Novar 1 Wind Farm Repowering

Chapter 8 - Ornithology

September 2026



8. Ornithology

8.1 Executive Summary

8.1.1 This chapter considers the potential impacts of the Proposed Development and their associated effects on ornithological features in line with best practice guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

8.1.2 The Proposed Development is located approximately 11 km north of Dingwall and 9 m northwest of Alness, in the Cromarty Firth in northern Scotland and in the jurisdiction of The Highland Council (THC). The location of the Proposed Development is shown in **Figure 1.1: Site Location (EIAR Volume 3a)**.

8.1.3 Ornithological studies were undertaken, including desk studies and field surveys covering the ornithology survey area within the Proposed Development. The field surveys were undertaken between September 2023 and August 2025 to provide baseline information on the presence and activity of target bird species. The field surveys included vantage point (VP) surveys, black grouse *Lyrurus tetrix* surveys, breeding raptor surveys, and moorland breeding bird surveys (MBBS).

8.1.4 Through the two-year VP survey period, between September 2023 and August 2025, 10 target species were recorded within the ornithology survey area. These species include golden eagle *Aquila chryasetos*, golden plover *Pluvialis apricaria*, hen harrier *Circus cyaneus*, red kite *Milvus milvus*, merlin *Falco columbarius*, osprey *Pandion haliaetus*, peregrine falcon *Falco peregrinus*, pink footed goose *Anser brachyrhynchus*, sparrowhawk *Accipiter nisus* and white-tailed eagle *Haliaeetus albicilla*. Golden eagle, golden plover, hen harrier, red kite, merlin, osprey and white-tailed eagle flights were recorded crossing the Site at potential collision height (PCH). The most numerous was red kite with 52 individuals and 42 flights recorded at PCH.

8.1.5 Moorland Breeding Bird Surveys (MBBS) recorded twelve target species between April and June 2024. Red-listed species that were recorded were black grouse, hen harrier, merlin and ptarmigan *Lagopus mutus*. The most common species recorded was red grouse *L. scotica* with 23 records, red kite with 11 records and hen harrier with eight records. No confirmed breeding territories were identified during MBBS surveys, but probable and possible breeding territories were identified for red grouse and hen harrier.

8.1.6 Breeding raptor surveys recorded buzzard, golden eagle, goshawk *A. gentilis*, hen harrier, red kite, osprey, and sparrowhawk between April and June 2024. The most records were of hen harrier, with a total of seven flights recorded during the survey. One confirmed breeding territory with nest location was identified for hen harrier north of the Site. One confirmed breeding territory with nest location was identified for golden eagle north northwest of the Site near Loch Morie.

8.1.7 Black grouse surveys identified one active lekking site[2], 1 km east of the Site boundary. All records were outside of the Site boundary. There were no observations of capercaillie *Tetrao urogallus* on or near the Site during these surveys. Capercaillie desk study data was purchased from RSPB and there are three confirmed active leks, two that overlap with the Access Route of the Proposed Development and one approximately 2 km north-northeast outside of the Site boundary within the Novar Special Protection Area (SPA).

[1] CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.3, updated September 2024. Available at: https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf . [Accessed January 2026].

[2] A lekking site refers to a site or territory used by males during the breeding season. Multiple males will aggregate within a lek to display, attracting females for mating.

8.1.8 The predicted disturbance to capercaillie during the construction phase is significant in the absence of additional mitigation. All other potential disturbance impacts from decommissioning and construction, and displacement impacts from operation are not considered to be significant following embedded mitigation measures.

8.1.9 Likely significant effects for the qualifying features and integrity of the Novar Special Protection Area (SPA) would result from construction of the Proposed Development alone and in combination with other cumulative developments. In the absence of additional mitigation, the impact on qualifying species of the SPA is considered to result in a significant effect.

8.1.10 Following the application of additional mitigation, such as implementation of a Capercaillie Species Protection Plan (SPP) and Biodiversity Enhancement Management Plan (BEMP) detailing mitigation measures specific to qualifying capercaillie, habitat replacement to offset the loss of SPA woodland, as well as standard working methods and good practice measures, such as adherence to a Decommissioning and Construction Environmental Management Plan (DCEMP), no significant residual effects are predicted.

8.2 Introduction

8.2.1 This chapter considers the likely significant effects on the ornithological features associated with the decommissioning of the existing Novar 1 Wind Farm and the construction, operation and decommissioning of the repowered wind farm.

8.2.2 The specific objectives of the chapter are to:

- Describe the existing ornithology baseline context and cumulative context;
- Describe the assessment methodology and significance criteria used in completing the impact assessment;
- Describe the potential effects, including direct, indirect and cumulative effects;
- Describe the mitigation measures proposed to address likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

8.2.3 The assessment has been carried out by suitably qualified ecologists from Ramboll. All field surveys were undertaken by Redwing Ecological Surveys Limited which has extensive experience with ornithological survey in the area of Scotland in which the Proposed Development is located.

8.2.4 This chapter is supported by the following figures and technical appendices:

- Volume 3a: Figures:
  - Figure 8.1: Ornithology Designated Sites (20 km);
  - Figure 8.2: Ornithology Flight Activity Survey Locations;
  - Figure 8.4b: Vantage Point Survey Results (2023-2025) - Red Kite;
  - Figure 8.4c: Vantage Point Survey Results (2023-2025): Other Target Species;
  - Figure 8.5: Moorland Breeding Bird Survey Results (2024);
  - Figure 8.9: Collision Risk Areas (Collision Risk Assessment TA).
- Volume 4: Technical Appendices:
  - Technical Appendix 8.1: Ornithology Methodology;
  - Technical Appendix 8.3: Habitat Regulations Appraisal;
  - Technical Appendix 8.4: Collision Risk Assessment; and
  - Technical Appendix 8.6: Bird Species Protection Plan (SPP)
- Volume 5: Confidential
  - Technical Appendix 8.2: Ornithology Results CONFIDENTIAL;

- Technical Appendix 8.5: Outline Capercaillie Species Protection Plan CONFIDENTIAL;
- Figure 8.3: Desk Study Results (CONFIDENTIAL);
- Figure 8.4a: Vantage Point Survey Results (2023-2025) – Golden eagle CONFIDENTIAL;
- Figure 8.6: Breeding Raptor Survey Results (2024) CONFIDENTIAL;
- Figure 8.7: Black Grouse Survey Results (2024) CONFIDENTIAL; and
- Figure 8.8: Golden Eagle Topography (GET) Model CONFIDENTIAL.

8.2.5 Figures and technical appendices are referenced in the text where relevant.

8.3 Legislation, Policy and Guidance

8.3.1 The ornithology assessment has been undertaken within the context of relevant legislative instruments, planning policies, and guidance documents, and these are and summarised below.

Legislation

8.3.2 Relevant legislation has been reviewed and considered as part of this ornithology assessment. Of relevance are:

- EC Birds Directive, (Amended 2009) 79/409/EEC[3];
- EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna, 92/43/EEC 1992 (the "Habitats Directive")[4];
- Conservation of Habitats and Species Regulations 2017[5];
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulation 2019[6];
- Wildlife and Countryside Act 1981[7];
- Nature Conservation (Scotland) Act 2004[8];
- UK Biodiversity Framework 2024[9];
- Electricity Act 1989[10];
- The Electricity Works (Environmental Impact Assessment) (Scotland) Act 2017[11]; and
- The Ramsar Convention on Wetlands 1971[12].

[3] Wild Birds Directive Text (1979). Council Directive of 2 April 1979 on the Conservation of Wild Birds. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/200286/Annex-B-Birds-Directive1.pdf [accessed January 2026].

[4] EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (1992). Available at: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [accessed January 2026].

[5] The Conservation of Habitats and Species Regulations (2017). Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made [accessed January 2026].

[6] The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019). Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573#:~:text=%20The%20Conservation%20of%20Habitats%20and%20Species%20(Amendment),of%20capturing%20or%20killing%20fish%20are%E2%80%94%20More/ [accessed January 2026].

[7] The Wildlife and Countryside Act (as amended) (1981). Available at: http://www.legislation.gov.uk/ukpga/1981/69 [accessed January 2026].

[8] Nature Conservation (Scotland) Act (as amended) (2004). Available at: http://www.legislation.gov.uk/asp/2004/6/contents [accessed January 2026].

[9] JNCC on behalf of the Four Countries' Biodiversity Group (4CBG) (2024). *UK Biodiversity Framework*. Available at: https://data.jncc.gov.uk/data/19a729f6-440e-4ac6-8894-cc72e84cc3bb/uk-biodiversity-framework.pdf [accessed January 2026].

[10] Electricity Act (1989). Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents [accessed January 2026].

[11] The Electricity Works (Environmental Impact Assessment) (Scotland) Act (2017). Available at: https://www.legislation.gov.uk/ssi/2017/101/contents [accessed January 2026].

[12] Ramsar Convention on Wetlands (1971). Available at: https://www.ramsar.org/sites/default/files/documents/library/original_1971_convention_e.pdf [accessed January 2026].

Policy

8.3.3 Relevant planning policies reviewed for this assessment include:

- National Planning Framework 4 (NPF 4)[13];
- Scottish Planning Policy (Scottish Government, 2014)[14];
- UK Biodiversity Action Plan (BAP) 2010[15];
- Scottish Biodiversity List (SBL) 2020[16];
- 2020 Challenge for Scotland's Biodiversity 2013[17];
- Highland-wide Local Development Plan (The Highland Council (THC), 2012)[18];
- Caithness and Sutherland Local Development Plan (THC, 2018)[19]; and
- Highland Nature Biodiversity Action Plan (THC, 2020)[20].

Technical Standards and Guidance

8.3.4 Best practice guidance has been implemented while undertaking field surveys and in the assessment of significant of effects, as detailed in **Technical Appendix 8.1: Ornithology Methodology (EIAR Volume 4)**.

8.4 Assessment Methodology

Overview

8.4.1 The ornithology methodology is detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)** and follows the principles set out in CIEEM Guidelines for Ecological Impact Assessment[21].

8.4.2 The assessment is presented with reference to specific 'areas' of the Site. The Site comprises the Turbine Array, substation, Access Route and Internal Tracks, as described in **Chapter 3: Site Description and Proposed Development (EIAR Volume 2)**.

8.4.3 Effects considered to be significant for the purposes of the EIA Regulations are those classified as being 'Major' or 'Moderate'.

Scope of Assessment

EIA Scoping Opinion

8.4.4 An EIA Scoping Report (presented in **Technical Appendix 1.3 Scoping Report (EIAR Volume 4)**) was submitted to the Energy Consents Unit (ECU) on 23rd January 2025 with a

[13] National Planning Framework (2023). Available at: https://www.gov.scot/publications/national-planning-framework-4/ [accessed January 2026].

[14] Scottish Planning Policy (2014). Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/06/scottish-planning-policy/documents/scottish-planning-policy/scottish-planning-policy/govscot%3Adocument/scottish-planning-policy.pdf [accessed January 2026].

[15] UK BAP (2010). Available at: https://jncc.gov.uk/our-work/uk-bap/ [accessed January 2026].

[16] The Scottish Biodiversity List (2020). Available at: https://www.nature.scot/doc/scottish-biodiversity-list [accessed January 2026]

[17] The 2020 Challenge for Scotland's Biodiversity (2013). Available at: http://www.gov.scot/Publications/2013/06/5538 [accessed January 2026]

[18] Highland-wide Local Development Plan (2012). Available at: https://www.highland.gov.uk/info/178/development_plans/199/highland-wide_local_development_plan [accessed January 2026].

[19] Caithness and Sutherland and Local Development Plan (2018). Available at: https://www.highland.gov.uk/info/178/development_plans/283/caithness_and_sutherland_local_development_plan [accessed January 2026].

[20] Highland Nature Biodiversity Action Plan 2021 to 2026. Available at: https://www.highland.gov.uk/downloads/file/27148/highland_nature_biodiversity_action_plan_2021_%E2%80%93_2026 [accessed January 2026].

[21] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Available at https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/ [accessed January 2026].

formal request for a Scoping Opinion on the proposed scope of the EIA and assessment methodologies. The ECU subsequently issued their Scoping Opinion on the proposed scope and methodology of the topics for assessment within the EIA on 23rd May 2025. A copy of the ECU's Scoping Opinion is provided in **Technical Appendix 1.4 Scoping Opinion (EIAR Volume 4)**.

8.4.5 A summary of the key points raised in ECU's Scoping Opinion, relevant to Ornithology are presented in Table 8.1, including a response on where the comments have been addressed.

Table 8.1: Summary of ECU Scoping Opinion Comments

Summary of Comment	**Response or location within the EIAR where comments have been addressed**
The Highland Council (THC)	
The presence of Schedule 1 Birds and qualifying interests of Special Protected Areas (SPAs) and other areas designated for aviary interests must be included and considered as part of the planning application process.	This ornithology assessment has been undertaken within the context of relevant legislation and planning policies, considering presence of Schedule 1 Birds and qualifying interests of the SPA.
All survey methods should follow NatureScot (NS) guidance.	All ornithology field surveys were undertaken in accordance with NS guidance and detailed methodologies are provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The proposed 2 km survey buffer for raptors should be extended to 6 km for golden and white-tailed eagles. MBBS should fall within the recommended survey period (mid-April to early July). Raptor surveys should fall within the recommended survey times for the target species which may fall outside the April-June window.	Breeding Raptor surveys extended to 6 km from the Site and Moorland Breeding Bird Surveys were undertaken during the appropriate dates as suggested and set out in best practice guidance from NS[22], and detailed methodologies are provided in **Technical Appendix 8.1: Ornithology Methodology (EIAR Volume 4)**.
Any proposed access routes should be covered by appropriate surveys in accordance with the guidance, to allow an assessment of potential for disturbance and displacement, and identification of any mitigation requirements.	The proposed widening of the Access Route has been considered within the ornithological assessment through desk-based review. A desk study, including purchased capercaillie data from the RSPB, has been used to identify any constraints and inform the assessment of disturbance and displacement effects. Desk study data is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. Where proposed works to the Access Route have the potential to affect sensitive species e.g. capercaillie, pre-construction surveys will be undertaken where necessary. In particular, given the presence of the Novar SPA designated for capercaillie, surveys would be completed to confirm the presence of that species, as an additional mitigation measure set out in the capercaillie SPP.

