

Environmental Impact Assessment Report (EIAR)

Crumhach Wind Farm, Co. Sligo

Chapter 7 - Birds



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GLOSSARY OF TERMS

Term	Meaning
Breeding Season	April to September
Collision Risk Model	A mathematical model to predict the number of birds that may be killed by collision with moving wind turbine rotor blades
Key Ornithological Receptor	A bird species upon which potential impacts are anticipated and assessed
Potential Collision Height	The rotor-swept area of the proposed turbines
Winter Season	October to March

GLOSSARY OF ACRONYMS

Acronym	Meaning
BoCCI	Birds of Conservation Concern in Ireland
BTO	British Trust for Ornithology
CRA	Collision Risk Assessment
I-WeBS	Irish Wetland Bird Survey
KOR	Key Ornithological Receptor
NPWS	National Parks and Wildlife Service
PCH	Potential Collision Height
SNH	Scottish Natural Heritage
SPA	Special Protection Area
VP	Vantage Point

7. BIRDS

7.1 Introduction

This chapter assesses the likely significant impacts of the Crumhach Wind Farm 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 Chapter 1: Introduction, for the purposes of this EIAR, the various project components are described and assessed using the following references:

- Where the 'Proposed Project' is referred to this encompasses the entirety of the project for the purposes of this EIA in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- Where 'the Site' is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-2 and encompasses an area of approx. 1,546ha.
- Where the 'Proposed Wind Farm' is referred to, this refers to turbines and associated foundations and hard-standing areas, access tracks, temporary construction compounds, onsite 110kV substation, internal underground cabling, onsite LiDAR compounds, peat and spoil management, site drainage, biodiversity enhancement, turbine delivery route (TDR) accommodation works and all ancillary works and apparatus. The Proposed Wind Farm is described in detail in Chapter 4 of this EIAR.
 - The 'Proposed Turbines' refers to the 17 no. turbines associated with the Proposed Wind Farm as outlined above.
- Where the 'Proposed Grid Connection Route' is referred to this encompasses the 110Kilovolt (kV) underground cabling connecting the proposed onsite 110kV substation to the existing Srananagh 220kV substation, and all ancillary works and apparatus. The Proposed Grid Connection Route is described in detail in Chapter 4 of this EIAR.
- Where the 'Existing Wind Farm' is referred to, this relates to all components of the existing Dunneill and Kingsmountain Wind Farm developments as outlined in Section 1.1.1 below.
 - Where differentiation is required between the Dunneill and Kingsmountain Wind Farms within the EIAR these are called out as necessary.
- Where the 'Existing Grid Connection' is referred to, this relates the existing underground cabling connecting the existing onsite control buildings for the Existing Wind Farm to the existing Cunghill 110kV substation.

In addition:

- Where the construction phase is detailed and assessed within the EIAR, this includes for the removal of the existing 23 no. turbines and the construction of the proposed 17 no. turbines and associated infrastructure on site.
- Where the operational phase is detailed and assessed within the EIAR, this includes for the operation of the proposed 17 no. turbines on site.
- Where the decommissioning phase is detailed and assessed within the EIAR, this includes for the decommissioning of the proposed 17 no. turbines on site.

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: construction, operation and decommissioning.

The **Mitigation and Best Practice Measures** section describes proposed mitigation and best practice 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 details of survey effort, including all survey dates, times and weather conditions, and maps of the survey locations.

Appendix 7-2 contains 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 any ecologically sensitive information, such as important breeding or resting locations.

Appendix 7-6 provides the methodology and results for the collision risk assessment.

Appendix 7-7 presents the proposed Bird Monitoring Programme.

The following definitions are used in this chapter:

‘**Study Area**’ refers to the focal area during field surveys. This was defined as a 500m radius of all potential and existing turbine locations at the outset of field surveys. This is the minimum area covered during field surveys. The Study Area and the final EIAR Site Boundary were not meaningfully different.

7.1.1 Description of the Proposed Project

A full description of the Proposed Project is provided in Chapter 4 of this EIAR. In brief, the Applicant is seeking a 35-year planning permission for a project consisting of 17 no. turbines and the associated works. The Proposed Turbines to be installed on the Proposed Wind Farm site will have the following dimension range:

- Turbine Tip Height – Maximum height 180 metres, Minimum height 176.6
- Hub Height – Maximum height 110 metres, Minimum height 105 metres
- Rotor Diameter – Maximum diameter 150 metres, Minimum diameter 133.2 metres

The wind turbines that will be installed as part of the Proposed Project will be conventional three-blade turbines, that will be geared to ensure the rotors of all turbines rotate in the same direction at all times.

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 (formerly Scottish Natural Heritage [SNH]) 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>
- 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 Chapter 1 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.
- Sligo County Development Plan 2024-2030.

7.1.3 Statement of Authority

This birds chapter has been prepared by Louis de Vries (M.Sc.), 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 Padraig Cregg (M.Sc.) and is fully compliant with recent NatureScot (formerly Scottish Natural Heritage) guidance (SNH, 2017, NatureScot, 2025).

Ornithological field surveys were undertaken by Andrew O'Donoghue (B.Sc.), Cillian Murphy (B.Sc.), Clodagh Helen, Collin Delahunt, Conor Rowlands (B.Sc.), Eoghan Phelan (B.Sc.), Lee Dark (M.Sc.), Niall Mc Hugh (B.Sc.) and Niamh Scanlon (B.Sc.). Drone surveys were conducted by Pietro Salvagno (M.Eng.), Environmental Scientist at MKO, with assistance from Andrew O'Donoghue. Collision monitoring surveys were conducted by Caroline Finlay and Patrice Kerrigan of Conservation Detection Dogs Northern Ireland, and by Cathal Bergin (B.Sc.; LANTRA accredited Conservation Detection Dog Handler), Project Ecologist of MKO, and Jessica Sara Barbara (M.Sc.) with trained dogs Monty, Rufus, Ivy, Ziba, Jasper, Niffler, Taio, Clay, Cain and Kizzy. Surveyors are suitably qualified competent experts for the purposes of the preparation of this EIAR.

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. 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) of 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 Section 2.7 of Chapter 2: Background to the Proposed Project of this EIAR. Table 7-1 Consultation responses Table 7-1 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 2-1 of this EIAR. The recommendations of the consultees have informed the EIAR preparation process and the contents of this chapter; Chapter 2 describes where the comments raised in the scoping responses received have been addressed.

Table 7-1 Consultation responses

	Consultee	Response
01	BirdWatch Ireland	No response received at the time of writing.
02	Department of Housing, Local Government and Heritage: Development Applications Unit (includes National Parks & Wildlife Service and the National Monuments Service)	Response received on the 9 th of September 2024. Acknowledged request with target of six weeks for formal response. Follow-up sent on the 3 rd of October 2024. No response received at the time of writing.
03	Irish Red Grouse Association	No response received at the time of writing.
04	Irish Raptor Study Group	No response received at the time of writing.
05	Irish Wildlife Trust	Response received on 9 th of September 2024. The Irish Wildlife Trust did not have the capacity to respond to consultation but would endeavour to respond if possible. No further correspondence was received.
06	Sligo County Council: Heritage Officer	No response received at the time of writing.
07	The Heritage Council	No response received at the time of writing.

7.2.2.1 Consultation with National Parks and Wildlife Service

Members of the Project Team, including Ornithologists met with the NPWS on the 10th of February 2026 to discuss the Proposed Project. The main topics discussed in the meeting included the following:

- An overview of the Proposed Project.
- Ecological surveys which have been undertaken to date and their findings.
- Ornithology surveys which have been undertaken to date and their findings.
- The Key Ecological Receptors identified at the Proposed Wind Farm.
- Proposed plans for habitat enhancement and management measures.

The outcome of the meeting included the following feedback and recommendations from the NPWS:

- Impacts on breeding golden plover and dunlin should be contextualised within the local isolated breeding population, as even a small impact on a single local breeding population unit could have a disproportion effect. The difficulty in defining a local population due to data availability was acknowledged.

- Breeding and wintering population should be clearly distinguished (e.g., golden plover and dunlin). Focus should be on breeding pairs locally, as this component of the population is highly sensitive. Estimates should also consider habitat availability observed density and the surveyed area to derive a reasonable local population estimate.
- Peregrine falcon have been observed in the area several years ago

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 was 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 2021 to March 2025, consisting of four 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 field 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 effort and 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 Turbines. Surveys were conducted from eight fixed vantage points with comprehensive coverage of the Proposed Wind Farm. The vantage point locations were selected by undertaking a viewshed analysis (described below) and confirmed by a reconnaissance visit and initial field surveys to ensure that the Proposed Turbine layout was entirely covered.

Viewsheds were calculated using the Visibility Analysis plugin (Version 1.8) over a raster digital 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 a 360° viewshed 20m from ground level up to a 2km radius around the vantage point. This viewshed was then cropped to a 180° arc representing the area visible to the surveyor. Once the three turbine model scenarios were confirmed to have a lowest swept height of 30m, 30.5m and 43.4m, the viewsheds were recalculated using a notational layer suspended at 30m, 30.5m and 43.4m. 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 3hour watches separated by a minimum 30minute break (i.e., 6 hours total) per month. Surveys were conducted from May 2021 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). In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Surveys at VP1 started in May 2021 to inform the extension of life application for the Existing Dunneill Wind Farm (Dunneill Wind Farm, Co. Sligo, PL 22/291) and continued at this location until March 2025. Surveys at VP2 also started in May 2021 to inform the extension of life application for the existing Dunneill Wind Farm. Surveys ceased at this location after the grant permission in May 2023 but recommenced in October 2023 to inform this EIAR for the proposed Crumhach Wind Farm. During the winter season 2024-2025, surveys were only conducted at VP1, VP2, VP6 and VP8 to be concurrent with collision monitoring at the Existing Wind Farm of Dunneill and Kingsmountain; surveys at the remaining vantage point survey locations ceased in September 2024. These surveys provide data from over 1,933 hours of dedicated flight activity watches at the Proposed Wind Farm.

Note that three hours of surveys were missed at VP4, VP7 and VP8 during the breeding season 2022 due to surveyor miscommunication. However, this is not considered a significant limitation in the data given that there are data from three breeding seasons available for analysis. VP3, VP4 and VP7 were respectively conducted the 28th, 30th and 29th of September 2021 but are used here to inform the winter season 2021/2022. While this is slightly outside of the winter season (1st October – 31st March), this is not considered to be a significant limitation in the data as the discrepancy of three days is unlikely to result in a significantly different assemblage of observed species or activity, therefore it has been treated as a winter season survey in this dataset. Similarly, VP1 and VP2 were conducted respectively on the 3rd of October and 4th of October 2022 but inform the breeding season 2022. Finally, VP7 was missed in September 2023, but was done twice in October 2023.

Table 7-2 Vantage point survey duration

Survey Season and Number of Vantage Points	Effort per Vantage Point
Breeding season 2021 (VP1, VP2)	36 hours per Vantage Point
Winter season 2021/2022 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours per Vantage Point (including surveys on 28 th , 29 th and 30 th September 2021)
Breeding season 2022 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours at VP1, VP2, VP3, VP4 and VP6 (including surveys on 3 rd and 4 th October 2022); 33 hours at VP4, VP7 and VP8

Winter season 2022/2023 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours per Vantage Point
Breeding season 2023 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours at VP1, VP2, VP3, VP4 and VP6; 39 hours at VP4 and VP8; 33 hours at VP7; 12 hours at VP2
Winter season 2023/2024 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours at VP1, VP2, VP3, VP4, VP5 and VP8; 42 hours at VP7
Breeding season 2024 (VP1, VP2, VP3, VP4, VP5, VP6, VP7, VP8)	36 hours per Vantage Point
Winter season 2024/2025 (VP1, VP2, VP6, VP8)	36 hours per Vantage Point

Flight activity of target species was mapped and recorded according to defined flight bands, chosen in relation to the dimensions of potential turbine models for the site. Two sets of height bands were used during Vantage Point Surveys. This is because some surveys were conducted at existing turbines to inform the extension of life application for the Existing Dunneill Wind Farm, while later surveys were conducted to inform the application for the Proposed Project. Surveys for the Proposed Turbines used four bands: 0-15m, 15-25m, 25-200m and >200m. Surveys for the Existing Wind Farm turbines used five bands: 0-15m, 15-23m, 23-75m, 75-150m and >150m. Survey data were collected using five bands between May and September 2021; between October 2021 and March 2025, the four bands were used. At VP2, the five bands were used from May 2021 to November 2022, and in March, April, and November 2023. All other surveys were conducted using the four bands. At VP3, the five bands were used only in November 2021; in all other months, the four bands were used. At VP4, the five bands were used only in November 2021 and in October 2023; all other surveys conducted at VP4 used the four bands. At VP5 and VP6, the five bands were used in November and December 2021 and in October 2023; all other surveys conducted at VP5 and VP6 used the four bands. At VP7 and VP8, the five bands were used in November and December 2021 and in November 2023; all other surveys conducted at VP7 and VP8 used the four bands.

All flight activity within the following height bands 23-75m, 25-200m, 75-150m and >150m are considered to be within the Potential Collision Height (PCH) with regard to the turbine swept area. The varying height bands have been accounted for in the collision risk assessment.

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). Winter walkover surveys were conducted in daylight hours over four visits between October and March (i.e., four visits in winter 2021/2022, four visits in winter 2022/2023 and four visits in winter 2023/2024). Some dense conifer plantations near Crowagh or Dunneill Mountain did not allow the surveyor access, and these were surveyed from the forestry tracks.

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.

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) Bird Census methods (British Trust for Ornithology, 2021) for dense habitat. Breeding walkover surveys were conducted in daylight over four visits during the core breeding season months April to July. It is acknowledged that half a day of survey was conducted on the 3rd of August 2023. While this is technically outside of the breeding season core months (1st April – 31st July), this is not considered to be a significant limitation in the data as the discrepancy of three days is unlikely to result in a significantly different assemblage of observed species or activity. Some dense conifer plantations near the townland of Crowagh or Dunneill Mountain did not allow the surveyor access, and these were surveyed from the forestry tracks.

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.

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, the species chough, grey wagtail and dipper were also treated as waterbirds for the purposes of these surveys. Significant wetlands and waterbodies within 8km of the Study Area were surveyed for waterbirds during the 2021/2022, 2022/2023 and 2023/2024 winter and passage seasons (August to May inclusive, with the exception of August 2023) to provide information on their distribution in relation to the Proposed Wind Farm. The area surveyed exceeds the 500m for foraging waterbirds and 1 km for roosting waterbirds requirements of 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 at wetlands and waterbodies. All target waterbird species were recorded and mapped.

7.2.3.2.5 **Hen Harrier Roost Surveys**

Hen harrier roost surveys were undertaken within 2km of the Study Area. These surveys aimed to identify active winter hen harrier roosts near or within the Study Area. Survey methodology followed Gilbert *et al.* (1998) and O'Donoghue (2019). Each hen harrier vantage point (HHVP) was surveyed once per month during the winter season between October and March inclusive (in winter 2021/2022, 2022/2023 and 2023/2024). In the winter 2021/2022 and 2022/2023, HHVP1 to HHVP8 were visited six times over each winter season. During the winter 2023/2024, some HHVP locations were moved to new locations (HHVP1a, HHVP2a, HHVP3a, HHVP4a, HHVP4b, HHVP4c, HHVP5a, HHVP5b, HHVP6a, HHVP7a, HHVP7b, HHVP8a, HHVP8b) were created to investigate potential activity of interest and to provide additional coverage over suitable habitat for roosting hen harrier.

Roost watches of 2-3 hours were conducted at the hen harrier vantage point locations from dusk until last visible light. All hen harrier observations were recorded and mapped.

7.2.3.2.6 **Breeding Raptor Surveys**

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. Breeding raptor 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). Each breeding raptor location was surveyed once per month during the core breeding season between April and July.

Breeding raptor (BR) watches of 3 hours (supplemented by transects if necessary) were conducted during daylight at 10 breeding raptor survey locations (BR1 to BR10) during breeding season 2022 and 2023. During the breeding season of 2024, BR5 and BR9 were moved to new locations (BR11 and BR12) to survey new areas suitable for breeding raptors and investigate potential activity of interest. In May 2024, BRT1 was created to survey the southern part of the site for raptor breeding activity, and BRT6 was created to survey the adjacent areas of BR6. In July 2024, some survey locations were moved (BRT12, BRT12a, BRT12b, BRT12c, BRT12d, BRT13) in response to potentially interesting merlin activity across the site. One survey was conducted on the 3rd of August 2023, to compensate a missed survey during the core breeding season. While this is technically outside of the breeding season core months (1st April – 31st July), this is not considered to be a significant limitation in the data as the discrepancy of three days is unlikely to result in a significantly different assemblage of observed species or activity.

All raptor species observed were recorded and mapped and breeding status was assigned following BTO breeding status codes. Surveyors did not approach nest sites to avoid disturbance.

On 19th of July 2024, a survey using a drone (Matrice 30T from manufacturer DJI) was conducted (under licence number 020/2024) to establish if there was a merlin nest in conifer plantation in a part of the Study Area where an increase in merlin activity in the summer had been observed. The drone pilot and ornithologist arrived on site and began a mission flight before dawn. During the mission, the drone searched a pre-defined route over the area where merlin activity was previously seen in suitable breeding habitat highlighted by the surveyor. The drone used a thermal imaging sensor to search for the heat signature of an occupied nest. A mounted camera was used to inspect any heat signatures for signs of a merlin nest. The ornithologist also visited potential signatures in trees on foot for a closer inspection using binoculars with a thermal sensor.

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. Each transect was surveyed three times during the core breeding season of May and June.

During breeding season 2021, two breeding woodcock transects (WKT1 and WKT2) were surveyed in May and June on three different occasions to inform extension of life planning application for the Existing Dunneill Wind Farm. During the breeding seasons 2022, 2023, and 2024, four breeding woodcock transects were surveyed (WKT1 to WKT4) three times during May and June each year to cover the Study Area for the Proposed Project. WKT4 was surveyed four times in breeding season 2022, with one visit in May 2022 and three in June 2022.

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 survey was conducted in March 2022, March 2023 and February 2024 and all surveys were conducted under National Parks and Wildlife Service license (Licences No. 36/2021, 23/2022, 13/2023, 097/2023).

The surveyor walked transects 150 m apart through suitable bog and heath habitat, where access allowed, stopping every 100 m 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.

7.2.3.2.9 **Multidisciplinary Walkover Survey**

The Proposed Grid Connection Route was surveyed on the 16th and 18th September 2025 through a multidisciplinary walkover survey. The site was systematically walked, while the surveyor recorded a range of protected species, including birds. Further details on this survey are available in Chapter 6: Biodiversity of this EIAR.

7.2.4 **Collision Monitoring**

Collision monitoring was conducted at both the existing Dunneill Wind Farm and existing Kingsmountain Wind Farm to estimate the number of individual bird fatalities that were attributable to collision with moving wind turbine rotor blades. This included carcass searches at the Existing Wind Farm turbines, and a mortality estimation using the data collected during carcass searches.

7.2.4.1 **Carcass Searches**

Carcass searches were conducted by a specially trained detection dog and handler team. Survey effort is presented in Appendix 7-1. Following Duffy *et al.* (2008) methodology, a 120m plot (Kingsmountain) or 50m plot (Dunneill) plot centred on the turbine bases were searched for an average of 65 minutes per month and all bird carcasses detected within were recorded. If the cause of death was not apparent, the fatality was conservatively attributed to collision with turbine blades.

At the Existing Kingsmountain Wind Farm, all 10 turbines were surveyed once per month from April 2024 to March 2025 (12 visits). At the Existing Dunneill Wind Farm, all 13 turbines were surveyed once per month from April 2021 to March 2022 (12 visits) and again from April 2024 to March 2026 (24 visits). Note that searches at T6 and T9 could not be conducted in September 2024 and the search at T2 could not be conducted in October 2024.

To ensure a more accurate estimation of the total number of fatalities, dog-led searches were calibrated to account for the dog's ability to find bird carcasses (searcher efficiency) and the likelihood of scavenging of carcasses by animals (scavenger removal). The searcher efficiency trials were conducted by planting carcasses within the site and allowing the dog to search for them. Searcher efficiency was then based on the percentage retrieval success. The scavenger removal trial was conducted by leaving carcasses in trial plots for 30 days or until scavengers removed the carcass. A determination on carcass removal was made when no body parts containing flesh or bone or >10 disarticulated feathers could be found (remaining carcass material was retrieved at the end of the trial). The scavenger removal rate was then determined (in terms of number of days) by the amount of scavenging that occurred in the intervening period.

7.2.4.2 **Mortality Estimation**

Collision-related mortality was estimated using the GenEst model software package (version 1.4.9; Dalthorp *et al.*, 2023). This model produces an estimate of mortality based on the results of the carcass searches described above. This estimate of mortality is then corrected for carcass detection probability, based on the results of the searcher efficiency and carcass persistence trials to provide a more accurate estimate of the number of fatalities in a wind farm in a given time period.

The parameters on the wind farm and survey effort that were input into the model are outlined in Section 7.2.4.1 and Appendix 7-1. The parameters on searcher efficiency and carcass persistence were input using the data from the trials outlined in Section 7.2.4.1. Finally, parameters for the search schedule were taken from the survey effort presented in Appendix 7-1. The density weighted

proportion for all turbines was 1 and the fractional change in searcher efficiency was set at 1. The confidence level for the model was set at 0.9 (a 90% confidence level) and 1000 iterations were run.

7.2.5 Receptor Evaluation and Impact Assessment

7.2.5.1 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.

7.2.5.2 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 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.

7.2.5.3 Potential Impacts Associated with Proposed Project

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 has been used to predict potential impacts of the Proposed Project on birds.

7.2.5.4 Collision Risk Assessment

Collision risk is calculated using a mathematical model to predict the number of individual birds of a particular species that may be killed by collision with moving wind turbine rotor blades. The modelling method used in this collision risk calculation follows the Band Model (Band, 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.

7.2.5.5 Description of Impacts

The sensitivity, magnitude and significance of impacts on bird populations resulting from the Proposed Project 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 impacts. EPA impact assessment criteria has been used for consistency between the Biodiversity and Birds chapters of this EIAR, while Percival (2003) has also been followed given its specific focus on birds.

7.2.5.5.1 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 cough. 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

Sensitivity	Description
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

7.2.5.5.2 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.

7.2.5.6 Cumulative Assessment

As per NatureScot guidance ‘Assessing the Cumulative Impacts of onshore Wind Energy Developments’ (NatureScot, 2025a), cumulative effects arising from two or more developments may be:

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

NatureScot (2025a; SNH, 2012; 2018) 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 scale.’ 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 Section 2.9 of Chapter 2 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.

7.2.6 Assessment Justification

7.2.6.1 Survey Data

A comprehensive suite of bird surveys was undertaken at the Proposed Wind Farm between April 2021 and March 2025. Results derived from a continuous four years of surveying at the Proposed Wind Farm and hinterland, undertaken in line with NatureScot guidance, are analysed to inform this assessment. The data used in this assessment exceeds the minimum requirement of two continuous years of bird survey data required under this guidance. As such, the surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the Proposed Project on ornithological receptors.

7.2.6.2 Mitigation

The Proposed Project 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).

7.2.6.3 Limitations

The information provided in this 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. Therefore, no significant limitations in the scope, scale or context of the assessment have been identified. Any minor deviations from methodology have been described under the relevant survey type in Section 7.2.3.2. Some dense conifer plantations near Crowagh or Dunneill Mountain did not allow the surveyor access, and these were surveyed from the forestry tracks.

7.3 Baseline Ornithological Conditions

7.3.1 Designated Sites and Restoration Projects

7.3.1.1 Special Conservation Areas

A screening assessment and NIS were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Proposed Project in compliance with Article 6(3) of the EU Habitats Directive (92/43/EEC). According to EPA (2022) '*A biodiversity section of an EIAR ... should not repeat the detailed assessment of potential effects on European sites contained in documentation prepared as part of the Appropriate Assessment process, but it should refer to the findings of that separate assessment*'. Therefore, this section provides a summary of the key findings regarding SPAs and Ramsar sites. 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 Ballysadare SPA. The potential for adverse effects was identified for the qualifying interest Wetlands and Waterbirds [A999]. Also, the site synopsis for Ballysadare Bay SPA states that the site is of high ornithological importance for Brent geese, golden

plover, whooper swan and bar-tailed godwit. Golden plover, whooper swan and bar-tailed godwit are of particular note as these species are listed on Annex I of the EU Birds Directive.

The potential for likely significant effects was identified for the Ramsar Site of Easky Bog (site number 471). A Ramsar site is an area that is designated to conserve wetlands for waterfowl. While Ramsar sites have no legal protection under Irish legislation, they are usually also designated as SPAs or Nature Reserves and should be considered for adverse impacts if necessary. Easky Bog is contiguous with Easky Bog Nature Reserve.

The Ramsar Sites Information Service overview states that Easky Bog provides habitat for Greenland white-fronted goose and golden plover. This area was partially covered by Vantage Point Survey viewsheds (VP7 and VP8), a Breeding Raptor Survey location (BR12), a Waterbird Distribution and Abundance Survey location, Hen Harrier Roost Survey locations (HHVP3a, HHVP4b and HHVP7a), Breeding Walkover Survey transects, Winter Walkover Survey transects and Breeding Red Grouse Survey transects.

7.3.1.2 Fiddandarry Bog Restoration Project

The Fiddandarry Bog restoration project is located within the Ox Mountains SAC (002006), Co. Sligo. NPWS owns approximately 450 ha of blanket bog at Fiddandarry, west of Lough Easky, over 4km south-west of the Proposed Wind Farm. The site was formerly under Coillte management, during which an extensive network of approximately 43 km of drains was established in preparation for plantation forestry; this development did not subsequently proceed.

BirdWatch Ireland, as a key deliverer of the CABB (Cooperation Across Borders for Biodiversity) project, undertook a drain-blocking scheme at the site. Works were contracted in mid-2020 and completed within the CABB project timeframe of 2017–2022 (<https://www.rspb.org.uk/helping-nature/what-we-do/protecting-species-and-habitats/projects/co-operation-across-borders-for-biodiversity>).

A monitoring programme was established to collect baseline habitat and hydrological data, enabling habitat improvements to be assessed during and beyond the project timeframe. The overall objective of the CABB project was to support the recovery of priority habitats, including active raised and blanket bog, and priority species, including breeding waders and marsh fritillary butterfly.

7.3.2 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. The Proposed Wind Farm lies within hectad G42 and G43, while the Proposed Grid Connection Route also extends into hectad G53, G52, G62 and G72. 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 2007-2011					
	G42	G43	G52	G53	G62	G72
Common Gull	Confirmed	-	Confirmed	-	-	-
Common Sandpiper	Confirmed	-	Probable	Possible	Possible	-
Corncrake	-	Possible	-	-	Possible	-

Species Name	Breeding Atlas 2007-2011					
	G42	G43	G52	G53	G62	G72
Dipper	Confirmed	Confirmed	Confirmed	-	Probable	Confirmed
Dunlin	Possible	-	-	-	-	-
Fulmar	-	Confirmed	-	-	-	-
Grey Heron	Possible	-	Possible	Confirmed	Possible	
Grey Wagtail	Probable	Probable	Probable	Possible	Confirmed	Confirmed
Guillemot	-	Confirmed	-	-	-	-
Kestrel	Possible	Probable	Possible	Confirmed	Confirmed	Confirmed
Kittiwake	-	Confirmed	-	-	-	-
Lesser Black-backed Gull	Possible	-	-	-	-	-
Mallard	Possible	Possible	Confirmed	Confirmed	Probable	Confirmed
Meadow Pipit	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Merlin	Possible	-	-	-	-	-
Moorhen	-	Possible	-	-	-	-
Peregrine Falcon	Possible	-	Possible	-	Possible	Possible
Razorbill	-	Confirmed	-	-	-	-
Shag	-	Confirmed	-	Probable	-	-
Snipe	Possible	Possible	Probable	-	Probable	Possible
Sparrowhawk	-	Probable	-	-	-	-
Teal	Probable	-	-	-	Probable	-

Table 7-7 Wintering Bird Atlas data

Species Name	Wintering Atlas 2007-2011					
	G42	G43	G52	G53	G62	G72
Barnacle Goose	Present	-	-	-	-	-

Species Name	Wintering Atlas 2007-2011					
	G42	G43	G52	G53	G62	G72
Black Guillemot	-	Present	-	Present	-	-
Black-headed Gull	-	Present	-	Present	Present	-
Common Gull	-	Present	-	Present	Present	-
Cormorant	Present	Present	Present	Present	Present	-
Curlew	-	Present	-	Present	Present	-
Dark-bellied Brent Goose	-	Present	-	Present	Present	-
Dipper	-	Present	Present	-	Present	-
Dunlin	-	Present	-	Present	Present	-
Fulmar	-	Present	-	-	-	-
Glaucous Gull	-	Present	-	Present	Present	-
Great Black-backed Gull	-	Present	-	Present	Present	-
Great Northern Diver	-	Present	-	Present	-	-
Greenshank	-	Present	-	Present	-	-
Grey Heron	Present	Present	-	Present	Present	-
Grey Wagtail	-	Present	Present	Present	Present	Present
Guillemot	-	Present	-	-	-	-
Hen Harrier	Present	Present	Present	-	Present	Present
Herring Gull	-	Present	-	Present	Present	-
Iceland Gull	-	Present	-	Present	-	-
Kestrel	Present	Present	Present	Present	Present	Present
Lapwing	-	Present	-	Present	Present	-
Lesser Black-backed Gull	Present	-	-	-	Present	-

Species Name	Wintering Atlas 2007-2011					
	G42	G43	G52	G53	G62	G72
Light-bellied Brent Goose	-	Present	-	Present	Present	-
Long-tailed Duck	-	Present	-	Present	-	-
Mallard	Present	Present	Present	Present	Present	-
Meadow Pipit	Present	Present	Present	Present	Present	Present
Merlin	Present	Present	-	Present	Present	Present
Oystercatcher	-	Present	-	Present	Present	-
Purple Sandpiper	-	Present	-	Present	-	-
Red-breasted Merganser	Present	-	-	Present	Present	-
Redshank	-	Present	-	Present	Present	-
Red-throated Diver	-	Present	-	Present	-	-
Redwing	Present	Present	Present	Present	Present	Present
Ringed Plover	-	Present	-	Present	-	-
Shag	-	Present	-	Present	-	-
Snipe	Present	Present	-	Present	Present	Present
Sparrowhawk	Present	-	Present	Present	Present	Present
Teal	Present	Present	Present	Present	Present	-
Turnstone	-	Present	-	Present	Present	-
Whooper Swan	Present	Present	-	Present	Present	Present
Woodcock	Present	Present	-	-	Present	Present

7.3.3 Bird Sensitivity Mapping Tool

A Bird Sensitivity Mapping Tool for wind energy development was developed by BirdWatch Ireland to provide a measured spatial indication of where protected birds are likely to be sensitive to wind energy developments. The tool can be accessed via the National Biodiversity Data Centre Website (www.biodiversityireland.ie) and is accompanied by a guidance document (McGuinness *et al.*, 2015).

