

7.

ORNITHOLOGY

7.1

Introduction

This chapter assesses the likely significant impacts of the prospective Meenbog Wind Farm development on ornithological receptors. Particular attention has been paid to bird species with national and international protection under the Irish Wildlife Acts (as amended) and the European Union (EU) Birds Directive (2009/147/EC). Where potential impacts on ornithological receptors are identified, mitigation is described and the residual effects are assessed.

As detailed in Section 1.1.1 in Chapter 1 of this EIAR, the various development components are described and assessed using the following references: 'Subject Development', 'Existing Development', 'Prospective Development', 'Permitted Development', 'Site', 'Wind Farm Site', 'Grid Connection Site', 'BMEP Site', 'Grid Connection', 'November 2020 Peat Slide', '2017 EIAR' and 'proposed turbines' or 'proposed turbine locations'. The following additional definitions are used in this chapter:

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

This chapter is structured as follows:

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

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

- **Appendix 7-1** contains details of survey effort, including all survey dates, times and weather conditions, and maps of the survey locations.
- **Appendix 7-2** contains a list of all bird species recorded during surveys.
- **Appendix 7-3** presents a summary of bird records from surveys.
- **Appendix 7-4** contains the raw survey data and maps.

- **Appendix 7-5** contains any ecologically sensitive raw survey data and maps, such as important breeding or resting locations.
- **Appendix 7-6** provides the methodology and results of the collision risk assessment.
- **Appendix 7-7** presents the proposed Bird Monitoring Programme.

7.1.1 Description of the Prospective Development

A full description of the Prospective Development is provided in Chapter 4 of this EIAR. In brief, the Prospective Development refers to all works necessary to complete construction, operate, and ultimately decommission the Meenbog Wind Farm. Permission is sought for a project consisting of the erection of 19 no. proposed turbines and the associated works. The proposed turbines will be 90m at hub height, with 3 blades of a diameter of 133m, giving a maximum blade tip height of 156.5 and a minimum rotor height of 23.5m. The wind turbine layout is dictated by the infrastructure already in place, i.e. the Existing Development which includes 18 no. completed and partially completed wind turbine foundations and 18 no. completed or partially completed hardstand areas. One hardstand and turbine foundation area, at T7 requires full construction. The Prospective Development will have an operational life of 25 years from the date of full commissioning of the wind farm.

7.1.2 Legislation, Guidance and Policy Context

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

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

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

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

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

- SNH (2009). Monitoring the impact of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2025-05/guidance-note-monitoring-the-impact-of-onshore-windfarms-on-birds.pdf>
- SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf>
- SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland.
- NatureScot (2024). Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms>
- NatureScot (2025). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland. Available at: <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>

- NatureScot (2025a). Assessing the cumulative impacts of onshore wind farms on birds. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds>
- NatureScot (2025b). Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas. NatureScot, Inverness, Scotland. Available at: <https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect>

The following Irish guidance documents were also consulted:

- Percival, S.M. (2003). Birds and wind farms in Ireland: A review of potential issues and impact assessment. Ecology Consulting, Durham, UK. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Percival_2003.pdf [Accessed 06/01/2026]
- 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 [Accessed 06/01/2026]
- 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/> [Accessed 06/01/2026]

Furthermore, this assessment has been prepared with respect to the various planning policies and strategy guidance documents listed below and as detailed in Section 1.2 in Chapter 1 of this EIAR:

- European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites. Publications Office of the European Union, Luxembourg.
- European Commission (2020). Guidance document on wind energy developments and EU nature legislation. Publications Office of the European Union, Luxembourg.
- Planning and Development Acts 2000 (as amended).
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority, Ireland.
- EPA (2022). Guidelines on the information to be contained in Environmental Impact Statement reports. Environmental Protection Agency, Johnstown Castle Estate, Wexford.
- DoHPLG (2018). Guidelines for planning authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government, Government of Ireland, Dublin.
- County Donegal Development Plan 2024-2030 (2024). Donegal County Council.
- Department of the Environment, Heritage and Local Government (2006). Wind Energy Development Guidelines for Planning Authorities. Department of the Environment, Heritage and Local Government, Government of Ireland, Dublin.

7.1.3 Statement of Authority

This chapter has been prepared by Katy Beckett (M.Sc.), Project Ecologist of MKO, and Susan Doyle (Ph.D.), Senior Ornithologist, and reviewed by Pdraig Cregg (M.Sc.), Principal Ornithologist. All are suitably qualified ecologists and ornithologists with experience in completing avifaunal assessments and competent experts for the purposes of the preparation of this EIAR. This chapter was peer-reviewed by Tom Gittings (Ph.D., MCIEEM; see Appendix 7-8).

Katy has over two and a half years' experience in ecological consultancy, undertaking Appropriate Assessment Screening Reports and Natura Impact Statements, Ecological Impact Assessments and EIAR chapters, and Biodiversity Management and Enhancement Plans. She has extensive experience in bird surveying for a range of developments including wind farms, greenways, amenity projects and masterplans, following best-practice guidance methodologies. She has gained further experience in bird

surveying through her involvement with the British Trust for Ornithology and BirdWatch Ireland Countryside Bird Survey and Irish Wetland Bird Surveys.

Susan has seven years' experience in ecological consultancy and specialises in ornithological consulting, including Environmental Impact Assessments and operational monitoring. In addition to consultancy, Susan gained experience through her involvement in several bird conservation projects, including protected seabirds, waders and waterfowl, as well as research into Arctic birds, satellite telemetry in migrant birds, breeding hen harrier and avian diseases in Ireland, providing her with extensive experience in a wide variety of bird survey methods, data management and reporting.

Padraig has over thirteen years' experience of working in environmental consultancies. In his role with MKO, he acts as technical advisor for the ornithology team helping to take projects through their full lifecycle, from site selection through survey design, constraints studies, impact assessment and lodgement of the planning application. He is responsible for training the ornithology team and undertakes to keep up-to-date and keep his colleagues updated on all emerging guidance, legislation, policies, initiatives, industry best practice and emerging trends and market opportunities.

The scope of works and survey methodology was devised by Padraig Cregg and is fully compliant with recent NatureScot guidance (SNH, 2017), which was revised in NatureScot (2025). Field surveys were undertaken by Andrew O'Donoghue (B.Sc.), Cillian Murphy (B.Sc.), Colin Delahunt (B.Sc.), Fionn O'Donoghue (B.Sc.), Eoghan Phelan (B.Sc.), Finbarr McGroarty (B.Sc.), John Downes (B.Sc.), Joss Glen (M.Sc.), Lee Dark (M.Sc.), Megan Doyle (B.Sc.), Niall McHugh (B.Sc.), Niamh Scanlon (B.Sc.), Shawn Dowdall (M.Sc.), Shay Fennelly (B.Sc.), Robert Vaughan, and Tom Ryan (M.Sc.). Surveyors are suitably qualified competent experts for the purposes of the preparation of this EIAR.

7.2 Methodology

7.2.1 Desk Study

A comprehensive desk study was undertaken to search for any relevant information on species of conservation concern that may use the 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 Wind Farm Site. The Zone of Influence is defined in the Natura Impact Statement (NIS) and Chapter 6 of this EIAR.
- > Bird atlases.
- > Bird sensitivity mapping tool.
- > Online web-mappers from the National Biodiversity Data Centre.
- > Irish Wetland Bird Survey data.
- > Review of specially requested records from the National Parks and Wildlife Service Rare and Protected Species Database.
- > Review of previous field survey data and planning applications at Meenbog Wind Farm.

7.2.2 Scoping and Consultation

Scoping and consultation was undertaken with the relevant statutory and non-statutory organisations to inform the current assessment. Full details can be found in Chapter 2 of this EIAR. Table 7-1 provides a list of the organisations consulted with regard to ornithology during the scoping process and notes where scoping responses were received.

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

Table 7-1 Consultation responses relevant to ornithology

No	Consultee	Response
Republic of Ireland		
01	An Taisce	No response received at the time of writing.
02	BirdWatch Ireland	No response received at the time of writing.
03	Department of Agriculture, Food and the Marine	Response received on 26 th of September 2025. No issues raised in relation to birds.
04	Department of Climate, Energy and the Environment	No response received at the time of writing.
05	Donegal County Council - Environment Section	No response received at the time of writing.
06	Irish Peatland Conservation Council	Response received on 17 th of September 2025. No issues raised in relation to the Prospective Development and birds.
07	Irish Raptor Study Group	No response received at the time of writing. Separate requests were issued for a meeting to discuss the project and no response was received at the time of writing.
08	Irish Red Grouse Association - Conservation Trust	No response received at the time of writing.
09	Irish Wildlife Trust	Response received on 29 th of September 2025. The Irish Wildlife Trust did not have the capacity to respond to consultation but would endeavour to respond if possible. No further correspondence was received.
10	The Heritage Council	No response received at the time of writing.
Northern Ireland		
11	Department of Agriculture, Environment and Rural Affairs (DAERA)	Response received on 3 rd of October 2025. No issues raised in relation to birds.
12	Royal Society for the Protection of Birds (RSPB)	Response received on 24th of October 2025. Due to limited capacity and high workload, the response refers back to the RSPB's responses submitted in relation to the 2017 EIAR (ABP-300460-17) (correspondence dated 27th of January 2017 and 5th of February 2018). The recommendations in relation to the 2017 EIAR are summarised below. <i>Correspondence dated 27th of January 2017:</i> 1. Survey/Desktop study recommendations - Advise that the Northern Ireland Environmental Agency should be contacted regarding nature conservation designations, Area Plans and Natura 2000 sites. - A full habitat survey should be carried out as part of the assessment. - A full bird survey should be carried out at appropriate times of the year, employing stated methodologies and using a reputable ecological contractor. The surveys should cover not only the

No	Consultee	Response
		development site but also areas near the site that may be affected, either directly or indirectly, by the development. • Approved methodologies must be employed, to ensure that the EIA gleans all the information necessary in order that an informed view as to the existing nature conservation interest of the site can be reached. • The following survey methods are therefore recommended for this site for at least one full year of survey. Depending on the outcomes of these surveys, another year may be required and should be planned for within the project timeline: ○ A modified Common Bird Census (CBC) or a Brown & Shepherd (B&S) survey including non-wader observations, over the development site plus 500metre (m) buffer. These can both be done using transects to ensure even coverage, over three visits in specified date windows between mid-March to mid-July. ○ Winter surveys using a B&S type survey (i.e. timed visits to specified area), repeated once per month between Oct - March inclusive, and again over the development site plus 500m buffer. ○ Vantage point (VP) surveys conforming to Scottish Natural Heritage (SNH) guidelines and targeting raptors i.e. buzzards, that may be using the site/buffer should be considered. It is recommended any surveyor (s) involved has experience of VP work and application of collision risk methodology. ○ VP surveys conforming to SNH guidelines and targeting migratory waterfowl should be considered. We recommend any surveyor (s) involved has experience of VP work for swans/geese. • All reports, field maps and field forms should be retained, even after a development proposal has gained consent, and should be viewed as being in the public domain. • The most up to date guidance available from SNH on surveys, monitoring and assessing the effects of windfarms, and peer-reviewed papers discussing breeding bird distribution and foraging raptor activity on existing windfarms, as well as a report on both spatial and temporal disturbance levels to certain upland species were provided. • The cumulative impacts of this proposal with any nearby windfarms or other plans or projects, should also be assessed.

No	Consultee	Response
		2. Analysis - The ES must provide an assessment of the possible impacts of the development on the interests described by the surveys. These possible impacts should include inter alia direct impacts, effects due to disturbance and indirect impacts. - The direct, physical impacts on the development should be addressed, including: - collision risk, - direct land-take by structures including masts, buildings, roads, tracks, fences and drainage ditches, - disruption of hydrology, in terms of saturation on the down-slope sides of roads, tracks and drying-out on the up-slope sides, - the creation of sumps through built development, with consequent saturation and desiccation effects, and - works associated with the construction of the development, including vegetation and soil/peat removal and storage, borrow pits, temporary compounds etc. - The RSPB's concern centres on whether disturbance factors would result in birds being forced to relocate to sub-optimal habitats. Indirect impacts may include: - agricultural intensification arising from the increased accessibility of the development site and surrounding areas to stock due to construction of roads and tracks, and - increased public disturbance due to the presence of those who wish the view the turbines from close up, and by virtue of increased accessibility. 3. Mitigation, enhancement and monitoring - The broad headings under which the RSPB would be keen to discuss mitigation (without prejudice) would be: - institution of agricultural management and access regimes which favour important bird species through habitat management and possibly habitat creation, - time-related restrictions on construction in relation to nesting periods, - precise location and orientation of built development within the development site, and - removal of some tracks/roads after construction. - The RSPB advocates no loss of biodiversity to development through appropriate mitigation and compensation where necessary.

No	Consultee	Response
		- Both mitigation and enhancement may happen on- or off-site - Monitoring should take place for all relevant species found on site (informed by the surveys). The ‘Before After Control Impact’ approach should be used to add rigour to the process. The RSPB is of the opinion that survey and monitoring results should be published, in order to enhance understanding of the relationships between windfarms and biodiversity. <i>Correspondence dated 5th of February 2018</i> - The low number of hen harrier flights recorded across the site and the subsequent low collision risk for the species were noted. However, without prejudice and should approval be granted, it was recommended that the habitat of the proposed areas of tree felling in the vicinity of the turbine locations be managed according to the recommendations in the SNH guidance ‘<i>Wind farm proposals on afforested sites – advice on reducing suitability for hen harrier, merlin and short-eared owl</i>’ to limit the suitability of the Wind Farm Site for hen harrier and thus reduce the risk of collision. - Unavoidable vegetation clearance from within the site footprint should occur outside of the bird breeding season which lasts from 01 March to 31 August to avoid disturbance to nesting birds. - An independent and suitably qualified ornithologist should be present on site if construction works are required from March to August of any year and operate a stop works authority should disturbance to breeding birds be detected. They should submit surveys to the Planning Authority as agreed to prior of any works commencing on site to avoid disturbance to breeding birds. - Prior to the commencement of construction a final Hen Harrier Habitat Enhancement Plan shall be submitted and agreed in writing with the Planning Authority. This plan should also include a comprehensive monitoring programme for the lifetime of the development. - Prior to the commencement of construction a final Post-Construction Bird Monitoring Programme shall be submitted and agreed in writing with the Planning Authority.

7.2.2.1 Meeting with the National Parks and Wildlife Service

A pre-planning meeting was held on the 8th of January 2026 between the project team and representatives of the National Parks and Wildlife Service (NPWS), namely Pat Roberts, Susan Doyle, Padraig Cregg and Robert Kennedy of MKO, William O’Connor of Planree Ltd, and Eoin Connolly and Miriam Crowley of the NPWS. A summary of the minutes of this meeting are outlined in Chapter 2 of this EIAR. In relation to birds, hen harrier was the main consideration discussed during the

meeting, including survey findings to date, the predicted effects of the Existing Development and Prospective Development, and proposed hen harrier habitat enhancement measures.

In response, the NPWS remarked the following main points:

- > The proposal to fell forestry was welcomed and considered an appropriate habitat enhancement measure for the project.
- > It was noted that on sloping ground within the BMEP Site, the potential for birch woodland to establish and dominate could be quite high. It was suggested that 2-3 key, straightforward indicators should be established to monitor the suitability of the BMEP Site areas for hen harrier, similar to the 'score card' used for the Hen Harrier Project (<http://www.henharrierproject.ie/> and <http://www.henharrierproject.ie/HHPWGCard.pdf>).
- > It was noted that the application should characterise the rationale for why the chosen BMEP Site is suitable.
- > In terms of characterising impacts on hen harrier, it was recommended to consult the NPWS High-Likelihood Nesting Area (HLNA) dataset as the project will result in the loss of nesting and foraging habitat for hen harrier.
- > It was emphasised that contextualising the Blue Stack Mountains hen harrier population should be a focus of the application, over and above the national population.

7.2.3 Field Surveys

7.2.3.1 Identification of Target Species

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

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

Then, adopting a precautionary approach, a site-specific scope for ornithological 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 September 2023 to September 2025, consisting of two breeding seasons (April – September) and two winter seasons (October – March). This survey work forms the core dataset for the assessment of impacts on ornithology. The data provided in the field surveys is robust and allows clear, well supported, evidence-based conclusions to be made on ornithological receptors. In the absence of specific national bird survey guidelines, the ornithological surveys were designed and undertaken in full accordance with the guidance document 'Recommended bird survey methods to inform impact assessment of onshore wind farms' from NatureScot (formerly Scottish Natural Heritage [SNH]) outlined in SNH (2017), which was revised in NatureScot (2025). Surveys remain in accordance with the updated guidance.

The various surveys undertaken are described in detail below, including a description of the area surveyed and its radius from the Study Area, which depended on the methodology and focal species. The Study Area was not meaningfully different from the Wind Farm Site boundary and provides coverage of the footprint of the development with the exception of the access track. Coverage of the

access track was achieved during certain surveys (see Section 7.2.5.3). 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), which was revised in NatureScot (2025), to monitor flight activity. The area surveyed was the Study Area, providing coverage to a 500m radius of the proposed turbines. Surveys were conducted from six fixed vantage points with comprehensive coverage of the Study Area. The vantage point locations were selected by undertaking a viewshed analysis (described below) and confirmed by a reconnaissance visit and previous field surveys to ensure that the proposed turbine layout was entirely covered.

Viewsheds were calculated using the Visibility Analysis plugin (Version 1.8) over a raster digital elevation model (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 ground/vegetation level. 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. To do this, surveyors initially visited the Study Area and created a map of landscape features (such as forestry blocks) as polygons in QGIS. Each polygon was assigned a height in metres and merged with the DTM using the Rasterise tool in QGIS before analysing the viewshed using the Visibility Analysis tool. The software produced a 360° viewshed 20m from ground/vegetation 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 model was confirmed to have a lowest swept height of 23.5m, the viewsheds were recalculated using a notational layer suspended at 23m. The viewsheds provide adequate coverage of the Wind Farm Site for a collision risk assessment to be undertaken.

Survey methodology followed SNH (2017), which was revised in NatureScot (2025). The surveyor collected data on bird observations and flight activity from the scanning arc of 180° to a 2km radius at the fixed vantage point locations for two 3 hour watches separated by a minimum 30 minute break (i.e., 6 hours total) per month. Surveys were conducted every month of the survey period, and were scheduled to provide a minimum of 36 hours per winter or breeding season and spread over the full daylight period to coincide with the highest periods of bird activity (Table 7-2). Dawn and dusk watches were conducted during the winter and passage seasons to target commuting or migrating waterbirds, in particular whooper swan. Dawn watches began 1 hour before sunrise, while dusk watches finished 1 hour after sunset, local time. Dawn and dusk watches typically alternated each month during these seasons.

These surveys provide data from 894 hours of dedicated flight activity watches at the selected vantage points surrounding the Wind Farm Site. It is acknowledged that VP1 was not conducted in March 2025, however it was carried out on the 1st of April 2025, as soon as possible, the following month. While this is technically outside the winter season (1st October – 31st March), this is not considered to be a significant limitation in the data as the discrepancy of a single day is unlikely to result in a significantly different assemblage of observed species or activity, therefore it has been treated as a winter season survey in this dataset. Furthermore, surveys were conducted at VP1 in March 2024.

Table 7-2 Vantage point survey duration

Survey Season and Number of Vantage Points	Effort per Vantage Point
Winter Season 2023/2024 (6 vantage points)	48 hours at VP1, 44 hours at VP2, 42 hours at VP3, 37 hours at VP4, 36 hours at VP5 and VP6
Breeding Season 2024 (6 vantage points)	36 hours at VP1, VP3, VP4, VP5 and VP6, and 39 hours at VP2
Winter Season 2024/2025 (6 vantage points)	36 hours at VP1 (including 6 hours at VP1 conducted on 1 st of April 2025), VP2, VP3, VP4, VP5 and VP6
Breeding Season 2025 (6 vantage points)	36 hours per VP1, VP2, VP3, VP4, VP5 and VP6

Flight activity of target species was mapped and recorded as per defined flight bands which were chosen in relation to the dimensions of potential turbine models for the Prospective Development at the outset of surveys. Bands were split into 0-15m, 15-25m, 25-200m and >200m. All flight activity within height bands 15-25m and 25-200m are considered to be within the Potential Collision Height (PCH) with regard to the turbine swept area. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat. The survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, and maps of the vantage point locations and viewsheds.

7.2.3.2.2 Winter Walkover Surveys

Winter walkover surveys were undertaken to record the presence of bird species within and in proximity to the Study Area. The area surveyed was the Study Area to a 500m radius, including areas between vantage point locations. The methodology was adapted from the breeding walkover methodology outlined in Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021). Winter walkover surveys were conducted in daylight hours over four visits between October and March (i.e., four visits in winter 2023/2024 and four visits in winter 2024/2025). Each visit was undertaken over two days.

Transect routes were walked across different habitat complexes where access allowed. All target species were recorded and mapped. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat. Survey effort and transects are presented in Appendix 7-1, including full details of dates, times and weather conditions for each survey, and maps of the transect routes.

7.2.3.2.3 Breeding Walkover Surveys

Breeding walkover surveys were undertaken to determine possible, probable or confirmed breeding bird activity within and in proximity to the Study Area. The area surveyed was the Study Area to a 500m radius. The methodology was based on Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021) for dense habitat. Breeding walkover surveys were conducted in daylight over four visits during the core breeding season months April to July (i.e., four visits during the breeding season 2024 and four visits during the breeding season 2025). The survey aims to be completed by mid-July, however note that some surveys were conducted in late July, due to the area to be covered. Each visit was undertaken over two to four days.

Transect routes were walked across different habitat complexes where access allowed. Although the survey aims to approach all suitable habitat to within 100m, this was not possible in parts of the Study Area due to the topography and vegetation. In addition, a large proportion of the Study Area comprised mature and post-thicket commercial forestry which was not accessible to the surveyor. The area of open land in the north-east of the Study Area was surveyed to within 150m-200m, however the surveyor had good visibility across this open area for displaying birds and also stopped to scan areas over 100m from the transect line. Using binoculars, the surveyor regularly scanned the surroundings of each transect for target species. All target species were mapped and breeding status was assigned following British Trust for Ornithology (BTO) breeding status codes (<https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>). In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat. Survey effort and transects are presented in Appendix 7-1, including full details of dates, times and weather conditions for each survey, and maps of the transect routes.

7.2.3.2.4 **Waterbird Distribution and Abundance Surveys**

Waterbirds include: swans, geese and ducks; cormorant, shag, divers and grebes; auks and seabirds; gulls, terns and skuas; herons, egrets and crane; rails and crakes; waders; and kingfisher. Due to their strong association with aquatic habitats, the species chough, grey wagtail and dipper were also treated as waterbirds for the purposes of these surveys. Surveys commenced in October 2023. Significant wetlands and waterbodies within 5km of the Study Area, along with Lough Eske, approximately 8km from the Study Area, were surveyed for waterbirds during the 2023/2024 and 2024/2025 winter and passage seasons (September to May inclusive; note that surveys commenced in October 2023 therefore September 2023 is not included) 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), which was 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). Surveys were undertaken fortnightly during daylight hours from suitable vantage points or transects overlooking wetlands and waterbodies. There were no suitable waterbodies for nocturnal roosting wildfowl such as whooper swan within 1km of the Study Area, therefore these surveys were not specifically timed for dawn or dusk to target birds arriving at potential roost sites (a small number of the surveys were conducted at sunset). All target waterbird species were recorded and mapped. Survey effort, including details of survey duration and weather conditions, and a map of the area that was surveyed, is presented in Appendix 7-1.

7.2.3.2.5 **Hen Harrier Roost Surveys**

Hen harrier roost surveys were undertaken within a 2km radius around 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). Roost watches of 2-3 hours were conducted at four hen harrier vantage point locations (HHVP1-HHVP4) from dusk until last visible light. All hen harrier observations were recorded and mapped.

Each hen harrier vantage point was surveyed once per month during the winter season between October and March inclusive (i.e., in winter 2023/2024 and 2024/2025). In February 2025, HHVP3 was conducted twice (instead of HHVP1) to cover potential hen harrier activity of interest observed during surveys. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, and maps of survey locations.

7.2.3.2.6 **Breeding Raptor Surveys**

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. Breeding raptor surveys were undertaken within a 2km radius of the Study Area to identify occupied territories and

monitor their breeding success near or within the Study Area. Surveys were also conducted at known traditional breeding raptor territories (see Section 7.2.3.2.11 ‘Supplemental Surveys’) at Lough Eske (approximately 8km from the Study Area), the Barnesmore Gap (approximately 3km from the Study Area) and Barrack Hill (approximately 3.4km from the Study Area). This included targeting suitable breeding locations for white-tailed eagle within 6km of the Study Area, as this is the distance from the Study Area within which data should be collected for this species according to NatureScot (2025).

Survey methodology followed Hardey *et al.* (2013). Breeding raptor watches of 3 hours were conducted during daylight at eight breeding raptor survey locations, supplemented by transects if necessary (e.g., if the surveyor investigated potentially interesting activity further). Extended surveys of 6 hours were also conducted at traditional nest sites in order to monitor current activity levels and breeding activity in these areas. For species such as hen harrier, these surveys took place over 6 consecutive hours to provide the best opportunity to detect adults provisioning nests. Vantage watches were conducted for merlin, although this species’ nests can be difficult to detect through vantage watches alone (Lusby *et al.*, 2011). However, due to previous knowledge of a territory in the area, vantage watches were considered more suitable, and nests were successfully detected during surveys.

All raptor species observed were recorded and mapped and breeding status was assigned following BTO breeding status codes. Surveyors did not approach nest sites to avoid disturbance. Each breeding raptor survey location was surveyed once per month during the core breeding season between April and July inclusive in 2024 and 2025. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, and maps of the survey locations.

Additional surveys were carried out in August 2024 in order to collect further data on breeding hen harrier activity within the Wind Farm Site during this breeding season. From June 2024, survey location BR1 was moved to an alternative location (BR1a) in order to provide better coverage of potential breeding activity of interest in the area. BR1a was then maintained as the replacement survey location for BR1 in all subsequent surveys. No survey was carried out at survey location BR8 in April 2024 as additional survey time was instead conducted at location BR6 due to potential activity of interest in this area. In August 2024, in addition to a survey at location BR8, an additional survey was conducted at a nearby location BR8a due to potential activity of interest in this area. However, following the trial of this survey location, surveys were not continued here the following season, and BR8 was maintained.

7.2.3.2.7 **Breeding Woodcock Surveys**

Breeding woodcock surveys were undertaken to identify breeding woodcock territories by locating roding (breeding display) males within or in proximity to the Study Area. The area surveyed was the Study Area to a 500m radius. Survey methodology followed Gilbert *et al.* (1998): the surveyor walked transects 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 May and June 2024 and 2025. Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, and maps of the transect routes.

7.2.3.2.8 **Breeding Red Grouse Surveys**

Breeding red grouse surveys were undertaken to identify breeding red grouse territories by using an auditory lure of a recording of a ‘rival’ red grouse male to elicit a response from the territory holder. The area surveyed was the Study Area to a 500m radius, as well as areas of open peatland at Croaghmagawna and Cross Hill, immediately west of the Study Area and in proximity to the access track, where suitable habitat occurs. Survey methodology followed Cummins *et al.* (2010). The survey was conducted in March 2024 and March 2025 and all surveys were conducted under National Parks and Wildlife Service license (2024 Licence No. 004/2024; 2025 Licence No. 009/2025).

The surveyor walked transects through areas of suitable bog and heath habitat, where access allowed, stopping every ~100m to broadcast lure calls for 30 seconds and listening for responses. Call-back and flying by the territory holder in response to the lure were recorded and mapped. Survey effort is

presented in Appendix 7-1, including full details of dates, times and weather conditions, and maps of the transect routes.

7.2.3.2.9 **Connectivity Vantage Point Survey**

Connectivity vantage point surveys were undertaken in accordance with SNH (2016) to monitor flight activity at the Barnesmore Gap due to the potential use of this area as a commuting corridor by wildfowl and raptor species of conservation interest. The Barnesmore Gap is located approximately 3km west of the Study Area, with the existing Grid Connection passing through the Gap within the existing N15 National Road. Surveys were conducted from one fixed connectivity vantage point to target birds travelling between this area and the Study Area.

Survey methodology followed SNH (2016). Surveys were conducted from September 2023 to September 2025 inclusive. Some surveys, particularly during the wintering season, were conducted at dawn and dusk in order to target wintering wildfowl that may commute through this area. During the breeding season, some surveys were undertaken during daytime hours when raptors that may use this area are most active. The surveyor collected data on flight activity from a scanning arc of 180° to a 2km radius at the connectivity vantage point. All target species were recorded and mapped. The survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions, and a map of the vantage point location.

7.2.3.2.10 **Breeding Red-throated Diver Survey**

During Waterbird Distribution and Abundance surveys undertaken in April and May 2024, a pair of adult red-throated divers in breeding plumage were identified at a waterbody approximately 3km outside the Study Area. Breeding red-throated diver surveys were therefore commenced at this location in June 2024 in order to identify the distribution of red-throated diver nests, commuter routes and feeding sites in relation to the Study Area. NatureScot (2025) recommends red-throated diver surveys up to 1km from the Study Area. There was one small loch within the Study Area that was also monitored during vantage point surveys, but no red-throated diver was observed using it. Other lochs with the potential to support red-throated diver are further than 1km from the Prospective Development boundary.

Survey methodology followed Gilbert *et al.* (1998). Suitable vantage points were chosen overlooking the waterbody on which the pair were identified. During June 2024, two vantage point locations were surveyed (RH1 and RH2), however coverage at RH1 was found to be preferable and therefore RH2 was not continued. Surveys continued at this location until August 2024. Surveys were conducted at this location again in 2025 from April to July. No evidence of nesting red-throated diver was recorded therefore surveys ceased at the end of July 2025.

The surveyor conducted two 3 hour watches separated by a minimum 30 minute break (i.e., 6 hours total) at each vantage point, including surveys starting or ending at sunrise to coincide with peak activity. All observations of red-throated diver were recorded and mapped.

7.2.3.2.11 **Supplemental Surveys**

Data collected during the survey period September 2023 to September 2025 form the core dataset used in this assessment. Prior to this period, breeding bird surveys were also conducted over five breeding seasons from 2019 to 2023 during the construction phase of the Existing Development and are included as supplemental data in this assessment.

Nest watch surveys were conducted at four known traditional breeding raptor territories in proximity to the Study Area to provide information on their distribution in relation to the Study Area. These comprised two hen harrier territories (survey location HH1 near Croaghmagawna and HH2 near Killeter), a peregrine falcon territory (PE1 near Barnesmore Gap) and a merlin territory (ML1 near

Barrack Hill). Survey methodology broadly followed Hardey *et al.* (2013): watches of 3-6 hours were conducted during daylight at each territory at least once per month during the core breeding season. Observations of the focal species were recorded and mapped, with particular reference to nesting activity. Any other raptor species observed was also recorded and mapped. Surveyors did not approach nest sites to avoid disturbance.

In 2019, 2021 and 2023, all territories were visited between April and July. Surveys were also conducted in Lismullyduff in July 2019 and near Trusk Lough in August 2019 to investigate these areas for breeding hen harrier. In 2020 and 2022 all territories were visited between May and July (no visits were conducted in April 2020 due to movement restrictions introduced by the Government of Ireland in response to the COVID-19 pandemic). The four survey locations were then incorporated into the Breeding Raptor Surveys conducted during breeding season 2024 and 2025 (Section 7.2.3.2.6), thus providing seven consecutive years of data from each of these four territories.

Survey effort is presented in Appendix 7-1, including full details of dates, times and weather conditions. Due to the ecological sensitivity of these species' breeding territories, maps of the survey locations HH1, HH2, PE1 and ML1 are not provided in Appendix 7-1; instead the survey locations are included alongside the data in the maps in confidential Appendix 7-5.

7.2.3.2.12 **BMEP Site**

The BMEP Site was surveyed in April 2025 and March 2026. A walkover survey of the parcels was conducted, and any target species encountered were recorded.

7.2.3.2.13 **Multidisciplinary Walkover Survey**

The Grid Connection Site was surveyed in September 2025 through a multidisciplinary walkover survey. The route was systematically walked, while the surveyor recorded a range of protected species, including birds. Further details on this survey are available in Chapter 6 of this EIAR.

7.2.4 **Receptor Evaluation and Impact Assessment**

7.2.4.1 **Geographical Context**

'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2024) recommends categories of ornithological value that relate to a geographical context (e.g., international through to local). This EIAR utilises the geographical context described in '*Guidelines for Assessment of Ecological Impact of National Road Schemes*' (NRA, 2009). The following geographic frame of reference should be used when determining the value of a bird population:

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

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

7.2.4.2 Identification of Key Ornithological Receptors

Following the analysis of field survey data, a precautionary screening approach was followed to identify KORs. A KOR is defined as a species occurring within the Wind Farm Site and hinterland upon which potential impacts are anticipated and assessed. All target species recorded during surveys are 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 Prospective Development

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 Wind Farm Site has been used to predict potential impacts of the Prospective Development on birds.

7.2.4.4 Collision Risk Assessment

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

As part of the peer-review process, an alternative collision rate was also calculated in addition to the Band (2024) methodology described above and is presented in this chapter. The rationale and full details of the adjustment are described in Appendix 7-6 and Appendix 7-8. See Appendix 7-6 for full details on the collision risk modelling method and the results of both the Band (2024) and alternative collision rate calculations.

7.2.4.5 Description of Impacts

The sensitivity, magnitude and significance of impacts on bird populations resulting from the Prospective Development was quantified according to two assessment criteria: Percival (2003) and the Environmental Protection Agency's '*Guidelines on the information to be contained in Environmental Impact Statement reports*' (hereafter refer to as 'EPA, 2022'). The two assessment criteria have been used to independently characterise impacts to inform a robust assessment of potential impacts. EPA, 2022 impact assessment criteria has been used for consistency between the Biodiversity and Birds chapters of this EIAR, while Percival (2003) has also been followed given its specific focus on birds.

7.2.4.5.1 Percival 2003 criteria

The Percival (2003) methodology quantifies the sensitivity of a given species to the development type, the magnitude of the effect and the significance of the potential impact. Table 7-3 (Sensitivity), Table 7-4

(Magnitude of effect) and Table 7-5 (Determination of significance) outline the assessment criteria for each stage.

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

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

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

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

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

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

7.2.4.5.2 EPA, 2022 Criteria

EPA, 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 guidance ‘*Assessing the cumulative impacts of onshore wind farms on birds*’ (NatureScot, 2025a), cumulative effects arising from two or more developments may be:

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

NatureScot guidance (2025a) was consulted while undertaking a cumulative impact assessment. This guidance emphasises that its priority is to “maintain the conservation status of the species’ population at the national scale.” However, it is acknowledged that consideration should also be allowed for impacts at the regional level “where regional impacts have national implications (for example where a specific region holds the majority of the national population)”. Following this, the cumulative assessment has been carried out at the geographical scale of the importance rating of the KOR. For the purposes of this cumulative assessment, the regional/county scale is considered to be a 25km radius of the proposed turbines and the local scale is considered to be a 5km radius.

Assessment material was compiled for other plans and projects within 25km of the Wind Farm Site, as described in Chapter 2 of this EIAR. The material was gathered through a search of relevant online Planning Registers, reviews of relevant EIS/EIAR documents, planning application details and planning drawings. These are then considered for in-combination or cumulative effects with the Prospective Development.

7.2.5 Assessment Justification

7.2.5.1 Survey Data

A comprehensive suite of bird surveys was undertaken at the Wind Farm Site between September 2023 and September 2025. Results derived from a continuous two years of surveying at the Wind Farm Site and hinterland, undertaken in line with NatureScot guidance, are analysed to inform this assessment. Supplemental nest watch data at traditional breeding raptor nest sites collected over five consecutive breeding seasons between 2019 and 2023 is also considered. As such, the surveys undertaken provide the information necessary to allow a comprehensive and robust assessment of the potential impacts of the Prospective Development on ornithological receptors.

7.2.5.2 Mitigation

Where potential impacts on KORs are predicted, mitigation and enhancement measures have been prescribed to avoid, reduce and remove such impacts. Proposed best practice design, mitigation and enhancement measures are specifically set out and are realistic in terms of cost and practicality. They have been subject to detailed design, and their successful implementation will address the effects on the identified KORs. As such, the potential impacts of the Prospective Development have been considered and assessed to ensure that all impacts on KORs are adequately addressed, and no significant residual

effects are likely to remain following the implementation of best practice mitigation and enhancement measures and best practices (refer to Section 7.6 for further details).

