Cloiche Wind Farm EIA Report

Chapter 9 Technical Appendix:

9.4 Outline Bird Protection Plan

April 2020

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1. INTRODUCTION

1.1 Purpose of this Document

1.1.1 This a technical appendix to Chapter 9 (Ornithology) of the Cloiche Wind Farm Environmental Impact Assessment (EIA) Report.

1.1.2 This document sets out the proposed approach to avoid / minimise impacts on breeding birds during construction of the Cloiche wind farm (the 'Proposed Development') in the form of an outline Bird Protection Plan (BPP). The outline BPP would be developed into a more detailed document in advance of the commencement of works (i.e. prior to wind farm construction commencing including enabling works and following the proposed pre-construction surveys)

1.2 Consultation & Approval

1.2.1 It is intended that following completion of the pre-construction surveys and ahead of works for the proposed wind farm commencing a fully detailed version of the BPP will be provided for review and comment by Scottish Natural Heritage (SNH) and The Highland Council (THC).

1.3 Relevant Legislation & Guidance

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

1.3.2 The key directive / legislation relevant to this document are:

- 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'; and
- Wildlife and Countryside Act 1981 (the 'WCA' as amended, including by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011).

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

- 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;
- Ruddock, M. & Whitfield, D.P. (2007). A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage; and
- SNH (2016). Dealing with construction and birds. Guidance document produced by Scottish Natural Heritage (March 2016).

1.4 Summary of Relevant Legal Framework

1.4.1 The information provided here is primarily derived from the SNH website. The original legislation should be referred to for definitive guidance. Copies of the original, i.e. as enacted, and revised versions of all UK and Scottish Government legislation are available online from http://www.legislation.gov.uk.

EU Birds Directive

1.4.2 The Birds Directive is a legal act of the European Union 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.

1.4.3 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).

1.4.4 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 (further detail is provided in Chapter 9). 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 of the proposed development.

Wildlife & Countryside Act 1981 (as amended)

1.4.5 In the UK, the provisions of Article 5 of the Birds Directive are implemented through the Wildlife & Countryside Act 1981**Error! Bookmark not defined.** (as amended).

1.4.6 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;
- disturb the dependent young of any wild bird listed on Schedule 1.

1.4.7 Those birds listed on Schedules A1 and 1A 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.

1.4.8 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.

1.4.9 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.

1.5 National and Local Status for Key Species

1.5.1 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 works. Details of the bird species which have been recorded as breeding within the Proposed Development area during the baseline surveys is provided in Technical Appendix 9.1.

1.5.2 Table 1 below provides a summary of the conservation and statutory designations applicable to certain key species of national conservation concern and/or special legal protection that have been recorded breeding within or near to the proposed development area. Also provided is a summary of the local (i.e. in the context of the proposed development area) status of the species considered in this document.

1.5.3 Please note that this is not a complete list of all potential species breeding within the Site.

Table 1: Summary of National Status and Legal Protection of Key Bird Species of Conservation Concern relevant to the Proposed Development Area

Species	Key Statutory and Conservation Taxon Designations	Summary of Proposed Development Area Presence / Status
Common scoter (*Melanitta nigra*)	• WCA Schedule 1 [i] • UK Red List (BoCC4) [ii] • UK BAP Priority Species [iii] • Scottish Biodiversity List [iv]	Breeding in the surrounding area, not within the Site, including locations near to the existing main access route, and also uses Glendoe Reservoir.
Black grouse (*Lyrurus tetrix*)	• UK Red List (BoCC4) [ii] • UK BAP Priority Species [iii] • Scottish Biodiversity List [iv]	Not breeding within the Site. Population present in the wider area along the main access track, at risk from disturbance during spring from vehicle movements.
Red grouse (*Lagopus lagopus scotica*)	• UK Amber List (BoCC4) [ii] • UK BAP Priority Species [iii]	Breeds within the Site (east and west). Relatively common breeder in areas of suitable habitat.
Red-throated diver (*Gavia stellata*)	• WCA Schedule 1 [i] • Birds Directive Annex I [v] • UK Green List (BoCC4) [ii] • Scottish Biodiversity List [iv]	Breeding in the surrounding area, not within the Site, including locations near to the existing main access route, and also uses Glendoe Reservoir.
Osprey (*Pandion haliaetus*)	• WCA Schedule 1 [i] • Birds Directive Annex I [v] • UK Amber List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area, not within the Site. Occasionally passing through the site and hunting over Glendoe Reservoir.
Golden eagle (*Aquila chrysaetos*)	• WCA Schedules 1, 1A, A1 [i] • Birds Directive Annex I [v] • UK Green List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area, not within the Site, however there is the potential for visual disturbance depending on the nest sites used.

