

Environmental Impact Assessment Report (EIAR)

Proposed Slievegrine
Renewable Energy
Development, Co.
Waterford

Chapter 7 – Ornithology



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
IOSG	Irish Ornithological Survey Group
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. ORNITHOLOGY

7.1 Introduction

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

For the purposes of this EIAR, the various project components are described and assessed using the terminology in Section 1.1.1 in Chapter 1: *‘Introduction to the Proposed Project’*. The following additional definitions are used in this chapter:

- › ‘Study Area’ refers to the focal area during field surveys. This was defined as a 500m radius of the viable area for the siting of turbines at the outset of field surveys. This is the minimum area covered during field surveys. The Study Area and the final Proposed Wind Farm site were not meaningfully different. The Study Area extends beyond the final Proposed Wind Farm site and therefore provides survey coverage of an area greater than that occupied by the Proposed Wind Farm. As a result, the final Proposed Wind Farm site and associated Proposed Turbine locations are fully encompassed within the area covered by the field surveys.
- › ‘Ornithology Cumulative Study Area’ refers to an area extending from the Proposed Turbines in which cumulative impacts on birds are assessed for relevant developments.
- › ‘Key Ornithological Receptor’ (KOR) is defined as a species occurring within the Ornithology Survey Area upon which potential impacts are anticipated and assessed.

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 Site.
- › The **Receptor Evaluation** section identifies KORs 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, best practice and enhancement measures to ameliorate the identified impacts and considers the residual effects.
- › The **Cumulative Impacts** section fully assesses potential cumulative effects of the Proposed Project in combination with other projects.
- › The **Monitoring** section outlines a schedule for monitoring birds during each phase of the Proposed Project if planning permission is granted: commencement and construction, operation and decommissioning.
- › The **Conclusion** provides a summary statement on the overall significance of predicted effects on birds.

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

- › **Appendix 7-1** contains the Survey Effort, including field survey dates, times, weather conditions and surveyors along with maps of survey locations.
- › **Appendix 7-2** contains the Species List for all bird species recorded during field surveys.
- › **Appendix 7-3** contains the Summary Data of field survey results.
- › **Appendix 7-4** contains the Survey Data collected during field surveys, including.
- › **Appendix 7-5** contains the Confidential Survey Data collected during field surveys that is ecologically sensitive and not suitable for public dissemination.
- › **Appendix 7-6** contains the Collision Risk Assessment and results conducted for this ornithological impact assessment.
- › **Appendix 7-7** contains the Bird Monitoring and Mitigation Plan proposed if the Proposed Project is granted planning permission.

7.1.1

Description of the Proposed Project

A full description of the Proposed Project is provided in Chapter 4: ‘*Description of the Proposed Project*’ of this EIAR. In brief, the Applicant is seeking planning permission for a 23-turbine wind farm (of three different turbine dimensions) and all associated works. Six of the Proposed Turbines (T7-T12) will have a 104m hub height, with a 3-blade rotor diameter of 162m, giving a maximum rotor height of 185m and minimum rotor height of 23m. Fifteen of the Proposed Turbines (T1-T6 and T13-T21) will have a 100m hub height, with a 3-blade rotor diameter of 150m, giving a maximum rotor height of 175m and minimum rotor height of 25m. Finally, two of the Proposed Turbines (T22 & T23) will have a 95m hub height, with a 3-blade rotor diameter of 150m, giving a maximum rotor height of 170m and minimum rotor height of 20m. The Proposed Turbines will have an operation life of 35 years from the date of commissioning.

7.1.2

Legislation, Guidance and Policy Context

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

- › The Wildlife Act 1976. This Act was revised in October 2022 to present amendments since enactment.
- › The Birds Directive (EU Directive 2009/147/EC on the conservation of wild birds)
- › The European Communities (Birds and Natural Habitats) Regulations 2011, as amended (S.I. no. 477 of 2011). These regulations transpose the EU Birds Directive into Irish law.

The following treaties are applicable to habitats and fauna in Ireland:

- › The International Convention on Wetlands of International Importance (the Ramsar Convention), 1971. This convention protects 45 wetland sites of significant value for nature in Ireland.

In the absence of specific national ornithological survey guidance for Ireland, the following guidance documents published by NatureScot have been followed to inform this assessment:

- › SNH (2009). Monitoring the impact of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2025-05/guidance-note-monitoring-the-impact-of-onshore-windfarms-on-birds.pdf>
- › SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf>

- › 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>. This document supersedes: SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland.
- › 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 detailed in Section 1.2 in Chapter 1 of this EIAR.

7.1.3 Statement of Authority

This ornithology chapter has been prepared by Susan Doyle (Ph.D., Senior Ornithologist at MKO) and Louis de Vries (MSc., Ornithologist at MKO). Padraig Cregg (MSc., Principal Ornithologist at MKO) acted as senior technical advisor.

Susan completed her primary degree in Zoology (moderatorship in Natural Science) at Trinity College Dublin in 2013 and her masters degree in Ecological Assessment in University College Cork in 2014. Susan has seven years' experience in ecological consultancy and has worked on wind farm projects, solar farm projects, residential developments, data centres, county council projects and National Parks and Wildlife Service projects. She specialises in ornithological consulting, including Environmental Impact Assessments and operational monitoring.

Louis holds a masters in ecology and ethology from University Jean Monnet in France. He is an Ornithologist with 3.5 years of professional experience in ecological consultancy. He specialises in ornithological field surveys, ecological data synthesis, and impact assessment for renewable energy and infrastructure developments, with a primary focus on onshore wind energy projects. Louis also authors Environmental Impact Assessment Report (EIAR) ornithology chapters, applying standardised impact

assessment frameworks to evaluate potential construction and operational effects (such as collision risk, displacement, and habitat loss) on avian populations.

Padraig has over eleven years of experience working in environmental consultancies. In his role, he acts as technical lead and advisor for the Ornithology Team at MKO, including survey design, constraints studies and impact assessment. Padraig has worked on over 60 wind farm projects in both Ireland and the UK, including landfall sites for offshore wind farms.

The scope of works and survey methodology was devised by the Irish Ornithological Survey Group and is compliant with recent NatureScot guidance (SNH, 2017; revised in NatureScot, 2025). Field surveys were undertaken by surveyors from the Irish Ornithological Survey Group: Aidan Duggan, Cian Cardiff, Joe Proudfoot, John Deasy, John Hehir, John Murphy, Kevin Collins, Laura Hynes, Mark Shorten, Noel Linehan, Paul Archer, Páidi Cullinan, Sean Dundon and Stan Nugent; and by MKO surveyors Conor Berney, Donal Moriarty and Andrew McCarthy. Surveyors are suitably qualified competent experts for the purposes of the preparation of this EIAR.

7.2

Methodology

7.2.1

Desk Study

This chapter assesses all elements of the Proposed Project, including the Proposed Turbines and associated infrastructure, Proposed 220kV Loop-in Substation and surrounding areas to account for bird species that may move through or use habitats beyond the immediate turbine locations. The spatial extent of the assessment varies according to the ecological characteristics of each species and the potential effect being considered. A comprehensive desk study was undertaken to search for any relevant information on species of conservation concern that may use the Proposed Wind Farm site. The assessment included a thorough review of the available ornithological data including:

- › Designated sites within the likely Zone of Influence of the Proposed Wind Farm site. The Zone of Influence is defined in the Natura Impact Statement (NIS) which accompanies this application.
- › 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 to inform this assessment. Full details can be found in Section 2.7 in Chapter 2: ‘*Background to the Proposed Project*’ of this EIAR. Table 7-1 provides a list of the relevant organisations consulted with regard to ornithology during the scoping process. Copies of all scoping responses are included in Appendix 2-1 of this EIAR.

Table 7-1 Consultation responses

	Consultee	Response
01	BirdWatch Ireland	No response received at time of writing
02	Department of Housing, Local Government and Heritage: Development Applications Unit	The Development Applications Unit acknowledges receipt of the consultation.

	Consultee	Response
	(includes National Parks & Wildlife Service and the National Monuments Service)	In the event of observations, a co-ordinated heritage-related response will be provided by email from the Development Applications Unit (DAU).
03	Irish Raptor Study Group	No response received at time of writing
04	Irish Wildlife Trust	The Irish Wildlife Trust does not currently have the staff capacity to respond to this consultation but will endeavour to respond if possible.
05	The Heritage Council	No response received at time of writing
06	Waterford City and County Council- Environment Department	No response received at time of writing
07	Waterford City and County Council- Heritage Department	No response received at time of writing

7.2.2.1 Consultation with the National Parks and Wildlife Service

Consultation meetings were held with the National Parks and Wildlife Service (NPWS) on 22nd January 2026 and 14th July 2026. During these meetings, NPWS highlighted several bird species of relevance to the Proposed Project and provided information on their known or potential use of the surrounding area, including breeding locations, core foraging areas and potential movement routes. Species discussed included:

- Hen harrier: including a breeding record within hectad X29, potential breeding areas in the Knockmealdown Mountains and Comeragh Mountains, and winter movements towards Ardmore.
- White-tailed eagle: including a nest near the confluence of the River Licky and the Blackwater Estuary and the associated core foraging area.
- Osprey: in relation to the reintroduction programme in Dungarvan Bay and potential movements over the Proposed Wind Farm site.
- Red kite and marsh harrier: in relation to potential winter movements from the Knockmealdown Mountains towards Ardmore.

NPWS advised that the foraging range of Special Conservation Interest (SCI) species within Special Protection Areas (SPAs) be considered in the cumulative impact assessment. The process for this is described in Section 7.3.1 and 7.7.3.

7.2.2.2 Data Request for Other Wind Farms

A request was made to Waterford City and County Council Planning Department and Cork County Council Planning and Development Department for information on ornithological monitoring at other operational wind farms. These wind farms are the same as those included in the cumulative assessment (Section 7.7). Access to any monitoring reports submitted to the councils providing information on bird activity at these wind farms was requested in August 2026. A separate request was also made to the operator of the Woodhouse Wind Farm in September 2026 for any available ornithological monitoring information relating to the operational wind farms. No response was received at the time of writing.

7.2.3 Field Surveys

7.2.3.1 Identification of Target Species

Based on the results of the desk study 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 October 2023 – March 2026, consisting of two breeding seasons (April – September) and three winter seasons (October – March). Vantage Point data comprises two complete breeding seasons and two complete winter seasons (April 2024–March 2026). This survey work forms the dataset for the assessment of impacts on ornithology. The data provided in the field surveys is considered robust to inform a strong assessment of the likely effects of the Proposed Project 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). The surveys undertaken between October 2023 and March 2026 remain consistent with the relevant recommendations of the updated guidance. Accordingly, the revision of the guidance does not affect the validity or adequacy of the survey dataset used in this assessment.

The various field surveys undertaken are described in detail below including a description of the area surveyed relative to 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) and NatureScot (2025) to monitor flight activity. The area surveyed was the Study Area. Surveys were conducted from 16 fixed vantage points. 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 turbine dimensions were confirmed to have a lowest swept height of 20m for VP15 and VP16, 23m for VP8-VP11 and finally 25m for VP1-VP7 and VP12-VP14, the viewsheds were recalculated using a notational layer suspended at 20m, 23m and 25m for the relevant vantage points. The viewsheds provided adequate coverage of the Proposed Turbines 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 a minimum of 6 hours per month. Surveys were conducted from April 2024 to March 2026 inclusive to provide 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). While, the 36 hours per vantage point per season was not achieved for some vantage points (see Table 7-2), neighbouring vantage points achieved coverage of some of these areas over these time periods.

Table 7-2 Vantage point survey duration

Survey Season and Number of Vantage Points	Effort per Vantage Point
Breeding Season 2024 (16 vantage points; VP1 to VP16)	30 hours at VP12 and VP13 34 hours at VP16 36 hours at VP8, VP9, VP10, VP14 and VP15 42 hours at VP1, VP2, VP3, VP5, VP6 and VP11 49 hours at VP4 and VP7
Winter Season 2024/2025 (16 vantage points; VP1 to VP16)	34 hours at VP2 36 hours at VP16 38 hours at VP10 and VP15 39 hours at VP5, VP9, VP11 and VP14 40 hours at VP3, VP6, VP7, VP8 and VP13 41 hours at VP1, VP4 and VP12
Breeding Season 2025 (16 vantage points; VP1 to VP16)	38 hours at VP4 39 hours at VP1, VP5, VP6 and VP7 40 hours at VP2, VP3, VP10, VP12 and VP13 41 hours at VP8, VP9, VP14 and VP15 42 hours at VP11 and VP16
Winter Season 2025/2026 (16 vantage points; VP1 to VP16)	31 hours at VP5 and VP13 37 hours at VP1, VP2, VP3, VP7, VP8, VP9, VP10, VP11 and VP12 38 hours at VP4, VP6 and VP16 39 hours at VP14 and VP15

Flight activity of target species was mapped and recorded as per defined flight bands which were chosen in relation to the dimensions of potential turbine models at the outset of surveys. Bands were split into 0-20m, 20-50m, 50-100m, 100-200m and >200m. All flight activity within a height band 20-50m, 50-100m and 100-200m is considered to be within the Potential Collision Height (PCH) with regard to the Proposed Turbines swept area. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

7.2.3.2.2 Winter transect surveys

Winter transect surveys were undertaken to record the presence of bird species within or in proximity to the Study Area. The area surveyed extended 500m from the Study Area, including areas between vantage point locations. The methodology was adapted from the breeding walkover methodology

outlined in O'Brien and Smith (1992) and Gilbert *et al.* (1998), combined with Common Bird Census methods (British Trust for Ornithology, 2021).

Winter transect surveys were conducted in daylight hours over three to four visits between October and March. During the winter season 2023-2024, transects were conducted within the Study Area at Drumhill, Clashbrack, Carronadavderg and Cloghraun. During the winter seasons 2024-2025, new transects were created to increase the coverage of the Study Area. These transect were each visited three times during the winter season 2024-2025 and four times during the winter season 2025-2026.

Transect routes were walked across different habitat complexes within the Study Area where access allowed. All target species were recorded. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

7.2.3.2.3 **Breeding transect surveys**

Breeding transect surveys were undertaken to determine possible, probable or confirmed breeding bird activity within or in proximity to the Study Area. The area surveyed extended 500m from the Study Area. The methodology was based on O'Brien and Smith (1992) and Gilbert *et al.* (1998), combined with Common Bird Census methods (British Trust for Ornithology, 2021) for dense habitat. Breeding transect surveys were conducted in daylight (majority of surveys were conducted between 7:00 and 15:00) over three to four visits during the breeding season months April to August.

In April 2024, transects were conducted within the Study Area at the townlands of Drumhill, Clashbrack, Carronadavderg and Cloghraun. From May 2024, new transects were created to increase the coverage of the Study Area. During the breeding season of 2024, two of these transect (T3 and T4) were visited once from May 2024 to August 2024. The remaining two transect (T1 and T2) were visited twice. During the breeding season 2025, each new transect was visited four times during the core breeding season, with the exception of T2 that was visited three times.

Transect routes were walked across different habitat complexes within the Study Area where access allowed. Using binoculars, the surveyor regularly scanned the surroundings of each transect for target species. All target species were recorded, and breeding status was assigned following British Trust for Ornithology (BTO) breeding status codes¹ where sufficient evidence was obtained. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

7.2.3.2.4 **Hinterland surveys**

Hinterlands surveys were undertaken to record the presence of bird species in the hinterland of the Study Area. The area surveyed extended 5km from the Study Area, including areas between other survey locations. These areas were surveyed for all target species (including raptors and waterbirds species) during the winter season 2024/2025 and 2025/2026 to provide information on their distribution in relation to the Study Area. The area surveyed exceeds the 500m for foraging waterbirds and 1km for roosting waterbirds requirements of SNH (2017; revised in NatureScot, 2025) and follows the recommendations of SNH (2016).

Survey methodology follows Gilbert *et al.* (1998) and the Irish Wetland Bird Survey (BirdWatch Ireland, 2021) adapted. Surveys were undertaken during daylight hours from suitable vantage points or transects covering potentially important features and a representative area of more widespread habitats. All target species were recorded and mapped.

7.2.3.2.5 **Hen harrier roost surveys**

¹ <https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>

Hen harrier roost surveys were undertaken within 2km from 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 was surveyed at least four times during the winter season between October and March inclusive (in winter 2024/2025 and 2025/2026).

Roost watches of 2-3 hours were conducted at 4 hen harrier roost 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**

Birds of prey surveys

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. Bird of Prey surveys were undertaken within the Study Area to identify species presence, distribution, and foraging activity and any occupied territories and monitor their breeding success near or within the Study Area. Survey methodology followed Hardey *et al.* (2013), adapting standard ornithological census techniques and British Trust for Ornithology (BTO). Roads through suitable habitat at the Study Area were driven at a slow, constant speed regularly during the Breeding Season 2024 and 2025. Watches were conducted where possible overlooking suitable habitat. All raptor species observed from the vehicle were recorded and mapped, assigning activity status based on standard BTO behaviour codes where sufficient evidence was obtained. Surveyors halted at safe location when necessary to confirm identification, remaining in or near the vehicle to minimise disturbance. The survey was conducted twice in the breeding season 2024 (once in May and Once in July). During breeding season 2025 the survey was conducted 15 times during the core breeding season (April to July).

Breeding peregrine falcon surveys

Targeted peregrine falcon surveys were undertaken to determine the presence, distribution and breeding status of peregrine falcon. Survey methodology followed Hardey *et al.* (2013). Surveys comprised visits to a series of known and potentially suitable peregrine falcon nesting locations within and extending up to approximately 10km from the Study Area during the 2024 breeding season. Each location was observed from suitable vantage points using binoculars to identify evidence of territory occupancy and breeding activity. All peregrine falcon observations were recorded and mapped, including the number of individuals, age and sex (where possible), behaviour and flight direction. Particular attention was given to behaviours indicative of breeding, such as territorial display, courtship, prey deliveries, incubation and the presence of dependent young. Other raptor species were also recorded as target species. Breeding status was assigned using BTO breeding evidence codes where sufficient evidence was obtained. Surveyors maintained an appropriate distance from potential nest sites throughout the surveys to minimise the risk of disturbance. Three surveys were conducted in May, June and July 2024.

Hen harrier nest watch surveys

Targeted hen harrier nest watches were undertaken within the Study Area to determine the presence of breeding pairs and identify active nesting locations. Survey methodology followed Hardey *et al.* (2013). Nest watches were conducted at two locations considered suitable for breeding hen harrier based on habitat suitability. Each location was observed from a vantage point for a period of approximately 5–6 hours during daylight, providing continuous coverage while minimising the risk of disturbance. All hen harrier activity was recorded and mapped, including the number of individuals, flight direction, behaviour and interactions. Particular attention was given to behaviours indicative of breeding, such as food passes, prey deliveries, nest material carrying, incubation changeovers and repeated movements into and out of areas of suitable nesting habitat. Breeding status was assigned using BTO breeding evidence codes where sufficient evidence was obtained. Surveyors remained at an appropriate distance

from potential nest sites throughout the surveys and did not approach potential nesting areas, in accordance with best practice to avoid disturbance. Two Hen Harrier Nest Watch locations were surveyed between April and July 2025.

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 extended 500m from the Study Area. Survey methodology followed Gilbert *et al.* (1998): the surveyor walked transects within and extending up to 500m from the Study 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.

7.2.3.2.8 **Wintering golden plover survey**

Wintering golden plover surveys were conducted to provide information on golden plover abundance and distribution in relation to the Study Area. Surveys followed Gillings and Fuller (1999) guidance along with Gilbert *et al.* (1998) and Irish Wetland Bird Survey (BirdWatch Ireland, 2021) detection and count methods. Potential golden plover habitats such as lakes, rivers, bogs and large agricultural fields, including areas known to have been used by large flocks in the past up to 12km from the Study Area were visited by the surveyor during daylight hours. Any golden plover observed at or between these sites were recorded and mapped. Surveys were conducted during the 2024/2025 and 2025/2026 winter seasons (October to March inclusive).

7.2.3.2.9 **Nightjar survey**

As breeding nightjar are very scarce and known to breed in the southeast of Ireland, on a precautionary basis dedicated nightjar surveys were conducted in suitable habitat within the Study Area. Survey methodology followed Gilbert *et al.* (1998): the surveyor walked transect for at least two hours from one hour before dusk until last visible light during which all nightjar observations would be mapped, with particular reference to display observations. A lure was not used. Multiple transect were surveyed within the Study Area during the months of June and July 2024 and 2025.

7.2.3.2.10 **Woodcock and owl survey**

A woodcock and owl survey was undertaken to determine the presence, distribution, and relative abundance of wintering woodcock and nocturnal owl species within the Study Area during the core winter season. Methodology for the surveys were using adapted transect following Gilbert *et al.* (1998), Hardey *et al.* (2013) and BirdWatch Ireland guidelines. The surveyor walked transect for at least two hours from one hour before dusk until last visible light during which all woodcock and owl observations would be mapped. Three transect were visited once in November 2023.

7.2.3.2.11 **Whooper swan survey**

A Whooper Swan survey was conducted to provide information on abundance and distribution in relation to the Study Area. Methodology followed the synchronization and coordination principles established by the International Swan Census (Kirby *et al.*, 1992) and long-term monitoring frameworks (Nilsson, 2014), alongside with Gilbert *et al.* (1998) guidance. Detection and count methods were further aligned with the Irish Wetland Bird Survey (I-WeBS) protocols, incorporating the most recent status and distribution assessments for wintering waterbirds in Ireland (Burke *et al.*, 2025). Recognizing documented shifts in winter habitat preference toward terrestrial feeding (Nilsson, 2016; Laubek, 1995), potential habitats – including lakes, rivers, bogs, and specifically large agricultural fields – within 5km from the Study Area were systematically visited during daylight hours. Any whooper swans observed at or between these sites were recorded, mapped, and age-classified where possible to distinguish cygnets. The survey was conducted once in October 2025.

7.2.3.2.12

Supplementary surveys

Data collected between October 2023, and March 2026 form the core dataset for this assessment. During the winter season 2023/2024, vantage point surveys were also undertaken at 22 survey locations. These surveys were completed prior to a redesign of the proposed layout. Initially 22 vantage points were surveyed from October 2023 to March 2024 inclusive, covering the winter season 2023/2024. From April 2024 onwards, a revised vantage point layout comprising 16 vantage points was implemented (as discussed in Section 7.2.3.2.1).

Data collected on these 22 vantage points between October 2023 and March 2024 inclusive, are included as supplementary data in the assessment as the redesign of the proposed layout and revision of the vantage point locations and coverage means that these data are no longer relevant for use in the collision risk assessment. However, these data still provide valuable information on species presence, abundance and activity and the results are reported in this chapter. Survey effort is presented in Appendix 7-1, including full details of survey dates, times and weather conditions. Survey data is presented in Appendix 7-4.

7.2.3.2.13

Multidisciplinary Walkover Survey

The Proposed Grid Connection site was visited during the survey period through a multidisciplinary walkover survey. The route was systematically walked, while the surveyor recorded a range of species, including birds. Further details on this survey are available in Chapter 6: ‘*Biodiversity*’ of this EIAR.

7.2.4 Receptor Evaluation and Impact Assessment

7.2.4.1 Geographical Context

‘Guidelines for Ecological Impact Assessment in the UK and Ireland’ (CIEEM, 2024) recommends that categories of ornithological value that relate to a geographical context (e.g., international/European, national, regional, metropolitan/county, river basin district, estuarine system/coastal cell and local) are used but should be adapted to suit local circumstances. This EIAR adapts these and utilises the geographical context described in the Irish-based guidance ‘Guidelines for Assessment of Ecological Impact of National Road Schemes’ (NRA, 2009). The following geographic frame of reference is used when determining the value of a bird population:

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

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

7.2.4.2 Identification of Key Ornithological Receptors

Following the analysis of field survey data, a precautionary screening approach was followed to identify KORs. 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.

7.2.4.3 Potential Impacts Associated with Proposed Wind Farm

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 Wind Farm on birds.

7.2.4.4 Collision Risk Assessment

Collision risk is calculated using a mathematical model to predict the number of individual birds of a particular species that may be killed by collision with moving wind turbine rotor blades. The modelling method used in this collision risk calculation follows the model developed by Band (2024), as

recommended by NatureScot (2024) guidance. The 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 number of rotor transits is multiplied by the collision probability to derive the predicted collision rate. An avoidance factor is applied to this to account for birds actively avoiding turbines, providing a final ‘real world’ annual collision rate for each species. See Appendix 7-6 for full details on the collision rate modelling method.

7.2.4.5 Description of Impacts

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

7.2.4.5.1 Percival 2003 criteria

The Percival (2003) methodology quantifies the sensitivity of a given species to the development type, the magnitude of the effect and the significance of the potential impact. Table 7-3 (Sensitivity), Table 7-4 (Magnitude of effect) and Table 7-5 (Determination of significance) outline the assessment criteria for each stage.

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

Sensitivity	Determining Factor
Very High	Species that form the cited interest of SPAs and other statutorily protected nature conservation areas. Cited means mentioned in the citation text for the site as a species for which the site is designated.
High	Species that contribute to the integrity of a SPA, but which are not cited as a species for which the site is designated. Ecologically sensitive species including the following: divers, common scoter, hen harrier, golden eagle, red necked phalarope, roseate tern and 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.

Sensitivity	Description
	Guide: 20-80% of population/ habitat lost.
Medium	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of baseline will be partially changed. Guide: 5-20% of population/ habitat lost.
Low	Minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible but underlying character/composition/attributes of baseline condition will be similar to pre-development circumstances/patterns. Guide: 1-5% of population/ habitat lost.
Negligible	Very slight change from baseline condition. Change barely distinguishable, approximating to the 'no change' situation. Guide: < 1% population/ habitat lost.

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

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

7.2.4.5.2 EPA 2022 Criteria

EPA, 2022 criteria use the following terms to describe the quality of the effect:

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

The significance of the effect is quantified as:

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

- › **Very Significant** – an effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
- › **Profound** – an effect which obliterates sensitive characteristics.

The duration of effects can be:

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

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

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

The probability of the effect may be:

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

The effects may also be described in relation to their extent and context. Extent describes the population affected by an effect, while context relates the effect to the established baseline conditions.

7.2.4.6 Cumulative Assessment

As per NatureScot, 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) 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 extend 25km from the Proposed Turbine locations, and the local scale is considered to extend 5km, as described in Section 2.9 of Chapter 2 of this EIAR.

The Ornithology Cumulative Study Area should be defined by environmental features that are relevant to the specific bird species using the area, such as contiguous habitat blocks (e.g., a mountain range). However, the Proposed Wind Farm site is not located within a discrete environmental feature that can be used to delineate a cumulative assessment study area. A 25km distance from the Proposed Turbines was considered sufficient based on this being approximately the average size of a county in Ireland and

because it exceeds the core foraging range for most terrestrial bird species. This allowed for the key suitable habitats for all KORs at a regional scale to be included.

Assessment material was compiled for other plans and projects within the Ornithology Cumulative Study Area. In addition to this 25km search area, the cumulative assessment considered operational wind farms located within the relevant foraging ranges of sensitive ornithological receptors. Given the presence of a known white-tailed eagle nest in the hinterland of the Proposed Wind Farm site, the search was extended to identify operational wind farms occurring within the recognised foraging distance of white-tailed eagle from the nest site (5km; SNH, 2016). A similar approach was applied to relevant SPAs, whereby operational wind farms located within the foraging ranges of the SCIs of these SPAs that could potentially occur at the Proposed Wind Farm site were also identified and considered. The material was gathered through a search of relevant online Planning Registers, reviews of relevant EIS/EIAR or other ecological reports. These are then considered for in-combination or cumulative effects with the Proposed Wind Farm.

7.2.5 Assessment Justification

7.2.5.1 Survey Data

A comprehensive suite of bird surveys was undertaken between October 2023 and March 2026. Results derived from a continuous 2.5 years of surveying at the Study Area and hinterland, undertaken by the Irish Ornithological Survey Group and MKO in line with SNH (2017) and NatureScot (2025) guidance, are analysed to inform this assessment. As such, the surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the Proposed Wind Farm on ornithological receptors.

7.2.5.2 Mitigation

The 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 have been subject to detailed design and will effectively address the effects on the identified KORs. As such, the potential impacts of the Proposed Project have been considered and assessed to ensure that all impacts on KORs are adequately addressed, and no significant residual effects are likely to remain following the implementation of mitigation measures and best practices (refer to Section 7.6 for further details).

7.2.5.3 Limitations

The description of effects within this chapter covers the requirements set out in Article 5(1)(b) of the EIA Directive. 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 guidance. Therefore, no significant limitations in the scope, scale or context of the assessment have been identified.

7.3 Baseline Ornithological Conditions

7.3.1 Designated Sites

A NIS was 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 SCI species and SPAs. For a detailed assessment of any potential impacts on SCI species and SPAs, refer to the NIS which accompanies this application.

In advance of field surveys, the potential for the SCI populations below to use the Proposed Wind Farm site was considered. Each species and their respective SPA(s) are described in the sections below. Figure 7-1 provides a map of SPAs in relation to the Proposed Wind Farm site and the foraging ranges of the different bird species.

7.3.1.1 Populations with Potential to Use the Proposed Wind Farm site

7.3.1.1.1 Bar-tailed godwit

Dungarvan Harbour SPA As no core foraging range was available in the literature, an estimate is based on the core foraging range of ecologically similar wading species greenshank and curlew, and an average value of 2km will be used here (SNH, 2016). The separation distance between the Proposed Wind Farm site boundary and Dungarvan Harbour SPA is 1.9km, however, there are no Proposed Turbines or proposed infrastructure within 2km of the SPA boundary. As no maximum foraging distance for bar-tailed godwit was available in the literature, an estimate is based on the maximum foraging range of ecologically similar wading species greenshank and curlew, and an average value of 2.5km will be used here (SNH, 2016). There are Proposed Turbines and Proposed Project infrastructure within 2.5km of the SPA boundary. Although SNH (2016) advises that in most cases the core range should be used when determining connectivity with SPAs, on a highly precautionary basis, given the proximity of the SPA to the Proposed Wind Farm site and that the maximum foraging range overlaps with Proposed Turbines, it is considered that there is potential for this population to occur within the Proposed Wind Farm site.

Other SPAs: There are no additional SPAs within 2.5km of the Proposed Wind Farm site.

7.3.1.1.2 Black-tailed godwit

Dungarvan Harbour SPA As no core foraging range was available in the literature, an estimate is based on the core foraging range of ecologically similar wading species greenshank and curlew, and an average value of 2km will be used here (SNH, 2016). The separation distance between the Proposed Wind Farm site boundary and Dungarvan Harbour SPA is 1.9km, however, there are no Proposed Turbines or proposed infrastructure within 2km of the SPA boundary. As no maximum foraging distance for black-tailed godwit was available in the literature, an estimate is based on the maximum foraging range of ecologically similar wading species greenshank and curlew, and an average value of 2.5km will be used here (SNH, 2016). There are Proposed Turbines and Proposed Project infrastructure within 2.5km of the SPA boundary. Although SNH (2016) advises that in most cases the core range should be used when determining connectivity with SPAs, on a highly precautionary basis, given the proximity of the SPA to the Proposed Wind Farm site and that the maximum foraging range overlaps with Proposed Turbines, it is considered that there is potential for this population to occur within the Proposed Wind Farm site.

Other SPAs: There are no additional SPAs within 2.5km of the Proposed Wind Farm site.

7.3.1.1.3 Common gull

Ballymacoda Bay SPA: This species' core foraging range is estimated to be 25km (Thaxter *et al.*, 2012). Based on the habitats within the Proposed Wind Farm site and its separation distance from the SPA (12.9km), there is potential for this population to occur within the Proposed Wind Farm site.

Other SPAs: This species' mean maximum foraging range is estimated to be 50km (Woodward *et al.*, 2019). Ballycotton Bay SPA, Blackwater callows SPA, Blackwater Estuary SPA, Cork Harbour SPA, Dungarvan Harbour SPA, Helvick Head to Ballyquin SPA, Mid-Waterford Coast SPA and Tramore Back Strand SPA are within this distance from the Proposed Wind Farm site. Of these, common gull is an SCI of Ballycotton Bay SPA and Cork Harbour SPA.

Ballycotton Bay SPA and Cork Harbour SPA are approximately 23km and 29.4km from the Proposed Wind Farm site respectively. Flight activity surveys did not suggest birds travelling between these SPAs and the Proposed Wind Farm site. Suitable habitats for this species recorded within the Proposed Wind Farm site are common and widespread in the intervening landscape between the Proposed Wind Farm sites and the SPAs. Therefore, it is unlikely that the common gull population at these SPAs are utilising the Proposed Wind Farm site. The majority of common gull activity in the hinterland was in farmland to the north of the Proposed Wind Farm and at Dungarvan Harbour, therefore it is likely that birds observed at the Proposed Wind Farm site originated from these areas.

7.3.1.1.4 **Cormorant**

Helvick Head to Ballyquin SPA: This species' mean foraging radius in the conservation objectives for this SPA is 7.1km (Woodward *et al.*, 2019; Power *et al.*, 2021). Based its separation distance from the SPA (5.8km), there is potential for this population to occur within the Proposed Wind Farm site (e.g., travelling over).

Other SPAs: This species' mean maximum foraging range is estimated to be 25.6km (Woodward *et al.*, 2019; Power *et al.*, 2021). Ballycotton Bay SPA, Ballymacoda Bay SPA, Blackwater Callows SPA, Blackwater Estuary SPA, Dungarvan Harbour SPA and Mid-Waterford Coast SPA are within this distance from the Proposed Wind Farm site. Of these, cormorant is an SCI of Mid-Waterford Coast SPA.

Mid-Waterford Coast SPA is 13km from the Proposed Wind Farm site. Suitable habitats for this species recorded within the Proposed Wind Farm site are common and widespread in the intervening landscape between the Proposed Wind Farm site and the SPA. In addition, Dungarvan Harbour lies directly between the Proposed Wind Farm site and this SPA. Therefore, it is unlikely that the cormorant population at the SPA is utilising the Proposed Wind Farm site. The majority of cormorant activity in the hinterland was in the River Blackwater, followed by Dungarvan Harbour, therefore it is likely that birds observed at the Proposed Wind Farm site originated from these areas.

7.3.1.1.5 **Golden plover**

Dungarvan Harbour SPA & Blackwater Estuary SPA: Although the core foraging range in SNH (2016) is 3km, wintering birds may have larger movements, as outlined in Gillings and Fuller (1999), which found that, while many movements were within 5km, some were 10-12km. Based on the habitats within the Proposed Wind Farm site and its separation distance from these SPAs (1.9km and 4.5km respectively), there is potential for these populations to occur within the Proposed Wind Farm site.

Other SPAs: Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA are also within 12km of the Proposed Wind Farm site. Golden plover is not an SCI of these SPAs.

7.3.1.1.6 **Great crested grebe**

Dungarvan Harbour SPA: This species' foraging range is estimated to be 5km (Piersma *et al.*, 1988). Based its separation distance from the SPA (1.9km), there is potential for this population to occur within the Proposed Wind Farm site (e.g., travelling over).

Other SPAs: Blackwater Estuary SPA is also within 5km of the Proposed Wind Farm site. Great crested grebe is not an SCI of this SPA.

7.3.1.1.7 **Herring gull**

Helvick Head to Ballyquin SPA & Mid-Waterford Coast SPA: This species' mean foraging radius reported in the conservation objectives for both of these SPAs is 14.9km (Woodward *et al.*, 2019; Power *et al.*, 2021). Based on the habitats within the Proposed Wind Farm site and its separation distance from these SPAs (5.8km and 13km respectively), there is potential for these populations to occur within the Proposed Wind Farm site.

