Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 1

Chapter 7: Ornithology

Document prepared by RPS Tetra Tech and Envams Ltd for Beinneun 2 Ltd.

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Contents

7 ORNITHOLOGY

7.1 INTRODUCTION

This chapter, the Ornithology Impact Assessment (OIA) considers the potential effects of Beinneun 2 Wind Farm ("the Development") on ornithology as part of the Environmental Impact Assessment (EIA) Report accompanying the application for section 36 consent and deemed planning permission for the Development by Beinneun 2 Ltd ("the Applicant"). The Development is situated approximately 5.4 kilometres (km) northwest of Invergarry, and approximately 11.3 km southwest of Fort Augustus in the Highlands ("the Site"). Access to the Site (which comprises the area encompassed by the application boundary containing turbines associated infrastructure as well as the Site access track) will be from the A87 west of the Site at National Grid Reference (NGR) 219586, 806801, as shown in, Figure 4.1.

7.1.1 Assessment Scenarios and Potential Effects

A detailed development description is provided in Chapter 4: Development Description.

This chapter describes the methods used to establish the ornithological interests within the Site and surrounding area, together with the process used to determine the level of importance of the ornithological features (i.e., designated sites and bird populations) present. It explains the ways in which birds may be affected by the Development and assesses the likely effects of the Development and their significance. Where significant adverse effects have been identified it includes targeted mitigation to prevent or reduce these effects. It also complements the assessment of ecological effects in Chapter 6 (Ecology). Particular attention has been paid to statutory designated sites and their qualifying features, as well as species evaluated as being of moderate or higher conservation concern and which have been identified in NatureScot (2025a) guidance[1] as being at risk of potential effects from onshore wind farms (target species). These include, but are not restricted to, species with national or international protection under the Wildlife and Countryside Act 1981 (and later amendments) (WCA) and the EU Birds Directive (79/409/EEC).

Birds may be affected by the following phases of the Development:

- Construction: construction of turbines and ancillary infrastructure, including tracks, hard-standings and borrow pit operations.
- Operation: turbine operation and associated maintenance activities; and
- Decommissioning: the removal of installed structures and reinstatement of habitats where appropriate.

The potential effects of the Development on birds are:

- Habitat modification due to changes in land management or hydrology;
- Direct habitat loss due to land take by wind turbine bases, access tracks and ancillary structures;
- Indirect habitat loss due to turbine barrier effects and the displacement of birds as a result of construction, maintenance and decommissioning activities, or due to the presence of the operating wind turbines close to nesting, roosting or feeding sites or habitual flight routes;
- Disturbance of bird behaviours due to construction and operational effects that do not result in displacement. This may result in reduced productivity and/or survival; and
- Collision: the killing or injury of birds following collision with rotating turbine blades and associated structures.
- Cumulative effects: the potential cumulative impacts due to construction, operation and decommissioning of the Development together with surrounding developments that could affect the same bird populations (i.e., additive or inter-related effects), including due to habitat loss or modification, disturbance, displacement and collision mortality risk.

[1] NatureScot (2025a) Guidance: Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas.

7.1.2 Supporting Information

The assessment is based on information available at the time of writing, presented in the Ornithology Baseline Data (Technical Appendix A7.1).

This chapter is also supported by:

- Ornithology Figures, (Technical Appendix A7.2, Figures 7.1-7.13);
- Collision Risk Modelling Results (Technical Appendix A7.3);
- Common Scoter Assessment (Technical Appendix A7.4) (Confidential – EIA Report Volume 5);
- Habitats Regulations Appraisal – West Inverness-shire Lochs SPA (Technical Appendix A7.5) (Confidential – EIA Report Volume 5); and
- Confidential Bird Information (Technical Appendix A7.6 and Confidential Figures 1-5; EIA Report Volume 5).

7.1.3 Competence

This assessment has been carried out by Principal Ornithologist Darren Graham. Darren is a full member of the Chartered Institute for Ecology and Environmental Management (MCIEEM). He is also a NatureScot Schedule 1 Bird Licence holder and an experienced ecological/ornithological consultant with over 10 years' experience working with birds and their conservation. His recent experience within the last five years of this has been within the onshore wind sector and has included planning and undertaking baseline field surveys undertaking impact assessments within relevant planning frameworks (EIA) and Habitats Regulations Appraisal (HRA)) and planning ecological mitigation strategies.

This report has been reviewed by Associate Ornithologist Lisette Coiffait. Lisette has over 20 years' experience in ornithological assessment, surveying and research. Lisette has worked on a wide range of projects across Scotland and England, predominantly in the renewable energy and energy transmission sectors. This includes completion of numerous ornithological impact assessments (OIAs), EIA Report chapters and bird mitigation plans

7.1.4 Consultation

A Scoping Opinion dated 01 February 2024 was issued by the Scottish Government Energy Consents Unit (ECU) on behalf of the Scottish Ministers to Beinneun 2 Ltd (included in this EIA Report as TA A2.1).

Further consultation with NatureScot took place between April and November 2024 (via email correspondence) to confirm that sufficient ornithology survey data had been collected to inform the OIA for the Development.

Details of relevant Scoping Opinion comments and the additional ornithology consultation with NatureScot are provided in Table 7.1.

Note that Royal Society for the Protection of Birds (RSPB) Scotland was consulted but did not provide a response.

Table 7.1: Details of Consultations undertaken and the Applicant's Response

Consultee	Key Comments	Response/Action Taken
The Highland Council – Scoping Opinion (12/01/2024)	Advised that the presence of Schedule 1-listed birds and qualifying interests of SPAs and other areas designated for avian interests must be included and considered as part of the planning application process; not as an issue that can be considered at a later stage and the Applicant should refer to any comments from NatureScot and RSPB in this respect. Further advised that an assessment of the impacts to birds through collision, disturbance, and displacement from foraging / breeding / roosting	All Schedule 1-listed breeding birds and qualifying interests of SPAs and other areas designated for avian interests were considered as part of the OIA (detailed in sections 7.7 and 7.8 of this Chapter and Technical Appendix A7.4) and shadow HRA (detailed in Technical Appendix A7.5). This included impacts due to collision, disturbance, and displacement, both from the

Consultee	Key Comments	Response/Action Taken
	habitat will be required for both the Development alone and cumulatively with other proposals. Advised that the EIA Report should be clear on the survey methods and any deviations from guidance on ornithology matters.	Development alone and cumulatively with other developments. Full details of the survey methods, including any limitations, are provided in Technical Appendix A7.1.
NatureScot – Scoping Opinion 01/02/2024	European sites – West Inverness-shire Lochs SPA and Site of Special Scientific Interest (SSSI) Advised that, in order to comply with the Habitats Regulations, the HRA will have to demonstrate that the Development will not adversely affect the integrity of European sites in particular (for ornithology) the West Inverness-shire Lochs SPA. Further advised that the Development is located between two constituent lochs of the West Inverness-shire Lochs SPA (to the south-east of Loch Loyne and north of Loch Garry), which is designated for breeding common scoter (Melanitta nigra) and black-throated diver (Gavia arctica). Further noted that other components of the SPA include Loch Cluanie further to the north-west, and Loch Lundie to the south-east. Advised that there is potential for a likely significant effect on both qualifying features of the SPA, and further information would be required as part of the planning application to determine the potential for disturbance, displacement and collision risk to both species and inform an HRA. Further advised that the SPA common scoter feature is currently in 'unfavourable declining' condition due to low numbers of breeding birds and any loss of breeding adult common scoter could affect the viability of the population and adversely affect the integrity of the SPA.	Appropriate EIA and HRA assessments (which include a focused common scoter assessment) have been undertaken. See Technical Appendices A7.4 and A7.5. All potential impacts of the Development on qualifying features, including due to disturbance, displacement and collisions, were considered as part of these assessments.
	To help inform the assessment of disturbance and displacement, surveys of waterbodies within the Site and a 1 km buffer should be undertaken for both SPA qualifying features and it would also be useful for the EIA Report to include an assessment of their suitability. Further advised that the Applicant should liaise with the RSPB on their proposed survey work so as to avoid duplication of survey effort and the risk of unnecessary disturbance and that any scoter and diver records from nearby lochs and lochans should be requested from the RSPB as part of the desk study.	A survey of all waterbodies deemed suitable for breeding common scoter and/or black-throated diver was completed in 2023 and 2024. An outline of the survey methods is presented in section 7.3.4 of this chapter, with full details provided in Technical Appendix A7.1. Records of common scoter and black-throated diver (as well as other protected species and birds of conservation concern) were requested as part of the desk study.
	Advised that an assessment of collision risk will also be required. For divers, methods should follow NatureScot guidance. For scoters, it was recommended that a theoretical assessment of the potential flight lines used by scoters if they were to move between Lochs Loyne, Garry and Cluanie (and any other lochs or lochans they may use) and the potential for these to cross the proposed turbine array should be completed. This assessment should include a review of desk study information (the RSPB should be contacted for relevant records) and consideration of the	As no flights of either species were recorded during the 2023-24 flight activity surveys completed for the Development, collision risk modelling (CRM) was not completed. Theoretical flight paths for both species, and expert opinion on common scoter flight activity, have been considered for surrounding developments; this is discussed in the Common Scoter Assessment (Technical Appendix

Consultee	Key Comments	Response/Action Taken
	surrounding topography. NatureScot further recommended that this assessment is supplemented by current expert opinion from scientists with a knowledge of common scoter breeding ecology on the probable flight lines of, and collision risk to, common scoters. NatureScot also recommended that the Applicant should contact them directly to discuss the scope of survey and assessment further.	A7.4) and the shadow HRA (Technical Appendix A7.5). As summarised below, Further consultation with NatureScot took place between April and November 2024 (via email correspondence) to confirm that sufficient ornithology survey data had been collected to inform the OIA for the Development.
	Noted that, as parts of the Site drain towards Lochs Loyne and Garry, adverse changes to water quality could affect the foraging resource of SPA populations. It was therefore recommended the EIA Report includes consideration of infrastructure design and layout, slope stability and the Site-specific mitigation measures that would be in place to protect water quality within the SPA and its catchment from increased sediment loading and pollutants, particularly during construction. It was further recommended that potential impacts to the SPA water quality are also considered in the context of the proposed Peat Landslide Hazard Risk Assessment.	Good practice measures to protect water quality within the catchment, including the SPA lochs, will be implemented during construction. All mitigation measures to protect water quality, including silt management, will be agreed with the Scottish Environment Protection Agency (SEPA) under a Construction Environmental Management Plan (CEMP). Measures to prevent impacts to watercourses are set out in the Outline CEMP, provided as Technical Appendix A4.1. The Peat Landslide Hazard and Risk Assessment (Technical Appendix A12.2) includes watercourses as potential receptors, with all residual risks being assessed as “low”.
	Noted that, as per the Scoping Report, any future grid connection is expected to be to the Auchterawe substation, which would be the subject of a separate application. Highlighted the potential proximity to the West Inverness-shire Lochs SPA (including Loch Lundie) and the need for any overhead line connection to consider the potential for collision risk, including cumulative impacts with other proposals in this area.	Noted. Potential impacts on all important ornithological features (IOFs), including qualifying features of the SPA, would be assessed as part of the separate planning application.
	Survey Methods Recommended that all survey work follows the methods detailed in NatureScot guidance[1]. Commented that the Scoping Report notes that some survey work will continue until July 2024, and vantage point (VP) survey work to April 2024. Advised that all survey work continues until August 2024 so that a full continuous breeding season is covered. Further noted that they would be happy to review the survey results at that stage to advise on the need or otherwise for two complete years to be undertaken.	All surveys followed the methods in NatureScot guidance that was current at the time of survey. Survey work continued until August 2024 and, as summarised below, NatureScot confirmed during subsequent consultation that the survey data collected between April 2023 and August 2024 was sufficient to inform the OIA. An outline of the survey methods is provided in section 7.3.4 of this chapter, with full details presented in Technical Appendix A7.1.
	Noted that raptor surveys are planned to 2 km from the Site boundary, while NatureScot guidance recommends survey and assessment to 6 km for eagles and recommended clarification on	Targeted surveys for eagles were completed, covering suitable habitat within a 6 km buffer of the Site Boundary

Consultee	Key Comments	Response/Action Taken
	how areas outside the 2 km buffer will be considered. Further recommended liaison with the Highland Raptor Study Group (HRSG) to determine the extent that this area is already covered by monitoring so as to avoid any unnecessary duplication or disturbance.	An outline of the survey methods is presented in section 7.3.4, while full details of the survey methods included in Technical Appendix A7.1
	Also recommended that the most up to date desk study records were requested from the HRSG and relevant national survey information was consulted.	As detailed in Technical Appendix A7.1, relevant records were requested from the HRSG. Additionally, relevant national survey information (e.g., for golden eagle (*Aquila chrysaetos*); Hayhow et al., 2017[2]) and other relevant sources of information, such as recent Scottish Raptor Monitoring Scheme reports (e.g., Challis et al., 2022[3]; 2023[4]), were consulted.
	Further advised that the timing of all raptor survey visits should follow NatureScot bird survey guidance.	In accordance with NatureScot guidance15, the 2023 and 2024 breeding raptor surveys covered the period April to July. Due to late commissioning, it was not possible to cover a full breeding eagle season in 2023, but the 2024 surveys were completed between March and August 2024, thus covering a full breeding eagle season. As detailed below, NatureScot confirmed during further consultation that the data collected were sufficient to inform the OIA.
	The need for surveys for roosting raptors should also be considered in line with our bird survey guidance.	As low levels of raptor activity were typically recorded during the non-breeding season and no evidence indicative of potential roosting behaviour was observed, targeted roosting raptor surveys were scoped out of the survey programme.
	Were pleased to note that existing access will be used as far as possible, and recommended that the surveys and desk study also cover the proposed access routes and relevant buffers around these, to allow the potential for disturbance and displacement to be assessed, especially for Schedule 1-listed species and black grouse (*Lyrurus tetrix*), with any mitigation requirements to be identified.	The proposed access track was included within the Site boundary and thus were included in the Survey Areas, which are defined in Section 7.3.4.1.

[2] Hayhow, D.B., Benn, S., Stevenson, A., Stirling-Aird, P.K. & Eaton, M.A. (2017) Status of Golden Eagle *Aquila chrysaetos* in Britain in 2015, *Bird Study*, 64:3, 281-294.

[3] Challis, A., Wilson, M.W., Eaton, M.A., Etheridge, B., Kortland, K., Mattingley, W., Steele, L.D., Stevenson, A., Stirling-Aird, P., Thornton, M., Titherington, J., Wernham, C.V. & Wilkinson, N.I.(2022). Scottish Raptor Monitoring Scheme Trends Summary 2009-2018. BTO Scotland, Stirling.

[4] Challis, A., Beckmann, B.C., Wilson, M.W., Eaton, M.A., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N.I. (2023). Scottish Raptor Monitoring Scheme Report 2021 & 2022. BTO Scotland, Stirling.

