



# **CRUACH CLENAMACRIE WIND FARM**

## **APPENDIX 11.3 BREEDING BIRD PROTECTION PLAN**



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# CRUACH CLENAMACRIE WIND FARM

Appendix 11.3: Bird Protection Plan





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# CRUACH CLENAMACRIE WIND FARM

## Appendix 11.3: Bird Protection Plan

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WSP

7 Lochside View  
Edinburgh Park  
Edinburgh, Midlothian  
EH12 9DH

Phone: +44 131 344 2300

WSP.com



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Signature				
Checked by	Pete Clark	Pete Clark		
Signature				
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## OVERVIEW

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### PURPOSE OF THIS DOCUMENT

This document sets out the proposed approach to avoid / minimise impacts on breeding and roosting birds during the construction and operation of the Cruach Clenamachie Wind Farm (the 'Proposed Development') in the form of an outline Bird Protection Plan (BPP).

All breeding birds are legally protected in Scotland, under the Wildlife & Countryside Act 1981 (as amended), and there is a requirement to ensure that all works required to construct the Proposed Development, proceed lawfully with respect to this legislation.

There is the potential for the use of the area by breeding birds to change with time. Therefore, information from pre-construction surveys and any ongoing and future monitoring will be considered prior to the BPP being finalised and implemented.

This document provides an outline BPP which would be developed into detailed documents in advance of the commencement of the Proposed Development (i.e. prior to any works related to wind farm construction (other than enabling works) and following the proposed pre-works surveys).

### RELEVANT LEGISLATION AND GUIDANCE

The key European Union (EU) directives and domestic legislation relevant to this document are as follows:

- Directive 2009/147/EC on the conservation of wild birds (codified version of Council Directive 79/409/EEC, as amended), known as the 'Birds Directive'. In Scotland, the Habitats Directive is translated into specific legal obligations by the Conservation (Natural Habitats &c.) Regulations 1994. This piece of legislation is usually known as the Habitats Regulations; and
- Wildlife and Countryside Act 1981 (the 'WCA' as amended, including by the Nature Conservation (Scotland) Act 2004).

The proposed approach and measures outlined in this document are based on current best practice guidance, including consideration of the following publications:

- Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283;
- SNH (2019). Good Practice during Wind Farm Construction (4th Edition). A joint publication by Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science, AEECoW;
- SNH (2016). Dealing with construction and birds. Guidance document produced by Scottish Natural Heritage (March 2016); and
- Forestry Commission Scotland (2006). FCS Guidance Note 32: Forest operations and birds in Scottish forests - the law and good practice.

## SUMMARY OF RELEVANT LEGAL FRAMEWORK

### EU BIRDS DIRECTIVE

The Birds Directive is a legal act of the EU which was produced in response to commitments made under the Bern and Bonn Conventions. The Birds Directive requires member states to implement measures and legislation to protect bird populations. The Birds Directive mandates protection against deliberate disturbance of birds, particularly during the breeding period. This includes a high level of protection for species listed on Annex I of the Directive as well as certain general provisions for all naturally occurring birds in the wild.

The main provisions of the Birds Directive relevant to the Proposed Development include:

- The maintenance of the populations of all wild bird species across their natural range (Article 2) with the encouragement of various activities to that end (Article 3);
- The identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species; and
- The establishment of a general scheme of protection for all wild birds (Article 5).

Full consideration of the potential implications of the Proposed Development on the maintenance of bird populations across their natural range and specifically in relation to SPAs has been given in the assessment (**EIA Chapter 11 – Ornithology**). This document focuses on the implications of Article 5 and specifically how the legal protections afforded to all wild birds, and the enhanced protections to certain scarce species, will be followed during the construction and operation of the Proposed Development (including the associated tree felling operations).

### WILDLIFE & COUNTRYSIDE ACT 1981 (AS AMENDED) (WCA)

In the UK, the provisions of Article 5 of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended).

With the exception of birds listed in Schedule 2, and for certain specified purposes under licence, the WCA makes it an offence to intentionally or recklessly:

- kill, injure or take a wild bird;
- take, damage, destroy or interfere with a nest of any wild bird whilst it is in use or being built (or at any time for a nest habitually used by any bird listed in Schedule A1);
- obstruct or prevent any wild bird from using its nest;
- take or destroy an egg of any wild bird;
- disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young, or whilst lekking; and/or
- disturb the dependent young of any wild bird listed on Schedule 1.

