March 2025

Glen Earrach Pumped Storage Hydro

Environmental Impact Assessment Report

Volume 2: Main Report
Chapter 8: Ornithology

Glen Earrach Energy Ltd

Glen Earrach AECOM

Quality information

Prepared by	Checked by	Verified by	Approved by
RW ACIEEM	RW MCIEEM, CBiol, CEnv	TM CEcol MCIEEM	VD MCIEEM
Associate Director	Principal Ecologist	Technical Director	Principal Environmental Scientist

Revision History

Revision	Revision date	Details	Authorized	Name	Position
1	March 2025	Submission	DL	DL	Technical Director – Renewable Energy

Table of Contents

Tables

Figures (Volume 3: Figures)

Appendices (Volume 5: Appendices)

Confidential Appendices (Volume 6: Confidential Appendices)

8. Ornithology

8.1 Introduction

8.1.1 This chapter addresses the potential impacts and effects of the Pre-Construction and Enabling, Construction and Operation of the Proposed Development on ornithological features (i.e. bird species and the sites and habitats that support them). Where appropriate, it provides details of committed mitigation, compensation and/or enhancement measures identified to avoid, minimise or offset adverse effects on ornithological features. **Chapter 7: Terrestrial Ecology** and **Chapter 9: Aquatic & Marine Ecology** (**Volume 2: Main Report**) are relevant to other ecological features. This chapter is supported by the following figures (**Volume 3: Figures**):

- **Figure 8.1: Northern Highlands Natural Heritage Zone**;
- **Figure 8.2: Ornithology Field Survey Areas**;
- **Figure 8.3**: **Vantage Point Viewsheds;**
- **Figure 8.4: Statutory Designated Sites for Ornithology;**
- **Figure 8.5: Moorland Breeding Bird Survey Territories - Waders, Waterbirds and Grouse;**
- **Figure 8.6: Moorland Breeding Bird Survey Territories - Passerines;**
- **Figure 8.7: Breeding Season VP Flight Lines - Waders, Waterbirds and Grouse;**
- **Figure 8.8: Breeding Season VP Flight Lines - Raptors;**
- **Figure 8.9: Non-breeding Season VP Flight Lines;** and
- **Figure 8.10: Breeding Diver and Grebe Survey Waterbodies.**

8.1.2 This chapter is also supported by the following appendices (**Volume 5: Appendices**):

- **Appendix 7.1: Method for Assessment of Ecological Impacts**;
- **Appendix 8.1: Ornithology,** complete with associated figures; and
- **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal,** complete with associated figures.

8.1.3 This chapter is also supported by the following appendices confidential appendix (**Volume 6: Confidential Appendices**):

- **Confidential Appendix 8.1: Sensitive Ornithology Assessment,** complete with associated figure

8.1.4 **Appendix 7.1: Method for Assessment of Ecological Impacts** and **Appendix 8.1: Ornithology** provides full details on the methodology of assessment and ornithology baseline conditions respectively.

8.1.5 Species listed on Schedule 1 of the Wildlife and Countryside Act (WCA) (1981) and certain other rare species are regarded by NatureScot as being vulnerable to persecution, for which reason the precise location of breeding sites of these species are confined to **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices**), complete with associated figures.

8.1.6 **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) submitted as part of the Section 36 application for the Proposed Development, describes the assessment conducted to test for adverse effects from the Proposed Development on the qualifying features of European sites, which comprise Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Of these sites, SPAs are designated for ornithological features. Where appropriate, reference is made in this chapter to analysis presented in the Statement to Inform Habitats Regulations Appraisal with respect to SPAs.

8.1.7 Throughout this chapter, species are given their common and scientific names when first referred to and their common names only thereafter. All distances are cited as the shortest distance ‘as the crow flies’, unless otherwise specified.

8.2 Legislation and Policy

Legislation

8.2.1 The following nature conservation legislation is potentially relevant to the Proposed Development and has been considered during the preparation of this chapter:

- Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive');
- Convention on Wetlands of International Importance 1971 ('Ramsar Convention');
- Conservation (Natural Habitats, &c.) Regulations 1994 and the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations');
- Wildlife and Countryside Act 1981 (the 'WCA');
- Nature Conservation (Scotland) Act 2004 ; and
- Wildlife and Natural Environment (Scotland) Act 2011 ('WANE Act').

Planning Policy

8.2.2 Detailed information on relevant planning policy can be found in **Chapter 5: Planning Policy (Volume 2: Main Report)**. However, a brief summary of national and local planning policy relevant to the conservation of bird species is given under the following sub-headings.

National Planning Policy

8.2.3 National Planning Framework 4 (NPF4) was formally adopted by Scottish Ministers on 13 February 2023. NPF4 includes the following statements of policy intent: "*To protect, restore and enhance natural assets making best use of nature-based solutions*" and "*To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks*". Wherever possible and proportionate to the scale and nature of the project, the Proposed Development has therefore sought to deliver benefits for biodiversity, in addition to protecting existing biodiversity. NPF4 also states that major development will only be supported where nature networks "*are in a demonstrably better state than without intervention*" using best practice and including future monitoring and management where appropriate.

8.2.4 Prior to the UK's exit from the European Union (EU), Scotland's SACs and SPAs were part of a wider European network of such sites known as the 'Natura 2000 network'. They were consequently referred to as 'European sites'. Now that the UK has left the EU, Scotland's SACs and SPAs are no longer part of the Natura 2000 network but form part of a UK-wide network of designated sites referred to as the 'UK site network'. However, it is current Scottish Government policy to retain the term 'European sites' to refer collectively to SACs and SPAs[1].

Local Planning Policy

8.2.5 The Proposed Development lies within The Highland Council (THC) local planning authority area. Relevant local planning policies are stated in the Highland-wide Local Development Plan (HwLDP)[2], adopted in 2012, and discussed in context within the Inner Moray Firth LDP[3], adopted in 2015 and currently under review. **Table 8-1: Summary of Relevant Policies Within the Highland-wide LDP** lists those adopted LDP policies relevant to nature conservation.

Table 8-1: Summary of Relevant Policies Within the Highland-wide LDP

Planning Policy	Relevant Purpose
Policy 28: Sustainable Design	Developments will be supported, which promote and enhance environmental wellbeing. Assessment of the impact on resources including habitats, freshwater systems, and species will be made and proposals must be compatible with the Sustainable Design Guide.
Policy 51: Trees and Development	Developments will be supported, which promote protection of existing hedges, trees and woodlands, and which are designed to create and enhance existing woodland, with compensatory planting and woodland management where required.

[1] Scottish Government (2020). *EU Exit: The Habitats Regulations in Scotland. December 2020*. (online) Available at: https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/.
[2] The Highland Council (2012) *Highland-wide Local Development Plan* (online) Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan.
[3] The Highland Council (2024) *Inner Moray Firth Local Development Plan 2* (online) Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/202/inner_moray_firth_local_development_plan.

Planning Policy	Relevant Purpose
Policy 52: Principle of Development in Woodland	Developments are expected to demonstrate the need to develop a wooded site, that the site has capacity, and that it is sustainable, with increased community benefit and woodland expansion or enhancement as appropriate.
Policy 57 Natural, Built and Cultural Heritage	Developments are expected to address effects on natural heritage (including designated sites). For features of local/regional importance, developments must demonstrate no unacceptable impact. For features of national importance, developments must not compromise the natural environment, and significant adverse effects must be clearly outweighed by social or economic benefits of national importance. Developments affecting features of international importance will not be permitted unless the Habitats Regulations Appraisal process has been followed and a conclusion of no adverse effect on site integrity is reached.
Policy 58: Protected Species	Summarises the legal requirements for protected species that developments are expected to comply with.
Policy 59: Other Important Species	Developments are expected to also address effects on notable species not protected by legislation or site designations, including Scottish Biodiversity List (SBL) and Local Biodiversity Action Plan (LBAP) species.
Policy 60: Other Important Habitats	Developments are expected to also address effects on notable habitats not protected by site designations, including watercourses, Annex I habitats, habitats of priority or protected species, and SBL/LBAP habitats.
Policy 63: Water Environment	The Council will support proposals that do not compromise the protection and enhancement of the water environment required under the Water Framework Directive. In assessing proposals, the Council will take into account River Basin Management Plans and supporting information on enhancement opportunities and constraints in the water environment.
Policy 74: Green Networks	Development in areas identified for the creation of green networks should avoid fragmenting the network and take steps to improve connectivity, where appropriate, to maintain and enhance the existing green network.
Policy 75: Open Space	The aims for open space include that it supports and enhances biodiversity.

Local Biodiversity Action Plan

8.2.6 Local Biodiversity Action Plans (LBAP) were established by local authorities, in partnership with other organisations and bodies, to identify biodiversity conservation priorities and actions in response to the UK becoming a signatory to the Convention on Biological Diversity. Highland Nature (2021-2026)[4], The Highland Council's LBAP, includes several priority habitats and a list of priority bird species for local conservation, many of which may be potentially relevant to the Proposed Development, including greenshank *Tringa nebularia*, golden eagle *Aquila chrysaetos*, and black grouse *Tetrao tetrix*.

8.3 Consultation

8.3.1 The assessment of impacts on birds has been informed and influenced by consultation held with several statutory and non-statutory stakeholders. A summary of the consultation held, the information/recommendations provided by consultees, and details of how this EIA has responded to consultee feedback is provided in **Table 8-2: Summary of Consultation.**

Table 8-2: Summary of Consultation

Consultee	Key Issue	Summary of Response	Action Taken
NatureScot	NatureScot provided their response to the Scoping Opinion request on 25 June 2024. In relation to ornithology, NatureScot raised one key issue, this being the potential for impacts on North Inverness Lochs SPA.	NatureScot stated in their response that they agreed that the scope of desk study and field survey proposed in the Scoping Report should be sufficient to inform detailed impact assessment. NatureScot advised that they are aware of Slavonian grebe *Podiceps auritus* nesting on waterbodies outside of sites designated for this species.	Survey for breeding Slavonian grebe was carried out at all potentially suitable waterbodies within 2 km of the Proposed Development Site, and not just at those which are designated for this species. Consideration of the potential impacts of the Proposed Development on this species is given in this chapter and, in relation to SPAs, in **Appendix 7.2: Statement to Inform**

[4] Highland Environment Forum (2021) *Highland Nature: Biodiversity Action Plan 2021- 2026* (online) Available at: https://www.highlandenvironmentforum.info/wp-content/uploads/2021/07/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf.

Consultee	Key Issue	Summary of Response	Action Taken
		NatureScot also advised that they are aware of nesting by golden eagle on crags near to the Headpond. NatureScot responded to a specific query in the Scoping Report to state that one year of ornithological field survey may be sufficient for the purposes of impact assessment, subject to the findings of the surveys carried out during that period.	**Habitats Regulations Appraisal** (**Volume 5: Appendices**). Survey for breeding golden eagle was carried out in all areas of suitable habitat within 6 km of the Proposed Development. Furthermore, data on known and historic breeding locations were obtained from the Highland Raptor Study Group (RSG), and the estate manager was consulted for their own knowledge of golden eagle presence.
NatureScot	More recent regional population estimates for golden eagle are available from NatureScot on request	NatureScot provided contemporary estimates for the regional golden eagle population.	Data were used to inform the evaluation and assessment of impacts on golden eagle
The Highland Council	The Highland Council in their response to the Scoping Opinion request advised that consideration must be given to impacts on birds.	The Highland Council stated that an assessment of the impacts of the Proposed Development as a result of "*collision, disturbance, and displacement from foraging/breeding/roosting habitat*" is required, for the Proposed Development alone and cumulatively with other projects. The Highland Council also stated that the adopted survey methods should be clearly described in the EIA Report.	Although collision is not a potential impact on bird species from the Proposed Development, all other impacts which could have significant effects on important bird species have been considered in this chapter. This chapter and the accompanying **Appendix 8.1: Ornithology** (**Volume 5: Appendices**) describe the survey methods used to collect the data which informs this assessment.
Royal Society for the Protection of Birds (RSPB)	RSPB provided their response to the Scoping Opinion request on 30 May 2024.	RSPB highlighted the potential connectivity between the Proposed Development and North Inverness Lochs SPA. RSPB highlighted that Slavonian grebe breeding outside of this SPA, but in the vicinity of the Proposed Development, could be important to the SPA population. RSPB recommended that two years' of ornithological field survey be carried out. RSPB recommended that the Proposed Development should deliver biodiversity enhancements, and that this could include bog restoration, deer control, provision of diver rafts, and species-specific measures to benefit Slavonian grebe.	Consideration of the potential for impacts on Slavonian grebe outside of North Inverness Lochs SPA to affect that designation has been given in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**). A full year of ornithological field survey has been completed to establish the baseline conditions relevant to this chapter. This has been supplemented by data collected through desk study, including data obtained from the Highland Raptor Study Group (HRSG) and RSPB. As data obtained from the desk study was comprehensive, particularly for Slavonian grebe (one of the most sensitive ornithological features) one year of AECOM ornithology surveys was determined to be appropriate. An Outline Landscape and Ecological Management Plan (oLEMP) has been produced for the Proposed Development. **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices).** This includes a range of enhancement measures, including blanket bog restoration, native tree planting, planting of bottle sedge beds in waterbodies and installation of red-throated diver *Gavia stellata* breeding rafts.

Consultee	Key Issue	Summary of Response	Action Taken
Glen Urquhart Community Council	In their response to the Scoping Opinion request, Glen Urquhart Community Council stated that surveys for breeding and migrating birds should be carried out.		Surveys for breeding birds were carried out in accordance with industry-standard guidelines. This includes monthly Vantage Point (VP) surveys, which would record regular migratory movements of birds.