Consultee	Key Comments	Response/Action Taken
	Advised that an assessment of potential impacts through habitat loss/change, disturbance and/or displacement, and collision risk to SPA and wider countryside bird populations will be required, both for the proposal on its own and in combination with other projects. Further advised that a cumulative assessment is carried out at the level of the relevant Natural Heritage Zone (NHZ), i.e. NHZ 7 (Northern Highlands). Noted that, depending on submission timescales NatureScot may be able to provide additional data to assist with the cumulative assessments, on request from the Applicant.	All potential impacts of the Development on SPA qualifying features and other IOFs, including from habitat loss/modification, disturbance and displacement, were considered as part of the OIA detailed in section 7.5 of this chapter. Cumulative effects on Important Ornithological Features (IOFs) are assessed in section 7.6. Where an IOF was a qualifying feature of an SPA, the assessment was made against the SPA population. For wider countryside birds, the assessment was made against the NHZ 7 population.
	Advised that mitigation options should be considered as part of the assessment process and recommended these details are included as part of any future application.	Embedded and targeted mitigation is detailed in section 7.7 of this chapter.
	Wider countryside birds Advised that, in addition to SPA protected species, legally protected birds in the wider countryside such as golden eagle, black grouse and divers could be affected by the proposal, either as an individual scheme or in combination with other developments in the area. Assessments of impacts to wider countryside birds should be assessed against the relevant NHZ, i.e., NHZ 7 (Northern Highlands) population in accordance with NatureScot guidance[1].	All potential impacts of the Development, both alone and in combination with surrounding developments, were assessed against the NHZ 7 population on / Full details are provided in sections 7.5 and 7.6 of this chapter.
	Advised that the Development has the potential to impact on the NHZ 7 golden eagle population, both as an individual scheme and in combination with other developments in the area, through the potential for collision risk and displacement from foraging habitat and an assessment of potential impacts will be required. Further advised that, in cases where modelling is necessary for the assessment of the impacts of wind farm proposals on golden eagles, a GET (Golden Eagle Topographical) model assessment is carried out.	Potential Impacts of the Development alone on the NHZ 7 breeding golden eagle population are assessed in section 7.5.1 of this chapter, while cumulative effects are assessed in section 7.6. A GET model was assessment was completed as part of this (see Technical Appendix A7.2, Figure 7.13).
	Advised that, if black grouse could be affected, NatureScot would expect the EIA Report to include information on the importance of lek(s) in the local context, and to consider the potential for indirect effects due to changes to foraging and roosting habitat. Further advised that a buffer of at least 500 m is incorporated between any lek site and turbines to minimise the risk of operational displacement.	Potential Impacts of the Development on the NHZ 7 black grouse population are assessed in sections 7.5.1.3**Error! Reference source not found.** and 7.6. No black grouse leks were identified within 500 m of the Development.
	NatureScot recommended that any nearby records for breeding Slavonian grebe (*Podiceps auritus*) are requested from the RSPB. If there are nearby sites NatureScot could advise further on assessment methods.	Records of all protected species and other species of species conservation concern, including Slavonian grebe, recorded within 2 km of the Site boundary between 2014 and 2024 were requested

Consultee	Key Comments	Response/Action Taken
		from the RSPB as part of the desk study. The data obtained did not include any records of Slavonian grebe. Details of the desk study are included in Technical Appendix A7.1.
	Highlighted that further information and advice on assessment of impacts to birds from wind farms (including CRM), SPA connectivity, effects of aviation lighting, etc) is available on the NatureScot website,	The OIA was completed with reference to relevant NatureScot guidance documents, which are listed in section 7.2.3 of this chapter.
Scottish Ministers – Scoping Response 01/02/2024	The Scottish Ministers recommended that decisions on bird surveys – species, methodology, VPs, viewsheds and duration – site specific and cumulative – should be made following discussion between the Applicant, the HRSG, NatureScot and RSPB Scotland. The Applicant should note and address the advice provided by RSPB Scotland in relation to the continuation of bird surveys to ensure that data is up to date.	Consultation carried out with NatureScot (email dated 24/09/2024) confirmed methods utilised by RPS followed NatureScot Guidance.
NatureScot – Additional Beinneun 2 WF – Ornithology Consultation (via email) 12/11/2024	Confirmed that there were sufficient data from the surveys completed between April 2023 and August 2024, which included one partial and one full breeding season and one non-breeding season, to inform an assessment of the impacts of the Development.	Full details of the survey methods, including any limitations, are provided in Technical Appendix A7.1

7.2 LEGISLATION POLICY AND GUIDANCE

The key legislation, policy and guidance listed below was considered when undertaking the OIA.

7.2.1 Legislation

- Environmental Impact Assessment Directive 2014/52/EU[5];
- The Wildlife and Countryside Act 1981 (as amended) (WCA)[6];
- The Conservation (Natural Habitats, &c) Regulations 1994 (as amended) ('The Habitats Regulations')[7];
- The Nature Conservation (Scotland) Act 2004 (as amended)[8]; and
- The Council Directive on the Conservation of Wild Birds 2009/147/EC (The EU 'Birds Directive')[9].

7.2.2 Policy

- Planning Advice Note 1/2013: Environmental Impact Assessment[10];
- Planning Advice Note 60: Planning for Natural Heritage[11];

[5] European Parliament (2014) Directive 2014/52/EU.
[6] UK Government (1981) The Wildlife and Countryside Act 1981 (as amended).
[7] European Parliament (1994) the Conservation (Natural Habitats, &c.) Regulations 1994.
[8] UK Government (2004) Nature Conservation (Scotland) Act 2004.
[9] European Parliament (2009) Directive 2009/147/EC.
[10] Scottish Government. (2013) Planning Advice Note 1/2013: Environmental Impact Assessment.
[11] Scottish Government. (2020) Planning for Natural Heritage: Planning Advice Note 60.

- National Planning Framework[4,12]; and
- The Highland-wide Local Development Plan[13].

7.2.3 Guidance

- NatureScot Guidance: Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas (2025a[1]);
- NatureScot Guidance: use of avoidance rates in the NatureScot wind farm collision risk model (2025b)[14];
- NatureScot Guidance: Recommended bird survey methods to inform impact assessment of onshore wind farms, version 2 (2017[15,16]);
- NatureScot Guidance: Assessing the cumulative impact of onshore wind farms on birds (2025c[17]);
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland, version 1.3[18];
- NatureScot Guidance: Environmental Impact Assessment Handbook (2018)[19];
- Assessing connectivity with Special Protection Areas (SPAs), version 3. (NatureScot, 2016a)[20];
- Disturbance Distances in selected Scottish Bird Species (NatureScot, 2022[21]); and
- Environmental Statements and Annexes of Environmentally Sensitive Bird Information. Guidance for Developers, Consultants and Consultees. (NatureScot, 2016b)[22].

Note that additional sources of information are referenced in the text where relevant.

7.3 ASSESSMENT METHODOLOGY

The assessment determines the likely significant effects of the Development. An effect is defined as a change in the assemblage of bird species present as a result of the impacts accrued by the Development. Change can occur either during or beyond the life of the Development. Where the response of a population has varying degrees of likelihood, e.g., as a result of habituation, the probability of these differing outcomes is considered. Note that effects can be adverse, neutral, or beneficial.

In assessing whether an effect is significant or not, the following factors are considered:

- The importance of the ornithological features (i.e., species and designated sites) present within the study area;
- The magnitude of the likely impact; and
- The level of significance of effects.

Further details of the process underlying the assessment and the determination of significance are presented in the following sections.

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[12] Scottish Government. (2023) National Planning Framework 4.

[13] The Highland Council (2012) Highland-wide Local Development Plan.

[14] NatureScot Guidance (2025b): Use of avoidance rates in the NatureScot wind farm collision risk model. NatureScot Guidance (2018): Environmental Impact Assessment Handbook.

[15] NatureScot (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms, version 2.

[16] The 2017 NatureScot Guidance was followed as it was current when the surveys were completed: The Guidance was updated in 2025.

[17] NatureScot Guidance (2025c): Assessing the cumulative impact of onshore wind energy developments

[18] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.

[19] NatureScot (2018). Environmental Impact Assessment Handbook.

[20] NatureScot (2016a). Assessing connectivity with special protection areas, version 3.

[21] NatureScot (2022). Disturbance Distances in selected Scottish Bird Species.

[22] NatureScot (2016b). Environmental Statements and Annexes of Environmentally Sensitive Bird Information. Guidance for Developers, Consultants and Consultees.

7.3.1 Determining Importance of Ornithological Features

In accordance with CIEEM guidance18, the Importance of each ornithological feature potentially affected by the Development was determined within a geographic context based on the criteria in Table 7.2. Note that these criteria should not be considered an exhaustive list; an element of professional judgement is also used when evaluating Important Ornithological Features (IOFs).

For sites designated for ornithological features, the level of importance is determined through a consideration of statutory designations and relevant legislation, as well as potential connectivity to the Site. A statutory site may be of international importance, but if there is no pathway for effects between it and a development site, e.g., no demonstrated or likely movement of features between the respective areas or no hydrological connectivity, it is not considered to be an IOF.

For bird species, the level of importance was evaluated through a consideration of relevant legislation, conservation status, population size and distribution and whether they are a designated feature of a statutory site (with potential connectivity to the Site) or identified in NatureScot (2025a) guidance1 as a target species for assessment when considering the impacts of onshore wind farms. Consideration was also given to the number of individuals using the Study Area, and the nature and level of use. For example, a raptor species listed on the UK Birds of Conservation Concern (BoCC) Red list (Stanbury et al., 2021[23]) is of high conservation importance, but if that species flew across the ornithology Study Area only occasionally and was not considered to be using it regularly for breeding, roosting or foraging, or considered to be at risk of population-level effects, it would not be identified as an IOF.

Table 7.2. Criteria for Evaluation of Importance of Ornithological Features

Level of Importance	Examples
International	• Statutory sites of international ornithological importance (SPAs and Ramsar sites) with potential connectivity to a development site. • Regular presence[24] within or around a development site of a qualifying feature of a statutory site of international ornithological importance with potential connectivity to a development site. • Regular presence[24] within or around a development site of migratory populations of species listed on Annex I to the EU Birds Directive.
National	• Statutory sites of national ornithological importance (SSSIs and National Nature Reserves (NNRs)) with potential connectivity to a development site. • Regular presence24 within or around a development site of a notified feature of a statutory site of national ornithological importance with potential connectivity to a development site. • Regular presence24 within or around a development site of a species breeding species listed on Schedule 1 to the WCA or roosting species listed on Schedule 1A to the WCA.
Regional	• The regular presence[24] within or around a development site of species of conservation concern identified in NatureScot (2025a) guidance[1] as a priority for assessment. • The regular presence[24] within or around a development site of other species of conservation concern which are rare or vulnerable, or warrant special consideration on account of the proximity of migration routes, or important breeding, moulting, wintering, foraging or staging areas. • A qualifying feature of a designated site, with potential connectivity to a development site, which is present within or around a development site

[23] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., & Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114, 723-747.

[24] Regular presence is based on professional judgement but is broadly defined as breeding within potential disturbance distance, or more than occasional commuting, foraging or roosting. Numbers of birds and nature of site use are also taken into account.

Level of Importance	Examples
	infrequently or in relatively low numbers, but could be expected to use the area more regularly in future, e.g. due to range expansion or habitat modification associated with the development.
Local	• A site of local nature conservation importance for birds with potential connectivity to a development site. • A qualifying feature of a designated site, with potential connectivity to a development site, which is present within or around a development site infrequently and/or in relatively low numbers, and is not expected to use the area more regularly post-construction. • Other species listed on Annex I to the Birds Directive, or breeding/roosting species listed on Schedules 1/1A to the WCA, that are present within or around a development site infrequently or in very low numbers and are not expected to use the area more regularly post-construction. • A locally important population/assemblage of a species of conservation concern that is identified in NatureScot (2025a) guidance1 as a priority for assessment, but which occurs in very low numbers and/or is present infrequently. • A locally important population/assemblage of a species of conservation concern that is regularly present24 within or around a development site, where this is not identified in NatureScot (2025a) guidance1 as a priority for assessment.
Less than Local	• Designated sites present in the wider area that have no potential connectivity with a development site. • Qualifying features of designated sites and other species of conservation concern, including those identified in NatureScot (2025a) guidance1 as target species for assessment, that have been identified in the wider area but are not present within the study area and for which no supporting habitat is present. • Species of medium conservation concern (i.e., those listed on the UK BoCC Amber list and/or the SBL), including those identified in NatureScot (2025a) guidance1 as target species for assessment, that are only present occasionally within a study area and are considered unlikely to be regularly present24 in future. • Passerine species, except those listed on Schedule 1 to the WCA. • Any other sites or species that are not considered to be at risk of significant effects from a development, because they were present infrequently (and numbers are not expected to increase during the lifetime of the development) and/or because they are common and widespread species that were not regularly present in high numbers.

7.3.2 Magnitude of Impact

CIEEM (2018) guidance18 states that when describing changes/activities and positive or negative impacts on ecosystem structure and function, reference should be made to the following parameters:

- Magnitude;
- Extent;
- Duration;
- Reversibility; and
- Timing and frequency.

Magnitude: refers to the size, amount, intensity and volume of an impact, determined on a quantitative basis if possible, but typically expressed in terms of relative severity, such as major, moderate, low, or negligible. Extent, duration, reversibility, timing, and frequency of the impact can be assessed separately but they tie in to determine the overall magnitude.

Extent: the area of which the impact occurs. When the important feature is the habitat itself, magnitude and extent may be synonymous.

Duration: the time for which the impact is expected to last prior to recovery or replacement of the IOF. This is defined in relation to ornithological characteristics, rather than human timeframes. The duration of an activity may differ from the duration of the resulting impact caused by the activity and this is taken into account.

Reversibility: an irreversible (permanent) impact is one from which recovery is not possible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it. A reversible (temporary) impact is one from which spontaneous recovery is possible or for which effective mitigation is possible and an enforceable commitment has been made.

Timing and frequency: the number of times an activity occurs will influence the resulting impact. The timing of an activity or change may cause an impact if it happens to coincide with critical life-stages or seasons.

Criteria for describing the magnitude of an impact are presented in Table 7.3 below

Table 7.3. Magnitude Criteria

Magnitude	Definition
Major	Total or major loss or alteration to the IOF, such that it will be fundamentally changed and may be lost from the Study Area altogether; and/or loss of a very high or high proportion of the known population or range of the IOF.
Moderate	Loss or alteration to the IOF, such that it will be partially changed; and/or loss of a moderate proportion of the known population or range of the IOF.
Low	Minor shift away from the existing or predicted future baseline conditions. Change arising from the loss or alteration will be discernible but the condition of the IOF will be similar to the pre-development conditions; and/or having a minor impact on the known population or range of the IOF.
Negligible	Very slight change from the existing or predicted future baseline conditions. Change barely discernible, approximating to the 'no change' situation; and/or having a negligible impact on the known population or range of the IOF.

7.3.3 Significance of Effects

Following the classification of each species' importance and consideration of the magnitude of each impact, professional judgement is used to make a reasoned assessment of the likely effect on the conservation status of each potentially affected species.

For this OIA, conservation status was taken to mean the sum of the influences acting on a population which may affect its long-term distribution and abundance. Conservation status is considered to be favourable where:

- A species appears to be maintaining itself on a long-term basis as a viable component of its habitats;
- The natural range of the species is not being reduced, nor is likely to be reduced for the foreseeable future; and
- There is (and will probably continue to be) sufficient habitat to maintain the species' population on a long-term basis.

Where these criteria above did not apply to a species then conservation status is categorised as unfavourable.

Where a species is a qualifying feature of an SPA (or Ramsar site) with potential connectivity to a development site, the assessment is made in the context of potential effects on the conservation status of that particular SPA (or Ramsar site) population, as this is considered to be the most appropriate scale for assessment.

Where a species is not a qualifying feature of an SPA (or Ramsar site) with potential connectivity to a development site, and the available data allowed, the conservation status of each potentially affected population is considered in the context of the relevant NHZ, which in the case of the Development, is NHZ 7.

Note that, where it is concluded that effects on a regional (i.e., NHZ 7) population of an IOF are not significant, effects will also be not significant at national (and international) population level.

CIEEM (2018) guidance18 avoids and discourages use of the matrix approach to determine significance and describes only two categories: "significant" or "not significant". According to this guidance, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for IOFs. For the purposes of this OIA, any effect that could threaten the integrity of a statutory site designated for ornithological features, or the favourable conservation status of a population, is considered to be significant. Where this is not the case, effects are considered to be not significant.

7.3.4 Baseline Study Methods

7.3.4.1 Survey Areas

Survey Areas varied according to the survey type and desk study dataset. Survey Areas were defined with reference to the boundary of the Site and encompassed a series of buffers of up to 6 km radius, and were based on NatureScot (2017) guidance15) with buffer size dependent on the sensitivity of key species to potential effects associated with wind farm development (see Technical Appendix A7.2, Figure 7.4). The Survey Areas are defined as follows:

- "VP survey area" refers to the area within the vantage point (VP) viewsheds (see Technical Appendix A7.2, Figure 7.5);
- "Breeding raptor survey area" refers to the Site plus an additional 2 km wide buffer;
- "Breeding eagle survey area" refers to the Site plus an additional 6 km wide buffer;
- "Breeding diver and common scoter survey area " refers to the Site plus an additional 1 km wide buffer;
- "Moorland breeding bird (MBBS) area", refers to the Site plus an additional 500 m wide buffer;
- "Black grouse survey area" refers to the Site plus an additional 1.5 km wide buffer; and
- "Desk study areas" refers to the Site plus an additional 2 km and 6 km wide buffer.

7.3.4.2 Desk-based Study

A desk-based study was undertaken to collate existing bird records and relevant information. As part of this, designated sites of ornithological importance within and around the Site were identified. Records of species of moderate or higher conservation concern (i.e., those listed on Schedules 1 or 1A to the WCA, Annex I of the Birds Directive, the UK BoCC Red or Amber list (Stanbury et al., 2021)23 and/or the Scottish Biodiversity List (SBL)) were also requested from the RSPB. Records of raptor species listed on Schedules 1 or 1A to the WCA and/or Annex I of the Birds Directive were also requested from the HRSG. Additionally, information on the distribution, abundance and ecology of relevant species was obtained from published sources (Forrester et al., 2007[25] and Balmer et al., 2013[26]). Records of birds of low conservation concern were not requested because these species are not considered to be at risk of significant population-level effects from any impacts associated with the Development. Full details of the desk-based study methods are provided in the ornithology Technical Appendix A7.1.

7.3.4.3 Field Surveys

Baseline ornithology field surveys were carried out in 2023 and 2024, without any access restrictions. Field survey design complied with NatureScot (2017) guidance15, which was current at the time and set out to document the distribution, abundance and flight activity of target bird species. This information was used to inform the OIA.

The ornithological survey programme was developed based on the particular ornithological features which were anticipated to occur at the Site. A detailed methodology for all surveys is

[25] Forrester, R.W., Andrews, I.J., McInerny, C.J., Murray, R.D., McGowan, R.Y., Zonfrillo, B., Betts, M.W., Jardine, D.C. & Grundy, D.S. (eds) (2007). The Birds of Scotland. The Scottish Ornithologists Club, Aberlady.

