



APPENDIX 7-7

BIRD MONITORING PROGRAMME

Bird Monitoring Programme

Maughanaclea Renewable
Energy Development, Co
Cork



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1. INTRODUCTION

1.1 Background

This Bird Monitoring Programme has been prepared by MKO for the Maughanaclea Renewable Energy Development. It provides a timeframe and monitoring schedule for the bird population at the Proposed Wind Farm site during the operational phase, informed by surveys undertaken to date. Bird surveys were undertaken from April 2022 to March 2025 inclusive. Key ornithological receptors (KORs) were identified from these surveys.

The objectives of the Bird Monitoring Programme are:

- To ensure any required construction phase monitoring is scheduled to avoid impacts on birds of conservation concern during the construction phase
- To record birds using the study area and their interaction with operating turbines
- To monitor short-term and long-term effects on bird populations in the study area, with a particular emphasis on birds of high conservation concern (birds listed on Annex I of the EU Birds Directive or on the Red List of Birds of Conservation Concern in Ireland).
- To undertake collision monitoring for potential bird fatalities as a result of a collision with turbine blades.
- To report on the findings of monitoring at the end of Years 1, 2, 3, 5, 10 and 15 of the operational life of the wind farm.
- To ensure any required decommissioning phase monitoring is scheduled to avoid impacts on birds of conservation concern during the decommissioning phase.

1.2 Key Ornithological Receptors

Table 7 – 7 – 1 lists the KORs recorded within the Proposed Wind Farm site during surveys conducted from April 2022 to March 2025 inclusive. These species form the basis of the Bird Monitoring Programme.

Table 7 – 7 – 1 Key ornithological receptors identified during surveys

Species	Scientific Name	Conservation Status
Chough	<i>Pyrrhocorax pyrrhocorax</i>	Annex I of Birds Directive
Hen Harrier	<i>Circus cyaneus</i>	Annex I of Birds Directive
Peregrine Falcon	<i>Falco peregrinus</i>	Annex I of Birds Directive
Kestrel	<i>Falco tinnunculus</i>	Red List
Red Grouse	<i>Lagopus lagopus hibernicus</i>	Red List
Snipe	<i>Gallinago gallinago</i>	Red List

Species	Scientific Name	Conservation Status
Buzzard	<i>Buteo buteo</i>	Green List
Sparrowhawk	<i>Accipiter nisus</i>	Green List

2. METHODOLOGY

2.1 Pre-construction and Construction Monitoring

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

Pre-commencement confirmatory surveys will be undertaken prior to the initiation of works at the Site. The survey will aim to identify sensitive sites (e.g., nests or roosts). Any requirement for construction works to run into subsequent breeding or winter seasons following the commencement of works will be subject to a repeat of the pre-construction bird surveys. These surveys will be conducted once per month during the core breeding season (April to July) and once at the start of the winter season (October).

Monitoring will be undertaken by a suitably qualified ornithologist. The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas. If winter roosts or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located and earmarked for monitoring at the beginning of the first winter or breeding season of the construction phase. If the roost/nest is found to be active during the construction phase no works shall be undertaken, works will cease within a species-specific buffer of this location in line with best practice guidance (Forestry Commission Scotland, 2006; Goodship and Furness 2022). No works shall be permitted within the buffer until it can be demonstrated that the roost or nest is no longer occupied. Special attention should be given to the areas of chough activity, particularly in the region between the turbine clusters where there will be road construction works.

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

2.2 Operational Monitoring

Operational monitoring will be undertaken in Years 1, 2, 3, 5, 10 and 15 of the lifetime of the Proposed Wind Farm, following SNH (2009) guidance. The surveys that will be undertaken are:

- Vantage Point Surveys (at 7 locations: VP2, VP3, VP4, VP5, VP7, VP8 and VP9.)
- Breeding Raptor and Chough Surveys (at 3 BR locations)
- Breeding Red Grouse (in two areas)

2.2.1 Vantage Point Surveys

Vantage point surveys will be undertaken to monitor flight activity within a 500m radius of the proposed turbines. The objective of the surveys is to provide information on bird use of the area and interactions with turbines after construction of the wind farm that can be compared to pre-planning data.