8.4 Study Area

8.4.1 The Zone of Influence (ZoI) of the Proposed Development is the area over which an ornithological feature may be subject to impacts as a result of its Pre-Construction and Enabling, Construction and Operation. This will vary for different ornithological features and impacts, depending on their sensitivity to environmental change. It is therefore appropriate to identify different ZoIs for different features and impacts. As recommended by the Chartered Institute of Ecology and Environmental Management[5], professionally accredited or published studies and guidance, where available, were used to help determine the likely ZoI, as well as professional judgement. However, CIEEM also highlight that establishing the ZoI should be an iterative process informed by both desk study and field survey. Where limited information was available, the Precautionary Principle[6] was adopted and a ZoI estimated on that basis.

8.4.2 The desk study and field survey areas were designed to allow sufficient data to be collected to establish the baseline conditions and determine the potential impacts of the Proposed Development on ornithological features. The ZoI can extend beyond a development and beyond the survey area. However, beyond a certain distance from a development its impacts might not result in significant effects (these being the focus of Ecological Impact Assessment (EcIA) according to CIEEM guidance), and even where a significant effect might occur over a large distance this does not necessarily require the field survey to extend to such distances[7]. The field survey areas adopted for this assessment were sufficiently precautionary to allow assessment of potentially significant effects from the Proposed Development on ornithological features, including within the wider ZoI beyond the field survey areas (see **Figure 8.2: Ornithology Field Survey Areas (Volume 3: Figures))**.

8.5 Methodology

Guidance and Standards

8.5.1 The following guidance was used to inform this assessment and to determine the scope and method of the surveys and assessment :

- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*[5];
- *Recommended bird survey methods to inform impact assessment of onshore wind farms*[8];
- *Assessing Significance of Impacts from Onshore Windfarms on Birds out with Designated Areas*[9];
- *Assessing Connectivity with Special Protection Areas (SPAs)*[10]; and

[5] CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (version 1.3 – updated September 2024). Chartered Institute of Ecology and Environmental Management, Winchester.
[6] UNESCO (2005). *The Precautionary Principle. United Nations Educational, Scientific and Cultural Organisation, Paris.* (online) Available at: https://unesdoc.unesco.org/ark:/48223/pf0000139578.
[7] By way of a theoretical example to illustrate this concept: many important bird species hold large home ranges and use the habitat within these for foraging. Construction activities within the home range of a given pair of birds could be said to have a ZoI which extends to the full home range, which may extend to several kilometres from a nest site, and cover thousands of hectares. However, these works may only have a significant effect on the impacted birds in their immediate vicinity, for example by preventing them from foraging within a few hundred metres of the activities. The field survey area in this case would focus on the area over which significant effects could occur, rather than the potential ZoI, which could encompass the entire home range.
[8] SNH (2017). *Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 – March 2017.* (online) Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms.
[9] SNH (2018). *Assessing Significance of Impacts from Onshore Windfarms on Birds out with Designated Areas. Version 2 – February 2018.* (online) Available at: https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected.
[10] SNH (2016). *Assessing Connectivity with Special Protection Areas (SPAs). Version 3 – June 2016*. (online) Available at: https://www.nature.scot/doc/assessing-connectivity-special-protection-areas.

- *Assessing the Cumulative Impact of Onshore Wind Energy Developments*[11].

8.5.2 Guidance in relation to ornithology survey and assessment for wind farms are referred to as they represent the industry standard as applicable to a range of developments in Scotland. Further guidance and standards are referred to in this chapter in relation to specific technical aspects of the methodology or assessment.

Assessment Scope

8.5.3 The scope of assessment described in this chapter was informed by the guidance contained in the published documents listed in the section above, on the responses of consultees (as set out in **Table 8-2: Summary of Consultation**), and on the results of detailed desk study and field survey.

8.5.4 NatureScot has established 21 'Natural Heritage Zones' (NHZ) covering the whole of Scotland, which reflect biogeographical differences across the country[12]. Assessment of the impacts on birds on a regional geographical scale in this EIA has been carried out in the context of the Northern Highlands Natural Heritage Zone (NHZ 7), within which the Proposed Development is located (see **Figure 8.1: Northern Highlands Natural Heritage Zone** (**Volume 3: Figures**)). This includes the assessment of cumulative effects which has considered the potential for effects to arise due to other energy developments and land use changes within NHZ 7.

8.5.5 The guidelines for EcIA published by CIEEM recommend that only those features that are 'important' and that could be significantly affected by the Proposed Development require detailed assessment, stating that "*it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*".

8.5.6 Consequently, for the purposes of the desk study, field survey and assessment described in this chapter, 'important' ornithological features were taken to include:

- The qualifying features of SPAs within 10 km (or further where connectivity exists) of the Proposed Development;
- All species listed on Annex I of the Birds Directive;
- All species listed on Schedule 1 of the WCA;
- Species listed on the SBL;
- All species on the Highland Nature LBAP;
- All species on the Red List of Birds of Conservation Concern (BoCC) 5[13]; and
- Species otherwise considered through professional judgement to have a degree of nature conservation interest for other reasons, for example by virtue of being a species with localised distribution (such as waders).

8.5.7 In relation to ornithology there is little to differentiate the impacts associated with design Option A and Option B (see **Chapter 2: Project and Site Description (Volume 2: Main Report)** for full details). Impacts on ornithological features are primarily associated with above ground Construction areas in the upstream (Headpond) area. Above ground Construction areas for Option A and Option B mirror each other with the exception of the location of the Upper Control Works. While the location differs between the options both will be located within the Headpond which is itself within the above ground Construction works area. As such, this assessment does not consider the options separately and the effects described herein are considered to be applicable to both options.

8.5.8 The assessment considers the effects during three phases of the Proposed Development lifespan as identified in **Chapter 2: Project and Site Description (Volume 2: Main Report)**. The phases are Pre-Construction and Enabling, Construction and Operation.

8.5.9 Decommissioning has been scoped out of assessment as the decommissioning of large-scale pumped storage hydro projects is extremely rare due to the long Operational lifespan of such facilities. Potential decommissioning effects are therefore considered to be similar to and associated with the components described in the Construction

[11] SNH (2018). *Assessing the Cumulative Impact of Onshore Wind Energy Developments*. (online) Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments.
[12] The Scottish Wind Farm Bird Steering Group (2015). *Natural Heritage Zone Population Estimates.* (online) Available at: https://web.archive.org/web/20211103054636/http://www.swbsg.org/images/SWBSG_Commissioned_Report_No_1504.pdf

[13] 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**, pp 723-747.

Phase, and are not separately assessed, however a decommissioning survey and plan would be produced if or when required.

Baseline Data Collection

Desk Study

8.5.10 A desk study was carried out to identify nature conservation designations and records of important bird species (as defined in the section above) potentially relevant to the Proposed Development. A stratified approach was taken when defining the desk study area, based on the likely ZoI of the Proposed Development on different ornithological features. Accordingly, the desk study sought to identify:

- International nature conservation designations within 10 km of the Proposed Development Site (or further afield where there is clear connectivity, for example through hydrological linkage or where the qualifying species are known to range over a wider distance);
- National statutory nature conservation designations within 2 km of the Proposed Development Site (or further afield where there is clear connectivity, for example through hydrological linkage or where the qualifying species are known to range over a wider distance);
- Local non-statutory nature conservation designations within 1 km of the Proposed Development Site; and
- Records of important bird species within 1 km of the Proposed Development Site, this being extended to 6 km for raptor species listed on Schedule 1 of the WCA (based on ranging distance of golden eagle as stated in NatureScot guidance[10])

8.5.11 The desk study was carried out using the data sources detailed in Table 8-3: Desk Study Data Sources.

Table 8-3: Desk Study Data Sources

Data Source	Date Last Accessed	Data Obtained
Ordnance Survey (OS) 1:25,000 maps and aerial photography (https://www.bing.com/maps/)	14 October 2024	• Habitats and connectivity relevant to interpretation of planning policy and potential protected/important species constraints.
NatureScot SiteLink website (https://sitelink.nature.scot/home)	14 October 2024	• Information on international and national statutory designations within the ZoI of the Proposed Development.
NatureScot	26 November 2024	• Data on regional populations of golden eagle from 2015 national survey
Highland Raptor Study Group (HRSG)	18 June 2024	• Information on the breeding locations of raptors within approximately 6 km of the Proposed Development Site, made between 2014 and 2023
Royal Society for the Protection of Birds (RSPB)	24 February 2025	• Information on the breeding locations of important bird species, and lekking black grouse, within 2 km of the Proposed Development Site made between 2013 and 2024.
National Biodiversity Network (NBN) Atlas Scotland (https://scotland.nbnatlas.org/)	07 October 2024	• Commercially available records of protected and/or important birds within 1 km of the Proposed Development Site, made within the last 10 years (2015 to 2024 inclusive).
Black-throated diver *Gavia arctica* national surveys in Scotland (available from NBN Atlas Scotland; data provided by the Royal Society for the Protection of Birds (RSPB))	17 October 2024	• Data on the locations of black-throated diver *Gavia arctica* breeding sites, found by the national surveys carried out in Scotland in 1985, 1994 and 2006.
Bird survey report of surveys undertaken in 2022 to inform woodland planting proposals on Balmacaan Estate	02 December 2024	• Breeding bird survey results from an area encompassing the eastern end of the Proposed Development Site. Lekking black grouse and moorland breeding birds were recorded.

Field Study

8.5.12 Ornithology field surveys were carried out within the Proposed Development Site and surrounding area between January 2024 and January 2025. All surveys followed the *Recommended bird survey methods to inform impact assessment of onshore wind farms*[8], as well as the following relevant guidance documents:

- The Brown and Shepherd methodology for censusing upland waders[14] amended to include for four rather than three visits, as detailed in Calladine *et al.* (2009)[15].
- Species-specific approaches for surveying raptors described in *Raptors: A Field Guide for Survey and Monitoring*[16]; and
- Other species-specific methodologies described in *Bird Monitoring Methods*[17], including for breeding divers, Slavonian grebe, and lekking black grouse.

8.5.13 A summary of the ornithological field surveys completed between January 2024 and January 2025 is provided **in Table 8-4: Summary of Ornithology Surveys Carried out for the Proposed Development**. A detailed description of the methods adopted for each survey type is provided in **Appendix 8.1: Ornithology** (**Volume 5: Appendices**). The survey areas varied according to survey type and were derived from the spatial distribution of proposed above ground infrastructure, based on designs presented at EIA Scoping Stage in April 2024. The adopted field survey areas for each survey type are shown on **Figure 8.2: Ornithology Field Survey Areas and Figure 8.3: Vantage Point Viewsheds** (**Volume 3: Figures**).

Table 8-4: Summary of Ornithology Surveys Carried out for the Proposed Development

Ornithology Survey	Date of Survey	Scope of Survey
VP survey	February 2024 – January 2025	Four VP locations were used to provide visual coverage of the Headpond location plus a buffer of approximately 500 m. As far as possible, six hours of survey were completed per VP per month, although access restrictions and weather conditions meant this was not always possible.
Moorland breeding bird survey	April – July 2024	Survey of breeding birds in areas of suitable open habitat within approximately 500 m of above-ground infrastructure (as proposed at EIA Scoping Stage). Four visits were carried out, once per month between April and July (inclusive) 2024.
Breeding raptor and eagle survey	January – July 2024	Survey for breeding raptor species listed on Schedule 1 of the WCA and/or Annex I of the Birds Directive was carried out in all areas of suitable habitat within 2 km of above-ground infrastructure (as proposed at EIA Scoping Stage), extended to 6 km for eagles (excluding a small area within the 6 km buffer to the east of Loch Ness). A total of four survey visits were made.
Breeding diver and grebe survey	May – July 2024	Targeted searches were conducted for breeding red-throated diver, black-throated diver and Slavonian grebe at all potentially suitable waterbodies within approximately 2 km of above-ground infrastructure (as proposed at EIA Scoping stage). Two survey visits were made, one in late-May and one in July.
Black grouse lek survey	March – May 2024	Survey for lekking black grouse in areas of suitable habitat within approximately 1.5 km of above-ground infrastructure (as proposed at EIA Scoping stage).

Territory Analysis

8.5.14 The results of the moorland breeding bird surveys were used to determine breeding activity and to estimate territorial locations of important bird species (as defined in **paragraphs 8.5.3 - 8.5.9**). The detailed method used for territory analysis is described in **Appendix 8.1: Ornithology** (**Volume 5: Appendices**).

Golden Eagle Topographical Model Data

8.5.15 The Golden Eagle Topographical (GET) model[18] was developed to predict habitat use by golden eagles. The model was developed using data from 92 satellite tagged golden eagles which were tagged as nestlings between 2007 and 2016 and that subsequently dispersed from nest sites. The model found that young golden eagles preferred, or used according to availability, space above slopes greater than 10º, at an altitude of 300 m or greater, and within 300 m of a ridge. The GET model uses predicted use-class values of between 1-10 for habitats. Habitat valued at 1-5 is considered to be unfavourable for golden eagles, while habitat scored as 6 or above is considered to be suitable. The GET model output was provided by the model's author, and the model is publicly available.

[14] Brown, A.F. and Shepherd, K.B. (1993) A method for censusing upland breeding waders. *Bird Study* **40**, pp 189-195.
[15] Calladine, J., Garner, G., Wernham, C. & Thiel, A. (2009) The influence of survey frequency on population estimates of moorland breeding birds. Bird Study, 56: 3, 381-388
[16] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). Raptors: A Field Guide for Surveys and Monitoring. 3rd Edition. The Stationary Office, Edinburgh.
[17] Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods. The Royal Society for the Protection of Birds, Sandy.
[18] Fielding, A.H., Haworth, P.F., Anderson, D. and Benn, S. (2019). A simple topographic model to predict Golden Eagle *Aquila chrysaetos* space use during dispersal. *Ibis* **162(2)**.

8.5.16 The GET model is recommended by NatureScot as a tool for estimating loss of this preferred habitat to range holding golden eagles[19]. Any habitat with a score of 6 or greater, and which is not currently afforested, was assumed to be suitable habitat for golden eagles. Areas encompassed by woodland identified from the following sources were considered as being unsuitable for golden eagle:

- Native Woodland Survey of Scotland[20];
- Ordnance Survey Open Data Woodland Polygons[21]; and
- Ancient Woodland Inventory[22].