Those birds listed on Schedules A1 (golden eagle and white-tailed eagle) and 1A (golden eagle, hen harrier, red kite and white-tailed eagle) receive additional protection which makes it an offence to intentionally or recklessly:

- at any time take, damage, destroy or interfere with any nest habitually used by any wild bird included in Schedule A1; and
- at any time harass any wild bird included in Schedule 1A.

In outline, to comply with the WCA there should be no disturbance of breeding birds listed on Schedule 1, no interference with the nests of species listed on Schedule A1 at any time, nor disturbance/harassment of birds listed in Schedule 1A at any time (this includes those at roost sites).

There should also be no direct physical interference with any wild birds, or their nests, whilst they are in use or being built or while they have dependent young. It is not, however, an offence to physically interfere with old nests, except for birds listed in Schedule A1.

## KEY SPECIES

As noted above, all wild birds, their nests, eggs and young are protected under the WCA. This outline BPP includes consideration of all birds, including common and widespread species, which could be affected by the Proposed Development. Details of the target species which have been recorded as breeding or roosting within the Proposed Development area during the baseline surveys are provided in **EIA Appendices 11.1 and 11.2**.

**Table 1.1** provides a summary of the conservation status and statutory designations applicable to certain key species of national conservation concern and/or special legal protection that have been recorded breeding or roosting within or near to the Proposed Development. Also provided is a summary of the local (i.e. in the context of the Proposed Development) status of the species considered in this document.

**Table 1.1: Status and legal protection of key bird species of conservation concern**

Species	Status	Summary of Proposed Development Area presence / status
Hen harrier	Annex I Birds Directive <sup>1</sup> ; WCA Schedule 1, 1A; Scottish Biodiversity List (SBL); BoCC Red List	Regularly recorded over and around the Site with confirmed breeding in 2021 and 2022. The Proposed Development poses a risk of disturbance/displacement and collision risk to this species.
Golden eagle	Glen Etive and Glen Fyne SPA; Annex I Birds Directive; WCA Schedule 1,1A and A1; SBL; BoCC Green List	Recorded infrequently over and around the Site with no evidence of nesting or roosting on or around the Site. Suitable habitat to the south of the Site, with one occupied territory located over 2km from the Site.
Black grouse	SBL; BoCC Red List	Recorded on and around the Site throughout the year with one core lek and three other lower status, peripheral leks located in and around the Site.
White-tailed eagle	Annex I Birds Directive; WCA Schedule 1, 1A and A1; SBL; BoCC Red List	Recorded infrequently passing over/around the Site with no evidence of breeding nearby, hence negligible theoretical risk of collision mortality or disturbance/ displacement of breeding birds.

<sup>1</sup> EU Directive 2009/147/EC on the conservation of wild birds (codified version of Council Directive 79/409/EEC, as amended).

Species	Status	Summary of Proposed Development Area presence / status
Osprey	Annex I Birds Directive; WCA Schedule 1; SBL; BoCC Amber List	Despite the recorded presence in 2021 and 2022, the natural destruction of this nest site and no apparent replacement in the vicinity of the Site means that this species is not thought to pose a constraint to the Proposed Development.
Peregrine	Annex I Birds Directive; WCA Schedule 1; SBL; BoCC Green List	Recorded rarely over/around the Site with no evidence of breeding nearby, hence negligible theoretical risk of collision mortality or disturbance/ displacement of breeding birds.
Merlin	Annex I Birds Directive; WCA Schedule 1; SBL; BoCC Red List	Recorded rarely over/around the Site with no evidence of breeding nearby, hence negligible theoretical risk of collision mortality or disturbance/ displacement of breeding birds.

## SENSITIVE PERIODS AND PROTECTION ZONES

**Table 1.2** provides a summary of the distances and periods over which the relevant bird species are considered to be particularly vulnerable to impacts from construction works. This information is provided for general guidance only. Note that all wild birds, not only the species listed here, are protected during the nesting period. Specific mitigation requirements for all species nesting within or near to works areas will need to be determined by a suitably experienced ornithologist on a case-by-case basis.

