensitivity species and low impact corresponds to a low effect significance.</p>	<p>Likely short-term frequent slight negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	<p>As described in detail above, peregrine falcon were hunting at the Proposed Wind Farm site and were likely breeding in the wider surroundings, potentially within 1.6km of the Proposed Wind Farm site.</p> <p>NatureScot (2022) indicates that breeding peregrine falcons can be disturbed up to 750m.</p> <p>The potential breeding location was approximately 1.6km from the Proposed Wind Farm site. Given the separation distance, displacement of breeding peregrine falcon during turbine operation is unlikely. Peregrine falcon were recorded hunting within 750m of the proposed turbine locations. However, the habitats utilised by peregrine falcon are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting, and potentially breeding, in the wider surroundings. No significant effects of displacement are anticipated at the county, national or international level.</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.	Likely long-term constant slight negative effect, which is not significant .
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The estimated mortality for subadults is 18.9%, and for adults is 19% (Smith <i>et al.</i>, 2015), for the purposes of this assessment 19% will be used.</p> <p>The collision rate for peregrine falcon has been calculated at 0.024 collisions per year, or less than one collision over the lifetime of the Proposed Wind Farm. If 0.024 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm site would increase the annual mortality of the</p>	The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	county population (c.126) by 0.1%. The predicted collision risk is negligible. No significant effects are anticipated.		
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.4 White-tailed Eagle (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	There were two observations of white-tailed eagle in the wider surroundings: one flying approximately 750m and one soaring high approximately 3.2km from the Proposed Wind Farm site. White-tailed eagle were not found to be utilising the Proposed Wind Farm site and no suitable breeding sites are present. No significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .
Disturbance	As described in detail above, there were two observations of white-tailed eagle in the wider surroundings. Few studies have been done on the effects of disturbance on white-tailed eagle. Ruddock and Whitfield (2007) suggest that, in general, disturbance buffers extend up to 500m from nest sites, however results from expert opinion suggest static disturbance of white-tailed eagles occurred at 150–1000m and active disturbance occurred at 50–500m. Goodship and Furness (2022) concur	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely short-term frequent slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>with a disturbance distance of 500-1000m during the breeding season and 250-500m during the non-breeding season, while the revision of figures from Ruddock and Whitfield (2007) provided in NatureScot (2022) also provides a figure of 250-500m.</p> <p>No breeding behaviour was observed during surveys; white-tailed eagle were infrequently passing through the wider area. No suitable breeding habitat is within proximity to the Proposed Wind Farm site. 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 described in detail above, there were two observations of white-tailed eagle in the wider surroundings.</p> <p>Few studies have been done on the effects of disturbance on white-tailed eagle. Ruddock and Whitfield (2007) suggest that, in general, disturbance buffers extend up to 500m from nest sites, however results from expert opinion suggest static disturbance of white-tailed eagles occurred at 150–1000m and active disturbance occurred at 50–500m. Goodship and Furness (2022) concur with a disturbance distance of 500-1000m during the breeding season and 250-500m during the non-breeding season, while the revision of figures from Ruddock and Whitfield (2007) provided in NatureScot (2022) also provides a figure of 250-500m.</p> <p>No breeding behaviour was observed during surveys; white-tailed eagle were infrequently passing through the wider area. No suitable breeding habitat is within proximity to the Proposed Wind Farm site. No significant effects of disturbance are anticipated at the county, national or international level.</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.	No Effect	No Effect
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.5 Kestrel (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Kestrel are resident and breeding in the area. Birds were regularly hunting in the Proposed Wind Farm site. However, there was no breeding territory located within the Proposed Wind Farm site or near any proposed works.</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where kestrel were observed hunting. Furthermore, the habitats utilised by kestrel are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting and breeding in the wider surroundings. Furthermore, kestrel is a wide-ranging generalist species. No significant effects of direct habitat loss are anticipated at the county, national or international level.</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.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Disturbance	<p>As described in detail above, kestrel are resident and breeding in the area. Birds were regularly hunting in the Proposed Wind Farm site, though no breeding territory was recorded here.</p> <p>Goodship and Furness (2022) suggest disturbance from humans up to 200m during the breeding season can occur, with disturbance distances reduced to less than 50m during the non-breeding season. Additionally, Pearce-Higgins <i>et al.</i> (2009) suggest that flight activity by kestrels appeared to be negatively related to track proximity. It is assumed that kestrel will show similar avoidance of construction activity.</p> <p>The nearest kestrel breeding territory was approximately 330m from the Proposed Wind Farm site. Given the separation distance, disturbance to breeding kestrel during construction is unlikely. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site where kestrel were observed hunting. However, the habitats utilised by kestrel are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting and breeding in the wider surroundings. Furthermore, kestrel is a wide-ranging generalist species. 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 medium sensitivity species and low impact corresponds to a low effect significance.</p>	<p>Likely short-term frequent slight negative effect, which is not significant.</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 described in detail above, kestrel are resident and breeding in the area. Birds were regularly hunting in the Proposed Wind Farm site, though no breeding territory was recorded here.</p>	<p>The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity species and low impact</p>	<p>Likely long-term constant slight negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Goodship and Furness (2022) suggest disturbance from humans up to 200m during the breeding season can occur, with disturbance distances reduced to less than 50m during the non-breeding season. Additionally, Pearce-Higgins <i>et al.</i> (2009) suggest that flight activity by kestrels appeared to be negatively related to track proximity. It is assumed that kestrel will show similar avoidance to the Proposed Wind Farm.</p> <p>The nearest kestrel breeding territory was approximately 330m from the Proposed Wind Farm site and over 1km from the nearest proposed turbine. Given the separation distance, displacement of breeding kestrel during construction is unlikely. Kestrel were recorded hunting within 200m of the proposed turbine locations. However, the habitats utilised by kestrel are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting and breeding in the wider surroundings. Furthermore, kestrel is a wide-ranging generalist species. No significant effects of displacement are anticipated at the county, national or international level.</p>	<p>corresponds to a low effect significance.</p>	
<p>Collision Risk</p>	<p>The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision rate has been calculated at 0.55 collisions per year, or one every two years.</p> <p>Annual mortality of adult kestrel has been calculated at 35% per annum (Orta <i>et al.</i>, 2020). If 0.55 collisions were to occur per year, it would mean that the losses at the proposed wind farm would increase the annual mortality of the county population (c.1,431) by 0.11%. 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 medium sensitivity species and negligible impact corresponds to a very low effect significance.</p>	<p>Likely long-term constant imperceptible negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.6 Red Grouse (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Red grouse were resident at the Proposed Wind Farm site. There was evidence of breeding within the Proposed Wind Farm site at RG-2, in the Coomglogh/Ballynamought area (the northern cluster of turbines), within 90m of a proposed turbine location. There was also evidence of a second breeding territory within 500m of the Proposed Wind Farm site (RG-1).</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where red grouse were observed. Furthermore, the habitats utilised by red grouse are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. However, given the presence of a breeding territory in the Proposed Wind Farm site where major works are proposed, the magnitude of the effect of direct habitat loss is assessed as medium.</p>	The magnitude of the effect is assessed as medium. The cross tabulation of a medium sensitivity species and medium impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .
Disturbance	As described in detail above, red grouse were resident at the Proposed Wind Farm site. Evidence of breeding was recorded within, and in proximity to, the Proposed Wind Farm site, within 90m of a proposed turbine location.	The magnitude of the effect is assessed as medium. The cross tabulation of a medium sensitivity species and medium impact	Likely short-term frequent slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>It is assumed that temporary disturbance will occur at the Proposed Wind Farm site during construction works. Populations of red grouse were found to recover within one year after disturbance caused by construction of wind farms (Pearce-Higgins <i>et al.</i>, 2012). In addition, the habitats utilised by red grouse are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. However, given the presence of a breeding territory in the Proposed Wind Farm site where major works are proposed, the magnitude of the effect of disturbance is assessed as medium.</p>	<p>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 described in detail above, red grouse were resident at the Proposed Wind Farm site. Evidence of breeding was recorded within, and in proximity to, the Proposed Wind Farm site, within 90m of a proposed turbine location.</p> <p>A study by Douglas <i>et al.</i> (2011) found no significant change in the relationships between grouse occurrence and either turbine or track proximity and found no evidence for re-distribution in red grouse in response to wind farm operation. In addition, the habitats utilised by red grouse are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. However, given the presence of a breeding territory in the Proposed Wind Farm site within proximity to a proposed turbine location, the magnitude of the effect of displacement is assessed as medium.</p>	<p>The magnitude of the effect is assessed as medium. The cross tabulation of a medium sensitivity species and medium impact corresponds to a low effect significance.</p>	<p>Likely long-term constant slight negative effect, which is not significant.</p>
Collision Risk	<p>This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.</p>	No Effect	No Effect