[22] Recommended bird survey methods to inform impact assessment of onshore windfarms (2024) Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
Once survey work is complete 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 Proposed Development on its own and in combination with other projects.	Potential impacts that have been scoped into the assessment are included in Table 8.2. Potential significant effects and cumulative effects are assessed in Section 8.71.
The Royal Society for the Protection of Birds (RSPB), Forestry and Land Scotland (FLS) should be consulted for any desk study records for black grouse in the area.	Black grouse surveys were undertaken as part of the baseline surveys as detailed within **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**. Data on black grouse was requested from the RSPB and considered as part of the desk study. Data has not been requested from FLS as the RSPB data is considered sufficient to inform the assessment.
The EIAR should include information on the importance of black grouse leks identified in the local context and consider potential for indirect effects due to foraging and roosting habitat.	The results of the black grouse survey are detailed within **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**, and impacts are considered as part of this assessment.
A 750 m buffer should be applied around black grouse lek(s) during construction, where no construction activity is allowed within the buffer (including vehicle movements along tracks) before 9am in April and May.	A mitigation hierarchy has been used when considering potential mitigation measures for all effects considered significant which is outlined in Sections 8.51 and 8.81. A disturbance distance buffer is a secured embedded mitigation measure in **Technical Appendix 3.1: Outline Decommissioning and Construction and Environmental Management Plan (EIAR Volume 4)**.
A buffer of 500 m should be incorporated between any lek site and turbine to minimise risk of displacement during operation.	A mitigation hierarchy has been used when considering potential mitigation measures for all effects considered significant which is outlined in Sections 8.61 and 8.81. This disturbance distance buffer is a secured embedded mitigation measure in **Technical Appendix 3.1: Outline Decommissioning and Construction and Environmental Management Plan (EIAR Volume 4)**.
The EIAR should consider breeding divers and Slavonian grebes in the scope of survey work according to NS guidance. The RSPB should be contacted for desk records.	Breeding diver and Slavonian grebe records have been obtained from RSPB. Detailed desk study data is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
Roosting raptor surveys should be done in accordance with NS guidance.	Breeding raptor surveys have been completed in accordance with NS guidance, and the detailed methodology is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The EIAR should assess significant impacts to legally protected birds in	NS guidance has been considered for this assessment. Key guidance to inform the assessment of scope and methodology is detailed in **Technical Appendix 8.1:**

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
the wider countryside following NS guidance[23].	**Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The EIAR should assess impacts to birds through collision, disturbance, and displacement from foraging/ breeding/roosting habitat for the Proposed Development and cumulatively with other proposals. Ornithology survey methods and any deviations from guidance should be clearly stated.	Potential impacts that were scoped in are shown in Table 8.2. Potential significant effects and cumulative effects are reported in Section 8.71.
The Highland Raptor Study Group (HRSG) should be contacted regarding raptor breeding sites and information on capercaillie.	Information and records on raptors and capercaillie obtained from HRSG are detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
A map of the VP survey viewsheds is required to determine if Turbine 4 is appropriately covered.	VP survey viewsheds are shown in **Figure 8.2: Ornithology Flight Activity Survey Locations (EIAR Volume 3a)**.
Schedule 1 mitigation measures to limit impacts on species will need to be provided if necessary. Dialogue with relevant stakeholders (e.g. NS, RSPB, CAA, local stakeholders) regarding potential measures is recommended.	A mitigation hierarchy has been used when considering potential mitigation measures for all effects considered significant which is outlined in Sections 8.61 and 8.81. In order to ensure collaboration and agreement on mitigation of impacts on species such as capercaillie in Novar SPA, and avoid any duplication of efforts/ surveys, post-submission consultation with key stakeholders would be undertaken.
The EIAR should provide further detail on what constitutes a worst-case scenario for ornithological effects related to the Site during construction and the Proposed Development as a whole.	The construction and operational impacts for a worst-case scenario of a combined decommissioning/construction phase is anticipated to last for a maximum of 3 years are scoped in and details for the assessment methodology is provided in **Technical Appendix 8.1: Ornithology Methodology (EIAR Volume 4)**.
NatureScot (NS)	
Any potential for cumulative impacts with the proposed Ceislein Wind Farm should be considered within the Novar SPA.	All potential cumulative effects considered are reported in Section 8.71.
The EIAR should confirm whether track upgrades would be required within the Novar SPA and consider the potential for resulting disturbance or loss of capercaillie habitat and impact mitigation measures.	Access Route upgrades will be required and potential impacts to the Novar SPA are detailed in the **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**. Proposed mitigation is described in Sections 8.61 and 8.81.
The EIAR must consider potential for disturbance to capercaillie from the operation of the track is required, particularly from construction and/or	Potential impacts to capercaillie from use of the Access Route during the decommissioning and

[23] NatureScot - Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas (2025). Available at: https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect [accessed January 2026].

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
decommissioning traffic, and details of the measures required to mitigate those impacts (e.g. time limitations on track use, no stop zones, etc).	construction phases has been scoped into the assessment and is set out in Table 8.2.
A desk study of existing capercaillie records should be undertaken covering the Proposed Development, access route and surrounding area through consultation with the RSPB Capercaillie Project Officer, FLS and reference to any other available wind farm survey data.	Desk study records for capercaillie are provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. Records for capercaillie were requested and received from the RSPB (via the Conservation Data Officer, RSPB).
It is recommended the potential collision risk to capercaillie that could impact the Novar SPA include an assessment of likely routes followed, including expert opinion on dispersal behaviour/likely movements between woodland areas to give an indication of collision risk.	Desk study records for capercaillie have been obtained to inform the potential collision risk assessment which is set out in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. Impacts to the Novar SPA was scoped into the assessment and are reported in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**.
The EIAR should consider impacts to the Morangie Forest SPA for breeding capercaillie.	Potential impacts to the Morangie Forest SPA for breeding capercaillie have been considered within this assessment. See Table 8.5 below.
The Cromarty Firth SPA is protected for breeding osprey and common tern, and a range of non-breeding coastal birds and is within connectivity distance of the Proposed Development and its access. Species such as osprey, greylag geese and whooper swans should be scoped in, and if affected by the Proposed Development a Habitats Regulation Appraisal (HRA) would be required.	Potential impacts to the Cromarty SPA have been scoped into the assessment and are set out in Table 8.2. An HRA is outlined in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)** and considers best practice NS guidance on connectivity with SPA bird populations[24].
The Proposed Development is 3 km from Ben Wyvis SPA which is protected for breeding dotterel. The EIAR should consider potential collision risk to dotterel.	Potential impacts to Ben Wyvis SPA have been scoped into the assessment and are set out in Table 8.2.
Survey and assessment should follow NS bird survey guidance.[25][26]	Ornithology field surveys were undertaken in accordance with best practice guidance and detailed methodologies are provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
Desk study and field surveys should cover access routes as well as any	The desk study and field survey areas cover the Access Route and Internal Tracks as well as

[24] Assessing Connectivity with Special Protection Areas (SPAs) (2016). Available at: https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf

[25] Recommended bird survey methods to inform impact assessment of onshore windfarms (2025). Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [accessed January 2026].

[26] NatureScot pre-application guidance for onshore wind farms (2025). Available at: https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms [accessed January 2026].

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
proposed habitat management or enhancement areas.	proposed habitat management or enhancement areas and these areas are shown in **Figure 8.1: Ornithology Designated Sites** and **Figure 8.2: Ornithology Flight Activity Survey Locations (EIAR Volume 3a)**.
NS collision risk modelling (CRM) guidance should be followed for the three turbines outside the footprint of the existing wind farm.[27]	A collision risk assessment (CRA) has been undertaken in accordance with best practice guidance and is detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The Proposed Development may have the potential to impact on the NHZ7 golden eagle population, both as an individual scheme and in combination with other developments. It is recommended that, in addition to survey work and desk study consultation with the HRSG, Golden Eagle Topographical (GET) modelling is undertaken to help with the assessment of impacts, including potential loss of foraging habitat.	A GET model was undertaken in accordance with best practice guidance and is set out in **Figure 8.8: Confidential GET Model (EIAR Volume 5)**.
The EIAR should demonstrate all areas suitable for black grouse have been surveyed. If black grouse could be affected the EIAR should include information on the importance of any lek(s) in the local context, and to consider the potential for indirect effects due to changes to foraging and roosting habitat, as well as any necessary mitigation.	Black grouse surveys were undertaken in accordance with best practice guidance, and the detailed methodology is set out in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. Black grouse survey results are shown in **Figure 8.7: Black Grouse Survey Results (CONFIDENTIAL) (EIAR Volume 5)** and were used to inform potential impacts.
A 500 m buffer between any lek site and turbines should be incorporated to minimise risk of disturbance during operation.	A 500 m buffer was used during the design process and is described further in Section 8.61.
The EIAR should include an assessment of potential impacts through habitat loss/change, disturbance and/or displacement, and collision risk to SPA and wider countryside bird populations.	Potential impacts are set out in Table 8.2. An assessment of scoped in potential impacts has been undertaken and potential significant effects and cumulative effects are summarised in Table 8.13.
Potential impacts to roosting birds should be considered following NS guidance.	Potential impacts are set out in Table 8.2 and have been assessed in accordance with best practice guidance.
The EIAR should include assessments for wider countryside birds following NS guidance[28].	This ornithology assessment has been undertaken within the context of relevant legislation and planning policies. Ornithology

[27] Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms (2024). Available at: https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms [accessed January 2026].

[28] NatureScot. Guidance note-Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas. Available at: https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect [accessed January 2026].

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
	desk study and field surveys were undertaken in accordance with NS guidance.
Cumulative effects assessments should be carried out at the level of relevant Natural Heritage Zone (NHZ) or SPA population according to NatureScot guidance.[29] Assessment for species such as golden eagle, white-tailed eagle, peregrine and hen harrier should be for NHZ7. For red kite the assessment should be against the whole North of Scotland population and for osprey it should be against the NHZ21 population.	Cumulative effects have been considered in accordance with NS guidance and are reported in Table 8.13.
The EIAR should include mitigation measures as part of the cumulative assessment process.	Mitigation measures that would be implemented in response to predicted cumulative effects are detailed in Sections 8.71 and 8.81.
The EIAR should include a summary of breeding bird monitoring reports from the existing wind farm in addition to one year of breeding bird surveys.	Breeding bird desk study and field surveys were undertaken in accordance with NS guidance and a detailed methodology is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
There should be a second year of VP survey work to assess impacts to golden eagle.	A second year of VP surveys was undertaken for golden eagle in accordance with NS guidance. A detailed methodology is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
Royal Society for the Protection of Birds (RSPB)	
The Cromarty Firth SPA protects breeding osprey. There are two pairs of breeding osprey within 1 km of the Proposed Development that should be considered part of the SPA population and scoped in. Information should be requested from the HRSG.	Potential impacts to the Cromarty Firth SPA osprey population are scoped in and are set out in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**. Desk study data is detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The Cromarty Firth SPA protects whooper swan and greylag goose. Flights during migration should be considered and VP survey data should determine if species are scoped in.	No whooper swan or greylag goose were recorded during ornithology field surveys. Impacts to the Cromarty Firth SPA that have been scoped in are detailed in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**.
The EIAR should take a precautionary approach and consider effects to Cromarty Firth SPA protected species as Likely Significant Effects (LSE) if they cannot be ruled out.	Potential impacts to the Cromarty Firth SPA that are scoped in are set out in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**.

[29] Guidance-Assessing the cumulative impacts of onshore wind farms on birds (2025). Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds [accessed January 2026].

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
The Ben Wyvis SPA is designated for breeding dotterel and should be scoped into the EIAR.	Potential impacts to the Ben Wyvis SPA are scoped in and set out in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**.
The ornithology surveys undertaken in 2023 and 2024 do not cover the access tracks that pass through the Novar SPA. To consider the potential impacts caused by works on and to the access track Capercaillie data should be requested from RSPB.	Capercaillie desk study data was requested from RSPB and the results are shown in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
Capercaillie surveys need to be undertaken in the month of April following NS guidance[30] in suitable habitats (i.e., mature Scots pine, regenerating Scots pine and Spruce, boggy areas adjacent to woodland etc.).	In the absence of project specific surveys for capercaillie as RSPB surveys exist already within the SPA area, desk study data from RSPB were purchased to cover capercaillie surveys and are detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.
The extended boundary for Ts 1 and 2 in the Proposed Development appears suitable for Golden Eagle, Golden Plover, and Dotterel. Two years of survey covering this area and appropriate buffers are recommended.	The original proposed Turbines 1 and 2 have been removed from the Proposed Development and no longer require survey.
The EIAR should provide evidence in detail as to how birds have "become habituated to the presence of the existing wind farm" in regards as to no further surveys being undertaken.	One year of baseline ornithological surveys following NS guidance were agreed to with NS due to the quantity of existing survey data that exists for the Site and because there is no proposed extension to the existing wind farm.
The EIAR should include maps that show VP locations that also denote viewsheds to ensure 500 m buffer from turbine locations is fully covered as per NS guidance[31].	VP locations and viewsheds with appropriate buffers are shown on **Figure 8.2: Ornithology Flight Activity Survey Locations (EIAR Volume 3a)**.
The EIAR should consider turbines (and their lighting), hard standings, battery compounds, access roads (including the route on public roads to get the turbines on site), on site tracks, met masts, borrow pits, drainage, grid connection, substation and temporary construction buildings/storage compounds. It should also assess the impacts of all phases of the project including site selection, design, construction, operation, maintenance and decommissioning (of current and Proposed Development).	Potential construction, decommissioning, and operational impacts that have been scoped into the assessment are set out in Table 8.2.

[30] Guidance Licensing-Capercaillie survey methods (2013). https://web.archive.org/web/20240615170531/https://www.nature.scot/doc/guidance-licensing-capercaillie-survey-methods [accessed January 2026].

[31] Recommended bird survey methods to inform impact assessment of onshore windfarms (2025). Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [accessed January 2026].

Table 8.1: Summary of ECU Scoping Opinion Comments	
Summary of Comment	**Response or location within the EIAR where comments have been addressed**
Disturbance, displacement, loss of suitable habitat (breeding, wintering and foraging) and collision risk should be assessed for all scoped in species, both during construction and operation. This should not only include impacts from the wind turbines but also new tracks and infrastructure as well as any existing road widening or upgrades.	Potential construction, decommissioning, and operational impacts that are scoped into the assessment are set out in Table 8.2.
The EIAR should address potential barrier effects with regards to golden eagles, raptors, whooper swans and geese.	Potential operational impacts such as barrier impacts are scoped into the assessment and are set out in Table 8.2.
The EIAR should include a GET model, particularly the area in which proposed turbines 1 and 2 are located.	A Golden Eagle Topographical model (GET model) is set out in **Figure 8.8: Confidential GET Model (EIAR Volume 5).** The original proposed Turbines 1 and 2 have been removed from the Proposed Development and have not been assessed in the EIAR.
For repowering projects, original VP data should be overlayed with new VP data in CRM to reveal historical flight paths over areas where turbines are proposed according to NS guidance.	A Collision Risk Assessment (CRA) has been undertaken following the Band et al (2007) Collision Risk Model (CRM) and in accordance with NS. The CRM is detailed in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. Collision risk areas are shown on **Figure 8.9: Collision Risk Areas (EIAR Volume 3a)**.
The EIAR should consider cumulative effects at the Northern Highlands (NHZ7) and Moray Firth (NHZ21) NHZs, as well as in relation to Novar SPA and Cromarty Firth SPA.	Cumulative effects have been considered in accordance with best practice guidance and are summarised in Table 8.13.

Potential Impacts Scoped In

8.4.6 The scope of this chapter is set out in Table 8.2. The scope of the assessment has been informed by consultation responses detailed in Table 8.1.

Table 8.2: Impacts Considered within the Assessment			
Impact	**Phase***		
	C	O/M	D
Temporary and permanent habitat loss/alteration/fragmentation associated with the Proposed Development infrastructure, including loss of nesting, lekking, roosting or foraging habitat.	X		X
Visual and noise disturbance associated with construction activities, including potential impacts on the Novar SPA as a result of construction works for the access route.	X		X
Displacement from nesting, lekking, roosting or foraging habitats around operational turbines and other permanent infrastructure, including barrier effects.		X	
Risk of collisions with operational wind turbine blades or any other permanent infrastructure resulting in direct mortality.		X	

Table 8.2: Impacts Considered within the Assessment			
Impact	**Phase***		
	C	O/M	D
Impacts relating to turbine lighting.		X	
Construction and decommissioning impacts.	X		X
Potential impacts on ornithological receptors during operation of the development. following completion of the single-phase construction and decommissioning phase.		X	
Potential collision risk impacts to Cromarty Firth SPA breeding osprey population.		X	
Potential collision risk impacts to Ben Wyvis SPA breeding dotterel populations.		X	
Potential impacts to Morangie Forest SPA breeding capercaillie.	X	X	X

**C=construction, O=operation and maintenance and D=decommissioning.*

8.4.7 The chapter assesses cumulative effects as arising from the addition of the Proposed Development to other cumulative developments, which are the subject of a valid planning application or known to be foreseeable, e.g. at scoping stage. The cumulative development list includes the following type of projects:

- Developments that could go ahead in the foreseeable future (at scoping stage);
- Where an application for consent has been submitted to the relevant authorities but is under determination;
- Where consent has been refused but an appeal against that decision has been submitted and is under determination;
- Where there is an approved consent, but construction has yet to commence;
- Where construction has commenced; and
- That are operational.

8.4.8 The assessment is based on the Proposed Development as described in **Chapter 3: Site Description and Proposed Development (EIAR Volume 2)** and informed by consultation responses as summarised in Table 8.1. This chapter focusses on the effects of the decommissioning of the existing Novar 1 Wind Farm and the construction, operation and decommissioning phases of the repowered wind farm upon Important Ecological Features (IEF) aligning with Ecological Impact Assessment (EcIA) Guidelines from the Chartered Institute of Ecology and Environmental Management (hereafter the 'CIEEM EcIA Guidelines'). This assessment has been prepared with reference to the applicable legislative framework and national and local planning policy, as listed below. Specific guidance documents for habitats and species are referenced throughout this chapter and the accompanying Technical Appendices.

Potential Impacts Scoped Out

8.4.9 The assessment focuses on likely significant effects and as such, impacts that are not likely to result in significant effects have been scoped out of the assessment. A summary of the impacts scoped out, together with reasoning for scoping them out is presented in Table 8.3.