Other SPAs: This species' mean maximum foraging range is estimated to be 58.8km (Woodward *et al.*, 2019; Power *et al.*, 2021). Ballycotton Bay SPA, Ballymacoda Bay SPA, Bannow Bay SPA, Blackwater Callows SPA, Blackwater Estuary SPA, Cork Harbour SPA, Dungarvan Harbour SPA, River Nore SPA and Tramore Back Strand SPA are within this distance from the Proposed Wind Farm site. Herring gull is not an SCI of any of these SPAs.

7.3.1.1.8 **Lapwing**

Dungarvan Harbour SPA & Blackwater Estuary SPA: As no core foraging range was available in the literature, an estimate is based on the core foraging range of the of ecologically similar golden plover, 10-12km (Gillings and Fuller, 1999). Based on the habitats within the Proposed Wind Farm site and its separation distance from these SPAs (1.9km and 4.5km respectively), there is potential for these populations to occur within the Proposed Wind Farm site.

Other SPAs: Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA are also within 12km of the Proposed Wind Farm site. Lapwing is not an SCI of these SPAs.

7.3.1.1.9 **Lesser black-backed gull**

Ballymacoda Bay SPA: This species' mean foraging radius reported in the conservation objectives for this SPA is 43.3km (Woodward *et al.*, 2019; Power *et al.*, 2021). Based on the habitats within the Proposed Wind Farm site and its separation distance from this SPA (12.9km), there is potential for the population to occur within the Proposed Wind Farm site.

Other SPAs: This species' mean maximum foraging range is estimated to be 127km (Woodward *et al.*, 2019; Power *et al.*, 2021). This maximum foraging range is more relevant to birds foraging at sea, where foraging distribution can be more extensive than in the terrestrial environment. However, it is used here as the best available information. All Saints Bog SPA, Ballyallia Lough SPA, Ballycotton Bay SPA, Ballyteigue Burrow SPA, Bannow Bay SPA, Blackwater Callows SPA, Blackwater Estuary SPA, Cahore Marshes SPA, Clonakilty Bay SPA, Cork Harbour SPA, Courtnacsherry Bay SPA, Dovegrove Callows SPA, Dungarvan Harbour SPA, Galley Head to Duneen Point SPA, Helvick Head to Ballyquin SPA, Keeragh Islands SPA, Kilcolman Bog SPA, Killarney National Park SPA, Lady's Island Lake SPA, Lough Derg (Shannon) SPA, Mid-Waterford Coast SPA, Middle Shannon Callows SPA, Mullaghanish to Musheramore Mountains SPA, Old Head of Kinsale SPA, River Little Brosna Callows SPA, River Nore SPA, River Shannon and River Fergus Estuaries SPA, Saltee Islands SPA, Seven Heads SPA, Sheep's Head to Toe Head SPA, Slieve Aughty Mountains SPA, Slieve Bloom Mountains SPA, Slievefelim to Silvermines Mountains SPA, Sovereign Islands SPA, Stack's to Mullaghareirk Mountains, Tacumshin Lake SPA, The Gearagh SPA, The Raven SPA, Tramore Back Strand SPA, Wexford Harbour and Slobbs SPA and Seas off Wexford are within this distance from the Proposed Wind Farm site. Of these, lesser black-backed gull is an SCI of Ballycotton Bay SPA, Cork Harbour SPA, Saltee Islands SPA, Wexford Harbour and Slobbs SPA and Seas off Wexford SPA.

These SPAs are approximately 23km, 29.4km, 71.6km, 84km and 43.9km from the Proposed Wind Farm site respectively. Flight activity surveys did not suggest birds travelling between these SPAs and the Proposed Wind Farm site. Suitable habitats for this species recorded within the Proposed Wind

Farm site are common and widespread in the intervening landscape between the Proposed Wind Farm sites and the SPAs. Therefore, it is unlikely that the lesser black-backed gull population at these SPAs are utilising the Proposed Wind Farm site. The majority of lesser black-backed gull activity in the hinterland was in farmland in the vicinity of the Proposed Wind Farm and at Dungarvan Harbour and the River Blackwater, therefore it is likely that birds observed at the Proposed Wind Farm site originated from these areas.

7.3.1.1.10 **Light-bellied Brent goose**

Dungarvan Harbour SPA: This species' foraging range is estimated to be 8.2km (Summers and Critchley, 1990). Based on the habitats within the Proposed Wind Farm site and its separation distance from this SPA (1.9km), there is potential for the population to occur within the Proposed Wind Farm site.

Other SPAs: Blackwater Estuary SPA and Helvick Head to Ballyquin SPA are also within 8.2km of the Proposed Wind Farm site. Light-bellied Brent goose is not an SCI of these SPAs.

7.3.1.2 **Populations Unlikely to Occur at the Proposed Wind Farm Site**

7.3.1.2.1 **Black-headed gull**

This species' mean foraging radius estimated to be 7km (Woodward *et al.*, 2019; Power *et al.*, 2021; only breeding values available in the literature). Dungarvan Harbour SPA, Blackwater Estuary SPA and Helvick Head to Ballyquin SPA are within this distance of the Proposed Wind Farm site. Black-headed gull is not an SCI of any of these SPAs.

This species' mean maximum foraging range is estimated to be 18.5km (Woodward *et al.*, 2019; Power *et al.*, 2021). The additional SPAs Mid-Waterford Coast SPA and Ballymacoda Bay SPA are within this distance of the Proposed Wind Farm site. Black-headed gull is an SCI of Ballymacoda Bay SPA.

Ballymacoda Bay SPA is 12.9km from the Proposed Wind Farm site. Flight activity surveys did not suggest birds travelling between this SPA and the Proposed Wind Farm site. Suitable habitats for this species recorded within the Proposed Wind Farm site are common and widespread in the intervening landscape between the Proposed Wind Farm sites and the SPA. Therefore, it is unlikely that the black-headed gull population at the SPA is utilising the Proposed Wind Farm site. The majority of black-headed gull activity in the hinterland was in farmland to the north of the Proposed Wind Farm and at Dungarvan Harbour, therefore it is likely that birds observed at the Proposed Wind Farm site originated from these areas.

7.3.1.2.2 **Chough**

Breeding chough tend to forage within 1km from their nest; Trewby *et al.*, 2006; Reid *et al.*, 2008). There are no SPAs within this distance of the Proposed Wind Farm site. In addition, chough was only recorded at the Proposed Wind Farm site during the winter season (non-breeding birds).

7.3.1.2.3 **Curlew**

This species' core foraging range is estimated to be 1km (SNH, 2016). The separation distance between the Proposed Wind Farm site and Dungarvan Harbour SPA is greater than this distance. However, the maximum foraging range is estimated to be usually within 2km (SNH, 2016). There are no Proposed Turbines or project infrastructure within 2km of the SPA boundary. There are also no other SPAs within 2km of the Proposed Wind Farm site.

7.3.1.2.4 **Dunlin**

The core foraging range of dunlin is estimated to be 500m (SNH, 2016). There are no SPAs within this distance from the Proposed Wind Farm site. The maximum foraging range is estimated to be 3km (SNH, 2016). Dungarvan Harbour SPA is within this distance. However, dunlin was not recorded at the Proposed Wind Farm site during any surveys, demonstrating that the population does not utilise the Proposed Wind Farm site. There are no other SPAs within this distance.

7.3.1.2.5 **Oystercatcher**

The mean foraging range of oystercatcher is estimated to be 1.1km (Schwemmer and Garthe, 2011). The separation distance between the Proposed Wind Farm site and Dungarvan Harbour SPA is greater than this distance. The estimated foraging range could extend to 2.2km (Schwemmer and Garthe, 2011). Dungarvan Harbour SPA is within this distance. However, oystercatcher were not recorded at the Proposed Wind Farm site during any surveys, demonstrating that the population does not utilise the Proposed Wind Farm site. There are no other SPAs within this distance.

7.3.1.2.6 **Peregrine falcon**

The mean foraging range of peregrine falcon is estimated to be 2km (SNH, 2016). Dungarvan Harbour SPA is within this distance. Peregrine falcon is not an SCI of this SPA.

The conservation objectives for Helvick Head to Ballyquin SPA states that most prey items are caught within 2km of an eyrie, rarely beyond 6km (Hardey *et al.*, 2009). Helvick Head to Ballyquin SPA is 5.8km from the Proposed Wind Farm site at the closest point. Given that this is close to the maximum foraging range and that the majority of the SPA area is further than 6km from the Proposed Wind Farm site, it is unlikely that an eyrie is within 6km of the Proposed Wind Farm site. There are also no Proposed Turbines within 6km of the SPA. In addition, suitable habitats for this species recorded within the Proposed Wind Farm site are common and widespread in the intervening landscape, it is unlikely that this population utilises the SPA.

7.3.1.2.7 **Redshank**

As no core foraging range was available in the literature, an estimate is based on the foraging range of the ecologically similar species greenshank, with a core foraging range of 2km (SNH, 2016). The separation distance between the Proposed Wind Farm site boundary and Dungarvan Harbour SPA is 1.9km, however, there are no Proposed Turbines or Proposed Project infrastructure within 2km of the SPA boundary. As no maximum foraging distance for redshank was available in the literature, an estimate is based on the maximum foraging range of ecologically similar species greenshank, with a maximum foraging range of 3km (SNH, 2016). Dungarvan Harbour SPA is within this distance. However, redshank was not recorded at the Proposed Wind Farm site during any surveys, demonstrating that the population does not utilise the Proposed Wind Farm site. There are no other SPAs within this distance.

7.3.1.2.8 **Ringed plover**

As no core foraging range was available in the literature, an estimated is based on the core foraging range of the ecologically similar dunlin (500m; SNH, 2016). There are no SPAs within this distance from the Proposed Wind Farm site. The maximum foraging range is estimated to be 3km (based on dunlin; SNH, 2016). Dungarvan Harbour SPA is within this distance. However, ringed plover were not recorded at the Proposed Wind Farm site during any surveys, demonstrating that the population does not utilise the Proposed Wind Farm site. There are no other SPAs within this distance.

7.3.1.2.9 **Teal**

The mean foraging range of teal is estimated to be 8.4km (Johnston *et al.*, 2013). Dungarvan Harbour SPA, Blackwater Estuary SPA and Helvick Head to Ballyquin SPA are within this distance. Teal is not an SCI of any of these SPAs.

7.3.1.2.10 **Wigeon**

The mean foraging range of wigeon is estimated to be 2.8km (Johnston *et al.*, 2013). Dungarvan Harbour SPA is within this distance. Wigeon is not an SCI of this SPA.

7.3.1.2.11 **Marine and coastal species**

The following species are SCIs of SPAs within proximity to the Proposed Wind Farm site. These are primarily marine habitat species and are unlikely to utilise the habitat within the Proposed Wind Farm site, which is not coastal:

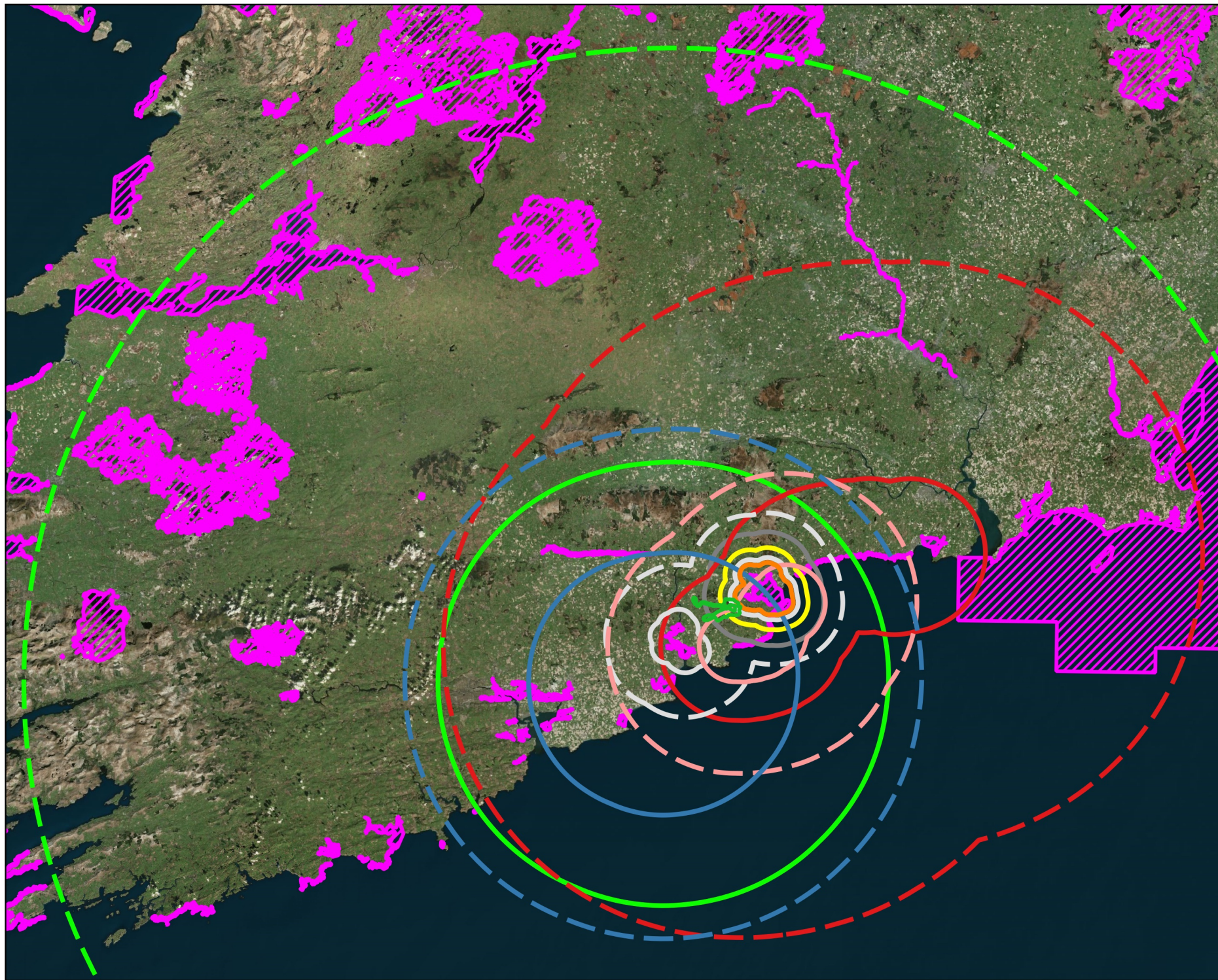
- › Grey Plover (Dungarvan Harbour SPA & Ballymacoda Bay SPA)
- › Kittiwake (Helvick Head to Ballyquin SPA)
- › Knot (Dungarvan Harbour SPA)
- › Red-breasted Merganser (Dungarvan Harbour SPA)
- › Sanderling (Ballymacoda Bay SPA)
- › Shelduck (Dungarvan Harbour SPA)
- › Turnstone (Dungarvan Harbour SPA & Ballymacoda Bay SPA)

7.3.1.3 **Potential for Indirect Impacts**

The potential for indirect impacts on water quality was identified for the Dungarvan Harbour SPA and the Blackwater Estuary SPA. The following species are SCIs of these SPAs:

- › Great crested grebe
- › Light-bellied Brent goose
- › Shelduck
- › Red-breasted merganser
- › Oystercatcher
- › Golden plover
- › Grey plover
- › Lapwing
- › Knot
- › Dunlin
- › Black-tailed godwit
- › Bar-tailed godwit
- › Curlew
- › Redshank
- › Turnstone
- › Wigeon





Map Legend

- EIAR Site Boundary
- Special Protection Area
- Core foraging range
- Maximum foraging range

Species

- Bar-tailed godwit and black-tailed godwit
- Common gull
- Cormorant
- Golden plover and lapwing
- Great-crested grebe
- Herring gull
- Lesser black-backed gull
- Brent goose

Drawing Title

Special Protection Area

Project Title

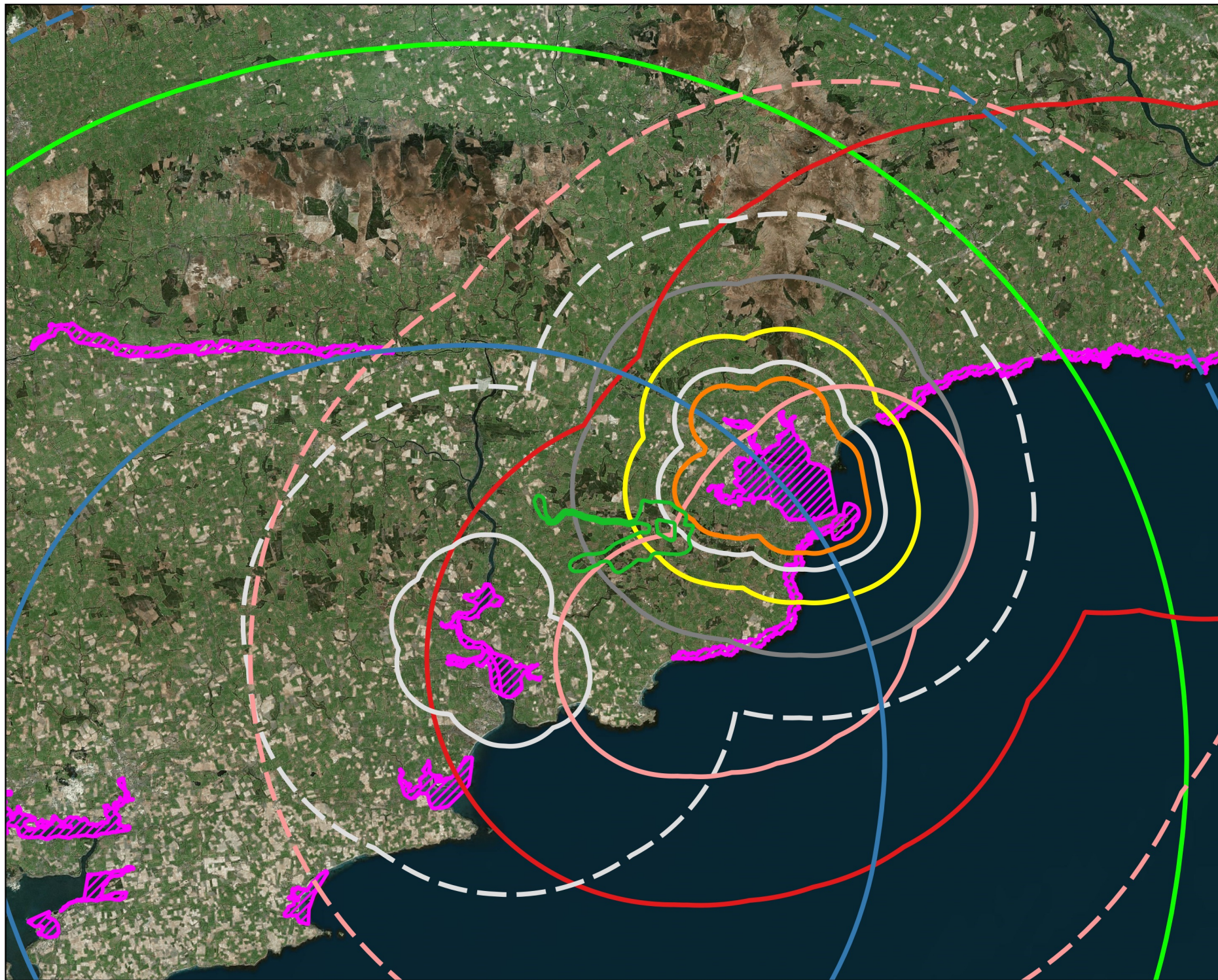
Slievegrine Renewable Energy Development, Co. Waterford

Drawn By	Checked By
LDV	SD
Project No.	Drawing No.
240740	Figure 7-1a
Scale	Date
1:1,000,000	08/10/2026

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- Map Legend
- EIAR Site Boundary
 - Special Protection Area
 - Core foraging range
 - Maximum foraging range
- Species
- Bar-tailed godwit and black-tailed godwit
 - Common gull
 - Cormorant
 - Golden plover and lapwing
 - Great-crested grebe
 - Herring gull
 - Lesser black-backed gull
 - Brent goose



Drawing Title	
Special Protection Area	
Project Title	
Slievegrine Renewable Energy Development, Co. Waterford	
Drawn By	Checked By
LDV	SD
Project No.	Drawing No.
240740	Figure 7-1b
Scale	Date
1:300,000	08/10/2026
 MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VV84 +353 (0) 91 735611 email: info@mkofireland.ie Website: www.mkofireland.ie	

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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 site lies within hectad X18 and X28, while the Proposed Grid Connection site also extends into hectad X19. 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	Breeding Atlas 2007-2011		
	X18	X28	X19
Barn Owl	-	-	Possible
Buzzard	Possible	Possible	Possible
Chough	-	Confirmed	-
Coot	-	-	Possible
Cormorant	-	Confirmed	-
Curlew	-	Possible	-
Dipper	Confirmed	Confirmed	Confirmed
Fulmar	-	Confirmed	-
Great Black-backed Gull	-	Confirmed	-
Great Crested Grebe	-	Possible	-
Grey Heron	Possible	Confirmed	Possible
Grey Wagtail	Confirmed	Confirmed	Confirmed
Hen Harrier	Possible	Probable	-
Herring Gull	-	Confirmed	-
Kestrel	Confirmed	Possible	Probable
Kingfisher	Possible	-	Possible
Little Egret	Possible	Confirmed	Possible
Little Grebe	-	Possible	Confirmed
Long-eared Owl	-	-	Confirmed
Mallard	Confirmed	Confirmed	Confirmed
Meadow pipit	Confirmed	Confirmed	Confirmed
Moorhen	Confirmed	Confirmed	Confirmed
Mute Swan	Possible	Confirmed	Possible

Species	Breeding Atlas 2007-2011		
	X18	X28	X19
Oystercatcher	-	Possible	-
Peregrine Falcon	Probable	Confirmed	Confirmed
Red-legged Partridge	-	-	Confirmed
Shelduck	Probable	Confirmed	
Snipe	Probable	-	Probable
Sparrowhawk	Probable	Possible	Confirmed
Stock Dove	Probable	Confirmed	Probable
Swift	-	-	Confirmed
Water Rail	-	Possible	-
Woodcock	-	Possible	Possible
Yellowhammer	Confirmed	Confirmed	Confirmed

Table 7-7 Wintering Bird Atlas data

Species	Wintering Atlas 2007-2011		
	X18	X28	X19
Bar-tailed Godwit	Present	-	Present
Bewick's Swan	-	Present	-
Black-headed Gull	Present	Present	Present
Chough	-	Present	-
Common Gull	Present	Present	-
Common Sandpiper	Present	-	-
Coot	-	Present	Present
Cormorant	Present	Present	-
Curlew	Present	Present	Present
Dark-bellied Brent Goose	-	Present	-
Dipper	Present	-	-
Dunlin	Present	Present	-
Fulmar	-	Present	-
Gannet	-	Present	-

Species	Wintering Atlas 2007-2011		
	X18	X28	X19
Glaucous Gull	-	Present	-
Golden Plover	Present	-	Present
Great Black-headed Gull	Present	Present	Present
Great Crested Grebe	-	Present	-
Great Northern Diver	-	Present	-
Greenshank	Present	Present	-
Grey Heron	Present	Present	Present
Grey Plover	Present	Present	-
Grey wagtail	Present	Present	Present
Guillemot	-	Present	-
Hen Harrier	-	Present	-
Jack Snipe	Present	-	-
Kestrel	Present	Present	Present
Lapwing	Present	Present	Present
Lesser Black-backed Gull	-	Present	-
Little Grebe	-	Present	Present
Mallard	Present	Present	Present
Meadow Pipit	Present	Present	Present
Moorhen	Present	Present	Present
Mute Swan	Present	Present	Present
Oystercatcher	Present	Present	-
Peregrine Falcon	-	-	Present
Pochard	-	Present	Present
Razorbill	-	Present	-
Red-breasted Merganser	Present	Present	-
Redshank	Present	Present	Present
Redwing	Present	Present	Present

Species	Wintering Atlas 2007-2011		
	X18	X28	X19
Ringed Plover	-	Present	-
Shag	Present	Present	-
Shelduck	Present	Present	-
Shoveler	-	Present	-
Slavonian Grebe	-	Present	-
Snipe	Present	Present	Present
Sparrowhawk	Present	Present	Present
Stock Dove	Present	Present	Present
Teal	Present	Present	Present
Tufted Duck	-	-	Present
Turnstone	-	Present	-
Water Rail	-	-	Present
Whooper Swan	-	Present	-
Wigeon	Present	Present	-
Woodcock	Present	Present	-
Yellowhammer	-	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 site is located within areas of low bird sensitivity to wind energy developments. The nearest high sensitivity area is located approximately 45km from the Proposed Wind Farm site.

7.3.4 National Biodiversity Data Centre Records

The National Biodiversity Data Centre (NBDC) Biodiversity Maps provide records of flora and fauna within 10km hectads across Ireland. Data is available from the map viewer on the NBDC website (<https://maps.biodiversityireland.ie/Map>). The Proposed Wind Farm site lies within hectad X18 and X28, while the Proposed Grid Connection also extends into hectad X19. Table 7-8 lists species of conservation interest that have been recorded in these 10km Grids.

Table 7-8 National Biodiversity Data Centre records

Species	NBDC Dataset
Arctic Tern	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Barn Owl	Birds of Ireland; eBIRD Bird Records for Ireland
Bar-tailed Godwit	eBIRD Bird Records for Ireland; Birds of Ireland
Bewick's Swan	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Black Brant	Bird Atlas 2007 - 2011
Black Guillemot	eBIRD Birds Record for Ireland
Black Tern	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Black-headed Gull	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84; eBIRD Bird Records for Ireland
Black-necked Grebe	Bird Atlas 2007 – 2011
Black-tailed Godwit	eBIRD Bird Records for Ireland
Bonaparte's Gull	Rare birds of Ireland
Brent Goose	Birds of Ireland; eBIRD Bird Records for Ireland
Buzzard	Birds of Ireland; eBIRD Bird Records for Ireland
Canada Goose	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Cattle Egret	eBIRD Bird Records for Ireland; Birds of Ireland
Chough	eBIRD Bird Records for Ireland
Common Guillemot	eBIRD Bird Records for Ireland
Common Gull	eBIRD Bird Records for Ireland
Common Sandpiper	eBIRD Bird Records for Ireland
Common Tern	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Coot	Bird Atlas 2007 – 2011; Birds of Ireland
Cormorant	eBIRD Bird Records for Ireland
Corncrake	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972
Curlew	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland; Birds of Ireland
Curlew Sandpiper	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Dipper	Birds of Ireland; eBIRD Bird Records for Ireland; Bird Atlas 2007 - 2011
Dunlin	Birds of Ireland

Species	NBDC Dataset
Eider	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Fulmar	Bird Atlas 2007 – 2011
Gadwall	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Gannet	eBIRD Bird Records for Ireland
Garganey	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Glaucous Gull	Bird Atlas 2007 - 2011
Golden Plover	eBIRD Bird Records for Ireland
Goldeneye	Bird Atlas 2007 – 2011
Great Black-backed Gull	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Great Crested Grebe	Bird Atlas 2007 – 2011; Birds of Ireland
Great Northern Diver	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Great White Egret	Birds of Ireland
Green Sandpiper	Bird Atlas 2007 – 2011; Irish Wetland Birds Survey (I-WeBS) 1994-2001
Greenshank	Birds of Ireland
Green-winged Teal	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Grey Heron	eBIRD Bird Records for Ireland
Grey Phalarope	Bird Atlas 2007 – 2011
Grey Plover	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Grey Wagtail	Birds of Ireland; eBIRD Bird Records for Ireland
Greylag Goose	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Hen Harrier	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Herring Gull	eBIRD Bird Records for Ireland
Hobby	Rare birds of Ireland
Iceland Gull	Bird Atlas 2007 – 2011; Birds of Ireland
Jack Snipe	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84; Bird Atlas 2007 - 2011
Kestrel	Birds of Ireland; eBIRD Bird Records for Ireland
Kingfisher	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Kittiwake	Irish Wetland Birds Survey (I-WeBS) 1994-2001; eBIRD Bird Records for Ireland

Species	NBDC Dataset
Knot	Bird Atlas 2007 – 2011; Birds of Ireland
Kumlien's Gull	Rare birds of Ireland
Lapwing	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Lesser Black-backed Gull	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Lesser White-fronted Goose	Birds of Ireland
Lesser Yellowlegs	Bird Atlas 2007 – 2011
Light-bellied Brent Goose	Bird Atlas 2007 – 2011
Little Egret	eBIRD Bird Records of Ireland
Little Grebe	Bird Atlas 2007 – 2011; Irish Wetland Birds Survey (I-WeBS) 1994-2001
Little Gull	Bird Atlas 2007 – 2011
Little Stint	Irish Wetland Birds Survey (I-WeBS) 1994-2001.
Long-eared Owl	Birds of Ireland; The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972
Mallard	eBIRD Bird Records for Ireland
Marsh Harrier	Birds of Ireland
Meadow Pipit	Bird Atlas 2007 – 2011; Birds of Ireland; eBIRD Bird Records for Ireland
Mediterranean Gull	Irish Wetland Birds Survey (I-WeBS) 1994-2001; eBIRD Bird Records for Ireland
Merlin	Bird Atlas 2007 – 2011; Birds of Ireland
Moorhen	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Mute Swan	eBIRD Bird Records for Ireland
Oystercatcher	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Peregrine Falcon	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Pink-footed Goose	Birds of Ireland
Pintail	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Pochard	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84; Irish Wetland Birds Survey (I-WeBS) 1994-2001
Purple Sandpiper	eBIRD Bird Records for Ireland
Quail	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Razorbill	Birds of Ireland

Species	NBDC Dataset
Red Kite	eBIRD Bird Records for Ireland
Red-breasted Merganser	Bird Atlas 2007 – 2011; Birds of Ireland
Red-legged Partridge	Bird Atlas 2007 – 2011
Redshank	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Red-throated diver	eBIRD Bird Records for Ireland
Redwing	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Ringed Plover	Irish Wetland Birds Survey (I-WeBS) 1994-2001; Birds of Ireland
Ringed-billed Gull	Bird Atlas 2007 – 2011
Roseate Tern	Irish Wetland Birds Survey (I-WeBS) 1994-2001.
Ruff	Irish Wetland Birds Survey (I-WeBS) 1994-2001.
Sanderling	Irish Wetland Birds Survey (I-WeBS) 1994-2001; eBIRD Bird Records for Ireland
Sandwich Tern	eBIRD Bird Records for Ireland
Scaup	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Shag	eBIRD Bird Records for Ireland
Shelduck	eBIRD Bird Records for Ireland
Shoveler	Bird Atlas 2007 – 2011; The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Slavonian Grebe	Irish Wetland Birds Survey (I-WeBS) 1994-2001; The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84
Snipe	Birds of Ireland; eBIRD Bird Records for Ireland
Sparrowhawk	eBIRD Bird Records for Ireland; Birds of Ireland
Spotted Redshank	Irish Wetland Birds Survey (I-WeBS) 1994-2001
Stock Dove	Birds of Ireland; Bird Atlas 2007 – 2011
Swift	Bird Atlas 2007 – 2011; The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972; Swifts of Ireland
Teal	Bird Atlas 2007 – 2011; Birds of Ireland; eBIRD Bird Records for Ireland
Tufted Duck	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
Tundra Swan	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Turnstone	Bird Atlas 2007 – 2011; Birds of Ireland

Species	NBDC Dataset
Turtle Dove	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Water Rail	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84; eBIRD Bird Records for Ireland; Birds of Ireland
Whimbrel	eBIRD Bird Records for Ireland
White-tailed Eagle	eBIRD Bird Records for Ireland
Whooper Swan	Birds of Ireland; Irish Wetland Birds Survey (I-WeBS) 1994-2001; eBIRD Bird Records for Ireland
Wigeon	Bird Atlas 2007 – 2011; Birds of Ireland; eBIRD Bird Records for Ireland
Woodcock	Bird Atlas 2007 – 2011; Birds of Ireland
Yellowhammer	Bird Atlas 2007 – 2011; eBIRD Bird Records for Ireland
Yellow-legged Gull	Bird Atlas 2007 – 2011; 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:

- › Blackwater Estuary
- › Clonea Strand
- › Dungarvan Harbour
- › Lower Blackwater River
- › Whiting Bay
- › Whiting Bay Marsh

A request was submitted to BirdWatch Ireland for additional bird survey data collected through the Irish Wetland Bird Survey (I-WeBS) at Dungarvan Harbour, to inform the assessment of potential effects of the Proposed Wind Farm on relevant bird species. Dungarvan Harbour is designated as a Special Protection Area (SPA) for several bird species and is located approximately 2km from the Proposed Wind Farm. The additional IWeBS data were therefore sought to provide further information on the occurrence, abundance and distribution of relevant species within the SPA and surrounding area, and to support the assessment of potential effects associated with the Proposed Wind Farm.

The data received comprised site-level and subsite-level I-WeBS count data for Dungarvan Harbour covering the five winter seasons from 2020/21 to 2024/25. The dataset included records for 58 waterbird species across 16 subsites, together with consolidated counts for Dungarvan Harbour as a whole, and provided seasonal peak counts and monthly counts for November to March. Species of conservation interest recorded within Dungarvan Harbour included light-bellied Brent goose, golden plover, dunlin, knot, black-tailed godwit, bar-tailed godwit, oystercatcher, redshank, curlew and shelduck, with great crested grebe and red-breasted merganser also recorded. This data was used to provide additional context on the recent occurrence, abundance and spatial distribution of waterbirds within Dungarvan Harbour and to identify areas used by relevant species. In interpreting the data, consideration was given to variation in survey coverage, tidal conditions and the potential movement of birds between subsites, with subsite records considered in the context of the Dungarvan Harbour SPA.

7.3.6 Rare and Protected Species Dataset

An information request was sent to NPWS requesting records from the Rare and Protected Species Database. The following records were obtained from the NPWS on the 22nd of May 2026:

- › Hen harrier – three sightings in X18 during the National Surveys in 2015/2010/2005.
- › Peregrine falcon – two occupied nest sites (not known in 2002) in X18, two occupied nest sites (not known in 2002) in X19 and four occupied nest sites (known in 2002) during the 2017 National Peregrine Survey (with information as to whether sites were recorded as nest sites in the previous National Survey in 2002).