8.5.17 Furthermore, a 500 m buffer around any operational wind farms was assumed to be unavailable to golden eagle due to displacement, following the findings of Walker *et al.* (2005)[23].

8.5.18 Areas of preferred habitat within identified golden eagle range/s that overlap with above ground Construction areas were then calculated.

Assessment Methodology

8.5.19 The principal steps involved in the assessment of impacts and effects on ornithological features can be summarised as:

- Determine baseline conditions through targeted desk study and field survey, to identify important features that might be affected;
- Evaluate the importance of identified ornithological features on a geographic scale, determining those that need to be considered further;
- Describe potential impacts on relevant ornithological features, considering best practice, legislation and embedded design measures;
- Assess and quantify (as far as possible) likely effects (adverse or beneficial) on relevant ornithological features;
- Develop measures to avoid and/or reduce predicted significant effects, in conjunction with other elements of the design (including mitigation for other environmental disciplines);
- Report residual significant effects; and
- Identify opportunities for compensation, if required, and biodiversity enhancement.

8.5.20 In line with CIEEM guidelines, the terminology used within this chapter draws a clear distinction between the terms ‘impact’ and ‘effect’. Within this chapter, these terms are defined as follows:

- Impact – actions resulting in changes to an ornithological feature (for example, the removal of nesting habitat); and
- Effect – the outcome resulting from an impact acting upon the conservation status or structure and/or function of an ornithological feature (for example, the loss of nesting habitat may reduce the population of an important bird species and result in an adverse effect on the conservation status of the population concerned).

8.5.21 Impacts are assessed in view of the conservation status of the bird species under consideration. NatureScot (2018) defines the conservation status of a species as “*the sum of the influences acting on it which may affect its long-term distribution and abundance, within the geographical area of interest*”[9]. A species’ conservation status is considered to be ‘favourable’ when:

[19] NatureScot (2021) *NatureScot statement on modelling to support the assessment of forestry and wind farm impacts on golden eagles.* (online) Available at: https://www.nature.scot/doc/naturescot-statement-modelling-support-assessment-forestry-and-wind-farm-impacts-golden-eagles.

[20] Scottish Government (2025). Native Woodland Survey of Scotland. Available online: https://spatialdata.gov.scot/geonetwork/srv/api/records/BB223316-8746-4338-9056-5D9A2F0D2824

[21] Ordnance Survey (2025). OpenData Downloads. Available online: https://osdatahub.os.uk/downloads/open

[22] NatureScot (2025). Ancient Woodland Inventory. Available online: https://opendata.nature.scot/datasets/snh::ancient-woodland-inventory/explore

[23] Walker, D., McGrady, M., McCluskie, A., Madders, M. and McLeod, D.R.A. (2005). Resident golden eagle ranging behaviour before and after construction of a windfarm in Argyll. Scottish Birds 25, pp 24-40.

- Population dynamics indicate that the species is maintaining itself on a long-term basis as a viable component of its habitats;
- The natural range of the species is not being reduced, nor is it likely to be reduced for the foreseeable future; and
- There is (and probably will continue to be) a sufficiently large habitat to maintain its population on a long-term basis.

8.5.22 For the purposes of this EIA, effects predicted to be significant on an ornithological feature at the Regional or greater geographic level are considered to be 'Significant' in broader EIA terms, whereas those predicted to be significant at the Local or Negligible levels, are considered to be 'Not Significant'.

8.5.23 A detailed description of the CIEEM method for impact assessment is provided in **Appendix 7.1: Method for Assessment of Ecological Impacts** (**Volume 5: Appendices**).

Limitations and Assumptions

8.5.24 The survey areas for the ornithology surveys were derived from an earlier design of the Proposed Development, as presented at EIA Scoping Stage in April 2024. Subsequently the design of the Proposed Development was amended so that the layout of the proposed above ground infrastructure does not exactly mirror that presented at EIA scoping. The most significant change in relation to the ornithology survey area is the route of the Permanent Access Tracks. The Access Tracks for the final design connect to the Headpond from the north in comparison to the west for the EIA Scoping design. Ornithology survey areas in relation to the Proposed Development Site are shown on **Figure 8.2 Ornithology Field Survey Areas (Volume 3: Figures).**

8.5.25 The survey areas encompass the proposed above ground infrastructure, except for a section of the moorland breeding bird survey area. In relation to moorland breeding birds, habitats outwith the survey area are largely analogous with areas covered by surveys (i.e. open moorland habitats). It is therefore reasonable to assume that the species assemblage in the areas not directly covered would be broadly the same as that recorded across other areas. Additionally, breeding territories occurring outside the moorland breeding bird survey area were identified from records gathered incidentally from other ornithology surveys e.g. black grouse lekking surveys or breeding Slavonian grebe and diver surveys. Species recorded in these areas (e.g. greenshank, golden plover *Pluvialis apricaria* and common sandpiper *Actitis hypoleucos*) were also recorded across the moorland breeding bird survey area. As such it is considered unlikely that moorland breeding birds will have been significantly under recorded or that this assessment underestimates potential impacts on these species.

8.5.26 Similarly, surveys undertaken for black grouse, divers/Slavonian grebe/raptors and eagles did not extend to the full survey extent (1.5 km, 2 km and 6 km respectively) from the proposed above ground infrastructure. Data from black grouse surveys were complimented by records gathered from other ornithology surveys and data obtained from desk study sources. The Highland Raptor Study Group (HRSG) provided data from up to 6 km from the Proposed Development Site and breeding territories within the respective 2 km / 6 km survey buffers were also identified during surveys. Based on this it is unlikely that nesting raptors were present across habitats within the wider survey buffers not covered by surveys. While the breeding diver and Slavonian grebe survey did not encompass the full 2 km survey buffer from the final design the closest waterbody not surveyed is approximately 1.2 km west of the Proposed Development Site, northwest of Glas-bheinn Mhor. At this distance this waterbody is unlikely to be directly affected by the Proposed Development. Due to the above factors, it is not considered that black grouse, raptors or divers/Slavonian grebe were under recorded within the ZoI of the Proposed Development, or that this assessment underestimates potential impacts on these species.

8.5.27 The aim of the desk study was to help characterise the baseline context of the Proposed Development and provide valuable background information that may not be captured by field survey alone. Information obtained during the desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular species does not necessarily mean they do not occur in the study area. Likewise, the presence of records for a particular species does not automatically mean that these still occur within the area of interest or are relevant to the Proposed Development.

8.5.28 It was not always possible to carry out a full six hours at each VP per calendar month due to adverse weather conditions or access restrictions. Sometimes poor visibility necessitated repeat surveys. As a result, a minimum of 36 hours per VP was not achieved during the non-breeding season (at total of 114.25 hours was undertaken across the four VPs). However, VP survey effort per breeding season was equal to or exceeded the required 36 hours recommended by SNH (2017). VP surveys were undertaken to provide additional data on the potential importance of habitat in and around above ground infrastructure for important bird species. As the Proposed

Development poses no collision risk, adherence to NatureScot guidance, developed to inform collision risk modelling, is not a strict requirement. Consequently, it is considered that data collected from VP surveys, together with other field and desk study data, are adequate to inform the assessment.

8.5.29 No nocturnal surveys were carried out during the 2024 breeding season and this could potentially have led to an underestimation of the activity of some species, including owls and certain waders such as snipe *Gallinago gallinago*. Observations were, however, made of snipe during moorland breeding bird surveys, and incidentally during other surveys, in particular black grouse lek surveys. Short-eared owl *Asio flammeus* was not recorded at any time during the breeding survey programme, and since this species can be active during daylight hours, particularly during the breeding season when they may be provisioning young, it is likely absent as a breeding species. Barn owl *Tyto alba* is very scarce as a breeding species in Highlands, and the vast majority of breeding sites elsewhere in Britain and Ireland lie at altitudes lower than 150 m above sea level[16] this being considerably lower than land within the Proposed Development Site. No barn owls were recorded during field surveys, nor were any records of this species identified during the desk study, including in the data provided by the HRSG. Barn owl is consequently likely to be absent from the ZoI of the Proposed Development. It is therefore unlikely that nocturnal species will have been substantially under-recorded or that this assessment underestimates potential impacts on them.

8.5.30 There were no other limitations to the desk study, field survey or subsequent analysis which could affect the reliability of this impact assessment.

8.6 Baseline Environment

8.6.1 The results detailed in this section are described in relation to the Proposed Development Site and/or above ground Construction areas of the Proposed Development including the Headpond, Dams, Temporary and Permanent Access Tracks, and other above ground infrastructure, as well as the Temporary Workers Accommodation and Temporary and Permanent Construction Compounds.

Designated Sites

Statutory Designated Sites

8.6.2 There are four SPAs and one Ramsar site within 10 km of the Proposed Development Site: North Inverness Lochs SPA, Loch Knockie and nearby Lochs SPA, Loch Ruthven SPA and Ramsar site, and Glen Affric to Strathconon SPA. Additionally, there is one Site of Special Scientific Interest (SSSI) within 2 km of the Proposed Development Site, Dubh Lochs SSSI, which is a constituent of the North Inverness Lochs SPA. Four SPAs located more than 10 km from the Proposed Development Site – Loch Ashie SPA, Moray Firth SPA, Loch Flemington SPA and Loch Vaa SPA – and four SSSIs located beyond 2 km from the Proposed Development Site – Balnagrantach SSSI, Knockie Lochs SSSI, Loch Ashie SSSI and Loch Vaa SSSI (all constituent SSSIs of SPAs) – were identified with the potential to be connected to the Proposed Development.

8.6.3 Details of these sites' ornithological qualifying interests are given under the following sub-headings. The locations of the designated sites in relation to the Proposed Development are shown on **Figure 8.4: Statutory Designated Sites for Ornithology** (**Volume 3: Figures**).

North Inverness Lochs SPA

8.6.4 North Inverness Lochs SPA encompasses five lochans in two discrete areas. One of the component areas, containing Loch Dubh and a second un-named waterbody, very slightly intersects the Proposed Development Site, extending approximately 25 m inside the north of the Proposed Development Site boundary. However, no infrastructure is proposed in this area, with the nearest being the access track and crossing point of the River Coiltie, approximately 750 m south of the SPA. The other component part of the SPA encompasses a cluster of three lochans (Loch nam Faoileag, Loch na Ba Ruaidhe and Loch nam Bat), approximately 2.4 km north of the Proposed Development Site. The lochans contain extensive areas of sedge and surrounded by mire, moorland and semi-natural broadleaved woodland dominated by birch *Betula* spp.

8.6.5 The sole qualifying feature of North Inverness Lochs SPA is breeding Slavonian grebe, with the site supporting a population of seven pairs between 1991 and 1995, according to the SPA citation[24] and three pairs based on the most recent population estimate from 2009[25].

Loch Knockie and nearby Lochs SPA

8.6.6 Loch Knockie and nearby Lochs SPA comprises a group of lochs to the southeast of Loch Ness. The undisturbed aquatic plant communities within the SPA include extensive sedge beds, and the lochs are surrounded by mire, heath, mixed woodland, and agricultural land. The closest constituent part of the SPA is approximately 4.6 km from the Proposed Development Site.

8.6.7 The sole qualifying feature of the Loch Knockie and nearby Lochs SPA is breeding Slavonian grebe, with the site supporting a population of up to six pairs between 1992 and 1995, according to the SPA citation[26] and two pairs based on the most recent population estimate from 2009[25].

Glen Affric to Strathconon SPA

8.6.8 Glen Affric to Strathconon SPA comprises mountain upland habitat north of the Great Glen and is located approximately 9.5 km northwest of the Proposed Development Site. The SPA is designated for breeding golden eagle with a population quoted in the citation document as comprising ten active territories (as derived from surveys in 2003)[27]. The condition assessment for golden eagle is noted as 'favourable maintained', based on an assessment undertaken in 2010.

Loch Ruthven SPA and Ramsar Site

8.6.9 Loch Ruthven Ramsar site underlies SPA of the same name, with a coincident site boundary. Loch Ruthven is a freshwater loch located approximately 9.9 km east of the Proposed Development Site. The SPA/Ramsar is designated for supporting breeding Slavonian grebe with a population quoted in the SPA citation document as comprising 14 pairs (based on estimate derived during 1988 to 1992[28]). The condition assessment for Slavonian grebe is noted as 'unfavourable declining', based on an assessment undertaken in 2023.

Loch Ashie SPA

8.6.10 Loch Ashie is a large waterbody to the east of Loch Ness and is located approximately 14.8 km from the Proposed Development Site. It is designated for supporting a non-breeding population of Slavonian grebe, which gather in the autumn to moult, before departing to wintering grounds elsewhere. The SPA population is quoted in the citation document as comprising up to 60 individuals[29]. However, the qualifying feature is in unfavourable declining condition and, according to the Site Management Statement for the underlying Loch Ashie SSSI, the mean number of gathering Slavonian grebes between 1999-2002 (when the site was last monitored) was 39 birds.

Moray Firth SPA

8.6.11 Moray Firth SPA comprises open water habitats of the inner and outer Moray Firth, the closet point to the Proposed Development Site is located approximately 18.2 km to the north. The Moray Firth supports populations of a range of wintering waterbird species and breeding shag. This SPA was included in the Appropriate Assessment described in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) as non-breeding Slavonian grebe and red-throated diver are listed as a qualifying species, and both species were recorded within the ZoI of the Proposed Development in 2024.

Loch Flemington SPA

8.6.12 Loch Flemington is a small waterbody located southeast of Inverness Airport, approximately 38 km from the Proposed Development Site. According to the citation document, between 1991 and 1995, an average of six pairs of Slavonian grebes bred within Loch Flemington SPA[30]. This SPA was included in the Appropriate Assessment described in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) as breeding Slavonian grebe are listed as a qualifying species and were recorded within the ZoI of the Proposed Development in 2024.