Species	Key Statutory and Conservation Taxon Designations	Summary of Proposed Development Area Presence / Status
Hen harrier (*Circus cyaneus*)	• WCA Schedules 1, 1A [i] • Birds Directive Annex I [v] • UK Red List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area, not within the Site, occasionally hunting within the Site.
Red kite (*Milvus milvus*)	• WCA Schedules 1, 1A [i] • Birds Directive Annex I [v] • UK Green List (BoCC4) [i] • Scottish Biodiversity List [iii]	Potentially breeding in the surrounding area, not within the Site, regularly hunting within the Site, particularly the eastern area.
White-tailed eagle (*Haliaeetus albicilla*)	• WCA Schedules 1, 1A, A1 [i] • Birds Directive Annex I [v] • UK Red List (BoCC4) [i] • Scottish Biodiversity List [iii]	Potentially breeding in the surrounding area, not within the Site, regularly hunting within the Site, particularly the western area.
Golden plover (*Pluvialis apricaria*)	• Birds Directive Annex I [iv] • UK Green List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeds within the Site (east and west). Relatively common breeder in areas of suitable habitat.
Dotterel (*Charadrius morinellus*)	• WCA Schedule 1 [i] • Birds Directive Annex I [v] • UK Red List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area, not within the Site, occasionally present within the Site during passage periods.
Dunlin (*Calidris alpina schinzii*)	• Birds Directive Annex I [v] • UK Amber List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeds within the Site (east and west). Particularly associated with areas of patterned blanket bog.
Greenshank (*Tringa nebularia*)	• WCA Schedule 1 [i] • UK Amber List (BoCC4) [i]	Breeds within the Site (east and west). Particularly associated with lochans and watercourses, which provide important brood-rearing habitats.
Merlin (*Falco columbarius*)	• WCA Schedule 1 [i] • Birds Directive Annex I [v] • UK Red List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area not within the Site, within suitable habitat along the main access track, occasionally hunting within the Site.
Peregrine (*Falco peregrinus*)	• WCA 1981 Schedule 1 [v] • Birds Directive Annex I [v] • UK Green List (BoCC4) [i] • Scottish Biodiversity List [iii]	Breeding in the surrounding area, not within the Site, occasionally hunting within the Site.
Ring ouzel (*Turdus torquatus*)	• UK Red List (BoCC4) [ii] • UK BAP Priority Species [iii] • Scottish Biodiversity List [iv]	Not breeding within the Site. Population present in the wider area along the main access track.

i. Species listed on Schedules 1, 1A and A1 to The Wildlife & Countryside Act 1981 (as amended).

ii. Eaton, M. A., Aebischer, N. J., Brown, A. F., Hearn, R. D., Lock, L., Musgrove, A. J., Noble, D. G., Stroud, D., & Gregory, R. D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108: 708-746.

iii. The UK List of Priority Species and Habitats was published in 2007 after adoption by the Governments of all four UK administrations as part of the UK contribution to the Convention on Biological Diversity (1992). The 'UK Post-2010 Biodiversity Framework' succeeded the UK BAP in 2012 and set out the strategy for England, Wales, Scotland and Northern Ireland, and the UK as a whole, to meet internationally agreed biodiversity targets. However, the 2007 UK BAP priority species and habitats remain relevant in the nature conservation / biodiversity policies.

iv. The Scottish Biodiversity List (SBL) is a list of flora, fauna and habitats considered by the Scottish Ministers to be of principal importance for biodiversity conservation. The publication of the Scottish Biodiversity List satisfies the requirements of Section 2(4) of The Nature Conservation (Scotland) Act 2004.