7.3.7 Field Survey Results

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

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

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

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

Species	Key findings
Golden plover	Non-breeding. There was no evidence of breeding at the Proposed Wind Farm. Probable roosting and foraging. Three probable roosting and foraging areas have been identified during the survey period. Two are within or partially within the Proposed Wind Farm. The remaining is 200m from the Proposed Wind Farm.
Peregrine falcon	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 kite	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.
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
Hen harrier	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.
Marsh harrier	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.
Merlin	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.
Short-eared owl	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.
Chough	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.
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.
Mediterranean gull	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.
Black-tailed godwit	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.
Cormorant	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
Curlew	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. Key Foraging area: Curlew were often recorded foraging in agricultural grassland near Reanaviddoge, partially within the Proposed Wind Farm.
Lapwing	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.
Common gull	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.
Herring gull	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.
Lesser black-backed gull	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.
Barn owl	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.
Kestrel	Probable breeding. There were two probable breeding territories identified over the survey period. One territory is partially within the Proposed Wind Farm. The other one is 850m 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	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
Meadow pipit	Breeding on the Site. Meadow pipits were observed displaying, singing and calling throughout the survey season, confirming breeding on the Proposed Wind Farm
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
Ring ouzel	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.
Snipe	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.
Stock dove	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.
Swift	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.
Whinchat	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.
Woodcock	Probable breeding. There were five probable breeding territories identified over the survey period. Four territories are partially within the Proposed Wind Farm. The other one is 300m from the Proposed Wind Farm. 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 30m from the Proposed Wind Farm. Buzzard was observed on a nest. Also, buzzards

Species	Key findings
	were observed displaying, mobbing and a juvenile was seen around that nest. Probable breeding. Two probable breeding territories were identified during the survey period. One within the Proposed Wind Farm and one at 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.
Hobby	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.
Long-eared owl	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.
Sparrowhawk	Likely breeding. Few breeding related records of Sparrowhawk were recorded and were scattered across the Proposed Wind Farm, but it wasn't possible to determine a specific breeding territory. 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
Bar-tailed godwit	The nearest record was approximately 2.7km from the Proposed Wind Farm. There were four observations of 2 to 100 birds foraging near Dungarvan Harbour in October 2025, January and March 2026.
Dunlin	The nearest record was approximately 2.3km from the Proposed Wind Farm. There were 17 records of 2 to 1400 birds foraging and roosting near Dungarvan Harbour and Ballynaclash Quay. All these observations were recorded during the winter Season.
Goshawk	The nearest record was approximately 2.7km from the Proposed Wind Farm. One bird was recorded foraging near Shanbally in February 2026.
Montagu's harrier	The nearest record was approximately 0.9km from the Proposed Wind Farm. There were two records of the same bird hunting and being mobbed near Reanagulle, both on the same day in November 2025. Montagu's harrier is a rare vagrant visitor to Ireland.

Species	Observations
Greenland white-fronted goose	The nearest record was approximately 7km from the Proposed Wind Farm. There were four records of birds present at Knocknaskagh Lower in January, February and March 2025.
Kingfisher	The nearest record was approximately 1.7km from the Proposed Wind Farm. There were four records of one to three kingfisher travelling, three of which were on River Brickey in October 2024, September and November 2025 and one at Ballynaclash Quay in January 2025.
Whooper swan	The nearest record was approximately 1.7km from the Proposed Wind Farm. There were 76 observations of 1 to 151 birds foraging or roosting. Only one of these observations was within 2km from the Proposed Wind Farm. Most of these records were at Monanee Lake, Camphire, Clogh and around Knocknaskagh Lower. All were recorded during the winter Season.
Oystercatcher	The nearest record was approximately 2.2km from the Proposed Wind Farm. There were 32 observations of 1 to 141 birds foraging, flying and roosting. Most of the observations were made at Dungarvan Harbour and Ballynaclash Quay and along River Blackwater. All records were made during the winter Season.
Redshank	The nearest record was approximately 2.2km from the Proposed Wind Farm. There were 58 observations of 1 to 191 birds foraging and roosting. Most of the observations were made at Dungarvan Harbour and Ballynaclash Quay and along River Blackwater. All records were made during the winter Season.
Brent Goose	The nearest record was approximately 0.6km from the Proposed Wind Farm. There were ten observations of 1 to 100 birds flying and foraging. Most records were made near Dungarvan Harbour, one flock of 30 birds was observed flying 600m from the Proposed Wind Farm. All records were made during the winter Season.
Shoveler	The nearest record was approximately 4.5km from the Proposed Wind Farm. There were two observations of two and seven birds roosting at Dungarvan Harbour in November 2024 and January 2026.

7.3.7.1 Golden plover

Golden plover was observed in the winter and passage season (April and September). Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to landing areas are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Golden plover was recorded 147 times during vantage point surveys, or on average once every 12 hours of winter and passage season surveys. Of these records, 64 were within 500m from the Proposed Turbines. Between 1 and 500 individuals were observed during the winter and passage season. The average flock size was 48 birds.

Golden plover was recorded 19 times landing and, on the ground, (likely feeding, though some birds may have been roosting) during the winter seasons of 2024-2025 and 2025-2026. On eight different observations in four distinct months (September, October 2024 and January, October 2025), flocks of 2 to 500 birds were observed flying and landing near Kilnafarna Upper (approximately 200m from the Proposed Wind Farm site boundary or 600m from the Proposed Project footprint). These records of repeated landing in the same area during the winter season suggest an area of landing for feeding and/or roosting that is labelled GP-1 in the maps in Appendix 7-5. Also, six records of flocks of 12 to 52 birds were seen flying, landing and on the ground in three distinct months (March, October 2025 and January 2026) near Slievegrine Hill, suggesting a regularly used landing area (GP-2). This area is located within the Proposed Wind Farm site. In November 2024 and November 2025, three records of flocks between 80 and 350 were observed flying, circling and landing near Carronbeg partially within the Proposed Wind Farm (GP-3). Additionally, in January 2025, two birds were observed landing near Monacullee (within the Proposed Wind Farm) and in February 2025, a flock of 34 birds was observed landing near Drumslogh (approximately 400m of GP-2, within the Proposed Wind Farm).

Of the remaining records, 70 were of flocks ranging from 1 to 350 birds flying and that may be associated with landed flocks foraging or roosting on the ground in the areas described above (GP-1 – GP-3), which is typical golden plover behaviour. The remaining 58 records were of golden plovers flying, circling and travelling over the Proposed Wind Farm and wider surroundings.

Winter transect survey

Golden plover was recorded 13 times during winter transect surveys, on 11 of the 42 survey dates (26%). Of these records, one was within the Proposed Wind Farm (11 were not mapped). Between 1 and 220 individuals were observed. The average flock size was 26 birds.

Birds were flying, circling and travelling in the Proposed Wind Farm and wider surroundings. In October 2023, five birds were recorded near Reamanagh East within the Proposed Wind Farm. In October 2024, one bird was recorded at GP-1 (200m from the Proposed Wind Farm). Two unmapped records of 3 and 220 birds were recorded at T3a respectively in October 2024 and December 2025. This transect is closely located near GP-3. Other unmapped records were of birds flying or flushed throughout the Proposed Wind Farm.

Hinterland survey

Golden plover was recorded ten times during hinterland surveys, on 9 of the 17 surveys dates (53%). Of these records, none are on the Proposed Wind Farm. Between 5 and 4,000 birds were observed. The average flock size was 1,130 birds.

In October 2024, a flock of 22 birds was present at GP-1. In March 2025, a flock of 269 birds was recorded flying near Carronbeg at GP-3. One flock of 2,300 birds was observed in January 2025 at Ballynaclash Quay. Two flocks of 4,000 birds were recorded foraging in January and February 2026 at Dungarvan Harbour. All remaining records were of flocks of 5 to 450 birds observed flying at Ballynaclash Quay

Wintering golden plover survey

Golden plover was recorded 27 times during wintering golden plover surveys, on 16 of the 18 surveys dates (89%). Of these records, two were within the Proposed Wind Farm. Between 1 and 2,300 birds were observed. The average flock size was 312 birds.

In November, December 2024, October 2025 and February 2026, four records of flock of 2 to 200 birds have been observed flying and roosting at the previously identified area GP-1. On eight distinct dates (within December 2024, March, April, October and November 2025 and February, March 2026) 1 to 98 birds have been observed flying and foraging at GP-3. Additionally, in November 2024, golden

plover was recorded calling (no number could be determined) within the Proposed Wind Farm. In February 2026, there was two observations of 12 and 88 birds on the ground, roosting and preening respectively, within 500m from the Proposed Wind Farm. In January 2025 and January 2026, two flocks of 2,000 birds were observed flying near Dungarvan Harbour. In February 2025, one flock of 2,300 birds was observed at Ballynaclash Quay. The remaining observations were of birds foraging and roosting in the wider surroundings of the Proposed Wind Farm, mainly at Ballynaclash Quay and Dungarvan Harbour.

Incidental records

There were 10 incidental observations of golden plover during hen harrier roost Survey, vantage point surveys (outside of the survey effort) and birds of prey surveys. Between 1 and 30 birds were observed. The average flock size was 10 birds.

In October 2024 and January 2025, two records of one and nine birds flying and foraging at GP-1. In early April 2025, there were two records of one bird flying and one bird flushed at GP-3. In November 2025, there was one record of one bird flying at GP-2. In October 2024 and March 2025, there were three records of birds calling and flying near Toor North, partially within the Proposed Wind Farm. The remaining two observations were of birds flying in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were 101 records of golden plover in the supplementary data. Of these records, 66 were observed within the Proposed Wind Farm (five were not mapped). Between 1 and 250 birds were observed. The average flock size was 51 birds.

In November 2023, five birds were observed feeding at GP-1. Of the remaining observations, 53 were of flocks flying above the previously identified landing areas (GP-1 to GP-3). Other records were of birds flying at the Proposed Wind Farm and its surroundings.

7.3.7.2 Peregrine falcon

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

Vantage point survey

Peregrine falcon was recorded 30 times during vantage point surveys, or on average once every 83 hours of surveys. Of these records, 19 were within 500m from the Proposed Turbines. Between one and two birds were observed during the survey period.

In June 2024, one bird was observed carrying prey near Monacullee within the Proposed Wind Farm and within 500m of any Proposed Turbine. No other breeding records were observed in that area, therefore no regularly used breeding territory could be established at this location. Additionally, there is no suitable habitat for breeding peregrine falcon (cliffs, quarries and other elevated structures) within the Proposed Wind Farm. A pair of peregrine falcon were seen hunting near Carronbeg within the Proposed Wind Farm in October 2024. The remaining records were of birds hunting, soaring, and perching throughout the Proposed Wind Farm and its surroundings.

Winter transect surveys

Peregrine falcon was recorded four times during winter transect surveys, on 4 of the 42 survey dates (10%). Of these records, none were mapped by the surveyor, but were recorded on transects within and in proximity of the Proposed Wind Farm. Between one and two birds were observed.

There were two records of a pair of peregrine falcons. The first was of a pair perched on the transect TA Drumhill in October 2023. The second record was of a pair (male and female) flying made in January 2026 on T2D. The remaining two records were of individual birds flying and perched on the transects T4 and T1.

Hinterland survey

Peregrine falcon was recorded twice during hinterland surveys, on 2 of the 17 surveys dates (12%; one record not mapped). Individual birds were observed.

In February 2026, one bird was observed perched at Cunnigar, approximately 5 km from the Proposed Wind Farm. A second record was made in the townland of Lyre in March 2026.

Raptor surveys

Peregrine falcon was recorded five times during raptor surveys, on 4 of the 27 surveys dates (15%), and on two of the three surveys dates (67%) of the dedicated breeding peregrine falcon surveys. Only individual birds were observed.

One bird was recorded stealing prey from a sparrowhawk near Carhuebwee (approximately 3.5km from the Proposed Wind Farm site) in June 2025. There were two records of an individual bird travelling in and out of Keereen Quarry (approximately 6.3km from the Proposed Wind Farm) in June 2024. These records suggest that peregrine falcon might breed in this quarry, but there was no further evidence on which to confirm this. The two remaining records were of birds flying and circling at a greater distance than 1.5km from the Proposed Wind Farm.

Incidental records

There were six incidental observations of peregrine falcon during hen harrier nest watches, whooper swan surveys and wintering golden plover surveys. Between one and two birds were observed. All records were of one or two birds hunting, interacting with each other, flying, soaring and perched further than 2km from the Proposed Wind Farm.

Supplementary data

There were 22 records of peregrine falcon in the supplementary data. Of these records, 12 were within the Proposed Wind Farm (one was not mapped). Between one and two birds were observed.

In March 2024, one peregrine falcon was observed mobbing another bird species near Lackamore (partially within the Proposed Wind Farm). Of the remaining observations, birds were hunting, flying and soaring withing the Proposed Wind Farm and its surroundings.

7.3.7.3 Red kite

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

Vantage point survey

Red kite was recorded four times during vantage point surveys, or on average once every 304 hours of winter surveys. Of these records, two were within 500m from the Proposed Turbines. Only individual birds were observed during the survey period.

An individual bird was observed flying and being mobbed at Cloghraun in January 2025. A second individual was recorded flying at Knocknahoola in February 2025. Both records were within the Proposed Wind Farm and within 500m of a Proposed Turbine. The two remaining observations were of birds flying, soaring, circling in the wider surroundings of the Proposed Wind Farm in March and December 2025.

Winter transect survey

Red kite was recorded twice during winter transect surveys, on 1 of the 42 survey dates (2%). Of these records, one was within the Proposed Wind Farm (one was not mapped). Only individual birds were observed. One bird was observed near Cloghraun in October 2023 (within the Proposed Wind Farm). Also, on the same day, one bird was observed flying on the transect T1 Carronadavderg but was not mapped by the surveyor.

Incidental Records

There was one incidental observation of red kite during wintering golden plover surveys. One bird was observed near Ballynaclash in February 2025 (approximately 5.8km from the Proposed Wind Farm).

Supplementary data

There were two records of red kite in the supplementary data. Of these records, one is within the Proposed Wind Farm and both are within 500m from the Proposed Turbines. Between one and two birds were observed. Both records were of birds flying and gliding in the Cloghraun area in December 2023.

7.3.7.4 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 five times during vantage point surveys, or on average once every 497 hours of surveys. Of these records, three were within 500m from the Proposed Turbines. Only individual birds were observed.

White-tailed eagle was recorded soaring over the Proposed Wind Farm site. On one occasion, one sub-adult bird was observed perching and preening in conifer plantation near Lackamore within the Proposed Wind Farm site and within 500m from the Proposed Turbines in July 2025. On another occasion, a juvenile bird was perched and mobbed by ravens near Knocknaglogh Upper (approximately 570m from the nearest Proposed Turbine) in January 2026. The remaining records were of birds soaring and circling, two of them over the Proposed Wind Farm.

Hinterland survey

White-tailed eagle was recorded once during hinterland Surveys, on 1 of the 17 surveys dates (6%). One bird was observed perched and later flying near Ballynaclash (5km from the Proposed Wind Farm) in January 2026.

Raptor surveys

White-tailed eagle was recorded once during raptor surveys, on 1 of the 27 surveys dates (4%). One bird was observed carrying prey and soaring near Ballynaclash (5km from the Proposed Wind Farm) in July 2025.

Incidental records

There were two incidental observations of white-tailed eagle during wintering golden plover and vantage point surveys (outside of survey effort). Only individual birds were observed. White-tailed eagle was recorded at Ballynaclash in February 2025, the second record was of one bird flying in the Blackwater estuary near Pillpark in January 2026. Both records are further than 5km from the Proposed Wind Farm.

Supplementary data

There was one record of a white-tailed eagle in the supplementary data. One bird was recorded soaring over the Proposed Wind Farm near Cloghraun in January 2024.

7.3.7.5 Hen harrier

Hen harrier was observed in the winter (including April) and post-breeding season (August). Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

Hen harrier was recorded 17 times during vantage point surveys, or on average once every 146 hours of winter and passage surveys. Of these records, ten were within 500m from the Proposed Turbines. Only individual birds were observed.

Both adult males and ringtails (juvenile or female) have been seen throughout the Site. Hen harrier was observed hunting on five occasions, three of these records were within the Proposed Wind Farm (two near Slievegrine Hill and one near Carronadavderg). The two remaining hunting observations were further than 500m from the Proposed Wind Farm. Hen harrier was also recorded landing and perching four times all of these records were within the Proposed Wind Farm (three near Slievegrine Hill and Drumhill and one near Carronbeg). The remaining observations were of birds flying and commuting.

Winter transect survey

Hen harrier was recorded on one occasion during winter transect surveys, on 1 of the 42 survey dates (2%). One bird was recorded at transect T4B near Clashbrack and Lyre in October 2024 (not mapped).

Hen harrier roost survey

Hen harrier was recorded nine times during hen harrier roost surveys, on 5 of the 36 surveys dates (14%). Only individual birds were recorded. None of these records were within the Proposed Wind

Farm. Birds were recorded hunting, flying and preening in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were eleven records of hen harrier in the supplementary data. Of these records, six were within the Proposed Wind Farm. Only individual birds were observed. Hen harrier was observed hunting, perched and flying within the Proposed Wind Farm and its surroundings.

7.3.7.6 Marsh harrier

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

Vantage point survey

Marsh harrier was recorded three times during vantage point surveys, or on average once every 611 hours of surveys. All these records were within 500m from the Proposed Turbines. Only individual birds were observed flying at the Proposed Wind Farm in May 2024, January 2026 and February 2026.

Winter transect survey

Marsh harrier was recorded once during winter transect surveys, on 1 of the 42 survey dates (2%). One female or immature bird was recorded near Ballyguiry in March 2026.

Hinterland survey

Marsh harrier was recorded twice during hinterland surveys, on 2 of the 17 surveys dates (12%). One bird was observed flying near Knockbrack in February 2026. The other bird was seen hunting near Clashmore in February 2026. Seven days separates both records therefore it is possible that it could have been the same bird, considering the rarity of this species. Both observations were recorded further than 2.6km from the Proposed Wind Farm.

7.3.7.7 Merlin

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

Vantage point survey

Merlin was recorded three times during vantage point surveys, or on average once every 405 hours of winter surveys. Of these records, two were within 500m from the Proposed Turbines. Only individual birds were observed. Individual merlin was recorded twice flying near Carronbeg within the Proposed Wind Farm in February and December 2025. One bird was also recorded flying near Knocknaglogh Upper, at 1.1km from the Proposed Wind Farm in October 2024.

Winter transect survey

Merlin was recorded once during winter transect surveys, on 1 of the 42 surveys dates (2%). One bird was observed flying near Carronbeg (200m from the Proposed Wind Farm and 770m from the nearest Proposed Turbine) in January 2026.

Hinterland survey

Merlin was recorded three times during hinterland surveys, on 3 of the 17 surveys dates (18%). Only individual birds were observed near Coolbagh and Kilmore (3km or more of the Proposed Wind Farm) in October and November 2024 and February 2025.

Incidental records

There were two incidental observations of merlin during hen harrier roost surveys. Only individual birds were observed. Both records were of an individual bird at Monanee Lake (2.1km from the Proposed Wind Farm) in January 2025 and February 2026.

Supplementary data

There was one record of a merlin in the supplementary data. One bird was recorded hunting near Lackamore 320m from the Proposed Wind Farm and 710m from the nearest Proposed Turbine in January 2024.

7.3.7.8 Short-eared owl

Short-eared owl was observed in the winter season. Raw survey data and maps are provided in Appendix 7-4.

Supplementary data

There were two records of short-eared owl in the supplementary data. Both records were of individual birds hunting. The first bird was recorded near Knocknahoola (within the Proposed Wind Farm) in November 2023. The second bird was recorded near Slievegrine Hill (approximately 30m from the Proposed Wind Farm and 380m from the nearest Proposed Turbine) in October 2023.

7.3.7.9 Chough

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

Winter transect survey

Chough was recorded twice during winter transect surveys, on 1 of the 42 surveys dates (2%). One record was of two birds feeding in a field observed from TB Drumhill; this transect is located within the Proposed Wind Farm. The second record was of one bird heard on TA Drumhill; this transect is mostly within the Proposed Wind Farm. Both records were made in October 2023 (not mapped).

Supplementary data

There was one record of Chough in the supplementary data. This record was of one bird flying near Garrynagree (within the Proposed Wind Farm) in January 2024.

7.3.7.10 Little egret

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

Vantage point survey

Little egret was recorded three times during vantage point surveys, or on average once every 828 hours of surveys. Of these records, one was within 500m from the Proposed Turbines. Between one and two birds were recorded each time.

Two little egret was recorded flying near Reamanagh East on the Proposed Wind Farm in May 2024. Additionally, two records of one and two birds flying were made in the wider surroundings of the Proposed Wind Farm in December 2024 and March 2025.

Hinterland survey

Little egret was recorded 31 times during hinterland surveys, on 13 of the 17 surveys dates (76%). No record was within the Proposed Wind Farm. Flocks between 1 and 21 birds were recorded. Average flock size was four birds.

All the records were of birds flying, roosting and/or foraging. Of these records most were made at Dungarvan Harbour and Ballynaclash Quay. The closest record to the Proposed Project was of three birds at Shanakill (approximately 1.5km from the Proposed Wind Farm).

Incidental records

There were nine observations of little egret during wintering golden plover surveys and birds of prey surveys. No record was on the Proposed Wind Farm. Birds were flying and foraging in the wider surroundings of the Proposed Wind Farm, mostly at Shanakill, Ballynaclash and Knocknaskagh respectively situated at 1.5km, 4.5km and 6km from the Proposed Wind Farm.

Supplementary data

There were three records of little egret in the supplementary data. Of these records, one was within the Proposed Wind Farm. One record of one bird flying near Knocknahoola within the Proposed Wind Farm. The second record is of one bird flying near Carronahyla within 500m from the Proposed Wind Farm, the other record was realised on the same day at the same Vantage Point as this second record (not mapped).

7.3.7.11 Mediterranean gull

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

Vantage point survey

Mediterranean gull was recorded twice during vantage point surveys, or on average once every 1,242 hours of surveys. Of these records, one was partially within 500m from the Proposed Turbines. Only individual birds were observed.

One bird was observed flying partially within 500m from the Proposed Turbines near Monagilleeny in August 2024. The remaining record was of one bird flying near Reanagullee (approximately 450m from the Proposed Turbines) in September 2024.

Winter transect survey

Mediterranean gull was recorded once during winter transect surveys, on 1 of the 42 survey dates (2%). One juvenile bird was recorded, during the T4a transect, which covers an area near Drumslog and Slievegrine Hill, in October 2025 (not mapped).

Hinterland survey

Mediterranean gull was recorded once during hinterland surveys, on 1 of the 17 survey dates (6%). Two birds were observed foraging in an agricultural grassland near Carhuebwee (approximately 2.7km from the Proposed Wind Farm) in February 2026.

7.3.7.12 Black-tailed godwit

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

Vantage point survey

Black-tailed godwit was recorded six times during vantage point surveys, or on average once every 414 hours of surveys. Of these records, three were within 500m from the Proposed Turbines. Flocks between 10 and 40 birds were observed. The average flock size was 19 birds.

Black-tailed godwit were seen flying over the Proposed Wind Farm in July 2024, August 2024, August 2025 and November 2025. Flocks of 11, 14 and 40 birds were seen over the Proposed Wind Farm. Of the remaining records, flocks were recorded in the wider surroundings of the Proposed Wind Farm.

Hinterland survey

Black-tailed godwit was recorded 28 times during hinterland surveys, on 14 of the 17 survey dates (82%). Flocks between 1 and 260 birds were observed. The average flock size was 40 birds.

Flocks of black-tailed godwit were observed foraging and roosting around the Dungarvan Harbour and Ballynaclash Quay, respectively 2.2km and 4.6km from the Proposed Wind Farm.

Incidental records

There were seven incidental observations of black-tailed godwit during wintering golden plover surveys. Flocks between 1 and 362 birds were recorded. The average flock size was 63 birds. Two records were around Dungarvan Harbour, and five records were at Ballynaclash Quay, respectively at 2.2km and 4.6km from the Proposed Wind Farm.

Supplementary data

There was one record of a black-tailed godwit in the supplementary data. One record of a flock of eight birds was recorded flying near Windgap and Knocknahoola within the Proposed Wind Farm in November 2023.

7.3.7.13 Cormorant

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

Vantage point survey

Cormorant was recorded nine times during vantage point surveys or on average every 274 hours of surveys. Of these records four were within 500m from the Proposed Turbines. Between one and ten birds were observed each time. The average number of birds seen was two.

Cormorant were seen flying over the Proposed Wind Farm in August 2024, August 2025, February 2026 and March 2026. Between one and four birds were seen over the Proposed Wind Farm. Of the remaining records, birds were recorded in the wider surroundings of the Proposed Wind Farm.

Hinterland survey

Cormorant was recorded 35 times during hinterland surveys on 14 of the 17 survey dates (82%). Between 1 and 22 birds were observed each time. The average number of birds seen was three.

The majority of observations came from Ballynaclash, Newport Easy and Dromore, on the River Blackwater, where birds were recorded as present, roosting and flying approximately 4.6km from the Proposed Wind Farm. The remaining observations came from single birds present, foraging or flying at Monaneea Lake, Dungarvan bay, Ballyquin, and the Finisk River between 2.3km and 7.7km from the Proposed Wind Farm.

Incidental records

There were 13 incidental observations of cormorant during wintering golden plover surveys, birds of prey surveys and whooper swan surveys. Observations were of between one and ten birds. The average number of birds seen was two. Seven of these observations were at Ballynaclash Quay on the River Blackwater approximately 4.6km from the Proposed Wind Farm. The remaining observations came from single birds present, foraging or flying at the River Brickey, Monaneea Lake, and the Finisk River between 1.6km and 6.6km from the Proposed Wind Farm.

7.3.7.14 Curlew

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

Vantage point survey

Curlew was recorded 44 times during vantage point surveys, or on average once every 56 hours of surveys. Of these records, 30 were within 500m from the Proposed Turbines (two were not mapped). Flocks between 1 and 42 birds were observed. The average flock size was 10 birds.

Flocks of 1 to 42 curlew were observed on 16 occasions on the ground (likely foraging), including six times foraging while on the ground in agricultural grassland near Reanaviddoge partially within the Proposed Wind Farm and partially within 500m of Proposed Turbines. All these records were in July 2024, August 2024, September 2024 and August 2025. Additionally, 12 other records of flock of curlew flying have been recorded at these fields and are likely flocks of foraging curlew. Of the remaining records, ten are of small flocks (one to nine birds) of Curlew flying within 500m from the Proposed Wind Farm. Four other records of curlew flying have been recorded in the surroundings of the Proposed Wind Farm.

Winter transect survey

Curlew was recorded twice during winter transect surveys, on 2 of the 42 survey dates (5%). A flock of five birds was recorded foraging in agricultural grassland near Reanaviddoge in October 2024. The second record was of one bird flying, observed on T2D, in March 2026.

Breeding transect survey

Curlew was recorded three times during breeding transect surveys, on 3 of the 30 survey dates (10%; two not mapped). One bird was recorded flying near Reanaviddoge within 500m from the Proposed Turbines in June 2024. The two unmapped records were of individual birds flying recorded during the T2 transect in June and August 2025; this transect is within the Proposed Wind Farm. There was no evidence of breeding behaviour in June (e.g., returning to the same location suggesting a nest or young), therefore these birds are likely failed- or post-breeding.

Hinterland survey

Curlew was recorded 49 times during hinterland surveys, on all survey dates (100%). Flocks between 1 and 134 birds were observed. The average flock size was 16 birds. Curlew were recorded foraging and roosting; no records were made within 500m from the Proposed Wind Farm. Most of the records were at Dungarvan Harbour and Ballynaclash Quay.

Incidental records

There were 21 incidental observations of curlew during birds of prey surveys, hen harrier roost surveys, nightjar surveys and wintering golden plover surveys. Flocks between 1 and 90 birds were recorded. The average flock size was 11 birds. One record was not mapped by the surveyor.

Three records were within the Proposed Wind Farm. One of which was of one bird in a field near Reanaviddoge in July 2025. The two other records are of individual birds flying over the Proposed Wind Farm. The remaining records were of birds present in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were three records of curlew in the supplementary data. One to five birds were flying over the Proposed Wind Farm in October 2023.

7.3.7.15 Lapwing

Lapwing was observed in the winter 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 608 hours of winter surveys. Of these records, one was within 500m from the Proposed Turbines. Flocks between 1 and 25 birds were observed. The average flock size was 13 birds.

There was one record of a flock of 25 birds flying through the Proposed Wind Farm in November 2025. The remaining record was of one bird flying in the wider surroundings.

Winter transect survey

Lapwing was recorded once during winter transect surveys, on 1 of the 42 survey dates (2%). The species was recorded on T2A in December 2025 (not mapped).

Hinterland survey

Lapwing was recorded 14 times during hinterland surveys, on 9 of the 17 survey's dates (53%). Flocks between 1 and 292 birds were observed. The average flock size was 88 birds. Lapwing were recorded foraging. No records were made within 500m from the Proposed Wind Farm. Most of the records were at Dungarvan Harbour and Ballynaclash Quay.

Incidental Records

There were three incidental observations of lapwing during wintering golden plover surveys. Flocks between 75 and 215 birds were recorded. The average flock size was 139 birds. Lapwing were recorded present near Dungarvan and Ballynaclash in November 2024 and January, February 2025.

7.3.7.16 Common gull

Common gull was observed in the winter and passage (September) season. Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

Common gull was recorded four times during vantage point surveys, or on average once every 458 hours of winter and passage surveys. Of these records, three were within 500m from the Proposed Turbines. Flocks between two and ten birds were observed. The average flock size was five birds.

All four records of common gulls were of birds flying, three records (of two to ten birds) were observed near Cloghraun (within 500m from the Proposed Turbines) in December 2024, January 2025 and January 2026. The remaining record was of one flock of two birds near Coollroe (700m from the closest Proposed Turbine) in September 2024.

Winter transect survey

Common gull was recorded three times during winter transect surveys, on 2 of the 42 survey dates (5%). The species was recorded flying and roosting on T4A and T4D in October 2025 and January 2026, but all three records were not mapped by the surveyor; these transects are within the Proposed Wind Farm. Two birds were roosting in the fields to the west of the south end of T4a according to the surveyor, which is the Drumligh area in January 2026.

Hinterland survey

Common gull was recorded 20 times during hinterland surveys, on 10 of the 17 survey's dates (59%). Flocks between 1 and 820 birds were observed. The average flock size was 58 birds. Common gull were recorded foraging and roosting and no records were made within 500m from the Proposed Wind Farm. Most of the records were around Dungarvan Harbour and Ballynaclash Quay.

Incidental records

There were eight incidental observations of common gull during wintering golden plover surveys. Flocks between 2 and 26 birds were recorded. The average flock size was ten birds. Common gull were recorded present in the wider surrounding of the Proposed Wind Farm.

Supplementary data

There was one record of common gull in the supplementary data. One bird was observed flying near Cloghraun within the Proposed Wind Farm in November 2023.

7.3.7.17 Herring gull

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

Vantage point survey

Herring gull was recorded 291 times during vantage point surveys, or on average once every 9 hours of surveys. Of these records, 180 were within 500m from the Proposed Turbines (seven records were not mapped). Flocks between 1 and 106 birds were observed. The average flock size was five birds.

There was seven records of flocks of herring gull foraging and on the ground (likely foraging or roosting), three of these records were within 500m from the Proposed Turbines. Eight herring gulls were recorded on the ground near Slievegrine Hill in July 2025, two birds were recorded on the ground near Reamanagh East in August 2025, and four birds were observed foraging near Cloghraun in January 2026. Of the remaining records, herring gulls were flying, circling and soaring throughout the Proposed Wind Farm and its surroundings.

Winter transect survey

Herring gull was recorded ten times during winter transect surveys, on 6 of the 42 survey dates (14%). None of these records was mapped by the surveyor. The species was recorded flying and roosting on TA Drumhill, T3 and T4; these transect are within the Proposed Wind Farm. Observations included flying and foraging. A large flock of 200 herring gull were roosting in the fields to the west of the south end of T4a, which is the Drumslog area.

Breeding transect survey

Herring gull was recorded 31 times during breeding transect surveys, on 16 of the 30 survey dates (53%). Of these, 19 records were not mapped by the surveyor. Observations included flying. Four records were within the Proposed Wind Farm.

Hinterland survey

Herring gull was recorded 24 times during hinterland surveys, on 11 of the 17 survey dates (65%). Flocks between 1 and 230 birds were observed. The average flock size was 23 birds. Herring gull were recorded foraging and roosting, with no records made within 500m from the Proposed Wind Farm. Most of the records were at Dungarvan Harbour and Ballynaclash Quay.

Incidental records

There were 32 incidental observations of herring gull during bird of prey surveys, breeding woodcock surveys, hen harrier roost surveys and wintering golden plover surveys. Flocks between 1 and 76 birds were recorded. The average flock size was 10 birds. Of these records, six were within the Proposed Wind Farm (two records were not mapped). A flock of five herring gull were recorded foraging in agricultural grassland near Cloghraun within the Proposed Wind Farm in June 2024. The remaining five of these records were of birds flying. The other remaining records were of birds flying and foraging in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were 15 records of herring gull in the supplementary data. Flocks between 1 and 35 birds were recorded. The average flock size was 4 birds. Seven were of birds flying over the Proposed Wind Farm. The remaining record were of birds travelling in the wider surrounding of the Proposed Wind Farm.

7.3.7.18 Lesser black-backed gull

Lesser black-backed gull was observed in the winter and breeding seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage point survey

Lesser black-backed gull was recorded 163 times during vantage point surveys, or on average once every 15 hours of surveys. Of these records, 97 were within 500m from the Proposed Turbines (three were not mapped). Flocks between 1 and 145 birds were observed. The average flock size was five birds.

There were two records of foraging lesser black-backed gull. Six birds were recorded foraging near Cloghraun (within the Proposed Wind Farm) in September 2025. Additionally, three birds were recorded foraging near Ahaun (1.5km from the Proposed Wind Farm) in May 2024. All the remaining records were of birds flying over the Proposed Wind Farm and its wider surroundings.

Winter transect survey

Lesser black-backed gull was recorded three times during winter transect surveys, on 2 of the 42 survey dates (5%). Between one and ten birds were recorded each time. The average flock size was seven birds. The species was recorded on T3, T4D and T4C but were not mapped by the surveyor; these transect are within the Proposed Wind Farm. One of these records is of one bird foraging, other records describe birds flying.

Breeding transect survey

Lesser black-backed gull was recorded nine times during breeding transect surveys, on 8 of the 30 survey dates (27%). Between 1 and 14 birds were recorded each time. The average flock size was four birds. Seven records were not mapped by the surveyor. Two mapped records of Lesser black-backed gull were within the Proposed Wind Farm.

Hinterland survey

Lesser black-backed gull was recorded 17 times during hinterland surveys, on 10 of the 17 survey's dates (59%). Flocks between 1 and 120 birds were observed. The average flock size was 15 birds. Lesser black-backed gull were recorded foraging no records were made within 500m from the Proposed Wind Farm. Most of the records were at Dungarvan Harbour and Ballynaclash Quay.

Incidental records

There were 21 incidental observations of lesser black-backed gull during bird of prey surveys, breeding woodcock surveys, vantage point surveys (outside of survey effort) and wintering golden plover surveys. Flocks between 1 and 25 birds were recorded. The average flock size was seven birds. Two records of Lesser black-backed gull were within the Proposed Wind Farm, one of which was a flock of 24 birds foraging at Cloghraun in June 2024. The other record was of one bird flying in August 2025. The remaining records were of birds flying and foraging in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were 47 records of lesser black-backed gull in the supplementary data. Flocks between 1 and 65 birds were recorded (one record was not mapped). The average flock size was 5 birds. A total of 29 records were of birds flying over the Proposed Wind Farm. The remaining records were of birds flying in the wider surrounding of the Proposed Wind Farm.

7.3.7.19 Barn owl

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

Birds of prey survey

Barn owl was recorded once during raptor Surveys, on 1 of the 27 survey dates (4%). One dead bird was recorded on the side of a road (most likely road casualty) near Newtown, approximately 3km from the Proposed Wind Farm in June 2025. It is assumed that the carcass had not been moved, indicating barn owl presence at this location.

Incidental records

There was one incidental observation of barn owl during vantage point surveys (outside of survey effort). One bird was flushed by the surveyor and flying near Ballycurrane approximately 440m from the Proposed Wind Farm in March 2025.