**Table 1.2: Summary of indicative disturbance protection zones and main nesting periods for selected**

Species	Protection Zone and breeding season <sup>2</sup>	Notes
Hen harrier	750m March-August <i>Roost sites are also protected from disturbance, with communal roosts generally occurring from autumn until early spring</i>	The species is not fully migratory in Scotland and birds can be seen on breeding grounds in almost any month, although generally they return in March. The first egg is usually laid between late April and mid-May but sometimes earlier. Early failures can see the replacement clutch not complete until mid-June. Incubation takes about 30 days for each egg (normal clutch size is 5 with 48-hour interval between laying) and chicks fledge at between 30 and 35 days old. This means that occasionally chicks may not fledge until August.
Golden eagle	750-1000m January-August	Golden eagles are present in their breeding territories all year round. Nest building takes place from autumn to late winter

<sup>2</sup> Primary source for disturbance distances is: Whitfield, D.P., Ruddock, M., Bullman R. (2008). Expert opinion as a tool for quantifying bird tolerance to human disturbance. *Biological Conservation*, 141 (2008) 2708–2717.

Species	Protection Zone and breeding season <sup>2</sup>	Notes
	<i>Roosts are also protected from disturbance and are occupied year round</i>	with mating occurring between January and April (mainly March).  For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.
Black grouse	500-750m (lekking males) All year round but core period from March-May  100-150m (nesting females) April-July	Black grouse are present in their breeding territories all year round but numbers at lek sites peak in early mornings in spring (April and May).  Females typically nest in vicinity of lek sites and lay clutches of 6-11 eggs from late April to early June. Incubation last 25-27 days, with young being able to fly after two weeks but not being fully independent until 2-3 months old.
Osprey	750m March-October	Adults return to breeding sites from mid-March but most do not arrive until early April, with peak egg laying in late April.  Incubation is 35 to 43 days and fledging period 40 to 59 days, typically fledging from Mid-July to late August.
White-tailed eagle	750m January-August  <i>Roosts are also protected from disturbance and are occupied year round</i>	The Ruddock & Whitfield report indicates 500-750m buffer for the breeding season. Draft forestry guidance advocates 250m for most activities near roosts outwith the breeding season, it should be noted that roosts of immatures can be all year.  For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.
Peregrine	750m March-July	Peregrine falcons are largely sedentary in Britain and home ranges in lowland Scotland may be occupied all year but those in the less productive uplands may move elsewhere for winter. Breeding sites are typically occupied from March onwards. Courtship takes place in March and April, with peak egg laying from early to late April.
Merlin	500m April-August	Adults return to breeding sites in April (but sometimes earlier) with peak egg laying late May to early June in Scotland.  Incubation is 28-32 days and fledging period 25-27 days, becoming independent two to four weeks later. This means young birds will often still be dependent on their parents for food in August.

The disturbance of birds which are not specially protected (i.e. not listed on Schedule 1, 1A or A1 of the WCA) is not an offence. However, intentional or reckless damage to, or destruction of nests is a potential offence. For example, the felling of trees or removal of ground vegetation during the breeding season which contain nests of any wild birds could be considered an offence unless it can be shown that the felling was a lawful operation, and that reasonable precautions were taken to avoid the damage/destruction, (or it could not have reasonably been foreseen), and that reasonable steps to mitigate damage had been taken once it was apparent that it had or would occur. An



approach to achieve reasonable precautions for common and widespread species is provided in the following sections.

The breeding locations for 2021 and 2022 and associated 750m buffer for hen harrier and lekking black grouse, considered the two key species recorded breeding within the site are detailed in **Appendix 11.2: Confidential Ornithological Information**. Osprey also bred within forestry adjacent to the site in 2021 and 2022 but this nest was blown down over winter 2023/24 and osprey are no longer considered to pose a constraint to the Proposed Development.

# OUTLINE BREEDING BIRD PROTECTION PLAN

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## INTRODUCTION

The purpose of the outline BPP is to set out how the potential effects on breeding birds arising from the construction and operation of the Proposed Development will be avoided or minimised, so that the works can proceed lawfully and following current best practice.

The measures proposed in the outline BPP will be subject to further review and consultation with NatureScot before any works occur. This is to ensure that any relevant information that emerges, subsequent to the EIA Report being submitted, is taken into consideration and that the proposed measures follow current best-practice.

The decommissioning of the Proposed Development is anticipated to occur 50 years after the wind farm becomes operational. There is the potential for what is currently considered to be best practice to change over this period. It is also possible that the range of bird species that need to be considered could be different. It is therefore proposed that the methods of the pre-decommissioning surveys for breeding birds and the proposed BPP (or equivalent as required at that time) would be reviewed, in consultation with the relevant authorities, not more than 12 months before decommissioning works are due to commence.

The BPP will be overseen by the Project Ornithologist, who shall co-ordinate survey effort, advise the ECoW on mitigation requirements and act as the lead contact for any communications with NatureScot with regard to breeding and roosting birds.

