

FEARNA STORAGE

Fearna Pumped Storage Hydro Scheme EIA Report

Chapter 8 – Terrestrial Ecology

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Executive Summary

This Ecological Impact Assessment (EcIA) chapter evaluates the potential ecological impacts associated with the proposed Fearna Pumped Storage Hydro (PSH) development, focusing on designated sites, habitats and protected species. The project aims to create a renewable energy storage facility through the construction of dams, reservoirs, access tracks, and associated infrastructure in the area surrounding Loch Quoich and Glen Garry. This chapter provides a comprehensive assessment of the ecological implications during both construction and operational phases, detailing predicted impacts, mitigation measures, biodiversity enhancements, and anticipated residual effects.

The proposed development site comprises a variety of ecologically sensitive areas, including Annex 1 habitats and Scottish Biodiversity List Priority Habitats, some of which qualify as Priority Peatland, Ancient Woodland, and Caledonian Pinewood. The project area also supports protected and notable species, including otter, pine marten, red squirrel, amphibians, reptiles, dragonflies, and other protected SBL invertebrates. The main potential impacts identified include:

- The construction of dams, access tracks, and reservoirs would result in the permanent loss of certain habitat areas and temporary loss/modification/degradation of others.
- Peat and carbon-rich soils would be lost and disturbed, affecting soil integrity and carbon storage. Construction activities may also alter water flow and quality, potentially impacting adjacent peatland, wetland, and aquatic habitats.
- Risks to protected and notable species include habitat degradation, fragmentation of foraging and commuting habitats, disruption of rest and breeding sites, pollution incidents, and potential for vehicle collisions.

To address these impacts, a 30-year Biodiversity Enhancement and Management Plan (BEMP) would be produced, with specific, measurable goals for habitat restoration, enhancement, and biodiversity net gain. An outline of this BEMP is included with this chapter at Appendix 8.7: OBEMP. Key mitigation and biodiversity net gain strategies include:

- Woodland, peatland, and montane scrub habitats would be restored or created in the Glen Garry and Clunes Forest areas to compensate for habitat loss.
- A Peat and Soil Management Plan and water quality protocols (aligned with SEPA guidelines) would reduce the risk of contamination and protect water and soil resources.
- Measures such as timed vegetation clearance, speed restrictions, translocation of vulnerable species would be implemented to reduce disturbance to wildlife and minimise ecological impacts during construction activities.

An Invasive Non-Native Species (INNS) Management Plan would be implemented to prevent the spread of invasive species, including biosecurity protocols for construction activities.

After the application of mitigation measures, the residual effects on most ecological receptors are expected to be non-significant, with a moderate to high confidence level in the effectiveness of the mitigation strategies. Long-term habitat restoration efforts are anticipated to promote recovery and provide biodiversity net gain, reducing long-term impacts on local populations and sensitive habitats.

8.1 Introduction

8.1.1 EnviroCentre Limited was commissioned by Fearna PSH Ltd. (the Applicant) to undertake an Ecological Impact Assessment (EclA) for the proposed Pumped Storage Hydro (PSH) scheme at Loch Fearna, the associated Southern Access Road (SAR), and the Main Site Compound area, cumulatively referred to hereafter as the 'Proposed Development', which is displayed in **Figure 1.1 – Scheme Layout with Grid References**.

8.1.2 This chapter details the specialist terrestrial ecological studies undertaken and the results of the assessment. The assessment has been carried out according to the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) by EnviroCentre Limited Lead-Senior Ecologist Steven Duncan (BSc) who is an Associated member of CIEEM (ACIEEM) who follows its Code of Professional Conduct and reviewed by EnviroCentre Limited Principal Ecologist Mhairi MacKintosh who is a Full member of CIEEM. It is supplemented by the technical reports contained within Volume 4: Appendices of this EIA Report.

Chapter Scope

8.1.3 The purpose of this chapter is to:

- Identify and describe the Important Ecological Features (IEFs) which may be impacted by the Proposed Development.
- Describe all potentially significant ecological impacts associated with the Proposed Development.
- Consider the avoidance and mitigation measures to be adopted within the design, construction and operational phases and those required to ensure compliance with nature conservation legislation and to address adverse impacts.
- Provide an assessment of the significance of any residual impacts.
- Set out the requirements for post-construction monitoring.
- Detail actions to be taken to deliver biodiversity enhancements.

