



APPENDIX 7-6

BIRD MONITORING PROGRAMME

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1. INTRODUCTION

This Bird Monitoring Programme has been prepared by MKO for the proposed Umma More Renewable Energy Development, Co. Westmeath. It provides a timeframe and monitoring schedule for the bird population in the Wind Farm area during the operational phase of the Proposed Development, informed by surveys undertaken to date. Bird surveys were undertaken from April 2019 to March 2021 inclusive, encompassing two breeding and two winter seasons, along with autumn and spring passage, in line with NatureScot (formerly Scottish Natural Heritage) guidance on recommended bird survey methods to inform impact assessment for onshore wind energy developments (SNH, 2017). Key ornithological receptors (KORs) were identified based on these surveys.

The objectives of this Bird Monitoring Programme are:

- To ensure any required pre-construction/ pre-decommissioning phase surveys are scheduled to avoid impacts on KORs and other birds of conservation concern.
- To record birds using the Wind Farm Site and their interaction with operating turbines during the operational phase of the Proposed Development.
- To monitor any short-term and long-term effects on bird populations in the Wind Farm Site, 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, birds that are a Special Conservation Interest [SCI] of nearby Special Protection Areas [SPAs] and raptors and other species sensitive to wind energy developments).
- To undertake collision monitoring and carcass searches for potential bird fatalities as a result of a collision with turbine blades.
- To report on the findings of operational monitoring at the end of each monitoring year.

2. BIRD MONITORING

2.1 Key Ornithological Receptors

Table 7-6-1 lists the KORs recorded during pre-planning surveys conducted from April 2019 to March 2021 inclusive. These species form the basis of the Bird Monitoring Programme.

Table 7 – 6 – 1 Key ornithological receptors

Species	Scientific Name	Conservation Status
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	SCI of Middle Shannon Callows SPA
Buzzard	<i>Buteo buteo</i>	Raptor
Kestrel	<i>Falco tinnunculus</i>	Red List & Raptor
Lapwing	<i>Vanellus vanellus</i>	Red List & SCI of Lough Ree SPA and Middle Shannon Callows SPA
Mallard	<i>Anas platyrhynchos</i>	SCI of Lough Ree SPA
Merlin	<i>Falco columbarius</i>	Annex I & Raptor
Peregrine Falcon	<i>Falco peregrinus</i>	Annex I & Raptor
Snipe	<i>Gallinago gallinago</i>	Red List
Sparrowhawk	<i>Accipiter nisus</i>	Raptor
Teal	<i>Anas crecca</i>	SCI of Lough Ree SPA

2.2 Pre-Construction Surveys

Pre-construction surveys will be undertaken prior to the initiation of construction works at the Wind Farm Site. Pre-construction surveys comprise a thorough walkover survey to a 500m radius of the development footprint and/or all works areas, where access allows.

If winter roosting 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 respectively. If it is found to be active during the construction phase, no works shall be undertaken within a species-specific disturbance buffer in line with industry best practice (e.g. Forestry Commission Scotland, 2006; Ruddock and Whitfield, 2007). No works shall be permitted within the buffer until it can be demonstrated that the roost/nest is no longer occupied. All site staff and sub-contractors will be made aware of any restrictions to be imposed by means of a toolbox talk and a map of the ‘no-work zone’. The restricted area will also be marked off to alert all personnel on site to the suspension of works within that area.

2.3 Operational Phase Monitoring

Operational monitoring will be undertaken in Years 1, 2, 3, 5, 10 and 15 of the lifetime of the Proposed Development, following SNH (2009) guidance. Survey methodology will be similar to methods employed for baseline Environmental Impact Assessment Report surveys, which will allow a comparison of data to be made. The operational monitoring surveys that will be undertaken at the Proposed Development are:

- Vantage point surveys;
- Breeding walkover surveys;
- Collision monitoring.

2.3.1 Vantage Point Surveys

Vantage point surveys will be undertaken during each monitoring year to record flight activity around the turbines. Vantage point survey methodology will follow guidelines issued by SNH (2009; 2017): the pre-planning vantage point locations (VP1 & VP3) will be visited once per month for two 3-hour watches separated by a minimum 30 minute break, amounting to 36 hours in the breeding season and 36 hours in the winter season at each 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 from September to May inclusive. The flight activity of target species (all waterbirds, raptors, groundfowl, and protected near-passerines and passerines¹) will be recorded from a scanning arc of 180° and a 2km radius and assigned to height bands based on the rotor swept height of the turbines. Behavioural categories for bird interactions with operational turbines will be in line with terminology by Meredith *et al.* (2002). Along with target species, the presence of all additional (non-target) species observed should be recorded to inform bird usage of the area.