[26] Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. and Fuller, R.J., (2013). *Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland*. Thetford: BTO.

provided in the ornithology Technical Appendix A7.1. A list of completed surveys is presented in Table 7.6 and a brief summary of each survey type is included below.

Table 7.4. Summary of Completed Ornithology Surveys

Survey Type	Survey Periods
Flight activity surveys	May 2023 to August 2024
Lekking black grouse surveys	April to May in 2023 & 2024
Breeding raptor surveys (including targeted surveys for golden eagle)	April to July in 2023 & 2024
Targeted eagle surveys	March to August 2024
Breeding diver and common scoter surveys	April to July in 2023 & 2024 April 2023 to July 2024
MBBS	April to July in 2023 & 2024

Flight Activity (Vantage Point) Surveys

Six VPs were identified to adequately cover the VP survey area. Combined, these VPs overlook the full VP survey area and the entirety of the Site at minimum tip height (200 m) in accordance with NatureScot (2017) guidance15.

NatureScot (2017) guidance15 requires that a minimum of 36 hours of survey effort is carried out at each VP in each relevant survey season (i.e. breeding and non-breeding). The flight activity survey programme was devised to cover the generic breeding season (April to August inclusive), as well as that of golden eagle and white-tailed eagle (*Haliaeetus albicilla*) (February to August inclusive) (Gilbert et al. 1998[27]) which were anticipated to occur in the vicinity of the Site.

Due to late commissioning, only 24 hours of survey effort per VP was conducted during the 2023 breeding season (between May and August), which is less than the recommended survey effort in NatureScot (2017) guidance15. However, an additional 36 hours of survey effort per VP was undertaken during each of the following seasons:

- Non-breeding season (September 2023 to February 2024); and
- Breeding season (late March to August 2024).

NatureScot confirmed (via email dated 12/11/2024) that sufficient data had been collected during the period between April 2023 and August 2024 to complete an assessment of potential impacts of the Development on ornithological features (see Table 7.1).

The scheme initially included eight VPs; however, locations 7 and 8 in the east of the Site were removed after turbine layout modifications reduced the collision risk area, making these locations unnecessary for further analysis. Data collected at VP 7 and VP 8 were not used within the CRM or to inform this OIA.

VP surveys were conducted monthly from May 2023 to August 2024.This equates to one partial and one full breeding season and one full non-breeding season captured across the survey period. All data derived from this survey period were used in the CRM.

VP surveys did not commence until May 2023 limiting the coverage of the 2023 golden eagle breeding season. Therefore, the effort for the 2023 season was supplemented with the 2024 targeted eagle survey effort (March-August) to capture the required minimum amount of effort for this species' breeding season.

Breeding Raptor Survey

The Site plus a surrounding buffer of 2 km was surveyed for breeding raptors between April and July 2023 and April and July 2024, with targeted eagle surveys, covering an extended buffer of 6 km, completed between early March and mid-August 2024.

[27] Gilbert, G., Gibbons, D.W. & Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy.

Survey protocols broadly followed the standard methodologies for assessing raptor populations as set out by Hardey et al. (2013)[28]. The generic raptor surveys (for species other than eagles) involved four rounds of visits undertaken monthly between April and July to determine presence, territory occupation and breeding success. Covering this period encompassed the time of the year when activity of most raptor species is highest and their presence most likely to be detected.

Golden eagle surveys should ideally be conducted in February and March to detect territory occupation and early season displaying. This was not possible in 2023 due to late commissioning. However, surveys were undertaken from March to August 2024 to capture early season breeding and territorial behaviour, as detailed below.

In total, 16 breeding raptor survey visits comprising 78.25 hours were undertaken during the Year 1 breeding season (2023) and 14 visits comprising 66.75 hours during Year 2 (2024). As detailed above, golden eagle surveys were undertaken between March and August 2024 to capture early season breeding and territorial behaviour, with a total of 15 visits comprising 100 hours.

Moorland Breeding Bird Survey

The MBBS was designed to target typical upland wader species and to cover all areas of open moorland within the Site and a surrounding buffer of 500 m. Surveys followed a modified Brown & Shepherd (1993[29]) methodology summarised in Gilbert et al. (1998)27 involving four survey visits between 08.30-18.00, conducted between April and July 2023 and 2024. The surveyors followed transect routes covering all parts of the survey area to within 100 m. These surveys were combined with generic raptor surveys when these were being undertaken from within the Site boundary and 500 m survey area. The behaviours of all birds seen or heard during the surveys were recorded on large-scale (1:10,000) maps using standard BTO coding and notation. Survey visits were undertaken in good, clear weather conditions (wind less than Beaufort Wind Force Scale 5).

Black Grouse Survey

Targeted surveys were undertaken to determine the presence of black grouse. These surveys were designed to cover all areas of suitable lekking habitat (e.g. areas of short grassland or moorland, particularly near forest edges and along forest rides) within the Site and a surrounding buffer of 1.5 km to determine the presence of any lekking black grouse. Surveys involved two rounds of surveys conducted between April and May in 2023 and 2024 and were conducted within 2 hours of dawn (Gilbert et al., 199827). Surveys only commenced when weather conditions were dry and calm, allowing the call of lekking males to be heard. Care was taken not to disturb lekking birds, which were observed from distance and counted using binoculars and/or a scope.

Breeding Diver/Scoter Survey

In accordance with NatureScot (2017) guidance15, all potentially suitable diver and common scoter breeding habitat within the Site plus a 1 km survey buffer was surveyed for the presence of these species and any evidence of breeding behaviour. The objective of the survey was to understand the proximity of any breeding locations to the development turbines and works areas in order to assess the potential effects of the Development on breeding birds. All suitable diver and common scoter breeding waterbodies (lochs, lochans and bog pool systems) were surveyed following the standard techniques described in Gilbert et al. (1998)27 as recommended in NatureScot (2017) guidance15.

7.3.4.4 Limitations

Limitations to the baseline study methods are detailed in Technical Appendix A7.1. However, these are not considered to undermine the robustness of the assessment.

[28] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring, 3rd edition. The Stationery Office, Edinburgh.

[29] Brown, A.F. & Shepherd, K.B. (1993). A method for censusing upland breeding waders. Bird Study 40(1): 89-195.

7.3.4.5 Future Baseline

Climate change projections indicate likely drier and warmer summers and warmer winters with increased winter rainfall[30]. These changes may affect habitats and prey abundance and availability. Bird populations dependent upon invertebrates may be most affected. Overall, there may be long-term changes to abundance, distribution and sensitivity of some key species. However, any such long-term changes are unlikely to affect the validity of baseline surveys and the assessment reported in this chapter. The future baseline is therefore considered to be the same as represented by the baseline studies.

7.3.5 Baseline Conditions

This section lists the designated sites of potential relevance to the assessment, briefly outlines habitat conditions as they may affect bird populations and summarises baseline bird populations and bird flight activity in the vicinity of the Site.

7.3.5.1 Designated Sites

Special Protected Areas (SPAs)

There are three internationally designated sites of ornithological interest within 20 km of the Beinneun Wind Farm: Glen Affric to Strathconon, Loch Knockie and Nearby Lochs, and West Inverness-shire Lochs, the locations of which are shown in Technical Appendix A7.2, Figure 7.3.

Glen Affric to Strathconon SPA

The Glen Affric to Strathconon SPA[31] site lies 11.4 km north of the Site. It covers 50,419.34 ha (central NGR NH 300410) and qualifies under Article 4.1 of the EU Birds Directive by regularly supporting a population of European importance of the Annex I species, golden eagle, with 10 active territories in 2003 (2.2% of the Great Britain population).

NatureScot (2016a) guidance20 suggests that golden eagle has a core foraging range of 6 km, with a maximum range of up to 9 km. Although there is more recent evidence to suggest that that golden eagle core foraging ranges are higher than 6 km (Fielding et al., 2020[32]), the separation distance between the Site and this SPA far exceeds the expected maximum of 9 km. As such, there is not considered to be any connectivity between this SPA and the Site and it has been scoped out of the OIA.

Loch Knockie and Nearby Lochs SPA

Loch Knockie and Nearby Lochs SPA[33] is located 14.7 km east of the Site (central NGR NH 429032) and covers 396.4 ha. The boundary of the SPA follows those of Knockie Lochs SSSI and Glendoe Lochans SSSI.

Loch Knockie and Nearby Lochs SPA qualifies under Article 4.1 by regularly supporting a population of European importance of the Annex I species: Slavonian grebe (1992 to 1995, up to six pairs, up to 10% of the Great Britain population).

Slavonian grebe is a rare breeding bird in Scotland confined to a small number of freshwater lochs where it breeds and feeds on small fish and aquatic invertebrates (Forrester *et al*., 200725). Based on the separation distance between the Site and this SPA (and lack of any records of this species on Site or in the surrounding area), there is not considered to be any potential for connectivity and it has been scoped out of the OIA.

[30] climate-projections-scotland-summary-dec21.pdf
[31] https://sitelink.nature.scot/site/10233
[32] Fielding, A.H., Haworth, P.F., Anderson, D., Benn, S., Dennis, R., Weston, E. & Whitfield, D.P., (2020). A simple topographical model to predict Golden Eagle *Aquila chrysaetos* space use during dispersal. *Ibis, 162*(2), pp.400-415.
[33] https://sitelink.nature.scot/site/8529

West Inverness-shire Lochs SPA

The West Inverness-shire Lochs SPA[34] encompasses Lochs Affric, Cluanie, Loyne (including Lochan Bad an Losguinn), Garry (including Loch Poulary), Lundie, and Blair. Generally, the SPA extends to include the habitats within 10 m of the lochs' shorelines, and is located 182 m from the Site. It covers an area of 2,967.5 2 ha and regularly supports a population of European importance of the Annex I species, black-throated diver, and a population of European importance of the migratory species, the common scoter.

The grass and heathland habitats adjacent to the SPA lochs provide nesting and brood-rearing areas for both black-throated diver and common scoter. The group of lochs that comprise this site support nationally important numbers of these species. The SPA is particularly important for black-throated divers due to its long history of use and the above average level of chick productivity that several of the component lochs demonstrate consistently. The lochs hold one of the main concentrations of breeding common scoter in Britain.

Sites of Special Scientific Interest (SSSIs)

There are four SSSIs designated for ornithological features within 20 km of the Site, the locations of which are shown in Technical Appendix A7.2 Figure 7.3. All three SSSI sites have ornithological features which could have connectivity with the Development.

Glen Affric SSSI

Glen Affric SSSI[35] covers 2,265.12 ha and lies at the head of Strathglass, 6 km west of the village of Cannich and ~40 km from Inverness. Glen Affric SSSI is 12.74 km the Site at the closest point. The majority of the SSSI lies on the southern shores of Loch Beinn a' Mheadhoin and Loch Affric, with two small outliers at Cougie and Coille Ruigh na Cuileige. It is notified for its native pinewood habitats and associated lichen and bird assemblages.

The bird assemblage includes several pinewood specialists such as crested tit (*Lophophanes cristatus*) and Scottish crossbill (*Loxia scotica*). Capercaillie (*Tetrao urogallus*) are present in very low numbers and there is also a population of black grouse.

Based on the habitats present on Site and the separation distance between the Site and this SSSI, there is not considered to be any potential for the Development to have significant effects on its breeding bird assemblage and it has been scoped out of the OIA.

Glendoe Lochans SSSI

Glendoe Lochans SSSI[36] features several small lochans with moderate nutrient levels, situated on a plateau at 700 m above sea level, southeast of the Great Glen and about 8 km from Fort Augustus. The lochans range in size from 2 to 9 ha. Glendoe Lochans SSSI is 14.71 km the Site at the closest point.

The site is home to a nationally significant breeding population of Slavonian grebes. From 2005 to 2008, the average breeding population was 1.25 pairs, accounting for 3% of the current British population. Despite being at the highest altitude in Scotland for these birds, the Glendoe Lochans are among the most successful regular breeding sites for Slavonian grebes in the country.

Additionally, the SSSI supports around two breeding pairs of common scoter, representing 4% of the British population, making it a nationally important breeding site for this species as well.

Glendoe Lochans SSSI is part of the Loch Knockie and Nearby Lochs SPA.

The surrounding vegetation is a mix of wet heath, dry heath, mire, and flushes, with species-poor wet heath being predominant. The lochans host a natural aquatic plant community, including extensive sedge beds, which provide essential nesting and brood-rearing habitats for the birds it supports.

[34] https://sitelink.nature.scot/site/9187
[35] https://sitelink.nature.scot/site/697
[36] https://sitelink.nature.scot/site/986

Based on the separation distance between the Site and this SSSI, there is not considered to be any potential for the Development to have significant effects on the SSSI or its notified features and it has been scoped out of the OIA.

Knockie Lochs SSSI

Knockie Lochs SSSI[37] comprises two deep lochs with moderate nutrient levels, Loch nan Lann (23.5 ha) and Loch Knockie (68.5 ha). These lochs are situated on the southeast side of the Great Glen at an altitude of 200 m, approximately 4 km southwest of Whitebridge. They are surrounded by broad-leaved woodland, conifer plantations, and some improved grassland. Loch Knockie also features several small, wooded islands. Knockie Lochs SSSI is 18.20 km from the Site at its closest point.

This site is of significant nature conservation importance as it supports a nationally important breeding population of Slavonian grebes. The Knockie Lochs supported one pair of grebes during most of the years from 1996 to 2002.

Both lochs contain extensive beds of emergent vegetation. These habitats provide essential nesting and brood-rearing areas for the birds.

Based on the separation distance between the Site and this SSSI, there is not considered to be any potential for the Development to have significant effects on the SSSI or its notified features and it has been scoped out of the OIA.

West Inverness-shire Lochs SSSI

West Inverness-shire Lochs SSSI[38] covers 2,967.52 ha. It comprises eight freshwater, upland lochs lying within the altitudinal range 90-340 m above sea level to the west of the Great Glen. The constituent lochs are Loch Affric, Loch Cluanie, Lochan Bad an Losguinn, Loch Loyne, Loch Lundie, Loch Garry, Loch Poulary and Loch Blair. The lochs are characterised by deep, acidic waters with patchy emergent vegetation. The West Inverness-shire Lochs SSSI is 163 m from the Site at its closest point.

The boundaries of the SSSI are contiguous with the West Inverness-shire Lochs SPA and black-throated diver and common scoter and qualifying features of both designations.

7.3.6 Baseline Bird Populations Within the Vicinity of the Site

7.3.6.1 Greylag Goose

No greylag goose *Anser anser* were recorded during the flight activity surveys at the Site, however a group of three were recorded flying during the MBBS. Given the lack of flight records by this species within the VP survey area and lack of suitable foraging habitat, there was not considered to be any potential for a significant population-level effect on this species. Hence, greylag goose is considered to be of Less than Local value and is not considered further in this chapter.

7.3.6.2 Pink-footed Goose

There was just one flight by pink-footed goose *Anser brachyrhynchus* comprising a total of 68 individuals. NatureScot guidance states that "*In light of the robust population and its high avoidance rate of 99.8%, collision risk modelling for pink-footed geese is only required if a proposal has connectivity with a protected area where this species is a qualifying interest*"[39]. This is not the case for the Development and, given the low level of flight activity by this species within the VP survey area and lack of suitable foraging habitat , there is not considered to be any potential for a significant population-level effect on this species. Hence, pink-footed goose is considered to be of Less than Local value and is not considered further in this chapter.

[37] https://sitelink.nature.scot/site/880
[38] https://sitelink.nature.scot/site/9189
[39] Stated on the NatureScot "Wind farm impacts on birds" webpage: https://www.nature.scot/professionaladvice/planning-and-development/planning-and-development-advice/renewable-energy/onshore-windenergy/wind-farm-impacts-birds [Accessed July 2025].

7.3.6.3 Common Scoter

No common scoters were observed during targeted surveys of suitable breeding habitat for this species (and divers) within 1 km of the Site boundary completed in 2023 and 2024 and no common scoter flights were observed during the VP surveys completed between May 2023 and August 2024.

The only records of this species during the field surveys were single incidental breeding season records during each survey year, with a pair recorded on a lochan in the northwest of the breeding common scoter survey area (see Confidential Appendix A7.6, Confidential Figure 1) during a breeding raptor survey on 15th May 2023 and three common scoter observed towards the middle of Loch Garry (approximate British National Grid Reference NH 22090 02076), during a MBBS visit on 19th April 2024.

Multiple RSPB records of this species within 2 km of the Site, including a small number of confirmed breeding records, were also obtained as part of the desk-based study. Further details are presented in Confidential Appendix A7.6). Despite the low levels of activity, due to common scoter being a qualifying feature of the West Inverness-shire Lochs SPA and the potential for it to breed and forage within potential disturbance distance of the Development, it has been assessed as being of international importance.

7.3.6.4 Capercaillie

Capercaillie was identified in the desk study as part of the bird assemblage linked to Glen Affric SSSI, based on the separation distance from the Site (12.74 km at the closest point) there is not considered to be any potential for connectivity. Furthermore, habitats present on the Site are not suitable for capercaillie. As such, capercaillie is considered to be of Less than Local importance and is not considered further in this chapter.