8.2 Scope and Consultation

8.2.1 Potential impacts to the following features have been considered within this assessment, based on the results of baseline studies (**Volume 4: Appendices 8.1 to 8.7**), and input from stakeholder consultation:

- Designated sites.
- Habitats and notable flora.
- Protected and/or notable species and species groups.

Study Area

8.2.2 The Study Area encompasses the area over which all desk-based and field data were gathered to inform the assessment presented in this Chapter. The Study Area comprises the PSH and SAR areas, plus appropriate buffers, as depicted in Technical Appendix 8.1a: PSH National Vegetation Classification Survey Report and Technical Appendix 8.1b: SAR National Vegetation Classification Survey Report.

Potential Impacts and Zone of Influence

8.2.3 Potential significant impacts in the absence of mitigation considered during Scoping were as follows:

Construction Phase

- Habitat loss, degradation, and fragmentation (permanent and temporary) from the flooding of habitats within the proposed inundation area and construction of associated infrastructure.
- Possible changes to groundwater flows, pollution of surface-water and groundwater pathways, and alterations to soil structure and profile, affecting groundwater dependent terrestrial ecosystems (GWDTEs) and peatland habitat types.
- The loss, degradation, and fragmentation of habitat important for the breeding success of invertebrates.
- Inadvertent killing or injuring of fauna.
- Disturbance to fauna due to vehicular traffic, plant, the presence of construction workers, lighting, noise and vibration (including from blasting activities).
- Permanent losses of protected or notable species' habitats, shelters and breeding or feeding areas, from the installation of proposed infrastructure and flooding of inundation areas.
- Sediment or other pollution of watercourses from construction activities and vehicular traffic.
- Inadvertent transfer of invasive non-native species, for example through vehicle movements and hydrological pathways.

Operational Phase

- Vehicular traffic and operational lighting causing collision risk and/or disturbance to fauna.
- Environmental incidents and accidents (e.g. spillages) from maintenance activities or vehicles.

Consultation Responses

8.2.4 To inform the scope of the assessment for the Proposed Development, consultation was undertaken with statutory and non-statutory bodies. Table 8-1 overleaf summarises the scoping and consultation responses relevant to the Landscape and Visual Assessment and provides information on where and/or how points raised have been addressed in this assessment.

8.2.5 Full details on the consultation responses and scoping opinion can be reviewed in **Chapter 5: Scoping and Consultation**, and associated appendices.

Table Error! No text of specified style in document.-1: Consultation Responses.

Consultee	Issue Raised	Detail	Response/Action Taken
The Highland Council Scoping response 17 July 2024	Baseline survey requirements	The EIAR should provide a baseline survey of the bird and animals (mammals, reptiles, amphibians, etc.) interest on site. It needs to be categorically established what species are present on the site, and where, before a future application is submitted. Further the EIAR should provide an account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans.	Comprehensive baseline survey results are displayed in Appendices 8.1 to 8.7 in Volume 4 of this EIAR and summarised in Section 8.6 Baseline Conditions.
	Habitat enhancement and mitigation	Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide (see later). Details of any habitat enhancement programmes (such as native-tree planting, stock exclusion, etc.) for the proposed site should be provided. It is expected that the EIAR will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.	Detailed habitat enhancement and mitigation measures are detailed in Section 8.10: Mitigation and Compensation and Section 8.12: Biodiversity Enhancements.

