Chapter 6: Ornithology

Tables

6.1 Executive Summary

6.1.1 This Ornithology chapter of the Environmental Impact Assessment Report (EIAR) assesses the likely significant effects of the Proposed Varied Development with respect to ornithology.

6.1.2 The Ornithological Impact Assessment (OIA) presented in this chapter considers only likely changes to the conclusions of the Consented Development. Where there is unlikely to be a change to effects to any of the Important Ornithological Features (IOFs) previously considered, these are scoped out of the OIA for the Proposed Varied Development.

6.1.3 No significant effects on IOFs were identified for the Consented Development, either alone or cumulatively. Updated surveys for breeding golden eagle (*Aquila chrysaetos*) and white-tailed eagle (*Haliaeetus albicilla*) were completed in February and March 2025 to supplement the existing desk study and baseline ornithology data collected between October 2018 to August 2020 and presented in the **2021 EIAR, Volume 1, Chapter 6: Ornithology** for the Consented Development. Based on this information, it is considered that the assessment of effects of the Consented Development alone on previously identified IOFs will remain unchanged for the Proposed Varied Development.

6.1.4 However, as collision risk will change due to the alteration of turbine height and associated geometry, revised Collision Risk Modelling (CRM) has been completed to inform a revised assessment of potential collision risk arising from the Proposed Varied Development. Additionally, given that new collision risk data are available from other developments, the cumulative collision risk has also been re-assessed and updated for relevant IOFs.

6.1.5 Seven species were scoped into the CRM completed for the Consented Development: greenshank (*Tringa nebularia*), red-throated diver (*Gavia stellata*), osprey (*Pandion haliaetus*), golden eagle, goshawk (*Astur gentilis*), red kite (*Milvus milvus*) and white-tailed eagle. Of these, however, only greenshank, red-throated diver and golden eagle were considered to be IOFs and scoped into the OIA for the Consented Development. Black grouse (*Lyrurus tetrix*), Slavonian grebe (*Podiceps auritus*) and golden plover (*Pluvialis apricaria*) were identified as additional IOFs in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** for the Consented Development but CRM was not completed for these species as no 'at-risk' flights were recorded. At-risk flights are identified as those within the collision risk area (CRA), at potential collision height (PCH).

6.1.6 As the minimum air gap (the distance from the ground to the lowest turbine blade sweep) for the Proposed Varied Development is larger than that for the Consented Development, all red-throated diver flights recorded during

baseline surveys were below PCH. Therefore, this species was scoped out of the revised CRM for the Proposed Varied Development.

6.1.7 Greenshank, osprey, golden eagle, goshawk, red kite and white-tailed eagle were scoped into the revised CRM for the Proposed Varied Development. Two additional IOFs, namely greylag goose (*Anser anser*) and peregrine (*Falco peregrinus*) were also scoped into the revised CRM because the increased tip height for the Proposed Varied Development meant that some of the flights recorded during the 2018-20 flight activity surveys were now deemed to be at-risk.

6.1.8 With the exception of red-throated diver, which was scoped out of the CRM for the Proposed Varied Development because all flights were below PCH (due to the increased air gap), collision risk to all species scoped into the revised CRM is predicted to be higher for the Proposed Varied Development compared to the Consented Development. However, the CRM for the Proposed Varied Development followed a more precautionary approach than the CRM for the Consented Development, and despite collision risk being comparatively higher, it is considered to be of Low Magnitude for white-tailed eagle and **Negligible** for all other species scoped into the revised CRM, with no significant effects in EIA terms predicted for any IOFs.

6.1.9 An updated cumulative collision risk assessment has also been completed for golden eagle and white-tailed eagle, using the revised CRM results for the Proposed Varied Development and CRM results from other developments in the surrounding area. No significant cumulative effects were identified for either species.

6.1.10 Although no significant effects on IOFs were predicted for either the Consented Development or the Proposed Varied Development, mitigation and enhancement measures for black grouse, breeding diver species and breeding golden eagle delivered via the final (2024) Habitat Management Plan (HMP) and Breeding Bird Protection Plan (BBPP) for the Consented Development and secured through planning conditions for the Consented Development remain appropriate and effective for the Proposed Varied Development.

6.1.11 To address comments from consultees, it is proposed that existing ornithology monitoring programmes overlapping the Site and/or surrounding area that are being delivered via the Regional Eagle Conservation Management Plan (RECMP) and the 2015 Bhlaraidh Wind Farm HMP are reviewed to determine whether there is a requirement for the final HMP to be updated to include additional operational monitoring for black grouse, golden eagle and wader species (specifically golden plover and greenshank). Additionally, it is proposed that updates to the 2024 HMP will include a protocol for reporting any observations of confirmed or suspected bird collisions to NatureScot. It is further proposed that the final HMP is updated to include suitable marking of

any deer fences which may require to be installed (as part of the HMP), in order to reduce collision risk to black grouse.

6.2 Scope of Assessment

6.2.1 A S36C Scoping Report for the Proposed Varied Development ("the Scoping Report" (**Technical Appendix 3.1: Scoping Report**)), was submitted to statutory consultees for their consideration in May 2025. The Scoping Report set out the rationale to assess or scope out ornithological features based on the potential impacts of the Proposed Varied Development due to changes from the Consented Development.

6.2.2 **Volume 1, Chapter 2: Design Iteration & Proposed Development**, describes how the Proposed Varied Development differs from the Consented Development.(see **Volume 2, Figure 1.4: Proposed Varied Development vs Consented Development Layout**).

6.2.3 As detailed in the Scoping Report for the Proposed Varied Development, no historical significant effects on IOFs were identified for the Consented Development, either alone or cumulatively and it is considered that the assessment of effects for the Consented Development alone on previously identified IOFs will largely remain unchanged for the Proposed Varied Development. Potential disturbance and displacement impacts have been scoped out of the OIA for the Proposed Varied Development. Additionally, it should be noted that removal of the borrow pit search area closest to T17 will lead to a reduction in infrastructure in the east of the Site, which is the area closest to identified Slavonian grebe breeding sites (although **Chapter 6: Ornithology** of the **2022 AIR** concluded that, based on the separation distance between this borrow pit and the nearest breeding territory, it was unlikely that the species would be disturbed by construction activities).

6.2.4 Estimated collision risk will change due to the alteration of turbine height and geometry. It should also be noted that the Consented Development comprises 15 turbines, whereas the CRM was based on an earlier iteration comprising 18 turbines. Therefore, revised CRM has been completed to inform a revised assessment of potential collision risk arising from the Proposed Varied Development. Additionally, given that new collision risk data are available from other developments, the cumulative collision risk to relevant IOFs has also been re-assessed.

6.2.5 Considering that the baseline ornithology data for the Consented Development is still considered to be valid, the relatively limited changes made for the Proposed Varied Development, and the mitigation and enhancements proposed in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** and included in the Planning Conditions of the 2022 consent, only collision risk has been 'scoped in' to the assessment for the Proposed Varied Development. All

other ornithological issues have been 'scoped out.' This is in line with NatureScot (2024a) guidance on dealing with proposals for the variation of Section 36 wind farm consents, which states that: "*For birds, in the majority of cases where the number and location of turbines are not changing, all that will be needed is a re-working of the collision risk model, rather than new survey work. Revised collision risk calculations should be presented in the EIA report and, where appropriate, in-combination with other wind farm developments.*" As detailed in section 6.3 below, NatureScot confirmed that they were content with this approach.

6.2.6 Relevant mitigation proposed in the planning submission for the Consented Development has been secured through appropriately worded planning conditions to the Section 36 Planning Consent. Consultee comments on the Proposed Varied Development Scoping Report and relevant planning conditions associated with the Consented Development are provided in the following sections. The ornithological baseline for the Consented Development, along with a summary of its predicted effects on IOFs, is also provided for context. Further to the above, the Scope of this assessment and document is to:

- Summarise the previously collected baseline information used to support the Consented Development's planning submission.
- Undertake CRM based on the new turbine parameters for the Proposed Varied Development.
- Undertake a revised assessment of the predicted collision risk effects of the Proposed Varied Development, both alone and cumulatively with surrounding developments, on IOFs.
- Summarise any changes in predicted collision risk effects on IOFs arising from the Proposed Varied Development compared with the Consented Development.

6.3 Consultations

6.3.1 Scoping Opinion comments relevant to ornithology received in 2019–2020 for the Consented Development, along with subsequent consultation feedback from NatureScot in January 2021, are detailed in **Volume 1, Chapter 6**: **Ornithology** of the **2021 EIAR** for the Consented Development and were fully addressed in that chapter. They are therefore not repeated here.

6.3.2 In response to the 2021 EIAR and 2022 Additional Information Report (AIR), NatureScot confirmed that the Proposed Development would not adversely affect the integrity of any identified Special Protection Areas (SPAs) with ornithological qualifying interests and no objection was received from NatureScot in relation to ornithology.

6.3.3 For context, a list of key documents submitted previously that are relevant to the Proposed Varied Development ornithology consultation is provided in **Table 6.1**.

Table 6.1: Summary of key documents relevant to the Proposed Varied Development ornithology consultation.

Document	Details	Relevance to the Proposed Varied Development
RECMP	A golden eagle research, conservation and monitoring project centred in the Monadhliath mountains that is chiefly funded by SSE Renewables through its Dunmaglass Wind Farm	The RECMP covers Natural Heritage Zone (NHZ) 10 (Central Highlands), which neighbours the NHZ within which the Proposed Varied Development is located (NHZ 7 Northern Highlands); the RECMP golden eagle monitoring includes part of the area surrounding the Site.
2015 Bhlaraidh Wind Farm HMP	The HMP for the operational Bhlaraidh Wind Farm, adjacent to the Site, to enhance and protect ecological features, with a focus on habitat improvement for black grouse	The HMP includes measures to mitigate any effects on black grouse; ornithological monitoring areas overlap the western edge of the Proposed Varied Development footprint.
2024 final HMP for the Consented Development (Technical Appendix 3.6a)	Following consent, a final, detailed HMP was submitted for the Consented Development in 2024 and approved by The Highland Council (THC) and NatureScot to satisfy Planning Condition 18	This contains measures committed to by the Applicant to ensure the delivery of biodiversity enhancement, which include an emphasis on habitat enhancements for black grouse and golden eagle and installation of an artificial nesting raft for divers, as well as engagement with the RECMP; these measures remain applicable to the Proposed Varied Development.