7.3.6.5 Black Grouse

The RSPB desk study returned one record of probable breeding black grouse. During field surveys single male black grouse were observed lekking (displaying) at two sites within the black grouse survey area, one in each survey year. There were a number of additional records of birds observed in flight or foraging, or heard calling. The locations of the records are displayed in Confidential Appendix A7.6, Confidential Figure 1 and Confidential Figure 4.

As no flights occurred during the flight activity surveys, no CRM was undertaken for this species. However, black grouse is included on the UK BoCC Red list (Stanbury et al., 2021)23 and SBL and, due to the presence of six lek sites within 1.5 km of the Site, it is assessed a being of regional importance.

7.3.6.6 Slavonian Grebe

Slavonian grebe was identified in the desk study as a designated feature of Loch Knockie and Nearby Lochs SPA, as well as Glendoe Lochans SSSI and Knockie Lochs SSSI. However, Slavonian grebe was not recorded on the Site or in the surrounding areas during the baseline surveys and there was no desk study records. Furthermore, based on the separation distance between the Site and this SPA (approximately 14.7 km), there is not considered to be any potential for connectivity between the two areas, As a result, there is not considered to be any potential for significant population-level effects on this species arising from the Development. It is assessed as being of Less than Local importance and it is not considered further in this chapter.

7.3.6.7 Golden Plover

Five golden plover (*Pluvialis apricaria*) flights, comprising eight individuals, were recorded during the breeding season, while another individual flight was recorded in the non-breeding season. The flights passed within the VP survey area for a total duration of 11.5 minutes, therefore CRM was undertaken for this species. Of this time, 8.5 minutes were spent at PCH.

In 2023, four possible golden plover territories were recorded within the MBBS area and in 2024 four probable golden plover territories were recorded (see Technical Appendix A7.2, Figures 7.11 and 7.12). Although golden plover is included on Annex I of the Birds Directive and the

SBL, it is a green-listed species and was not present in high densities. Therefore, it is assessed as being of regional importance.

7.3.6.8 *Snipe*

Three flights of individual snipe (*Gallinago gallinago*) were recorded during the breeding season. The flights passed within the VP survey area for a total duration of 39 minutes. Of this time, 38.5 minutes were spent at PCH; CRM was therefore undertaken for this species as a precautionary approach, but was determined to be very low, with no potential for the Development to have any significant effects on the NHZ 7 population of this species.

One possible snipe breeding territory was recorded in 2023 and two possible and one probable snipe territories were recorded in 2024 (See Technical Appendix A7.2 Figures 7.11 and 7.12). As levels of activity were low and snipe is not a qualifying feature of a designated site with potential connectivity to the Site nor identified in NatureScot (2025a) guidance as a target species for consideration of potential impacts of onshore wind farms it is assessed as being of Local importance. As there is not considered to be any potential for significant population-level effects on this species due to impacts associated with the Development, it has been scoped out of the assessment.

7.3.6.9 *Greenshank*

Four greenshank (*Tringa nebularia*) flights, comprising five individuals in total were recorded during the breeding season. The flights passed within the VP survey area for a total duration of 3.25 minutes. Of this time, 1.75 minutes were spent at PCH; therefore, CRM was undertaken for this species.

In 2023 there was one possible and one confirmed greenshank territory within the MBBS area, whilst in 2024 there was one possible, one probable and one confirmed breeding territory (see Confidential Appendix 7.6, Confidential Figure 5). As greenshank is a Schedule 1-listed breeding bird and has a restricted distribution within Scotland, it is assessed as being of national importance.

7.3.6.10 *Red-Throated Diver*

One red-throated diver (*Gavia stellata*) flight consisting of one individual was recorded during the breeding season. The flight passed the VP survey area for a duration of 2 minutes and was at PCH for the entirety. A pair was also recorded in the west of the Site during the MBBS/diver surveys in April and May 2024, however no breeding evidence was found (see Confidential Appendix A7.6, Confidential Figure 7.3).

Given red-throated diver has been recorded on Site and there is potential for breeding within disturbance distance, this species was scoped into the OIA. However, as there was just one flight record, CRM was not completed for this species. Red-throated diver is assessed as being of regional importance.

7.3.6.11 *Black-throated Diver*

Two black-throated diver records were returned from the desk study and one pair of black-throated diver were recorded loafing on Loch Garry in May 2023 during field surveys. There were no other sightings of this species on Site or in the surrounding area.

Despite the low levels of activity, due to black-throated diver being a qualifying feature of the West Inverness-shire Lochs SPA and the potential for birds to breed within disturbance distance of the Development and use the Site for foraging, it is assessed as being of international importance .

7.3.6.12 *Osprey*

Four flights of individual osprey (*Pandion haliaetus*) were recorded during the breeding season. The flights passed within the VP survey area for a total duration of 10.5 minutes. Of this time, 8.75 minutes were spent at PCH.

There was no evidence of breeding osprey within 2 km of the Site. CRM was therefore undertaken for this species. Osprey is assessed as being of regional importance.

7.3.6.13 Golden Eagle

A total of 30 golden eagle flights comprising 33 individuals in total were recorded during the baseline VP surveys. The flights, which consisted of adult and sub-adult birds, occurred throughout the breeding and non-breeding seasons and were distributed over the Site and surrounding areas of open moorland and forestry. All but one flight was either partially or entirely at potential collision height (PCH).

The flights passed within the VP survey area for a total duration of 2 hours 45 minutes. Of this time, 2 hours 30 minutes was spent at 20-250 m in height (i.e. PCH). CRM was therefore undertaken for this species.

The Site is 3.5 km from the closest known golden eagle nest site (see Confidential Appendix A7.6, Confidential Figure 7.2). Golden eagle is assessed as being of regional importance.

7.3.6.14 Hen Harrier

One hen harrier (*Circus cyaneus*) was recorded hunting on the Site in August 2023. The individual was observed for 45 seconds and was flying below 20 m in height, i.e., below PCH so not at risk of collision. Given the lack of flight records by this species within the VP survey area and lack of desk study records, hen harrier is assessed as being of Local importance and is not considered to be at risk of significant population-level effects arising from the Development. As such, it is not considered further in this chapter.

7.3.6.15 White-tailed Eagle

Eleven flights of white-tailed eagle, each comprising 1-2 birds, were recorded throughout the breeding season. The flights passed within the VP survey area for a total duration of 44.5 minutes. Of this time, 40 minutes were spent at PCH. CRM was therefore undertaken for this species.

The Site is 3 km from a known nest site (see Confidential Appendix A7.6, Confidential Figure 2). White-tailed eagle is assessed as being of regional importance.

7.3.6.16 Merlin

Two flights of individual merlin (*Falco columbarius*) were recorded during the breeding season. The flights passed within the VP survey area for a total duration of 60 seconds; neither flight was at PCH. Furthermore, there were no desk study records, Merlin is therefore assessed as being of Local importance and is not considered to be at risk of significant population-level effects arising from the Development. It is therefore not considered further in this chapter.

7.3.6.17 Other Species

The RSPB data included records of red-breasted merganser *Mergus serrator* and common sandpiper, *Actitis hypoleucos* and pied wagtail *Motacilla alba,* which were potentially breeding. There was also one record of common gull, likely use the wider area as a foraging resource.

During field surveys a further 13 Red-/Amber-listed BoCC (Stanbury et al., 2021)23 and/or SBL-listed species were also recorded during surveys. Of these, eight species were identified to be holding breeding territories within the survey area (mallard (*Anas platyrhynchos*), teal (*Anas crecca*), red grouse (*Lagopus scotica*), kestrel (*Falco tinnunculus*), hooded crow (*Corvus cornix*), meadow pipit (*Anthus pratensis*), skylark (*Alauda arvensis*), wheatear (*Oenanthe oenanthe*)).

It is generally accepted that passerine species are not significantly impacted by wind farm developments (NatureScot, 201715) and it is considered unlikely that the Site would have a significant impact on local populations of passerine species. Hence, effects on all passerine species are not considered further in this chapter.

All other species recorded during field surveys were of low conservation concern (i.e., Green-listed species that are not included on the SBL) and none are included in NatureScot (2025a) guidance1 as priority species for assessment. Therefore, these species are assessed as being of Less than Local importance and are not considered further in this chapter.

7.4 IDENTIFICATION AND EVALUATION OF POTENTIAL EFFECTS

7.4.1 Evaluation of Importance of Ornithological Features

An evaluation of the importance of ornithological features identified during the desk study and/or recorded during field surveys is presented in Table 7.5.

Statutory sites and species evaluated as being of Regional or higher importance are considered to be IOFs, while those of Local or Less than Local importance are not considered to be IOFs and have been scoped out of the assessment in the following sections.

Note, however, that the embedded mitigation described in section 7.7 will ensure that all breeding birds are protected during construction and decommissioning works, including those of Local or Less than Local importance. In addition, the enhancement measures detailed in the Habitat Management Plan (HMP; see Technical Appendix A6.6) are likely to benefit a range of upland breeding birds, including some species that have been scoped out of the assessment.

Table 7.5. Evaluation of Importance of Ornithological Features

Importance Level	Ornithological Feature
International	West Inverness-shire Lochs SPA, common scoter, black-throated diver
National	West Inverness-shire Lochs SSSI
Regional	Black grouse, golden plover, greenshank, red-throated diver, osprey, golden eagle and white-tailed eagle
Local	Snipe, hen harrier, merlin
Less than Local	Glen Affric to Strathconon SPA, Loch Knockie and Nearby Lochs SPA, Glen Affric SSSI, Glendoe Lochans SSSI and Knockie Lochs SSSI, greylag goose, pink-footed goose, mallard, teal, red grouse Slavonian grebe, common sandpiper, common gull, kestrel, all other species

7.4.2 Effects Scoped Out

On the basis of the desk-based study and field surveys undertaken, the professional judgement of the ornithology team, experience from other relevant projects and taking account of policy guidance, the topic areas listed below have been scoped out of the assessment.

- Effects on the following designated sites of ornithological importance: Glen Affric to Strathconon SPA, Loch Knockie and Nearby Lochs SPA, Glen Affric SSSI, Glendoe Lochans SSSI and Knockie Lochs SSSI. There was not considered to be any connectivity between the Site and any of these sites, and therefore there is no pathway for any effects;
- Effects on the following species: greylag goose, pink-footed goose, hen harrier, merlin, Slavonian grebe, capercaillie, mallard, teal, red-breasted merganser, red grouse, snipe, common sandpiper, common gull, kestrel, all passerine species and all species assessed as being of Less than Local importance. There was not considered to be any significant for population-level effects on these species due to construction, operation or decommissioning of the Development;
- Potential disturbance effects due to operational maintenance. These will be of low to negligible magnitude and not significant in EIA terms for any IOF;
- Cumulative effects on all IOFs, except common scoter, due to disturbance during construction and decommissioning (as described in section 7.6);
- Cumulative effects on all IOFs due to direct and indirect habitat loss (as described in section 7.6); and
- Cumulative collision risk to golden plover, greenshank and osprey. Predicted collision rates for these species from the Development alone were so low that there was not considered to be any potential for it to contribute to a material contribution to significant cumulative collision risks on the NHZ 7 breeding populations of any of these IOFs.

7.4.3 Embedded Mitigation

No specific design amendments were required in response to ornithological constraints.

There are two key types of embedded mitigation with relevance to ornithological receptors, namely good practice measures during construction to protect water quality, including silt management, which are detailed in the Outline CEMP (Technical Appendix A4.1) and implementation of a Bird Protection Plan (BPP) to protect breeding and roosting birds in accordance with relevant legislation.

The OIA has been undertaken under the assumption that the embedded mitigation will be in place prior to the onset of construction activities.

7.4.3.1 BPP

Under the WCA it is an offence to kill, injure or take any wild bird, to damage, destroy or interfere with a nest while it is in use or being built, to obstruct or prevent any bird from using its nest, and to take or destroy the eggs of any bird. Breeding species listed on Schedule 1 of the WCA are afforded additional protection from disturbance. In addition, golden eagle, white-tailed eagle and hen harrier are listed on Schedule 1A the WCA, which protects them from harassment at all times (including the non-breeding season). If any roosting Schedule 1A species are identified within potential disturbance distance of the Development (at any time of year) and no measures are taken to protect them from disturbance, this could be considered to constitute reckless harassment.

The good practice measures outlined in Table 7.6 below will be incorporated into a detailed BPP, devised (as part of a planning condition) in consultation with NatureScot, to ensure the safeguarding of all breeding birds, as well as roosting eagles or hen harrier, during the construction phase. Note that the measures in Table 7.6 provide an outline of proposed mitigation only; full details will be included in the BPP itself.

To ensure that mitigation measures are reactive to changing conditions on the Site and compliance with legislation protecting breeding birds and non-breeding Schedule 1A species, the BPP will be overseen by a suitably experienced and licensed Ecological Clerk of Works (ECoW), whose role is set out in the Outline CEMP (Technical Appendix A4.1). The ECoW will attend the Site regularly to make or oversee observations of birds present in and around areas where works are planned, and identify any potential constraints to works and/or reactive mitigation needs.

Routine maintenance required during operation is expected to be minimal, limited to small areas at any one time and of a short duration. However, should significant operational maintenance works be required during the nesting bird season, or if any roosting merlin or short-eared owl are suspected or confirmed to be present during the operational phase, measures such as those outlined in Table 7.6 will be implemented in order to protect breeding birds and roosting short-eared owl and merlin that may move into the area, and ensure compliance with relevant legislation.

As decommissioning works are likely to be of a similar nature and duration as construction activities, it is proposed that the mitigation outlined in Table 7.6 should be implemented during the decommissioning phase, following review and update (if required) to ensure compliance with prevailing legislation.

Table 7.6. Proposed Bird Protection Plan Measures

Measure	Summary
Toolbox talk	A 'toolbox talk' will be delivered by a suitably experienced ECoW to ensure that all contractors working on the Site are aware of ornithological sensitivities and relevant legislation.
Timing of works	Where practicable, construction works should take place outside the main breeding bird season (March to August inclusive).
Pre-construction survey for lekking black grouse	Where construction works are required during the key lekking period for black grouse (late March to mid-May; Gilbert *et al*., 199827), pre-construction survey of areas of suitable lekking habitat within 750 m of works will be completed by a

Measure	Summary
	suitably experienced and qualified ECoW, to check for the presence of black grouse leks.
Pre-construction survey for other breeding birds	Full pre-construction surveys of suitable habitat within the whole Development area and surrounding buffer areas appropriate to the species (i.e., the maximum species-specific recommended disturbance buffer in NatureScot (2022) guidance20) will be completed for Schedule 1-listed birds during the breeding season immediately prior to construction.
Pre-construction checks of works areas for all nesting birds	Where construction works are required during the breeding bird season, the area within 50 m of works should be surveyed ahead of any operations, by a suitably experienced and qualified ECoW, to check for active nests of all bird species. Checks should be completed on a regular basis throughout the construction period, where this coincides with breeding bird seasons.
Protection of Schedule 1/Annex I breeding birds	In the event that any nests or breeding territories of species listed on Schedule 1 of the WCA and/or Annex I of the Birds Directive are identified during pre-construction surveys or nest checks, an exclusion zone around the nest (or territory) will be established (with the distance appropriate to the species and determined by the ECoW with reference to NatureScot (2022) guidance20). No works will be permitted within the exclusion zone and no personnel or vehicles will be allowed to enter or pass through until the ECoW has confirmed that the chicks have fledged or the breeding attempt has failed. Where this is not feasible, a targeted species protection plan for the relevant species will be produced detailing specific mitigation to avoid disturbance. The exact measures will depend on the species and circumstances (e.g. nest location and nature and timing of the works) and will be agreed with NatureScot, but could include avoiding works during the most sensitive periods of the breeding attempt and/or during periods of cold or wet weather, restricting working hours to allow birds sufficient time to forage and a watching brief of any nests by a suitably experienced and licensed ornithologist whilst works are ongoing.
Protection of other nesting birds	If any other nesting birds are identified during pre-construction surveys or nest checks, an exclusion zone around the nest will be established, with the distance to be determined by the ECoW, appropriate to the species, nest location and nature of the works. No works will be permitted within the exclusion zone and no personnel or vehicles will be allowed to enter or pass through until the ECoW has confirmed that the chicks have fledged or the breeding attempt has failed. The ECoW will also determine whether any additional or alternative mitigation measures (e.g., a watching brief) are required or appropriate, depending on the circumstances.
Minimising disturbance to black grouse	If any leks are identified within 750 m of works during pre-construction surveys for this species during the key lekking period (late March to mid-May), a 750 m exclusion zone around the lek site will be established, within which no works will take place around the hours of dawn or dusk (with permitted working times to be determined by the ECoW through monitoring of the leks).
Protection of roosting Schedule 1A species	If any Schedule 1A species are confirmed or suspected to be roosting within potential disturbance distance of construction works (with the exact distance dependent on the species and in accordance With NatureScot (2022) guidance21), a specific protection plan will be developed to avoid disturbance to this species. Specific mitigation measures will be agreed with NatureScot but will likely include implementation of an appropriate disturbance buffer within which works are excluded whilst roosting birds are present.