[24] NatureScot (2024) *North Inverness Lochs SPA* (online) Available at: https://sitelink.nature.scot/site/8557.
[25] Stroud, D.A., Bainbridge, I.P., Maddock, A., Anthony, S., Baker, H., Buxton, N., Chambers, D., Enlander, I., Hearn, R.D., Jennings, K.R, Mavor, R., Whitehead, S. & Wilson, J.D. - on behalf of the UK SPA & Ramsar Scientific Working Group (eds.) (2016). The status of UK SPAs in the 2000s: the Third Network Review. [c.1,108] pp. JNCC, Peterborough.

[26] NatureScot (2024) *Loch Knockie and nearby Lochs SPA* (online) Available at: https://sitelink.nature.scot/site/8529.
[27] NatureScot (2024) *Glen Affric to Strathconon SPA* (online) Available at: https://sitelink.nature.scot/site/10233
[28] NatureScot (2024) *Loch Ruthven SPA* (online) Available at: https://sitelink.nature.scot/site/8538
[29] NatureScot (2024) *Loch Ashie SPA* (online) Available at: https://sitelink.nature.scot/site/8525.
[30] NatureScot (2024) *Loch Flemington SPA* (online) Available at: https://sitelink.nature.scot/site/8527

Loch Vaa SPA

8.6.13 Loch Vaa is a small lochan located north of Aviemore, approximately 40 km from the Proposed Development. According to the SPA citation, Loch Vaa regularly supports a population of up to seven pairs of Slavonian grebe[31]. This SPA was included in the Appropriate Assessment described in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) as breeding Slavonian grebe are listed as a qualifying species and were recorded within the ZoI of the Proposed Development in 2024.

Dubh Lochs SSSI

8.6.14 The only SSSI within 2 km of the Proposed Development Site designated for ornithological features is Dubh Lochs SSSI. This site underlies the component of North Inverness Lochs SPA which encompasses Loch Dubh and the un-named lochan to the north of the Proposed Development Site.

8.6.15 The site is notified for supporting a population of breeding Slavonian grebe.

Balnagrantach SSSI

8.6.16 Balnagrantach SSSI underlies the other component part of North Inverness Lochs SPA which encompasses Loch nam Faoileag, Loch Ba Ruaidhe and Loch nam Bat, approximately 2.4 km north of the Proposed Development Site.

8.6.17 The site is notified for supporting a population of breeding Slavonian grebe.

Knockie Lochs SSSI

8.6.18 Knockie Lochs is coincident with Loch Knockie and nearby Lochs SPA, encompassing Loch Knockie only, which is located approximately 4.6 km southeast of the Proposed Development Site.

8.6.19 The site is notified for supporting a population of breeding Slavonian grebe.

Loch Ashie SSSI

8.6.20 Loch Ashie SSSI underlies Loch Ashie SPA and is located approximately 14.8 km northeast of the Proposed Development Site.

8.6.21 The site is notified for supporting a population of post-breeding Slavonian grebe.

Loch Vaa SSSI

8.6.22 Loch Vaa SSSI underlies Loch Vaa SPA and is located approximately 40 km east of the Proposed Development Site.

8.6.23 The site is notified for supporting a population of breeding Slavonian grebe and goldeneye (*Bucephala clangula*).

Non-statutory Designated Sites

8.6.24 There are no locally designated nature conservation sites within 1 km of the Proposed Development Site.

Moorland Breeding Birds

8.6.25 Eighteen important bird species were recorded breeding within the moorland breeding bird survey area, holding a maximum of 167 breeding territories. The estimated territory centre points for these species are shown on **Figure 8.5: Moorland Breeding Bird Survey Territories - Waders, Waterbirds and Grouse** and **Figure 8.6: Moorland Breeding Bird Survey Territories – Passerines (Volume 3: Figures)** with the exception of greenshank which is included in **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**). Of the species recorded, seven were waders (common sandpiper, curlew *Numenius arquata*, dunlin *Calidris alpina*, greenshank, golden plover, lapwing *Vanellus vanellus*, and snipe)[32], one species was waterfowl (teal *Anas crecca*), one species was grouse (red grouse *Lagopus scotica* and nine were passerines (cuckoo *Cuculus canorus*, redpoll *Acanthis cabaret*, mistle thrush *Turdus viscivorus*, reed bunting *Emberiza schoeniclus*, siskin *Spinus spinus*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, tree pipit *Anthus trivialis* and whinchat *Saxicola rubetra*). A summary of the number of breeding territories of each species is given in Table **8-5: Maximum Number of Breeding Territories Recorded During Moorland Breeding Bird Survey**. Further details are provided in **Appendix 8.1: Ornithology** (**Volume 5: Appendices**)**,**

[31] NatureScot (2024) *Loch Vaa SPA* (online) Available at: https://sitelink.nature.scot/site/8541
[32] Common sandpiper, red grouse, snipe and teal have been included as ‘important’ species in this assessment on the basis of professional judgement, as none otherwise meet any of the criteria listed in **paragraph 8.5.6**.

Table 8-5: Maximum Number of Breeding Territories Recorded During Moorland Breeding Bird Survey

Species	Conservation Designation(s)	Maximum Number of Breeding Territories
Skylark	Red List BoCC; SBL	65
Snipe	-	18
Tree pipit	Red List BoCC; SBL	14
Golden plover	Annex I, SBL	13
Cuckoo	Red List BoCC; SBL	11
Red grouse	-	10
Common sandpiper	-	9
Greenshank	Schedule 1	8
Teal	-	4
Dunlin	Red List BoCC; SBL Annex I	3
Redpoll[33]	Red List BoCC; SBL	3
Lapwing	Red List BoCC; SBL	2
Mistle thrush	Red List BoCC	2
Curlew	Red List BoCC; SBL	1
Reed bunting	SBL	1
Siskin	SBL	1
Song thrush	Red List BoCC; SBL	1
Whinchat	Red List BoCC	1

8.6.26 Flights of moorland breeding birds recorded during the VP surveys included the following (**Figure 8.7: Breeding Season VP Flight Lines – Waders, Waterbirds and Grouse (Volume 3: Figures)**):

- Common sandpiper – two flights;
- Greenshank – two flights;
- Golden plover – two flights;
- Red grouse – two flights; and
- Snipe – one flight.

8.6.27 Records of important species obtained from NBN Atlas, that were not recorded during the moorland bird surveys, included those of common crossbill *Loxia curvirostra*, goldeneye *Bucephala clangula*, redwing *Turdus iliacus*, starling *Sturnus vulgaris* and yellowhammer *Emberiza citrinella*. A full list of records obtained from NBN Atlas is contained within in **Appendix 8.1: Ornithology** (**Volume 5: Appendices**).

Raptors

8.6.28 A breeding site for one important raptor species (i.e. those listed on Schedule 1 of the WCA and/or Annex I of the Birds Directive), golden eagle, was recorded during the surveys. Further details for this species are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**). The following species were recorded in the survey area, but no breeding sites were located:

- Hen harrier *Circus cyaneus*;
- White-tailed eagle *Haliaeetus albicilla*;

[33] Redpoll is not a territorial species and breeds gregariously. However, it was included in the territory analysis to illustrate the location of probable/possible breeding, based on field observations.

- Peregrine *Falco peregrinus*;
- Merlin *Falco columbarius*;
- Red kite *Milvus milvus*; and
- Osprey *Pandion haliaetus*.

8.6.29 Flights of the following species were recorded specifically during the VP surveys (Figure 8.8: Breeding Season VP Flight Lines- Raptors and Figure 8.9: Non-breeding Season VP Flight Lines (Volume 3: Figures))

- Golden eagle – eighteen flights;
- Red kite – five flights;
- Merlin – three flights;
- Osprey – three flights; and
- Peregrine – one flight.

8.6.30 The HRSG and/or RSPB provided records of breeding locations of golden eagle, white-tailed eagle, red kite and peregrine. Full details of these records are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**).

Golden Eagle Topographical Modelling

8.6.31 In summary a total of 2,777 ha (27.77 km^2) of preferred habitat for golden eagle was identified within the Proposed Development Site and 98 ha (0.98 km^2) overlaps with the above ground Construction areas (approximately 3.5% of the Proposed Development Site). The results with respect to potential habitat losses associated with the Proposed Development in relation to golden eagle territorial ranges are discussed in detail in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**.

Divers and Slavonian Grebe

8.6.32 A total of 32 waterbodies was surveyed for breeding divers and Slavonian grebe with eight and five waterbodies respectively assessed as being potentially suitable to support breeding (**Figure 8.10: Breeding Diver and Grebe Survey Waterbodies (Volume 3: Figures)**). Breeding sites were identified for both species during the survey, and the RSPB provided records of breeding Slavonian grebe, with further details included in **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**).

8.6.33 Three flights of red-throated diver, and none of Slavonian grebe, were recorded during the VP surveys (**Figure 8.7: Breeding Season VP Flight Lines - Waders, Waterbirds and Grouse (Volume 3: Figures)**)

Black Grouse

8.6.34 Lekking black grouse were recorded during the surveys and records returned from the desk study. Full details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**).

8.6.35 Fourteen flights of black grouse were recorded during the VP surveys (Figure 8.7: Breeding Season VP Flight Lines- Waders, Waterbirds and Grouse and Figure 8.8: Non-breeding Season VP Flight Lines (Volume 3: Figures)).

Future Baseline

Baseline at Time of Construction

8.6.36 Construction of the Proposed Development is expected to take approximately eight years to complete, including the Pre-Construction and Enabling works. No major land use changes are expected within the Proposed Development Site prior to commencement of Pre-Construction and Enabling works.

8.6.37 Minor changes in the distribution of some species (e.g. nesting birds) may occur due to small-scale changes in habitat structure as a result of ecological succession or other natural processes. Given the relatively short period of time before Construction would be expected to start, and that significant changes in land management practices (such as grazing regimes) are unlikely in the intervening period, any such changes are likely to be within the range of normal short-term variation in the distribution and abundance of species populations.

Baseline in Absence of the Proposed Development

8.6.38 In the absence of the Proposed Development there are unlikely to be significant changes from the current baseline. This is because current land management practices would be likely to continue as at present, and significant changes of land use are unlikely, especially in the more upland part of the Proposed Development Site containing the Headpond. Small changes might occur in the more lowland parts of the Proposed Development Site, such as possible implementation of biodiversity measures (e.g. planting of new woodland), but would likely be of small impact relative to the size of the Proposed Development Site. Some impact from climate change could occur, however it is difficult to predict the direction of change on habitats, since the effects of possible drier and hotter periods but also increased rainfall (e.g. on blanket bog) could counteract each other. In summary, the future baseline in the absence of the Proposed Development is likely to be similar to current baseline.

8.7 Embedded Mitigation

8.7.1 Embedded mitigation measures are incorporated into the design of a development and aim to avoid or reduce adverse effects, including those on ornithological features. Embedded mitigation can be considered at the impact assessment stage, whereas specific mitigation measures which are not part of the design and are developed after the initial impact assessment, are assessed at a later stage when considering the residual effects.

Infrastructure Design

8.7.2 The Proposed Development has sought to avoid impacts on ornithological features as far as possible by a number of infrastructure refinements embedded into the design, as set out below:

- Where possible, Construction and Operational access tracks were sited to avoid known Slavonian grebe breeding waterbodies. Specifically, Access Tracks to the north of the Headpond were sited to minimise impacts on this species;
- As far as the River Coiltie, the northern access route to the Proposed Development follows existing forestry roads and access roads that serve an existing hydropower scheme on the watercourse, minimising habitat loss. Similarly, access from the south (the Allt Sigh track), which will be for smaller vehicles such as 4x4s only, will follow an existing track;
- The Proposed Development was designed to assure a minimum separation distance between above ground works areas and the North Inverness Lochs SPA of at least 750 m. This was undertaken to minimise potential impacts on this ornithological feature of international importance;
- The Temporary Workers Accommodation was sited to minimise potential impacts on important ornithological features including North Inverness Lochs SPA and potential breeding waterbodies for Slavonian grebe. This was achieved by siting the Temporary Workers Accommodation at a relatively low elevation in respect to nearby waterbodies and screened from the south, west and east by Cárn Bán and Srón Dubh. The Temporary Workers Accommodation is located approximately 1.4 km south of the North Inverness Lochs SPA ; and
- With the exception of waterbodies subsumed by the Headpond, the above ground works areas of the Proposed Development have been sited at least 50 m from waterbodies. This will reduce the likelihood of works polluting these waterbodies and potentially adversely affecting Slavonian grebe, a key ornithological feature.

Other Measures

8.7.3 In the breeding season prior to commencement of Construction and throughout the Construction Phase, a programme of breeding bird surveys will be carried out. The survey methods will follow those described herein for the baseline gathering work supporting this assessment. The surveys will be carried out by a suitably experienced and licensed ornithologist(s) and will follow best practice methods. The results of on-going surveys will be communicated to relevant Construction personnel to ensure that appropriate mitigation is implemented to protect identified breeding birds. Method of communication to be confirmed by the Construction Contractor but will be sufficiently prompt to alert personnel to any new or additional constraints e.g. direct verbal communication with site foreman or Construction manager followed by update of a constraints register and/or GIS. The detailed programme of breeding bird surveys will be set out in a Bird Protection Plan (BPP), which will be approved by The Highland Council, in consultation with NatureScot, prior to the commencement of Construction works.