2024 BBPP for the Consented Development **(Technical Appendix 3.6i)**	Following consent, a BBPP was submitted and approved for the Consented Development to satisfy Planning Condition 13, part (m)	Includes measures to protect lekking black grouse, breeding Slavonian grebe, breeding diver and wader species; these measures remain applicable to the Proposed Varied Development
2024 Deer Management Plan (DMP) for the Consented Development **(Technical Appendix 3.6d)**	A DMP was submitted and approved for the Consented Development to satisfy Planning Condition 20	The DMP addresses the requirement for deer stalking grallochs or carcasses to be left outwith the windfarm development area. The DMP is also likely to result in wider enhancement to habitats through a reduction in grazing pressure which will benefit breeding birds. These measures remain applicable to the Proposed Varied Development

6.3.4 The consultation responses and Scoping Opinion received in July 2025 in response to the Proposed Varied Development Scoping Report are provided in **Technical Appendix 3.1-3.3** and summarised in **Table 6.2**.

6.3.5 NatureScot were subsequently consulted via letter on 13 August 2025 (submitted via both email and NatureScot's InformedDECISION™ portal, reference number 102649) to confirm that impacts on IOFs due to disturbance/ displacement and aviation lighting could be scoped out of the updated OIA for the Proposed Varied Development, and that there was no requirement for further surveys to be completed to inform the updated CRM. However, although NatureScot confirmed (via email dated 25/08/2025) that they had received the consultation letter, no further comments had been provided by NatureScot at the time of writing.

Table 6.2: Summary of Scoping Opinion comments with relevance to ornithology received for the Proposed Varied Development.

Consultee and Date	Issue Raised	Response
Proposed Varied Development Scoping Opinion – 16 July 2025		
THC **02 July 2025**	Ecology General Guidance Advised that the EIAR should address the likely impacts on the nature conservation interests of all designated sites in the vicinity of the Proposed Varied Development and provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. Further advised that NatureScot can provide specific advice in respect of SPA site boundaries and their qualifying features as well as impacts on designated sites.	Potential effects on designated sites and Slavonian grebe (which was the only qualifying interest feature identified as an IOF) were assessed in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** and **Chapter 6: Ornithology** of the **2022 AIR**. As detailed in section 6.2 of this chapter, only collision risk has been 'scoped in' to the assessment for the Proposed Varied Development. All other ornithological issues have been 'scoped out.' This is in line with NatureScot (2024a) guidance on dealing with proposals for the variation of Section 36 wind farm consents. No at-risk flights by Slavonian grebe were recorded during the 2018-20 flight activity surveys and collision risk to this species from the Proposed Varied Development is considered to be the same as that for the Consented Development.
	Advised that the HMP should include a comprehensive monitoring programme for breeding birds on the Site. Further advised that remote sensing using radar or infra-red cameras should be considered, to help inform future development and decision making within the industry with regards to eagles. Also advised that the HMP (or other document) should include a protocol for reporting collisions to NatureScot.	Refer to **Technical Appendix 3.6a** (final HMP, 2024). With the exception of monitoring the artificial diver nest raft, operational ornithological monitoring is not included in the HMP (although the effectiveness of habitat enhancements will be monitored). However, monitoring of breeding golden eagle territories and tagging of nestlings takes place as part of the RECMP. This will expand the RECMP (NHZ 10) research into NHZ7. Ornithological monitoring of the local area also takes place as part of the 2015 Bhlaraidh Wind Farm HMP. This existing ornithological monitoring will be reviewed to determine whether there is a requirement for the 2024 HMP to be updated to include additional monitoring to assess the effectiveness of the habitat management in supporting black grouse and golden

		eagle during the operational phase of the Proposed Varied Development It is also proposed that the 2024 HMP will be updated to include details of the SSE Avian Incident Search Protocol, which entails a dedicated monthly search of operational turbines for bird and bat carcasses, and a protocol for the reporting of any collisions observed during HMP monitoring to NatureScot via completion of their Bird Collision Incident Form[1]. It is expected that the 2024 HMP will be reviewed as required under planning conditions for the Proposed Varied Development.
	Biodiversity Enhancement Noted that the Ecology Officer supports the proposed measures to enhance habitat for black grouse and golden eagle, creation of montane scrub, planting of Caledonian woodland, installation of artificial rafts for divers, and an enhancement with the RECMP. Recommended that, as the area is important for black grouse, fence removal/marking to reduce collision risks to this species, as well as regular checks and collision reporting should be implemented.	The final, detailed HMP for the Consented Development submitted in 2024 (and approved by THC and NatureScot) (refer to **Technical Appendix 3.6d**) includes planting of native woodland/montane scrub to enhance habitats for black grouse and golden eagle prey species, installation of an artificial nest raft for diver species and a commitment to financially support and engage with the RECMP. Additionally, the approved 2024 DMP for the Consented Development (**Technical Appendix 3.6d**) commits to removal of deer fencing, which will benefit black grouse, while the peatland/bog restoration that will be delivered via the 2024 HMP, combined with a reduction in deer grazing pressure resulting from the DMP measures, is likely to benefit a range of breeding birds, including black grouse.

[1] Available online at: Bird strike or collision incident recording form | NatureScot [Accessed September 2025].

		As noted above, it is expected that the 2024 HMP will be reviewed as required under planning conditions for the Proposed Varied Development. It is proposed that updates to the 2024 HMP will include fence marking, as well as details of the SSE Avian Incident Search Protocol and a protocol for the reporting of any collisions observed during HMP monitoring to NatureScot via completion of their Bird Collision Incident Form[1].
	<u>Ornithology</u> Advised that the presence of birds listed on Schedule 1 of the W&CA and qualifying interests of SPAs and other areas designated for avian interests must be included and considered as part of the planning application process and not as an issue that can be considered at a later stage. Referred the Applicant to any comments from NatureScot and RSPB in this respect.	As described in section 6.2 of this chapter, it is considered that, in terms of potential impacts on ornithological features, the only change between the Proposed Varied Development and Consented Development would be due to changes in collision risk (both from the Proposed Varied Development alone and cumulatively with other developments). This has been considered in sections 6.8 and 6.11 of this chapter, with all relevant species considered, including those listed on Schedule 1 of the W&CA and qualifying features of protected sites with potential connectivity to the Site. As summarised in this Table, comments from both NatureScot and the RSPB have been taken into account when completing the OIA presented in this chapter.
	Advised that an assessment of the impacts to birds through collision, disturbance, and displacement from foraging / breeding / roosting habitat will be required for both the Proposed Varied Development alone and cumulatively with other proposals.	As noted above, in terms of potential impacts on ornithological features, the only change between the Proposed Varied Development and Consented Development would be due to changes in collision risk, which is assessed in section 6.8 of this chapter for the Proposed Varied Development alone and section 6.11 for cumulative impacts. As described in section 6.2, potential disturbance and displacement impacts have been scoped out of the OIA.

	Further advised that the EIAR should be clear on the survey methods and any deviations from guidance on ornithology matters.	Survey methods, including any limitations, were detailed in **Volume 4, Technical Appendix 6.1: Ornithology** of the **2021 EIAR** for the Consented Development and are not repeated here. However, a summary of the completed baseline surveys is presented in section 6.5 of this chapter, along with details of the updated breeding eagle surveys completed in February and March 2025 (refer to **Volume 5, Confidential Annex**.
	<u>Proposed Ornithology Baseline</u> Noted that the Applicant proposes using flight activity data gathered between October 2018 and August 2020 to inform the CRM, but according to NatureScot (2025a) guidance on recommended bird survey methods to inform impact assessment of onshore windfarms, data exceeding five years is invalid. Advised that updated vantage point (VP) surveys are required to confirm current flight activity (two full years, unless shorter periods are justified). Further advised that it was not clear in the Scoping Report when the other ornithological surveys (moorland breeding birds, breeding raptors, divers, and back grouse lek surveys) were conducted, and therefore, THC are unable to comment on the proposed baseline. Advised that data more than five years old must be repeated as per NatureScot (2025a) guidance.	As detailed in the Scoping Report, the approach for the OIA for the Proposed Varied Development follows Nature Scot (2024a) guidance on proposals for the variation of section 36 wind farm consents, which states that, "*For birds, in the majority of cases where the number and location of turbines are not changing, all that will be needed is a re-working of the collision risk model, rather than new survey work.*" This, rather than the 2025a NatureScot guidance is considered to be relevant in this instance, because the latter largely relates to proposed new developments. In their Scoping Opinion comments (detailed above), NatureScot confirmed their agreement with this approach and did not recommend any further surveys. Details of relevant survey data (including dates) are included in **Volume 4, Technical Appendix 6.1: Ornithology** of the **2021 EIAR** for the Consented Development and are not repeated here, although a summary is provided in section 6.5 of this chapter for reference. Updated eagle surveys were completed in February and March 2025 (refer to **Volume 5, Confidential Annex**) and details are also provided in section 6.5 of this chapter.
	<u>Proposed Scoped Out Effects</u> Agreed with the proposal to scope out disturbance, displacement and habitat loss effects, citing previously	See previous response.

	approved mitigation (BBPP), if the baseline data remain valid (less than five years old), but with a new baseline, the scoping must be reconsidered.	
	<u>Proposed Approach to Evaluation and Impact Assessment Methods</u> Agreed that revised CRM using the Band model (per 2021 EIAR) should be completed, subject to a review of any updates to collision avoidance rates. Further advised that impacts from disturbance, displacement and habitat loss effects must be considered in the EIAR, should new baseline data scope in receptors.	As detailed in 6.4 of this chapter, revised CRM was completed for the Proposed Varied Development. Avoidance rates for IOFs scoped into the assessment were based on current (2025b) NatureScot guidance. As noted above, the existing baseline data are considered valid and has been supplemented with updated breeding eagle surveys, which were completed in 2025 (refer **Volume 5, Confidential Annex**). Considering the baseline data are still considered to be valid and the relatively limited changes made for the Proposed Varied Development, the conclusions of the 2021 OIA regarding potential disturbance, displacement and habitat loss effects of the Consented Development on IOFs are still considered to be valid for the Proposed Varied Development, and a revised assessment of these effects has been 'scoped out. This is in line with NatureScot (2024a) guidance and, as noted above, NatureScot have confirmed their agreement with this approach.
	<u>Cumulative Assessment</u> Advised that the revised CRM must review cumulative impacts from new/approved proposals within the same NHZ.	An updated cumulative assessment has been completed for relevant IOFs (golden eagle and white-tailed eagle), and includes proposed developments submitted since the 2021 EIAR for the Consented Development. See section 6.11 of this chapter.
NatureScot **14 July 2025**	Agreed that due to the increase in turbine dimensions, CRM should be scoped in for red-throated diver, Slavonian grebe, black grouse, golden eagle, greenshank and golden plover. Advised that revised	Noted. Revised CRM has been completed for greenshank, and golden eagle, as well as six additional target species (greylag goose, osprey, goshawk, red kite, white-tailed eagle and peregrine), and the results are presented in section 6.6 of this

	collision risk calculations should be presented in the EIAR and, where appropriate, in combination with other wind farm developments.	chapter, with the updated assessment of collision risk presented in section 6.8. An updated cumulative collision risk assessment has also been completed for golden eagle (as well as white-tailed eagle). Details are presented in section 6.11 of this chapter. However, as per the CRM for the Consented Development, black grouse, Slavonian grebe and golden plover were scoped out of the revised CRM as no at-risk flights were recorded. There is not considered to be any change to collision risk effects on these three species from the Proposed Varied Development compared with the Consented Development. Red-throated diver was also scoped out of the revised CRM as, based on the turbine parameters for the Proposed Varied Development, all flights were below PCH.
	Also highlighted that their CRM guidance has been updated (NatureScot, 2024b).	Although reference was made to the revised CRM guidance (NatureScot, 2024b), the method for the revised CRM was based on Band (2000) as the revised CRM guidance contains insufficient detail. Additionally, the flight activity dataset was collected based on methods designed for the earlier guidance, and use of this guidance was retained to ensure consistency with earlier CRM completed for the Consented.