The criteria for estimating a zone of sensitivity (i.e. 'low', 'medium', 'high' and 'highest') is based on a review of the behavioural, ecological and distributional data available for each species.

The Proposed Wind Farm is located within areas of low bird sensitivity to wind energy developments.

7.3.4

National Biodiversity Data Centre Records

The National Biodiversity Data Centre (NBDC) Biodiversity Maps provide records of flora and fauna within 10 km hectads across Ireland. Data is available from the map viewer on the NBDC website (<https://maps.biodiversityireland.ie/Map>). The Proposed Wind Farm lies within G42 and G43, while the Proposed Grid Connection Route also extends into hectad G53, G52, G62 and G72. Table 7-8 lists the bird species have been recorded in these 10 km Grids.

Table 7-8 National Biodiversity Data Centre records

Species	NBDC Dataset
Arctic Skua	eBIRD Bird Records for Ireland
Arctic Tern	eBIRD Bird Records for Ireland
Baird's Sandpiper	Rare birds of Ireland
Barn Owl	Birds of Ireland, Bird Atlas 2007 - 2011
Barnacle Goose	Bird Atlas 2007 - 2011
Bar-tailed Godwit	eBIRD Bird Records for Ireland, Birds of Ireland
Black Brant	Bird Atlas 2007 - 2011
Black Guillemot	eBIRD Bird Records for Ireland, Birds of Ireland
Black-headed Gull	eBIRD Bird Records for Ireland, Birds of Ireland, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Black-tailed Godwit	eBIRD Bird Records for Ireland
Black-throated Diver	Irish Wetland Birds Survey (IWeBS) 1994-2001
Brent Goose	eBIRD Bird Records for Ireland, Birds of Ireland
Buzzard	eBIRD Bird Records for Ireland, Birds of Ireland
Chough	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Common Guillemot	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Common Gull	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland, Birds of Ireland, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Common Sandpiper	eBIRD Bird Records for Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Bird Atlas 2007 – 2011, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972
Common Scoter	eBIRD Bird Records for Ireland
Common Tern	eBIRD Bird Records for Ireland
Coot	Bird Atlas 2007 – 2011, eBIRD Bird Records for Ireland
Cormorant	eBIRD Bird Records for Ireland, Birds of Ireland, Bird Atlas 2007 - 2011
Corncrake	Bird Atlas 2007 – 2011, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972

Species	NBDC Dataset
Curlew	eBIRD Bird Records for Ireland, Birds of Ireland, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972., The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Dipper	eBIRD Bird Records for Ireland, Birds of Ireland, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972., Bird Atlas 2007 – 2011, Birds of Ireland
Dunlin	eBIRD Bird Records for Ireland, Birds of Ireland
Eider	eBIRD Bird Records for Ireland
Fulmar	eBIRD Bird Records for Ireland, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972
Gadwall	eBIRD Bird Records for Ireland
Gannet	eBIRD Bird Records for Ireland
Glaucous Gull	Bird Atlas 2007 - 2011
Golden Eagle	Birds of Ireland
Golden Plover	Birds of Ireland, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., eBIRD Bird Records for Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Goldeneye	Birds of Ireland
Goosander	Bird Atlas 2007 - 2011
Great Black-backed Gull	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, eBIRD Bird Records for Ireland, Birds of Ireland
Great Crested Grebe	Birds of Ireland
Great Northern Diver	eBIRD Bird Records for Ireland, Birds of Ireland
Green Sandpiper	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Greenshank	eBIRD Bird Records for Ireland, Bird Atlas 2007 – 2011, Birds of Ireland
Grey Heron	eBIRD Bird Records for Ireland, Birds of Ireland, Bird Atlas 2007 – 2011, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Grey Plover	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Bird Atlas 2007 - 2011
Grey Wagtail	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Greylag Goose	Bird Atlas 2007 - 2011
Gyr Falcon	Rare birds of Ireland
Hen Harrier	Birds of Ireland, Bird Atlas 2007 - 2011
Herring Gull	eBIRD Bird Records for Ireland, Birds of Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Iceland Gull	Bird Atlas 2007 - 2011, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Jack Snipe	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Kestrel	eBIRD Bird Records for Ireland, Bird Atlas 2007 – 2011, Birds of Ireland

Species	NBDC Dataset
Kingfisher	Bird Atlas 2007 - 2011, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Birds of Ireland
Kittiwake	eBIRD Bird Records for Ireland
Knot	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland
Lapwing	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland, Birds of Ireland, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Lesser Black-backed Gull	eBIRD Bird Records for Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Birds of Ireland
Lesser Scaup	Bird Atlas 2007 - 2011
Light-bellied Brent Goose	Bird Atlas 2007 - 2011
Little Egret	eBIRD Bird Records for Ireland, Birds of Ireland
Little Grebe	Bird Atlas 2007 - 2011, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, eBIRD Bird Records for Ireland
Long-eared Owl	Bird Atlas 2007 - 2011, Birds of Ireland
Long-tailed Duck	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland
Mallard	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011, Birds of Ireland
Manx Shearwater	eBIRD Bird Records for Ireland
Marsh Harrier	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Meadow Pipit	eBIRD Bird Records for Ireland, Birds of Ireland
Merlin	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland, Birds of Ireland
Moorhen	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972., Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland, Birds of Ireland
Mute Swan	Bird Atlas 2007 - 2011, Birds of Ireland
Nightjar	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Osprey	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Oystercatcher	eBIRD Bird Records for Ireland, Birds of Ireland
Peregrine	Bird Atlas 2007 - 2011, Birds of Ireland, eBIRD Bird Records for Ireland
Pintail	Bird Atlas 2007 - 2011
Pochard	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Bird Atlas 2007 - 2011
Purple Sandpiper	Bird Atlas 2007 - 2011
Razorbill	eBIRD Bird Records for Ireland, Birds of Ireland
Red Grouse	Birds of Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972
Red-breasted Merganser	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland, Birds of Ireland
Red-throated Diver	eBIRD Bird Records for Ireland
Redshank	eBIRD Bird Records for Ireland, Birds of Ireland

Species	NBDC Dataset
Redwing	Bird Atlas 2007 - 2011, eBIRD Bird Records for Ireland
Ringed Plover	eBIRD Bird Records for Ireland, Birds of Ireland
Ruff	Birds of Ireland
Sanderling	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Sandwich Tern	eBIRD Bird Records for Ireland
Scaup	Bird Atlas 2007 – 2011, Irish Wetland Birds Survey (I-WeBS) 1994-2001.
Shag	eBIRD Bird Records for Ireland, Birds of Ireland
Shelduck	eBIRD Bird Records for Ireland, Birds of Ireland
Shoveler	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Birds of Ireland
Snipe	eBIRD Bird Records for Ireland, Bird Atlas 2007 – 2011, Birds of Ireland
Sparrowhawk	eBIRD Bird Records for Ireland, Birds of Ireland, Bird Atlas 2007 - 2011
Stock Dove	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972., Bird Atlas 2007 - 2011
Storm Petrel	European Seabirds at Sea (ESAS) bird sightings 1980-2023
Swift	eBIRD Bird Records for Ireland, Bird Atlas 2007 – 2011, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Teal	Bird Atlas 2007 - 2011, Birds of Ireland
Tufted Duck	eBIRD Bird Records for Ireland, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Turnstone	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Twite	eBIRD Bird Records for Ireland, Bird Atlas 2007 - 2011
Velvet Scoter	Bird Atlas 2007 - 2011
Water Rail	Bird Atlas 2007 – 2011, Birds of Ireland
Whimbrel	eBIRD Bird Records for Ireland, Birds of Ireland
Whinchat	eBIRD Bird Records for Ireland, The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Bird Atlas 2007 - 2011
White Stork	Rare birds of Ireland
White-rumped Sandpiper	Rare birds of Ireland
White-tailed Eagle	Rare birds of Ireland, eBIRD Bird Records for Ireland
Whooper Swan	Bird Atlas 2007 - 2011, Birds of Ireland
Wigeon	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Birds of Ireland, Bird Atlas 2007 - 2011
Wood Warbler	Bird Atlas 2007 - 2011
Woodcock	Bird Atlas 2007 - 2011, The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Irish Wetland Birds Survey (I-WeBS) 1994-2001
Yellowhammer	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972., The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84., Birds of Ireland

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:

- Ballygawley Lough
- Ballysadare Bay
- Ballysadare River
- Colgagh Lough
- Drumcliff Bay Estuary
- Garvogue River
- Lough Arrow
- Lough Gara
- Outer Sligo Bay
- Sligo Harbour

7.3.6 Rare and Protected Species Dataset

An information request was sent to NPWS on the 5th of September 2025 requesting records from the Rare and Protected Species Database. The following records were obtained from the NPWS on the 1st of November 2025:

- Greenland white-fronted goose – in G42, there were 30 records between 1982 and 1997.
- Peregrine falcon – occupied nest in G43 and one occupied and unoccupied nest in G52 recorded during the 2017 National Peregrine Survey
- Hen Harrier – two sightings in G42 during the 2005 national survey for breeding hen harrier.
- Corncrake – in G33, there was one record in 2023 and one record in 2022. In G43, there were six records in 2018 and two records in 2017.

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 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 are summarised in Table 7-10.

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

Species	Key findings
White-tailed eagle	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.

Species	Key findings
Golden eagle	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Dunlin	Probable and Possible Breeding. Two breeding territories were identified in 2023. The first was 120m from the Proposed Wind Farm and 400m from the nearest Proposed Turbines. The second is located 800m from the Proposed Wind Farm. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Golden plover	Probable and Possible Breeding. Two breeding territories were identified in 2022 and 2024, one 400m from the Proposed Wind Farm and one 1.2km from the Proposed Wind Farm. Probable roosting and foraging. Five probable roosting and foraging areas have been identified during the survey period. Two are within or partially within the Proposed Wind Farm. The three remaining are 320m, 350m and 1.3km from the Proposed Wind Farm.
Hen harrier	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys. A roost was identified. One infrequently used roost was identified in 2024 with one male hen harrier recorded roosting there once. This roost area is ~2.3 km from the Proposed Wind Farm.
Merlin	Confirmed breeding. One nest was confirmed near Easky Lough in 2022 2.2km from the Proposed Wind Farm. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Peregrine falcon	Confirmed breeding. One nest was confirmed near Lough Aghree in 2022, 2.6km from the Proposed Wind Farm. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Little egret	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Red-throated diver	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys.
Whooper swan	Non-breeding. Does not breed in Ireland.

Species	Key findings
	No regularly used roosts identified. Birds were seen roosting on Lough Minna (1.2km from the Proposed Wind Farm) on one occasion in October 2023.
Kestrel	Probable breeding. Seven probable territories for kestrel were identified over the survey period. Four of these territories are within or partially within the Proposed Wind Farm. Of the three remaining probable territories, two are within or partially within 500m of the Proposed Wind Farm and the third is approximately 700m from the Proposed Wind Farm. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Grey wagtail	Probable Breeding. There was probable breeding on the Proposed Wind Farm on different rivers (Crowagh River, Dunneill River, Owenduff River and close to Kingsmountain).
Lapwing	Non-breeding. There was no evidence of breeding at the site during surveys. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Meadow pipit	Breeding on the site. Meadow pipits were regularly observed displaying, singing and calling throughout the survey season, confirming breeding on the Proposed Wind Farm.
Red grouse	Probable breeding. Seven probable breeding areas have been identified, five of which are within or partially within the Proposed Wind Farm. The remaining two territories are 900m and 1km from the Proposed Wind Farm. Records of pairs of red grouse, adult birds with young birds and bird calling were recorded throughout the survey period.
Redwing	Non-breeding. Does not breed in Ireland. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Snipe	Probable breeding. Three probable breeding areas for snipe have been identified, two were within the Proposed Wind Farm and the third is located approximately 360m from the Proposed Wind Farm. Birds were recorded drumming and displaying.
Swift	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys.
Whinchat	Non-breeding. One family party with juveniles was observed in June 2023, suggesting breeding in the general area. No other records suggested breeding at the Proposed Wind Farm.
Woodcock	Probable breeding. Two probable breeding territories for woodcock have been identified. One is partially within 500m of the Proposed Turbines, the second is partially within 500m of the Proposed Wind Farm. Birds were observed roding on the probable breeding territories.

Species	Key findings
	No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Yellowhammer	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys.
Buzzard	Confirmed Breeding. There was a nest identified within the Proposed Wind Farm. Buzzards were recorded carrying prey, expressing agitated behaviours and young buzzards were heard at this location. Probable breeding. A probable nest site was identified 1.2km from the Proposed Wind Farm. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.
Long-eared owl	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm during surveys.
Sparrowhawk	Probable Breeding. Two probable breeding territories were identified, both within the Proposed Wind Farm, with birds observed displaying, carrying prey and expressing agitated behaviours. No regularly used roosts identified. There was no evidence of roosting at the Proposed Wind Farm during surveys.

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

Species	Observations
Red kite	The nearest record was approximately 6.5km from the Proposed Wind Farm. There was one observation of one bird soaring at Cooper's Lodge in November 2021.
Bar-tailed godwit	The nearest record was approximately 4.9km from the Proposed Wind Farm. There was one observation of four birds foraging at Donaghintraine beach in April 2022. There were also three other observations of two to four birds foraging at Aughris Beach in November 2023 and March 2023.
Barnacle goose	The nearest record was approximately 5.6km from the Proposed Wind Farm. A flock of 23 birds was grazing in coastal grassland at Doonaltan in November 2021.
Black-throated diver	The nearest record was approximately 4.5km from the Proposed Wind Farm. Two observations of two and one bird foraging near Pollnadiuva Pier. There were also six other observations of birds foraging and flying at Aughris Beach and Dunmorán Strand during the winter season and the early breeding season.

Species	Observations
Chough	The nearest record was approximately 7.5km from the Proposed Wind Farm. There were two observations of pair of birds calling near Aughris Head in March and April 2023.
Common tern	The nearest record was approximately 4.3km from the Proposed Wind Farm. There were two observations: one of 19 birds roosting at Aughris beach in August 2022, and one of a bird flying near Doonycoy in October 2022.
Great northern diver	The nearest record was approximately 2.6km from the Proposed Wind Farm. There were 59 observations of one to six birds foraging, preening, roosting, and flying along the coast, north of the site, during the winter season and early breeding season. One bird was also observed foraging on Easky Lough in November 2021.
Greenland white-fronted goose	The nearest record was approximately 5km from the Proposed Wind Farm. A flock of 14 birds was commuting at high altitude near Lough Ahusey in November 2021.
Kingfisher	The nearest record was approximately 3.6km from the Proposed Wind Farm. One bird was seen flying and perching along the Easky River at Fartannan in November 2021.
Mediterranean gull	The nearest record was approximately 7.8km from the Proposed Wind Farm. A flock of six birds was observed flying at Aughris Head in November 2021.
Sandwich tern	The nearest record was approximately 7.9km from the Proposed Wind Farm. There was one observation of three birds flying at Dunmorán Strand in May 2024.
Storm petrel	The nearest record was approximately 8.3km from the Proposed Wind Farm. There were two observations of 1 and 19 birds flying near Aughris Head in September 2021 and October 2022.
Barn owl	The nearest record was approximately 1.6km from the Proposed Wind Farm and 3.1km from the nearest Proposed Turbine. A single bird was recorded flying at Rathgoonaun in September 2023. This record is within the EIAR boundary but away from any major works (turbines), temporary alterations will be required at this location including removal of vegetation. These works will not have any impact on nesting, roosting or foraging habitat for barn owl. As these works are minor in nature and owing to the considerable separation distance to the Proposed Turbines, barn owl are not discussed further.
Common scoter	The nearest record was approximately 7.2km from the Proposed Wind Farm. There were 10 observations of 4 to 35 birds diving at Aughris beach and Dunmorán Strand during the winter season and early breeding season.
Curlew	The nearest record was approximately 900m from the Proposed Wind Farm. There were 133 records of flocks of 1 to 44 birds, foraging, roosting and flying along the coast, north of the site during winter and passage season. There were also three records of birds flying and calling within 2km of the Proposed Wind Farm.

Species	Observations
Eider	The nearest record was approximately 4.3km from the Proposed Wind Farm. There were 24 observations of flocks of 1 to 20 birds roosting, foraging, and flying along the coast, north of the Proposed Wind Farm, during the winter season.
Oystercatcher	The nearest record was approximately 4.2km from the Proposed Wind Farm. There were 284 observations of flocks between 1 and 42 birds foraging, resting, and flying along the coast, north of the Proposed Wind Farm, and at Ardogelly turlough. All these observations were made during the winter and passage season (August to May inclusive).
Shoveler	The nearest record was approximately 5.2km from the Proposed Wind Farm. There were eleven observations of 4 to 42 birds foraging and resting at Ardogelly turlough, Corkagh Beg, and Farranyharpy during the winter season.
Redshank	The nearest record was approximately 1.5km from the Proposed Wind Farm. There were 74 observations of 1 to 34 birds foraging, roosting, and flying along the coast, north of the site, during the winter season and occasionally in August, September, April, and May. There was also one observation of two birds being flushed at Tonaloughan Lough in August 2021.
Black-tailed godwit	The nearest record was approximately 7.2km from the Proposed Wind Farm. Two birds were observed foraging at Aughris Beach in April 2024.
Kittiwake	The nearest record was approximately 4.3km from the Proposed Wind Farm. There were 24 observations of flocks of 2 to 65 birds flying, foraging, and nesting along the coast north of the site during the winter season, and occasionally in August, September, and May.
Purple sandpiper	The nearest record was approximately 4.6km from the Proposed Wind Farm. There were 8 observations of 1 to 43 birds foraging, flying and roosting along the coast, north of the site during the winter season.
Razorbill	The nearest record was approximately 5.6km from the Proposed Wind Farm. There were five observations of 4 to 34 birds foraging and flying along the coast, north of the Proposed Wind Farm, during the winter season.
Ring ouzel	The nearest record was approximately 600m from the Proposed Wind Farm. One bird was observed flying in April 2023 at Grangebeg Barr.
Knot	The nearest record was approximately 4.3km from the Proposed Wind Farm. There were three observations of one to six birds foraging and flying along the coast, north of the Proposed Wind Farm, in January and November 2022.
Long-tailed duck	The nearest record was approximately 7.8km from the Proposed Wind Farm. One bird was observed foraging at Dunmorran Strand in October 2021.

7.3.7.1 White-tailed eagle

White-tailed eagle was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

White-tailed eagle was recorded nine times during vantage point surveys, or on average once every 112 hours of survey. Of these observations, five were within 500m of the Proposed Wind Farm, and two were within 500m of the Proposed Turbines. All records were of individual birds observed during the winter season.

White-tailed eagle was recorded soaring over the Proposed Wind Farm. On one occasion, a juvenile being mobbed by ravens landed on the bog north of Lough Nafullow, within the Proposed Wind Farm and ~600 m from the nearest Proposed Turbines, while under attack. It was not observed otherwise landed or using habitats within the Proposed Wind Farm.

It is possible that white-tailed eagle are using the topography of the landscape around the Proposed Wind Farm to utilise thermals and search for food. There is sheep farming in the area, and carcasses of sheep that have died may provide food for white-tailed eagle.

Winter walkover survey

White-tailed eagle was recorded once during winter walkover survey. One juvenile bird was recorded soaring over the Proposed Wind Farm near Lough Nafullow in October 2023.

Breeding walkover survey

White-tailed eagle was recorded seven times during breeding walkover surveys on the same day in April 2024. All these records were of an individual bird soaring in the same area (~400 m from the nearest Proposed Turbines), all records were made within 1 hour and 10mins. Given the short time window, it was most likely the same bird repeatedly observed.

Breeding raptor survey

White-tailed eagle was recorded once during breeding raptor surveys. One bird was observed soaring in July 2023 on the coast ~5 km north of the Proposed Wind Farm.

Incidental recordings

There were 16 incidental observations of white-tailed eagle during waterbird distribution and abundance surveys. Of these, six were within the Proposed Wind Farm, eight were within 500m of the Proposed Wind Farm and the two remaining were further than 500m of the Proposed Wind Farm.

White-tailed eagles were recorded on three different days. Six observations of one or two birds flying occurred on the same day in November 2023, around the Crowagh or Dunneill Mountain area, within 500m of the Proposed Turbines. Nine observations of one bird occurred on the same day in January 2024, between Fiddangarrode Lough, partially within 500m of the Proposed Wind Farm. The last observation was of one bird soaring around Fiddanabrock in April 2024.

7.3.7.2 Golden eagle

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

Incidental recordings

One bird was observed soaring during a hen harrier roost survey over upland blanket bog in November 2021. It was near Ballygreighan, partially within 500m of the Proposed Wind Farm.

7.3.7.3 Dunlin

Dunlin 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 are provided in Confidential Survey Data Appendix 7-5.

Breeding walkover survey

Dunlin was recorded four times during breeding walkover surveys, on 3 of the 112 survey days (3%). All these records were of individual birds flying or being flushed by the surveyor in upland blanket bog. Of these records, two were within or partially within the Proposed Wind Farm site.

Dunlin was recorded in breeding plumage at three different locations. In July 2021, one bird in breeding plumage was flushed by the surveyor over suitable breeding habitat east of Lough Nafullow (partially within the Proposed Wind Farm) but did not return to its original location where it had been flushed, suggesting that there was no nest site or young present. No evidence of breeding was found or observed by the surveyor at this location when they investigated the area further. In May 2023, one bird in breeding plumage was flushed by the surveyor. This bird exhibited agitated behaviour suggesting a breeding territory in the area. This probable breeding territory (labelled DN-1 in the map in Appendix 7-5) was in a bog 120m of the Proposed Wind Farm. On a third occasion, in July 2023, the surveyor also flushed one bird in breeding plumage from a suitable breeding habitat at a different location, suggesting another breeding territory. This breeding territory (DN-2) is approximately 800m from the Proposed Wind Farm. The last record was of one dunlin flying close to DN-2. This may have been the same bird as in the other observation, and the bird flew a short distance before landing again, suggestive of a territory.

Waterbird distribution and abundance survey

Dunlin was recorded 32 times during waterbird distribution and abundance surveys, on 23 of 120 survey dates (19%). Between 1 and 320 birds were observed during the winter and passage (April, May, August and September) seasons. The average flock size was 34 birds.

One record of one bird in fading breeding plumage perched on heather was ~550 m from the Proposed Wind Farm in August 2021, in the same area identified as a likely breeding territory during breeding walkover surveys (DN-2). Therefore, it is possible that a breeding territory was also held here in 2021. The remaining 31 observations were along the coast north over 4.4km of the Proposed Wind Farm (Carrickpatrick Beach, Carricknagrauv, Trawee Beach, Aughris Beach and Dunmorán Strand) where they were recorded foraging, roosting and flying.

7.3.7.4 Golden plover

Golden plover was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests and roosts are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Golden plover was recorded 128 times during vantage point surveys, or on average once every 12 hours of winter and passage season (April, May and September) surveys. Of these records, 34 were within 500m of the Proposed Turbines. Between 1 and 150 individuals were observed during the winter and passage season. The average flock size was 30 birds.

Golden plover was recorded on the ground (likely feeding, though some birds may have been roosting) on 11 occasions. In December 2021, two birds were flushed from the bog at Crowagh or Dunneill

Mountain, within the Proposed Wind Farm (labelled as GP-1 in the maps in Appendix 7-5). In January 2022, one flock of 53 birds were recorded flying and then landing near Crowagh or Dunneill Mountain (GP-2). This area was in upland blanket bog 350m from the Proposed Wind Farm. Later the same month, four birds landed in upland blanket bog near Crowagh or Dunneill Mountain (GP-3). In February 2022, two birds were also flushed from the bog by a raven at the same location (GP-3). Again, in April 2022, a flock of 29 birds took off from the same location (GP-3). Finally, in May 2024, two birds were observed foraging on the bog at this location. GP-3 is located within 500m of the Proposed Wind Farm. In September 2022, two birds were observed on the bog at Dunowla (labelled as GP-4 in the map in Appendix 7-5), which is within the Easky Bog Ramsar site. In January 2023, one bird was flushed from the bog at the same location (GP-4). In December 2023, a flock of 60 golden plovers took off from the bog at the same location (GP-4) and circled in the surrounding area. This area is more than 1km away from the Proposed Wind Farm.

Of other records, 31 were of flocks ranging from 1 to 120 birds that may be associated with landed flocks foraging or roosting on the ground in the areas described above (GP-1 – GP-4), which is typical golden plover behaviour. The remaining 81 records were of golden plovers flying, circling and travelling over the Proposed Wind Farm and wider surroundings.

Winter walkover survey

Golden plover was recorded 19 times during winter walkover surveys, on 10 of the 55 survey dates (18%). Of these records, seven were within or partially within the Proposed Wind Farm. Between 1 and 110 individuals were observed. The average flock size was 27 birds.

Birds were flying, circling and travelling in the Proposed Wind Farm and wider surroundings. In March 2022, a flock of 15 birds was observed landing on upland blanket bog near the Belcloghy loughs within 500m of the Proposed Wind Farm (GP-5), which is within the Easky Bog Ramsar site. In October 2022, a flock of 62 birds was foraging on blanket bog within 500m of the Proposed Turbines (GP-3). In January 2024, one bird was roosting at the same location (GP-3). The remaining records were of birds flying in the Proposed Wind Farm and its surroundings.

Breeding walkover survey

Golden plover was recorded 10 times during breeding walkover surveys, on 8 of the 112 survey dates (7%). Of these records, none were within or partially within the Proposed Wind Farm. Between 1 and 25 individuals were observed. The average flock size was 5 birds.

Golden plover was recorded in breeding plumage at two different locations. In April 2022, one adult male in breeding plumage was flushed by the surveyor in a blanket bog and it is possible this bird was on a breeding territory. This possible breeding territory (labelled as GP-1-b in the maps in Appendix 7-5) is located at ~360m from the Proposed Wind Farm and within the Easky Bog Ramsar site. In April 2024, a pair was observed in breeding plumage in a bog habitat suggesting another breeding territory (GP-2-b) located 1.2km west of the Proposed Wind Farm.

The remaining records were birds flying, calling or flushed. These are likely to include wintering birds that had not yet left on migration.

Waterbird distribution and abundance survey

Golden plover was recorded 23 times during waterbird distribution and abundance surveys, on 17 of 120 survey dates (14%). Between 1 and 250 birds were observed during the winter and passage (September) seasons. The average flock size was 51 birds.

In September 2021, one flock of 16 birds was recorded roosting and foraging on upland blanket bog at Crowagh or Dunneill Mountain (labelled as GP-5 in Appendix 7-5). Eight other observations of birds

roosting and foraging were recorded further than ~1.8 km from the Proposed Wind Farm (North of Easky Lough, Lough Minna, Glendarragh Lough, Tullyvellin Loughs, Ardogelly Turlough, Aughris Head and Dunmorán Strand). Two observations of birds flying were recorded within 500m of the Proposed Wind Farm. Seven other records of birds flying were made within 1 km of the Proposed Wind Farm. The remaining observations were of birds flying and swirling further than 1.8km from the Proposed Wind Farm (North of Easky Lough, Lough Minna, Aughris Head and Dunmorán Strand).

Incidental recordings

There were 55 incidental observations of golden plover during waterbird distribution and abundance, hen harrier roost, breeding raptors, vantage point (outside of the survey effort) and breeding red grouse surveys. Between 1 and 250 birds were observed. The average flock size was 39 birds.

Golden plover was observed on 12 occasions within the Proposed Wind Farm, 24 observations were within 500m of the Proposed Wind Farm, and 12 were within 500m of the Proposed Turbines. All these observations were of 1 to 250 birds flying or calling. There were two observations of 36 and 2 birds roosting at ~1.2km and ~1km from the Proposed Wind Farm, respectively. All other observations were of birds flying and calling.

7.3.7.5 Hen harrier

Hen harrier was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to roosts are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Hen harrier was recorded 47 times during vantage point surveys, or on average once every 33 hours of winter and passage season surveys. Of these records, 20 were within 500m of the Proposed Turbines. Single birds were observed in the winter and passage (April and August) seasons.

Birds were using the Proposed Wind Farm for hunting, particularly the bog at Dunowla, the bog north of Lough Nafullow and the east of the site near Fiffangarrode Lough. Male, females and ringtails (female/juvenile) were observed hunting over the bog on 31 occasions, including within the Proposed Wind Farm. The remaining 16 observations were birds flying or travelling through the Proposed Wind Farm.

Winter walkover survey

Hen harrier was recorded seven times during winter walkover surveys, on 4 of the 55 survey dates (7%). Of these records, one was partially within the Proposed Wind Farm. Only individual birds including adult males and females were observed.

Six of these observations were of birds hunting on the bog, three of which were partially within 500m of the Proposed Wind Farm. The remaining observation was of one bird commuting at ~1.2 km of the Proposed Wind Farm (mostly to the south-west).

Hen harrier roost survey

Hen harrier was recorded 18 times during hen harrier roost surveys, on 11 of the 131 survey dates (8%). Of these records, three were partially within the Proposed Wind Farm. Only individual birds including males and ringtails were observed.