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.7 Snipe (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Snipe were recorded utilising habitats within the Proposed Wind farm site, often in the Coomgloagh/Ballynamought area (the northern cluster of turbines). There was likely a breeding territory in this area (SN-1), approximately 230m from the nearest proposed turbine location.</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where snipe were observed. The breeding territory within the Proposed Wind Farm Site (SN-1) is located approximately 230m from the proposed infrastructure footprint, therefore there will be no loss of habitat within any identified breeding territories. Furthermore, the habitats utilised by snipe are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. No significant effects of direct habitat loss are anticipated at the county, national or international level.</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.	Likely long-term constant slight negative effect, which is not significant .
Disturbance	As described in detail above, snipe were utilising the Proposed Wind Farm site and breeding approximately 230m from the nearest proposed turbine location.	The magnitude of the effect is assessed as medium. The cross tabulation of a medium sensitivity species and medium impact	Likely short-term frequent slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>Pearce-Higgins <i>et al.</i> (2012) found significant 53% declines in snipe densities on wind farms during the construction phase. Snipe were also shown by Pearce-Higgins <i>et al.</i> (2009) to exhibit significant avoidance of turbines extending to a distance of 400m, and there is also evidence of avoidance of access tracks. It is assumed that snipe will show similar avoidance of construction activity.</p> <p>It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site that snipe were observed utilising and breeding in. However, the habitats utilised by snipe are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. In addition, 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. However, given the presence of a breeding territory in the Proposed Wind Farm site within disturbance distance of major works, the magnitude of the effect of disturbance is assessed as medium.</p>	<p>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 described in detail above, snipe were utilising the Proposed Wind Farm site and breeding approximately 230m from the nearest proposed turbine location.</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.</p> <p>The habitats utilised by snipe are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. In addition, 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</p>	<p>The magnitude of the effect is assessed as medium. The cross tabulation of a medium sensitivity species and medium impact corresponds to a low effect significance.</p>	<p>Likely long-term constant slight negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	selection of habitats. However, given the presence of a breeding territory in the Proposed Wind Farm site within displacement distance of a proposed turbine, the magnitude of the effect of disturbance is assessed as medium.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision rate has been calculated at 0.002 collisions per year, or less than one collision over the lifetime of the Proposed Wind Farm. The predicted collision risk is negligible. No significant effects are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.8 Buzzard (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Buzzard are resident and breeding in the area. There was a probable breeding territory located within the Proposed Wind Farm site (BZ-2) where new roads, internal cabling, the substation and borrow pit are proposed. An area of native planting is also proposed at BZ-2. Furthermore, there was a breeding territory in proximity to the Proposed Grid Connection Route (BZ-1).</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where buzzard were observed hunting. Furthermore, the habitats utilised by buzzard are not unique</p>	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting in the wider surroundings. Furthermore, buzzard is a wide-ranging generalist species. The area of native planting may benefit buzzard by providing habitat. However, given the presence of a breeding territory in the Proposed Wind Farm site where works for the substation are proposed, the magnitude of the effect of direct habitat loss is assessed as medium.		
Disturbance	<p>As described above, buzzard are resident and breeding in the area. There was a probable breeding territory located within the Proposed Wind Farm site where new roads, internal cabling, the substation and a borrow pit are proposed, as well as the temporary construction compound. An area of native planting is also proposed at BZ-2. Furthermore, there was a breeding territory in proximity to the Proposed Grid Connection Route.</p> <p>Goodship and Furness (2022) suggest disturbance of buzzard up to 450m from large scale works can occur, based on a study of forestry.</p> <p>It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm site where buzzard were observed hunting and breeding. However, the habitats utilised by buzzard are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting in the wider surroundings. Furthermore, buzzard is a wide-ranging generalist species. However, given the presence of a breeding territory in the Proposed Wind Farm site within disturbance distance of works for the substation, the magnitude of the effect of disturbance is assessed as medium.</p>	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.	Likely short-term frequent imperceptible negative effect, which is not significant .
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Displacement and Barrier Effect	<p>As described above, buzzard are resident and breeding in the area. There was a probable breeding territory located within the Proposed Wind Farm site where new roads and the substation are proposed, and 90m from the nearest proposed turbine location. An area of native planting is also proposed at BZ-2. Furthermore, there was a breeding territory in proximity to the Proposed Grid Connection Route.</p> <p>Pearce-Higgins <i>et al.</i> (2009) found that buzzard shows significant turbine avoidance extending to at least 500m.</p> <p>The habitats utilised by buzzard are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations of hunting in the wider surroundings. Furthermore, buzzard is a wide-ranging generalist species. The area of native planting may benefit buzzard by providing habitat. However, given the presence of a breeding territory in the Proposed Wind Farm site within disturbance distance of a proposed turbine location, the magnitude of the effect of displacement is assessed as medium.</p>	<p>The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.</p>	<p>Likely short-term frequent imperceptible negative effect, which is not significant.</p>
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision rate has been calculated at 0.071 collisions per year, or one bird every 14 years.</p> <p>Annual mortality of buzzard has been calculated at 10% per annum (Kenward <i>et al.</i>, 2000). If 0.07 collisions were to occur per year, it would mean that the losses at the proposed wind farm would increase the annual mortality of the national county population (c.150) by 0.47%. 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 low sensitivity species and negligible impact corresponds to a very low effect significance.</p>	<p>Likely long-term constant imperceptible negative effect, which is not significant.</p>