6.3.6 For reference, a summary of the Section 36 planning conditions relating to ornithological issues for the Consented Development is provided below in **Table 6.3**. These conditions correspond to consultation responses for the Consented Development and mitigation measures to reduce effects to IOFs proposed in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** for the Consented Development. The Applicant has prepared and submitted plans to satisfy the pre-commencement elements of several planning conditions and, where these plans have been approved by the Highland Council and NatureScot and where they are relevant to this EIAR, these reports have been included as **Technical Appendices** to chapter 3 in **Volume 4**. Where relevant, the mitigation contained in the plans has been considered as part of the OIA and the relevance to this ornithology chapter is summarised in Table 6.3.

6.3.7 The planning commitments agreed for the Consented Development will be adhered to for the Proposed Varied Development. The Applicant expects that similar conditions may be imposed for the Proposed Varied Development, and any additional mitigation identified through this OIA will be incorporated into updated plans as required.

Table 6.3: Summary of Planning Conditions of the Consented Development with relevance to ornithology.

Planning Condition	Reason	Elements of the Planning Condition of Particular Relevance to Ornithology	Relevance to Proposed Varied Development OIA
12. ECoW	"*To secure effective monitoring of and compliance with the environmental mitigation and management measures associated with the Development during the decommissioning, restoration, and aftercare phases*."	*"(1) No development or Site Enabling Works shall take place unless and until the terms of appointment of an independent Ecological Clerk of Works ("ECoW") by the Company have been submitted to and approved in writing by the Planning Authority (in consultation with NatureScot and SEPA). The terms of appointment shall:* *(a) impose a duty to monitor compliance with the ecological, ornithological and hydrological commitments provided in the Environmental Impact Assessment Report ("the EIAR"), the Additional Information Report and other information lodged in support of the Application, the Construction Environmental Management Plan (condition 13), the Peat Management Plan (condition 17), the Habitat Management Plan (condition 18), the Species Specific Surveys and Protection Plans (condition 13(2)(m)) and other plans approved in terms of the conditions of this planning permission ("the ECoW Works")*".	The terms of appointment of an independent ECoW were submitted and approved in writing by the Planning Authority (in consultation with NatureScot and the Scottish Environment Protection Agency (SEPA)) for the Consented Development to satisfy Planning Condition 12. This includes monitoring compliance with the ornithological commitments provided in the 2021 EIAR, and the Construction Environmental Management Plan (CEMP), HMP and BBPP for the Consented Development. The Applicant expects terms to be reviewed but will be similar for the Proposed Varied Development.
13. CEMP	"*To ensure that all construction operations are carried out in a manner that minimises their impact on road safety, amenity, and the environment, and that the mitigation measures*	*"(2) The CEMP for each phase of works or development shall include (but is not limited to);…* *(m) Species specific surveys and Protection Plans carried out at an appropriate time of year for the species concerned, by a suitably qualified person. The surveys shall cover black grouse, slavonian grebe, golden eagle, greenshank, golden plover, black and red divers [ ]. The survey results and any mitigation measures required for*	A BBPP was submitted and approved for the Consented Development to satisfy Planning Condition 13, part (m). This is included for reference purposes as **Technical Appendix 3.6i.**

	contained in the Environmental Impact Assessment Report which accompanied the application, or as otherwise agreed, are fully implemented."	*these species on site shall be set out in a species mitigation and management plan, which shall inform construction activities".*	The measures in the BBPP remain applicable to and appropriate for the Proposed Varied Development.
18. Habitat Management Plan	"*In the interests of protecting ecological features*."	*"(1) No development, with the exception of the Site Enabling Works, shall commence unless and until a finalised Habitat Management Plan ("HMP"), has been submitted to, and approved in writing by the Planning Authority in consultation with NatureScot, and SEPA. The information shall include: [ ]* *(d) a scheme for planting of montane vegetation (such as juniper and willow)…;* *(e) a suitable area to leave deer stalking grallochs or carcasses outwith the windfarm development area;* *(f) a scheme for the delivery of biodiversity enhancement which shall include an emphasis on biodiversity enhancements for black grouse and golden eagle;* *(g) a scheme for the protection and enhancement of the Golden Eagle population has been submitted to and approved in writing by the Planning Authority. For the avoidance of doubt the scheme shall deliver aims and objectives which complement those of the Regional Eagle Conservation Management Plan. Thereafter the approved scheme shall be implemented through the construction, operation and decommissioning of the Development.*	The 2024 final HMP for the Consented Development was submitted and approved by Highland Council to satisfy planning condition 18. This is included for reference purposes as **Technical Appendix 3.6a.** The final HMP contains montane vegetation planting proposals which will provide suitable habitat for black grouse, whilst maintaining areas of open ground for golden eagle foraging. A separate Biodiversity Net Gain report was also submitted and is included as **Technical Appendix 3.6c**. The quantitative and qualitative BNG assessment measures the change in biodiversity value that will occur and demonstrates that the HMP provides biodiversity enhancements (in accordance with the National Planning Framework 4 (NPF4), with an emphasis on

		(h) the provision for regular monitoring and review to be undertaken to consider whether amendments are needed to better meet the habitat plan objectives [ ]"	enhancements for black grouse and golden eagle. The final HMP commits to supporting the RECMP through the purchase of satellite tags, assistance in satellite tagging work within NHZ 10 and NHZ 7 and the satellite transmission costs (and/or equivalent value) for 10 years for each satellite tag (2 and 3 satellite tags over the period of the operation of the wind farm). The 2024 DMP submitted for the Consented Development (refer to planning conditions 18 & 20 below and **Technical Appendix 3.6d**) addresses the requirement for deer stalking grallochs or carcasses to be left outwith the footprint of the Consented Development. The relevant measures in the 2024 HMP (and DMP) remain applicable to and appropriate for the Proposed Varied Development.
20. Deer Management Plan	*"To protect ecological interests."*	*"No development, with the exception with the exception [sic] of the Site Enabling Works, shall commence until a Deer Management Plan ("DMP") has been submitted to and approved in writing by the Planning Authority in consultation with NatureScot. The DMP will set out proposed long term management of deer using the*	The 2024 DMP for the Consented Development was submitted and approved (along with the HMP and BNG reports) to satisfy the requirements of planning condition 20.

		Development site and shall provide for the monitoring of deer numbers on site [ ]".	Although not specifically prescribed within Planning Condition 20, the DMP is likely to result in wider enhancement to habitats through a reduction in grazing pressure which, in conjunction with the habitat management measures delivered via the 2024 HMP, will benefit breeding birds. The relevant measures in the 2024 DMP remain applicable to and appropriate for the Proposed Varied Development.
24. Site Decommissioning, Restoration and Aftercare	"*To ensure the decommissioning and removal of the Development in an appropriate and environmentally acceptable manner and the restoration and aftercare of the site, in the interests of safety, amenity and environmental protection*."	*"(4) The detailed decommissioning, restoration and aftercare plan shall provide updated and detailed proposals, [ ] and environment management provisions which shall include [ ]:.* *(m) a species protection plan based on surveys for protected species (including birds) carried out no longer than eighteen months prior to submission of the plan".*	The Applicant expects to adhere to a similar condition for the Proposed Varied Development at the time of decommissioning.

6.4 Assessment Methodology

6.4.1 With the exception of CRM, the assessment methodology for the Proposed Varied Development is the same as that for the Consented Development, described in Volume 1, Chapter 6: Ornithology of the 2021 EIAR for the Consented Development, and is not repeated here. Further details of the CRM methods are presented in the following sections.

Collision Risk Modelling

6.4.2 The CRM was completed based on the same 2-year flight activity dataset as the original CRM undertaken for the Consented Development as part of the 2021 EIAR. The revised CRM is based on the Proposed Varied Development design of 2025. The dataset was collected from October 2018 to August 2020 as part of the ornithology baseline surveys carried out for the 2021 EIAR submission for the Consented Development. These flight activity surveys were carried out following NatureScot (2017) guidance, which was current at the time (but has since been revised). Full details of the flight activity survey methods and results are provided in **2021 EIAR, Volume 4, Technical Appendix 6.1: Ornithology**.

6.4.3 With the exception of the turbine parameters and locations, as far as possible, the same CRM methods were followed for the Proposed Varied Development as for the Consented Development, which followed Band (2000) guidance. It is acknowledged that NatureScot has recently updated this guidance (NatureScot, 2024b); however, as the flight activity dataset was collected based on methods designed for the earlier guidance, and to ensure consistency with earlier CRM completed for the Consented Development, use of the earlier guidance was retained for this revised CRM based on the Proposed Varied Development. Some bird biometrics used in the revised CRM for the Proposed Varied Development also differed to those used for the CRM for the Consented Development, because the source(s) of the latter were unknown.

Turbine Parameters and Bird Biometric Data

6.4.4 A summary of the CRA and turbine parameters used for the Consented Development and Proposed Varied Development is presented in **Table 6.4**, while bird biometric data are presented in **Table 6.5**.

6.4.5 The CRA for the Proposed Varied Development was calculated in GIS by drawing a concave hull around the outermost turbines and adding a 500m buffer. A slightly different approach was used to determine the CRA for the

Consented Development, which was based on GIS Delaunay Triangulation[2] from the proposed turbine with a 500m buffer added around this.

6.4.6 Note that several candidate turbine models are under consideration for the Proposed Varied Development. Therefore, the parameters for the revised CRM were based on a 'worst-case scenario' (in terms of potential rotor swept height) of a minimum potential air gap (the distance from the ground to the lowest blade sweep) of 67m and a maximum tip height of 230m.