In March 2024, one adult male hen harrier was observed going to roost on upland blanket bog near Bellanaboy (labelled HH-1 in the map in Appendix 7-5). This roost area is ~2.3km from the Proposed Wind Farm. This roost was only observed being used once during the period surveyed.

The remaining observations were of birds hunting and travelling in the southern section of the Proposed Wind Farm and in the wider surroundings. This includes the roost site at Bellanaboy (HH-1).

Breeding raptor survey

Hen harrier was recorded once during breeding raptor surveys. One bird was recorded hunting within the Proposed Wind Farm in May 2021, around Lough Nafullow.

Incidental recordings

There were 17 incidental observations of hen harrier during waterbird distribution and abundance, hen harrier roost, vantage point (outside of the survey effort) and breeding red grouse surveys. Only individual birds were observed.

Hen harrier was observed on two occasions within the Proposed Wind Farm, nine records were within 500m of the Proposed Wind Farm, and three were within 500m of the Proposed Turbines. There were two observations of two adult males bombing each other in January 2024. All the remaining observations were of birds hunting, travelling and perching.

7.3.7.6 Merlin

Merlin was 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 Confidential Survey Data Appendix 7-5.

Vantage point survey

Merlin was recorded 44 times during vantage point surveys, or on average, once every 44 hours of winter and breeding season surveys. Of these records, 19 were within 500m of the Proposed Turbines. Single birds were observed including male and female birds in the winter and breeding seasons.

Birds were using the Proposed Wind Farm for hunting, particularly the bog at Tawnadremira and Crowagh or Dunneill Mountain. Males and females were observed hunting over the bog on 13 occasions, including within the Proposed Wind Farm. The remaining 31 observations were birds flying, perching, and travelling in proximity to the Proposed Wind Farm and in the wider surroundings.

Winter walkover survey

Merlin was recorded four times during winter walkover surveys, on 3 of the 55 survey dates (5%). Two of these records were within the Proposed Wind Farm. The remaining two observations were within or partially within 500m of the Proposed Wind Farm. Individual birds were observed hunting over the bog.

Breeding walkover survey

Merlin was recorded five times during breeding walkover surveys, on 5 of the 112 survey dates (4%). Of these records, none were within the Proposed Wind Farm site. Only individual birds were observed.

Individual merlin was recorded hunting twice outside the 500m of the Proposed Wind Farm over bog and conifer plantation. The remaining three observations were of birds flying over the bog; two were within 500m of the Proposed Wind Farm.

Breeding raptor survey

Merlin was recorded 22 times during breeding raptor surveys, on 13 of the 107 days of surveys (12%). One to three birds were observed simultaneously. Six of these observations were within 500m of the Proposed Wind Farm.

In May 2022, a merlin was seen displaying at Trasgarve. Later the same month, a female merlin was observed with agitated behaviour (mobbing a rook) at the same location. In June 2022, two birds were observed chasing each other; on the same day, a juvenile bird was observed in the same area. In July 2022, a pair was observed, and two chicks were heard begging; they were seen preening, and a food pass was witnessed, with the parents all in the same area. All these sightings confirmed breeding at this location (labelled ML-1 in the map in Appendix 7-5). Additional records show birds flying and calling in this area during the breeding season of 2022. This area is in exposed rock and upland blanket bog, located ~2.2km from the Proposed Wind Farm.

Of other records, most were of birds travelling, hunting, and perching on upland blanket bog within 1 km of the Proposed Wind Farm. Three of these records were partially within the Proposed Wind Farm; these birds were flying, and remains of kill and pellets were found near fence posts, suggesting hunting near Crowagh or Dunneill Mountain, within 500m of the Proposed Wind Farm.

Drone survey

A drone survey was conducted in July 2024 in an area conifer plantation at Crowagh or Dunneill Mountain partially within 500m of the Proposed Wind Farm to establish if there was a merlin nest at this location where an increase in merlin activity in the summer had been observed. The thermal sensor detected some small heat signatures in trees. The surveyor investigated these trees further using thermal binoculars and different angles. No merlin nest was found in these trees (the heat signatures may just have been perched birds). Given the quality of the imagery, both surveyor and pilot were satisfied that there was no nest in the surveyed area. This was supported by low amounts of merlin activity for the remainder of the summer.

Incidental recordings

There were 55 incidental observations of merlin during vantage point surveys, winter walkover surveys, breeding walkover surveys (outside of the survey effort), waterbird distribution and abundance surveys, hen harrier roost surveys, breeding red grouse surveys and breeding woodcock surveys. One to two birds were observed.

In May 2022, a female was observed mobbing passing gulls at Transgarve, suggesting defence of the nest site (ML-1). In June 2022, two fledglings were observed calling and preening on exposed rocks near the nest (ML-1). In August 2022, one fledgling was observed perched on a boulder near the nest site (ML-1). Two other observations of merlin calling and flying occurred in this area in May and June 2022.

Merlin was observed on 2 occasions within the Proposed Wind Farm site; 37 records were within 500m of the Proposed Wind Farm site, and 24 were within 500m of the Proposed Turbines. All these observations were of birds hunting, flying or perching. All the remaining 13 records were of birds travelling, hunting and perching and were recorded in the wider surroundings of the Proposed Wind Farm.

7.3.7.7 Peregrine falcon

Peregrine falcon was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Peregrine Falcon was recorded 17 times during vantage point surveys, or on average once every 114 hours of winter and breeding season surveys. Of these records, 13 were within 500m of the Proposed Turbines. Between one and three birds were observed in the winter and breeding seasons.

In August 2024, three peregrine fledglings were recorded flying above bogs, near Grangebeg Barr. No other sightings were made during vantage point surveys suggesting breeding behaviour in this area, however given the time of year and that they were still in a family group, the natal area of the fledglings was likely in the general area. On nine other occasions, peregrine was seen flying, hunting and soaring in the wider area around the Existing Wind Farm of Kingsmountain, Ballygreighan Barr and Lugdoon. The remaining observations were of birds flying and hunting over the Proposed Wind Farm at Crowagh or Dunneill Mountain, Tawnadremira and Dunowla.

Breeding walkover survey

Peregrine falcon was recorded once during breeding raptor surveys. This observation of one bird hunting near Farranyharpy, ~1.3km away from the Proposed Wind Farm site.

Breeding raptor survey

Peregrine falcon was recorded 22 times during breeding raptor surveys, on 12 of the 107 days of surveys (11%). One or two birds were observed at the same time. There was one record of a bird flying within the Proposed Wind Farm. The remaining 21 records were in the surrounding area: three included breeding behaviour.

In June 2022, a nest was identified near Lough Achree, ~2.6km east of the Proposed Wind Farm (labelled as PE-1 in maps in Appendix 7-5). Again, in May 2023, a male and a female were seen alarm-calling and flying up to this nest area, therefore it is possible that the pair had returned. In May 2024, one bird was observed carrying prey, near Lugdoon, ~1.2km north-east of the Proposed Wind Farm site. It is possible that this bird was provisioning a nest, but no other breeding behaviour was observed in this area that could confirm breeding. The remaining sightings were of birds hunting, soaring or flying or engaged on maintenance behaviour such as preening on the Proposed Wind Farm and wider surroundings.

Incidental recordings

There were 15 incidental observations of peregrine falcon during vantage point (outside of the survey effort), waterbirds distribution and abundance, hen harrier roost and breeding red grouse surveys. Three of these were of a breeding pair near the confirmed nest (PE-1). Two other observations of birds hunting and flying were recorded at the nest location.

In February 2024, a pair of peregrine falcons were seen displaying south of the site and partially within the Proposed Wind Farm, but no further breeding behaviour was recorded here. All other records were of birds hunting and travelling on the Proposed Wind Farm site or its wider surroundings.

7.3.7.8 Little egret

Little egret was observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Waterbird distribution and abundance survey

Little egret was recorded twice during waterbird distribution and abundance surveys, on 2 of 120 survey dates (2%). Respectively in December 2022 and November 2023, one and two birds were observed foraging at Carrownabinny and Aughris beach (~6.5km and ~7.5km of the Proposed Wind Farm).

Incidental recordings

There were two incidental observations of little egret during hen harrier roost surveys. Both observations were of two birds travelling over the bog within or partially within 500m of the Proposed Wind Farm.

7.3.7.9 Red-throated diver

Red-throated diver was observed in the winter season and passage (August). Raw survey data and maps are provided in Appendix 7-4.

Winter walkover survey

Red-throated diver was recorded once during winter walkover surveys. In October 2023, one bird was observed flying through the Proposed Wind Farm, within 500m of the Proposed Turbines.

Waterbird distribution and abundance survey

Red-throated diver was recorded 17 times during waterbird distribution and abundance surveys, on 13 of 120 survey dates (11%). Between one and three birds were observed during the winter and passage (April and August) seasons.

There were no records of birds within 500m of the Proposed Turbines or the Proposed Wind Farm. Two observations of an individual bird were recorded in August 2021 and April 2022, respectively on Lough Easky (~2.5km from the Proposed Wind Farm) and Lough Croane (~1km from the Proposed Wind Farm). The remaining 15 observations were along the coast north of the site (Pollbreen, Carrickpatrick, Pollnadivva, Carricknagrauv, Pollnimma and Dunmorán Strand) where birds were recorded foraging and preening.

7.3.7.10 Whooper swan

Whooper swan was observed in the winter and passage season. Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

Whooper swan was recorded 18 times during vantage point surveys, or on average once every 56 hours of winter season survey. Of these records, seven were within 500m of the Proposed Turbines. Between 1 and 24 individuals were observed during the winter seasons. The average flock size was 8 birds.

Whooper swan was seen once on Lough Nafullow (~600 m from the nearest Proposed Turbines). A flock of nine was seen landing on the lough and left 55 minutes later in October 2021. Similarly, on Lough Minna (~1.2 km from the nearest Proposed Turbines), a flock of six birds was observed feeding in October 2022, and a flock of 18 birds was seen landing there in October 2023 and stayed until the end of the survey (one hour after sunset), suggesting a potential roosting location. The remaining 18 observations were of birds flying or travelling through the Proposed Wind Farm and the surrounding area.

Winter walkover survey

Whooper swan was recorded once during winter walkover surveys. In October 2023, a flock of four birds was observed swimming in Lough Nafullow (within 500m of the Proposed Wind Farm).

Waterbird distribution and abundance survey

Whooper swan was recorded 34 times during waterbird distribution and abundance surveys, on 29 of 120 survey dates (24%). Between 1 and 18 birds were observed during the winter and passage (April) seasons. The average flock size was six birds.

There were no records of flocks within 500m of the Proposed Turbines or the Proposed Wind Farm. The majority of these were associated with waterbodies in the surroundings (Easky Lough, Lough Loe, Carrowabanny Lough, Lough Aghree, Ardogelly Turlough and Dunmorán Beach). They were recorded swimming, roosting, foraging, and engaging in maintenance behaviours such as preening.

Incidental recordings

There were four incidental records of whooper swan during hen harrier roost surveys. Between three and nine birds were observed. The average flock size was of six birds.

One flock of nine birds was recorded within 500m of the Proposed Turbines and within the Proposed Wind Farm site. The three other records were of birds flying in the wider surroundings, mostly to the west of the site.

7.3.7.11 Kestrel

Kestrel was observed in the breeding and winter season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to probable breeding territories are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Kestrel was recorded 468 times during vantage point surveys, or on average every 4 hours of surveys. Of these records, 266 were within 500m of the Proposed Turbines. Between 1 and 4 individuals were observed throughout all seasons, including family parties of fledged young.

In June 2024, a pair of birds was seen hunting and later started displaying within 500m of the Proposed Turbines north of the Existing Wind Farm of Kingsmountain (labelled as K-1 in the maps in Appendix 7-5). In August 2024, kestrels were seen mobbing a sparrowhawk, suggesting the defence of a breeding territory in the same area (K-1). In August and July 2022, three observations of one to four fledglings were observed hunting close to this area (K-1). In August 2022, September 2022 and July 2024, kestrels were observed mobbing other raptor species (respectively, hen harrier, merlin and buzzard) in the townlands of Dunwola (K-2), Crowagh or Dunneill Mountain (K-3) and Ballygreighan Barr (K-4), suggesting probable breeding territories close to these locations, which are within or in proximity to the Proposed Wind Farm. Also, in August 2022, two and one juvenile bird were seen hunting close to the

area in Crowagh or Dunneill Mountain (K.-3), suggesting breeding in the area. Additionally, in August 2022, kestrels were observed hunting and carrying prey towards a forestry to the south of the Proposed Wind Farm (K.-5), the surveyor added a note that a nest could be in this area. This area is partially within 500m of the Proposed Wind Farm. Finally, two records of juvenile birds were recorded in July 2022 and July 2024 ~1km to the west of K.-5. These records could be of birds fledged from nearby nests as by the month of July, kestrel fledglings can travel from their natal area.

Kestrel was also using the Proposed Wind Farm site for hunting. There were 357 records of kestrel hunting over bog, grassland and conifer plantation and perched or eating prey, all over the Proposed Wind Farm and wider surroundings. The remaining 92 observations were of birds travelling and flying around the Proposed Wind Farm and wider surroundings.

Winter walkover survey

Kestrel was recorded 26 times during winter walkover surveys, on 18 of the 55 survey dates (33%). Of these records, 21 were within or partially within the Proposed Wind Farm. Up to two individuals were observed.

Kestrel is resident at the Proposed Wind Farm. They were using the Proposed Wind Farm and wider surroundings for hunting: there were 23 records of birds hunting or perched in grassland and bog. One bird was seen carrying prey in November 2022. The bird was coming from the bog and going in the direction of a conifer plantation. At this time of year, it is unlikely to be related to breeding, but most likely a kestrel after a successful hunt, looking to perch somewhere to eat its catch.

Breeding walkover survey

Kestrel was recorded 86 times during breeding walkover surveys, on 39 of the 112 survey dates (35%). Of these records, 48 were within or partially within the Proposed Wind Farm. One or two birds were observed.

Birds used the Proposed Wind Farm and its surroundings for hunting throughout the breeding seasons. In May 2021, one bird was seen carrying prey near Doonbeakin, partially within 500m of the Proposed Wind Farm. In May 2023, one adult bird was seen carrying prey near Ballyglass within the Proposed Wind Farm site. Both observations were of a single bird without any other sign of breeding observed in the same area during other surveys. In July 2022 and in May 2023, a pair of kestrels was seen hunting together in Crowagh and Dunneill Mountain; one of these observations was within the Proposed Wind Farm, the other was approximately 1.5km to the west of the Proposed Wind Farm. Eight observations of juvenile kestrels were recorded in July 2024 near a conifer plantation along the Crowagh River in the southern part of the Proposed Wind Farm, one of which was within 500m of the Proposed Turbines. By the month of July, kestrel fledglings can travel from their natal area, so there is no evidence of kestrel breeding in that area, but it is plausible that these records were of birds originating in the nearby areas previously identified. All remaining observations were of birds flying and perching at the Proposed Wind Farm and wider surroundings.

Breeding raptor survey

Kestrel was recorded 89 times during breeding raptor surveys, on 33 of the 107 survey dates (31%). There were 41 records within the Proposed Wind Farm. One or two birds were observed.

In April 2021, two birds were seen displaying near Dunowla. No other kestrel breeding behaviour was recorded in that area, but the probable breeding areas K.-1 and K.-2 are both at ~1km from this observation, so it could be linked to either of those kestrel territories. In June 2023, two observations of a kestrel carrying prey were recorded near Doonbeakin (~700m from the Proposed Wind Farm), suggesting a potential nest in the area (K.-6). In July 2023, a pair of kestrels was observed twice north of the Existing Wind Farm of Kingsmountain near the territory K.-1, and a bird was observed with

agitated behaviour (alarm calling) ~800m to the north of K.-1. Again, in May 2024, kestrels were observed carrying prey near the same area identified during vantage point surveys (K.-1). In July 2024, a kestrel was seen multiple times hunting and three times carrying prey towards a conifer plantation near Crowagh or Dunneill Mountain on the same day and within 500m of the Proposed Turbines, suggesting a potential nest site (K.-7). The remaining 28 records were of birds hunting and flying at the Proposed Wind Farm site and its wider surroundings.

Incidental recordings

There were 69 incidental records of kestrel during vantage point, winter walkover, breeding walkover (outside of the survey effort), hen harrier roost, waterbird distribution and abundance, breeding red grouse and breeding woodcock. Of these records, 31 were within 500m of the Proposed Turbines. The remaining 38 were in the wider surroundings, particularly to the west. Birds used the Proposed Wind Farm and its surroundings for hunting, perching, and flying during the winter and breeding seasons.

Breeding summary

Seven probable breeding territories were identified during the survey period at the Proposed Wind Farm and its surroundings. In 2021, birds were seen displaying close to K.-1 and K.-2, but no other breeding behaviour was observed in that year. In 2022, three potential breeding areas were identified (K.-2, K.-3 and K.-5) suggesting at least three pairs in the surroundings of the Proposed Wind Farm. Additionally, some juveniles were observed close to K.-1, K.-3 and K.-5 suggesting successful breeding. In 2023, kestrel was observed expressing breeding behaviour again at K.-1 and a new area was identified (K.-6), suggesting a minimum of two pairs through the Proposed Wind Farm. In 2024, two new areas were identified for breeding kestrel (K.-4 and K.-7), the area previously identified as K.-1 was again used by kestrel for the third consecutive year. In 2024, at least three pair of kestrels were using the Proposed Wind Farm and its surroundings. Finally, juvenile activity was recorded in 2024, close to K.-5. The maximum number of pairs identified in a single year was three.

7.3.7.12 Grey wagtail

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

Vantage point survey

Grey wagtail was recorded once during vantage point surveys, or on average once every 922 hours of breeding season survey. One bird was recorded flying on the Dunneill River within 500m of the nearest Proposed Turbines.

Winter walkover survey

Grey wagtail was recorded four times during winter walkover surveys, on 3 of the 55 survey dates (5%). All of these records were within the Proposed Wind Farm. Up to two individuals were observed. All four records were of birds flying close to Dunneill River.

Breeding walkover survey

Grey wagtail was recorded 12 times during breeding walkover surveys, on 10 of the 112 survey dates (9%). Of these records, five were within the Proposed Wind Farm. Up to two individuals were observed.

Grey wagtail pairs were observed four times at different locations (Crowagh River, Dunneill River, Owenduff River and close to Kingsmountain). In June 2022, there was one record of an adult female carrying food to a young fledgling near Dunowla, 20m from the Proposed Wind Farm. Fledglings were

seen again in July 2022, further downstream on the same river, in the Proposed Wind Farm, confirming breeding in the area.

Waterbird distribution and abundance survey

Grey wagtail was recorded three times during waterbird distribution and abundance surveys, on 3 of 120 survey dates (3%). One and two birds were observed during the winter and early breeding (May) seasons.

The closest records were ~5 km from the Proposed Wind Farm. Birds were recorded foraging and flying at Aughris Head and near Workhouse Bridge.

Incidental recordings

There were 12 incidental records of grey wagtail during vantage point (outside of the survey effort), breeding woodcock, waterbird distribution and abundance and breeding raptor surveys. One to three birds were observed. One observation of two birds foraging was within 500m of the nearest Proposed Turbines. The remaining 11 observations were of birds flying and foraging in the surroundings of the Proposed Wind Farm site.

7.3.7.13 Lapwing

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

Vantage point survey

Lapwing was recorded twice during vantage point surveys, or on average once every 773 hours of winter and passage (August) season survey. A flock of three birds was recorded flying through the Proposed Wind Farm, within 500m of the nearest Proposed Turbines. A second flock of 45 birds was recorded flying at ~3.7 km to the west of the nearest Proposed Turbines.

Waterbird distribution and abundance survey

Lapwing was recorded 29 times during waterbird distribution and abundance surveys, on 25 of 120 survey dates (21%). Between 1 and 78 birds were observed during the winter and passage (August and September) seasons. The average flock size was 28 birds.

All records of lapwing were in the wider surroundings. Four of these records were of birds travelling, foraging on a bog within 2 km of the Proposed Wind Farm. The remaining 25 records were associated with waterbodies in the wider surroundings (mainly Ardogelly Turlough and Aughris Head) where they were recorded foraging, roosting and flying.

Incidental recordings

There was one incidental record of a flock of two lapwings flying during a breeding raptor survey at Crowagh in July 2021. This record was more than 500m from the Proposed Wind Farm.

7.3.7.14 Meadow pipit

Meadow pipit was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

Meadow pipit was recorded 382 times during vantage point surveys, or on average once every 5 hours of survey. Birds were within 500m of the nearest Proposed Turbines, as well as in the surrounding areas. Between 1 and 90 individuals were observed through all seasons. The average flock size was 3 birds.

Meadow pipit was recorded throughout the survey period and was resident at the Proposed Wind Farm, frequently flying and foraging. Birds are likely breeding at the Proposed Wind Farm, as they were observed displaying and singing during the breeding seasons 2021, 2022 and 2024. In August 2023, one juvenile meadow pipit was observed near Ballygreighan Barr (within 500m of the Proposed Wind Farm) confirming breeding in the area.

Winter walkover survey

Meadow pipit was recorded 162 times during winter walkover surveys, on 35 of the 55 survey dates (64%). Birds were within the Proposed Wind Farm, as well as in the surrounding areas. Between 1 and 31 individuals were observed. The average flock size was two birds.

Birds were recorded every winter season and are resident at the Proposed Wind Farm. In winter, they were observed flying, foraging and perching. Singing and displaying were recorded in the early breeding season in March 2022 and 2024.

Breeding walkover survey

Meadow pipit was recorded 1,044 times during breeding walkover surveys, on 92 of the 112 survey dates (82%). Birds were within the Proposed Wind Farm, as well as in the surrounding areas. Between 1 and 28 individuals were observed. The average flock size was three birds.

Meadow pipits were seen during every breeding season, displaying, singing, flying, calling, and perching, and were resident at the Proposed Wind Farm.

Incidental recordings

There were 257 incidental records of meadow pipit during vantage point, winter walkover, breeding walkover (outside of the survey effort), waterbird distribution and abundance, hen harrier roost, breeding raptor, breeding woodcock and breeding red grouse survey. Records were made throughout the survey period, within the Proposed Wind Farm and wider surroundings. Between 1 and 120 birds were observed. The average flock size was four birds. Birds were flying, foraging, perching, calling and displaying. Also, in June 2022, there was one record of a meadow pipit foraging and then entering a nest with food near Crowagh (within 500m of the Proposed Wind Farm).

7.3.7.15 Red grouse

Red grouse were observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Red grouse was recorded 162 times during vantage point surveys, or on average, once every 12 hours of the winter season survey. Of these records, 28 were within 500m of the Proposed Turbines. Between one and seven individuals were observed during the winter and breeding seasons.

In April 2022, one red grouse was recorded displaying near Dunowla (~2 km from the site, labelled as RG-1 in the maps in Appendix 7-5). Also, in September 2023, a female with six juveniles was seen foraging at ~900 m from the nearest Proposed Turbines to the west (RG-2). There were 131 records of red grouse heard calling (including multiple records within RG-1 and RG-3) from the bog and heather across the site, mostly within 500m of the Proposed Wind Farm. Additional probable breeding territories based on the location where calling birds were heard are labelled RG-3, RG-4 and RG-5. The cryptic ecology and secrecy of red grouse and thus their detectability from the vantage point location accounts for most records being clustered in this area, as it is close to the vantage points. There were also seven observations of droppings, indicating the species is using the habitat. The remaining observations were of birds being flushed by the surveyor or flying within the breeding areas outlined above.

Winter walkover survey

Red grouse was recorded ten times during winter walkover surveys, on 7 of the 55 survey dates (13%). Of these records, five were partially or within 500m of the nearest Proposed Turbines, and two of them were of red grouse droppings. Up to two individuals were observed.

In March 2024, a pair of red grouse was flushed by the surveyor; they were also calling near Crowagh or Dunneill Mountain (RG-2). Seven observations (including four of droppings) were recorded near Dunowla (RG-1). The remaining observations were of droppings and of birds flying within 500m of the Proposed Wind Farm.

Breeding walkover survey

Red grouse was recorded 44 times during breeding walkover surveys, on 29 of the 112 survey dates (26%). Of these records, eight were partially or within the Proposed Wind Farm, and three were observations of red grouse droppings and/or feathers. Up to six individuals were observed.

In July 2022, six young birds were observed near Crowagh or Dunneill Mountain (RG-1) within 500m of the nearest Proposed Turbines. In April 2023, a pair was seen at the same location. In May 2023, a pair was seen near the Existing Wind Farm of Kingsmountain (RG-4). Birds were heard calling within RG-4 as well as at Farbreagabeg (~2.8km south of the Proposed Wind Farm site). Also, in July 2023, one female and five juveniles were flushed by the surveyor within the Proposed Wind Farm near RG-2. The remaining observations were of droppings and/or feathers and of birds flushed by the surveyor, calling or flying in the wider surroundings of the Proposed Wind Farm.

Breeding red grouse survey

Red Grouse was recorded 62 times during dedicated breeding red grouse surveys, on 9 of the 10 survey dates (90%). Of these records, 19 were within the Proposed Wind Farm.

Red grouse was recorded each year the survey was undertaken (March 2022, March 2023 and February 2024). Red grouse was recorded responding (flying towards/away and calling back) to the lure call played by the surveyor or calling on 50 occasions throughout the Proposed Wind Farm and its wider surroundings. These records are within four of the previously identified breeding red grouse areas (RG-1, RG-2, RG-3 and RG-4), and two new areas have been identified as probable breeding areas for red grouse (labelled as RG-6 and RG-7), both within the Proposed Wind Farm. All these records were on heather and bog habitats suitable for breeding red grouse. Within the remaining records, eight were of red grouse droppings or feathers, and four were of birds flushed without calling or flying.

Incidental recordings

There were 79 incidental records of red grouse during hen harrier roost, breeding raptor, vantage point, winter walkover (outside of the survey effort), breeding woodcock and waterbird distribution and abundance surveys. Records were collected throughout the survey period; of these, 15 were within the Proposed Wind Farm.

Red grouse were recorded calling on 56 occasions, mostly within previously established breeding areas RG-1, RG-2, RG-3, RG-6 and RG-7. Other birds were calling close to these areas and, therefore, might be related to those breeding areas. Of the remaining records, eight were of red grouse droppings or feathers found by the surveyor, and 15 records were of birds foraging and flying in bog and heather habitats.

Breeding summary

Red grouse was heard calling throughout the survey period in different surveys, and seven breeding areas have been identified in the bog and heather habitat within the Proposed Wind Farm, especially in the west of the Proposed Wind Farm. Considering the abundance of red grouse calling records from surveys across the Proposed Wind Farm in suitable habitat (bogs and heather), the species is assumed to be breeding in all suitable habitats within the Proposed Wind Farm.

7.3.7.16 Redwing

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

Vantage point survey

Redwing was recorded 39 times during vantage point surveys, or on average, once every 26 hours of winter season survey. Birds were within 500m of the nearest Proposed Turbines, as well as in the surrounding areas. Between 1 and 79 individuals were observed during the winter season. The average flock size was 13 birds.

Birds were recorded every winter season at the Proposed Wind Farm. They were recorded flying over bog and conifer plantation or foraging in agricultural fields.

Winter walkover survey

Redwing was recorded 7 times during winter walkover surveys, on 6 of the 55 survey dates (11%). Birds were within the Proposed Wind Farm site, as well as in the surrounding areas. Between 1 and 23 individuals were observed. The average flock size was 8 birds.

Birds were recorded in three winter seasons. They were observed flying, foraging and perching, once in a mixed flock with fieldfare.

Incidental recordings

There were six incidental records of redwing during hen harrier roost and waterbird distribution and abundance surveys. Records were made over three winter seasons within the Proposed Wind Farm and wider surroundings. Between 1 and 62 birds were observed. The average flock size was 18 birds. Birds were observed flying and foraging.

7.3.7.17 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 the potential breeding area are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Snipe was recorded 166 times during vantage point surveys, or on average once every 12 hours of survey. Of these records, 83 were within 500m of the Proposed Turbines. Between 1 and 16 individuals were observed through all seasons. The average count was two birds.

Snipe were resident at the Proposed Wind Farm in both the winter and breeding season. Birds were frequently recorded flying or flushed by the surveyor or other birds. Drumming and chipping (courtship) were heard in breeding season 2022 and 2024 (June) suggesting breeding in the area (labelled SN-1 in the map in the Appendix 7-5), mostly in the west and south of the Proposed Wind Farm.

Winter walkover survey

Snipe was recorded 62 times during winter walkover surveys, on 21 of the 55 survey dates (38%). Of these records, 33 were within or partially within the Proposed Wind Farm. Between one and nine individuals were observed. The average count was one bird.

Snipes are resident at the Proposed Wind Farm in winter. Birds were frequently recorded flying or flushed by the surveyor.

Breeding walkover survey

Snipe were recorded 42 times during breeding walkover surveys, on 26 of the 112 survey dates (23%). Of these records, 13 were within or partially within the Proposed Wind Farm. One to three birds were observed.

In June and July 2022, snipe was heard drumming or singing in a bog on three different days within the Proposed Wind Farm near Crowagh or Dunneill Mountain. Also, in June 2022, one snipe was heard drumming within the Proposed Wind Farm near the Existing Wind Farm of Kingsmountain. Thus, it is likely that snipe was breeding at the Proposed Wind Farm, given their courtship behaviour and their presence throughout the core breeding season. Probable breeding territories based on the location of drumming birds are outlined in the map in Appendix 7-5, labelled SN-2 and SN-3. Two other observations of birds drumming or calling were recorded in the wider surroundings of the Proposed Wind Farm. Other records were of birds being flushed by the surveyor or flying within the Proposed Wind Farm and wider surroundings.

Waterbird distribution and abundance survey

Snipe was recorded 46 times during waterbird distribution and abundance surveys, on 22 of 120 survey dates (18%). Between 1 and 51 birds were observed during the winter and passage (August and September) seasons. The average count was four birds. Two records in February 2022 were of 18 and 31 birds - these were a total count of birds flushed by the surveyor in small groups of 2 to 3 individuals while walking on a wetland area.