## ECOLOGICAL CLERK OF WORKS

The Proposed Development will appoint a suitably experienced and qualified Ecological Clerk of Works (ECoW) for the duration of the enabling works, construction, and site restoration phases. The appointment of the individual(s) covering the ECoW role will be agreed in advance in consultation with NatureScot. The ECoW will have the authority to immediately halt any works that have the potential to affect nesting birds or that would contravene the ecological/environmental commitments.

The ECoW will have responsibility for checking that the BPP measures, as set out in this document, are properly implemented and adhered to. Also, that the potential presence of nesting birds is regularly monitored during the works and that appropriate action is taken should any nests be at risk of disturbance (e.g. active nest sites not previously identified during the pre-works surveys).

The ECoW will attend site as required throughout the felling/construction period to ensure all environmental mitigation relevant to birds is delivered and ensure compliance with the mitigation including the BPP.

The ECoW will provide monthly reports on the progress of the works in relation to the implementation of the environmental protection measures (including measures under the BPP) and a final report at the end of the construction and site restoration works. Copies of these reports will be provided to the Local Planning Authority (LPA) and NatureScot on request.

## OUTLINE BIRD PROTECTION PLAN – PRE-CONSTRUCTION AND CONSTRUCTION PHASE

### Pre-construction surveys

#### Hen harrier

Prior to the commencement of construction works, a pre-construction raptor/hen harrier survey of the Site and a surrounding buffer of at least 1km will be carried out. The survey will broadly follow the methods detailed in Hardey *et al.* (2013) and will involve a combination of vantage point surveys and walkover survey followed by focal watches to identify and monitor any active nest site locations.

Surveys will commence from mid-March to capture early season hen harrier display flight activity. A detailed survey protocol will be prepared and agreed with the LPA in consultation with NatureScot prior to the commencement of surveys to ensure appropriate intensity and coverage by the surveys.

A programme of surveys will be undertaken in the breeding season immediately preceding the commencement of construction works. The purpose of these surveys will be to confirm the continued presence of hen harrier and identify the presence of any other specially protected raptor species, in the vicinity of the Proposed Development, and establish whether any breeding pairs are present and where the current nest sites are located relative to the Proposed Development.

These surveys will also identify whether there are any other nest sites in the vicinity of the Site which could pose a constraint to the construction works.

#### Black grouse

Prior to the commencement of construction works, a pre-construction black grouse lek survey of the Site and a surrounding buffer of at least 750m will be carried out. The survey will broadly follow the methods detailed in Gilbert *et al.* (1998) and will involve walkover surveys of all suitable lekking habitat, including inspections of the core lek site as well as the satellite leks.

Surveys will take place take place April and early May, thereby focusing on the core lekking period. A detailed survey protocol will be prepared and agreed with the LPA in consultation with NatureScot prior to the commencement of surveys to ensure appropriate intensity and coverage by the surveys.

The pre-construction surveys will be undertaken in the breeding season immediately preceding the commencement of construction works. The purpose of these surveys will be to confirm the continued presence of black grouse, the attendance of lek sites, and the number of lekking males, in the vicinity of the Proposed Development. These surveys will identify whether any of satellite lek sites have become more regularly used and/or if any other lek sites have been established in the vicinity of the Site which could pose a constraint to the construction works.

#### Golden eagle

Prior to the commencement of construction works, a pre-construction raptor/golden eagle survey of the Site and a surrounding buffer of at least 1km will be carried out. The survey will broadly follow the methods detailed in Hardey *et al.* (2013) and will involve a combination of vantage point surveys and walkover surveys followed by focal watches to identify and monitor any active nest and roost site locations. It is important to note that under Schedule A1 of the Wildlife and Countryside Act 1981, it is the birds using the roost and not the roost site itself that is protected.

Surveys will commence from January to capture early season golden eagle nest construction activity. A detailed survey protocol will be prepared and agreed with the LPA in consultation with NatureScot prior to the commencement of surveys to ensure appropriate intensity and coverage by the surveys.

A programme of surveys will be undertaken in the breeding season immediately preceding the commencement of construction works. The purpose of these surveys will be to identify roost locations of golden eagle and identify the presence of any other specially protected raptor species, in the vicinity of the Proposed Development and establish whether any breeding pairs are present and where the current nest sites are located relative to the Proposed Development.

These surveys will also identify whether there are any other nest sites in the vicinity of the Site which could pose a constraint to the construction works.