Consultee	Issue Raised	Detail	Response/Action Taken
	Peat assessment	The developer should undertake a specific peat assessment to inform the siting, design, or other mitigation in order to overcome significant effects on peatland and Carbon Rich Soils, Deep Peat, and Priority Peatland Habitat (CPP). Attention is drawn to paragraph 4.34 on page 24 of the OWESG, which discusses peat and CPP. We also expect an up-to-date National Vegetation Classification (NVC) survey and a commitment to undertake peatland restoration on an area of increased size to that of the application site. The Environmental Impact Assessment Report (EIAR) should provide details of all direct, indirect, permanent, and temporary impacts to any bog habitat present on the site.	Results of the NVC survey including detailed plans are included in Technical Appendix 8.1 and summarised in Section 8.6: Baseline Conditions.
	Designated sites	The EIAR should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the proposed development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. NatureScot provide advice on the impact on designated sites.	Details of local designated conservation sites are included in Technical Appendices 8.1 to 8.5 and are scoped out of this assessment in Table 8-2: Scoping Summary. Details of all direct, indirect, and temporary impacts to bog habitats are detailed in Section 8.8: Impact Assessment.
	Ecology - GWDTE	The EIAR should include a map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDTE) and buffers.	Results of the NVC survey including extent and assessment of potential GWDTE are detailed in Technical Appendix 8.1a and 8.1b and summarised in Section 8.6: Baseline Conditions.
	Ecology - HMP and SPPs demonstrating mitigation and enhancement measures	A draft or outline Habitat Management Plan (HMP) and Species Protection Plan (SPP) should be produced as part of the EIAR, including any proposals for mitigation and enhancement in relation to important habitats and species. Any compensatory planting plans should be carefully considered and included in the HMP. The HMP should include a comprehensive monitoring programme for all habitat improvements, and breeding birds on the site.	An OBEMP is provided in Technical Appendix 8.7. A full BEMP and species specific SPPs will be produced, per recommendations in Section 8.10: Mitigation and Compensation.
	BEMP requirements	The Biodiversity Enhancement and Management Plan must demonstrate to the satisfaction of the Planning Authority that the development will accord with Policies 57-60 of the HwLDP [Highland-wide Local Development Plan]. The Biodiversity Enhancement and Management Plan will be carried out by a suitably qualified and experienced consultant. In rare cases where site constraints result in the applicant being unable to deliver one or more of the above criteria, consideration may be given to developer contributions as to enable biodiversity enhancements to be implemented elsewhere in line with the mitigation hierarchy to allow offset, off- site measures.	An OBEMP is provided in Technical Appendix 8.7. This document and the compensation strategy summarised in Section 8.12: Biodiversity Enhancements of this chapter satisfy Policies 57-60 of the Highland-wide Local Development Plan. A full BEMP and species specific SPPs will be produced, per recommendations in

Consultee	Issue Raised	Detail	Response/Action Taken
			Section 8.10: Mitigation and Compensation.
	Peat condition categorisation	The Peatland Condition Assessment photographic guide lists the criteria for each condition category and illustrates how to identify each condition category. This should be used to identify peatland in near natural condition and can be helpful in identifying areas where peatland restoration could be carried out.	Information pertaining to peatland condition assessment is included in Appendix 8.7.1 – Peatland Restoration Assessment
NatureScot Scoping Response 3 July 2024	Biodiversity enhancement requirements	Policy 3 (Biodiversity) also applies to all development proposals, so any proposal affecting carbon-rich soils and peatlands must also take into account the requirements to conserve, restore and enhance biodiversity, including priority peatland habitats.	An OBEMP is provided in Technical Appendix 8.7. This document and the compensation strategy summarised in Section 8.12: Biodiversity Enhancements detail biodiversity enhancement objectives relating to priority peatland habitat. A full BEMP and will be produced, per recommendations in Section 8.10: Mitigation and Compensation.
	Terrestrial Ecology	We agree with the scope of further surveys and assessments. We provide further advice through our standing guidance: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species .	N/A
NDSFB Scoping Response 3 July 2024	BNG opportunities	Under National Planning Framework 4, all major developments such as PSH have to demonstrate that “the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention”. For some proposed PSH schemes this will be challenging, but for Fearna PSH there are many opportunities for net biodiversity gain (NBG), including addressing long-standing impacts of the 1950s conventional hydro scheme on salmon. The redesign of the Gearr Garry compensation flow intake, so that it is fed from the loch surface, rather than the base of the dam, is one NBG opportunity, but there are many others. Opportunities include riparian tree planting in upper Garry tributaries, “trap and truck” of salmon smolts from the upper Garry to by-pass Invergarry Dam, the modernisation of downstream smolt passage at Invergarry Dam (to provide another option than having to go through the generation tunnel, turbines, and tailrace), the provision of downstream passage for post-spawning salmon (kelts) and improved sediment management downstream of hydro impoundments.	Biodiversity net gain opportunities associated with terrestrial ecology are discussed in Section 8.12: Biodiversity Enhancements and detailed further in Technical Appendix 8.7: OBEMP. Biodiversity net gain opportunities associated within freshwater ecology are discussed in Chapter 11: Freshwater Ecology .