There were two records on the Proposed Wind Farm. These comprised small numbers (one or two) of birds flushed from the ground. The remaining 44 records were in the wider surroundings. Snipe were

often associated with waterbodies (Belcloghy loughs, Lough Ilra, Easky Lough, Loughanaboll, Lough Aghree), where they were recorded foraging, being flushed, flying and roosting.

Incidental recordings

There were 212 incidental records of snipe during vantage point (outside of the survey effort), breeding raptor, breeding woodcock survey, breeding red grouse, waterbird distribution and abundance, hen harrier roost and winter walkover surveys. Records were made throughout the survey period, within the Proposed Wind Farm and wider surroundings. Between 1 and 14 birds were observed. The average count was one bird. Birds were recorded drumming and chipping, including within the Proposed Wind Farm near SN-1, SN-2 and SN-3. Birds were also flying, flushed and heard calling.

7.3.7.18 **Swift**

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

Vantage point survey

Swift was recorded nine times during vantage point surveys in the breeding season, or on average once every 102 hours of survey. Of these records, four were within 500m of the Proposed Turbines. Between 1 and 16 individuals were observed. The average count was four birds. All birds were recorded flying and foraging during the breeding season of 2021, 2023 and 2024.

Breeding walkover survey

Swift was recorded seven times during breeding walkover surveys, on 6 of the 112 survey dates (5%). Of these records, none were on the Proposed Wind Farm. One to two birds were observed flying and foraging.

Incidental recordings

There were three incidental records of swift during breeding raptor, breeding walkover (outside of the survey effort) and waterbird distribution and abundance surveys. Individual birds were seen flying in July and August 2021 and June 2024. One of these records was within 500m of the nearest Proposed Turbines.

7.3.7.19 **Whinchat**

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

Incidental recordings

There were two incidental records of whinchat during breeding raptor and breeding woodcock surveys. In July 2021, one bird was seen at Cloghabracka (not mapped, but within 500m of the Proposed Wind Farm). In June 2023, five birds, including three juveniles, were seen flying near the Existing Wind Farm of Kingsmountain, within 500m of the nearest Proposed Turbines. No previous signs of breeding whinchat were observed during the survey period, however the presence of a family party in June indicates breeding in the general area, although the origin is unknown.

7.3.7.20 Woodcock

Woodcock was 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 Confidential Survey Data Appendix 7-5.

Vantage point survey

Woodcock was recorded four times during vantage point surveys, or on average once every 253 hours of winter season surveys. All records were within 500m of the nearest Proposed Turbines. One bird was observed on each occasion. All records were of birds flying and being flushed by the surveyor above the bog and conifer plantation in the winter months around the Dunowla area.

Winter walkover survey

Woodcock was recorded once during winter walkover surveys. In January 2024, one bird was flushed and then flying near Dunowla, within the Proposed Wind Farm.

Breeding woodcock survey

Woodcock was recorded three times during breeding woodcock surveys, on three of the 42 survey dates (7%). Two of these records were within 500m of the Proposed Wind Farm. Male woodcock were observed roding and displaying in May and June 2021 in Crowagh or Dunneill Mountain at dusk above forestry and conifer plantation. The remaining record was of one bird heard calling near conifer plantation ~600 m from the Proposed Wind Farm. Probable breeding territories based on the location of roding and displaying birds are outlined in the map in Appendix 7-5, labelled WK-1 and WK-2.

Incidental recordings

There were 22 incidental observations of woodcock during vantage point surveys (outside of the survey effort), hen harrier roost surveys and breeding red grouse surveys. One to two birds were being flushed from roost and flying during the winter season. Of these records, 15 are within 500m of the Proposed Turbines and mostly in the eastern section of the Proposed Wind Farm, around the Existing Wind Farm of Kingsmountain. Other records were in the wider surroundings of the Proposed Wind Farm.

7.3.7.21 Yellowhammer

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

Vantage point survey

Yellowhammer was recorded once during vantage point surveys, or on average, once every 922 hours of breeding season surveys. This record was of one bird calling in scrub along Dunneill River. This record was within 500m of the nearest Proposed Turbines.

7.3.7.22 Buzzard

Buzzard was observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Buzzard was recorded 268 times during vantage point surveys, or on average once every 6 hours of survey. Of these records, 179 were within 500m of the nearest Proposed Turbines. Between one and three individuals were observed throughout all seasons.

Buzzard was resident at the Proposed Wind Farm. Birds were using bog, farmland, and conifer plantation for hunting and were observed perched, resting, and engaged in maintenance behaviours such as preening. They were also observed soaring and circling high over the Proposed Wind Farm and travelling through it. In April 2022, three birds were seen displaying within the Proposed Wind Farm. In May 2022, one bird was observed landing at a probable nest site identified by the surveyor (labelled as BZ-1 on the maps in Appendix 7-5). This area is located ~1.2km from the Proposed Wind Farm. In August 2022, one buzzard was observed perched at the previously identified probable nest site (BZ-1) and two juvenile birds were observed near the same location. At another location, also in August 2022, one to two young buzzards were heard begging three times near the Dunneill River at Dunowla, within 500m of the Proposed Turbines, suggesting breeding in this area (BZ-2). In August 2023, one juvenile bird was also heard calling at the same location (BZ-2) suggesting breeding has occurred again in this area.

Winter walkover survey

Buzzard was recorded 13 times during winter walkover surveys, on 9 of the 55 survey dates (16%). Of these records, nine were within or partially within the Proposed Wind Farm. Between 1 and 3 individuals were observed.

Birds were using bog, grassland and conifer plantation in the Proposed Wind Farm for hunting and preening on one occasion. Three records of buzzards soaring (twice as a pair and once three birds together) within the Proposed Wind Farm. The remaining observations were single birds flying and travelling through the Proposed Wind Farm and its wider surroundings.

Breeding walkover survey

Buzzard was recorded 84 times during breeding walkover surveys, on 43 of the 112 survey dates (38%). Of these records, 46 were within or partially within the Proposed Wind Farm. Up to four individuals were observed.

In May 2022, a pair of buzzards was recorded displaying and calling together near the Existing Wind Farm of Dunneill. Pairs of buzzards were regularly seen hunting and flying together in April 2021, May 2022, and May 2023 on the Proposed Wind Farm; two of these observations were close to BZ-1. Three records of birds in July 2022 and June 2023 were of birds expressing agitated behaviour (repeatedly calling) close to the BZ-1 area, again indicating breeding here in consecutive years. The remaining observations were of birds flying, soaring and hunting over the Proposed Wind Farm site and its wider surroundings.

Breeding raptor survey

Buzzard was recorded 82 times during breeding raptor surveys, on 35 of the 107 survey dates (33%). Between one and three birds were observed. Of these records, 29 were within the Proposed Wind Farm. Up to three birds were observed.

In July 2022, buzzards were seen with agitated behaviour around Dunowla (BZ-2) due to the close proximity the surveyor. After the surveyor moved away from the area, the buzzard flew back into the conifer plantation. Later that same day, a buzzard was also seen flying towards the same conifer plantation, with prey, confirming a nest at this location.

Two observations of birds displaying or expressing territorial behaviours were recorded at two different locations more than 1km from the Proposed Wind Farm. Two pairs of buzzards were observed within the Proposed Wind Farm; three additional pairs were observed in the wider surroundings. The remaining observations were of birds hunting, flying, soaring, and perching over the Proposed Wind Farm and the wider surrounding area.

Incidental recordings

There were 43 incidental observations of buzzards during vantage point surveys (outside of the survey effort), hen harrier roost surveys, breeding raptor surveys, breeding woodcock surveys, breeding red grouse surveys and waterbird distribution and abundance surveys. One to three birds were recorded. Of these records, 15 are within the Proposed Wind Farm and most of buzzard activity occurred in the northern section of the Proposed Wind Farm.

In August 2022, on two separate days, one and two buzzard chicks were heard begging and calling from the nest previously identified at BZ-2. Buzzards were seen hunting and travelling over the Proposed Wind Farm with a higher activity around the nest (BZ-2). Other records of buzzards hunting, travelling and soaring are located in the wider surroundings of the Proposed Wind Farm.

7.3.7.23 Long-eared Owl

Long-eared owl was observed in their early breeding season. Raw survey data and maps are provided in Appendix 7-4.

Incidental recordings

There were two incidental observations of a long-eared owl during vantage point surveys (outside of the survey effort). In March 2024, one bird was heard calling in a conifer plantation on the Proposed Wind Farm. No other birds were seen close to this location and breeding activity was not recorded. Long-eared owl is a nocturnal species, and cryptic during daylight hours, when the majority of surveys are conducted. However, this observation was realised within a few meters from two breeding woodcock transects (50m of WKT1 and 250m of WKT3) and those surveys are conducted at dusk when long-eared owl chicks are highly vocal and easily detectable. No incidental records were made during those surveys. As such, it is considered that there was no breeding territory at this location. Another observation of a bird in flight occurred in February 2024 at Bellafarney (~4.6 km from the Proposed Wind Farm) during the day.

7.3.7.24 Sparrowhawk

Sparrowhawk were observed in the winter and breeding season. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage Point Survey

Sparrowhawk was recorded 82 times during vantage point surveys, or on average once every 19 hours of survey. Of these records, 21 were within 500m of the Proposed Turbines. Up to two birds were observed through all seasons.

Sparrowhawk was resident at the Proposed Wind Farm. Birds were using bog, agricultural grassland and conifer plantation for hunting and were observed perched. They were also observed soaring, circling, and travelling through the Proposed Wind Farm. In June 2021, one bird was seen carrying prey over forestry near the Existing Wind Farm of Dunneill. In March 2024, a pair of sparrowhawks was seen displaying over a conifer plantation in the same area (labelled SH-1 on the maps in Appendix

7-5). In February 2024, a sparrowhawk was seen displaying over a conifer plantation near the Existing Wind Farm of Kingsmountain on two different occasions (SH-2). On the same day, a pair was also seen displaying together in the same area. In September 2024, a sparrowhawk was observed mobbing a kestrel close to this area. Also, in March 2024, a sparrowhawk was observed mobbing a raven outside 500m of the Proposed Wind Farm.

Winter Walkover Survey

Sparrowhawk was recorded seven times during winter walkover surveys, on 6 of the 55 survey dates (11%). Of these records, four were within or partially within the Proposed Wind Farm. Only individual birds were observed.

Birds were using the bog, grassland and conifer plantation in the Proposed Wind Farm for hunting. The remaining observations were of birds flying and travelling at the Proposed Wind Farm and surroundings.

Breeding Walkover Survey

Sparrowhawk was recorded 8 times during breeding walkover surveys, on 8 of the 112 survey dates (7%). Both males and females were observed. Of these records, four were within or partially within the Proposed Wind Farm. Only individual birds were observed. Birds were observed hunting three times within 500m of the Proposed Wind Farm; the other records were of birds soaring and flying on the Proposed Wind Farm and its wider surroundings.

Breeding Raptor Survey

Sparrowhawk was recorded 18 times during breeding raptor surveys, on 13 of the 107 survey dates (12%). Between one and two birds were observed. Of these records, five were within the Proposed Wind Farm.

In May 2023, one sparrowhawk was observed displaying over a conifer plantation at Crowagh or Dunneill Mountain, 500m from the Proposed Wind Farm. In July 2023, a pair was seen flying together over conifer plantation, improved grassland and bogs near the previously identified possible breeding area SH-1. In May 2024, one bird was recorded alarm calling near the Existing Wind Farm of Kingsmountain. The remaining 16 records were in the surrounding area, but none included breeding behaviour: sparrowhawks were hunting and travelling around the Proposed Wind Farm and wider surroundings.

Incidental Recordings

There were 26 incidental records of sparrowhawk during hen harrier roost, winter walkover surveys, vantage point (outside of the survey effort), breeding raptor, breeding red grouse and waterbird distribution surveys. Only individual birds were observed in the winter and breeding seasons. There were five records in the Proposed Wind Farm. These were of birds flying and flushed by the surveyor. The remaining 25 observations were in the wider surroundings. These birds were hunting and flying.

7.3.8 Collision Monitoring Results

7.3.8.1 Existing Kingsmountain Wind Farm

7.3.8.1.1 Searcher Efficiency Trials

There were 76 searcher efficiency trials conducted between April 2024 and March 2025. The carcasses used in the trials were: 4 scavenged bullfinch legs, 2 house martins, 15 pigeon species, 5 robins, 5 rooks, 2 thrush species, 6 starlings and 37 bat species. A total of 73 out of 76 carcasses were found by the dogs. Searcher efficiency was 97% (median = 0.97, 95% confidence intervals [CI] 0.86-0.99).

7.3.8.1.2 Carcass Persistence Trials

There were 24 carcass persistence trials conducted between April 2024 and March 2025. During these, 21 carcasses out of 24 were predated. The median number of days a carcass persisted was 2.89.

7.3.8.1.3 Carcass Searches

A total of seven carcasses were found during carcass search surveys. Of these, four were birds. These were: one intact but decomposed juvenile kestrel found 15m from T4, one scavenged mistle thrush recorded 40m from T1, one featherspot of an unidentified bird species found 20m from T5, and one featherspot of a thrush species found 24m from T8.

7.3.8.1.4 Mortality Estimation

In this estimation, 100% of the search area was surveyed and detection probability was 0.14 [CI 0.09-0.21]). The model estimates with 90% confidence that between 7 and 54 bird fatalities occurred (estimated mortality = 23.27 birds [CI 6.94-54.49]. This scales to 2.33 [CI 0.69-5.45] birds per turbine per year.

7.3.8.2 Existing Dunneill Wind Farm

7.3.8.2.1 Searcher Efficiency Trials

There were ten searcher efficiency trials conducted during carcass searches to inform the extension of life application for the Existing Dunneill Wind Farm from April 2021 to March 2022. The carcasses used in the trials were: six pheasants, one mallard and three bat species. A total of eight out of the ten carcasses were found, although one was scavenged before the trial took place.

A further 19 trials were conducted from April 2024 to March 2025. The carcasses used in the trials were: one chaffinch, three crow species, one house martin, one kestrel, two Manx shearwaters, one passerine species, one rook, one starling, one thrush species and seven bat species. All 19 carcasses were located.

Finally, 116 efficiency trials were carried out from April 2025 to March 2026 using a variety of bird and bat species carcasses. A total of 112 out of 116 carcasses were located. Searcher efficiency was 97% (median = 0.97 [CI 0.92-0.98]).

7.3.8.2.2 Carcass Persistence Trials

There were four carcass persistence trials conducted from April 2021 to March 2022. All carcasses were predated. A further eight trials were conducted from April 2024 to March 2025. A total of five carcasses

were predated; three were still present after the trial. The median number of days a carcass persisted was 13.98. Finally, 16 trials were conducted from April 2025 to March 2026. A total of 14 carcasses were predated; 2 were still present after the trial. The median number of days a carcass persisted was 5.28.

7.3.8.2.3 **Carcass Searches**

A total of four carcasses were found during searches from April 2021 to March 2022. Of these, two were birds. These were two featherspots of corvid species; one was located 57m from T1 and the other was 61m from T8.

A total of 17 carcasses were found during searches from April 2024 to March 2025. Of these, 13 were birds. These were: two blackbirds (one featherspot 35m from T5, and one scavenged carcass 23m from T1), one scavenged chaffinch 25m from T12, two corvid featherspots (one 42m from T9 and the other 59m from T8), one scavenged house martin 23m from T9, one snipe featherspot 32m from T9, one scavenged starling 12m from T8, three thrush species (one intact carcass 10m from T10, one scavenged carcass 19m from T9, one featherspot 44m from T9), and two featherspots of unknown bird species (one 35m from T9 and the other was 28m from T9).

A total of 12 carcasses were found during searches from April 2025 to March 2026. Of these, nine were birds. These were: two blackbirds (one intact female 12m from T6 and one featherspot of a male 3m from T3), one scavenged mistle thrush 23m from T3, one intact decomposed sparrowhawk 14m from T13, two featherspots of thrush species (one was 24m from T1 and the other 37m from T4), one intact fresh whitethroat 39m from T4, and two unknown bird species (one scavenged carcass 6m from T13 and an intact decomposed carcass 36m from T8).

7.3.8.2.4 **Mortality Estimation**

A mortality estimation was conducted for the two most recent years of carcass searches. In the estimation from April 2024 to March 2025, 100% of the search area was surveyed and detection probability was 0.51 [CI 0.33-0.66]. The model estimates with 90% confidence that between 11 and 33 bird fatalities occurred (estimated mortality = 19.23 birds [CI 11.41-33.2]). This scales to 1.48 (CI 0.88-2.55) birds per turbine per year.

In the estimation from April 2025 to March 2026, 100% of the search area was surveyed and detection probability was 0.35 [CI 0.21-0.51]. The model estimates with 90% confidence that between 11 and 45 bird fatalities occurred (estimated mortality = 21.15 birds [CI 10.68-45.26]). This scales to 1.63 (CI 0.82-3.48) birds per turbine per year, which is similar to the results of the preceding year and lower than that of the Existing Kingsmountain Wind Farm.

7.4 **Receptor Evaluation**

7.4.1 **Determination of Population Importance**

A determination of population importance for birds within the Proposed Wind Farm is provided below, following criteria described in Section 7-2-5. Estimates of national population sizes were obtained from the most recent 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, a review of IWeBS sites within Sligo¹, or derived from national estimates, according to what literature was available.

¹ Please note that these figures are estimates based on the best available information but should be interpreted with a degree of caution.

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

7.4.1.1 White-tailed eagle

White-tailed eagle was recorded during the breeding and winter seasons. This species has been the subject of significant reintroduction efforts between 2007-2011 and 2020-2025 in attempts to reintroduce and bolster the Irish population. As a result, the estimated national (Republic of Ireland; ROI) population is 12 pairs (Crowe *et al.*, 2021). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

White-tailed eagle was seen 34 times during the survey period. The species has been regularly seen soaring over the Proposed Wind Farm and may be using thermals to search for food in the landscape. A juvenile was once seen landing on the Proposed Wind Farm site while being mobbed by a raven. No breeding behaviour was recorded during surveys, but, as the species remains a rare breeding bird in Ireland and Northern Ireland (Crowe *et al.*, 2021) and has been regularly observed at the Proposed Wind Farm site, this species is considered to be a population of **National Importance** on a precautionary basis.

7.4.1.2 Golden eagle

Golden eagle was recorded during the winter season only. The estimated national (ROI) population is five pairs (Article 12 Reporting). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

During the survey period, golden eagle was observed once, in November 2021. One bird was seen soaring within 500m of the Proposed Wind Farm.

Golden eagle was reintroduced to Ireland in 2001 but remains a rare breeding bird in Ireland and Northern Ireland (Crowe *et al.*, 2021). However, given that there was only one observation of one bird during the entirety of the survey period and was not using habitats in the Proposed Wind Farm, this species is considered to be a population of **No Ecological Importance**.

7.4.1.3 Dunlin

Dunlin was recorded during breeding and winter seasons. These seasonal populations are discussed separately.

Breeding

The estimated national (ROI) breeding population of dunlin is 20-50 pairs (Article 12 Reporting). Therefore, regularly occurring population of one pair is required for classification as National Importance.

Two probable breeding areas were identified during the breeding season 2023. One of these areas is approximately 120m from the Proposed Wind Farm, and the second area is approximately 800m from the Proposed Wind Farm. Thus, at least two breeding areas for dunlin were identified, and the breeding population of dunlin at the Proposed Wind Farm is of **National Importance**.

Wintering

The estimated national (ROI) wintering population is 51,270 birds (Burke *et al.*, 2025). Therefore, a regularly occurring population of 512 birds is required for classification as National Importance. There are no published figures for the County Sligo population. To estimate the county population, a review of all Sligo I-WeBS sites was conducted. The following mean count values have been recorded for I-WeBS sites over the most recent 5-season period (2018/19 – 2022/23). Note that sites with a mean of zero birds were excluded from this list:

- Ballysadare Bay: 363
- Drumcliff Bay Estuary: 448
- Outer Sligo Bay: 1
- Sligo Harbour: 561

Based on the above, the mean wintering population from I-WeBS sites in Sligo is 1,373 birds. Therefore, a regularly occurring population of 14 birds is required for classification as County Importance.

Up to 320 birds were recorded in the wider surroundings, however no wintering birds were recorded at the Proposed Wind Farm during surveys. In addition, 9 for the 17 Proposed Turbines will be sited in conifer plantation, which is of no ecological value for this species. Thus, the Proposed Wind Farm is of **No Ecological Importance** to the wintering population for this species.

7.4.1.4 Golden plover

Golden Plover was recorded during breeding and winter seasons. These seasonal populations are discussed separately.

Breeding

The estimated national (ROI) breeding population of golden plover is 84-98 pairs (Article 12 Reporting). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

Two probable breeding areas were identified during the breeding season of 2021 and 2024. One of these areas is partially within 500m of the Proposed Wind Farm, the second area is ~1.2 km of the Proposed Wind Farm site. Thus, the breeding population of golden plover at the Proposed Wind Farm is of **National Importance**.

Wintering

The estimated national (ROI) wintering population is 82,190 birds (Burke *et al.*, 2025). Therefore, a regularly occurring population of 822 birds is required for classification as National Importance. There are no published figures for the County Sligo population. To estimate the county population, a review of all Sligo I-WeBS sites was conducted. It should be noted that the population estimate based on I-WeBS figures alone is likely to be an underestimate of the county population. As per Burke *et al.* (2025) in relation to the golden plover count, 'these estimates must be treated as conservative on the basis that they are widely disturbed in a variety of wetland and non-wetland habitats that are under-sampled during I-WeBS.' This is due to the foraging ecology of wintering golden plover that will utilise agricultural grasslands and other terrestrial habitats not typically surveyed during I-WeBS counts, as this is a survey of wetland habitats. The following mean count values have been recorded for I-WeBS sites over the most recent 5-season period (2018/19 – 2022/23). Note that sites with a mean of zero birds were excluded from this list:

- Ballysadare Bay: 37

- > Drumcliff Bay Estuary: 216
- > Lough Gara: 4
- > Outer Sligo Bay: 3
- > Sligo Harbour: 59

Based on the above, the mean wintering population from I-WeBS sites in Sligo is 319 birds. Therefore, regularly occurring population of three birds is required for classification as County Importance.

Although not listed as an SCI of Ballysadare Bay SPA, the presence of golden plover is stated to be of particular note in the SPA site synopsis, and the species is listed on Annex I. The site synopsis of this SPA stated a peak count of 301 golden plover during the winter and autumn season. This is the peak count for four winters in the period 1995/1996 to 1999/2000. The site synopsis was published in 2010, and no later counts are available, therefore this provides the most up to date data. The foraging range of golden plover can extend to 12km (Gillings *et al.*, 1999). The separation distance between the Proposed Wind Farm and this SPA is ~11km, therefore there is potential for the golden plover population in the SPA to be present at the Proposed Wind Farm. However, suitable habitats for this species recorded within the Proposed Wind Farm are common and widespread in the intervening landscape between the Proposed Wind Farm and the SPA, and the Proposed Wind Farm is close to the maximum foraging range. Therefore, it is unlikely that the golden plover population at this SPA are utilising the Proposed Wind Farm.

Flocks of up to 150 birds were recorded at the Proposed Wind Farm and up to 250 birds in the wider surroundings during the surveys. Thus, the wintering golden plover population at the Proposed Wind Farm is of **County Importance**.

7.4.1.5 Hen harrier

Hen harrier was recorded during breeding and winter seasons. These seasonal populations are discussed separately.

Breeding

The estimated national (ROI) breeding population of hen harrier is 85-106 breeding pairs (The 2022 National Survey of breeding Hen Harrier in Ireland, Ruddock *et al.*, 2024). Therefore, a regularly occurring population of 1-2 breeding pairs is required for classification as National Importance.

No breeding behaviour was recorded at the Proposed Wind Farm during the survey period. Hen harrier was infrequently recorded hunting during the core breeding season (three observations). Therefore, the hen harrier population at the Proposed Wind Farm during the breeding season is considered to be of **No Ecological Importance**.

Wintering

The estimated national (ROI) wintering population is 311-435 birds (Article 12 Reporting). Therefore, a regularly occurring wintering population of 3-4 birds is required for classification as National Importance.

There is only one observation of one bird roosting near Bellanaboy (~2.3 km of the Proposed Wind Farm). Hen harrier was regularly observed hunting at the Proposed Wind Farm during winter. Up to three birds were seen at the same time during the survey period (two males and a female). Thus, the hen harrier population at the Proposed Wind Farm is considered to be of **National Importance**.

7.4.1.6 Merlin

Merlin was recorded during the breeding and winter seasons. The estimated national (ROI) population is 200-400 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 2-4 pairs is required for classification as National Importance. There are no published figures for the County Sligo population. However, according to the distribution of merlin across Ireland in the bird atlas, 3.45% of the population is found in Sligo in the breeding season. Extrapolating this, the Sligo breeding population is estimated to be 7-14 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

A pair of merlin were confirmed to be breeding near Easky Lough outside the Proposed Wind Farm during the 2022 breeding season. Merlin was regularly recorded hunting on the Proposed Wind Farm. Considering the core foraging range of merlin is 5 km (SNH, 2016) and the identified nest for is located approximately 2.2km from the Proposed Wind Farm it is possible that birds associated with this breeding territory use the habitats in the Proposed Wind Farm for hunting and provisioning the nest. Thus, this species is considered to be a population of **County Importance**.

7.4.1.7 Peregrine falcon

Peregrine falcon was recorded during the breeding and winter seasons. The estimated national (ROI) population is 425 pairs (Article 12 Reporting). Therefore, a regularly occurring population of four pairs is required for classification as National Importance. There are no published figures for the County Sligo population. However, according to the distribution of peregrine falcon across Ireland in the bird atlas, 3.01% of the population is found in Sligo in the breeding season. Extrapolating this, the Sligo breeding population is estimated to be 13 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

A breeding pair of peregrines were identified in 2022 in the wider surroundings during surveys, ~2.6 km of the Proposed Wind Farm. The core foraging range of peregrine falcon is 2 km (SNH, 2016), therefore birds seen at the Proposed Wind Farm site during the breeding season are unlikely to be associated with this nest. However, most of the bird activity was on and to the east of the Proposed Wind Farm (~2.5 km of the nest) with some flight leaving the area in the direction of the nest. These observed flightlines establish a pattern of movement that could be connected to the identified nest site. Thus, on a precautionary basis, it is assumed that these birds are associated with the nest, and the species is considered to be a population of **County Importance**.

7.4.1.8 Little egret

Little egret was recorded during the winter season. Little egret was recorded four times during surveys, with up to two individuals. Two birds were recorded once travelling over the Proposed Wind Farm site over the entire survey period. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species.

7.4.1.9 Red-throated diver

Red-throated diver was recorded during the winter season. This species was recorded on 18 occasions during the survey period. However, the majority of records were along the coast, more than 4km north of the Proposed Wind Farm, and only one bird was recorded within the Proposed Wind Farm. This bird was observed flying over the Proposed Wind Farm in October 2023 and was not using the habitats within. Thus, the red-throated diver population does not occur regularly at the Proposed Wind Farm site and, the Proposed Wind Farm site is of **No Ecological Importance** to this species.

7.4.1.10 Whooper swan

Whooper swan was recorded in the winter and passage seasons. The estimated national (ROI) wintering population is 14,467 (Burke *et al.*, 2021a). Therefore, a regularly occurring population of 145 birds is required for classification as National Importance. The estimated Sligo wintering population is 273 (Burke *et al.*, 2021a). Therefore, regularly occurring population of three birds is required for classification as County Importance.

Although not listed as an SCI of Ballysadare Bay SPA, the presence of whooper swan is stated to be of particular note in the SPA site synopsis, and the species is listed on Annex I. The site synopsis of this SPA stated a peak count of 15 whooper swan during the winter and autumn season. This is the peak count for four winters in the period 1995/1996 to 1999/2000. The site synopsis was published in 2010, and no later counts are available, therefore this provides the most up to date data. However, the core foraging range of whooper swan is 5km (SNH, 2016). The separation distance between the Proposed Wind Farm and this SPA is ~11km. As such, it is unlikely the whooper swan population in the SPA is utilising the Proposed Wind Farm.

A flock of nine birds was observed once landing on Lough Nafullow (~100m from the Proposed Wind Farm). Also, flocks of County Importance (up to 24 birds) were recorded flying over the Proposed Wind Farm and surrounding areas. One flock of six birds was observed foraging at Lough Minna (~900 m of the Proposed Wind Farm site).

The population recorded within 5km of the Proposed Wind Farm Site (the core foraging range of whooper swan; SNH, 2016) was considered to be of **County Importance** on a precautionary basis given that flocks of County Importance were observed flying through the Proposed Wind Farm on a number of occasions.

7.4.1.11 Kestrel

Kestrel was recorded during the breeding and winter seasons. The estimated national (ROI) population is 13,500 birds (Article 12 Reporting). Therefore, a regularly occurring population of 135 birds is required for classification as of National Importance. There are no published figures for the county Sligo population. However, according to the distribution of kestrel across Ireland in the breeding bird atlas, 3.16% of the breeding population is found in Sligo. Extrapolating this, the Sligo population is estimated to be 427 birds. Therefore, a regularly occurring population of four birds is required for classification of County Importance.

Kestrel was resident at the Proposed Wind Farm site. Seven breeding territories were identified, four of which are within the Proposed Wind Farm, two within 500m of the Proposed Wind Farm and the remaining was approximately 700m from the Proposed Wind Farm. A maximum of three pairs were observed around the Proposed Wind Farm in 2022 and 2024, and two breeding territories in 2023. Therefore, up to six adult birds were regularly occurring at the Proposed Wind Farm. Thus, this species is considered to be a population of **County Importance**.

7.4.1.12 Grey wagtail

Grey wagtail is a BOCCI Red Listed species for breeding populations only in Ireland. Grey wagtail was observed in the breeding season (including March) and. However, this species is abundant (the national population is estimated to be 50,768; Lewis *et al.*, 2019) and widespread across Ireland (NBDC Biodiversity Maps). As such, the population recorded at the Proposed Wind Farm is considered to be of **Local Importance (Lower Value)**.