7.4.4 Potential Impacts from the Development Alone

This section considers the potential impacts and associated effect significance of the construction, operation and decommissioning of the Development based on the typical activities described in Chapter 4: Development Description.

Potential effects on the ornithological features to be assessed associated with the construction and/or operation of the Development are:

7.4.4.1 Potential Disturbance and Displacement during Construction, Operation and Decommissioning

Disturbance of breeding birds, roosting birds (particularly during winter) and displacement of feeding/foraging birds in suitable habitats may occur, primarily during construction works. Temporary disturbance of breeding birds is likely to result from activities associated with people and machines in the vicinity of the Development.

The potential effects associated with construction activities are only likely to occur for as long as the construction phase continues and are thus generally short-term in nature. The exception to this would be if a negative effect on the breeding success of a feature were such that the local population becomes extinct and replacement through recruitment or recolonisation does not occur. For example, a study by Pearce-Higgins et al. (2012)[40] found that snipe and curlew densities declined significantly on wind farms during construction and had not recovered by the first-year post-construction. Disturbance/displacement effects during construction could affect species potentially breeding within the Site and surrounding area. Furthermore, it could also affect species using the Site as a potential roosting during both the breeding and non-breeding season. Disturbance/displacement of roosting birds, especially during the more weather adverse non-breeding season can negatively impact body condition, through an increase in energy expenditure and a reduction in rest time. Construction disturbance can be readily mitigated by avoiding sensitive areas through the implementation of appropriately defined buffer zones and by timing construction activities to avoid periods where sensitive species are present (if and where possible), such as the breeding season. A range of good practice measures have therefore been proposed to mitigate for potential disturbance effects during construction, decommissioning and any major operational maintenance. These will be detailed in the BPP (see section 7.4.3.1).

The predicted ornithological impacts due to disturbance have been assessed using a combination of professional ornithological judgement based on known bird behaviour patterns and assessment of bird numbers as well as available information, e.g., NatureScot (2022) guidance on sensitivity of individual bird species to disturbance.

Construction of the Site is programmed to last for approximately 12-18 months and decommissioning approximately eight months. Potential disturbance from construction activities will therefore affect 1-2 bird breeding seasons (February-August including eagle species).

The operation of turbines and increased human activity associated with maintenance of the Development has the potential to cause disturbance and displace birds from the Site. However, disturbance effects during the operational phase are likely to be of a lower magnitude than during construction, as some species may become habituated to turbines. Additionally, the level of human activity and associated disturbance onsite would be considerably reduced compared to the construction phase, with the level of human activity on the Site during operational works expected to be infrequent and of limited extent (both spatially and temporally).

If any significant maintenance works are required during the operational phase of the Development, relevant good practice measures outlined in the BPP; see section 7.4.3.1) would be applied to ensure compliance with legislation protecting breeding birds, including species listed on Schedules 1 and 1A to the WCA.

As such, potential operation phase effects are assessed as being of low magnitude and not significant in EIA terms for any IOF.

[40] Pearce-Higgins, J. W., Stephen, L., Douse, A. and Langston, R. H. W. (2012). Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. *Journal of Applied Ecology*, 49: 386–394.

7.4.4.2 Habitat Loss (Direct and Indirect Due to Displacement) during Construction, Operation and Decommissioning

The direct loss of critical habitats due to land take for infrastructure and habitat modification changes due to changes in land management may occur. Changes may be temporary or long-term.

Indirect habitat loss due to turbine barrier effects and the displacement of birds as a result of construction and maintenance activities, or due to the presence of the operating wind turbines close to nesting, roosting or feeding sites or habitual flight routes.

The Development is predicted to result in the permanent direct loss of c. 23 ha and a temporary direct loss of c. 4 ha of land through the development of borrow pits and construction compounds. Most of the habitat lost will be moorland and bog habitat mosaic. Full details are provided in Chapter 6: Ecology.

7.4.4.3 Potential Collision Risk during Operation

VP surveys allowed for the collection of flight path data for target species which fly or forage over the Site. Detailed CRM methods are provided in Technical Appendix A7.3, methods are briefly summarised in the following section.

7.4.5 Collision Risk Modelling

CRM was carried out for the Development based on the Band Model (Band, 2000)[41] and using NatureScot (2025b) avoidance rates. The collision risk area (15,386,852 m^2) was calculated in GIS by drawing a concave hull around the 19-turbine layout and adding a 500 m buffer. The CRM was based on an air gap (i.e., the lowest blade sweep height) of 28 m and tip height of 200 m, although all flights of relevant species recorded in the collision risk area within height bands ranging from 20-250 m were included as a precautionary approach)

Only bird flights recorded during the timed VP surveys were taken forward for modelling. Data was loaded into the R coding environment (R Core Team 2020) using the "sf" package (Pebesma, 2018[42]; Pebesma and Bivand, 2023[43]). Only flights or parts of flights that were inside the collision risk area were included in the analysis.

Only target species for which sufficient levels of flight activity, defined as two or more flights (though less flights would be considered if involving large flocks of target species) recorded at PCH within the collision risk area during the surveys were included in the CRM. Based on these criteria, CRM was completed for white-tailed eagle, golden eagle, golden plover, osprey and greenshank.

Collision risk was modelled under two scenarios of turbine operational time: 85%, which is typically the default value and is highly precautionary, and 44.8%, which is based on expected load factors for 2026-2029[44], and is therefore more realistic while still regarded as precautionary.

Full details of the CRM methods are presented in Technical Appendix A7.3.

7.4.6 Cumulative Assessment

Cumulative impacts have been assessed following guidance from NatureScot on assessing cumulative impacts from wind farm developments (NatureScot, 2018). Cumulative impacts are

[41] Band, W. (2000). Windfarms and birds – calculating a theoretical collision risk assuming no avoiding action. NatureScot Guidance Note.

[42] Pebesma, E. 2018. "Simple Features for R: Standardized Support for Spatial Vector Data." The R Journal, 10(1), 439–446. doi:10.32614/RJ-2018-009, Available at: https://doi.org/10.32614/RJ-2018-009.

[43] Pebesma, E., Bivand, R. 2023. Spatial Data Science: With applications in R. Chapman and Hall/CRC. doi:10.1201/9780429459016, Available at: https://r-spatial.org/book/.

[44] Department for Energy Security & Net Zero https://assets.publishing.service.gov.uk/media/65e85ee662ff48001a87b243/cfd-ar6-standard-terms-notice.pdf [accessed July 2025].

assessed by considering the impacts of the Development at the same time as the impacts arising from another development. This is done additively, i.e., adding the impacts of the two developments together and assessing if the new cumulative impact results in a significant effect. As recommended by NatureScot, cumulative effects for ornithology have been assessed within NHZ 7.

7.5 IMPACT ASSESSMENT

Potential effects of the Development alone on each IOF are assessed below, with species considered in order of importance level (and by taxonomic order within each importance level).

The impact assessment presented in the following sections assumes that the embedded mitigation described in section 7.4.2 will be fully implemented.

7.5.1 Species

7.5.1.1 Common Scoter

A detailed common scoter assessment is provided in Technical Appendix A7.4. As the assessment is confidential, an overview is presented below.

Disturbance during Construction and Decommissioning

Common scoter have been assessed as having high sensitivity to human disturbance in NatureScot (2022) guidance20, which recommends a disturbance buffer of 300-500 m from identified breeding sites. Wind farm construction and decommissioning has the potential to cause disturbance to any foraging or breeding common scoter within 500 m of the Development (see Confidential Appendix A7.6, Confidential Figure 3).

Embedded mitigation will include standard good practice to protect all breeding birds due to construction of the Development in accordance with relevant legislation. Additional measures to protect species listed on Schedule 1 to the WCA and/or Annex I of the Birds Directive, including common scoter, will also be implemented. These measures will be detailed in the BPP.

Any breeding attempts by common scoter within the vicinity of proposed construction activities would be identified during pre-construction surveys detailed in the BPP for the Site. The BPP will detail appropriate measures to avoid construction disturbance to any breeding attempts in compliance with legislation.

Common scoter was assessed as being of international importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is high. Following implementation of the BPP, potential effects on the West Inverness-shire Lochs SPA breeding common scoter population due to disturbance/displacement during construction and decommissioning of the Development are considered to be of negligible to low magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

Common scoter was assessed as being of international importance. In west Inverness-shire, common scoters breed on larger lochs (Balmer et al., 201326). Females nest in tall vegetation, sometimes heather (Calluna vulgaris), with islands often used (Forrester et al., 200725). During the breeding season common scoters forage on a wide range of freshwater invertebrates and studies have shown that lake use by breeding birds is correlated with both abundance of large invertebrates as well as shallow water (where prey is more accessible) (e.g., Hancock *et al.*, 2016[45]; 2019[46]). As such, there will be no direct loss of common scoter breeding or foraging habitat due to construction of the Development. Good practice measures to protect waterbodies, including the SPA lochs, from indirect impacts due to pollution will be implemented

[45] Hancock, M.H., Robson, H.J., Smith, T.D. & Douse, A. (2016). Correlates of lake use by breeding Common Scoters in Scotland. *Aquatic Conservation: Marine and Freshwater Ecosystems* 26, 749–760.

[46] Hancock, M.H., Robson, H.J., Smith, T.D. & Douse, A. (2019). Spatial and temporal patterns of foraging activity by breeding Common Scoters (*Melanitta nigra*) in Scotland. *Ornis Fennica* 96, 124–141.

during construction as part of the embedded mitigation for the Development (summarised in section 7.4.2).

No flights of common scoter were observed and, based on favoured areas of SPA lochs and the topography of the Site and surrounding area, it is considered unlikely that birds would regularly commute across the Site in future. As such, there is not considered to be any potential for common scoters from the West Inverness-shire Lochs SPA breeding population to be displaced due to barrier effects from the Development.

Given the separation distance between the Development turbines and common scoter breeding areas (detailed in Technical Appendix A7.4), it is considered unlikely that the presence of the Development would deter birds from breeding in the West Inverness-shire Lochs SPA (or lochs/lochans near to the SPA). Additionally, the presence of the operational Beinneun Windfarm, Beinneun Windfarm Extension and Millenium Wind Farm in the vicinity, of the SPA will likely mean that birds are habituated to the presence of turbines in the wider landscape.

In accordance with the BPP, appropriate measures will be implemented to avoid construction disturbance to any breeding common scoter attempts within potential disturbance distance (300-500 m; NatureScot, 202221). As a worst-case scenario, however, common scoters could be deterred from attempting to breed in areas of suitable breeding habitat within 500 m of the Development due to the presence of site personnel, vehicles and machinery during the construction and decommissioning phases of the Development, effectively resulting in displacement of birds that might otherwise have bred in the area.

Although this would be temporary, given the International importance level (and sensitivity) of the population a precautionary approach to the assessment has been adopted. Thus, in the absence of targeted mitigation, potential effects on the West Inverness-shire Lochs SPA breeding common scoter population due to displacement during construction and decommissioning of the Development are assessed as being of low to moderate magnitude and **potentially significant**. Targeted mitigation is proposed in section 7.7.1.

Collision Risk during Operation

As noted in Table 7.1, NatureScot raised a concern during consultation that common scoters associated with the West Inverness-shire Lochs SPA moving between breeding lochs could fly over the Development turbine array and therefore be at risk of collision.

No common scoter flights were identified during a total of 360 hours of VP surveys completed across the 2023 and 2024 breeding seasons (nor during any other surveys). As such, there is no evidence that common scoter regularly commute across the Site. CRM was, therefore, not completed for common scoter. Similarly, no flights over or towards the Beinneun Ridge were observed during the baseline surveys or desk study completed for Beinneun Windfarm (Arcus Renewable Energy Consulting Ltd, 2011[47]).

As detailed in Technical Appendix A7.4, evidence from studies of offshore wind farms (see Arcus, 2011 and references therein) suggests that, during the day, common scoters strongly avoid offshore wind farm, including during nocturnal flights, and birds reduce flight activity when visibility is poor and in very dark conditions. This suggests that common scoters are likely to avoid onshore wind farms.

Additionally, common scoters typically fly at very low heights offshore and expert advice on common scoter movements around the West Inverness-shire Lochs SPA also indicates that birds typically fly at low heights around breeding lochs.

Furthermore, it is considered highly unlikely that birds moving between favoured areas within the SPA breeding lochs would fly directly over the Development, which is located at a higher

[47] Arcus Renewable Energy Consulting Ltd (2011). Beinneun Windfarm Environmental Statement, Technical Appendix A8.2. Beinneun Windfarm Appraisal of the Likely Significant Effect on Common Scoter Associated with the West Inverness-shire Lochs Special Protection Area. https://wam.highland.gov.uk/wam/files/AECC9ACBDD849F29827412A7CB9966E3/pdf/11_04152_S36-VOL_III_-_TECH.APX_A8.2-298232.pdf

altitude than the SPA lochs, with birds more likely to follow an alternative flight path that avoids the Site (as detailed in Technical Appendix A7.4).

Common scoter was assessed as being of international importance. Potential collision risk to the West Inverness-shire Lochs SPA breeding common scoter population is considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.2 Black-throated Diver

Disturbance during Construction and Decommissioning

No breeding black-throated divers within potential disturbance distance of the Development were observed during the field surveys or identified during the desk study. However, construction and decommissioning of the Development has the potential to cause disturbance to foraging and breeding black-throated divers associated with the nearby West Inverness-shire Lochs SPA if they are present in future. Black-throated diver have been assessed as having high sensitivity to human disturbance in NatureScot (2022) guidance20, which recommends a disturbance buffer of 500-750 m from identified breeding sites.

Any potential breeding attempts by black-throated diver within potential disturbance distance of proposed construction or decommissioning activities would be identified during pre-construction/decommissioning surveys detailed in the BPP for the Site. In accordance with the BPP, appropriate measures will be implemented to avoid construction disturbance to any breeding attempts, in compliance with relevant legislation.

Black-throated diver was assessed as being of international importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is high. Potential impacts of construction or decommissioning disturbance on the West Inverness-shire Lochs SPA breeding black-throated diver population are considered to be of low to negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

Black-throated divers breed on lochs (e.g., Gilbert et al., 199827) and feed on fish and aquatic invertebrates (e.g., Jackson, 2002[48]), typically feeding their chicks with fish caught at the breeding loch, although prey may also be brought to chicks from nearby freshwater lochs and sometimes from the sea (e.g., Jackson, 2003[49]; 2005[50]). As such, no black-throated diver breeding or foraging habitat will be lost due to construction of the Development and good practice measures to protect waterbodies from indirect impacts due to pollution will be implemented during construction as part of the embedded mitigation for the Development (summarised in section 7.4.2).

No flights of black-throated diver were observed and, based on distances between SPA lochs and the topography of the Site and surrounding area, it is considered unlikely that birds would regularly commute across the Site in future.

As such, there is not considered to be any potential for black-throated divers from the West Inverness-shire Lochs SPA breeding population to be displaced due to barrier effects from the Development.

Black-throated diver was assessed as being of international importance. Potential direct and indirect habitat loss impacts, including barrier effects, on the West Inverness-shire Lochs SPA black-throated diver breeding population arising from the Development are therefore considered to be of negligible magnitude and **not significant** in EIA terms.

[48] Jackson, D.B. (2002). Between-lake differences in the diet and provisioning behaviour of Black-throated Divers *Gavia arctica* breeding in Scotland. *Ibis* 145, 30-44.
[49] Jackson, D.B. (2003). The diet and foraging behaviour of Black-throated Divers *Gavia arctica* breeding in Scotland. Ibis 145, 33–40.
[50] Jackson, D.B. (2005). Environmental correlates of lake occupancy and chick survival of Black-throated Divers *Gavia arctica* in Scotland. Bird Study 52, 225-236.

Collision Risk during Operation

Black-throated diver were not recorded during the VP surveys completed between 2023 and 2024 and CRM was not completed for this species.

It is considered unlikely that black-throated diver collision would increase in the future. This is because there is evidence that divers avoid turbines[51]. Furthermore based on the topography of the Site and surrounding area and distances between SPA lochs, the potential for divers to cross the Site while commuting between SPA lochs in the wider area is considered to be low, particularly as the core foraging range for breeding black-throated divers is likely to be less than 10 km (NatureScot, 2016a)[20].

Black-throated diver was assessed as being of international importance. Due to the lack of flight activity, potential collision risk to the West Inverness-shire Lochs SPA breeding black-throated diver population is considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.3 Black Grouse

Disturbance during Construction and Decommissioning

The most recent national survey in 2005 estimated the Scottish black grouse population to be around 3,400 males, which represents an overall decline of 29% since 1995/1996, although declines were lower in the north and northeast of Scotland compared with the southwest and southeast (Sim et al. 2008[52]). The NHZ 7 black grouse population was estimated at 473 males (Wilson et al. 2015[66]).

Black grouse have been assessed as having medium sensitivity to human disturbance in NatureScot (2022) guidance21, which recommends a disturbance buffer of 500-750 m from lek sites.

There were multiple registrations of black grouse in 2023 and 2024, spread across the same area, most of which were over 750 m from the Development, including two registrations of lekking birds. No lekking black grouse were observed within 750 m of the Site during targeted surveys in 2023 or 2024 and there were no desk study records of lek sites within this distance. However, there were occasional registrations of black grouse within 500-750 m and it is possible that birds could establish a lek within potential disturbance distance of the Development prior to construction or decommissioning.

