

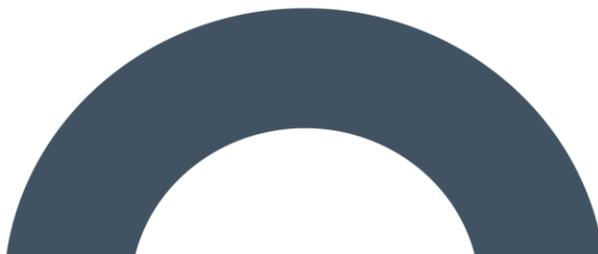


APPENDIX 7-6

BIRD MONITORING PROGRAMME

Appendix 7-6 – Bird Monitoring Programme

Slieveacurry Renewable
Energy Development, Co.
Clare





DOCUMENT DETAILS

Client: **Slieveacurry Ltd**

Project Title: **Slieveacurry Renewable Energy Development, Co. Clare**

Project Number: **170224c**

Document Title: **Appendix 7-6 – Bird Monitoring Programme**

Document File Name: **Ch7 BMP -F – 2021.09.29 – 170224c**

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Rev	Status	Date	Author(s)	Approved By
01	Final	29/09/2021	MP	PC

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1. INTRODUCTION

This Bird Monitoring Programme has been prepared by MKO for the proposed Slieveacurry Renewable Energy Development, Co. Clare.

This document provides a timeframe and monitoring schedule for the bird population of the study area during the construction and post-construction phase of the project. Breeding and wintering bird surveys were undertaken during the period April 2016 to March 2018 and October 2020 to September 2021 encompassing three full breeding seasons and three full winter seasons, as well as autumn and spring migration periods, in line with SNH guidance on recommended bird survey methods to inform impact assessment for onshore wind energy developments (SNH, 2017). The surveys undertaken to date have informed the various proposed bird monitoring measures outlined in this document.

1.1 Key Ornithological Receptors and Birds of Conservation Concern

Table 1-1 lists the Key Ornithological Receptors recorded within the study area during field surveys.

Table 1-1 Key Ornithological Receptors identified during field surveys undertaken at Slieveacurry Renewable Energy Development site

Common Name	Latin Name	Conservation Status
Hen Harrier	<i>Circus cyaneus</i>	Annex I; EU Birds Directive
Golden Plover	<i>Pluvialis apricaria</i>	Annex I; EU Birds Directive
Merlin	<i>Falco columbarius</i>	Annex I; EU Birds Directive
Peregrine Falcon	<i>Falco peregrinus</i>	Annex I; EU Birds Directive
Osprey	<i>Pandion haliaetus</i>	Annex I; EU Birds Directive
Common Snipe	<i>Gallinago gallinago</i>	BoCCI Red List & Irish Wildlife Act
Kestrel	<i>Falco tinnunculus</i>	BoCCI Red List & Irish Wildlife Act
Red Grouse	<i>Lagopus lagopus hibernicus</i>	BoCCI Red List & Irish Wildlife Act
Sparrowhawk	<i>Accipiter nisus</i>	Raptor Species; Schedule 4 of the Wildlife Act 1976

1.2 Objectives

This document has been prepared having regard to the following objectives:

- To ensure any required pre-commencement/ pre-construction phase monitoring is scheduled to ensure any impacts on KOR and/or birds of conservation concern are avoided.
- To record usage of the site by birds and interaction with operating turbines during the post-construction phase of the development.
- To monitor short-term and long-term effects on bird populations with a particular emphasis on wintering and breeding birds deemed to be of high conservation concern (Annex I; EU Birds Directive and BoCCI red list species).
- To undertake collision monitoring and corpse searches for potential bird fatalities as a result of a collision with turbine blades.
- To report on findings of post-construction monitoring at the end of each monitoring year (Year 1, 2, 3, 5, 10 & 15 of the life-time of the wind farm).

2. METHODOLOGY

2.1 Commencement and Pre-construction Bird 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 surveys will be undertaken before the initiation of works at the wind farm.

The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas, where access allows. If winter roost sites 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 season or breeding season (respectively) of the construction phase. If it is found to be active during the construction phase no works shall be undertaken within a 500m buffer (Forestry Commission Scotland, 2006; Ruddock & 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 through 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 using hazard-tape fencing to alert all personnel on site to the suspension of works within that area.