7.4.1.13 Lapwing

The estimated national (ROI) wintering population is 67,700 (Burke *et al.* 2025). Therefore, a regularly occurring population of 677 birds is required for classification as of National Importance. There are no published figures for the county Sligo population. To estimate the county population, a review of all Sligo I-WeBS sites was conducted. It should be noted that the population estimate based on I-WeBS figures alone is likely to be an underestimate of the county population. This is due to the foraging ecology of wintering lapwing that will utilise agricultural grasslands and other terrestrial habitats not typically surveyed during I-WeBS counts, as this is a survey of wetland habitats. The following mean count values have been recorded for I-WeBS sites over the most recent 5-season period (2018/19 – 2022/23). Note that sites with a mean of zero birds were excluded from this list:

- Ballysadare Bay: 56
- Drumcliff Bay Estuary: 108
- Lough Gara: 57
- Outer Sligo Bay: 3
- Sligo Harbour: 123

Flocks of up to 78 lapwings were recorded during winter surveys. These flocks were using waterbodies in the wider surroundings and were not birds using the Proposed Wind Farm. There was only one flock of two birds recorded travelling over the Proposed Wind Farm during the entire survey period. These birds are likely to be associated with those from the wider surroundings. Thus, the Proposed Wind Farm is of **No Ecological Importance** for this species.

7.4.1.14 Meadow pipit

Meadow pipit is a BOCCI Red Listed species for breeding populations only in Ireland. Meadow pipit was recorded in the breeding and winter seasons. Birds were resident and breeding within the Proposed Wind Farm and wider area. 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, the population recorded at the Wind Farm Site is considered to be of **Local Importance (Lower Value)**.

7.4.1.15 Red grouse

Red grouse was recorded during the breeding and winter seasons. The estimated national (ROI) population is 1,898 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 19 pairs is required for classification as National Importance. There are no published figures for the County Sligo population. However, according to the distribution of red grouse across Ireland in the bird atlas, 2.63% of the population is found in Sligo in the breeding season. Extrapolating this, the Sligo breeding population is estimated to be 50 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

There were seven probable breeding areas for red grouse identified during the survey period. Five of these probable breeding areas are within the Proposed Wind Farm, the two remaining areas are approximately 1 km from the Proposed Wind Farm. Therefore, given the sedentary nature of this species, it is possible to estimate at least one pair for each breeding area identified, and minimum of five pair of red grouse would occur within the Proposed Wind Farm. Thus, this species is considered to be a population of **County Importance**.

7.4.1.16 Redwing

Redwing is a BOCCI Red Listed species for wintering population only in Ireland. Redwing was recorded in the winter season. Birds were foraging in the Proposed Wind Farm and wider area. 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)**.

7.4.1.17 Snipe

Snipe was recorded during the breeding and winter seasons. The estimated national (ROI) population is 4,275 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 43 pairs is required for classification as National Importance. There are no published figures for the County Sligo population. However, according to the distribution of snipe across Ireland in the bird atlas, 3.37% of the population is found in Sligo in the breeding season. Extrapolating this, the Sligo breeding population is estimated to be 144 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

There were three probable breeding territories for snipe identified during breeding season surveys, along with several sporadic records of males chipping and drumming within the Proposed Wind Farm and surrounding areas. Two of these territories are located partially within the Proposed Wind Farm. A third area was identified ~370m west of the Proposed Wind Farm. The evidence suggests that there is a regularly occurring population of least two pairs (indicated by calling males in two locations) within the Proposed Wind Farm during the breeding season. Thus, this species is considered to be a population of **County Importance**.

7.4.1.18 Swift

Swift was recorded in the breeding season. The estimated national (ROI) breeding population is 51,728 birds (Lewis *et al.*, 2019). Based on this, a regularly occurring population of 517 birds is required for classification as National Importance. In the absence of more detailed county-level information, the county population is estimated to be 1989 birds, assuming an even spatial distribution across the 26 counties of Ireland covered by these data. Therefore, a regularly occurring population of 20 birds is required for classification as County Importance.

There were 19 observations of between one and 16 birds foraging over the Proposed Wind Farm during the 2021, 2023 and 2024 breeding seasons, but no breeding activity or colonies were identified. Thus, this species is considered to be a population of **Local Importance (Higher Value)**.

7.4.1.19 Whinchat

Whinchat was recorded twice during the breeding season (2021 and 2023). The estimated national (ROI) population is 51-100 pairs (Article 12 Reporting). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

Whinchat was recorded twice within the survey period. One of these observations was of five birds, including three juveniles, flying within the Proposed Wind Farm. Taking a precautionary approach (given the species unfavourable conservation status) the population recorded at the Wind Farm Site was assigned **National Importance**.

7.4.1.20 Woodcock

Woodcock is BoCCI Red Listed during the breeding season in Ireland. The estimated national breeding population (ROI) is 27,434 roding males (O'Neill *et al.*, 2026). Therefore, a regularly occurring population of 27 roding males is required for classification as National Importance. There are no published figures for the county Sligo population. However, according to the distribution of woodcock across Ireland in the breeding bird atlas, 3.23% of the population is found in Sligo. Extrapolating this,

the Sligo population is estimated to be 886 roding males. Therefore, a regularly occurring population of nine roding males is required for classification of County Importance.

There were two breeding areas identified at, or within 500m of, the Proposed Wind Farm in 2021. The breeding population recorded at the Proposed Wind Farm is considered to be of **Local Importance (Higher Value)**.

7.4.1.21 Yellowhammer

The national population of yellowhammer is estimated to be 217,252 birds (Lewis *et al.*, 2019). Yellowhammer does not occur in county Sligo in enough numbers to be shown in the distribution map provided in Lewis *et al.* (2019) and is not listed in either breeding or wintering Bird Atlas (2007-2011) in the hectads covering the Proposed Wind Farm.

This species was recorded once calling in July 2021, within the Proposed Wind Farm. There was no evidence of breeding, especially considering that the species is highly detectable due to its distinguishable song. Thus, this species is considered to be a population of **No Ecological Importance**.

7.4.1.22 Buzzard

Buzzard was recorded during the breeding and winter seasons. The estimated national (ROI) population is 1,938 pairs (Article 12 Reporting). 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. One nest was identified within the Proposed Wind Farm. However, buzzard is on the BoCCI Green List, 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)**.

7.4.1.23 Long-eared owl

Long-eared owl was recorded during the breeding season. The estimated national (ROI) population is 1,484-2,703 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 15-27 pairs is required for classification as National Importance. There are no published figures for the county Sligo population. However, according to the distribution of long-eared owl across Ireland in the breeding bird atlas, 2.4% of the population is found in Sligo. Extrapolating this, the Sligo population is estimated to be 36-65 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

One bird was recorded calling once within the Proposed Wind Farm in March 2024. No breeding territory could be identified and considering the cryptic nature of this species and the difficulty of recorded it, no other observations were made. Long-eared owl is on the BoCCI Green List, indicating it is lower conservation priority. It is not a habitat generalist, having specific habitat requirements of woodland, treelines or large hedgerows for breeding. However, this habitat is widespread in the Proposed Wind Farm site and wider surroundings and is not scarce in Sligo. Thus, the Proposed Wind Farm is of **No Ecological Importance** for this species.

7.4.1.24 Sparrowhawk

Sparrowhawk was recorded during the breeding and wintering seasons. The estimated national (ROI) population of sparrowhawk is 11,859 individuals (Article 12 Reporting). Based on this, a regularly occurring population of 118 individuals is required for classification as 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.

Two sparrowhawk breeding territories were identified partially within the Proposed Wind Farm in 2021 and 2024. However, sparrowhawk is on the BoCCI Green List, 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)**.

7.4.2 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
White-tailed eagle	Annex I Birds Directive & Red List & Raptor	<u>All Seasons</u> National Importance	White-tailed eagle was not recorded using habitats within the Proposed Wind Farm. There is no potential for significant habitat loss for this species. Birds were recorded within 500m of the Proposed Wind Farm. Birds may be using thermals to soar and search the landscape for food. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of disturbance/displacement and collision risk is required for white-tailed eagle.	Yes
Golden eagle	Annex I Birds Directive & Red List & Raptor	<u>Wintering</u> No population of Ecological Importance	No population of ecological importance was recorded utilising the Proposed Wind Farm 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
Dunlin	Annex I Birds Directive & Red List	<u>Breeding</u>	Dunlin were recorded using habitat within the Proposed Wind Farm. There is potential for significant habitat loss for this species.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		National Importance <u>Wintering</u> No population of Ecological Importance	Dunlin were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of significant habitat loss and disturbance/displacement is required for dunlin.	
Golden plover	Annex I Birds Directive & Red List	<u>Breeding</u> National Importance <u>Wintering</u> County Importance	Golden plover was recorded using habitats within the Proposed Wind Farm for roosting, landing and foraging. There is potential for significant habitat loss for this species. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of significant habitat loss, disturbance/displacement and collision risk is required for golden plover.	Yes
Hen harrier	Annex I Birds Directive & Raptor	<u>Breeding</u> No population of Ecological Importance <u>Wintering</u>	Hen harrier was recorded using the Proposed Wind Farm for hunting. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		National Importance	Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for hen harrier.	
Merlin	Annex I Birds Directive & Raptor	<u>All Seasons</u> County Importance	Merlin was recorded using the Proposed Wind Farm for hunting. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for merlin.	Yes
Peregrine falcon	Annex I Birds Directive & Raptor	<u>All Seasons</u> County Importance	Peregrine falcon was recorded using the Proposed Wind Farm site for hunting. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for peregrine falcon.	
Little egret	Annex I Birds Directive	<u>Wintering</u> No population of Ecological Importance	No population of ecological importance was recorded utilising the Proposed Wind Farm 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
Red-throated diver	Annex I Birds Directive	<u>Wintering</u> No population of Ecological Importance	No population of ecological importance was recorded utilising the Proposed Wind Farm 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
Whooper Swan	Annex I Birds Directive	<u>Wintering and Passage</u> County Importance	Whooper swan was not recorded using the Proposed Wind Farm site. There is no potential for direct habitat loss for this species. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of disturbance/displacement and collision risk is required for whooper swan.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Kestrel	Red List & Raptor	<u>All Seasons</u> County Importance	Kestrel was recorded using the Proposed Wind Farm site for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for kestrel.	Yes
Grey wagtail	Red List	<u>All Seasons</u> Local Importance (Lower Value)	Grey wagtail was recorded using the Proposed Wind Farm for foraging and breeding. 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
Lapwing	Red List	<u>Wintering and post-breeding</u> No population of Ecological Importance	No population of ecological importance was recorded utilising the Proposed Wind Farm 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
Meadow pipit	Red List	<u>All Seasons</u> Local Importance (Lower Value)	Meadow pipit is resident and breeding at the Proposed Wind Farm. 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	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.	
Red grouse	Red List	<u>All Seasons</u> County Importance	Red grouse was recorded using habitat and breeding within the Proposed Wind Farm. There is potential for significant habitat loss for this species. Red grouse were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of significant habitat loss and disturbance/displacement is required for red grouse.	Yes
Redwing	Red List	<u>Wintering</u> Local Importance (lower value)	Redwing was foraging within the Proposed Wind Farm. 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
Snipe	Red List	<u>All Seasons</u> County Importance	Snipe was recorded using the Proposed Wind Farm for breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for snipe.	
Swift	Red List	<u>Breeding</u> Local Importance (Higher Value).	At the Proposed Wind Farm a proportion of swift were recorded foraging. 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
Whinchat	Red List	<u>Breeding</u> National Importance	A whinchat family party was observed moving through the area in June, indicating breeding in the general area, although the origin is unknown. The species was only recorded twice over the entire survey period, showing a very infrequent presence around the Proposed Wind Farm. 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
Woodcock	Red List	<u>Breeding</u> Local Importance (Higher Value)	Woodcock was recorded using the Proposed Wind Farm for breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			There were no birds recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of direct habitat loss and disturbance/displacement required for woodcock.	
Yellowhammer	Red List	<u>Breeding</u> No population of Ecological Importance	No population of ecological importance was recorded utilising the Proposed Wind Farm 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)	Buzzard was recorded using the Proposed Wind Farm for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for buzzard.	Yes
Long-eared owl	Raptor	<u>All Seasons</u>	No population of ecological importance was recorded utilising the Proposed Wind Farm during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No population of Ecological Importance	limited and there is no evidence to suggest that the development site is of significance to this species.	
Sparrowhawk	Raptor	<u>All Seasons</u> Local Importance (Higher Value)	Sparrowhawk was recorded using the Proposed Wind Farm for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for sparrowhawk.	Yes

7.4.3 Sensitivity Determination

Criteria developed by Percival (2003) for assessing bird sensitivity within the Proposed Wind Farm is presented in Table 7-3 (Section 7.2.5). The sensitivity of the KORs, as per Percival (2003), are listed below, including the rationale for their respective sensitivity classification.

High Sensitivity KORs are:

- White-tailed eagle (population of National Importance)
- Dunlin (breeding population only: Annex I, Red List, population of National Importance)
- Golden plover (breeding population only; Annex I, Red List, population of National Importance)
- Hen harrier (Annex I, ecologically sensitive species)

Medium Sensitivity KORs are:

- Merlin (Annex I, population of County Importance)
- Peregrine falcon (Annex I, population of County Importance)
- Whooper swan (Annex I, population of County Importance)
- Kestrel (Annex I, population of County Importance)
- Red grouse (Red List, population of County Importance)
- Snipe (Red List, population of County Importance)
- Woodcock (Red List)

Low Sensitivity KORs are:

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

7.5 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 Route.
- Assessment of the likely effects associated with the turbine delivery route.
- Assessment of the likely effects on designated sites.

7.5.1 'Do-Nothing' Scenario

An alternative land use option to repowering the Existing Wind Farm as part of the Proposed Project would be to leave the Existing Wind Farm site as it is, with no changes made to the existing operating 23 no. wind turbines within the Existing Wind Farm. In doing so, environmental effects in terms of emissions are likely to be neutral for the short term, however 13 no. of the existing turbines (existing Dunneil Wind Farm) are due to be decommissioned in accordance with their planning permissions in 2039. Once the 13 no. turbines are decommissioned, there will be a negative effect on greenhouse gas emissions. The 10 no. turbines which were commissioned in 2003 will be left in situ (existing Kingsmountain Wind Farm). However, these machines are aging and are not as efficient as the newer machines. Although these turbines do not have a decommissioning date, they will eventually break

down and have to be decommissioned. The opportunity to continue capturing the available renewable energy resource with the Existing Wind Farms would be lost.

An alternative land use option to developing a renewable energy project in the greenfield sections of the Proposed Wind Farm site (i.e areas of the Proposed Wind Farm site located outside the footprint of the Existing Wind Farm) would be to leave the area as it is with no changes made to the current land use practices of commercial forestry, turf cutting, and public road corridor.

In implementing the 'Do-Nothing' alternative, however, the opportunity to capture a significant part of Co. Sligo's renewable energy resource would be missed, as would the opportunity to contribute to meeting Government and EU 2030 targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. In addition, the opportunity to meet the obligations as laid out in the Climate Action and Low Carbon Development Act 2021 will be lost. The opportunity to generate local employment, development contributions, and rates would also be forgone. Furthermore, the opportunity to implement the measures outlined in the Biodiversity Management and Enhancement Plan (BMEP) as outlined in Appendix 6-4 would also be lost.

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

7.5.2 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 construction phase will include the removal of the existing 23 no. turbines at the Existing Wind Farm. The magnitude and significance of these effects are then defined according to Percival (2003) and EPA (2022) criteria.

7.5.2.1 White-tailed eagle

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	During the survey period, white-tailed eagle was recorded on 34 occasions. The species has been regularly seen soaring over the Proposed Wind Farm. White-tailed eagles were not recorded using the habitats within the Proposed Wind Farm. Therefore, 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 negligible negative effect, which is not significant .
Disturbance	During the survey period, white-tailed eagle was recorded on 34 occasions. The species has been regularly seen soaring over the Proposed Wind Farm and may be using thermals to search the landscape for food. White-tailed eagles were not recorded using the habitats within the Proposed Wind Farm. A review of disturbance distances by Ruddock and Whitfield (2007) suggests an upper limit of disturbance of 500m for a white-tailed eagle nest, while Goodship and Furness (2022) reported a buffer zone suggestion of 500-1000m for white-tailed eagle during the breeding season and 250-500m during the non-breeding season. However, white-tailed were only recorded soaring in the Proposed Wind Farm and surroundings and are not dependent upon the Proposed Wind Farm for hunting or breeding.	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 slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	It is assumed that temporary disturbance will occur around the Proposed Wind Farm construction works, however, given the lack of use of the Proposed Wind Farm by this species within disturbance distance, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	During the survey period, white-tailed eagle was recorded on 34 occasions. The species has been regularly seen soaring over the Proposed Wind Farm and may be using thermals to search the landscape for food. White-tailed eagles were not recorded using the habitats within the Proposed Wind Farm. A review of disturbance distances by Ruddock and Whitfield (2007) suggests an upper limit of disturbance of 500m for a white-tailed eagle nest, while Goodship and Furness (2022) reported a buffer zone suggestion of 500-1000m for white-tailed eagle during the breeding season and 250-500m during the non-breeding season. However, white-tailed were only recorded soaring in the Proposed Wind Farm and surroundings and are not dependent upon the Proposed Wind Farm for hunting or breeding. In addition, areas of suitable habitat are widespread in the wider environment, as supported by observations of white-tailed eagle during surveys outside the Proposed Wind Farm. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the local white-tailed eagle population. Therefore, no significant displacement and barrier effects are anticipated at the county, national or international level.	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 slight negative effect, which is not significant .
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken for the three turbine scenarios	The magnitude of the effect is assessed as negligible. The cross	Likely long-term constant imperceptible negative

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	(full details provided in Appendix 7-6). The highest collision risk has been calculated at 0.008 collisions per year, or less than one bird over the lifetime of the Proposed Wind Farm. No significant effects are anticipated.	tabularisation of a High sensitivity species and negligible impact corresponds to a Very Low effect significance.	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.

7.5.2.2 Dunlin

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Dunlin breeding territories were identified 120m (DN-1) and 800m (DN-2) from the Proposed Wind Farm during the 2023 breeding season. Both dunlin breeding territories are outside the Proposed Wind Farm boundary. There is no infrastructure proposed within these locations; the infrastructure will be sited in an area of degraded bog that has been used for turbary and where there is an existing track. No significant effects of direct habitat loss are anticipated at the county, national or international level.	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	Dunlin breeding territories were identified at 120m (DN-1) and 800m (DN-2) of the Proposed Wind Farm during the 2023 breeding season. A study by Stroud <i>et al.</i> (1987), showed that breeding adult dunlin were most likely to stay close to their breeding territory, which was chosen by the abundance of invertebrate food and is closely related to the number and	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 slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	spacing of bog pools. Dunlin chicks are precocial and feed around the nesting area. A review of disturbance distances by Goodship and Furness (2022) reported a buffer zone suggestion of 100-200m for dunlin during the breeding season. Of the two locations, there is no construction proposed within 200m of these locations. The closest construction to DN-1 is a section of new road (230m of DN-1) and the Proposed Turbine hardstands for T1 (350m of DN-1) and T3 (380m of DN-1) which are further than the disturbance distance for this species. On a precautionary basis, it is assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works, however, given the distance between the construction and the breeding territories identified for dunlin, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	Dunlin breeding territories were identified at 120m (DN-1) and 800m (DN-2) of the Proposed Wind Farm during the 2023 breeding season. A study by Stroud <i>et al.</i> (1987), showed that breeding adult dunlin were most likely to stay close to their breeding territory, which was chosen by the abundance of invertebrate food and is closely related to the number and spacing of bog pools. Dunlin chicks are precocial and feed around the nesting area. A review of disturbance distances by Goodship and Furness (2022) reported a buffer zone suggestion of 100-200m for dunlin during the breeding season.	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	The closest infrastructure to these territories is a section of new road and the Proposed Turbine hardstands for T1 and T3 and are located 230m from DN-1, which is further than the disturbance distance for this species. The second breeding territory identified (DN-2) is 800m away of the Proposed Wind Farm which is even further away from any construction. Given the distance to the nearest proposed infrastructure, no significant effects of displacement are anticipated at the county, national or international level.		
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. Literature review from Cramp <i>et al.</i>, 1985; del Hoyo <i>et al.</i>, 1996; Hagemeijer <i>et al.</i>, 1997; O'Brien <i>et al.</i>, 2006 and Svensson <i>et al.</i>, 2023 show that collision risk is unlikely to be significant for breeding dunlin. Indeed, males dunlin engages in aerial display when establishing territories. Territorial displays consist of fluttering song-flights and trilling calls performed over breeding habitats. Multiple research documentation characterises this behaviour as low-altitude flight, typically occurring only several meters above the ground surface rather than involving high-altitude soaring. As these displays are confined to the near-ground airspace, they remain well below the rotor swept area of the turbines, reducing the potential for significant collision impact. No significant effects are anticipated at the local, county, national or international level.	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 .
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.

7.5.2.3 Golden plover

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Breeding: Two breeding territories were identified in 2022 and 2024, one ~400m from the Proposed Wind Farm, within the Easky Bog Ramsar site, and one 1.2km from the Proposed Wind Farm. Roosting and foraging: Five probable roosting and foraging areas were identified during the survey period. Two are within or partially within the Proposed Wind Farm. The three remaining are 320m, 350m and 1.3km from the Proposed Wind Farm, and two of these are in the Easky Bog Ramsar site. Ballysadare Bay SPA: Golden plover are not an SCI of Ballysadare SPA, however this species is listed on Annex I of the EU Birds Directive and the site synopsis states that the site is of high ornithological importance for this species. The separation distance between the Proposed Wind Farm and Ballysadare SPA is ~11km, therefore there is potential for the golden plover population in the SPA to be present at the Proposed Wind Farm. However, suitable habitats for this species recorded within the Proposed Wind Farm are common and widespread in the intervening landscape between the Proposed Wind Farm and the SPA, and the Proposed Wind Farm is close to the maximum foraging range of 12km (Gillings and Fuller, 1999). Therefore, it is unlikely that the golden plover population at this SPA are utilising the Proposed Wind Farm. It is most likely that the birds present at the Proposed Wind Farm are from a wider county population in the general area around the Proposed Wind Farm rather than from the Ballysadare Bay SPA. No identified breeding territories are located within the Proposed Wind Farm or the built footprint. The species was not considered dependent on the Proposed Wind Farm for breeding due to the infrequent nature of site utilisation during the breeding season. The majority of winter and passage	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	observations involved golden plover commuting or circling over the Proposed Wind Farm. Some observations recorded the species utilising habitats within the Proposed Wind Farm, including roosting in proximity to the infrastructure footprint (upgrade to an existing road) at GP-1. However, the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. Significant areas of suitable foraging and roosting habitat, including grassland and peatland, will remain post-construction within the Proposed Wind Farm and surrounding area. In addition, areas of suitable habitat are widespread in the wider environment, as supported by observations of golden plover during surveys outside the Proposed Wind Farm, including at GP-2, GP-4 and GP-5, which are all located outside the Proposed Wind Farm. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local golden plover population. No significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	Breeding: Two breeding territories were identified in 2022 and 2024, one ~400m from the Proposed Wind Farm and one 1.2km from the Proposed Wind Farm. Roosting and foraging: Five probable roosting and foraging areas were identified during the survey period. Two are within or partially within the Proposed Wind Farm. The three remaining are 320m, 350m and 1.3km from the Proposed Wind Farm. Ballysadare Bay SPA: As above, golden plover are not an SCI of Ballysadare SPA, however this species is listed on Annex I of the EU Birds Directive and the site synopsis states that the site is of high ornithological importance for this species. The separation distance between the Proposed Wind Farm and Ballysadare Bay SPA is ~11km, therefore there is potential for the golden	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 slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	plover population in the SPA to be present at the Proposed Wind Farm. However, suitable habitats for this species recorded within the Proposed Wind Farm are common and widespread in the intervening landscape between the Proposed Wind Farm and the SPA, and the Proposed Wind Farm is close to the maximum foraging range. Therefore, it is unlikely that the golden plover population at this SPA are utilising the Proposed Wind Farm. Breeding discussion: No identified breeding territories are located within the Proposed Wind Farm. The species was not considered dependent on the Proposed Wind Farm for breeding due to the infrequent nature of site utilisation during the breeding season. Pearce-Higgins <i>et al.</i> (2012) did not find any significant negative effect of construction works on breeding golden plover populations (though it must be considered that the number of sites studied was low). Goodship and Furness (2022) reported a buffer zone suggestion of 200-500m for golden plover during the winter season. The nearest structure is a temporary construction compound located 560m away from GP-1-b, otherwise the closest turbine to this breeding territory is T17, which is 740m away. The second breeding territory is located 1.2km away from the Proposed Wind Farm. Roosting and foraging discussion: The majority of observations involved golden plover commuting or circling over the Proposed Wind Farm during the winter and passage season. Some observations recorded the species utilising habitats within the Proposed Wind Farm, including roosting in proximity to proposed infrastructure (upgrade to an existing roads and new access tracks) within 200m of GP-1 and GP-3. Goodship and Furness (2022) reported a buffer zone suggestion of 200-500m for golden plover during the winter season. On the Proposed Wind Farm, golden plover were recorded utilising habitats and flying within 500m of large-scale construction works (turbines) on 57 occasions over the four years of surveys. However, significant areas of suitable foraging and roosting habitat, including grassland and peatland, will remain available		

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	during construction within the Proposed Wind Farm and surrounding area, as the construction footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. In addition, areas of suitable habitat are widespread in the wider environment, as supported by observations of golden plover during surveys outside the Proposed Wind Farm, including at GP-2, GP-4 and GP-5, which are all located outside the Proposed Wind Farm. As such, disturbance within the Proposed Wind Farm during construction will not result in the loss of a scarce resource for the local golden plover population. No significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	Breeding: Two breeding territories were identified in 2022 and 2024, one ~400m from the Proposed Wind Farm and one 1.2km from the Proposed Wind Farm. Roosting and Foraging: Five probable roosting and foraging areas were identified during the survey period. Two are within or partially within the Proposed Wind Farm. The three remaining are 320m, 350m and 1.3km from the Proposed Wind Farm. Ballysadare Bay SPA: As above, golden plover are not an SCI of Ballysadare SPA, however this species is listed on Annex I of the EU Birds Directive and the site synopsis states that the site is of high ornithological importance for this species. The separation distance between the Proposed Wind Farm and Ballysadare Bay SPA is ~11km, therefore there is potential for the golden plover population in the SPA to be present at the Proposed Wind Farm. However, suitable habitats for this species recorded within the Proposed Wind	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Farm are common and widespread in the intervening landscape between the Proposed Wind Farm and the SPA, and the Proposed Wind Farm is close to the maximum foraging range. Therefore, it is unlikely that the golden plover population at this SPA are utilising the Proposed Wind Farm. No identified breeding territories are located within the Proposed Wind Farm. The species was not considered dependent on the Proposed Wind Farm for breeding due to the infrequent nature of site utilisation during the breeding season. The majority of winter and passage observations involved golden plover commuting or circling over the Proposed Wind Farm. Some observations recorded the species utilising habitats within the Proposed Wind Farm, including roosting in proximity to proposed infrastructure (upgrade to an existing road) at GP-1. A review of 22 studies suggests that golden plover will approach wind turbines to an average distance of 175m in the non-breeding season (Hötker <i>et al.</i>, 2006), while Pearce-Higgins <i>et al.</i> (2009) found that this species exhibited reduced habitat usage within 200m of turbines. McGuinness <i>et al.</i> (2015) suggest a zone of sensitivity of 800m for breeding populations. This is used as a precautionary starting point; it is not a prediction that birds will definitely be displaced at this distance. The actual distance for any impact depends on local ecological variables. However, a review of disturbance distance estimates by NatureScot (2022) recommended a disturbance buffer of 200-500m during both the non-breeding and breeding season. The two golden plover breeding territories (GP-1b and GP-2b) are 740m and 1.5km from the nearest Proposed Turbine respectively. Although, the GP-1b territory is within the zone of sensitivity quoted by McGuinness, the distance to the Proposed Turbine is much greater than the 500m most recently recommended in NatureScot (2022). Two areas for roosting and foraging golden plover are within or partially within disturbance distance of the		

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Proposed Turbines (GP-1 and GP-3). However, areas of suitable habitat are widespread in the wider environment, as supported by observations of golden plover during surveys outside the Proposed Wind Farm, including at GP-2, GP-4 and GP-5, which are all located further than 500m from the nearest Proposed Turbine. As such, displacement from the Proposed Wind Farm during operation will not result in the loss of a scarce resource for the local golden plover population. There is no evidence to suggest that the Proposed Wind Farm site lies on a migratory/regular commuting route for the species therefore barrier effect is not anticipated. No significant displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision risk has been calculated at a rate of 1.755 collisions per year. Annual mortality of adult golden plover has been calculated at 27% per annum (Sandercock, 2003). If 1.755 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. 319) by 2.04%. The magnitude of the predicted collision risk is low. As mentioned earlier, even if it is considered unlikely that the golden plover population at Ballysadare Bay SPA are utilising the Proposed Wind Farm and that this species is not an SCI of this SPA, collision risk for the SPA population that could potentially be present at the Proposed Wind Farm is also assessed here on a precautionary basis. If 1.755 collisions were to occur per year, it would mean that the losses at the SPA would increase the annual mortality of the SPA population (c. 301 individuals) by 2.16%. As outlined above, this collision risk analysis is provided on a precautionary basis. In practice, it is likely that only a minority of the c. 1.755 predicted annual collisions would	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	involve birds associated with the Ballysadare Bay SPA population. Golden plover are widespread throughout the county, occurring in suitable habitat considerably closer to the Proposed Wind Farm than the SPA at the limit of the commuting range documented for this species. It is therefore considered highly unlikely that all birds recorded at the Proposed Wind Farm originate from the SPA population. In the unlikely scenario that some of the birds present at the Proposed Wind Farm are from the SPA only a proportion of the predicted collisions would be associated with the SPA. Regarding the local breeding population, no flights were recorded within 500m of any of the Proposed Turbines during the core breeding season (likely migratory and wintering bird excluded). During all breeding season vantage point surveys, a total of 18 seconds of flights was recorded that is attributed to potential breeding birds and these flights were below lowest swept height (<15m). The two golden plover breeding territories (GP-1b and GP-2b) are 740m and 1.5km from the nearest Proposed Turbine respectively, therefore breeding birds activity is likely clustered around these areas, rather than in the vicinity of the Proposed Turbines, which may be why there were few observations of breeding birds during vantage point surveys. As such, no significant risk of collision is predicted for the local breeding population. The magnitude of the predicted collision risk is low.		
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.