Table 6.4: Summary of CRA and Turbine Parameters for the Consented Development and Proposed Varied Development CRM

Parameter	Consented Development	Proposed Varied Development
Number of turbines in array	18*	15
CRA (ha)	800.86	710.40
Blade (rotor) diameter (m)	158	163
Turbine radius (m)	79	82.35
Tower (hub) height (m)	101	148.5
Turbine height to maximum blade tip (m)	180	230
Air gap from ground to lowest blade sweep (m)	22	67
Blade depth (m)	1.61	4.7
Maximum chord (m)	4	4.3
Rotation period (s)	6.18	4.76
Blade pitch (degrees)	15	15
***Note that the Consented Development and Proposed Varied Development both comprise a similar 15- turbine layout, whereas the CRM completed for the Consented Development was based on an earlier, 18-turbine iteration**		

[2] Delaunay triangulation is a form of mathematical/computational geometry where a given set of points (in this case the turbine locations) are all joined to create discrete triangles. Further information is available online: https://uk.mathworks.com/help/matlab/math/delaunay-triangulation.html [Accessed September 2025].

Table 6.5: Summary of Bird Biometrics for the Consented Development and Proposed Varied Development CRM

Species	Avoidance rate*	Consented Development			Proposed Varied Development		
		Length (m)	Wingspan (m)	Assumed flight speed (ms^{-1})	Length (m)**	Wingspan (m)**	Assumed flight speed***
Greylag goose	0.998	-	-	-	0.82	1.64	17.2
Greenshank	0.98	0.315	0.69	14	0.32	0.69	12.3
Red-throated diver	0.995	0.73	1.3	17	-	-	-
Osprey	0.98	0.58	1.7	11.4	0.56	1.58	11.4
Golden eagle	0.99	0.90	2.12	15	0.82	2.12	11.9
Goshawk	0.98	0.62	1.65	9.7	0.55	1.5	11.3
Red kite	0.99	0.66	1.95	12	0.63	1.85	12.0
White-tailed eagle	0.95	0.90	2.4	13.6	0.8	2.2	11.3
Peregrine	0.98	-	-	-	0.42	1.02	12.1**

***From NatureScot (2025b) guidance; avoidance rates used for the 2021 CRM for the Consented Development were also consistent with these rates**

****From Snow & Perrins (1998)**

*****From Alerstam *et al*. (2007)**

Turbine Operation Time

6.4.7 The basic model used for CRM typically assumes that turbines are operational 85% of the time. However, the UK Government publishes load factor numbers which can be used to provide a realistic output, using best scientific evidence. The load factor is calculated by RenewableUK as a rolling average of the past five years using data (on an Unchanged Configuration Basis) from the Digest of UK Energy Statistics published by the Department for Energy Security and Net Zero (DESNZ), using statistics from 2019-2023 (released in July 2024) is 26.34% for onshore wind.

6.4.8 Load factors have been increasing over time due to technological innovation. DESNZ states in its CfD (Standard Terms) Regulations document that the load

factor for new build projects (for delivery years 2026-2029) is 44.8% for onshore wind (>5MW).

6.4.9 Given the above, in addition to running the CRM based on the default 85% turbine operation time, it has also been run based on 50% turbine operation time scenario, which is considered to remain precautionary but also more realistic than the default value.

Flight Height Bands

6.4.10 During the flight activity surveys completed between October 2018 and August 2020 (inclusive) to collect data to inform the CRM, flights were recorded and assigned to height bands to identify flights that where below, at, or above potential collision risk height (PCH). The following five height bands were used:

1. 0-20m;
2. 21-40m;
3. 41-100m;
4. 101-150m; and
5. >150m.

6.4.11 **Volume 4, Technical Appendix 6.1: Ornithology** of the **2021 EIAR** states that “Where the actual rotor blade altitude differs from the pre-defined survey height bands, the collision risk model accounts for this difference on the assumption of an even flight distribution within each particular survey height band, and an adjustment can be made to estimate total flight duration at actual rotor blade altitude.” However, it was not clear if or how that adjustment was made for the Consented Development CRM.

6.4.12 No such adjustments were made for the revised CRM for the Proposed Varied Development, which included all flights within the Collision Risk Area (CRA) at height bands 3 to 5 (i.e., >40m). As such, the approach followed was more precautionary compared to the Consented Development because some of the flights included in the CRM may have been below or above PCH. Red-throated diver was scoped out of the CRM as all flights within the CRA were at height bands 1 and 2.

Species Scoped Into the CRM

6.4.13 Flights recorded within the CRA at PCH are defined as 'at-risk' flights. At-risk flights by seven target species were recorded during the 2018-20 flight activities for the Consented Development, namely greenshank, red-throated diver, osprey, golden eagle, goshawk, red kite and white-tailed eagle. Although CRM was completed for all seven species, osprey, golden eagle, red

kite and white-tailed eagle were not considered to be IOFs and were scoped out of the OIA for the Consented Development.

6.4.14 Due to the change in turbine parameters for the Proposed Varied Development, the air gap has increased compared to that for the Consented Development. Consequently, there were no at-risk red-throated diver flights (because all flights within the CRA were below PCH) and therefore they were not included in the revised CRM. The six remaining species, namely osprey, golden eagle, goshawk, red kite and white-tailed eagle, were scoped into the CRM for the Proposed Varied Development. Two additional species were also scoped in, namely greylag goose and peregrine.

6.5 Consented Development EIAR Baseline

6.5.1 **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** details the baseline for the Site. Full details of the desk-based study and completed surveys are included in **Volume 4, Technical Appendix 6.1: Ornithology** of the **2021 EIAR** for the Consented Development and are not repeated here. For ease of reference, however, a list of completed surveys is provided below.

- Flight activity (VP) surveys (October 2018 to August 2020, inclusive);
- Scarce breeding bird surveys (February to August in 2019 and 2020);
- Breeding raptor surveys (2019 and 2020 breeding seasons);
- Black grouse surveys (April/May 2019; surveys were not undertaken in 2020 due to access restrictions relating to the Covid-19 pandemic);
- Breeding bird surveys (BBS) (April to July 2019 and May to July 2020; surveys were not undertaken in April 2020 due to access restrictions relating to the Covid-19 pandemic); and
- Winter walkover surveys (November to February in 2018-19 and 2019-20.

6.5.2 Since submission of the 2021 EIAR, breeding eagle surveys were completed in 2025 to update the existing baseline for golden and white-tailed eagles (refer to **Volume 5, Confidential Annex**). This included monitoring of a known golden eagle territory to check for any evidence of additional nest sites, as well as monitoring for any evidence of additional golden eagle territories or white-tailed eagle nests within a 2km study area.

6.5.3 Additionally, the Highland Raptor Study Group (HRSG) were contacted to request any updated records of eagles and other Schedule 1-listed raptor species for the period 2020-24.

6.5.4 A summary of the ornithological baseline is presented below.Predicted impacts on ornithological features presented in the 2021 EIAR are also summarised below.

Designated Sites

6.5.5 There are no statutory or non-statutory sites designated for ornithological interests within the boundary of the Proposed Varied Development (which remains the same as that for the Consented Development).

6.5.6 The following SPAs, which all include Slavonian grebe as a qualifying feature, were identified within 20km of the Site:

- Loch Knockie and Nearby Lochs SPA;
- North Inverness Lochs SPA;
- Glen Affric to Strathconon SPA;
- West Inverness-shire Lochs SPA; and
- Loch Ruthven SPA.

6.5.7 Potential effects of the Consented Development on these SPAs were considered separately as part of the HRA process in **Volume 4, Technical Appendix 6.4: Habitats Regulations Appraisal** of the **2021 EIAR**. It was concluded that the integrity of the identified SPAs will not be subject to likely significant effects and no objection was raised by NatureScot on the Consented Development application.

6.5.8 The following SSSIs and Ramsar sites within 20km of the Site which include Slavonian grebe as a notified/qualifying feature were scoped into **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** for the Consented Development:

- Knockie Lochs SSSI (a component of Loch Knockie and Nearby Lochs SPA);
- Dubh Lochs SSSI (a component of North Inverness Lochs SPA);
- Balnagrantach SSSI (a component of North Inverness Lochs SPA);
- Glendoe Lochans SSSI (a component of Loch Knockie and Nearby Lochs SPA); in addition to Slavonian grebe, breeding common scoter (*Melanitta nigra*) is a notified feature; and
- Loch Ruthven SSSI and Ramsar site (this site is also an SPA); in addition to Slavonian grebe, the breeding bird assemblage is a notified feature of the SSSI.

Species

6.5.9 Wildfowl: goose species were infrequently recorded during the 2018-20 baseline surveys for the Consented Development, with a small number of migratory greylag goose flights (up to 50 birds) and pink-footed goose flights (up to 140 birds) recorded above the Site. There was no evidence that these species made any use of habitats within the Site. As no ‘at-risk’ wildfowl flights were recorded during the 2018-20 flight activity surveys, CRM was not

completed for any wildfowl species and wildfowl were scoped out of the OIA for the Consented Development.

6.5.10 Black grouse: four lek locations were identified within the black grouse study area during the 2019 baseline surveys, the largest of which (and most frequently used lek) was attended by up to ten males and two females. As no flights were recorded during the 2018-20 flight activity surveys, however, CRM was not completed. Black grouse was assessed as being of Medium Nature Conservation Importance and scoped into the 2021 OIA for the Consented Development.

6.5.11 Slavonian grebe: During 2019 baseline surveys for the Consented Development, a pair of Slavonian grebe successfully bred on a lochan outside the Site but within the study area. In 2020 the lochan was again occupied by a pair but it was likely that the breeding attempt failed. An additional loch within the study area buffer had a pair present in 2020, but breeding success could not be confirmed. A third pair was also recorded in the wider area. As no flights were recorded during the 2018-20 flight activity surveys, however, CRM was not completed. Slavonian grebe was assessed as being of High Nature Conservation Importance and scoped into the 2021 OIA for the Consented Development.

6.5.12 Waders: nine wader species were recorded within the study area during baseline surveys for the Consented Development, almost exclusively during the breeding seasons. Of these, six displayed signs of breeding: golden plover, curlew (*Numenius arquata*), dunlin (*Calidris alpina*), snipe (*Gallinago gallinago*), common sandpiper (*Actitis hypoleucos*) and greenshank with non-breeding lapwing (*Vanellus vanellus*), ringed plover (*Charadrius hiaticula*) and woodcock (*Scolopax rusticola*) also recorded very occasionally. With the exception of golden plover and greenshank, wader species were scoped out of the OIA for the Consented Development because they were either not breeding or breeding in low numbers within the context of likely NHZ 7 populations, generally in areas away from infrastructure, with consequently low or zero collision rates predicted. Golden plover and greenshank were both assessed as being of Medium Nature Conservation Importance; CRM was completed for greenshank but not golden plover (due to there being no at-risk flights).