2.3.2 Breeding Walkover Surveys

Breeding walkover surveys will be undertaken during each monitoring year to determine possible, probable or confirmed breeding bird activity. Transects will be conducted following methodology 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. Surveys should be conducted in daylight hours (08:00-18:00), with one visit per month during the core breeding season April to July inclusive.

Transect routes should be walked across different habitat complexes to a 500m radius of the turbines, where access allows, and aim to follow the same routes that were used during pre-planning surveys. The surveyor should regularly scan for target species (all waterbirds, raptors, groundfowl, and protected near-passerines and passerines). Notes should be recorded on nesting and territorial behaviour and breeding signs using standard British Trust of Ornithology codes. Non-breeding behaviour such as birds flying over the site should also be recorded. Along with target species, the presence of all additional (non-target) species observed should be recorded to inform bird usage of the area.

2.3.3 Collision Monitoring

Collision monitoring will be undertaken during each monitoring year to monitor bird fatalities due to collisions with turbines at the Proposed Development site. Monitoring will follow industry best practice,

¹ Protection comprises (i) species listed on Annex I of the EU Birds Directive (Directive 2009/147/EC) and (ii) species listed as Red on the Birds of Conservation Concern in Ireland

such as SNH (2009) and Northern Ireland Environment Agency guidelines and search methods adopted by Duffy and Steward (2008).

The Wind Farm Site will be visited once per month. 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 specially trained dog in the detection of bird carcasses and qualified handler should be used where possible 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 using the following condition categories, as per Johnson *et al.* (2003):

- **Intact** - a carcass that is completely intact, is not badly decomposed, and shows no sign of being fed upon by a predator or scavenger.
- **Scavenged** - an entire carcass which shows signs of being fed upon by a predator or scavenger, or a portion(s) of a carcass in one location such as wings, legs, skeletal remains or pieces of skin.
- **Feather Spot** - ten or more feathers at one location indicating predation or scavenging. If only feathers are found, 10 or more total feathers or two or more primaries must be discovered to consider the observation a casualty..

Carcass removal trials and searcher efficiency trials will be undertaken to account for the ability of the dog team to find bird carcasses and the likelihood of scavenging of corpses 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 another worker with the dog. These may be conducted on the same day as surveys are carried out to avoid flooding the area with carcasses and increasing scavenger activity. The result of these trials provide a correction factor that can be applied to the results of the carcass searches.

2.3.4 Summary

Table 7-6-2 summarises the proposed bird monitoring schedule for each operational monitoring year.

Table 7 - 6 - 2 Proposed operational monitoring schedule

Survey	Year	Period	Visits	Survey Method
Vantage Point Survey	Year 1, 2, 3, 5, 10 and 15	All months	1 visit per month to all vantage points (VP1 & VP3)	6 hour vantage point watch, including dawn and dusk surveys between September and May, and daytime surveys between June and August.
Breeding Walkover Survey	Year 1, 2, 3, 5, 10 and 15	April - July	1 visit per month	Transects.
Collision Monitoring	Year 1, 2, 3, 5, 10 and 15	All months	1 visit per month to survey all turbine bases	Targeted carcass searches at turbine bases with trained dog.

2.4 Decommissioning Surveys

Pre-decommissioning monitoring surveys will be undertaken prior to works associated with decommissioning at the Wind Farm Site. The survey will include a thorough walkover survey to a 500m radius of the development footprint and all works areas, where access allows. If winter roosting 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 it is found to be active during the decommissioning phase, no works shall be undertaken within a disturbance buffer in line with industry best practice (e.g. Forestry Commission Scotland, 2006; Ruddock and Whitfield, 2007). No works shall be permitted within the buffer until it can be demonstrated that the roost/nest is no longer occupied.

2.5 Reporting

A report summarising the findings of bird monitoring surveys will be submitted to the Planning Authority at the end of each operational monitoring year (Year 1, 2, 3, 5, 10 and 15). The report will provide the results of the surveys (vantage point surveys, breeding walkover surveys and collision monitoring) and discuss potential impacts on birds (particularly KORs) and any recommendations that may inform further monitoring measures during the operational phase of the Proposed Development.

3.

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