7.2.5.3 Limitations

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

The Study Area was not meaningfully different from the Wind Farm Site boundary and provides coverage of the footprint of the development with the exception of the access track. Coverage of the access track was achieved during certain surveys. The Connectivity Vantage Point Survey was conducted on the access track itself. Breeding Red Grouse Surveys were conducted in suitable habitat adjacent to the access track, while certain Breeding Raptor Survey, Hen Harrier Roost Survey and Waterbird Distribution and Abundance Survey locations were in proximity to the access track. In addition, the proposed works on the access track are minor, consisting of small areas of road widening or localised tree felling. As such, adequate coverage of this area has been achieved for this assessment.

7.3 Baseline Ornithological Conditions

7.3.1 Designated Sites

A screening assessment and NIS were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Prospective Wind Farm in compliance with Article 6(3) of the EU Habitats Directive (92/43/EEC). According to EPA, 2022 ‘*A biodiversity section of an EIAR ... should not repeat the detailed assessment of potential effects on European sites contained in documentation prepared as part of the Appropriate Assessment process, but it should refer to the findings of that separate assessment*’. Therefore, this section provides a summary of the key findings regarding SPAs. For a detailed assessment of any potential impacts on SPAs, refer to the Appropriate Assessment Screening Report and NIS which has been prepared for the Prospective Development, including detailed screening rationale for each SPA. It also includes a detailed screening of Croaghonagh Bog Special Area of Conservation, in which Greenland white-fronted goose, merlin, red grouse, curlew and kestrel have been recorded.

The NIS accompanies this planning application. It concluded that no potential for likely significant effects was identified for any SPAs.

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. Previous bird atlases have been the primary source of information on the distribution and abundance of British and Irish birds prior to Bird Atlas 2007–11. The three previously published atlases were:

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

The Wind Farm Site, BMEP Site, and Grid Connection Site lie entirely within hectad H08. 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 for hectad H08

Species	Breeding Atlas 1968-1972	Breeding Atlas 1988-1991	Breeding Atlas 2007-2011
Black-headed gull	confirmed	-	-
Buzzard	-	-	possible
Common gull	confirmed	seen	-
Common Sandpiper	confirmed	breeding	possible
Corncrake	probable	-	-
Curlew	confirmed	breeding	-
Dipper	confirmed	-	confirmed
Dunlin	probable	-	-
Golden Plover	confirmed	breeding	probable
Grey Wagtail	confirmed	breeding	probable
Hen Harrier	possible	-	confirmed
Kestrel	confirmed	breeding	possible
Kingfisher	possible	-	-
Lapwing	confirmed	-	-
Mallard	confirmed	breeding	probable
Meadow Pipit	confirmed	breeding	confirmed
Moorhen	confirmed	-	-
Peregrine Falcon	-	-	possible
Red Grouse	confirmed	breeding	probable
Swift	possible	-	-
Teal	probable	breeding	possible
Twite	possible	-	-
Whinchat	confirmed	breeding	-
Woodcock	possible	breeding	-
Yellowhammer	confirmed	-	-

Table 7-7 Wintering Bird Atlas data for hectad H08

Species	Wintering Atlas 1981-1984	Wintering Atlas 2007-2011
Black-headed Gull	present	-
Buzzard	-	present
Common Sandpiper	present	-
Cormorant	present	present

Species	Wintering Atlas 1981-1984	Wintering Atlas 2007-2011
Curlew	present	-
Golden Plover	present	present
Goldeneye	present	-
Greenland White-fronted Goose	present	-
Grey Heron	present	-
Grey Wagtail	present	-
Hen Harrier	present	-
Kestrel	present	present
Lapwing	present	-
Mallard	present	present
Meadow Pipit	present	present
Moorhen	present	-
Mute Swan	present	-
Pochard	present	-
Red Grouse	present	present
Redwing	-	present
Snipe	present	-
Sparrowhawk	present	present
Teal	present	present
Whooper Swan	present	-
Woodcock	present	present

7.3.3 Bird Sensitivity Mapping Tool

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

The Wind Farm Site is largely located within areas of low bird sensitivity to wind energy developments, with small areas in the northwesternmost areas located within areas of medium sensitivity. Additionally, two areas of road widening along the main existing access road are located within an area of high sensitivity. The existing Grid Connection is also within areas of high sensitivity, medium and low bird sensitivity to wind energy developments along the N15 National Road.

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 Wind Farm Site, BMEP Site, and Grid Connection Site lie entirely within hectad H08. Table 7-8 lists species of conservation interest that have been recorded in this 10km Grid.

Table 7-8 National Biodiversity Data Centre records

Species	NBDC Dataset
Black-headed Gull	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Buzzard	Birds of Ireland
Common Gull	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Common Sandpiper	Bird Atlas 2007 - 2011
Cormorant	Bird Atlas 2007 - 2011
Corncrake	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Curlew	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Dipper	Bird Atlas 2007 - 2011
Dunlin	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Golden Eagle	Birds of Ireland
Golden Plover	Birds of Ireland
Goldeneye	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Grey Heron	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Grey Wagtail	eBIRD Bird Records for Ireland
Hen Harrier	Birds of Ireland
Herring Gull	eBIRD Bird Records for Ireland
Kestrel	Birds of Ireland
Kingfisher	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Lapwing	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Mallard	eBIRD Bird Records for Ireland
Meadow Pipit	eBIRD Bird Records for Ireland
Moorhen	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Mute Swan	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Peregrine	Bird Atlas 2007 - 2011
Pied Wagtail	eBIRD Bird Records for Ireland
Pochard	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Red Grouse	Birds of Ireland
Redwing	Bird Atlas 2007 - 2011
Snipe	Birds of Ireland

Species	NBDC Dataset
Sparrowhawk	Birds of Ireland
Swift	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Teal	Birds of Ireland
Twite	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.
Whinchat	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
White-fronted Goose	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Whooper Swan	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.
Woodcock	Birds of Ireland
Yellowhammer	Birds of Ireland

7.3.5 Irish Wetland Bird Survey Records

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

- > Ballyness Bay
- > Clooney Lough
- > Culdaff
- > Donegal Bay
- > Dunfanaghy Estuary
- > Dunfanaghy New Lake
- > Killybegs Harbour
- > Kiltorris Lough
- > Lough Fern
- > Lough Swilly
- > Maghera Lake
- > Rosapenna Lough
- > Sheskinmore Lough
- > Trawbreaga Bay

7.3.6 Rare and Protected Species Dataset

An information request was sent to the NPWS requesting records from the Rare and Protected Species Database. The following records were obtained from the NPWS on the 11th of August 2025.

A follow-up request was sent to the NPWS on the 13th of February 2026 seeking access to the NPWS High-Likelihood Nesting Area (HLNA) dataset, as recommended during the pre-planning meeting with the NPWS held in January 2026 (see Section 7.2.2.1 above). No response has been received to date.

Greenland White-fronted Goose

The NPWS provided 102 records of Greenland white-fronted goose in hectad H08. All records are dated from between the years 1982 and 1991, and are of the Pettigo Plateau flock. Pettigo Plateau is now designated as an SPA for the species, and is located approximately 6.4km south of the Grid Connection and approximately 9.0km from the nearest proposed turbines. No observations of the species were recorded within the Wind Farm Site.

Curlew

One record of a nest location or estimated centre of territory was recorded in hectad H08 in 2017. No further information was provided.

Hen Harrier

Hen harrier were confirmed as breeding within the hectad H08 during the National Hen Harrier Surveys in both 2010 and 2015.

Peregrine Falcon

One occupied nest site was recorded within the hectad H08 during the 2017 National Peregrine Survey. This nest site was also known from previous National Survey in 2002.

7.3.7 Previous Survey Data

As part of the 2017 EIAR, a suite of ornithological surveys were undertaken between 2015-2017. Target species recorded during these surveys included whooper swan, golden plover, merlin, peregrine falcon, hen harrier, goshawk, golden eagle, lesser black-backed gull, herring gull, red grouse, woodcock, wigeon, buzzard, sparrowhawk, kestrel, meadow pipit, grey wagtail and yellowhammer.

Of these species, the Wind Farm Site was determined not to be of significance to whooper swan, goshawk, golden eagle, lesser black-backed gull, herring gull or wigeon because numbers of ecological significance per NRA (2009) criteria were not recorded within or travelling through the Wind Farm Site, or within the potential collision risk zone.

Taking a precautionary approach, the probable breeding population of merlin located approximately 1.7km to the east of the site boundary (as per the 2017 EIAR) was assigned *Local Importance (higher value)* on the basis of a resident/regularly occurring population assessed to be important at the local level. Similarly, the confirmed breeding population of peregrine falcon recorded from the Barnesmore Gap, and the populations of sparrowhawk and kestrel, both of which were resident, were also assigned *Local Importance (higher value)*. While no evidence of breeding buzzards were recorded within the 2km radius of the site boundary, the birds recorded during the breeding season were likely to be associated with a breeding population from the wider area, and as such were likewise assigned *Local Importance (higher value)*.

A resident population of red grouse was identified outside the development site boundary, which were assigned *Local Importance (higher value)*. Additionally, taking an extremely precautionary approach, the record of a single calling male woodcock was considered to represent a potential local breeding population of *Local Importance (higher value)*. The populations of wintering golden plover utilising the Wind Farm Site were determined to be of *County Importance* in Donegal.

Taking a precautionary approach, it was determined that the records of hen harrier observed during the winter season were associated with a wintering population of *National/International Importance* identified roosting 2.5km from the site boundary. No hen harrier were observed within the study area during the core breeding season of mid-May to June.

7.3.8 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 methodology. Raw survey data and maps for each species are provided in Appendix 7-4. However, sensitive ecological records (e.g., nest or roost sites) or records that may reveal the location of sensitive ecological records are contained in confidential Appendix 7-5.

This appendix is not intended for widespread public dissemination due to the sensitivity of the records, however it may be made available on request.

The target species recorded within 500m of the 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. Target species only recorded greater than 500m from the Wind Farm Site are summarised in Table 7-10.

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

Species	Key findings
Golden eagle	Non-breeding. There was no evidence of breeding at the Wind Farm Site during surveys. No regularly used roosts identified. There was no evidence of roosting at the Wind Farm Site during surveys.
Golden plover	Non-breeding. There was no evidence of breeding at the Wind Farm Site during surveys. No regularly used roosts identified. There was no evidence of roosting at the Wind Farm Site during surveys. No key foraging areas identified. There was no evidence of key foraging areas at the Wind Farm Site during surveys.
Hen harrier	Confirmed breeding. During supplemental surveys prior to the core survey period, hen harrier were confirmed to be breeding within the Wind Farm Site in 2020 and 2021. During the core survey period, nest sites were identified within the Wind Farm Site in 2024 and 2025, approximately 660m and 600m from the location of the nearest proposed tubrine. Probable breeding. During supplemental surveys prior to the core survey period, a probable breeding location was identified at Killeter in 2019, approximately 2.4km outside the Wind Farm Site, but in subsequent years there was a roaming male resident here with no evidence of a mate. No regularly used roosts identified. There was no evidence of roosting at the Wind Farm Site during surveys.
Merlin	Confirmed breeding. During supplemental surveys prior to the core survey period, merlin were confirmed to be breeding at Barrack Hill in 2019, 2020 and 2021. This was outside the Wind Farm Site and not within 500m of any proposed turbines. Probable breeding. During supplemental surveys prior to the core survey period, a pair of merlin were observed in the area of Barrack Hill again in 2023, suggesting probable breeding in this area again. During the core wind farm surveys, a pair of merlin were again observed in the same area in 2025, suggesting probable breeding.

Species	Key findings
Peregrine falcon	Confirmed breeding. During supplemental surveys prior to the core survey period, peregrine falcon were confirmed to be in breeding in two locations in the Barnesmore Gap, in 2021 and 2023. These nesting sites are located 1.5-2.5km outside the Wind Farm Site. Probable breeding. During supplemental surveys prior to the core survey period, a probable nesting territory for peregrine falcon was identified in the Barnesmore Gap in 2022. During the core survey period, two probable nest territories were identified in the Barnesmore Gap in 2024 and 2025. Probable breeding peregrine falcon were also observed near Barnesmore Wind Farm, >3km from the territories in the Barnesmore Gap, in 2024. It is possible that these may be individuals from a separate territory, however this is not certain.
White-tailed eagle	Confirmed breeding. A confirmed nesting location was identified at a waterbody approximately 8km outside the Wind Farm Site in 2024 and 2025.
Whooper swan	Migrating birds were recorded passing through during spring and autumn passage. No regularly used roosts identified. There was no evidence of roosting at the Wind Farm Site during surveys. No key foraging areas identified. There was no evidence of key foraging areas at the Wind Farm Site during surveys.
Grey wagtail	Confirmed breeding. Breeding was confirmed within the south of the Wind Farm Site in 2025 and in the northeast of the Wind Farm Site in both 2024 and 2025. Probable breeding. Other areas of probable breeding were identified within the south of the Wind Farm Site in 2025 and north of the Wind Farm Site in both 2024 and 2025.
Kestrel	Confirmed breeding. A confirmed nest location was identified approximately 200m outside the Wind Farm Site to the north of the Barnesmore Gap in 2024. A second confirmed nest location was identified within the Barnesmore Gap, approximately 2-3km outside the Wind Farm Site in 2025. Probable breeding. During supplemental surveys prior to the core survey period, a probable nest location was identified approximately 1.2km to the northwest of the Wind Farm Site in 2022.
Meadow pipit	Probable breeding. Meadow pipits were observed displaying within the Wind Farm Site and wider area during both the 2024 and 2025 breeding seasons.
Red grouse	Probable breeding. A probable breeding area was identified approximately 1-2km outside the Wind Farm Site.

Species	Key findings
Redshank	No specific nesting, foraging or roosting areas were identified in the Wind Farm Site.
Redwing	No specific foraging or roosting areas were identified in the Wind Farm Site.
Snipe	Probable breeding. Five probable breeding areas for snipe were identified to the north, east, west and southwest of the Wind Farm Site.
Swift	No specific nesting or foraging areas were identified in the Wind Farm Site.
Woodcock	No evidence of breeding in the Wind Farm Site.
Buzzard	Confirmed breeding. During supplemental surveys prior to the core survey period, buzzard were confirmed to be breeding at one location outside the Wind Farm Site in 2021. During the core survey period, three confirmed breeding territories were identified to the east and southeast of the Wind Farm Site. Breeding was confirmed near Killeter and within the northeast of the Wind Farm Site in 2024, and to the east of the Wind Farm Site in 2025. Probable breeding. Three probable breeding territories were identified in the wider area across 2024 and 2025. Of these, one territory was located partially within the Wind Farm Site and within 500m of the proposed turbines.
Long-eared owl	Confirmed breeding. A long-eared owl breeding territory was identified in conifer trees along the main access road.
Sparrowhawk	Confirmed breeding. During supplemental surveys prior to the core survey period, sparrowhawk were confirmed to be breeding at one location outside the Wind Farm Site in 2019. During the core survey period, two confirmed breeding territories were identified in the south and to the east of Wind Farm Site in 2025, within and partially within 500m of the proposed turbines. Probable breeding. During supplemental surveys prior to the core survey period, one probable sparrowhawk breeding area was identified to the southeast of the Wind Farm Site in 2023. During the core survey period, one probable breeding territory was identified to the southeast of the Wind Farm Site in 2025.

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

Species	Observations
Curlew	The nearest record of curlew was approximately 1.1km outside the Wind Farm Site. There was a single record of this species in March 2025, when a flight call was heard at dusk during a hen harrier roost

Species	Observations
	survey close to the Mourne Beg River to the northeast of the Wind Farm Site. The individual was not seen.
Goldeneye	The nearest record of goldeneye was approximately 2.0km outside the Wind Farm Site. There were 15 records of this species at Lough Eske (7.7km outside the Wind Farm Site) and Lough Mourne (1.8km outside the Wind Farm Site) during waterbird distribution and abundance surveys, of between 1 and 5 individuals swimming and foraging during the winter season.
Great northern diver	The nearest record of great northern diver was approximately 2.0km outside the Wind Farm Site. There were eight records of this species during the winter season, largely of individuals swimming, diving and preening at Lough Eske (7.7km outside the Wind Farm Site) during waterbird distribution and abundance surveys. There was also a single incidental record of this species flying in the direction of Lough Mourne (1.8km outside the Wind Farm Site), observed during a hen harrier roost survey.
Kingfisher	The nearest record of kingfisher was approximately 8.5km outside the Wind Farm Site. The single record of this species was of an individual flying over the water on the western side of Lough Eske (7.7km outside the Wind Farm Site) during waterbird distribution and abundance surveys in October 2024.
Little egret	The nearest record of little egret was approximately 8.2km outside the Wind Farm Site. There were 5 records of this species on Lough Eske (7.7km outside the Wind Farm Site) and surrounding fields during waterbird distribution and abundance surveys. All records were of individual birds, foraging, preening and flying in the area during the winter season.
Long-tailed duck	The nearest record of long-tailed duck was approximately 8.5km outside the Wind Farm Site. The single record of this species was of an individual swimming on the western side of Lough Eske (7.7km outside the Wind Farm Site) during waterbird distribution and abundance surveys in November 2023.
Montagu's harrier	The nearest record of Montagu's harrier was approximately 1.0km outside the Wind Farm Site. There was a single record of this species during supplemental nest watch surveys in 2022, of an individual bird flying in a north-westerly direction over Barrack Hill.
Osprey	The nearest record of osprey was approximately 7.9km outside the Wind Farm Site. There was a single record of this species during breeding raptor surveys at Lough Eske in May 2024. This record was of an individual bird which arrived from north, circled several times over the bay and woodlands, and swooped at a white-tailed eagle nest three times. The individual then flew north again and was not seen again.
Pallid harrier	The nearest record of pallid harrier was approximately 8.3km outside the Wind Farm Site. There was a single record of this species during breeding raptor surveys at Lough Eske in April 2024. This record was

Species	Observations
	of a male bird flying over the survey location and between a male white-tailed eagle and its nest, evoking no reaction from the eagle. The pallid harrier continued to fly north and was not seen again.
Red-throated diver	The nearest record of red-throated diver was approximately 1.6km outside the Wind Farm Site. There were 18 records of this species during waterbird distribution and abundance and breeding red-throated diver surveys, and as incidental records. In April and May 2024, there were three records of red-throated diver on two loughs, Lough Golagh and Lough Slug, which are 2.8km and 4.2km southwest of the Wind Farm Site respectively. Observations included a pair in breeding plumage. Because of this observation, dedicated breeding red-throated diver surveys then commenced on Lough Golagh. During the remainder of the 2024 breeding season, there were four records of the species at Lough Golagh, all of which were of a pair preening, feeding, swimming, sleeping on the water, croaking in flight and singing together on one occasion. Vegetation and suitable nesting habitat are available in this area, indicating probable breeding. There were two further incidental records of red-throated diver at a third lough, Loughnaweelagh, which is 1.9km southwest of the Wind Farm Site. In July, a pair were foraging here, and in August, an adult flew from Lough Golagh to Loughnaweelagh. During the 2025 breeding season there were seven records of the species at Lough Golagh, including adults foraging and flying to Loughnaweelagh. Only individual adults were observed during the dedicated surveys between May and July. Observations were again of an adult in breeding plumage feeding, swimming and preening on the lough. There was also a single record of a pair on this Lough Golagh during waterbird distribution and abundance surveys, and one further incidental record of a pair swimming at Lough Slug in, both in April.
Whinchat	The nearest record of whinchat was approximately 1.9km outside the Wind Farm Site. There was a single incidental record of this species during breeding raptor surveys. This record was of an individual in May 2025 singing along the Lowerymore River in the Barnesmore Gap at dawn. This may suggest possible breeding of this species in this area.

7.3.8.1 Golden Eagle

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

Breeding Raptor Surveys

Golden eagle was observed once during breeding raptor surveys. This record was of an individual bird in April 2025 which was observed distantly circling in north-westerly direction over the Barnesmore Gap. This record was located approximately 2.0km outside the Wind Farm Site.

Incidental Records

There was one incidental record of golden eagle during breeding red-throated diver surveys. In May 2025, an individual believed to be an adult was observed soaring at a high altitude. A second large raptor was briefly visible when it was first observed, however it could not be confirmed to be a second golden eagle. This record was located approximately 2.6km outside the Wind Farm Site.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, golden eagles were recorded ten times. Note that these surveys did not target golden eagle. Records were of individuals and pairs of birds during the breeding season.

In June 2020, an adult female was observed circling over the Barnesmore Gap before being dive-bombed by an adult male golden eagle. In April 2021, a sub-adult golden eagle was observed three times on a single date flying and soaring over Barrack Hill near Barnes Lough to the northwest of the Wind Farm Site, before being mobbed by hooded crows and lost from view behind a ridge. The following month there was an additional sighting of a suspected golden eagle in the same area. In May 2023, there were two sightings of an adult golden eagle within the Wind Farm Site, with one flight within 500m of the proposed turbines. This individual was observed soaring over a wide area before gliding northwards. In July 2023, an immature bird was observed twice on a single day hunting and travelling over the Barnesmore Gap.

7.3.8.2 Golden Plover

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

Vantage Point

Golden plover were recorded seven times during vantage point surveys, or on average once every 107 hours of winter and passage season surveys. Of these records, five were within 500m of the proposed turbines. Between 1 and 17 individuals were observed during the winter and passage seasons. The average flock size was 10 birds.

There were five records of golden plover flying within 500m of the proposed turbines during vantage point surveys, largely in the northeastern section of the Wind Farm Site, to the east of proposed turbines T16 and T19. Birds were recorded circling over the bog habitats in this area, and heard calling from the vicinity. Golden plover were also heard calling from grasslands to the north of the Wind Farm Site, and recorded flying from this area.

Waterbird Distribution and Abundance

Golden plover were recorded 20 times during waterbird distribution and abundance surveys, on 16 of 68 survey dates (24%). Records were of flocks of between 1 and 340 individuals during the winter and passage seasons. The average flock size was 30 birds.

The majority (19 of 20) of records of golden plover during these surveys were located in the areas surrounding Barnesmore Wind Farm, located to the southwest of the Wind Farm Site. On all occasions, birds were recorded flying through the area, circling and occasionally landing in the bog and lake habitats in this area.

A single record of a flock of golden plover was also recorded to the east of the Wind Farm Site, in the area of Tievecloghoge in April 2024. This flock numbered 340 birds which landed and took flight from

a field to the north of the Mourne Beg River. This was the largest flock of golden plover recorded during any of the surveys undertaken, and was located approximately 4.2km outside the Wind Farm Site. The nearest record of golden plover during waterbird distribution and abundance surveys was located approximately 1.4km outside the Wind Farm Site.

Connectivity Vantage Point

Golden plover were recorded twice during connectivity vantage point surveys, on 2 of 39 survey dates (5%). Records were of flocks of between 11 and 43 birds, both during October.

On two occasions in October 2024, flocks of golden plover were recorded flying in a north-westerly direction through and around the Barnesmore Gap. One of these flocks was recorded passing over the Wind Farm Site in the area of the main site entrance.

Incidental Records

There were two incidental records of golden plover during breeding raptor and hen harrier roost surveys. Between 27 and 30 individuals were observed during the winter and passage seasons.

In October 2023, a flock of 27 golden plover were observed travelling in the area of Lough Beg, to the northeast of the Wind Farm Site. In April 2024, a flock of 30 individuals were recorded flying from the direction of Mourne Lough, to the north of the Wind Farm Site, circling before landing close to an existing road and roosting in this location. This roosting location was situated immediately adjacent to hen harrier survey location HHVP2, which surveyed this area at dawn/dusk during the winter months. However, no other observations of golden plover roosting in this area were recorded during any of the surveys undertaken, suggesting that it is not a regular roosting site.

7.3.8.3 Hen Harrier

Hen harrier were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage Point

Hen harrier were recorded 37 times during vantage point surveys, or on average once every 24 hours of breeding and wintering season surveys. Of these records, 14 were within 500m of the proposed turbines. All records were of individuals or pairs of birds, during the breeding and wintering seasons.

During the 2024 breeding season, hen harrier were breeding within the Wind Farm Site, with a nest site identified in an area of conifer plantation in the north of the Wind Farm Site. Food passes were observed between the male and female hen harriers on three occasions in May and June 2024, and the female was observed mobbing a raven in June, indicating territorial behaviour. The male and female were both observed regularly hunting in this area during the breeding season. Provisioning behaviour was observed during breeding walkover and breeding raptor surveys (see 'Breeding Walkover' and 'Breeding Raptor' sections below for details), therefore this was mapped as a confirmed breeding territory, labelled HH-1 in Appendix 7-5.

In the 2025 breeding season, a pair of hen harrier again returned to a nearby area and another nest site was identified close to the location of the 2024 nest. The male bird was observed in a display flight in April 2025 over this area, again indicating probable breeding. The male was seen hunting near the nest site twice more in May and June 2025, and was not observed again after that. This suggests breeding may have been initiated but was not successful, however the nest site is mapped as HH-2 in Appendix 7-5.

Hen harrier were observed 12 times during the winter season, largely over the areas of bog and wet grassland habitats to the north and east of the Wind Farm Site. All records were of a male individual, except one for which sex was not noted, often hunting in these areas or travelling over forestry.

Breeding Walkover

Hen harrier were recorded 28 times during breeding walkover surveys, on 9 of 20 survey dates (45%). Records were all of individuals and pairs of birds during the breeding season.

Further records of the pair of hen harriers associated with the 2024 (HH-1) and 2025 (HH-2) nest sites were observed during breeding walkover surveys. During the 2024 breeding season, hen harrier were observed 19 times between May and August. Sightings were mostly those of the male and female flying into and out of the nest area for hunting forays, with a possible food pass observed in May. In late June, the male was observed returning to the nest site with prey, indicating provisioning of young and therefore confirming breeding in this location.

The following year there were nine observations of hen harrier in April and May 2025, after which the pair were not seen again. These early observations were of both adults hunting in the area, emerging from and circling over the nest site. In mid-April there was also an observation of a second male, flying in pursuit of the male observed flying from the nest site.

Hen Harrier Roost

Hen harrier were recorded three times during hen harrier roost surveys, on 3 of 48 survey dates (6%). Records were all of individual birds during the winter season. All three records were of birds travelling over areas of wet grassland, heath and bog, male birds noted on two occasions. No roosting activity was recorded as birds were only seen to travel through the area. The nearest record of hen harrier during hen harrier roost surveys was approximately 330m outside the Wind Farm Site.

Breeding Raptor

Hen harrier were observed 40 times during breeding raptor surveys, on 10 of 67 survey dates (15%). Records were of individuals and a pair of birds during the breeding season.

Observations of hen harriers during breeding raptor surveys were of the pair associated with nest sites HH-1 and HH-2 as described in the preceding sections. There were 32 observations during the 2024 breeding season. In April and May 2024, the male hen harrier was observed skydancing and displaying on seven occasions, with the female close by and occasionally joining in flight. From June onwards the pair were regularly seen leaving and arriving to the nest site for hunting forays, with food passes observed twice in the nest area. In July, the female was recorded returning to the nest site with prey, suggesting provisioning of young and confirming breeding in this location.

There were eight observations of hen harrier in April and May 2025, after which the pair were once again not seen. The female was seen on only one occasion, flying with the male around the nest area in early May. Other sightings of the male were those of the bird regularly flying out from the nest area (HH-2), skydancing and displaying around the nest site and going on long hunting flights.

Incidental Records

There were 15 incidental records of hen harrier during vantage point, waterbird distribution and abundance, connectivity vantage point and breeding red-throated diver surveys. All records were of individual birds, during both the breeding and wintering seasons.

A juvenile hen harrier was observed once in January 2024, hunting over Barnesmore Bog to the southwest of Barnesmore Wind Farm. All other incidental records of hen harrier were those of adult male birds. There were three more records of birds hunting and flying through the area of Barnesmore Bog in June and October 2024. During the 2024/2025 winter season, there were 11 records of male hen harriers hunting and flying through the areas of open bog in the wider area surrounding the Wind Farm Site, including near at Lough Hill, Lough Beg and near Meenablagh Road. There was one final incidental record of a male hen harrier flying through the Wind Farm Site in May 2025, a bird which was likely the male associated with the nest site HH-2.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, hen harrier were recorded 52 times. Records were of individuals and pairs of birds during the breeding season.

In 2019, there were 18 observations of hen harrier, with all records being of individual males. There was only one sighting within the Wind Farm Site, of a male flying over conifer plantation in the vicinity of a traditional breeding territory in April. During the survey undertaken at Lismullyduff in July, there were seven observations of a male hen harrier regularly hunting over the cutover bog habitats in the vicinity, with a similar observation in this area from Trusk Lough in August. Observations were also frequent at Killeter, where a male was seen skydancing in May. This indicates a probable breeding territory at this location, labelled as HH-3 in Appendix 7-5. There were no further breeding behaviours observed at any other locations in 2019.

In 2020, there were 22 sightings of hen harrier, with a male again frequent in the area of Killeter. However all observations in this area were of an individual young male (based on plumage colouration) hunting over conifer plantation and recently-felled woodland in the vicinity, with no indications of breeding behaviours. This roaming male appeared to be resident in Killeter but did not appear to have a mate or be nesting. Within the Wind Farm Site, a nest location was identified. In May, both a male and a female hen harrier were observed flying low and circling over the nest location on several occasions, with three food passes between the pair. There were further observations of the female flying into and out of the nest area in June 2020, after which there were no further sightings within the Wind Farm Site. This nest location is mapped as HH-4 in Appendix 7-5.

In 2021, there were eight sightings of hen harrier, all of which were located within the Wind Farm Site. In April, a pair were observed in a courtship display flight together near the traditional breeding territory, and the male was seen skydancing on several occasions in April and May. A new nest location was identified to the west of the 2020 location, with a food pass was recorded between the male and female in this area. In May the male was seen flying into the nest area with prey, indicating the provisioning of young within the nest and confirming breeding in this location. This nest site is mapped as HH-5 in Appendix 7-5.

In 2022 and 2023, there were three and one observation of hen harrier respectively. All of these sightings were of the roaming male in the area of Killeter, with no records within the Wind Farm Site. These observations were of individuals travelling and hunting in areas of conifer plantation and recently-felled woodland to the southeast of the Wind Farm Site. No breeding behaviours were recorded during the 2022 or 2023 breeding season.

Summary of Nests and Territories

As described above, five hen harrier nest locations or territories were identified during surveys. These were:

- > HH-3: probable territory ~2.4km south of Wind Farm in 2019. Roaming male observed here in subsequent years, but did not appear to be nesting.
- > HH-4: ~290 from location of the closest proposed turbine. Occupied in 2020 until June, but no fledglings were observed.
- > HH-5: ~195, from location of the closest proposed turbine. Occupied in 2021. Young were still present in the nest in May, but no fledglings were observed.
- > HH-1: ~660m from location of the closest proposed turbine. Occupied in 2024. Young were still present in the nest in July, but no fledglings were observed.
- > HH-2: ~660m from location of the closest proposed turbine. Occupied in 2025, but no activity recorded after May.

It is likely that HH-1, HH-2, HH-4 and HH-5 was the same hen harrier pair returning to their territory each year, while HH-3 may have been a separate pair/bird due to the distance from the nest sites.

7.3.8.4 Merlin

Merlin were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nest locations are provided in Confidential Survey Data Appendix 7-5.

Breeding Raptor

Merlin were recorded three times during breeding raptor surveys, on 2 of 67 survey dates (3%). Records were of individuals and a pair of birds, during the breeding season.

All records of merlin during breeding raptor surveys were during April and May 2025. On one occasion, a pair of birds were observed circling together and calling high over conifer plantation at Barrack Hill near a traditional nest site (ML-1, described in detail in the ‘Supplemental Surveys’ section below). This pair then glided north-westwards over the forestry in the direction of Barnes Lough. The presence of a pair in this area of suitable habitat indicates probable breeding in this location in 2025. This area of probable breeding is mapped as ML-2 in Appendix 7-5. The remaining two records were of individuals flying low nearby the nest site. The nearest record of merlin to the Wind Farm Site during breeding raptor surveys was located approximately 600m outside the Wind Farm Site.

Connectivity Vantage Point

Merlin were recorded once during connectivity vantage point surveys. In May 2024, a probable male bird flew between fence posts and into forestry on Barrack Hill, close to where merlin have previously successfully bred (see ‘Supplemental Surveys’ below). No further records of merlin were observed in this area during connectivity vantage point surveys. This record is located approximately 800m outside the Wind Farm Site.

Incidental Records

There were ten incidental records of merlin during vantage point, waterbird distribution and abundance, hen harrier roost, breeding raptor, breeding red grouse and breeding red-throated diver surveys. Records were all of individual birds, during the breeding and wintering seasons.

There were four records of merlin using the wider area for hunting, with hunting behaviours recorded at Croaghonagh, Barnesmore Wind Farm and adjacent to the Mourne Beg River to the northeast of the Wind Farm Site, as well as fresh pellets identified in the previous breeding territory on Barrack Hill (see ‘Supplemental Surveys’ below). All other incidental records of merlin are those of individual birds perched, calling, travelling and being flushed from areas of bog, grassland and forestry in the wider area outside the Wind Farm Site. There was a single record of a merlin within the Wind Farm Site, of an individual which was flushed from a fence post along the main access road.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, merlin were recorded 46 times. Records were of between 1 and 3 birds, during the breeding season. The nearest record of merlin to the Wind Farm Site during nest watch surveys was located approximately 50m outside the Wind Farm Site, where a single merlin was recorded at Killeter in May 2020.

Merlin were confirmed to be breeding in an area of conifer forestry on Barrack Hill, approximately 500m to the west of the Wind Farm Site in 2019, 2020 and 2021. In April 2019, a pair of merlin were recorded in the area, and food passes and possible mating were observed. After numerous subsequent observations throughout the breeding season, in July 2019 successful breeding was confirmed when three juveniles were recorded perched on a heather hummock nearby, with one individual feeding on prey. This successful breeding location is shown as ML-1 in the maps within Appendix 7-5. This same nest was used again in subsequent years, with another three juveniles recorded in 2020. No juveniles were seen during surveys undertaken in 2021, however the nest at ML-1 was again used, with defensive behaviour against other raptors such as golden eagle recorded in April, and several prey drops recorded into the nest location in June and July.

There was no evidence of attempted breeding in 2022 with only two records of merlin: one of a female bird flushed from an area of conifer plantation to the north of ML-1, and another of pellets and feathers on a mound near the old nest site. In 2023, however, there were five records of merlin in this area between May and July, of a male and a female hunting and travelling through the area. This suggests breeding probably occurred again this year.

7.3.8.5 Peregrine Falcon

Peregrine falcon were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nest locations are provided in Confidential Survey Data Appendix 7-5.

Vantage Point

Peregrine falcon were recorded on one occasion during vantage point surveys. This record was during February 2025 and was not located within 500m of the proposed turbines; it was approximately 650m to the north of the Wind Farm Site. An individual peregrine falcon was observed flying westwards above conifer forestry at dusk.

Breeding Raptor

Peregrine falcon were recorded 28 times during breeding raptor surveys, on 12 of 67 survey dates (18%). Records were of individuals and pairs of birds during the breeding season.

During the 2024 breeding season, adult birds were regularly seen flying near the confirmed breeding area in the Barnesmore Gap from 2023 (PE-5, see ‘Supplemental Surveys’ section below for detail). In July, a probable pair were observed as two adults were seen near the suspected nest area in short succession. This indicates probable breeding in this location in 2024, and as such the probable nest area

is mapped as PE-1 in Appendix 7-5. During the 2025 breeding season, a pair was again regularly observed in the Barnesmore Gap, indicating probable breeding again this year. An exact breeding location was not identified; however adult birds were regularly recorded flying from the vicinity of the 2024 nest area. As such, this area is likely the probable nest area for 2025 and is mapped as PE-2 in Appendix 7-5.

Peregrine falcon were also observed utilising the area of the Barnesmore Gap for hunting, with eight records of individuals soaring and hunting species such as woodpigeons throughout the area, as well as perched on ledges and boulders feeding on prey.

Connectivity Vantage Point

Peregrine falcon were recorded three times during connectivity vantage point surveys, on 3 of 39 survey dates (8%). Records were of single birds, during the breeding season.

All records of peregrine falcon during connectivity vantage points were of birds flying in the Barnesmore Gap, with individuals likely associated with the Barnesmore Gap territory described in the preceding section. In April and May 2024, individuals were observed travelling in the direction of the nest location, and the following year in June 2025 an individual was again seen in flight over the mountain ridge, in the vicinity of the nest location.

Peregrine falcon were also observed utilising the Barnesmore Gap area for hunting, with individuals observed hunting and soaring in May 2024. The nearest record of peregrine falcon during these surveys was located approximately 1.1km outside the Wind Farm Site.

Incidental Records

There were five incidental records of peregrine falcon during waterbird distribution and abundance and breeding raptor surveys. Records were of individuals and pairs of birds during the 2024 breeding season.