7.3.7.20 Kestrel

Kestrel 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 breeding territories are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Kestrel was recorded 295 times during vantage point surveys, or on average once every 8 hours of surveys. Of these records, 146 were within 500m from the Proposed Turbines (one was not mapped). One to three birds were observed each time.

Kestrel is resident to the Proposed Wind Farm. In April 2024, one adult male was observed carrying prey near Slievegrine Hill (within the Proposed Wind Farm). As this sighting was made early within the breeding season, it is unlikely that this kestrel was carrying prey with the intention to provide for a nest, it is most likely flying to a perch to consume a recently caught prey. In July 2024, on the same day, there were three records of individual kestrel carrying prey near Knocknaglogh Lower. On the same day, a kestrel was recorded mobbing a passing buzzard and alarm calling in the same area. Additionally, also on the same day, kestrel begging calls were heard from a forestry in the same area.

All these records and the activity of kestrel around that area confirm a breeding territory near Knocknaglogh Lower located approximately 850m from the Proposed Wind Farm (labelled K.-1 in the maps in the Appendices 7-5). In July 2024, one record of an adult male hunting with two juveniles was reported near Carronadavderg (within the Proposed Wind Farm). In August 2024, three distinct records of a one and two juvenile kestrel were made in the same area. Also, in August 2024, an adult and a juvenile were recorded hunting together near Knocknaglogh Lower, near K.-1. In September 2024, a pair of Kestrel was observed mobbing a sparrowhawk near K.-1 and one juvenile male was recorded hunting in the same area. Also in September 2024, a pair of Kestrel were observed hunting close together near Monacullee (partially within the Proposed Wind Farm). It is likely that some of these observations were the kestrel family fledged at K.-1, while others may have belonged to a separate territory (see the area mapped as K-2 described below).

The following spring, in March 2025, one kestrel was observed alarm calling and mobbing two hooded crows near Knocknahoola (outside the Proposed Wind Farm). In May 2025, one bird was observed carrying prey near the previously identified breeding territory K.-1, suggesting the area was still used for breeding in 2025. In August 2025, one kestrel was observed mobbing a buzzard near Carronadavderg (partially within the Proposed Wind Farm). With this record and the juveniles observed in this area in July and August 2024, this area represents a probable breeding territory for kestrel (labelled K.-2). Of the remaining records, Kestrel was mainly observed hunting, flying and perching throughout the Proposed Wind Farm and its surroundings.

Winter transect survey

Kestrel was recorded 14 times during winter transect surveys, on 10 of the 42 survey dates (24%). Only individual birds were observed. Of these records, 12 were not mapped by the surveyor.

The species was recorded all over the Proposed Wind Farm and on nearly every transect surveyed. Kestrel was observed twice near Moyng in October 2023, only the presence of the species was noted, no activity is available. One of these flightlines is within the Proposed Wind Farm and the second is outside. Some unmapped records state that the bird observed were flying, perching and hunting.

Breeding transect survey

Kestrel was recorded seven times during breeding transect surveys, on 4 of the 30 survey dates (13%). Only individual birds were observed. Of these records, five were not mapped by the surveyor.

The species was recorded all over the Proposed Wind Farm and on nearly every transect surveyed. Kestrel was observed hunting twice near Knocknahoola in April 2024. Both records are within the Proposed Wind Farm. One unmapped record state a kestrel hunting.

Hinterland survey

Kestrel was recorded seven times during hinterland surveys, on 6 of the 17 survey's dates (35%). One to two birds were observed.

In October 2024, one kestrel was observed carrying prey (small mammal) near Monacullee (within the Proposed Wind Farm). As this sighting was made during the winter season, it is unlikely that this kestrel was carrying prey with the intention to provide for a nest, it is most likely flying to a perch to consume a recently caught prey. Of the remaining records, Kestrel were perching and hunting near Monaneea Lake and near Ballynaclash (more than 2km from the Proposed Wind Farm).

Raptor survey

Kestrel was recorded 30 times during raptor surveys, on 14 of the 27 survey dates (52%). One and two birds were observed at the same time (three records were not mapped). Ten records were within the Proposed Wind Farm. Kestrel were recorded hunting, flying and perching throughout the Proposed Wind Farm and its surroundings.

Incidental records

There were 24 incidental observations of kestrel during breeding woodcock surveys, hen harrier nest watches surveys, hen harrier roost surveys, nightjar surveys, whooper swan surveys, winter transect surveys (outside of survey effort) and wintering golden plover surveys. Only individual birds were recorded. Of these records, five were within the Proposed Wind Farm and six records were not mapped by the surveyor. Kestrel were recorded hunting, flying and perching throughout the Proposed Wind Farm and its surroundings.

Supplementary data

There were 182 records of kestrel in the supplementary data. One to three birds were observed at the same time. Of these records, 119 were within the Proposed Wind Farm (three records were not mapped).

In November 2023, one bird was observed mobbing another bird species near Reamanagh East. As this observation was not within the breeding season, it may have been a bird defending a wintering territory or itself, but it is difficult to determine if it is related to a territory. The remaining records were of birds flying, hunting, perched and soaring over the Proposed Wind Farm and its surroundings.

7.3.7.21 Grey wagtail

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

Vantage point survey

Grey wagtail was recorded 12 times during vantage point surveys, or on average once every 207 hours of surveys. Of these records, none were within 500m from the Proposed Turbines (nine were not mapped). Only individual birds were observed each time.

The presence of a grey wagtail was observed once within the Proposed Wind Farm near Reanagullee along the Licky River in April 2024. The two remaining mapped records were of birds flitting and flying. Nine other records of grey wagtail are located throughout the Proposed Wind Farm and its surroundings.

Winter transect survey

Grey wagtail was recorded 13 times during winter transect surveys, on 12 of the 42 survey dates (29%). Between one and two birds were observed each time. All these records were not mapped by the surveyor but were on transect within the Proposed Wind Farm. Grey wagtail was recorded on nearly all transect covered by the Winter Transect Surveys, apart from the T1 transect.

Breeding transect survey

Grey wagtail was recorded three times during breeding transect surveys, on 3 of the 30 survey dates (10%). One to three birds were observed. Of these records, two were not mapped by the surveyor. The

presence of three grey wagtail was observed once within the Proposed Wind Farm near Reanagullee along the Licky River in May 2024. The two unmapped records were made on T4 transect; these are within the Proposed Wind Farm.

Hinterland survey

Grey wagtail was recorded five times during hinterland Surveys, on 3 of the 17 survey's dates (18%). One to two birds were observed. No records were within the Proposed Wind Farm. All five records were of birds recorded in the wider surrounding of the Proposed Wind Farm.

Supplementary data

There were 13 records of grey wagtail in the supplementary data. Only individual birds were recorded at the same time. Nine of these records were made at VPg in October, November, December 2023 and February, March 2024. VPg is located along the Licky River (50m from the Proposed Wind Farm). The remaining four records were made at other Vantage Points throughout the Proposed Wind Farm.

7.3.7.22 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 277 times during vantage point surveys, or on average once every 9 hours of surveys. Of these records, 30 were within 500m from the Proposed Turbines and 177 records were not mapped by the surveyor. Flocks between 1 and 62 birds were observed. The average flock size was eight birds.

Birds were recorded parachuting (displaying) near Reanaviddoge and Slievegrine Hill within the Proposed Wind Farm in February 2025 and June 2025. Additionally, Meadow pipit were recorded parachuting and singing near Glen Beg and Barranastook Upper in April and May 2025. Of the remaining records, birds were observed flying, calling, flitting throughout the Proposed Wind Farm and its surrounding.

Winter transect survey

Meadow pipit was recorded 101 times during winter transect surveys, on 38 of the 42 survey dates (90%). Counts of between 1 and 103 birds were observed (not mapped). Records were made on all transect throughout the Proposed Wind Farm.

Breeding transect survey

Meadow pipit was recorded 65 times during breeding transect surveys, on 23 of the 30 survey dates (77%). Flocks between 1 and 33 birds were observed. Of these records, 15 were recorded within the Proposed Wind Farm (40 were not mapped). Seven records mention meadow pipit flitting. Most of the mapped records were throughout the Proposed Wind Farm and its wider surroundings.

Hinterland survey

Meadow pipit was recorded three times during hinterland surveys, on 3 of the 17 survey's dates (18%). Flock of 1 to 20 birds were observed. The average flock size was seven birds. None of these records were mapped.

Incidental records

There were 20 incidental observations of meadow pipit during breeding woodcock surveys, hen harrier roost surveys, nightjar surveys, vantage point survey (outside of survey effort). Flocks of 1 to 25 were recorded. The average flock size was five birds. Of these records, none were within the Proposed Wind Farm (18 were not mapped). Both mapped records were of birds flying and calling further than 1 km from the Proposed Wind Farm.

Supplementary data

There were 115 records of Meadow pipit in the supplementary data. Flocks of 1 to 60 birds were recorded. Average flock size was 10 birds.

7.3.7.23 Redwing

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

Vantage point survey

Redwing was recorded 55 times during vantage point surveys, or on average once every 22 hours of surveys. Of these records, two were within 500m from the Proposed Turbines (43 records were not mapped). Flocks between 1 and 85 birds were observed. The average flock size was 11 birds.

Birds were recorded flying and foraging every winter at the Proposed Wind Farm. They were recorded flying over conifer plantation and agricultural grassland, as well as foraging in agricultural grassland.

Winter transect survey

Redwing was recorded 32 times during winter transect surveys, on 22 of the 42 survey dates (58%). Flocks of 1 and 220 birds were observed each time. Average flock size was 22 birds. Records were made on all transect throughout the Proposed Wind Farm during both winter seasons surveyed.

Hinterland survey

Redwing was recorded twice times during hinterland Surveys, on 2 of the 17 survey's dates (12%). Only one bird was recorded each time. None of these records were mapped by the surveyor.

Incidental records

There were five incidental observations of redwing during vantage point surveys at the Proposed Wind Farm (outside of survey effort). Flocks of 2 to 40 were recorded. The average flock size was twenty birds.

Supplementary data

There were 56 records of redwing in the supplementary data. Flocks of 1 to 120 birds were recorded. Average flock size was 14 birds.

7.3.7.24 Ring ouzel

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

Breeding transect survey

Ring ouzel was recorded once during breeding transect surveys, on 1 of the 30 survey dates (3%). One adult male was perched near Kilnafarna Hill, 170m from the Proposed Wind Farm in April 2024.

Incidental records

There was one incidental observation of ring ouzel during vantage point surveys (outside of survey effort). One bird was observed perched near Carronadavderg (350m from the Proposed Wind Farm) in March 2026.

7.3.7.25 Snipe

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

Vantage point survey

Snipe was recorded 94 times during vantage point surveys, or on average once every 19 hours of winter and passage surveys. Of these records, 45 were within 500m from the Proposed Turbines. Counts between 1 and 15 birds were observed. Average count was of two birds.

Snipe were resident at the Proposed Wind Farm in the winter season with a few records during the early- and post-breeding season (April, August and September). Birds were frequently recorded flying or flushed by the surveyor or other birds.

Winter transect survey

Snipe was recorded 31 times during winter transect surveys, on 24 of the 42 survey dates (57%). Counts of one and seven birds were observed each time. Average count was two birds. Of these records, two were within the Proposed Wind Farm (27 were not mapped).

Birds are resident in the Proposed Wind Farm and were recorded on the three winter seasons surveyed. Birds were frequently recorded flying or flushed by the surveyor.

Breeding transect survey

Snipe was recorded twice during breeding transect surveys, on 2 of the 30 survey dates (7%). Only individual birds were observed. Both records were made in April 2024, during the early breeding season (not mapped). There was no evidence of breeding observed during the breeding transect surveys.

Hinterland survey

Snipe was recorded seven times during hinterland surveys, on 6 of the 17 survey's dates (35%). Counts of one to nine birds were observed. Average count was of three birds. All records were of birds present in the wider surroundings of the Proposed Wind Farm at Dungarvan Harbour, Ballynaclash Quay or Monaneea Lake.

Incidental records

There were 28 incidental observations of snipe during breeding woodcock surveys, hen harrier roost surveys, vantage point survey (outside of survey effort) and wintering golden plover survey. Counts of 1

to 50 were recorded. Average count was of three birds. Of these records, eight were within the Proposed Wind Farm (five were not mapped). Birds were recorded flying, calling and flushed at the Proposed Wind Farm and its surroundings during the winter and early-breeding (April) seasons.

Supplementary data

There were 31 records of snipe in the supplementary data. Counts of 1 to 30 birds were recorded. Average count was four birds. Of the records, 18 were within the Proposed Wind Farm (one was not mapped). Birds were recorded flying throughout the Proposed Wind Farm and its surroundings.

7.3.7.26 Stock dove

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

Vantage point survey

Stock dove was recorded 58 times during vantage point surveys, or on average once every 43 hours of surveys. Of these records, five were within 500m from the Proposed Turbines (32 records were not mapped). Flocks between one and six birds were observed. The average flock size was two birds. Stock dove was regularly recorded throughout the year at the Proposed Wind Farm and its surroundings; birds were observed flying and foraging.

Winter transect survey

Stock dove was recorded five times during winter transect surveys, on 5 of the 42 survey dates (12%). Flocks of one and nine birds were observed each time. Average flock size was three birds. Stock dove was recorded T2, T3 and T4 throughout the Winter seasons; these transect are within the Proposed Wind Farm.

Breeding transect survey

Stock dove was recorded 18 times during breeding transect surveys, on 13 of the 30 survey dates (43%). Between one and ten birds were observed at the same time. The average flock size was two birds. Of these records, two were recorded within the Proposed Wind Farm (13 were not mapped). One bird was observed displaying in August 2025 on T4. Other birds were recorded foraging.

Hinterland survey

Stock dove was recorded once during hinterland surveys, on 1 of the 17 survey's dates (6%). One flock of five birds were recorded near Shanbally, 2.7km from the Proposed Wind Farm.

Incidental records

There was seven incidental observations of stock dove during breeding woodcock surveys and bird of prey surveys. Between one and two birds were recorded. Of these records, none were within the Proposed Wind Farm (one was not mapped). All mapped records were of birds flying and displaying in the wider surrounding of the Proposed Wind Farm.

Supplementary data

There were 17 records of Stock dove in the supplementary data. Flocks of one to five birds were recorded. Average flock size was two birds. None of the records were mapped by the surveyor.

7.3.7.27 **Swift**

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

Vantage point survey

Swift was recorded 57 times during vantage point surveys, or on average once every 22 hours of breeding season surveys. Of these records, 25 were within 500m from the Proposed Turbines (five records were not mapped). Flocks between 1 and 12 birds were observed. The average flock size was two birds. All birds were recorded flying and foraging during the breeding season of 2024 and 2025.

Breeding transect survey

Swift was recorded twice during breeding transect surveys, on 2 of the 30 survey dates (7%). Between one and four birds were observed on T1, which is within the Proposed Wind Farm. Both were recorded during the Breeding season of 2025.

Incidental records

There was three incidental observations of swift during birds of prey surveys and nightjar surveys. One or two birds were recorded. Of these records, one was within the Proposed Wind Farm. Birds were recorded flying and foraging at the Proposed Wind Farm and its surroundings.

7.3.7.28 **Whinchat**

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

Breeding transect survey

Whinchat was recorded twice during breeding transect surveys, on 2 of the 30 survey dates (7%). Both records are of one bird perched and foraging in August 2025, one day separates both records, so it is possible it was the same bird recorded on the two dates. These were recorded at 250m and 900m from the Proposed Wind Farm.

7.3.7.29 **Woodcock**

Woodcock 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 nest/roosts are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Woodcock was recorded three times during vantage point surveys, or on average once every 828 hours of surveys. Of these records, one was within 500m from the Proposed Turbines (two records were not mapped). Counts between 1 and 10 birds were observed. Average count was of seven birds. One bird was flushed by the surveyor. Records were made in May 2024, November 2025 and December 2025.

Winter transect survey

Woodcock was recorded twice during Winter transect surveys, on 2 of the 42 survey dates (5%). Only individual birds were recorded. One record of a bird was recorded near Monacullee within the

Proposed Wind Farm in February 2024. The second record was of one bird flushed at T2b in October 2024; this transect is located within the Proposed Wind Farm.

Breeding transect survey

Woodcock was recorded once during breeding transect surveys, on 1 of the 30 survey dates (3%). The species was recorded once in June 2025 at T4.

Breeding woodcock surveys

Woodcock was recorded 70 times during dedicated breeding woodcock transect surveys, on 11 of the 19 survey dates (58%). Of these records, 17 are within the Proposed Wind Farm. Male Woodcock were observed roding and displaying 67 times in April, May and June 2024 and 2025 in Reamanagh West (labelled WK-1 in the maps of Appendix 7-5), Monacullee (WK-2), Garrynagree (WK-3) and Moyng (WK-4) at dusk near and above forestry and conifer plantations. Birds were also seen flying and calling in the same areas. Four breeding territories were identified, three are within the Proposed Wind Farm site and the fourth one is approximately 300m from the Proposed Wind Farm. During the 2024 and 2025 breeding seasons, roding and display activity was recorded 51 times at WK-1 and 12 times at WK-2. While roding activity was only recorded in the 2024 breeding season twice at WK-3, and twice at WK-4.

Woodcock and owl survey

Woodcock was recorded once during woodcock and owl surveys in winter, on one of the three dates (33%). One bird was recorded flying near Carronadavderg, within the Proposed Wind Farm in November 2023.

Incidental records

There were 42 incidental observations of woodcock during hen harrier roost survey, nightjar surveys and vantage point surveys (outside of survey effort). One to three birds were recorded. Of these records, 20 were within the Proposed Wind Farm (four were not mapped). Birds were observed roding and displaying 14 times mainly at WK-1 and WK-2, and at another location near Lyre (labelled WK-5) within the Proposed Wind Farm. Other records were of birds flying and flushed during the Breeding and Winter seasons throughout the Proposed Wind Farm and its surroundings.

Breeding summary

At WK-1, roding and displaying Woodcock were recorded in both 2024 and 2025, with 51 records made during the breeding woodcock surveys across the two breeding seasons and a further two incidental records in 2025. This area is located 300m from the Proposed Wind Farm. All four remaining breeding territories are within the Proposed Wind Farm. At WK-2, roding and displaying birds were also recorded in both 2024 and 2025, comprising 12 breeding woodcock surveys records across the two seasons and nine incidental records in 2024. At WK-3, two records were made during the breeding woodcock survey in 2024, while two records of roding activity were made at WK-4 during the same year. At WK-5, roding activity was recorded incidentally in 2025, with two records. In total, during the breeding season 2024 there was four breeding woodcock territories identified (WK-1, WK-2, WK-3 and WK-4). During the breeding season 2025, three breeding woodcock territories were identified (WK-1, WK-2 and WK-5).

7.3.7.30 Yellowhammer

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

Vantage point survey

Yellowhammer was recorded twice during vantage point surveys, or on average once every 634 hours of breeding season surveys. Of these records, one was 500m from the Proposed Turbines (one record was not mapped). One and two birds were observed in April 2024 and June 2025 respectively.

Winter transect survey

Yellowhammer was recorded twice during winter transect surveys, on 2 of the 42 survey dates (5%); these transect are within the Proposed Wind Farm. One and six birds were recorded in November and December 2023 respectively.

Hinterland survey

Yellowhammer was recorded once during hinterland surveys, on 1 of the 17 survey's dates (6%). One record of two birds was made in March 2026 near Dromore (8.5km from the Proposed Wind Farm).

7.3.7.31 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 nest/roosts are provided in Confidential Survey Data Appendix 7-5.

Vantage point survey

Buzzard was recorded 814 times during vantage point surveys, or on average once every 3 hours of surveys. Of these records, 498 were within 500m from the Proposed Turbines (14 records were not mapped). Between one and six birds were observed each time.

Buzzard was resident at the Proposed Wind Farm. Birds were using agricultural grassland, conifer plantation and forestry for hunting and were perched. They were also observed soaring high over the Proposed Wind Farm and travelling through it. Buzzard breeding activity was recorded across the Proposed Wind Farm between April 2024 and March 2026, indicating the presence of several potential breeding territories. The most persistent activity occurred around Cloghraun and Lackamore, where birds were repeatedly observed displaying, soaring and hunting in April and August 2024, March, June and September 2025, and January 2026. These observations included pairs displaying, a pair descending together into the same area of forestry in March 2025, and up to six birds displaying, hunting and flying between Lackamore and Cloghraun in April 2024, collectively indicating a regularly occupied breeding territory in this area (labelled BZ-1 in the maps in the Appendix 7-5). This breeding territory is within the Proposed Wind Farm. Around Reanaviddoge and Glen More, birds were observed displaying and soaring in April and May 2024, mobbing a crow at Reanaviddoge in September 2024, and a juvenile was recorded flying in the area in October 2024. Four displaying and soaring birds were also recorded near Reanaviddoge in March 2026. These records show a continued territorial occupation and possible successful breeding within the wider Reanaviddoge and Glen More area (BZ-2). A nest was observed near this area during breeding transects surveys and is discussed below. The nest is located at 30m from the Proposed Wind Farm. Evidence of likely successful breeding was also recorded outside of the Proposed Wind Farm at Barranastook Upper, where an adult carrying prey was observed in July 2024 and a juvenile was present in August 2024. This area is labelled as BZ-3 and is located approximately 1.2km from the Proposed Wind Farm. Additional breeding-related activity was recorded at widely distributed locations within the central part of the Proposed Wind Farm, including Drumslog, Lyre, Moyng, Slievegrine Hill, Carronadavderg, Toor North and Reamanagh East. At Drumslog and Lyre, pairs were observed displaying and flying in April and May 2024, a juvenile was recorded flying and perching near Drumslog in July 2025, and two birds displayed and soared there in March 2026. One to three birds were also recorded displaying and

hunting near Moyng and Slievegrine Hill in April 2024. At Carronadavderg, three birds were displaying and hunting in April 2024, while a buzzard mobbed a Kestrel there in August 2024. Near Toor North, three birds, including a pair, were observed displaying, soaring and calling in February 2025, and one to two birds displayed and soared near Reamanagh East on two occasions in March 2025. Although these observations demonstrate widespread breeding-season and territorial activity within the central part of the Proposed Wind Farm. The records were spatially dispersed and did not form a sufficiently consistent or localised cluster to identify or delineate a specific breeding territory. Also, a single buzzard mobbing a hooded crow near Kilnafarna Hill in September 2024 provided additional evidence of territorial behaviour; however, the isolated nature of this record did not allow the presence or location of an associated breeding territory to be confirmed. The remaining observations were of birds hunting, soaring and travelling throughout and around the Proposed Wind Farm.

Winter transect survey

Buzzard was recorded 43 times during winter transect surveys, on 27 of the 42 survey dates (64%). Of these records, six are within the Proposed Wind Farm (35 were not mapped). One to nine birds were observed. Buzzards were flying, soaring and perching throughout the Proposed Wind Farm.

Breeding transect survey

Buzzard was recorded 42 times during breeding transect surveys, on 19 of the 30 survey dates (63%). Of these records, one is within the Proposed Wind Farm (29 were not mapped). One to four birds were observed. In June 2025, one buzzard was observed nesting near Glen More (BZ-2), confirming buzzard to be nesting in this area located 30m from the Proposed Wind Farm. Other records were of buzzards, flying, hunting, soaring and foraging in the surroundings of the Proposed Wind Farm.

Hinterland survey

Buzzard was recorded 33 times during hinterland surveys, on 11 of the 17 survey's dates (65%). One of these records was within the Proposed Wind Farm. Birds were recorded soaring, flying, hunting and perching at the Proposed Wind Farm and its surroundings.

Raptor survey

Buzzard was recorded 107 times during raptor surveys, on 19 of the 27 surveys dates (70%). Of these records, 29 were within the Proposed Wind Farm (five were not mapped). One to five birds were observed. In May 2024, one bird was observed carrying prey near Monacullee (within the Proposed Wind Farm), this bird was 950m away from BZ-2, therefore it could be associated with this breeding territory. In May 2025 and July 2025, birds were observed displaying, carrying prey and mobbing a white-tailed eagle in the wider surrounding of the Proposed Wind Farm.

Incidental records

There were 53 incidental observations of buzzard during breeding woodcock surveys, hen harrier nest watches survey, hen harrier roost surveys, nightjar surveys, vantage point survey (outside of survey effort), whooper swan surveys and wintering golden plover surveys. One to three birds were observed each time. Of these records, six were within the Proposed Wind Farm (four were not mapped). Birds were recorded flying, soaring, hunting and perching throughout the Proposed Wind Farm and its surroundings.

Supplementary data

There were 332 records of buzzard in the supplementary data. Of the records, 240 were within the Proposed Wind Farm (two were not mapped). Birds were recorded flying throughout the Proposed Wind Farm and its surroundings.

In January 2024, two buzzards were observed displaying near Drumslog (within the Proposed Wind Farm), additionally in March 2024, two records of displaying buzzards were made at Carronadavderg and Cloghraun, respectively outside the Proposed Wind Farm and within the previously identified breeding territory BZ-1. Other records were of birds hunting, soaring and perching throughout the Proposed Wind Farm and its surroundings.

7.3.7.32 Hobby

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

Vantage point survey

Hobby was recorded once during vantage point surveys, or on average once every 1,269 hours of breeding surveys. One bird was recorded hunting and flying near Carronadavderg (within the Proposed Wind Farm) in May 2024.

7.3.7.33 Long-eared owl

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

Vantage point survey

Long-eared owl was recorded once during vantage point surveys, or on average once every 1,269 hours of breeding surveys. In April 2024, one bird was recorded calling near Cloghraun 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 transect (230m 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, suggesting that there was no nest in this area.

Incidental records

There were two incidental observations of long-eared owl during nightjar surveys. In June 2024 and June 2025, one bird was observed each time perching and flying near Carronadavderg (on the Proposed Wind Farm). This area is close to a Breeding Woodcock transect (145m of Carronadavderg WK) and covered multiple times by a Nightjar Transect (NJT1) were both records were made. If the species bred in the area, Long-eared owl chick would have been heard on these dusk surveys conducted in the area, therefore it is unlikely that the species bred in this area. It may have been hunting.

7.3.7.34 Sparrowhawk

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

Vantage point survey

Sparrowhawk was recorded 124 times during vantage point surveys, or on average once every 20 hours of surveys. Of these records, 66 were within 500m from the Proposed Turbines (one record was not mapped). Between one and five birds were observed each time.

Sparrowhawk is resident to the Proposed Wind Farm. Breeding related activity was recorded at several widely dispersed locations between April 2024 and March 2026. Display behaviour was observed near Reanagullea in April 2024 and near Reanaviddoge in March 2026, with both records located more than 500m from the nearest Proposed Turbine. More direct evidence of breeding activity was recorded in July 2024, when a Sparrowhawk was observed carrying prey near Knocknahoola, and also in August 2024 when a juvenile was observed hunting near Kilnafarna Upper outside the Proposed Wind Farm. Territorial or defensive behaviour was also repeatedly recorded near Kilnafarna Upper, where a Sparrowhawk was observed mobbing corvids in September 2024 and again in February 2025, indicating recurrent use of this area. Another bird carrying prey was observed near Carronadavderg in April 2025. Further mobbing behaviour was recorded near Reamanagh East in August 2025, involving a Buzzard; near Carronadavderg in September 2025, involving a Kestrel; and near Slievegrine Hill in March 2026, involving other birds. The latter three records occurred within 500m from the Proposed Turbines. As the observations were spatially dispersed and did not form a sufficiently consistent or localised concentration of activity to identify a specific breeding territory within the Proposed Wind Farm, it is not possible to establish any breeding territory. However, sparrowhawk is breeding within the general area and potentially within the Proposed Wind Farm. Other records were of birds soaring, hunting and perching within the Proposed Wind Farm and its wider surroundings.

Winter transect survey

Sparrowhawk was recorded 11 times during winter transect surveys, on 8 of the 42 survey dates (21%). Of these records, two are within the Proposed Wind Farm (nine were not mapped). One and two birds were observed each time. When activity was recorded, birds were gliding and hunting at the Proposed Wind Farm.

Breeding transect survey

Sparrowhawk was recorded eight times during breeding transect surveys, on 8 of the 30 survey dates (27%). Of these records, two are within the Proposed Wind Farm (six were not mapped). One and two birds were recorded each time. In April 2024, one bird was observed carrying prey near Drumslogh (within the Proposed Wind Farm). Other records report the presence of the species of flying within the Proposed Wind Farm.

Hinterland survey

Sparrowhawk was recorded seven times during hinterland surveys, on 4 of the 17 survey's dates (24%). None of these records was within the Proposed Wind Farm. The presence of the species or birds flying were recorded in the surrounds of the Proposed Wind Farm.

Raptor Survey

Sparrowhawk was recorded 14 times during raptor surveys, on 8 of the 27 surveys dates (30%). Of these records, none were within the Proposed Wind Farm (one was not mapped). One and two birds were observed each time. In April 2025 and June 2025, two records of birds carrying prey at Monaneela Lake (approximately 2km from the Proposed Wind Farm) suggests that a nest is in this area. Additionally, in June 2025, one record of a pair with the female displaying was made near Carhuebwee (approximately 3.5km from the Proposed Wind Farm). Other records are of birds soaring, hunting or being mobbed in the wider surroundings of the Proposed Wind Farm.

Incidental Records

There were ten incidental observations of sparrowhawk during hen harrier nest watches surveys, hen harrier roost surveys, nightjar surveys and wintering golden plover surveys. Only individual birds were observed. Of these records one was within the Proposed Wind Farm (one was not mapped). One juvenile Sparrowhawk was recorded near Gorteen (approximately 1.2km from the Proposed Wind Farm) in July 2025. Other records were of birds hunting and flying in the wider surroundings of the Proposed Wind Farm.

Supplementary data

There were 73 records of sparrowhawk in the supplementary data. Of the records, 40 were within the Proposed Wind Farm (three were not mapped). In March 2024, one bird was observed mobbing another bird species near Cloghraun. Other records were of birds hunting, soaring and perching throughout the Proposed Wind Farm and its surroundings.

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 7.2.4. 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 County Waterford², or derived from national estimates, according to what literature was available.

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

7.4.1.1 Golden plover

Golden plover was recorded during the winter and passage seasons. The estimated national (Republic of Ireland; ROI) wintering population is 82,190 birds (Burke *et al.*, 2025). Therefore, regularly occurring population of 822 birds is required for classification as National Importance. There are no published figures for the County Waterford population. To estimate the county population, a review of all Waterford I-WeBS sites was conducted. It should be noted that the population estimate based on IWeBS 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 distributed 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:

² Please note that these figures are estimates based on the best available information but should be interpreted with a degree of caution.

- > Dungarvan Harbour: 3,785
- > Lower Blackwater: 516
- > Tramore Back Strand: 2,367

Based on the above, the mean wintering population from I-WeBS sites in Waterford is 6,668 birds. Therefore, regularly occurring population of 67 birds is required for classification as County Importance.

The conservation objectives supporting document for Dungarvan Harbour SPA was consulted. The most recent counts available were for the period 2005/06-2009/10, when the site supported 3,454 golden plovers. The conservation objectives supporting document for Blackwater Estuary SPA was also consulted. The most recent counts available were for the period 1995/96 – 1999/00, when the site supported 2,628 golden plovers.

Flocks of up to 350 birds were recorded at the Proposed Wind Farm and up to 4,000 birds in the wider surroundings during the surveys (flocks of 4,000 and 2,000 birds were recorded at Dungarvan Harbour and Ballynaclash Quay during the winter seasons). Given the distance that this species may travel for foraging in winter, birds recorded at the Proposed Wind Farm are likely to be part of the same population recorded in the wider area. Thus, the wintering golden plover population at the Proposed Wind Farm is of **National Importance**.

7.4.1.2 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 Waterford population. However, according to the distribution of peregrine falcon across Ireland in the bird atlas, 3.81% of the population is found in Waterford in the breeding season. Extrapolating this, the Waterford breeding population is estimated to be 16 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

Peregrine was observed carrying prey once on the Proposed Wind Farm and some breeding activity was sparsely recorded in the wider surroundings of the Proposed Wind Farm. No breeding territory could be identified at the Proposed Wind Farm nor its wider surroundings. Despite that, peregrine falcon was recorded multiple times at the Proposed Wind Farm sometimes hunting. No more than two birds were observed at the same time. 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**.

7.4.1.3 Red kite

Red kite was recorded during the winter season. The species was reintroduced to Ireland between 2007 and 2011, following an absence of over 200 years, with releases undertaken in Counties Wicklow and Dublin to re-establish a self-sustaining population. The estimated national (ROI) breeding population of red kite is 63 breeding pairs (Article 12). Preliminary results of the 2019-2024 reporting period indicate this has increased to 96 breeding pairs. Therefore, a regularly occurring population of one breeding pairs is required for classification as National Importance.

Red kite was only observed during the winter season and on only nine occasions over the entire survey period. Only six of the records are within 500m from the Proposed Wind Farm. The species was only recorded flying and soaring during the survey period and was not utilising the habitats within the Proposed Wind Farm. However, as this is a recently re-introduced species that is expanding gradually from the east coast of Ireland, on a precautionary basis the Proposed Wind Farm is considered of **County Importance** to this species.

7.4.1.4 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 (ROI) population is 12 pairs (Crowe *et al.*, 2021) and preliminary results of the 2019-2024 Article 12 reporting period indicate this is increasing (14 breeding pairs). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

White-tailed eagle was seen ten times during the survey period and four times at the Proposed Wind Farm. The species has been occasionally seen soaring over the Proposed Wind Farm. A juvenile was once seen perched and preening on the Proposed Wind Farm. Some of the records were of tagged birds, and at least two different tagged birds were observed within the Proposed Wind Farm and two other tagged birds were observed in the wider surroundings of the Proposed Wind Farm. This shows a minimum of five distinct birds observed during surveys. In a meeting with NPWS, the presence of a breeding territory near the confluence of Blackwater River and Licky River was shared, which is ~5km from the Proposed Wind Farm. No breeding behaviour was recorded during surveys at the Proposed Wind Farm, but, given the nest location in the wider surroundings of the Proposed Wind Farm and as the species remains a rare breeding bird in Ireland and Northern Ireland (Crowe *et al.*, 2021) and has been observed at the Proposed Wind Farm, this species is considered to be a population of **National Importance** on a precautionary basis.

7.4.1.5 Hen harrier

Hen harrier was recorded during the winter and post-breeding season. The estimated national (ROI) wintering population is 311-435 birds (Article 12 Reporting). Preliminary results of the 2019-2024 reporting period indicate this has decreased to 242-290 birds. Therefore, a regularly occurring wintering population of 2-4 birds is required for classification as National Importance.

No roosting was observed during surveys. Hen harrier was observed hunting on multiple occasions throughout the Proposed Wind Farm and its wider surroundings. Only individual birds were recorded each time but, two distinct birds were seen on the same survey (one adult female and a juvenile) adult males were also seen, making that at least three different birds were observed during surveys. Thus, the Proposed Wind Farm is considered of **National Importance** to this species.

7.4.1.6 Marsh harrier

Marsh harrier was recorded during the winter and passage season. Marsh harrier is a rare visitor in Ireland and is very occasionally breeding in Ireland (Crowe *et al.*, 2021). Marsh harrier was irregularly recorded during the winter and passage on only six occasions over the entire survey period, and only four of them are within 500m from the Proposed Wind Farm. The species was flying and hunting during the survey period. Additionally, there is no suitable habitat for marsh harrier at the Proposed Wind Farm. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species.