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

1.6 Nesting Periods and Indicative Protection Zones

1.6.1 Table 2 below 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. NB all wild birds, not only the species listed here or on Schedule 1 to the WCA, are protected to some degree 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 2: Summary of Indicative Disturbance Protection Zones and Main Nesting Periods for Selected Species[1] (NB all breeding seasons are inclusive of the stated months)

Species	Indicative Protection Zone & Breeding Season (inc. peak periods for raptor nesting stages)	Notes
Common scoter	300m, mid-April to August. • Incubation: 30-31 days • Fledging: 45-50 days • Chicks are precocial, downy	Ruddock & Whitfield (2007) reported an upper limit of active response to disturbance by common scoter, from people approaching on foot, at 300m during the chick-rearing period.
Black grouse	750m (lek site), April to September.	Black grouse are particularly sensitive to disturbance at their lek sites and at a relatively large distance. Ruddock & Whitfield (2007) reported that black grouse are likely to show a static response to disturbance, by a person on foot, between 500 to 750m from a lek site. Lekking activity mainly around dawn and dusk, therefore the presence of a lek would not necessarily represent a constraint in terms of disturbance during the day, between the times of two hours after sunrise and two hours before sunset. The peak lekking period is April to May.
Red-throated diver	750m, April to mid-September. • Incubation: 26-29 days • Fledging: 47-54 days • Chicks are precocial, downy	Breeding red-throated divers are potentially vulnerable to disturbance at their nesting lochs and at comparatively large distances. Distance at which behavioural responses are elicited can vary considerably according to loch size, stage in the breeding season, screening and between individual birds. May show behavioural responses to a person on foot at a distance of between 500 to 750m from their nesting loch (Ruddock & Whitfield 2007).
Golden eagle	1000m, February to August. • Nest-building: Jan-Mar. • Egg-laying: mid-Mar. to early Apr. • Incubation: 41-45 days • Young in nest: late-Apr. to early Aug. • Fledging: c. 70 days • Post-fledging dependency lasts c. four months.	Breeding golden eagles are highly sensitive to the presence of people visible at relatively large distances from their nest sites. Ruddock & Whitfield (2007) reported an upper limit for active responses of breeding golden eagles to disturbance from a person on foot at 750-1000m from the nest. Safe working distances may need to vary depending on the specific circumstances (i.e. nature of the works, line of sight to the nest, extent of topographic screening). Cliff-nesting golden eagles may be particularly sensitive because their nest sites allow greater visibility of their surroundings.

[1] Primary sources are:
- Snow, D., & Perrins, C.M. (Eds) (1998). The Birds of the Western Palearctic, Concise Edition. Oxford University Press, Oxford.
- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring (3rd Edition). The Stationery Office, Edinburgh.
- Ruddock, M. & Whitfield, D.P. (2007). A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage.
- 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.
- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring (3rd Edition). The Stationery Office, Edinburgh.