Table 8.3: Impacts Scoped Out of the Assessment	
Impact	**Reasoning**
Common and/or low conservation species not recognised in statute as requiring special conservation measures (i.e., not listed as Annex 1/Schedule 1 species). Common and/or low conservation species not included in non-statutory lists (i.e., not listed as Amber or Red-listed Birds of Conservation Concern (BoCC) species), showing birds whose populations are at some risk either generally or in parts of their range. Passerine species, not generally considered to be at risk from wind farm developments, unless being particularly rare or vulnerable at a national level.	Baseline data and experience from other comparable developments, support that significant effects are unlikely on these ornithological features. This approach is consistent with best practice CIEEM EcIA guidance[32] and NatureScot bird survey guidance[33] which recommend an assessment directed towards target species and receptors of conservation importance, and those for which there is potential for significant effects.

Method of Baseline Characterisation

Extent of the Study Area

8.4.10 The ornithology desk study area (hereafter referred to as 'Study Area') was defined as the Site plus a 20 km buffer for designated sites, as shown on **Figure 8.1 (EIAR Volume 3a)**. The extent of the Study Area was selected to assess the connectivity of potential key ornithological sites/species with the Proposed Development in accordance with relevant NS guidance[34].

8.4.11 The ornithology Field Survey Area (FSA) was defined as the area within which each survey has been undertaken and is based on species or Site-specific guidance on the extent of the survey required, as shown in **Figure 8.2 (EIAR Volume 3a)**. Species-specific survey areas and buffers are detailed in **Technical Appendix 8.1 Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.

Ornithology Desk Study

8.4.12 A desk study was undertaken using the NS SiteLink[35] website to inform the location and qualifying features of designated sites within the Study Area. This desk study was also informed by historic pre-construction and post-construction monitoring data from the existing Novar 1 Wind Farm[36], as well as EIARs or technical reports from other developments or proposed developments in the local area.

8.4.13 In addition, the RSPB and HRSG provided records of protected, rare and/or notable avian species, including capercaillie, golden eagle, Slavonian grebe *Podiceps auritus* and diver *Gavia sp.* species.

8.4.14 More detailed information on the desk study methodology is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.

[32] CIEEM EcIA Guidelines (2024). Available at: https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/ [accessed May 2026].

[33] NatureScot Recommended Bird Survey Methods (2025). Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [accessed May 2026].

[34] NatureScot (2025) Recommended bird survey methods to inform impact assessment of onshore windfarms | NatureScott Guidance Available at : Recommended bird survey methods to inform impact assessment of onshore windfarms | NatureScot

[35] NatureScot SiteLInk. Available at: https://sitelink.nature.scot/home [accessed January 2026].

[36] As detailed within the Novar Wind Farm Repowering EIA Scoping Report, Issued January 2025 (Ramboll Limited UK)

Ornithology Field Survey

8.4.15 Ornithology field surveys were undertaken between September 2023 and August 2025, inclusive. All field surveys were undertaken by Ramboll's subconsultants Redwing Ecology Limited. Redwing surveyors are based in the Inverness area and specialise in ornithology surveys across the Scottish Highlands.

8.4.16 More detailed information on the surveys undertaken is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. The survey locations described below are shown on **Figure 8.2 (EIAR Volume 3a)**.

VANTAGE POINT SURVEYS

8.4.17 Vantage Point (VP) surveys (at four VP locations) commenced in September 2023 and were completed in August 2025. All four VP survey locations were surveyed between September 2023 and August 2024 following NS guidance[37]. Additional VP surveys between August 2024 and August 2025 were completed from VP 4 to cover potential activity by birds from the closest territory.

8.4.18 The VP surveys were designed to provide optimal coverage, especially of open areas that have potential to be used by raptor species, such as golden eagles, when hunting or displaying, or using commuting routes. Each survey location was surveyed twice per month, with each individual survey lasting three hours. This equates to 72 hours of annual survey time from each VP survey location, which is in line with NS guidance. Survey timings were spread evenly across the day so surveys from the same location were not undertaken at the same time in adjacent months, potentially leading to a temporal bias in results. Surveys were only undertaken in favourable weather conditions, relative to the typical weather in the Highlands.

MOORLAND BREEDING BIRD SURVEYS

8.4.19 Areas of moorland were surveyed in the Moorland Bird Survey Area (the Site and 500 m buffer), comprising four visits between April and July 2024, in accordance with the Brown and Shepard (1993)[38] methodology for censusing upland breeding waders.

BLACK GROUSE SURVEYS

8.4.20 Black grouse surveys were undertaken in the Woodland Grouse Survey Area (Site and 1.5 km buffer), comprising three visits between March and May 2024, in accordance with the methodology set out in Gilbert *et al* (1998)[39].

SCHEDULE 1 LISTED SPECIES (BREEDING RAPTOR) SURVEYS

8.4.21 Breeding raptor surveys were undertaken in the Breeding Raptor Survey Area (Site and 2 km buffer), comprising three visits between April and June 2024, in accordance with the methodology set out in Hardey et al (2013)[40]. Additional data was purchased from RSPB to cover the extended 6 km buffer for golden and white-tailed eagles. The surveyor identified areas of suitable breeding habitat for Annex 1 and Schedule 1 species which were monitored for activity. If breeding activity was located, intensive surveys were undertaken to confirm

[37] Recommended bird survey methods to inform impact assessment of onshore windfarms (2025). Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms [accessed January 2026].

[38] Brown and Shepard (1993) A Method for Censusing Upland Breeding Waders. Available at: https://cieem.net/resource/a-method-for-censusing-upland-breeding-waders/ [accessed January 2026].

[39] Gilbert, Gibbons and Evans (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Available at: https://cieem.net/resource/bird-monitoring-methods-a-manual-of-techniques-for-uk-key-species/ [accessed January 2026]

[40] Hardey, Crick, Wernham, Riley, Etheridge and Thompson (2013). Raptors: A field Guide for Surveys and Monitoring. Available at: https://www.nhbs.com/raptors-a-field-guide-for-surveys-and-monitoring-book [accessed January 2026].

breeding success. Intensive surveys to monitor breeding success were only undertaken by ornithologists holding valid NS Schedule 1 licences.

Collision Risk Assessment

8.4.22 A Collision Risk Assessment (CRA) was undertaken following the Band et al (2007) model[41] and in accordance with NS[42]. This used the flight data gathered during the VP surveys to predict the level of collision mortality associated with the Proposed Development for each of the species assessed. The model uses the amount of time each species spent flying at Potential Collision Height (PCH, 12.5 m to 180 m) within the Turbine Array along with parameters from the turbines to calculate a predicted collision mortality assuming no avoiding action. This number is reduced using the prescribed avoidance rate for each species, provided by NS[43].

8.4.23 This process is described in full detail in **Technical Appendix 8.4: Collision Risk Assessment (EIAR Volume 4)** and complemented by Figure 8.9: Collision Risk Areas (Collison Risk Assessment TA).

Habitat Regulations Appraisal

8.4.24 A Habitat Regulations Appraisal (HRA) was undertaken to assess potential for Likely Significant Effects (LSE) on all qualifying species that could impact designated sites (SPA and Ramsar) within 20 km of the Proposed Site. This assessment considered the potential for disturbance and displacement, as well as habitat loss/change and collision risk.

8.4.25 The HRA assessment is detailed in T**echnical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**.

Golden Eagle Topography Modelling

8.4.26 Golden Eagle Topography (GET) Modelling was undertaken covering the ornithology Study Area. This provides an estimate of golden eagle activity for each location dependent on factors that have been shown to be preferential to golden eagles, following Fielding *et al* (2020)[44]:

- Slopes of greater than 10°;
- Altitude higher than 300 m; and
- Within 300 m of a ridge.

8.4.27 The output of this model has been used to predict areas of potentially higher golden eagle activity and is considered alongside the desk study and field survey data collected to inform the golden eagle baseline. This process is described in more detail in **Technical Appendix 8.1 Ornithology Survey and Assessment Methodology (EIAR Volume 4)** and shown on **Figure 8.8.**

[41] Band, Madders, and Whitfield. (2007). Developing Field and Analytical Methods to Assess Avian Collision Risk at Wind Farms. Available at: https://www.natural-research.org/application/files/4114/9182/2839/Band_et_al_2007.pdf [accessed January 2026].

[42] NatureScot (2024). Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. Available at: https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms [accessed January 2026].

[43] NatureScot (2025). Wind farm impacts on birds-Use of Avoidance Rates in NatureScot Wind Farm Collision Risk Model. Available at: https://www.nature.scot/doc/wind-farm-impacts-birds-use-avoidance-rates-naturescot-wind-farm-collision-risk-model [accessed January 2026].

[44] Fielding, A.H., Haworth, P.F., Anderson, D., Benn, S., Dennis, R., Weston, E. and Whitfield, D.P. (2020), A simple topographical model to predict Golden Eagle Aquila chrysaetos space use during dispersal. Ibis, 162: 400-415. https://doi.org/10.1111/ibi.12718 [accessed January 2026].

Method of Assessment

Overview

8.4.28 Detailed information on the assessment methodology, including criteria for assessing sensitivity of receptors, magnitude of change and cumulative effects, as well as overall significance criteria, is provided in **Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.

8.4.29 Ornithological features are given an importance rating based on a geographic scale as follows: International; National; Regional; County or Local. The classification of importance assesses ornithological features in relation to their population size, diversity, rarity, fragility, typicalness, connectivity with surroundings, intrinsic value, recorded history, and potential value.

Criteria for Assessing the Magnitude of Change

8.4.30 The magnitude of impact is predicted quantitatively where possible, considering the duration and reversibility of effects, and is considered spatially and temporally as described within Table 8.4. Impacts can be adverse or beneficial, and classified as direct or indirect.

8.4.31 Impacts have also been characterised based on their nature, including duration, frequency, likelihood and reversibility. Further information is provided in **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**.

Table 8.4: Description of Impact Magnitude

Impact Magnitude	Description
High	Total/near total loss of a bird population at the spatial scale at which the receptor is valued (e.g. local, regional, national or international) due to mortality or displacement or major reduction in the status or productivity of a bird population due to mortality or displacement or disturbance. This typically corresponds to an effect on approximately 50 to 100% of the affected population.
Medium	Partial reduction in the status or productivity of a bird population at the spatial scale at which the receptor is valued (e.g. local, regional, national or international) due to mortality or displacement or disturbance. This typically corresponds to an effect on approximately 10% to 50% of the affected population.
Low	Small but discernible reduction in the status or productivity of a bird population at the spatial scale at which the receptor is valued (e.g. local, regional, national or international) due to mortality or displacement or disturbance. This typically corresponds to an effect on approximately 1% to 10% of the affected population.
Negligible	Very slight reduction in the status or productivity of a bird population at the spatial scale at which the receptor is valued (e.g. local, regional, national or international) due to mortality or displacement or disturbance. Reduction barely discernible, approximating to the 'no change' situation. This typically corresponds to an effect on approximately less than 1% of the affected population.

8.4.32 Following best practice guidance on ecological impact assessment from the Chartered Institute of Ecology and Environmental Management (CIEEM)[45], alongside a consideration of the magnitude of the impact, other characteristics including extent, duration, frequency, timing and/or reversibility are also considered.

[45] https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/

Criteria for Assessing Cumulative Effects

8.4.33 Cumulative effects have been assessed following guidance from NS[46] on assessing cumulative ornithological impacts from wind farm developments. Cumulative effects are assessed by considering the impacts of the Proposed Development at the same time as the impacts arising from another development. This is done additively, i.e., adding the impacts of multiple developments together and assessing if the resulting cumulative effect is significant or not.

8.4.34 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects are particularly important in EcIAs as many ornithological features are already exposed to background levels of threat or pressure and may be close to critical thresholds, where further impacts could cause irreversible decline and significant cumulative effects. Further impacts can also make habitats and species more vulnerable or sensitive to change.

8.4.35 Cumulative effects have been considered within the Northern Highlands (NHZ7) and Moray Firth (NHZ21) Natural Heritage Zones (NHZ) and relevant SPA populations, as requested by NS and RSPB, see Table 8.1. Golden eagle, white-tailed eagle, peregrine and hen harrier are considered against NHZ7. For red kite the assessment has been completed with consideration of the whole North of Scotland population and for osprey, it has been against the NHZ21 population.

Criteria for Assessing Significance

8.4.36 An effect is either significant or not significant. For the purposes of EcIA, a significant effect is an effect that either supports or undermines biodiversity conservation objectives for important ecological features or for biodiversity in general. In broad terms, significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats or species (including extent, abundance and distribution). Significant effects are assessed with reference to the geographical importance of the ornithological feature. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, a significant effect on a species which is protected by national legislation, does not necessarily equate to a significant effect on its national population.

8.4.37 For the purposes of EIA, apart from in exceptional circumstances, a significant effect, as defined by the EIA Regulations[47] is only considered to be possible where the feature in question is of regional, national, or international importance. That is not to say that impacts from the Proposed Development cannot result in ornithologically significant effects (under the EIA Regulations) on features of county or local importance, simply that those effects are not likely to be significant under EIA Regulations, unless the effect is likely to undermine the conservation status or distribution of the species. Whether an effect at local or county importance is significant or not significant under the EIA Regulations has been made clear in the impact assessment for each ornithological feature.

8.4.38 Mitigation and/or compensation is proposed for all effects considered significant under the EIA Regulations. Where appropriate, as part of additional good practice, mitigation and/or compensation may be proposed for ornithologically significant effects on features of county or local importance, but which are not considered to be significant under the EIA Regulations.

[46] NatureScot (2018) Assessing the Cumulative Impact of Onshore Wind Farms on Birds. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds [accessed January 2026].

[47] The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 Available at: http://www.legislation.gov.uk/ssi/2017/101/contents/made [accessed January 2026].

Limitations and Assumptions

8.4.39 It should be noted that the availability and quality of the data obtained during desk studies is reliant on third party responses and recorders. This varies from region to region and for different species groups. Furthermore, the comprehensiveness of data often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder.

8.4.40 The ornithology surveys provide a snapshot of ornithological conditions and do not record species that may be present in the Study Area at different times of the year. The absence of a particular species cannot definitely be confirmed by a lack of field signs and only concludes that an indication of its presence was not located during the survey effort. However, surveys for bird species were undertaken during optimal periods for locating field signs.

8.4.41 A single-phase construction and decommissioning phase of up to 3 years has been considered in the assessment.

8.4.42 Limitations and assumptions are not considered to undermine the validity of survey data or overall assessment.

8.4.43 A micrositing allowance of 100 m is proposed. While the final location of infrastructure may vary within this tolerance, any such changes would remain within the parameters assessed in the EIAR and would not give rise to materially different environmental effects. Therefore, the conclusions of this assessment would remain unchanged.

8.5 Baseline Conditions

Current Baseline

Desk Study

DESIGNATED SITES

8.5.1 The designated sites within the Study Area are shown on **Figure 8.1: Ornithology Designated Sites (EIAR Volume 3a)** and listed in Table 8.5: Ornithology Designated Sites.

Table 8.5: Ornithology Designated Sites (within 20 km of the Site, and their qualifying features)

Site Name	Qualifying Feature(s)	Distance from the Site at Closest Point	Connectivity[48] with Proposed Development
Novar Special Protection Area (SPA)	Capercaillie *Tetrao urogallus*, breeding	3.5 km southeast of the Turbine Array at the closest point. The Access Route intersects the southwest extent of the SPA for approximately 2.8 km as shown on **Figure 8.1: Ornithology Designated Sites (EIAR Volume 3a)**.	Yes, the access route for the Proposed Development passes through this SPA.

[48] NatureScot (2016) Assessing Connectivity with Special Protection Areas (SPA). Guidance series.

Table 8.5: Ornithology Designated Sites (within 20 km of the Site, and their qualifying features)

Site Name	Qualifying Feature(s)	Distance from the Site at Closest Point	Connectivity[48] with Proposed Development
Ben Wyvis SPA	Dotterel *Charadrius morinellus*, breeding	3.3 km west - southwest	No dotterel were recorded during the field surveys and, whilst low potential for them to use the Proposed Development site exists, the species is declining in its optimal habitat areas, such as SPAs, and therefore is considered extremely unlikely to occur within the Site with any regularity.
Cromarty Firth SPA and Ramsar	Common tern *Sterna hirundo*, breeding Osprey, breeding Bar-tailed godwit *Limosa lapponica*, non-breeding Curlew *Numenius arquata*, non-breeding Dunlin Calidris alpina alpina, non-breeding Greylag goose *Anser anser*, non-breeding Knot *Calidris canutus*, non-breeding Oystercatcher *Haematopus ostralegus*, non-breeding Pintail *Anas acuta*, non-breeding Red-breasted merganser *Mergus serrator*, non-breeding Redshank *Tringa totanus*, non-breeding Scaup *Aythya marila*, non-breeding Waterfowl assemblage, non-breeding Whooper swan *Cygnus cygnus*, non-breeding Wigeon *Anas penelope*, non-breeding	7.8 km southeast	Yes, only for breeding osprey which may pass over the site. The other qualifying interest species are strongly tied to the coastal habitats of the designated sites.