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.5.9 Sparrowhawk (All seasons)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	<p>Sparrowhawk are resident and breeding in the area. Two territories were partially within the Proposed Wind Farm site. One was within 320m of a proposed turbine, and where new roads, internal cabling, the substation and a borrow pit are proposed. An area of native planting is also proposed here. The other was within 230m of a proposed turbine. It is possible that the same pair of birds used both areas. There was another territory approximately 720m south of the nearest proposed turbine (SH-3), outside the Proposed Wind Farm site.</p> <p>The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (14.67ha or 1.9% of 791.4ha) where sparrowhawk were observed hunting. Furthermore, the habitats utilised by sparrowhawk are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations, including breeding, in the wider surroundings. Furthermore, sparrowhawk is a wide-ranging generalist species. The area of native planting may benefit sparrowhawk by providing habitat and supporting prey. However, given the presence of a breeding territory in the Proposed Wind Farm site where works for the substation are</p>	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	proposed, the magnitude of the effect of direct habitat loss is assessed as medium.		
Disturbance	<p>As described above, sparrowhawk are resident and breeding in the area, and there was a territory located within the Proposed Wind Farm site. Two territories were partially within the Proposed Wind Farm site. One was within 320m of a proposed turbine and in an area where new roads, internal cabling, the substation and a borrow pit are proposed, as well as the temporary construction compound. The other was within 230m of a proposed turbine. There was another territory approximately 720m south of the nearest proposed turbine, outside the Proposed Wind Farm site.</p> <p>Few studies have been done on the effects of disturbance on sparrowhawk, but it is assumed that temporary disturbance will occur at the Proposed Wind Farm site during construction works. where sparrowhawk were observed breeding. However, the habitats utilised by sparrowhawk are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations, including breeding, in the wider surroundings. Furthermore, sparrowhawk is a wide-ranging generalist species. However, given the presence of a breeding territory in the Proposed Wind Farm site within disturbance distance of major works, the magnitude of the effect of disturbance is assessed as medium.</p>	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.	Likely short-term frequent imperceptible negative effect, which is not significant .
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As described above, sparrowhawk are resident and breeding in the area, and there was a territory located within the Proposed Wind Farm site. Two territories were partially within the Proposed Wind Farm site. One was within 320m of a proposed turbine and in an area where new roads and the substation are proposed. An area of native planting is also proposed here. The	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact	Likely short-term frequent imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	<p>other was within 230m of a proposed turbine. There was another territory approximately 720m south of the nearest proposed turbine, outside the Proposed Wind Farm site.</p> <p>Displacement from turbines is not reported for sparrowhawk, however, it is assumed for the purposes of the assessment that sparrowhawk will show avoidance to turbines, as with other raptors (Pearce-Higgins <i>et al.</i>, 2009). The habitats utilised by sparrowhawk are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. This is supported by regular observations, including breeding, in the wider surroundings. Furthermore, sparrowhawk is a wide-ranging generalist species. The native planting may benefit sparrowhawk by providing habitat and supporting prey. However, given the presence of a breeding territory in the Proposed Wind Farm site within disturbance distance of turbines, the magnitude of the effect of displacement is assessed as medium.</p>	<p>corresponds to a very low effect significance.</p>	
Collision Risk	<p>The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision rate has been calculated at a ratio of 0.009 collisions per year, or less than one collision over the lifetime of the Proposed Wind Farm.</p> <p>Annual mortality of adult sparrowhawk has been calculated at an average of 31% per annum (Newton, 1986). If 0.009 collisions were to occur per year, it would mean that the losses at the proposed wind farm would increase the annual mortality of the county population (c. 456) by 0.01%. 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 low sensitivity species and negligible impact corresponds to a very low effect significance.</p>	<p>Likely long-term constant imperceptible negative effect, which is not significant.</p>



Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.6 Likely Effects Associated with the Proposed Grid Connection

The Proposed Grid Connection will commence from the proposed 110kV onsite substation and will run along existing roads to Dunmanway 110kV Substation in the townland of Ballyhalwick. Required works are minor and are all located within the existing road corridor (full details in Ch. 4: Description of the Proposed Project of this EIAR).

The existing habitats (i.e., existing roads) do not have the potential to support other species of conservation interest in the area. A buzzard breeding territory was identified in proximity to the Proposed Grid Connection during field surveys. On a precautionary basis, it is assumed that some temporary disturbance may occur during works. However, the scale of the works will be minor and temporary in duration. Furthermore, given the extent of suitable habitat in the wider area, significant disturbance effects are not predicted for buzzard or other species. The effect significance for all KORs is classed as no greater than **Low** (Percival, 2003) or a **likely short-term slight negative effect** (EPA, 2022).

7.5.7 Likely Effects Associated with the Turbine Delivery Route

The proposed turbine delivery route will require temporary junction accommodation for abnormal loads, therefore required works are minor and are located within the existing road corridor (full details in Ch. 4: Description of the Proposed Project of this EIAR).

The existing habitats (i.e., existing roads) 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 **likely short-term slight negative effect** (EPA, 2022).

7.5.8 Likely Effects on Designated Sites

A screening assessment and NIS were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Proposed Wind Farm. The screening identified and assessed a potential pathway for adverse effects on the Mullaghanish to Musheramore Mountains SPA. Following the screening, a Natura Impact Statement was prepared which concluded that:

‘This NIS has provided an assessment of all potential direct or indirect adverse effects on European Sites. It has also assessed the potential for in-combination effects on European Site with other plans and projects.

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 and operation of the Proposed Project does not adversely affect the integrity of European Sites.

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

7.6 Mitigation and Best Practice Measures

This section describes the measures that are in place to mitigate negative effects associated with the Proposed Wind Farm on ornithological receptors. Effects on ornithological receptors have been addressed through the design of the Proposed Wind Farm and a Construction and Environmental Management Plan (CEMP). These are discussed below.

7.6.1 Design of the Proposed Wind Farm

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

- › Hard standing areas have been designed to the minimum size necessary to accommodate the turbine model that is selected.
- › The Proposed Grid Connection has been selected to utilise built infrastructure for the majority of its length (i.e., cables to be laid within public roads). Cabling will be installed underground to avoid effects on roadside hedgerows and disturbance to nesting birds.

7.6.2 Construction and Environmental Management Plan

A CEMP has been prepared and will be in place prior to the start of the construction phase. Full details are available in Ch. 4: Description of the Proposed Project and Appendix 4-3 of this EIAR. Note that the majority of 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 permission or findings of any pre-construction survey results. Measures specific to birds are detailed below:

- › Works will commence outside the bird nesting season (1st of March to 31st of August inclusive).
- › The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2022. Where sections of woody vegetation are removed for the purposes of the junction and road upgrades, these will be replaced with suitable hedge/tree species which are common in the local context.
- › 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.
- › Silt fences will be installed as an additional water protection measure around existing waterbodies.
- › A pre-construction bird survey at the Proposed Wind Farm site will be organised to ensure that any sensitive roost or nest sites in the works area are identified and disturbance to these are avoided. Further details are provided in Appendix 7-7.
- › If winter roosting or breeding activity of birds of high conservation concern is identified, no works shall be undertaken within a species-specific disturbance buffer of the roost/nest, 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.