6.5.13 Red-throated diver: activity was recorded at a number of locations during the 2019 and 2020 baseline surveys, with breeding considered to be possible (but unconfirmed) at a single location in 2020 only. A total of seven flights were recorded during the 2018-20 flight activity surveys and CRM was completed for this species. Red-throated diver was assessed as being of Medium Nature Conservation Importance and scoped into the 2021 OIA for the Consented Development.

6.5.14 Black-throated diver: there were occasional registrations of black-throated diver during the 2019-20 baseline surveys for the Consented Development,

but neither of the two flights recorded during the flight activity surveys were at-risk, and it was concluded that breeding did not take place within the survey area, with the nearest lochs used (by non-breeding birds) located over 1.5km to the west of the Consented Development. CRM was not completed for this species and it was scoped out of the OIA for the Consented Development presented in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**.

6.5.15 Golden eagle: the Site overlaps with an occupied golden eagle territory. Although territorial behaviour has been observed, including during the 2019 and 2020 baseline surveys for the Consented Development, no breeding attempts have been recorded to date. A further four potential golden eagle nest/roost locations were identified by surveyors over 1km from the Site during the baseline surveys. Regular golden eagle flight activity was observed throughout both survey years, with a total of 90 flights recorded during the 2018-20 flight activity surveys. Most flight activity was recorded outside of the Site, in areas closer to potential nest/roost sites. CRM was completed for golden eagle, which was assessed as being of Medium Nature Conservation Importance and scoped into the 2021 OIA for the Consented Development.

6.5.16 The 2025 eagle surveys confirmed the continued occupation of the occupied golden eagle territory, with an adult pair recorded displaying extensively across the territory range in mid-February. No new golden eagle nest or roost locations within this territory were identified during the surveys and there was no evidence of any other golden eagle territories within the 2km study area. The HRSG did not provide any additional golden eagle records for the period 2020-24 (and the occupied territory is not actively monitored by them). Based on the results of the monitoring, it was concluded that 2025 golden eagle behaviour within and around the Site was comparable to that recorded during the original baseline surveys completed between October 2018 and August 2020, demonstrating that the original baseline data can still be considered representative of breeding eagle activity in the area, (refer to **Volume 5, Confidential Annex** for further details).

6.5.17 Other raptors: no other breeding raptors were identified on Site or within 2km of the Consented Development during the baseline survey period for the Consented Development. Merlin (*Falco columbarius*) is known to have bred within the 2km survey area historically, and may have bred in the wider area during the 2019 baseline surveys for the Consented Development. There were also occasional flights of osprey, goshawk, hen harrier (*Circus cyaneus*), red kite, white-tailed eagle and peregrine, but there was no evidence that any of these species were breeding in the surrounding area. No at-risk hen harrier, merlin or peregrine flights were recorded based on the turbine parameters for the Consented Development, but CRM was completed for the other four raptor species (osprey, goshawk red kite and white-tailed eagle). All seven raptor species were scoped out of the 2021 OIA due to the absence of breeding evidence within 2km of the Site, low levels of flight activity recorded during

baseline surveys and low predicted collision rates (where CRM was completed).

6.5.18 No white-tailed eagles or evidence of any nests were recorded during the surveys in February and March 2025. The HRSG did not provide any records of white-tailed eagle or any other breeding Schedule 1-listed raptor species within the 2km study area for the period 2020-24 (refer to **Volume 5, Confidential Annex** for further details). Thus, there are no new white-tailed eagle territories (or records of other Schedule 1-listed breeding raptor) in the area and the 2018-20 data can still be considered representative of breeding white-tailed eagle activity in the area.

6.5.19 To summarise, the following six species of Medium or High Nature Conservation Importance present within the Site or surrounding area (as confirmed through survey results and consultations) were scoped into the OIA for the Consented Development: black grouse, Slavonian grebe, golden plover, greenshank, red-throated diver and golden eagle.

6.6 Predicted Collision Risk for the Consented Development and Proposed Varied Development

6.6.1 Predicted mean annual/seasonal collision risk for the Consented Development and Proposed Varied Development based on 85% turbine operation time is presented in **Table 6.6**.

Table 6.6: Summary of mean annual/seasonal collision risk from the Consented Development and Proposed Varied Development for relevant IOFs based on 85% turbine operation time

Species		Consented Development			Proposed Varied Development		
	Period*	Mean Collision Risk (across two years)**	No. of Years per Collision	Approx. Total Collisions during 50-year Lifespan	Mean Collision Risk (across two years)**	No. of Years per Collision	Approx. Total Collisions during 50-year Lifespan[3]
Greylag goose	Annual (BS only)	0***	0***	0***	0.004	227.7	<1
Greenshank	Annual (BS only)	0.006	169.9	<1	0.066	15.1	3

[3] Rounded up or down to the nearest whole number, since it is only possible to kill a whole bird

Red-throated diver	Annual (BS only)	0.004	226.3	<1	0**	0**	0**
Osprey	Annual (BS only)	0.015	68.5	<1	0.069	14.6	4
Golden eagle	NBS	0.064			0.109		
	BS	0.116			0.160		
	Annual	0.180	5.6	9	0.269	3.7	14
Goshawk	Annual (NBS only)	0.009	109.6	<1	0.019	52.9	1
Red kite	Annual (NBS only)	0.025	39.9	1	0.028	36.1	1
White-tailed eagle	NBS	0.045			0.024		
	BS	0.005			0.314		
	Annual	0.050	20.0	3	0.338	3.0	17
Peregrine	Annual (NBS only)	0**	0**	0**	0.001	738.3	<1

***BS = breeding season; NBS = non-breeding season; for the Proposed Varied Development CRM completed for the these were based on species-specific breeding seasons defined by NatureScot, 2014); for the Consented Development season definitions for species groups are provided in Table E-4 within the 2021 EIAR, Volume 4, Technical Appendix 6.1: Ornithology**

****Based on avoidance rates of 95% for white-tailed eagle, 98% for greenshank, osprey, goshawk and peregrine; 99% for golden eagle and red kite; 99.5% for red-throated diver; and 99.8% for greylag goose, in accordance with NatureScot (2025b) guidance**

*****No at-risk flights recorded, therefore CRM not completed**

6.6.2 Additionally, predicted mean annual/seasonal collision risk for the Proposed Varied Development based on 50% turbine operation time is presented in **Table 6.7** (with the results for the default 85% operation time also included for comparison.

Table 6.7: Summary of mean annual/seasonal collision risk to relevant IOFs from the Proposed Varied Development based on a more realistic 50% turbine operation time scenario (with results for the default 85% scenario included for comparison)

Species (and Season)	Period*	50% Turbine Operation Time			85% Turbine Operation Time		
		Mean Collision Risk (across two years)**	No. of Years per Collision	Approx. Total Collisions during 50-year Lifespan	Collision Risk*	No. of Years per Collision	Approx. Total Collisions during 50-year Lifespan[3]
Greylag goose	Annual (BS only)	0.003	387.1	<1	0.004	227.7	<1
Greenshank	Annual (BS only)	0.039	25.6	2	0.066	15.1	3
Osprey	Annual (BS only)	0.040	24.8	2	0.069	14.6	4
Golden eagle	NBS	0.064			0.109		
	BS	0.094			0.160		
	Annual	0.158	6.3	8	0.269	3.7	14
Goshawk	Annual (NBS only)	0.011	89.9	1	0.019	52.9	1
Red kite	Annual (NBS only)	0.016	61.3	1	0.028	36.1	1
White-tailed eagle	NBS	0.014			0.024		
	BS	0.185			0.314		
	Annual	0.199	5.0	10	0.338	3.0	17
Peregrine	Annual (NBS only)	0.001	1,255.1	<1	0.001	738.3	<1

6.7 Summary of Effects Predicted & Mitigation Measures suggested for the Consented Development

Predicted Effects on IOFs

Statutory Sites

6.7.1 Potential effects of the Consented Development on Slavonian grebe, which was the only IOF that was a qualifying feature of relevant statutory sites, are discussed in the species section below.

6.7.2 Likely Significant Effects (LSEs) in HRA terms could not be definitively excluded for the Slavonian grebe qualifying interest of the Loch Knockie and Nearby Lochs SPA, North Inverness Lochs SPA or West Inverness-shire Lochs SPA. Consequently, the Scottish Government, as competent authority, was required to carry out an AA in view of the site's conservation objectives for its qualifying features. To assist with the AA, a HRA Report was presented as **Volume 4, Technical Appendix 6.4: Habitats Regulations Appraisal** of the **2021 EIAR**. Based on this information, it was concluded that the Consented Development would not adversely affect the integrity of any of the SPAs.

Species

6.7.3 This chapter focuses on an updated assessment of the effects of collision risk associated with the Proposed Varied Development. As other predicted effects are considered to be the same as those for the Consented Development, they have been scoped out of the OIA for the Proposed Varied Development. For ease of reference, however, a summary of predicted effects of the Consented Development on species identified as IOFs is presented in **Table 6.8**.

6.7.4 For the avoidance of doubt, for this assessment for the Consented Develoment assessment, **Major** and **Moderate** effects are considered 'Significant' in EIA terms, while **Minor** and **Negligible** effects are regarded as 'Not Significant'.

