

Technical Note

Project name Glen Earrach	Subject Glen Earrach Grid Connection - Ornithology Assessment	Date April 2026
Prepared by RW Associate Director - Ornithology	Checked by SJ Ecologist	Verified by DL Technical Director
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Background

Glen Earrach Energy (GEE) has instructed AECOM to undertake a desk-based ornithological assessment of the potential effects of a proposed grid connection (hereafter the Grid Connection Project) for the Glen Earrach Pumped Storage Hydro project (the Proposed Development). An indicative connection route has been identified between the substation forming part of the Proposed Development and the indicative connection point for the Proposed Development at the Bingally substation to the west (hereafter the Connection Route).

The Connection Route comprises an initial section (approximately 2km) of underground 400kV cable (UGC) from the Glen Earrach Pumped Storage Hydro substation to the start of a 400kV overhead line (OHL) section. The 400kV overhead line has an approximate length of 16km and connects the underground cable section to the Bingally Substation. The Connection Route is as shown in Figure A. To inform the assessment it is assumed that the 2km of 400kV cable will be installed through micro-tunnelling. It is also assumed that access tracks and temporary working areas will be required in the vicinity of the Connection Route during construction with construction lasting approximately 3 years (three bird breeding seasons).

The aim of this assessment is to identify whether the Grid Connection Project has the potential to result in any likely significant effects on ornithology, having regard to the cumulative assessment approach used in the Environmental Impact Assessment Report (EIAR) for the Proposed Development, during both the Construction Phase and the Operation Phase. This Technical Note should be read in conjunction with Chapter 8: Ornithology of the EIAR and all Additional Information for the Proposed Development (hereafter the Ornithology Chapter).

Baseline Conditions

A high-level overview of important bird species present or potentially present in the vicinity of the Connection Route was obtained from a review of the application documents submitted for the Glen Earrach Pumped Storage Hydro project and the following additional projects with survey areas which overlap the Connection Route:

- Loch Liath Wind Farm¹ – Large ornithology survey area which overlaps with the central section of the Connection Route; and
- Bingally 400kV Substation² – Survey area which overlaps with the western end of the Connection Route.

A desk study was carried out to identify nature conservation designations and records of important bird species (as defined in the Ornithology Chapter) potentially relevant to the Project. A stratified approach was taken when defining the desk study area, based on the likely Zone of Influence of the Project on different ornithological features. Accordingly, the desk study sought to identify:

- International nature conservation designations within 10 km of the Connection Route (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);

¹ Energy Consents Unit (2026). Loch Liath Wind Farm. Available at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00002182&T=0>

² The Highland Council (2026). Bingally Substation. Available at: <https://wam.highland.gov.uk/wam/applicationDetails.do?keyVal=SRVZANIHFCK00&activeTab=summary>

- National statutory nature conservation designations within 2 km of the Connection Route (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 Connection Route;

Assessment

This assessment has been undertaken on the assumption that the Project will be constructed in accordance with all industry standard mitigation measures to ensure compliance with best practice and legislation. As such the following impacts are scoped out and not considered further:

- Impacts on water quality during construction;
- Impacts on habitats due to the spread of Invasive non-native plant species;
- Mortality of breeding birds eggs/chicks, including indirect mortality through disturbance; and
- Direct impacts on habitats – it is assumed that all habitats lost to temporary construction areas will be reinstated. It is assumed that access tracks will be designed to avoid impacts to waterbodies.

The following impacts have been considered in the assessment:

- Disturbance and displacement of important bird species during construction – works associated with construction of the project could disturb birds or displace them from preferred habitat for the duration of the construction period;
- Displacement of important bird species during operation – The OHL structure could provide perching opportunities for predatory bird species which could increase predation of important bird species or result in displacement from habitat in the vicinity of the OHL. The Connection Route crosses a remote upland area with limited other structures, except at either end, and limited tree/woodland areas which could also attract predatory bird species; and
- Collision mortality during operation – The OHL infrastructure could pose a collision risk to important bird species and result in injury or mortality.

Important ornithological species/groups included in the assessment were determined based on professional judgement following a review of the likely baseline conditions and potential impacts from the project. Two designated sites within 2km of the Connection Route are not considered in detail in Table 1, namely Glen Affric National Nature Reserve and Corrimony RSPB Reserve, with neither site overlapping the Connection Route. It is considered that the assessment provided for individual species/species groups is equally applicable to these designated sites.

The assessment assumes that a full suite of ornithology surveys, including Vantage Point Surveys, will be undertaken for the Project at a later stage. Impact avoidance, mitigation and/or compensation measures are recommended with cognisance of this.

A high-level summary of baseline conditions for important bird species/groups, together with an assessment for each of the above impacts is provided in Table 1 below.