In April 2024, a peregrine falcon displayed territorial behaviour to the south of Barnesmore Wind Farm, mobbing corvids and a white-tailed eagle near a stand of conifer forestry, indicating the establishment of a breeding territory. An individual was seen flying in this area again in July 2024, indicating their continued presence later in the season. Given the distance of these observations from the Barnesmore Gap nest (>3km) and the core foraging range of 2km for peregrine falcon (SNH, 2016), it is possible that these may be individuals from a separate territory, however this is not certain. As such, on a precautionary basis another probable breeding location is mapped in the area in which territorial behaviour was observed, labelled PE-3 in Appendix 7-5. Peregrine falcon were also observed three times in April 2024, flying low over Croaghonagh and towards the area of Lough Mourne. A suspected pair was seen later this day flying over the Barnesmore Gap, likely associated with the Barnesmore Gap territory described above (PE-1).

Peregrine falcon were also observed utilising the wider area for hunting, with an individual observed flying fast and low during April 2024. The nearest record of peregrine falcon during these surveys was located flying over the Wind Farm Site in the area of the existing onsite 110kV substation.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, peregrine falcon were recorded 44 times. Records were of individuals and pairs of birds during the breeding season.

In 2019, there were three records of peregrine falcon in the area of the Barnesmore Gap. These records were of birds flying through the area and landing on cliff ledges. While this indicates possible breeding, no further breeding activity of peregrine falcon observations were recorded in 2019.

In 2020, there were five records of peregrine falcon during nest watch surveys. In May, a pair were observed hunting feral pigeons along the western slope of the Barnesmore Gap, suggesting probable breeding in the area this year. There were three further observations in June and July, however no further breeding activity was recorded and no breeding sites were located.

In 2021, there were 18 records of peregrine falcon and a confirmed breeding location was identified, again in the Barnesmore Gap. In April, a pair were observed in full display and were regularly perching and flying around the suspected nesting site. In May, a nest site was confirmed and adults were seen flying into the nest carrying prey, indicating provisioning of young. A fledged juvenile was observed calling and flying with the female in July. This nest area is mapped as PE-4 in Appendix 7-5.

In 2022, a pair were again observed in the Barnesmore Gap area, suggesting probable breeding. A food pass was observed between the male and female in May, after which the female flew a short distance and stashed the prey behind a rock and then began preening. Peregrine falcon were again heard from this potential nesting site in June, however breeding was not confirmed this year. This breeding site is in the same area as PE-4, therefore is labelled as a probable nest site for 2022 in Appendix 7-5.

In 2023, there were four records of peregrine falcon. Three of these were on the same day in late June, including a single record of a probable juvenile flying over a suitable nest site. The remaining three records were of adult individuals flying around the area. The presence of a juvenile suggests confirmed breeding in this area in 2023. The likely area of the nest based on these observations is labelled as PE-5 in Appendix 7-5.

7.3.8.6 White-tailed Eagle

White-tailed eagle were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nests are provided in Confidential Survey Data Appendix 7-5.

Vantage Point

There were two records of white-tailed eagle from vantage point surveys, or on average once every 447 hours of breeding and winter season surveys. These records were of a single bird during a survey in January 2024 which was perched and then travelling. These records were not located within 500m of the proposed turbines.

In January 2024 an adult white-tailed eagle was observed perched within conifer plantation approximately 320m to the north of the Wind Farm Site, adjacent to the Mourne Beg River. This individual rested here for approximately 38 minutes and was mobbed by corvids before taking flight. The bird was then recorded travelling westwards along the river, still being mobbed by corvids before sight was lost. The recorded flight path was located approximately 140m to the north of the Wind Farm Site at its nearest.

Breeding Raptor

White-tailed eagle were recorded 45 times during breeding raptor surveys, on 11 of 67 survey dates (16%). Records were of between one and three individuals, during the breeding season.

During the 2024 and 2025 breeding seasons, a pair white-tailed eagles were confirmed to be nesting at a location a waterbody approximately 8km outside the Wind Farm Site (labelled as WE-1 in Appendix 7-5). During surveys in April 2024, the pair were observed regularly perched and preening in the vicinity of the nest location, and incubating on the nest. In May, the pair were then observed regularly taking flights from the nest, and the female was seen to begin to feed the clutch. Feeding of the chick(s) continued through June with prey such as mallards recorded. In August, a juvenile was observed flying over the waterbody and returning to the nest site, having successfully fledged. During 2025 surveys, two

chicks were observed in May, and by June only a single male chick survived. This chick was still being provisioned by the adults in July 2025.

Incidental Records

There were 18 incidental records of white-tailed eagles during breeding raptor and waterbird distribution and abundance surveys. Between 1 and 4 individuals were observed during the breeding and wintering seasons.

Of the incidental records, 13 were located in the vicinity of the confirmed nest as described in the preceding sections (WE-1). These records were of individuals or the pair of adults flying and perched in the area, with a juvenile observed in September 2024, likely the fledged chick from the nest. The pair and two chicks were observed in the nest in May 2025, giving the maximum count of four individuals. All records from the core winter months were of pairs of birds, with courtship recorded in December 2023, near the nest site.

The remaining incidental records were located to the south of the Wind Farm Site, in the surroundings of Barnesmore and Meenadreen Wind Farms. These records were of perched and flying individuals during both the breeding and wintering seasons. The nearest incidental record of white-tailed eagle is located approximately 2.0km from the Wind Farm Site.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, white-tailed eagle were recorded three times. Note that these surveys did not target white-tailed eagle or known nesting territories.

Records were of an individual and pairs of birds during the 2021 breeding season only. On two occasions in April and May 2021, a pair of white-tailed eagles were observed soaring the valley to the north of the Barnesmore Gap before moving westwards. On both occasions the pair interacted with other raptors in the area - a peregrine falcon and a golden eagle, respectively. Given the generally large territory sizes of this species, it is likely that these records are of the confirmed breeding pair (WE-1). The remaining record was that of an individual flying low across an open area in conifer plantation to the southeast of the Wind Farm Site.

7.3.8.7 Whooper Swan

Whooper swan were observed in the winter and passage seasons (April 2025). Raw survey data and maps are provided in Appendix 7-4.

Vantage Point

Whooper swan was recorded 13 times during vantage point surveys, or on average once every 57 hours of winter and passage season surveys. Of these records, 12 were within 500m of the proposed turbines. Between 2 and 23 individuals were observed during the winter seasons. The average flock size was 8 birds.

Whooper swan were not recorded roosting during vantage point surveys, all records are those of birds in flight, passing through the Wind Farm Site and surrounding areas, often calling or in a 'V'-formation. Of these records, 11 were recorded between the 8th and 10th of October 2024, with the remaining two records on the 19th and 20th of March 2025 (see Appendix 7-3 Table 7-3-1). These indicate migratory windows for the species as they move towards wintering and breeding grounds, respectively.

Winter Walkover

Whooper swan were recorded four times during winter walkover surveys, on 3 of 16 survey dates (19%). Records were of flocks of between 2 and 24 individuals during the winter season. The average flock size was 10 birds.

All records of whooper swan during winter walkover surveys are those of birds in flight, passing through the Wind Farm Site and surrounding areas. One observation was located within the Wind Farm Site, a record of two birds flying in a northerly direction and calling over conifer plantation to the east of Turbine 15.

Breeding Walkover

Whooper swan were recorded only once during breeding walkover surveys. This record was of a single bird flying in a northerly direction, towards Lough Mourne. This flight was recorded during April 2025, the spring passage season for migratory species, therefore it is possible that this bird was migrating, heading towards northerly breeding grounds. This record is located approximately 600m to the north of the Wind Farm Site.

Waterbird Distribution and Abundance

Whooper swan were recorded 16 times during waterbird distribution and abundance surveys, on 14 of 68 survey dates (21%). Records were of flocks of between 2 and 32 individuals throughout the winter season. The average flock size was 7 birds.

Whooper swan were observed resting on two occasions, at Lough Mourne, located approximately 1.9km to the northwest of the Wind Farm Site, and at Loughnaweelagh approximately 2.0km to the south of the Wind Farm Site. Birds were also observed perched, preening and/or resting on three occasions at Lough Slug approximately 4.4km to the southwest of the Wind Farm Site and again at Lough Mourne. No regular roosting sites were identified during these surveys.

Foraging activity was noted on five occasions, at Lough Eske approximately 7.6km to the west of the Wind Farm Site, Lough Cuill approximately 8.1km to the south of the Wind Farm Site and Lough Shinnagh approximately 3.1km to the northeast of the Wind Farm Site. The remaining records were of birds flying through wider surroundings of the Wind Farm Site. The nearest record of whooper swan during waterbird distribution and abundance surveys was located approximately 1.4km outside the Wind Farm Site.

Connectivity Vantage Point

Whooper swan were recorded seven times during connectivity vantage point surveys, on 3 of 39 survey dates (8%). Records were of flocks of between 2 and 25 individuals during the winter season. The average flock size was 8 birds.

All records of whooper swan during these surveys were of flocks flying through the area to the west of the Wind Farm Site. Of these records, five were observed on the 11th of October 2024. On this date, small flocks of between 2 and 6 birds were recorded flying southwest and northeast over the Barnesmore Gap. There were five records of whooper swans flying over the Wind Farm Site during connectivity vantage point surveys, all of which were of birds passing over the main site access road.

Incidental Records

There were ten incidental records of whooper swan during vantage point and hen harrier roost surveys. Between 1 and 20 individuals were observed during the winter seasons.

All incidental records of whooper swan were those of birds in flight, passing through the Wind Farm Site and surrounding areas during the morning or evening. Of these records, seven were recorded on the 12th of October 2023, with separate flocks totalling 65 birds observed during a morning survey. All observations were of birds heading in a southerly direction, with three records of flights passing through the Wind Farm Site, two of which were within 500m of the proposed turbines. These records show the migratory pathways of the species through the wider area.

7.3.8.8 Grey Wagtail

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

Vantage Point

Grey wagtail were recorded 24 times during vantage point surveys, or on average once every 23 hours of breeding (including March and September) season surveys. Of these records, 23 were within 500m of the proposed turbines. Between 1 and 3 individuals were observed during the breeding season.

There were 20 records of grey wagtail across the two breeding seasons, which were predominantly concentrated in the southern section of the Wind Farm Site. During the 2024 breeding season, pairs were regularly observed in this area suggesting probable breeding in the vicinity. This area of probable breeding activity is labelled as GL-1 in Appendix 7-5. During the 2025 breeding season, a juvenile was observed within GL-1 from June onwards, foraging around the drainage channels, confirming breeding in the vicinity this year. Individuals were also recorded in this area in March 2024 and September each year as the pairs stayed on territory. This territory may also include watercourses located to the east of the mapped records of the species, given the species' preference for breeding along streams and rivers. The area was also used for foraging.

An individual was also seen on one occasion foraging in the vicinity of Turbine 19. This area corresponds to confirmed breeding territory GL-2 as described in 'Breeding Walkover' section below.

Winter Walkover

Grey wagtail were recorded six times during winter walkover surveys, on 3 of 16 survey dates (21%). Records were all of individual birds during March. A pair of birds were recorded during March 2024 in the south of the Wind Farm Site, with the male noted as being on territory. This area corresponds to the probable breeding area GL-1 as described in the preceding section. A second pair were also recorded in March 2025 to the south of Turbine 17. This area corresponds to confirmed breeding territory GL-2 as described in 'Breeding Walkover' section below. These records indicate early breeding behaviours of this species in these areas. The remaining record is that of an individual bird at a small excavated pool in the vicinity of Turbine 18. Further records in these areas were observed during breeding walkover surveys and are described in the section below.

Breeding Walkover

Grey wagtail were recorded 31 times during breeding walkover surveys, on 17 of 20 survey dates (85%). Records were of between 1 and 2 individuals throughout the breeding season.

There were a further four records of grey wagtail within the area of breeding activity GL-1 during breeding walkover surveys, with a juvenile observed during the breeding season 2025, confirming their successful breeding in this area. Additionally, individuals were again seen in the vicinity of Turbine 17, as well as the nearby Turbines 16 and 19. Birds were regularly noted singing and as being on territory during both the 2024 and 2025 breeding seasons in this area, with juveniles observed and breeding

confirmed during the 2024 season. Incidental records also confirm the presence of juveniles in this area during the 2025 breeding season (see ‘Incidental Records’ section below for detail). As such, this area is a confirmed breeding territory for grey wagtail in both 2024 and 2025, and is mapped as such in Appendix 7-5, labelled GL-2. The area was also used for foraging.

There were also high concentrations of activity in the vicinity of Turbine 18, with a pair present and a male in song, during both the 2024 and 2025 breeding season. There is a small excavated pool in this area around which the birds were recorded, and the Bunadownen River flows closely to the south. Due to the regular presence of a pair of birds in this area showing territorial behaviours, and the presence of suitable breeding habitat in the vicinity, this area is considered a probable breeding territory and is mapped as GL-3 in Appendix 7-5. Further records of grey wagtail in flight were also noted on occasion further downstream this watercourse. This territory is considered separate to GL-2 based on the clustering of records in separate areas, and the likelihood of pairs utilising the separate watercourses present in each area. The remaining records of grey wagtail across the Wind Farm Site were sporadic, of individual travelling birds.

Waterbird Distribution and Abundance

Grey wagtail were recorded three times during waterbird distribution and abundance surveys, on 3 of 68 survey dates (4%). Records were all of single birds during the breeding season. Sightings were located at Killeter, Lough Mourne and along the Mourne Beg River to the east of the Wind Farm Site, flying and perched around the watercourses at each location. The nearest record of grey wagtail during waterbird distribution and abundance surveys was located approximately 2.5km outside the Wind Farm Site.

Connectivity Vantage Point

Grey wagtail were recorded seven times during connectivity vantage point surveys, on 5 of 39 survey dates (13%). Records were of between 1 and 3 individuals during the breeding season and with a single record in September 2025. All records were of birds flying in close proximity to the connectivity vantage point location, travelling along the existing main site access road within the Wind Farm Site. No evidence of breeding activity was recorded in this location.

Incidental Records

There were 25 incidental records of grey wagtail during vantage point, waterbird distribution and abundance, hen harrier roost and breeding raptor surveys. Records were of between 1 and 5 individuals during the breeding and wintering seasons.

Incidental records provided additional observations of grey wagtail within confirmed breeding territories GL-1 and GL-2, with incidental records of juveniles within GL-2 in 2025 confirming breeding success in this area. Individuals were also recorded alarm calling from probable breeding territory GL-3. A maximum of five grey wagtails were recorded together at the existing borrow pit within the Wind Farm Site which had flooded with water. A pair of adults were recorded here feeding three juvenile birds on one occasion in May 2025.

There were five records during the 2024 breeding season along the Glendergan River to the south of the Wind Farm Site, with two pairs and a single male noted here twice in April, and individuals recorded here also in May and July. Due to the presence of pairs in this location with suitable breeding habitat present, this is considered an area of probable breeding, and is labelled as GL-4 in Appendix 7-5. No records of grey wagtail were present in this area during the 2025 breeding season.

There was a single record of grey wagtail during the core winter months (January 2024) to the east of the Wind Farm Site, which could suggest a small resident population, or could have been an individual passing through the area and opportunistically foraging along the Mourne Beg River. Occasional

observations of grey wagtail foraging and being flushed from the wider area were also recorded during the breeding season, including again along the Mourne Beg River to the east of the Wind Farm Site, along the Lowerymore River and forestry tracks to the west, and at a bridge to the south of Lough Eske.

7.3.8.9 Kestrel

Kestrel were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4. Survey data and maps relating to nest locations are provided in Confidential Survey Data Appendix 7-5.

Vantage Point

Kestrel were recorded 55 times during vantage point surveys, or on average once every 16 hours of breeding and wintering season surveys. Of these records, 28 were within 500m of the proposed turbines. Records were all of individual birds, during both the breeding and wintering seasons.

Of these records of kestrel, only nine were recorded during the breeding season while 46 were during the wintering season, suggesting more frequent use of the habitats within the Wind Farm Site over winter. There were 35 records of kestrel using the Wind Farm Site and wider area for hunting. Kestrel were indiscriminate in their use of habitats for hunting purposes, utilising conifer plantation, recently-felled areas, bog habitats and grasslands. Sightings were most frequent in the south of the Wind Farm Site, and over the open bog and grasslands to the north and northeast of the Wind Farm Site. The remaining 20 records were of birds travelling through the Wind Farm Site and wider area, occasionally perching in trees or on posts to rest.

Winter Walkover

Kestrel were recorded once during winter walkover surveys. In March 2024, an individual bird was recorded flying in a southeasterly direction, travelling through the Wind Farm Site at the location of Turbine 1. There were no further records of this species during winter walkover surveys.

Breeding Walkover

Kestrel were recorded five times during breeding walkover surveys, on 5 of 20 survey dates (25%). Records were all of individual birds, during the breeding season.

Of these records, kestrel was observed hunting three times, during both the 2024 and 2025 breeding seasons. Hunting was recorded over grassland, scrub, heath and conifer plantation habitats, in the northernmost area of the Wind Farm Site and surrounding areas. The other two records were of kestrels travelling through this same area, as well as to the southeast of the Wind Farm Site.

Breeding Raptor

Kestrel were recorded 46 times during breeding raptor surveys, on 20 of 67 survey dates (30%). Records were all of individual birds, during the breeding season.

During the 2024 breeding season, a male kestrel was observed flying with prey in the direction of a confirmed nest site (K.-2, see 'Connectivity Vantage Point' section below for detail) and a female was observed hunting in the surrounding area. During the 2025 breeding season, kestrel were confirmed to be breeding in an area of montane heath on the western side of the Barnesmore Gap. In June 2025, there were 12 sightings of kestrel in the Barnesmore Gap, five of which were of adult birds hunting throughout the valley. On four occasions, the birds, both a male and female, were then observed flying into a nest site with prey, provisioning young. There were 2-3 chicks in the nest at this time which were seen wing flapping on the ledge, confirming their successful breeding in this area. In July 2025 juvenile

kestrels were observed three times in the wider area. This confirmed nest site is mapped as K.-1 in Appendix 7-5.

The remaining records of kestrel during breeding raptor surveys were largely of individuals hunting throughout the wider area, particularly in the area of the Barnesmore Gap and over the bog habitats to the north. There were three records of hunting activity within the Wind Farm Site, located in the vicinity of Turbine 19.

Connectivity Vantage Point

Kestrel were recorded 14 times during connectivity vantage point surveys, on 4 of 39 survey dates (10%). Records were all of individual birds, during the breeding and wintering seasons.

A confirmed nest site for kestrel was identified during connectivity vantage point surveys, in an area of conifers to the northeast of the Barnesmore Gap. In June 2024, a male was observed carrying prey into this area of trees to the west of the road, suggesting provisioning of young and confirming breeding in this location. There were a further ten observations of both male and female kestrels on this date, hunting in the bog habitats in the area and regularly returning to the nest area. As such, this area is considered a confirmed nest site, and is labelled as K.-2 in the maps in Appendix 7-5. No further records of kestrel using this area of trees were recorded during subsequent connectivity vantage point surveys.

There were two records of a male and a female kestrel, respectively, flying through and hunting in the area during the winter season. Of the records of kestrel during connectivity vantage point surveys, three were located partially within the Wind Farm Site in the area of the main site access road.

Incidental Records

There were 21 incidental records of kestrel during vantage point, waterbird distribution and abundance, hen harrier roost, breeding woodcock, breeding red grouse, connectivity vantage point and breeding red-throated diver surveys. Records were of between 1 and 3 birds, during the breeding and wintering seasons.

There were 14 incidental records of kestrel utilising the wider area surrounding the Wind Farm Site for hunting, particularly the bog and grassland habitats to the north and south. There was only one incidental record of kestrel from within the Wind Farm Site, of an individual flying through. The remaining records were those of birds travelling through the area.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, kestrel were recorded 27 times. Note that these surveys did not target kestrel or known nesting territories. Records were largely of individuals, with one record of a pair of juveniles, during the 2020, 2021, 2022 and 2023 breeding seasons.

In June 2022, a kestrel was observed exhibiting defensive behaviour by mobbing a hen harrier over an area of conifer plantation to the northwest of the Wind Farm Site. To the northwest of this, male and female birds were regularly observed hunting and landing on the ground in an area of upland bog and heath. This suggests the holding of a territory and as such this area is mapped as a probable breeding territory, labelled K.-3 in Appendix 7-5.

Kestrel were recorded hunting 17 times over bog, grassland habitats and exposed rocky areas in the vicinity of the Barnesmore Gap and the hills to the northwest (Croaghbrack, Brown's Hill and Pollakeeran Hill). In July 2020, two juveniles were also recorded hunting over conifer forestry at Killeter, to the southeast of the Wind Farm Site. The remaining nine observations were of birds

travelling and flying around in through the area of the Barnesmore Gap and hills to the northwest. The nearest record of kestrel during these surveys was located approximately 600m outside the Wind Farm Site.

7.3.8.10 Meadow Pipit

Meadow pipit were observed in the breeding and wintering seasons. Raw survey data and maps are provided in Appendix 7-4.

Vantage Point

Meadow pipit were recorded 201 times during vantage point surveys, or on average once every 4 hours of breeding and wintering season surveys. Of these records, 101 were within 500m of the proposed turbines. Between 1 and 80 individuals were observed during all seasons. The average count was seven birds.

It should be noted that records tend to be clustered around vantage point locations due to the increased ability to record this small passerine species at closer range. Meadow pipit were recorded during both breeding and wintering seasons and were resident both within the Wind Farm Site and surrounding areas. Records of this species were largely of small flocks of birds flying across areas of conifer plantation, wet grassland and bog habitats both within and outside the Wind Farm Site.

It is probable that meadow pipits are breeding within the Wind Farm Site as this species was observed displaying during breeding season surveys between April and July 2024 and April and June 2025. Habitats in which meadow pipits were observed displaying were largely bog habitats and wet grasslands with scrub cover which provide suitable ground nesting areas, as well as two records within conifer plantation.

Winter Walkover

Meadow pipit were recorded eight times during winter walkover surveys, on 5 of 16 survey dates (31%). Records were of flocks of between 1 and 15 individuals during the winter season. The average flock size was 6 birds.

Meadow pipit were recorded on one date during the 2023/2024 winter season (March 2024) and throughout the 2024/2025 winter season. The species is resident within the Wind Farm Site. All observations were located within the Wind Farm Site and comprised of birds flitting and flying through the Wind Farm Site, occasionally in mixed flocks with chaffinch. Records were particularly located in areas of bog and wet grassland.

Breeding Walkover

Meadow pipit were recorded five times during breeding walkover surveys, on 4 of 20 survey dates (20%). Records were of flocks of between 4 and 25 individuals during the breeding season. The average flock size was 10 birds.

Of these records, meadow pipits were observed displaying on three occasions, within wet grassland and bog habitats within the Wind Farm site and immediately to the east, indicating their probable breeding both within the Wind Farm site and within the wider area. In July 2024, a flock of 25 meadow pipits was also observed showing evasive behaviour as they were being actively hunted by kestrel within the Wind Farm Site.

Connectivity Vantage Point

Meadow pipit were recorded ten times during connectivity vantage point surveys, on 10 of 39 survey dates (26%). Records were of flocks of between 1 and 60 individuals during the breeding and wintering seasons. The average flock size was 10 birds.

It should be noted that records tend to be clustered around the connectivity vantage point location due to the increased ability to record this small passerine species at closer range. Observations largely consisted of small flocks flitting, perched, calling or foraging around the survey location. There were also two records of birds displaying in this area over wet grassland and bog habitats during March and June 2025, with a minimum of seven pairs recorded around the vantage point in late June 2024. Of the records of meadow pipit during connectivity vantage point surveys, seven were located within the Wind Farm Site, in the area of the main site access road.

Incidental Records

There were 117 incidental records of meadow pipit during vantage point, waterbird distribution and abundance, hen harrier roost, breeding raptor, breeding red grouse and connectivity vantage point surveys. Between 1 and 60 individuals were observed during the breeding and wintering seasons, with an average flock size of 10 birds.

There were 44 incidental records of breeding behaviours within the Wind Farm Site and the wider area during both the 2024 and 2025 breeding seasons. These behaviours included displaying, alarm calling, observations of pairs on territory, and provisioning of fledged young late in the breeding season. These records were not particular to any single area of the Wind Farm Site but were frequent in areas of wet grassland and bog habitats.

All other incidental records of meadow pipits consisted of birds flitting, foraging, perched, calling and travelling through the Wind Farm Site and wider area. There is also one incidental record of a flock of 18 meadow pipits being actively hunted by a merlin in March 2024.

7.3.8.11 Red Grouse

Red grouse were observed in the breeding and wintering seasons. 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

Red grouse were recorded on one occasion during vantage point surveys. This record was during May 2025, was not located within 500m of the proposed turbines and was approximately 130m to the southwest of the Wind Farm Site. This was an aural record of an individual calling once within peatland habitats during the breeding season, with no visual record of the bird. This record is located in close proximity to the possible breeding area for red grouse near Barnesmore Wind Farm (see 'Breeding Red Grouse' and 'Incidental Records' sections below) and is therefore attributed to this territory.

Breeding Red Grouse

Red grouse were recorded twice during dedicated breeding red grouse surveys, on both survey dates in 2024 and 2025. Records were of single birds on both occasions, and both during March.

In March 2024, an individual male was recorded making territorial calls in a peatland located to the southwest of the Wind Farm Site. In March 2025 a male was observed flying low and calling in the same area as 2024. This area of peatland presents suitable breeding habitat for the species, and the

territorial calls of males recorded suggests that red grouse are possibly breeding in this location. This possible area of breeding red grouse is mapped as RG-1 in Appendix 7-5. The nearest record of red grouse during these surveys was located approximately 250m outside the Wind Farm Site.

Incidental Records

There were 24 incidental records of red grouse during breeding raptor, breeding red-throated diver, hen harrier roost and waterbird distribution and abundance surveys. Of these records, none were located within 500m of the proposed turbines, or within the Wind Farm Site. Records were largely of individual birds, with three records of pairs of birds and three records of droppings, and were observed across all seasons. The nearest record of red grouse during these surveys was located approximately 730m outside the Wind Farm Site.

Six incidental records of red grouse were recorded during the 2024 and 2025 breeding seasons, which consisted largely of flushed and calling males. These were mostly recorded within the habitats and roadsides within Barnesmore Wind Farm, located to the southwest of the Wind Farm Site and mapped as possible breeding territory RG-1 as described in the preceding section. Additionally, there was a single record of a pair of birds during the breeding season, located on the higher ground at Croaghonagh, to the west of the Barnesmore Gap. This suggests the probable breeding of this species in this area in 2024, and is therefore mapped as RG-2 in Appendix 7-5.

During the 2023/2024 and 2024/2025 winter seasons, red grouse were observed nine times from the bog habitats and roadsides within Barnesmore Wind Farm. These records largely consisted of single birds flushed by surveyors. On three occasions in October 2023, droppings were also recorded within this area. In addition, three records during the winter season were located on higher ground at Croaghonagh, and a further three records were within peatland habitats to the north of the Wind Farm Site. These findings indicate the prevalence of red grouse in the area surrounding Barnesmore Wind Farm and surrounding bog habitats, and the over-wintering of red grouse in the wider area.

7.3.8.12 Redshank

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

Incidental Records

There were two incidental records of redshank during vantage point surveys. Both records were of an individual bird on one date in September 2025. A single redshank was heard calling from the area of bog approximately 490m to the east of the Wind Farm Site, and was shortly after recorded travelling towards the Mourne Beg River to the north.

7.3.8.13 Redwing

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

Vantage Point

Redwing were recorded 100 times during vantage point surveys, or on average once every 5 hours of winter season surveys. Of these records, 57 were within 500m of the proposed turbines. Between 1 and 170 individuals were observed during the winter season, with an average flock size of 20 birds.

Records were largely of individuals and flocks of birds largely travelling through the Wind Farm Site, over conifer plantations, through bog habitats, and often along forestry fringes, with no records of

foraging behaviours. Redwing were also recorded migrating through the Wind Farm Site at dawn, dusk and in darkness, occasionally perching in trees for rest before moving on. Mixed flocks with fieldfare were frequent. Only two records were during the 2023/2024 winter season, with the remaining 98 records during the 2024/2025 winter season.

Winter Walkover

Redwing were recorded only once during winter walkover surveys. This record was of a flock of 13 birds foraging in an area of conifer plantation and bog habitats in October 2024. This record is located within the Wind Farm Site, to the west of Turbine 19.

Connectivity Vantage Point

Redwing were recorded five times during connectivity vantage point surveys, on 3 of 39 survey dates (8%). Records were of flocks of between 7 and 70 individuals during the 2024/2025 winter season only, with an average flock size of 28 birds. All records were of flocks flying and calling in the vicinity of the connectivity vantage point location, on one occasion in a mixed flock with fieldfares. All of the records of redwing during connectivity vantage point surveys were located within the Wind Farm Site, in the area of the main site access road.

Incidental Records

There were eight incidental records of redwing during waterbird distribution and abundance, winter walkover and vantage point surveys. Between 2 and 55 individuals were observed during both winter seasons, with an average flock size of 18 birds. Only one of these records was located within the Wind Farm site, which was of a flock of 30 birds flying in a south-westerly direction over the main site access road. Records were of birds flying, calling and flitting to the northwest of the Wind Farm Site between areas of conifer plantation and bog habitats.

7.3.8.14 Snipe

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

Vantage Point

Snipe were recorded 57 times during vantage point surveys, or on average once every 16 hours of breeding and wintering season surveys. Of these records, 24 were within 500m of the proposed turbines. Between 1 and 3 individuals were observed during all seasons.

Snipe was resident within the Wind Farm Site and the surrounding areas during both the winter and breeding seasons. There were 17 records of snipe across the two breeding seasons, however the species was recorded only once during the 2024 breeding season, calling from an area of grassland to the north of the Wind Farm Site. During the 2025 breeding season, there were a further nine records of snipe in this same area, all of which were of birds drumming and chipping (courtship displays). It is therefore probable that snipe were breeding in this area in 2025, given the courtship behaviour and that they were present throughout the core breeding season. As such, this area is mapped as a probable breeding area for snipe, labelled SN-1 in Appendix 7-5. A single record of an individual displaying was also recorded in the south of the Wind Farm Site, adjacent to Turbine 1. All other records of snipe during the breeding season were of birds travelling through the area.

During the winter season, records of snipe were mostly of birds flying within the Wind Farm Site and in the wider area, often alarm calling and frequently flushed by surveyors. Records are largely from bog and grassland habitats that provide suitable overwintering habitats for the species.

Winter Walkover

Snipe were recorded twice during winter walkover surveys, on 2 of 16 survey dates (13%). Records were both of individual birds, during the winter season. On both occasions, the birds were flushed from areas of wet bog and scrub within the Wind Farm Site that provide cover for resident overwintering birds.

Breeding Walkover

Snipe were recorded eight times during breeding walkover surveys, on 4 of 20 survey dates (20%). Records were all of individual birds, during the 2025 breeding season.

All records of snipe during breeding walkover surveys were of active breeding activity, with birds seen and heard chipping and drumming in display between May and July 2025. These records were concentrated in two areas, located to the north and east of the Wind Farm Site. The northern area coincides with the snipe breeding territory SN-1 as described above. The additional probable breeding territory located to the east is outlined in the map in Appendix 7-5, labelled SN-2. The nearest record of snipe during breeding walkover surveys was located approximately 20m outside the Wind Farm Site.

Waterbird Distribution and Abundance

Snipe were recorded 15 times during waterbird distribution and abundance surveys, on 13 of 68 survey dates (19%). Records were of between 1 and 2 individuals during both the breeding and wintering seasons.

Five records of snipe during these surveys were during the breeding season, and chipping display behaviours were observed on three occasions. This courtship display was recorded on the western side of Croaghonagh and within Barnesmore Wind Farm, to the west and south of the Wind Farm Site, respectively. The presence of multiple records of breeding behaviours at Croaghonagh indicates the probable breeding of snipe in this area, therefore this area is outlined in the map in Appendix 7-5, labelled SN-3. Additionally, there was one record of a snipe chipping within Barnesmore Wind Farm to the south of the Wind Farm Site. Further breeding season observations of snipe within this same area of Barnesmore Wind Farm were recorded as incidentals, and as such this area was also mapped as a probable breeding area and is labelled as SN-4 in Appendix 7-5 (see 'Incidental Records' section below for further detail). The nearest record of snipe during waterbird distribution and abundance surveys was located approximately 1.1km outside the Wind Farm Site.

Connectivity Vantage Point

Snipe were recorded five times during connectivity vantage point surveys, on 4 of 39 survey dates (10%). Records were all of individual birds, during both the breeding and wintering seasons. All records were of individual birds travelling through the area during dawn and dusk. No evidence of birds breeding in this area was recorded. Of the records of snipe during connectivity vantage point surveys, three were located within the Wind Farm Site, in the area of the main site access road.

Incidental Records

There were 117 incidental records of snipe during vantage point, hen harrier roost, breeding raptor, breeding red grouse and connectivity vantage point surveys. Between 1 and 3 individuals were observed during both the breeding and wintering seasons.

Snipe were incidentally recorded 12 times during the 2024 and 2025 breeding seasons, with chipping behaviours also recorded in March 2025 within the Wind Farm Site. Records of chipping and drumming were recorded within breeding territories SN-1 and SN-2 during the 2025 and 2024 breeding seasons, respectively. Additionally, there were three records of snipe during the breeding season in the same area of Barnesmore in which courtship behaviours were recorded once during the waterbird distribution and abundance surveys. The presence of multiple records of snipe in this area during the breeding season across surveys indicates their probable breeding, therefore this probable breeding area is outlined in the map in Appendix 7-5, labelled SN-4. Furthermore, there were two records of snipe drumming in an area of grassland to the east of the Wind Farm Site during the 2025 breeding season, indicating another probable breeding area. This location is mapped as SN-5 in Appendix 7-5. Widespread individual records of breeding behaviours were also recorded from the wider area to the northeast and southwest of the Wind Farm Site, reflecting the abundance of suitable bog and grassland breeding habitats for the species in the vicinity of the Wind Farm Site.

During the winter season, incidental records of snipe were mostly of birds flying within the Wind Farm Site and in the wider area, often alarm calling and frequently flushed by surveyors. Records are largely from the areas of open bog and grassland habitats to the northeast and northwest of the Wind Farm Site that provide suitable overwintering habitats for the species.

7.3.8.15 **Swift**

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

Vantage Point

Swift were recorded on three occasions during vantage point surveys, or on average once every 145 hours of breeding season survey. All three records were located within 500m of the proposed turbines. Between one and two individuals were observed at each observation, during both the 2024 and 2025 breeding seasons. Individuals were only observed flying through the Wind Farm Site.

7.3.8.16 **Woodcock**

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

Vantage Point

Woodcock were recorded 11 times during vantage point surveys, or on average once every 81 hours of winter season surveys. Of these records, six were within 500m of the proposed turbines. Between 1 and 2 individuals were observed on each occasion.

A single record of woodcock was observed at VP1 during winter 2024/25 surveys. No records of woodcock were recorded during the breeding season during vantage point surveys. All winter records of woodcock were those of birds travelling at dawn and dusk, largely over areas of conifer plantation towards the south of the Wind Farm Site, in the vicinity of Turbines 3 and 5. It was noted on occasion that the birds were heading towards the bog habitats outside the Wind Farm Site

Breeding Woodcock Survey

No observations of woodcock were recorded during the dedicated breeding woodcock surveys undertaken in May and June 2024 and 2025. This suggests the absence of breeding territories in the surveyed areas, in line with findings from other survey types and incidental records outlined below.

Incidental Records

There were 45 incidental records of woodcock during vantage point and hen harrier roost surveys. Between 1 and 2 individuals were observed predominantly during the winter season, with two records during April and May 2024.

All incidental records of woodcock are those of birds travelling at dawn and dusk, often flushed by surveyors on foot or in vehicles commuting through the Wind Farm Site. Records were frequent along the main access road into the Wind Farm Site. Two records of woodcock were during the 2024 breeding season in April and May, respectively. These were located along the main Wind Farm access road, and in the vicinity of Turbine 3. No evidence of breeding behaviours or locations were observed during any surveys undertaken. These records are therefore likely of late-staying winter migrants, or of migrants passing through the area.

7.3.8.17 Buzzard

Buzzard were observed in the breeding and wintering seasons. 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

Buzzard were recorded 73 times during vantage point surveys, or on average once every 12 hours of breeding and wintering season surveys. Of these records, 33 were within 500m of the proposed turbines. Records were all of individuals and pairs of birds, during both the breeding and wintering seasons.