### **Pre-construction Induction**

Prior to any personnel working within the felling or construction area they will be fully briefed by the ECoW on the potential for nesting birds to be present in the area, their status and legal protection, relevant details of the BPP and what actions they need to take should any nesting birds be encountered or suspected as present during their work.

### **Construction Phase Surveys: Key Species**

The pre-construction Schedule 1 listed raptor/golden eagle/hen harrier surveys will be repeated during the construction phase to identify any breeding activity and the requirement for any associated works exclusion zones and assist the contractor to schedule the works more appropriately to avoid disturbance impacts on nesting hen harriers (or any other Schedule 1 listed raptor species). Any works exclusion zones which are required to be established around active hen harrier nest sites or golden eagle roost sites will take account of disturbance distances discussed for hen harrier and golden eagle in **Table 1.2**.

The pre-construction black grouse lek surveys will be repeated during the construction phase to identify the requirement for any associated works exclusion zones and assist the contractor to schedule the works more appropriately to avoid disturbance impacts on lekking black grouse.

Site clearance and construction activities should ideally be timed to take place outside the main breeding season (mid-March to mid-August) to avoid nest destruction and disturbance to all nesting birds. With regards to hen harrier, young recently fledged birds may still be present around the nest into August and the presence and potential disturbance of these dependent young must be taken into consideration given the species' Schedule 1 protection status.

SNH (2016b) recognises that avoiding construction work within the breeding season for birds may not be possible, as the season coincides with the best weather for construction and recommends precautionary measures will be taken in relation to breeding birds. For instance, if works will coincide with the breeding season it is considered advantageous to start before mid-March. This will allow birds the opportunity to take potential disturbance into account in the process of selecting a nest site. Although hen harriers can display high levels of site fidelity, nesting in the same location as previous years, or within a few hundred metres of it, they establish new nests each year. Therefore, the hen harriers associated with the Site may be able to select nest sites in locations where disturbance is less intrusive in which to nest during breeding seasons which overlap with the construction phase.

## Construction Phase Surveys: Nest Checks for Common Species

Systematic pre-works checks of the felling/construction working area will be undertaken by suitably experienced ecologists/ornithologists to establish if common or widespread birds are nesting, involving an experienced ornithological surveyor walking and scanning the area of works to confirm breeding birds based on audio and/or visual signs.

Nest searches will also be completed on a rolling programme by the ECoW in order to provide the most up-to-date information in all areas where works are being undertaken that could impact on nesting birds.

Active breeding sites for the purpose will be defined as follows:

- Presence of nest sites with eggs and/or young;
- Observation of birds carrying nest material to a nest site (e.g. hole in tree, etc.);
- Birds carrying food to a nest site;
- Birds carrying faecal sacs away from a nest site; and
- Birds observed behaving in a highly agitated manner (e.g. alarm calling), performing distraction display and/or feigning injury when approached by a surveyor.

Where nest locations of common and widespread species fall within the construction footprint, no works shall be undertaken within a 5m buffer until it is confirmed that chicks have fledged, or the nest has failed. Where there is any doubt as to whether the nest is in use or not, it will be monitored by the ECoW over a period of a week. Direct observations of the nest will be made on the 1st, 3rd, and 5th days to provide clear evidence that the nest is disused and no eggs are present. Where a nest is confirmed as disused but with eggs present (indicating an abandoned nest), the nest will not be moved until a licence has been obtained for the taking of the eggs.

The above measures would be articulated in the Construction and Environmental Management Plan (CEMP), and implemented by the ECoW, as instructed by a suitably experienced ornithologist, who will confirm when breeding has been completed at any nest sites, and when any protection zone can be removed.

An emergency procedure will be implemented by site workers if any breeding birds are encountered. All work will cease, and the ECoW will inspect the site and establish any mitigation in line with a suitably experienced ornithologist and this BPP.

An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with NatureScot if required).

It is acknowledged that locating nest sites of many bird species and proving that birds are breeding can be a very difficult and time consuming task. However, it is considered that an appropriate level of survey by experienced ornithological surveyors will be undertaken in order to confirm active nest sites. In addition, where breeding is suspected though a nest has not been confirmed a conservative approach will be taken and the area classified as an active breeding site, allowing appropriate mitigation to be applied.