7.6.3 Residual Effects

Following the measures described in Section 7.6.2, no effect significance greater than **Low**, as per Percival (2003) criteria, was identified for any KOR. No effect significance greater than **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.

7.7 Cumulative Effects

The Proposed Project was considered in combination with other plans and projects in the surrounding area that could result in cumulative impacts on KORs. The plans and projects considered are listed in Ch. 2: Background to the Proposed Project of this EIAR. The full list of plans and projects has been considered and relevant ones from this list are considered in the cumulative assessment. These are outlined below.

7.7.1 Plans Considered in the Assessment

The following plans were considered in the cumulative impact assessment:

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

7.7.2 Projects Considered in the Assessment

7.7.2.1 Developments/Land Uses

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

7.7.2.2 Forestry and Agricultural Practices

Some areas within the Proposed Wind Farm 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 Project 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.

7.7.2.3 Other Wind Farm Developments

Wind farm projects within 25km of the Proposed Wind Farm are summarised in Table 7-12. This table includes details of their planning status, number of turbines and distance from the Proposed Wind Farm site. Each wind farm is discussed individually in the following sections.

Table 7-12 Wind energy applications within 25km of the Proposed Wind Farm Site

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork	Gortloughra Wind Farm	In Planning	8	2km

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork	Shehy More Wind Farm	Existing	11	2.6km
Cork	Dereenacreenig West Wind Farm	Existing	3	3.6km
Cork	Curraglass Wind Farm	In Planning	3	4km
Cork	Milane Hill Wind Farm	Existing	9	8.7km
Cork	Carrigarierk Wind Farm	Existing	5	8.9km
Cork	Carrigarierk Extension Wind Farm	Permitted	3	9.4km
Kerry	Grousemount Wind Farm	Existing	38	10km
Cork	Lahanaght Hill Wind Farm	Existing	5	11.8km
Cork	Killaveenoge Wind Farm	Existing	10	11.9km
Cork	Ballybane Wind Farm	Existing	21	12km
Kerry	Sillahertane-Coomagearlaghy II Wind Farm	Existing	10	12km
Cork	Derragh Wind Farm	Existing	6	12.1km
Cork	Cleanrath Wind Farm	Existing	9	12.5km
Cork	Gortyrähilly Wind Farm	Permitted	13	13km
Kerry	Midas Wind Farm	Existing	23	14.6km
Kerry	Kilgarvan Wind Farm	Existing	15	17.1km
Kerry	Kilgarvan Repowering Wind Farm	Permitted	11	17.2km
Kerry & Cork	Kilgarvan II Wind Farm	Existing	13	17.4km

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork	Coomatallin Wind Farm	Existing	4	17.6km
Kerry & Cork	Inchamore Wind Farm	Permitted	4	19.5km
Cork	Kilvinane Wind Farm	Existing	3	20.4km
Cork	Barnadivane Wind Farm	In Planning	6	21.7km
Cork	Knocknamork Wind Farm	Permitted	7	22.7km
Cork	Reenascreena Wind Farm	Existing	5	22.7km
Cork	Garranereagh Wind Farm	Existing	4	23.3km
Kerry & Cork	Cummeenabuddoge Wind Farm	Proposed	17	23.5km
Kerry	Clydraghroe Wind Farm	Existing	5	24km

Gortloughra Wind Farm

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 wind farm 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.’*

Shehy More Wind Farm

The EIS for the Shehy 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.’*

Dereenacreenig West Wind Farm

The inspectors report for the Dereenacreenig Wind Farm was consulted. The Inspectors’ Report outlined that *‘there are no records of hen harrier in this area and the EIS indicates that consultations were undertaken with the Irish Raptor Study Group and NPWS in this regard. There are no records of Annex I birds for the area and none identified on the site.’* Having regard to the characteristics of the site and the nature of development proposed, it was not considered that the proposed development would give rise to unacceptable impacts on habitats or species of conservation interest.

Curraglass Wind Farm

The EIAR for the Curraglass Wind Farm (25/6398, PL88.500665) was consulted. The EIAR assessed the following high conservation concern species as key ornithological receptors: white-tailed eagle, peregrine falcon, kestrel, snipe, buzzard and sparrowhawk. This EIAR assessed habitat loss, displacement/barrier effect and collision risk for this development. Habitat loss was assessed to be no greater than Low (Percival, 2003) or long-term slight negative effect (EPA, 2022). Disturbance, displacement and barrier effect were assessed to be no greater than Low (Percival, 2003) or long-term slight 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 25km of the Curraglass Wind Farm. No residual additive, antagonistic or synergistic effects were identified with regard to habitat loss, displacement or collision mortality.

The EIAR 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.’*

Milane Hill Wind Farm

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. Applying the precautionary principal, there is potential for KOR species of the Proposed Project to occur at the Milane Hill Wind Farm.

Carrigarierk Wind Farm

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.

Carrigarierk Extension Wind Farm

The EIAR for the Carrigarierk Extension Wind Farm was consulted. Carrigarierk Extension shared the following KORs with the Proposed Project: hen harrier, snipe, kestrel, buzzard 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 Carrigarierk and any other wind farms within 20km.

Grousemount Wind Farm

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 Bord 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.'*

Lahanaght Hill Wind Farm

The planning file for the Lahanaght Hill Wind Farm was consulted. However, there was no information regarding potential effects on bird species available. Lahanaght Hill Wind Farm is located within farmland, adjacent to commercial forestry. Applying the precautionary principal, there is potential for KOR species of the Proposed Project to occur at the Lahanaght Hill Wind Farm

Killaveenoge Wind Farm

The EIS for the Killaveenoge 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.'*

Ballybane Wind Farm

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.