Consultee	Issue Raised	Detail	Response/Action Taken
RSPB Scoping Response 3 July 2024	Biodiversity Enhancement	The Applicant should give early consideration to how positive effects for biodiversity would be delivered. The mitigation hierarchy should be followed, and any mitigation, compensation and enhancement measures must be clearly and separately identified within the EIA and other accompanying documents. It is RSPB Scotland's current view that biodiversity enhancement measures should not be delivered on designated sites for nature, apart from in a small number of exceptional circumstances, and enhancement measures must be truly additional. As much detail as possible should be provided in a HMP prior to consent in order that the benefits be fully considered alongside the application. Careful consideration should also be given to how any enhancement will be delivered and monitored in the long term and if any agreement and collaboration with other landowners and managers is needed. For a development of this size, we would recommend that biodiversity enhancement is considered at a landscape scale. This should consider existing habitat networks in the area and any ongoing species focused projects such as those for Common Scoter, North Atlantic Salmon, White-faced Darter, Azure Hawker and Northern Emerald dragonflies; and could include the following: - Peatland restoration in line with NatureScot guidance. - Riparian and native woodland expansion, including Caledonian pinewood regeneration (avoiding deep peat and sensitive areas supporting birds of open habitats). - Habitat restoration through measures such as deer control and <i>Rhododendron ponticum</i> removal. - Invasive non-native Mink control to reduce their impacts on ground-nesting birds and other wildlife. - Habitat restoration at Lochan an Staic.	An OBEMP is provided in Technical Appendix 8.7. This document and the compensation strategy summarised in Section 8.12: Biodiversity Enhancements detail biodiversity enhancement objectives relating to priority peatland habitat. A full BEMP will be produced, per recommendations in Section 8.10: Mitigation and Compensation.
	Biodiversity Enhancement	The Applicant has specifically sought feedback on the approach to measuring biodiversity enhancement. It is our general view that this could be done by understanding the existing baseline for habitats and species (including birds and aquatic invertebrates) and then monitoring future habitat condition and species presence and abundance and comparing to understand the level of enhancement. Although a form of metric could be used, this is not necessary as there is no metric currently in place for Scotland and this type of development and any existing metric is likely to have significant limitations, and good outcomes can be achieved using other methods.	A baseline biodiversity unit calculation, conducted in accordance with the Natural England Statutory Biodiversity Metric and detailing the units of habitat loss required to facilitate the development, is provided in Technical Appendix 8.6: Baseline Biodiversity Assessment Report.
Glen Garry Community Council Scoping Response 3 July 2024	Terrestrial Ecology	There is much local knowledge available within the heads of people who live and work on the ground. Asking them is something that should be considered as part of any survey. Amphibians and reptiles should not be 'scoped out'. It may be correct that the site is unlikely to support these species but how would we know without a survey?	The Applicant has consulted with local people through attendance at community council meetings and at public consultation events.
Buglife Scoping Response 3 July 2024	Proposed scope of terrestrial invertebrate surveys	Buglife is concerned that the proposed scope for terrestrial invertebrates is limited to dragonfly surveys. Dragonfly surveys are clearly appropriate given the habitats present and the records returned from the desk study. However, given the range of habitats impacted, Buglife strongly recommends that a range of invertebrate surveys are undertaken, as determined by a suitably qualified entomologist.	The results of an Invertebrate Survey are presented in Technical Appendix 8.5, and species scoped into this report are further detailed in Section 8.6: Baseline Condition.

Zone of Influence

- 8.2.6 The CIEEM Guidelines identify the Zone of Influence (Zol) as the area over which ecological features may be subject to significant effects as a result of the Proposed Development and associated activities. This is likely to extend beyond the Proposed Development Area (PDA), for example where there are mobile species or hydrological links beyond the site boundaries. Features found to be present or likely to be present within the predicted Zol and which have potential to be significantly affected (positively and negatively) by the Proposed Development are included within the scope of this assessment. The features considered, associated Zol, decision to scope in/out and justification are summarised in Table 8-2 overleaf. Where impacts to features are considered likely to be similar, these have been grouped for succinctness.