## Construction Phase: Mitigation

Specifically aimed at protecting breeding hen harrier, to ensure works are undertaken in a manner that avoids disturbance or displacement to breeding hen harriers, there is a general presumption against works being carried out as follows:

- Where Construction Phase surveys confirm that no breeding hen harriers will be disturbed by the works (i.e. no hen harrier nests/prospecting birds located within 750m of areas where work is to be carried out or access taken) work can be carried out after 15 May; and
- In areas where works can begin after 15 May, a watching brief shall be maintained as works progress along the construction footprint, in case breeding hen harrier establish a breeding territory after the initial surveys.

Where construction phase surveys confirm the presence of breeding hen harriers no works shall be undertaken within a 750m protection zone until a Protected Species Risk Assessment (PSRA) has been produced and agreed with NatureScot. This will assess any potential for a reduction of the protection zone buffer or allowance of certain works activities within the buffer dependant on identified mitigation measures and will be determined on a case by case basis by the Project Ornithologist, and will be informed by factors such as local topography, screening, stage of the breeding cycle, and the type, distance and level of potential disturbance from the works. A site wide shut-down over the specified period is due to the fact that whilst hen harriers may nest in the same general area as previous years, they are not nest site faithful – they may nest in roughly similar areas, but do not nest in exactly the same location as previous years.

Specifically for active golden eagle roost sites, in the absence of mitigation, disturbance from construction activities has the potential to result in the disturbance and possible displacement of golden eagles from the roost site located within 500m of the development footprint. However, roost sites would typically only be occupied overnight (i.e. between dusk and dawn) and hence unlikely to overlap with construction hours. Therefore, in order to avoid such disturbance or displacement, all construction activities taking place within 500m of the roost site will be restricted to the period from one hour after sunrise to one hour before sunset. Given working hours, this is only likely to pose a restriction during winter months and is not anticipated to represent a significant constraint. In the relatively unlikely event that works should need to take place beyond sunset or before sunrise, works will only be permitted to take place within 500m of the roost site under supervision by the ECoW/SQO. For works required to advance beyond sunset or commence before sunrise, a monitoring watch will be conducted between two hours before to one hour after sunset in order to identify if any birds fly into the roost site for the night.

## Operational Phase Surveys: Key species

Specifically for golden eagle, it is unlikely that operational maintenance works would overlap with the nighttime period when the roost site is likely to be occupied (i.e. between dusk and dawn). However, in order to minimise the risk of disturbing any golden eagles which may use the roost site, all operational maintenance activities taking place within 500m of the roost site will be restricted to the period from one hour after sunrise to one hour before sunset. In the relatively unlikely event that works should need to take place beyond sunset or before sunrise, works will only be permitted to take place within 500m of the roost site under supervision by the ECoW/SQO. For works both required to advance beyond sunset or commence before sunrise, a monitoring watch will be conducted.

Following the completion of the construction phase, a programme of post-construction monitoring will be carried out to determine whether the presence of the Proposed Development has any effects on the distribution of key species, the breeding success of hen harriers, and the activity status of lekking black grouse within and immediately surrounding the Site. Additionally, this monitoring will be required to identify the presence of lekking black grouse which may be disturbed by operational maintenance activities (measures for which are discussed below). As such, this monitoring is likely to be required annually throughout the Proposed Development's operational lifespan.

The scope of the monitoring programme will be developed in consultation with NatureScot but will broadly follow the same methods of the pre-construction and construction phase surveys detailed earlier.

The findings of the post-construction monitoring will be used to determine if effects are equivalent to, or more significant than predicted, potentially resulting in a requirement for further adaptive management to ameliorate these effects.

### **Operational Phase: Residual effects**

Painting the turbine bases with concentric bands is anticipated to significantly reduce the collision risk posed to locally occurring black grouse on the Site, such that the residual effect on the NHZ population is predicted to be reduced from a moderate to **negligible effect**.

### **Summary**

In summary, the main key species that will be the focus of the pre-construction breeding bird surveys are: golden eagle, hen harrier, and black grouse. Surveys will identify breeding activity within a 1km buffer of the Proposed Development and locate nest locations of raptors and lekking sites of black grouse. In addition, roost sites of golden eagle will be identified and monitored.

Breeding surveys during the construction phase will follow the same methodology as the pre-construction surveys for the key species identified. The presence of an ECoW on site along with mitigation measures including buffers around the work will avoid the destruction or disturbance of nesting key species.

A monitoring programme for the operational phase will be agreed with NatureScot to determine any effects on the breeding populations by the competition of the proposed development.



7 Lochside View  
Edinburgh Park  
Edinburgh, Midlothian  
EH12 9DH

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