In January, March and April 2025, pairs of buzzards were observed circling and displaying over areas of conifer plantation within the east and west of the Wind Farm Site, however no breeding territories were identified. In March 2025, another pair of buzzards were observed descending towards an area of conifer plantation approximately 1.2km to the east of the Wind Farm Site. While no further breeding activity was recorded in this area during vantage point surveys, incidental records (see 'Incidental Records' section below) confirmed buzzard breeding in this location. This territory is mapped as BZ-1 in Appendix 7-5.

There were 39 records of buzzard during the winter season, largely of individual birds soaring, travelling through the area, calling, perched in trees and hunting. Buzzard were frequent within the Wind Farm Site and across the wider area, using large areas of conifer plantation, wet grassland, scrub and bog habitats for hunting purposes across all seasons.

Winter Walkover

Buzzard were recorded four times during winter walkover surveys, on 4 of 16 survey dates (25%). Records were all of individual birds during the winter season.

Of these records, buzzard were observed hunting twice, in areas of conifer plantation and wet grassland to the north and northeast of the Wind Farm Site. The two other records were of birds travelling, with a single record of an individual flying through the Wind Farm Site, adjacent to Turbine 12.

Breeding Walkover

Buzzard were recorded 16 times during breeding walkover surveys, on 11 of 20 survey dates (55%). Records were all of individual birds during the breeding season.

During breeding walkover surveys, observations of buzzards were generally in the northern area of the Wind Farm Site, and the wider area to the north. Juvenile birds were recorded twice - the first was in June 2024 when an adult and juvenile were observed soaring and hunting together over wet grassland and conifer plantation in the north-easternmost area of the Wind Farm Site, indicating confirmed breeding in the vicinity. Regular sightings of adult birds in this area during the 2024 breeding season support this, therefore this area is mapped as confirmed breeding territory BZ-2 in Appendix 7-5. The second observation of a juvenile was in the location of confirmed territory BZ-1 in July 2025 (see 'Incidental Records' below for detail). Buzzard were also observed hunting on eight occasions, over areas of conifer plantation, wet grassland and scrub.

Breeding Raptor

Buzzard were recorded 45 times during breeding raptor surveys, on 28 of 67 survey dates (42%). Records were largely of individual birds with pairs observed on two occasions during the breeding season.

In May 2024, a buzzard was heard from an area of conifers near the Barnesmore Gap where a pair had recently been seen during connectivity vantage point surveys and a probable breeding territory identified (BZ-3, see 'Connectivity Vantage Point' section below), with further sightings of adults hunting in close proximity earlier in the month and again in July. A pair was again observed in this area in April 2025, suggesting their continued presence in the area during the 2025 breeding season and a probable breeding territory.

In June 2024, an adult buzzard was observed circling over an area of conifer plantation before dropping in to a possible nest site in the area of Killeter, to the southeast of the Wind Farm Site. This suggests possible breeding in this location, however while buzzard sightings were regular, no further records of breeding behaviour were observed in the vicinity during breeding raptor surveys. Incidental records, however, confirm breeding of buzzard in an area just to the north, therefore this sighting is attributed to this breeding territory (BZ-4, see 'Incidental Records' below for detail).

Additionally, there were a further three records of buzzards in the vicinity of confirmed territory BZ-2 described above, in June 2024 and June 2025. The observation of an adult on territory in this location in June 2025 suggests that this breeding site may have been re-used during a second breeding season, therefore BZ-2 is mapped as a probable breeding location for the 2025 breeding season. Two additional sightings of buzzard in this area are also attributed to the breeding territories at either BZ-1 or BZ-2.

In April 2025, a pair of buzzards were observed circling together over an area of conifer plantation to the south of the Wind Farm Site. There were also 16 records of buzzards hunting during breeding raptor surveys. These were widespread across bogs, grasslands and conifer plantations in the wider area, with five observations of buzzards hunting within the Wind Farm Site.

Connectivity Vantage Point

Buzzard were recorded 11 times during connectivity vantage point surveys, on 8 of 39 survey dates (21%). Records were largely of individual birds with a single observation of a pair, during the breeding and wintering seasons.

In April 2024, a pair of buzzards were observed showing courtship behaviour over the Barnesmore Gap before flying back into a probable nest site in an area of conifers. Buzzards were seen twice more in this area in July 2024, hunting and circling in the vicinity. This area is therefore considered a probable breeding territory and is mapped as BZ-3 in Appendix 7-5. Buzzards were observed hunting on a further four occasions during these surveys, largely over the bog habitats in the areas surrounding the connectivity vantage point location. Of the records of buzzard during connectivity vantage point surveys, individuals were observed within the Wind Farm Site on three occasions hunting, circling and heard in the area of the main site access road.

Incidental Records

There were 58 incidental records of buzzard during vantage point, waterbird distribution and abundance, hen harrier roost, breeding raptor, breeding red grouse, connectivity vantage point and breeding red-throated diver surveys. Records were all of individual birds, largely during the winter season.

In April 2024, an individual was observed flying into an area of conifer plantation approximately 1.2km to the east of the Wind Farm Site carrying nesting material, indicating a probable breeding site in this area in 2024. This probable breeding territory is mapped as BZ-1 in Appendix 7-5. No further records of buzzard in this area were recorded during the following months. However, in March 2025 there were two early records of buzzards displaying, with a pair showing courtship behaviour over this same section of conifer plantation. The second record of display behaviour was located approximately 750m to the south, over another area of conifer plantation a week later. Given the typical home range of buzzards (2-3km²; Hardey *et al.*, 2013), it is assumed that these were observations of the same pair. During the following months there were several records of buzzards soaring over this area of forestry, occasionally as a pair, and hunting in the surrounding bog and grasslands. In July 2025, a juvenile buzzard was heard ‘mewing’ from the nest area and was later that day observed flying along the edge of the forestry, with a second observation of the adult and juvenile a few days later confirming successful breeding at BZ-1. The buzzards are resident in this territory location, with several records of birds continuing to utilise this area during the 2023/2024 and 2024/2025 winter seasons. There were also two records of a juvenile in this area in October 2023, suggesting their successful breeding the season prior, as well as breeding records in 2021 (see ‘Supplemental Surveys’ section below). This breeding territory (BZ-1) is therefore mapped as confirmed during the 2025 breeding season in Appendix 7-5.

Additionally, in April 2024 a pair of buzzards were recorded in the area of Killeter to the southeast of the Wind Farm Site. One of the birds was carrying prey and was observed flying into an area of conifer plantation. This provisioning behaviour indicates confirmed breeding in this location, and as such this area is mapped as BZ-4 in Appendix 7-5. An individual was again present in this area a week later, being flushed from the ground before flying into this same section of conifer plantation. This territory is located approximately 2.8km outside the Wind Farm Site.

Of the remaining incidental records of buzzard, 31 were during the winter season and were of individuals flying, soaring, calling and occasionally being mobbed by corvids such as ravens. Observations of buzzard during both the breeding and wintering season were widespread across the wider area, surrounding the Wind Farm Site, as well as seven records of birds passing through and hunting within the Wind Farm Site itself.

Supplemental Surveys

During additional raptor nest watch surveys undertaken between 2019 and 2023, buzzard were recorded 38 times. Note that these surveys did not target buzzard or known nesting territories. Records were largely of individuals, with one record of a pair of birds, during the breeding season.

During 2019 and 2020, pairs of buzzards were observed soaring together on three occasions. In April 2021, an adult was recorded flying into the Wind Farm Site carrying prey. It was not seen to land and no breeding site was identified based on this observation.

In July 2021, in the area of breeding territory BZ-1 described in the preceding sections, a family of 2 adults and 2-3 juvenile buzzards were observed alarm calling. This suggests their successful breeding in this area again in 2021 and regular breeding in this location.

Additionally, in July 2021 a juvenile buzzard was heard calling from an area of conifer plantation approximately 5.5km to the east of the Wind Farm Site. The juvenile was then seen to perch in the trees and remained calling in this location throughout the survey. This suggests breeding in the vicinity of this area, however no territories were identified.

There were six records of buzzards using the Wind Farm Site and surrounding areas for hunting, utilising conifer plantation, recently felled woodland, grasslands and bog habitats. The remaining records were of individuals travelling, soaring and perched in the wider area.

7.3.8.18 Long-eared Owl

Long-eared owl were observed in February, which is the early breeding season for this species. Raw survey data and maps are provided in Appendix 7-4.

Incidental Records

There was a single incidental record of a long-eared owl during connectivity vantage point surveys. This record was an aural record of a bird in an area of conifer plantation within the Wind Farm Site in February 2024, in the area of the main site access road. The bird made a single alarm call.

7.3.8.19 Sparrowhawk

Sparrowhawk were observed in the breeding and wintering seasons. 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

Sparrowhawk were recorded 23 times during vantage point surveys, or on average once every 39 hours of breeding and wintering season surveys. Of these records, 12 were within 500m of the proposed turbines. Records were all of individual birds and pairs, during both the breeding and wintering seasons.

Sparrowhawk breeding activity was confirmed within the Wind Farm Site during the 2025 breeding season. In April 2025, a pair of birds were recorded displaying in an area near Turbine 1, and later that evening were observed carrying prey, indicating the provisioning of young in the area. The adults were observed carrying prey three more times in this area in June and July 2025. While an exact nest site was not identified, this continued provisioning activity indicates a confirmed breeding territory, which is mapped and labelled as SH-1 in Appendix 7-5. Additionally, there was a single record in June 2025 of an adult sparrowhawk flying into another area of conifer to the east of the Wind Farm Site while carrying prey. This indicates a second confirmed breeding territory in this area, located immediately to the east of the Wind Farm Site, and as such is mapped as SH-2 in the maps within Appendix 7-5.

There were also eight records of sparrowhawk hunting in the wider area, across the seasons. Hunting activity was most frequent over areas of grassland and bog habitats to the north and northeast of the Wind Farm Site, with one record from within the Wind Farm Site, in the vicinity of Turbine 3. All other records were of sparrowhawk travelling through the wider area, often low to the ground.

Winter Walkover

Sparrowhawk were recorded once during winter walkover surveys. In March 2025, an individual bird was recorded flying in a north-westerly direction, travelling over conifer plantation through the Wind Farm Site to the northwest of Turbine 14.

Breeding Walkover

Sparrowhawk were recorded four times during breeding walkover surveys, on 4 of 20 survey dates (20%). Records were all of individual birds, during the breeding season.

Of these records, sparrowhawk were observed hunting twice, in areas of conifer plantation, wet grassland and scrub around the northern margins of the Wind Farm site. There were also two records of birds travelling through and to the north of the Wind Farm Site.

Breeding Raptor

Sparrowhawk were recorded 14 times during breeding raptor surveys, on 11 of 39 survey dates (28%). Records were all of individual birds, during the breeding season.

In August 2024, a sparrowhawk was observed rising from conifer plantation in the area of Killeter and chasing off a buzzard, suggesting territorial behaviour and probable breeding in the vicinity. Therefore, a probable breeding territory is mapped in the area from which the sparrowhawk emerged, and is labelled SH-3 in Appendix 7-5.

While no specific breeding locations were identified, sparrowhawk were observed in the area to the south and along the Glendargan River earlier in 2024, as well as on three occasions during the 2025 breeding season. The regular presence of both a male and female in this area indicate probable breeding in the area, however no territories were identified. Further records of sparrowhawk in this area were also previously recorded between 2019 and 2023 (see ‘Supplemental Surveys’ section below), suggesting the regular use of this area during the breeding season.

Sparrowhawk were also recorded four times during breeding raptor surveys in the Barnesmore Gap, flying along the river, railway line and hunting in the area. The remaining three records are those of individual birds travelling through areas to the north of the Wind Farm Site and at Lough Eske. The nearest record of sparrowhawk during these surveys was located approximately 50m to the north of the Wind Farm Site.

Connectivity Vantage Point

Sparrowhawk were recorded once during connectivity vantage point surveys. In January 2024, an individual was recorded travelling through the area adjacent to the N15 National Road, flying through scrub and grassland habitats to the west of the connectivity vantage point location. This record is located approximately 10m outside the Wind Farm Site.

Incidental Records

There were 16 incidental records of sparrowhawk during vantage point, waterbird distribution and abundance, winter walkover and hen harrier roost surveys. Records were all of individual birds, largely during the winter season.

A sparrowhawk was observed displaying over an area of conifer plantation to the north of the Wind Farm Site in February 2024, indicating early breeding behaviour, however no further records of sparrowhawk were recorded in the vicinity for the rest of the breeding season and no breeding territories were identified.

There were four incidental records of sparrowhawk hunting to the north and northeast of the Wind Farm Site as well as at Lough Eske. All other incidental records of sparrowhawk were of birds travelling through the wider area.

Supplemental Surveys

During nest watch surveys undertaken between 2019 and 2023, sparrowhawk were recorded 28 times. Note that these surveys did not target sparrowhawk or known nesting territories. Records were largely of individuals, with one record of a pair of birds, during the breeding season.

In July 2019 a male was observed flying into an area of conifer plantation near Killeter with prey, indicating the provisioning of young in the area. This suggests confirmed breeding in this location, and as such the area of conifer into which the bird flew is mapped as breeding location SH-4 in Appendix 7-4. In May 2022 a male was again seen carrying prey into an area of suitable habitat nearby (record location Killeter, but not mapped). A possible immature bird was later recorded in June this year, however its origin is unknown. The subsequent year, 2023, there were six records of sparrowhawk in this area, with regular visits by both a male and a female to a stand of trees along the Glendargan River. The regular presence of a pair in this area suggest the holding of a territory and probable breeding and therefore this area of trees is mapped as a probable breeding territory, labelled SH-5 in Appendix 7-5.

In addition, in July 2019 an adult sparrowhawk was observed flying in the area of Lismullyduff approximately 7.4km to the northeast of the Wind Farm Site, carrying prey. This indicates the provisioning of young in the area, however the bird was not seen to land and no breeding site was identified based on this observation. As nest watch surveys were only conducted at this location during the month of July 2019, there were no further records in this area.

In May 2020 a pair of sparrowhawk were observed over an area of conifer plantation to the northwest of Lough Mourne, however no further records of sparrowhawk were recorded in the vicinity and no breeding territories were identified. Furthermore, in June 2020 a male was observed circling and displaying over an area of clearfell and conifer plantation within the Wind Farm Site, to the north of Turbine 5, however again no further records of sparrowhawk were recorded in the vicinity and no breeding territories were identified.

The remaining records were spread throughout the wider area, and were of individuals flying through the area, across bog, scrub, grassland, heath and conifer plantation. Hunting was also recorded on occasion.

7.4

Receptor Evaluation

7.4.1

Determination of Population Importance

A determination of population importance for target species within 500m of the Wind Farm Site is provided below, following the criteria described in Section 7.2.4. Estimates of national population sizes were obtained from the most recent 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 I-WeBS sites within County Donegal¹, 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 Eagle

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

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

During supplemental surveys prior to the core survey period, golden eagle were observed on ten occasions. In June 2020, two birds were observed, with an adult female mobbed by a male. During the core survey period, individual golden eagles were observed on two occasions, with a possible (but unconfirmed) second bird also present in May 2025. Golden eagle was reintroduced to Ireland in 2001 but remains a rare breeding bird in Ireland and Northern Ireland (Crowe *et al.*, 2021). On a precautionary basis, this species is considered to be a population of **National Importance**.

7.4.1.2 Golden Plover

Golden plover was recorded during the winter and passage season. The estimated national (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 Donegal population. To estimate the county population, a review of all Donegal I-WeBS sites was conducted. It should be noted that the population estimate based on I-WeBS figures alone is likely to be an underestimate of the county population. As per Burke *et al.* (2018) in relation to the golden plover count, ‘these estimates must be treated as conservative on the basis that they are widely disturbed in a variety of wetland and non-wetland habitats that are under-sampled during I-WeBS.’ This is due to the foraging ecology of wintering golden plover that will utilise agricultural grasslands and other terrestrial habitats not typically surveyed during I-WeBS counts, as this is a survey of wetland habitats. The following mean count values have been recorded for I-WeBS sites over the most recent 5-season period (2018/19 – 2022/23). Note that sites with a mean of zero birds were excluded from this list:

- > Ballyness Bay: 3
- > Donegal Bay: 57
- > Lough Swilly: 851
- > Sheskinmore Lough: 2

Based on the above, the mean wintering population from I-WeBS sites in Donegal is 913 birds. Therefore, regularly occurring population of nine birds is required for classification as County Importance.

Flocks of up to 17 birds were recorded at the Wind Farm Site and up to 340 birds in the wider surroundings during the surveys. Thus, the wintering golden plover population at the Wind Farm Site is of **County Importance**.

7.4.1.3 Hen Harrier

Hen harrier was mainly recorded during the breeding season, with occasional records during the winter season. As such, breeding and wintering populations are treated separately,

Breeding

The estimated national (ROI) breeding population of hen harrier is 85-106 breeding pairs (The 2022 National Survey of breeding Hen Harrier in Ireland, Ruddock *et al.*, 2024). Therefore a regularly occurring population of 1-2 breeding females is required for classification as National Importance. Information on the regional population was also sourced from Ruddock *et al.* (2024). The Blue Stack Mountains, Pettigo Plateau and South Donegal population was estimated at 4-6 pairs in the 2022 National Hen Harrier Survey.

Breeding hen harrier nests were confirmed within the Wind Farm Site in 2020, 2021, 2024 and 2025, at four sites located between 200 and 660m from the nearest turbine locations, likely all belonging to the same pair returning to their breeding territory each year. In 2019 a probable breeding territory was also identified in the area of Killeter, approximately 2.7km from the nearest turbine location. In subsequent

years, a roaming male was resident in Killeter. Due to the regular presence and breeding of hen harrier within the Wind Farm Site and surrounding area the breeding population of this species is considered to be of **National Importance**.

Wintering

The estimated national (ROI) wintering population of hen harrier is 311-435 birds (Article 12 Reporting). Therefore a regularly occurring wintering population of 3-4 birds is required for classification as National Importance. In the absence of higher resolution data, the best available information on wintering hen harrier populations shows an estimated regional wintering population of two birds within the 20km square in which the Wind Farm Site is located (O'Donoghue, 2021).

No hen harrier roosting activity was recorded during any of the surveys as birds were only seen to travel through and hunt within the Wind Farm Site and wider area during the winter season. Hen harrier were hunting at the Wind Farm Site, and at least two individuals were observed during surveys, with records largely of males but a juvenile also noted on one occasion. Thus, the hen harrier population at the Wind Farm Site during the winter season is considered to be of **County Importance**.

7.4.1.4 Merlin

Merlin was recorded during the breeding and winter seasons. The estimated national (ROI) population is 200-400 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 2-4 pairs is required for classification as National Importance. There are no published figures for the County Donegal population. However, according to the distribution of merlin across Ireland in the bird atlas, 10% of the population is found in Donegal in the breeding season. Extrapolating this, the Donegal breeding population is estimated to be 20-40 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

A pair of merlin were confirmed to be breeding at Barrack Hill outside the Wind Farm Site during the 2019, 2020 and 2021 breeding seasons, with probable breeding again in 2023 and 2025. Merlin were recorded within the Wind Farm Site on only one occasion, a record of a bird perched on a fence post which then flew away from the Wind Farm Site. However, the core foraging range of merlin is 5km (SNH, 2016) and the identified breeding locations for merlin are located 0.5-1.5km from the Wind Farm Site. There is therefore potential for birds to use the habitats in the vicinity of the Wind Farm Site for hunting, and the perched individual was likely associated with the nest site. Thus, this species is considered to be a population of **County Importance**.

7.4.1.5 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 Donegal population. However, according to the distribution of peregrine falcon across Ireland in the bird atlas, 8.82% of the population is found in Donegal in the breeding season. Extrapolating this, the Donegal breeding population is estimated to be 37 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

A pair of peregrine falcon were confirmed to be breeding at various locations within a territory in the Barnesmore Gap outside the Wind Farm Site in 2021 and 2023, with probable breeding also in 2022, 2024 and 2025. In 2024, it is possible that there was a separate breeding pair to the south of the Wind Farm Site, approximately 4km from the nearest proposed turbine, though it is uncertain if this was actually the same pair as from the Barnesmore Gap. Peregrine falcon were recorded within the Wind Farm Site only twice, travelling through the area on both occasions. However, the identified breeding locations for peregrine falcon are located 1.5-2.5km outside the Wind Farm Site. The core foraging range of peregrine falcon is 2km (SNH, 2016), however individuals from the Barnesmore Gap pair were

recorded taking flights in excess of 5km in length. There is therefore potential for peregrine falcon to use the habitats in the vicinity of the Wind Farm Site for hunting and commuting and the birds seen at Wind Farm Site during the breeding season are likely to be associated with this nest site. Thus, this species is considered to be a population of **County Importance**.

7.4.1.6 Red-throated Diver

Although red-throated diver were not recorded within 500m of the Wind Farm Site, given their conservation status as a rare breeding bird with a breeding range restricted to County Donegal, they are discussed here.

Red-throated diver are likely breeding in Lough Golagh and Lough Slug, with at least two pairs present, and birds also travel between Lough Golagh and Loughnaweelagh. Loughnaweelagh is the closest lough to the Wind Farm Site boundary, and is 1.9km at the closest point. The nearest record of red-throated diver was a bird flying to Loughnaweela from Lough Golagh, approximately 1.6km outside the Wind Farm Site.

Birds were not observed travelling through the Wind Farm Site on any survey. Furthermore, the Wind Farm Site does not provide suitable breeding or foraging habitat (small loughans) for this species. As such, the Wind Farm Site is of **No Ecological Importance** to this species.

7.4.1.7 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). Therefore, a regularly occurring population of one pair is required for classification as National Importance.

A regular white-tailed eagle nest site was identified approximately 9km outside the Wind Farm Site, with successful breeding observed in both 2024 and 2025. White-tailed eagle were observed within 500m of the Wind Farm Site on only one date in January 2024 when an individual was perched resting within conifer plantation approximately 320m to the north of the Wind Farm Site, adjacent to the Mourne Beg River. The recorded flight path was located approximately 140m to the north of the Wind Farm Site at its nearest. On a precautionary basis, this species is considered to be a population of **National Importance**.

7.4.1.8 Whooper Swan

Whooper swan was recorded in the winter and passage (April) seasons. The estimated national (ROI) wintering population is 14,467 (Burke *et al.*, 2021). Therefore, a regularly occurring population of 145 birds is required for classification as National Importance. The estimated Donegal wintering population is 1,159 (Burke *et al.*, 2021). Therefore, regularly occurring population of 12 birds is required for classification as County Importance.

Flocks of County Importance were not observed utilising the habitats within the Wind Farm Site, however flocks of County Importance (up to 25 birds) were recorded flying over the Wind Farm Site and surrounding areas. No flocks of County Importance were observed foraging or roosting during any of the surveys undertaken.

The population recorded within 5km of the Wind Farm Site (the core foraging range of whooper swan; SNH, 2016) was assigned **County Importance** on a precautionary basis given that flocks of County Importance were observed flying through the Wind Farm Site and wider area on several occasions.

7.4.1.9 Grey Wagtail

Grey wagtail is a BOCCI Red Listed species for breeding populations only in Ireland. Grey wagtail were observed in the breeding (including March and October) season and only once during the core winter months. The estimated national (ROI) resident population is 50,768 birds (Lewis *et al.*, 2019). 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 Wind Farm Site is considered to be of **Local Importance (Lower Value)**.

7.4.1.10 Kestrel

Kestrel is a BoCCI Red Listed species for breeding populations only in Ireland. Kestrel was recorded during the breeding and winter seasons. The estimated national (ROI) population is 13,500 birds (Article 12 Reporting). Therefore, a regularly occurring population of 135 birds is required for classification as of National Importance. There are no published figures for the County Donegal population. However, according to the distribution of kestrel across Ireland in the bird atlas, 7.38% of the breeding population is found in Donegal. Extrapolating this, the Donegal population is estimated to be 996 birds. Therefore, a regularly occurring population of 10 birds is required for classification of County Importance.

Kestrel was resident at the Wind Farm Site. Two nest locations were confirmed in 2024 and 2025 to the west and northwest of the Wind Farm Site, and a probable nest location was identified in 2022 to the northwest of the Wind Farm Site. Because these records occurred in different years, it is not known if these were the same or different birds (therefore between two and six adults are present). Thus, this species is considered to be a population of **Local Importance (Higher Value)**.

7.4.1.11 Meadow Pipit

Meadow pipit was recorded in the breeding and winter seasons. Birds were resident within the Wind Farm Site 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)**.

7.4.1.12 Red Grouse

Red grouse was recorded during the breeding and winter seasons. The estimated national (ROI) population is 1,898 pairs (Article 12 Reporting). Therefore, a regularly occurring population of 19 pairs is required for classification as National Importance. There are no published figures for the County Donegal population. However, according to the distribution of red grouse across Ireland in the bird atlas, 19% of the population is found in Donegal in the breeding season. Extrapolating this, the Donegal breeding population is estimated to be 360 pairs. Therefore, a regularly occurring population of four pairs is required for classification of County Importance.

A possible breeding area for red grouse is located to the southwest of the Wind Farm Site, where calling males were heard in 2024 and 2025. There is also a probable breeding area at Croaghonagh, where a pair were observed during the breeding season. This was the only observation of a pair and all other records of red grouse during the breeding season were of single birds on each date. There was one record of red grouse within 500m of the Wind Farm Site, and one record of a bird partially within 500m of the Wind Farm Site. There were no records of this species within the Wind Farm Site or within 500m of the proposed turbines. Therefore, given the sedentary nature of this species, no population of ecological importance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the Wind Farm Site is of **No Ecological Importance** to this species.

7.4.1.13 Redshank

Redshank were recorded in the winter season. There were only two observations of a single bird on one date in September 2025, approximately 490m outside the Wind Farm Site. There were no other records of this species during any of the surveys undertaken within the Wind Farm Site, and no specific foraging or roosting areas were identified in any location. As such, the Wind Farm Site is of **No Ecological Importance** to this species.

7.4.1.14 Redwing

Redwing was recorded in the winter season. Birds were foraging in the Wind Farm Site and wider area, with flocks regularly passing through on migration. 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 Wind Farm Site is considered to be of **Local Importance (Lower Value)**.

7.4.1.15 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 Donegal population. However, according to the distribution of snipe across Ireland in the bird atlas, 7.92% of the population is found in Donegal in the breeding season. Extrapolating this, the Donegal breeding population is estimated to be 339 pairs. Therefore, a regularly occurring population of three pairs is required for classification of County Importance.

There were five probable breeding territories for snipe identified during breeding season surveys, along with several sporadic records of males chipping and drumming within the Wind Farm Site and surrounding areas. Of these breeding territories, one is located partially within the Wind Farm Site and four were in the wider surroundings. The evidence suggests that there is a regularly occurring population of three pairs (indicated by calling males in three locations) within 500m of the Wind Farm Site during the breeding season. Thus, this species is considered to be a population of **County Importance**.

7.4.1.16 Swift

Swift was recorded in the breeding season. There were only three observations of between one and two birds travelling through the Wind Farm Site during the 2024 and 2025 breeding seasons, and no breeding activity or colonies were identified. As such, the Wind Farm Site is of **No Ecological Importance** to this species.

7.4.1.17 Woodcock

Woodcock is a BoCCI Red Listed species for the breeding season only in Ireland. Woodcock were observed during the winter and passage (April, May) seasons, and no evidence of breeding was observed despite undertaking species-specific breeding woodcock surveys during the 2024 and 2025 breeding seasons. The Irish population is bolstered by migrants from Eastern Europe and Russia during the winter season, and the woodcock recorded during surveys are likely to be overwintering birds. The Wind Farm Site is considered to be of **No Ecological Importance** to the resident Irish population of woodcock.

7.4.1.18 Buzzard

Buzzard was recorded during the breeding and winter seasons. The estimated national (ROI) population is 1,938 pairs (Article 12 Reporting). Buzzard has recently undergone range expansion westwards in Ireland and it is likely that the population has increased considerably since this count was made. However, there are no updated figures available, therefore the value presented in Article 12 Reporting will be used. Based on this, a regularly occurring population of 19 pairs is required for classification as National Importance. In the absence of more detailed county-level information, the county population is estimated to be 75 breeding pairs, assuming an even spatial distribution across the 26 counties of Ireland covered by these data.

Buzzard is resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site, and three other territories were found in the wider surroundings. 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)**.

7.4.1.19 Long-eared Owl

Long-eared owl were recorded in February 2024. 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 Donegal population. However, according to the distribution of long-eared owl across Ireland in the bird atlas, 7.93% of the breeding population is found in Donegal. Extrapolating this, the Donegal population is estimated to be 118-214 pairs. Therefore, a regularly occurring population of one pair is required for classification of County Importance.

There was one observation of a single bird in February 2024, at the beginning of this species' breeding season, which made an alarm call in an area of suitable breeding habitat (conifer trees) within the Wind Farm Site. Long-eared owl may hold territories year-round. Given the cryptic nature of this species, and that it was in a location not frequently visited when the owls would be most detectable during dark hours in the breeding season, this bird is precautionarily considered to hold a breeding territory. As such, it is considered to be a population of **County Importance**.

7.4.1.20 Sparrowhawk

Sparrowhawk was recorded during the breeding and wintering seasons. The estimated national (ROI) population of sparrowhawk is 11,859 individuals (Article 12 Reporting). 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.

One breeding territory of sparrowhawk was identified partially within the Wind Farm Site, with a second breeding territory immediately to the east of the Wind Farm Site, both in 2025. A further three breeding territories were identified in the wider area between 2019 and 2024, however these occurred in different years, and it is not known if these were the same or different birds. Birds were also hunting at the Wind Farm Site and wider area in 2025 (that may not have been the nesting pairs, but other birds from elsewhere). 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 rationale

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Golden eagle	Annex I & Raptor & Red List (breeding)	<u>Breeding</u> National Importance	Golden eagle were observed circling over the Wind Farm Site on two occasions during supplemental surveys, however they were not recorded using habitats within the Wind Farm Site. There is no potential for significant habitat loss for this species. Birds were recorded within 500m of the Wind Farm Site during supplemental surveys. On a precautionary basis, the potential for disturbance/displacement cannot be excluded. A bird was recorded flying within 500m of the proposed turbines once during supplemental surveys in 2023. There were no birds recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. This limits the potential for collision risk for this species. As such, an assessment of disturbance/displacement is required for golden eagle.	Yes
Golden plover	Annex I & Red List (breeding & wintering)	<u>Wintering and Passage</u> County Importance	Golden plover were not recorded using habitats within the Wind Farm Site. There is no potential for significant habitat loss for this species. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of disturbance/displacement and collision risk is required for golden plover.	
Hen harrier	Annex I & Raptor	<u>Breeding</u> National Importance <u>Wintering</u> County Importance	Hen harrier were recorded using the Wind Farm Site for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for hen harrier.	Yes
Merlin	Annex I & Raptor	<u>Breeding and Wintering</u> County Importance	A merlin was recorded using habitats within the Wind Farm Site on one occasion, when an individual was flushed from a fence post on the main access road. The potential for significant habitat loss for this species is limited. Birds were recorded within 500m of the Wind Farm Site on four occasions. However, a nesting territory was recorded within foraging range of the Wind Farm Site in 2019, 2020, 2021, 2023 and 2025. There is therefore potential for birds to use the habitats in the vicinity of the Wind Farm Site for hunting, and, on a precautionary basis, the potential for disturbance/displacement cannot be excluded.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			There were no birds recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of disturbance/displacement is required for merlin.	
Peregrine falcon	Annex I & Raptor	<u>Breeding and Wintering</u> County Importance	Peregrine falcon were not recorded using habitats within the Wind Farm Site. There is no potential for significant habitat loss for this species. Birds were recorded within 500m of the Wind Farm Site on three occasions, travelling through the area on all occasions. However, a nesting territory was recorded within foraging range of the Wind Farm Site in 2021, 2022, 2023, 2024 and 2025. There is therefore potential for peregrine falcon to use the habitats in the vicinity of the Wind Farm Site for hunting, and the potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of disturbance/displacement is required for peregrine falcon.	Yes
Red-throated diver	Annex I	<u>Breeding</u> No Population of Ecological Importance	No population of ecological significance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. Red-throated diver were recorded at loughs in the wider surroundings, the nearest being 1.9km from the Wind Farm Site boundary. Red-throated diver were not recorded travelling across the Study Area during two breeding seasons of vantage point survey, although it is acknowledged that detectability of this species is low. In addition, while there is a complex of lochs to the south of the Wind Farm Site,	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			there is only one lake to the north that may create a commuting route through the Wind Farm Site (Trusk Lough). Red-throated diver were not recorded on Trusk Lough during Waterbird Distribution and Abundance Surveys in the winter season or during April and May (early-to-mid breeding season). Within the complex of lochs, birds were travelling between Lough Golagh and Loughnaweelagh, however they were not observed flying north of this (towards the Wind Farm Site). As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	
White-tailed eagle	Annex I & Raptor & Red List (breeding)	<u>Breeding and Wintering</u> National Importance	White-tailed eagle were not recorded using habitats within the Wind Farm Site. There is no potential for significant habitat loss for this species. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The majority of flights were of birds hunting and travelling in the wider surroundings of the Wind Farm Site, in particular within the vicinity of the nest site. This limits the potential for significant collision risk for this species. As such, an assessment of disturbance/displacement is required for white-tailed eagle.	Yes
Whooper swan	Annex I	<u>Wintering and Passage</u> County Importance	Whooper swan were not recorded using habitats within the Wind Farm Site. There is no potential for significant habitat loss for this species. Birds were not recorded using habitats within 500m of the Wind Farm Site. All records of whooper swan were of birds travelling through the Wind Farm	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			Site and wider area. The potential for disturbance, displacement and barrier effects cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of disturbance/displacement and collision risk is required for whooper swan.	
Grey wagtail	Red List (breeding)	<u>Breeding and Wintering</u> Local Importance (Lower Value)	Grey wagtail was recorded using the Wind Farm Site for foraging and breeding. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.	No
Kestrel	Red List (breeding) & Raptor	<u>Breeding and Wintering</u> Local Importance (Higher Value)	Kestrel was recorded using the Wind Farm Site for resting and hunting. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for kestrel.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Meadow pipit	Red List (breeding)	<u>Breeding and Wintering</u> Local Importance (Lower Value)	Meadow pipit is resident at the Wind Farm Site with probable breeding activity recorded. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.	No
Red grouse	Red List (breeding)	<u>Breeding and Wintering</u> No Population of Ecological Importance	No population of ecological importance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. In a study monitoring bird responses to wind farm construction, Pearce-Higgins (2012) found that red grouse were significantly reduced during construction, although red grouse recovered by the first year post-construction. Disturbance distances are not provided for red grouse, however, NatureScot (2022) recommends a buffer zone of up to 150m for nesting females of a similar species, black grouse. The possible red grouse territory was over 280m from the access track and over 650m from the nearest construction works, therefore unlikely to be affected by construction disturbance. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	No
Redshank	Red List (breeding & wintering)	<u>Wintering</u> No Population of Ecological Importance	No population of ecological importance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	No
Redwing	Red List (wintering)	<u>Wintering</u> Local Importance (Lower Value)	Redwing were migrating through and foraging within the Wind Farm Site. However, as per NatureScot guidance, it is generally considered that passerine bird species are not significantly impacted by wind farms due to their ecology. As such, the potential for direct habitat loss, disturbance/displacement and	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
			collision risk are limited and there is no evidence to suggest that the development will significantly impact this species.	
Snipe	Red List (breeding & wintering)	<u>Breeding and Wintering</u> County Importance	Snipe was recorded using the Wind Farm Site for breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for snipe.	Yes
Swift	Red List (breeding)	<u>Breeding</u> No Population of Ecological Importance	No population of ecological importance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	No
Woodcock	Red List (breeding)	<u>Winter and Passage</u> No Population of Ecological Importance	No population of ecological importance was recorded utilising the Wind Farm Site during the extensive suite of surveys conducted. As such, the potential for direct habitat loss, disturbance/displacement and collision risk are limited and there is no evidence to suggest that the development site is of significance to this species.	No

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Buzzard	Raptor	<u>Breeding and Wintering</u> Local Importance (Higher Value)	Buzzard was recorded using the Wind Farm Site for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of the direct effects of habitat loss, disturbance/displacement and collision risk is required for buzzard.	Yes
Long-eared Owl	Raptor	<u>Breeding</u> County Importance	Field survey records suggest that it is likely that long-eared owl were using the Wind Farm Site for breeding. On a precautionary basis, the potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. There were no birds recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. This limits the potential for significant collision risk for this species. As such, an assessment of direct habitat loss and disturbance/displacement and collision risk is required for long-eared owl.	Yes

Species	Status	NRA Evaluation	Rationale for inclusion/exclusion as KOR	KOR
Sparrowhawk	Raptor	<u>Breeding and Wintering</u> Local Importance (Higher Value)	Sparrowhawk was recorded using the Wind Farm Site for hunting and breeding. The potential for direct habitat loss cannot be excluded. Birds were recorded within 500m of the Wind Farm Site. The potential for disturbance/displacement cannot be excluded. Birds were recorded flying at PCH within 500m of the proposed turbines during vantage point surveys. The potential for collision risk cannot be excluded. As such, an assessment of direct habitat loss, disturbance/displacement and collision risk is required for sparrowhawk.	Yes

7.4.3 Sensitivity Determination

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

High Sensitivity KORs are:

- > Golden eagle (ecologically sensitive species, population of National Importance)
- > Hen harrier (ecologically sensitive species, breeding population of National Importance)
- > White-tailed eagle (population of National Importance)

Medium Sensitivity KORs are:

- > Golden plover (Annex I, population of County Importance)
- > Merlin (Annex I, population of County Importance)
- > Peregrine falcon (Annex I, population of County Importance)
- > Whooper swan (Annex I, population of County Importance)
- > Kestrel (BoCCI Red Listed)
- > Snipe (BoCCI Red Listed, population of County Importance)
- > Long-eared owl (population of County Importance)

Low Sensitivity KORs are:

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

7.5 Impact Assessment

All elements of the Prospective Development 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 Prospective Development during construction, operation and decommissioning;
- > Assessment of the likely effects associated with the 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

The ‘Do-Nothing’ alternative is an alternative scenario to retaining and regularising the Existing Development. In this scenario, the Existing Development will remain in-situ as an unauthorised and partially completed wind farm, which is, in effect, the “Do-Nothing” alternative insofar as it represents the current situation as at the date of the application for Substitute Consent.