Species	**Indicative Protection Zone & Breeding Season** (inc. peak periods for raptor nesting stages)	Notes
Golden plover	c. 250m, April to July (in northern Scotland the first eggs are laid from mid-April but up to 2-3 weeks later at altitude). • Incubation: 28-31 days • Fledging: 25-33 days • Chicks are precocial, downy	Evidence from monitoring of wind farm construction sites in Scotland indicates that golden plover are sensitive to disturbance during construction. Prolonged, high levels of disturbance are likely to cause birds to vacate breeding territories. The distances at which golden plovers show behavioural reactions to a person on foot ranges from 50m to 400m and varies in relation to a number of factors including stage of the breeding season. Yalden & Yalden (1990[2]) reported that adults with chicks alarm-called when approached within c. 200 m.
Dunlin	c. 250m, April to July. • Incubation: 21-22 days • Fledging: 19-21 days • Chicks are precocial, downy	Dunlin appear to be less responsive to sources of disturbance than some other moorland waders such as golden plover. Yalden & Yalden (1989[3]) found that breeding dunlin reacted to a human presence by alarm calling within about 35 m.
Greenshank	c. 800m, mid-April to July. • Incubation: 25-27 days • Fledging: 28-29 days • Chicks are precocial, downy	Territory size of 800m radius was assumed for the national survey methodology (Hancock 1997[4]). In the absence of published research on responses to disturbance sources by this species, 800m is treated as the potential zone of disturbance during construction (applies to courtship, nesting, and brood-rearing areas). Young can be moved comparatively long-distances from the nest site to brood-rearing habitats rich in insect prey.
Merlin	500m, April to mid-August. • Incubation: Early May to mid-Jun. (28-32 days) • Young in nest: Late May to early Aug. (28-31 days)	Behavioural responses to sources of disturbance are likely to vary according to stage in the breeding season and the prior exposure of individuals which may increase tolerance. Ruddock & Whitfield (2007) reported an upper limit to static responses to disturbance (person on foot) at 300-500 m.
Peregrine	750m, March to mid-August. • Egg laying: Mar to Apr. • Incubation: Apr. to May (28-35 days) • Young in nest: May to Jun. (c. 40 days)	Ruddock & Whitfield (2007), based on data from an expert questionnaire on the upper limit of static or passive disturbance, recommended a disturbance management zone of 500 - 750m from the nest.

2. OUTLINE BIRD PROTECTION PLAN

2.1 Introduction

2.1.1 The purpose of the outline BPP is to set out, in sufficient detail for the purposes of EIA, 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.

2.1.2 The measures proposed in the outline BPP will be subject to further review and consultation with SNH before any works occur. This is to ensure that any relevant

[2] Yalden, P.E. & Yalden, D.W. (1990). Recreational disturbance of breeding Golden Plovers Pluvialis apricaria. Biological Conservation. 51: 243– 262.
[3] Yalden, D.W. & Yalden, P.E. (1989). The sensitivity of breeding golden plovers Pluvialis apricaria to human intruders. Bird Study 36: 49-55.
[4] Hancock, M.H., Gibbons, D.W. & Thompson, P.S. (1997). The status of breeding Greenshank Tringa nebularia in the United Kingdom in 1995. Bird Study, 44:3, 290-302.

information that emerges, subsequent to the EIA-R being submitted, is taken into consideration and that the proposed measures follow current best-practice.

2.1.3 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 within the Site boundary will be taken into account prior to the BPP being finalised and implemented.

2.1.4 The decommissioning of the Proposed Development is anticipated to occur 25 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 will 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.

2.2 Ecological Clerk of Works

2.2.1 The proposed development will appoint suitably experienced and qualified Ecological Clerk of Works (ECoW) for the duration of the pre-works, construction and site restoration phases. The appointment of the individual(s) covering the ECoW role will be agreed in advance in consultation with SNH and THC. The ECoW will have authority on site to immediately halt any works that have the potential to affect nesting birds or that would contravene any other ecological / environmental protections or commitments.

2.2.2 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).

2.2.3 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 SNH and THC.

2.3 Pre-Construction Surveys

2.3.1 A detailed survey method statement will be developed, discussed and agreed with SNH well in advance of works commencing for the proposed development (i.e. at least 12 months in advance). All survey methods will follow current best practice and surveys will be completed by suitably experienced ecologists/ornithologists.

2.3.2 The surveys will be completed at the appropriate time of year and not more than 12 months prior to the commencement of construction.