2.2 Post-construction Bird Monitoring

Survey methods employed for post-construction monitoring will be in line with guidelines issued by the Scottish Natural Heritage (SNH, 2009). Post-construction monitoring will be undertaken in Years 1, 2, 3, 5, 10 and 15 of the life-time of the wind farm.

Post-construction monitoring will include vantage point surveys and a programme of regular corpse searching of birds that may potentially collide with operating turbines during the operational phase of the wind farm project.

Bird monitoring will include the following survey methods:

- Flight activity surveys: breeding season vantage point surveys;
- Enhancement area monitoring; and
- Targeted bird collision surveys (corpse searches): the surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.

Breeding Season Vantage Point Surveys

Breeding Season Vantage point surveys will be undertaken monthly between March and August during operational years 1, 2, 3, 5, 10 and 15 of the life-time of the wind farm. The methodology for vantage point watches will follow guidelines issued by the SNH (2009) and SNH (2017). The proposed vantage point watches will adhere to a minimum of 36 hours/VP per season as per guidelines issued by SNH. Monthly visits will be undertaken between March and August inclusive. During each visit, six-hour vantage point watches will be undertaken from each fixed vantage point location that offers an un-interrupted view of the study area. Vantage points will be undertaken from the same locations that pre-planning surveys which informed the EIAR application of the proposed development (i.e. VPs 1, 2, 3 and 4). Vantage point surveys will be timed to provide a spread over the full daylight period including dawn and dusk watches to coincide with the highest periods of bird activity. Behavioural categories for

the observation of bird interactions with operational wind farms will be in line with terminology outlined by Meredith et al. (2002). All breeding or non-breeding observations will be recorded, with a particular emphasis on breeding raptor, e.g. hen harrier.

Enhancement Plan Monitoring

The enhancement plan (please see Section 7-10 of this EIAR and Appendix 7-7 for further details) will be the subject of ongoing monitoring to assess the effectiveness of the measures proposed and employed and to contribute to advances in habitat management methods, which can be applied to future similar projects.

The monitoring measures will include:

- The area proposed for enhancement will be the subject of ongoing monitoring during the operational phase of the wind farm to ensure it is offering supporting habitat for breeding hen harrier. The ongoing monitoring will take place during the breeding bird season. The monitoring will seek to identify whether optimal hen harrier habitat has been created within areas under active management and will be conducted by way of vantage point surveys. These surveys will be undertaken once a month from March to August inclusive.
- Passerine point counts will be undertaken monthly from April to July inclusive in each monitoring year at each of the enhancement areas. The location of enhancement areas is provided in Appendix 7-7 Figure 1-1. The monitoring aims to investigate to what extent enhancement measures e.g. seed crops, increase the availability of prey species for hen harrier.

The efficacy of the enhancement measures employed will be reviewed in years 1, 2, 3, 5, 10 and 15 following commencement of the plan based on the results of bird surveys. Analysis of the data collected will be the basis for a review of the measures and techniques employed. Should any adjustments to the plan be deemed necessary or advisable, these will be the subject of consultation with the NPWS before any alterations to the plan.

In addition, the applicant will be responsible for having these managed lands audited to ensure the prescriptive measures have been implemented before funds are released to landowners. Audits will be undertaken annually for the 30-year lifespan of the wind farm.

Reports detailing the monitoring works carried out, the results obtained and a review of their success, along with any suggestions for amendments to the plan will be prepared and submitted to the planning authority in years 1, 2, 3, 5, 10 and 15 following commencement of the plan.

Collision Searches (Bird Casualties)

Surveys for bird casualties will follow survey methods broadly based on guidelines issued by the Scottish Natural Heritage (2009) and search methods adopted by Duffy & Steward, 'Turbine Search Methods and Carcass Removal Trials at the Braes of Doune Windfarm' (Natural Research Information Note 4. Natural Research Ltd, Banchory, UK, 2008).