There would be no direct negative environmental effects as a result of implementing the “Do-Nothing” alternative. However, by implementing this ‘Do-Nothing’ alternative, the opportunity to capture a significant part of the country’s renewable energy resource by completing the Meenbog Wind Farm (subject to appropriate planning consents) 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, local authority development contributions, rates and investment in the local area would

also be lost. Furthermore, the opportunity to implement the proposed biodiversity enhancement measures would be lost. Please see Appendix 6-4 Biodiversity Management and Enhancement Plan for details. Under the “Do-Nothing” alternative, the opportunity to put in place the community benefit scheme proposed as part of the Prospective Development would also be lost.

If the Prospective Development is not undertaken, it is likely that the Site will continue to be managed for forestry production. It is likely that it will be subject to ongoing road maintenance and forest activities such as rotational and periodic clear felling, planting and establishment. It is unlikely that significant road or infrastructure building activity will occur and thus unlikely that there will be any loss of habitats, other than rotational forestry. There is likely to be the continuation of likely impacts on the downstream watercourses as a result of nitrification and sediment release as a result of ongoing land management practices.

7.5.2 Likely Effects of the Prospective Development

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

7.5.2.1 Golden Eagle (breeding)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	During the core survey period, golden eagle were recorded on two occasions. Both records were of birds soaring over 2km outside of the Wind Farm Site. During supplemental surveys prior to the core survey period, golden eagle were recorded a further eight times soaring, circling, travelling and hunting at distances over 1.0km outside the Wind Farm Site. A bird was seen flying over the Wind Farm Site on two occasions on a single date in May 2023, when an individual was observed soaring over a wide area before gliding northwards. Golden eagle were not recorded using the habitats within the Wind Farm Site on any occasion. The dense commercial forestry plantations throughout the Wind Farm Site do not provide optimal habitat for this species. There was a single record of a bird hunting in the area of the Barnesmore Gap, however this observation was located approximately 1.4km outside of the Wind Farm Site. Golden eagle are infrequent visitors to the area surrounding the Wind Farm Site, and were not recorded using the Wind Farm Site for hunting or breeding on any occasion. Therefore, no significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as Negligible. When a High sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Disturbance	As described above, golden eagle were occasionally recorded over 1.0km outside the Wind Farm Site. A bird was only seen flying over the Wind Farm Site on a single date in May 2023. Golden eagle were not recorded using the habitats within the Wind Farm Site on any occasion. A review of disturbance distances by NatureScot (2022) and Goodship and Furness (2022) reported a buffer zone suggestion of 750-1000m for golden eagle during the breeding season. Golden eagle are infrequent visitors to the area surrounding the Wind Farm Site and are not dependent upon the Wind Farm Site for hunting or breeding. Of the 12 records of golden eagle between 2019 and 2025, a single bird was recorded within 1km of the proposed construction footprint only twice, on a single date in May 2023. All other records of golden eagle are located over 1.3km outside the Wind Farm Site. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, given the infrequency of observations of this species within disturbance distance, no significant effects of disturbance are anticipated at the county, national or international level.	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this 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.
Disturbance, Displacement and Barrier Effect	As described above, golden eagle were occasionally recorded over 1.0km outside the Wind Farm Site. A bird was only seen flying over the Wind Farm Site on a single date in May 2023. Golden eagle were not recorded using the habitats within the Wind Farm Site on any occasion. A review of disturbance distances by NatureScot (2022) and Goodship and Furness (2022) reported a buffer zone suggestion of 750-1000m for golden eagle during the breeding season. Madders and Whitfield (2006) found golden	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	eagles as having potentially the highest sensitivity to displacement by wind farms, with range use changing in a pair of resident Scottish eagles after a wind farm was constructed within the territory, however it should be noted that definitive conclusions were confounded by a simultaneous habitat management plan in the territory. Other studies in USA, however, have not noted any displacement effects due to the operation of wind farms (discussed in Ruddock and Whitfield, 2007). Birds were not frequently recorded on site, therefore significant disturbance by maintenance vehicles and personnel visits during the operational phase is not anticipated. No evidence of golden eagles holding territories within the Wind Farm Site or wider surroundings was recorded during any of the surveys undertaken between 2019 and 2025. Additionally, of the 12 records of golden eagle between 2019 and 2025, a single bird was recorded within the Wind Farm Site only twice, on a single date in May 2023. All other records of golden eagle are located over 1km outside the Wind Farm Site. There is no evidence to suggest that the Wind Farm Site lies on a migratory/regular commuting route for the species therefore barrier effect is not anticipated. Given the infrequency of observations of this species within or within proximity to the Wind Farm Site, no significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	While this species was recorded within the Wind Farm Site during supplemental surveys prior to the core survey period, this species was not recorded within the Wind Farm Site during the extensive vantage point survey work undertaken during the core survey period. Studies have found that golden eagle are strongly influenced by habitat preference and that their proximity to turbines depends on the intrinsic habitat attractiveness of the turbine locations and its connectivity to the surrounding habitat's attractiveness (Fielding <i>et al.</i>, 2021). The majority of the Wind Farm Site is dense commercial	No Effect.	No Effect.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	forestry plantation, which is not attractive habitat for golden eagle. Collision related mortality is not likely to significantly impact this species.		
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 Golden Plover (wintering and passage)

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	The majority of records of golden plover were of birds flying in the area of Barnesmore Wind Farm and the surrounding bog habitats during waterbird distribution and abundance surveys, over 1.4km to the southwest of the Wind Farm Site. A single record of a flock of 340 birds was also recorded in the area of Tievecloaghoge approximately 4.2km to the east of the Wind Farm Site. Golden plover were recorded roosting on only one occasion, in an area of bog habitat approximately 900m to the northwest of the Wind Farm Site. A bird was also heard from the bog habitats to the east of the Wind Farm Site on one occasion. Records of golden plover within the Wind Farm Site were infrequent, with birds recorded on three occasions, all of which were of birds flying through or circling over the area of bog in the northeast of the Wind Farm Site. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	artificial surfaces, spoil and bare ground and recolonising bare ground which are of no ecological value for golden plover. This species is not dependent upon the Wind Farm Site for foraging or roosting during the winter period, given how infrequently birds were seen flying within the Wind Farm Site and the lack of any records of birds landing within the Wind Farm Site. Where golden plover were recorded within the Wind Farm Site, the birds were seen travelling through the area, and circling over an area of bog in the northeast. Loss of suitable golden plover habitat will be extremely small given the extent of the footprint of the Prospective Development that is already in place. No significant effects of direct habitat loss are anticipated.		
Disturbance	As described above, the majority of records of golden plover were over 1.4km from the Wind Farm Site. Golden plover were recorded roosting on only one occasion, in an area of bog habitat approximately 900m to the northwest of the Wind Farm Site. Records of golden plover within the Wind Farm Site were infrequent. Goodship and Furness (2022) reported a disturbance buffer zone suggestion of 200-500m for golden plover during the winter season. Golden plover were not recorded utilising habitats within the Wind Farm Site for roosting or foraging, and flights were recorded within 143m of the proposed construction footprint on only five occasions over the two winter seasons of surveys. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, this species is not dependent upon the Wind Farm Site for foraging or roosting during the winter period, given how infrequently birds were seen flying within the Wind Farm Site and the lack of any records of birds landing within the Wind Farm Site. Where golden plover were recorded within the Wind Farm Site, the birds were seen travelling through the area, and circling over an area of bog in the northeast.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Therefore, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, the majority of records of golden plover were over 1.4km from the Wind Farm Site. Golden plover were recorded roosting on only one occasion, in an area of bog habitat approximately 900m to the northwest of the Wind Farm Site. Records of golden plover within the Wind Farm Site were infrequent. Goodship and Furness (2022) reported a disturbance buffer zone suggestion of 200-500m for golden plover during the winter season. 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 al.</i>, 2006). McGuinness <i>et al.</i> (2015) suggest a larger zone of sensitivity of 800m. Using the precautionary figure of 800m, golden plover were recorded within 800m of the proposed turbines on only six occasions, of which birds were only recorded landing within the habitats in these areas on only one occasion. Golden plover were not frequently recorded within the Wind Farm Site, therefore significant disturbance by maintenance vehicles and personnel visits during the operational phase is not anticipated. Golden plover were also not dependent upon areas within displacement distance of the proposed turbines for foraging or roosting during the winter period, given how infrequently birds were seen flying within or utilising these areas. There is no evidence to suggest that the Wind Farm Site lies on a migratory/regular commuting route for the species therefore barrier effect is not anticipated.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	No significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the winter and passage season are included. The collision rate has been calculated at 0.0713-0.292 collisions per year, or one bird approximately every 3-14 years. Given the uncertainties associated with estimating collision rates, this may range up to 0.323-0.950 birds per year. Annual mortality of adult golden plover has been calculated at 27% per annum (Sandercock, 2003). If 0.0713-0.292 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c.913 birds) by 0.03-0.12%. In addition, the estimate of the county population of 913 birds is based on I-WeBS data, which is likely to be an underestimate, therefore the magnitude of the impact may be lower than this. The predicted collision risk is negligible.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this 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.

7.5.2.3 Hen Harrier (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Hen harrier have been recorded breeding within the Wind Farm Site during the 2020, 2021, 2024 and 2025 breeding seasons. The nests were not in the same location each year but moved within a distance of approximately 2km within the Wind Farm Site. Additionally, during supplemental surveys prior to the core survey period, a probable breeding location was identified at Killeter in 2019, approximately 2.4km outside the Wind Farm Site. In subsequent years, a roaming male was resident here and did not appear to have a mate. Records of hen harrier were therefore clustered around these breeding sites, with frequent hunting activities around the nests and forays into the wider area. Habitat usage by hen harrier was largely of bog habitats with flights over conifer plantation also regular. Hen harrier were also recorded infrequently during the winter season. No hen harrier roosting activity was recorded during any of the surveys as birds were only seen to travel through and hunt within the Wind Farm Site and wider area during the winter season. No habitat loss will occur at any of the previous breeding locations for hen harrier as they are all located outside the footprint of the Prospective Development. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for hen harrier. Loss of potential hen harrier hunting, breeding and roosting habitat will be small given the extent of the footprint of the Prospective Development that is	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	already in place. Therefore, no significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As described above, hen harrier have been recorded breeding within the Wind Farm Site in 2020, 2021, 2024 and 2025. Additionally, a probable breeding location was identified at Killeter in 2019, approximately 2.4km outside the Wind Farm Site, with a roaming male resident here in subsequent years. Records of hen harrier were therefore clustered around these breeding sites, with frequent hunting activities around the nests and forays into the wider area. During wind farm construction, disturbance of breeding birds has been suggested to potentially occur up to 500m around construction works, with some disturbance up to 1km, depending on lines of visibility (Madders, 2004, cited in Bright <i>et al.</i>, 2006), while NatureScot (2022) suggests a disturbance buffer of 500-750m. The previous breeding locations for hen harrier within the Wind Farm Site (in 2020 and 2021) are located approximately 240m and 110m from the proposed construction footprint respectively and approximately 290m and 195m from the closest proposed turbine. The 2020 nest site (HH-4) has lines of visibility with proposed construction works. The more recent breeding locations (in 2024 and 2025) are located approximately 505m and 450m respectively from the proposed construction footprint and approximately 660m from the closest proposed turbine. In addition, hen harrier were occasionally hunting within proximity to construction works, although the majority of observations were around the nest site in the north of the Wind Farm Site. Of the 148 total records of hen harrier during the breeding season between 2019 and 2025, 65 of these were located within 500m of the proposed construction footprint. There is therefore the potential for temporary disturbance to occur during the construction phase during the breeding season to the nest sites and to foraging	<u>Breeding Season</u> The magnitude of the effect is assessed as Medium. When a High sensitivity species is cross-referenced with a Medium impact, this corresponds to a High effect significance. <u>Wintering Season</u> The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	<u>Breeding Season</u> Likely short-term significant negative effect. <u>Wintering Season</u> Likely short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	areas. This has the potential to lead to the avoidance of areas within the Wind Farm Site by hen harrier during construction and the loss of potential breeding or foraging areas within the disturbance zones, therefore the magnitude of the effect of disturbance is assessed as medium during the breeding season. Without intervention, a significant effect is predicted. As such, a comprehensive BMEP is proposed (see Section 7.6.3). Hen harrier were also recorded infrequently during the winter season. No hen harrier roosting activity was recorded during any of the surveys as birds were only seen to travel through and hunt within the Wind Farm Site and wider area during the winter season. No significant effects of disturbance are anticipated at the county, national or international level during the winter season.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, hen harrier have been recorded breeding within the Wind Farm Site in 2020, 2021, 2024 and 2025. Additionally, a probable breeding location was identified at Killeter in 2019, approximately 2.4km outside the Wind Farm Site, with a roaming male resident here in subsequent years. Records of hen harrier were therefore clustered around these breeding sites, with frequent hunting activities around the nests and forays into the wider area. NatureScot (2022) found that disturbance to hen harrier may occur between 500-750m of human activity. Management and servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of hen harrier is possible throughout the Wind Farm Site during the operational phase by maintenance vehicles and personnel visits, particularly in the vicinity of the proposed	<u>Breeding Season</u> The magnitude of the effect is assessed as High. When a High sensitivity species is cross-referenced with a High impact, this corresponds to a Very High effect significance. <u>Wintering Season</u> The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-	<u>Breeding Season</u> Likely long-term very significant negative effect. <u>Wintering Season</u> Likely long-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development	Significance (Percival, 2003)	Significance (EPA, 2022)
turbines, access roads and the onsite 110kV substation. This may result in temporary avoidance by foraging birds, however the volume and frequency of such visits is considered to be very low and is likely to be minor in scale and short in duration when it occurs. There is no guidance which provides a definitive hen harrier displacement distance from operational turbines, and evidence of displacement from relevant scientific literature is mixed. However, 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. Of the 148 total records of hen harrier during the breeding season between 2019 and 2025, 64 of these (43%) were located within 500m of the proposed turbines. Additionally, the previous breeding locations for hen harrier within the Wind Farm Site are all located within 650m of the proposed footprint, therefore there is potential for displacement to occur during the operational phase during the breeding season. This has the potential to lead to the avoidance of areas within the Wind Farm Site by hen harrier during operation and the loss of potential habitat within the displacement zones. It is acknowledged that some areas of the Wind Farm Site may naturally become unsuitable for hen harrier over the lifetime of the Prospective Development 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 Wind Farm Site during the lifetime of the Prospective Development, and as such new potential suitable habitat for hen harrier would become available. Therefore, due to the above outlined displacement effects during operation, there will be a long-term loss of potential habitat within the Wind Farm Site for hen harrier. To determine the likely significance of this displacement effect, a two-step process was undertaken. In Step 1, the amount of indirect habitat loss was calculated. In Step 2, this was considered relative to the availability of habitat	referenced with a Low impact, this corresponds to a Low effect significance.	

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	locally to quantify the magnitude of the effect. Each step is described in detail below. Step 1: As stated above, there is no guidance which provides a definitive hen harrier displacement distance from operational turbines, and evidence of displacement from relevant scientific literature is mixed. The study by Pearce-Higgins <i>et al.</i> (2009) cited above found significant avoidance of turbines by within 250m, and reduced flight activity (52%) within 500m of turbines at operating wind farms. Figure 1 of the paper shows that the reductions in hen harrier density mainly occur within 250-500m of a turbine. The model fitted an exponential (log-linear) relationship with turbine proximity, smoothing the response into a monotonic distance relationship. If the true response is strongly concentrated within 250m of turbines (as indicated in Figure 1), the model may dilute the near-turbine effect and spread it over a larger area, overstating the level of displacement impact beyond 250m.. There is therefore a sound scientific basis for using a 250m buffer for estimating the hen harrier displacement effect and, in this habitat loss calculation, it was assumed that there would be total avoidance of a buffer zone within a 250m radius of the proposed wind proposed turbines. Closed canopy forestry does not provide suitable habitat for hen harrier. As such, areas of this habitat within 250m of the proposed turbines have not been included in the calculation of habitat loss. As the amount of closed canopy forestry within 250 metres of the proposed turbines varies (over time) with the rotational cycle of forestry, calculations have been made using felling plans for the relevant folios as provided by the forestry owner (Coillte) to determine the average amount of potentially available hen harrier habitat that will be unavailable on an annual basis throughout the proposed operational lifetime of the wind farm.		

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Based on the precautionary assumption that hen harrier will avoid all areas within 250 metres of a turbine and having calculated the amount of foraging habitat available on an annual basis (taking into account standard forestry management practices for forested areas), the estimated quantum of habitat from which hen harrier will be displaced is 104.88ha. Step 2: Information on hen harrier home range size in the literature is extremely limited, particularly as more intensive or costly methods such as GPS tagging are required for these types of analyses. One study has shown that breeding hen harrier spend the majority of their time within a home range of 800ha for males and 450ha for females (Arroyo <i>et al.</i>, 2014). This is likely to have included birds commuting across non-foraging habitat or infrequently used areas, therefore it should be interpreted with caution, as not all of this area may be functional foraging habitat. However, in the absence of other studies quantifying the home range of hen harrier, the lower value of 450ha is used here. Assuming that the breeding pair are using a home range of 450ha for foraging, the loss of 104.88ha represents, approximately a 23% reduction in the amount of available foraging habitat in the home range of this pair. Therefore the magnitude of the effect of displacement is assessed as high during the breeding season. Without intervention, a significant effect is predicted. As such, a comprehensive BMEP is proposed (see Section 7.6.3). Hen harrier were recorded infrequently during the winter season. No hen harrier roosting activity was recorded during any of the surveys as birds were only seen to travel through and hunt within the Wind Farm Site and wider area during the winter season. No significant disturbance, displacement and barrier effects are anticipated at the county, national or international level during the winter season.		

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). The collision risk has been calculated at 0.015-0.0323 collisions per year during the breeding season, or one bird every 31 years or more, and 0.007-0.0077 collisions per year during the wintering season, or less than one bird over the lifetime of the Prospective Development. Combined, this is 0.022-0.04 birds per annum, or one bird every 25 years or more. Given the uncertainties associated with estimating collision rates, this may range up to 0.029-0.098 birds per year during the breeding season and 0.016-0.029 during the winter season. Annual mortality of adult hen harrier has been calculated at 19% per annum (Picozzi, 1984). If 0.015-0.0323 collisions were to occur per year during the breeding season, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the national population (c.170-212 [85-106 breeding pairs]) by between 0.04-0.05% and 0.08-0.1%. The predicted effect of collision risk on the national population during the breeding season is negligible. The annual mortality of the regional population (c.8-12 [4-6 breeding pairs]; Blue Stack Mountains, Pettigo Plateau and South Donegal) would increase by between 0.66-0.99% and 1.42-2.13%. If 0.007-0.0077 collisions were to occur per year during the wintering season, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the national population (c. 311-435 birds) by 0.01%. The predicted effect of collision risk on the national population during the wintering season is negligible. The annual mortality of the regional population (c.2 birds within the 20km grid square in which the Wind Farm Site is located) would increase by between 1.84 and 2.03%.	<u>Breeding Season</u> The magnitude of the effect on the national population is assessed as Negligible. When a High sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance. The magnitude of the effect on the regional population is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance. <u>Wintering Season</u> The magnitude of the effect on the national population is assessed as Negligible. When a High sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance. The magnitude of the effect on the regional population is	<u>Breeding Season</u> Likely long-term imperceptible negative effect, which is not significant, on the national population. Likely long-term slight negative effect, which is not significant, on the regional population. <u>Wintering Season</u> Likely long-term imperceptible negative effect, which is not significant, on the national population. Likely long-term slight negative effect, which is not significant, on the regional population.

Potential effects during the construction and operational phases of the Prospective Development	Significance (Percival, 2003)	Significance (EPA, 2022)
The threshold level of a 1% increase in annual mortality is non-negligible. A 1% threshold for significance is recommended by the European Commission 2008 guidance document on hunting under the Birds Directive (EC, 2008). Under Article 9(1)(c) of the Birds Directive, there is a derogation 'to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers', while the guidance document suggests a 1% increase in annual mortality to describe 'small numbers' in this context. As such, this 1% threshold was not intended to suggest that all increases above 1% are significant. The guidance also indicates that sustainable hunting of wild birds can be permitted under Article 7 with an impact on annual mortality which may be an order of magnitude higher. As such, 1% should not be treated as a threshold for significance, but a threshold for indicating where further assessment is required, particularly for species of conservation concern or where the increase in annual mortality is substantially greater than 1%. The predicted collision risk during the breeding and winter seasons is low (Percival, 2003). The highest increase in annual mortality (2.13%) does not exceed the 5% threshold for a 'medium' impact following Percival (2003). In addition, a comprehensive BMEP to create optimal hen harrier habitat is proposed (see Section 7.6.3). The enhancement area is sufficiently large and distant from the Wind Farm Site that it is likely to help attract foraging birds away from the proposed turbines, and, if successful, will reduce collision risk estimates (as per NatureScot recommendations (SNH, 2016b). In addition, there are relatively few documented cases of hen harrier mortality due to turbine collisions in Ireland (e.g., Fennelly, 2015) and abroad (Whitfield and Madders, 2006; Haworth and Fielding, 2012). Collision monitoring is also proposed at the Wind Farm Site to monitor for bird collisions with turbines (details in Appendix 7-7).	assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	

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

7.5.2.4 Merlin (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Merlin were recorded breeding at a location on Barrack Hill in 2019, 2020 and 2021 (ML-1), with probable breeding again in 2023 and 2025 (ML-2). These breeding sites are located 0.5-1.5km outside the Wind Farm Site, with records of merlin therefore clustered in this area throughout the surveys undertaken between 2019 and 2025. Merlin were recorded within the Wind Farm Site on one occasion - an incidental record of a bird perched on a fence post which then flew away from the Wind Farm Site. Birds likely associated with the nest sites were recorded flying within 500m of the Wind Farm Site, and merlin were also recorded using the wider area for hunting on occasion. No habitat loss will occur at the nesting site at Barrack Hill, as it is outside the Wind Farm Site boundary. In addition, no habitat loss will occur in the bog and heath habitats in the areas surrounding the nesting site where merlin activity was concentrated, as this area is also outside the Wind Farm Site boundary. The Wind Farm Site is located within the core foraging range of merlin (5km; SNH, 2016) therefore, on an extremely precautionary basis, there is potential for birds associated with the nest site at Barrack Hill to use the habitats within	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	the Wind Farm Site for hunting. However, the footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for merlin. This species is not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site. Loss of suitable hunting habitat for merlin will be limited given the extent of the footprint of the Prospective Development that is already in place. Taking into account the above, no significant effects of direct habitat loss are anticipated.		
Disturbance	As described above, merlin were recorded breeding on Barrack Hill in 2019, 2020 and 2021 (confirmed) and 2023 and 2025 (probable), 0.5-1.5km outside the Wind Farm Site, with records of merlin therefore clustered in this area. Merlin were recorded within the Wind Farm Site on one occasion, while birds likely associated with the nest sites were recorded flying within 500m of the Wind Farm Site, and merlin were using the wider area for hunting on occasion. Few studies have been done on the effects of disturbance on merlin. Goodship and Furness (2022) suggest disturbance up to 200m from humans can occur during the winter season, and 300-500m during the breeding season (NatureScot, 2022). While the nesting site at Barrack Hill is located approximately 500m outside the Wind Farm Site, it is located over 880m from the nearest proposed construction works and is therefore located outside the disturbance distance for merlin during construction. Additionally, it is separated from the Wind Farm Site and construction footprint by a national road with traffic disturbance. Therefore, no significant effects of disturbance are anticipated on the nesting site during construction.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	However, the Wind Farm Site is located within the core foraging range of merlin therefore, on an extremely precautionary basis, there is potential for birds associated with the nest site at Barrack Hill to use the habitats within the Wind Farm Site for hunting. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, merlin are not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site. Therefore, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, merlin were recorded breeding on Barrack Hill in 2019, 2020 and 2021 (confirmed) and 2023 and 2025 (probable), 0.5-1.5km outside the Wind Farm Site, with records of merlin therefore clustered in this area. Merlin were recorded within the Wind Farm Site on one occasion, while birds likely associated with the nest sites were recorded flying within 500m of the Wind Farm Site, and merlin were using the wider area for hunting on occasion. Few studies have been done on the effects of disturbance on merlin. Goodship and Furness (2022) suggest disturbance up to 200m from humans can occur during the winter season, and 300-500m during the breeding season (NatureScot, 2022). In the absence of research specific to wind turbine displacement, it is assumed that operating turbines will result in a similar distance for displacement. The nesting site at Barrack Hill is located approximately 3.2km from the location of the nearest proposed turbine and is therefore located outside the	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	disturbance distance for merlin during operation. Additionally, it is separated from the Wind Farm Site and the proposed turbines by a national road with traffic disturbance. Therefore, no significant effects of disturbance or displacement are anticipated on the nesting site during operation. The Wind Farm Site is located within the core foraging range of merlin therefore, on an extremely precautionary basis, there is potential for birds associated with the nest site at Barrack Hill to use the habitats within the Wind Farm Site for hunting. However, merlin are not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site and that the majority of the habitat within is forestry plantation, which is not favoured by this species. Therefore, no significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.	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.

7.5.2.5 Peregrine Falcon (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	A pair of peregrine falcon were confirmed to be breeding within a territory in the Barnesmore Gap outside the Wind Farm Site in 2021 and 2023 (PE-4, PE-5), with probable breeding in this territory also in 2022, 2024 and 2025 (PE-1, PE-2, PE-4). The identified nesting sites within this territory are located approximately 1.5-2.5km outside the Wind Farm Site, with records of peregrine falcon therefore clustered in this area throughout the surveys undertaken between 2019 and 2025. In 2024, it is possible that there was also a separate breeding pair over 3km to the south of the Wind Farm Site (PE-3), though it is uncertain if this was actually the same pair as from the Barnesmore Gap. Peregrine falcon were recorded within the Wind Farm Site only twice, travelling through the area on both occasions. Peregrine falcon were also recorded travelling and hunting within the wider area on occasion. No habitat loss will occur at the territory in the Barnesmore Gap, or the additional probable breeding site (PE-3) as they are located outside the Wind Farm Site boundary. In addition, no habitat loss will occur in the bog and heath habitats in the areas surrounding the nesting sites where peregrine falcon activity was concentrated, as these areas are also outside the Wind Farm Site boundary. The peregrine falcon territory at the Barnesmore Gap is located approximately 1.5-2.5km outside the Wind Farm Site and as such is located within the core foraging range of peregrine falcon (2km; SNH, 2016) therefore, on a precautionary basis, there is potential for birds associated with the territory to use the habitats within the Wind Farm Site for hunting. However, the footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	(74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for peregrine falcon. This species is not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site and lack of any recorded hunting activity within the Wind Farm Site. Furthermore, loss of suitable hunting habitat for peregrine falcon will be limited given the extent of the footprint of the Prospective Development that is already in place. Taking into account the above, no significant effects of direct habitat loss are anticipated.		
Disturbance	As described above, a pair were breeding in the Barnesmore Gap in 2021 and 2023 (confirmed), and 2022, 2024 and 2025 (probable), 1.5-2.5km outside the Wind Farm Site, with records of peregrine falcon clustered in this area. In 2024, it is possible that there was also a separate breeding pair approximately over 3km to the south of the Wind Farm Site. Peregrine falcon were recorded within the Wind Farm Site only twice and were also travelling and hunting within the wider area on occasion. NatureScot (2022) found that breeding peregrine falcons can be disturbed up to 750m. The territory at the Barnesmore Gap is located over 1.5km outside the Wind Farm Site and is therefore located outside the disturbance distance for peregrine falcon during construction. Additionally, it is separated from the Wind Farm Site and construction footprint by the topography and landscape of the Barnesmore Gap, which acts as a natural barrier. Furthermore, the separate probable breeding site (PE-3) is also located over 3km to the south of Wind Farm Site. Therefore, no significant effects of disturbance are anticipated on any breeding territories during construction. However, the Wind Farm Site is located within the core foraging range of peregrine falcon associated with the Barnesmore Gap territory, therefore, on a precautionary basis, there is potential for birds to use the habitats within the	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Wind Farm Site for hunting. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, peregrine falcon are not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site and lack of any recorded hunting activity within the Wind Farm Site. Therefore, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, a pair were breeding in the Barnesmore Gap in 2021 and 2023 (confirmed), and 2022, 2024 and 2025 (probable), 1.5-2.5km outside the Wind Farm Site, with records of peregrine falcon clustered in this area. In 2024, it is possible that there was also a separate breeding pair approximately over 3km to the south of the Wind Farm Site. Peregrine falcon were recorded within the Wind Farm Site only twice and were also travelling and hunting within the wider area on occasion. NatureScot (2022) found that breeding peregrine falcons can be disturbed up to 750m. In the absence of research specific to wind turbine displacement, it is assumed that operating turbines will result in a similar distance for displacement. The territory at the Barnesmore Gap is located over 1.5km outside the Wind Farm Site and 3-4.5km from the location of the nearest proposed turbine and is therefore located outside the disturbance and displacement distance for peregrine falcon during operation. Additionally, it is separated from the Wind Farm Site by the topography and landscape of the Barnesmore Gap, which acts as a natural barrier. Furthermore, the separate probable breeding site (PE-3) is also located over 3km to the south of Wind Farm Site and 4km from the	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	location of the nearest proposed turbine. Therefore, no significant effects of disturbance or displacement are anticipated on any breeding territories during operation. The core foraging range of peregrine falcon is 2km (SNH, 2016), however individuals from the Barnesmore Gap pair were recorded taking flights in excess of 5km in length. There is therefore potential for peregrine falcon to use the habitats in the vicinity of the proposed turbines for hunting during operation. However, peregrine falcon has been documented to become accustomed to various sources of human disturbance over time (Ratcliffe, 1962 cited in Ruddock and Whitfield, 2007) and may become tolerant of the Prospective Development and hunt in the vicinity of the Wind Farm Site. Additionally, peregrine falcon are not dependent upon the Wind Farm Site for hunting or breeding, given the sparsity of records of birds within the Wind Farm Site and lack of any recorded hunting activity within the Wind Farm Site. Therefore, no significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the breeding and wintering seasons are included. The collision rate has been calculated at 0.00008-0.0004 collisions per year or less than one collision over the lifetime of the wind farm. Given the uncertainties associated with estimating collision rates, this may range up to 0.00035-0.003 birds per year. Annual mortality of adult peregrine falcon has been calculated at 19% per annum (Craig <i>et al.</i>, 2004). If 0.00008-0.0004 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	mortality of the county population (c.74 birds [37 pairs]) by 0.001-0.003%. 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 White-tailed Eagle (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	A white-tailed eagle nest site was identified approximately 8km outside the Wind Farm Site, with successful breeding observed in both 2024 and 2025 (WE-1). White-tailed eagle were not recorded within the Wind Farm Site on any occasion; however a single bird was observed within 500m of the Wind Farm Site on one date in January 2024 when an individual was perched within conifer plantation approximately 320m to the north of the Wind Farm Site, adjacent to the Mourne Beg River. Birds were also recorded soaring and travelling through the wider area on occasion. No habitat loss will occur at the nesting site, as it is outside the Wind Farm Site boundary. In addition, no habitat loss will occur in the habitats surrounding the nesting site where white-tailed activity was concentrated, as these areas are also outside the Wind Farm Site boundary. White-tailed eagle are infrequent visitors to the Wind Farm Site and were not recorded using the Wind Farm Site for hunting or breeding on any occasion. The Wind Farm Site is located outside the core foraging range of white-tailed	The magnitude of the effect is assessed as Negligible. When a High sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	eagle associated with the nest site (5km; SNH, 2016) therefore it is possible that the bird observed along the Mourne Beg River is not associated with the breeding pair. Additionally, the footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for white-tailed eagle. This species is not dependent upon the Wind Farm Site for hunting or breeding, given the lack of any records of birds within the Wind Farm Site. Loss of suitable hunting habitat for white-tailed eagle will be limited given the extent of the footprint of the Prospective Development that is already in place. Taking into account the above, no significant effects of direct habitat loss are anticipated.		
Disturbance	As described above, a white-tailed eagle nest site was identified approximately 8km outside the Wind Farm Site in 2024 and 2025. White-tailed eagle were not recorded within the Wind Farm Site on any occasion; however a single bird was observed within 500m of the Wind Farm Site on one date in January 2024. Birds were also recorded soaring and travelling through the wider area on occasion. Few studies have been done on the effects of disturbance on white-tailed eagle. Ruddock and Whitfield (2007) suggest that, in general, disturbance buffers extend up to 500m from the nest site, however results from expert opinion suggest static disturbance of white-tailed eagles occurred at 150–1000m and active disturbance occurred at 50–500m. Goodship and Furness (2022) concur with a disturbance distance of 500-1000m during the breeding season and 250-500m during the non-breeding season, while the revision of figures from	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Ruddock and Whitfield (2007) provided in NatureScot (2022) also provides a figure of 250-500m. The white-tailed eagle nest site is located approximately 8km outside the Wind Farm Site and is therefore located outside the disturbance distance for this species during construction. Additionally, it is separated from the Wind Farm Site and construction footprint by the topography and landscape of the Barnesmore Gap, which acts as a natural barrier. Therefore, no significant effects of disturbance are anticipated on the nesting site during construction. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, white-tailed eagle are infrequent visitors to the Wind Farm Site and are not dependent upon the Wind Farm Site for hunting or breeding, given the lack of any records of birds within the Wind Farm Site. Therefore, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, a white-tailed eagle nest site was identified approximately 8km outside the Wind Farm Site in 2024 and 2025. White-tailed eagle were not recorded within the Wind Farm Site on any occasion; however a single bird was observed within 500m of the Wind Farm Site on one date in January 2024. Birds were also recorded soaring and travelling through the wider area on occasion. Few studies have been done on the effects of disturbance on white-tailed eagle. Ruddock and Whitfield (2007) suggest that, in general, disturbance buffers extend up to 500m from the nest site, however results from expert opinion suggest static disturbance of white-tailed eagles occurred at 150–1000m and	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	active disturbance occurred at 50–500m. Goodship and Furness (2022) concur with a disturbance distance of 500-1000m during the breeding season and 250-500m during the non-breeding season, while the revision of figures from Ruddock and Whitfield (2007) provided in NatureScot (2022) also provides a figure of 250-500m. In the absence of research specific to wind turbine displacement, it is assumed that operating turbines will result in a similar distance for displacement. The white-tailed eagle nest site is located 8km outside the Wind Farm Site and over 10km from the location of the nearest proposed turbine and is therefore located outside the disturbance and displacement distance for this species during operation. Additionally, it is separated from the Wind Farm Site by the topography and landscape of the Barnesmore Gap, which acts as a natural barrier. Therefore, no significant effects of disturbance and displacement are anticipated on the nesting site during operation. White-tailed eagle are infrequent visitors to the Wind Farm Site, and are not dependent upon the Wind Farm Site for hunting or breeding, given the lack of any records of birds within the Wind Farm Site. Therefore, no significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.	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.