2.3.3 The surveys will include all suitable breeding habitats within appropriate buffer zones related to the focal species (or group of species) and their potential zone of disturbance from the works including a margin for error. For example, surveys for greenshank would be completed in all areas of suitable habitat within at least 1km of the proposed works.

2.3.4 Pre-construction surveys will be completed within all potentially suitable breeding habitats for the following species / groups and areas (NB a desk study will be completed to confirm the appropriate suite of species prior to the surveys being undertaken):

- Common scoter - within 2km of the Proposed Development[5], including the Glendoe Lochans SSSI area (in co-ordination with RSPB), and within 500m of the main access route from the B862;

- Black grouse - within 750m of the main access route from the B862;

- Red-throated diver - within 2km of the Proposed Development and within 1km of the main access route from the B862;

- Slavonian grebe - within 2km of the Proposed Development, including the Glendoe Lochans SSSI area (in co-ordination with RSPB), and within 1km of the main access route from the B862;

- Golden eagle - all breeding activity within 6km of the Proposed Development and within 1km of the main access track. It is assumed annual monitoring of the established breeding territories would continue by Highland Raptor Study Group (HRSG) and/or under the Regional Eagle Conservation Management Plan (RECMP);

- Hen harrier - within 2km of the Proposed Development and within 1km of the main access route from the B862;

- Golden plover - within 500m of the Proposed Development and a suitable control site located in an area with similar habitats and elevation but outside of the direct influence of any wind farm;

- Dunlin - within 500m of the Proposed Development and a suitable control site located in an area with similar habitats and elevation but outside of the direct influence of any wind farm;

- Greenshank - within 1km of the Proposed Development, including the Glendoe Lochans SSSI area (in co-ordination with RSPB), and within 1km of the main access route from the B862;

- Merlin - within 2km of the Proposed Development and within 1km of the main access route from the B862; and

- Peregrine - within 2km of the Proposed Development and within 1km of the main access route from the B862.

2.3.5 The results of the pre-construction surveys will be used to inform the detailed BPP for the construction phase of the Proposed Development. The results would also form the baseline data against which the results of the monitoring surveys during the operational phase can be compared against, discussed within section 3 below.

2.3.6 The results of the pre-construction bird surveys will be submitted to SNH and THC along with the detailed BPP.

[5] For avoidance of doubt, 'Proposed Development' refers to all locations where works (temporary or permeant) are proposed including all compounds and borrow pits.

2.4 Works Extents & Timing

2.4.1 The extent of ground works required for the construction of the wind farm will be kept to the minimum necessary.

2.4.2 Initial groundworks (e.g. initial turf strip ahead of construction) will be programmed, where possible, outside of the most sensitive periods of bird breeding season (see Table 2). However, due to the high elevation of the Site and likelihood of winter weather delaying works, restricting the timing to out-side of the breeding season is not considered to be practical.

2.4.3 Ideally, initial groundworks would start before the onset of the main nesting period for moorland waders and songbirds (e.g. before April) and avoid starting within that period. Where such works have to occur within the main breeding season they will only be carried out following a suitably thorough survey and assessment of the area by the ECoW.

2.5 ECoW Role during Construction Phase

2.5.1 The ECoW(s) will attend site as required throughout the construction period to oversee the effective implementation of all environmental mitigation, including measures relevant to birds, and to help ensure works proceed in compliance with the BPP and the legislation protecting nesting birds.

2.5.2 Prior to any personnel working within 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.

Breeding Bird Survey / Nest Check Methods during Construction

2.5.3 The ECoW, with support from ornithological surveyors, will undertake / co-ordinate a rolling programme of surveys and checks for nesting birds ahead of and during construction works throughout the breeding season. This is to provide up-to-date information in all areas where works are being undertaken that could impact on nesting birds.

2.5.4 Methods to determine whether breeding is occurring and, if so, the nest site location (or likely location) vary between the focal species. The BPP will detail the methods for each species, the following is a summary of the proposed approach.

2.5.5 Experienced ornithological surveyors will walk, and scan from suitable vantage points, the works area and buffer zone. The presence of breeding behaviour will be determined based on audio and/or visual evidence, which will vary in relation to the focal species.