Table 8.5: Ornithology Designated Sites (within 20 km of the Site, and their qualifying features)			
Site Name	**Qualifying Feature(s)**	**Distance from the Site at Closest Point**	**Connectivity[48] with Proposed Development**
Morangie Forest SPA	Capercaillie, - breeding	9 km east	No. The SPA is sufficiently distant that capercaillie from that SPA are unlikely to travel as far as the Site. There is potential for birds from that SPA to cross to Novar SPA, but the Proposed Development does not lie between these SPAs. Potential impacts on capercaillie are limited to those within Novar SPA.
Moray Firth SPA	Common scoter *Melanitta nigra,* non-breeding Eider *Somateria mollissima*, non-breeding Goldeneye *Bucephala clangula,* non-breeding Great northern diver *Gavia immer*, non-breeding Long-tailed duck *Clangula hyemalis*, non-breeding Red-breasted merganser *Mergus serrator*, non-breeding Red-throated diver *Gavia stellata*, non-breeding Scaup *Aythya marila*, non-breeding Shag *Phalacrocorax aristotelis*, breeding and non-breeding, Slavonian, non-breeding	19 km south - southeast	No. Red-throated diver was recorded during field surveys, but in low numbers. The potential for regular flights between the SPA and the Proposed Development does not exist.
Dornoch Firth and Loch Fleet Ramsar	Bar-tailed godwit, non-breeding Curlew, non-breeding Dunlin, non-breeding Greylag goose non-breeding Osprey, breeding Oystercatcher, non-breeding Redshank, non-breeding	19.9 km	No. Potential for greylag goose connectivity, but suitable habitat for goose foraging is not considered to exist around the Proposed Development. Greylag geese were not recorded during field surveys.

Table 8.5: Ornithology Designated Sites (within 20 km of the Site, and their qualifying features)

Site Name	Qualifying Feature(s)	Distance from the Site at Closest Point	Connectivity[48] with Proposed Development
Strath Carnaig and Strath Fleet Moors SPA	Hen harrier, breeding	19.9 km	No. The site lies far beyond the best practice maximum connectivity distance with an SPA for hen harrier of 10 km.
Inner Moray Firth SPA and Ramsar	Bar-tailed godwit - non-breeding Common tern - breeding Cormorant- non-breeding Curlew - non-breeding Goldeneye - non-breeding Goosander *Mergus merganser* - non-breeding Greylag - non-breeding Osprey - breeding Oystercatcher - non-breeding Red-breasted merganser - non-breeding Redshank - non-breeding Scaup - non-breeding Teal *Anas crecca* - non-breeding Waterfowl assemblage - non-breeding Wigeon *Anas penelope* - non-breeding	19 km south-southeast	No. At the limit of normal foraging range for osprey and the other qualifying interest species are strongly tied to the coastal habitats of the designated sites.

PURCHASED DATA

8.5.2 Desk study data was purchased from RSPB and HRSG to inform the baseline for breeding raptors and capercaillie. The RSPB has provided records for capercaillie and golden eagle. These records indicate that two active capercaillie lek sites have been recorded within the Site boundary, overlapping the Access Route and located within the Novar SPA. RSPB data also identified one confirmed golden eagle territory approximately 3 km off-Site. HRSG records confirmed four breeding locations within the Study Area, comprising one golden eagle breeding site (approximately 2.2 km from the Site), two hen harrier breeding sites (approximately 840 m from the Site), and one peregrine falcon breeding site (approximately 640 m from the Site). All breeding locations were situated outside the Site boundary. The locations of these active lek/nest sites are confidential and are described in **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**. Confidential RSPB and HRSG desk study data is shown in **Figure 8.3: Desk Study Results (CONFIDENTIAL) in EIAR Volume 5**.

Field Survey results (2023-2025)

8.5.3 The results of the surveys undertaken between September 2023 and July 2025 are listed below. Surveys included flight activity, moorland breeding bird, breeding raptor and Black

Grouse surveys. Additional VP surveys were undertaken to enable a better understanding regarding the presence and flight activity of golden eagle within the ornithology FSA.

VP (VANTAGE POINT) SURVEYS

8.5.4 Ten target species were recorded during the two-year survey period within the ornithology FSA.

8.5.5 Full details of the surveys undertaken for the Proposed Development are provided in the **Technical Appendix 8.1: Ornithology Survey and Assessment Methodology (EIAR Volume 4)**. The results below focus on the information on the ornithological features required to undertake the impact assessment.

8.5.6 Detailed descriptions of the species recorded during the VP surveys are provided in this section. For any target species recorded during the VPs as overflying the Site at potential collision height (PCH), further information on population size and trends has been provided. This is due to these species being potentially at risk of collision with turbines.

8.5.7 The data presented below reflect the survey results of the 2-year survey period.

8.5.8 The results of the VP surveys are shown on Figures 8.4a-c Vantage Point Survey Results (2023-2025) (**Figure 8.4a, EIAR Volume 5 and Figures 8.4b-c, EIAR Volume 3a**). The results of the VP surveys are summarised in Table 8.6.

Table 8.6: Vantage Point Survey Results (2023-2025)

Species	Total		Crossing the proposed Turbine Array (plus 200 m buffer) at PCH	
	Flights	Individuals	Flights	Individuals
Golden Eagle	23	27	2	2
Golden Plover	2	24	2	24
Hen Harrier	13	13	4	4
Red kite	80	94	42	53
Merlin	2	2	1	1
Osprey	1	1	1	1
Peregrine falcon	2	2	0	0
Pink footed goose	1	40	0	0
Sparrowhawk	1	1	0	0
White-tailed Eagle	3	3	2	2

GOLDEN EAGLE

8.5.9 Multiple flights of golden eagle were recorded during surveys at PCH during field surveys within the ornithology study area. Two flights were recorded at PCH within the 200 m buffer of the Turbine Array.

8.5.10 Golden eagle flights were recorded on 23 occasions, involving 27 individuals during the two-year survey period. Juvenile bird was recorded in July 2024 and a male bird displaying in February and May 2025. The highest activity was recorded north – northwest of the Site, in the area between Loch Morie and Loch Glass. The records included activities indicating breeding, such as displaying and the presence of juvenile. Two flights of golden eagle involving a total of two individuals were recorded at PCH within the 200 m buffer of the Turbine Array. The VP results for this species are shown on **Confidential Figure 8.4a: Vantage Point Survey Results (2023-2025): Golden Eagle (EIAR Volume 5)**.

8.5.11 The population of golden eagle is largely restricted to the Scottish Highlands and Islands[49] and a newly reestablished population in Southern Scotland[50]. The species is present all year within this range[51].The population is relatively stable, with 400 to 500 breeding pairs present. This is a green listed species on the UK Birds of Conservation Concern List (BoCC), classed as of Least Concern, and on the IUCN Red List of Threatened Species. Although habituation and avoidance of wind farms by golden eagle had been documented, the species is considered to be highly vulnerable to collision with wind turbines[52].

GOLDEN PLOVER

8.5.12 Two golden plover flights were recorded on Site in October 2023, within the southeastern section of the Proposed Development, involving two groups of 10 and 14 birds, in the area between VP 1 and 2.

8.5.13 Golden plover is a bird of the uplands in summer, ranging from the Pennines north into Scotland and can also be found in lowland Britain and Ireland in winter. Golden plover is a green listed species with 33 thousand pairs breeding in the UK (2016) and 410 thousand spending the winter in the UK (2006 – 2007)[53].

8.5.14 The two groups were both recorded flying at PCH. The two flights were recorded at PCH within a 200 m buffer from the Turbine Array as prescribed in best practice guidance on collision risk assessment[54]. Golden plover flights are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a)**.

HEN HARRIER

8.5.15 Thirteen flights of hen harrier were recorded during the VP surveys in the immediate vicinity of the Proposed Development and within the Site in April and May 2024, all of individual birds. Five flights were seen near the northern sections of the Site, south of Loch Morie, in the immediate vicinity of the Site, where male and female birds were observed hunting. Two flights were recorded within the Site, including a ringtail and an adult male hunting solo. A further four flights were recorded at the southeast corner section of the Site, where adult male birds were seen displaying.

8.5.16 All of these flights included segments at PCH. Four flights of four individuals were recorded within 200 m from the Turbine Array. Hen harrier flights recorded during VP surveys are shown on **Figure 8.4c: Vantage Point Survey Results: Other Target Species (2023-2025) (EIAR Volume 3a)**.

8.5.17 There are estimated to be 545 breeding pairs on hen harriers in the UK, based on last counts from 2016[55]. The population of hen harriers in the area surrounding the Site are considered to be of regional importance. Geographically the species has shown a 9.4% decline in the Highland Region[56].

[49] A small population has reestablished in the south of Scotland in recent years: South of Scotland Golden Eagle Project

[50] South Scotland Golden Eagle Project (website) available at South of Scotland Golden Eagle Project [Accessed: 1st February 2026]

[51] BTO (2025) Available from: https://www.bto.org/learn/about-birds/birdfacts/golden-eagle#distribution-change

[52] Whitfield, D.P. (2009) Collision Avoidance of Golden Eagles at Wind Farms under the 'Band' Collision Risk Model. Report to Scottish Natural Heritage. Natural Research Ltd, Banchory, UK.

[53] BTO (2025) Available from https://www.bto.org/learn/about-birds/birdfacts/golden-plover#conservation-status

[54] NatureScot (2024). Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. NatureScot Guidance Note. https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms [Accessed in April 2025].

[55] Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D.A. & Noble, D. (2020) Population estimates of birds in Great Britain and the United Kingdom. British Birds, 113, pp. 69–104. Available at: https://britishbirds.co.uk [Accessed: 2nd February 2026].

[56] 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.

RED KITE

8.5.18 Red kite was recorded on 80 occasions during the survey period, involving 94 individuals in total, thus being the most recorded species, seen across the entirety of the 2023-2025 survey period in all seasons, all over the Site and its vicinity. Single birds were observed flying on 67 occasions and in pairs on twelve occasions. Three birds flying together were also observed once. Observations of territorial display and hunting between turbines were recording during survey season. Fifty-five flights were recorded, including segments at PCH.

8.5.19 Red kite was observed on multiple occasions hunting between turbines on Site, indicating habituation. Forty-two flights of 53 individuals were recorded within the 200 m buffer from the Turbine Array. Red kite flights are shown on **Figure 8.4b: Vantage Point Survey Results (2023-2025) - Red Kite (EIAR Volume 3a)**.

8.5.20 Following its reintroduction in the late 20th century, this species now has large populations in Wales, Yorkshire and eastern Scotland. The long-term population trend of this species clearly indicates a steady growth[57]. This is a Green listed species on the list of UK Birds of Conservation Concern[58]. However, this species shows a significant (10%) decline in the Highland Region[59].

MERLIN

8.5.21 Two single flights of merlin were recorded in June 2024 during VP surveys. The flights occurred on the same day, near the middle section of the Site, south - southeast of Meall an Tuirc, with both flights recorded from VP2. Both flights included segments at PCH. One single bird was recorded at PCH during surveys within the 200 m from the Turbine Array. Merlin flights recorded are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a)**.

8.5.22 Merlin breeds in the uplands of the UK. The current estimate of breeding pairs is 707[60] and considered to represent a stable population. This species is red listed in the UK Birds of Conservation Concern[61] and is considered as of regional importance.

OSPREY

8.5.23 Osprey was recorded on one occasion during the flight activity surveys in July 2024. An adult bird was seen commuting between Loch Glass and Loch Morie. Part of the flight occurred on Site and at PCH. The flight was recorded within the 200 m buffer from the Turbine Array.

8.5.24 Osprey is a migratory species, a summer visitor in the UK, arriving around late February to breed from their wintering grounds in West Africa. The population appears to be stable since its breeding success has shown no significant change nationally between 2009 – 2018[1]. Osprey is an Amber listed species of medium conservation concern in the UK. Osprey flights recorded are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a)**.

[57] Heywood, J.J.N., Massimino, D., Balmer, D.E.,Kelly, L., Marion, S., Noble, D.G., Pearce-Higgins, J.W., White, D.M., Woodcock, P., Wotton, S. Gillings, S. (2025) The Breeding Bird Survey 2024. BTO Research Report 765. British Trust for Ornithology, Thetford.

[58] https://www.bto.org/learn/about-birds/birdfacts/red-kite#conservation-status

[59] 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.

[60] 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.

[61] https://www.bto.org/learn/about-birds/birdfacts/merlin#conservation-status

PEREGRINE FALCON

8.5.25 Peregrine falcon was recorded on two occasions, once in November 2023 and once in February 2024. Individual birds were observed hunting near the summit of Meall an Tuirc and flying near VP1. Both flights occurred on Site. Both flights were recorded as below PCH.

8.5.26 The long–term population trend of this species shows a steady decline[62] in general but indicates a significant increase in breeding success in the northeast of Scotland[63].The species is Green listed on the list of UK Birds of Conservation Concern.

8.5.27 Flight records of this species are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a)**.

PINK FOOTED GEESE

8.5.28 One group of 40 pink footed geese was recorded during surveys in October 2023 flying above PCH, southwest of the Site, crossing the location of the Access Route, commuting in a northeast - southwest direction.

8.5.29 Approximately 370,000 pink-footed geese overwinter in the UK, constituting 96% of the global population. This species overwinters predominately in Scotland, northwest England and East Anglia between October and March, before migrating north to breed in Iceland and Greenland. Wintering Bird Survey data suggests a slight decline of the UK population of this species in the last few decades, since 2010[64].

8.5.30 Pink-footed geese flights recorded during VP surveys are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a)**.

SPARROWHAWK

8.5.31 One adult sparrowhawk was recorded from VP 3 in February 2024, to the north-northeast of Meall an Tuirc, as it was plucking a prey item. The sparrowhawk flight recorded during VP surveys is shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025) - Other Target Species (EIAR Volume 3a).**

8.5.32 Sparrowhawks are resident in the UK but rarely seen in the Scottish uplands. The long-term population trend of this species indicates a steady decline[65]. The species is Amber listed on the list of UK Birds of Conservation Concern and is of medium concern.

WHITE-TAILED EAGLE

8.5.33 White-tailed eagles were recorded on and in the vicinity of the Site on three occasions. One adult was seen in October 2023, soaring near Meall an Tuirc, between the summit and the nearby coniferous woodland in the west. Another flight of a subadult individual was recorded in March 2024 circling above Allt Strath nan Gleann and crossing the Site's southern section, north of VP2. The third, long, single flight of an adult bird was observed in April 2024, with the full flight recorded within the Site boundary, occurring in a northwest - southeast direction. All three flights included segments at PCH. Two flights involving two individuals were recorded within the 200 m buffer from the Turbine Array. White-tailed eagle flights recorded during VP surveys are shown on **Figure 8.4c: Vantage Point Survey Results (2023-2025)- Other Target Species (EIAR Volume 3a)**.

[62] https://data.bto.org/trends_explorer/?species=Peregrine

[63] 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.

[64] https://www.bto.org/learn/about-birds/birdfacts/pink-footed-goose#conservation-status

[65] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and 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.

8.5.34 The Scottish population of this species includes more than 100 breeding pairs[66]. The regional population trend for this species indicates no significant change in the Scottish Highlands but indicates a 5.4% increase in Scotland as a whole[67]. White-tailed eagle is Amber listed species and of medium concern.

MOORLAND BREEDING BIRD SURVEYS

8.5.35 Twelve target species were recorded during the Moorland Breeding Bird Surveys undertaken between April and June in 2024. The results of the Moorland Breeding Bird Surveys are shown on **Figure 8.5: Moorland Breeding Bird Survey Results 2024 (EIAR Volume 3a)** and **Figure 8.6: Breeding Raptor Survey Results 2024 CONFIDENTIAL (EIAR Volume 5)**. The results are summarised in Table 8.7.

Table 8.7: Moorland Breeding Bird Survey Results (Colour depicts listing on Birds of Conservation Concern (BoCC) 5[68,69])

Species Code	Species	Number of Records
BK	Black grouse	2
BZ	Common buzzard	1
EA	Golden eagle	2
HH	Hen harrier	8
ML	Merlin	2
OP	Osprey	3
PE	Peregrine falcon	2
PT	Ptarmigan	2
RN	Raven *Corvus corax*	3
RG	Red grouse	23
KT	Red kite	11
RH	Red-throated diver	1

8.5.36 The most common target species recorded during MBBS was red grouse, followed by red kite and hen harrier. Four red listed, one amber listed and seven green listed species were recorded.