7.5.2.7 Whooper Swan (wintering and passage)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Whooper swan were recorded during the winter and passage seasons. Records were predominantly those of birds in flight both over the Wind Farm Site and the wider area. There were no records of whooper swan using the habitats within the Wind Farm Site during any of the surveys undertaken. Beyond the Wind Farm Site, birds were recorded resting and preening at Lough Mourne, Loughnaweelagh and Lough Slug, all located over 1.7km outside the Wind Farm Site. Foraging activity was recorded at Lough Eske, Lough Cuill and Lough Shinnagh, waterbodies located over 3km outside the Wind Farm Site. No regular roosting sites were identified for the species during any of the surveys undertaken. There will be no habitat loss at any waterbodies in the wider surroundings as these are located outside of the Wind Farm Site boundary. Additionally, the available potential habitat for whooper swan within the Wind Farm Site is limited, restricted to Carrickaduff Lough to the south of Turbine 6. In addition to its location outside of the proposed infrastructure footprint, this small lough was surveyed as part of the waterbird distribution abundance surveys and no whooper swan were ever recorded in this location. Therefore, as whooper swan were not recorded using the habitats within the Wind Farm Site on any occasion and no suitable habitat for the species will be lost as part of the Prospective Development, no significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .
Disturbance	As described above, whooper swan records were predominantly of birds in flight both over the Wind Farm Site and the wider area. There were no records of whooper swan using the habitats within the Wind Farm Site during any of the surveys undertaken. Beyond the Wind Farm Site, birds were recorded in loughs over 1.7km outside the Wind Farm Site.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low	Likely short-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Few studies have been done on the effects of disturbance on whooper swan during the winter. Goodship and Furness (2022) suggest disturbance up to 600m from humans can occur, based on studies on geese, while McGuinness <i>et al.</i> (2015) also suggest a zone of sensitivity for wind energy developments of 600m. The waterbodies in the surrounding area where whooper swan was recorded are all greater than 600m from the nearest construction works at the Wind Farm Site, and it is not expected that disturbance will occur at this distance. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, therefore, while whooper swan were not recorded using the habitats within the Wind Farm Site, there is potential for birds passing overhead to experience low levels of disturbance during the construction period. However, no significant disturbance effects are anticipated at the county, national or international level.	impact, this corresponds to a Low effect significance.	
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect	No Effect
Disturbance, Displacement and Barrier Effect	As described above, whooper swan records were predominantly of birds in flight both over the Wind Farm Site and the wider area. There were no records of whooper swan using the habitats within the Wind Farm Site during any of the surveys undertaken. Beyond the Wind Farm Site, birds were recorded in loughs over 1.7km outside the Wind Farm Site. Few studies have been done on the effects of disturbance on whooper swan during the winter. Goodship and Furness (2022) suggest disturbance up to 600m from humans can occur, based on studies on geese. Observations of whooper swan non-breeding activity from eight European studies have given a mean minimum avoidance distance of 150m from the base of wind turbines	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development	Significance (Percival, 2003)	Significance (EPA, 2022)
(Hötter <i>et al.</i>, 2006), while Percival (2003) suggests an exclusion area of 300m from wind energy installations. Taking a more conservative approach given the international importance of the Irish distribution of whooper swan, McGuinness <i>et al.</i> (2015) suggest a larger zone of sensitivity of 600m. Management and servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of whooper swan passing overhead is possible during the operational phase, however the volume and frequency of such visits is considered to be very low and is likely to be minor in scale and short in duration when it occurs. Using the precautionary figure of 600m, 15 of the 51 total records of whooper swan during the core survey period were of birds within 600m of the proposed turbines. Whooper swan were not recorded using the habitats within the Wind Farm Site or within displacement distance on any occasion, however these records were of birds flying through the area during the winter and passage seasons. The proposed turbines are not located on a regular flight path between waterbodies or a narrow migratory route – flight paths for whooper swan were not restricted to the airspace above the Wind Farm Site but were mapped passing throughout the Wind Farm Site and wider area. Additionally, the Barnesmore Gap, which may be used as a landmark during migration, is located over 2.6km to the west of the nearest turbine location and as such is situated outside the disturbance and displacement distance for this species. Therefore, the erection of the proposed turbines is not anticipated to have a significant barrier effect for whooper swan as this species used the entirety of the wider area outside the Wind Farm Site for flights.		

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Taking into account the above, no significant disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the winter and passage season are included. The collision risk has been calculated at 0.195-0.2581 collisions per year, or one bird approximately every 4-5 years. Given the uncertainties associated with estimating collision rates, this may range up to 0.512-1.032 birds per year. Annual mortality of adult whooper swan has been calculated at 20% per annum (Brazil, 2003). If 0.195-0.2581 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c.1,159) by 0.08-0.11%. The predicted collision risk is negligible.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect.	No Effect.
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.2.8 Kestrel (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Kestrel are resident at the Wind Farm Site. Two nest locations were confirmed in 2024 and 2025 between 150m and 2km to the west and northwest of the Wind Farm Site (K.-1, K.-2). A probable nest location was also identified in	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is	Likely long-term imperceptible negative

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	2022, over 2km to the northwest of the Wind Farm Site (K.-3). Kestrel were also regularly recorded hunting within the Wind Farm Site and throughout the wider area. No habitat loss will occur at any of the identified breeding locations for kestrel as they are all located outside the Wind Farm Site boundary. In addition, no habitat loss will occur in the bog and heath habitats in the areas surrounding the nesting sites where kestrel activity was concentrated, as these areas are also outside the Wind Farm Site boundary. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for kestrel. Loss of potential kestrel hunting and breeding habitat will be minor given the extent of the footprint of the Prospective Development that is already in place. Furthermore, kestrel is a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. Taking into account the above, no significant effects of direct habitat loss are anticipated.	cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	effect, which is not significant .
Disturbance	As described above, kestrel are resident at the Wind Farm Site. Nest locations were identified in the wider area, at least 150m from the Wind Farm Site in 2024 and 2025 (confirmed) and 2022 (probable). Goodship and Furness (2022) suggest disturbance from humans up to 200m during the breeding season can occur, with disturbance distances reduced to	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	less than 50m during the non-breeding season. The identified breeding locations for kestrel area all located over 500m from the nearest proposed construction activity (a small area of road widening along the main site access road) and are therefore located outside the disturbance distance for kestrel during construction. Additionally, all of the identified breeding sites are separated from the Wind Farm Site and construction footprint by a national road with traffic disturbance. Therefore, no significant effects of disturbance are anticipated on any breeding territories during construction. Kestrel were recorded within 200m of the proposed construction footprint on 16 occasions, with birds hunting and travelling through this potential disturbance zone, and no records of breeding activity. It is assumed that temporary disturbance will occur around the Wind Farm Site during construction works, however, kestrel are not dependent upon the Wind Farm Site for hunting or breeding. Kestrel is a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. As such, were disturbance to occur it would not result in the loss of a scarce resource for the local kestrel population. Therefore, no significant effects of disturbance are anticipated at the county, national or international level.		
Operational Phase			
Direct Habitat Loss	Direct habitat loss effects are not anticipated.	No Effect.	No Effect.
Disturbance, Displacement and Barrier Effect	As described above, kestrel are resident at the Wind Farm Site. Nest locations were identified in the wider area, at least 150m from the Wind Farm Site in 2024 and 2025 (confirmed) and 2022 (probable).	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development	Significance (Percival, 2003)	Significance (EPA, 2022)
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. 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 identified breeding locations for kestrel area all located over 500m from the development footprint (including access tracks and existing onsite 110kV substation), and 2.8km from the location of the nearest proposed turbine and are therefore located outside the disturbance and displacement distance for kestrel during operation. Additionally, all of the identified breeding sites are separated from the Wind Farm Site by a national road with traffic disturbance. Therefore, no significant effects of disturbance and displacement are anticipated on any breeding territories during operation. Management and servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of kestrel is possible throughout the Wind Farm Site during the operational phase by maintenance vehicles and personnel visits, particularly in the vicinity of the proposed turbines, access roads and the existing onsite 110kV substation. This may result in temporary avoidance by foraging birds, however the volume and frequency of such visits is considered to be very low and is likely to be minor in scale and short in duration when it occurs. Kestrel were recorded within 200m of the proposed infrastructure (turbine locations and upgraded access tracks) on 16 occasions, with birds hunting and travelling through this potential displacement zone, and no records of breeding	impact, this corresponds to a Low effect significance.	

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	activity. Kestrel are not dependent upon the Wind Farm Site for hunting or breeding. Kestrel is a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. As such, were displacement to occur it would not result in the loss of a scarce resource for the local kestrel population. Therefore, no significant effects of disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the breeding and wintering seasons are included. The collision rate has been calculated at 0.257-0.4673 collisions per year, or one bird approximately every 2-4 years. Given the uncertainties associated with estimating collision rates, this may range up to 0.578-1.752 birds per year. 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 0.257-0.4673 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c.996 birds) by 0.07-0.13%. The predicted collision risk is negligible.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this 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.

7.5.2.9 Snipe (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Snipe were resident at the Wind Farm Site and were regularly recorded during the breeding and wintering seasons, with records most frequent within areas of bog and wet grasslands. One breeding territory was identified (SN-2) that overlaps with the north-easternmost area of the Wind Farm Site, and a further four breeding territories were located in the wider surroundings. Snipe were also regularly using bog habitats within the Wind Farm Site and wider surroundings in the winter season. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of no ecological value for snipe. The breeding territory that partially overlaps with the Wind Farm Site (SN-2) is located approximately 500m from the proposed infrastructure footprint, therefore there will be no loss of habitat within any identified breeding territories. Loss of suitable snipe habitat will be limited given the extent of the footprint of the Prospective Development that is already in place. Taking into account the above, no significant effects of direct habitat loss are anticipated.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .
Disturbance	As described above, snipe are resident at the Wind Farm Site. One breeding territory was identified that overlaps with the Wind Farm Site boundary, and a further four breeding territories were located in the wider area. Pearce-Higgins <i>et al.</i> (2012) found significant 53% declines in snipe densities on wind farms during the construction phase, with no apparent recovery post-construction. Snipe were also shown by Pearce-Higgins <i>et al.</i> (2009) to exhibit	The magnitude of the effect is assessed as Medium. When a Medium sensitivity species is cross-referenced with a Medium impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	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. Snipe were recorded within 400m of the proposed construction footprint on 47 occasions. However, the majority of these were records of birds flying and alarm calling, with only one record of a bird displaying within this disturbance zone. This is due to the high density of conifer plantation within the Wind Farm Site, with the majority of the optimal habitat for snipe located in the northeast of the Wind Farm Site and in the wider area. The literature outlined above and survey results suggest that the construction of the Prospective Development may result in a measurable reduction in the presence of snipe within the Wind Farm Site during construction. In particular, the breeding territory SN-2 is located approximately 420m from the proposed construction footprint, and as such has the potential be subject to temporary disturbance during the construction phase. Considering the above, 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.
Disturbance, Displacement and Barrier Effect	As described above, snipe are resident at the Wind Farm Site. One breeding territory was identified that overlaps with the Wind Farm Site boundary, and a further four breeding territories were located in the wider surroundings. Pearce-Higgins <i>et al.</i> (2012) found significant 53% declines in snipe densities on wind farms during the construction phase, with no apparent recovery post-construction, suggesting that this effect may continue during the operational phase. Servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of snipe is possible throughout the Wind Farm Site during the	The magnitude of the effect is assessed as Medium. When a Medium sensitivity species is cross-referenced with a Medium impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development	Significance (Percival, 2003)	Significance (EPA, 2022)
operational phase from disturbance by maintenance vehicles and personnel visits, particularly in the vicinity of the proposed turbines, access roads and the existing onsite 110kV substation. However the volume and frequency of such visits is considered to be very low and is likely to be generally minor in scale and short in duration when it occurs. 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, leading to an expected 47.5% decline in abundance within 500m of the turbines. Similarly, a review of 29 studies by Hötter <i>et al.</i> (2006) suggests that snipe will approach wind turbines to an average distance of 403m in non-breeding season. As outlined above in relation to the construction phase, snipe were recorded within 400m of the proposed infrastructure (turbine locations and upgraded access tracks) on 47 occasions. However, the majority of these were records of birds flying and alarm calling, with only one record of a bird displaying within this displacement zone. This is due to the high density of conifer plantation within the Wind Farm Site, with the majority of the optimal habitat for snipe located in the northeast of the Wind Farm Site and in the wider area. The literature outlined above and survey results suggest that once operational, the Prospective Development may result in a measurable reduction in the presence of snipe within the Wind Farm Site due to the erection of the proposed turbines and the potential additional avoidance of upgraded access tracks. The breeding territory SN-2 is located approximately 490m from the location of the nearest proposed turbine, and as such has the potential be subject to displacement during the operational phase, therefore snipe could be displaced from this territory. Considering the above, the magnitude of the effect of displacement is assessed as medium.		

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the breeding and wintering season are included. The collision risk has been calculated at 0.044-0.1008 collisions per year, or one bird approximately every 10-23 years. Given the uncertainties associated with estimating collision rates, this may range up to 0.093-0.358 birds per year. Annual mortality of adult snipe has been calculated at 37.5% per annum (Spence, 1988). If 0.044-0.1008 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c. 678 birds [339 pairs]) by 0.02-0.04%. The predicted collision risk is negligible.	The magnitude of the effect is assessed as Negligible. When a Medium sensitivity species is cross-referenced with a Negligible impact, this 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.

7.5.2.10 Buzzard (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Buzzard are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site (BZ-2), and three other territories were found in the wider surroundings between 0.6km and 3km outside the Wind Farm Site. Buzzard were also regularly recorded hunting within the Wind Farm Site and throughout the wider area.	The magnitude of the effect is assessed as Low. When a Low sensitivity species is cross-referenced with a Low impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	No habitat loss will occur at any of the identified breeding locations for buzzard as they are all located outside the footprint of the Prospective Development. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for buzzard. Loss of potential buzzard hunting and breeding habitat will be minor given the extent of the footprint of the Prospective Development that is already in place. Furthermore, buzzard is a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. Taking into account the above, no significant effects of direct habitat loss are anticipated at the county, national or international level.		
Disturbance	As described above, buzzard are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site, and three other territories were found in the wider surroundings. Goodship and Furness (2022) suggest disturbance of buzzard up to 450m from large scale works can occur, based on a study of forestry, but generally range between 100-200m. The breeding territories BZ-1, BZ-3 and BZ-4 are greater than 450m from the nearest large scale works at the proposed turbines, but there is the potential for disturbance at breeding territory BZ-2 which is located partially within the Wind Farm Site, and within the potential disturbance zone for this species during construction (approximately 135m from the nearest works). Buzzard is a wide-ranging generalist species and, as forestry and bog are not a scarce	The magnitude of the effect is assessed as Medium. When a Low sensitivity species is cross-referenced with a Medium impact, this corresponds to a Very Low effect significance.	Likely short-term imperceptible negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. However, given the presence of a breeding territory within disturbance distance in the Wind Farm Site (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.
Disturbance, Displacement and Barrier Effect	As described above, buzzard are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site, and three other territories were found in the wider surroundings. Goodship and Furness (2022) suggest disturbance of buzzard up to 450m from large scale works can occur, based on a study of forestry, but generally range between 100-200m. Buzzard were also shown by Pearce-Higgins <i>et al.</i> (2009) to exhibit significant avoidance of turbines, extending to at least 500m from turbine, and there is also evidence of avoidance of access tracks, leading to an expected 41.4% decline in flight activity within 500m of turbines. During the non-breeding season, Hötter <i>et al.</i> (2006) suggests from a review of 15 studies that buzzard will approach wind turbines to an average distance of 50m. Servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of buzzard is possible throughout the Wind Farm Site during the operational phase from disturbance by maintenance vehicles and personnel visits, particularly in the vicinity of the proposed turbines, access roads and existing onsite 110kV substation. This may result in disturbance near BZ-2 and the displacement of foraging birds to another area, however the volume and frequency of such visits is considered to be very low and likely to be minor in scale and short in duration when it occurs. The breeding territories BZ-1, BZ-3	The magnitude of the effect is assessed as Medium. When a Low sensitivity species is cross-referenced with a Medium impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	and BZ-4 are also greater than 500m from the location of the nearest proposed turbine, but there is the potential for displacement at breeding territory BZ-2 which is located partially within the Wind Farm Site, and within the potential disturbance zone for this species during operation (approximately 218m from the nearest proposed turbine). Buzzard is a wide-ranging generalist species, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. However, given the presence of a breeding territory in the Wind Farm Site (BZ-2), the magnitude of the effect of disturbance and displacement is assessed as medium.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix 7-6). Flights recorded during the breeding and wintering seasons are included. The collision rate has been calculated at 0.307-0.3649 collisions per year, or one bird approximately every three years. Given the uncertainties associated with estimating collision rates, this may range up to 0.608-1.102 birds per year. Annual mortality of adult buzzard has been calculated at 10% per annum (Kenward <i>et al.</i>, 2000). If 0.307-0.3649 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c.150 birds [75 pairs]) by 2.05-2.43%. The threshold level of a 1% increase in annual mortality is non-negligible. A 1% threshold for significance is recommended by the European Commission 2008 guidance document on hunting under the Birds Directive (EC, 2008). Under Article 9(1)(c) of the Birds Directive, there is a derogation 'to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or	The magnitude of the effect is assessed as Low. When a Low sensitivity species is cross-referenced with a Low impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	other judicious use of certain birds in small numbers', while the guidance document suggests a 1% increase in annual mortality to describe 'small numbers' in this context. As such, this 1% threshold was not intended to suggest that all increases above 1% are significant. The guidance also indicates that sustainable hunting of wild birds can be permitted under Article 7 with an impact on annual mortality which may be an order of magnitude higher and allows for exceedances up to 5% for species with favourable conservation status. As such, 1% should not be treated as a threshold for significance, but a threshold for indicating where further assessment is required, particularly for species of conservation concern or where the increase in annual mortality is substantially greater than 1%. The predicted collision risk is low and does not exceed the 5% threshold for a 'medium' impact following Percival (2003). In addition, buzzard is an abundant species with a favourable conservation status, and the predicted collision risk does not exceed the 5% threshold permitted under Article 7. Therefore, the predicted collision risk is not considered to be 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.

7.5.2.11 Long-eared Owl (breeding)

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

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Direct Habitat Loss	A long-eared owl breeding territory (LE-1) was identified in conifer trees along the main access road. No habitat loss will occur at breeding territory LE-1, as it is located outside the footprint of the Prospective Development. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Loss of potential long-eared owl hunting habitat will be minor given the extent of the footprint of the Prospective Development that is already in place. Furthermore, as forestry is not a scarce resource locally (see further information and quantification on the extent of this habitat type in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. Taking into account the above, no significant effects of direct habitat loss are anticipated at the county, national or international level.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.
Disturbance	As described above, a long-eared owl breeding territory was identified in conifer trees along the main access road. NatureScot (2022) provide a disturbance distance of 100-300m for breeding long-eared owl. This figure is based on Ruddock and Whitfield (2007), which found that long-eared owl have a limit of disturbance at 50-100m during incubation and 150-300m during chick rearing, based on a study of escape distances by females for human disturbance. The nearest proposed works (road widening) are 75m from breeding territory LE-1. As such, there is the potential for disturbance at breeding territory LE-1, which is located within the potential disturbance zone for this species during construction. Habitat containing suitable nesting trees is available elsewhere in the Wind Farm Site and immediate surrounds, some of which is greater than this disturbance distance, and in proximity to LE-1. As such, were disturbance to	The magnitude of the effect is assessed as Medium. When a Medium sensitivity species is cross-referenced with a Medium impact, this corresponds to a Low effect significance.	Likely short-term slight negative effect, which is not significant.

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	occur it would not result in the loss of a scarce resource for the local long-eared owl population. However, given the presence of a breeding territory in the Wind Farm Site (LE-1), 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.
Disturbance, Displacement and Barrier Effect	As described above, a long-eared owl breeding territory was identified in conifer trees along the main access road. NatureScot (2022) provide a disturbance distance of 100-300m for breeding long-eared owl. This figure is based on Ruddock and Whitfield (2007), which found that long-eared owl have a limit of disturbance at 50-100m during incubation and 150-300m during chick rearing, based on a study of escape distances by females for human disturbance. In the absence of research specific to wind turbine displacement, it is assumed that operating turbines will result in a similar distance for displacement for nesting and foraging birds. Servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The temporary disturbance of long-eared owl is possible during the operational phase from maintenance vehicles and personnel visits particularly in the vicinity of the proposed turbines, access roads and the existing onsite 110kV substation. The proposed access track is adjacent to breeding territory LE-1. This may result in disturbance at LE-1, generally comprising passing vehicles along the access track, however the volume and frequency of such visits is considered to be very low. LE-1 is over 900m from the existing onsite 110kV substation, therefore no disturbance is expected at this distance. Maintenance and servicing throughout the Wind Farm Site is also more likely to take place during daylight hours, when long-eared owl do not hunt, further reducing the potential for disturbance either at LE-1 or to foraging birds.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	Breeding territory LE-1 is over 2km from the location of the nearest proposed turbine. Therefore, no significant effects of displacement are anticipated on the breeding territory LE-1 during operation. Furthermore, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity for hunting, over 300m from a turbine. As such, were displacement to occur it would not result in the loss of a scarce resource for the local long-eared owl population. Taking into account the above, no significant effects of disturbance, displacement and barrier effects are anticipated at the county, national or international level.		
Collision Risk	This species was not recorded flying at PCH during the extensive vantage point survey work undertaken. Collision related mortality is not likely to significantly impact this species, based on available data.	No Effect.	No Effect.
Decommissioning			
Direct Habitat Loss	Direct or indirect effects are not anticipated.	No Effect.	No Effect.
Disturbance	As above for the construction phase.	As above for the construction phase.	As above for the construction phase.

7.5.2.12 Sparrowhawk (breeding and wintering)

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
Construction Phase			
Direct Habitat Loss	Sparrowhawk are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site (SH-1), with a second immediately to the east of the Wind Farm Site boundary (SH-2). A further	The magnitude of the effect is assessed as Low. When a Low sensitivity species is cross-	Likely long-term imperceptible negative

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	three territories were found in the wider surroundings between 0.7km and 3km outside the Wind Farm Site. Sparrowhawk were also regularly recorded hunting within the Wind Farm Site and throughout the wider area. No habitat loss will occur at any of the identified breeding locations for sparrowhawk as they are all located outside the footprint of the Prospective Development. The footprint of the Prospective Development is very small relative to the total area within the Wind Farm Site (22.9ha of approximately 892ha within the Wind Farm Site, excluding the Grid Connection Site, i.e., 2.6%). Of this, over 16.6ha (74.4%) of habitat loss will be that of conifer plantation, buildings and artificial surfaces, spoil and bare ground and recolonising bare ground which are of low ecological value for sparrowhawk. Loss of potential sparrowhawk hunting and breeding habitat will be small given the extent of the footprint of the Prospective Development that is already in place. Furthermore, sparrowhawk is a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. Taking into account the above, no significant effects of direct habitat loss are anticipated at the county, national or international level.	referenced with a Low impact, this corresponds to a Very Low effect significance.	effect, which is not significant .
Disturbance	As described above, sparrowhawk are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site, with a second immediately to the east of the Wind Farm Site boundary, and a further three territories were found in the wider surroundings. Few studies have been done on the effects of disturbance on sparrowhawk. The breeding territories SH-3, SH-4 and SH-5 are greater than 900m from the nearest proposed construction activity. Therefore, the potential for disturbance of these breeding sites can be excluded based on the disturbance distances of	The magnitude of the effect is assessed as Medium. When a Low sensitivity species is cross-referenced with a Medium impact, this corresponds to a Very Low effect significance.	Likely short-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	ecologically similar species such as kestrel and buzzard discussed above as no literature specific to sparrowhawk was available. However there is the potential for displacement at breeding territory SH-1 which is located partially within the Wind Farm Site and <200m from the proposed construction footprint, and at SH-2 located immediately to the east of the Wind Farm Site, approximately 400m from the proposed construction footprint. Sparrowhawk are a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. As such, were disturbance to occur it would not result in the loss of a scarce resource for the local sparrowhawk population. However, given the presence of breeding territories within the potential disturbance zones, 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.
Disturbance, Displacement and Barrier Effect	As described above, sparrowhawk are resident at the Wind Farm Site. One breeding territory was identified partially within the Wind Farm Site, with a second immediately to the east of the Wind Farm Site boundary, and a further three territories were found in the wider surroundings. Servicing of the wind farm will not add significantly to the background levels of disturbance currently occurring in the area. The breeding territories SH-3, SH-4 and SH-5 are greater than 900m the nearest development footprint. Therefore, the potential for disturbance at these breeding sites can be excluded based on the disturbance distances of ecologically similar species such as kestrel and buzzard discussed above as no literature specific to sparrowhawk was available. Temporary disturbance at breeding territory SH-1, which is located partially within the Wind Farm Site and <200m from the	The magnitude of the effect is assessed as Medium. When a Low sensitivity species is cross-referenced with a Medium impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	development footprint, and at SH-2 located immediately to the east of the Wind Farm Site, approximately 400m from the development footprint, as well as of foraging sparrowhawk throughout the Wind Farm Site is possible during the operational phase from disturbance by maintenance vehicles and personnel visits, particularly in the vicinity of the proposed turbines, access roads and existing onsite 110kV substation, although the volume and frequency is considered to be very low and is likely to be minor in scale and short in duration when it occurs. Few studies have been done on the effects of displacement on sparrowhawk. The breeding territories SH-3, SH-4 and SH-5 are greater than 1km from the nearest proposed turbines. Therefore, the potential for displacement at these breeding sites can be excluded based on the displacement distances of ecologically similar species such as kestrel and buzzard discussed above as no literature specific to sparrowhawk was available. However there is the potential for displacement at breeding territory SH-1 which is located partially within the Wind Farm Site and <200m from the proposed turbines, and at SH-2 located immediately to the east of the Wind Farm Site, approximately 400m from the proposed turbines. However, sparrowhawk are a wide-ranging generalist species and, as forestry and bog are not a scarce resource locally (see further information and quantification on the extent of these habitat types in Section 7.7.1.3.1), there is likely to be similar habitat available in the wider surroundings that has not reached carrying capacity. As such, were disturbance or displacement to occur it would not result in the loss of a scarce resource for the local sparrowhawk population. However, given the presence of breeding territories within the potential disturbance and displacement zones, the magnitude of the effect of disturbance and displacement is assessed as medium.		
Collision Risk	The species was recorded flying within PCH during vantage point surveys. A collision risk analysis has been undertaken (full details provided in Appendix	The magnitude of the effect is assessed as Negligible. When a	Likely long-term imperceptible negative

Potential effects during the construction and operational phases of the Prospective Development		Significance (Percival, 2003)	Significance (EPA, 2022)
	7-6). Flights recorded during the breeding and wintering seasons are included. The collision rate has been calculated at 0.01-0.0142 collisions per year or less than one collision of the lifetime of the wind farm. Given the uncertainties associated with estimating collision rates, this may range up to 0.036-0.059 birds per year. Annual mortality of adult sparrowhawk has been calculated at 31% per annum (Newton, 1986). If at 0.01-0.0142 collisions were to occur per year, it would mean that the losses at the Wind Farm Site would increase the annual mortality of the county population (c. 456) by 0.01%. The predicted collision risk is negligible.	Low sensitivity species is cross-referenced with a Negligible impact, this 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.

7.5.3 Likely Effects Associated with the Grid Connection

The Prospective Development will connect to the existing onsite 110kV electrical substation via the existing and proposed 33kV underground cabling, as described in Chapter 4 of this EIAR. The onsite 110kV substation compound is already constructed and will be connected to the national grid via the existing Clogher 110 kV substation (Clogher Substation), located in the townland of Cullionboy, Co. Donegal. Each turbine will be connected to the existing existing onsite 110kV substation (part of the existing grid connection) via underground 33 kV (kilovolt) electricity cabling. Fibre-optic cables will also be laid within the same cable ducts, and will connect each wind turbine and the met mast to the existing onsite 110kV substation.

Required maintenance works on the Grid Connection are minor and infrequent, and are all located within the existing road and access track corridors. On a precautionary basis, it is assumed that some temporary disturbance may occur during works. The most recent hen harrier nest (2025) is within 650m of some of these activities, however as part of the Construction and Environmental Management Plan (CEMP) included in Appendix 4-3 of this EIAR (see Section 7.6 below), works causing disturbance will not take place within 500m of an active hen harrier nest. Given this, 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

It is proposed that the large wind turbine components will be delivered to the Wind Farm Site, from Killybegs Port. The turbines will be transported from Killybegs, northeast on the R263 Regional Road, before turning right on to the N56 National Road, continuing east, then turning left onto the N15 National Road, and continuing northeast towards the entrance to the Wind Farm Site.

The existing habitats (i.e., existing roads) along the route do not have the potential to support other species of conservation interest in the area. Temporary junction accommodation for abnormal loads will be required, however these works are minor in scale and are located within the existing road corridor (full details in 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

A screening assessment and NIS were prepared to provide the competent authority with the information necessary to complete an Appropriate Assessment for the Prospective Development. The screening did not identify any potential pathway for adverse effects on an SPA. Per the conclusion of the NIS:

“it can be objectively concluded that the Prospective Development, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site”

As such, it can be concluded that the Prospective Development 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 proposed to mitigate negative effects associated with the Prospective Development on ornithological receptors. Effects on ornithological receptors have been addressed through the design of the Prospective Development, a Construction and Environmental Management Plan (CEMP, Appendix 4-3 of this EIAR), and Biodiversity Management and Enhancement Plan, (BMEP, Appendix 6-4 of this EIAR) which includes targeted hen harrier habitat enhancement measures. These are discussed below.

7.6.1

Design of the Prospective Development

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

- The Prospective Development avoids wildlife refuge sites (e.g., waterbodies)
- A Biodiversity Management and Enhancement Plan (BMEP), which includes targeted hen harrier habitat enhancement, is proposed.

7.6.2

Construction and Environmental Management Plan

A Construction and Environmental Management Plan has been prepared for the construction phase of the Prospective Development and will be in place prior to the commencement of construction works at the Wind Farm Site. 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:

- Construction works will not take place in the vicinity of the most recent hen harrier nest site until the forestry canopy closes at this location, to ensure no short-term loss of nesting habitat.
- Works will commence outside the bird nesting season (1st of March to 31st of August inclusive).
- A pre-construction bird survey at the Wind Farm Site will be organised to ensure that any sensitive roost or nest sites in the works area are identified and disturbance to these are avoided. This will include surveys targeted towards hen harrier and long-eared owl (further details are provided in Appendix 7-7). There will be a particular emphasis on nesting hen harrier, especially in proximity to the known previous nest sites.
- Construction phase surveys will be conducted, including a dedicated breeding hen harrier survey (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; NatureScot, 2022; or other relevant literature). No works shall be permitted within the buffer until it can be demonstrated that the birds are no longer dependent on the roost/nest. The most recent NatureScot guidance (NatureScot, 2022) suggests a disturbance distance of 300-750m for hen harrier during the breeding season, while the Forestry Commission of Scotland (2006) recommends 500-1000m. The appropriate disturbance buffer will depend on the scale and duration of the works occurring at the time, as well as the connectedness/sightlines to the nest site, and the time of year. If breeding hen harrier are identified, a suitably qualified Ecological Clerk of Works (ECow) will be appointed to conduct an assessment to determine the construction restrictions required to avoid disturbance to the pair or their young, or damage to habitat depended on by the pair of their young. Taking a precautionary approach, the assessment will begin with a potential disturbance buffer of 500-1000m around the breeding area, depending on the particulars of the nest location, to be determined by the ECow. The ECow will monitor the response of the hen harrier and adapt the disturbance buffer if necessary.

- 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.

7.6.3

Biodiversity Management and Enhancement Plan (BMEP)

As described above, based on the precautionary assumption that hen harrier will avoid all areas within 250 metres of a turbine and having calculated the amount of foraging habitat available on an annual basis (taking into account standard forestry management practices for forested areas), the estimated quantum of habitat from which hen harrier will be displaced is 104.88ha. A BMEP was prepared to ensure that the Subjective Development does not result in a net loss of foraging habitat for hen harrier. The plan is designed to create approximately the same amount of permanent foraging habitat for hen harrier as will potentially be lost by the Prospective Development. The target condition for this habitat will be open heathland, with pockets of willow and birch scrub throughout, covering a maximum of 30% of the enhancement area in total. Full details of the plan are provided in the Appendix 6-4: BMEP of this EIAR.

The main objective of the hen harrier habitat enhancement measures is to create, maintain and improve habitats for the benefit of foraging hen harrier. It is recognised that anything that benefits potential prey species is of benefit to the hen harrier. The BMEP (following this principle) aims to improve the structure of the habitat and abundance of prey. Successful implementation of the plan will provide an increase in the availability of passerine prey within enhancement areas. Hen harrier also favours open habitats for foraging over closed canopy forestry, as, among other things, prey is more accessible in open habitats. Hen harrier habitat enhancement will be undertaken across approximately 108.4ha that is currently conifer plantation on peatland. Optimal habitat includes heather-dominated wet heath on sloping ground with areas of patchy willow-dominated scrub.

7.6.4

Residual Effects

The effects of indirect habitat loss for hen harrier due to disturbance during the construction phase (short-term) and displacement during the operational phase (long-term) were assessed to be High and Very High (Percival, 2003) and Significant and Very Significant (EPA, 2022). As described above, the Subjective Development includes a proposed BMEP (Appendix 6-4 of this EIAR) containing measures to mitigate the identified effects on hen harrier as a result of indirect habitat loss due to avoidance of turbines during the lifetime of the wind farm. Two parcels of currently forested land totalling c.108.41ha, are proposed to mitigate the predicted (indirect) habitat loss of 104.88ha (see BMEP in Appendix 6-4 of this EIAR for locations of the parcels). It is proposed that these measures will be in place before the large scale construction (i.e., turbine construction) begins, to ensure that there is ample foraging habitat for the local hen harrier pair before disturbance or displacement occurs.

Following successful implementation of the measures described in this section, no effect significance greater than **Low**, as per Percival (2003) criteria, is identified for any KOR. No effect significance greater than **likely long-term slight negative effect**, as per EPA, 2022 criteria, is identified for any KOR. Taking into consideration the effect significance levels identified and the proposed best practice and

mitigation, no significant residual effects on the KORs with regard to direct habitat loss, disturbance/displacement or collision mortality were identified.

7.7 Cumulative Impacts

The Prospective Development was considered in combination with other plans and projects in the surrounding area that could result in cumulative, in-cumulation, and transboundary impacts on KORs. Each of these types of cumulative impacts are discussed in the following sections.

7.7.1 Cumulative Effects – Prospective Development

The Prospective Development was considered in combination with other plans and projects in the surrounding area that could result in cumulative impacts on KORs. A significant effect of disturbance and displacement on hen harrier as a result of the Prospective Development has been identified and a BMEP has been proposed to mitigate this effect. This cumulative assessment considers the residual effects of the Prospective Development on hen harrier.

The plans and projects considered are listed in Chapter 2 of this EIAR. The full list of plans and projects has been considered and relevant ones from this list are considered in this cumulative assessment. These are outlined below.

7.7.1.1 Plans Considered in the Assessment

The following plans were considered in the cumulative impact assessment:

- County Donegal Development Plan 2024 - 2030
- Northern and Western Regional Spatial and Economic Strategy 2020-2032
- Ireland's 4th National Biodiversity Action Plan 2023 – 2027

7.7.1.2 Projects Considered in the Assessment

7.7.1.2.1 Developments/Land Uses

A review of the relevant planning registers was undertaken to document relevant general development planning applications in the vicinity of the Prospective Development, as described in Chapter 2 of this EIAR. The majority of these relate to the provision and/or alteration of one-off rural housing and the provision and/or alteration of agricultural buildings. Owing to the scale and nature of these developments, significant cumulative impacts are not anticipated.

7.7.1.2.2 Forestry and Agricultural Practices

The land surrounding the project site is dominated by conifer forestry with upland grasslands that are grazed with sheep and cattle. There are quarrying and peat harvesting activities ongoing in the wider area. The potential for the Prospective Development to contribute to cumulative effects on birds when considered alongside these land uses was assessed. The Coillte planned harvest units for the Croaghonagh South were considered as part of this assessment.

