APPENDIX 7-7

Bird Monitoring Programme

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1. INTRODUCTION

1.1 Background

This Bird Monitoring Programme has been prepared by MKO for the Proposed Project. It provides a timeframe and monitoring schedule for the bird population in the study area during the operational phase of the Proposed Project, informed by surveys undertaken to date. Bird surveys were undertaken from October 2020 – September 2022 inclusive and from October 2025 – September 2026 inclusive. Key ornithological receptors (KORs) in the study area were identified based on 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 Proposed 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 and hinterland during surveys conducted from October 2020 – September 2022 inclusive and from October 2025 – September 2026 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
Golden Plover	*Pluvialis apricaria*	Annex I Birds Directive & Red List
Kingfisher	*Alcedo atthis*	Annex I Birds Directive & SCI of River Nore SPA
Peregrine Falcon	*Falco peregrinus*	Annex I Birds Directive & Raptor
Kestrel	*Falco tinnunculus*	Red List & Raptor
Lapwing	*Vanellus vanellus*	Red List
Snipe	*Gallinago gallinago*	Red List

Species	Scientific Name	Conservation Status
Woodcock	*Scolopax rusticola*	Red List
Buzzard	*Buteo buteo*	Raptor
Long-eared Owl	*Asio otus*	Raptor
Sparrowhawk	*Accipiter nisus*	Raptor

2. METHODOLOGY

2.1 Pre-construction and Construction Monitoring

Proposed Wind Farm site

It is proposed that construction works at the Proposed Wind Farm site 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 Proposed Wind Farm site. This survey will be conducted a maximum of three weeks before the commencement of works. Following commencement, construction phase surveys will be conducted during works. 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). These surveys will continue to be conducted each season for the duration of the construction period. The aim of the pre-commencement and construction phase surveys is to identify sensitive sites (e.g., nests or roosts) in proximity to works.

The surveys 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 works will cease within a species-specific buffer of this location in line with best practice guidance (e.g., Forestry Commission Scotland, 2006; Goodship and Furness 2022; Ruddock and Whitfield, 2007). 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.

Proposed 110kV Underground Cabling crossing of the River Nore

It is proposed that construction works at the Proposed 110kV Underground Cabling crossing of the River Nore will be conducted outside the kingfisher core nesting season (April to July inclusive), as described in Section 7.6.3 of Chapter 7 of the EIAR. In addition, targeted kingfisher surveys will be undertaken at the Proposed 110kV Underground Cabling crossing of the River Nore if the works are to commence here between February and September. This precautionary period accounts for early courtship and the potential for multiple/late broods. The survey will be conducted a maximum of two

weeks before the commencement of works at the River Nore, and preferably within one week if possible. Surveys will follow the transect routes established during the pre-planning surveys. The aim is to establish if active nesting is occurring or if the surrounding river corridor is being utilised for foraging by adults provisioning dependent young.

The surveys will be undertaken by a suitably qualified ornithologist. If a kingfisher breeding site is identified, works will cease within a species-specific buffer of this location in line with current best practice guidance (e.g., NatureScot, 2022). No works shall be permitted within the buffer until it can be demonstrated that the nest is no longer occupied. The ornithologist will also monitor foraging routes of the breeding kingfisher and if works are found to interfere with adults provisioning dependent young, works will cease within a species-specific buffer of foraging routes until it can be demonstrated that the nest is no longer occupied.

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
- Breeding Raptor Surveys
- Breeding Woodcock Surveys
- Breeding Kingfisher Surveys
- Collision Monitoring Surveys

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 Proposed Wind Farm that can be compared to pre-planning data.

Vantage point surveys will be conducted from four fixed locations that were used during pre-planning surveys (VP1, VP2, VP4, and VP5) in order to provide complete coverage of all Proposed 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 Proposed Turbines at the new locations. Surveys will be conducted monthly.

Survey methodology should follow NatureScot (2025) and any revisions to the same. Behavioural categories for the observation of bird interactions with operational wind farms will be in line with terminology outlined by Meredith *et al.,* (2002). 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.