7.4.1.7 Merlin

Merlin was recorded during the winter season. 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 Waterford population. However, according to the distribution of merlin across Ireland in the bird atlas, 4.43% of the population is found in Waterford in the breeding season. Extrapolating this, the Waterford breeding population is estimated to be 9-18 pairs. Therefore, a regularly occurring population of one pair (two birds) is required for classification of County Importance.

Merlin was recorded only occasionally during the survey period and was never observed actively utilising the Proposed Wind Farm. Therefore, the Proposed Wind Farm is of **No Ecological Importance** to this species.

7.4.1.8 Short-eared owl

Short-eared owl was recorded in the winter season. Short-eared owl were only recorded hunting twice in October and November 2023. This species is a winter visitor to Ireland and predominantly uses lowland coastal habitat, which is not available at the Proposed Wind Farm. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species.

7.4.1.9 Chough

The species was recorded in the winter season. Chough was recorded on only three occasions during the survey period. Although one record involved two birds feeding within the Proposed Wind Farm, this observation was isolated and there was no evidence of regular use, roosting, or repeated foraging activity. Given the very limited number of records and the absence of any indication that the Proposed Wind Farm supports a population of ecological significance, the Proposed Wind Farm is considered to be of **No Ecological Importance** to this species.

7.4.1.10 Little egret

Little egret was recorded during the breeding and winter season. The estimated national wintering population of little egret is 1,140 birds for ROI (Burke *et al.*, 2025). Therefore, a regularly occurring population of 11 birds is required for classification as nationally important. There are no published figures for the County Waterford population. However, according to the distribution of little egret across Ireland in the bird atlas, 4.96% of the population is found in Waterford in the wintering season. Extrapolating this, the Waterford breeding population is estimated to be 57 birds. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

The maximum number of birds recorded within 500m from the Proposed Wind Farm was two birds. No breeding activity was recorded during surveys. The majority of records were associated with Dungarvan Harbour and Ballynaclash Quay, in the wider area. Thus, the population of little egret within the Proposed Wind Farm is considered to be a population of **No Ecological Importance**.

7.4.1.11 Mediterranean gull

Mediterranean gull was recorded during breeding and winter season. Mediterranean gull were only recorded four times during the survey period and only once at the Proposed Wind Farm. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species given how infrequently it is used by this species.

7.4.1.12 Black-tailed godwit

Black-tailed godwit was recorded during the breeding and winter season. The estimated national (ROI) wintering population is 22,900 birds (Burke *et al.*, 2025). Therefore, regularly occurring population of 290 birds is required for classification as National Importance. There are no published figures for the County Waterford population. To estimate the county population, a review of all Waterford 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. 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:

➤ Blackwater Callows: 248

- > Dungarvan Harbour: 1,108
- > Lower Blackwater River: 134
- > Tramore Back Strand: 734

Based on the above, the mean wintering population from I-WeBS sites in Waterford is 2,224 birds. Therefore, regularly occurring population of 22 birds is required for classification as County Importance.

The conservation objectives supporting document for Dungarvan harbour SPA was consulted. The most recent counts available where mean peaks for the period 2005/06-2009/10, when the site supported 706 black-tailed godwits.

Black-tailed Godwit was recorded 42 times during the survey period, with just three records occurring within the Proposed Wind Farm. All observations comprised birds in flight; no individuals were recorded landing, foraging, roosting or otherwise utilising habitats within the Proposed Wind Farm. The flight records were scattered and did not indicate a regularly used flight corridor. The species is an SCI at the Dungarvan Harbour SPA, Blackwater Estuary SPA and Ballymacoda Bay SPA and was recorded 17 times around Dungarvan Harbour. However, there was no evidence of black-tailed godwit travelling to the Proposed Wind Farm from these areas as only a small number of records were within 500m from the Proposed Wind Farm and the birds were not landed. Therefore, the Proposed Wind Farm is considered to be of **No Ecological Importance** to this species.

7.4.1.13 Cormorant

Cormorant was recorded during the winter and breeding seasons. This species is an SCI of the Helvick Head to Ballyquin SPA. The conservation objectives at this SPA are to restore the favourable conservation condition of the breeding SPA population in terms of population size, productivity rate and distribution within the SPA, as well as foraging distribution, disturbance to the breeding sites and at areas ecologically connected to the colony, and barriers to connectivity.

The estimated national (ROI) breeding population is 4,124 pairs (Burnell *et al.*, 2023). Therefore, regularly occurring population of 41 pairs is required for classification as National Importance. The County Waterford breeding population is 227 pairs. Therefore, a regularly occurring population of 2 pairs is required for classification of County Importance.

The conservation objectives for Helvick Head to Ballyquin SPA were consulted and the most recent counts available were from the census of breeding seabirds in Britain and Ireland (2015-2021; Burnell *et al.*, 2023). There were 73 apparently occupied nests (or 73 pairs) in Helvick Head to Ballyquin SPA.

Cormorant was recorded 57 times during the survey period, with just four records occurring within the Proposed Wind Farm. All observations comprised birds in flight; no individuals were recorded landing, foraging, roosting or otherwise utilising habitats within the Proposed Wind Farm. The flight records were scattered and did not indicate a regularly used flight corridor. There was no evidence of cormorant travelling to the Proposed Wind Farm from Helvick Head to Ballyquin SPA as only a small number of records were within 500m from the Proposed Wind Farm and the birds were not landed. Therefore, the Proposed Wind Farm is considered to be of **No Ecological Importance** to this species.

7.4.1.14 Curlew

Curlew was recorded during the winter and post-breeding season. The estimated national (ROI) wintering population is 31,710 birds (Burke *et al.*, 2025). Therefore, regularly occurring population of 317 birds is required for classification as National Importance. There are no published figures for the County Waterford population. To estimate the county population, a review of all Waterford 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. 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:

- › Blackwater Callows: 236
- › Clonea Strand: 42
- › Dungarvan Harbour: 614
- › Lower Blackwater River: 89
- › River Suir Lower: 54
- › Tramore Back Strand: 397
- › Waterford Harbour: 60

Based on the above, the mean wintering population from I-WeBS sites in Waterford is 1,492 birds. Therefore, regularly occurring population of 15 birds is required for classification as County Importance.

Flocks of up to 42 birds were recorded at the Proposed Wind Farm during the surveys, including foraging birds. Thus, the wintering curlew population at the Proposed Wind Farm is of **County Importance**.

7.4.1.15 Lapwing

Lapwing was recorded during the winter season. Lapwing was recorded only infrequently during the survey period, with a single record of a flock of 25 birds flying over the Proposed Wind Farm. No birds were recorded landing, foraging, roosting, or otherwise utilising habitats within the Proposed Wind Farm, and there was no evidence of regular site use. Given the isolated nature of the record and the absence of any indication that the Proposed Wind Farm supports a population of ecological significance, the Proposed Wind Farm is considered to be of **No Ecological Importance** to this species.

7.4.1.16 Common gull

Common gull was recorded during the winter and passage season. The estimated national (ROI) wintering population is 21,438 birds (Article 12 Reporting). Therefore, regularly occurring population of 214 birds is required for classification as National Importance. There are no published figures for the County Waterford population. To estimate the county population, a review of all Waterford I-WeBS sites was conducted. It should be noted that the population estimate based on IWeBS figures alone is likely to be an underestimate of the county population. 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:

- › Blackwater Callows: 10
- › Clonea Strand: 167
- › Dungarvan Harbour: 142
- › Lower Blackwater River: 38
- › River Suir Lower: 16
- › Tramore Back Strand: 7
- › Waterford Harbour: 1,200

Based on the above, the mean wintering population from I-WeBS sites in Waterford is 1,580 birds. Therefore, regularly occurring population of 16 birds is required for classification as County Importance.

The conservation objectives supporting document for Ballymacoda Bay SPA was consulted. The most recent counts available were mean peaks for the three-year period 2009/10-2011/12, when the site supported 257 common gulls.

Common gull was recorded only five times within the Proposed Wind Farm during the survey period, involving a maximum of ten birds. All but one record related to birds flying over the site, with a single observation of two birds roosting. No evidence of regular use, foraging activity, or any significant concentration of birds was recorded within the Proposed Wind Farm. Common gull is an SCI of Ballymacoda Bay SPA, which is within foraging range of the Proposed Wind Farm. The limited number of records indicates that the Proposed Wind Farm does not support a population of ecological significance for this species, however, given its status as an SCI species and adopting a precautionary approach, the population recorded at the Proposed Wind Farm is considered to be of **County Importance**.

7.4.1.17 Herring gull

Herring gull was recorded during the breeding and winter season. This species is an SCI of Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA. The conservation objectives at these SPAs are to restore the favourable conservation condition of the breeding SPA population in terms of population size, productivity rate and distribution within the SPA, as well as foraging distribution, disturbance to the breeding sites and at areas ecologically connected to the colony, and barriers to connectivity.

The estimated national (ROI) breeding population is 9,702 pairs (Burnell *et al.*, 2023). Therefore, regularly occurring population of 97 pairs is required for classification as National Importance. The County Waterford breeding population is 1,056 pairs. Therefore, a regularly occurring population of 10 pairs is required for classification of County Importance.

The conservation objectives for Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA were consulted and the most recent counts available were from the census of breeding seabirds in Britain and Ireland (2015-2021; Burnell *et al.*, 2023). There were 228 apparently occupied nests (or 228 pairs) in Helvick Head to Ballyquin SPA and 514 apparently occupied nests in Mid-Waterford Coast SPA.

A flock of 200 birds was recorded foraging and roosting once near the Proposed Wind Farm, however, all other records were of less than 10 birds foraging and roosting at the Proposed Wind Farm. No breeding was recorded at or in proximity to the Proposed Wind Farm. Thus, the herring gull population at the Proposed Wind Farm is of **County Importance**.

7.4.1.18 Lesser black-backed gull

Lesser black-backed gull was recorded during the breeding and winter season. The estimated national (ROI) wintering population is 11,842 birds (Article 12). Therefore, regularly occurring population of 118 birds is required for classification as National Importance. There are no published figures for the County Waterford wintering population. However, according to the distribution of lesser black-backed gull across Ireland in the bird atlas, 10% of the population is found within the regional area (i.e., within the foraging range [43.3km] of wintering lesser black-backed gull from the Proposed Wind Farm). Extrapolating this, the Waterford population is estimated to be 1,184 birds.

Additionally, lesser black-backed gull is an SCI of Ballymacoda Bay SPA. Given the foraging range of lesser black-backed gull, it cannot be ruled out that birds observed within the Proposed Wind Farm are associated with the SPA. The conservation objectives supporting document for Ballymacoda Bay SPA was consulted. The most recent counts available were mean peaks for the three-year period 2009/10-2011/12, when the site supported 736 lesser black-backed gulls.

Therefore, the total regional population is and is estimated to be 1,920 birds. Therefore, a regularly occurring population of 19 birds is required for classification of County Importance.

Flocks of up to seven birds were seen landing and foraging at the Proposed Wind Farm during the surveys. Thus, the lesser black-backed gull population at the Proposed Wind Farm is of **County Importance**.

7.4.1.19 Barn owl

Barn owl was recorded during the breeding and winter season. The species was recorded only once within proximity to the Proposed Wind Farm during the survey period. In addition, there is relatively little suitable habitat for barn owl within the Proposed Wind Farm, with the site largely comprising habitats that are unlikely to support regular breeding and roosting activity by the species (e.g., no large, mature trees or structures that may provide nest sites). No evidence of breeding, nesting, roosting or regular foraging use was identified during surveys. Given the sparsity of records, the limited availability of suitable habitat, and the absence of any indication that the Proposed Wind Farm supports a population of ecological significance, the site is considered to be of **No Ecological Importance** to this species.

7.4.1.20 Kestrel

Kestrel was recorded during the breeding and winter seasons. The estimated national (ROI) population is 13,500 birds (Article 12 Reporting). Preliminary results of the 2019-2024 reporting period indicate this has increased to 13,700 birds. Therefore, a regularly occurring population of 135-137 birds is required for classification as of National Importance. There are no published figures for the county Waterford population. However, according to the distribution of kestrel across Ireland in the breeding bird atlas, 2.81% of the breeding population is found in Waterford. Extrapolating this, the Waterford population is estimated to be 379-385 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. Two breeding territories were identified, one of them is within the Proposed Wind Farm and the remaining was approximately 850m from the Proposed Wind Farm. A maximum of two pairs were observed around the Proposed Wind Farm in 2024 and 2025. Therefore, up to four adult birds were regularly occurring at the Proposed Wind Farm. Thus, this species is considered to be a population of **County Importance**.

7.4.1.21 Grey wagtail

Grey wagtail is a BOCCI Red Listed species for breeding populations only in Ireland. Grey wagtail was observed in the breeding season. 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)**.

7.4.1.22 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 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)**.

7.4.1.23 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)**.

7.4.1.24 Ring ouzel

Ring Ouzel was recorded during the passage season (March and April). The estimated national (ROI) population is only 8-10 breeding pairs (Article 12 Reporting) and preliminary results of the 2019-2024 reporting period indicate this has decreased to between 2 and 9 birds. The species was recorded on just two occasions during the survey period. Both records involved single birds perched approximately 170m and 350m from the Proposed Wind Farm during spring passage. There was no evidence that the birds were utilising the Proposed Wind Farm for foraging, breeding, roosting or any other regular activity, and the records are considered to represent transient passage individuals moving through the wider area. Given the very limited number of records, their occurrence during the passage season only, the site is considered to be of **No Ecological Importance** to this species.

7.4.1.25 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 Waterford population. However, according to the distribution of snipe across Ireland in the bird atlas, 4.25% of the population is found in Waterford in the breeding season. Extrapolating this, the Waterford breeding population is estimated to be 182 pairs. Therefore, a regularly occurring population of two pair is required for classification of County Importance.

Snipe was regularly recorded within the Proposed Wind Farm during the winter season and occasionally during the breeding season. The maximum number of birds recorded within the Proposed Wind Farm from the winter seasons surveyed was of 15 birds. While there was no confirmed breeding territories identified during surveys, there was a regular occurrence of snipe, and this is a sedentary species likely to remain resident year-round. As a precautionary approach, the population recorded at the Proposed Wind Farm was therefore assigned **County Importance** on the basis of a resident/regularly occurring wintering population assessed to be important on a county level.

7.4.1.26 Stock dove

Stock dove was recorded during the breeding and winter seasons. The estimated national (ROI) population is 27,486 birds (Article 12 Reporting). Preliminary results of the 2019-2024 reporting period indicate this has decreased to 17,210. Therefore, a regularly occurring population of 172-274 birds is required for classification as National Importance. There are no published figures for the County Waterford population. However, according to the distribution of stock dove across Ireland in the bird atlas, 8.52% of the population is found in Waterford in the breeding season. Extrapolating this, the Waterford breeding population is estimated to be 1,466-2,342 birds. Therefore, a regularly occurring population of 15-23 birds is required for classification of County Importance.

Stock dove was recorded throughout the Proposed Wind Farm; birds were observed foraging and flying though the site. The maximum number of birds recorded within the Proposed Wind Farm during the survey period was of 10 birds. As such, the population recorded at the Wind Farm Site is considered to be of **Local Importance (Higher Value)**.

7.4.1.27 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 62 observations of between one and 12 birds foraging over the Proposed Wind Farm during the 2024 and 2025 breeding seasons, but no breeding activity or colonies were identified. Thus, this species is considered to be a population of **Local Importance (Lower Value)**.

7.4.1.28 Whinchat

Whinchat was recorded during the breeding season. Whinchat was only recorded perched twice at the Proposed Wind Farm. There was no evidence that the birds were utilising the Proposed Wind Farm for foraging or breeding or any other regular activity, and the records are considered to represent transient passage individuals moving through the wider area. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species given how infrequently it is used by this species.

7.4.1.29 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 Waterford population. However, according to the distribution of woodcock across Ireland in the breeding bird atlas, 6.45% of the population is found in Waterford. Extrapolating this, the Waterford population is estimated to be 1,769 roding males. Therefore, a regularly occurring population of 18 roding males is required for classification of County Importance.

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

7.4.1.30 Yellowhammer

The national population of yellowhammer is estimated to be 217,252 birds (Lewis *et al.*, 2019). There are no published figures for the county Waterford population. However, according to the distribution of Yellowhammer across Ireland in the breeding bird atlas, 4.45% of the population is found in Waterford. Extrapolating this, the Waterford population is estimated to be 9,668 birds.

This species was recorded five times during the survey period, 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, given the low frequency of occurrence, this species is considered to be a population of **No Ecological Importance**.

7.4.1.31 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: preliminary results of the 2019-2024 Article 12 reporting period indicate this has increased to 3,485 birds. Based on this, a regularly occurring population of 19-35 pairs is required for classification as National Importance. In the absence of more detailed county-level information, the county population is estimated to be 75-134 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 breeding territory was identified within the Proposed Wind Farm (BZ-1). Additionally, one nest was identified 30m from the Proposed Wind Farm (BZ-2) and one other breeding territory was identified 1.2km from the Proposed Wind Farm (BZ-3).

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)**.

7.4.1.32 Hobby

Hobby was recorded within the Proposed Wind Farm on only one occasion over the survey period. It is a scarce vagrant visitor to Ireland. Thus, the Proposed Wind Farm is of **No Ecological Importance** to this species given how infrequently it is used by this species.

7.4.1.33 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 Waterford population. However, according to the distribution of long-eared owl across Ireland in the breeding bird atlas, 3.35% of the population is found in Waterford. Extrapolating this, the Waterford population is estimated to be 50-91 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

Long-eared owl was recorded on three occasions within the Proposed Wind Farm. 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. This habitat is widespread in the Proposed Wind Farm site and wider surroundings and is not scarce in Waterford. As such, it is considered to be a population of **Local Importance (Higher Value)**.

7.4.1.34 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.

No Sparrowhawk breeding territories were identified within the Proposed Wind Farm, but breeding activity was recorded throughout the Proposed Wind Farm. It is likely breeding in the general area, potentially including the Proposed Wind Farm. 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
Golden plover	Annex I Birds Directive & SCI of Dungarvan Harbour SPA & Red List	<u>Wintering and passage</u> National 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 from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for golden plover.	Yes
Peregrine falcon	Annex I Birds Directive & Red List & 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 from the Proposed Turbines. 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 from 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 peregrine falcon.	
Red Kite	Annex I Birds Directive & Red List & Raptor	<u>Wintering</u> County importance	Red kite 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 from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from 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 red kite.	Yes
White-tailed eagle	Annex I Birds Directive & Red List & Raptor	<u>All seasons</u> National Importance	White-tailed eagle was recorded using the Proposed Wind Farm site once for perching and preening. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from 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 habitat loss, disturbance/displacement and collision risk is required for white-tailed eagle.	
Hen harrier	Annex I Birds Directive & Raptor	<u>Wintering and post-breeding</u> National importance	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 from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for hen harrier.	Yes
Marsh harrier	Annex I Birds Directive & Raptor	<u>Wintering and breeding</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Merlin	Annex I Birds Directive & Raptor	<u>Wintering</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Short-eared owl	Annex I Birds Directive & Raptor	<u>Wintering</u>	No population of ecological significance was recorded utilising the Proposed Wind Farm during the extensive suite of surveys conducted. As such, the	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No ecological importance	potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the Proposed Wind Farm is of significance to this species.	
Chough	Annex I Birds Directive	<u>Wintering</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Little egret	Annex I Birds Directive	<u>All seasons</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Mediterranean gull	Annex I Birds Directive	<u>All seasons</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Black-tailed godwit	Red List & SCI of Dungarvan Harbour SPA	<u>All seasons</u> No ecological importance	Although the Proposed Wind Farm was found to be of no ecological importance to black-tailed godwit, due to the proximity of the Dungarvan Harbour SPA to the Proposed Wind Farm and that flying birds were recorded at PCH during surveys, on an extremely precautionary bases, a collision risk assessment will be conducted for this species.	Yes
Cormorant	SCI Of Helvick Head to Ballyquin SPA	<u>All seasons</u>	Although the Proposed Wind Farm was found to be of no ecological importance to cormorant, due to the proximity of the Helvick Head to Ballyquin SPA to the Proposed Wind Farm and that flying birds were	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
		No ecological importance	recorded at PCH during surveys, on an extremely precautionary bases, a collision risk assessment will be conducted for this species.	
Curlew	Red List	<u>All seasons</u> County importance	Curlew was recorded using the Proposed Wind Farm for foraging. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for curlew.	Yes
Lapwing	Red List & SCI of Dungarvan Harbour SPA	<u>Wintering</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Common gull	SCI of Ballymacoda Bay SPA	<u>Wintering and passage</u> County Importance	Common gull was recorded using the Proposed Wind Farm for roosting. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from the Proposed Turbines. 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 from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for common gull.	
Herring gull	SCI of Helvick Head to Ballyquin SPA	<u>All seasons</u> County importance	Herring gull was recorded using the Proposed Wind Farm for roosting and foraging. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for herring gull.	Yes
Lesser black-backed gull	SCI of Ballymacoda Bay SPA	<u>All seasons</u> County importance	Lesser black-backed gull was recorded using the Proposed Wind Farm for roosting and foraging. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from 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 habitat loss, disturbance/displacement and collision risk is required for lesser black-backed gull.	
Barn owl	Red List & Raptor	<u>All seasons</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
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 from the Proposed Turbines. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of 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 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 collision risk are limited and there is no evidence to suggest that the Proposed Wind Farm will significantly impact this species.	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Meadow pipit	Red List	<u>All seasons</u> Local Importance (Lower Value)	Meadow pipit is resident and likely 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 collision risk are limited and there is no evidence to suggest that the Proposed Wind Farm will significantly impact this species.	No
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 Proposed Wind Farm will significantly impact this species.	No
Ring ouzel	Red List	<u>Passage season</u> No ecological importance	Ring ouzel was recorded twice in March and April and is considered to be passing through during migration. No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No
Snipe	Red List	<u>All seasons</u> County importance	Snipe is resident to the Proposed Wind Farm. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m from 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 from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for snipe.	
Stock dove	Red List	<u>All seasons</u> Local Importance (Higher Value)	Stock dove is resident within the Proposed Wind Farm. Although Stock dove is not a passerine species, its behaviour and ecology are broadly comparable to those of passerines. As set out in NatureScot guidance, passerine species are generally considered unlikely to be significantly affected by wind farm developments due to their ecology. Accordingly, the potential for effects on Stock dove arising from direct habitat loss, disturbance/displacement and collision risk is considered limited, and there is no evidence to suggest that the Proposed Wind Farm would result in significant effects on this species.	No
Swift	Red List	<u>Breeding</u> Local Importance (Higher Value)	Swift were recorded foraging 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 collision risk are limited and there is no evidence to suggest that the Proposed Wind Farm will significantly impact this species.	No
Whinchat	Red List	<u>Breeding</u> No ecological importance	No population of ecological significance 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 Proposed Wind Farm is of significance to this species.	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Woodcock	Red List	<u>All seasons</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 from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m from the Proposed Turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of habitat loss and disturbance/displacement required for woodcock.	Yes
Yellowhammer	Red List	<u>All seasons</u> No ecological importance	Yellowhammer was recorded sporadically 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 collision risk are limited and there is no evidence to suggest that the Proposed Wind Farm will significantly impact 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 from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m from 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 habitat loss, disturbance/displacement and collision risk is required for buzzard.	
Hobby	Raptor	<u>Breeding</u> No ecological importance	No population of ecological significance 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 Site is of significance to this species.	No
Long-eared owl	Raptor	<u>Breeding</u> Local Importance (Higher Value)	Field survey records suggest that it is unlikely that long-eared owl were using the Proposed Wind Farm site for breeding. There is limited potential for direct habitat loss for this species. Birds were recorded within 500m from the Proposed Wind Farm. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m from the proposed turbine locations during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of disturbance/displacement is required for long-eared owl.	Yes
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 from 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 from the Proposed Turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of habitat loss, disturbance/displacement and collision risk is required for sparrowhawk.	

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 7.2.4). The sensitivity of the KORs, as per Percival (2003), are listed below, including the rationale for their respective sensitivity classification.

Very High Sensitivity KORs are:

- > Golden plover (SCI species)
- > Black-tailed godwit (SCI species)
- > Common gull (SCI species)
- > Cormorant (SCI species)
- > Herring gull (breeding population only: SCI species)
- > Lesser black-backed gull (SCI species)

High Sensitivity KORs are:

- > White-tailed eagle (population of National Importance)
- > Hen harrier (population of National Importance)

Medium Sensitivity KORs are:

- > Peregrine falcon (Annex I)
- > Red kite (Annex I)
- > Curlew (Red List)
- > Kestrel (Red List)
- > Snipe (Red List)
- > Woodcock (Red List)

Low Sensitivity KORs are:

- > Buzzard (conservation interest)
- > Long-eared owl (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;
- > 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

If the Proposed Project were not to proceed, it is unlikely that any changes would be made to the current land use practice. The majority of the lands within the Site would continue to be managed as they are now either as forestry or improved agricultural grassland and associated grazing. The other

habitats identified within the Site, including stone walls, treelines, hedgerows, watercourses etc. would likely remain in a similar condition.

In some areas where scrub succession is establishing, this scrub may develop if not managed by the landowners and in time, this may undergo succession to small areas of woodland. The general biodiversity on the Site, as described in this chapter, would likely remain similar to its current state as activity levels and land use would not change.

The opportunity to harness the wind energy resource of County Waterford would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment would also be lost.

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

At a global scale, climate change has been proven to have negative impacts on biodiversity, either through reduced quality of habitat, displacement due to the changing baselines, and reduced or altered food sources. With Irelands climate action plans in mind and the potential contribution of 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. These are presented according to their sensitivity classification (Section 7-4-3). The magnitude and significance of these effects are then defined according to Percival (2003) and EPA (2022) criteria.

7.5.2.1 Golden plover

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Golden plover were observed on 308 occasions during the survey period. Golden Plover was regularly recorded using habitats within the Proposed Wind Farm, with birds landing, foraging and roosting at several locations, including the regularly used landing areas GP-2 and GP-3. Flocks of up to 350 birds were recorded using these areas. The species was also frequently recorded flying and circling over the Proposed Wind Farm. A third regularly used landing area was identified outside the Proposed Wind Farm (GP-1). Larger flocks (up to 4,000 birds) were recorded at various sites in the wider surroundings of the Proposed Wind Farm, including Dungarvan Harbour and Ballynaclash Quay. Golden plover are an SCI of Dungarvan Harbour SPA and Blackwater Estuary SPA. The separation distance between the Proposed Wind Farm and these SPAs is 1.9km and 4.5km respectively. As the winter golden plover foraging range is estimated to be up to 10-12km (Gillings and Fuller, 1999), the possibility that birds travel from the SPAs to these areas of the Proposed Wind Farm cannot be excluded. To quantify the impact of direct habitat loss on the SPA population, the following assessment was conducted. The CORINE land cover (2018) dataset was used to calculate the area of suitable golden plover habitat within 12km of Dungarvan Harbour and	Dungarvan Harbour SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Blackwater Estuary SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Regional Population:	Dungarvan Harbour SPA: Likely long-term slight negative effect, which is not significant. Blackwater Estuary SPA: Likely long-term slight negative effect, which is not significant. Regional Population: Likely long-term imperceptible negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Blackwater Estuary SPAs, representing the maximum foraging range. These values were 43,745.412ha and 45987.581ha respectively. Next, the area of the Proposed Project footprint within suitable golden plover habitat was calculated. A total of 8.273ha of the Proposed Project footprint overlapping with the 12km buffer of both the Dungarvan Harbour SPA and the Blackwater SPA was suitable habitat. This corresponds to 0.019% of suitable habitat for golden plover within 12km of Dungarvan Harbour SPA and 0.018% of suitable habitat for golden plover within 12km of Blackwater Estuary SPA. The predicted impact of direct habitat loss on the Dungarvan Harbour SPA and Blackwater Estuary SPA population is negligible. In terms of the regional population (birds that may not belong to the Dungarvan Harbour or Blackwater Estuary SPA population), significant areas of suitable foraging and roosting habitat, like grassland, 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-1, which is 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.	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.	
Disturbance	As outlined above, flocks up to 350 birds were regularly observed landing and/or roosting within the Proposed Wind Farm, leading to the identification of three foraging and landing areas, two of which are within or partially within the Proposed Wind Farm, and the last of which is 200m away. Goodship and Furness (2022) advised a disturbance distance of 200-500m for golden plover during the winter season. On the Proposed Wind Farm, golden plover were recorded utilising habitats within 500m of large-scale construction works (turbines) on 67 occasions during the winter months, concentrated	Dungarvan Harbour SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Dungarvan Harbour SPA: Likely short-term slight negative effect, which is not significant. Blackwater Estuary SPA:

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	around GP-1, GP-2 and GP-3. The repeated use of these areas across multiple survey months and winter seasons indicates that they represent regularly used foraging and/or roosting areas, rather than locations used only occasionally or incidentally. Accordingly, construction activity in proximity to these areas has the potential to cause disturbance of golden plover from regularly used wintering habitat. However, this will be temporary in nature. No disturbance will occur to habitat within the Dungarvan Harbour SPA or Blackwater Estuary SPA. 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-1, which is located outside the works area. 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.	Blackwater Estuary SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Regional Population: 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 short-term slight negative effect, which is not significant. Regional Population: Likely short-term imperceptible negative effect, which is not significant.
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined above, flocks up to 350 birds were regularly observed landing and/or roosting within the Proposed Wind Farm, leading to the identification of three foraging and landing areas, two of which are within or partially within the Proposed Wind Farm, and the last of which is 200m away. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. A review of 22 studies suggests that golden plover will approach wind turbines to an average distance of 175m in the non-breeding season (Hötter <i>et</i>	Dungarvan Harbour SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Dungarvan Harbour SPA: Likely long-term constant slight negative effect, which is not significant. Blackwater Estuary SPA:

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
<i>al.</i>, 2006), while Pearce-Higgins <i>et al.</i> (2009) found that this species exhibited reduced habitat usage within 200m of turbines. Additionally, a review of disturbance distance estimates by NatureScot (2022) recommended a minimum disturbance buffer of 200m during the non-breeding season. An average of these values is 187m. As outlined above, golden plover is an SCI of Dungarvan Harbour SPA and Blackwater Estuary SPA, and there is potential for birds associated with the SPA population to travel to the Proposed Wind Farm. To quantify the impact of indirect habitat loss as a result of displacement from operating turbines on the SPA population, the following assessment was conducted. A 187m buffer was applied to all turbines to represent the displacement distance for golden plover. The area of suitable golden plover habitat within this buffer was calculated. All turbines overlapped the 12km buffer of Dungarvan Harbour SPA, totalling displacement from 95.248ha of suitable habitat. Although all turbines also overlapped the 12km buffer of Blackwater Estuary, not all of the 187m buffer overlapped, therefore the total displacement was from 94.542 of suitable habitat. Within 12km of Dungarvan Harbour SPA, golden plover are estimated to be displaced from 95.248ha of a total 43,745.412ha of suitable habitat (0.22%). Within 12km of Blackwater SPA, golden plover are estimated to be displaced from 94.542ha of a total 45987.581ha of suitable habitat (0.21%). The predicted impact of indirect habitat loss as a result of displacement from operating turbines on the Dungarvan Harbour SPA and Blackwater Estuary SPA populations is negligible. In terms of the regional population, 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-1. As such, displacement from the Proposed Wind Farm during operation will not result in	Blackwater Estuary SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Regional Population: The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant slight negative effect, which is not significant. Regional Population: Likely long-term constant imperceptible negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	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.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been (full details provided in Appendix 7-6). The collision risk has been calculated a 3.634 collisions per year. The origin of birds flying over the Proposed Wind Farm is not known for certain, however, given that the SPAs are within foraging range, it is likely that the birds flying over the Proposed Wind Farm include a mix of birds from the SPA populations and non-SPA birds from elsewhere in the region. Although numbers flying over the Proposed Wind Farm may include birds originating from outside the SPA, on a precautionary basis, the increase in mortality is calculated individually for the Dungarvan Harbour SPA and Blackwater Estuary SPA, as well as the regional and national population. Annual mortality of adult golden plover has been calculated at 27% per annum (Sandercock, 2003). If 3.634 collisions were to occur per year: - Assuming all birds originated from Dungarvan Harbour SPA, losses at the Proposed Wind Farm would increase the annual mortality of the Dungarvan Harbour SPA population (c. 3,454 birds) by approximately 0.39%. - Assuming all birds originated from Blackwater Estuary SPA, losses at the Proposed Wind Farm would increase the annual mortality of the Blackwater Estuary SPA population (c. 2,628 birds) by approximately 0.51%.	Dungarvan Harbour SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Blackwater Estuary SPA: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance. Regional Population: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Dungarvan Harbour SPA: Likely long-term constant slight negative effect, which is not significant. Blackwater Estuary SPA: Likely long-term constant slight negative effect, which is not significant. Regional Population: Likely long-term constant slight negative effect, which is not significant. National Population: Likely long-term constant slight negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	- Losses at the Proposed Wind Farm would increase the annual mortality of the county population (c. 6,668 birds) by approximately 0.20% - Losses at the Proposed Wind Farm would increase the annual mortality of the national population (c. 82,290 birds) by approximately 0.02%. The magnitude of the predicted collision risk is negligible.	National Population: The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a 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.

7.5.2.2 Black-tailed godwit

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Black-tailed godwit was recorded 42 times during the survey period, with only three records within the Proposed Wind Farm. All observations within the Proposed Wind Farm involved birds in flight, with no evidence of birds landing, foraging, roosting or otherwise utilising habitats within. Flight records over the Proposed Wind Farm were scattered and did not indicate a regularly used flight corridor. The Proposed Wind Farm was considered to be of no ecological importance to this species. Black-tailed godwit are an SCI of Dungarvan Harbour SPA. The separation distance between the Proposed Wind Farm and this SPA is 1.9km. The core	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	black-tailed godwit foraging range is estimated to be 2km and the maximum foraging range is estimated to be 2.5km (based on the average of other ecologically similar species), therefore there is potential for birds to travel from the SPA to the Proposed Wind Farm, including potentially the Proposed Turbines. However, as black-tailed godwit was not observed utilising habitats within the Proposed Wind Farm during the survey period, no habitat loss effects on this species are anticipated as a result of the Proposed Wind Farm. All records relate to birds flying over the Proposed Wind Farm, with no evidence of foraging, roosting or other habitat use within the Proposed Wind Farm. No significant effects of direct habitat loss are anticipated.		
Disturbance	As outlined before, black-tailed godwit were occasionally recorded flying over the Proposed Wind Farm but the area was considered to be of no ecological importance to this species. Goodship and Furness (2022; also reviewed in NatureScot, 2022) found that disturbance may occur between 100 and 200m in both the breeding and winter season. As black-tailed godwit was not recorded utilising habitats within the Proposed Wind Farm during the survey period, disturbance effects on the species are considered unlikely. All observations within the Proposed Wind Farm were of birds flying over, with no evidence of foraging, roosting or other habitat use within. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of black-tailed godwit from habitats on which the species depends. The Dungarvan Harbour SPA is located 1.9km from the Proposed Wind Farm, therefore construction disturbance will not affect birds within the SPA due to the separation distance. No significant effects as a result of disturbance are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible 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)
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, black-tailed godwit were occasionally recorded flying over the Proposed Wind Farm but the area was considered to be of no ecological importance to this species. Goodship and Furness (2022, also reviewed in NatureScot, 2022) found that disturbance may occur between 100 and 200m in both the breeding and winter season. As black-tailed godwit was not recorded utilising habitats within the Proposed Wind Farm during the survey period, displacement effects on the species are considered unlikely. All observations within the Proposed Wind Farm were of birds flying over, with no evidence of foraging, roosting or other habitat use within. Therefore, displacement associated with operating turbines is not anticipated to result in the displacement of black-tailed godwit from habitats on which the species depends. The Dungarvan Harbour SPA is located 1.9km from the Proposed Wind Farm, therefore displacement will not affect birds within the SPA due to the separation distance. No significant effects as a result of disturbance are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant
Collision Risk	The species was recorded flying within PCH during vantage point surveys. There were just three records of black-tailed godwit in flight in proximity to the Proposed Wind Farm, however, on an extremely precautionary basis, due to the distance to the Dungarvan Harbour SPA, a collision risk assessment has been undertaken. The assessment was conducted for the three turbine dimensions (full details provided in Appendix 7-6). The collision risk has been calculated a 0.869 collisions per year, or one bird every year the lifetime of the Proposed Wind Farm.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Annual mortality of adult black-tailed godwits has been calculated at 18.6% per year (Groen and Hemerik, 2002). If 0.869 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the Dungarvan Harbour SPA population (c. 706 birds) by approximately 0.66% and of the county population (c.2,224 birds) by 0.21%. 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.