2.5.6 An appropriate level of survey / search effort by experienced ornithological surveyors will be undertaken in order to confirm the presence of active nest sites. It is acknowledged that locating nest sites of many bird species (including common moorland species) can be a time-consuming task. However, 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, until such time as breeding status can be confirmed and appropriate mitigation may be implemented as required.

2.5.7 In open moorland all areas of works, and extending to c. 50m beyond, will be systematically walked and scanned to detect signs of ground-nesting songbirds. Where

waders are seen or suspected to breed (based on the result of the pre-construction surveys) the area of search will be extended to include c. 250m beyond the area of works.

2.5.8 Surveys of the works areas and wider surrounding habitats (i.e. out to c. 1km from the works areas) for breeding Schedule 1 species at risk of disturbance at distance (e.g. common scoter, red-throated diver, merlin, greenshank) would also be completed throughout the construction programme during the relevant breeding season for the focal species. Protection zones for some species will need to vary in response to different stages of the breeding season. For example, protection of breeding greenshank from disturbance (as Schedule 1 species) will require sufficient monitoring to confirm the location of courtship, nesting and brood-rearing territories (should they be at risk) and the protection zones for these territories are likely to be located in different areas as the season progresses.

2.5.9 Additionally, the ECoW would be in direct communication with the raptor surveyor responsible for monitoring breeding golden eagles in the wider area so that timely updates on breeding activity can be passed on. This is particularly important in relation to pairs using / suspected to be using nest sites that are at risk of noise or visual disturbance from the works.

Breeding Bird Protection Zones

2.5.10 Appropriate protection zones will be established for any breeding sites / nest sites confirmed during the pre-construction checks and during the works. Physical marking of the edge of protection zones, in the vicinity of works, will be appropriate in some cases (e.g. use of warning signs, canes or poly rope) but this will be kept to the minimum necessary.

2.5.11 Nest protection zones will vary depending on the species (see Table 2) and the specific circumstances. The exact extents will be determined by the ECoW on a case-by-case basis, with input from an ornithologist where needed. This will depend on a number of factors including local topography (e.g. the extent to which the nest site is visually screened from the works), species and the type and level of potential disturbance from the works.

2.5.12 Where breeding is proven, or is suspected though no nest site location is confirmed, the area will be protected so that no construction works takes place until monitoring confirms the absence of an active nest site, e.g. birds have fledged the nest or no activity indicative of on-going nesting is observed after a number of monitoring visits (e.g. allowing for the potential for some species to raise more than one brood within a breeding season).

2.5.13 Only the ECoW will confirm when breeding has been completed and when the protection zone can be removed and works can commence.

2.5.14 There will be a watching brief in place during the construction works to help ensure that the relevant BPP measures are correctly and consistently applied and also to react to any new evidence of breeding birds that may be found during the construction phase. This will be the responsibility of the appointed ECoW.

2.6 Monitoring during Wind Farm Operation

2.6.1 An operational breeding bird monitoring plan (as part of the detailed BPP) would be developed, in consultation with SNH, prior to the start of construction works.

2.6.2 It is proposed that breeding bird surveys would be undertaken over the same areas and for the same suite of species listed for the pre-construction surveys (see Section 2.3).

2.6.3 Surveys would be completed for at least the first 10 years of the development (i.e. annually for the first 3 years, then 5th and 10th years) and then the need for further monitoring would be reviewed.

2.6.4 The operational monitoring methods for breeding greenshank will be set out in the detailed BPP and would be discussed and agreed in consultation with SNH prior to construction works commencing on the Proposed Development.

2.6.5 Surveys for breeding greenshank, following the methods detailed in Hancock *et al*. (1997[6]), would be completed in at least one breeding season prior to construction works commencing (e.g. either as part of the pre-construction surveys or additional to this). The survey would also include suitable methods to quantify flight activity, identifying any commuting routes between favoured courtship territories, nesting areas and foraging habitats.