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IEF	Zol	Scoping Decision	Justification
Garry Falls SSSI Upland mixed ash woodland, bryophyte assemblages	Within the development footprint and up to the furthest extent of hydrological connection (furthest extent at which pollution impacts are expected).	Scoped out	The closest feature of the designated site is located approximately 0.45km upstream from the PDA. As no pollution pathways are anticipated, Garry Falls SSSI is considered to be outwith the Zol and no significant effects are anticipated.
South Laggan Fen SSSI Wetlands	Within the development footprint and up to the furthest extent of hydrological connection (furthest extent at which pollution impacts are expected).	Scoped out	South Laggan Fen SSSI lies 4.85km from the PDA and is considered to be outside the primary Zol due to significant distance and dilution effects on potential hydrological impacts. While there is a hydrological connection, the long distance reduces the likelihood of measurable pollution impacts on the SSSI's wetlands.
The West Inverness-shire Lochs (Multiple Sites) SSSI/SPA Population of breeding Common Scoter (<i>Melanitta nigra</i>) and Annex 1 Black Throated Divers (<i>Gavia arctica</i>)	Within the development footprint and up to the furthest extent of hydrological connection (furthest extent at which pollution impacts are expected).	Scoped out	The West Inverness-shire Lochs SSSI and SPA lies 0.66 km from the PDA, and potential impacts on terrestrial habitats utilised by the qualifying features are not expected. These designated sites are considered to be outside the Zol, and no significant effects are anticipated regarding terrestrial ecology. The effects on ornithology are considered in Chapter 10 – Ornithology.
Bryophytes, Lichens, and Fungi			
Oceanic Bryophytes Sites - Northeast of Loch Fearna (NH00-09). Site Category E. - Southwest of Loch Fearna (NH00-08). Site Category C.	Within the footprint of the development and the	Scoped out	Category C sites have been assessed by the British Bryological Society (BBS) and scored below the threshold as outlined in the Oceanic Bryophyte Sites methodology. Category E sites, although not surveyed, are not expected to

IEF	Zol	Scoping Decision	Justification
- Allt a' Mheil (upstream part) (NH00-11). Site Category C. - Allt a' Mheil (downstream part) (NH00-10). Site Category C. - Garr Garry (NH00-06). Site Category E.	furthest extent of hydrological connections		hold significant conservation value. As neither category meets the threshold for watercourses of conservation importance for rare bryophytes, no significant negative effects on oceanic bryophyte conservation-sites as a result of raising/lowering of water levels and change to riparian humidity conditions are predicted.
Bryophytes - Green Shield-moss (<i>Buxbaumia viridis</i>) - Yellowish Fork-moss (<i>Dichodontium flavescens</i>)	Within the footprint of the development and the furthest extent of hydrological connections	Scoped out	Two SBL bryophyte species of conservation concern were identified within 5 km of the proposed development area during the desk study, and it is likely that more SBL bryophyte species are present within native woodland surrounding the SAR. These species are closely associated with riparian and ancient woodland habitats, which typically lie outside the potential impact zone of the development. Given their specific habitat requirements, stable humidity, consistent shade, and unaltered hydrological conditions within ancient and riparian woodland, no significant changes to water levels, humidity, or shade conditions in these habitats are anticipated from the Proposed Development. Although suitable conditions currently exist within the eastern SAR development area surrounding the proposed new River Garry bridge and associated access, part of this area of ancient woodland is scheduled for clearance under a previously consented scheme (Coire Glas). Consequently, this area is predicted to be sub-optimal for SBL bryophytes at the time of the SAR development. Therefore, no significant negative effects on SBL bryophyte species are predicted, and further detailed assessment has been scoped out.
Fungi	Within the footprint of the development	Scoped out	No SBL fungi species of conservation concern were identified within 5 km of the proposed development area during the desk study. Fungi of conservation importance are typically associated with stable ancient woodland habitats, especially mature trees and undisturbed soils. Given the limited extent of habitat disturbance anticipated from the proposed development and the absence of known SBL fungi records nearby, no significant negative effects on