7.5.2.4 Hen harrier

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	There is only one observation of one bird roosting near Bellanaboy (~2.3km of the Proposed Wind Farm) in March 2024. Hen harrier was regularly observed hunting at the Proposed Wind Farm and surrounds during winter. Up to three birds were seen at the same time during the survey period. No breeding was recorded. No works are proposed in the area of the potential roost, as it is outside the Proposed Wind Farm, near Bellanaboy (~2.3km of the Proposed Wind Farm). The land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. Significant areas of suitable hunting habitat, including grassland and peatland, will remain post-construction within the Proposed Wind Farm and surrounding area. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for hen harrier. The habitats utilised by hunting hen harrier are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and potentially roosting in the wider surroundings. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local hen harrier population. No significant effects of direct habitat loss are anticipated at the county, national or international level.	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	There is only one observation of one bird roosting near Bellanaboy (~2.3km of the Proposed Wind Farm) in March 2024. Hen harrier was regularly observed hunting at the Proposed Wind Farm and surrounds during winter. Up to three birds were seen at the same time during the survey period. No breeding was recorded.	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 slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	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. No works are proposed within 2km of the area of the roost, as it is outside the Proposed Wind Farm. Given the separation distance, disturbance to roosting hen harrier during construction is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for hen harrier. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm where hen harrier were observed hunting. However, the habitats utilised by hen harrier are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and potentially roosting in the wider surroundings. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource for the local hen harrier population. No significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	There is only one observation of one bird roosting near Bellanaboy (~2.3km of the Proposed Wind Farm) in March 2024. Hen harrier was regularly observed hunting at the Proposed Wind Farm and surrounds during winter. Up to three birds were seen at the same time during the survey period. No breeding was recorded. 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	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	500m of turbines at operating wind farms. Goodship and Furness (2022, also reviewed in NatureScot, 2022) also found that disturbance may occur between 500-750m. The nearest Proposed Turbine location is over 2km from the area of the roost. Given the separation distance, displacement of roosting hen harrier during turbine operation is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for hen harrier. 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 and are abundant in the wider surrounds. This is supported by regular observations of hunting and potentially roosting in the wider surroundings. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the local hen harrier population. No significant effects of displacement are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision risk has been calculated at a rate of 0.001 collisions per year, or less than one bird within the lifetime of the Proposed Wind Farm. Mortality of hen harriers may be disproportionately lower than other raptors (Drewitt and Langston, 2008). This is likely due to hen harrier's characteristic low altitude flight, particularly when foraging (Madders, 2000; Whitfield and Madders, 2006; Band <i>et al.</i>, 2007). This low altitude flight limits the potential for a collision to occur. The WindHarrier research project (Wilson <i>et al.</i>, 2015) carried out by University College Cork between 2012 and 2014, found the risk of collisions for hen harrier to be low. The only exception to this is early in the breeding season, when display flights can overlap with the turbine rotor swept	The magnitude of the effect is assessed as Negligible. The cross tabulation of High 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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	height. However, no breeding behaviour was recorded during the entire survey period. The magnitude of the predicted collision risk is negligible.		
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.

7.5.2.5 Merlin

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	A pair of merlin were confirmed to be breeding near Easky Lough, 2.2km from the Proposed Wind Farm, during the 2022 breeding season. Merlin was regularly recorded hunting on the Proposed Wind Farm. Considering the core foraging range of merlin is 5km (SNH, 2016) and the identified nest for is located ~2.2km from the Proposed Wind Farm it is possible that birds associated with this breeding territory use the habitats in the Proposed Wind Farm for hunting and provisioning the nest. However, the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not suitable hunting habitat for merlin. Significant areas of suitable hunting habitat, including grassland and peatland, will remain post-construction within the Proposed Wind Farm and surrounding area. In addition, areas of suitable habitat are widespread in the wider environment, as supported by observations	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	of merlin during surveys outside the Proposed Wind Farm. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the nesting pair. No significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	A pair of merlin were confirmed to be breeding near Easky Lough, 2.2km from the Proposed Wind Farm, during the 2022 breeding season. Merlin was regularly recorded hunting on the Proposed Wind Farm. Considering the core foraging range of merlin is 5km (SNH, 2016) and the identified nest for is located ~2.2km from the Proposed Wind Farm it is possible that birds associated with this breeding territory use the habitats in the Proposed Wind Farm for hunting and provisioning the nest. Few studies have been done on the effects of disturbance on merlin. Goodship and Furness (2022) suggest disturbance up to 200m from humans can occur during the winter season, and 300-500m during the breeding season (Ruddock and Whitfield, 2007). The nesting site at Easky Lough is located over 2km outside the Proposed Wind Farm and is therefore located outside the disturbance distance for merlin during construction. No works are proposed within 2.2km of the area of the nest, as it is outside the Proposed Wind Farm. Given the separation distance, disturbance to nesting merlin during construction is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for merlin. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm where merlin were observed hunting. However, the habitats utilised by merlin are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and nesting in the wider surroundings. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource	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 short term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	for the breeding pair. No significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	A pair of merlin were confirmed to be breeding near Easky Lough, 2.2km from the Proposed Wind Farm, during the 2022 breeding season. Merlin was regularly recorded hunting on the Proposed Wind Farm. Considering the core foraging range of merlin is 5km (SNH, 2016) and the identified nest for is located ~2.2km from the Proposed Wind Farm it is possible that birds associated with this breeding territory use the habitats in the Proposed Wind Farm for hunting and provisioning the nest. Few studies have been done on the effects of disturbance on merlin. Goodship and Furness (2022) suggest disturbance up to 200m from humans can occur during the winter season, and 300-500m during the breeding season (Ruddock and Whitfield, 2007). In the absence of research specific to wind turbine disturbance, it is assumed that operating turbines will result in a similar disturbance distance. The nearest Proposed Turbine location is over 2.2km from the area of the roost. Given the separation distance, displacement to nesting merlin during operational is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for merlin. The habitats utilised by merlin are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and nesting in the wider surroundings. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the breeding pair. No significant effects of disturbance are anticipated at the county, national or international level.	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 slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision risk has been calculated at a rate of 0.0005 collisions per year, or less than one bird within the lifetime of the Proposed Wind Farm. The magnitude of the predicted collision risk is negligible.	The magnitude of the effect is assessed as Negligible. The cross tabulation of 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.

7.5.2.6 Peregrine falcon

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	A breeding pair of peregrine falcon were identified in 2022 at Lough Aghree, ~2.6km of the Proposed Wind Farm. The core foraging range of peregrine falcon is 2km (SNH, 2016), therefore most of the records at the Proposed Wind Farm site during the breeding season are unlikely to be associated with this nest. However, most of the bird activity was on and to the east of the Proposed Wind Farm (~2.5 km of the territory) with some flight leaving the area in the direction of the nest. These observed flightlines establish a pattern of movement that could be connected to the identified nest site, therefore on a precautionary basis it is assumed that the nesting pair were sometimes hunting at the Proposed Wind Farm.	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 slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	No habitat loss will occur at the territory in the Lough Aghree as it are located outside the Proposed Wind Farm. In addition, no habitat loss will occur in the bog and heath habitats in the areas surrounding the nesting sites where peregrine falcon activity was concentrated, as these areas are also outside the Proposed Wind Farm. The land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for peregrine falcon. Significant areas of suitable hunting habitat, including grassland and peatland, will remain post-construction within the Proposed Wind Farm and surrounding area. In addition, areas of suitable habitat are widespread in the wider environment, as supported by observations of peregrine falcon during surveys outside the Proposed Wind Farm. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the nesting pair. No significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	A breeding pair of peregrine falcon were identified in 2022 at Lough Aghree, ~2.6km of the Proposed Wind Farm. The core foraging range of peregrine falcon is 2km (SNH, 2016), therefore birds seen at the Proposed Wind Farm site during the breeding season are unlikely to be associated with this nest. However, most of the bird activity was on and to the east of the Proposed Wind Farm (~2.5 km of the nest) with some flight leaving the area in the direction of the nest. These observed flightlines establish a pattern of movement that could be connected to the identified nest site, therefore on a precautionary basis it is assumed that the nesting pair were sometimes hunting at the Proposed Wind Farm.	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 short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Ruddock and Whitfield (2007) found that peregrine falcons can be disturbed up to 750m from humans. The territory at Lough Aghree is located over 1.5km outside the Proposed Wind Farm and is therefore located outside the disturbance distance for peregrine falcon during construction. Therefore, no significant effects of disturbance are anticipated on the breeding territory during construction. No works are proposed within 1.5km of the area of the nest, as it is outside the Proposed Wind Farm. Given the separation distance, disturbance to nesting peregrine falcon during construction is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for peregrine falcon. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm where peregrine falcon were observed hunting. However, the habitats utilised by peregrine falcon are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and nesting in the wider surroundings. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource for the breeding pair. No significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	A breeding pair of peregrine falcon were identified in 2022 at Lough Aghree, ~2.6km of the Proposed Wind Farm. The core foraging range of peregrine falcon is 2km (SNH, 2016), therefore birds seen at the Proposed Wind Farm site during the breeding season are unlikely to be associated with this nest. However, most of the bird activity was on and to the east of the Proposed Wind Farm (~2.5 km of the nest) with some flight leaving the area in the	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 slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	direction of the nest. These observed flightlines establish a pattern of movement that could be connected to the identified nest site, therefore on a precautionary basis it is assumed that the nesting pair were sometimes hunting at the Proposed Wind Farm. Ruddock and Whitfield (2007) found that peregrine falcons can be disturbed up to 750m from humans. The territory at Lough Aghree is located over 1.5km outside the Proposed Wind Farm and is therefore located outside the disturbance distance for peregrine falcon during operation. The nearest Proposed Turbine location is over 1.5km from the area of the roost. Given the separation distance, displacement to nesting peregrine falcon during operational is unlikely. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for peregrine falcon. The habitats utilised by peregrine falcon are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. This is supported by regular observations of hunting and nesting in the wider surroundings. Peregrine falcon has been documented to become accustomed to various sources of human disturbance over time (Ratcliffe, 1962 cited in Ruddock and Whitfield, 2007) and may become tolerant of the operating turbines and hunt in the vicinity of the Proposed Wind Farm. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the breeding pair. No significant effects of disturbance are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision rate has been calculated at 0.03 collisions per year or one bird approximately every 33 years.	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 imperceptible negative effect, which is not significant.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Annual mortality of adult peregrine falcon has been calculated at 19% per annum (Craig <i>et al.</i> , 2004). If 0.03 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.26 birds [13 pairs]) by 0.61%. The predicted collision risk is negligible.		
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.

7.5.2.7 Whooper swan

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Whooper swan were recorded during the winter and passage season. Records were predominantly those of birds in flight both over the Proposed Wind Farm and the wider area with flocks of up to 24 birds. A flock of nine birds was observed landing on Lough Nafullow (~100m of the Proposed Wind Farm), four birds were also seen swimming on this Lough, and one flock of six birds was observed foraging at Lough Minna (~900 m of the Proposed Wind Farm). No regular roosting sites were identified for the species during any of the surveys undertaken. There will be no habitat loss at any waterbodies in the wider surroundings as these are located outside of the Proposed Wind Farm. Additionally, the available optimal habitat for whooper swan within the Proposed Wind Farm is limited, restricted to Lough Nafullow directly adjacent to the south the	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 imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	proposed biodiversity enhancement area. In addition to its location outside of the Proposed Wind Farm site, this small lough was surveyed as part of the waterbird distribution abundance surveys and whooper swan were seen landing once on this lough over the entire survey period. Therefore, as whooper swan were not regularly recorded using the habitats within the Proposed Wind Farm, no significant effects of direct habitat loss are anticipated.		
Disturbance	Whooper swan were recorded during the winter and passage season. Records were predominantly those of birds in flight both over the Proposed Wind Farm and the wider area with flocks of up to 24 birds. A flock of nine bird was observed landing on Lough Nafullow (~100m of the Proposed Wind Farm), four birds were also seen swimming on this Lough, and one flock of six birds was observed foraging at Lough Minna (~900 m of the Proposed Wind Farm). No regular roosting sites were identified for the species during any of the surveys undertaken. Few studies have been done on the effects of disturbance on whooper swan during the winter. Goodship and Furness (2022) suggest disturbance up to 600m from humans can occur, based on studies on geese, while McGuinness <i>et al.</i> (2015) also suggest a zone of sensitivity of 600m. The waterbodies in the surrounding area where whooper swan was recorded are all greater than 600m from the nearest construction works at the Proposed Wind Farm site, except Lough Nafullow (530m to the Proposed Turbine T9). However, no regular use of the lough was recorded. As such, it is not expected that disturbance to resting or foraging whooper swan will occur at this distance. It is assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works, therefore, while whooper swan were not regularly recorded using the habitats within the Proposed Wind Farm, there is	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 short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	potential for birds passing overhead to experience low levels of disturbance during the construction period. However, no significant disturbance effects are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	Whooper swan were recorded during the winter and passage season. Records were predominantly those of birds in flight both over the Proposed Wind Farm and the wider area with flocks of up to 24 birds. A flock of nine bird was observed landing on Lough Nafullow (~100 m of the Proposed Wind Farm), four birds were also seen swimming on this Lough, and one flock of six birds was observed foraging at Lough Minna (~900 m of the Proposed Wind Farm). No regular roosting sites were identified for the species during any of the surveys undertaken. Observations of whooper swan non-breeding activity from eight European studies have given a mean minimum avoidance distance of 150m from the base of wind turbines (Hötter <i>et al.</i>, 2006), while Percival (2003) suggests an exclusion area of 300m from wind energy installations. Taking a more conservative approach given the international importance of the Irish distribution of whooper swan, McGuinness <i>et al.</i> (2015) suggest a larger zone of sensitivity of 600m. Whooper swan were not regularly recorded using the habitats within the Proposed Wind Farm or within disturbance distance on any occasion, however these records were of birds flying through the area during the winter and passage seasons. The Proposed Turbine locations are not located on a regular flight path between waterbodies or a narrow migratory route – flight paths for whooper	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 slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	swan were not restricted to the airspace above the Proposed Wind Farm but were mapped passing throughout the Proposed Wind Farm and wider area. Therefore, the operation of the Proposed Turbines is not anticipated to have a significant barrier effect for whooper swan as this species used the entirety of the wider area outside the Proposed Wind Farm for flights. Therefore, no significant displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision risk has been calculated at 0.106 collisions per year, or one bird approximately every nine years. Annual mortality of adult whooper swan has been calculated at 20% per annum (Brazil, 2003). If 0.106 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.273) by 0.19%. The predicted collision risk is negligible.	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 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.

7.5.2.8 Kestrel

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Kestrel was resident at the Proposed Wind Farm. Seven breeding territories were identified, four of which are within and partially within the Proposed Wind Farm (K.-1, K.-2, K.-3 and K.-7), two within 500m of the Proposed Wind Farm (K.-4 and K.-5) and the remaining was approximately 700m from the Proposed Wind Farm (K.-6). A maximum of three pairs were observed around the Proposed Wind Farm in 2022 and 2024, and only two breeding territories in 2023. Kestrel was also regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter seasons. The K.-1 breeding territory overlaps with two Proposed Turbines (T13 and T15) as well as some new access tracks that will lead to a habitat loss. The K.-7 breeding territory overlaps with and upgrade to a public road, which will not result to any additional habitat loss. This species is a wide-ranging generalist and was using upland blanket bog and conifer plantation within the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain, as the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm, and there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local kestrel population. However, given the presence of a breeding territory in an area where turbines are proposed, the magnitude of the effect of direct habitat loss is assessed as medium.	The magnitude of the effect is assessed as medium. The cross tabularisation 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	Kestrel was resident at the Proposed Wind Farm. Seven breeding territories were identified, four of which are within and partially within the Proposed Wind Farm (K.-1, K.-2, K.-3 and K.-7), two within 500m of the Proposed Wind Farm (K.-4 and K.-5) and the remaining was approximately 700m from the Proposed Wind Farm (K.-6). A maximum of three pairs were observed around	The magnitude of the effect is assessed as medium. The cross tabularisation of a medium sensitivity species and medium	Likely short-term frequent slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	the Proposed Wind Farm in 2022 and 2024, and only two breeding territories in 2023. Kestrel was also regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter seasons. Few studies have been done on the effects of disturbance around construction areas on kestrel. Goodship and Furness (2022) suggest disturbance from humans up to 200m during the breeding season can occur. It is assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works, particularly within the K.-1, K.-2, K.-3 and K.-7 breeding territories that are located within the disturbance distance of a Proposed Turbine. This species is a wide-ranging generalist and was using upland blanket bog and conifer plantation within the Proposed Wind Farm and, as forestry and bog is not a scarce resource locally, there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource for the local kestrel population. However, given the presence of four breeding territories partially within disturbance distance of the Proposed Project works, the magnitude of the effect of displacement during construction is assessed as medium.	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	Kestrel was resident at the Proposed Wind Farm. Seven breeding territories were identified, four of which are within and partially within the Proposed Wind Farm (K.-1, K.-2, K.-3 and K.-7), two within 500m of the Proposed Wind Farm (K.-4 and K.-5) and the remaining was approximately 700m from the	The magnitude of the effect is assessed as medium. The cross tabularisation of a medium sensitivity species and medium	Likely long-term constant slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Proposed Wind Farm (K.-6). A maximum of three pairs were observed around the Proposed Wind Farm in 2022 and 2024, and only two breeding territories in 2023. Kestrel was also regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter seasons. 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. Similarly, a review of 14 studies by Hötter <i>et al.</i> (2006) suggests that kestrel will approach wind turbines to an average distance of 26m in 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. The breeding territories K.-1, K.-2, K.-3 and K.-7 are within 200m of a Proposed Turbine. However, this species is a wide-ranging generalist and was using upland blanket bog and conifer plantation within the Proposed Wind Farm and, as forestry and bog is not a scarce resource locally, there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the local kestrel population. However, given the presence of four breeding territories partially within disturbance distance of any Proposed Turbine, the magnitude of the effect of displacement during operation is assessed as medium.	impact corresponds to a Low effect significance.	
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision rate has been calculated at 1.352 collisions per year.	The magnitude of the effect is assessed as Negligible. The cross tabulation of a Medium sensitivity species and Negligible	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Annual mortality of adult kestrel has been calculated at an average of 35% (range 30-40%) per annum (Orta <i>et al.</i> , 2020). If 1.352 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.427 birds) by 0.9%. One kestrel carcass was found during collision monitoring. This is in line with the prediction; however it must be noted that the Existing Wind Farm turbines have a lower swept height than the Proposed Turbine models. The predicted collision risk is negligible.	impact corresponds to a Very Low effect significance.	
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.

7.5.2.9 Red grouse

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Red grouse were resident and breeding at the Proposed Wind Farm. There were seven probable breeding areas for red grouse identified during the survey period. Five of these probable breeding areas are within the Proposed Wind Farm (RG-2, RG-3, RG-4, RG-6 and RG-7), the two remaining areas are approximately 1km from the Proposed Wind Farm (RG-1 and RG-5). The breeding territories RG-3, RG-4, RG-6 and RG-7 overlap with Proposed Turbines as well as some new access tracks. Also, the RG-4 breeding territory overlaps with borrow pits. All of these construction works will lead to a habitat loss within these four breeding territories. The RG-2 breeding territory	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 .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	overlaps with and upgrade to a public road, which will not result to any additional habitat loss. The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (27.6ha or 1.8%) where red grouse were observed. Furthermore, the habitats utilised by red grouse are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local red grouse population. However, given the presence of multiple breeding territories in in an area where Proposed Turbines are located the magnitude of the effect of direct habitat loss is assessed as medium.		
Disturbance	Red grouse were resident and breeding at the Proposed Wind Farm. There were seven probable breeding areas for red grouse identified during the survey period. Five of these probable breeding areas are within the Proposed Wind Farm (RG-2, RG-3, RG-4, RG-6 and RG-7), the two remaining areas are approximately 1km from the Proposed Wind Farm (RG-1 and RG-5). It is assumed that temporary disturbance will occur at the Proposed Wind Farm during construction works. Populations of red grouse were found to recover within one year after disturbance caused by construction of wind farms (Pearce-Higgins et al., 2012). In addition, the habitats utilised by red grouse are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. As such, any temporary disturbance that may occur during construction would not result in the loss of a scarce resource for the local red grouse population. The magnitude of the effect of disturbance is assessed as low.	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 short-term frequent slight negative effect, which is not significant.
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Displacement and Barrier Effect	Red grouse were resident and breeding at the Proposed Wind Farm. There were seven probable breeding areas for red grouse identified during the survey period. Five of these probable breeding areas are within the Proposed Wind Farm (RG-2, RG-3, RG-4, RG-6 and RG-7), the two remaining areas are approximately 1km from the Proposed Wind Farm (RG-1 and RG-5). The breeding territories RG-3, RG-4, RG-6 and RG-7 overlap with Proposed Turbines as well as some new access tracks. 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. The magnitude of the effect of displacement is assessed as low.	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	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.

7.5.2.10 Snipe

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Snipe is resident and breeding in the Proposed Wind Farm. There were three probable breeding territories for snipe identified during breeding season surveys, along with several sporadic records of males chipping and drumming within the Proposed Wind Farm and surrounding areas. Two of these territories are located partially within the Proposed Wind Farm (SN-2 and SN-3). The SN-2 breeding territory overlaps with three Proposed Turbines that will lead to habitat loss. Within the breeding territories SN-2 and SN-3, some upgrades to existing road which will not result to any additional habitat loss. A third area was identified at 370m to the west of the Proposed Wind Farm (SN-1). The overall footprint of the development accounts for a small proportion of the Proposed Wind Farm site (27.6ha/1.8%) where snipe were observed. The SN-2 breeding territory within the Proposed Wind Farm is located within an area where Proposed Turbines, new access tracks and peat and spoil management areas are proposed. The SN-3 breeding territory within the Proposed Wind Farm, only overlaps with existing roads that are to be upgraded, therefore there will be no habitat loss over this breeding area. Furthermore, the habitats utilised by snipe are not unique to the Proposed Wind Farm site and are abundant in the wider surrounds. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local red grouse population. However, given the presence of a two breeding territory partially within disturbance distance of the proposed works, the magnitude of the effect of direct habitat loss is assessed as medium.	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 slight negative effect, which is not significant .
Disturbance	Snipe is resident and breeding in the Proposed Wind Farm. There were three probable breeding territories for snipe identified during breeding season surveys, along with several sporadic records of males chipping and drumming within the Proposed Wind Farm and surrounding areas. Two of these territories are located partially within the Proposed Wind Farm (SN-2 and SN-	The magnitude of the effect is assessed as Medium. The cross tabulation of a Medium sensitivity species and Medium	Likely short-term frequent slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	3). The SN-2 breeding territory overlaps with three Proposed Turbines that will lead to habitat loss. Within the breeding territories SN-2 and SN-3, some upgrades to existing road which will not result to any additional habitat loss. A third area was identified at 370m to the west of the Proposed Wind Farm (SN-1). 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. It is assumed that temporary disturbance will occur in the breeding territory SN-2 and SN-3 where snipe was observed utilising and breeding in. However, the habitats utilised by snipe are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource for the local snipe population. 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 two breeding territories in the Proposed Wind Farm within disturbance distance of major works, the magnitude of the effect of disturbance is assessed as medium.	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	Snipe is resident and breeding in the Proposed Wind Farm. There were three probable breeding territories for snipe identified during breeding season surveys, along with several sporadic records of males chipping and drumming within the Proposed Wind Farm and surrounding areas. Two of these	The magnitude of the effect is assessed as Medium. The cross tabulation of a Medium sensitivity species and Medium	Likely long-term constant slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	territories are located partially within the Proposed Wind Farm (SN-2 and SN-3). A third area was identified at 370m to the west of the Proposed Wind Farm (SN-1). 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. Both SN-2 and SN-3 are located within 400m of Proposed Turbines, so there is potential for displacement. The habitats utilised by snipe are not unique to the Proposed Wind Farm and are abundant in the wider surrounds. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the local snipe population. In addition, wintering non-breeding birds are assumed to be at less risk of displacement 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 within displacement distance of a Proposed Turbine, the magnitude of the effect of disturbance is assessed as medium.	impact corresponds to a Low effect significance.	
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision rate has been calculated at 0.046 collisions per year, or one collision every 22 years. Annual mortality of adult snipe has been calculated at 37.5% per annum (Spence, 1988). If 0.046 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.288 birds [144 pairs]) by 0.043%. One snipe carcass was found during collision monitoring over a three year period. This is in line with the prediction, as the collision risk is not zero. It must be noted that the Existing Wind Farm turbines have a lower swept height than the Proposed	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 imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Turbine models, which may increase collision risk for a typically low-flying species such as snipe. The predicted collision risk is negligible.		
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.

7.5.2.11 Woodcock

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	This species was recorded twice during breeding woodcock surveys only in 2021. Two roding male woodcock were recorded. These observations indicate that woodcock bred within the Proposed Wind Farm site in 2021. There were two breeding territory identified at these two locations. One is in the Proposed Wind Farm (WK-1 ~200m from the nearest Proposed Turbine) and the second (WK-2) is ~360m from the Proposed Wind Farm. This species breeds in woodland habitat, including conifer plantation which is found in the Proposed Wind Farm. Extensive areas of breeding habitat will remain, as the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local woodcock population. However, given the presence of a breeding territory in an area where the substation, new access tracks and peat and spoil management areas proposed, the magnitude of the effect of direct habitat loss is assessed as medium.	The magnitude of the effect is assessed as Medium. The cross tabularisation 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 .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Disturbance	This species was recorded twice during breeding woodcock surveys only in 2021. Two roding male woodcock were recorded. These observations indicate that woodcock bred within the Proposed Wind Farm site in 2021. There were two breeding territory identified at these two locations. One is in the Proposed Wind Farm (WK-1 at ~200m from the nearest Proposed Turbine) and the second (WK-2) is at 360m of the Proposed Wind Farm. The WK-1 breeding territory overlaps with the proposed substation and an area of peat and soil management. This species breeds in woodland habitat, including conifer plantation which is found in the Proposed Wind Farm. As such, were disturbance to occur during construction, it would not result in the loss of a scarce resource for the local woodcock population. However, given the presence of a breeding territory within in an area where the temporary construction compound, substation, new access tracks and peat and spoil management areas proposed, disturbance during construction is assessed as medium.	The magnitude of the effect is assessed as Medium. The cross tabularisation of a Medium sensitivity species and Medium impact corresponds to a Low effect significance.	Likely short-term slight 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	This species was recorded twice during breeding woodcock surveys only in 2021. Two roding male woodcock were recorded. These observations indicate that woodcock bred within the Proposed Wind Farm site in 2021. There were two breeding territory identified at these two locations. One is in the Proposed Wind Farm (WK-1 at ~470m from the nearest Proposed Turbine) and the second (WK-2) is at 360m of the Proposed Wind Farm. A study by Dorka <i>et al.</i> (2014) found that there was a reduction of breeding woodcock densities from 10 males/100ha to 1.2 males/100ha at 15 wind farms	The magnitude of the effect is assessed as Medium. The cross tablature 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 .

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	in Germany. These declines were attributed to the barrier effect of turbines and the effects of turbine noise on displaying woodcock. LAG VSW (2014) outline a displacement distance of 500m around operational turbines for breeding woodcock. The WK-1 breeding territory is 470m from the nearest Proposed Turbine which is slightly within the 500m disturbance distance described above. This species breeds in woodland habitat, including conifer plantation which is found in the Proposed Wind Farm. As such, were displacement to occur during operation, it would not result in the loss of a scarce resource for the local woodcock population. However, given the presence of a breeding territory within disturbance distance of a Proposed Turbine, displacement during operation is assessed as medium.		
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.

7.5.2.12 Buzzard

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Buzzard was using the Proposed Wind Farm for breeding. One breeding territory was identified (BZ-1) that is 1.2km from the Proposed Wind Farm. One buzzard nest (BZ-2) was also identified within the Proposed Wind Farm. Additionally, buzzard was regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter season. The BZ-2 nesting area is adjacent to the Proposed Grid Connection Route which is located within the public road corridor and so the works will not result to any additional habitat loss. This species is a wide-ranging generalist and was using farmland and bog within the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain, as the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm and there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local buzzard population. The magnitude of the effect of direct habitat loss is assessed as low.	The magnitude of the effect is assessed as Low. The cross tabularisation of a Low sensitivity species and Low impact corresponds to a Very Low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant.
Disturbance	Buzzard was using the Proposed Wind Farm for breeding. One nest was identified (BZ-2) within the Proposed Wind Farm. Buzzard was also regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter seasons. One further breeding territory was identified in the wider area (BZ-1). Goodship and Furness (2022) suggest disturbance of buzzard up to 450m from large scale works can occur, based on a study of forestry. The breeding territory BZ-1 is over 1.2km from the nearest large scale proposed works within the Proposed Wind Farm and it is not expected that disturbance during	The magnitude of the effect is assessed as Medium. The cross tabularisation 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.