Table 6.8: Summary of predicted effects of the Consented Development on IOFs

IOF	Importance of IOF	Stage of Consented Development and Type of Impact	Significance of Likely Effect	Mitigation Measure (refer to Volume 5, Confidential Annex)	Significance of Residual Effect
Black grouse	Medium	Construction and decommissioning: displacement (due to disturbance or direct habitat loss)	Minor adverse effect, potentially significant	• Pre-construction surveys • Implementation of BBPP, including measures to avoid lek site disturbance	Minor adverse effect, not significant
		Operation: displacement	Minor adverse effect, not significant	• HMP enhancement (native woodland/ scrub planting)	Minor adverse effect, not significant
		Operation: collision risk	Negligible adverse effect, not significant	None required	Negligible adverse effect, not significant
Slavonian grebe	High	Construction and decommissioning: displacement (due to disturbance only)	Minor adverse effect, not significant	• Pre-construction surveys • Implementation of BBPP	Minor adverse effect, not significant
		Operation: displacement	Minor adverse effect, not significant	None required	Minor adverse effect, not significant
		Operation: collision risk	Negligible adverse effect, not significant	None required	Negligible adverse effect, not significant
Golden plover	Medium	Construction and decommissioning: displacement (due to disturbance or direct habitat loss)	Minor adverse effect, not significant	• Pre-construction surveys • Implementation of BBPP	Minor adverse effect, not significant
		Operation: displacement	Minor adverse effect, not significant	• None required	Minor adverse effect, not significant
		Operation: collision risk	Minor adverse effect, not significant	None required	Negligible adverse effect, not significant
Greenshank	Medium	Construction and decommissioning: displacement	Minor adverse effect, not significant	• Pre-construction surveys • Implementation of BBPP	Minor adverse effect, not significant

		(due to disturbance or direct habitat loss)			
		Operation: displacement	Minor adverse effect, not significant	• None required	Minor adverse effect, not significant
		Operation: collision risk	Negligible adverse effect, not significant	None required	Negligible adverse effect, not significant
Red-throated diver	Medium	Construction and decommissioning: displacement (due to disturbance only)	Minor adverse effect, not significant	• Pre-construction surveys. • Implementation of BBPP	Minor adverse effect, not significant
		Operation: displacement	Minor adverse effect, not significant	• Artificial nest raft	Minor adverse effect, not significant
		Operation: collision risk	Negligible adverse effect, not significant	None required	Negligible adverse effect, not significant
Golden eagle	Medium	Construction and decommissioning: displacement (due to disturbance or direct habitat loss)	Minor adverse effect, not significant	• Pre-construction surveys. • Implementation of BBPP	Minor adverse effect, not significant
		Operation: displacement	Minor adverse effect, not significant	• HMP enhancement (native woodland/ scrub planting) • Monitoring programme	Minor adverse effect, not significant
		Operation: collision risk	Minor adverse effect, not significant	None required	Minor adverse effect, not significant

Mitigation and Enhancements

6.7.5 As can be seen from **Table 6.8**, in terms of the EIA Regulations, the only **potentially significant effect** predicted for any IOF was: displacement of black grouse (due to disturbance or direct habitat loss) during the construction and decommissioning phases of the Consented Development. However, as good practice, mitigation and enhancement measures were proposed to avoid and reduce the risk of adverse effects on all IOFs and therefore the predicted residual effect of the Proposed Varied Development on black grouse is reduced to "*Minor adverse effect, not significant*". The following sections outline these measures during each phase of the Consented Development.

6.7.6 Further information is presented in the final (2024) HMP and the (2024) BBPP for the Consented Development, which were submitted in 2024 and approved by THC and NatureScot to satisfy Planning Conditions 13 and 18 (refer to **Technical Appendices 3.6a and 3.6i** respectively).

Construction Phase: all Breeding Birds

6.7.7 Mitigation measures will be implemented during construction to ensure all relevant legislation is complied with, including preventing damage to any wild bird nests and avoiding disturbance to species listed on Schedule 1 of the W&CA and/or Annex I of the Birds Directive. This will be achieved by:

- The implementation of the approved 2024 BBPP, as part of the CEMP planning condition. This details the survey methods and mitigation required for protecting any breeding birds that may be impacted by construction activities. It also sets out the role of the Ecological Clerk of Works (ECoW), who will oversee implementation of the BBPP during construction; and
- As part of the BBPP, pre-construction surveys (a generic BBS and targeted surveys for lekking black grouse, and breeding Slavonian grebe, divers and golden eagle) will also be undertaken by a suitably experienced ornithologist, to inform the detailed measures required to ensure effective implementation of other BPMP measures to protect breeding birds.

Construction Phase: Lekking Black Grouse

6.7.8 To avoid a significant disturbance effect occurring during construction, the approved (2024) BBPP also extends to protection of black grouse leks (as well as nest sites). If pre-construction surveys do record lekking black grouse within a potential disturbance zone (up to 750m of any proposed works), construction activities will not commence until two hours after sunrise and will cease two hours before sunset, during the period between March and May

(inclusive). Black grouse lekking constraint areas are indicated on **Figure 2.10: Environmental Constraints**.

6.7.9 Restrictions to construction activity would likely be within two hours of dawn during core lekking period of March to May, but the exact timing and/or distance of any disturbance-free zone would be agreed with NatureScot, within which any construction activity that is considered to be potentially disturbing would be prohibited in that area until the core lekking period has passed.

Operational Phase: Black Grouse

6.7.10 The seasonal No Stopping / No Parking restrictions along the part of the access track closest to the largest black grouse lek (Lek 1 in **Volume 2, Figure 6.6: Black Grouse Lek Locations 2009-19** of the **2021 EIAR**), as implemented for the operational Bhlaraidh Wind Farm would continue to be followed during the operational period of the Consented Development (refer to **Figure 2.10: Environmental Constraints**).

6.7.11 The planting of Caledonian woodland and montane scrub proposed in the final (2024) HMP would provide suitable habitat and food sources for black grouse, thus providing enhanced habitat for this species.

6.7.12 Additionally, the approved 2024 DMP for the Consented Development commits to removal of deer fencing, which will benefit black grouse, while the peatland/bog restoration that will be delivered via the 2024 HMP, combined with a reduction in deer grazing pressure resulting from the DMP measures, is likely to benefit a range of breeding birds, including black grouse

Operational Phase: Divers

6.7.13 As identified in the section 6.9, **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**, the location of Consented Development turbines alongside the Operational Development may cause a displacement/barrier effect for red-throated divers trying to use some lochs within the Site. Although no significant effects on the NHZ 7 population are predicted, to help breeding divers, a single loch has been identified as suitable for installation of an artificial nesting raft. It was noted in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** that very few diver breeding attempts have been recorded in the local area, despite a number of lochs being used by red-throated and black-throated divers, which may be due to the unsuitability of lochs for natural nest sites, risk of flooding, or risk of predation. The artificial raft would therefore help combat these risks and provide a more secure nesting site, for one or both diver species. To ensure the best chance of breeding success, the raft would be monitored and

maintained on an annual basis, and kept free from any competition, e.g., by nesting gulls or wildfowl.

Operational Phase: Golden Eagle

6.7.14 Although it was concluded in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** that there would be no significant effects on golden eagle during any phase of the Consented Development, the planting of Caledonian woodland and montane scrub proposed in the final (2024) HMP would benefit golden eagle by improving habitat suitability for prey species, including grouse and hares.

6.7.15 As detailed in the final (2024) HMP for the Consented Development, planting of low-density native woodland and/or montane scrub is proposed to the south-east of the Site between Carn Mor and Meall Doire Bhrath, which is in an area predicted to have relatively high usage/suitability within the known golden eagle breeding territory, according to the golden eagle territory (GET) model submitted in support of the **2021 EIAR** (**Volume 5, Confidential Figure 6.2.1: Golden Eagle GET Model and Activity (October 2018 to August 2020**)), but importantly not too close to restrict access to potential nest sites. Hill slopes would be selected for planting, but areas around crags would be left unplanted for perching/roosting purposes, and some open ground (at least 15%) will be maintained within the planting area to allow foraging.

6.7.16 Additionally, as proposed in the final (2024) HMP, the Applicant would support research on golden eagle through the funding of 2-4 golden eagle satellite tags over the operational period of the Consented Development, as well as the associated satellite transmission costs for a period of 10 years for each tag, and assistance in satellite tagging work within NHZ 7 and the neighbouring NHZ 10. This would continue other research funded by the Applicant as part of the RECMP.

6.8 Revised Assessment of Effects for the Proposed Varied Development

6.8.1 Based on the methods described in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**, greylag goose is considered to be of Low Nature Conservation Importance, and the results of the revised CRM for the Proposed Varied Development show that collision risk to this species is negligible, with no potential for any population-level effects, either from the Proposed Varied Development alone, or cumulatively with other developments in NHZ 7. As such, collision risk to this species is not considered further and it is scoped out of the revised assessment of effects for the Proposed Varied Development.

6.8.2 Similarly, no goshawk, red kite or peregrine breeding territories have been identified within 2km of the Site and revised collision rates for the Proposed

Varied Development were **Negligible** (no more than a single individual of each species across the 50-year lifespan of the Proposed Varied Development), with no potential for any population-level effects, either from the Proposed Varied Development alone, or cumulatively with other developments in NHZ 7. As such, collision risk to these species is not considered further and it is scoped out of the revised assessment of effects for the Proposed Varied Development.

6.8.3 Based on the turbine parameters for the Proposed Varied Development, there were no at-risk flights of black grouse, Slavonian grebe, golden plover or red-throated diver. Therefore, although these species are all considered to be IOFs, revised CRM was not completed for these species and collision risk is considered to be **Negligible**, with no potential for any population-level effects.

6.8.4 Potential effects of collision risk from the Proposed Varied Development alone on the remaining IOFs for which revised CRM was completed (greenshank, osprey, golden eagle and white-tailed eagle) are considered in the following sections.

Greenshank

6.8.5 Based on turbine parameters for the Proposed Varied Development, a single at-risk greenshank flight was recorded during the 2020 breeding season. The mean breeding season collision rate for greenshank (based on 2019 and 2020 flight data) under a scenario of 85% turbine operation time was 0.066, which represents 0.022% of the NHZ 7 breeding population (148 pairs; Wilson *et al*., 2015).

6.8.6 As summarised in **Table 6.8**, greenshank is considered to be of Medium Nature Conservation Importance, and it is considered that the impact of collision risk from the Proposed Varied Development would be of **Negligible** Magnitude and therefore **not significant** in the context of the EIA Regulations.

Osprey

6.8.7 Based on turbine parameters for the Proposed Varied Development, two at-risk osprey flights were recorded during the 2019 breeding season. The mean breeding season collision rate for osprey (based on 2019 and 2020 flight data) under a scenario of 85% turbine operation time was 0.069, which represents 0.431% of the NHZ 7 breeding population (eight breeding pairs in 2013; Wilson *et al*., 2015).

6.8.8 Based on the methods described in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**, osprey is considered to be of Medium Nature Conservation Importance (although it should be noted that there was no evidence of any

breeding within 2km of the Site), and it is considered that the impact of collision risk from the Proposed Varied Development would be of **Negligible** Magnitude and therefore not significant in the context of the EIA Regulations.

Golden Eagle

6.8.9 Based on the 85% turbine operation scenario, the revised CRM for the Proposed Varied Development predicted mean rates of 0.160 golden eagles during the breeding season (based on 2019 and 2020 flight data) and 0.109 during the non-breeding season (based on 2018-19 and 2019-20 flight data). The mean annual rate (for both seasons combined) under the 85% turbine operation scenario is 0.269, which represents 0.313% of the NHZ 7 golden eagle breeding population (43 breeding pairs; Wilson *et al*., 2015).