7.5.2.3 Common gull

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Common gull was recorded using habitats within the Proposed Wind Farm on one occasion, when two birds were recorded roosting in fields near Drumslogh in January 2026. The species was also recorded flying within or over the Proposed Wind Farm on three occasions. Common gull are an SCI of Ballymacoda Bay SPA. The separation distance between the Proposed Wind Farm and this SPA is 12.9km. Common gull is a wide ranging species, 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. In addition, due to the low frequency of habitat use within the Proposed Wind	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Farm, and low abundance of birds, no significant effects of direct habitat loss are anticipated.		
Disturbance	As outlined above, common gull were recorded roosting at the Proposed Wind Farm on one occasion and flying over the Proposed Wind Farm on three occasions. Disturbance from construction of the Proposed Wind Farm is unlikely to give rise to significant impacts given the low abundance and frequency of use of the Proposed Wind Farm by common gull. The Proposed Wind Farm does not represent an important area for common gull. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of common gull from habitats on which the species depends. The Ballymacoda Bay SPA is located 12.9km from the Proposed Wind Farm, therefore construction disturbance will not affect birds within the SPA due to the separation distance. No significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible 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	As outlined above, common gull were recorded roosting at the Proposed Wind Farm on one occasion and flying over the Proposed Wind Farm on three occasions. Displacement distances of common gull due to the presence of turbines has not been reported in the literature. The low abundance and frequency of use of the Proposed Wind Farm by common gull indicates that the Proposed Wind Farm does not represent an important area for common gull. Therefore, displacement associated with operating turbines is not anticipated to result in	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is moderate

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	the displacement of common gull from habitats on which the species depends. The Ballymacoda Bay SPA is located 12.9km from the Proposed Wind Farm, therefore displacement will not affect birds within the SPA due to the separation distance. There is no evidence to suggest that the Proposed Wind Farm lies on a migratory/regular commuting route for the species given that flights across the Proposed Wind Farm appear random in nature, therefore barrier effect is not anticipated. Based on this, no significant displacement or barrier effects are anticipated.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 0.008804 collisions per year, which is less than one bird over the lifetime of the Proposed Wind Farm. The predicted collision risk is negligible.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible 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.

7.5.2.4 Cormorant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Cormorant was recorded 57 times during the survey period, with only four records within the Proposed Wind Farm. All observations within the Proposed Wind Farm involved birds in flight, with no evidence of birds landing,	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	foraging, roosting or otherwise utilising habitats within. Flight records over the Proposed Wind Farm were scattered and did not indicate a regularly used flight corridor. The Proposed Wind Farm was considered to be of no ecological importance to this species. Cormorant are an SCI of Helvick Head to Ballyquin SPA. The separation distance between the Proposed Wind Farm and this SPA is 5.8km. The core cormorant foraging range is estimated to be 7.1km, therefore there is potential for birds to travel from the SPA to the Proposed Wind Farm. However, as cormorant was not observed utilising habitats within the Proposed Wind Farm during the survey period, no habitat loss effects on this species are anticipated as a result of the Proposed Wind Farm. All records relate to birds flying over the Proposed Wind Farm, with no evidence of foraging, roosting or other habitat use within the Proposed Wind Farm. No significant effects of direct habitat loss are anticipated.	sensitivity species and negligible impact corresponds to a low effect significance.	
Disturbance	As outlined before, cormorant were occasionally recorded flying over the Proposed Wind Farm but the area was considered to be of no ecological importance to this species. As cormorant was not recorded utilising habitats within the Proposed Wind Farm during the survey period, disturbance effects on the species are considered unlikely. All observations within the Proposed Wind Farm were of birds flying over, with no evidence of foraging, roosting or other habitat use within. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of cormorant from habitats on which the species depends. The Helvick Head to Ballyquin SPA is located 5.8km from the Proposed Wind Farm, therefore construction disturbance will not affect birds within the SPA due to the separation distance.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible 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)
	No significant effects as a result of disturbance are anticipated.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, cormorant were occasionally recorded flying over the Proposed Wind Farm but the area was considered to be of no ecological importance to this species. As cormorant was not recorded utilising habitats within the Proposed Wind Farm during the survey period, displacement effects on the species are considered unlikely. All observations within the Proposed Wind Farm were of birds flying over, with no evidence of foraging, roosting or other habitat use within. Therefore, displacement associated with operating turbines is not anticipated to result in the displacement of cormorant from habitats on which the species depends. The Helvick Head to Ballyquin SPA is located 5.8km from the Proposed Wind Farm, therefore displacement will not affect birds within the SPA due to the separation distance. No significant effects as a result of disturbance are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant
Collision Risk	The species was recorded flying within PCH during vantage point surveys. There were just four records of cormorant in flight in proximity to the Proposed Wind Farm, however, on an extremely precautionary basis, due to the distance to the Helvick Head to Ballyquin SPA, a collision risk assessment has been undertaken. The assessment was conducted for the three turbine dimensions (full details provided in Appendix 7-6). The collision risk has been calculated a 0.131 collisions per year, or one bird every eight years over the lifetime of the Proposed Wind Farm.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Annual mortality of adult cormorant has been calculated at 12% per year (Frederiksen and Bregnballe, 2000). If 0.131 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the Helvick Head to Ballyquin SPA population (c. 146 birds; 73 pairs) by approximately 0.75% and of the county population (c.454 birds; 227 pairs) by 0.24%. 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 Herring gull

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Herring gull was recorded using habitats within the Proposed Wind Farm on two occasions, including a flock of five birds foraging in agricultural grassland near Cloghraun and a flock of approximately 200 birds roosting near Drumslig. The species was also frequently recorded flying, circling and soaring over the Proposed Wind Farm. Herring gull are an SCI of Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA. The separation distance between the Proposed Wind Farm and these SPAs is 5.8km and 13km respectively. The core herring gull foraging range is estimated to be 14.9km according to the conservation objectives (see Woodward <i>et al.</i>, 2019; Power <i>et al.</i>, 2021) therefore there is potential for birds to travel from the SPAs to the Proposed Wind Farm. However, suitable	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and low negligible corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	habitats for this species recorded within the Proposed Wind Farm are common are widespread in the intervening landscape between the Proposed wind Farm and the SPA. In addition, due to the low frequency of habitat use within the Proposed Wind Farm, no significant effects of direct habitat loss are anticipated.		
Disturbance	As outlined above, herring gull were recorded roosting and foraging at the Proposed Wind Farm on two occasion and flying over the Proposed Wind Farm regularly. Disturbance from construction of the Proposed Wind Farm is unlikely to give rise to significant impacts given that the species was only infrequently using the Proposed Wind Farm. The Proposed Wind Farm does not represent an important area for herring gull. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of herring gull from habitats on which the species depends. Any minor alterations to the flight paths of local commuting birds is not likely to result in significant effects. The Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA is located 5.8km and 13km respectively from the Proposed Wind Farm, therefore construction disturbance will not affect birds within the SPAs due to the separation distance. No significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant 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	As outlined above, herring gull were recorded roosting and foraging at the Proposed Wind Farm on two occasion and flying over the Proposed Wind Farm regularly.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Displacement distance of herring gull due to the presence of turbines has not been reported in the literature. Displacement from turbines is unlikely to give rise to significant impacts given that the species was only infrequently using the Proposed Wind Farm indicating that it does not represent an important area for herring gull. The Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA is located 5.8km and 13km respectively from the Proposed Wind Farm, therefore displacement will not affect birds within the SPA due to separation distance. There is no evidence to suggest that the Proposed Wind Farm lies on a migratory/regular commuting route for the species given that flights across the Proposed Wind Farm appear random in nature, therefore barrier effect is not anticipated. Any minor alterations to the flight paths of local commuting birds due to the presence of the Proposed Turbines is not likely to result in significant effects. Based on this, no significant displacement or barrier effects are anticipated.	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 (full details provided in Appendix 7-6). The conservation objectives for herring gull at Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA are to restore the favourable conservation status of the breeding population, therefore collision risk is considered for the breeding populations below. The collision risk has been calculated at 1.117 collisions per breeding season. The origin of birds flying over the Proposed Wind Farm is not known for certain, however, given that the SPAs are within foraging range, it is likely that the birds flying over the Proposed Wind Farm include a mix of birds from the SPA breeding populations and non-SPA breeding or summering birds from	<u>Helvick Head to Ballyquin SPA</u> The magnitude of the effect is assessed as negligible. The cross tabularisation of a very high sensitivity species and negligible impact corresponds to a low effect significance. <u>Mid-Waterford Coast SPA</u>	<u>Helvick Head to Ballyquin SPA</u> Likely long-term constant slight negative effect, which is not significant. <u>Mid-Waterford Coast SPA</u> Likely long-term constant slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
elsewhere in the region. Breeding herring gull forage both in the marine and terrestrial environment: a study on Wadden Sea colony foraging behaviours by Enners <i>et al.</i> (2018) found that in a colony close to the mainland 37.1% of the foraging trips targeted the tidal flats, 20.6% targeted solely terrestrial habitats, and 42.3% were mixed. Although numbers flying over the Proposed Wind Farm may include birds originating from outside the SPA, on a precautionary basis, the increase in mortality is calculated below assuming all originate from the SPAs. To estimate contribution of each SPA to the number of collisions, the NatureScot (2017) guidance on apportioning impacts from marine renewable energy developments to breeding seabirds in SPAs was followed. In brief, the collision rate was weighted by colony size, distance from the colony (the shortest distance between the SPA boundary and the nearest turbine was used as a more conservative value than the geometric centre) and proportion of available sea area. The majority of breeding season observations were in July and August and included immature birds, therefore the population size was estimated from the number of apparently occupied nests while assuming 0.75 fledglings per nest outlined in a population viability analysis by Cook and Robinson (2010) and described in the conservation objectives. For Helvick Head to Ballyquin SPA, these input values were: population size of 627 birds, distance of 6.3km and 1.74 available sea area. For Mid-Waterford Coast SPA: population size of 1,414 birds, distance of 13.3km and 2.23 available sea area. The resulting weight for Helvick Head to Ballyquin SPA was 1.3 (0.61 of total weighting) and for Mid-Waterford Coast SPA was 0.85 (0.39 of total weighting). This is a respective contribution of 0.67 and 0.44 birds to the total number of collisions. Annual mortality of adult herring gulls has been calculated at 16.6% per year (Horswill and Robinson, 2015) based on an established annual survival of 83.4% per year. At Helvick Head to Ballyquin SPA, if 0.67 collisions were to	The magnitude of the effect is assessed as negligible. The cross tabularisation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	occur during each breeding season, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the SPA breeding population (c. 627 birds) by 0.65%. At Mid-Waterford Coast SPA, if 0.44 collisions were to occur during each breeding season, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the SPA breeding population (c. 1,414 birds) by 0.19%. 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.

7.5.2.6 Lesser black-backed gull

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Lesser black-backed gull was recorded using habitats within the Proposed Wind Farm on three occasions, with 1 to 24 birds recorded foraging. The species was also regularly recorded flying over the Proposed Wind Farm. Lesser black-backed gull are an SCI of Ballymacoda Bay SPA. The separation distance between the Proposed Wind Farm and this SPA is 12.9km. Lesser black-backed gull is a wide-ranging forager, 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. In addition, due to the low abundance and frequency of occurrence, no significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Disturbance	As outlined above, lesser black-backed gull were recorded foraging at the Proposed Wind Farm on three occasions and flying over the Proposed Wind Farm regularly. Disturbance from construction of the Proposed Wind Farm is unlikely to give rise to significant impacts given that the species was only infrequently using the Proposed Wind Farm. The Proposed Wind Farm does represent an important foraging area for the species. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of lesser black-backed gull from habitats on which the species depends. Any minor alterations to the flight paths of local commuting birds is not likely to result in significant effects. The Ballymacoda Bay SPA is located 12.9km from the Proposed Wind Farm, therefore construction disturbance will not affect birds within the SPA due to the separation distance. No significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible 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	As outlined above, lesser black-backed gull were recorded foraging at the Proposed Wind Farm on three occasions and flying over the Proposed Wind Farm regularly. Displacement distance of lesser black-backed gull due to the presence of turbines has not been reported in the literature. Displacement from turbines is unlikely to give rise to significant impacts given that the species was only infrequently using the Proposed Wind Farm indicating that it does not represent an important area for lesser black-backed gull. The Ballymacoda	The magnitude of the effect is assessed as negligible. The cross tabulation of a very high sensitivity species and negligible impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Bay SPA is located 12.9km from the Proposed Wind Farm, therefore displacement will not affect birds within the SPA due to separation distance. There is no evidence to suggest that the Proposed Wind Farm lies on a migratory/regular commuting route for the species given that flights across the Proposed Wind Farm appear random in nature, therefore barrier effect is not anticipated. Any minor alterations to the flight paths of local commuting birds due to the presence of the Proposed Turbines is not likely to result in significant effects. Based on this, no significant displacement or barrier effects are anticipated.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The conservation objectives for lesser black-backed gull at Ballymacoda Bay SPA are to maintain the favourable conservation status of the non-breeding population, therefore collision risk is considered for the winter season below. The collision risk has been calculated at 0.2591 collisions per year. Annual mortality of adult lesser black-backed gull has been calculated at 9% per year (Wanless <i>et al.</i>, 1996). If 0.2591 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the Ballymacoda Bay SPA population (c. 736 birds) by 0.39%. The predicted collision risk is negligible.	The magnitude of the effect is assessed as negligible. The cross tabularisation of a very high sensitivity species and negligible 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.

7.5.2.7 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 10 occasions. The species has been seen soaring over the Proposed Wind Farm. A white-tailed eagle was recorded perched and preening at the Proposed Wind Farm once during the survey period. A nest is known to be present near the Blackwater and Licky river confluence approximately 5.1km from the Proposed Wind Farm, or 5.5km from the closest Proposed Turbine. Due to this low frequency of occurrence of habitat use within the Proposed Wind Farm, no significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant
Disturbance	As outlined before, the species has been regularly seen soaring over the Proposed Wind Farm, and a nest is located at approximately 5.1km from 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. The known breeding territory near the Blackwater/Licky confluence is therefore well beyond the recommended disturbance buffers and would not be affected by construction of the Proposed Wind Farm. Furthermore, white-tailed were mainly recorded soaring and once perched and preening in the Proposed Wind Farm and surroundings and are therefore not dependent upon the Proposed Wind Farm for hunting or breeding. 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	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 short-term imperceptible negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Farm by this species within disturbance distance, no significant effects of disturbance are anticipated.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, the species has been regularly seen soaring over the Proposed Wind Farm, and a nest is located at approximately 5.1km from 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. The known breeding territory is therefore well beyond these recommended disturbance distances and would not be subject to displacement effects associated with operation of the Proposed Wind Farm. Furthermore, white-tailed were mainly recorded soaring and once perched and preening in the Proposed Wind Farm and surroundings and are not dependent upon the Proposed Wind Farm for hunting or breeding. 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.	The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 0.196 collisions per year, or one bird every five years over the lifetime of the Proposed Wind Farm.	Before mitigation: the magnitude of the effect is assessed as high. The cross tabulation of a high sensitivity species and high impact	Before mitigation: likely long-term constant very significant negative effect

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Although the predicted number of collisions is relatively low in absolute terms, the loss of even a small number of individuals could represent a meaningful impact given the species' small national breeding population, slow reproductive rate and its classification as a population of National Importance at the Proposed Wind Farm. The magnitude of the predicted collision risk is considered high. As such, mitigation is proposed. This is described in Section 7.6 below.	corresponds to a very high 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.

7.5.2.8 Hen harrier

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Hen harrier was recorded 38 times during the survey period. Hen harrier was recorded using habitats within the Proposed Wind Farm, with birds hunting and travelling. Up to three birds were seen at the same time. No breeding or roosting activity was recorded during the survey period. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for hen harrier. The land lost to the permanent built infrastructure footprint is small (i.e., c.33.17ha/2.29% of the Site). Significant areas of suitable hunting habitat, like open grassland, will	The magnitude of the effect is assessed as low. The cross tabulation of a high sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	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 hen harrier 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 hen harrier. Therefore, no significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As outlined before, hen harrier was recorded 38 times hunting and travelling within the Proposed Wind Farm and its wider surroundings. 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. A large proportion of the habitat within the Proposed Wind Farm is mature forestry, which is not optimal hunting habitat for hen harrier. In addition, the habitats utilised by hen harrier are not unique to the Proposed Wind Farm and are abundant in the wider surroundings. This is supported by regular observations of hunting 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.	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
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Displacement and Barrier Effect	As outlined before, hen harrier was recorded 38 times hunting and travelling within the Proposed Wind Farm and its wider surroundings. Management and servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. Pearce-Higgins <i>et al.</i> (2009) found significant avoidance of turbines by hen harrier within 250m, and reduced flight activity (52%) by hen harrier within 500m of turbines at operating wind farms. Goodship and Furness (2022; also reviewed in NatureScot, 2022) also found that disturbance may occur between 500-750m. A large proportion of the habitat within the Proposed Wind Farm is mature commercial conifer forestry, which is not optimal hunting habitat for hen harrier. It is acknowledged that some areas of the Proposed Wind Farm may naturally become unsuitable for hen harrier over the lifetime due to the maturation of commercial forestry. However, it must also be noted that due to the regular cycles of commercial forestry, additional areas are likely to also be felled within the Proposed Wind Farm during the lifetime, and as such new potential suitable habitat for hen harrier would become available. In addition, 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.	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
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 0.0020 collisions per	The magnitude of the effect is assessed as negligible. The cross tabulation of a high sensitivity species and negligible impact	Likely long-term constant imperceptible negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	year, or less than one bird over the lifetime of the Proposed Wind Farm. The magnitude of the predicted collision risk is negligible.	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 Peregrine falcon

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Peregrine falcon were regularly recorded hunting over the Proposed Wind Farm. Potential breeding behaviour was recorded once at the Proposed Wind Farm (carrying prey), but no breeding territories were identified during surveys. Additionally, there is no suitable breeding habitat for peregrine falcon at the Proposed Wind Farm. No breeding territories could be identified within 2km from the Proposed Wind Farm, which corresponds to the core foraging range of peregrine falcon (SNH, 2016). A large proportion of the habitat within the Proposed Wind Farm is forestry, which is not optimal hunting habitat for peregrine falcon. The land lost to the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the total area of the Site. Significant areas of suitable hunting habitat, including grassland, 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	The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Proposed Wind Farm will not result in the loss of a scarce resource for peregrine falcon. No significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As outlined before, no breeding territory was identified for peregrine falcon. Birds were mainly hunting and flying at the Proposed Wind Farm and its wider surroundings. Ruddock and Whitfield (2007) found that peregrine falcons can be disturbed up to 750m from humans. It is assumed that temporary disturbance will occur in areas of the Proposed Wind Farm where peregrine falcon were observed hunting. However, a large proportion of the habitat within the Proposed Wind Farm is forestry, which is not optimal hunting habitat for peregrine falcon. In addition, 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 observations of hunting peregrine falcon 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 species. 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 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	As outlined before, no breeding territory was identified for peregrine falcon. Birds were mainly hunting and flying at the Proposed Wind Farm and its wider surroundings.	The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity species and low impact	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Management and servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. Ruddock and Whitfield (2007) found that peregrine falcons can be disturbed up to 750m from humans. A large proportion of the habitat within the Proposed Wind Farm is forestry, which is not optimal hunting habitat for peregrine falcon. It is assumed that displacement 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 observations of hunting peregrine falcon 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 species. No significant effects of displacement and barrier effect are anticipated at the county, national or international level.	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 (full details provided in Appendix 7-6). The collision risk has been calculated a 0.081 collisions per year, or one bird every 10 years over the lifetime of the Proposed Wind Farm. Annual mortality of adult peregrine falcon has been calculated at 19% per annum (Craig <i>et al.</i>, 2004). If 0.081 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.32 birds [16 pairs]) by 1.33%. The predicted collision risk is 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
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect	No Effect

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.2.10 Red kite

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Red kite was recorded only during the winter season, with nine observations over the entire survey period. Six of these records occurred within 500m from the Proposed Wind Farm. All observations involved birds flying or soaring, with no evidence of the species utilising habitats within the Proposed Wind Farm. As red kite was not observed utilising habitats within the Proposed Wind Farm during the survey period, no habitat loss effects on this species are anticipated as a result of the Proposed Project. No significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant
Disturbance	As outlined before, red kite were occasionally recorded flying and soaring at the Proposed Wind Farm. Goodship and Furness (2022; also reviewed in NatureScot, 2022) found that disturbance may occur between 150 and 300m in the winter season. As red kite was not recorded utilising habitats within or in proximity to the Proposed Wind Farm during the survey period, disturbance effects on the species are considered unlikely. Any minor alterations to the flight paths of commuting birds is not likely to result in significant effects. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the displacement of red kite from habitats on which the species depends.	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 short-term imperceptible negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	No significant effects as a result of disturbance are anticipated.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, red kite were occasionally recorded flying and soaring at the Proposed Wind Farm. Goodship and Furness (2022; also reviewed in NatureScot, 2022) found that disturbance may occur between 150 and 300m in the winter season. As red kite was not recorded utilising habitats within or in proximity to the Proposed Wind Farm during the survey period, displacement and barrier effects on the species are unlikely. Therefore, displacement associated with turbine operation is not anticipated to result in the displacement of red kite from habitats on which the species depends. There is no evidence to suggest that the Proposed Wind Farm lies on a regular commuting route between the Knockmealdown Mountains and Ardmore given the low number of flights over the entire survey period and that flights across the Proposed Wind Farm appear randomly distributed, therefore barrier effect is not anticipated. Any minor alterations to the flight paths of local commuting birds due to the presence of the Proposed Turbines is not likely to result in significant effects. No significant effects as a result of displacement are anticipated.	The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity species and negligible impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 0.0735 collisions per year, or one bird every 11 years.	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		Significance (Percival, 2003)	Significance (EPA, 2022)
	Although the predicted number of collisions is very low (less than three birds over the lifetime of the Proposed Wind Farm), red kite remains a relatively scarce breeding species in Ireland, and the population recorded at the Proposed Wind Farm is considered to be of County Importance. The loss of individuals through collision could therefore represent a measurable impact on the population. Considering the uncertainty about the population size of red kite in Ireland, on a precautionary basis, the magnitude of the predicted collision risk is considered to be medium.	impact corresponds to a 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.

7.5.2.11 Curlew

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Curlew was recorded 122 times over the survey period. Birds were recorded using habitats within the Proposed Wind Farm, including six records of flocks (1 to 42 birds) foraging in agricultural grassland in the late-breeding season. Curlew were also recorded flying over the Proposed Wind Farm on several occasions. No evidence of breeding was recorded. The land lost to permanent built infrastructure footprint is small (i.e. c.33.17ha/2.29%) relative to the total area of the Site. A large proportion of the Proposed Wind Farm comprises forestry, which is unsuitable for curlew. Curlew primarily utilised agricultural grassland within the Proposed Wind	The magnitude of the effect is assessed as low. The cross tabulation of a medium sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Farm, and this habitat is widespread and abundant within the Proposed Wind Farm and wider surroundings, with extensive areas of suitable foraging habitat remaining post-construction. Therefore, no significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As outlined before, curlew were occasionally recorded foraging at the Proposed Wind Farm and flying over the Proposed Wind Farm. Goodship and Furness (2022; also reviewed in NatureScot, 2022) found that disturbance may occur between 200 and 650m in the non-breeding season. In the Proposed Wind Farm, curlew were recorded foraging and flying within 650m of large-scale construction works (turbines) on multiple occasions over the survey period. It is assumed that temporary disturbance will occur during works. However, significant areas of suitable foraging habitat, including agricultural grassland, will remain available during construction within the Proposed Wind Farm site and surrounding area, as the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the total area of the Site. In addition, areas of suitable habitat are widespread in the wider environment. As such, disturbance within the Proposed Wind Farm during construction will not result in the loss of a scarce resource for the local curlew population. 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 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

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Displacement and Barrier Effect	As outlined before, curlew were occasionally recorded foraging at the Proposed Wind Farm and flying over the Proposed Wind Farm. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. Goodship and Furness (2022; also reviewed in NatureScot, 2022) found that disturbance may occur between 200 and 650m in the non-breeding season. On the Proposed Wind Farm, curlew were recorded foraging and flying within 650m of turbines on multiple occasions over the survey period. However, significant areas of suitable foraging and roosting habitat, including agricultural grassland, will remain available within the Proposed Wind Farm and surrounding area during operation, as the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the total area of the Site. In addition, areas of suitable habitat are widespread in the wider environment. As such, displacement within the Proposed Wind Farm during will not result in the loss of a scarce resource for the local curlew population. There is no evidence to suggest that the Proposed Wind Farm lies on a migratory/regular commuting route for the species given that flights across the Proposed Wind Farm appear random in nature, therefore barrier effect is not anticipated. Any minor alterations to the flight paths of local commuting birds due to the presence of the Proposed Turbines is not likely to result in significant effects. No significant effects of displacement 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 constant 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 (full details provided in Appendix 7-6). The collision risk has been calculated a 3.14 collisions per year.	The magnitude of the effect is assessed as negligible. The cross tabulation of a medium sensitivity	Likely long-term constant imperceptible negative

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Annual mortality of adult curlew has been calculated at 26% per annum (Evans and Pienkowski, 1984). If 3.14 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the regional population (c.1,492) by 0.81%. The predicted collision risk is negligible.	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.

7.5.2.12 Kestrel

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Kestrel had a probable breeding territory partially within the Proposed Wind Farm, with a confirmed breeding territory approximately 850m from the Proposed Wind Farm. The species was regularly recorded using habitats within the Proposed Wind Farm, primarily for hunting and perching, with one to three birds observed at a time. Kestrel was also frequently recorded flying and soaring over the Proposed Wind Farm. This species is a wide-ranging generalist and was using conifer plantation for breeding and hunting within the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain, as the land lost to the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the	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		Significance (Percival, 2003)	Significance (EPA, 2022)
	total area of the Site, 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 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.		
Disturbance	As mentioned above, kestrel is using the Proposed Wind Farm for breeding and hunting. The species was also regularly observed flying over the Proposed Wind Farm. 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, with disturbance distances reduced to less than 50m during the non-breeding season. It is assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works, particularly within the K.-2 breeding territory that is located within the disturbance distance of a Proposed Turbine location. This species is a wide-ranging generalist and was using conifer plantation within the Proposed Wind Farm and, as forestry 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, 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 one breeding territory partially within disturbance distance of the construction works, the magnitude of the effect of displacement 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			

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As mentioned above, kestrel is using the Proposed Wind Farm for breeding and hunting. The species was also regularly observed flying over the Proposed Wind Farm. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. 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 territory K.-2 is within 200m of a Proposed Turbine. However, this species is a wide-ranging generalist and, as forestry 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, 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 one breeding territory partially within disturbance distance of a Proposed Turbine, the magnitude of the effect of displacement during operation 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 .
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 1.86 collisions per year.	The magnitude of the effect is assessed as low. The cross tabularisation of a medium sensitivity species and low	Likely long-term constant slight negative effect, which is not significant .

Potential effects		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 1.86 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.379-385 birds) by 1.4%. The predicted collision risk is low.	impact corresponds to a 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.

7.5.2.13 Snipe

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	The species was regularly recorded using habitats within the Proposed Wind Farm during the winter season, with birds frequently flushed or calling. Snipe were also frequently recorded flying over the Proposed Wind Farm, with counts generally comprising small numbers of birds. There was no evidence of snipe breeding within the Proposed Wind Farm. The overall permanent built infrastructure footprint accounts for a small proportion of the Site (c.33.17ha/2.29%) where snipe were observed. 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 snipe population.	The magnitude of the effect is assessed as low. The cross tabularisation of a medium sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	No significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As mentioned above, snipe was not recorded breeding on the Proposed Wind Farm. The species was frequently recorded calling and being flushed on the Proposed Wind Farm during the winter. 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. 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. As most records were made during the winter season, the magnitude of the effect of disturbance is assessed as low.	The magnitude of the effect is assessed as low. The cross tabularisation of a medium sensitivity species and low 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	As mentioned above, snipe was not recorded breeding on the Proposed Wind Farm. The species was frequently recorded calling, being flushed and flying on the Proposed Wind Farm during the winter. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the	The magnitude of the effect is assessed as low. The cross tabularisation of a medium sensitivity species and low impact corresponds to a low effect significance.	Likely long-term constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	area. 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. Displacement distances were not provided for wintering birds, therefore breeding values will be used here. Snipe were recorded throughout the Proposed Wind Farm. However, 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. As most records were made during the winter season, the magnitude of the effect of displacement is assessed as low.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk assessment has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated a 0.194 collisions per year or one bird every five years. Annual mortality of adult snipe has been calculated at 37.5% per annum (Spence, 1988). If 0.194 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. 364 birds [182 pairs]) by 0.14%. 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.

7.5.2.14 Woodcock

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Woodcock had four breeding territories within the Proposed Wind Farm and one 200m from the Proposed Wind Farm, with birds regularly recorded roding and displaying during the breeding season. The species was also recorded using habitats within the Proposed Wind Farm during the winter season, including birds being flushed, and was recorded flying and calling throughout the Proposed Wind Farm. Forestry felling is planned within all four breeding territories, with seven Proposed Turbines located within these territories. This species breeds in woodland habitat, including conifer plantation which is found in the Proposed Wind Farm. However, these areas comprise commercial forestry that would be subject to periodic harvesting and replanting as stands reach maturity even if the Proposed Project does not proceed, resulting in the ongoing loss and subsequent creation of suitable woodcock habitat. Given that four breeding territories would nevertheless be affected by forestry felling and infrastructure associated with the Proposed Project, the magnitude of the effect of direct habitat loss is assessed as medium. Although the overall effect significance of the impact of direct habitat loss on woodcock is low, biodiversity enhancement measures that will benefit breeding woodcock are proposed. See Section 7.6 for details.	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	As outlined before, four breeding woodcock breeding territories were identified at the Proposed Wind Farm and one 200m from the Proposed Wind Farm. This species breeds in woodland habitat, including conifer plantation which is found in the Proposed Wind Farm. Construction works within and around	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.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	these territories will include forestry feeling, access road construction, turbine foundation and hardstand works, movement of heavy machinery and increased human activity. These activities will result in temporary disturbance, which may temporarily displace woodcock from breeding areas. Although suitable woodland and conifer plantation habitat is widespread within the Proposed Wind Farm and wider surroundings, due to the presence of works in territories disturbance during construction is assessed as medium.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, four breeding woodcock breeding territories were identified at the Proposed Wind Farm and one 200m from the Proposed Wind Farm. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. 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 in Germany. These declines were attributed to the barrier effect of turbines and the effects of turbine noise on displaying woodcock. The Länderarbeitsgemeinschaft der Vogelschutzwarten (2014) outline a displacement distance of 500m around operational turbines for breeding woodcock. Seven turbines are located within the four breeding territories identified during surveys. Given the presence of a breeding territories within disturbance distance of a Proposed Turbine, displacement during operation 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 constant slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Although the overall effect significance of the impact of displacement on woodcock is low, biodiversity enhancement measures that will benefit breeding woodcock are proposed. See Section 7.6 for details.		
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.

7.5.2.15 Buzzard

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	One buzzard breeding territory was identified within the Proposed Wind Farm (BZ-1), with a further confirmed nest located approximately 30m from the Proposed Wind Farm (BZ-2 located at 400m of T6), and a third breeding territory 1.2km from the Proposed Wind Farm. The species was also regularly recorded using habitats within the Proposed Wind Farm, primarily for hunting and perching. Buzzards were also frequently recorded flying and soaring over the Proposed Wind Farm. The BZ-1 breeding territory overlaps with two Proposed Turbines (T22 and T23) and the adjacent works (including new roads, forestry felling). This species is a wide-ranging generalist and was using farmland and forestry within	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		Significance (Percival, 2003)	Significance (EPA, 2022)
	the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain, as the land lost to the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the total area of the Site and there is an abundance of similar suitable habitat in the surrounding area. This is supported by regular observations, including a breeding territory, 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. However, given the presence of a Proposed Turbine within a breeding territory, the magnitude of the effect of direct habitat loss is assessed as medium.		
Disturbance	As mentioned before, a nest was identified within the Proposed Wind Farm. Another territory was 30m from the Proposed Wind Farm and 400m from the closest Proposed Turbine, and a third breeding territory 1.2km from the Proposed Wind Farm. 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 within the Proposed Wind Farm and overlaps with two turbines (T22 and T23) so it is assumed that the construction of those turbines and the associated works will involve a temporary disturbance around that area. It is also assumed that temporary disturbance will occur around the Proposed Wind Farm during construction works and the construction of a Proposed Turbine (T6) 400m from the buzzard nest BZ-2. The breeding territory BZ-3 is over 1.7km from the nearest large scale proposed works within the Proposed Wind Farm and it is not expected that disturbance during construction at the Proposed Wind Farm will occur at this distance. Buzzard is a wide-ranging generalist species and farmland and bog is not a scarce resource locally. However, given the presence of two breeding	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 imperceptible negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	territories within disturbance distance of major works (BZ-1 and 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	As mentioned before, a nest was identified within the Proposed Wind Farm. Another territory was 30m from the Proposed Wind Farm and 400m from the closest Proposed Turbine and a third breeding territory 1.2km from the Proposed Wind Farm. Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. 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 within this distance from two Proposed Turbine (T22 and T23), so there is the potential for displacement at this location. Also, there is the potential for displacement at breeding territory BZ-2 (located 400m of T6). Buzzard is a wide-ranging generalist species, and farmland and bog is not a scarce resource locally. However, given the presence of a breeding territory within displacement distance of a Proposed Turbine (BZ-1 and BZ-2), the magnitude of the effect of displacement is assessed as medium.	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 .
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). The collision rate has been calculated at 5.839 collisions per year. Annual mortality of adult buzzard has been calculated at 10% per annum (Kenward <i>et al.</i>, 2000). If 5.839 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact corresponds to a very low effect significance.	Likely long-term constant imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	mortality of the county population (c.150-268 birds [75-134 pairs]) by 21.79-38.93%. The predicted collision risk is assessed as medium.		
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.