A review of the impact of wind farms on grouse species by Coppes *et al*. (2020)[53] found that lekking black grouse in Scotland and Austria may be affected by infrastructure up to distances of 500 m, with indications that impacts may continue over larger distances in some instances. Earlier evidence from Austria has also suggested that black grouse leks may be adversely affected by wind farms, although it is not clear what the exact causes may be (Zeiler & Grünschachner-Berger, 2009[54]). In contrast, a study by Zwart *et al*. (2015)[55] of several Scottish wind farm sites found no evidence in the change in abundance of lekking males at operational wind farm sites following construction. Although the study did find that some lek locations moved locally following construction, this may have been due to several factors, including the response to provision of positive habitat management measures for the species away from operational infrastructure. The study also reported evidence of frequent use of habitats within wind farm sites, including beneath operational turbines

[51] Krijgsveld, K.L., 2014. Avoidance behaviour of birds around offshore wind farms. *Overview of knowledge including effects of configuration. Rapport Bureau Waardenburg*, pp.13-268.
[52] Sim, I.M., Eaton, M.A., Setchfield, R.P., Warren, P.K. and Lindley, P., (2008). Abundance of male Black Grouse Tetrao tetrix in Britain in 2005, and change since 1995–96. Bird Study, 55(3), pp.304-313.
[53] Coppes, J., Braunisch, V., Bollmann, K., Storch, I., Mollet, P., Grünschachner-Berger, V., Taubmann, J., Suchant, R. and Nopp-Mayr, U., (2020). The impact of wind energy facilities on grouse: a systematic review. Journal of Ornithology, 161(1), pp.1-15.
[54] Zeiler, H.P. and Gruenschachner-Berger, V., (2009). Impact of wind power plants on black grouse, *Lyrurus tetrix* in Alpine regions. Folia Zoologica, 58(2), p.173.
[55] Zwart, M.C., Robson, P., Rankin, S., Whittingham, M.J. and McGowan, P.J., (2015). Using environmental impact assessment and post-construction monitoring data to inform wind energy developments. Ecosphere, 6(2), pp.1-11.

Coppes *et al*. (2020)[53] suggested that landscape characteristics might largely determine how black grouse populations are affected by wind turbines. In the Alps, black grouse live mainly around the upper tree line (Patthey et al., 2012[56]; Sachser et al., 2017[57]), a relatively narrow altitudinal zone where conditions 500 m up or down the slope are unsuitable for lekking. Consequently, birds avoiding the immediate vicinity of wind turbines may lack suitable alternative lek sites nearby, resulting in lek abandonment Coppes *et al*. (2020)[53], whereas availability of lek sites may be less of an issue in Scotland.

Although there were multiple registrations of black grouse, including 1-2 registrations of single males within 500 m (the minimum recommended disturbance distance in NatureScot (2022) guidance20) of the Development during both survey years, the only records of lekking/displaying birds were more than 750 m away (see Confidential Appendix A7.6, Confidential Figure 4). The good practice measures detailed in the BPP (see Table 7.6), includes specific measures to protect lekking black grouse from disturbance during construction and decommissioning of the Development

Black grouse was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is medium. Following implementation of the BPP, impacts on the NHZ 7 black grouse population from construction or decommissioning disturbance associated with the Development are considered to be of low magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

The majority of black grouse activity, including the two registrations of lekking/displaying birds, was recorded more than 750 m of the Development. Although it is possible that black grouse could establish a lek site within potential disturbance distance in future, there is some evidence to suggest that males remain close to their lek all year round and their recruitment is local (Borecha et al., 2017)[58]. Although it is possible that small numbers of birds could be displaced from foraging areas, registrations of black grouse were concentrated outwith the Site boundary, with the majority outside the maximum disturbance distance, suggesting that the area within and around the Site is not a favoured foraging area. Furthermore, in the unlikely event that small numbers of birds are displaced, it is considered that there is sufficient suitable lekking, nesting and foraging habitat available in the surrounding area to support any displaced birds.

Black grouse was assessed as being of regional importance. The effects of direct or indirect habitat loss on the NHZ 7 population of breeding black grouse are considered to be of low magnitude and **not significant** in EIA terms.

While no significant effects are predicted, restoration of peatland habitats and the low density broadleaf woodland proposed in the Outline Habitat Management Plan for the Development (see Technical Appendix A6.6) will deliver new and enhanced foraging opportunities for black grouse.

Potential Collision Risk during Operation

As no flights occurred during the flight activity surveys, no CRM was undertaken for this species. Based on the topography of the Site and habitats present, it is considered unlikely that flight activity across the Site will increase in future as black grouse are more likely to moving between the forestry edges on lower slopes.

[56] Patthey, P., Signorell, N., Rotelli, L, & Arlettaz, R, (2012). Vegetation structural and compositional heterogeneity as a key feature in Alpine Black Grouse microhabitat selection: conservation management implications. European Journal of Wildlife Research 58, 59–70.

[57] Sachser, F., Nopp-Mayr, U., Zohmann, M., Schweiger A.-K., Grünschachner-Berger, V. & Immitzer, M. (2017). Searching the right tie – expert-based vs. statistical niche modeling for habitat management at the alpine treeline ecotone. Ecological Engineering 100, 107–119.

[58] Borecha, D.E., Willebrand, T. and Nielsen, O.K. (2017). Lek site defines annual spatial use of male Black Grouse (*Tetrao tetrix*). *Ornis Fennica* 94, 150–160

Black grouse was assessed as being of regional importance. Potential impacts on the NHZ 7 breeding black grouse population due to collision risk are considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.4 Golden Plover

Disturbance during Construction and Decommissioning

Golden plover have been assessed as having medium sensitivity to human disturbance in NatureScot (2022) guidance20, which recommends a disturbance buffer of 200-500 m from identified breeding sites. Wind farm construction and decommissioning has potential to cause disturbance to two possible breeding golden plover territories identified in 2023, these are within disturbance distance of the Development (see Technical Appendix A7.2, Figure 7.11), as well as to golden plover foraging in areas close to construction and decommissioning works. This represents (0.07 % of the NHZ 7 breeding population (3,009 pairs in 2005; Wilson *et al*., 201566), which is an insignificant proportion. Although several golden plover breeding territories were identified within the MBBS area during the 2024 surveys, these were all more than 500 m from the Development (see Technical Appendix A7.2, Figure 7.12).

Any golden plover breeding territories within potential disturbance distance of proposed construction or decommissioning activities would be identified during pre-construction/decommissioning surveys detailed in the BPP for the Site. In accordance with the BPP, appropriate measures will be implemented to avoid construction/decommissioning disturbance to any breeding attempts, in compliance with relevant legislation.

Golden plover was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is medium. Potential impacts of construction and decommissioning disturbance on the NHZ 7 breeding golden plover population are considered to be of negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

As well as direct loss of nesting and foraging habitat due to land-take for the Development, there is a possibility that golden plover will generally avoid areas developed for turbines resulting in additional (indirect) habitat loss due to displacement. Golden plovers are sensitive to human disturbance and numbers have been shown to be lower in areas of high disturbance (Finney et al., 2005[59]). For example, Pearce-Higgins, et al. (2009)[60] recorded a reduced occurrence of golden plovers within 200 m of turbines across 12 upland wind farms. However, studies by Fielding & Haworth (2010)[61] and Douglas et al. (2011)[62] found that, under some circumstances, golden plovers may be more tolerant of wind farm infrastructure. At Farr Wind Farm, Fielding & Haworth (2010)61 showed that the median distance of 16 golden plover nests to the nearest turbine was 168.8 m, with nine nests being less than 200 m away and three less than 100 m from the nearest turbine. Similarly, at Beinn Tharsuinn Wind Farm, Douglas *et al.* (2011)62 found that the distribution of breeding golden plovers appeared to be unaffected by proximity to turbines or tracks, with no evidence for this lack of association changing through time.

It is anticipated that any displaced birds could be accommodated within the large expanse of suitable nesting and foraging habitats in the surrounding area.

[59] Finney, S.K., Pearce-Higgins, J.W. & Yalden, D.W., (2005). The effect of recreational disturbance on an upland breeding bird, the golden plover *Pluvialis apricaria.* Biological Conservation, 121(1), pp.53-63.
[60] Pearce-Higgins, J.W. & Grant, M.C. (2009). International importance and drivers of change of upland bird populations. In *Drivers of environmental change in uplands* (pp. 237-255). Routledge.
[61] Fielding, A.H. and Haworth, P.F. (2010). Farr windfarm: A review of displacement disturbance on golden plover arising from operational turbines between 2005-2009. *Haworth Conservation*.
[62] Douglas, D.J., Bellamy, P.E. and Pearce-Higgins, J.W., (2011). Changes in the abundance and distribution of upland breeding birds at an operational wind farm. *Bird Study*, *58*(1), pp.37-43.

Golden plover was assessed as being of regional importance. Direct or indirect habitat loss on the NHZ 7 breeding golden plover population are considered to be of low magnitude and **not significant** in EIA terms.

Although no significant effects on golden plover are predicted due to direct or indirect habitat loss impacts from the Development, habitat enhancements, including peatland restoration, proposed within the Outline HMP (Technical Appendix A6.6), will improve and extend breeding and foraging habitat for upland breeding birds such as golden plover.

Collision Risk during Operation

For golden plover, no collisions are predicted during the non-breeding season as flights were only recorded in the breeding season. In winter, most Scottish-breeding birds move to coastal locations and they are unlikely to be present during this period (Forrester et al., 200725).

Golden plover breeding season collisions are predicted to be very low. Based on the 15 % turbine downtime scenario (which is more precautionary than the 55.2 % downtime scenario), the annual predicted golden plover collision mortality rate was 0.030 collisions during the breeding season (or 32.89 years per collision). This represents 0.02 % of the NHZ 7 breeding population (3009 pairs in 2005; Wilson et al., 201566).

Golden plover was assessed as being of regional importance. The effect of collision risk on the NHZ golden plover breeding population is considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.5 Greenshank

Disturbance during Construction and Decommissioning

Greenshank have been assessed as having medium/high sensitivity to human disturbance in NatureScot (2022) guidance20, which recommends a disturbance buffer of 300-500 m from identified breeding sites. Wind farm construction and decommissioning has potential to cause disturbance to one possible greenshank breeding territory identified within potential disturbance distance of the Development in 2023 and one probable and one possible breeding territory identified in 2024 (see Confidential Appendix A7.6, Confidential Figure 5). Three territories represents (2.03 % of the NHZ 7 breeding population (148 pairs in 1995[63]), which is an insignificant proportion.

Any nesting attempts by greenshank within potential disturbance distance of proposed construction or decommissioning activities would be identified during pre-construction/decommissioning surveys detailed in the BPP for the Site. In accordance with the BPP appropriate measures will be implemented to avoid construction/decommissioning disturbance to any breeding attempts, in compliance with relevant legislation.

Greenshank was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is medium/high. Potential impacts of construction and decommissioning disturbance on the NHZ 7 breeding greenshank population are considered to be of low magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

Greenshank are regarded as potentially vulnerable to human disturbance, particularly when disturbance coincides with areas of habitat change[64]. There is potential that up to three greenshank territories could be displaced (see Confidential Appendix A7.6, Figure 5). This represents (2.03 % of the NHZ 7 breeding population (148 pairs in 1995), which is an insignificant proportion. In addition, it is anticipated that any displaced birds could be accommodated within the extensive area of suitable nesting and foraging habitats surrounding area.

[63] BTO (2015). Natural Heritage Zones Bird Population Estimates. SWBSG Commissioned Report Number: 1504. https://web.archive.org/web/20211103054636/http:/www.swbsg.org/images/SWBSG_Commissioned_Report_No_1504.pdf

[64] NatureScot Research Report 1283 - Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species | NatureScot

Greenshank was assessed as being of regional importance. Direct and indirect habitat loss impacts on the NHZ 7 breeding greenshank populations are considered to be of low magnitude and **not significant** in EIA terms.

Enhancement, including peatland restoration, proposed in the Outline HMP for the Development (Technical Appendix A6.6) will deliver new and enhanced foraging and nesting opportunities for upland breeding birds including greenshank.

Collision Risk during Operation

The estimated mean annual collision rate for greenshank, using an avoidance rate of 98%, was 0.007 when based on the more realistic 44.8% operational time scenario. This represents 0.002% of the NHZ 7 breeding population (148 pairs in 1995; Wilson et al., 201566), which is an insignificant proportion.

Greenshank was assessed as being of regional importance. The potential collision risk impact to the NHZ 7 breeding greenshank population during operation of the Development are considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.6 Red-throated Diver

Disturbance during Construction and Decommissioning

No breeding red-throated divers within potential disturbance distance of the Development were observed during the field surveys or identified during the desk study. However, construction and decommissioning of the Development has the potential to cause disturbance to foraging and breeding red-throated divers if they are present in future . Red-throated diver have been assessed as having high sensitivity to human disturbance in NatureScot (2022) guidance20, which recommends a disturbance buffer of 500-750 m from identified breeding sites.

Any potential breeding attempts by red-throated diver within the vicinity of proposed construction or decommissioning activities would be identified during pre-construction/decommissioning surveys detailed in the BPP for the Site. In accordance with the BPP, appropriate measures to avoid construction disturbance to any breeding attempts will be implemented, in compliance with relevant legislation.

Red-throated diver was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is high. Potential impacts of construction or decommissioning disturbance on the NHZ 7 breeding red-throated diver population are considered to be of negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

Red-throated divers breed on small pools and lochans (e.g., Gilbert et al., 199827) and feed on fish, typically flying to the sea to forage, or occasionally larger lochs (other than the breeding loch), carrying fish back to their chicks (e.g., Forrester et al., 200725; NatureScot, 201715). No red-throated diver breeding or foraging habitat will be lost due to construction of the Development therefore there is no potential for displacement due to direct habitat loss, and good practice measures to protect waterbodies from indirect impacts due to pollution will be implemented during construction as part of the embedded mitigation for the Development (summarised in section 7.4.2).

Although it is possible that birds could breed in the area in future, or that birds which would otherwise have bred there could be displaced by the presence of the Development when operational, the low levels of activity by red-throated divers during surveys for the Development as well as during surveys for nearby developments, such as the operational Beinneun Wind Farm and the consented Bunloinn Wind Farm (and lack of designations for this species in the area), suggest that the Site is not located in an important area for red-throated divers and it is considered unlikely that there could be significant effects on breeding birds due to indirect habitat loss arising from the Development.

Displacement due to barrier effects can also occur when birds are deterred from using normal commuting routes between feeding areas and roosting or breeding sites (NatureScot, 201715). As there is no evidence that red-throated divers regularly commute across the Site, however,

there is not considered to be any potential for the presence of the Development to result in barrier effects.

Red-throated diver was assessed as being of regional importance. Potential direct and indirect habitat loss impacts, including barrier effects, to the NHZ 7breeding red-throated population associated with the Development are considered to be of negligible magnitude and **not significant** in EIA terms.

Collision Risk during Operation

Red-throated diver was only recorded once during the VP surveys completed between 2023 and 2024; therefore CRM was not completed for this species. It is considered unlikely that red-throated diver collision would increase in the future because, as discussed above, the Site does not appear to be located in an important area for red-throated divers, which may prefer breeding sites closer to coastal foraging areas. Furthermore, there is evidence that red-throated divers avoid onshore wind turbines[65].

Red-throated diver was assessed as being of regional importance. Due to the lack of flight activity, potential collision risk to potentially breeding red-throated diver is considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.7 Osprey

Disturbance during Construction and Decommissioning

No evidence of breeding osprey was recorded within 2 km of the Site. However, In the event that birds establish a new breeding territory within potential disturbance distance (350-750 m; NatureScot, 202220) prior to or during construction (or decommissioning), measures detailed in the BPP will be implemented to ensure birds are protected from disturbance in compliance with legislation. Osprey was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is medium/high. Potential impacts of construction or decommissioning disturbance on the NHZ 7 breeding osprey population are considered to be of negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

The habitats present within the Site are dominated by open moorland and bog habitat, and the Site is considered to be of limited value to osprey compared with the forested habitats and lochs present in the wider area. No nest sites were identified within the Site and there were few registrations of the species over the Site. Osprey was assessed as being of regional importance. As such, no impacts of direct or indirect habitat loss are predicted for this species at the scale of the NHZ 7 breeding population and there will be **no significant effects** in EIA terms.

Collision Risk during Operation

The estimated mean annual collision rate for osprey, using an avoidance rate of 98%, is 0.023 when based on the more realistic 44.8% operational time scenario (or one collision every 43.39 years). This represents 0.14 % of the NHZ 7 population (eight breeding pairs in 2013; Wilson *et* al., 2015[66]), which is not considered to be significant at the population level. It should also be noted that numbers of osprey pairs in the Highlands have increased significantly (by 4.9%) between 2009-2018 (Challis et al., 20223); therefore, collision risk impacts to the NHZ 7 population may be lower than predicted based on the 2013 (Wilson et al., 201566) population estimate.