8.5.37 The Red listed species recorded were:

- Black grouse;
- Hen harrier;
- Merlin; and
- Ptarmigan.

8.5.38 The Amber listed species recorded included one species:

- Osprey.

8.5.39 Three osprey were recorded flying together near the northern section of the Site.

[66] https://www.bto.org/learn/about-birds/birdfacts/white-tailed-eagle#conservation-status

[67] 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.

[68] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and 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.

[69] The colours indicate the range of conservation concern, from green being the least to red being the highest.

8.5.40 No confirmed breeding territories were identified during MBBS surveys in 2024, but probable and possible breeding territories were identified for two species:

- Red grouse – Probable and possible breeding; and
- Hen harrier – Possible breeding.

8.5.41 Red grouse was the most frequently recorded species during MBBS surveys. One probable territory of this species was identified based on male birds calling and a pair having been recorded twice on Site, in the northeastern section of the Proposed Development.

8.5.42 Seven other possible breeding territories were also identified for red grouse, where five pairs were recorded, males were recorded calling across the three visits or displaying. These territories are spread out from southeast to northwest, including location both on and off-Site.

8.5.43 One possible hen harrier territory was identified with a male bird displaying south of Loch Morie, approximately 500 m north of the Site. A long flight of a male bird was also recorded in the same area during MBBS surveys.

8.5.44 Breeding activities identified are shown **Figure 8.5: Moorland Breeding Bird Survey Results (2024) (EIAR Volume 3a)** and **Confidential Figure 8.6: Breeding Raptor Survey Results (2024) (EIAR Volume 5)**.

BREEDING RAPTOR SURVEYS

8.5.45 Seven raptor species were recorded within the ornithology FSA during breeding raptor surveys. Species recorded included:

- Common buzzard;
- Golden eagle;
- Goshawk;
- Hen harrier;
- Red kite;
- Osprey; and
- Sparrowhawk.

8.5.46 One confirmed breeding territory with nest location identified was recorded for hen harrier near the north-northwest section of the Site. No records of any raptor roosts were identified during the programme of surveys. The results of the breeding raptor surveys are shown on **Confidential Figure 8.6: Breeding Raptor Survey Results (2024) (EIAR Volume 5)**.

COMMON BUZZARD

8.5.47 Common buzzards were recorded on four occasions in total, in May and June 2024. Two flights of a pair were recorded north of the Site, southeast of Loch Morie. Two further flights involving one pair and one single bird were recorded south and west of the Site. All fights occurred off-Site.

GOLDEN EAGLE

8.5.48 One flight of a golden eagle pair was recorded above Loch Morie in June 2024.

GOSHAWK

8.5.49 One flight of a single bird was recorded south of Loch Moine, north of the Site. The bird was flying in the immediate vicinity of the loch, off-Site.

HEN HARRIER

8.5.50 Hen harrier records were the most numerous during the breeding raptor surveys. Seven flights of this species were recorded. Two flights of single birds were recorded in June 2024, including a long flight crossing Loch Moine in a north-south direction and one flight in the same area, between the loch and the Site. Both flights occurred off-Site. These flights occurred in the same area where possible breeding territory for hen harrier was identified during MBBS surveys. A hen harrier territory was confirmed, and nest location was identified within in this area. The nest location is shown on **Confidential Figure 8.6: Breeding Raptor Survey Results (2024) (EIAR Volume 5)**. A further four flights were recorded near the west/northwest section of the Site, in the immediate vicinity of proposed Turbine 1. Four single flights were recorded, three in May and one in June. Two of these flights occurred within the FSA.

RED KITE

8.5.51 One single flight of this species was recorded near the northwest section of the Site. The flight occurred south of Loch Moine, in May 2024.

OSPREY

8.5.52 One long flight of a single bird was recorded above and in the immediate vicinity of Loch Morie in June 2024. The flight occurred north of the Site, off-Site.

SPARROWHAWK

8.5.53 Two flights of this species were recorded during the surveys, both flights of single birds occurred in June and both off-Site. Flights were recorded near Loch Moine and to the southeast of the Site.

Black Grouse Surveys

8.5.54 The black grouse surveys identified one lekking site of this species within the black grouse survey area, approximately 1 km east of the Site. Two male birds were heard singing on the 9th of April 2024, and three male birds were observed as actively lekking, with two male birds seen on the sideline in May 2024. All sightings were located around the same location where four male birds were encountered during MBBS on the same day.

8.5.55 Five lekking males were also heard and seen on the 10th of April in the same area.

8.5.56 Incidental sightings of hen harrier and barn owl *Tyto alba* hunting were also recorded during the second visit, in May 2024.

8.5.57 All records were approximately 1 km west of the Site.

8.5.58 The results of the Black grouse surveys are shown on **Confidential Figure 8.7: Black grouse Survey Results (2024) (EIAR Volume 5)**.

Future Baseline

8.5.59 The future baseline of the FSA under the "do nothing" scenario is unlikely to change significantly in the absence of the Proposed Development. The majority of habitats are already modified by the existing Novar 1 Wind Farm, associated Internal Tracks and disturbance. It should be noted that the "do nothing scenario" would result in localised, short-term disturbance from impacts associated with the decommissioning of the existing Novar 1 Wind Farm infrastructure, and that these effects are temporary. Bird species using the area of the existing wind farm are either now habituated and comfortable in continuing to access areas or they now avoid it altogether. Accordingly, the suite of bird species occurring on-Site, using the existing habitats for roosting, breeding or commuting is unlikely

to change. Therefore, the distribution of bird species using the open areas of the Site would be unlikely to change.

Summary of Sensitive Receptors

8.5.60 A summary of the receptors considered likely to be affected by the Proposed Development due to connectivity and therefore scoped into the assessment are set out in Table 8.8, together with their associated sensitivity.

Table 8.8: Summary of Sensitive Receptors

Receptor	Sensitivity	Justification
Novar SPA	National	Novar SPA qualifies under international legislation Article 4.1 by regularly supporting a breeding population of Annex 1 species of European importance: capercaillie[70]. Capercaillie is known from the RSPB data received to be present in the vicinity of the Site where suitable habitat is available. Data regarding records of this species from the last 10 years sourced from the RSPB, confirms the ongoing presence of an active, breeding population in the SPA. Novar SPA is approximately 3.5 km southeast of the Turbine Array at its closest point. The Access Route intersects the southwest extent of the SPA for approximately 2.8 km as shown on **Figure 8.1: Ornithology Designated Sites (EIAR Volume 3a)**.
Cromarty Firth SPA and Ramsar	National	A Special Protected Area which is part of the European site network of protected areas[71] Cromarty Firth SPA regularly supports populations of European importance of Annex 1 species: osprey, common tern, whooper swan, bar-tailed godwit[72]; migratory species: greylag goose; and nationally important populations of waterfowl, comprising wildfowl and waders. Out of the qualifying species of the SPA, osprey was recorded during the survey period. The SPA is approximately 7.8 km southeast of the Site at its closest point. This is within the potential core range for osprey flights[73].
Breeding birds (not including Schedule 1 raptors)	Site	All bird nests are legally protected under UK law meaning that a significant effect is possible if any are destroyed due the construction or operation of the Proposed Development. Confirmed breeding for red grouse was recorded.
Black grouse	County	Black grouse is a red listed species on the BoCC list, considered in the UK as at risk of extinction[74]. A small black grouse lekking site was identified approximately 1 km east of the Site.

[70] Scottish National Heritage (2005) Available at chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/ https://www.nature.scot/sites/default/files/special-protection-area/8662/spa-citation.pdf

[71] NatureScot(2023)Available at https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/international-designations/european-sites/special-protection-areas-spas

[72] https://www.nature.scot/sites/default/files/special-protection-area/8488/spa-citation.pdf

[73] NatureScot (2016) Assessing Connectivity with Special Protection Areas (SPA). Guidance series.

[74] RSPB (2025) Available at https://www.rspb.org.uk/birds-and-wildlife/black-grouse/watching-endangered-grouse

Table 8.8: Summary of Sensitive Receptors		
Receptor	**Sensitivity**	**Justification**
Golden eagle	Regional	Desk study data confirmed two golden eagle breeding sites approximately 3 km southwest and 2.2 km northwest of the Site. 23 flights of 27 individuals were recorded during the VP survey program within the ornithology FSA. All flights were recorded outwith the proposed Turbine Array, north – northwest of the Site, in the area between Loch Morie and Loch Glass. Two flights of two individual birds were recorded within 100 m of proposed Turbine 1. Behaviours and the presence of juveniles of the species included indications of breeding, and an established golden eagle territory was confirmed during VP surveys approximately 1.8 km northwest of the Site. Behaviours and the presence of juveniles of the species included indications of breeding, and of an established golden eagle territory in the vicinity.
Golden plover	Local	Two flights of golden plover were recorded within the FSA, involving 24 individuals. The flights were seen crossing the proposed Turbine Array. The species is a Local Biodiversity Action Plan (LBAP) species of the Highland Council[75] as a priority species.
Hen harrier	Regional	Desk study data confirmed two hen harrier breeding sites approximately 840 m north and 840 m southeast of the Site. Thirteen flights of this species were recorded during the two-year flight activity survey period. All flights occurred in the immediate vicinity of the Site, both within and outside the Site, to the north and to the east of the Proposed Development. Sightings included male and female birds hunting and male birds displaying. Hen harrier records were the most numerous during breeding raptor surveys. MBBS also recorded hen harriers on eight occasions. One breeding territory for this species was identified, approximately 750 m north of the Site.
Merlin	Local	This is a Schedule 1 Raptor Species that was recorded during MBBS surveys on two occasions, and two single flights were also recorded during flight activity surveys, within the Site, in the vicinity of the Proposed Development. No breeding activity for this species was recorded during surveys, indicating that merlin population on Site is of local importance only.
Osprey	Local	No osprey territory was identified within the FSA. Three osprey fights were recorded near and to the south of Loch Moine, off-Site. Osprey is a qualifying species of the Cromarty Firth SPA, which is within connectivity distance from the Site. Due to the low flight activity of this species within the Site, osprey population on Site is considered of local importance only.
Peregrine falcon	County	Desk study data confirmed a peregrine falcon breeding site approximately 640 m south of the Site located within the NS best practice 750 m disturbance distance buffer during the breeding season. The species was recorded on Site on two occasions. Peregrine falcon is a Schedule 1 Species showing a steady decline in long term population trends, but an increase in breeding success in the north of Scotland.

[75] https://www.highland.gov.uk/downloads/file/27148/highland_nature_biodiversity_action_plan_2021_%E2%80%93_2026

Table 8.8: Summary of Sensitive Receptors		
Receptor	**Sensitivity**	**Justification**
Pink-footed goose	Local	This is an amber listed species that was recorded off-Site but in the vicinity of the Site, including one group of 40 individuals migrating in a northeast-southwest direction. It is considered that the species' movement routes are already affected by the presence of the existing Novar 1 Wind Farm which they appear to avoid crossing. No direct adverse effect on SPAs notified for this species are predicted.
Red kite	Regional	Red kite is a Schedule 1 Species that was regularly recorded during the two-year survey period, including pairs on 12 occasions. Birds were hunting between turbines, indicating habituation. The long-term population trends of this species show a steady growth but a significant decline in the Scottish Highlands.
White-tailed eagle	Regional	Three individual birds were recorded during flight activity surveys, on two occasions individual birds were crossing the Turbine Array at PCH, near proposed Turbine 6 and 4. White-tailed eagle is a Schedule 1 species particularly sensitive to collision[76].

8.6 Embedded Mitigation

8.6.1 Embedded mitigation includes design/standard best practice measures as described in **Chapter 3: Site Description and Proposed Development (EIAR Volume 2)** and the **Chapter 4: Design Evolution and Alternatives (EIAR Volume 2)** the latter of which provides a detailed review of mitigation achieved through design. Ornithological considerations fed into the decision to remove two proposed turbines, which originally formed part of the Proposed Development, due to the presence of a golden eagle territory.

8.6.2 The Outline Decommissioning and Construction Environmental Management Plan (ODCEMP) is provided in **Technical Appendix 3.1 (EIAR Volume 4)** and details standard mitigation applicable across disciplines and also discipline specific mitigation i.e., ornithology specific embedded mitigation measures.

8.6.3 As the embedded mitigation forms an integral part of the Proposed Development, the assessment of likely significant effects assumes that these mitigation measures have been implemented.

8.6.4 A summary of the embedded mitigation considered for the ornithology assessment is set out in Table 8.9. Embedded mitigation for ornithology has been given a unique mitigation reference ID (OR1, OR2 etc) and is further detailed below and in Table 8.9.

8.6.5 As part of the DCEMP, a Bird Species Protection Plan (Bird SPP) will be prepared that will set out standardised measures to be taken to avoid potential impacts on bird species. The mitigation hierarchy set out in **Technical Appendix 3.1: Outline Decommissioning Construction and Environmental Management Plan (EIAR Volume 4)** would be adhered to.

8.6.6 This will establish that all identified nests (and leks) would be retained/avoided in the first instance. The Bird SPP detailed in **Technical Appendix 8.6: Bird Species Protection Plan (EIAR Volume 5)** would also set out that works would maintain a species-specific buffer around nests or leks to avoid/reduce potential disturbance impacts. Where this exclusion

[76] May, R., Nygård, T., Dahl, E.L., Reitan, O. & Bevanger, K. 2011. Collision risk in white-tailed eagles. Modelling kernel-based collision risk using satellite telemetry data in Smøla wind-power plant. – NINA Report 692. 22 pp. Available from https://www.researchgate.net/publication/255180387_Collision_risk_in_white-tailed_eagles_Modelling_kernel-based_collision_risk_using_satellite_telemetry_data_in_Smola_wind-_power_plant

zone cannot be maintained, or a feature must unavoidably be destroyed as a last resort, the bird SPP would stipulate that a licence would be sought from NS. The bird SPP would state that works shall be timed to minimise potential disturbance to black grouse and capercaillie, with no works undertaken during lekking times within the designated species-specific buffers.[77] **(OR01)**

8.6.7 An Ecological Clerk of Works (ECoW) would enforce measures detailed within the bird SPP, required during construction, operation (if appropriate during operational maintenance works[78]) and during decommissioning **(OR02).**

8.6.8 For black grouse, a disturbance buffer of 750 m for construction/decommissioning and 500 m for operation would be maintained around active lek sites. For capercaillie, a disturbance buffer of 500-1,000 m would be maintained around active capercaillie leks during construction, operation (if appropriate during operational maintenance works) and decommissioning. These species-specific disturbance buffers would be detailed within the DCEMP (Bird SPP) and enforced by the ECoW. If works are required within the buffer this would be done outwith the breeding season. **(OR03)**

8.6.9 All works would avoid the breeding bird season (March-September inclusive) to avoid disturbance to nesting birds. If this is not possible then pre-construction/operational monitoring (if applicable) and decommissioning surveys would be required and works may only proceed under supervision of an ECoW, as detailed within the DCEMP (Bird SPP). **(OR04).**

Table 8.9: Summary of Embedded Mitigation

ID	Phase*	Description	Purpose of Mitigation
Embedded Mitigation			
OR1	C	All identified nests (and leks) would be retained/avoided. Works would maintain a specific buffer around nests/leks. When exclusion zone cannot be maintained licence would be sought from NS. Works shall be timed to minimise potential disturbance to black grouse and capercaillie with no works undertaken at lekking times within species-specific disturbance buffers.	Avoid/reduce potential disturbance impacts on nesting/lekking birds. Minimise potential disturbance to black grouse and capercaillie.
OR2	C, O, D	Measures detailed in the SPP will be enforced by ECoW during construction, operational and decommissioning phases.	Avoid/minimise disturbance to nesting/lekking birds.
OR3	C, O, D	A disturbance buffer for active black grouse leks would be maintained at 750 m for construction/decommissioning and 500 m for operation, enforced by the ECoW. A 500-1000 m disturbance buffer would be maintained and enforced by the ECoW around active capercaillie leks during construction, operation (if appropriate during operational maintenance) and during decommissioning.	Avoid/minimise disturbance on active black grouse and capercaillie leks.

[77] NatureScot Disturbance Distances (2022). Available at: https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance. [accessed May 2026].