Sillahertane-Coomagearlaghy II Wind Farm

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.

Derragh Wind Farm

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.

Cleanrath Wind farm

The EIAR for the Cleanrath Wind Farm was consulted. The EIAR identified the following species as Key Ornithological Receptors: hen harrier, chough, 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.’* The results of ongoing monitoring of this wind farm site do not contradict the conclusion of the Cleanrath EIAR.

Gortyrhilly Wind Farm

The Inspector’s Report for the Gortyrhilly Wind Farm was consulted. The EIAR identified the following Key Ornithological Receptors in common with the Proposed Project; chough, hen harrier, kestrel, peregrine falcon, red grouse, and snipe. However, the Inspector’s Report concluded that *“the proposed development would not have any unacceptable direct, indirect or cumulative effects on ornithology.”* The results of ongoing monitoring of this wind farm site do not contradict the conclusion of the Gortyrhilly Inspector’s Report.

Midas Wind Farm

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. Using the precautionary approach, there is potential for KOR species of the Proposed Project to occur at the Midas Wind Farm.

Kilgarvan Wind Farm

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 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.’*

Kilgarvan II Wind Farm

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.’*

Coomatallin Wind Farm

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. Using the precautionary approach, there is potential for KOR species of the Proposed Project to occur at the Coomatallin Wind Farm.

Inchamore Wind Farm

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.’*

Kilvinane Wind Farm

The planning file for the Kilvinane Wind Farm was consulted. However, the EIS was not available. Kilvinane Wind Farm is located within farmland. Using the precautionary principal, there is potential for some KOR species of the Proposed Project to occur at the Kilvinane Wind Farm as they will utilise farmland for hunting.

Barnadivane Wind Farm

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.'*

Knocknamork Wind Farm

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.'*

Reenascreena Wind Farm

The planning file for the Reenascreena Wind Farm was consulted. However, the EIS was not available. Reenascreena Wind Farm is located within farmland. Using the precautionary principal, there is potential for some KOR species of the Proposed Project to occur at the Reenascreena Wind Farm as they will utilise farmland for hunting.

Garranereagh Wind Farm

The planning file for the Garranereagh Wind Farm was consulted. However, the EIS was not available. Garranereagh Wind Farm is located within farmland. Using the precautionary principal, there is potential for some KOR species of the Proposed Project to occur at the Garranereagh Wind Farm as they will utilise farmland for hunting.

Cummeenabudodge Wind Farm

The EIAR for the Cummeenabudodge 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 Cummeenabudodge 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 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.’*

7.7.3 Cumulative Impact Assessment

During the assessment of cumulative effects on KORs, cumulative habitat loss, displacement and collision risk associated with operational turbines was assessed in Table 7-13. No significant cumulative effects are predicted to result from the construction phase. For this reason, construction phase effects are not considered further in the cumulative assessment.

Table 7-13 Assessment of cumulative effects

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
Chough	County Importance (25km)	<p>There are 30 wind farms within 25km of the Proposed Wind Farm site. Carrigarierk Extension, Carrigarierk, Cleanrath, Cummeenabuddoge, Curraglass, Derragh, Gortyrhilly, Inchamore, Killaveenoge, Knocknamork, Shehy More and Sillahertane-Coomagearlaghy II are all location within, or partially within, commercial forestry. These habitats are of limited value to foraging chough.</p> <p>Ballybane, Barnadivane, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Midas, Milane Hill, Shehy More and Sillahertane-Coomagearlaghy II are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for chough. Ballybane, Barnadivane, Coomatallin, Garranereagh, Kilvinane, Lahanaght Hill, and Reenascreena are all located within, or partially within, agricultural grassland habitats. These habitats are also suitable for chough.</p> <p>However, upland and agricultural habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Project.</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term frequent slight negative effect, which is not significant .

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
		<p>Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on chough are anticipated at the county, national or international scale.</p>		
Hen harrier	National Importance (25km)	<p>Ballybane, Carrigarierk Extension, Carrigarierk, Cleanrath, Cummeenabuddoge, Curraglass, Derragh, Gortyrhilly, Inchamore, Killaveenoge, Knocknamork, Shehy More and Sillahertane-Coomagearlachy II are all located within, or partially within, commercial forestry. These habitats are of limited value to foraging hen harrier.</p> <p>Barnadivane, Coomatallin, Garranereagh, Kilvinane, Lahanaght Hill, and Reenascreena are all location within, or partially within, agricultural grassland habitats. These habitats can be used by foraging hen harrier.</p> <p>Ballybane, Barnadivane, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Midas, Milane Hill, Shehy More and Sillahertane-Coomagearlachy II are located within, or partially within, upland habitats (bog/wet grassland). This habitat type is suitable for foraging hen harrier.</p> <p>However, upland and agricultural habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on hen harrier are anticipated at the county, national or international scale.</p>	<p>The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.</p>	<p>Likely long-term frequent slight negative effect, which is not significant.</p>