8.7.4 In addition, a range of measures that are standard good practice for development of this type, and which are required to comply with environmental protection legislation, will also be implemented. These are well-developed

and have been successfully implemented on infrastructure projects across the country and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. These will include:

- All personnel involved in the Construction and Operation of the Proposed Development will be made aware of the ornithological features within the ZoI and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required;
- An Ecological Clerk of Works (ECoW) and/or Environmental Clerk of Works (EnvCoW) (referred to collectively thereafter as 'ECoW') will be employed for the duration of the Construction of the Proposed Development. The remit of the ECoW will include, but may not be limited to:
  - Carrying out pre-works checks for important bird species and nesting birds;
  - Advising on exact infrastructure placement within micro-siting tolerances;
  - Monitoring of, and advising on, storage of overburden to minimise habitat damage;
  - Monitoring of any peat/vegetated turves that may be stored for later reinstatement;
  - Advising on habitat reinstatement; and
  - Monitoring of pollution control measures and advising on placement of ditches, settlement ponds, etc. to minimise habitat damage.
- As far as possible, works that will directly impact upon areas of vegetation that could be used by nesting birds will be undertaken outside of the breeding season, this being taken to be between March and September, inclusive. Should vegetation clearance works be required during the breeding season, a pre-works check for active nests will be carried out by the ECoW or another suitably experienced ornithologist. Such checks will be completed no more than 48 hours in advance of clearance works taking place as nests can be quickly established. Where any active nests are identified or suspected, suitable species-specific exclusion zones will be implemented and maintained until the breeding attempt has concluded;
- Sightings of protected and/or important bird species within the Proposed Development Site during the Construction period will be recorded. If any evidence or sightings of specially protected bird species listed on Schedule 1 of the WCA suggest that a nest site may be present, then works in that area will stop immediately and the ECoW will be contacted for further advice.
- A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by The Highland Council, in consultation with Scottish Environment Protection Agency (SEPA) and NatureScot, where necessary, prior to commencement of Construction. The CEMP will set out all environmental management measures and the roles and responsibilities of Construction personnel;
- During all phases of the Proposed Development, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines (PPG) and Guidance on Pollution Prevention (GPP), including the following:
  - Controls and contingency measures will be provided to manage run-off from Construction areas and to manage sediment;
  - All oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Proposed Development Site;
  - In order to avoid pollution impacts to soils, vegetation and watercourses / waterbodies during Construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base. This will be situated at least 50m away from any watercourse.
- Any artificial lighting required for Construction works will be directional to avoid or minimise light spill beyond immediate works areas;
- Signs will be installed as part of the Proposed Development design to inform visitors about the sensitive flora and fauna in the area and request that visitors remain on access racks, particularly during the bird breeding season (April to August inclusive) to minimise the potential for disturbance; and
- Deer fences associated with proposed landscape and ecological interventions will be installed with markers to improve visibility and minimise the risk of bird collisions.

8.8 Assessment of Effects

Features Scoped Out of Further Assessment

8.8.1 As stated in **paragraphs 8.5.3 - 8.5.9**, relevant ornithological features are those that are 'important' and have the potential to be significantly affected by the Proposed Development[5]. In view of the baseline data obtained through desk study and field survey, the features in **Table 8 -6: Ornithological Features Scoped Out of Further Assessment** have been excluded from further assessment because: a) available data indicate that they are likely to be absent from the ZoI of the Proposed Development or the ZoI is of negligible importance to the species; b) it is clear that no impact from the Proposed Development is possible; and/or c) they are features that, although identified as being 'important' by the criteria given in this chapter, are common and widespread and their conservation status is clearly not threatened by the Proposed Development. Bird populations are referenced, where appropriate, in relation to national populations listed in *The Birds of Scotland*[34] and regional populations with respect to the North Highlands NHZ and/or online bird reports provided by the Scottish Ornithologist Club (SOC)[35]. Additional species-specific sources are referenced where available.

Table 8 -6: Ornithological Features Scoped Out of Further Assessment

Ornithological Feature	Rationale for Exclusion from Further Assessment in this Chapter
Glen Affric to Strathconon SPA	The sole qualifying feature of Glen Affric to Strathconon SPA is breeding golden eagle. Based on NatureScot guidance[10], the Proposed Development Site is beyond the 6 km core foraging range of golden eagle nesting in the SPA. As the Proposed Development Site is approximately 9.5 km from the SPA, and therefore well beyond the expected core foraging range of golden eagle, there is limited potential for connectivity and significant effects on birds associated with this site are highly unlikely.
White-tailed eagle	This species was observed on four occasions northwest of above ground Construction areas during a single day in May 2024. No breeding sites were identified during the AECOM surveys in 2024. A breeding site was identified by the Highland RSG, approximately 4 km from the above ground Construction areas. The very low frequency of use of the Proposed Development Site and surrounding area indicates that the ZoI is of Negligible importance to this species.
Peregrine	Two records of individual birds in flight, to the south of above ground Construction areas, were recorded during surveys. Records of breeding sites were provided by the Highland RSG, with the closest being approximately 1.5 km from the above ground Construction areas. This site, however, has been inactive since 2017. No evidence of breeding was recorded during surveys undertaken for the Proposed Development. Based on the above, the ZoI is considered to be of Negligible importance to this species.
Merlin	Eight records of individual hunting/commuting merlin were recorded. No evidence of breeding was identified during surveys or from the desk study. While these observations may have been of birds which were nesting in the wider area, the infrequency of occurrence suggests that the habitat within the ZoI of the Proposed Development is of Negligible importance to this species.
Red kite	Eleven records of individual red kites were recorded in flight/hunting, predominately southwest of the above ground Construction areas. No breeding sites for this species were recorded during surveys or identified from desk study. While these observations may have been of birds which were nesting in the wider area, the infrequency of occurrence suggests that the habitat within the ZoI of the Proposed Development is of Negligible importance to this species.
Osprey	Four observations of individual fishing/commuting birds were recorded during surveys. No breeding was identified either through field survey or desk study. While these observations may have been of birds which were nesting in the wider area, the infrequency of occurrence suggests that the habitat within the ZoI of the Proposed Development is of Negligible importance to this species.
Breeding passerine assemblage	Of the nine important passerine species recorded, only skylark, tree pipit and cuckoo were recorded frequently, with an estimated 65, 14 and 11 breeding territories, respectively. The remaining species (redpoll, mistle thrush, reed bunting, siskin, song thrush and whinchat) were recorded infrequently, with a total of nine breeding territories between them. Despite being Red-Listed or on the SBL, these species are all common and widespread, both locally and across Scotland. The numbers recorded during surveys represent a small proportion of national populations; for example, population estimates of 290,000-557,000 pairs and 43,000 pairs for skylark and tree pipit, respectively. The breeding passerine assemblage is therefore considered to be of Negligible importance.

[34] 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) (2012). The Birds of Scotland. The Scottish Ornithologists' Club, Aberlady.
[35] The Scottish Ornithologists' Club (2024). *Online Scottish Bird Report*. (online) Available at: https://www.the-soc.org.uk/pages/online-scottish-bird-report

Ornithological Feature	Rationale for Exclusion from Further Assessment in this Chapter
Breeding wader assemblage (not including dunlin and golden plover)	While curlew and lapwing are both Red-Listed BoCC and listed on the SBL, they were recorded in low numbers, with one and two estimated territories, respectively. Of these territories only one of lapwing would potentially be affected, located approximately 150 m north of the above ground Construction areas. The remaining lapwing territory and curlew territory were approximately 750 m north and 1.6 km south of the above ground Construction areas respectively. The SOC Bird Report note that both species are common but declining breeders in the Highland area. Snipe and common sandpiper were more numerous, with eighteen and nine territories, respectively. However, both species are of lower conservation concern. Both species are noted as a common breeder in the SOC Bird Report. The breeding wader assemblage (not including golden plover and dunlin) is therefore considered to be of Negligible importance.
Breeding waterbirds and grouse (not including Slavonian grebe and red-throated diver)	Important breeding waterbirds and grouse comprised four of teal and ten of red grouse. These species are of lower conservation concern. The breeding waterbird and grouse assemblage is therefore considered to be of Negligible importance.

Importance of Ornithological Features

8.8.2 The assessed importance of those ornithological features identified in the baseline conditions, and which have not been scoped out above, is set out in **Table 8-7: Importance of Ornithological Features** together with a rationale. Importance has been assessed considering geographic scale, in accordance with CIEEM guidelines[5].

8.8.3 When considering geographic scale, for the purposes of this assessment, the geographical level of 'Regional' is defined as the area encompassed by NHZ 7, and 'Local' as the area within 10 km of the Proposed Development.

Table 8-7: Importance of Ornithological Features

Ornithological Feature	Importance	Rationale
North Inverness Lochs SPA	International	Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA via recruitment to the breeding population (returning young nesting within the SPA). This site was selected, and is legally protected, for its internationally important population of breeding Slavonian grebe.
Loch Knockie and nearby Lochs SPA		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA via recruitment to the breeding population (returning young nesting within the SPA). This site was selected, and is legally protected, for its internationally important population of breeding Slavonian grebe.
Loch Ruthven SPA and Ramsar site[36]		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA via recruitment to the breeding population (returning young nesting within the SPA). This site was selected, and is legally protected, for its internationally important population of breeding Slavonian grebe.
Loch Ashie SPA		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA by travelling to the SPA to undertake post-breeding moult. This site was selected, and is legally protected, for its internationally important population of non-breeding Slavonian grebe.
Moray Firth SPA		Red-throated diver and Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA as part of the over-wintering population (i.e. breeding birds wintering in the Moray Firth). This site was selected, and is legally protected, for its internationally important population of non-breeding waterbirds, including red-throated diver and Slavonian grebe.
Loch Flemington SPA		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA via recruitment to the breeding population (returning young nesting within the SPA). This site was selected, and is legally protected, for its internationally important population of breeding Slavonian grebe.
Loch Vaa SPA		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SPA via recruitment to the breeding population (returning young nesting within the SPA). This site was selected, and is legally protected, for its internationally important population of breeding Slavonian grebe.

[36] These sites are considered together as they are designated for identical ornithological features (Slavonian grebe) and cover a coincident designated area.

Ornithological Feature	Importance	Rationale
Dubh Lochs SSSI	National	Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SSSI via recruitment to the breeding population (returning young nesting within the SSSI). This site was selected, and is legally protected, for its nationally important population of breeding Slavonian grebe.
Balnagrantach SSSI		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SSSI via recruitment to the breeding population (returning young nesting within the SSSI). This site was selected, and is legally protected, for its nationally important population of breeding Slavonian grebe
Knockie Lochs SSSI		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SSSI via recruitment to the breeding population (returning young nesting within the SSSI). This site was selected, and is legally protected, for its nationally important population of breeding Slavonian grebe
Loch Ashie SSSI		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SSSI by travelling to the SPA to undertake post-breeding moult. This site was selected, and is legally protected, for its nationally important population of non-breeding Slavonian grebe.
Loch Vaa SSSI		Slavonian grebe nesting in the vicinity of the Proposed Development could be connected to the SSSI via recruitment to the breeding population (returning young nesting within the SSSI). This site was selected, and is legally protected, for its nationally important population of breeding Slavonian grebe
Slavonian grebe	National	The British Trust for Ornithology (BTO) estimates the breeding population of Scotland to be 28 pairs (between 2013-2017)[37]. The number of breeding pairs recorded during surveys is sufficient to represent a population of national importance. See **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**) for full details.
Red-throated diver	Regional	The national and regional breeding population of red throated divers is estimated at 1,255[38] and 39 pairs[12] respectively. The number of breeding pairs recorded during surveys is sufficient to represent a population of regional importance. See **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**) for full details.
Golden eagle	Regional	The national golden eagle survey carried out in 2015 identified 508 territorial pairs across Scotland[39]. Based on the results of the 2015 national survey, NatureScot estimates that there are 86 territories in NHZ 7, 30 of which were vacant (56 active territories)[40]. The number of golden eagle territories identified during surveys is sufficient to represent a population of regional importance. See **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**) for full details.
Black grouse	Regional	The national and regional population of displaying male black grouse is estimated at 3,344 and 473 respectively, as derived from surveys in 2005[12]. The number of black grouse recorded during surveys is sufficient to represent a population of regional importance. See **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**) for full details.
Greenshank	Regional	The national and regional population of greenshank was estimated at 1,080[34] and 148 territories[12], respectively, derived from surveys undertaken in 1995. While this is the best available estimate, it is suspected that these numbers are likely to be an underestimate. The number of greenshank territories recorded during surveys is sufficient to represent a population of regional importance. See **Confidential Appendix 8.1: Sensitive Ornithology Assessment** (**Volume 6: Confidential Appendices**) for full details.
Dunlin	Regional	A maximum of three territories were identified by surveys. Dunlin is listed on Annex I of the Birds Directive, the SBL, and is a Red-Listed BoCC. The national and regional population of dunlin is estimated at 8,000- 10,000 and 90 pairs, respectively, although the SOC Bird Report notes that the species

[37] https://www.bto.org/understanding-birds/birdfacts/slavonian-grebe.
[38] Dillon, I.A., Smith, T.D., Williams, S.J., Haysom, S. & Eaton, M.A. (2009). Status of Red-throated Divers Gavia stellata in Britain in 2006. Bird Study 56, pp 147-157
[39] Hayhow, D.B., Benn, S., Stevenson, A., Stirling-Aird, P.K. and Eaton, M.A. (2017). Status of Golden Eagle Aquila chrysaetos in Britain in 2015. Bird Study 64, pp 281-294
[40] NatureScot email to AECOM, 26 November 2024.

Ornithological Feature	Importance	Rationale
		as a "*fairly common breeder*" in the Highland uplands. Dunlin has been assigned Regional importance as the species is a conservation priority in Europe (as indicated by its listing on Annex I) and approximately 3.3% of the regional population was recorded during surveys.
Golden plover	Local	Thirteen golden plover territories were identified by surveys. Golden plover is listed on Annex I of the Birds Directive and on the SBL. The estimated regional population of golden plover is 3,009 pairs and is listed as a "*locally common breeder*" by the SOC for the Highland region in 2020. While locally common, this species is a conservation priority at a European level (as indicated by its listing on Annex I). The population within the ZoI of the Proposed Development is therefore considered to be of Local importance.