6.8.10 However, the NHZ population estimates are based on data from the 2003 national golden eagle survey, whereas the most recent national survey in 2015 (Hayhow *et al*., 2017) found that the north-central Highlands, the study region within which the Proposed Varied Development is located and an area smaller than NHZ 7, supported 49 golden eagle pairs. Based on this estimate, a predicted mean annual collision rate of 0.269 represents just 0.274% of the north-central Highlands population.

6.8.11 As summarised in **Table 6.8**, golden eagle is considered to be of Medium Nature Conservation Importance and it is considered that collision risk to the NHZ 7 breeding golden eagle population from the Proposed Varied Development would be of **Negligible** Magnitude and not significant in EIA terms.

White-tailed Eagle

6.8.12 Based on turbine parameters for the Proposed Varied Development, seven at-risk white-tailed eagle flights were recorded during the 2018-20 flight activity surveys completed for the Consented Development, four of which were during the 2019 breeding season (between mid-March and mid-April). Based on the 85% turbine operation scenario, the revised CRM for the Proposed Varied Development predicted mean rates of 0.293 white-tailed eagles during the breeding season (based on 2019 and 2020 flight data) and 0.022 during the non-breeding season (based on 2018-19 and 2019-20 flight data). The mean annual rate (for both seasons combined) under the 85% turbine operation scenario is 0.338, which would represent 16.90% of the NHZ 7 white-tailed eagle breeding population (a single breeding pair in 2013; Wilson *et al*., 2015).

6.8.13 Based on the more realistic scenario of 50% turbine operation time (see **Table 6.7**), the estimated mean annual collision rate for white-tailed eagles is 0.199, or approximately one white-tailed eagle every 5.0 years.

6.8.14 CRM is generic and based on a number of assumptions, which makes the results highly precautionary, and not necessarily realistic in ecological terms. For example, CRM works on the assumption that, a bird can either collide with a turbine multiple times, or collides once and is replaced instantly in the population, which is not realistic under any circumstances. As such, theoretical collision risk will typically be higher than actual rates and CRM results should therefore be treated as indicative rather than verbatim. The revised CRM included all flights within the CRA recorded at a height of 41m and above (corresponding to height bands 3-5), whereas any flights below 67m would be below PCH, while any above 230m would be above PCH.

6.8.15 It should also be noted that not all birds present in the vicinity of the Development (and therefore potentially at risk of collision) will necessarily be part of the NHZ 7 breeding population. At least three different individuals were recorded during the 2018-20 flight activity surveys, which means they could not all be part of the NHZ 7 breeding population if it still comprises a single pair. Furthermore, the number of flights during these surveys was very low (seven flights totalling 11 birds) during a total of 622 hours of observation across the flight activity surveys[4], with two registrations involving the same pair observed twice during the same survey. No white-tailed eagles were observed during the breeding eagle surveys completed in February and March 2025. Thus, this species made only occasional use of the Site and there are no known breeding territories within 2km (this was supported by the results of the 2025 breeding eagle surveys). Although it is possible that flight activity levels could increase in future as birds expand their range, thus increasing collision risk, NHZ 7 does not appear to be a core area for the species and there appears to be little or no suitable nesting habitat on Site. Additionally, if numbers of breeding pairs within NHZ 7 do increase, a collision would represent a smaller proportion of the population. Thus, it is considered unlikely that there would be a population-level effect due to collisions.

6.8.16 Based on the methods described in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**, white-tailed eagle is considered to be of Medium Nature Conservation Importance (although it should be noted that there was no evidence of any breeding within 2km of the Site), and it is considered that the impact of collision risk from the Proposed Varied Development. Collision impacts on the NHZ 7 white-tailed eagle breeding population arising from the

[4] Note that this excludes survey effort from VP5, which was excluded from the revised CRM because the viewshed from this VP does not overlap with the CRA

Proposed Varied Development are considered to be of Low Magnitude and not significant in EIA terms.

6.9 Revised Mitigation Measures for the Proposed Varied Development

6.9.1 No significant collision risk effects on any IOFs are predicted for the Proposed Varied Development and no additional mitigation measures are proposed beyond those already proposed in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR** and 2024 BBPP (refer to **Volume 5, Confidential Annex**).

6.9.2 However, in line with Scoping Opinion comments from consultees (**Table 6.2**), it is proposed that existing ornithology monitoring programmes overlapping the Site and/or surrounding area that are being delivered via the RECMP and the 2015 Bhlaraidh Wind Farm HMP are reviewed to determine whether there is a requirement for the 2024 HMP for the Consented Development (refer to **Volume 5, Confidential Annex**) to be updated to include additional operational monitoring for black grouse and golden eagle, as well as wader species (specifically golden plover and greenshank), as suggested in **Volume 1, Chapter 6: Ornithology** of the **2021 EIAR**. Additionally, it is proposed that the updated HMP includes details of the SSE Avian Incident Search Protocol and a protocol for reporting any observations of confirmed or suspected bird collisions to NatureScot.

6.9.3 It is further proposed that the 2024 HMP is updated to include consideration of suitable marking of any deer fences (where these are to be installed as part of the HMP), in order to reduce collision risk to black grouse.

6.10 Comparison of Effects of the Proposed Varied Development with the Effects of the Consented Development

Greenshank

6.10.1 Based on the turbine parameters for the Consented Development, a single at-risk greenshank flight was recorded during the 2020 breeding season. Assuming 85% turbine operation, this resulted in a mean collision rate of 0.006 birds per breeding season, which equates to one bird every 169.9 years, i.e., less than one bird over the 50-year lifespan of the Consented Development.

6.10.2 Based on the 85% turbine operation scenario, the revised CRM for the Proposed Varied Development predicted higher greenshank mortality, with a mean breeding season rate of 0.066 (based on 2019 and 2020 flight data), which equates to one bird every 15.1 years, or approximately three birds over the 50-year lifespan of the Proposed Varied Development. However, there is not considered to be any change in the impact magnitude compared with the

Consented Development, which remains **Negligible Adverse**, resulting in no significant effects in EIA terms.

Osprey

6.10.3 Based on the turbine parameters for the Consented Development, two at-risk osprey flights were recorded, both during the 2019 breeding season. Assuming 85% turbine operation, this resulted in a mean collision rate of 0.015 birds per breeding season, which equates to one bird every 68.5 years, i.e., less than one bird over the 50-year lifespan of the Consented Development.

6.10.4 Based on the 85% turbine operation scenario, the revised CRM for the Proposed Varied Development predicted higher osprey mortality, with a mean breeding season rate of 0.069, which equates to one bird every 14.6 years, or approximately four birds over the 50-year lifespan of the Proposed Varied Development. However, impacts are considered to be of **Negligible** Magnitude, resulting in no significant effects in EIA terms.

Golden Eagle

6.10.5 CRM completed for the Consented Development predicted mean rates of 0.115 golden eagles during the breeding season (based on 2019 and 2020 flight data) and 0.065 during the non-breeding season (based on 2018-19 and 2019-20 flight data), giving a mean annual rate of 0.180, which equates to one bird every 5.6 years, or nine birds[3] over the 50-year lifespan of the Consented Development.

6.10.6 Based on the same 85% turbine operation scenario, the revised CRM for the Proposed Varied Development predicted mean rates of 0.160 during the breeding season (based on 2019 and 2020 flight data) and 0.109 during the non-breeding season (based on 2018-19 and 2019-20 flight data), giving a mean annual rate of 0.269, which equates to one bird every 3.7 years, or approximately 14 birds[3] over the 50-year lifespan of the Proposed Varied Development. The increased risk compared to the Consented Development is likely due to levels of flight activity within height band 5 (>150m), some of which would have been considered to be above PCH for the Consented Development CRM. Although some of this flight activity may also have been above PCH for the Proposed Varied Development, as a precautionary approach, all flights within height band 5 were included in the revised CRM. Despite the increased collision risk to golden eagle, there is not considered to be any change in the impact magnitude compared with the Consented Development, which remains **Negligible Adverse**, resulting in no significant effects in EIA terms.

White-tailed Eagle

6.10.7 Based on the turbine parameters for the Consented Development, a total of five at-risk white-tailed eagle flights were recorded during the 2018-20 flight activity surveys, which resulted in predicted mean collision rates of 0.005 white-tailed eagles during the breeding season (based on 2019 and 2020 flight data) and 0.045 during the non-breeding season (based on 2018-19 and 2019-20 flight data), giving a mean annual rate of 0.050, which equates to one bird every 20.0 years, or three birds[3] over the 50-year lifespan of the Consented Development.

6.10.8 Based on the turbine parameters for the Proposed Varied Development, six of the white-tailed eagle flights recorded during the 2018-20 flight activity surveys were at-risk and, based on the 85% turbine operation scenario, the revised CRM predicted mean rates of 0.314 during the breeding season and 0.024 during the non-breeding season, giving a mean annual rate of 0.338, which equates to one bird every 3.0 years, or approximately 17 birds[3] over the 50-year lifespan of the Proposed Varied Development. As for golden eagle, the increased risk compared to the Consented Development is likely due to levels of flight activity within height band 5 (>150m), some of which would have been above PCH for the Consented Development. It is possible that some flights within height band 5 were also above PCH for the Proposed Varied Development, and thus the revised collision risk to eagle species may be overestimates. Nonetheless, impacts are considered to be of Low Magnitude, resulting in no significant effects in EIA terms.

6.11 Cumulative Effects

6.11.1 Based on the very low predicted collision rates for greenshank and osprey, and absence of breeding osprey records within 2km of the Site, there is not considered to be any potential for the Proposed Varied Development to make a material contribution to cumulative collision effects on these species and they are scoped out of the cumulative collision risk assessment.

6.11.2 The potential for the Proposed Varied Development to make a material contribution to cumulative collision effects on golden eagle and white-tailed eagle is assessed in the following sections, with reference to NatureScot (2018) guidance.

6.11.3 Predicted annual collision risk to both eagle species from the Proposed Varied Development and surrounding developments within NHZ 7 is summarised in **Table 6.9**. Note that the assessment focussed on wind farm developments. This is due to CRM being routinely completed for wind farm developments, whereas CRM is not typically completed for overhead lines.

6.11.4 The following proposed developments were excluded from the cumulative collision risk assessment due to a lack of available or sufficient information:

the operational Beinn Tharsuinn, Fairburn, Lochluichart, Lochluichart Extension, Novar 1 and Millennium wind farms; and the proposed Beinneun 2 Wind Farm, Beinn Tharsuinn Repower and Western Extension, Cnoc Farasd Wind Farm, Creachan Wind Farm, Ceislein Wind Farm, Fairburn Wind Farm Extension, Fiodhag (formerly Fasnakyle) Wind Farm, Millennium East Wind Farm, Novar 1 Wind Farm Repowering and Tarvie Wind Farm.