Table 1 Ornithology Assessment

Ornithology Feature	Baseline and Evaluation	Impact Pathway	Impact Avoidance, Mitigation and/or Compensation Options	Potential for Likely Significant Effects
North Inverness Lochs SPA ³	SPA designated for breeding Slavonian grebe. The SPA is approximately 1.4km from the Connection Route at its closest point. As detailed in the Ornithology Chapter Slavonian grebe nesting out with the SPA could be connected to the SPA population via the interchange of breeding birds between waterbodies, which could include SPA waterbodies (both within and between years). A maximum of six breeding pairs were recorded during the Loch Liath surveys. While the locations of these breeding sites were not published, potentially suitable breeding waterbodies are present along and adjacent to the Connection Route. The North Inverness Lochs SPA is of international importance.	Disturbance and displacement during construction.	- Exclusion zones around confirmed breeding sites during the early breeding season (April and May) to avoid displacement. - Exclusion zones around active breeding sites during the breeding season.	Impact avoidance and mitigation measures will likely reduce the potential for effects to negligible levels. There is therefore a low likelihood for significant effects.
		Displacement during operation.	Routing of OHL and access tracks to avoid confirmed Slavonian grebe breeding waterbodies by a minimum of 350m (ideally greater).	
		Collision mortality during operation.	- Routing of OHL to avoid confirmed Slavonian grebe breeding waterbodies by a minimum of 350m (ideally greater). - Installation of line markers on any OHL sections that are crossed by known or predicted Slavonian grebe flight paths⁴.	
Glen Affric to Strathconon SPA	SPA designated for breeding golden eagle. The SPA is approximately 2.9km from the Connection Route at its closest point. The Connection Route could overlap habitat within the golden eagle foraging range from the SPA. Extensive golden eagle activity was identified during the Loch Liath surveys including one active breeding site. Due to the presence of a known territory outside the SPA, it is considered likely that golden eagle activity in the vicinity of the Connection Route would be from non-SPA birds. Glen Affric to Strathconon SPA is of international importance.	N/A	N/A	There is therefore considered to be limited connectivity between the Connection Route and the SPA. There is therefore a low likelihood for significant effects.
Golden eagle	Two golden eagle breeding sites were identified during the Loch Liath surveys, one of which likely corresponds to the breeding site identified during the Glen Earrach Pumped Storage Hydro Surveys. Extensive golden eagle flight activity was recorded during the Loch Liath surveys, including crossing the Connection Route. Golden eagle are considered to be of Regional Importance.	Disturbance and displacement during construction.	Exclusion zones around confirmed breeding and roost sites to avoid disturbance and displacement.	Impact avoidance and mitigation measures will likely reduce the potential for effects to Negligible levels. There is therefore a low likelihood for significant effects.
		Displacement during operation.	Routing of OHL and access tracks to avoid golden eagle breeding and roost sites to a minimum of 1km for breeding sites.	
		Collision mortality during operation.	- OHL Routing to avoid breeding and roost sites and areas of high flight activity identified during Vantage Point Surveys. - Installation of line markers if areas of greater risk of collision are identified and cannot be avoided.	
Red-throated diver	A maximum of five breeding sites were identified during the Loch Liath surveys with the exact locations, and proximity to the Connection Route, unknown. Multiple potentially suitable breeding waterbodies are located in vicinity of the Connection Route. Red-throated divers are considered to be of Regional Importance.	Disturbance and displacement during construction.	Exclusion zones around active breeding sites during the breeding season.	Impact avoidance and mitigation measures will likely reduce the potential for effects to Negligible levels. There is therefore a low likelihood for significant effects.
		Displacement during operation.	Routing of OHL and access tracks to avoid confirmed breeding waterbodies by a minimum of 500m (ideally greater).	
		Collision mortality during operation.	OHL Routing to avoid breeding sites and areas of high flight activity identified during Vantage Point Surveys.	

³ Slavonian grebe are considered in relation to effects on designated sites only. The assessment for North Inverness Lochs SPA is also relevant for underlying SSSIs and more distant SPAs designated for Slavonian grebe as considered in the EIA for Glen Earrach Pumped Storage Hydro Project

⁴ Flight paths identified from Vantage Point surveys and/or as predicted between known breeding waterbodies.

Ornithology Feature	Baseline and Evaluation	Impact Pathway	Impact Avoidance, Mitigation and/or Compensation Options	Potential for Likely Significant Effects
			Installation of line markers if areas of greater risk of collision are identified and cannot be avoided.	
Black grouse	Lekking black grouse were recorded during the Bingally Substation and Glen Earrach Pumped Storage Hydro surveys at the western and eastern end of the Connection Route respectively. Five core lek sites were identified during the Loch Liath surveys with the exact location relative to the Connection Route unknown. Optimal black grouse habitat appears to be present primarily at the eastern and western ends of the Connection Route. Black grouse are considered to be of Regional Importance.	Disturbance and displacement during construction.	Exclusion zones around lek sites during the key lekking period (April and May).	Impact avoidance and mitigation measures will likely reduce the potential for effects to Negligible levels.
		Displacement during operation.	Routing of OHL and access tracks to avoid core lekking sites by a minimum of 750m.	There is therefore a low likelihood for significant effects
		Collision mortality during operation.	- OHL Routing to avoid core lekking sites and areas of high flight activity identified during Vantage Point Surveys. - Installation of line markers if areas of greater risk of collision are identified and cannot be avoided.	
Breeding waders	The breeding wader assemblage identified in the vicinity of the Connection Route during the Loch Liath surveys included territories of golden plover, greenshank, common sandpiper and dunlin. The breeding wader assemblage is considered to be of Local Importance.	Disturbance and displacement during construction.	- Pre-construction surveys to identify breeding sites. - Exclusion zones around active breeding sites during the breeding season.	Impact avoidance and mitigation measures will likely reduce the potential for effects to Site level significance at most. Site level effects will remain as the full suite of proposed mitigation may not be proportionate to apply to single territories / areas with lower breeding activity.
		Displacement during operation.	Routing of OHL and access tracks to avoid any identified breeding wader 'hotspots' or areas of higher activity.	There is therefore a low likelihood for significant effects.
		Collision mortality during operation.	- OHL Routing to avoid wader 'hotspots' and areas of high flight activity identified during Vantage Point Surveys. - Installation of line markers if areas of greater risk of collision are identified and cannot be avoided.	

Conclusion

Based on the assessment set out above, no likely significant effects on ornithology are identified. This conclusion assumes the implementation of the recommended impact avoidance and mitigation measures, informed by project-specific survey data at the detailed design stage. On that basis, no likely significant effects on ornithology have been identified arising from the Grid Connection Project, having regard to the cumulative assessment approach used in the EIAR for the Proposed Development.

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