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	construction at the Proposed Wind Farm will occur at this distance. It is assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works (including the Proposed Grid Connection Route, which is discussed in Section 7.5.3) and the construction of a Proposed Turbine (T7) 170m from the buzzard nest BZ-2. Buzzard is a wide-ranging generalist species and, as farmland and bog is not a scarce resource locally, there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, construction disturbance within the Proposed Wind Farm will not result in the loss of a scarce resource for the local buzzard population. However, given the presence of a breeding territory within disturbance distance of major works (BZ-2), the magnitude of the effect of disturbance is assessed as medium.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	Buzzard was using the Proposed Wind Farm for breeding. One nest was identified (BZ-2) that is within the Proposed Wind Farm. Buzzard was also regularly using the Proposed Wind Farm and wider surroundings for hunting in farmland and bog in both the breeding and winter season. One other breeding territory was identified in the wider area (BZ-1). Pierce-Higgins <i>et al.</i> (2009) found that breeding buzzards avoided turbines at a distance of at least 500m. The breeding territory BZ-1 is located greater than this distance from the nearest Proposed Turbine, but there is the potential for displacement at breeding territory BZ-2 (located 170m of T7). Buzzard is a wide-ranging generalist species and, as farmland and bog is not a scarce resource locally, there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including probable breeding, in the wider surroundings. As such, operational	The magnitude of the effect is assessed as Medium. The cross tabularisation 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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	displacement within the Proposed Wind Farm will not result in the loss of a scarce resource for the local buzzard population. However, given the presence of a breeding territory within displacement distance of a Proposed Turbine (BZ-2), the magnitude of the effect of displacement is assessed as medium.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision rate has been calculated at 0.484 collisions per year, or one bird approximately every 2 years. Annual mortality of adult buzzard has been calculated at 10% per annum (Kenward <i>et al.</i>, 2000). If 0.484 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.150 birds [75 pairs]) by 3.23%. The predicted collision risk is low.	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 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.

7.5.2.13 Sparrowhawk

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Sparrowhawk are resident at the Proposed Wind Farm. Two breeding territories were identified partially within the Proposed Wind Farm. SH-1 is	The magnitude of the effect is assessed as Medium. The cross	Likely long-term constant imperceptible negative

Potential effects during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	within the Existing Dunneill Wind Farm, and SH-2 is partially within the Proposed Wind Farm. Sparrowhawk were also regularly recorded hunting within the Proposed Wind Farm and throughout the wider area. The SH-1 breeding territory is located within the Existing Dunneill Wind Farm, construction phase works that will take place in that area, is the removal of the turbines at the Existing Dunneill Wind Farm, as such no additional habitat loss will occur. The SH-2 breeding territory overlaps with one Proposed Turbine and the construction of new access tracks that will lead to habitat loss. This species is a wide-ranging generalist and was using bog and conifer plantation within the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain, as the land lost to the built infrastructure footprint is small (27.6ha/1.8%) relative to the total area of the Proposed Wind Farm, and there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including breeding, in the wider surroundings. As such, habitat loss within the Proposed Wind Farm will not result in the loss of a scarce resource for the local sparrowhawk population. However, given the presence of a breeding territory in an area where turbines are proposed, the magnitude of the effect of direct habitat loss is assessed as medium.	tabularisation of a Low sensitivity species and Medium impact corresponds to a Very Low effect significance.	effect, which is not significant .
Disturbance	Sparrowhawk are resident at the Proposed Wind Farm. Two breeding territory were identified partially within the Proposed Wind Farm. SH-1 is within the Existing Dunneill Wind Farm, and SH-2 is partially within the Proposed Wind Farm. Sparrowhawk were also regularly recorded hunting within the Proposed Wind Farm and throughout the wider area. The SH-1 breeding territory is located within the Existing Dunneill Wind Farm, construction phase works that will take place in that area, is the removal of the turbines at the Existing Dunneill Wind Farm, as such no additional habitat loss will occur that may lead to disturbance. The SH-2 breeding territory overlaps with one Proposed	The magnitude of the effect is assessed as Medium. The cross tabularisation 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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	Turbine and the construction of new access tracks that may lead to disturbance. Disturbance from construction activity is not reported for sparrowhawk, however, it is assumed for the purposes of the assessment that sparrowhawk will show avoidance to construction, as with other raptors. However, sparrowhawk is a wide-ranging generalist species and, as grassland, bog and hedgerow/treeline is not a scarce resource locally, there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including breeding, in the wider surroundings. As such, construction disturbance within the Proposed Wind Farm will not result in the loss of a scarce resource for the local sparrowhawk population. However, given the presence of both breeding territory within disturbance distance of major works, the magnitude of the effect of disturbance is assessed as medium.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	Sparrowhawk are resident at the Proposed Wind Farm. Two breeding territory were identified partially within the Proposed Wind Farm. SH-1 is within the Existing Dunneill Wind Farm, and SH-2 is partially within the Proposed Wind Farm. Sparrowhawk were also regularly recorded hunting within the Proposed Wind Farm and throughout the wider area. In one of those breeding territories (SH-2) a Proposed Turbine is located (T13), also new access tracks and upgrade to existing roads are proposed. The other (SH-1) is located within the Proposed Wind Farm, but no proposed works are at this location. Displacement from turbines is not reported for sparrowhawk, however, it is assumed for the purposes of the assessment that sparrowhawk will show	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 during the construction and operational phases of the Proposed Project		Significance (Percival, 2003)	Significance (EPA, 2022)
	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. As such, operational displacement within the Proposed Wind Farm will not result in the loss of a scarce resource for the local sparrowhawk population. However, given the presence of a breeding territory within potential displacement distance of turbines, the magnitude of the effect of displacement is assessed as medium.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken for the three turbine scenarios (full details provided in Appendix 7-6). The highest collision risk has been calculated at 0.006 collisions per year. One sparrowhawk carcass was found during collision monitoring over a three year period. This is in line with the prediction, as the collision risk is not zero. It must be noted that the Existing Wind Farm turbines have a lower swept height than the Proposed Turbine models, which may increase collision risk for a typically low-flying species such as sparrowhawk. Taking these together, no significant effects on the local population are anticipated.	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.	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.

7.5.3

Likely Effects Associated with the Proposed Grid Connection Route

The Proposed Grid Connection Route will originate at the proposed onsite 110kV substation and run west for approximately 130m through proposed access track before turning north for 400m along the L2702 Local Road. The Proposed Grid Connection Route will continue east and then north along the L6309 Local Road network for approx. 6.6km. The Proposed Grid Connection Route then follows the N59 National Road east for 26.2km before continuing southeast for 6.9km on the R290 Regional Road. The Proposed Grid Connection Route then joins the R284 Regional Road heading southeast for 2.8km on the L6234 Local Road before heading east onto the L5204 Local Road for 1.8km. From the L5204 the Proposed Grid Connection Route turns left and travels a final 400m into the existing Srananagh 220kV substation.

Required works are all located within the existing road corridor, with the exception of 130m of new access tracks in an area of conifer plantation (full details in Section 4.3.3 in Chapter 4 of this EIAR). On a precautionary basis, it is assumed that some temporary disturbance may occur during works. However, given the scale of the works and the extent of similar habitat in the wider surroundings, significant effects are not predicted. The Proposed Grid Connection Route will be underground therefore, there is no risk of collision with overhead lines. The effect significance for all KORs is assessed as no greater than **Low** (Percival, 2003) or a **likely short-term slight negative effect** (EPA, 2022).

7.5.4

Likely Effects Associated with the Turbine Delivery Route

Road and junction widening are sometimes required along proposed turbine delivery routes to accommodate the large vehicles used to transport turbine components to proposed project sites. The proposed turbine delivery route for the Proposed Project has been the subject of a route assessment to determine if any works are required along its length. Full details of the assessment are included as part of the traffic impact assessment set out in Section 15.1.10 of this EIAR and summarised below. There are sections on the route where the vertical alignment may require specialist transport vehicles. These sections will be further considered by the appointed transport company following turbine procurement process. Accommodation works will be required at various locations on the national and local road network between the port of arrival in Killybegs and the Proposed Wind Farm site. These will be limited to temporary measures including temporary local road widening, overruns of roundabout island and temporary relocation of some signs and street furniture. Also, some private walls and tree removal will be needed along to local road to accommodate the turbine delivery, as these trees are on the side of the road with already high levels of disturbance due to traffic, no significant additional impacts are anticipated.

The existing habitats (i.e., existing roads) along the route do not have the potential to support other species of conservation interest in the area. Temporary junction accommodation for abnormal loads will be required; however, these works are minor in scale and are located within the existing road corridor (full details in Section 4.5.3 of Chapter 4 of this EIAR). Upon completion of the turbine delivery phase, it will revert back to its existing condition. On a precautionary basis, it is assumed that some temporary disturbance may occur along sections during works. However, given the scale of the works and the extent of similar habitat in the wider surroundings, significant effects are not predicted. The effect significance for all KORs is assessed as no greater than **Low** (Percival, 2003) or a **likely short-term slight negative effect** (EPA, 2022).

7.5.5 Likely Effects on Designated Sites

7.5.5.1 Special Protection Areas

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

‘Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction 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.

7.5.5.2 Ramsar Sites

The potential for effects on Easky Bog Ramsar Site was assessed in Chapter 6 of this EIAR. The Chapter identified no direct effects as the Proposed Project located entirely outside the boundary of this Designated Site. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Designated Site. As such, potential for direct or indirect impact on this Ramsar Site can be excluded. Chapter 6 concluded that:

‘Therefore, this Nationally/Internationally Designated Site is not within the Likely Zone of Influence, and no further assessment is required.’

The bird species associated with this Ramsar Site are Greenland white-fronted goose and golden plover. Greenland white-fronted goose was recorded once over the entire survey period. A flock of 14 birds was recorded flying high in November 2021 at 5.0km of the Proposed Wind Farm. A golden plover breeding territory (GP-1b) was identified within the Easky Bog Ramsar Site, and golden plover were recorded roosting and foraging in GP-4 and GP-5, both in the Easky Bog Ramsar Site.

As these areas are outside the Proposed Wind Farm, there will be no effects of direct habitat loss. Although Easky Bog is within 150m of the Proposed Wind Farm, GP-1b, GP-4 and GP-5 were further than 500m from the nearest construction works and Proposed Turbine location, therefore no significant effects of construction disturbance or operational displacement are anticipated.

7.6 Mitigation and Best Practice Measures

This section describes the measures that are in place to mitigate negative effects associated with the Proposed Project on ornithological receptors. No significant negative effect has been identified on any KORs, therefore these measures are proposed as industry best practice rather than to mitigate any identified significant effect. Effects on ornithological receptors have been addressed through the design of the Proposed Project, and a Construction and Environmental Management Plan. These are discussed below.

7.6.1 Design of the Proposed Project

The Proposed 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 Route has been selected to utilise built infrastructure for the majority of its length (i.e., cables to be laid within public roads). Cables will be laid underground to avoid effects on roadside hedgerows and disturbance to nesting birds.

7.6.2 Construction and Environmental Management Plan

A Construction and Environmental Management Plan has been prepared and will be in place prior to the start of the construction phase. Full details are available in Appendix 4-5 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). Any requirement for construction works to run into the subsequent breeding season following commencement will be informed by pre-construction bird surveys.
- 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.
- During the construction phase, noise limits, noise control measures, hours of operation (i.e. dusk and dawn is high faunal activity time) and selection of plant items will be considered in relation to disturbance of birds. All plant and equipment for use will comply with the European Communities (Noise Emission By Equipment For Use Outdoors) Regulations, 2001, as amended (SI 632/2001). Plant machinery will also be turned off when not in use.
- Silt fences will be installed as an additional water protection measure around existing watercourses.
- A pre-construction bird survey at the Proposed Wind Farm 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, the roost or nest site will be located and no works shall be undertaken within a species-specific disturbance buffer in line with industry best practice (e.g., NatureScot, 2022). No works shall be permitted within the buffer until it can be demonstrated that the birds are no longer dependent on the roost/nest.
- The closest infrastructure to the dunlin breeding territory is a section of new road and the Proposed Turbine hardstands for T1 and are located 360m from DN-1. There is no infrastructure to the west of the access road of T1, T3 and T5, therefore there will be no construction works to the west of the development footprint of the Proposed Wind Farm. Given this distance and the existing land use at this location, significant impacts to breeding dunlin are considered unlikely. Notwithstanding this, a pre-construction survey should be undertaken prior to any works during the dunlin breeding season (March to July) to establish whether the territory remains occupied. If the potential for breeding dunlin is recorded during pre-construction surveys, an Ecological Clerk of Works (ECoW) will supervise works in the vicinity of DN-1 or any territories found in proximity to works. The role of the ECoW will be to monitor for the following risks: (1) disturbance of the nesting pair and their young; (2) injury of the nesting pair, nest, eggs or young or; (3) damage to habitat depended on by the nesting pair or their young. If the ECoW determines a high level of risk for any of these events to occur, works will cease within the risk area until the dispersal of juveniles from the natal area.

Should works be required within 200m of a confirmed breeding territory, these will be scheduled outside the dunlin breeding season (March to July), from when initial territory establishment may occur until the likely dispersal of juveniles from the natal area (see also Appendix 7-7).

7.6.3 Biodiversity Management and Enhancement Plan

The Biodiversity Management and Enhancement Plan (BMEP) has been prepared in support of this EIAR. The objectives of the BMEP include providing Biodiversity Enhancement by enhancing existing peatland habitats within the site which link up existing peatland habitats of the Ox Mountains Bogs SAC, thereby improving habitat connectivity and offsetting the loss of 1.29ha of blanket bog and 5.6ha of cutover bog habitat for the Proposed Project; to restore habitat condition of degraded peatland habitats to favourable conservation status for upland blanket bog and; to provide riparian planting along the Dunneill_010 between then Proposed Wind Farm and the Proposed Enhancement Area. to increase hedgerow and treeline habitat, bolster wildlife corridors and create a buffer for the river habitat. Full details of the BMEP are presented in Appendix 6-4.

The BMEP will benefit the ornithological community at the Proposed Wind Farm. In particular, KORs that utilise peatland habitat, such as dunlin, golden plover, hen harrier, merlin, red grouse and snipe will benefit from the restoration of degraded peatland habitats for foraging and resting. Red grouse breeding territories were identified within the BMEP area and will benefit from the restoration of peatland habitats. Although part of the BMEP area is within displacement distance of Existing Wind Farm turbines for some of these species, a proportion of the area is further than 500m from the Proposed Turbine locations and will be available to these species. In addition, riparian planting will support a variety of bird species, in particular prey species for raptor species.

7.6.4 Mitigation Measures

White-tailed Eagle

It is possible that white-tailed eagle are using the topography of the landscape around the Proposed Wind Farm to utilise thermals and search for food. There is sheep farming in the area, and carcasses of fallen sheep (or other livestock and wild animals such as deer) may provide food for white-tailed eagle.

Although no significant effects of collision risk are anticipated at the Proposed Wind Farm, the literature highlights eagles as a species group that can be particularly vulnerable to collision with wind turbines (e.g., May *et al.*, 2011). The carcasses of fallen animals can attract soaring eagles to scavenge.

To reduce the likelihood of white-tailed eagles being attracted to the Proposed Wind Farm, fallen animal carcasses will be removed from the Proposed Wind Farm. The removal of fallen animal carcasses should be conducted throughout the lifetime of the Proposed Wind Farm to make the area less attractive to eagles. Full details of the fallen animal removal protocol are provided in Appendix 7-7.

Residual Effects

No effect significance greater than **likely long-term slight negative effect**, 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 Impacts

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 Section 2.9 of Chapter 2 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:

- Sligo County Development Plan 2024-2030
- Northern and Western Regional Spatial and Economic Strategy 2020-2032
- Irelands 4th National Biodiversity Action Plan 2023 – 2027

7.7.2 Projects Considered in the Assessment

7.7.2.1 Forestry, Turbary and Agricultural Practices

Land uses in the vicinity of the Proposed Wind Farm comprise forestry and turbary activity, as well as agriculture in the wider area. Forestry practices including rotational forestry felling is likely to continue within the Proposed Project site. Private peat cutting on turbary plots will likely continue in the vicinity of the Proposed Wind Farm and in the wider area. These land-uses have been taken into account in this cumulative assessment. Cumulative impacts relating to other ecological impacts such as water quality and habitat loss are discussed in Chapter 6 of this EIAR.

7.7.2.2 Other Wind Farm Developments

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

Table 7-12 Wind farm developments within 25km of the Proposed Wind Farm

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Sligo	Black Lough Wind Farm	Existing	4	c.4.2km
	Cloonkeelaun Single Wind Turbine	Existing	1	c.6.7km
	Cloonkeelaun 2 Wind Turbine	Existing	2	c.6.6km
	Strokane Single Turbine (Cloonkeelaun)	Permitted	1	c.7.1km
	Cloonkeelaun Wind Farm (Carrowleagh Wind Farm Extension)	Existing	3	c.6.7km
	Lackan Wind Farm	Existing	3	c.14.1km
	Clooncunny Wind Farm	Proposed	7	c.14.6km

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
	Templehouse Single Turbine	Permitted	1	c.17.1km
Mayo	Carrowleagh 1 Wind Farm	Existing	13	c.7km
	Firlough Wind Farm	Permitted	13	c.7.7km
	Bunnyconnellan Wind Farm	Existing	12	c.12.5km
	Killala Wind Farm Phase 1	Existing	5	c.23.6km
	Killala Wind Farm Phase 2	Existing	1	c.23.3km
	Grady Joinery Wind Farm	Existing	1	c.24.5km

Black Lough Wind Farm (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Black Lough Wind Farm was considered. The Natura Impact Statement and the Environmental Impact Statement were reviewed on the Sligo County Council Planning Register².

It was discussed in this document that indirect impacts on breeding birds associated with the Ox Mountain Bog SAC may occur from the indirect degradation of habitat (drying) on which the protected species feed and roost. Also, wet bogs areas are identified as a traditional feeding and roosting ground for white-fronted geese, a protected and declining species in Ireland with high conservation value that uses the Ox Mountain SAC (Easky bog) during the winter months. Red grouse and snipe are also discussed as likely to be present in this area and impacted by the development. The conclusion of the assessment was that the impacts of the construction and operation of the Proposed Turbines on bird species are likely to be low provided construction, management and re-installment on decommissioning follow best practices procedures and the proposed mitigation measures are adopted.

Carrowleagh 1 Wind Farm (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Carrowleagh Wind Farm was considered. The Environmental Statement was reviewed on the Mayo County Council Planning Register³.

The following species were assessed: hen harrier, cormorant, whooper swan, red grouse, merlin, golden plover, curlew and snipe. Snipe was assessed as the only breeding bird on the site therefore it might be impacted by habitat loss and displacement during the construction phase, but as the species is widespread and common in the surroundings area, the local population is unlikely to be significantly impacted. For the remaining seven species assessed, no of them was breeding or foraging on the proposed site and are therefore unlikely to be negatively affected in any way by the construction and operation of the wind farm

² <https://eplanning.ie/ePlan/AppFileRefDetails/1793/25?localAuthorityId=25>

³ <https://www.eplanning.ie/MayoCC/AppFileRefDetails/063861/0>

Cloonkeelaun Single Wind Turbine (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Cloonkeelaun Single Wind Turbine was considered. The Environmental Impact Statement was reviewed on the Sligo County Council Planning Register⁴.

The following species were assessed: whooper swan, grey heron, mallard, kestrel, merlin, red grouse, lack-tailed godwit, golden plover, jack snipe, common snipe, common gull, herring gull, great black-backed gull, wood pigeon, cuckoo, skylark, swallow, meadow pipit, pied wagtail, grey wagtail, wren, robin, blackbird, song thrush, mistle thrush, redwing, wheatear, whinchat, stonechat, sedge warbler, blackcap, chiffchaff, willow warbler, goldcrest, long-tailed tit, great tit, coal tit, blue tit, magpie, rook, hooded crow, raven, chaffinch, linnet, goldfinch, siskin, lesser redpoll, common crossbill and reed bunting. Meadow pipit was assessed as the only breeding bird that might be impacted by habitat loss and displacement during the construction phase, but as the species is widespread and common in the surroundings area, the local population is unlikely to be significantly impacted. The impact of habitat loss, displacement and disturbance on other species was considered low. Collision risk was assessed for red grouse and considered to be very low. Of other species of conservation concern, 'the disturbance and collision impacts are considered to be low.' It was concluded that the development would not have an adverse impact on any SPAs, either alone or in combination with other plans or projects.

Cloonkeelaun 2 Wind Turbine (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Cloonkeelaun Wind Turbine was considered. The Environment Impact Statement and Screening Statement of Appropriate Assessment were reviewed on the Sligo County Council Planning Register⁵.

The following species were assessed: merlin, red grouse, meadow pipit and golden plover. Meadow pipit was assessed as the only breeding bird that might be impacted by habitat loss and displacement during the construction phase, but as the species is widespread and common in the surroundings area, the local population is unlikely to be significantly impacted. The impact of habitat loss, displacement and disturbance on other species was considered low. Collision risk was assessed for red grouse and considered to be very low. Of other species of conservation concern, 'the disturbance and collision impacts are considered to be low.' It was concluded that the development would not have an adverse impact on any SPAs, either alone or in combination with other plans or projects.

Strokane Single Turbine (Cloonkeelaun) (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Strokane Single Turbine was considered. The Environmental Report was reviewed on the Sligo County Council Planning Register⁶.

The target species were the following: kestrel, lesser black-backed gull, golden plover and teal. Surveys recorded no evidence of breeding for kestrel, teal, golden plover, or lesser black-backed gull within the area. Also, the construction phase was assessed to have no significant disturbance effects to these species. Direct impacts are limited to a permanent but minor loss of habitat within the area. For other species, including passerines and corvids, potential disturbance during construction is assessed as being of short-term duration and negligible-to-low significance. It was concluded that the development would not have an adverse impact on any SPAs, either alone or in combination with other plans or projects.

⁴ <https://eplanning.ie/ePlan/AppFileRefDetails/15343/25?localAuthorityId=25>

⁵ <https://eplanning.ie/ePlan/AppFileRefDetails/15466/25?localAuthorityId=25>

⁶ <https://eplanning.ie/ePlan/AppFileRefDetails/22161/25?localAuthorityId=25>

Cloonkeelaun Wind Farm (Carrowleagh Wind Farm Extension) (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Cloonkeelaun Wind Farm was considered. The Environmental Impact Statement was reviewed on the Sligo County Council Planning Register⁷.

The following species were assessed: little grebe, teal, common snipe, skylark, kestrel, common gull and swallow. It was determined in the document disturbance will be minor with the exception of little grebe and teal that might be impacted during the breeding season considering the proximity to Lough Weeloge, therefore no construction work or tree felling was advised during the breeding season. Within the operational phase, disturbance and collision risk were assessed as low or very low for all bird species.

Firlough Wind Farm (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Firlough Wind Farm was considered. The Environmental Impact Statement was reviewed on the Mayo County Council Planning Register⁸.

The following species were assessed: Greenland white-fronted geese, merlin, hen harrier, golden plover, red grouse and snipe. Habitat loss and local disturbance are considered to be of low significance. During the construction phase, potential disturbance to red grouse is expected to be temporary and localised. For merlin, there is a potential for seasonal disruption if nesting occurs within 1km of turbines, requiring targeted mitigation to establish territory locations prior to works. Breeding snipe recorded during surveys were at a sufficient distance (>500m) to avoid significant impact, and any effects on wintering snipe are expected to be minor. Operational impacts, including collision risk and displacement, are assessed as low or insignificant. Specifically, red grouse and merlin typically fly at low altitudes below the rotor sweep, while Greenland white-fronted geese are not at risk due to the absence of suitable habitat or established flight paths over the site.

Bunnyconnellan Wind Farm (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Bunnyconnellan Wind Farm was considered. The EIAR was reviewed on the Mayo County Council Planning Register⁹.

The following species were assessed: red grouse and snipe. For red grouse, disturbance was determined to be low, indirect habitat loss was determined as low-to-null, and collision risk was determined as null. For snipe, disturbance, habitat loss and collision risk are all determined as low.

Killala Wind Farm Phase 1 (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Killala Wind Farm Phase 1 was considered. The EIAR was reviewed on the Mayo County Council Planning Register¹⁰.

The following bird species were identified as Key Ecological Receptors: peregrine falcon, kestrel, sparrowhawk, buzzard and snipe. Without mitigation, during the construction phase, impacts are deemed significant at the county scale for peregrine, significant at a local scale for snipe and not significant for kestrel, sparrowhawk and buzzard. Without mitigation, during the operational phase, a

⁷ <https://eplanning.ie/ePlan/AppFileRefDetails/10235/25?localAuthorityId=25>

⁸ <https://www.eplanning.ie/MayoCC/AppFileRefDetails/11495/0>

⁹ <https://www.eplanning.ie/MayoCC/AppFileRefDetails/10514/0>

¹⁰ <https://eplanning.ie/ePlan/AppFileRefDetails/17619/20?localAuthorityId=20>

significant negative impact is expected for peregrine falcon at the county level, no significant impacts are expected for snipe, sparrowhawk, kestrel and buzzard. Mitigation measures were proposed to limit impact on peregrine falcon, especially, during the breeding season (e.g., no construction works during the peregrine falcon breeding season in close proximity with the established nest). It was concluded that the development would not have an adverse impact on any SPAs, either alone or in combination with other plans or projects.

Killala Wind Farm Phase 2 (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Killala Wind Farm (Phase 2) was considered. The NIS and Ecological Impact Assessment were reviewed on the Mayo County Council Planning Register¹¹.

The following species were assessed: golden plover, curlew, herring gull, cormorant, whooper swan, snipe, common gull, lesser black-backed gull, greater black-backed gull, grey heron, little egret and Iceland gull. The document found that there is potential for significant effects on the peregrine falcon due to collision during the operational phase of the turbines in combination with the consented and under-construction wind farm prior to mitigation measures being specified. A number of mitigation measures have been proposed to mitigate the potential effects. As part of the 2010 permission, there was a Turbine 6 consented in a location close to a peregrine nest. This turbine was omitted from the 2018 permission. The current location of Turbine 6 is now over 1km from the peregrine nest, and this has avoided potential for disturbance. After mitigation measures have been implemented there will be no residual effect on the peregrine falcon during construction. Prior to mitigation, there is potential for significant effects on features of local importance such as kestrel.

Grady Joinery Wind Farm (Co. Mayo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Grady Joinery Wind Farm was considered. The Environmental Report was reviewed on the Mayo County Council Planning Register¹².

The following species were recorded and assessed: blue tit, coal tit, chaffinch, greenfinch, goldfinch, blackbird, robin, wren, woodpigeon, hooded crow, rook, jackdaw, magpie and starling. It was determined in the document that impacts (disturbance and collision risk) will not result in significant impacts on bird species recorded during surveys.

Lackan Wind Farm (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Lackan Wind Farm was considered. The Environmental Impact Statement was reviewed on the Sligo County Council Planning Register¹³.

The following species were assessed: little grebe, teal, kestrel, red grouse, snipe, common gull, skylark, sparrowhawk and swallow. It was considered unlikely that the operational turbines at Lackan Wind Farm will have any significant negative impact (habitat loss, disturbance and collision risk) on bird species found within the area.

Also, the EIAR for extension of life of the Lackan Wind Farm was reviewed on the Sligo County Council Planning Register¹⁴.

¹¹ <https://eplanning.ie/ePlan/AppFileRefDetails/19260/20?localAuthorityId=20>

¹² <https://www.eplanning.ie/MayoCC/AppFileRefDetails/11413/0>

¹³ <https://eplanning.ie/ePlan/AppFileRefDetails/10235/25?localAuthorityId=25>

¹⁴ <https://eplanning.ie/ePlan/AppFileRefDetails/22401/25?localAuthorityId=25>

The following species were assessed: oystercatcher, great northern diver, mute swan, kestrel, heron, great black-backed gull, little egret, curlew, cormorant, brent geese, herring gull, lesser black-backed gull and ringed plover. It was considered unlikely that the operational turbines at Lackan Wind Farm have had any significant negative impact on bird species found within the area and particularly to qualifying species of the Killala Bay/Moy Estuary SPA, ringed plover and curlew, which were recorded in the vicinity of the wind farm in 2002 and 2021-2022.

Clooncunny Wind Farm (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Clooncunny Wind Farm was considered. The proposed Clooncunny Wind Farm is at the pre-planning stage and therefore no planning application has been lodged, and no impact assessment has been completed. The development is located in bog and farmland, with some areas of forestry. These habitats are likely to host some of the KORs recorded at the Proposed Wind Farm including golden plover, hen harrier, merlin, peregrine falcon, whooper swan, kestrel, lapwing, snipe, barn owl, buzzard and sparrowhawk, and long-eared owl may utilise forestry.

Templehouse Single Turbine (Co. Sligo)

The potential for the Proposed Project to result in significant cumulative or in-combination effects when assessed alongside Templehouse Wind Farm was considered. The Environmental Impact Statement and NIS were reviewed on the Sligo County Council Planning Register¹⁵.

The following species were assessed: skylark, meadow pipit, snipe, jay, sparrowhawk, woodcock, teal, wigeon, mallard, tufted duck, goldeneye, lapwing, curlew, Greenland white-fronted goose, mute swan, great crested grebe and grey heron. No significant impacts were found for the species listed above. The document concluded that, with the implication of the outlined mitigation measures, the proposed development will not have the potential to result in significant negative residual impacts to fauna.

7.7.3 Cumulative Impact Assessment

There were 13 KORs identified at the Proposed Wind Farm: white-tailed eagle, dunlin, golden plover, hen harrier, merlin, peregrine falcon, whooper swan, kestrel, red grouse, snipe, woodcock, buzzard and sparrowhawk. A key consideration in the assessment of the potential for cumulative impacts to result in significant effects on KORs in proximity and whether the existing, permitted or proposed projects under consideration all contain suitable habitats for the species in question. For the purposes of this cumulative assessment, the local scale is considered to be a 5km radius of the Proposed Wind Farm site. There are 27 existing turbines within 5km of the Proposed Wind Farm (Dunneill Wind Farm, Kingsmountain Wind Farm and Black Lough Wind Farm), however, the Existing Wind Farms of Dunneill and Kingsmountain are within the Proposed Wind Farm and will be decommissioned as part of the Proposed Project. Therefore, these two wind farms do not form part of the cumulative assessment. The remaining wind farms are between 5-25km of the Proposed Wind Farm, i.e. Black Lough Wind Farm.