[65] https://www.nature.scot/sites/default/files/2017-07/Publication%202015%20-%20SNH%20Commissioned%20Report%20885%20-%20A%20review%20of%20red-throated%20diver%20and%20great%20skua%20avoidance%20rates%20at%20onshore%20wind%20farms%20in%20Scotland.pdf

[66] Wilson, M.W., Austin, G.E., Gillings S. & Wernham, C.V. (2015) Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number SWBSG_1504.

Osprey was assessed as being of regional importance. Impacts to the NHZ 7 breeding osprey population from potential collision risk are considered to be of negligible magnitude and **not significant** in EIA terms.

7.5.1.8 Golden Eagle

Disturbance during Construction and Decommissioning

No golden eagle nest or roost sites were identified within 2 km of the Site. In the event that birds establish a new breeding territory or roost site within potential disturbance distance (750-1,000 m for nest sites and 250-500 m for roost sites; NatureScot, 202220) prior to or during construction (or decommissioning), measures detailed in the BPP will be implemented to ensure birds are protected from disturbance. Golden eagle was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is high. Potential impacts of construction and decommissioning disturbance on the NHZ 7 breeding golden eagle population are considered to be of negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

Evidence suggests there is a possibility that golden eagles in Scotland will generally avoid areas developed for turbines resulting in indirect habitat loss through displacement. For example, there is evidence from operational monitoring studies undertaken at Edinbane, Ben Aketil and Beinn an Tuirc Wind Farms that suggests decreased spatial use of habitats at a wind farm during initial years of operation (Haworth Conservation, 2015)[67]. Displacement was further investigated in a recently published study investigating the response of GPS tagged dispersing juvenile golden eagles to wind farms in Scotland (Fielding et al., 2022[68]). The findings of this study suggest that dispersing juvenile golden eagles avoid turbines.

Low and consistent levels of flight activity were recorded across all seasons during the VP surveys and breeding raptor surveys. This indicates some use of the Site as a foraging resource. However, it is considered that there is more than sufficient alternative foraging habitat available in the wider area to support any birds that are temporarily displaced from traditional foraging areas during construction of the Development. No nest or roost sites were identified within 2 km the Site, indicating that use of the Site is limited to occasional foraging.

NatureScot recommend[69] the use of the GET model to inform potential habitat loss to golden eagle ranges in the vicinity of wind farms (Fielding et al., 2020)32. The GET model results are shown in Technical Appendix A7.2, Figure 7.13. The GET model is used to predict habitat use by eagles generally, based on the presence of suitable habitat, slope, aspect and distance to a ridge. The preference index that underlies the GET model is based on an extensive dataset of GPS positions of young satellite tagged golden eagles in Scotland. All known golden eagle territories are over 2 km away (shown in Confidential Appendix A7.6, Confidential Figure 2) and, given the locational, topographical and habitat context of the Site, there would be no appreciable 'fragmentation / barrier effect' within any known golden eagle territory. In addition, as outlined below, the GET model indicates that golden eagle foraging ranges are significantly higher than 6 km, which was previously considered to be the core foraging range for golden eagle[70]. Consequently the significance of losing areas to wind farms will tend to diminish (McLeod et al., 2002[71]; Fielding et al., 202032).

[67] Haworth Conservation (2015). Edinbane Windfarm: ornithological monitoring. A review of the spatial use of the area by birds of prey.

[68] Fielding, A.H., Anderson, D., Benn, S., Dennis, R., Geary, M., Weston, E. & Whitfield, D.P., 2022. Responses of dispersing GPS-tagged Golden Eagles (*Aquila chrysaetos*) to multiple wind farms across Scotland. *Ibis*, *164*(1), pp.102-117

[69] https://www.nature.scot/doc/naturescot-statement-modelling-support-assessment-forestry-and-wind-farm-impacts-golden-eagles

[70] https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf

[71] McLeod, D.R., Whitfield, D.P., Fielding, A.H., Haworth, P.F. and McGrady, M.J., (2002). Predicting home range use by golden eagles *Aquila chrysaetos* in western Scotland. *Avian Science*, 2(4), pp.183-198.

Golden eagle was assessed as being of regional importance and the effect of habitat loss (direct and indirect due to displacement) on the NHZ 7 breeding golden eagle population would be of low magnitude and **not significant** in EIA terms.

Collision Risk during Operation

Golden eagles are potentially vulnerable to collision with wind turbines during display flights, interactions with other eagles, mobbing intruders, when hunting and moving between favoured hunting areas and nest/roost sites. However, there have been few confirmed reports of golden eagle collisions at onshore wind farms in Scotland. This is in contrast to very high numbers of collision fatalities recorded at certain wind farms in North America and a total of 28 reported incidents in mainland Europe[72], including wind farm sites in Spain, Norway and Sweden.

As discussed above under habitat loss impacts on golden eagle, there is evidence that birds in Scotland tend to avoid turbines. For example, data emerging from the expansion in satellite tracking of young golden eagles in Scotland has shown relatively consistent avoidance of operational turbines (Whitfield & Fielding, 2017[73]; Fielding et al., 202268). 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. For example, Whitfield & Fielding (2017)73 analysed GPS location data from over 100 young (dispersal phase) satellite tagged golden eagles relative to 39 wind farm sites. Only 0.03 % of the records (totalling 360,711 location fixes) were within 500 m of an operational wind turbine. Consequently, the risk of the predicted collision rate actually occurring is considered to be very low. Additionally, NatureScot (2025b) guidance14 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%).

Fielding et al. (2022)68 speculate that, in contrast to other populations, golden eagles in Scotland may avoid turbines due to a lack of concentrated prey resource among turbine arrays or due to increased levels of threat perception (“wariness”), which could be selectively influenced by a history of persecution of golden eagles in Scotland.

As a long-lived, relatively scarce raptor with a low reproductive rate, additive collision mortality could result in significant effects on population dynamics, particularly if the population is already under pressure from other sources of mortality, such as human persecution/illegal killing. However, as outlined above displacement effects, particularly in relation to territorial birds, appear to be the more important potential impact from operational wind farms on this species in Scotland (e.g., Whitfield & Fielding, 201773; Fielding et al., 202268).The estimated mean annual collision rate for golden eagle, using an avoidance rate of 99 % is 0.26 and based on the more realistic 44.8% operational time scenario (or approximately one golden eagle every 3.86 years). This represents 0.30 % of the NHZ population (43 breeding pairs; Wilson et al., 201566).

It should be noted that the CRM is generic and based on a number of assumptions, which makes the results highly precautionary. For example, For example, CRM works on the assumption that, a bird can either collide with a turbine multiple times, or collides once is replaced instantly in the population, which is not realistic in any circumstances. As such, theoretical collision risk will typically be higher than actual rates and CRM results should therefore be treated as indicative, and not verbatim. Additionally, 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. For example, immature golden eagles are essentially nomadic until they reach maturity at 4-5 years (e.g., Hardey et al., 201328).

Additionally, the results of national surveys show that the British golden eagle population has increased by 15% between 2003-15 and the population now meets the abundance target identified to define favourable conservation status in Scotland (Hayhow et al., 2017)2. The NHZ 17 population estimate (Wilson et al., 201566) is based on data from the 2003 national golden eagle survey, whereas the most recent national golden eagle survey in 2015 (Hayhow *et al.,* 20172) found that the north-central Highlands, the study region within which the Development is

[72] Effects of wind turbines on birds and bats | Home | LfU

[73] Whitfield, D.P. & Fielding, A.H. (2017). Analyses of the Fates of Satellite Tracked Golden Eagles in Scotland. Scottish Natural Heritage Commissioned Report No. 982.

located and an area smaller than NHZ 7, supported 49 golden eagle pairs. Based on this estimate, a predicted mean annual collision rate of 0.26 represents 0.27 % of the north-central Highlands population, which is an insignificant proportion.

Golden eagle was assessed as being of regional importance. With a breeding population of at least 43 pairs within NHZ 7 and an overall Scottish breeding population of 508 territorial pairs (Hayhow et al., 20172), and given the strong evidence (outlined above) that birds are likely to avoid turbines, overall impacts on the NHZ 7 breeding golden eagle population arising from collision mortality are considered to be of low magnitude and **not significant** in EIA terms.

7.5.1.9 White-tailed Eagle

Disturbance during Construction and Decommissioning

No white-tailed eagle roosting sites were identified within 2 km of the Site and only one known nesting site, located approximately 3 km from the Site boundary, was identified within the breeding eagle survey area. In the event that birds establish a new breeding territory or roost site within potential disturbance distance (250-500 m for breeding and roosting birds; NatureScot, 202220) prior to or during construction (or decommissioning), measures detailed in the BPP will be implemented to ensure birds are protected from disturbance. White-tailed eagle was assessed as being of regional importance and according to NatureScot (2022) guidance20, the overall likely sensitivity of this species to disturbance is high. Potential impacts of construction or decommissioning disturbance on the NHZ 7 white-tailed eagle breeding population are considered to be of negligible magnitude and **not significant** in EIA terms.

Habitat Loss (Direct and Indirect Due to Displacement)

There will be no direct loss of any known white-tailed eagle nest or roost sites due to construction of the Development. As Site use by white-tailed eagle was relatively low (see section 7.3.6.15) indicating that it is not currently an important area for foraging. However, it is acknowledged that activity levels could increase in future if white-tailed eagles start to breed or roost within close proximity of the Site. There is also a possibility that white-tailed eagles will generally avoid areas developed for turbines resulting in additional habitat loss (Tikkanen *et al*., 2018)[74].

The indirect loss of foraging habitat due to displacement is not expected to result in any marked reduction in foraging opportunities for range-holding white-tailed eagles, which have a core foraging range of 5 km and a maximum range of 13 km (NatureScot, 2016a20).

White-tailed eagle was assessed as being of regional importance. Overall, the impacts of habitat loss on the NHZ 7 white-tailed eagle breeding population are considered to be of negligible magnitude and **not significant** in EIA terms.

Collision Risk during Operation

Since 2002 at least 574 white-tailed eagles have been reported killed in collisions with wind turbines in mainland Europe, mostly at wind farms in Germany and Norway and Sweden (Dürr, 2025[75]). in addition to these, at least nine collisions have been reported from wind farms in Scotland (NatureScot, 2024[76]). The species' high vulnerability to collision is thought to be related to flight behaviour, with a large amount of recorded activity at wind farm sites at the blade sweep height (Hötker et al., 2013[77]).

[74] Tikkanen, H., Balotari-Chiebao, F., Laaksonen, T., Pakanen, V.M. & Rytkönen, S., (2018). Habitat use of flying subadult White-tailed Eagles (*Haliaeetus albicilla*): implications for land use and wind power plant planning. Ornis Fennica, 95(4), pp.137-150.

[75] Dürr, T. (2025). Vogelverluste an Windenergieanlagen (bird fatalities at wind turbines in Europe). Data collected from the central archives of Brandenburg State Office for the Environment (dated 26 February 2025).

[76] NatureScot (2024). Freedom of Information Request - Deaths of Birds of Prey in Scotland from windfarms. Available online at: https://www.nature.scot/doc/freedom-information-request-deaths-birds-prey-scotland-windfarms [Accessed July 2025].

[77] Hötker, H., Krone, O. & Nehls, G. (2013). Greifvögel und Windkraftanlagen: Problemanalyse und Lösungsvorschläge. Schlussbericht für das Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit.

Certain wind farm sites have been responsible for a high proportion of the total number of turbine fatalities reported in Europe. A long-term study at Smøla Wind Farm in Norway has included carcass searches and recording of collisions. This wind farm overlaps with an area that supports very high densities of breeding white-tailed eagles. Various studies at Smøla have reported very high collision rates with a large percentage being adult birds (May *et al*., 2013[78]), although many of the adults killed were not thought to have been part of the local breeding population (Dahl, 2012)[79]. Between 2005 and 2016, for example, a total of 75 white-tailed eagles, comprising 30 adults, 27 sub-adults, two juveniles and 16 of undetermined age, were found dead at Smøla wind farm (Dürr, 2025). A high proportion of recorded fatalities were during the spring and associated with increased territorial activity, potentially reducing birds awareness of the turbine blades (Nygård et al., 2010)[80].

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, a modelling study of the reintroduced Scottish white-tailed eagle population (Sansom *et al*., 2016[81]) 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.

The Site is located approximately 3 km from a known nest site and white-tailed eagles have been recorded flying over and around the Site during the breeding and non-breeding season. According to Wilson et al. (2015)66, 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., 20234). and the Scottish population has been estimated at approximately 200 breeding pairs and increasing[82.] This is in line with the study by Sansom *et* al. (2016)81, the results of which suggested that it could grow to over 200 pairs by 2025 and almost 900 pairs by 2040.

The estimated mean annual collision rate for white-tailed eagles, using an avoidance rate of 95%, is 0.373 when based on the more realistic 44.8% operational time scenario (or approximately one white-tailed eagle every 2.68 years).

As noted above for golden eagle, CRM is generic and based on a number of assumptions, which makes the results highly precautionary, and not necessarily realistic in ecological terms. At least one individual recorded during the VP surveys was an immature bird, which was therefore unlikely to be part of the NHZ 7 breeding population. Furthermore, the number of flights was very low (11 flights, the majority of which were of single birds) during a total of 579 hours of observation across the flight activity surveys), with some registrations involving the same individual observed more than once during the same survey. Thus, this species made only occasional use of the Site. 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 is no suitable nesting habitat on Site. Additionally, if

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[78] May, R., Nygård, T., Dahl, E. L. & Bevanger, K. (2013). Habitat utilization in white-tailed eagles (*Haliaeetus albicilla*) and the displacement impact of the Smøla wind-power plant. Wildlife Society Bulletin 37:75–83.

[79] Dahl, E.L., Bevanger, K., Nygård, T., Røskaft, E. & Stokke, B.G. (2012). Reduced breeding success in white-tailed eagles at Smøla windfarm, western Norway, is caused by mortality and displacement. Biological Conservation 145, 79-85.

[80] Nygård, T., Bevanger, K., Dahl, E.L., Flagsted, Ø., Follestad, A., Hoel, P.H., May, R. & Reitan, O. (2010). A study of White-tailed Eagle movements and mortality at a wind farm in Norway. BOU Proceedings – Climate Change and Birds.

[81] Sansom, A., Evans, R. & Roos, S. (2016). Population and future range modelling of reintroduced Scottish white-tailed eagles (*Haliaeetus albicilla*). NatureScot Commissioned Report No. 898.

[82] https://www.nature.scot/scotlands-sea-eagles-balancing-conservation-and-farming.

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.

White-tailed eagle was assessed as being of regional importance. Overall impacts on the NHZ 7 white-tailed eagle breeding population arising from collision mortality are considered to be of low magnitude and **not significant** in EIA terms.

7.5.2 Designated Sites

7.5.2.1 West Inverness-shire Lochs SPA

There is one European site designated for ornithological interests with potential connectivity to the Site, namely the West Inverness-Shire Lochs SPA. This SPA is designated for its breeding populations of the Annex I species black-throated diver and the migratory species common scoter, both of which are of European importance.

During baseline surveys black-throated diver and common scoter were recorded only occasionally. No evidence of breeding was recorded for either species, However, there was a desk study record of a potential common scoter breeding territory within potential disturbance distance of the Development. There were also two desk study records of black-throated diver of unknown breeding status on Loch Loyne. Further details are provided in Confidential Appendix A7.6. The Site is also within the core foraging range of black-throated diver breeding in the SPA (likely less than 10 km; NatureScot 2016a20).

The SPA is separated from the Site by a minimum distance of 182 m and will be protected from indirect impacts such as pollution through implementation of relevant good practice measures detailed in the Outline CEMP (Technical Appendix A4.1).

As such, there is not considered to be any potential for to the Development to have any direct or indirect impacts on the habitats within the SPA due to habitat loss or modification.

Potential effects of the Development on qualifying interest features of the SPA (common scoter and black-throated diver) are assessed separately above. It was concluded that, in the absence of targeted mitigation, construction and decommissioning of the Development could have a significant effect on the West Inverness-shire Lochs SPA breeding common scoter population due to displacement.

Targeted mitigation is therefore proposed in section 7.7 below to avoid or minimise these impacts.

As the Development will have a Likely Significant Effect (LSE) on the SPA, Scottish Ministers, as competent authority, will be required to carry out an Appropriate Assessment (AA) in view of the conservation objectives of the SPA. To assist with the AA, a shadow HRA was completed. This is presented in Technical Appendix A7.5.

7.5.2.2 West Inverness-shire Lochs SSSI

There is one site of national importance designated for ornithological interests with potential connectivity to the Site, namely the West Inverness-Shire Lochs SSSI. The notified features of the SSSI are the same as the corresponding SPA and the boundaries are contiguous. As such, potential impacts on the SSSI are considered to be the same as those on the SPA.

7.6 CUMULATIVE EFFECTS

The EIA Regulations require the cumulative effects of the Development with other relevant projects or plans to be assessed. NatureScot guidance (NatureScot, 2025c) on assessing cumulative effects was followed when completing the cumulative assessment on IOFs, which is presented in the following sections.