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, in this case 0-22m, 22-185m, and 185+m. 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 Surveys

Breeding raptor surveys will be undertaken to establish whether a raptor breeding attempt was initiated and subsequently, whether it was successful. The objective of the surveys is to provide information on the raptor (in particular KOR species) use of the area for breeding after construction of the Proposed Wind Farm that can be compared to their breeding activity in pre-planning data. Surveys should be conducted at the territories with nest sites identified within 500m of the Proposed Wind Farm site during pre-planning surveys in each monitoring year, or at additional locations if it is believed that the raptor nest may have moved to a new location within 500m of the Proposed Wind Farm site. Surveys should be undertaken from April to July inclusive and from at least four breeding raptor vantage points.

Survey methods should follow Hardey *et al.* (2013) or any revisions to the same or updated guidance. Up to four visits are necessary: (1) to establish 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 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 Woodcock Surveys

Breeding woodcock surveys will be undertaken to monitor breeding woodcock activity during the operational phase. Survey methods should follow Gilbert *et al.* (1998) or any revisions to the same or updated guidance. Three visits should be undertaken in May and June inclusive. Surveys should be undertaken from one hour before sunset to one hour after sunset or until it is too dark to see. The same transect routes (or as close as possible)) as those used during preplanning surveys should be followed to provide comparable data. All woodcock activity, in particular breeding behaviour, should be recorded

2.2.4 Breeding Kingfisher Surveys

Breeding kingfisher surveys will be undertaken in the first year of the operational lifetime of the River Nore underground cable crossing. This is to establish that kingfisher continue to breed along the watercourse post-construction. If potential breeding kingfisher are found to be utilising the river in Year 1 there is no requirement for further surveys. If potential breeding kingfisher are not found to be utilising the river, surveys are to be undertaken in the subsequent monitoring year, and so forth.

Three survey visits should be undertaken between March and May, following the same transects routes as the pre-planning surveys. Survey methodology follows Cummins *et al.* (2010), and are to take place between 08:00 and 18:00, the surveyor should walk as close as is safe to the watercourse searching for kingfisher, signs of kingfisher nesting holes, and suitable kingfisher nesting habitat.

2.2.5 Collision Monitoring

Carcass searches 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 Proposed 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 carcasses and the likelihood of scavenging of carcasses 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.

2.2.6 Summary

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

Table 7 - 7 - 2 Proposed bird monitoring schedule

Survey	Year	Period	Visits	Survey Method
Vantage Point Surveys	1, 2, 3, 5, 10, 15	Each month of the year	Monthly visits to each vantage point location during the survey period.	NatureScot (2025)
Breeding Raptor Surveys	1, 2, 3, 5, 10, 15	April – July inclusive	Monthly visits to each territory location during the survey period.	Hardey *et al.* (2013)
Breeding Woodcock Surveys	1, 2, 3, 5, 10, 15	May and June	Three visits to each transects during the survey period.	Gilbert *et al.* (1998)
Breeding Kingfisher Surveys	1, and subsequent years if required	Between March and May	Three visits over the survey period	Cummins *et al.* (2010)
Collision Monitoring	1, 2, 3, 5, 10, 15	Each month of the year	Monthly visits to each turbine during the survey period.	Duffy and Steward (2008)

2.3 Decommissioning Monitoring

An appropriate decommissioning plan will be prepared in advance of the decommissioning of the Proposed Turbines. This plan will include the measures proposed for the construction monitoring (Section 3.1) and will be developed in consultation with the Planning Authority and the NPWS. The aim of the plan will be to identify and protect sensitive nests, roosts or other key areas in proximity to decommissioning works. The requirements of the plan will be informed by the findings of the operational monitoring, along with the findings of other relevant ornithological surveys conducted in the interim where available. Methodologies should follow the current best practice guidance at the time the plan is prepared.

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 Project.

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 (2027-2031) 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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