[78] For example, if maintenance works would create disturbance risk to breeding birds or lekking sites i.e., heavy machinery, vegetation clearance etc.

Table 8.9: Summary of Embedded Mitigation			
ID	**Phase***	**Description**	**Purpose of Mitigation**
		Works required within this buffer must be undertaken outside of the breeding season.	
OR4	PC, C, O, D	All works would avoid breeding season. If this is not possible, preconstruction/ operational/decommissioning surveys would be required, under the supervision of a ECoW.	Avoid disturbance to nesting birds.

**PC=Pre-construction, C=construction, O=operation and maintenance and D=decommissioning.*

8.7 Assessment of Likely Effects

8.7.1 The assessment of effects in this section takes into account the embedded mitigation set out in Section 8.6.

Decommissioning of Novar 1 Wind Farm

Disturbance (Non-Schedule 1 Birds)

8.7.2 Decommissioning impacts would involve personnel and machinery accessing locations across the Study Area to dismantle and remove infrastructure, including turbines, hardstanding and Site buildings. The wind turbines would be removed to ground level, with the concrete turbine foundations left in situ and broken down to a minimum of 0.5 m below ground level. A number of redundant Internal Tracks would be removed with electrical cables likely left in-situ to minimise habitat disturbance. These impacts would be short-term, intermittent and temporary lasting for a few months at any given location. The existing Access Route and Internal Tracks would be used to access the infrastructure to be decommissioned. Birds would be extremely unlikely to be using any of the decommissioning work areas for breeding due to existing habituation to avoid them as well as operational disturbance and, however other breeding birds (not including Schedule 1 raptor species) may use areas immediately adjacent. This is particularly relevant to red grouse and ptarmigan, both species that were recorded on Site during the MBBS. As a result, if decommissioning works were unable to avoid the bird breeding season, temporary disturbance impacts are possible. However, these impacts would be indirect, adverse, low magnitude, short-term and reversible impacts on features of Site importance and therefore this effect would be **Not Significant**.

Disturbance (Schedule 1 Birds and black grouse)

8.7.3 There is also the possibility that the decommissioning works could impact on the nests of rare and vulnerable breeding raptors or black grouse leks (i.e. specially protected species listed on Schedules 1 or 2 of the Wildlife and Countryside Act 1981). The damage, destruction or disturbance of such species' nests or leks is likely to result in the loss of any nesting attempt or production of young in the year of the works, unless the birds initiate a second nesting attempt elsewhere. Although the number of nests which might be affected is likely to be small, the lower abundance and higher (Regional) importance value of such species means that the effects of such impacts are increased. These impacts would be indirect, adverse, low magnitude, short-term and reversible. The potential for impact on each territory identified during surveys is assessed in Table 8.10.

Table 8.10: Assessment of Potential Disturbance Impacts on Protected Ornithological Features (Raptor Nests or Black Grouse Leks)		
Species	**Feature Information**	**Potential Effect Significance**
Golden eagle	There were two golden eagle breeding sites confirmed from desk study data within the Study Area. There was one golden eagle territory confirmed within the Ornithology FSA during field surveys. The best practice disturbance distance[79] for golden eagle is 750–1,000 m. The nest for these three sites lies outside this distance. More specific information on the location of this confidential feature is provided in **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**.	Not Significant at Regional level
Hen harrier	There were two hen harrier breeding sites confirmed from desk study data within the Study Area. One hen harrier territory and nest location was identified within the ornithology FSA during field surveys. The best practice disturbance distance for hen harrier during the breeding season is estimated to be 750 m. The nest location of these three sites is not within this distance. More specific information on the location of this is provided in **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**.	Not Significant at Regional level
Peregrine Falcon	There was one peregrine falcon breeding site confirmed from desk study data within the desk study area. The best practice disturbance distance for peregrine falcon during breeding season is estimated to be 750 m. The nest location is within this distance, however it is considered that any disturbance impacts, either visual or auditory, would be screened by terrain and by woodland areas. It is considered that peregrine would be habituated to vehicle traffic on the Access Track and would not be disturbed by increased noise from traffic. More specific information on the location of this is provided in **Technical Appendix 8.2: Ornithology Confidential Results (EIAR Volume 5)**.	Not Significant at County Level
Black grouse lek	A black grouse lekking site was confirmed approximately 1 km east of the Site. The disturbance distance for lekking males is estimated to be between 500 – 750 m[80].	Not Significant at County level

Construction of Repowered Wind Farm

Nest Destruction (Non-Schedule 1 Birds)

8.7.4 There is potential for active birds' nests (not including Schedule 1 raptor nests) to be damaged or destroyed where works are required around nests. Installation of widened and new sections of existing Internal Tracks within the Turbine Array may also result in damage or disturbance to nests if installed in the breeding season (March-August inclusive). These impacts would be direct, adverse, low magnitude, medium-term impacts on features of Site importance. Where the impact occurs early enough in the breeding season, the nest destruction could be reversible, with birds having time to initiate a second breeding attempt.

[79] Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

[80] https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance#Sensitivity+category+

However, impacts may be irreversible, with no breeding attempt made that year. While this would result in a **not significant** effect at a site level, all species of birds' nests are protected under the Wildlife and Countryside Act 1981[81] therefore any nest destroyed would be considered a legal offence. However, the committed embedded mitigation would ensure that no nest destruction occurs.

Nest Disturbance (Non-Schedule 1 Birds)

8.7.5 There is also potential for breeding birds to be disturbed by construction works and felling activities conducted near their nest sites. This could result in the abandonment and failure of the nest in the year of the works. This impact would be greatest in areas where woodland felling is required for the widening of the Access Route. For species of the general breeding bird assemblage, typically those not afforded specific protection under Schedule 1 of the Wildlife and Countryside Act 1981[82], the number of nest sites which could potentially be affected is likely to be small and the impact is unlikely to result in a discernible effect on the local populations of the species concerned. Impacts would be indirect, adverse, low magnitude, short-term and reversible. Any such disturbance effects on general breeding birds (of Site importance) are therefore considered to be **not significant**.

Disturbance or Destruction of Active Nests (Schedule 1 Birds and black grouse)

8.7.6 There is potential for breeding Schedule 1 bird species (rare and vulnerable breeding raptors that are specially protected species listed on Schedule 1 of the Wildlife and Countryside Act 1981) and black grouse to be directly impacted through the destruction or disturbance of nest/lek sites by the construction works. The disturbance of such species' nests/lek sites is likely to result in the loss of any nesting attempt or production of young in the year of the works, unless the birds initiate a second nesting attempt elsewhere. Although the number of nests which might be affected is likely to be small, the lower abundance and higher (Regional/County) conservation value of such species means that the effects of such impacts are increased. These impacts would be indirect, adverse, low magnitude, short-term and reversible and **not significant** at up to regional level. The potential for impact on each territory identified during the surveys is assessed in Table 8.10: Impacts on Designated Sites**.**

8.7.7 Potential impacts on SPAs and Ramsar sites are further discussed in **Technical Appendix 8.3: Habitat Regulations Appraisal (EIAR Volume 4)**. As the Proposed Development occurs within connectivity distance for the qualifying species associated with both the Novar SPA and Cromarty Firth SPA/Ramsar, potential disturbance impacts are possible on SPA species during the construction phase. A summary of impacts on designated sites is provided below.

NOVAR SPA - DISTURBANCE

8.7.8 While the construction at the Turbine Array itself is not considered to present a potential disturbance impact to the Novar SPA, due to the SPA being 3.5 km from that area, there is a potential that disturbance could occur during works on the Access Route, which intersects Novar SPA for approximately 3 km. Works within the SPA would include tree felling and works to widen the Access Route. There is potential for breeding capercaillie, a qualifying species of the Novar SPA, to be directly impacted through the disturbance of active lek sites by the construction works, specifically relating to Internal Track upgrades. The disturbance of such species lek sites is likely to result in the loss of a breeding attempt or production of young in the year of the works. Depending on the timing of these works, these can adversely affect the breeding success of this vulnerable species which are highly sensitive to human

[81] The Wildlife and Countryside Act (as amended) (1981): http://www.legislation.gov.uk/ukpga/1981/69 [Accessed January 2026]
[82] The Wildlife and Countryside Act (as amended) (1981): http://www.legislation.gov.uk/ukpga/1981/69 [Accessed January 2026]

disturbance. The disturbance distance of this species during the breeding season is between 500 m – 1,000 m for lekking males[83], but only 100 m during the non-breeding season.

8.7.9 Although the number of lek sites which might be affected is likely to be small, the restricted distribution, low abundance and high conservation value of such species means that the effects of such impacts are increased. Where disturbance impacts occur, they would be direct, adverse, low magnitude, medium-term and reversible impacts on a feature of National importance. In the absence of additional mitigation these impacts would have the potential to result in a **significant** effect.

NOVAR SPA – HABITAT LOSS

8.7.10 The construction of the Proposed Development would require the widening of the Access Route that intersects Novar SPA for approximately 3 km. The Access Route widening would require the felling of 22 trees[84] within the SPA of mostly coniferous species which provide potential habitat for capercaillie, albeit limited as the trees to be removed are at the margins of the Access Route. Although this impact is limited to the very edges of the Access Route, the loss of any trees within a woodland designated site is considered to be a medium magnitude impact on a feature of National importance. This impact would be direct, adverse, long-term and permanent. The loss of these trees within the Novar SPA has potential to result in **significant** effects. This impact is also discussed in **Chapter 7: Ecology (EIAR Volume 2)**.

CROMARTY FIRTH SPA AND RAMSAR - DISTURBANCE

8.7.11 Out of the qualifying species of the Cromarty Firth SPA and Ramsar, osprey was recorded flying in the vicinity of the Site. Other qualifying species of the designated site that are adapted to coastal environments are not anticipated to use the area.

8.7.12 Osprey is a migratory species with wide ranges and as such, there is a potential connectivity between the Site and the designated site. Osprey was recorded during the two-year survey period on two occasions, including one single flight during VP surveys and a flight of three individuals recorded during MBBS.

8.7.13 The core foraging range for osprey can extend up to 10 km[85].There is not considered to be suitable foraging and nesting habitats for osprey in the immediate vicinity of the Turbine Array due to a lack of waterbodies or mature woodland. Although no breeding activity was recorded during surveys, suitable woodland habitat occurs in the wider area surrounding sections of the Access Route and osprey associated with the Cromarty Firth SPA and Ramsar could potentially utilise these areas for foraging and nesting. Disturbance from works along the Access Route could have the potential to disturb breeding osprey that may use this woodland habitat. These birds could form part of the qualifying SPA and Ramsar population and therefore, indirect impacts on this designated site may occur. However, given the low level of osprey activity recorded during surveys, absence of breeding activity and the lack of any identified breeding territories within habitats potentially affected by the Proposed Development, any disturbance impacts would be indirect, adverse, low magnitude, short-term and reversible. As a result, the effect on the Cromarty Firth SPA and Ramsar osprey population would be **not significant**.

[83] Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

[84] Out of 75 trees to be removed along the Access Route.

[85] NatureScot (2016) Assessing Connectivity with Special Protection Areas. Guidance Series.

Operation of Repowered Wind Farm

Collision Risk

8.7.14 Once the Proposed Development is constructed and operational it would pose a potential collision risk for birds. Birds are known to collide with wind turbines with most collisions resulting in the death of the bird. Collisions can occur for reasons including poor weather conditions resulting in low visibility, from strong wind pushing birds into the wind turbine or from birds not realising that the blades are spinning and being hit by a blade it may not have observed. It is assumed in calculations that any collision would result in the death of the bird.

8.7.15 It is noted that the Proposed Development is being constructed on the Site of the existing Novar 1 Wind Farm. The presence of this development means that the suite of birds that are the baseline for the Proposed Development have been habituated to the presence of an operational wind farm. The Proposed Development uses turbines of different dimensions, larger and with a larger rotor swept area, than the current development, but the activity recorded during surveys was recorded in the presence of active turbines. This likely contributed to the generally low level of flight activity recorded, in all species apart from red kite.

8.7.16 Potential collision risk is assessed quantitatively for wind farms, with the methodology set out in **Technical Appendix 8.4: Collision Risk Assessment** (**EIAR Volume 4**). For this assessment, any flight of a bird between 20 m and 180 m above ground level is considered to be at PCH. Flights recorded within a 200 m buffer around the Turbine Array have also been considered as per NatureScot guidance[86] for onshore wind farms, in the collision risk modelling (CRM)

8.7.17 Golden eagle, hen harrier and red kite had frequent flight activity (defined as more than 3 flights recorded during VP surveys) and therefore became the focal species for CRM. At less than one bird mortality per year, the proposed repowered wind farm is unlikely to have an effect on the populations of any of the three target species. The collision risk assessment is set out in Table 8.11.

Table 8.11: Estimated collision risk - number of collisions per year

	Mid estimate			**Upper estimate**		
Species	**Breeding season**	**Non-breeding season**	**Annual**	**Breeding season**	**Non-breeding season**	**Annual**
Golden eagle	0.05	0.02	0.1	0.14	0.09	0.2
Hen harrier	0	0	0	0.1	0	0.1
Red kite	0.18	0.02	0.2	0.49	0.09	0.6

Species Summary

GOLDEN EAGLE

8.7.18 Golden eagles were seen regularly during the VP surveys with 23 flights recorded. It is a large raptor that has potential to collide with wind turbines due to its soaring flight style. Flights were predominantly recorded in the northern area of the Site, with a confirmed golden eagle territory located to that side of the Proposed Development. There were only 2 flights (involving 2 birds) recorded at PCH. The assessed collision risk is 0.1 - 0.2 birds per

[86] https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms

year, which represents a worst case 0.08% of the regional population of 248 birds[87]. Over an assessed 35-year lifespan of the Proposed Development, this would lead to an estimated 2.5 golden eagle fatalities. However, golden eagle mortality at wind farms is considerably lower than that modelled and there is clear evidence from studies in recent years that both resident, territory holding golden eagles and golden eagles dispersing from natal territories show very strong avoidance of/displacement from the airspace of operational wind farms[88,89], something not accounted for in theoretical collision risk modelling. As such, whilst mortality from collision would present a permanent, adverse impact, the actual likely number of fatalities would be a low magnitude impact that alone is unlikely to cause a significant regional population decline. The resulting effect is therefore considered to be **not significant**.

HEN HARRIER

8.7.19 Hen harriers were seen regularly during VP surveys with 13 flights recorded within the immediate vicinity of the Site. Hen harrier is a medium sized raptor that has potential to collide with wind turbines due to its low altitude flight patterns and tendency to hunt over open ground. Flights were recorded all across the Site, with 4 flights (involving 4 birds) recorded at PCH. Five flights were recorded north of the Site, where a confirmed hen harrier breeding territory is located. The assessed collision risk is 0 - 0.1 birds per year, with an average estimate of 0.03 mortalities per year, which represents 0.022% of the regional population of 138 birds[90]. Over an assessed 35-year lifespan of the Proposed Development, this would lead to an estimated 1 hen harrier fatality[91]. This would present a permanent, adverse impact that is of low magnitude that alone is unlikely to cause a significant regional population decline. The resulting effect is therefore considered to be **not significant**.

RED KITE

8.7.20 Red kite was the most commonly recorded bird species during the VP surveys. Red kite is a medium sized raptor that is very manoeuvrable, using their larger wings and tail to allow them to fly slowly and look out for carrion to scavenge. Flights were recorded all across the Proposed Development, with 42 flights (involving 53 birds) recorded at PCH. The assessed collision risk is 0 - 0.6 birds per year, with an average estimate of 0.2 mortalities per year, which represents of 0.19% of the regional population of 106 birds[92]. Over an assessed 35-year lifespan of the Proposed Development, this would lead to an estimated 7 red kite fatalities. Red kites do not show the same avoidance of wind farms as species such as golden eagles do[93], however proximity to nest site is a clear predictor of collision risk with the shorter the distance between a nest and a wind farm, the higher the predicted collision risk. No red kite nests were recorded close to the Proposed Development. Additionally, red kites are known to be adept at both micro and meso-avoidance of wind turbines[94] indicating that, as for golden eagle, theoretical collision risk modelling is likely to over-estimate the actual collision risk. The presence of red kites actively flying on the operational wind farm site and

[87] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

[88] Fielding, A.H. (2023) *Responses of GPS-Tagged Territorial Golden Eagles Aquila chrysaetos to Wind Turbines in Scotland* Diversity 2023, 15(8), 917 Available here: Responses of GPS-Tagged Territorial Golden Eagles Aquila chrysaetos to Wind Turbines in Scotland

[89] Fielding, A.H. et al. (2022) *Responses of dispersing GPS tagged Golden Eagles to multiple wind farms across Scotland* Ibis 164, 102-117 available at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/ibi.12996?msockid=0da11fb5b11a6ed6144d0e3eb51a68ea

[90] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

[91] The calculated number is 3.5 but as it is not possible to have a partial fatality, this is rounded up to 4.