7.5.2.16 Long-eared owl

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	There was no evidence of long-eared owl breeding within the Proposed Wind Farm. Long-eared owl were observed infrequently (three times calling, perching and flying) within the Proposed Wind Farm over the survey period, but given the nocturnal nature of this species, it is likely to be under recorded during surveys. The land lost to the permanent built infrastructure footprint is small (i.e. c.33.17ha/2.29%) relative to the total area of the Site. The habitats within the Proposed Wind Farm that may be used by long-eared owl are widespread and abundant within the wider surroundings, with extensive areas of suitable hunting habitat remaining post-construction. No significant effects of direct habitat loss are anticipated at the regional, national or international level.	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	As outlined before, long-eared owl were not recorded breeding in the Proposed Wind Farm, but were recorded calling, perching and flying.	The magnitude of the effect is assessed as low. The cross	Likely short-term imperceptible negative

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	As long-eared owl was irregularly recorded utilising habitats within the Proposed Wind Farm during the survey period, disturbance effects on the species are possible but considered unlikely. All observations were of birds flying, calling or perched over the Proposed Wind Farm, with no other evidence of hunting or breeding within. Therefore, temporary disturbance associated with construction activities is not anticipated to result in the disturbance of long-eared owl from habitats on which the species depends. No significant effects as a result of disturbance are anticipated at the county, national or international level.	tabularisation of a low sensitivity species and low impact corresponds to a very low effect significance.	effect, which is not significant .
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, long-eared owl were not recorded breeding in the Proposed Wind Farm, but were recorded calling, perching and flying. As long-eared owl was irregularly recorded utilising habitats within the Proposed Wind Farm during the survey period, displacement effects on the species are possible but considered unlikely. All observations were of birds flying, calling or perched over the Proposed Wind Farm, with no other evidence of hunting or breeding within. Therefore, displacement associated with turbine operation is not anticipated to result in the displacement of long-eared owl from habitats on which the species depends. No significant effects of displacement are anticipated at the county, national or international level.	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 .

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

7.5.2.17 Sparrowhawk

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	There was no specific sparrowhawk breeding territory identified within the Proposed Wind Farm, although breeding activity indicated that the species was breeding in the general area and likely within the Proposed Wind Farm. Sparrowhawk was regularly recorded using habitats within the Proposed Wind Farm (grassland, hedgerow/treeline), primarily for hunting and perching. The species was also frequently recorded flying and soaring over the Proposed Wind Farm. This species is a wide-ranging generalist and was using agricultural grassland and conifer plantation within the Proposed Wind Farm. Extensive areas of similar hunting and breeding habitat will remain after construction, as the land lost to the permanent built infrastructure footprint is small (c.33.17ha/2.29%) relative to the total area of the Site, and there is an abundance of similar	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		Significance (Percival, 2003)	Significance (EPA, 2022)
	suitable habitat in the surrounding area. This is supported by regular observations, including breeding behaviours, 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 likely presence of breeding birds in the Proposed Wind Farm, the magnitude of the effect of direct habitat loss is assessed as medium.		
Disturbance	As outlined before, sparrowhawk is resident in the Proposed Wind Farm and likely breed within the Proposed Wind Farm, but no specific location could be identified. Disturbance distance from construction activity is not reported for sparrowhawk in the literature, 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 grassland and hedgerow/treeline is not a scarce resource locally. 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 sparrowhawk population. However, given the species is likely breeding within disturbance distance of major works, the magnitude of the effect of disturbance is assessed as medium.	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 constant imperceptible negative effect, which is not significant .
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Displacement and Barrier Effect	As outlined before, sparrowhawk is resident in the Proposed Wind Farm and likely breed within the Proposed Wind Farm, but no specific location could be identified.	The magnitude of the effect is assessed as medium. The cross tabulation of a low sensitivity species and medium impact	Likely long-term constant imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Management and servicing of the Proposed Wind Farm will not add significantly to the background levels of disturbance currently occurring in the area. Displacement from turbines is not reported for sparrowhawk, however, it is assumed for the purposes of the assessment that sparrowhawk will show avoidance to turbines, as with other raptors. However, sparrowhawk is a wide-ranging generalist species and grassland and hedgerow/treeline is not a scarce resource locally. This is supported by regular observations, including probable breeding, in the wider surroundings. 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 species is likely breeding within disturbance distance of Proposed Turbines, the magnitude of the effect of displacement is assessed as medium.	corresponds to a very 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 collision rate has been calculated at 0.0802 collisions per year, or one bird every 12 years. Annual mortality of adult sparrowhawk has been estimated at approximately 34% per annum (Newton <i>et al.</i>, 1983). If 0.0802 collisions were to occur per year, it would mean that the losses at the Proposed Wind Farm would increase the annual mortality of the county population (c.456 birds) by 0.05%. The predicted collision risk is negligible.	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

It is proposed to connect the Proposed 110kV Substation to the Proposed 220kV Loop-in Substation in the townland of Ballycullane, County Waterford via 110kV underground electrical cabling. The Proposed 110kV Underground Cabling Route is described in Section 4.3.2 of Chapter 4 of this EIAR and is located primarily within the public road corridor, with a short section (approximately 262m) located within a private forestry road and another short section (approximately 788m) being located within proposed new access roads through agricultural pastures in the townlands of Graigue and Ballycullane.

Required works are minor and are all located within the existing road corridor and existing forestry tracks, with a short section (788m) that is contiguous with a proposed new access road (full details 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.

It is proposed to construct a 220kV electricity substation in agricultural pastures within the townland of Ballycullane (full details in Chapter 4 of this EIAR). No KORs were recorded within 500m of this substation during hinterland surveys and wintering golden plover surveys. The existing habitats (agricultural grassland) are of low ecological value and are widespread and abundant in the surrounding landscape. Golden plover flocks were not recorded in these fields during dedicated wintering golden plover surveys. To facilitate transformer delivery to the Proposed 220kV Loop-in Substation vegetation clearance will be required along existing roads (L-99997). 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 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

For the purpose of this EIAR, the Port of Waterford has been selected and assessed to facilitate turbine delivery to the Site. It is proposed that the large wind turbine components will be delivered from Belview Port (Port of Waterford), Co. Waterford to the Site via the N29 and N25 for approximately 62.8km, exiting at the L2024/N25 Junction in Pulla before heading west along the L2024 for 1.1km before reaching the main site entrance. All deliveries of turbine components to the Site will follow this route.

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 (removal of street furniture) for abnormal loads will be required; however, these works are minor in scale and are located within the existing road corridor (full details in Chapter 4 of this EIAR). Upon completion of the turbine delivery phase, they 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

An NIS was prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Proposed Wind Farm. The NIS 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.

7.6 Mitigation and Best Practice Measures

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

7.6.1 Design of the Proposed Project

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

- › Hard standing areas have been designed to the minimum size necessary to accommodate the turbine models that have been selected.
- › The Proposed 110kV Underground Cabling 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.
- › A potentially viable area for the siting of wind turbines, within the townlands of Kilnafarna Upper and Barranastook Upper, to the north-west of the Proposed Wind Farm site, was omitted from consideration following an early-stage review of the findings of the ornithological surveys. These surveys identified comparatively high levels of golden plover activity within this area, indicating its importance to the species. This was later confirmed with the identification of a regularly used landing and foraging area for golden plover, identified as GP-1 at this location. In response to these findings, the turbine layout was refined to avoid this area of concentrated activity, and several Proposed Turbines were removed from the Proposed Project.

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 Chapter 4 and Appendix 4-3 of this EIAR. Note that the majority of these measures are proposed as industry best practice rather than to mitigate any identified significant effect and will be updated as required to address any conditions of a permission or findings of any pre-construction survey results. Measures specific to birds are detailed below:

- › Works will commence outside the bird nesting season (1st of March to 31st of August inclusive). 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. Goodship and Furness, 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.

7.6.3 Mitigation and Enhancement Measures

White-tailed eagle

A potentially significant effect of collision risk for white-tailed eagle has been identified (Section 7.5.2.7). To address this, an adaptive mitigation plan is proposed to ameliorate potential adverse effects of collision risk to low (Pervical, 2003) or slight (EPA, 2022). This mitigation plan is integrated with a monitoring plan, enabling monitoring results to inform the implementation and evaluation of mitigation measures.

Fallen-animal removal will be implemented as the first part of this mitigation plan to minimise the attraction of eagles into the turbine area. Its effectiveness will be assessed through flight-activity and collision monitoring. If either a pre-defined collision or flight-activity threshold is reached, additional measures will be implemented and evaluated. While the required outcome and thresholds are fixed, the measures used to achieve them may be adapted in response to monitoring findings, emerging evidence and technological developments, consistent with best practice in adaptive management. Full details are provided in Appendix 7-7.

Woodcock

Although the overall effect significance of the impact of direct habitat loss and displacement on woodcock is low, biodiversity enhancement measures that will benefit breeding woodcock are proposed. The Proposed Wind Farm site borders the Licky River to the south. In order to enhance the biodiversity value on Site and create an additional riparian buffer to contribute to the protection of the water quality of the Licky River, it is proposed to establish a new native woodland measuring 3.6ha in area. This woodland will include a riparian boundary along a tributary of the Licky River, measuring approximately 100m in length. The proposed planting area is located at the southern boundary of the Proposed Wind Farm site, south of the Proposed Turbine T10. It is proposed that the woodland to be established will be of a species mix including a primary species mix of pedunculate oak (*Quercus robur*), alder (*Alnus glutinosa*) and grey willow (*Salix cinerea*). Full details are provided in Appendix 6-4. This woodland will create suitable breeding habitat for woodcock in the area.

7.6.4 Residual Effects

Following the measures described in Section 7.6, no effect significance greater than **low**, as per Percival (2003) criteria, was identified for any KOR. 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.

As stated in Section 7.2.4.6, the Ornithology Cumulative Study Area (Figure 7-2) considered operational wind farms located within the foraging ranges of the SCI species that could potentially occur at the Proposed Wind Farm site. These species were golden plover, black-tailed godwit, cormorant and breeding herring gull. The distances used for each SPA were: 12km from the Dungarvan Harbour SPA based on the foraging range of golden plover, 14.9km from the Helvick Head to Ballyquinn SPA based on the foraging range of herring gull, and 12km from the Blackwater Estuary SPA based on the foraging range of golden plover. This list does not include wintering gull species lesser black-backed gull and common gull as these have extensive foraging ranges.

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 regional and national plans with biodiversity-related elements were considered in the cumulative impact assessment:

- › Waterford City and County Development Plan 2022–2028
- › Regional Spatial & Economic Strategy for the Southern Region 2020-2032
- › Ireland's 4th National Biodiversity Action Plan 2023 – 2027

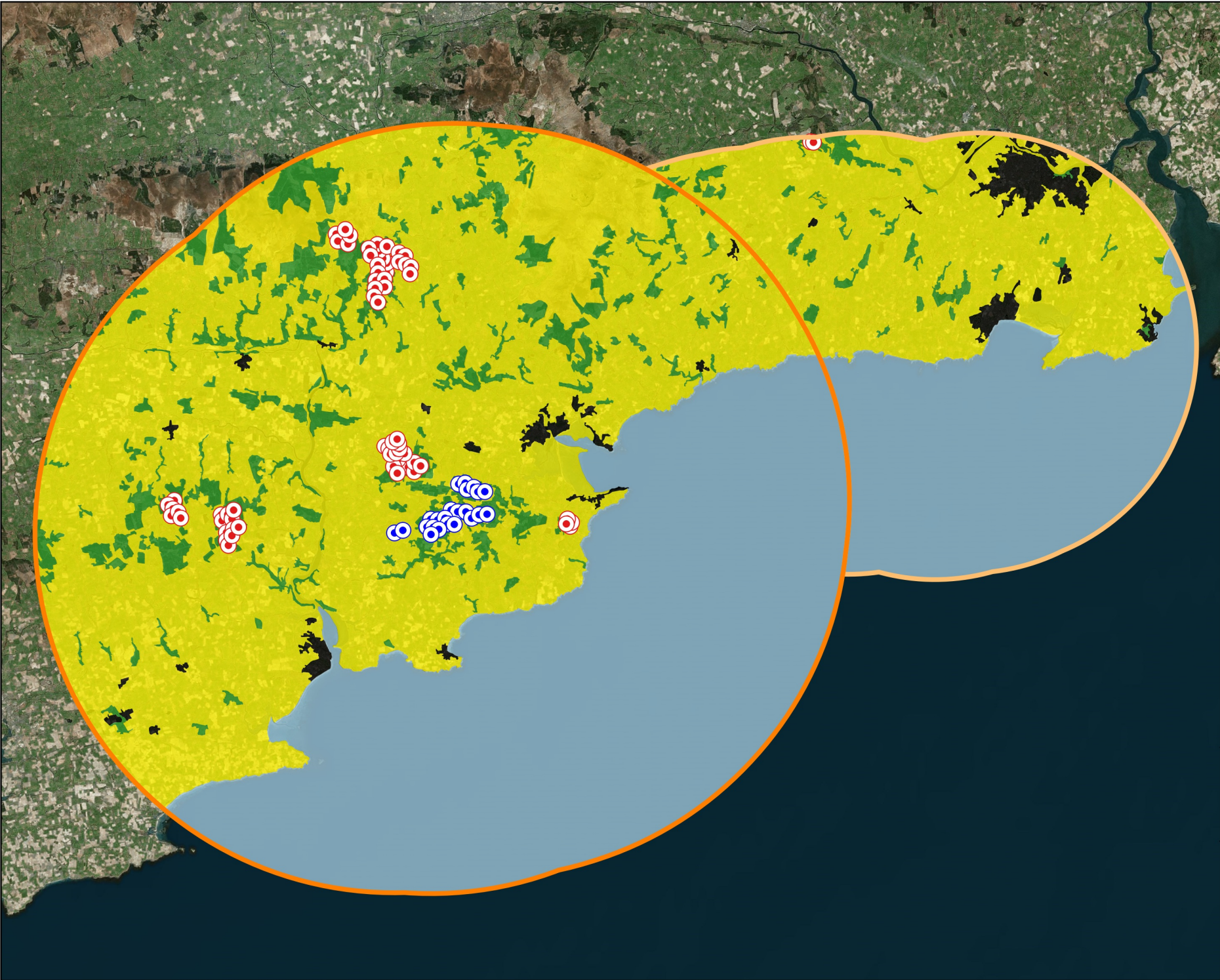
7.7.2 Projects Considered in the Assessment

7.7.2.1 Forestry and Agricultural Practices

Land uses in the vicinity of the Proposed Wind Farm comprise forestry and agriculture in the wider area. Forestry practices including rotational forestry felling is likely to continue within the Proposed Wind Farm. Agriculture will likely continue in the vicinity of the Proposed Wind Farm and in the wider area. These land-uses in the Ornithology Study Area 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 large-scale development

The other large-scale development projects within 25km from the Proposed Project comprise solar energy and residential/mixed-use developments, as outlined in Chapter 2. Two solar energy projects are located approximately 6.18km and 8.1km from the Proposed Wind Farm. These comprise a 149.12ha solar farm, including associated transformer stations, storage containers, underground electrical cabling and a short section of overhead networking cable, and an extension to an existing permitted solar PV farm, including an alternative grid connection to the Foxhall ESB substation. A residential development comprising 90 dwelling houses and a creche is located approximately 9.9km from the Proposed Wind Farm, while a six-storey mixed-use commercial and residential development comprising 37 apartments is located approximately 5.75km from the Proposed Wind Farm. These proposed and existing projects have been taken into account in this cumulative assessment (see Section 7.8.3).



- Map Legend
- Proposed Turbines
 - Other development turbines
 - 25km radius of Proposed Turbines
 - 14.9km radius of Mid-Waterford Coast SPA
- CORINE Landcover data
- Open habitats
 - Forest habitats
 - Urban
 - Sea



Drawing Title	
Ornithology Cumulative Study Area	
Project Title	
Slievegrine Renewable Energy Development, Co. Waterford	
Drawn By	Checked By
LDV	SD
Project No.	Drawing No.
240740	Figure 7-2
Scale	Date
1:350,000	08/10/2026
MKO Planning and Environmental Consultants	
MKO Planning and Environmental Consultants Tuam Road, Galway Ireland, H91 VV84 +353 (0) 91 735611 email: info@mkofireland.ie Website: ww.mkofireland.ie	

Microsoft product screen shots reprinted with permission from Microsoft Corporation

7.7.2.3 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. A request was made to Waterford City and County Council Planning Department and Cork County Council Planning and Development Department for information on ornithological monitoring at those wind farms that are operational (Ballycurreen Wind Farm and Woodhouse Wind Farm), as well as the operator of the Woodhouse Wind Farm. Each wind farm is discussed individually in the following sections.

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

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Waterford	Knocknamona Wind Farm	Permitted	8	c. 2.97km
	Moanbrack Wind Farm	Proposed	2	c. 5.64km
	Ballycurreen Wind Farm	Existing	2	c. 5.92km
	Woodhouse Wind Farm	Existing	8	c. 4.87km
	Scart Mountain Wind Farm	Proposed	15	c. 14.04km
	Dyrick Hill Wind Farm	Proposed	12	c. 15.23km
	Bealough Wind Farm	Existing	2	c. 33.07km
Waterford & Cork	Lyrenacarriga Wind Farm	Permitted	17	c. 11.02km

Knocknamona Wind Farm

The Knocknamona Windfarm 2026 Environmental Impact Assessment Report was reviewed. The site lies within a predominantly commercial forestry and agricultural landscape, with conifer plantation forming the dominant habitat. Bird surveys recorded a range of raptors, waders and waterbirds, including kestrel, buzzard, white-tailed eagle, sparrowhawk, peregrine falcon, merlin, golden plover, woodcock, snipe, curlew, lapwing, whooper swan, common gull, herring gull and brent goose.

Potential effects on birds included permanent or temporary loss or fragmentation of suitable habitat, disturbance and displacement and collision mortality. Collision risk modelling predicted low levels of mortality for buzzard, kestrel, sparrowhawk and golden plover. No white-tailed eagle was recorded utilising the wind farm site and the project was considered to present a low collision risk to this species, while collision risk to woodcock was also considered low due to its low density and typical flight behaviour. Following mitigation and monitoring, residual collision effects were assessed as not significant to neutral, and the overall effect on biodiversity was assessed as not significant.

The Blackwater Estuary SPA and Dungarvan Harbour SPA were identified with potential for indirect effects from the wind farm. Potential effects related principally to habitat loss or reduction, deterioration in water quality, the spread of invasive species and reductions in prey availability arising from construction-related sediment or contaminants entering downstream watercourses. Significant effects on these sites were not predicted and, following implementation of the proposed mitigation and monitoring measures, the residual effect was assessed as neutral.

Moanbrack Wind Farm

The Moanbrack Wind Farm Screening for Environmental Impact Assessment and the NIS were reviewed. The site is predominantly characterised by improved agricultural grassland and conifer plantation, with hedgerows and small areas of wet grassland also present. A range of bird species of conservation interest was recorded, including golden plover, peregrine, chough, herring gull, black-

tailed godwit, curlew, dunlin, lapwing, redshank, snipe, common gull, lesser black-backed gull and kestrel. A number of wetland and waterbird species, including golden plover, black-tailed godwit, curlew and dunlin, together with peregrine, cormorant, herring gull and chough, were assessed as being of International Importance, while several other species were considered to be of Local Importance (Higher Value).

Potential effects on birds included direct habitat loss during construction, disturbance and displacement, and collision mortality during operation. The assessment concluded that habitat loss would generally be negligible, as the habitats affected were largely improved agricultural grassland and conifer plantation. Disturbance and displacement effects were generally assessed as low or very low, with suitable alternative habitat available in the surrounding area. Collision risk modelling was undertaken for species recorded flying for more than 200seconds within the Collision Risk Zone. Predicted collision risk was zero for many species, while modelling identified low predicted annual collision rates for black-headed gull, common gull, great black-backed gull, lesser black-backed gull and buzzard, with the resulting effects assessed as negligible or very low.

Helvick Head to Ballyquin SPA, approximately 0.5km from the site, was considered in relation to peregrine, cormorant, herring gull and chough, while Dungarvan Harbour SPA, approximately 2.5km away, was considered in relation to golden plover. Mid-Waterford Coast SPA, approximately 10 km from the site, was also considered in relation to peregrine, cormorant, herring gull and chough. Potential effects on these SPAs included disturbance, displacement and collision risk arising from birds using areas outside the designated sites, with the relevant assessments undertaken through the Natura Impact Statement. The NIS concluded that, with the implementation of the specified mitigation measures, the site would not adversely affect the integrity of the relevant European Sites, either alone or in combination with other plans or projects.

Ballycurreen Wind Farm

The Ballycurreen Wind Farm Environmental Report was reviewed. The site was considered to be of low ecological value at a local level. A range of common bird species typical of farmland and associated habitats was recorded, with no species of high conservation concern identified.

Potential effects on birds included disturbance during construction and operation, loss of breeding or feeding habitat, and collision mortality. Given the low value of the improved agricultural grassland for birds, habitat loss was considered unlikely to significantly affect bird populations, a low collision risk was estimated for chough and peregrine falcon and the overall effect on birds was assessed as insignificant.

Helvick Head to Ballyquin SPA lies approximately 570m from the existing turbines. Surveys recorded no chough feeding within the wind farm site, while peregrine falcon was considered likely only to occasionally overfly the site. Collision risk for both species was considered very low and no significant effects on the SPA were predicted. Dungarvan Harbour SPA, approximately 2km from the site, was also considered. Its qualifying wintering waterbirds were considered unlikely to use or regularly cross the wind farm site, and no significant effect on the integrity or conservation objectives of the SPA was predicted.

Woodhouse Wind Farm

The Woodhouse Wind Farm Environmental Impact Statement was reviewed. The key species recorded within the site included rook, jackdaw, hooded crow, magpie, starling, woodpigeon, meadow pipit, skylark, robin, wren, blackbird, song thrush, blue tit, coal tit, long-tailed tit, goldcrest, chaffinch and bullfinch, reed bunting, moorhen and grey wagtail. No bird species of high conservation importance were recorded or considered likely to occur within the site.

Potential effects on birds were identified as habitat loss, disturbance and displacement associated with turbines, and collision mortality. The loss of the small areas of improved grassland and hedgerow was not considered significant. Some displacement of birds from areas around turbines was considered possible but was not expected to significantly affect local populations. Collision risk was considered low, with any casualties unlikely to result in population-level effects.

Dungarvan Harbour SPA, approximately 10km east of the site, was identified as the nearest important wetland for birds. The assessment found no evidence that the site was located on a regularly used migration route or route used by wintering waterfowl. Dungarvan Harbour SPA was considered sufficiently distant that no direct or indirect effects on these designated sites were predicted. Overall, impacts on birds were assessed as not significant.

Lyrenacarriga Wind Farm

The Lyrenacarriga Wind Farm EIAR was reviewed. The site is dominated by commercial conifer plantation, with areas of improved agricultural grassland and other open habitats. A range of bird species of conservation interest was recorded, including golden plover, hen harrier, peregrine, woodcock, lesser black-backed gull, buzzard, sparrowhawk, kestrel and common snipe. Golden plover and lesser black-backed gull were assessed as occurring in numbers of County Importance, while other species were considered to be of Local Importance (Higher Value).

Potential effects on birds included direct habitat loss, disturbance and displacement during construction and operation, and collision mortality. Given that much of the proposed infrastructure would be located within commercial forestry, habitat loss and displacement effects were generally considered limited, although localised effects were identified for species such as woodcock and snipe. Collision risk modelling predicted low or negligible collision effects for golden plover, hen harrier, peregrine, lesser black-backed gull, buzzard, sparrowhawk, kestrel and snipe. Following mitigation, no residual effect greater than low significance under the Percival (2003) criteria or slight under the EPA (2022) criteria was identified, and significant residual effects on ornithological receptors were not anticipated.

Blackwater Estuary SPA, approximately 3.5km from the site, was considered due to potential hydrological connectivity and the occurrence of golden plover associated with the wider area. Potential effects included collision risk and disturbance/displacement of golden plover outside the SPA, together with potential indirect effects on supporting wetland habitat. Ballymacoda Bay SPA, approximately 10.7km from the site, was also considered in relation to golden plover, black-headed gull and lesser black-backed gull, while Blackwater Callows SPA, approximately 9.9km away, was screened out as no significant pathway for effects was identified.

Scart Mountain Wind Farm

The Scart Mountain Wind Farm Natura Impact Statement was reviewed. The proposed development comprises 15 wind turbines located within a predominantly upland landscape on the southeastern side of the Knockmealdown Mountains. Species of conservation interest recorded included hen harrier, golden plover, merlin, peregrine falcon, whooper swan, lapwing, curlew, black-throated diver, cormorant, black-headed gull, herring gull, lesser black-backed gull and great black-backed gull. Up to five hen harrier territories were recorded during the 2023 and 2024 surveys, including confirmed breeding at the edge of the site, while a wintering population of golden plover was recorded in the vicinity of the site.

Potential effects on birds included collision risk, together with disturbance and displacement associated with the construction and operation of the wind farm. The assessment concluded that most of the additional bird species recorded were infrequent and were not observed flying within the potential collision height of the proposed turbines. Occasional records of peregrine falcon and merlin were noted, although no evidence of breeding peregrine was identified within the 2km survey buffer and no nesting merlin were recorded within the proposed wind farm site or 500m buffer. The assessment

concluded that the hen harrier and golden plover recorded during the surveys were not associated with populations designated within nearby SPAs. In particular, the golden plover recorded around the site were considered likely to be associated with the Lower Blackwater River wintering population, approximately 5.7km to the south-west, rather than the Dungarvan Harbour SPA population.

Dungarvan Harbour SPA, approximately 13km from the proposed project, and Blackwater Estuary SPA, approximately 16km away, were considered in relation to their wintering bird populations. The assessment concluded that there was no potential for collision risk or disturbance/displacement to their qualifying bird species because the proposed project does not contain suitable foraging or roosting habitat for these species and is outside their core foraging ranges. However, both SPAs were considered to have a potential hydrological pathway through downstream watercourses, with potential indirect effects on bird populations through deterioration in water quality and consequent effects on food resources.

Dyrick Hill Wind Farm

The Dyrick Hill Wind Farm EIAR was reviewed. The site is located within a landscape comprising farmland, forestry and upland heath, with the wider wind farm site dominated by improved agricultural grassland, wet grassland, dry acid grassland, conifer plantation, heath/grassland/bracken mosaic and dry heath. A range of bird species of conservation interest was recorded, including golden plover, hen harrier, merlin, peregrine, red kite, kestrel, lapwing, snipe, redwing, stock dove, swift, herring gull, lesser black-backed gull, meadow pipit and skylark. Golden plover, hen harrier, merlin, peregrine and red kite were assessed as very high sensitivity/international importance, while other species were assessed as high, medium or low sensitivity. Golden plover was particularly notable; with large wintering flocks recorded within the site and a core foraging and roosting area identified at Broemountain.

Potential effects on birds included direct habitat loss, disturbance and displacement during construction and operation, collision mortality and barrier effects. Habitat loss was generally considered limited in the context of the wider availability of suitable habitats, although effects were identified for species associated with woodland, open upland and wetland habitats. Greater potential effects were identified for golden plover due to the presence of its core wintering and foraging area within the site, while kestrel was also recorded frequently and considered likely to breed in the vicinity. Collision risk modelling was undertaken for 16 target species. Predicted collision rates were highest for golden plover, buzzard and kestrel, while collision risk for most other species was low or negligible. Following mitigation, the EIAR concluded that the proposed development would result in an imperceptible to slight reversible residual effect on birds at the local level, with the residual effect for golden plover also assessed as imperceptible to slight in the local context, although a moderate residual habitat-loss effect was identified locally and reduced to slight at county level.

Blackwater Callows SPA, approximately 11.4km from the site, and Dungarvan Harbour SPA, approximately 11.8km away, were considered in relation to their qualifying wintering bird populations. Blackwater Estuary SPA, approximately 19.7km away, and Mid-Waterford Coast SPA and Helvick Head to Ballyquin SPA, approximately 19.0km and 20.4km away respectively, were also considered in the ornithological assessment. Dungarvan Harbour SPA was particularly relevant to the assessment of golden plover, with the EIAR undertaking a landscape-scale assessment of potentially suitable habitat surrounding the SPA. Cumulative effects were also considered in relation to other wind farm developments, with cumulative collision risk generally assessed as negligible, except for golden plover, for which a long-term slight cumulative effect was identified; cumulative effects on kestrel remained long-term imperceptible.

Bealough Wind Farm

The Bealough Wind Farm, which comprises two turbines, was reviewed. No planning files nor impact assessment were available. Bealough Wind Farm is located within agricultural grassland. This wind

farm is over 33km from the Proposed Wind Farm, however, it is approximately 14.5km from Mid-Waterford SPA, therefore is included in the cumulative impact assessment for the KOR herring gull, which is an SCI of this SPA.

7.7.3 Cumulative Impact Assessment

During the assessment of cumulative effects on KORs, cumulative habitat loss, disturbance, displacement and collision risk associated with operational turbines were assessed. No significant cumulative effects are predicted to result from disturbance during the construction phase, given that these are short-term impacts that are unlikely to overlap temporally with other similar activities. For this reason, construction phase effects are not likely to result in significant impacts and are not considered further in the cumulative assessment. Cumulative impacts of habitat loss, displacement and collision risk during the operational phase for each species are discussed in further detail in the relevant sections below.

7.7.3.1 Landscape Level Cumulative Assessment

A Geographic Information Systems (GIS) mapping exercise was undertaken that aimed to quantify the amount of land within the wider landscape (i.e., the continuous 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 within 500m from the Proposed Turbines. This distance was chosen as Pearce-Higgins *et al.* (2009) identified significant avoidance of turbines between 250m and 500m for a range of species. It therefore follows that significant effects are unlikely at distances greater than 500m.

The GIS exercise provided the following results. The CORINE land cover data³ was used to determine the land uses within the Ornithology Cumulative Study Area. These data were simplified into four main land cover types: open habitat (agricultural, peatland, etc.), forestry (conifer plantation, woodland, etc.), urban and industrial (mineral extraction) and open marine habitat.

The total Ornithology Cumulative Study Area is 245,231ha. Of this area, 1,798ha is urban or industrial and therefore of limited value to KORs and has been omitted from the Ornithology Cumulative Study Area for this assessment. In addition, 89,822ha comprise of open marine habitat. As the cumulative impact assessment related to terrestrial wind energy developments, these open marine habitats are not directly affected by terrestrial turbines and are not considered relevant, so they have been excluded from the assessment. Therefore, the Ornithology Cumulative Study Area for this assessment is 153,611ha, of which 2,969ha (1.93% of the Ornithology Cumulative Study Area) is within 500m of a turbine (excluding the Proposed Turbines). The 500m radius of the Proposed Turbines comprises 1,161ha (0.76% of the Ornithology Cumulative Study Area). The two main land uses in the Proposed Wind Farm site are forestry habitat (678ha; including commercial and transitional ‘natural’ woodland) and open habitat (483ha; including agricultural land). Below is the breakdown of these main land uses.

- The total area of open habitat is 132,530ha (86.3% of the Ornithology Cumulative Study Area);
 - Open habitat greater than 500m from turbines (excluding the Proposed turbine layout) is 131,076ha (or 98.9% of the open habitat).
 - Open habitat greater than 500m from turbines (including the Proposed Turbine layout) is 130,593ha (or 98.5% of the open habitat).
- The total area of forestry habitat is 21,081ha (13.7% of the Ornithology Cumulative Study Area);

³ <https://land.copernicus.eu/en/products/corine-land-cover>

- Forestry habitat greater than 500m from turbines (excluding the Proposed Turbine layout) is 19,566ha (or 92.8% of the forestry habitat).
- Forestry habitat greater than 500m from turbines (including the Proposed Turbine layout) is 18,887ha (or 89.6% of the forestry habitat).
- The total area, excluding urban, industrial land and open marine habitats, within 500m of turbines (including the Proposed Turbine layout) is 4,130ha (2.69% of the Ornithology Cumulative Study Area);
 - 1,937ha is within open habitat (46.9% of the Ornithology Cumulative Study Area within 500m of turbines); and
 - 2,193ha is within forestry habitat (53.1% of the Ornithology Cumulative Study Area within 500m of turbines).

Having undertaken the above analysis of the available area within the Ornithology Cumulative Study Area the following is of note:

- The substantial majority of the Ornithology Cumulative Study Area comprises open habitat, which accounts for approximately 86% of the total area, with forestry habitat accounting for the remaining approximately 14%.
- Of the habitat occurring within 500m of existing and proposed turbines, approximately 47% comprises open habitat and 53% comprises forestry habitat.
- The density of turbines within the Ornithology Cumulative Study Area is low at the regional scale. Approximately 98.5% of open habitat and 89.6% of forestry habitat remains more than 500m from any turbine, including the Proposed Turbines.
- In total, approximately 2.69% of the Ornithology Cumulative Study Area occurs within 500m of existing and proposed turbines. The area within 500m from the Proposed Turbines alone represents approximately 0.76% of the Ornithology Cumulative Study Area.

As open habitat makes up the vast majority of the total 153,611ha within the Ornithology Cumulative Study Area, 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 several of the species encountered within 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 for a lot of species. Impacts associated with wind farms (renewable abiotic energy use) are likely of medium importance locally. As outlined in a recent NPWS report (Burke *et al.*, 2025) '*existing onshore windfarms have been considered a low-level pressure to Irish waterbirds [including golden plover] ... future expansion may increase the threat to particular species and waterbird communities at particular sites.*' Please see the following species-specific impact assessment for a detailed discussion of cumulative effects.

7.7.3.2 Cumulative Collision Risk Assessment

The table below outlines the cumulative collision risk for each of the KORs. It should be noted that the cumulative collision risk presented below represents the currently quantifiable collision risk based on the information available at the time of assessment and should not be regarded as a finite or fixed value. A number of additional permitted and proposed wind farm developments occur within the Ornithology Cumulative Study Area and, should these projects become operational, they may contribute additional collision risk where relevant species occur and flight activity overlaps with turbine rotor-swept areas.

Where sufficient information was available, a best-estimate collision risk was calculated and is presented in the table below. This was derived using collision-risk information from the nearest wind farm occurring within similar habitat and the same ecological landscape as a proxy. No quantitative collision-risk value was assigned ‘-’ and is presented in Table 7-13. There are two wind farms which did not include collision risk models within their EIS. The Ballycurreen Wind Farm assessment was based principally on breeding bird surveys undertaken in May and June 2009 and considered collision risk qualitatively, with particular consideration given to chough and peregrine falcon; no species-specific collision estimate was calculated for other species. Similarly, the Woodhouse Wind Farm assessment was informed by an ecological survey undertaken in early June 2004 and considered collision mortality qualitatively, and no species-specific collision risk was calculated. For these wind farms a best estimate was calculated and presented in the table below. A request was made to Waterford City and County Council Planning Department and Cork County Council Planning and Development Department for information on ornithological monitoring at these, but none were received. This best estimate was calculated by using the collision risk analysis from the nearest wind farm within similar habitat and in the same ecological landscape as a proxy when sufficient information allowed, because bird flight activity is likely to be very similar between these areas. At Ballycurreen Wind Farm, peregrine falcon collision risk was only assessed qualitatively so the Proposed Project was used as a proxy for Ballycurreen Wind Farm (5.92km separation distance) by estimating a proportion collision risk based on the number of turbines. For example, as the Proposed Project estimated 0.081 collisions per year for peregrine falcon across 23 turbines, the collision risk was therefore estimated to be 0.007 collisions per year for the 2 turbines within Ballycurreen Wind Farm. Similarly, Moanbrack Wind Farm was used as a proxy for golden plover, common gull, herring gull, lesser black-backed gull and buzzard for the Ballycurreen Wind Farm (300m separation distance). The Proposed Project was used as a proxy for the Woodhouse Wind Farm (4.87km separation distance). Finally, Dyrick Hill Wind Farm was as a proxy for Bealough Wind Farm (29.5km separation distance but closest wind farm available with similar habitats). Moanbrack Wind Farm, Scart Mountain Wind Farm and Dyrick Hill Wind Farm are proposed developments for which the consenting outcome remains uncertain.