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
White-tailed Eagle	National Importance (25km)	<p>Ballybane, Carrigarierk Extension, Carrigarierk, Cleanrath, Cummeenabuddoge, Curraglass, Derragh, Gortyrähilly, Inchamore, Killaveenoge, Knocknamork, Shehy 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.</p> <p>Barnadivane, Coomatallin, Garranereagh, Kilvinane, Lahanaght Hill, and Reenascreena are all location within, or partially within, agricultural grassland habitats. These habitats can be used by foraging white-tailed eagle. Ballybane, Barnadivane, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Gortloughra, Gortyrähilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Midas, Milane Hill, Shehy More and Sillahertane-Coomagearlachy II are located within, or partially within, upland habitats (bog/wet grassland). This habitat type is suitable for foraging white-tailed.</p> <p>However, upland and agricultural habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on white-tailed eagle are anticipated at the county, national or international scale.</p>	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term frequent slight negative effect, which is not significant .
Peregrine Falcon	County Importance (25km)	Carrigarierk Extension, Carrigarierk, Cleanrath, Cummeenabuddoge, Curraglass, Derragh, Gortyrähilly, Inchamore, Killaveenoge, Knocknamork, Shehy More and Sillahertane-Coomagearlachy II are all located within, or	The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity species and low	Likely long-term frequent slight negative effect, which is not significant .

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
		<p>partially within, commercial forestry. These habitats are of limited value to foraging peregrine falcon.</p> <p>Ballybane, Barnadivane, Coomatallin, Garranereagh, Kilvinane, Lahanaght Hill, and Reenascreena are all located within, or partially within, agricultural grassland habitats. These habitats can be used by foraging peregrine falcon. Ballybane, Barnadivane, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Midas, Milane Hill, Shehy More and Sillahertane-Coomagearlachy II are located within, or partially within, upland habitats (bog/wet grassland). This habitat type is suitable for foraging peregrine.</p> <p>However, upland and agricultural habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on peregrine falcon are anticipated at the county, national or international scale.</p>	<p>impact corresponds to a low effect significance.</p>	
Kestrel	Local Importance (5km)	<p>Four wind farms were identified within 5km of the Proposed Wind Farm site. Curraglass, and Shehy More are all located within, or partially within, commercial forestry. Dreenacreenig West and Gortloughra are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for kestrel.</p> <p>However, forestry and upland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction.</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>Likely long-term frequent slight negative effect, which is not significant.</p>

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
		<p>Furthermore, no significant effects were reported for any of the wind farms located within a 5km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on kestrel are anticipated at the county, national or international scale.</p>		
Red Grouse	County Importance (25km)	<p>Ballybane, Barnadivane, Coomatallin, Garranereagh, Kilvinane, Lahanaght Hill, and Reenascreena are all located within, or partially within, agricultural grassland habitats. Carrigierk Extension, Carrigierk, Cleanrath, Cummeenabuddoge, Curraglass, Derragh, Gortyrhilly, Inchamore, Killaveenoge, Knocknamork, Shehy More and Sillahertane-Coomagearlachy II are all located within, or partially within, commercial forestry. These habitats are of limited value to red grouse.</p> <p>Ballybane, Barnadivane, Cleanrath, Clydraghroe, Coomatallin, Dreenacreenig West, Gortloughra, Gortyrhilly, Grousemount, Kilgarvan II, Kilgarvan Repowering, Kilgarvan, Knocknamork, Midas, Milane Hill, Shehy More and Sillahertane-Coomagearlachy II are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for breeding and foraging red grouse.</p> <p>However, upland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No</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>Likely long-term frequent slight negative effect, which is not significant.</p>

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
		significant impacts on red grouse are anticipated at the county, national or international scale.		
Snipe	Local Importance (5km)	<p>Four wind farms were identified within 5km of the Proposed Wind Farm site. Curraglass, and Shehy More are all located within, or partially within, commercial forestry. These habitats are of limited value to snipe.</p> <p>Dreenacreenig West and Gortloughra are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for snipe.</p> <p>However, upland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 5km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on snipe are anticipated at the county, national or international scale.</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.	Likely long-term frequent slight negative effect, which is not significant .
Buzzard	Local Importance (5km)	<p>Four wind farms were identified within 5km of the Proposed Wind Farm site. Curraglass, and Shehy More are all located within, or partially within, commercial forestry. Dreenacreenig West and Gortloughra are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for buzzard.</p> <p>However, forestry and upland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 5km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects</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.	Likely long-term frequent imperceptible negative effect, which is not significant .

KOR	Scale	Evaluation	Significance (Percival, 2003)	Significance (EPA, 2017)
		have been identified with regard to habitat loss or displacement. No significant impacts on buzzard are anticipated at the county, national or international scale.		
Sparrowhawk	Local Importance (5km)	<p>Four wind farms were identified within 5km of the Proposed Wind Farm site. Curraglass, and Shehy More are all located within, or partially within, commercial forestry. Dreenacreenig West and Gortloughra are located within, or partially within, upland habitats (bog/wet grassland). These habitats are suitable for sparrowhawk.</p> <p>However, forestry and upland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Furthermore, no significant effects were reported for any of the wind farms located within a 5km radius of the Proposed Project. Taking into consideration the above reported effects and the predicted effects with the Proposed Project, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement. No significant impacts on sparrowhawk are anticipated at the county, national or international scale.</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.	Likely long-term frequent imperceptible negative effect, which is not significant .

7.8 Monitoring

7.8.1 Construction Phase

A Bird Monitoring Plan with the objective of monitoring the ornithological community at the Proposed Wind Farm site during construction works has been prepared. This is presented fully in Appendix 7-7. It includes for pre-commencement and construction monitoring to identify sensitive nests or roosts in proximity to the works.