7.7.1.2.3 Other Wind Farm Developments

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

Table 7-12 Wind farm developments within 25km of the proposed turbine positions

Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Altgolan Wind Farm	Proposed	5	15.6km
Altilow Turbine	Existing	1	13.2km
Anarget Wind Farm	Existing	3	17.8km
Anarget Wind Farm Extension	Existing	3	17.9km
Ballystrang Wind Farm	Existing	6	17.0km
Barnesmore Repowering	Permitted	13	2.07km
Barnesmore Wind Farm	Existing	25	2.09km
Bin Mountain Wind Farm	Existing	6	18.2km
Cark Wind Farm	Existing	30	16.8km
Cark Wind Farm Extension	Existing	4	16.7km
Castlecraig Wind Farm	Existing	10	20.6km
Church Hill Wind Farm	Existing	8	11.3km
Church Hill Wind Farm Extension	Permitted	1	12.1
Clogheravaddy Wind Farm	Existing	6	24.0km
Clunahill Wind Farm	Pre-planning	6	24.6km
Crighshane Wind Farm	Existing	14	8.3km
Crilly Wind Farm	Permitted	4	13.9km
Croaghanmeal Wind Farm	Existing	7	6.3km
Culliagh Wind Farm	Existing	18	14.9km
Culliagh Wind Farm Extension	Existing	3	14.5km
Drumnahough Wind Farm	Permitted	12	16.2km
Graffy Wind Park	Proposed	8	19.3km
Gronan Wind Farm	Existing	4	12.1km
Lenalea Wind Farm	Existing	7	17.4km
Lough Cuill Wind Farm	Existing	8	6.2km

Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Lough Hill Wind Farm	Existing	6	18.9km
Meenadreen Wind Farm	Existing	4	6.7km
Meenadreen Wind Farm Extension	Existing	8	6.1km
Meenahorna Wind Farm	Existing	7	13.6km
Meenakeeran Wind Farm	Proposed	5	3.1km
Meenalaban Wind Farm	Existing	7	14.1km
Meenamullan Wind Farm	Proposed	6	12.8km
Meenanilta Wind Farm	Existing	3	13.0km
Meenamilta Wind Farm Extension 2	Existing	3	12.8km
Meenamilta Wind Farm Extension 3	Existing	4	12.5km
Meentycat Wind Farm	Existing	9	14.9km
Pullytean Wind Farm	Proposed	7	9.3km
Seegronan Wind Farm	Existing	6	13.0km
Seegronan Wind Farm Extension	Existing	3	11.8km
Slieveglass Wind Farm	Existing	3	20.5km
Straness Wind Farm	Existing	15	3.5km
Thornog Wind Farm	Existing	3	21.9km
Thornog Wind Farm Extension	Existing	5	21.0km
Tievenameenta Wind Farm	Existing	15	10.5km
Tullynaglack Wind Farm Mid-Point	Pre-planning	n/a	20.9km

Altgolan Wind Farm

The potential for the Existing Development to result in significant cumulative effects when assessed alongside the proposed Altgolan Wind Farm was considered. The planning file² was reviewed on the Northern Ireland Planning Portal website and the EIAR was reviewed.

The potential for displacement, disturbance and collision risk was assessed for buzzard, hen harrier, kestrel and peregrine. No significant negative impacts were anticipated for these species. The potential

² <https://planningregister.planningsystemni.gov.uk/application/182293>

effects on other breeding birds were not considered to be significant. Potential impacts on wintering waterfowl, including whooper swan, were also assessed. No significant impacts were anticipated. There was previous records of breeding curlew within the 500m survey radius however, recent surveys did not find any evidence of breeding curlew, thus the development was considered to have no significant effect on local or national breeding curlew population. Cumulative impacts with wind farms within 25km of the site were considered. The overall cumulative effect was assessed to be not significant.

Altilow Turbine

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Altilow Turbine was considered. The planning file³ was reviewed on the Donegal County Council website and the Environmental Report was reviewed.

Bird species were recorded in the course of the habitat and mammal surveys. No species of conservation concern were identified. No evidence was found to show that the site is within a regularly used migration route by birds or a route used by wintering wildfowl. From the location and topography of the area there was no reason to believe it would be used by significant numbers of migrating birds or wildfowl. Therefore, the possibility of an impact by disturbance on migrating birds during construction was disregarded. A minor loss of habitat was also not expected to affect any of the bird species in the area. It was considered unlikely that the operational turbine would have any disturbance impacts on the passerine species in the adjoining habitats. The site did not provide suitable roosting or nesting habitat for Greenland white-fronted geese. It was concluded that *‘the proposed development will have no long term negative impacts on the local environment provided that all mitigation measures are implemented’*.

Anarget Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Anarget Wind Farm was considered. The planning file⁴ was reviewed on the An Coimisiún Pleanála website. There was no impact assessment available within the planning file, however the inspectors report was reviewed. The inspector noted that Dúchas (the Heritage Service) had no objections to Anarget Wind Farm in relation to its proximity to conservation areas.

Anarget Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Anarget Wind Farm Extension was considered. The planning file⁵ was reviewed on Donegal County council website and the EIS was reviewed.

During bird surveys for this extension and for previous applications, a low diversity was present and species recorded included meadow pipit, skylark, wheatear, snow bunting, snipe, raven, hooded crow, peregrine, and kestrel. It was noted that sensitive species such as golden plover, red grouse, peregrine, merlin, hen harrier, and golden eagle could all feasibly utilise habitats within the site but there were no records of these species during surveys. As there was an absence of any negative impacts at the site or at similar locations for raptors such as golden eagle, merlin and hen harrier, the extension of the site was considered not to have any significant negative impact. It was not expected that there would be any significant changes to existing bird movements across the site. It was anticipated that locally breeding pairs of red grouse or golden plover could be displaced if their territories were within or near the area of the proposed turbines or access roads but as both species are likely to have very large territories the

³ <https://eplanning.ie/ePlan/AppFileRefDetails/1120428/6?localAuthorityId=6>

⁴ <https://archive.pleanala.ie/en-ie/case/112591>

⁵ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/0520375/0>

displacement was not considered likely to involve the loss of birds but rather a change in their territories.

Ballystrang Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Ballystrang Wind Farm was considered. The planning file⁶ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Ballystrang Wind Farm is located in open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Barnesmore Repowering

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the granted Barnesmore Repowering was considered. The planning file⁷ was reviewed on the An Comisiún Pleanála website and the EIAR was reviewed.

The target species discussed in this document were golden plover, curlew, common sandpiper, snipe, red grouse, kestrel, merlin, peregrine, hen harrier, buzzard, golden eagle, sparrowhawk, white-tailed eagle, whooper swan, cormorant, heron and some small passerine species. Prior to mitigation, from the primary field surveys and assessment, there were considered to be negligible effects on extant bird species. However, some moderate effects were predicted for the construction phase on snipe, red grouse, common sandpiper, golden plover, whooper swan and meadow pipit and skylark. Snipe, whooper swan, common sandpiper, hen harrier, skylark and meadow pipit were also assessed as moderate - minor displacement effects during the operational phase. Following mitigation, these effects are assessed as being of negligible magnitude, and not significant. Kestrel were considered to be vulnerable to collision so nest boxes were proposed to increase set-back distance for this species. There were no raptors or other priority species directly impacted by the development subject to the implementation of disturbance management measures during construction / decommissioning. It was concluded that *'Following implementation of proposed mitigation, and best practice measures, there are considered to be no significant negative effects of the Development on ornithology'*.

Barnesmore Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Barnesmore Wind Farm was considered. The planning file⁸ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology.

The area of the development is comprised largely of open peatland. These habitats are likely to host some of the KORs recorded at the Wind Farm Site. Note that this site was re-appraised as part of the Barnesmore Repowering, as outlined above.

Bin Mountain Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Bin Mountain Wind Farm was considered. The planning file⁹ was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Bin Mountain Wind Farm is located in

⁶ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/028010/0>

⁷ <https://www.pleanala.ie/en-ie/case/306303>

⁸ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/95914/0>

⁹ <https://planningregister.planningsystemni.gov.uk/application/237719>

an area of open peatland habitats, and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Cark Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Cark Wind Farm was considered. The planning files^{10, 11} were reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Cark Wind Farm is located in an area of open peatland habitats, and is therefore likely to host many of the KORs recorded at the Wind Farm Site.

Cark Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Cark Wind Farm Extension was considered. The planning file¹² was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology, although it was noted that Dúchas provided no comments on nature conservation. From aerial imagery, Cark Wind Farm Extension is located in an area of conifer plantation and open peatland habitats, and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Cark/Largymore Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Cark/Largymore Wind Farm was considered. The planning file¹³ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Cark/Largymore Wind Farm is located in an area of open peatland and farmland habitats, and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Castlecraig Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Castlecraig Wind Farm was considered. The planning file¹⁴ was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Castlecraig Wind Farm is located in an area of open peatland and farmland habitats, and is therefore likely to host many of the KORs recorded at the Wind Farm Site.

Church Hill Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Church Hill Wind Farm was considered. The planning file¹⁵ was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. However, reports on ornithological monitoring during the pre-planning, construction and operational phases from 2004 to 2016 were available and reviewed. Species including golden plover, hen harrier, merlin, peregrine falcon, kestrel, curlew, lapwing, snipe,

¹⁰ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/951310/0>

¹¹ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/96780/0>

¹² <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/018262/0>

¹³ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/028328/0>

¹⁴ <https://planningregister.planningsystemni.gov.uk/application/57370>

¹⁵ <https://planningregister.planningsystemni.gov.uk/application/237906>

buzzard and sparrowhawk were discussed. Golden plover (wintering), hen harrier, kestrel, snipe (breeding), buzzard and sparrowhawk numbers were found to have remained stable over the monitoring period. A decline in wintering snipe numbers was noted. A hen harrier nest was located within 500m of a turbine during construction, but is suspected to have been predated. However, hen harrier breeding numbers in the wider area remained stable. Kestrel were breeding on the edge of the 500m turbine buffer zone in one year, while breeding buzzard and snipe were recorded within 500m turbine buffer zone and regularly forage in this zone. Merlin was recorded sporadically but in recent years have not been seen within 500m of turbines, while peregrine falcon was also recorded sporadically. Breeding curlew declined but it was assessed that curlew were absent from the local area before construction began, in correlation with the decline of curlew nationwide.

Church Hill Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Church Hill Wind Farm Extension was considered. The Planning File¹⁶ was reviewed on the Northern Ireland Planning Portal Website and the EIS was reviewed. An assessment was undertaken to determine the risk to birds at the site, including a review of data from historic and continued bird surveys at the operational Church Hill Wind Farm (discussed above). Hen harrier and snipe were assessed.

The effects during the construction phase were judged to be Not Significant and the magnitude of the potential operational disturbance was considered to be low for both species. The size of the proposed single wind turbine extension project would have a limited effect on the overall cumulative presence of turbines in the area, therefore cumulative impacts were deemed Not Significant. In a consultation response, the Northern Ireland Environment Agency noted that hen harrier and merlin nesting occurred at a distance of ~900m and 1.8km from the proposed development site in 2011 respectively. The habitat was considered generally unsuitable for red grouse, which have not been detected at the site since 2004. The site is not a known flyway or foraging/roosting area for large numbers of waterfowl. The EIS concluded that the likely effects of the proposed development on all bird species was Not Significant.

Clogheravaddy Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Clogheravaddy Wind Farm was considered. The planning file¹⁷ was reviewed on the Donegal County Council website and the NIS was reviewed.

Within the NIS, disturbance, displacement and collision risk of SCI species associated with Lough Nillan SPA was considered, and it was concluded that *‘with the application of the proposed mitigation measures, the development of the wind farm at Clogheravaddy will have no adverse impacts on the Natura 2000 sites in the wider hinterland.’*

Clunahill Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Clunahill Wind Farm was considered. The planning file¹⁸ was reviewed on the Northern Ireland Planning Portal website and the Environmental Statement was reviewed.

¹⁶ <https://planningregister.planningsystemni.gov.uk/application/236226>

¹⁷ <https://www.eplanning.ie/DonagCC/AppFileRefDetails/14513050>

¹⁸ <https://planningregister.planningsystemni.gov.uk/application/694694>

Impacts during the construction, de-commissioning, and operational stages were assessed for curlew, snipe and red grouse. The impacts from construction disturbance and displacement during the operational stage were assessed to be of moderate regional significance and high local significance for curlew. Mortality through collision with turbine blades was assessed to be of low significance for curlew also. The impacts of disturbance from construction and displacement from foraging was assessed to be of low significance for snipe. There were no significant impacts anticipated relating to red grouse. Impacts during the operational stage were assessed for raptors, including buzzard, kestrel, peregrine, red kite, sparrowhawk and hen harrier. The collision risk modelling indicated a moderate significant impact for kestrel, a low significant impact for buzzard, a negligible impact on peregrine, red kite, and sparrowhawk and no impact on hen harrier. Impacts on breeding passerines, including meadow pipit, were assessed and impacts were anticipated to be low or negligible. Cumulative impacts of wind farms within 5km of the development site were assessed, and found to be not significant.

Crighshane Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Crighshane Wind Farm was considered. The planning file¹⁹ was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. However, reports on ornithological monitoring during the pre-planning, construction and operational phases from 2004 to 2016 were available and reviewed. Buzzard, kestrel, hen harrier, merlin, sparrowhawk, curlew and snipe were discussed. Numbers of hunting buzzard, kestrel, hen harrier, sparrowhawk and breeding snipe have remained stable. Hen harrier bred within 3km of the site boundary in one year. There were some records of merlin over the years. Breeding curlew declined but it was assessed that curlew were absent from the local area before construction began, in correlation with the decline of curlew nationwide.

Crilly Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Crilly Wind Farm was considered. The planning file²⁰ was reviewed on the Donegal County Council Planning website and the EIS was reviewed.

Of the bird species recorded, those requiring further assessment were hen harrier and snipe only. Resting and foraging hen harrier were considered sensitive to visual disturbance and sudden noise events over moderate distances, and potentially vulnerable to collision with turbines during the migration period. Wintering and breeding snipe were also considered sensitive to development. The effects on birds due to habitat loss was considered to be Negligible. No evidence of breeding hen harrier was registered during surveys and no historical records of breeding in the Crilly Wind Farm area. Due to the small local population sizes of snipe, irregular use of the area for foraging by hen harrier and the overall small predicted effects on habitats, the magnitude of construction disturbance effects on hen harrier and snipe was considered to be low. The magnitude of collision mortality effects on hen harrier and snipe was also considered to be low. No impact to any SPA bird designation features were anticipated. It was concluded that *‘the likely effects of the proposed development on all bird species are Not Significant.’*

Croghanmeal Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Croghanmeal Wind Farm was considered. The planning files^{21,22}

¹⁹ <https://planningregister.planningsystemni.gov.uk/application/228950>

²⁰ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/1351404/0>

²¹ <https://archive.pleanala.ie/en-ie/case/220235>

²² <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/041461/0>

were reviewed on the An Coimisún Pleanála website and Donegal County Council website. There was no impact assessment available within the planning file, however the inspectors report was reviewed.

The inspector assessed Croaghanmeal Wind Farm Extension in conjunction with adjacent sites Straness Wind Farm and Meenadreen Wind Farm Extension which effectively form a single windfarm for 33 no. turbines in addition to the five turbines already at Meenadreen Wind Farm.

The original planning application to the local authority was refused in part due to “*concerns in regard to the impact of the proposed development and that of adjoining developments on the natural environment including the disturbance and displacement of breeding areas, habitat and foraging areas of hen harriers.*”

The DoEHLG commented “*we consider the nature conservation issues and mitigation measures have been adequately addressed in the EIS. It is felt that there would be no significant threat to any designated area, habitat or important species*”.

However, the Northern Ireland Planning service raised some concerns regarding the ornithological interest of the site “*the bird survey carried out indicated that the proposed development was of ornithological interest during the breeding season. It was indicated that 1) a second survey for breeding waders would be prudent, and 2) that the hen harrier had an established breeding population in the uplands of south Donegal/Tyrone/Fermanagh and that the EIS confirmed sightings within the Study area and potential of the area as a foraging habitat. Concerns were therefore expressed from the potential for disturbance of birds from foraging areas or even actual or potential nest sites. It was also stated that 3) potential risk of collision with whooper swans may have been underestimated and more data on this issue be sought.*”

The inspector concluded “*However based on the submissions available to me including the EIS and in the First Party grounds of appeal, the presence of the existing turbines and the absence of further contradictory data I do not recommend an objection to the proposed (amended and reduced) development on significant detriment to the ornithological interest of the area.*”

The inspector stated that ‘*None of the bird species observed on the site are included in the Irish Red Data Book. No potential impact to birds or mammals is foreseen during the construction or operation of the development.*’ The inspector then found that ‘*The likely impact of the development on the ecology of the area, climate, air quality, noise and archaeology are properly addressed.*’ and that ‘*The information contained in the EIS with regard to the habitats, flora and fauna on the site is considered to be adequate to demonstrate that the development would not have any undue effect on the natural heritage of the area.*’

Cullagh Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Cullagh Wind Farm was considered. The planning file²³ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Cuillagh Wind Farm is located in an area of open peatland habitats, and is therefore likely to host many of the KORs recorded at the Wind Farm Site.

²³ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/971740/0>

Culliagh Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Culliagh Wind Farm Extension was considered. The planning file was reviewed on the Donegal County Council website and the EIS was reviewed.

Impacts were considered for Greenland white-fronted geese, whooper swan, golden plover, hen harrier, peregrine, merlin, and red grouse. It was noted that there may be an enhanced collision risk or barrier effects to migratory flocks of golden plover, Greenland white-fronted geese, and whooper swan. The potential impacts from construction disturbance, loss of habitat and collision risk was assessed to be low and not significant for hen harrier, peregrine and merlin, and red grouse. It was noted that disturbance from ancillary construction works, may have impacts on potentially sensitive breeding birds such as golden plover, snipe, red grouse, peregrine and merlin.

Drumnahough Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the permitted Drumnahough Wind Farm was considered. The planning file²⁴ was reviewed on the An Coimisiún Pleanála website and the EIS was reviewed.

The avian Key Ecological Receptors discussed in this document were merlin, peregrine, hen harrier, kestrel, sparrowhawk, buzzard, golden eagle, golden plover, snipe, goosander, great black-backed gull, lesser black-backed gull, grey heron, red grouse and Red-listed passerine species. The magnitude of the effect of direct habitat loss during construction was assessed as Negligible for goosander and lesser black-backed gull and Low for merlin, peregrine kestrel, sparrowhawk, buzzard, golden eagle, hen harrier, golden plover, snipe, great black-backed gull, grey heron and red grouse. The magnitude of the effect of displacement and barrier effect during construction was assessed as Negligible for kestrel, sparrowhawk, buzzard, golden eagle, goosander and lesser black-backed gull, Low-Negligible for grey heron, Low for merlin, peregrine, hen harrier, golden plover and great black-backed gull, Medium for red grouse and Red-listed passerine species, and High for snipe. The magnitude of the effect of displacement and barrier effect during operation was assessed as Negligible for golden eagle, golden plover, goosander and grey heron, Low for merlin, peregrine, kestrel, sparrowhawk, hen harrier, great black-backed gull, lesser black-backed gull, red grouse and Red-listed passerines, Medium for buzzard and High for snipe. Finally, the magnitude of the effect of collision risk during operation was assessed as Negligible for hen harrier, golden plover and grey heron, Low for merlin, peregrine, kestrel, sparrowhawk, buzzard, golden eagle, snipe, goosander and lesser black-backed gull, Medium for great black-backed gull and no impact for red grouse. It was concluded that, taking account of mitigations, *‘the proposed development can be built without significant effects on avifauna at the local and county scale’*.

Graffy Wind Park

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Graffy Wind Park was considered. The planning file²⁵ was reviewed on the Donegal County Council Planning website and the EIS was reviewed.

KORs identified included merlin, white-tailed eagle, hen harrier, golden eagle, whooper swan, red grouse, sparrowhawk, kestrel, snipe, and jack snipe. Direct and indirect disturbance to breeding during the construction phase was assessed to be medium significance to merlin, and low significance to meadow pipit, sparrowhawk, snipe, whinchat, and amber-listed passerines. Collision risk was considered to be low significance for white-tailed eagle, low/medium significance for golden eagle and

²⁴ <https://www.pleanala.ie/en-ie/case/308806>

²⁵ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/2151990/0>

very low significance for kestrel. Indirect disturbance to breeding during the operational phase of the development was considered to be of medium significance to merlin, low significance to whinchat, and very low significance to snipe. Cumulative impacts of wind farms within 15km of the development site were assessed, and found to be not significant, due to the low density of operational and consented wind farms.

Gronan Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Gronan Wind Farm was considered. The planning file²⁶ was reviewed on the Northern Ireland Planning Portal Website. There was no impact assessment available within the planning file. There was no impact assessment available within the planning file related to ecology. From aerial imagery, Gronan Wind Farm is located in an area of open peatland/wet grassland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Lenalea Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Lenalea Wind Farm was considered. The planning file²⁷ was reviewed on the Donegal County Council Planning website and the EIS was reviewed.

The target species recorded on this site were hen harrier, golden plover, red grouse, merlin, peregrine, Greenland white-fronted goose, whooper swan, red-throated diver, curlew, kestrel, snipe, buzzards and other amber-listed species. The proposed development was not considered to contain good quality hen harrier breeding habitat, though the species may continue to forage in the site and surrounding habitats. Records indicates regular occurrence of whooper swan in autumn and spring and periodically during the winter. Greenland white-fronted goose was not known to use the site or local habitats however they were recorded once on spring migration outside the site. Collision risk for Greenland white-fronted goose and whooper swan was considered to be low given the apparently small numbers and infrequent movements of birds. The Lenalea site was not considered to contain large populations of any species particularly sensitive to wind farm developments and it was therefore not expected that there would be significant cumulative impacts on the local faunal communities. It was concluded that ‘*With the successful application of mitigating measures... and best practice construction techniques, the wind farm construction will not have any long term negative impacts on the habitats or locally occurring wildlife on the site. With the successful application of mitigating measures the residual impacts post construction would be negligible.*’

Lough Cuill Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Lough Cuill Wind Farm was considered. The planning file²⁸ was reviewed on the Donegal County Council Planning website. The impact assessment was not accessible within the planning file, however the inspectors report was reviewed.

The inspector stated that “*The applicants have also carried out surveys in regards to bird species within the area and it is concluded that impact of the proposal in regards to breeding is negligible and the risk of collision with the turbines is low. I am satisfied with the scope and level of detail provided by the applicant in regards to bird species in the area. I am also satisfied that based on the information submitted that the proposal would have no significant or adverse impact upon such species.*”

²⁶ <https://planningregister.planningsystemni.gov.uk/application/149194>

²⁷ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/0950116/0>

²⁸ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/1250866/0/>

Lough Hill Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Lough Hill Wind Farm was considered. The planning file²⁹ was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Lough Hill Wind Farm is located in an area of open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Meenadreen Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenadreen Wind Farm was considered. The planning files^{30,31} were reviewed on the An Coimisiún Pleanála website and Donegal County Council website. There was no impact assessment available within the planning file, however the inspectors report was reviewed.

This site was refused planning permission for the erection of turbines on three occasions (PL05.103184 (Reg. Ref. 95/58); PL05.104225 (Reg. Ref. 95/1710); Reg. Ref. 99/2078), with effects on the habitats of bird species cited as a refusal reason in all cases. Limited information could be extracted from the Inspector's Report on the first party appeal against certain conditions and a third party appeal against a decision by the Planning Authority to grant permission (PL05.116924 (Reg. Ref. 99/1257)), after which the development was ultimately granted. Within the first party appeal, the developer stated that that *'the extensive planting will affect the land as a bird habitat and that most rare species are not located on or close to the site e.g. peregrine falcon, hen harrier and merlin. Also Red Grouse are unlikely to use the site as planting evolves. The EIS. does not indicate that the site has been used as a migratory route by birds and this is after detailed inspection and investigation. Noise impact on birds would be negligible.'* The wind farm was ultimately granted based on this appeal with this information.

Meenadreen Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenadreen Wind Farm Extension was considered. The planning files^{32,33} were reviewed on the An Coimisiún Pleanála website and Donegal County Council website. There was no impact assessment available within the planning file, however the inspectors report was reviewed.

The inspector assessed Meenadreen Wind Farm Extension in conjunction with adjacent sites Straness Wind Farm and Croaghanmeal Wind Farm Site which effectively form a single windfarm for 33 no. turbines in addition to the five turbines already at Meenadreen Wind Farm.

The original planning application to the local authority was refused in part due to *"concerns in regard to the impact of the proposed development and that of adjoining developments on the natural environment including the disturbance and displacement of breeding areas, habitat and foraging areas of hen harriers."*

The DOEHLG commented *"we consider the nature conservation issues and mitigation measures have been adequately addressed in the EIS. It is felt that there would be no significant threat to any designated area, habitat or important species"*.

²⁹ <https://planningregister.planningsystemni.gov.uk/application/52048>

³⁰ <https://archive.pleanala.ie/en-ie/case/212856>

³¹ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/05127/0>

³² <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/041462/0>

³³ <https://archive.pleanala.ie/en-ie/case/220172>

However, the Northern Ireland Planning service raised some concerns regarding the ornithological interest of the site *“the bird survey carried out indicated that the proposed development was of ornithological interest during the breeding season. It was indicated that 1) a second survey for breeding waders would be prudent, and 2) that the hen harrier had an established breeding population in the uplands of south Donegal/Tyrone/Fermanagh and that the EIS confirmed sightings within the Study area and potential of the area as a foraging habitat. Concerns were therefore expressed from the potential for disturbance of birds from foraging areas or even actual or potential nest sites. It was also stated that 3) potential risk of collision with whooper swans may have been underestimated and more data on this issue be sought.”*

The inspector concluded *“However based on the submissions available to me including the EIS and in the First Party grounds of appeal, the presence of the existing turbines and the absence of further contradictory data I do not recommend an objection to the proposed (amended and reduced) development on significant detriment to the ornithological interest of the area.”*

Meenahorna Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenahorna Wind Farm was considered. The planning file³⁴ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Meenahorna Wind Farm is located in an area of open peatland habitats, and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Meenakeeran Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Meenakeeran Wind Farm was considered. The planning file³⁵ was accessed on the Northern Ireland Planning Register, and the ES Non-technical summary was reviewed, in the absence of the ornithology chapter.

The potential for impacts of loss of foraging habitat and disturbance during the construction and operational phase were assessed for golden plover, hen harrier, woodcock, and snipe, and found to be low to negligible and deemed not significant. Impacts from collision risk with turbines were assessed for golden plover and hen harrier and found to be low to negligible, and not significant.

Meenalaban Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenalaban Wind Farm was considered. The planning file³⁶ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Meenalaban Wind Farm is located in an area of conifer plantation and open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Meenamullan Wind Farm

The proposed Meenamullan Wind Farm is at the pre-planning stage and therefore no planning application has been lodged and no impact assessment has been completed to date. The development

³⁴ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/028373/0>

³⁵ <https://planningregister.planningsystemni.gov.uk/application/703917>

³⁶ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/028008/0>

is located in open peatland and conifer plantation. These habitats are likely to host some of the KORs recorded at the Wind Farm Site.

Meenanilta Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenanilta Wind Farm was considered. The planning file³⁷ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Meenanilta Wind Farm is located in an area of conifer plantation habitats and is therefore likely to host many of the KORs recorded at the Wind Farm Site.

Meenanilta Wind Farm Extension 2

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenanilta Wind Farm Extension (2) was considered. The planning file³⁸ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Meenanilta Wind Farm Extension (2) is located in an area of conifer plantation and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Meenanilta Wind Farm Extension 3

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meenanilta Wind Farm Extension (3) was considered. The planning file³⁹ was reviewed on the Donegal County Council website and the EIS was reviewed.

The main species identified on the site and the surrounding area were skylark and meadow pipit. The EIS states that *‘Research conducted in other EU countries has concluded that mortality rates generated by turbines are negligible and mainly relate to seasonal migrational routes. The proposed site is not situated in any of these routes. The overall predicted impact to the bird population in the area would be therefore positive, due to the improvement of the general habitat on site.’*

Meentycat Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Meentycat Wind Farm was considered. The planning file⁴⁰ was reviewed on the Donegal County Council website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Meentycat Wind Farm is located in an area of open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Pullytean Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the proposed Pullytean Wind Farm was considered. The planning file⁴¹ was reviewed on the Northern Ireland Planning Portal website and the Environmental Statement was reviewed.

³⁷ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/018143/0>

³⁸ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/018305/0>

³⁹ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/049275/0>

⁴⁰ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/018038/0>

⁴¹ <https://planningregister.planningsystemni.gov.uk/application/706437>

The Important Ornithological Features identified in this assessment included lesser black-backed gull, golden plover, hen harrier, merlin, peregrine, snipe, great black-backed gull, kestrel, red grouse, and woodcock. Disturbance, displacement, loss of habitat, and collision risk effects for lesser black-backed gull, golden plover, hen harrier, merlin and peregrine were assessed to be negligible and not significant. No significant impacts were anticipated for snipe, great black-backed gull, kestrel, red grouse or woodcock. It was noted that due to the mitigation and enhancement measures proposed alongside the project that there would be a net positive benefit for local biodiversity through the lifetime of the project.

Seegronan Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Seegronan Wind Farm was considered. The planning file⁴² was reviewed on the Northern Ireland Planning Portal website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Seegronan Wind Farm is located in an area of open peatland/wet grassland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Seegronan Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Seegronan Wind Farm Extension was considered. The planning file⁴³ was reviewed on the Northern Ireland Planning Portal Website and the EIS was reviewed.

The Key Ornithological receptors assessed were hen harrier and snipe. The impacts of disturbance and loss of habitat during the construction and operational phases of the development for hen harrier and snipe were assessed to be not significant.

Slieveglass Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Slieveglass Wind Farm was considered. The planning file⁴⁴ was reviewed on the Northern Ireland Planning Portal Website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Slieveglass Wind Farm is located in an area of open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Straness Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Straness Wind Farm was considered. The planning files^{45,46} were reviewed on the An Coimisiún Pleanála website and Donegal County Council website. There was no impact assessment available within the planning file, however the inspectors report was reviewed.

The inspector assessed Straness Wind Farm Extension in conjunction with adjacent sites Croaghanmeal Wind Farm and Meenadreen Wind Farm Extension which effectively form a single windfarm for 33 no. turbines in addition to the five turbines already at Meenadreen Wind Farm.

⁴² <https://planningregister.planningsystemni.gov.uk/application/236513>

⁴³ <https://planningregister.planningsystemni.gov.uk/application/187388>

⁴⁴ <https://planningregister.planningsystemni.gov.uk/application/175332>

⁴⁵ <https://www.eplanning.ie/DonegalCC/AppFileRefDetails/041526/0>

⁴⁶ <https://archive.pleanala.ie/en-ie/case/220176>

The original planning application to the local authority was refused in part due to ‘*concerns in regard to the impact of the proposed development and that of adjoining developments on the natural environment including the disturbance and displacement of breeding areas, habitat and foraging areas of hen harriers.*’

The DoEHLG commented ‘*we consider the nature conservation issues and mitigation measures have been adequately addressed in the EIS. It is felt that there would be no significant threat to any designated area, habitat or important species.*’

However, the Northern Ireland Planning service raised some concerns regarding the ornithological interest of the site ‘*the bird survey carried out indicated that the proposed development was of ornithological interest during the breeding season. It was indicated that 1) a second survey for breeding waders would be prudent, and 2) that the hen harrier had an established breeding population in the uplands of south Donegal/Tyrone/Fermanagh and that the EIS confirmed sightings within the Study area and potential of the area as a foraging habitat. Concerns were therefore expressed from the potential for disturbance of birds from foraging areas or even actual or potential nest sites. It was also stated that 3) potential risk of collision with whooper swans may have been underestimated and more data on this issue be sought.*’

The inspector concluded ‘*However based on the submissions available to me including the EIS and in the First Party grounds of appeal, the presence of the existing turbines and the absence of further contradictory data I do not recommend an objection to the proposed (amended and reduced) development on significant detriment to the ornithological interest of the area.*’

Thornog Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Thornog Wind Farm was considered. The planning files^{47,48} was reviewed on the Northern Ireland Planning Portal Website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Thornog Wind Farm is located in an area of open peatland and farmland/wet grassland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Thornog Wind Farm Extension

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Thornog Wind Farm Extension was considered. The planning file^{49,50} was reviewed on the Northern Ireland Planning Portal Website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Thornog Wind Farm Extension is located in an area of open peatland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Tievenameenta Wind Farm

The potential for the Existing Development to result in significant cumulative or in-combination effects when assessed alongside the existing Tievenameenta Wind Farm was considered. The planning file⁵¹ was reviewed on the Northern Ireland Planning Portal Website. There was no impact assessment available within the planning file relating to ecology. From aerial imagery, Tievenameenta Wind Farm

⁴⁷ <https://planningregister.planningsystemni.gov.uk/application/54470>

⁴⁸ <https://planningregister.planningsystemni.gov.uk/application/106918>

⁴⁹ <https://planningregister.planningsystemni.gov.uk/application/63419>

⁵⁰ <https://planningregister.planningsystemni.gov.uk/application/109059>

⁵¹ <https://planningregister.planningsystemni.gov.uk/application/212401>

is located in an area of open peatland and farmland/wet grassland habitats and is therefore likely to host some of the KORs recorded at the Wind Farm Site.

Tullynaglack Wind Farm

The proposed Tullynaglack Wind Farm is at the pre-planning stage and therefore no planning application has been lodged and no impact assessment has been completed to date. The area of the development is comprised of farmland, open peatland and conifer plantation. These habitats are likely to host some of the KORs recorded at the Wind Farm Site.

7.7.1.3 Cumulative Impact Assessment

During the assessment of cumulative effects on KORs, cumulative habitat loss and displacement/disturbance associated with operational turbines, forestry and agricultural practices was assessed. For most KOR species collision risk no greater than Very Low (Percival, 2003) or Long-term Imperceptible (EPA, 2022) were predicted. Cumulative collision risk is therefore not considered further given these predicted impacts are effectively zero. The collision risk for buzzard and breeding hen harrier was predicted to be Low (Percival, 2003) and Long-term Slight (EPA, 2022), therefore cumulative impacts for collision risk were considered below for these species. Quantitative information on collision risk was generally not available for the majority of wind farms, therefore cumulative impacts for collision risk were considered qualitatively based on what information was available. No significant cumulative effects are predicted to result from the construction phase because these are short in duration and temporal overlap. For this reason, construction phase effects are not considered further in the cumulative assessment.

7.7.1.3.1 Landscape Level Assessment

A GIS mapping exercise was undertaken that aimed to quantify the amount of land within the wider landscape (i.e., the continuous upland habitat in which the Wind Farm Site lies) that is likely to be significantly impacted by the presence of turbines. Impacts were predicted to be restricted to the area near a turbine. Near to a turbine was defined as within the range of 250m to 500m. This distance was chosen as Pearce-Higgins *et al.* (2009) identified, for a range of species, significant avoidance of turbines between 250m and 500m. It therefore follows that significant effects are unlikely at distances greater than 500m. To define the area of interest, it was found that by including lands above 100m in elevation, a reasonable approximation of the Blue Stack Mountains and the South Donegal hen harrier stronghold and uplands was achieved and the key suitable habitats for all KORs at a regional scale were included. Natural borders such as valleys and rivers were used and Lough Finne and the River Finn were used as the northern extent of the regional upland area. The rationale for this approach was as follows: O'Donoghue (2004) described the modern landscape of the Irish breeding hen harrier as upland, typically above 100m above sea level. The GIS exercise provided the following results.

The total upland area is 122,769ha and of this, 8,484ha (7%) is within 500m of a turbine (excluding the proposed turbine layout). The 500m radius of the proposed turbines comprises 895ha, all of which is in upland area and 66ha is within open habitat. The two main land uses in these uplands are forestry and peatland (with some agriculture), which is the 'open habitat' mentioned below. There is the following breakdown of forestry and open habitat.