In considering cumulative effects, it is necessary to identify any effects that are of low or greater magnitude due to the Development in isolation, but that may feasibly be greater cumulatively. Cumulative effects were considered for all IOFs for which there was some indication of a potential effect as a result of the Development, which may be exacerbated cumulatively.

7.6.1 Disturbance during Construction and Decommissioning

As developments are at different phases of their life-cycle the numbers of birds that could potentially be affected annually due to cumulative disturbance impacts during construction and decommissioning will be limited, both spatially and temporally.

It was determined that the Development could result in disturbance to breeding common scoter, greenshank and golden plover. With the exception of common scoter, however, implementation of the common scoter protection plan and BPP, which forms part of the embedded mitigation outlined in section 7.7, will ensure that breeding birds and their nests are protected from disturbance during construction and decommissioning. Other developments will implement similar good practice measures to protect breeding birds.

Although the Development could also result in disturbance to foraging birds, extensive suitable foraging habitat is available in the surrounding (and wider) area to support any foraging birds that are temporarily disturbed during construction and decommissioning of the Development.

As such, with the exception of common scoter, which is assessed in Technical Appendix A7.4, even where the construction and decommissioning phases of the Development overlap with those of surrounding developments, there is not considered to be any potential for significant cumulative effects on breeding or foraging birds (including IOFs) due to disturbance during construction and decommissioning. With the exception of common scoter, this impact has therefore been scoped out of the cumulative assessment.

7.6.2 Habitat Loss (Direct and Indirect Due to Displacement)

No habitat within any designated site or their immediate surroundings will be lost or modified due to construction of the Site. No confirmed breeding territories of any IOF will be lost.

Although it was determined that golden eagle, white-tailed eagle, greenshank, golden plover, black grouse and snipe will lose some foraging habitat, as well as potentially suitable nesting or lekking habitat, it was considered that this would be limited in the context of species foraging ranges and the availability of suitable alternative habitat in the surrounding (and wider) area.

Furthermore, it is possible that some displaced birds could potentially return to breed on or around the Site and surrounding development sites post-construction/decommissioning, particularly at those sites where habitat improvements have been completed/proposed to benefit upland breeding birds (which includes the Development). These birds would therefore only be temporarily lost from the breeding population.

Barrier effects are also a form of displacement. and golden eagle, diver species and common scoter could potentially be affected by barrier effects if they avoid flying over/through the Development and adjacent developments when flying between nest/roost sites to the west and south of the Site and foraging areas. However, there was no evidence of any regular flight paths by diver species or common scoter over/near the Site. While some golden eagle activity was recorded over the Site, based on the location of the nearest breeding territories (see Confidential Appendix A7.6, Confidential Figure 2) and the large foraging range of this species, there is not considered to be any potential for the Development to contribute to significant cumulative barrier effects to foraging golden eagles. The results of the GET model suggest that areas further to the west of the Development and other nearby developments are of greatest importance to golden eagles in the vicinity of the Development and the presence of the Development would not affect access to these areas. Additionally, it is considered likely that the separation distance between the Development turbines and the existing Beinneun, Beinneun Extension and Millennium wind farms and proposed Millenium East Wind Farm will be sufficient to allow breeding birds to fly between developments. Alternatively, depending on the breeding/foraging site, birds may fly around the Development via the south and north/northeast, e.g. following Loch Garry in the south or Loch Loyne to the north/northeast. It is considered that the additional distance required to fly around rather than through the developments will be minor and unlikely to result in significant increases to daily energy costs.

As such, there is not considered to be any potential for construction, operation or decommissioning of the Development to make a material contribution to any cumulative effects

on IOFs due to disturbance and this has therefore been scoped out of the cumulative assessment

7.6.3 Collision Risk during Operation

It is considered possible that the Development could potentially contribute to significant cumulative collision risk to the NHZ 7 white-tailed eagle and golden eagle breeding populations. For all other IOFs for which CRM was completed (golden plover, osprey and greenshank) predicted collision risk from the Development alone was so low that there was not considered to be any potential for it to make a material contribution to collision risk to NHZ populations of these species and they have been scoped out of the assessment of cumulative collision risk.

Predicted annual collision risk to both eagle species from the Development and surrounding developments within NHZ 7 is summarised in Table 7.7. Note that the assessment focussed on wind farm developments since CRM is routinely completed for this type of development, whereas it is not typically done for overhead lines.

As can be seen from Table 7.7, cumulative annual collision risk to golden eagle was 1.767, which represents 2.05 % of the NHZ population (43 breeding pairs; Wilson et al., 2015), or 1.92 % of the north-central Highlands population (46 pairs; Hayhow et al., 2017). Given that evidence strongly suggests high levels of turbine avoidance by golden eagles in Scotland, and in view of the favourable conservation status of the national population (including an apparently stable breeding population in the north-central Highlands) (Hayhow *et al*., 2017) there is not considered to be any potential for the Development to contribute to significant collision risk effects on the NHZ 7 breeding golden eagle population.

As shown in Table 7.7, annual cumulative collision risk to white-tailed eagle (0.477) is only marginally higher than that from the Development alone (0.373). As discussed in section 0, 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. Additionally, some of the birds observed may not be part of the NHZ 7 breeding population. Although it is acknowledged that flight activity within NHZ 7 may increase as the national white-tailed eagle population continues to expand (in both range and numbers), there is not considered to be any potential for cumulative collision risk to constrain growth or expansion of the NHZ 7 breeding population.

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

Table 7.7. Summary of cumulative collision risk to OIFs scoped into CRM from wind farm developments within NHZ 7

Development	Status	Date of Application/ Approval/ Installation	Number of Turbines	Proximity to Beinneun 2 Site (km)	Collision Risk Rate (per year)	
					Golden eagle	White-tailed eagle
The Development	Application	-	19	N/A	0.259	0.373
Beinneun Wind Farm	Operational	2017	25	0.00	0.124	-
Beinneun Extension	Operational	2017	7	0.00	0.090	-
Millennium (2008)	Operational	2008	26	0.00	0.277	-
Millennium South (2017)	Consented	2017	10	0.63	0.0162	
Bunloinn Wind Farm	Consented	2024	10	0.70	0.040	-
Tomchrasky revised 2020	Consented	2022	14	1.84	0.035	0.014
Millennium East	Submitted	2025	8	2.10	0.047	-
Culachy	Planning	2023	8	3.80	0.145	-
Bhlaraidh Wind Farm	Operational	2017	32	0.00	0.064	-
Bhlaraidh Wind Farm Extension	Consented	2022	18	0.03	0.180	0.05
Chrathaich Wind Farm	Consented	2023	14	0.07	0.070	-
Fairburn Wind Farm Extension (2022)	Scoping	Unknown	14	12.14	-	-
Fairburn Wind Farm	Operational	Unknown	20	14.32	-	-
Tarvie Wind Farm	Scoping	Unknown	11	16.79	-	-
Carn Fearna Wind Farm	Submitted	Unknown	9	21.03	0.177	-
Lochluichart Windfarm Extension II Redesign	Consented	2023	5	26.18	0.069	-
Lochluichart Extension	Operational	Unknown	6	26.18	0.006	-
Lochluichart Windfarm	Operational	Unknown	17	26.37	0.08	-
Corriemoillie	Operational	Unknown	17	27.99	0.003	-
Abhainn Dubh	Submitted	Unknown	9	32.38	-	-
Kirkan Wind Farm	Consented	Unknown	17	39.23	0.070	-

Development	Status	Date of Application/ Approval/ Installation	Number of Turbines	Proximity to Beinneun 2 Site (km)	Collision Risk Rate (per year)	
					Golden eagle	White-tailed eagle
Ceislein Wind Farm	Scoping	Unknown	20	49.35	-	-
Novar (Extension	Operational	Unknown	16	53.82	-	-
Novar 1 Wind Farm	Operational	Unknown	34	53.84	-	-
Novar Wind Farm Repowering	Scoping	N/A (under consideration)	10	53.84	-	-
Creachan Wind Farm, Glen Calvie	Scoping	Unknown	21	53.98	-	-
Strathrory Wind Farm	Consented	Unknown	7	55.46	-	-
Beinn Tharsuinn Windfarm	Operational	Unknown	17	59.16	0.001	-
Beinn Tharsuinn Windfarm Reporting and Extension	Scoping	Unknown	31	59.54	-	-
Coille Beith Wind Farm	Submitted	Unknown	11	67.05	0.014	-
Strath Oykel Wind Farm and Battery Energy Storage	Consented	Unknown	11	67.12	-	0.040
Total					**1.767**	**0.477**

7.7 MITIGATION AND ENHANCEMENT MEASURES AND RESIDUAL EFFECTS

Measures set out below are in addition to the Outline CEMP and BPP that have been considered to be implemented for the purposes of the assessment presented in section 7.5.

7.7.1 Targeted Mitigation for Common Scoter

As outlined in the Technical Appendix A7.5 and section 7.5.1.1, targeted mitigation is proposed to minimise the potential for displacement of breeding common scoter during construction and decommissioning of the Development. These measures would be detailed in a Common Scoter Protection Plan, which would be developed in consultation with NatureScot and the RSPB.

Measures included within the Common Scoter Protection Plan may include, but are not limited to, one or more of the following:

- No construction or decommissioning works within 500 m of favoured common scoter breeding and foraging areas on SPA lochs (to be confirmed in consultation with the RSPB) during the common scoter breeding season (mid-April to August inclusive; NatureScot, 2014);
- Completion of a targeted pre-construction breeding common scoter survey by a suitably experienced ornithologist or ecologist, covering all areas of suitable breeding habitat within 500 m of the Development;
- Regular monitoring, by a suitably experienced ornithologist or ecologist, for breeding common scoter within 500 m of works throughout the construction and decommissioning periods, where these overlap with the common scoter breeding season;
- Implementation of a 300 m buffer around any confirmed or suspected common scoter nest sites, within which no works will take place and no site personnel will enter until the breeding attempt has concluded; and
- A watching brief of any confirmed or suspected common scoter nest sites within 500 m of construction or decommissioning works where these take place during the common scoter breeding season.

7.7.2 Proposed Enhancement

Measures to improve areas of degraded peatland are proposed as part of the Outline HMP for the Site, provided as TA A6.6 which will be agreed in consultation with NatureScot and the RSPB.

Healthy peatlands well connected to rivers reduce peak flows in river systems, which reduces flooding during heavy rainfall events, which in turn can improve egg and chick survival for ground-nesting upland birds.

Restoring peatland habitats will also reduce the dominance of competitive plants such as *Molinia* and offer a more diverse habitat, with mosaics of tall vegetation, upland heathland and wet habitats such as open pools and undrained bog. This will in turn increase diversity and abundance of invertebrate species and provide improved nesting and foraging opportunities for a number of upland breeding bird species, including greenshank, golden plover, snipe and black grouse.

Restored peatland habitat will also support greater densities of mammalian and avian prey species for raptors such as white-tailed and golden eagle, as well as hen harrier and merlin.

The Outline HMP (TA A6.6) includes proposals for c. 130 ha of low density broadleaf woodland, which would provide increased habitat to black grouse.

7.7.3 Proposed Monitoring

In addition to the pre-construction surveys recommended as part of the BPP and Common Scoter Protection Plan (see section 7.7.1), it is proposed that the monitoring outlined below is undertaken to determine how IOFs breeding within disturbance distance of the Development respond to construction and operation of the Development. Monitoring would be completed by a suitably experienced ecologist during construction as well as during

years 1, 2, 3, 5, 10 and 15 during the operational life of the Development. This is in line with best practice guidance (NatureScot, 2009)[83].

- Surveys for moorland breeding birds waders (focusing on greenshank and golden plover in areas of suitable habitat within the Site and a surrounding 500 m buffer as well as any areas of the HMP (see Technical Appendix A6.6) that extend beyond this;
- Black grouse surveys, to monitor lek sites identified during the surveys, as well as any new lek sites in areas of suitable habitat within the Site and a surrounding 1.5 km buffer area, as well as any areas of the HMP (see Technical Appendix A6.6) that extend beyond this; and
- Breeding common scoter surveys on Loch Loyne and Loch Garry. These surveys would be co-ordinated with the RSPB to avoid duplication and agreement made to data share.

An annual report detailing that year's monitoring work would be published at the end of each monitoring year. Monitoring would be undertaken

7.7.4 Residual Effects

Following implementation of the embedded mitigation outlined in section 7.4.2 and specific mitigation to protect breeding common scoter outlined in section 7.7.1, no significant effects on any IOFs during any phase of the Development life cycle are predicted.

7.8 SUMMARY OF EFFECTS

A summary of the effects of the Development on IOFs is presented in Table 7.8.

Table 7.8. Summary of Effects

Importance	Predicted Effect	Significant Effects?	Proposed Mitigation, Enhancement & Monitoring	Significant Residual Effect?
Construction				
West Inverness-shire Lochs SPA and SSSI	Habitat loss	No	Embedded mitigation to protect waterbodies as part of CEMP	No
	Disturbance	Yes	BPP Common Scoter Protection Plan	No
Golden and White-Tailed Eagle	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Osprey	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Red-Throated Diver	Habitat loss	No	Embedded mitigation to protect waterbodies as part of CEMP	No
	Disturbance	No	BPP	No
Black-Throated Diver	Habitat loss	No	Embedded mitigation to protect waterbodies as part of CEMP	No
	Disturbance	No	BPP	No
Common Scoter	Habitat loss	No	Embedded mitigation to protect waterbodies as part of CEMP	No
	Disturbance	Yes	BPP Common Scoter Protection Plan	No

[83] NatureScot (2009). Guidance on Methods for Monitoring Bird Populations at Onshore Wind Farms.

Importance	Predicted Effect	Significant Effects?	Proposed Mitigation, Enhancement & Monitoring	Significant Residual Effect?
Greenshank and Golden Plover	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Black Grouse	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Operation				
Golden and White-Tailed Eagle	Habitat loss	No	None	No
	Disturbance	No	BPP	No
	Collision Risk	No	None	No
Osprey, Red/Black-Throated Diver, Common Scoter, Greenshank, Golden Plover and Black Grouse	Habitat loss	No	None	No
	Disturbance	No	BPP and Common Scoter Protection Plan during any major works	No
	Collision risk	No	None	No
Decommissioning				
West Inverness-shire Lochs SPA and SSSI	Habitat loss	No	Good practice mitigation to protect waterbodies	No
	Disturbance	Yes	BPP Common Scoter Protection Plan	No
Golden and White-Tailed Eagle	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Osprey	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Red-Throated Diver	Habitat loss	No	Good practice mitigation to protect waterbodies	No
	Disturbance	No	BPP	No
Black-Throated Diver	Habitat loss	No	Good practice mitigation to protect waterbodies	No
	Disturbance	No	BPP	No
Common Scoter	Habitat loss	No	Good practice mitigation to protect waterbodies	No
	Disturbance	Yes	BPP Common Scoter Protection Plan	No
Greenshank and Golden Plover	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Black Grouse	Habitat loss	No	None	No
	Disturbance	No	BPP	No
Cumulative				
Common scoter	Habitat loss/	No	Good practice mitigation to protect waterbodies	No

Importance	Predicted Effect	Significant Effects?	Proposed Mitigation, Enhancement & Monitoring	Significant Residual Effect?
	Disturbance	Yes	BPP Common Scoter Protection Plan	No
All other IOFs	Habitat loss	No	None	No
	Disturbance	No	BPP	No
	Collision risk	No	None	No

7.9 STATEMENT OF SIGNIFICANCE

An assessment has been made of the potential for significant effects of the Development on IOFs. Following implementation of to the embedded mitigation during construction and decommissioning (good practice measures to protect waterbodies and the BPP, both of which are included in the Outline CEMP; Technical Appendix A4.1) and specific mitigation for common scoter (the Common Scoter Protection Plan, outlined in section 7.7) all effects of the Development on IOFs, both alone and in combination with other schemes, are assessed as being of low to negligible magnitude, and thus **not significant** in EIA terms.

7.10 LIST OF ACRONYMS

- AA: Appropriate Assessment
- BoCC: Birds of Conservation Concern
- BPP: Bird Protection Plan
- CEMP: Construction Environmental Management Plan
- CIEEM: Chartered Institute of Ecology and Environmental Management
- CRM: Collision Risk Modelling
- ECoW: Ecological Clerk of Works
- ECU: Energy Consents Unit
- EIA: Environmental Impact Assessment
- GET: Golden Eagle Topography (Model)
- HMP: Habitat Management Plan
- HRA: Habitats Regulations Appraisal
- HRSG: Highland Raptor Study Group
- IOF: Important Ornithological Feature
- IUCN: International Union for Conservation of Nature
- LSE: Likely Significant Effect
- MBBS: Moorland Breeding Bird Survey
- NHZ: Natural Heritage Zone
- OIA: Ornithological Impact Assessment
- PCH: Potential Collision Height
- RSPB: Royal Society for the Protection of Birds
- SBL: Scottish Biodiversity List
- SEPA: Scottish Environment Protection Agency
- SPA: Special Protection Area
- SSSI: Site of Special Scientific Interest
- VP: Vantage Point
- WCA: Wildlife and Countryside Act