2.7 Carcass Searches during Wind Farm Operation

2.7.1 Bird carcass searches, following current best practice methods, would be completed annually for 3 years after the wind farm becomes operational and then in the 5th and 10th years, after which the need for further monitoring would be reviewed. The monitoring would be preceded by trails to determine values for site-specific biases that affect estimates of bird mortality from carcase searches, such as scavenger removal rates and search accuracy.

2.7.2 The existing SSER protocol for incidents where dead birds are found near to wind turbines (either during formal carcase searches or as incidental records by personnel involved in turbine maintenance or wind farm operational management) would apply to the Proposed Development. This includes the recording of the location of the carcase (minimum 6 figure OS Grid reference), position relative to the nearest wind turbine, and other potentially relevant circumstances (e.g. species, sex, age if known, presence of any rings, tags, preceding weather conditions). The carcase is then placed in an appropriate container. It is taken as quickly as possible to a suitably experienced veterinary surgeon to complete a necropsy. The species, sex, age is confirmed and the likely cause of death is determined, where possible. The findings and other details of the incident are reported to SNH.

2.8 Habitat Management Plan (HMP)

2.8.1 A HMP is proposed to address the effects of the construction of the Proposed Development on blanket bog vegetation communities (see Chapter 8: Ecology). Suitable areas for peatland restoration would be identified, e.g. actively eroding deep peat with only limited vegetation cover. The location and extent of these areas would be subject to refinement prior to completion of the final HMP but the area identified for restoration would be no less than the blanket bog permanently lost as a result of the Proposed Development.

2.8.2 In order to maximise the potential benefit of these measures for moorland waders, where possible, they would be located within the same landholding but outside of the potential displacement effect zone for the existing and proposed wind farms. In developing the

[6] Hancock, M. H., Gibbons, D. W., & Thompson, P. S. (1997). The status of breeding Greenshank (Tringa nebularia) in the United Kingdom in 1995. Bird Study 44: 290–302.

detailed HMP consideration will also be given to enhancement of blanket bog habitats within the Monadhliath SSSI. The Applicant will fully consult with all relevant parties during the development of the detailed HMP. The HMP will be subject to agreement with SNH and the relevant landowners prior to being implemented.

2.9 Proposed Operational Mitigation for Eagles

2.9.1 Annual surveys for golden eagle would continue for the life-time of the wind farm (as part of the RECMP, funded by the Applicant) and would include continuing to gathering data on golden eagle occupancy, breeding success, productivity, juvenile ranging behaviours, for all of the territories near to the Proposed Development (i.e. with territory centres within 6km of the Proposed Development).

2.9.2 It is also proposed that the measures undertaken for Stronelairg Wind Farm to reduce the risk to golden eagle from that development (i.e. removal of deer carcases / gralloch from within the wind arm area and provision of winter larders in suitable locations) would also apply to the operation of the Proposed Development.

2.9.3 The Applicant also proposes to provide additional financial support for eagle monitoring and conservation management measures within the Central Highlands Natural Heritage Zone (NHZ 10), under the umbrella of the existing RECMP, should the Proposed Development be approved.

2.10 Operational Reporting

2.10.1 The results of all operational monitoring surveys, studies, carcase searches etc. would be included within suitably detailed annual reports, copies of which would be provided to SNH as quickly as possible, no later than March of the following year.

2.11 Decommissioning Works

2.11.1 The wind farm would be decommissioned at the end of its life (50-years). During this process there is the potential for disturbance to nesting / breeding birds, including species listed on Schedule 1 of the WCA. Pre-works survey and the relevant BPP measures proposed for the construction phase (see above) will apply to the works. However, these measures will be reviewed, in advance of the decommissioning, in order to take into account the results of monitoring during the operation of the wind farm, the results of the pre-decommissioning surveys and advances in best practice approaches to mitigate impacts on breeding birds that may have emerged since the wind farm was constructed.