The Potential Impacts of the Proposed Development

Pre-Construction and Enabling Works, and Construction Phase

Impacts Scoped In

8.8.4 The following broad categories of impact could arise during both the Pre-Construction and Enabling Phase and the Construction Phase of the Proposed Development and are considered, where potentially relevant, in relation to each of the ornithological features scoped in for detailed assessment:

- Loss of habitat which supports important bird species associated with the Construction of the Proposed Development. Habitat loss would be associated with temporary Construction areas and permanent infrastructure and potentially associated with proposed landscape and ecological mitigation, outlined in the oLEMP (**Appendix 6:4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**).
- Disturbance and/or displacement of species during Construction whilst at the nest, displaying or foraging (or any other behaviours important to maintenance of the species population). Disturbance distances from Construction works were derived from recommendations contained within established guidance[41]. These distances apply for all Construction works with the exception of above ground blasting required at the Tunnel Portals, Upper Control Works, Lower Control Works and potentially the Borrow Pit. It is reasonable to assume, based on professional judgment, that disturbance and displacement from blasting activities could occur over larger distances.

Impacts Scoped Out

8.8.5 The application of embedded mitigation and design features will reduce the potential effects for a number of impacts to negligible levels with respect to ornithological features.

8.8.6 Embedded mitigation measures detailed in Section 8.7, and provided in further detail in **Chapter 10: Water Environment (Volume 2: Main Report)**, will reduce the potential for impacts on water quality, and directly adjacent habitats, to negligible levels.

8.8.7 Potential impacts of Construction on surface and groundwater flows, which could indirectly affect habitats, have been scoped out. Access tracks and watercourse crossings will be constructed such that they do not impede surface water flows. There is consequently no possibility of surface water changes affecting habitats, including waterbodies, to a significant extent. The Proposed Development would be of negligible scale with respect the ground water aquifer and the Proposed Development is on strata considered to be essentially impermeable. As such any new lines of ground water flow which could be created would have a negligible impact on surface waterbodies (see **Chapter 10: Water Environment (Volume 2: Main Report)** for full details).

8.8.8 All impacts associated with below ground Construction works have been scoped out. As detailed in **Chapter 10: Water Environment (Volume 2: Main Report)** there is negligible potential for below ground works to impact ground water and therefore surface habitats. Works underground have limited potential to disturb or displace birds using surface habitats. Noise and vibration from underground Construction works would be negligible at the surface.

8.8.9 Potential impacts to habitats from the release of dust are scoped out due to the availability of industry standard embedded mitigation measures to reduce the likelihood and magnitude of this impact. Additionally, the Proposed

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

Development Site is located on habitats typically characterised by wet soils which would naturally limit the release of dust for some Construction activities.

8.8.10 There is negligible potential for destruction of breeding bird nests due to the standard good practice mitigation measures implemented during the Construction Phase. This is in relation to direct mortality of eggs or chicks through, for example, crushing by the movement of plant. Indirect mortality to eggs and chicks from disturbance is considered further as this impact can occur over a much wider ZoI and is inherently more difficult to identify and mitigate (although this impact will also be considered in the Bird Protection Plan).

8.8.11 Loss of habitat associated with the spread of Invasive Non-Native Species (INNS) has been scoped out of further consideration. Only two individual INNS plants were recorded during ecology surveys, one of cotoneaster *Cotoneaster sp* and one of Pontic rhododendron *Rhododendron ponticum* (**Chapter 7: Terrestrial Ecology (Volume 2: Main Report**)) With the latter recorded adjacent to the A82. Additionally, the spread of INNS will be controlled by adherence to a Biosecurity Management Plan (BMP) as part of terrestrial ecology embedded mitigation.

Operational Phase

Impacts Scoped In

8.8.12 Operational phase impacts on ornithological features may comprise disturbance and displacement of species whilst at nest, displaying or foraging. This could be from Operational activities/movement of personnel and/or the presence of infrastructure in the landscape.

Impacts Scoped Out

8.8.13 Loss of habitat as a result of changes to water levels in Loch Ness has been scoped out for ornithological features. Habitats potentially affected are not considered of importance to important bird species and are not supporting habitats of any designated sites with ornithological interests.

8.8.14 Injury or mortality to birds due to collision with infrastructure has been scoped out. Above ground infrastructure would not include any overhead lines or other structures considered to be of greater risk. The grid connection for the Proposed Development will be subject to a separate S37 Application and is therefore not considered as part of the Proposed Development.

8.8.15 Disturbance/displacement of bird species due to an increase in recreational disturbance has been scoped out. As detailed in **Chapter 16: Socio-Economics, Recreation and Tourism (Volume 2: Main Report)** the Proposed Development Site is currently used as a recreational resource for outdoor activities including hillwalking with access from existing access tracks from the south and north. The Permanent Access Tracks of the Proposed Development have been designed to avoid sensitive sites and the vast majority of additional visitors that could be attracted would be expected to remain on Access Tracks and not venture off track into the wider area. Signs will be installed as part of the Proposed Development design to inform visitors about the sensitive flora and fauna in the area and request that visitors remain on access racks, particularly during the core bird breeding season (April to August inclusive) to minimise the potential for disturbance.

8.8.16 Native woodland planting across sections of the Proposed Development Site would be proposed as part of proposed landscape and ecological interventions implemented as part of the Proposed Development (**Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**. Planting areas would be protected from grazing by the installation of deer fences around the perimeter of the sites. Deer fences are a known collision risk for birds, particularly black grouse. To minimise the risk of collision mortality deer fences will be installed with markers to improve visibility and minimise the risk of collisions[42]. It is considered that with the installation of these markers as a design feature the risk of collision will be reduced to negligible levels. Where native woodland planting enhancement proposals are of benefit, or potentially detrimental, to important ornithological features this is discussed within relevant sections of the assessment.

8.8.17 There are no pathways for the accidental destruction of breeding bird nests due to the restriction of works activities to access tracks and other hardstanding generally unsuitable for nesting by the species scoped in for assessment.

8.8.18 Other potential Operational impacts which have been scoped out because there is clearly no potential for them to occur or would result in negligible effects are:

- Airborne pollution, including dust;

[42] Forestry Commission (2012). Technical Note – Fence marking to reduce grouse collisions. Available online: Fence marking to reduce grouse collisions

- Spread of INNS; and
- Pollution of surface water, groundwater, soils or vegetation.

Statement to Inform Habitats Regulations Appraisal

8.8.19 A detailed assessment of the potential impacts and effects of the Proposed Development on European Sites is provided in the Statement to Inform HRA **(Appendix 7.2: Statement to Inform HRA) (Volume 5: Appendices)**. It was concluded in that document that there would be no adverse effect on the integrity of any European Site as a result of the Proposed Development.

8.8.20 Based on conclusions of no adverse effect on integrity, the underlying SSSIs and Ramsar sites (assessed as part of the EIA) would also therefore be subject to negligible not significant effects. The relevant designated sites are listed below:

- North Inverness Lochs SPA (and underlying Dubh Lochs SSSI and Balnagrantach SSSI);
- Loch Knockie and nearby Lochs SPA (and underlying Knockie Lochs SSSI);
- Loch Ruthven SPA (and underlying Loch Ruthven SSSI and Loch Ruthven Ramsar Site);
- Loch Ashie SPA (and underlying Loch Ashie SSSI);
- Moray Firth SPA;
- Loch Flemington SPA; and
- Loch Vaa SPA (and underlying Loch Vaa SSSI).

8.8.21 The above conclusions were derived at Appropriate Assessment stage, following the consideration of mitigation. The sole impact considered at Appropriate Assessment stage for the European sites concerned was disturbance and displacement of breeding Slavonian grebe and red-throated diver, during Pre-Construction and Enabling/Construction and Operational stages.

8.8.22 For the purpose of this EIA Impacts on the above designated sites pre-additional mitigation follow those described for Slavonian grebe (all designated sites) and red-throated diver (Moray Firth SPA). Associated effects would be of International (SPA and Ramsar sites) and National (SSSI) significance.

Impacts on Slavonian Grebe

8.8.23 A full assessment of the effects of the Proposed Development on Slavonian grebe is provided in Confidential **Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**. To avoid providing sensitive details on the location(s) of Slavonian grebe, the assessed effects only are given in this chapter, with no supporting evidence, for which see the confidential appendix.

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.24 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Negligible effect on Slavonian grebe due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.25 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Temporary Adverse effect of National Significance on Slavonian grebe due to disturbance and displacement. This is **Significant.**

Construction Phase

Loss of Habitat

8.8.26 Construction of the Proposed Development is predicted to have a Negligible effect on Slavonian grebe due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.27 Construction of the Proposed Development is predicted to have a Temporary Adverse effect of National Significance on Slavonian grebe due to disturbance and displacement. This is **Significant**.

Operational Phase

Disturbance and Displacement

8.8.28 Operation of the Proposed Development is predicted to have a Permanent Adverse effect of National Significance on Slavonian grebe due to disturbance and displacement. This is **Significant.**

Impacts on Red-throated Diver

8.8.29 A full assessment of the effects of the Proposed Development on red-throated diver is provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**. To avoid providing sensitive details on the location(s) of red-throated diver, the assessed effects only are given in this chapter, with no supporting evidence, for which see the confidential appendix.

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.30 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Negligible effect on red-throated diver due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.31 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Negligible effect on red-throated diver due to disturbance and displacement. This is **Not Significant.**

Construction Phase

Loss of Habitat

8.8.32 Construction of the Proposed Development is predicted to have a Negligible effect on red-throated diver due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.33 Construction of the Proposed Development is predicted to have a Temporary Adverse effect of Regional Significance on red-throated diver due to disturbance and displacement. This is **Significant.**

Operational Phase

Disturbance and Displacement

8.8.34 Operation of the Proposed Development is predicted to have a Permanent Adverse effect of Regional Significance on red-throated diver due to disturbance and displacement. This is **Significant.**

Impacts on Golden Eagle

8.8.35 A full assessment of the effects of the Proposed Development on golden eagle is provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**. To avoid providing sensitive details on the location(s) of golden eagle, the assessed effects only are given in this chapter, with no supporting evidence, for which see the confidential appendix.

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.36 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Negligible effect on golden eagle due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.37 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Negligible effect on golden eagle due to disturbance and displacement. This is **Not Significant.**

Construction Phase

Loss of Habitat

8.8.38 Construction of the Proposed Development is predicted to have a Negligible effect on golden eagles due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.39 Construction of the Proposed Development is predicted to have a Temporary Adverse effect of Regional significance on golden eagle due to disturbance and displacement. This is **Significant**

Operational Phase

Disturbance and Displacement

8.8.40 Operation of the Proposed Development is predicted to have a Negligible effect on golden eagle due to disturbance and displacement. This is **Not Significant.**

Impacts on Black Grouse

8.8.41 A full assessment of the effects of the Proposed Development on black grouse is provided in Confidential **Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**. To avoid providing sensitive details on the location(s) of black grouse, the assessed effects only are given in this chapter, with no supporting evidence, for which see the confidential appendix.

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.42 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on black grouse due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.43 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on black grouse due to disturbance and displacement. This is **Not Significant.**

Construction Phase

Loss of Habitat

8.8.44 Construction of the Proposed Development is predicted to have a Permanent Adverse effect of Local significance on black grouse due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.45 Construction of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on black grouse due to disturbance and displacement. This is **Not Significant.**

Operational Phase

Disturbance and Displacement

8.8.46 Operation of the Proposed Development is predicted to have a Negligible effect on black grouse due to disturbance and displacement. This is **Not Significant.**

Impacts on Greenshank

8.8.47 A full assessment of the effects of the Proposed Development on greenshank is provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**. To avoid providing sensitive details on the location(s) of greenshank the assessed effects only are given in this chapter, with no supporting evidence, for which see the confidential appendix.

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.48 The Pre-Construction and Enabling Phase of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on greenshank due to habitat loss. This is **Not Significant.**

Disturbance and Displacement

8.8.49 The Pre-Construction and Enabling works of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on greenshank due to disturbance and displacement. This is **Not Significant**.

Construction Phase

Loss of Habitat

8.8.50 Construction of the Proposed Development is predicted to have a Permanent Adverse effect of Local significance on greenshank due to habitat loss. This is **Not Significant**.

Disturbance and Displacement

8.8.51 Construction of the Proposed Development is predicted to have a Temporary Adverse effect of Local significance on greenshank due to disturbance and displacement. This is **Not Significant.**

Operational Phase

Disturbance and Displacement

8.8.52 Operation of the Proposed Development is predicted to have a Negligible effect on greenshank due to disturbance and displacement. This is **Not Significant.**

Impacts on Dunlin

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.53 Three dunlin breeding territories were recorded during surveys, with the closest approximately 3.5 km west of above ground Pre-Construction and Enabling works areas. A core foraging range for dunlin of 500 m from nest sites is stated within NatureScot guidance[10]. Based on this, it considered that effects on dunlin through loss of suitable foraging habitat associated with these territories would be negligible.

8.8.54 It is therefore concluded that the Pre-Construction and Enabling Phase of the Proposed Development would have a Negligible effect on dunlin. This is N**ot Significant**.

Disturbance and Displacement

8.8.55 Dunlin are considered to have a 'medium' sensitivity to human disturbance with a breeding season buffer zone of 100 - 200 m recommended[41]. As described above, the nearest territory to above ground Pre-Construction and Enabling works areas is 3.5 km west and therefore out with this disturbance zone. At 3.5 km from Tunnel Portal 1 no effects from blasting at this location would be expected.

8.8.56 It is therefore concluded that the Pre-Construction and Enabling Phase of the Proposed Development would have a Temporary Adverse effect of Local significance. This is **Not Significant**.

Construction Phase

Loss of Habitat

8.8.57 Two territories were recorded within 500 m of Construction areas. Habitat loss specific to the Construction Phase within 500 m or territories is restricted to Access Tracks and a very small area of Embankment (territory located approximately 430 m north of the Headpond). As habitat lost would be small in scale it is not considered that this loss would be of the extent to affect the survival and breeding productivity of dunlin.