Following SNH (2012) guidance, the cumulative impact assessment has been carried out at the scale of the importance rating of the receptor: National Importance (white-tailed eagle, dunlin, golden plover and hen harrier); County Importance (merlin, peregrine falcon, whooper swan, kestrel, red grouse and snipe); and Local Importance (woodcock, buzzard and sparrowhawk). The assessment of cumulative effects on KORs is provided in the sections below. In particular, cumulative habitat loss and displacement associated with operational turbines is assessed. Short-term impacts (e.g., construction disturbance) are highly unlikely to give rise to significant cumulative impacts, primarily as it is unlikely

¹⁵ <https://eplanning.ie/ePlan/AppFileRefDetails/21113/25?localAuthorityId=25>

that there will be temporal overlap. No significant cumulative effects during the construction phase are predicted to result, and they are not considered further.

For the majority of KORs, collision risk effects of no greater than Very Low (as per Percival [2003] criteria) or Long-term Imperceptible (as per EPA [2022] criteria) were predicted. Cumulative collision risk is therefore not considered further for these species, given these predicted impacts are effectively zero. Collision risk effects of Low (as per Percival [2003] criteria) or Long-term Slight (as per EPA [2022] criteria) were predicted for dunlin and golden plover, therefore the cumulative collision risk for these species is discussed below.

7.7.3.1 Landscape-Level Assessment

A GIS mapping exercise was undertaken that aimed to quantify the amount of land within the wider landscape (i.e., the continuous upland habitat in which the Proposed Wind Farm lies) that is likely to be significantly impacted by the presence of turbines. Impacts were predicted to be restricted to the area near a turbine, which was defined as within 500m of a turbine. This distance was chosen as Pearce-Higgins *et al.* (2009) identified, for a range of species, significant avoidance of turbines between 250m and 500m. It therefore follows that significant effects are unlikely at distances greater than 500m.

To define the area of interest, it is considered that including lands above 100m in elevation is a reasonable approximation of the continuous habitats which are similar to those within the Proposed Wind Farm, which also lie within the Ox Mountains. This area is largely one coherent ecological unit that contains a contiguous mosaic of similar habitats that likely contain similar species as were observed during the surveying of the Proposed Wind Farm and wider surroundings. Therefore, this area is a suitable area for a landscape-level assessment for all KORs. The GIS exercise provided the following results outlined below.

The total upland area is 37,885ha and of this 2,338ha (6.2%) is within 500m of a turbine (excluding the Proposed Turbine layout). The Existing Wind Farms of Dunneill and Kingsmountain are included within this total as they are currently existing and contributing to the baseline conditions within this upland area. However, it is noted that if the Proposed Wind Farm is built, these two Existing Wind Farm will be decommissioned. The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area (2.5% of the uplands) and 687ha is within open habitat. The two main land uses in these uplands are forestry, and upland bog/pastural grassland which is the 'open habitat' below. The breakdown of forestry and open habitat is:

- The total area of forestry is 7,335ha (19.4% of the total upland area);
 - Forestry greater than 500m from turbines (excluding the Proposed Turbine layout) is 6,988ha (or 95.3% of the forestry).
 - Forestry greater than 500m from turbines (following the decommissioning of Dunneill and Kingsmountain Wind Farms and excluding the Proposed Turbine layout) is 7,198ha (or 98.1% of the forestry).
 - Forestry greater than 500m from turbines (following the decommissioning of Dunneill and Kingsmountain Wind Farms and including the Proposed Turbine Layout) is 6,930ha (or 94.5% of the forestry).
- The total area of open habitat is 30,550ha (80.6% of the total upland area);
 - Open areas greater than 500m from turbines (excluding the Proposed Turbine layout) is 28,559ha (or 93.5% of the open habitat).
 - Open areas greater than 500m from turbines (following the decommissioning of Dunneill and Kingsmountain Wind Farms and

excluding the Proposed Turbine layout) is 29,009ha (or 95.0% of the open habitat).

- Open area greater than 500m from turbines (following the decommissioning of Dunneill and Kingsmountain Wind Farms and including the Proposed Turbine layout) is 28,322ha (or 92.7% of the open habitat).
- The total area within 500m of turbines (including the Proposed Turbine layout) is 2,633ha following the decommissioning of the Existing Wind Farms of Dunneil and Kingsmountain (6.9% of the total upland area);
 - 408ha is within forestry (15.5% of the area within 500m of turbines); and
 - 2,225ha is within open habitats (84.5% of the area within 500m of turbines).

Having undertaken the above analysis of the available area within the surrounding uplands the following can be ascertained:

- The majority of the uplands is comprised of 'open habitats'.
- A portion of the land cover of the uplands is commercial forestry (19.4%).
- There is a low density of turbines within these uplands and the area occupied by the turbines (plus a 500m radius) is small in size when compared to the other key industries of commercial forestry, turf harvesting and agriculture.
- In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will initially increase the availability of habitat within 500m of the decommissioned turbines.
- In the specific case of dunlin, significant displacement effects occur at 200m (Stroud *et al.*, 1987) and for golden plover, significant displacement effects occur at 200m (Pearce-Higgins *et al.*, 2009), compared to the 500m used in this assessment. Therefore, cumulative impacts on dunlin and golden plover would be much less than those calculated here at a landscape level.

As forestry, turf harvesting and agriculture (i.e., open habitat) make up a significant amount of the total 37,885ha within the uplands, it is reasonable to conclude that the relative quality/suitability of these habitats is likely to have the greatest (positive or negative) influence on the local ornithological community. While many of the species encountered at the Proposed Wind Farm are in decline at a national level, it is not possible to conclusively attribute the decline to any one industry; likely, the national hierarchy of threats/pressures as per Article 12 reporting holds true locally also. That is; forestry practice (including forest planting on open ground and forestry management) and factors associated with agricultural intensification are of high importance. Impacts associated with wind farms (renewable abiotic energy use) are likely of medium importance locally.

In summary, significant landscape level cumulative effects are not anticipated based on the following rationale. There is a low density of turbines within this upland area. The additional indirect habitat loss associated with the Proposed Turbines is small given that the area overlaps with the Existing Wind Farm of Dunneill and Kingsmountain, which will be decommissioned as part of the Proposed Project. Extensive areas of similar suitable upland habitat will remain outside any displacement distance from proposed, permitted or existing turbines within the Ox Mountains.

7.7.3.2 White-tailed Eagle (National Importance)

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

At a national level, the main pressures and threats for white-tailed eagle listed in Article 12 reporting are: wood transport; transmission of electricity and communications; agricultural activities generating diffuse pollution to surface or ground waters; and wind, wave and tidal power, including infrastructure; as well as sports, tourism and leisure activities, plant and animal diseases, pathogens and pests, and increases in precipitation due to climate change. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for white-tailed eagle. Of the pressures/threats listed, wind, wave and tidal power is ranked as of high importance, while those relating to commercial forestry or agriculture are of medium importance.

Significant cumulative effects greater than 25km from the Proposed Wind Farm are unlikely given the separation distance between the Proposed Wind Farm and these developments and given the extensive areas of suitable habitat available within 25km of the Proposed Wind Farm. The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for foraging white-tailed eagle and commercial forestry, which is of limited ecological value to white-tailed eagle. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunmy, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland), which are habitats suitable for white-tailed eagle. Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats, which is of limited ecological value to white-tailed eagle. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6.988ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

White-tailed eagle typically breeds at large waterbodies (<8ha) and largely hunts fish, although they will opportunistically take terrestrial prey (Radović and Mikuska, 2009; Treinys *et al.*, 2015). There are no suitable waterbodies in proximity to the Wind Farm Site; the nearest large (<8ha) waterbody is Lough Easky, over 1.9km from the Proposed Wind Farm.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.3 Dunlin (National Importance)

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

At a national level, the main pressures and threats for dunlin listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; intensive grazing or overgrazing by livestock; drainage for use as agricultural land; conversion from one type of agricultural land use to another; burning for agriculture; and wind, wave and tidal power, including infrastructure; as well as problematic native species, other invasive alien species, vandalism or arson and sports, tourism and leisure activities. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for dunlin. The threat/pressure of wind, wave and tidal power was ranked as of medium importance, while those relating to forestry were all ranked as of high importance. Intensive grazing or overgrazing by livestock, and drainage for use as agricultural land were ranked as of high importance, while the remainder relating to agricultural practices were ranked as of medium importance.

Significant cumulative effects greater than 25km from the Proposed Wind Farm are unlikely given the separation distance between the Proposed Wind Farm and these developments and given the extensive areas of suitable habitat available within 25km of the Proposed Wind Farm. The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for dunlin and commercial forestry, which is of no ecological value to dunlin. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland) which are habitats suitable for breeding dunlin. Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. Both of these habitats are of no ecological value to dunlin. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

Significant impacts of collision risk were not reported for any of the existing or proposed wind farms within 25km of the Proposed Wind Farm and given the low predicted collisions at the Proposed Wind Farm, significant cumulative collision risk on dunlin are not anticipated.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6.988ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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, displacement or collision risk. **Significant cumulative impacts are not predicted.**

7.7.3.4 Golden Plover (National Importance)

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

At a national level, the main pressures and threats for golden plover listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; intensive grazing or overgrazing by livestock; drainage for use as agricultural land; conversion from one type of agricultural land use to another; burning for agriculture; and wind, wave and tidal power, including infrastructure; as well as problematic native species, other invasive alien species, and vandalism or arson. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for golden plover. The threat/pressure of wind, wave and tidal power was ranked as of medium importance, while those relating to forestry were all ranked as of high importance. Intensive grazing or overgrazing by livestock, and drainage for use as agricultural land were ranked as of high importance, while the remainder relating to agricultural practices were ranked as of medium importance.

Significant cumulative effects greater than 25km from the Proposed Wind Farm are unlikely given the separation distance between the Proposed Wind Farm and these developments and given the extensive areas of suitable habitat available within 25km of the Proposed Wind Farm. The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for golden plover and commercial forestry, which is of no ecological value to golden plover. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland), which are habitats suitable for golden plover. Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats, which is of no ecological value to golden plover. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

Significant impacts of collision risk were not reported for any of the existing or proposed wind farms within 25km of the Proposed Wind Farm and given the low predicted collisions at the Proposed Wind Farm, significant cumulative collision risk on golden plover are not anticipated.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6.988ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment,

the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat. No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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, displacement or collision risk. **Significant cumulative impacts are not predicted.**

7.7.3.5 Hen Harrier (National Importance)

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

At a national level, the main pressures and threats for hen harrier listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; replanting with or introducing non-native or non-typical species; wood transport; removal of small landscape features for agricultural land parcel consolidation; reseeded of grasslands and other semi-natural habitats; conversion from one type of agricultural land use to another; burning for agriculture; abandonment of management/use of other agricultural and agroforestry systems; and wind, wave and tidal power, including infrastructure; as well as problematic native species. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for hen harrier. The pressures/threats of wind, wave and tidal power and agricultural are ranked as of medium importance. Conversion to forest from other land uses, or afforestation, and replanting with or introducing non-native or non-typical species were ranked as of high importance, with the remaining pressures/threats relating to forestry and agricultural practices ranked as of medium importance.

The Hen Harrier Threat Response Plan 2024-2028 states:

'While wind energy production is identified as one of the key pressures on the species, wind energy development is also, more generally, a key part of the global and national response to alleviating climate change. Biodiversity and climate change commitments have equal standing, and creating opportunities to achieve both, without compromising each other, is critical, particularly as biodiversity can assist in climate change mitigation and adaptation.'

The fluctuations in hen harrier populations in Ireland can be related to habitat modification and loss (Wilson *et al.*, 2015). In particular, extensive afforestation over the past 65 years in Ireland has resulted in the loss of large areas of open habitat suitable for breeding hen harrier. Agricultural intensification and wind farms are also identified as key pressures/threats.

There is substantial Irish-based evidence that shows that both moorland habitats, low-intensity managed grasslands and dense structured hedgerows are important for foraging hen harrier (Barton *et al.*, (2006), Ruddock *et al.*, 2012) and mature heather for nesting. However, as mature heather becomes increasingly rare in Ireland, the species is forced to nest in young commercial coniferous forestry. Wilson *et al.*, (2015) highlight the importance of open habitats that hold a high diversity of prey species for foraging hen harrier. Young conifer plantations provide cover suitable for nesting hen harrier,

however forestry may be associated with higher rates of nest predation and lower prey availability around the nest (Wilson *et al.*, 2015; Gómez-Catasús *et al.*, 2021). Open habitats are favoured by hen harrier and are potentially of strategic importance to a declining population undergoing range contraction. While hen harrier can nest in forestry, they are reliant on open habitats for foraging. An absence (or unavailability) of open habitats can limit range expansion and the associated population recovery.

Significant cumulative effects greater than 25km from the Proposed Wind Farm are unlikely given the separation distance between the Proposed Wind Farm and these developments and given the extensive areas of suitable habitat available within 25km of the Proposed Wind Farm. The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for hen harrier and commercial forestry, which is of some ecological value to hen harrier during the pre-thicket stage. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunmy, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. All of these are habitats which are suitable (to varying degrees) for hen harrier during the breeding (uplands) or wintering (uplands and lowlands) seasons. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6,988ha of forestry greater than 500m from a turbine. Owing to the likely asynchronous rotation cycle of the forestry crop, only a proportion of the forestry will be young (pre-thicket) and thus useful/available to hen harrier at any one time. The forestry is suitable for approximately a quarter of its lifecycle. All else being equal, approximately 1,747ha of the 6,988ha is likely available to hen harrier at any one time. The 30,306ha combined total constitutes a significant amount of upland habitat available for hen harrier in any given year. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat and part of the forestry habitat are of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha and 1,800ha of forestry (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area, 687ha is within open habitat and 268ha of forestry. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.754ha (comprising 687ha of open habitat and 67ha of forestry habitat, the latter calculated as 25% of the 268ha of forestry likely to be in the pre-thicket stage and therefore available to hen harrier at any one time), which represents a 2.5% loss of the remaining open habitat greater than 500m from a turbine (30,306ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 30,055ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.6 Merlin (County Importance)

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

At a national level, the main pressures and threats for merlin listed in Article 12 reporting are: replanting with or introducing non-native or non-typical species; clear-cutting, removal of all trees; conversion from one type of agricultural land use to another; peat extraction; and wind, wave and tidal power, including infrastructure. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for merlin. Of the threats/pressures listed, conversion into agricultural land is ranked as of high importance, and the remainder are ranked as of medium importance.

The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for merlin and commercial forestry, which is of some ecological value to breeding merlin. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. All of these are habitats which are suitable (to varying degrees) for merlin. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6.988ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.7 Peregrine Falcon (County Importance)

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

At a national level, the main pressure/threats for peregrine falcon listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure; agricultural activities (which relates to changes in habitat extent and quality due to agricultural management); and use of plant protection chemicals in agriculture; as well as poisoning of animals, illegal harvesting, and other human intrusions and disturbance not mentioned above (which relates to checking nests and taking chicks for the purposes of falconry). The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which also have the potential to influence habitat availability and quality for peregrine falcon.

The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for foraging peregrine falcon and commercial forestry, which is of limited ecological value to peregrine falcon. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland), which are habitats suitable for peregrine falcon. Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats, which is of limited ecological value to peregrine falcon. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6.988ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.8 Whooper Swan (County Importance)

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

At a national level, the main pressures and threats for whooper swan listed in Article 12 reporting are: transmission of electricity and communications; and wind, wave and tidal power, including infrastructure; as well as sports, tourism and leisure activities, and modification of flooding regimes, flood protection for residential or recreational development. The following provides an assessment of the threats/pressures that are relevant at the regional level. Threats/pressures relating to wind farms were ranked as of medium importance.

The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) and commercial forestry, both of which are of limited or no ecological value to whooper swan respectively. However, there are a number of loughs within the upland habitat surrounding the Proposed Wind Farm which could support whooper swan. Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland), which may contain habitats which are suitable for whooper swan. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. These habitats are of limited or no ecological value to whooper swan respectively. The majority of whooper swan activity within the uplands surrounding the Proposed Wind Farm are likely of travelling or migrating birds. However, there is a low density of turbines within 25km of the Proposed Wind Farm and cumulative barrier effect to commuting or migration routes for whooper swan are not anticipated. Furthermore, extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.9 Kestrel (County Importance)

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

At a national level, the main pressures and threats for kestrel listed in Article 12 reporting are: use of plant protection chemicals in agriculture; conversion from mixed farming and agroforestry systems to specialized production; and removal of small landscape features for agricultural land parcel consolidation; as well as interspecific relations. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for kestrel. The threats/pressures listed that relate to agriculture were ranked as of medium importance.

The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed

Wind Farm contains open upland habitats (such as bogs) which are suitable for foraging kestrel and commercial forestry, which is of some ecological value to breeding kestrel. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunny, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. All of these are habitats which are suitable (to varying degrees) for kestrel. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 35,547ha of suitable habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. Kestrel is a habitat generalist that uses open habitat, agricultural habitat and forestry; therefore, all habitat types were included in this assessment. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. The projected open habitat greater than 500m of a turbine in the uplands would be 36,207ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and all of which is suitable for kestrel. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.955ha, which represents a 2.6% loss of the remaining suitable habitat greater than 500m from a turbine (36,207ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 35,252ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Site. 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. **Significant cumulative impacts are not predicted.**

7.7.3.10 Red Grouse (County Importance)

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

At a national level, the main pressures and threats for red grouse listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; intensive grazing or overgrazing by livestock; drainage for use as agricultural land; change of habitat, size and/or quality due to climate change; burning for agriculture; and peat extraction; as well as problematic native species and other invasive alien species. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for red grouse. The threat/pressure relating to change of habitat, size and/or quality due to climate change, to peat extraction and forestry were all ranked as of high importance. Intensive grazing or overgrazing by livestock, and drainage for use as agricultural land were ranked as of high importance, while the remainder relating to agricultural practices were ranked as of medium importance.

The potential for developments at a county scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for red grouse and commercial forestry, which is of no ecological value to red grouse. Black Lough, Bunnyconnellan,

Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland), which may contain habitat which is suitable for red grouse. Clooncunmy, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats. These are of limited or no ecological value to red grouse respectively. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6,988ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.11 Snipe (County Importance)

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

At a national level, the main pressures and threats for snipe listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; mowing or cutting of grasslands; intensive grazing or overgrazing by livestock; conversion from one type of agricultural land use to another; abandonment of grassland management; drainage for use as agricultural land; wind, wave and tidal power, including infrastructure; and peat extraction; as well as other invasive alien species, and problematic native species. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for snipe. Some of the threats/pressures relating to forestry and agriculture were ranked as of high importance (mowing or cutting of grasslands; intensive grazing or overgrazing by livestock; conversion from one type of agricultural land use to another), while the remaining were ranked as of medium importance. Peat extraction, and wind, wave and tidal power were ranked as of medium importance.

The potential for developments at a regional scale (within 25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for snipe and commercial forestry, which is of no ecological value to snipe. Black Lough, Bunnyconnellan, Carrowleagh 1, Cloonkeelaun single turbine, Cloonkeelaun 2, Furlough and Strokane are located within upland open habitats (bogs and farmland). Clooncunna, Grady Joinery, Killala Phase 1, Killala Phase 2, Lackan and Templehouse are located within lowland open habitats (bogs and farmland). Both of these are habitats which are suitable for snipe. Cloonkeelaun (Carrowleagh Extension) is located within forestry habitats, which is of no ecological value to snipe. There is a low density of turbines within 25km of the Proposed Wind Farm. Extensive areas of suitable habitat will remain post construction, and there is an abundance of suitable habitat in the surrounding area.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 28,559ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 6,988ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 28,559ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As open habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 29,009ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 687ha is within open habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.687ha, which represents a 2.4% loss of the remaining open habitat greater than 500m from a turbine (29,009ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 28,322ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius of the Proposed Wind Farm. 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. **Significant cumulative impacts are not predicted.**

7.7.3.12 Woodcock (Local Importance)

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

At a national level, the main pressures and threats for woodcock listed in Article 12 reporting are: logging without replanting or natural regrowth; clear-cutting, removal of all trees; abandonment of traditional forest management, abandonment of grassland management (e.g. cessation of grazing or mowing); as well as other human instruction and disturbance not mentioned above; interspecific relations (competition, predation, parasitism, pathogens); problematic native species and the removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.). The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for woodcock. All the threat/pressure listed above were ranked as of medium importance.

The potential for developments at a local scale (within 5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains commercial forestry, which is suitable habitat for woodcock, and open upland habitats (such as bogs) which are of limited ecological value to woodcock. The disturbance associated with operational turbines will not significantly impact the local population of woodcock at the Proposed Wind Farm. There is only one wind farm within 5km of the Site (Black Lough Wind Farm), which does not contain suitable habitat for woodcock. Therefore, significant cumulative impacts are not predicted.

The results of the landscape-level analysis provide the following information: excluding the proposed development, there are currently 6,988ha of forestry habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 28,559ha of open habitat greater than 500m from a turbine. This species is primarily a forestry habitat species, therefore there is 6,988ha of currently available suitable habitat. In the scenario that the Proposed Wind Farm receives a grant of planning permission, the Existing Dunneil and Kingsmountain Wind Farms will be decommissioned. This, in turn, will increase the availability of habitat within 500m of the decommissioned turbines. As forestry habitat is only of interest for this species-specific impact assessment, the projected open habitat greater than 500m of a turbine in the uplands would be 7,198ha (excluding the Proposed Wind Farm). The 500m radius of the Proposed Turbine layout comprises 955ha, all of which is within this upland area and 268ha is within forestry habitat. Thus, the total suitable habitat within 500m of the Proposed Turbines is c.268ha, which represents a 3.7% loss of the remaining forestry habitat greater than 500m from a turbine (7,198ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 6,930ha continues to constitute a significant amount of upland habitat.

No significant impacts on this species were identified for any of the local wind farms (within 5km). 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 concerning habitat loss or displacement. **Significant cumulative impacts are not predicted to occur at the local scale.**

7.7.3.13 Buzzard (Local Importance)

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

At a national level, the main pressures and threats for buzzard listed in Article 12 reporting are: abandonment of grassland management; as well as poisoning of animals, and illegal shooting/killing. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for buzzard. Threats/pressures relating to agriculture were ranked as of medium importance.

The potential for developments at a local scale (within 5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for foraging buzzard and commercial forestry, which is of some ecological value to nesting buzzard. The disturbance associated with operational turbines will not significantly impact the local population of buzzard at the Proposed Wind Farm. There is only one wind farm within 5km of the Proposed Wind Farm (Black Lough Wind Farm), similar displacement impacts are predicted at this wind farm. However, these habitat types are not a rare habitat locally. Therefore, significant cumulative impacts are not predicted.

No significant impacts on this species were identified for any of the local wind farms (within 5km). 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 concerning habitat loss or displacement. **Significant cumulative impacts are not predicted to occur at the local scale.**

7.7.3.14 Sparrowhawk (Local Importance)

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

At a national level, the main pressures and threats for sparrowhawk listed in Article 12 reporting are: removal of small landscape features for agricultural land parcel consolidation; conversion from mixed farming and agroforestry systems to specialised; and use of plant protection chemicals in agriculture. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for sparrowhawk. The threats/pressures relating to agriculture and forestry are ranked as of medium importance.

The potential for developments at a local scale (within 5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Project were considered. The Proposed Wind Farm contains open upland habitats (such as bogs) which are suitable for foraging sparrowhawk and commercial forestry, which is of some ecological value to sparrowhawk. The displacement associated with operational turbines will not significantly impact the local population of sparrowhawk at the Proposed Wind Farm. There is only one wind farm within 5km of the Proposed Wind Farm (Black Lough Wind Farm), similar displacement impacts are predicted at this wind farm. However, these habitat types are not a rare habitat locally. Therefore, significant cumulative impacts are not predicted.

No significant impacts on this species were identified for any of the local wind farms (within 5km). 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 concerning habitat loss or displacement. **Significant cumulative impacts are not predicted to occur at the local scale.**

7.8 Monitoring

7.8.1 Construction Phase

Pre-commencement and construction monitoring are proposed to identify sensitive nests or roosts in proximity to the works, including specific surveys for breeding dunlin.

7.8.1.1 All bird species surveys

It is proposed that major construction works will commence outside the bird nesting season (1st of March to 31st of August inclusive) to avoid the most sensitive time of the year for most bird species with the potential to use the site and its environs.

A pre-commencement survey will be undertaken prior to the initiation of works at the Proposed Wind Farm. This survey will be conducted a maximum of three weeks before the commencement of works. Following commencement, construction phase surveys will be conducted during works. These surveys will be conducted once per month during the breeding season (April to July) and once at the start of the winter season (October). These surveys will continue to be conducted each season for the duration of the construction period. The aim of the pre-commencement and construction phase surveys is to identify sensitive sites (e.g., nests or roosts) in proximity to works.

The surveys will be undertaken by a suitably qualified ornithologist. The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas. If winter roosts or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located and earmarked for monitoring at the beginning of the first winter or breeding season of the

construction phase. If the roost/nest is found to be active during the construction phase no works shall be undertaken, works will cease within a species-specific buffer of this location in line with best practice guidance (e.g., Forestry Commission Scotland, 2006; NatureScot, 2022). No works shall be permitted within the buffer until it can be demonstrated that the roost or nest is no longer occupied. All site staff and subcontractors will be made aware of any restrictions to be imposed by means of a toolbox talk and a map of the 'no-work zone' will be made available to all construction staff. The restricted area will also be marked off to alert all personnel on site to the suspension of works within that area.

7.8.1.2 Dunlin specific surveys

The closest infrastructure to the dunlin breeding territory is a section of new road and the Proposed Turbine hardstands for T1 and are located 360m from DN-1. There is no infrastructure to the west of the access road of T1, T3 and T5, therefore there will be no construction works to the west of the development footprint of the Proposed Wind Farm. As described in Section 7.5.2.2, given this distance and the existing land use at this location, significant impacts to breeding dunlin are considered unlikely.

Notwithstanding this, on a precautionary basis, a pre-construction survey will be undertaken prior to any works during the dunlin breeding season (March to July) to establish whether the territory remains occupied or if there has been a change in the distribution of dunlin. If the potential for breeding dunlin is recorded during pre-construction surveys, an Ecological Clerk of Works (ECoW) will supervise works in the vicinity of DN-1 or any territories found in proximity to works. The role of the ECoW will be to monitor for the following risks: (1) disturbance of the nesting pair and their young; (2) injury of the nesting pair, nest, eggs or young or; (3) damage to habitat depended on by the nesting pair or their young. If the ECoW determines a high level of risk for any of these events to occur, works will cease within the risk area until the dispersal of juveniles from the natal area. Should works be required within 200m of a confirmed breeding territory, these will be scheduled outside the dunlin breeding season (March to July), from when initial territory establishment may occur until the likely dispersal of juveniles from the natal area.

7.8.2 Operational Phase

A Bird Monitoring Programme with the objective of monitoring the response of the ornithological community at the Proposed Wind Farm to the operating turbines has been prepared. This is presented fully in Appendix 7-7. It includes for dedicated Breeding Dunlin Surveys in the vicinity of known territories, and dedicated Breeding Red Grouse Surveys in the Proposed Wind Farm and BMEP area, as well as a Breeding Walkover and Winter Walkover Survey within a 500m radius of all built infrastructure and the BMEP area. The Bird Monitoring Programme also includes for Collision Monitoring Surveys and outlines the protocol for fallen animal removal as part of mitigation measures proposed for white-tailed eagle.

7.8.3 Decommissioning Phase

An appropriate Decommissioning Plan will be prepared in advance of the decommissioning of the proposed turbines. This plan will be developed in consultation with the Planning Authority and the NPWS. The aim of the plan will be to identify and protect sensitive nests, roosts or other key areas in proximity to decommissioning works. The requirements of the plan should be informed by the findings of this EIAR and the findings of Bird Monitoring Programme, along with the findings of other relevant ornithological surveys conducted in the interim where available. Methodologies should follow the current best practice guidance at the time the plan is prepared.

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: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.

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, best practice mitigation measures that are described within this application, significant individual or cumulative effects on the identified KORs are not anticipated.

7.10 EIA Classification Summary

Please see the below table for a summary of all identified impacts for the Proposed Project relating to ornithology.

Table 7-13: Impact Assessment Classification Summary

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
White-tailed eagle	Direct Habitat Loss: Likely long-term constant negligible effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than slight	Not Significant
Dunlin	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than slight	Not Significant
Golden Plover	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term constant slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than slight	Not Significant

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Hen harrier	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.8.1	No effect greater than slight	Not Significant
Merlin	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Peregrine falcon	Direct Habitat Loss: Likely long-term slight negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Whooper swan	Direct Habitat Loss: Likely long-term imperceptible negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Kestrel	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term frequent slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Red grouse	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term frequent slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Snipe	Direct Habitat Loss: Likely long-term slight negative effect Disturbance: Likely short-term frequent slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Woodcock	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Buzzard	Direct Habitat Loss: Likely long-term imperceptible negative effect Disturbance: Likely short-term frequent imperceptible negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Sparrowhawk	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term imperceptible negative effect	Section 7.6.1 Section 7.6.2 Section 7.7.1	No effect greater than slight	Not Significant
Operational Phase				
White-tailed eagle	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Section 7.6.1 Section 7.6.4 Section 7.8.2	No effect greater than slight	Not Significant
Dunlin	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Golden Plover	Direct Habitat Loss: No effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect			
Hen harrier	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Merlin	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term slight negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Peregrine falcon	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term slight negative effect Collision Risk: Likely long-term imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Whooper swan	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term slight negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	Collision Risk: Likely long-term imperceptible negative effect			
Kestrel	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Red grouse	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: No effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Snipe	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Woodcock	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: No effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Buzzard	Direct Habitat Loss: No effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
	Disturbance, Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Likely long-term constant imperceptible negative effect			
Sparrowhawk	Direct Habitat Loss: No effect Disturbance, Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Section 7.6.1 Section 7.8.2	No effect greater than slight	Not Significant
Decommissioning Phase				
Ornithological Receptors	Direct Habitat Loss: No Effect Disturbance: As per construction phase	Section 7.8.3	No effect greater than slight	Not Significant