[92] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

[93] Hötker, H., Mammen, K., Mammen, U. & Rasran, L. (2017) Red kites and wind farms—telemetry data from the core breeding range. In Wind Energy and Wildlife Interactions (ed. Köppel, J.) Springer. Available here: https://link.springer.com/chapter/10.1007/978-3-319-51272-3_1

[94] Mercker, M., Škrábal, J., Blew, J. et al. (2026) *Smart flying in challenging skies: How Red Kites adjust wind turbine micro- and meso-avoidance across weather and experience*. Sci Rep 16, 12939 Available here: https://www.nature.com/articles/s41598-026-45894-3

no sightings of a fatality or near miss recorded during the year of VP survey, is considered further evidence that red kites would continue to fly in the vicinity of the Proposed Development without a high collision risk. Red kite flight height is typically low to the ground as they are scavenging birds. Whilst the collision risk area would extend higher for the new, taller turbines, the Proposed Development would involve the removal of 34 old turbines to be replaced by up to just 9 new turbines. This would reduce the number of potential collisions at those typical lower flight heights, simply by there being 25 fewer turbine locations. This would present a permanent, adverse impact that is of low magnitude that alone is unlikely to cause a significant regional population decline. The resulting effect is therefore considered to be **not significant**.

Displacement

8.7.21 Displacement is an adverse impact causing species to adjust their behaviour and avoid using a location following the construction of a development. It would involve species that have previously been recorded as active within the Turbine Array choosing not to use the Turbine Array following its construction. However, unlike for a wind farm project being constructed on a new site, the Proposed Development would replace the existing Novar 1 Wind Farm. As displacement is linked to the distance to the nearest structure, e.g. wind turbine, and the number of turbines is reducing greatly, it is possible that the area of displacement could reduce. All nine of the proposed wind turbines for the repowered wind farm lie within the area covered by the 34 existing wind turbines. It is considered that although the reduction in number of turbines might reduce displacement impacts within discreet parts of the Turbine Array, the overall spatial extent of any displacement impact, i.e., the area within and beyond the Turbine Array from which birds are displaced is not likely to change.

8.7.22 Although, a likely displacement impact is already occurring on-Site from the existing wind turbines, surveys identified the presence of key target species such as golden plover, hen harrier and red kite within the Turbine Array area, suggesting that the effects of displacement already occurring on-Site are not sufficiently significant to prevent them from entering the area.

8.7.23 As described, it is likely that certain species have become habituated to the presence of the wind turbines, with displacement impacts having reduced over the many years of operation. It is unknown how a change in wind turbine configuration might alter that habituation, however with the general extent of turbines remaining similar to Novar 1 as well as the number of turbines reducing it is assessed that any change would be of low magnitude. It would continue to be an ongoing indirect impact, permanent for the life of the Proposed Development albeit one which may reduce over the medium to longer term for certain species with habituation. It is not reversible and no mitigation is possible to reduce the impact, however the effect is **not significant.**

Decommissioning of Proposed Wind Farm

Disturbance (Non-Schedule 1 Birds)

8.7.24 Decommissioning of the Proposed Development would involve personnel and machinery accessing locations across the Study Area to dismantle and remove infrastructure, including turbines, hardstanding and site buildings. The wind turbines would be removed to ground level, with the concrete turbine foundations left in-situ and broken down to a minimum of 0.5 m below ground level. The redundant sections of Internal Tracks would be removed with electrical cables left in-situ to minimise habitat disturbance. These impacts would be short-term, intermittent and temporary lasting for a few months at any given location. Existing Internal Tracks would be used to access the infrastructure to be decommissioned. Birds would be extremely unlikely to be using any of the decommissioning work areas for breeding due to existing operational displacement effects causing birds not to nest in those areas. However, other breeding birds (not including Schedule 1 raptor species) may use areas

immediately adjacent. This is particularly relevant to red grouse and ptarmigan, both species that were recorded on Site during the MBBS. As a result, if decommissioning works occur during the bird breeding season, temporary disturbance impacts are possible. However, these impacts would be indirect, adverse, low magnitude, short-term and reversible impacts on features of site importance and therefore this effect is considered to be **not significant**.

Disturbance (Schedule 1 Birds and black grouse)

8.7.25 There is also the possibility that the decommissioning works could impact on the nests of rare and vulnerable breeding raptors or black grouse leks (i.e. specially protected species listed on Schedules 1 or 2 of the Wildlife and Countryside Act 1981). The damage, destruction or disturbance of such species' nests or leks is likely to result in the loss of any nesting attempt or production of young in the year of the works, unless the birds initiate a second nesting attempt elsewhere. Although the number of nests which might be affected is likely to be small, the lower abundance and higher (Regional) importance value of such species means that the effects of such impacts are increased. As a result, if decommissioning works occur during the bird breeding season, these impacts would be indirect, adverse, low magnitude, short-term and reversible and **not significant**. Potential for impact on each territory identified during surveys is assessed in Table 8.10.

Potential Cumulative Effects

8.7.26 Cumulative effects are considered to include both the total effects resulting from the Proposed Development in combination with other similar developments (present and reasonably foreseeable), and the additional contribution of the Proposed Development to the total cumulative effects taking account of other similar developments. As such, the aim is to identify any likely significant effects associated with the combination or addition of the Proposed Development with the cumulative baseline. EIA Reports for infrastructure projects within a 20 km buffer zone from the Site have been consulted and are presented in Table 8.12. Developments for which no data could be reviewed are also listed in Table 8.12 but have been left out of the assessment. The absence of data for some cumulative developments is not considered to be a considerable limitation on this assessment. The key ornithological issues for these developments have been identified and are considered in this section. Based on professional judgement, specialist local knowledge of the area and the robust and precautionary approach taken in this assessment, it is considered unlikely that potentially significant cumulative effects have been overlooked.

Table 8.12: Cumulative schemes within 20 km

Scheme	Description	Status	Potential for cumulative effects with Proposed Development
Beinn nan Oighrean Wind Farm	A two-turbine wind farm located 9 km north of the Site.	Operational	**No.** (Uncertain but unlikely). Due to lack of available data for Beinn nan Oighrean Wind Farm, no shared cumulative effects can be identified. However, as it is an operational project, potential cumulative effects are limited to collision risk and with just two turbines those are likely to be negligible.
Beinn Tharsuinn Wind Farm	An existing 17-turbine wind farm located 8 km north of the Site with a proposal to repower and extend the	Operational	**Yes.** Due to lack of available data for Beinn Tharsuinn Wind Farm, no shared potential cumulative effects can be identified with the operational project. However, based on the scoping information for the proposed repowering, there are potential effects to black grouse and hen harrier and

Table 8.12: Cumulative schemes within 20 km			
Scheme	**Description**	**Status**	**Potential for cumulative effects with Proposed Development**
	site to 31 larger turbines.		subsequently, there is the potential for cumulative effects to be generated.
Coire na Cloiche Wind Farm	A 13-turbine wind farm located 6.5 km north of the Site	Operational	**No.** The effects on ornithological receptors from Coire na Cloiche Wind Farm alone are concluded to be minor and not significant, therefore, potential for cumulative effects with the Proposed Development is not predicted.
Corriemoillie Wind Farm	A 17-turbine wind farm located 19 km west of the Site.	Operational	**Yes.** The effects from Corriemoillie Wind Farm alone on ornithological receptors are concluded to be not significant. Quantified collision risk is not provided. However, the area supports a similar suite of bird species to the Proposed Development and therefore, there is the potential for cumulative effects to be generated.
Novar 2 Wind Farm	A 16-turbine extension to Novar 1 Wind Farm located next to the Site.	Operational	**No.** The repowered wind farm alongside the adjacent operational wind farm would not result in cumulative effects. The operational effects of the repowered wind farm would be similar to those already associated with the existing Novar 2 Farm which forms part of the baseline. Birds that are existing in the area are considered habituated, and therefore cumulative effects are not considered to exist.
Somersby Farm Lochussie Repowering	A single turbine 15 km from the Site	Operational	**No**. A small single turbine development in farmland close to Dingwall. With entirely different habitats and small size, no cumulative effects are predicted.
Yellow Wells	A single turbine 10 km from the Site	Operational	**No.** A small, single turbine located in farmland near Evanton. The supporting statement for the development identified no significant effects, which SNH (NatureScot) considered a satisfactory assessment for impacts on birds. With entirely different habitats and small size, no cumulative effects are predicted.
Abhainn Dubh Wind Farm	A nine-turbine wind farm located 2 km west of the Site.	In Planning	**Yes.** The assessment concluded that there are potential non-significant effects to black grouse, golden eagle, hen harrier and red kite for the Proposed Development and Abhainn Dubh Wind Farm. Subsequently, there is the potential for cumulative effects.
Braelangwell Wind Farm	A 17-turbine wind farm located 19 km north of the Site	Scoping	**Yes.** There are potential effects to golden eagle, red kite, hen harrier, peregrine falcon and osprey for the Proposed Development and Braelangwell Wind Farm. Therefore, there is the potential for cumulative effects.

Table 8.12: Cumulative schemes within 20 km			
Scheme	**Description**	**Status**	**Potential for cumulative effects with Proposed Development**
Carn Fearna Wind Farm	A nine-turbine wind farm located 14 km southwest of the Site.	In planning	**Yes.** Effects on all ornithological receptors are predicted to be minor adverse or negligible, with no significant residual effects. Although the stand alone effects from Carn Fearna Wind Farm alone are predicted to be not significant, there is the potential for cumulative effects to black grouse, golden eagle and red kite from the proposed development and Carn Fearna Wind Farm.
Ceislein Wind Farm	An 11-turbine wind farm located <1 km east of the Site	In planning	**Yes.** The EIAR concluded that potential effects on all ornithological receptors are predicted to have negligible or low magnitude, with no significant effects anticipated. There are potential effects to black grouse, capercaillie, hen harrier, red kite, peregrine falcon and osprey. Subsequently, in the context of the proximity to the Proposed Development there is the potential for cumulative effects.
Creachan Wind Farm	A 13-turbine wind farm located 6 km north of the Site.	In planning	**Yes.** The EIAR concludes predicted potential effects to black grouse and golden eagle. Effects are predicted to be minor or negligible and managed through appropriate mitigation with no significant effects predicted. Subsequently, there is the potential for cumulative effects.
Glasa Wind Farm	A 27-turbine wind farm located 10 km east of the Site.	Scoping	**Yes.** There is the potential for effects on black grouse, golden eagle and red kite. Subsequently, there is the potential for cumulative effects.
Kirkan Wind Farm	A 17-turbine wind farm located 18.5 km west of the Site.	Approved	**Yes.** The EIAR concluded potential negligible and minor (non-significant) adverse effects for golden eagle and black grouse. Although the standalone effects from Kirkan Wind Farm are concluded to be not significant, potential effects to golden eagle and black grouse could result in potential cumulative effects between the Proposed Development and Kirkan Wind Farm.
Lochluichart Wind Farm and Extension	A five-turbine extension to the 23 turbine Lochluichart wind farm, located 20 km west of the Site.	Approved	**Yes.** There are potential effects to black grouse, golden eagle, osprey, red kite and hen harrier for Lochluichart Wind Farm and its extension. Subsequently, there is the potential for cumulative effects.
Spittal to Loch Buidhe to Beauly	A 173 km 400kV OHL installation	In planning	**Yes.** The EIAR predicted significant habitat loss effects on capercaillie (as a qualifying feature of the Novar SPA),

Table 8.12: Cumulative schemes within 20 km			
Scheme	**Description**	**Status**	**Potential for cumulative effects with Proposed Development**
400kV OHL Connection	overlapping with the eastern extent of the Site.		alongside significant construction effects on red-throated diver and operational/ disturbance impacts on black grouse without additional mitigation. There are potential effects to capercaillie (Novar SPA qualifying species), black grouse and red-throated diver for the Proposed Development and the Spittal to Loch Buidhe to Beauly 400kv OHL Connection. Subsequently, there is the potential for cumulative effects.
Strathrory Wind Farm	A seven-turbine wind farm 5-10 km from the Site	Approved	**Yes.** The EIAR predicted potential effects to black grouse, capercaillie and red kite. The magnitude of these effects is predicted to be low with no significant effects on these features. Subsequently, there is the potential for cumulative effects.
Tarvie Wind Farm	An 11-turbine wind farm located 18 km south-west of the Site.	Scoping	**Yes.** Primary target receptors highlighted in the Scoping Report includes black grouse. There are potential cumulative effects to black grouse for the Proposed Development and Tarvie Wind Farm.

Cumulative Effect Summary

8.7.27 Table 8.13 summarises the potential cumulative effects on each ornithological feature in combination with the cumulative developments scoped into the assessment for each species.

Table 8.13: Cumulative Effect Assessment Summary		
Feature	**Developments with potential significant effects[95]**	**Potential effect significance**
Capercaillie (Novar SPA population)	Ceislein; and Spittal to Loch Buidhe to Beauly 400kV OHL Connection	**Construction** The EIAR for the Spittal to Loch Buidhe to Beauly 400 kV OHL Connection identifies significant habitat impacts for the Novar SPA qualifying capercaillie population. This is stated to be through removal of woodland in the wider area that may be used by dispersing birds moving beyond the SPA boundary. The Proposed Development would involve the removal of 22 trees within Novar SPA and a total of 75 trees, all of them along the widened Access Route. Ceislein Wind Farm would not result in direct habitat loss for capercaillie within the wind farm array. All three projects intend to use the same Access Route through the SPA and other woodland. There are two active leks overlapping the Access Route where there is potential for significant disturbance during Access Route upgrades or construction traffic

[95] This includes developments yet to be submitted into planning that may provide significant impacts, based on review of scoping report.