Table 7-13 Cumulative Collision Risk Totals

	Proposed Project	Ballycurreen Wind Farm	Woodhouse Wind Farm	Bealough Wind Farm	Knocknamona Wind Farm	Lyrenacarriga Wind Farm	Moanbrack Wind Farm	Dyrick Hill Wind Farm	Scart Mountain Wind Farm	Cumulative annual collision risk
Golden plover	3.634	3.9 ⁴	1.264 ⁵	-	3.6 (3.3 – 3.9)	Wintering: 3.29	3.9	6.21	1.69	27.488
Black-tailed godwit	0.869	-	0.302261 ⁵	-	-	-	-	-	-	1.171261
Common gull	0.008804	0.1 ⁴	0.003062 ⁵	-	-	-	0.1	-	-	0.211866
Cormorant	0.131	-	0.045565 ⁵	-	-	-	-	-	-	0.176565
Herring gull	Breeding: 1.117	0.6 ⁴	0.388522 ⁵	0.008333 ⁶	-	-	0.6	0.05	-	2.763855
Lesser black-backed gull	0.259	0.06 ⁴	0.090087 ⁵	-	-	Wintering: 5.4	0.06	0.22	-	6.089087
White-tailed eagle	0.196	-	0.068174 ⁵	-	-	-	-	-	-	0.264174
Hen harrier	0.002	-	0.000696 ⁵	-	-	Wintering: 0.007	-	0.02	0.00383	0.033526
Peregrine falcon	0.081	0.007 ⁷	0.028174 ⁵	-	-	Wintering: 0.023	-	0.02	0.0516	0.210774
Red kite	0.0735	-	0.025565 ⁵	-	-	-	-	-	-	0.099065
Curlew	3.14	-	1.092174 ⁵	-	-	-	-	-	0.023	4.255174
Kestrel	1.86	-	0.646957 ⁵	-	0.7 (0.6 – 0.8)	0.55	-	2.72	0.464	6.940957
Snipe	0.194	-	0.067478 ⁵	-	-	0.36	-	0.13	-	0.751478

⁴ Proxy figure calculated using the Moanbrack Wind Farm collision risk figure

⁵ Proxy figure calculated using the Proposed Project collision risk figure

⁶ Proxy figure calculated using the Dyrick Hill Wind Farm collision risk figure

⁷ Proxy figure calculated from the Proposed Project collision risk figure

	Proposed Project	Ballycurreen Wind Farm	Woodhouse Wind Farm	Bealough Wind Farm	Knocknamona Wind Farm	Lyrenacarriga Wind Farm	Moanbrack Wind Farm	Dyrick Hill Wind Farm	Scart Mountain Wind Farm	Cumulative annual collision risk
Woodcock	-	-	-	-	-		-	-	0.5	0.5
Buzzard	5.839	<i>0.5⁴</i>	<i>2.030957⁵</i>	-	0.75 (0.7 – 0.8)	Breeding: 1.05	0.5	3.66	-	14.32996
Long-eared owl	-	-	-	-	-	-	-	-	-	-
Sparrowhawk	0.0802	-	<i>0.027896⁵</i>	-	0	0.038	-	0.04	-	0.186096

7.7.3.3 Golden plover

At a national level, the main threats and pressures for wintering golden plover listed in Article 12 reporting are: hunting; temperature change due to climate change; wind, wave and tidal power; sports, tourism and leisure activities; and modification to flooding regimes. All of these threats and pressures are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging and roosting golden plover. Ballycurreen, Dyrrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. Scart Mountain wind farm is partially located within bog habitats. Both of these habitats are suitable for golden plover. However, these habitats (agricultural grassland and bog habitats) are not a scarce resource in the area. Agricultural grassland in particular (which is favoured by golden plover) is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Project.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable golden plover habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species. It should be noted that golden plover are predicted to be displaced by 187m from operating turbines rather than the 500m displacement discussed within the landscape level assessment, and therefore, the displacement effect on golden plover is likely to be less than that outlined here.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on golden plover, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, given the availability of alternative suitable habitat within the wider cumulative assessment area, significant cumulative effects associated with habitat loss or displacement are not anticipated. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for golden plover is 23.854 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Project. It should be noted that collision risk was estimated for some wind farms. Therefore, this value represents a best estimate component rather than a finite cumulative total. Given the estimated regional population of golden plover is 6,668 birds and the annual mortality of adult golden plover has been calculated at 27% per year (Sandercock, 2003), the loss of 23.854 birds per year would result in an increase in the annual mortality of the regional population of approximately 1.32%.

If the 3.634 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 27.488 birds per year, resulting in an increase in the annual mortality of the regional population of approximately 1.53%. The Proposed Wind Farm therefore results in an additional increase in background annual mortality of approximately 0.20%, which represents a negligible contribution under the Percival criteria. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for golden plover.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on golden plover are considered to be influenced primarily by the broader effects of commercial forestry and agricultural practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk.

Significant changes to the baseline cumulative impacts are not predicted.

7.7.3.4 Black-tailed godwit

At a national level, the main threats and pressures for wintering black-tailed godwit listed in Article 12 reporting are: sports, tourism and other leisure activities; other impacts from marine aquaculture, including infrastructure; wind, wave and tidal power, including infrastructure; modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures); and sea-level and wave exposure changes due to climate change. All of these threats and pressures are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

Black-tailed godwit were not observed using habitats within the Proposed Wind Farm. Birds were irregularly observed travelling over the Proposed Wind Farm. No significant cumulative habitat loss effects are predicted given that this species prefers coastal habitats that are not within 500m of any turbine within the Ornithology Cumulative Study Area for roosting and/or foraging.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable black-tailed godwit habitat (open habitat) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology

Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on black-tailed godwit, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable black-tailed godwit habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for black-tailed godwit is 0.30226 bird per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore this value represents a best estimate rather than finite cumulative total.

If the 0.869 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk is 1.17126 birds per year. This represents a low level of collision mortality and no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for black-tailed godwit.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on black-tailed godwit are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on black-tailed godwit are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.5 Common gull

At a national level, the main threats and pressures for common gull listed in Article 12 reporting are: intensive grazing or overgrazing by livestock; other invasive alien species; problematic native species;

and wind, wave and tidal power, including infrastructure. All of these threats and pressures are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging and roosting common gull. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. However, this habitat is not a scarce resource in the area. It is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable common gull habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on common gull, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable common gull habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for common gull is 0.203062 birds per year from the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represent a best estimate rather than a finite cumulative total.

If the 0.008804 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk is 0.211866 birds per year. This represents a low level of additional collision mortality and no significant cumulative collision risk effects are anticipated. The

Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for common gull.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on common gull are considered to be influenced primarily by the broader effects of agricultural practices and other pressures on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk.

Significant cumulative impacts are not predicted.

7.7.3.6 Cormorant

At a national level, the main threats and pressures for breeding cormorant listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure; bycatch and incidental killing (due to fishing and hunting activities) which are of high importance; and sports, tourism and leisure activities; illegal shooting/ killing; mixed source marine water pollution (marine and coastal); desynchronisation of biological/ ecological processes due to climate change; and decline or extinction of related species (e.g. food source/ prey, predator/ parasite, symbiote, etc. due to climate change. All of these threats and pressures are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

Cormorant were not observed using habitats within the Proposed Wind Farm site. Birds were irregularly observed travelling over the Proposed Wind Farm site. No significant cumulative habitat loss effects are predicted given that this species does not use habitats within 500m of any turbine within the Ornithology Cumulative Study Area for roosting and/or foraging.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable cormorant habitat (open habitat) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm site, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on cormorant, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable cormorant habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for cormorant is 0.045565 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.131 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk is 0.176565 birds per year. This represents a low level of additional collision mortality and no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for cormorant.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on cormorant are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on cormorant are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.7 Herring gull

At a national level, the main threats and pressures for wintering herring gull listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure, residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) and other invasive alien species. Wind, wave and tidal power are listed as of high importance while the remainder are listed as of medium importance. The main threats and pressures for breeding herring gull listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure which are of high importance; and residential or recreational activities and structures generating marine macro- and micro-particulate pollution; industrial or commercial activities and structures generating marine macro- and micro-particulate pollution; and other invasive alien species which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging and roosting herring gull. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. However, this habitat is not a scarce resource in the area. It is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

For the purposes of the landscape-level cumulative assessment for herring gull, the Ornithology Cumulative Study Area was extended to include the area within 14.9km of the Mid-Waterford Coast SPA, representing the identified foraging range of herring gull and allowing Bealough Wind Farm to be included in the assessment. This extension comprises 77,774ha, of which 3,317ha is urban or industrial land and therefore considered of limited value to herring gull. A further 35,208ha comprises open marine habitat and, as the cumulative assessment relates to terrestrial wind energy developments, has also been excluded. The resulting extension is therefore 39,248ha, comprising 36,895ha of open habitat and 2,353ha of forestry habitat. Of this additional area, 88ha (0.22%) is located within 500m of a turbine, comprising 43ha of open habitat and 45ha of forestry habitat.

When combined with the original Ornithology Cumulative Study Area, the species-specific herring gull Ornithology Cumulative Study Area comprises 192,859ha. The principal terrestrial habitats within this area are distributed as follows:

- The total area of open habitat is 169,425ha (87.8% of the herring gull Ornithology Cumulative Study Area).
 - Open habitat located more than 500m from turbines, excluding the Proposed Turbine layout, comprises 167,928ha (99.1% of the open habitat).
 - Open habitat located more than 500m from turbines, including the Proposed Turbine layout, comprises 167,445ha (98.8% of the open habitat).
- The total area of forestry habitat is 23,434ha (12.2% of the herring gull Ornithology Cumulative Study Area).
 - Forestry habitat located more than 500m from turbines, excluding the Proposed Turbine layout, comprises 21,874ha (93.3% of the forestry habitat).
 - Forestry habitat located more than 500m from turbines, including the Proposed Turbine layout, comprises 21,196ha (90.4% of the forestry habitat).

The total area within 500m of turbines, including the Proposed Turbine layout, is 4,218ha (2.19% of the herring gull Ornithology Cumulative Study Area). Of this:

- 1,980ha comprises open habitat (46.9% of the area within 500m of turbines); and
- 2,238ha comprises forestry habitat (53.1% of the area within 500m of turbines).

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 167,928ha of potentially suitable herring gull habitat (open habitat, including agricultural land) greater than 500m from a turbine in the herring gull Ornithology Cumulative Study Area. In the same herring gull Ornithology Cumulative Study Area, there are 21,196ha of forestry greater than 500m from cumulative wind farm turbines and the Proposed Turbines. This species is an

open habitat species that does not use forestry; therefore, there are 167,928ha of available suitable habitat. Within the Proposed Wind Farm, there are 1,161ha within 500m of the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) within 500m of a turbine. The total available habitat for this species within 500m of the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.29% loss of the remaining habitat greater than 500m from a turbine (167,928ha) within the herring gull Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 167,445ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on herring gull, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable herring gull habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for herring gull is 1.647 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 1.117 potential collisions per year associated with the Proposed Wind Farm during the breeding season are included, the currently quantifiable cumulative collision risk increases to 2.764 birds per year. This represents a low level of additional collision mortality and no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for herring gull.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on herring gull are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on herring gull are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.8 Lesser black-backed gull

At a national level, wind, wave and tidal power are listed as the key pressure to wintering lesser black-backed gull, which is of medium importance. There are no key threats listed for this species. The plans

and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging and roosting lesser black-backed gull. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. However, this habitat is not a scarce resource in the area. It is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable lesser black-backed gull habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m of them from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m of them from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on lesser black-backed gull, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable lesser black-backed gull habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for lesser black-backed gull is 5.830087 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm, . It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.259 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 6.089087 birds per year. The Proposed Wind Farm therefore contributes an additional 0.259 birds per year, equivalent to an increase of

approximately 4.44% over the currently quantifiable baseline collision risk. This represents a small additional contribution, and the Proposed Wind Farm is not predicted to significantly increase the baseline cumulative collision risk for lesser black-backed gull.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on lesser black-backed gull are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on lesser black-backed gull are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.9 White-tailed eagle

At a national level, the main threats and pressures for breeding white-tailed eagle listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure which are of high importance; and agricultural activities generating diffuse pollution to surface or ground waters; sports, tourism and leisure activities; wood transport; transmission of electricity and communications (cables); plant and animal diseases, pathogens and pests; increases or changes in precipitation due to climate change; removal of old trees (excluding dead or dying trees); clear-cutting, removal of all trees; reduced fecundity/genetic depression (e.g. inbreeding or endogamy); and increases or changes in precipitation due to climate change; which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

White-tailed eagle were irregularly observed using habitats within the Proposed Wind Farm. Birds were observed travelling over the Proposed Wind Farm. No significant cumulative habitat loss effects are predicted given that this species does not use habitats within 500m of any turbine within the Ornithology Cumulative Study Area for roosting and/or foraging.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable white-tailed eagle habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on white-tailed eagle, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable white-tailed eagle habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for white-tailed eagle is 0.06817 birds per years across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should also be noted that no other wind farms are located within 5km from the known white-tailed eagle nest. It should also be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.196 potential collision per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 0.264174 birds per year. Given the absence of other wind farms within 5km from the known nest, no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for white-tailed eagle.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. A known white-tailed eagle nest is present within the wider landscape; however, it is located more than 5km from the Proposed Project, and no other wind farms are located within 5km from the nest. This spatial separation substantially limits the potential for cumulative effects associated with the known breeding location. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on white-tailed eagle are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on white-tailed eagle are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.10 Hen harrier

At a national level, the main threats and pressures for wintering hen harrier listed in Article 12 reporting are: conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production; conversion to forest from other land uses, or afforestation (excluding drainage); and drainage for use as agricultural land; which are of high importance. Wind, wave and tidal power, including infrastructure; conversion to forest from other land uses, or afforestation (excluding drainage); reseeded of grasslands and other semi-natural habitats; use of plant protection chemicals in agriculture; and tillage practices (e.g. ploughing) in agriculture; conversion from one type of agricultural land use to another (excluding drainage and burning); which are of medium importance. With regards to breeding hen harrier, the main threats and pressures listed are conversion to forest from other land uses, or

afforestation (excluding drainage); and replanting with or introducing non-native or non-typical species (including new species and GMOs); which are of high importance. Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.); wind, wave and tidal power, including infrastructure; reseeding of grasslands and other semi-natural habitats; conversion from one type of agricultural land use to another (excluding drainage and burning); abandonment of management/use of other agricultural and agroforestry systems (all except grassland); problematic native species; wood transport; and burning for agriculture; which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging hen harrier. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. Scart Mountain wind farm is partially located within bog habitats which is suitable for roosting and foraging hen harrier. Both of these habitats are suitable for foraging and roosting hen harrier. However, these habitats (agricultural grassland and bog habitats) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable hen harrier wintering habitat (agricultural land and open peatland) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 19,566ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use mature forestry; however, clear-fell and recently planted forestry can provide suitable foraging habitat for hen harrier. Therefore, for the purposes of this landscape-level calculation, one quarter of the available forestry habitat (4,892ha) has been included as potentially suitable habitat. While it is acknowledged that not all agricultural land or forestry is suitable for wintering hen harrier, the majority of the open habitat will be suitable for either foraging or roosting hen harrier in some capacity. Therefore, there is approximately 135,968ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) and 678ha of which is forestry. Applying the same assumption that one quarter of forestry is potentially suitable for hen harrier, approximately 170ha of the forestry within 500m from the Proposed Turbines is considered suitable habitat. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore approximately 653ha, which represents a 0.48% loss of the remaining habitat greater than 500m from a turbine (135,968ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining approximately 135,315ha continues to constitute a significant amount of suitable habitat for this species. It should be noted that hen harrier are predicted to be displaced by 250m from operating turbines (Pearce-Higgins *et al.*, 2009) rather than the 500m displacement discussed within the landscape level assessment, and therefore, the displacement effect on hen harrier are likely to be less than that outlined here.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on hen harrier, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss

or degradation of suitable hen harrier habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for hen harrier is 0.031526 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.002 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 0.033526 birds per year. The Proposed Wind Farm therefore contributes an additional 0.002 birds per year to the currently quantifiable cumulative collision risk. Given the very low absolute level of predicted additional collision mortality, the Proposed Wind Farm is not predicted to significantly increase the baseline cumulative collision risk for hen harrier.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on hen harrier are considered to be influenced primarily by the broader effects of commercial forestry and agricultural practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on hen harrier are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.11 Peregrine falcon

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 plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging peregrine falcon. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. Scart Mountain wind farm is partially located within bog habitats. Both of these habitats are suitable for foraging peregrine falcon. However, these habitats (agricultural grassland and bog habitats) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the

potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable peregrine habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on peregrine, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable peregrine habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for peregrine falcon is 0.129774 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Project. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.081 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 0.210774 birds per year. The Proposed Project therefore contributes an additional 0.081 birds per year to the currently quantifiable cumulative collision risk. Given the low absolute level of predicted additional collision mortality, the Proposed Wind Farm is not predicted to significantly increase the baseline cumulative collision risk for peregrine falcon.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on peregrine falcon is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on peregrine falcon are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have

been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on peregrine falcon are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.12 Red kite

At a national level, the main threats and pressures for breeding red kite listed in Article 12 reporting are: removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.); use of plant protection chemicals in agriculture; wind, wave and tidal power, including infrastructure; transmission of electricity and communications (cables); and roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels); which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

Red kite were not observed using habitats within the Proposed Wind Farm. Birds were irregularly observed travelling and soaring over the Proposed Wind Farm. No significant cumulative habitat loss effects are predicted given that this species does not use habitats within 500m of any turbine within the Ornithology Cumulative Study Area for roosting and/or foraging.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable red kite habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on red kite, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable red kite habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable collision risk for red kite is 0.025565 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed

Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.0735 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk is 0.099065 birds per year. This represents a low level of additional collision mortality and no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for red kite.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on red kite is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on red kite are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on red kite are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.13 Curlew

At a national level, the main threats and pressures for wintering curlew listed in Article 12 reporting are: sports, tourism and leisure activities; marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species; other impacts from marine aquaculture, including infrastructure; wind, wave and tidal power, including infrastructure; modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures); which are of medium importance. With regards to breeding curlew, the main threats and pressures are mowing or cutting of grasslands; conversion to forest from other land uses, or afforestation (excluding drainage); problematic native species; other invasive alien species; drainage for use as agricultural land; which are of high importance. Conversion from one type of agricultural land use to another (excluding drainage and burning); abandonment of grassland management (e.g. cessation of grazing or mowing); burning for agriculture; peat extraction; and wind, wave and tidal power, including infrastructure are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for foraging curlew. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. However, this habitat is not a scarce resource in the area. It is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 131,076ha of potentially suitable curlew habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on curlew, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable curlew habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for curlew is 1.115174 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 3.14 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk is 4.255174 birds per year. This represents an additional 3.14 birds per year associated with the Proposed Project and no significant cumulative collision risk effects are anticipated. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for curlew.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on curlew is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on curlew are considered to be influenced primarily by the broader pressures affecting the species and its supporting habitats, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on curlew are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.14 Kestrel

At a national level, the main threats and pressures for breeding kestrel listed in Article 12 reporting are: use of plant protection chemicals in agriculture; interspecific relations (competition, predation, parasitism, pathogens); conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production; and removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.). All of these threats and pressures are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains open agricultural grassland habitats that are suitable for foraging kestrel and scrub/woodland suitable for breeding kestrel. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack, Scart Mountain and Woodhouse wind farms are located, within or partially within agricultural habitats and woodland. Both of these habitats are suitable for kestrel for foraging or breeding. However, these habitats (agricultural grassland and woodland) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

At a landscape level, kestrel is a habitat generalist that will utilise the majority of habitats to varying degrees. The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 150,642ha of potentially suitable kestrel habitat (open agricultural land for foraging, and forestry/woodland for breeding) greater than 500m from a turbine in the Ornithology Cumulative Study Area. Within the Proposed Wind Farm, the total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from cumulative wind farm turbines, is 1,161ha, which represents a 0.77% loss of the remaining habitat greater than 500m from a turbine (150,642ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 149,481ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on kestrel, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable kestrel habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for kestrel is 5.080957 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 1.86 potential collisions per year associated with the Proposed Project are included, the currently quantifiable cumulative collision risk increases to 6.940957 birds per year. The Proposed Wind Farm therefore contributes an additional 1.86 birds per year to the currently quantifiable cumulative collision risk. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for kestrel.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on kestrel is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on kestrel are considered to be influenced primarily by the broader effects of agricultural and forestry practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on kestrel are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.15 Snipe

At a national level, the main threats and pressures for breeding snipe listed in Article 12 reporting are: mowing or cutting of grasslands; intensive grazing or overgrazing by livestock; conversion to forest from other land uses, or afforestation (excluding drainage); other invasive alien species; and problematic native species; which are of high importance. Conversion from one type of agricultural land use to another (excluding drainage and burning); abandonment of grassland management (e.g. cessation of grazing or mowing); drainage for use as agricultural land; peat extraction; and wind, wave and tidal power, including infrastructure are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains agricultural grassland habitats that are suitable for snipe. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack and Woodhouse wind farms are located, within or partially within agricultural habitats. Scart Mountain wind farm is partially located within bog habitats. Both of these habitats are suitable for snipe. However, these habitats (agricultural grassland and bog habitats) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Project, there are 131,076ha of potentially suitable snipe habitat (open habitat, including agricultural land) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 18,887ha of forestry greater than 500m from a cumulative wind farm turbine and Proposed Turbines. This species is an open habitat species that does not use forestry, therefore there is 131,076ha of available suitable habitat. Within the Proposed Project, there is 1,161ha within 500m from the Proposed Turbines, 483ha of which is suitable open habitat (agricultural land and open peatland) which is within 500m of a turbine. The total available habitat for

this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 483ha, which represents a 0.37% loss of the remaining habitat greater than 500m from a turbine (131,076ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 130,593ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on snipe, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable snipe habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for snipe is 0.557478 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Project.. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.194 potential collisions per year associated with the Proposed Project are included, the currently quantifiable cumulative collision risk increases to 0.751478 birds per year. The Proposed Project therefore contributes an additional 0.194 birds per year to the currently quantifiable cumulative collision risk. The Proposed Project is therefore not predicted to significantly increase the baseline cumulative collision risk for snipe.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on snipe is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on snipe are considered to be influenced primarily by the broader effects of agricultural and forestry practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on snipe are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.16 Woodcock

At a national level, the main threats and pressures for breeding woodcock listed in Article 12 reporting are: logging without replanting or natural regrowth; clear-cutting, removal of all trees; other human intrusions and disturbance; abandonment of traditional forest management; interspecific relations (competition, predation, parasitism, pathogens); problematic native species; abandonment of grassland management (e.g. cessation of winter grazing or mowing); removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees,

etc.); and hunting; which are all of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains scrub and woodland habitats which are suitable for breeding woodcock. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack, Scart Mountain and Woodhouse wind farms are located, within or partially within scrub/woodland habitats, which are suitable for breeding woodcock. However, these habitats are not a scarce resource in the area. Commercial forestry in particular is abundant within the Ornithology Cumulative Study Area. This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 19,566ha of potentially suitable woodcock habitat (forestry habitat, including commercial and transitional 'natural' woodland) greater than 500m from a turbine in the Ornithology Cumulative Study Area. In the same Ornithology Cumulative Study Area, there are 131,076ha of open habitat greater than 500m from a cumulative wind farm turbine. This species is a forestry habitat species, therefore there is 19,566ha of available suitable habitat. Within the Proposed Wind Farm, there is 1,161ha within 500m from the Proposed Turbines, 678ha of which is suitable forestry habitat which is within 500m of a turbine. The total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from other turbines, is therefore 678ha, which represents a 3.5% loss of the remaining habitat greater than 500m from a turbine (19,566ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 18,888ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on woodcock, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable woodcock habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for woodcock is 0.5 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total. No significant cumulative collision risk effects are anticipated based on the available information.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on woodcock is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss,

displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on woodcock are considered to be influenced primarily by the broader effects of commercial forestry and forestry management practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on woodcock are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.17 Buzzard

At a national level, the main threats and pressures for breeding buzzard listed in Article 12 reporting are: abandonment of grassland management (e.g. cessation of grazing or mowing); poisoning of animals (excluding lead poisoning); illegal shooting/ killing; and wind, wave and tidal power, including infrastructure; which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains open agricultural grassland habitats that are suitable for foraging buzzard and scrub/woodland suitable for breeding buzzard. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack, Scart Mountain and Woodhouse wind farms are located, within or partially within agricultural habitats and woodland. Both of these habitats are suitable for kestrel for foraging or breeding. However, these habitats (agricultural grassland and woodland) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

At a landscape level, buzzard is a habitat generalist that will utilise the majority of habitats to varying degrees. The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 150,642ha of potentially suitable buzzard habitat (open agricultural land for foraging, and forestry/woodland for breeding and foraging) greater than 500m from a turbine in the Ornithology Cumulative Study Area. Within the Proposed Wind Farm, the total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from cumulative wind farm turbines, is 1,161ha, which represents a 0.77% loss of the remaining habitat greater than 500m from a turbine (150,642ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 149,481ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on buzzard, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable buzzard habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments,

significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for buzzard is 8.490967 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 5.839 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 14.329967 birds per year. The Proposed Wind Farm therefore contributes an additional 5.839 birds per year to the currently quantifiable cumulative collision risk. The Proposed Wind Farm is therefore not predicted to significantly increase the baseline cumulative collision risk for buzzard considering the species is widespread.

Cumulative summary

Therefore, in this landscape, the cumulative effects of habitat loss, disturbance/displacement and collision risk associated with the Proposed Project are not considered significant. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on buzzard are considered to be influenced by the broader effects of commercial forestry and agricultural practices on habitat availability and quality, together with the collision risk associated with wind farm development. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on buzzard are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.18 Long-eared owl

At a national level, the main threats and pressures for breeding long-eared owl listed in Article 12 reporting are: roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels); use of plant protection chemicals in agriculture; removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.); replanting with or introducing non-native or non-typical species (including new species and GMOs); and clear-cutting, removal of all trees; which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains open agricultural grassland habitats that are suitable for foraging long-eared owl and scrub/woodland suitable for breeding long-eared owl. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack, Scart Mountain and Woodhouse wind farms are located, within or partially within agricultural habitats and woodland. Both of these habitats are suitable for kestrel for foraging or breeding. However, these habitats (agricultural grassland and woodland) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Wind Farm.

Landscape-level analysis

At a landscape level, long-eared owl is a habitat generalist that will utilise the majority of habitats to varying degrees. The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 150,642ha of potentially suitable long-eared owl habitat (open agricultural land for foraging, and forestry/woodland for breeding and roosting) greater than 500m from a turbine in the Ornithology Cumulative Study Area. Within the Proposed Wind Farm, the total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from cumulative wind farm turbines, is 1,161ha, which represents a 0.77% loss of the remaining habitat greater than 500m from a turbine (150,642ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 149,481ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on long-eared owl, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable long-eared owl habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, there is no quantified cumulative collision risk for long-eared owl across the wind farms within the Ornithology Cumulative Study Area, as no numerical collision mortality values were available for this species. It is noted that collision risk values were not available for several existing wind farms, and therefore the absence of a quantified cumulative value should not be interpreted as representing zero collision risk. No significant cumulative collision risk effects are anticipated based on the available information.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on long-eared owl is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on long-eared owl are considered to be influenced primarily by the broader effects of forestry and agricultural practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on long-eared owl are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.7.3.19 Sparrowhawk

At a national level, the main threats and pressures for breeding sparrowhawk listed in Article 12 reporting are: removal of small landscape features for agricultural land parcel consolidation (hedges,

stone walls, rushes, open ditches, springs, solitary trees, etc.); conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production; and use of plant protection chemicals in agriculture; which are of medium importance. The plans and projects which relate to these threats and pressures have been considered within this cumulative assessment.

Cumulative habitat review

The Proposed Wind Farm contains open agricultural grassland habitats that are suitable for foraging sparrowhawk and scrub/woodland suitable for breeding sparrowhawk. Ballycurreen, Dyrick Hill, Knocknamona, Lyrenacarriga, Moanbrack, Scart Mountain and Woodhouse wind farms are located, within or partially within agricultural habitats and woodland. Both of these habitats are suitable for kestrel for foraging or breeding. However, these habitats (agricultural grassland and woodland) are not a scarce resource in the area. Agricultural grassland in particular is abundant locally and is one of the most abundant habitat types within the Ornithology Cumulative Study Area (and at a national level). This abundance limits the potential for significant habitat loss effects to result on an individual project basis or cumulatively. No significant residual (habitat loss) effects are predicted to result from the Proposed Project.

Landscape-level analysis

At a landscape level, sparrowhawk is a habitat generalist that will utilise the majority of habitats to varying degrees. The results of the landscape-level analysis provide the following information: excluding the Proposed Wind Farm, there are 150,642ha of potentially suitable sparrowhawk habitat (agricultural land and open peatland for foraging, and forestry/woodland for breeding and foraging) greater than 500m from a turbine in the Ornithology Cumulative Study Area. Within the Proposed Wind Farm, the total available habitat for this species within 500m from the Proposed Turbines, but greater than 500m from cumulative wind farm turbines, is 1,161ha, which represents a 0.77% loss of the remaining habitat greater than 500m from a turbine (150,642ha) within the Ornithology Cumulative Study Area. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 149,481ha continues to constitute a significant amount of suitable habitat for this species.

Cumulative impacts of other developments

With regard to the cumulative impact of other large-scale developments relating to the key threats and pressures on sparrowhawk, the identified developments within the Ornithology Cumulative Study Area comprise two solar energy developments and two residential/mixed-use developments. Although the solar developments will result in land-use change, significant cumulative effects associated with the loss or degradation of suitable sparrowhawk habitat are not anticipated given their distance from the Proposed Wind Farm. Similarly, given the nature and scale of the residential and mixed-use developments, significant cumulative effects arising from increased human activity, disturbance or recreational pressure are not anticipated. Therefore, significant cumulative effects are not anticipated.

Cumulative collision risk

As outlined in Table 7-13, the currently quantifiable cumulative collision risk for sparrowhawk is 0.105898 birds per year across the other wind farms within the Ornithology Cumulative Study Area, excluding the Proposed Wind Farm. It should be noted that collision risk was estimated for several wind farms and therefore the value presented represents a best estimate rather than a finite cumulative total.

If the 0.0802 potential collisions per year associated with the Proposed Wind Farm are included, the currently quantifiable cumulative collision risk increases to 0.186098 birds per year. The Proposed Wind Farm therefore contributes an additional 0.0802 birds per year to the currently quantifiable

cumulative collision risk. The Proposed Project is therefore not predicted to significantly increase the baseline cumulative collision risk for sparrowhawk.

Cumulative summary

Therefore, in this landscape, the contribution of the Proposed Project to cumulative habitat loss, disturbance/displacement and collision risk effects on sparrowhawk is considered to be limited. Furthermore, where assessments were available, no significant residual effects of habitat loss, displacement or collision risk were reported for the other wind farms. Taking into consideration the above reported effects and the predicted effects associated with the Proposed Project, cumulative effects on sparrowhawk are considered to be influenced primarily by the broader effects of forestry and agricultural practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Proposed Project. No significant residual additive, antagonistic or synergistic cumulative effects have been identified with regard to habitat loss, displacement/barrier effects or collision risk. No significant impacts on sparrowhawk are anticipated at the county, national or international scale.

Significant cumulative impacts are not predicted.

7.8 Monitoring

7.8.1 Construction Phase

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

7.8.2 Operational Phase

A Bird Monitoring and Mitigation Plan with the objective of monitoring the response of the ornithological community at the Proposed Wind Farm to the operating turbines and implementing adaptive mitigation has been prepared. This is presented fully in Appendix 7-7. It includes for vantage point surveys, collision monitoring and breeding woodcock surveys, as well as fallen animal removal

7.8.3 Decommissioning Phase

A Bird Monitoring and Mitigation Plan with the objective of monitoring the ornithological community at the Proposed Wind Farm during decommissioning works has been prepared. This is presented fully in Appendix 7-7.

7.8.4 Data Sharing

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

7.9

Conclusion

Following consideration of the residual effects (post-mitigation), it is concluded that the Proposed Project will not result in any significant effects on any of the identified KORs. No significant effects on receptors of International, National or County Importance were identified. Provided that the Proposed Project is constructed, operated and decommissioned in accordance with the design, best practice mitigation and enhancement 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 7-14 for a summary of all identified impacts for the Proposed Project relating to birds.

Table 7-14 EIA Classification Table

Species	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
Golden plover	Direct Habitat Loss: Likely long-term slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Black-tailed godwit	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Common gull	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Cormorant	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Herring gull	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely long-term constant slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)

Lesser black-backed gull	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
White-tailed eagle	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term imperceptible negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight (EPA, 2022), following mitigation.	Not Significant (residual)
Hen harrier	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Peregrine falcon	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Red kite	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term imperceptible negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Curlew	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Kestrel	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Snipe	Direct Habitat Loss: Likely long-term constant slight negative effect Disturbance: Likely short-term slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Woodcock	Direct Habitat Loss: Likely long-term constant slight negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)

	Disturbance: Likely short-term slight negative effect			
Buzzard	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term imperceptible negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Long-eared owl	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term imperceptible negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Sparrowhawk	Direct Habitat Loss: Likely long-term constant imperceptible negative effect Disturbance: Likely short-term constant imperceptible negative effect	Sections 7.6.1–7.6.3; 7.8.1	No effect greater than Slight.	Not Significant (residual)
Operational Phase				
Golden plover	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Black-tailed godwit	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Common gull	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)

	Collision Risk: Likely long-term constant slight negative effect			
Cormorant	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Herring gull	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Lesser black-backed gull	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
White-tailed eagle	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Before mitigation – likely long-term constant very significant negative effect.	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight (EPA, 2022), following mitigation.	Not Significant (residual)
Hen harrier	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)

Peregrine falcon	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Red kite	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Curlew	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Kestrel	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term constant slight negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Snipe	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant slight negative effect Collision Risk: Likely long-term imperceptible negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Woodcock	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)

	constant slight negative effect Collision Risk: No Effect			
Buzzard	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Long-eared owl	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: No Effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Sparrowhawk	Direct Habitat Loss: No Effect Displacement and Barrier Effect: Likely long-term constant imperceptible negative effect Collision Risk: Likely long-term constant imperceptible negative effect	Sections 7.6.1, 7.6.3, 7.8.2	No effect greater than Slight.	Not Significant (residual)
Decommissioning Phase				
Golden plover	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Black-tailed godwit	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Common gull	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Cormorant	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)

Herring gull	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Lesser black-backed gull	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
White-tailed eagle	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight (EPA, 2022), following mitigation.	Not Significant (residual)
Hen harrier	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Peregrine falcon	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Red kite	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Curlew	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Kestrel	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Snipe	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Woodcock	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Buzzard	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)

Long-eared owl	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)
Sparrowhawk	Direct Habitat Loss: No Effect Disturbance: As above for the construction phase.	Sections 7.6 and 7.8.3	No effect greater than Slight.	Not Significant (residual)