Vantage point surveys will be conducted from seven fixed locations that were used during pre-planning surveys (VP2, VP3, VP4, VP5, VP7, VP8, and VP9) in order to provide complete coverage of all turbines. Should vantage point locations need to be moved, a viewshed analysis will be conducted to ensure there is still comprehensive coverage of the 500m radius of turbines at the new locations. Surveys will be conducted monthly.

Survey methodology should follow NatureScot (2025) and any revisions to the same. The surveyor should collect 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 should be spread over the full daylight period, including dawn and dusk watches to coincide with the highest periods of bird activity. Dusk surveys should end one hour after sunset and dawn surveys should begin one hour before sunrise.

Flight activity of target species will be mapped and recorded as per three defined flight bands chosen in relation to the dimensions of the turbines as built: below rotor swept height, at the rotor swept height and above rotor swept height. When a target species is detected, the location of the bird will be recorded on a map and the surveyor will provide the following details: time, species, number of birds, activity/behaviour, the primary habitat used (and secondary and tertiary habitat if applicable) and any other notes of interest.

2.2.2 Breeding Raptor and Chough Surveys

Breeding raptor and chough surveys will be undertaken to establish whether a breeding attempt was initiated and subsequently, whether it was successful. The objective of the surveys is to provide information on raptor and chough use of the area for breeding after construction of the wind farm that can be compared to their breeding activity in pre-planning data.

Pre-planning survey results should be used to inform the locations of these surveys and which species to target (suggested target species are chough, hen harrier, peregrine, kestrel, buzzard and sparrowhawk). A minimum of three survey locations is recommended, focused on the area within 500m of the turbine envelope. Three areas were identified as having breeding activity by chough and/or raptor species within this envelope during pre-planning surveys: one in the northern cluster of turbines, one in the southern cluster and one in the middle of the clusters.

Survey methods should follow Hardey *et al.* (2013), Gray *et al.* (2003) and Keribiou *et al.* (2009) or any revisions to the same or updated guidance. Up to four visits are necessary: (1) to establish breeding raptor or chough occupancy, (2), to establish if an active nest is present, (3) to check if young have hatched and (4) to check if young have fledged. During any visit, when a raptor or chough is detected, the location of the bird will be recorded on a map and the following details will be recorded: time, species, number of birds, breeding activity/behaviour, the primary habitat used (secondary and tertiary habitat if applicable) and any other notes of interest (such as male or female).

2.2.3 Breeding Red Grouse Surveys

Breeding red grouse surveys will be undertaken to establish whether this species is breeding in the area. The objective of the surveys is to provide information on red grouse use of the area for breeding after construction of the wind farm that can be compared to their breeding activity in pre-planning data.

Pre-planning surveys should inform the locations of the breeding red grouse surveys. Methodology should follow the National Red Grouse Survey method (Cummins *et al.*, 2010). The surveyor should walk transects 150m apart throughout suitable bog and heath habitat within 500m of the turbine envelope, where access allows. Along the transect, the surveyor should stop every 100m to broadcast the lure for a maximum of 30 seconds and listen and watch for a response.

If a response from a red grouse occurs after a broadcast, the surveyor should map the location of the red grouse on a map and the following details should be provided for each map reference: time, transect number, number of birds detected, breeding activity and behaviour (including which one of the four responses to the broadcast occurred) and habitat (and secondary and tertiary habitat if necessary). During the survey, the surveyor also should record any indicators of red grouse (e.g. feathers and droppings). Red grouse tape and lure surveys are conducted under a National Parks and Wildlife Service license.

2.2.4 Collision Monitoring

Monitoring for bird casualties as a result of collision with turbines will follow survey methods broadly based on guidelines issued by the SNH (2009) and search methods adopted by Duffy and Steward (2008). The study area will be visited once per month during operational Years 1, 2, 3, 5, 10 and 15 of the lifetime of the wind farm. During each visit, the base of each operating turbine will be searched for bird carcasses. The area to be searched will be based on the turbine size and surrounding landscape. A trained dog and handler should be used to locate carcasses.