It is proposed to undertake a minimum of one visit per month during each survey year. During each visit, searches will be undertaken at each operating turbine location by a team of two surveyors. A plot measuring 130m x 130m from the centre of each turbine location will be the subject of target searches for bird casualties. Searches will incorporate the use of transects spaced at 10m intervals apart with the observer covering 5m on either side for each transect. Locations and coordinates of transect routes will be confirmed using a portable GPS recording device. Recording sheets will be used to document bird carcasses encountered in the field.

Alternatively, a trained dog and handler may be used where possible to locate any carcasses.

The following details will be considered during field surveys: 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 location, date, time, etc.

Corpse searching work will be calibrated to account for the ability to find bird corpses and the likelihood of scavenging of corpses by animals. This will ensure a more accurate estimation of the total number of collision victims. To allow for this, sample bird corpses of various bird sizes will be placed within the various habitats found within proximity of the turbine locations. Carcasses will be left out in the trial areas by one worker and searched for by another two days later. A 36-hour period between laying carcasses and searching for them will help to prevent disturbance from discouraging scavengers from attending the trial plots. The locations of all carcasses will be logged using GPS by the layer and the finder. Any signs of predation will be recorded. Birds will be left in place for a further two weeks before a further examination will occur to determine further scavenger levels. The level of scavenging which occurs will then be used to help calibrate the detection rate and estimate a likely percentage of collisions that may be removed by scavengers between searches.

Results of bird casualties will be issued in a final report at the end of each monitoring year.

3.

TIMEFRAME OF PROPOSED MONITORING WORKS

It is proposed to undertake bird monitoring surveys during years 1, 2, 3, 5, 10 & 15 of the wind farm operation.

Table 3-1 below describes the proposed bird monitoring work schedule for each monitoring year for the proposed wind farm development

Table 3-1 Proposed bird monitoring work schedule for each monitoring year at Slievecurry Renewable Energy Development

Survey Type	Phase	Period	No. of Visits	Survey Method
Breeding Season Vantage Point Surveys	Year 1, 2, 3, 5, 10 & 15	March - August	1 visit/ VP/ month during breeding season	Three fixed, 6-hour, Breeding Season Vantage Point Surveys
Enhancement Area monitoring	Year 1, 2, 3, 5, 10 & 15	March - August	1 visit/month for each monitoring year	Breeding Season Vantage Point Surveys & Passerine Point Counts
Corpse Searches (Bird Casualties)	Year 1, 2, 3, 5, 10 & 15	January - December	1 visit/month for each monitoring year	Targeted corpse searches at turbine bases

4. **REPORTING**

A report summarising the findings of the bird monitoring surveys will be submitted to the Planning Authority, within three months of each monitoring year. The report will be submitted no later than the 31st of March. This will provide details of the various methods employed, the results of field surveys (e.g. vantage point watches and corpse searches), potential impacts on birds and any recommendations that may inform additional mitigation measures during the operational phase of the wind farm project.

Maps outlining flight lines of key target species will be produced using GIS software applications to accompany the final report at the end of each monitoring year.

BIBLIOGRAPHY

- Bibby, C.J., Burgess, N.D. & Hill, D.A. & Mustoe, S. (2000) *Bird Census Techniques (Second edition)*. Academic Press, London.
- Colhoun K. & Cummins S. 2013. Birds of Conservation Concern in Ireland 2014-2019. *Irish Birds* (9) p523-544
- Duffy, K. & Steward, M. 2008. *Turbine Search Methods and Carcass Removal Trials at the Braes of Doune Windfarm*. Natural Research Information Note 4. Natural Research Ltd, Banchory, UK.
- Gilbert, G., Gibbons, D.W. & Evans, J. (1998) *Bird Monitoring Methods*. RSPB, Sandy.
- Hardey, J., Crick, H., Wernham, C., Riley, H. & Thompson, D. (2009): *Raptors: a field guide to survey and monitoring*. 2nd Edition Edinburgh: The Stationery Office.
- Meredith, C., Venosta, M. & Resson, R. 2002. Cordington *Wind Farm Avian Avoidance Behaviour Report 2002*. Biosis Research Project.
- Scottish Natural Heritage, 2009. *Monitoring the Impact of Onshore Wind Farms on Birds*. Scottish Natural Heritage.
- Scottish Natural Heritage, 2017. *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms*. Scottish Natural Heritage.