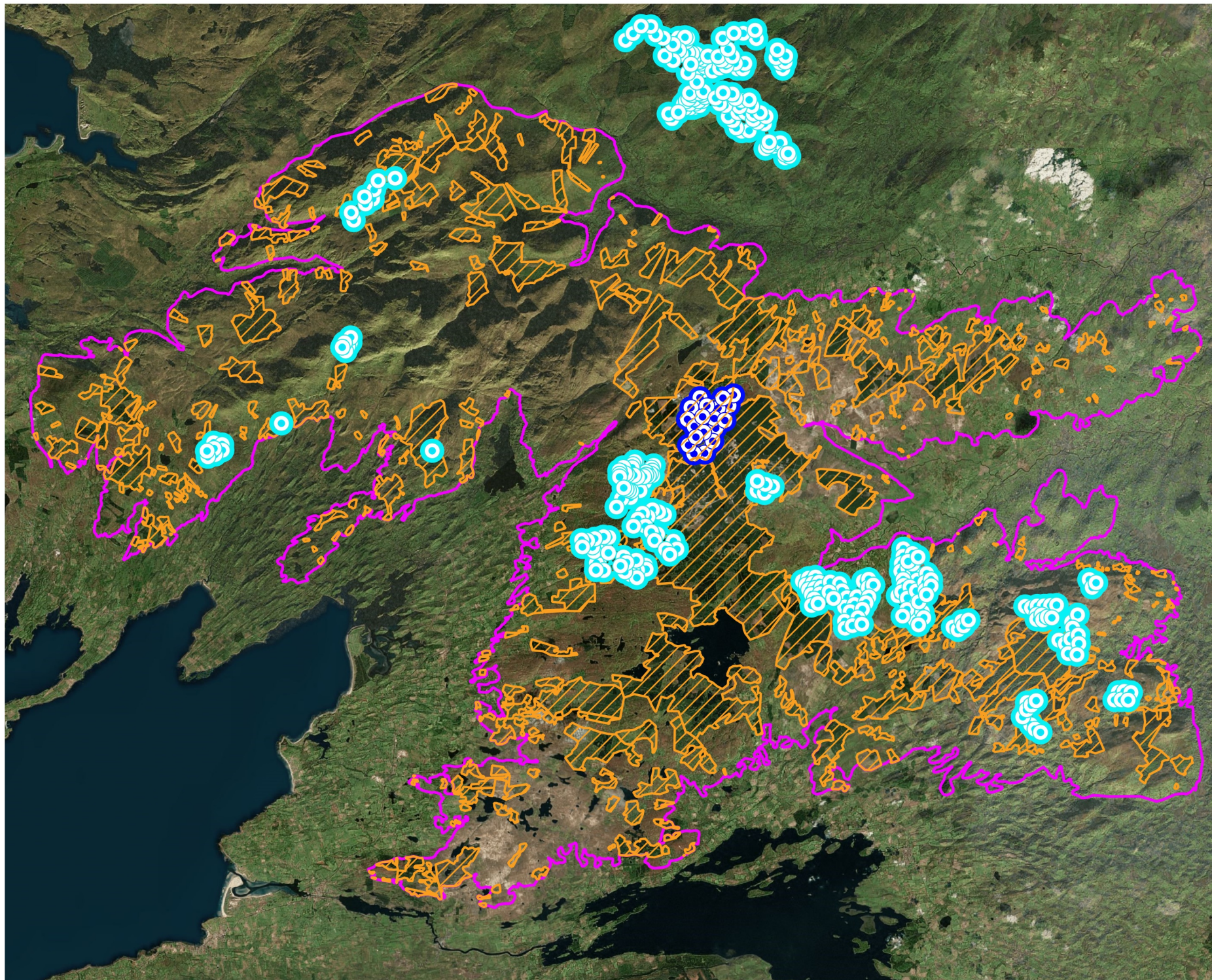
- The total area of forestry is 31,477ha (25.6% of the total upland area);
 - Forestry greater than 500m from turbines (excl. the proposed turbine layout) is 29,859ha (or 94.8% of the forestry).
 - Forestry greater than 500m from turbines (incl. the proposed turbine layout) is 29,029ha (or 92.2% of the forestry).

- The total area of open habitat is 91,292ha (74.4% of the total upland area);
 - Open areas greater than 500m from turbines (excl. the proposed turbine layout) is 84,435ha (or 92.5% of the open habitat).
 - Open area greater than 500m from turbines (incl. the proposed turbine layout) is 84,419ha (or 92.5% of the open habitat).
- The total area within 500m of turbines (incl. the proposed turbine layout) is 9,379ha (7.6% of the total upland area);
 - 2,451ha is within forestry (2% of the upland area); and
 - 6,928ha is within open habitats (5.6% of the upland area).

Having undertaken the above analysis of the available area within the surrounding uplands the following is of note:

- The majority of the uplands is comprised of ‘open habitats’ such as peatlands and agriculture.
- A significant portion of the land cover of the uplands is commercial forestry (25.6%).
- A majority of the turbines are located within open habitats (87%).
- Although there is a high density of turbines, relative to other regions, the area occupied by the turbines (plus a 500m radius) is small to moderate in size when compared to the other key industries of commercial forestry and agriculture.
- Displacement effects associated with the 19 proposed turbines account for 0.7% of the upland area.

As forestry and peatlands/agriculture (i.e., open habitat) make up the vast majority of the total 122,769ha within the uplands it is reasonable to conclude that the relative quality/suitability of these habitats is likely to have the greatest (positive or negative) influence on the local avian community, including hen harrier. While several of the species encountered at the Site are in decline at a national level, it is not possible to conclusively attribute the decline to any one industry; likely, the national hierarchy of threats/pressures as per Article 12 reporting holds true locally also. That is; forestry practice (including forest planting on open ground and forestry management) and factors associated with agricultural intensification are of high importance. Impacts associated with wind farms (renewable abiotic energy use) are likely of medium importance locally. 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 whooper swan and 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.



Map Legend

-  Upland Area (>100m)
-  Forestry
-  Proposed Turbine Locations
-  500m Buffer of Proposed Turbine Locations
-  Other Proposed/Permitted Turbines
-  500m Buffer of Other Proposed/Permitted Turbines



Drawing Title
Wind Farms within the Upland Region
Surrounding Meenbog Wind Farm

Project Title
**Meenbog Wind Farm,
Co. Donegal**

Drawn By KS	Checked By SD
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Project No. 240505	Drawing No. Fig.1
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Scale 1:255,000	Date 24.04.2026
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7.7.1.3.2 Golden Eagle

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
National Scale	At a national level, the main pressures and threats for golden eagle listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; abandonment of grassland management; and extensive grazing or undergrazing by livestock; as well as poisoning of animals and illegal shooting/killing. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for golden eagle. All of the pressures/threats were ranked as of medium importance. The extent of commercial forestry in the landscape influences the availability and distribution of open habitat for golden eagle. Afforestation reduces the extent of open foraging habitat. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for golden eagle (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance, as well as carrion availability). For example, drainage, reseeding and improvement may reduce habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to golden eagle. Altgolan Wind Farm, the Altilow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castleraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. The total available habitat for this species within 500m of the proposed turbines is therefore c.65a, which represents a 0.08% loss of the remaining habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment		

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on golden eagle 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 Prospective Development. No significant residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on golden eagle are anticipated at the county, national or international scale.		

7.7.1.3.3 Golden Plover

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressures and threats for golden plover listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; intensive grazing or overgrazing by livestock; drainage for use as agricultural land; conversion from one type of agricultural land use to another; burning for agriculture; and wind, wave and tidal power, including infrastructure; as well as problematic native species, other invasive alien species, and vandalism or arson. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry,	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for golden plover. The threat/pressure of wind, wave and tidal power was ranked as of medium importance, while those relating to forestry were all ranked as of high importance. Intensive grazing or overgrazing by livestock, and drainage for use as agricultural land were ranked as of high importance, while the remainder relating to agricultural practices were ranked as of medium importance. The extent of commercial forestry in the landscape influences the availability and distribution of open habitat for golden plover. Afforestation reduces the extent of open habitat. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for golden plover (e.g., through changes in grazing pressure, vegetation structure, drainage and levels of human disturbance). For example, drainage may reduce foraging/roosting habitat suitability in some areas, while reseeded and improved may maintain suitable habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to golden plover. Altgolan Wind Farm, the Altulow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm,		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use forestry, therefore there is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. The total available habitat for this species within 500m of the proposed turbines is therefore c.65a, which represents a 0.08% loss of the remaining habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and		

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on golden plover are anticipated at the county, national or international scale.		

7.7.1.3.4 **Hen Harrier**

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Breeding: National Scale Wintering: Regional Scale (25km)	At a national level, the main pressures and threats for hen harrier listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; replanting with or introducing non-native or non-typical species; wood transport; removal of small landscape features for agricultural land parcel consolidation; reseedling of grasslands and other semi-natural habitats; conversion from one type of agricultural land use to another; burning for agriculture; abandonment of management/use of other agricultural and agroforestry systems; and wind, wave and tidal power, including infrastructure; as well as problematic native species. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for hen harrier. The pressures/threats of wind, wave and tidal power and agricultural are ranked as of medium importance. Conversion to forest from other land uses, or afforestation, and replanting with or introducing non-native or non-typical species were ranked as of high	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
importance, with the remaining pressures/threats relating to forestry and agricultural practices ranked as of medium importance. Commercial forestry habitats are of limited value to hen harrier except during the pre-thicket stage (approximately the first ten years of growth) when they can be used by hunting and nesting birds. Some areas of forestry in the landscape may naturally become unsuitable for this species over the lifetime of the Prospective Development due to the maturation of commercial forestry. However, due to the regular cycles of commercial forestry, additional areas are likely to also be felled within the landscape, and as such new potential suitable habitat would become available. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for hen harrier (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance). For example, drainage, reseeding and improvement may reduce habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to hen harrier. Altgolan Wind Farm, the Altulow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm,		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The Hen Harrier Threat Response Plan 2024-2028 states: <i>‘While wind energy production is identified as one of the key pressures on the species, wind energy development is also, more generally, a key part of the global and national response to alleviating climate change. Biodiversity and climate change commitments have equal standing, and creating opportunities to achieve both, without compromising each other, is critical, particularly as biodiversity can assist in climate change mitigation and adaptation.’</i> The fluctuations in hen harrier populations in Ireland can be related to habitat modification and loss (Wilson <i>et al.</i>, 2015). In particular, extensive afforestation over the past 65 years in Ireland has resulted in the loss of large areas of open habitat suitable for breeding hen harrier. Agricultural intensification and wind farms are also identified as key pressures/threats. There is substantial Irish-based evidence that shows that both moorland habitats, low-intensity managed grasslands and dense structured hedgerows are important for foraging hen harrier (Barton <i>et al.</i>, (2006), Ruddock <i>et al.</i>, 2012) and mature		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
heather for nesting. However, as mature heather becomes increasingly rare in Ireland, the species is forced to nest in young commercial coniferous forestry. Wilson <i>et al.</i> (2015) highlight the importance of open habitats that hold a high diversity of prey species for foraging hen harrier. Young conifer plantations provide cover suitable for nesting hen harrier, however forestry may be associated with higher rates of nest predation and lower prey availability around the nest (Wilson <i>et al.</i>, 2015; Gómez-Catasús <i>et al.</i>, 2021). Open habitats are favoured by hen harrier and are potentially of strategic importance to a declining population undergoing range contraction. While hen harrier can nest in forestry, they are reliant on open habitats for foraging. An absence (or unavailability) of open habitats can limit range expansion and the associated population recovery. The results of the landscape-level analysis provide the following information. Excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. Owing to the likely asynchronous rotation cycle of the forestry crop, only a proportion of the forestry will be young (pre-thicket) and thus useful/available to hen harrier at any one time. The forestry is suitable for approximately a quarter of its lifecycle. All else being equal, approximately 7,465ha of the 29,859ha is likely available to hen harrier at any one time. The 91,900ha combined total constitutes a significant amount of upland habitat available for hen harrier in any given year. Within the Wind Farm Site, there is c.895ha within 500m of proposed turbines, c.830ha of which is commercial forestry and c.65ha of which is open habitat. At any one time over the lifetime of the Wind Farm Site, a quarter of the forestry (c.208ha) is likely suitable for hen harrier, along with the c.65ha of open habitat. Thus, the total available habitat (forestry and open) within 500m of the proposed turbines is then c.273ha, which represents a 0.3% loss of the remaining habitat greater than 500m from a turbine (91,900ha) within the cumulative assessment		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for breeding hen harrier. Furthermore, the remaining 91,900ha continues to constitute a significant amount of upland habitat. Furthermore, no significant effects of habitat loss and displacement were reported for any of these wind farms. At Barnesmore Wind Farm, hen harrier were recorded roosting within 5km and breeding just beyond 2km from the site. Maps or further details on the location of these were not publicly available to confirm, but given the proximity of Barnesmore to Killeter and the Prospective Development, these may be the same birds recorded during surveys for the Prospective Development, as surveys were conducted close to the same time period. Hen harrier were recorded breeding in proximity to Church Hill in 2011, which is over 12km from the Prospective Development and the hen harrier breeding territories recorded here. The same nest was also reported for Seegronan and Crilly Wind Farms (which are effectively contiguous with Church Hill). At Crigshane Wind Farm (which is in proximity to Church Hill/Seegronan/Crilly), hen harrier were suspected to be breeding 3km from the site in 2010. Operational monitoring for Crigshane suggests that numbers of hen harrier in the area have remained stable from 2004 to 2016, after commissioning. No significant effects of collision risk were reported for any of these wind farms. Collision risk estimates were obtained for four wind farms: Dromnahough Wind Farm (0.002 hen harrier per annum); Graffy Wind Farm (0.002333); Meenakeeran Wind Farm (0.02) and Pullytean (0.01 per breeding season and 0.02 per winter season). Combined with the Prospective Development, this is a total of 0.049-0.067 hen harrier per breeding season and 0.051-0.052 per winter season. A comprehensive BMEP to create optimal hen harrier habitat is proposed (see Section 7.6.3) as part of the Subject Development. The enhancement area is sufficiently large and distant from the Wind Farm Site that it is likely to help		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
attract foraging birds away from the proposed turbines, and, if successful, will reduce collision risk estimates (as per NatureScot recommendations (SNH, 2016b). Notwithstanding this, a comprehensive suite of commencement/pre-construction and operational phase monitoring is proposed in Section 7.8 as a best practice measure (SNH, 2009). The proposed monitoring plan is comprehensive and considered entirely adequate in this regard. The monitoring results will be reported to the Planning Authority and NPWS following each monitoring year and will include information on the rate of occurrence of all KORs and the number of collisions. This will inform recommendations that may include additional mitigation or adaptation if required. Adaptive management is an iterative process whereby the results of previous monitoring are analysed to inform future monitoring or mitigation as relevant. As the Bird Monitoring Programme is considered entirely adequate as currently submitted, no change will be proposed unless there is a significant change in the use of the site by the local ornithological community. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, 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 collision risk or the relatively limited contribution associated with the Prospective Development. No residual additive, antagonistic or synergistic 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.		

7.7.1.3.5 Merlin

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressures and threats for merlin listed in Article 12 reporting are: replanting with or introducing non-native or non-typical species; clear-cutting, removal of all trees; conversion from one type of agricultural land use to another; peat extraction; and wind, wave and tidal power, including infrastructure. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for merlin. Of the threats/pressures listed, conversion into agricultural land is ranked as of high importance, and the remainder are ranked as of medium importance. The maturation and management of commercial forestry in the landscape influences the availability and distribution of habitat for merlin. Afforestation may reduce the extent of open foraging habitat, while forest maturation further reduces habitat suitability over time, but provides trees that this species sometimes uses for nesting. Conversely, felling and restructuring operations may periodically create temporary open habitat conditions in some areas. The suitability of the landscape for merlin is therefore influenced by the age structure, composition and management cycle of commercial forestry. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats.	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
The intensity and type of agricultural activity can affect habitat suitability for merlin (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance). For example, drainage, reseeding and improvement may reduce habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to merlin. Altgolan Wind Farm, the Altílow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
a turbine. While it is acknowledged that this species sometimes nests in forestry, it traditionally nests in open habitat and uses open habitats for foraging, therefore this assessment is undertaken with regards to open habitat. There is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. Thus, the total available suitable habitat for this species within 500m of the proposed turbines is c.65ha, which represents a 0.08% loss of the remaining suitable habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of suitable habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on merlin 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on merlin are anticipated at the county, national or international scale.		

7.7.1.3.6 Peregrine Falcon

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressure/threats for peregrine falcon listed in Article 12 reporting are: wind, wave and tidal power, including infrastructure; agricultural activities (which relates to changes in habitat extent and quality due to agricultural management); and use of plant protection chemicals in agriculture; as well as poisoning of animals, illegal harvesting, and other human intrusions and disturbance not mentioned above (which relates to checking nests and taking chicks for the purposes of falconry). The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which also have the potential to influence habitat availability and quality for peregrine falcon. Overall, the pressure from wind, wave and tidal power is not considered to currently be having a negative impact on the national/regional populations. The maturation and management of commercial forestry in the landscape influences the availability and distribution of habitat for peregrine falcon. Afforestation may reduce the extent of open foraging habitat, while forest maturation further reduces habitat suitability over time. Conversely, felling and restructuring operations may periodically create temporary open habitat conditions in some areas that could be suitable for foraging. The suitability of the landscape for peregrine falcon is therefore influenced by the age structure, composition and management cycle of commercial forestry. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for peregrine falcon (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance). For example, drainage, reseeding and improvement may reduce habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to peregrine falcon: this species needs open area with a plentiful supply of birds to hunt and secure sites for breeding (Ratcliffe, 1993). Altgolan Wind Farm, the Altilow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats.		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore this assessment is undertaken with regards to open habitat. There is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. Thus, the total available habitat for this species within 500m of the proposed turbines is c.65a, which represents a 0.08% loss of the remaining habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on peregrine falcon 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on peregrine falcon are anticipated at the county, national or international scale.		

7.7.1.3.7 White-tailed Eagle

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
National Scale	At a national level, the main pressures and threats for white-tailed eagle listed in Article 12 reporting are: wood transport; transmission of electricity and communications; agricultural activities generating diffuse pollution to surface or ground waters; and wind, wave and tidal power, including infrastructure; as well as sports, tourism and leisure activities, plant and animal diseases, pathogens and pests, and increases in precipitation due to climate change. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for white-tailed eagle. Of the pressures/threats listed, wind, wave and tidal power is ranked as of high importance, while those relating to commercial forestry or agriculture are of medium importance. The extent of commercial forestry in the landscape influences the availability and distribution of open habitat for white-tailed eagle. Afforestation reduces the extent of open foraging habitat, although this species also forages over water. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for white-tailed eagle (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance, as well as carrion availability). For example, drainage, reseeding and improvement may reduce	The magnitude of the effect is assessed as Low. When a High sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat, although this species also forages over water. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to white-tailed eagle. Altgolan Wind Farm, the Altilow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. This species is primarily an open habitat species that does not regularly use forestry, therefore there is 84,435ha of available suitable habitat. Within the proposed Meenbog Wind Farm, there is c.895ha within 500m of proposed		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. Thus, the total available habitat for this species within 500m of the proposed turbines is c.65a, which represents a 0.08% loss of the remaining habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment uplands. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. White-tailed eagle typically breed at large waterbodies (<8ha) and largely hunt fish, although they will opportunistically take terrestrial prey (Radović and Mikuska, 2009; Treinys <i>et al.</i>, 2015). There are no suitable waterbodies in proximity to the Wind Farm Site; the nearest large (<8ha) waterbody is Lough Morne, over 1.7km from the Wind Farm Site boundary. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on white-tailed eagle 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on white-tailed eagle are anticipated at the county, national or international scale.		

7.7.1.3.8 Whooper Swan

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressures and threats for whooper swan listed in Article 12 reporting are: transmission of electricity and communications; and wind, wave and tidal power, including infrastructure; as well as sports, tourism and leisure activities, and modification of flooding regimes, flood protection for residential or recreational development. The following provides an assessment of the threats/pressures that are relevant at the regional level. Threats/pressures relating to wind farms were of ranked as of medium importance. There is no evidence to suggest, nor is there any expectation, that the forestry or upland habitats of the wider surroundings of the Wind Farm Site would be of any significant value to this species. Whooper swan is a wetland species however it also favours improved agricultural grassland for foraging. During surveys, whooper swan were typically found to be using large waterbodies in the wider area or travelling over. The unfavourable nature of onsite habitats (i.e., dominated by mature forestry) effectively eliminates the potential for ecologically significant habitat loss effects. The majority of other wind farms (with exception of Bin Mountain Wind Farm and Barnesmore Wind Farm) do not have turbines located within 500m of large waterbodies and the Prospective Development is not located within 500m of a large waterbody. As no significant loss of these habitats is predicted, no cumulative habitat loss is therefore predicted. Improved agricultural grassland is more commonly found in lowland areas and is therefore there is a relatively restricted extent in the landscape within this cumulative assessment. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on whooper swan 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on whooper swan are anticipated at the county, national or international scale.		

7.7.1.3.9 Kestrel

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Local Scale (5km)	At a national level, the main pressures and threats for kestrel listed in Article 12 reporting are: use of plant protection chemicals in agriculture; conversion from mixed farming and agroforestry systems to specialised production; and removal of small landscape features for agricultural land parcel consolidation; as well as interspecific relations. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for kestrel. The threats/pressures listed that relate to agriculture were ranked as of medium importance. Kestrel is a habitat generalist that may use commercial forestry and agricultural environments. The majority of the Prospective Development is located within commercial forestry, while Straness Wind Farm is also partially located within commercial forestry habitats. Barnesmore Wind Farm and Repowering, Meenakeeran Wind Farm and Straness Wind Farm are located, or partially	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	located within open peatland habitats. These habitats are of value to kestrel. However forestry and open peatland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Given that kestrel at the Wind Farm Site was determined to be a population of Local Importance (Higher Value), this further reduces the likelihood of significant cumulative impacts at the landscape scale. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on kestrel are anticipated at the county, national or international scale.		

7.7.1.3.10

Snipe

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressures and threats for snipe listed in Article 12 reporting are: conversion to forest from other land uses, or afforestation; mowing or cutting of grasslands; intensive grazing or overgrazing by livestock; conversion from one type of agricultural land use to another; abandonment of grassland management; drainage for use as agricultural land; wind, wave and tidal power, including infrastructure; and peat extraction; as well as other invasive alien species, and problematic native species. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant.

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
have the potential to influence habitat availability and quality for snipe. Some of the threats/pressures relating to forestry and agriculture were ranked as of high importance (mowing or cutting of grasslands; intensive grazing or overgrazing by livestock; conversion from one type of agricultural land use to another), while the remained were ranked as of medium importance. Peat extraction, and wind, wave and tidal power were ranked as of medium importance. The extent of commercial forestry in the landscape influences the availability and distribution of open habitat for snipe. Afforestation reduces the extent of open foraging habitat. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for snipe (e.g., through changes in grazing pressure, vegetation structure and levels of human disturbance). For example, drainage, reseeding and improvement may reduce habitat suitability for foraging, roosting and nesting, while low-intensity grazing systems may maintain suitable habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to snipe. Altgolan Wind Farm, the Altilow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. This species is an open habitat species that does not use forestry, therefore there is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. Thus, the total available habitat for this species within 500m of the proposed turbines is c.65a, which represents a 0.08% loss of the remaining habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into		

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on snipe 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 Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on snipe are anticipated at the county, national or international scale.		

7.7.1.3.11 Buzzard

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Local Scale (5km)	At a national level, the main pressures and threats for buzzard listed in Article 12 reporting are: abandonment of grassland management; as well as poisoning of animals, and illegal shooting/killing. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for buzzard. Threats/pressures relating to agriculture were ranked as of medium importance. Buzzard is a habitat generalist that may use commercial forestry and agricultural environments. The majority of the Prospective Development is located within commercial forestry, while Straness Wind Farm is also partially located within commercial forestry habitats. Barnesmore Wind Farm and Repowering, Meenakeeran Wind Farm and Straness Wind Farm are located, or partially located within open peatland habitats. These habitats are of value to buzzard. However forestry and open peatland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Given that buzzard at the Wind Farm Site was determined to be a population of	The magnitude of the effect is assessed as Low. When a Low sensitivity species is cross-referenced with a Low impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Local Importance (Higher Value), this further reduces the likelihood of significant cumulative impacts at the landscape scale. Furthermore, no significant effects of habitat loss or displacement were reported for any of these wind farms. No significant effects of collision risk were reported for any of the other wind farms. Collision risk estimates were obtained for four wind farms: Dromnahough Wind Farm (0.347 buzzard per annum); Graffy Wind Farm (0.19333); Clunahill Wind Farm (0.27718) and Barnesmore Repowering (0.014). Of these, only Barnesmore Wind Farm is within 5km of the Prospective Development. Combined collision risk across the Barnesmore Wind Farm and the Prospective Development 0.321-0.379 buzzard per annum. If 0.321-0.379 collisions were to occur per year across these sites, it would increase the annual mortality of the county population (c.150 birds [75 pairs]) by 2.14-2.53%. The predicted collision risk is not considered to be significant. In addition, during operational surveys at Barnesmore Wind Farm, no collisions were detected, although it should be noted that dedicated collision surveys were not being undertaken. Notwithstanding this, a comprehensive suite of commencement/pre-construction and operational phase monitoring is proposed in Section 7.8 as a best practice measure (SNH, 2009). The proposed monitoring plan is comprehensive and considered entirely adequate in this regard. The monitoring results will be reported to the Planning Authority and NPWS following each monitoring year and will include information on the rate of occurrence of all KORs and the number of collisions. This will inform recommendations that may include additional mitigation or adaptation if required. Adaptive management is an iterative process whereby the results of previous monitoring are analysed to inform future monitoring or mitigation as relevant. As the Bird Monitoring Programme is considered entirely adequate as currently submitted, no change will be proposed unless there is a significant change in the use of the site by the local ornithological community.		

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on buzzard are anticipated at the county, national or international scale.		

7.7.1.3.12 Long-eared Owl

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Regional Scale (25km)	At a national level, the main pressures and threats for long-eared owl listed in Article 12 reporting are: replanting with or introducing non-native or non-typical species; clear-cutting removal of all trees; roads, paths, railroads and relative infrastructure; use of plant protection chemicals in agriculture; and removal of small landscape features for agricultural land parcel consolidation; as well as poisoning of animals, and illegal shooting/killing. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for long-eared owl. The threats/pressures relating to forestry and agriculture were ranked as of medium importance. The maturation and management of commercial forestry in the landscape influences the availability and distribution of habitat for long-eared owl. Afforestation may reduce the extent of open foraging habitat, while forest maturation further reduces foraging suitability over time, but provides nesting trees. Conversely, felling and restructuring operations may periodically create	The magnitude of the effect is assessed as Low. When a Medium sensitivity species is cross-referenced with a Low impact, this corresponds to a Low effect significance.	Likely long-term slight negative effect, which is not significant .

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
temporary open habitat conditions in some areas. The suitability of the landscape for long-eared owl is therefore influenced by the age structure, composition and management cycle of commercial forestry. The majority of the Prospective Development is located within commercial forestry, while Cark Wind Farm Extension, Clogheravaddy Wind Farm, Crilly Wind Farm, Drumnahough Wind Farm, Graffy Wind Park, Lenalea Wind Farm, Meenadreen Wind Farm, Meenahorna Wind Farm, Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm and Extension (2), Straness Wind Farm and Tullynaglack Wind Farm are also located, or partially located, within commercial forestry habitats. The intensity and type of agricultural activity can affect habitat suitability for long-eared owl (e.g., through changes in prey availability, grazing pressure, vegetation structure and levels of human disturbance). For example, drainage, reseeded and improvement may reduce habitat suitability in some areas, while low-intensity grazing systems may maintain suitable foraging habitat. Cark Wind Farm Extension, Castlecraig Wind Farm, Church Hill Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Crilly Wind Farm, Croaghanmeal Wind Farm, Lenalea Wind Farm, Meenanilta Wind Farm Extension (3), Thornog Wind Farm, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located, within farmland habitats. Open peatland habitats are of value to foraging long-eared owl. Altgolan Wind Farm, the Altlow Turbine, Anarget Wind Farm and extension, Ballystrang Wind Farm, Barnesmore Wind Farm and Repowering, Bin Mountain Wind Farm, Cark Wind Farm and Extension, Cark/Largymore Wind Farm, Castlecraig Wind Farm, Church Hill Wind Farm and Extension, Clogheravaddy Wind Farm, Clunahill Wind Farm, Crighshane Wind Farm, Culliagh Wind Farm and Extension, Drumnahough Wind Farm, Graffy Wind Park, Gronan Wind Farm, Lough Cuill Wind Farm, Lough Hill Wind Farm, Meenadreen Wind Farm Extension, Meenahorna Wind Farm, Meenakeeran Wind Farm,		

Potential effects	Significance (Percival, 2003)	Significance (EPA, 2022)
Meenalaban Wind Farm, Meenamullan Wind Farm, Meenanilta Wind Farm Extension (3), Meentycat Wind Farm, Pullytean Wind Farm, Seegronan Wind Farm and Extension, Slieveglass Wind Farm, Straness Wind Farm, Thornog Wind Farm and Extension, Tievenameenta Wind Farm and Tullynaglack Wind Farm are located, or partially located within open peatland habitats. The results of the landscape-level analysis provide the following information: excluding the proposed development, there are 84,435ha of open habitat greater than 500m from a turbine in the uplands included in the cumulative assessment area. In the same uplands, there are 29,859ha of forestry greater than 500m from a turbine. While it is acknowledged that this species nests in forestry, it uses open habitats for foraging. Therefore this assessment is undertaken with regards to open habitat, as the loss of foraging habitat is likely to have a greater impact on this species, given that forestry is widespread in the area and nesting sites are not scarce. There is 84,435ha of available suitable habitat. Within the Prospective Development, there is c.895ha within 500m of proposed turbines, c.65ha of which is open habitat and c.830ha of which is commercial forestry. The total available foraging habitat for this species within 500m of the proposed turbines is c.65ha, which represents a 0.08% loss of the remaining foraging habitat greater than 500m from a turbine (84,435ha) within the cumulative assessment landscape. This is not a significant (direct/indirect) contribution to the cumulative loss of suitable habitat for this species. Furthermore, the remaining 84,435ha continues to constitute a significant amount of upland habitat. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, cumulative effects on long-eared owl are considered to be influenced primarily by the broader effects of commercial forestry and		

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	agricultural practices on habitat availability and quality, rather than by the relatively limited contribution associated with the Prospective Development. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on long-eared owl are anticipated at the county, national or international scale.		

7.7.1.3.13 Sparrowhawk

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
Local Scale (5km)	At a national level, the main pressures and threats for sparrowhawk listed in Article 12 reporting are: removal of small landscape features for agricultural land parcel consolidation; conversion from mixed farming and agroforestry systems to specialised; and use of plant protection chemicals in agriculture. The following provides an assessment of the threats/pressures that are relevant at the regional level. The landscape within this cumulative assessment is influenced by a combination of commercial forestry, agricultural land use and other wind farm developments, all of which have the potential to influence habitat availability and quality for sparrowhawk. The threats/pressures relating to agriculture and forestry are ranked as of medium importance. Sparrowhawk is a habitat generalist that may use commercial forestry and agricultural environments. The majority of the Prospective Development is located within commercial forestry, while Straness Wind Farm is partially located within commercial forestry habitats. Barnesmore Wind Farm and Repowering, Meenakeeran Wind Farm and Straness Wind Farm are located, or partially located within open peatland habitats. These habitats are of value to sparrowhawk. However forestry and open peatland habitats are widespread and abundant in the landscape. Extensive areas of suitable habitat will persist after construction. Given that sparrowhawk at the Wind Farm Site was determined to	The magnitude of the effect is assessed as Low. When a low sensitivity species is cross-referenced with a Low impact, this corresponds to a Very Low effect significance.	Likely long-term imperceptible negative effect, which is not significant .

Potential effects		Significance (Percival, 2003)	Significance (EPA, 2022)
	be a population of Local Importance (Higher Value), this further reduces the likelihood of significant cumulative impacts at the landscape scale. Therefore, in this landscape, the contribution of the Prospective Development to cumulative habitat loss and disturbance/displacement effects is considered to be limited. Furthermore, no significant residual effects of habitat loss and displacement were reported for any of the other wind farms. Taking into consideration the above reported effects and the predicted effects with the Prospective Development, no residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss or displacement/barrier effects. No significant impacts on sparrowhawk are anticipated at the county, national or international scale.		

7.7.2 In-Cumulation Effects

This section considers the potential for additional impacts to arise when considering the Prospective Development in cumulation with the Existing Development (i.e., the effects of the Subject Development on ornithological receptors). No significant residual effects on ornithological receptors were identified as a result of the Prospective Development on its own. The potential for significant effects on the identified KORs associated with the Prospective Development to occur when considered in cumulation with the Existing Development are considered in this section. No additional KORs were identified as a result of this in-cumulation assessment.

The NIS concluded that the Prospective Development will not have an adverse impact on any SPAs. The Existing Development also did not have an adverse impact on any SPAs. As such, there is no potential for adverse in-cumulation effects on SPAs to occur.

No significant residual effects on KOR were identified as a result of the Prospective Development on its own after mitigation/enhancement. Also, no significant residual effects on KORs were identified as a result of the Existing Development on its own. As such, there is no potential for adverse in-cumulation effects to occur.

7.7.3 Cumulative Effects – Subject Development

For the assessment of cumulative effects of the Subject Development, any other existing, permitted or proposed projects (wind energy or otherwise) have been considered. The potential cumulative effects of the Subject Development and other relevant developments has been carried out with the purpose of identifying what influence the Subject Development will have on the surrounding environment when considered cumulatively.

Further information on projects considered as part of the cumulative assessment are given in Section 2.10 of Chapter 2: Background and Policy of this EIAR and Section 2.9 of Chapter 2 Background and Policy of the rEIAR. The cumulative effects assessment of the Subject development has considered the list of plans and projects listed in Appendix 2-1 of the EIAR, and Appendix 2-1 of the rEIAR.

During the assessment of cumulative effects on KORs, the in-cumulative effect was first considered and then the cumulative habitat loss and displacement/disturbance associated with operational turbines, forestry and agricultural practices was assessed. No significant cumulative effects are predicted to result from the construction phase because these are short in duration and have little to no temporal overlap with other developments. In undertaking the cumulative assessment of the Subject Development, consideration was given to the results of the landscape-level assessment as per Section 7.7.1.3.1 of the EIAR. The result of the assessment of cumulative effects of the Subject Development does not meaningfully differ from the cumulative effect significance of the Prospective Development. Which is to say, provided that the Subject Development is constructed, operated and decommissioned in accordance with the design, best practice mitigation and the successful implementation of the habitat enhancement measures that are described within this application, significant cumulative effects on the identified KORs are not anticipated. Please see Section 7.7 of the EIAR for full details.

7.7.4 Transboundary Effects

Given the location of the Prospective Development, close to the border with Northern Ireland, this section considers the potential for transboundary effects as a result of the Prospective Development on its own, in cumulation with the Existing Development and in combination with other land uses and projects. As the Prospective Development will be located entirely within the Republic of Ireland, there is no potential for direct transboundary effects to occur or have occurred either alone or in combination with other projects and land uses.

The field surveys were conducted at the Wind Farm Site and wider area at survey radii specific to the target species (e.g., Hen Harrier Roost Surveys up to 2km from the Wind Farm Site and Breeding Raptor Surveys up to 8km from the Wind Farm Site). These radii were irrespective of country borders. As such, effects on populations occurring in or originating from Northern Ireland have been considered in this impact assessment. In consideration of potential indirect transboundary effects on ornithological receptors, no effect was identified. The Prospective Development will not result in significant effects on ornithological populations originating from Northern Ireland.

The Existing Development is also located outside Northern Ireland and will not result in significant effects on ornithological populations originating from Northern Ireland. Therefore, the Subject Development will not result in any significant residual transboundary effect on ornithological receptors.

7.8 Monitoring

7.8.1 Construction Phase

A Bird Monitoring Programme with the objective of monitoring the ornithological community at the Wind Farm Site during construction works has been prepared. This is presented fully in Appendix 7-7. It includes for pre-commencement and construction monitoring to identify sensitive nests or roosts in proximity to the works. This will include surveys in suitable hen harrier habitat.

7.8.2 Operational Phase

A Bird Monitoring Programme with the objective of monitoring the response of the ornithological community at the Wind Farm Site to the operating turbines has been prepared. This is presented fully in Appendix 7-7. It includes for Breeding Hen Harrier Surveys, Breeding Walkover Surveys, Collision Monitoring Surveys, Vantage Point Surveys and Breeding Red-throated Diver Surveys. It also includes for monitoring of hen harrier and habitat suitability in the BMEP Site. The management of the habitat in the BMEP Site during the operational lifetime is set out in the BMEP in Appendix 6-4 of this EIAR.

7.8.3 Decommissioning Phase

A Bird Monitoring Programme with the objective of monitoring the ornithological community at the Wind Farm Site during decommissioning works has been prepared. This is presented fully in Appendix 7-7. It includes for pre-commencement and decommissioning monitoring to identify sensitive nests or roosts in proximity to the works. This will include surveys suitable hen harrier habitat.

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 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 format. This measure will be fulfilled within the first year of the construction phase in the event of a successful application. This commitment ensures the Prospective Development is contributing to the aims of Objective Four, Outcome 4B of Ireland's 4th National Biodiversity Action Plan: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.

Conclusion

Following consideration of the residual effects (post-mitigation), no significant effects of the Prospective Development on any of the KORs have been identified. No significant effects on receptors of International, National or County Importance were identified. Provided that the Prospective Development is constructed, operated and decommissioned in accordance with the design, best practice mitigation and habitat enhancement measures that are described within this application, significant individual or cumulative effects on the identified KORs are not anticipated.