If a bird carcass is found, the following details will be recorded: GPS location of each bird carcass, photographic record, carcass condition (intact - carcass that is completely intact or not badly composed; scavenged - evidence that the carcass was fed upon by a scavenger/predator; or feather spot - ten or more feathers indicating predation or scavenging or two or more primary feathers must be present to consider the carcass a casualty), distance from the turbine, date and time.

Carcass removal trials and searcher efficiency trials will be undertaken to account for the ability of the dog to find bird carcass and the likelihood of scavenging of carcass by animals. This is done to ensure a more accurate estimation of the total number of collision victims. During carcass removal trials, a carcass is placed in a study area periodically and is monitored for a set number of days or until scavengers remove the carcass. A determination on carcass removal is made when no body parts containing flesh or bone or >10 disarticulated feathers can be found. During searcher efficiency trials, a number of carcasses are placed in a study area by one worker, then searched for by the dog later. The result of these trials is a correction factor that can be applied to the results of the carcass searches.

2.2.5 Summary

Table 7 – 7 – 2 summarises the proposed bird monitoring schedule for each monitoring year.

Table 7 – 7 – 2 Proposed operational phase bird monitoring schedule

Survey	Years	Period	Visits	Survey Method
Vantage Point Surveys	Operational years 1, 2, 3, 5, 10 and 15	Each month of the year	Once monthly to each survey location (VP 2, 3, 4, 5, 7, 8, and 9)	6-hour vantage point surveys, following NatureScot (2025)
Breeding Raptor and Chough Surveys	Operational years 1, 2, 3, 5, 10 and 15	April to July inclusive	Once monthly to each survey location	3-hour vantage watches or transects, following Hardy <i>et al.</i> (2013), Gray <i>et al.</i> (2003) and Keribiou <i>et al.</i> (2009).

Survey	Years	Period	Visits	Survey Method
Breeding Red Grouse Surveys	Operational years 1, 2, 3, 5, 10 and 15	Between January and March	Once per year	Tape-lure surveys, following Cummins <i>et al.</i> (2010).
Carcass Searches	Operational years 1, 2, 3, 5, 10 and 15	Each month of the year	Once monthly to each turbine	Carcass searches following SNH (2009) and search methods adopted by Duffy and Steward (2008).

2.3 Decommissioning Monitoring

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

Decommissioning surveys will be undertaken prior to the decommissioning of the Proposed Wind Farm site. The survey will aim to identify sensitive sites (e.g., nests or roosts). Any requirement for decommissioning works to run into subsequent breeding or winter seasons following the commencement of works will be subject to a repeat of the decommissioning bird surveys. These surveys will be conducted once per month during the breeding season (April to July) and once at the start of the winter season (October).

Monitoring will be undertaken by a suitably qualified ornithologist. The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas. If winter roosts or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located and earmarked for monitoring at the beginning of the first winter or breeding season of the decommissioning phase. If the roost/nest is found to be active during the decommissioning phase no works shall be undertaken, works will cease within a species-specific buffer of this location (Forestry Commission Scotland, 2006; Goodship and Furness 2022; Ruddock and Whitfield, 2007) in line with best practice. No works shall be permitted within the buffer until it can be demonstrated that the roost or nest is no longer occupied.

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

2.4 Reporting

A report summarising the findings of bird monitoring surveys will be submitted to the Planning Authority at the end of each monitoring year (i.e., Year 1, 2, 3, 5, 10 and 15). The report will provide the results of the surveys and discuss potential impacts on birds (particularly KORs) and any recommendations that may inform additional mitigation measures during the operational phase of the Proposed Wind Farm.

2.5 Sharing Ecological Data

As a measure to support conservation research and policy, it is proposed to submit the monitoring survey data and information to the National Biodiversity Data Centre (NBDC) and to BirdWatch Ireland to contribute to the upcoming bird atlas (2027) on relevant ecological records, for example, information on the location of breeding territories and nest sites of bird species of conservation concern

(e.g., Red-List Species as per the most recent BoCCI). The submission of the data will follow relevant standards and will be provided in the preferred NBDC excel template. This measure will be fulfilled within three months of each monitoring year, as relevant, in the event of a successful application. This commitment ensures the project is contributing to the aims of Objective Four, Outcome 4B of the Ireland's 4th National Biodiversity Action Plan2: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.

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