Table 8.13: Cumulative Effect Assessment Summary		
Feature	**Developments with potential significant effects[95]**	**Potential effect significance**
		activity. With three projects proposing to use the Access Route, there is either potential for concurrent disturbance impacts in combination between the projects, or there is potential for multiple years of disturbance. Therefore, potential cumulative effects on this internationally important population are considered to exist and the resulting effects could be **significant** in the absence of additional mitigation. **Operation** No operational effects are predicted for this species.
Golden eagle	Abhainn Dubh Wind farm; Braelangwell Wind farm; Carn Fearna Wind Farm; Creachan Wind farm; Glasa Wind farm; Kirkan Wind farm; and Lochluichart Wind farm and Extension.	**Construction** None of the cumulative developments lie within the 1 km potential disturbance distance of the golden eagle territory recorded during field surveys. Additionally, cumulative disturbance impacts could only be predicted for developments that are being constructed at the same time as the Proposed Development and as they are all at different stages in the planning system, it is considered unlikely that would occur, therefore no potential for significant cumulative construction effects is considered to exist from construction activities on golden eagle. **Operation** The annual collision estimate for golden eagle from the Proposed Development is 0.07 birds per year. Carn Fearna (0.23 birds per year) and Kirkan Wind Farms (0.054 birds per year) are the only ones of the developments listed for which a collision risk assessment has been undertaken. The total collision risk for the Proposed Development and these two developments is 0.354 birds per year, or 0.14% of the regional population of 248 birds[96]. This cumulative collision risk effect is considered to be **not significant**. Displacement impacts are low for golden eagle due to the presence of the existing Novar 1 Wind farm which already presents a source of disturbance and displacement. The additional displacement impact from the Proposed Development on top of that of the cumulative developments is not considered to be sufficient to lead to a significant displacement effect. **The cumulative operational effects on golden eagle is not significant.**
Hen harrier	Abhainn Dubh Wind farm; Beinn Tharsuinn Wind farm and Extension;	**Construction** None of the cumulative developments lie within potential disturbance distance of the hen harrier territory recorded during field surveys. Additionally, cumulative disturbance impacts could only be

[96] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

Table 8.13: Cumulative Effect Assessment Summary		
Feature	**Developments with potential significant effects[95]**	**Potential effect significance**
	Braelangwell Wind farm; Ceislein Wind farm; Creachan Wind farm; and Lochluichart Wind farm and Extension.	predicted for developments that are being constructed at the same time as the Proposed Development and as they are all at different stages in the planning system, it is considered unlikely that would occur, therefore no potential for significant cumulative construction effects is considered to exist from construction activities on hen harrier. **Operation** The annual collision estimate for hen harrier from the Proposed Development is 0.03 birds per year. Ceislein Wind Farm (0.06 birds per year) is the only one of the developments listed for which a collision risk assessment has been undertaken. The total collision risk for these two developments is 0.09 birds per year, or 0.065% of the regional population of 138 birds[97]. **This cumulative collision risk effect is considered to be not significant.**
Black grouse	Abhainn Dubh Wind farm; Beinn Tharsuinn Wind farm and Extension; Carn Fearna Wind farm; Ceislein Wind farm; Creachan Wind farm; Glasa Wind farm; Kirkan Wind Farm; Lochluichart Wind farm and Extension; Spittal to Loch Buidhe to Beauly 400kV OHL Connection; Strathrory Wind Farm; and Tarvie Wind farm.	**Construction** The only cumulative development that lies within potential disturbance distance of the black grouse territories recorded during field surveys is Ceislein Wind Farm. Both developments predict low magnitude impacts on black grouse. Additionally, cumulative disturbance impacts could only be predicted for developments that are being constructed at the same time as the Proposed Development and as they are all at different stages in the planning system, it is considered unlikely that would occur, therefore no potential for significant cumulative construction effects is considered to exist from construction activities on black grouse. **Operation** The Proposed Development and Ceislein Wind Farm are anticipated to have no collision risk impact on black grouse. **Therefore, cumulative effects on black grouse would be not significant.**
Osprey	Braelangwell Wind farm; Ceislein Wind farm; and Lochluichart Wind farm and Extension.	**Construction** The construction of the Proposed Development is predicted to have non-significant impacts on osprey during construction as no territories were recorded in the vicinity of the Turbine Array or the Access Route. Of the potential cumulative developments for osprey, only Ceislein lies within potential connectivity range of Cromarty Firth SPA. As the Access Route for the

[97] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

Table 8.13: Cumulative Effect Assessment Summary		
Feature	**Developments with potential significant effects[95]**	**Potential effect significance**
		Proposed Development and Ceislein would be shared, the potential for impacts on any osprey territories would be the same for the two projects. However, embedded mitigation measures, including a Bird SPP and an ECoW would ensure **no significant** cumulative effects would occur. **Operation** The Proposed Development and the listed cumulative projects are anticipated to have no collision risk impact on osprey. **Therefore, cumulative effects on osprey would be not significant.**
Peregrine	Braelangwell Wind farm; Ceislein Wind farm; and Glasa Wind farm.	**Construction** The only cumulative development that lies within potential disturbance distance of the peregrine territory identified in the baseline is Ceislein Wind Farm. The Proposed Development predicts a low magnitude impact on peregrine, while Ceislein Wind Farm predicts a negligible impact. Additionally, cumulative disturbance impacts could only be predicted for developments that are being constructed at the same time as the Proposed Development and as they are all at different stages in the planning system, it is considered unlikely that would occur, therefore no potential for significant cumulative construction effects is considered to exist from construction activities on peregrine. **Operation** The Proposed Development and the listed cumulative projects are anticipated to have no collision risk impact on peregrine. **Therefore, cumulative effects on peregrine would be not significant.**
Red kite	Abhainn Dubh Wind farm; Braelangwell Wind farm; Carn Fearna Wind farm; Ceislein Wind farm; Creachan Wind farm; Glasa Wind farm; Lochluichart Wind farm and Extension; and Strathrory Wind farm.	**Construction** No potential impacts are predicted on red kite from the Proposed Development, therefore there is no potential for the Proposed Development to contribute to a cumulative construction impact on red kite. **Operation** Red kite was frequently recorded flying within the existing wind farm site and are assessed to have a low magnitude collision risk with 14 predicted fatalities through the lifetime of the Proposed Development. Alone, this is not considered to be a significant effect. This species continues to spread following a successful historical reintroduction programme in the Highlands and the population is increasing[98]. No empirical data from the cumulative schemes are available and therefore it is not possible to consider a potential cumulative collision risk number. However, the Site is located in an area of

[98] Peniche, G., Challis, A., Beckmann, B., Wilson, M., Eaton, M., Stevenson, A., Stirling-Aird, P., Thornton, M. & Wilkinson, N. (2025). Scottish Raptor Monitoring Scheme Report 2023. BTO Scotland, Stirling.

Table 8.13: Cumulative Effect Assessment Summary		
Feature	**Developments with potential significant effects[95]**	**Potential effect significance**
		particularly high red kite activity but has a low predicted risk and it is expected that other sites would contribute no more than low collision risk in addition. **As such, the cumulative collision risk effect would be not significant, however this conclusion will be revisited should empirical data be available in future.**

8.8 Additional Mitigation and Enhancement Measures

8.8.1 Additional mitigation comprises measures which have been included to further reduce the magnitude of impact/significance of effect identified through the EIA.

8.8.2 Additional mitigation measures have been assigned Mitigation Reference IDs (i.e., OR01, OR02) as detailed in Table 8.14**.**

Mitigation during Construction

Nesting Birds

8.8.3 Depending on timings of construction, felling may need to occur during the breeding bird season (March to September) therefore, pre-construction surveys for nesting birds would be required to avoid destroying or disturbing nests. These surveys would seek to identify the locations of any active nests within, or immediately adjacent to the working and felling areas within the Site. All pre-construction bird surveys should extend a sufficient distance out from the Site to identify any nest sites which may be within the disturbance range of the species in question. For example, pre-construction checks for general nesting birds do not need to extend more than 50 m beyond the development footprint, while surveys for rare and vulnerable raptors should extend out to between 500 m and 750 m. These buffers would be defined in the Bird SPP, detailed within the DCEMP. **(OR05)**

8.8.4 Surveys for the territories/nests of rare and vulnerable breeding raptors, including golden eagle, peregrine falcon, hen harrier and osprey, would be conducted in the year prior to works. The surveys would focus on confirmed or probable territories, identified in the survey work already undertaken and should be expanded to include other areas of potentially suitable habitat, e.g. potential osprey nest sites in woodland close to the Access Route. **(OR06)**

8.8.5 If any confirmed or suspected active nests are identified within range of potential disturbance, a works exclusion zone would be established around the nest site as stated in the Bird SPP and advised by the ECoW. Works would not be permitted to commence within the exclusion zone until nesting has been completed and the young have fledged, or the ECoW deems, through monitoring each stage of the breeding attempt, that the extent of the exclusion zone may be reduced. **(OR07)**

Black Grouse Leks

8.8.6 Pre-construction surveys would be required in the black grouse lekking areas shown on **Figure 8.6: Black Grouse Survey Results (EIAR Volume 3a).** Works required within 500–750 m[99] of known lekking areas would be accompanied by a watching brief undertaken

[99] Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

by a suitably qualified ECoW (as detailed within the SPP, within the DCEMP). Locations where lekking black grouse have been recorded would be stated in the Bird SPP, as well as buffer distances to be observed. Works in these areas would occur outside of the breeding season for black grouse (late March to early May[100]) and this would be stated in the Bird SPP (within the DCEMP). **(OR08)**

Habitat loss

8.8.7 The loss of 22 trees within Novar SPA and 75 trees in total along the Access Route requires mitigation. Restoration and enhancement of woodland throughout the wider Novar Estate would be carried out in line with the proposal presented in **Technical Appendix 7.4: Outline Biodiversity Enhancement Management Plan (EIAR Volume 4)**. Restoration enhancement of this habitat type is defined as improving the condition of and extending the woodland within the adjacent Novar SPA. It is assumed that to adequately account for all of the trees felled along the Access Route to Site, that 0.7 ha of native woodland would be required to be replanted to successfully mitigate against the losses described above. Rehabilitation and addition to the existing native woodland within the Novar Estate and SPA via replanting at a low density with appropriate deer protection measures would be the priority for any restorative efforts for woodland habitats, and a location within the northern part of the SPA has been identified as suitable for these mitigation measures. **(OR09)**

Capercaillie

8.8.8 The potential significant effects for the Novar qualifying capercaillie species requires mitigation. Whilst the Bird SPP provides suitable overarching measures to identify the presence of and prevent disturbance to breeding birds including lekking and nesting Schedule 1 species, additional mitigation is necessary for capercaillie. These measures, which have been developed from recommendations made by NatureScot and RSPB Scotland, are presented in **Technical Appendix 8.5: Outline Capercaillie Species Protection Plan Confidential (EIAR Volume 5)**. Capercaillie surveys would be required prior to construction, but to avoid or minimise disturbance caused by surveys, data (such as additional survey records) would be sought from the RSPB in the first instance, with the aim of minimising or negating the need for surveys. Close collaboration and alignment between the Proposed Development and cumulative developments also proposing to use the Access Route would be required. **(OR10)**

Mitigation during Operation

8.8.9 No mitigation is required during the operational phase of the Proposed Development.

Mitigation during Decommissioning

8.8.10 Surveys for rare and vulnerable breeding raptors, including hen harrier and osprey, would be conducted in the year prior to decommissioning works. The surveys would focus on confirmed or probable territories, identified in the survey work already undertaken and would be expanded to include other areas of potentially suitable habitat. **(OR11)**

8.8.11 In the event that any confirmed or suspected active nests are identified within range of potential disturbance, a works exclusion zone would be established around the nest site as stated in the Bird SPP and advised by the ECoW. Works would not be permitted to commence within the exclusion zone until nesting has been completed and the young have fledged, or the ECoW deems, through monitoring each stage of the breeding attempt, that the extent of the exclusion zone may be reduced. **(OR12)**

[100] 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.

Black Grouse Leks

8.8.12 Pre-decommissioning surveys would be required in black grouse lekking areas shown on **Figure 8.6: Black Grouse Survey Results Confidential (EIAR Volume 5)**. Works required within 500 – 750 m[101] of known lekking areas should be accompanied by a watching brief undertaken by an ornithologist. Locations where lekking black grouse have been recorded would be stated in the Bird SPP, as well as buffer distances to be observed. Works in these areas should occur outside of the breeding season for grouse (late March to early May[102]), this would be stated in the Bird SPP (within the DCEMP). **(OR13)**

8.8.13 A summary of the additional mitigation is set out in Table 8.14.

Table 8.14: Summary of Additional Mitigation

Description of Impact	ID	Description of Mitigation	Purpose of Mitigation	Timing of Mitigation*	Consultation or Approval Required
Destruction or damage to active birds' nests and disturbance of breeding birds (not including Schedule 1 bird species).	OR05	Pre-construction surveys for nesting birds	To avoid the destruction of or damage to nests or disturbance of breeding birds.	PC	No
Destruction of or damage to active birds' nests and disturbance of breeding Schedule 1 bird species.	OR06	Pre-construction surveys for breeding raptor surveys to be conducted in the year prior to the construction works.	To avoid the destruction of or damage to nests or disturbance of breeding raptors.	PC	No
Destruction of or damage to active birds' nests and disturbance of breeding Schedule 1 bird species.	OR07	Works exclusion zone around suspected or confirmed active nests identified within range of potential disturbance. No works would be permitted within the exclusion zone until nesting is complete or young have fledged or until the ECoW deems that the extent of the exclusion zone may be reduced.	To avoid the destruction of or damage to nests or disturbance of breeding birds	C	No

[101] Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

[102] 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.

Table 8.14: Summary of Additional Mitigation					
Description of Impact	**ID**	**Description of Mitigation**	**Purpose of Mitigation**	**Timing of Mitigation***	**Consultation or Approval Required**
Destruction of or damage to active birds' nests and disturbance of breeding black grouse or leks.	OR08	▪ Pre-construction surveys for lekking black grouse; ▪ Works required within disturbance distance would be accompanied by a watching brief by a suitably qualified ECoW; and ▪ Works in areas where lekking black grouse have been recorded should occur outside the breeding season	To avoid the destruction of or damage to nests and disturbance of breeding black grouse.	PC/C	No
Loss of habitat within Novar SPA (potential habitat for capercaillie).	0R09	Restoration and enhancement of woodland; minimum 0.7 ha of native woodland required to be replanted.	To improve the condition of and extent of the woodland within Novar SPA for capercaillie.	C	Yes, consultation with key stakeholders including Novar Estate, NatureScot, RSPB and Yes. Collaboration with Ceislein Wind Farm and Spittal to Loch Buidhe to Beauly 400kV OHL Connection projects.

Table 8.14: Summary of Additional Mitigation

Description of Impact	ID	Description of Mitigation	Purpose of Mitigation	Timing of Mitigation*	Consultation or Approval Required
Disturbance of breeding capercaillie or leks.	OR10	▪ Pre-construction surveys for capercaillie; and ▪ Close collaboration and alignment between the Proposed Development and cumulative developments using the Access Route.	To minimise disturbance to breeding capercaillie.	PC/C	Yes, consultation with key stakeholders including Novar Estate, NatureScot, RSPB and Yes. Collaboration with Ceislein Wind Farm and Spittal to Loch Buidhe to Beauly 400kV OHL Connection projects.
Destruction of or damage to active birds' nests and disturbance of breeding Schedule 1 bird species.	OR11	Pre-construction surveys for raptors to be conducted in the year prior to the construction works.	To avoid the destruction of or damage to nests or disturbance of breeding raptors.	D	No
Destruction of or damage to active birds' nests and disturbance of breeding Schedule 1 bird species.	OR12	Works exclusion zone around suspected or confirmed active nests identified within range of potential disturbance. No works would be permitted within the exclusion zone until nesting is complete or young have fledged or until the ECoW deems that the extent of the exclusion zone may be reduced	To avoid the destruction of or damage to nests or disturbance of breeding raptors.	D	No

Table 8.14: Summary of Additional Mitigation					
Description of Impact	**ID**	**Description of Mitigation**	**Purpose of Mitigation**	**Timing of Mitigation***	**Consultation or Approval Required**
Destruction of or damage to active birds' nests or leks and disturbance of breeding black grouse.	OR13	▪ Pre-construction surveys for lekking black grouse; ▪ Works required within disturbance distance would be accompanied by a watching brief by a suitably qualified ECoW; and ▪ Works in areas where lekking black grouse have been recorded should occur outside the breeding season.	To avoid the destruction of or damage to nests and disturbance of breeding black grouse.	D	No

**PC=Pre-construction, C=Construction, O=operation and maintenance and D=decommissioning.*

8.9 Significant Residual Effects

8.9.1 Following implementation of the embedded mitigation measures detailed in Table 8.9, significant effects remained in relation to the Novar SPA qualifying capercaillie population. Significant effects were identified from construction-related disturbance associated with works along the Access Route within the SPA, habitat loss from woodland removal within the SPA and potential cumulative effects associated with other developments proposing to use the same Access Route.

8.9.2 The additional mitigation measures detailed in Table 8.14 (OR09, OR10) address these remaining significant effects. OR09 provides compensatory woodland restoration and enhancement within the wider Novar Estate and Novar SPA, offsetting the loss of potential capercaillie habitat within the SPA and enhancing habitat availability for the qualifying population. OR10 provides for pre-construction surveys, implementation of the Capercaillie Species Protection Plan and coordination with other developments using the Access Route, thereby avoiding and minimising disturbance to active lek site and reducing potential for cumulative effects. Consequently, the additional mitigation measures reduce the remaining effects such that significant effects are no longer predicted. Therefore, following successful implementation of the embedded mitigation measures detailed in Table 8.9 and the additional mitigation measures detailed in Table 8.14, **no significant residual effects** are

predicted during the decommissioning of the existing Novar 1 Wind Farm and the construction, operation and decommissioning of the repowered wind farm.

8.10 Monitoring

Construction Phase Monitoring

8.10.1 No construction phase monitoring is required.

Operational Phase Monitoring

8.10.2 The collision risk assessment identified a low collision risk for red kite. However, the importance of habituation of red kite to the existing wind farm was not a part of the collision risk modelling exercise. Whilst the CRM results did not identify a need to undertake a detailed programme of Post Construction Fatality Monitoring (PCFM) to verify the results, it is considered prudent to undertake a repeat of the baseline VP survey in the first year of operation and record any flight activity with an interaction with the wind turbines, e.g. close avoidance/flightpath alteration or worst case, any collision. This would be secured through a condition on any consent that is granted.

8.10.3 In addition, a robust incidental fatality find protocol would be established and communicated to all site staff. If any incidental finds are recorded, a review of the need for PCFM would be completed.

Decommissioning Phase Monitoring

8.10.4 No additional decommissioning phase monitoring is required.