8.8.58 Landscape and ecological mitigation proposals, specifically woodland planting, could potentially adversely affect dunlin through habitat loss as nesting/foraging dunlin avoid woodland areas. Areas earmarked for pine/juniper/dwarf birch naturalistic planting and regeneration are proposed within 500 m of the dunlin territory identified to the north of the Headpond. Much of this planting, however, would be located along steep slopes to the north of Glas-bheinn Mhór. Areas of steep craggy slopes would not typically be used by nesting or foraging dunlin and therefore loss of these open habitats would likely have a negligible direct effect on this territory. There is evidence that dunlin avoid suitable habitat in the vicinity of woodland[43], potentially up to a distance of 700 m[44], however studies were undertaken for larger areas of woodland, typically conifer plantations. While unlikely, it cannot be ruled out that this dunlin territory is displaced due to avoidance of the proposed planting area at Glas-bheinn Mhór. The loss of a single territory would represent approximately 1.1% of the regional population.

8.8.59 It is therefore concluded that the Construction Phase of the Proposed Development would have a Permanent Adverse effect of Local significance. This is **Not Significant**.

Disturbance and Displacement

8.8.60 Two dunlin territories were recorded within 100 m of Access Tracks, one of which was within 500 m of the Borrow Pit where basting would be undertaken. As a reasonable worst case it is assumed that these territories may be displaced by Construction activities. Any nesting attempts that occur within the ZoI will be protected from disturbance by implementing the Bird Protection Plan. Displacement of these territories will be across a relatively

[43] Hancock, M. H., Grant, M. C., & Wilson, J. D. (2009). Associations between distance to forest and spatial and temporal variation in abundance of key peatland breeding bird species. Bird Study, 56(1), 53–64.
[44] Wilson, J.D., Anderson, R., Bailey, S., Chetcuti, J., Cowie, N.R., Hancock, M.H., Quine, C.P., Russell, N., Stephen, L., Thompson, D.B.A. & Elphick, C. (2014). Modelling edge effects of mature forest plantations on peatland waders informs landscape-scale conservation. J. Appl. Ecol. 51, 204–213.

small area of habitat and will be short term for the duration of Construction. One territory, near the Alltsigh Access Track, would be impacted only during the Construction of this Access Track, which would be relatively short duration (the Alltsigh Access Track would not be used for Construction traffic). A temporary effect on breeding success of two territories, representing approximately 2.2% of the regional population, cannot be discounted.

8.8.61 It is therefore concluded that the Construction Phase of the Proposed Development would have a Temporary Adverse effect of Local significance. This is **Not Significant**.

Operational Phase

Disturbance and Displacement

8.8.62 The Operational phase infrastructure will be inconspicuous in the landscape and, based on professional judgement, unlikely to displace breeding dunlin in and of itself. During the Operational phase, the presence of personnel will be infrequent and short duration, especially along Access Tracks. Additionally, evidence from a study of wind farms in the UK suggests that dunlin breeding populations are not negatively affected during the operation of the wind farm[45]. It is reasonable to assume that windfarms, due to the presence of large moving turbines, would have a greater potential for impacts than the Proposed Development.

8.8.63 It is therefore concluded that there will be Negligible effects from disturbance/displacement on breeding dunlin during the Operational phase of the Proposed Development. This is **Not Significant**.

Golden Plover

Pre-Construction and Enabling Phase

Loss of Habitat

8.8.64 A maximum of thirteen golden plover territories were recorded during survey in 2024, with the closest being approximately 1.8 km southwest of above ground Pre-Construction and Enabling works areas. The core foraging range from nest sites for golden plover is 3 km[10] and five territories were located within 3 km of the above-ground Pre-Construction and Enabling works areas. The largest area of discrete habitat loss would be associated with the Construction compounds in the River Coiltie area, particularly the Temporary Workers Accommodation. No territories were located within 1.5 km of these areas and it can reasonably be assumed that areas of habitat in closer proximity to nest sites, if suitable, would be of greater importance to the birds. Consequently, it is considered unlikely that habitat loss associated with the Pre-Construction and Enabling works would affect golden plover to the extent that it would influence territory occupancy or breeding success.

8.8.65 It is considered that there will be **Negligible effects** from habitat loss on breeding golden plover during the Pre-Construction and Enabling Phase of the Proposed Development. This is **Not Significant**.

Disturbance and Displacement

8.8.66 Golden plover are considered to have a ‘medium’ sensitivity to human disturbance with a breeding season buffer zone of 200-500 m recommended[41]. The closest territory was located 1.8 km southwest of above ground Pre-Construction and Enabling works areas. At this distance, impacts from blasting activities at Tunnel Portal 1 would be unlikely. Blasting at this location, in any case, would be relatively short lived with respect to the wider Pre-Construction and Enabling works. Consequently, it is considered unlikely that golden plover would be disturbed or displaced during the Pre-Construction and Enabling works phase.

8.8.67 It is therefore concluded that there will be a Negligible effect from disturbance/displacement of golden plover during the Pre-Construction and Enabling Phase of the Proposed Development. This is **Not Significant**.

Construction Phase

Loss of Habitat

8.8.68 Of the territories recorded, one directly overlaps the Headpond and a further three are located within 500 m of the Headpond (the Headpond represents the largest concentrated area of habitat loss associated with the Proposed Development). It is reasonable to assume that territories located within or in proximity to the Headpond will be affected to a greater extent than those that are more distant. It is assumed that the loss of habitat associated with the Headpond will result in these four territories becoming unviable (i.e. unable to support breeding birds). The density of territories in the wider area may limit the ability of these birds to utilise directly adjacent suitable habitat. It is considered that four golden plover territories are important at the local level.

[45] Pearce-Higgins, J.W.; Stephen, L.; Douse, A.; Langston, R.H.W. Greater Impacts of Wind Farms on Bird Populations during Construction than Subsequent Operation: Results of a Multi-Site and Multi-Species Analysis. J. Appl. Ecol. 2012, 49, 386–394

8.8.69 As detailed for dunlin, landscape and ecological mitigation proposals could potentially adversely affect golden plover through habitat loss. Woodland is unsuitable nesting and foraging habitat for this species, and birds have the potential to be displaced from suitable habitat in the immediate vicinity[46], up to a distance of 700 m[44], from the woodland edge. Of the territories recorded 11 were within 700 m of woodland enhancement parcels, which includes the four territories identified within 500 m of the Headpond. Based on a review of the proximity and size of woodland parcels it is estimated that an additional five could be adversely affected to the extent that they would be displaced, which would be nine in total. Nine territories would represent 0.3% of the regional population.

8.8.70 It is therefore concluded that there will be a Permanent Adverse effect of Local significance from habitat loss on golden plover during the Construction Phase of the Proposed Development. This is **Not Significant**.

Disturbance and Displacement

8.8.71 As described above, four territories are located within 500 m of the Headpond and a further two territories are located within 500 m of Access tracks. As a reasonable worst case, it is assumed that these territories may be displaced by the Construction works. Sporadic blasting works at the Borrow Pit and Upper Control Works could exacerbate this impact and potentially extend it to further territories. While similar habitat exists in the wider area to support displaced golden plover, results indicate a relatively high population density that may not accommodate the displaced birds. Six territories would represent approximately 0.2% of the regional population.

8.8.72 It is therefore concluded that there will be a Temporary Adverse effect of Local significance from disturbance/displacement of golden plover during the Construction Phase of the Proposed Development. This is **Not Significant**.

Operational Phase

Disturbance and Displacement

8.8.73 The Operational Phase infrastructure will be inconspicuous in the landscape and, based on professional judgement, unlikely to displace breeding golden plover in and of itself. Works during the Operational Phase of the Proposed Development will be substantially reduced compared to the Construction Phase. Additionally, evidence from a study of windfarms in the UK suggests that golden plover breeding populations are not negatively affected during the operation of the windfarm[45] (a development that would be expected to exert a greater displacement impact than the Proposed Development).

8.8.74 It is considered that disturbance/displacement will be very limited in frequency, duration and magnitude and only potentially affect two territories. It is therefore concluded that the Operational Phase of the Proposed Development will have a Negligible effect on golden plover. This is **Not Significant**.

8.9 Additional Mitigation

8.9.1 Specific mitigation measures will be implemented to minimise the adverse effects on ornithological features identified in this chapter. Although mitigation is not required where effects are Not Significant (i.e. they have been assessed as being of local importance or less), in some cases, measures will be implemented where these can be readily achieved. Furthermore, in certain instances, measures will be required to ensure compliance with relevant wildlife legislation, even when no significant effect on a species was determined.

Works Exclusion Zones

8.9.2 Additional mitigation in the form of works exclusions zones for Slavonian grebe, red-throated diver and black grouse are detailed in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**.

Blasting Specific Restrictions

8.9.3 Additional mitigation specifically related to above ground blasting activities for Slavonian grebe, red-throated diver, golden eagle and black grouse are detailed in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**.

[46] Amar, A., Grant, M., Buchanan, G., Sim, I., Wilson, J., Pearce-Higgins, J.W. & Redpath, S. (2011) Exploring the relationships between wader declines and current land-use in the British uplands. Bird Study, 58, 13-26.

8.10 Residual Effects

8.10.1 The potential effects of the Proposed Development during the Pre-Construction and Enabling Phase, Construction and Operational phases are summarised in **Table 8-8: Summary of Effects during the Pre-Construction and Enabling Phase, Table 8-9: Summary of Effects during the Construction Phase,** and **Table 8-10: Summary of Effects during the Operational Phase,** respectively. The specific mitigation measures proposed to minimise the identified effects are outlined in this table and the residual, post-mitigation effect is assessed.

8.10.2 For the purposes of this assessment, only effects which are judged as being Regionally, Nationally or Internationally Significant (according to the CIEEM method for Ecological Impact Assessment) were considered to be Significant in EIA terminology. On this basis, the only Significant adverse effects predicted on ornithological features in the absence of mitigation were as a result of:

- Disturbance and displacement of Slavonian grebe during the Pre-Construction and Enabling, Construction and Operational Phases; (and coincident effects on designated sites with Slavonian grebe listed as a qualifying feature);
- Disturbance and displacement of Red-throated diver during the Construction and Operational Phases; (and coincident effects the Moray Firth SPA); and
- Disturbance and displacement of golden eagle during the Construction Phase.

8.10.3 With the implementation of mitigation, as described above, in **Confidential Appendix 8.1: Schedule 1 Birds (Volume 6: Confidential Appendices**), and summarised in **Tables 8.8** and **8.9**, the only remaining significant effect would be:

- Displacement of golden eagle during the Construction Phase

8.10.4 Proposed additional mitigation will also reduce the non-significant effect of disturbance and displacement of black grouse during the Pre-Construction and Enabling and Construction Phases from significant at a Local level to Negligible.

Table 8-8: Summary of Effects during the Pre-Construction and Enabling Phase

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
North Inverness Lochs SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Knockie and nearby Lochs SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Moray Firth SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe and red-throated diver.	Negligible	Not Significant
Loch Flemington SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Vaa SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Dubh Lochs SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA.	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Balnagrantach SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA.	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Knockie Lochs SSSI	Detailed assessment follows that provided for Loch Knockie and nearby Lochs SPA.	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven Ramsar Site	Detailed assessment follows that provided for Loch Ruthven SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
Loch Ruthven SSSI	Detailed assessment follows that provided for Loch Ruthven SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SSSI	Detailed assessment follows that provided for Loch Ashie SPA.	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Vaa SSSI	Detailed assessment follows that provided for Loch Ashie Vaa SPA.	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Slavonian grebe	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of National Significance	Blasting Specific Restrictions	Negligible	Not Significant
Red-throated diver	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Golden eagle	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Black grouse	Habitat Loss	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	Works exclusion zones around core lek sites Blasting Specific Restrictions	Negligible	Not Significant
Greenshank	Habitat Loss	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant
Dunlin	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant
Golden plover	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Negligible	None	Negligible	Not Significant

Table 8-9: Summary of Effects during the Construction Phase

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
North Inverness Lochs SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Knockie and nearby Lochs SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven SPA and Ramsar site	Detailed assessment provided **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Moray Firth SPA	Detailed assessment provided **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe and Red-throated diver	Negligible	Not Significant
Loch Flemington SPA	Detailed assessment provided **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Vaa SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Temporary Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Dubh Lochs SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Balnagrantach SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Knockie Lochs SSSI	Detailed assessment follows that provided for Loch Knockie and nearby Lochs SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven Ramsar Site	Detailed assessment follows that provided for Loch Ruthven SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven SSSI	Detailed assessment follows that provided for Loch Ruthven SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SSSI	Detailed assessment follows that provided for Loch Ashie SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
Loch Vaa SSSI	Detailed assessment follows that provided for Loch Vaa SPA	Temporary Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Slavonian grebe	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of National Significance	Works exclusion zones around known breeding sites Blasting Specific Restrictions	Negligible	Not Significant
Red-throated diver	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Regional Significance	Works exclusion zones around known breeding sites Blasting Specific Restrictions	Negligible	Not Significant
Golden eagle	Habitat Loss	Negligible	None	Negligible	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Regional Significance	None	Temporary Adverse effect of Regional Significance	**Significant**
Black grouse	Habitat Loss	Permanent Adverse effect of Local Significance	None	Permanent Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	Works exclusion zones around core lek sites Blasting Specific Restrictions	Negligible	Not Significant
Greenshank	Habitat Loss	Permanent Adverse effect of Local Significance	None	Permanent Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant
Dunlin	Habitat Loss	Permanent Adverse effect of Local Significance	None	Permanent Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
Golden plover	Habitat Loss	Permanent Adverse effect of Local Significance	None	Permanent Adverse effect of Local Significance	Not Significant
	Disturbance and Displacement	Temporary Adverse effect of Local Significance	None	Temporary Adverse effect of Local Significance	Not Significant

Table 8-10: Summary of Effects during the Operational Phase

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
North Inverness Lochs SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Knockie and nearby Lochs SPA	Detailed assessment provided **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven SPA and Ramsar site	Detailed assessment provided **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Moray Firth SPA	Detailed assessment provided in S **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe and Red-throated diver	Negligible	Not Significant
Loch Flemington SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Vaa SPA	Detailed assessment provided in **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices).**	Permanent Adverse effect of International Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Dubh Lochs SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Balnagrantach SSSI	Detailed assessment follows that provided for North Inverness Lochs SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant

Ornithological Feature	Impact	Effects	Additional Mitigation	Residual Effects	Significance
Knockie Lochs SSSI	Detailed assessment follows that provided for Loch Knockie and nearby Lochs SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven Ramsar Site	Detailed assessment follows that provided for Loch Ruthven SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ruthven SSSI	Detailed assessment follows that provided for Loch Ruthven SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Ashie SSSI	Detailed assessment follows that provided for Loch Ashie SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Loch Vaa SSSI	Detailed assessment follows that provided for Loch Vaa SPA	Permanent Adverse effect of National Significance	Additional mitigation follows that described for Slavonian grebe.	Negligible	Not Significant
Slavonian grebe	Disturbance and Displacement	Permanent Adverse effect of National Significance	Works exclusion zones around known breeding sites	Negligible	Not Significant
Red-throated diver	Disturbance and Displacement	Permanent Adverse effect of Regional Significance	Works exclusion zones around known breeding sites	Negligible	Not Significant
Golden eagle	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Black grouse	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Greenshank	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Dunlin	Disturbance and Displacement	Negligible	None	Negligible	Not Significant
Golden plover	Disturbance and Displacement	Negligible	None	Negligible	Not Significant

8.11 Cumulative Effects

Inter-Cumulative Effects

Scope of Cumulative Assessment

8.11.1 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The assessment of cumulative effects considered the context of the Northern Highlands NHZ (NHZ 7). However, to assess every development in the whole of NHZ 7 would be impossible due to the number of developments this would include and the lack of available data for many. This constraint is recognised by NatureScot[11].