7.8.2 Operational Phase

A Bird Monitoring Plan with the objective of monitoring the response of the ornithological community at the Proposed Wind Farm site to the operating turbines has been prepared. This is presented fully in Appendix 7-7. It includes for vantage point surveys, breeding raptor and chough surveys, breeding red grouse surveys and collision monitoring.

7.8.3 Decommissioning Phase

A Bird Monitoring Plan with the objective of monitoring the ornithological community at the Proposed Wind Farm site during decommissioning works has been prepared. This is presented fully in Appendix 7-7. It includes for pre-commencement and construction monitoring to identify sensitive nests or roosts in proximity to the works.

7.8.4 Data Sharing

As a measure to support conservation research and policy, it is proposed to submit the pre-planning survey data and information to the National Biodiversity Data Centre (NBDC) and to BirdWatch Ireland to contribute to the upcoming bird atlas (2027) on relevant ecological records, for example, information on the location of breeding territories and nest sites of bird species of conservation concern. The submission of the data will follow relevant standards and will be provided in the preferred NBDC excel template. This measure will be fulfilled within the first year of the construction phase in the event of a successful application. This commitment ensures the Proposed Project is contributing to the aims of Objective Four, Outcome 4B of Ireland's 4th National Biodiversity Action Plan.

7.9 Conclusion

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

7.9.1

EIA Classification Summary

The table below provides the impact assessment classification summary of all identified impacts for the Proposed Project relating to ornithology.

Table 7-14 Impact assessment classification summary

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
Chough (all seasons)	Direct Habitat Loss: Long-Term, Slight, Negative Disturbance: Short-Term, Slight, Negative	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than Slight	Not Significant
Hen Harrier (post-breeding and wintering)	Direct Habitat Loss: Long-Term, Slight, Negative Disturbance: Short-Term, Slight, Negative	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than Slight	Not Significant
Peregrine Falcon (all seasons)	Direct Habitat Loss: Long-Term, Slight, Negative Disturbance: Short-Term, Slight, Negative	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than Slight	Not Significant
White-tailed Eagle (all seasons)	Direct Habitat Loss: Long-Term, Imperceptible, Negative Disturbance: Short-Term, Slight, Negative	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than Slight	Not Significant
Kestrel (all seasons)	Direct Habitat Loss:	Section 7.6.1	No effect greater than Slight	Not Significant

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	<p>Long-Term, Slight, Negative</p> <p>Disturbance:</p> <p>Short-Term, Slight, Negative</p>	<p>Section 7.6.2</p> <p>Section 7.8.1</p>		
Red Grouse (all seasons)	<p>Direct Habitat Loss:</p> <p>Long-Term, Slight, Negative</p> <p>Disturbance:</p> <p>Short-Term, Slight, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.6.2</p> <p>Section 7.8.1</p>	No effect greater than Slight	Not Significant
Snipe (all seasons)	<p>Direct Habitat Loss:</p> <p>Long-Term, Slight, Negative</p> <p>Disturbance:</p> <p>Short-Term, Slight, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.6.2</p> <p>Section 7.8.1</p>	No effect greater than Slight	Not Significant
Buzzard (all seasons)	<p>Direct Habitat Loss:</p> <p>Long-Term, Imperceptible, Negative</p> <p>Disturbance:</p> <p>Short-Term, Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.6.2</p> <p>Section 7.8.1</p>	No effect greater than Imperceptible	Not Significant
Sparrowhawk (all seasons)	<p>Direct Habitat Loss:</p> <p>Long-Term, Imperceptible, Negative</p> <p>Disturbance:</p>	<p>Section 7.6.1</p> <p>Section 7.6.2</p> <p>Section 7.8.1</p>	No effect greater than Imperceptible	Not Significant

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	Short-Term, Imperceptible, Negative			
Operational Phase				
Chough (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: Long-Term, Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant
Hen Harrier (post-breeding and wintering)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: No Effect</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant
Peregrine Falcon (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: Long-Term, Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
White-tailed Eagle (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: No Effect</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant
Kestrel (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: Long-Term Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant
Red Grouse (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect: Long-Term, Slight, Negative</p> <p>Collision Risk: No Effect</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant
Snipe (all seasons)	<p>Direct Habitat Loss: No Effect</p> <p>Displacement and Barrier Effect:</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	<p>Long-Term, Slight, Negative</p> <p>Collision Risk:</p> <p>Long-Term, Imperceptible, Negative</p>			
Buzzard (all seasons)	<p>Direct Habitat Loss:</p> <p>No Effect</p> <p>Displacement and Barrier Effect:</p> <p>Long-Term, Imperceptible, Negative</p> <p>Collision Risk:</p> <p>Long-Term, Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Imperceptible	Not Significant
Sparrowhawk (all seasons)	<p>Direct Habitat Loss:</p> <p>No Effect</p> <p>Displacement and Barrier Effect:</p> <p>Long-Term, Imperceptible, Negative</p> <p>Collision Risk:</p> <p>Long-Term Imperceptible, Negative</p>	<p>Section 7.6.1</p> <p>Section 7.8.2</p>	No effect greater than Slight	Not Significant

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Decommissioning Phase				
Ornithological Receptors	Direct Habitat Loss: No Effect Disturbance: No Effect greater than Slight	7.8.3	No effect greater than Slight	Not Significant