Table 6.9: Summary of cumulative collision risk to golden eagle and white-tailed eagle from the Proposed Varied Development and other developments within NHZ 7

Development	Status	No. of Turbines	Golden eagle	White-tailed eagle
Proposed Varied Development	**In Planning**	**15**	**0.269**	**0.338**
Abhainn Dubh Wind Farm (LUC, 2023a)	Submitted	9	0*	0*
Ballach Wind Farm Energiekontor UK Limited, 2025)	Submitted	20	0.180	0.160
Beinneun Windfarm (Arcus Renewable Energy Consulting Ltd, 2011)	Operational	25	0.124	0*
Beinneun Windfarm Extension (Arcus Consultancy Services Ltd, 2014)	Operational	7	0.090	0*
Bhlaraidh Wind Farm	Operational	32	0.064	0*
Bunloinn Wind Farm (Energiekontor UK Limited, 2022a)	Consented	10	0.035**	0*
Carn Fearna Wind Farm (SLR Consulting Limited, 2025)	Submitted	9	0.076	0*
Chràthaich Wind Farm (Chràthaich Renewables LLP, 2023)	Consented	14	0.067	0*
Coille Beith Wind Farm (Ramboll UK Limited, 2025)	Submitted	11	0.014	0*

Coire na Cloiche Windfarm (RockbySea, 2012)	Operational	13	0.008	0*
Corriemoillie Wind Farm (RPS Planning and Development, 2010; Amec Foster Wheeler Environment & Infrastructure UK Limited, 2016)	Operational	17	0.005	0*
Culachy Wind Farm[5] (ITPEnergised, 2023)	Submitted	8	0.146	0*
Glenurquhart & Strathglass Wind Energy Project[6] (Corrimony Energy Ltd and Soirbheas Ltd, 2010)	Operational	5	0.021***	0*
Kirkan Wind Farm (RSK, 2019)	Consented	17	0.042**	0*
Loch Liath Wind Farm (LUC, 2023b)	Submitted	13	0.054	0*
Lochluichart Wind Farm Extension II (Infinergy Limited, 2018)	Consented	5	0*	0*
Meall Buidhe Wind Farm (Muirden Energy LLP, 2020, 2021)	Consented	8	0.041	0*
Strathrory Wind Farm Redesign (Energiekontor UK Limited, 2022b)	Consented	7	0*	0*
Strath Oykel Wind Farm and Battery Energy Storage (Energiekontor UK Limited, 2022c)	Consented	11	0*	0.040

[5] The majority of this development would be within NHZ 10 (Central Highlands), but the access route and a single turbine would be just within the boundary of NHZ 7 (ITPEnergised, 2023)

[6] Also known as Corrimony Wind Farm

Tomchrasky Wind Farm (Atmos Consulting, 2022)	Consented	14	0.035	0.014
Total			**1.271**	**0.552**

***CRM not completed**

****Mean value calculated from annual values presented in the EIAR for this development**

*****Based on a collision risk of 0.005 for adults and 0.016 for immatures)**

6.11.5 As can be seen from **Table 6.9**, in many cases white-tailed eagle flight activity was often absent or too low for CRM to be merited. Where CRM was completed for one or both eagle species, collision rates were typically low to negligible. The predicted mean annual cumulative collision risk was 1.271 for golden eagle and 0.552 for white-tailed eagle.

6.11.6 These estimates represent 1.478% of the NHZ 7 breeding golden eagle population, 43 breeding pairs; Wilson *et al*., 2015) and 26.450% of the NHZ 7 breeding white-tailed eagle population (a single breeding pair in 2013; Wilson *et al*., 2015). The latest assessed condition of SPA breeding populations (2024 for greenshank and 2017 for golden eagle) was “favourable maintained” (NatureScot, 2025c).

6.11.7 Although the cumulative collision risk appears high for both species, but particularly so for white-tailed eagle, this is considered to be a worst-case theoretical scenario and potential impacts on the NHZ 7 breeding eagle populations are likely to be lower than predicted for a number of reasons. As noted in section 6.8, CRM is generic and based on a number of assumptions, which typically results in highly precautionary predicted collision rates. Additionally, some of the flights included in the CRM for a development are likely to include transient and non-breeding birds that are not part of the NHZ 7 breeding eagle populations.

6.11.8 As noted in section 6.8, the NHZ 7 golden eagle population estimates are based on data from the 2003 national survey, and there is evidence to suggest an increase in the regional population to at least 49 pairs in 2015 (Hayhow *et al*., 2017). Additionally, there is evidence to suggest that golden eagles in Scotland tend to avoid turbines (e.g., Whitfield & Fielding, 2017; Fielding *et al*., 2022). Golden eagles do still occasionally pass through wind farms, but they tend to fly above turbine height or appear to deliberately fly through gaps between the turbine arrays (Fielding *et al*., 2022). NatureScot (2025b) guidance recommends an avoidance rate of 99% for golden eagle for CRM, indicating that the species is considered to be less vulnerable to collisions than many other species (the default avoidance rate is 98%).

6.11.9 No white-tailed eagle nests were identified within the 2km study area during the 2025 breeding eagle surveys and there are no known nesting white-tailed

eagle pairs within 5km of the Site, which is the core foraging range from the nest site during the breeding season (NatureScot, 2016), indicating that potential collision risk to breeding birds is limited. As shown in Table 6.9, cumulative collision risk to white-tailed eagle (0.552) is only marginally higher than that from the Development alone (0.338). As discussed in section 6.8, evidence suggests that the Site was in fact used only occasionally by white-tailed eagles and is not an important foraging area for this species.

6.11.10 As noted above, Wilson *et al*. (2015), estimated that the NHZ 7 white-tailed eagle breeding population comprised just one pair in 2013. However, the authors noted that the Scottish population of white-tailed eagle is expanding and many of their NHZ population estimates for this species may quickly become outdated. In 2022 (the most recent year for which data are available), Scottish raptor workers reported 62 breeding territories in the Highlands that were occupied by white-tailed eagle pairs (Challis *et al*., 2023) and the Scottish population has been estimated at approximately 200 breeding pairs and increasing (NatureScot, 2025c). This is in line with a modelling study of the reintroduced Scottish white-tailed eagle population by Sansom *et al*. (2016), the results of which suggested that it could grow to over 200 pairs by 2025 and almost 900 pairs by 2040. Although adult white-tailed eagles are largely sedentary, remaining in their home rages year-round, young birds may wander widely in their first year (Hardey *et al*., 2013). Birds have also been taken from Scottish nests and translocated to southern England to establish new populations elsewhere in the UK (Forestry England, 2025), which blurs the boundaries of clearly defined NHZ populations. This also suggests that, where birds are not breeding in the local area, completing the species assessment in the context of the wider UK breeding population may be a more appropriate scale than the NHZ breeding population.

6.11.11 Although very few white-tailed eagle fatalities have so far been reported at wind farms in Scotland, the frequency of collisions is likely to increase in the future as the population, primarily associated with the Western Isles and western seaboard, expands east into areas where wind farms are more prevalent. However, the study by Sansom *et al*. (2016) found that, although potential additional mortality caused by illegal killing and collisions with wind turbines resulted in a reduction in population growth, this was not to the extent that it caused a population decline. While it is possible that flight activity levels could increase in future as birds expand their range, thus increasing collision risk, NHZ 7 does not appear to be a core area for the species and there is no, little or no suitable nesting habitat on Site. Additionally, if numbers of breeding pairs within NHZ 7 do increase, a collision would represent a smaller proportion of the population.

6.11.12 Although it is acknowledged that there could be additional cumulative collision risk to both eagle species from developments for which CRM was not completed or data were unavailable, this is expected to be **Negligible**. Furthermore, some of the developments included in the cumulative collision risk assessment are still in planning and may not be consented or built.

Additionally, the CRM does not take into account any mitigation/compensation, which would likely reduce the figures significantly.

6.11.13 Cumulative collision effects on the NHZ 7 golden eagle and white-tailed eagle breeding populations are considered to be of Low Magnitude for both species and not significant in EIA terms.

6.12 Conclusion

6.12.1 This chapter has assessed the effects of collision risk associated with the Proposed Varied Development on relevant IOFs. This was considered to be the only impact that could potentially differ from those predicted for the Consented Development. All other effects on previously identified IOFs were determined to remain as previously predicted for the Consented Development and no additional IOFs were identified for the Proposed Varied Development.

6.12.2 Seven species were scoped into the CRM for the Consented Development, namely greenshank, red-throated diver, osprey, golden eagle, goshawk, red kite and white-tailed eagle. Due to the increased minimum air gap, there were no at-risk red-throated diver flights for the Proposed Varied Development and this species was scoped out of the revised CRM. The remaining six species were scoped into the revised CRM, together with greylag goose and peregrine, which were considered to be at potential risk of collision due to the increased tip height of the Proposed Varied Development.

6.12.3 Collision risk to all IOFs scoped into the revised CRM is predicted to be higher for the Proposed Varied Development compared to the Consented Development. However, collision risk is considered to be of Low Magnitude for white-tailed eagle and **Negligible** for all other species scoped into the revised CRM, with no significant effects in EIA terms predicted for any IOFs.

6.12.4 An updated cumulative collision risk assessment was also completed for golden eagle and white-tailed eagle, using the revised CRM results for the Proposed Varied Development and CRM results from other developments in the surrounding area. No significant cumulative effects were identified for either species.

6.12.5 Although no significant effects on IOFs were predicted for either the Consented Development or the Proposed Varied Development, mitigation and enhancement measures for black grouse, breeding diver species and breeding golden eagle delivered via the final (2024) HMP and BBPP for the Consented Development remain appropriate and effective for the Proposed Varied Development (refer to **Technical Appendices 3.6a** and **3.6i** respectively).

6.12.6 Additionally, to address comments from consultees (see **Table 6.2**), it is proposed that the existing ornithology monitoring programmes overlapping the Site and/or surrounding area that are being delivered via the RECMP and the

2015 Bhlaraidh Wind Farm HMP are reviewed to determine whether there is a requirement for the 2024 HMP to be updated to include details of operational monitoring for black grouse, golden eagle and wader species (specifically golden plover and greenshank). It is further proposed that the 2024 HMP is updated to include a protocol for reporting any observations of confirmed or suspected bird collisions to NatureScot, as well as suitable marking of any deer fences to be installed (as part of the HMP) to reduce collision risk to black grouse.

6.13 References

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