8.11.2 A list of schemes for which cumulative assessment may be necessary is therefore identified in **Chapter 4: Approach to EIA (Volume 2: Main Report)**. The full list of schemes is not reproduced here, but those most important to ornithological features are considered to be those schemes of sufficient scale which are located within 10 km of above ground infrastructure. A 10 km buffer is considered proportionate because this distance encompasses the territorial range and/or foraging range of relevant species (see **paragraph 8.11.4**) and would therefore incorporate the key additive effects from cumulative schemes. Pumped storage projects more than 10 km from the Proposed Development, which may however impact water levels in Loch Ness, have not been included due to the negligible magnitude of potential impacts of changes in Loch Ness water levels to scoped in important ornithological features.

8.11.3 The key schemes for cumulative assessment for ornithology are therefore those set out in **Table 8-11: List of Schemes Most Important to Cumulative Assessment**.

Table 8-11: List of Schemes Most Important to Cumulative Assessment

Scheme	Description	Status	Approx. Distance from the Headpond (km)	Approx. Distance to Tailpond (km)
Bhlaraidh Wind Farm Extension	Extension to existing Bhlaraidh Wind Farm comprising up to fifteen turbines with maximum blade tip height of 180 m with associated infrastructure and access.	Consented	6.1	8.7
Loch Kemp Pumped Storage Hydro	New 600 MW pumped storage scheme utilising the existing Loch Kemp as the upper storage reservoir and Loch Ness as the lower reservoir with associated infrastructure and access.	Application	6.1	5.2
Chrathaich Wind Farm	New wind farm comprising a total of fourteen turbines with maximum blade tip height of up to 149.9 m with associated infrastructure and access.	Application	8.9	8.7
Loch Liath Wind Farm	New wind farm comprising a total of thirteen wind turbines with maximum blade tip height of 200 m with associated infrastructure and access.	Application	9.4	12.2
Cnoc Farasd Wind Farm	New wind farm comprising a total of up to nine wind turbines with a maximum blade tip height of 220 m, battery energy storage system (BESS) and associated infrastructure.	Pre-Application (Scoping)	10	11.9

8.11.4 Based on the conclusions of the assessment presented in Section 8.8: Assessment of Effects and the mitigation outlined in Section 8.7: Embedded Mitigation and Section 8.9: Additional Mitigation, and detailed in **Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**, the following important ornithological features and associated impact pathways, have been scoped out of the cumulative assessment:

- Slavonian grebe – negligible residual effects from habitat loss or disturbance/displacement were identified, following additional mitigation, on this species.
- Red-throated diver – negligible residual effects from habitat or disturbance/displacement were identified, following additional mitigation, on this species.

- Designated sites (SPA, Ramsar and SSSI) designated for supporting Slavonian grebe and red-throated diver - negligible residual effects from habitat loss or disturbance/displacement were identified, following additional mitigation.

8.11.5 The remaining important bird species, golden eagle, black grouse, greenshank, dunlin and golden plover are considered in the cumulative assessment detailed below for each species/species group.

Golden Eagle

8.11.6 **Confidential Appendix 8.1: Schedule 1 Birds (Volume 6: Confidential Appendices)** describes in detail the potential cumulative effects on golden eagle that could arise as a result of the relevant schemes identified in **Table 8-11: List of Schemes Most Important to Cumulative Assessment.** It is considered that there would be no significant cumulative effects and effects on golden eagle would remain significant at a Regional level.

8.11.7 No significant cumulative effects on golden eagle are therefore predicted from the Proposed Development acting in-combination with any other scheme(s).

Black Grouse

8.11.8 **Confidential Appendix 8.1: Schedule 1 Birds (Volume 6: Confidential Appendices)** describes in detail the potential cumulative effects on black grouse that could arise as a result of the schemes identified in **Table 8-11: List of Schemes Most Important to Cumulative Assessment**. It is considered that there would be no significant cumulative effects and effects on black grouse would remain significant at a Local level.

8.11.9 No significant cumulative effects on black grouse are therefore predicted from the Proposed Development acting in-combination with any other scheme(s).

Waders (greenshank, dunlin and golden plover)

8.11.10 Greenshank, golden plover and dunlin were recorded during site surveys for the Bhlaraidh Wind Farm Extension, Chrathaich Wind Farm and Loch Liath Wind Farm. None of these species were recorded during surveys for the Lock Kemp Pumped Storage Hydro project. Cnoc Farasd Wind Farm, at scoping stage, is located in plantation woodland which is unsuitable habitat for these species.

8.11.11 All three species were scoped out of assessment for the Loch Liath Wind Farm and minor non-significant effects from displacement and habitat loss were identified for the Bhlaraidh Wind Farm Extension and Chrathaich Wind Farm. As the schemes are distant from the Proposed Development it is unlikely that impacts would affect the same territories. However, impacts would likely result in cumulative effects on the wider local breeding populations of each species. Based on available evidence, the combined effects of the Proposed Development and other schemes on greenshank, dunlin, and golden plover populations would not elevate the level of impact beyond the Local significance level already identified for the Proposed Development alone. The cumulative effects would not reach the threshold of Regional significance.

8.11.12 No significant cumulative effects on greenshank, dunlin and golden plover are therefore predicted from the Proposed Development acting in-combination with any other scheme(s).

Cumulative Assessment Conclusion

8.11.13 It is concluded on the basis of the assessment presented above that the Proposed Development would not act cumulatively with other schemes to give rise to significant adverse effects on ornithological features, beyond any significant effects predicted for the Proposed Development in isolation.

Intra-Cumulative Effects

8.11.14 Intra-cumulative effects have been assessed as an inherent part of this chapter. All potential sources of impact have been considered when evaluating the likely significance of effect on ornithological features. For example, assessment of the effects of habitat loss takes into consideration direct loss under infrastructure and changes as a result of native woodland biodiversity enhancement proposals.

8.11.15 It is not considered that combined effects between the Pre-Construction and Enabling, Construction and Operation Phases would elevate the significance conclusion above that identified for each phase alone. No residual effects were identified for any important ornithological feature during the Operational Phase. The Pre-Construction and Enabling Phase is short term (approximately one year) and will immediately precede the Construction Phase.

8.11.16 It is therefore concluded that Intra-cumulative effects have been taken into account when reaching a significance conclusion for each ornithological feature considered.

8.12 Compensation, Enhancement and Monitoring

Compensation

8.12.1 No specific measures are included as compensation to offset the only remaining significant residual effect, that of disturbance and displacement of foraging golden eagle during the Construction Phase. While it is considered that native woodland biodiversity enhancement proposals and peatland restoration (detailed below) may benefit golden eagle by improving habitat for prey species e.g. black grouse, the time taken to establish new habitats means the beneficial effects of this measure may occur only on a medium or long term basis (I.e. post construction). As such these measures would be unlikely to act as compensation for temporary Construction effects.

Enhancement

Outline Landscape and Ecological Management Plan

Overview

8.12.2 An oLEMP has been drafted for the Proposed Development and submitted as part of the Section 36 Application **(Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**. The oLEMP sets out a range of landscape and ecological interventions that will be implemented by the Proposed Development. This is intended to: a) mitigate landscape and ecological/ornithological impacts; and, b) beyond this deliver biodiversity and general environmental enhancement.

8.12.3 Further information of these enhancements with respect to specific ornithological features is provided in the sections below.

Slavonian Grebe

8.12.4 Habitat enhancements for Slavonian grebe will be undertaken to improve the suitability of waterbodies for the species. Management will comprise sedge bed creation within sections of waterbodies that are currently largely unsuitable for the species due to the absence of large areas of emergent vegetation. The RSPB, who are actively involved with Slavonian grebe in this geographical area, will be consulted for comment on the final LEMP. Further details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices).**

Red-Throated Diver

8.12.5 Red-throated divers are known to adopt artificial breeding rafts, which they have been demonstrated to improve breeding success[47]. Two red-throated diver breeding rafts will be installed on suitable waterbodies. Further details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices).**

Golden Eagle

8.12.6 Low density native woodland planting proposed will benefit golden eagle by improving habitats for their prey, including grouse and hare. Further details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices).**

Black Grouse

8.12.7 Low density native woodland planting proposed will benefit black grouse by improving breeding habitat and providing additional shelter from predators and adverse weather. Planting was designed to retain the known core lek sites as open habitat while providing enhancements within the wider areas. Further details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices).**

Woodland Passerines

8.12.8 It is considered that native woodland planting will increase available habitat for a number of woodland/woodland sedge breeding passerines including tree pipit and willow warbler. To further enhance breeding habitat for passerines a minimum of 25 nest boxes will be installed within existing woodland and a further 25 boxes will be installed within planted woodlands when the trees are of sufficient age/size to support the boxes. The boxes will comprise a variety of types and sizes in order to support a range of cavity nesting species.

[47] Nummi, P., Väänänen, V.M., Pakarinen, R. and Pienmunne, E., 2013. The Red-throated Diver (Gavia stellata) in human-disturbed habitats–building up a local population with the aid of artificial rafts. Ornis Fennica, 90(1), pp.16-22.

Monitoring

8.12.9 Monitoring of breeding birds within the ZoI of above ground works sites will be undertaken as detailed in **Section 8.7 Embedded Mitigation.** Monitoring over and above this requirement is stipulated in this section. Monitoring of natural habitat created is detailed in the oLEMP **(Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices).** Bird specific monitoring will be incorporated into the BPP.

Slavonian Grebe

8.12.10 Post-Construction breeding Slavonian grebe surveys will continue annually for a minimum of five years. Monitoring will be undertaken across all habitat enhancement waterbodies. The aim of the surveys will be to determine the success, or otherwise, of habitat creation in attracting breeding Slavonian grebe.

8.12.11 As detailed above the RSPB will be consulted for comment on monitoring proposals and opportunities for collaboration will be explored.

Red-Throated Diver

8.12.12 To ensure the best chance of success, the breeding rafts will be monitored and maintained on an annual basis. Monitoring will commence on installation of the first breeding raft (Pre-Construction and Enabling) and will continue on an annual basis until a minimum of five years post Construction. If rafts are found to be damaged they will be repaired or replaced. The requirement for longer-term annual monitoring will be subject to ongoing review of the results and agreement with statutory consultees.

8.12.13 Breeding red-throated diver surveys will be undertaken annually at the installed diver rafts for a minimum of five years post Construction.

Golden Eagle Monitoring

8.12.14 Monitoring of identified potentially affected golden eagle nest sites will be undertaken during Construction to corroborate the predicted effects. Full details are provided in **Confidential Appendix 8.1: Sensitive Ornithology Assessment (Volume 6: Confidential Appendices)**.

8.13 Summary

8.13.1 The following important ornithological features were scoped in for assessment:

- Designated sites - North Inverness Lochs SPA, Loch Knockie and nearby Lochs SPA, Loch Ruthven SPA and Ramsar site, Loch Ashie SPA, Moray Firth SPA, Loch Flemington SPA, Loch Vaa SPA, Dubh Lochs SSSI, Balnagrantach SSSI, Knockie Lochs SSSI, Loch Ashie SSSI, Loch Vaa SSSI.
- Individual species – Slavonian grebe, red-throated diver, golden eagle, black grouse, greenshank, dunlin and golden plover.

8.13.2 This chapter has considered how the Proposed Development would affect the above features and determines if effects would be significant following the implementation of embedded and additional mitigation, if required. Potential impacts from the Proposed Development were identified as:

- Loss of supporting habitat during the Pre-Construction and Enabling and Construction Phases;
- Disturbance and displacement during the Pre-Construction and Enabling, Construction and Operational Phases.

8.13.3 Embedded and additional impact avoidance and mitigation comprised monitoring of breeding birds and implementation of exclusion zones to minimise disturbance and displacement and blasting specific works exclusion zones. Following the implementation of impact avoidance and mitigation the only remaining residual significant effects comprised a temporary adverse effect on golden eagle of Regional significance due to disturbance and displacement of foraging birds during the Construction Phase.

8.13.4 Enhancement measures are proposed which would benefit a range of species including Slavonian grebe, red-throated diver, golden eagle and black grouse.

Glen Earrach AECOM