IEF		Zol	Scoping Decision	Justification
				fungi are predicted. Therefore, further detailed assessment has been scoped out.
Lichens • <i>Arthonia ilicina</i> • <i>Elixia flexella</i> • <i>Hypotrachyna sinuosa</i> • <i>Lecania cyrtella</i> • <i>Leptogium brebissonii</i> • <i>Leptogium burgessii</i> • <i>Lobaria pulmonaria</i> • <i>Micarea alabastrites</i> • <i>Micarea synotheoides</i> • <i>Nephroma laevigatum</i> • <i>Opegrapha brevis</i> • <i>Pannaria conoplea</i> • <i>Pannaria rubiginosa</i> • <i>Parmeliella parvula</i>	• <i>Parmeliella testacea</i> • <i>Peltigera britannica</i> • <i>Peltigera collina</i> • <i>Platismatia norvegica</i> • <i>Porocyphus kenmorensis</i> • <i>Pseudocyphellaria norvegica</i> • <i>Ptychographa xylographoides</i> • <i>Pyrenula occidentalis</i> • <i>Rhizocarpon amphibium</i> • <i>Stereocaulon delisei</i> • <i>Sticta limbata</i> • <i>Sticta sylvatica</i> • <i>Strigula confuse</i> • <i>Thelotrema macrosporum</i>	Within the footprint of the development and the furthest extent of hydrological connections	Scoped out	Twenty-three lichen species of conservation concern were identified within 5 km of the proposed development area during the desk study, nine of which were recorded within 100m of the development area. These records were generally associated with the Garry Falls SSSI and the Glengarry Forest (upper Allt Criche). <i>Lobaria pulmonaria</i> was identified frequently within the W17 woodland within the eastern extent of the SAR during field survey. These SBL lichen species typically associated with mature oak and Scots pine trees within ancient woodland. Given their specific habitat requirements, stable humidity, good air quality, and unaltered hydrological conditions within ancient and riparian woodland, no significant changes to water levels, humidity, or light conditions in these habitats are anticipated from the Proposed Development. Although suitable conditions currently exist within the eastern SAR development area surrounding the proposed new River Garry bridge and associated access, part of this area of ancient woodland is scheduled for clearance under a previously consented scheme (Coire Glas). Consequently, this area is predicted to be sub-optimal for SBL lichens at the time of the SAR development. Furthermore, by design, siting of passing places and road widening areas along the SAR would avoid mature native trees, retaining habitat for lichens. Therefore, no significant negative effects on SBL lichen species are predicted, and further detailed assessment has been scoped out.
Habitats				
NVC communities • U4 <i>Festuca ovina</i>-<i>Agrostis capillaris</i>-<i>Galium saxatile</i> grassland • U20 <i>Pteridium aquilinum</i>-<i>Galium saxatile</i> community		Within the PDA.	Scoped out	These vegetation communities are present within or directly adjacent to the PDA. However, as they are widespread in the local area and not of conservation concern, no significant effects are predicted.

IEF	Zol	Scoping Decision	Justification
W23 <i>Ulex europaeus</i>-<i>Rubus fruticosus</i> scrub			
NVC Communities - M6 <i>Carex echinata</i>-<i>Sphagnum fallax/denticulatum</i> mire - U5 <i>Nardus stricta</i>-<i>Galium saxatile</i> grassland - W18 <i>Pinus sylvestris</i> – <i>Hylocomium splendens</i> woodland (outside Caledonian Pinewood Inventory Core Zone) - M29 <i>Hypericum elodes</i>-<i>Potamogeton polygonifolius</i> soakway - S9 <i>Carex rostrata</i> swamp - W4c <i>Betula pubescens</i>-<i>Molinia caerulea</i> woodland, <i>Sphagnum</i> sub-community	Within/directly adjacent to the PDA.	Scoped in	These vegetation communities are present within or directly adjacent to the PDA and are of conservation concern. There is potential for significant direct and indirect effects as a result of the proposed development through habitat loss, modification of the hydrological regime, and edge effects.
NVC Communities - W9 <i>Fraxinus excelsior</i> – <i>Sorbus aucuparia</i> - <i>Mercurialis perennis</i> woodland - W11 <i>Quercus petraea</i>-<i>Betula pubescens</i>-<i>Oxalis acetosella</i> woodland	Within the PDA.	Scoped out	These vegetation communities are of conservation concern; however, they are present out with the Zol and no negative effects are predicted.
NVC Communities - A22 <i>Littorella uniflora</i>-<i>Lobelia dortmanna</i> community - A24 <i>Juncus bulbosus</i> community - H17 <i>Calluna vulgaris</i>-<i>Arctostaphylos alpinus</i> heath - H14 <i>Calluna vulgaris</i>-<i>Racomitrium lanuginosum</i> heath - H21 <i>Calluna vulgaris</i>-<i>Vaccinium myrtillus</i>-<i>Sphagnum capillifolium</i> heath - M1 <i>Sphagnum auriculatum</i> bog pool community - M3 <i>Eriophorum angustifolium</i> bog pool community - M10 <i>Carex dioica</i>-<i>Pinguicula vulgaris</i> mire	Within the PDA.	Scoped in	These vegetation communities are present within or directly adjacent to the PDA and are of conservation concern. There is potential for significant direct and indirect effects as a result of the proposed development through habitat loss, modification of the hydrological regime, and edge effects.

IEF	Zol	Scoping Decision	Justification
- M15 <i>Trichophorum cespitosum</i>-<i>Erica tetralix</i> wet heath - M25 <i>Molinia caerulea</i>-<i>Potentilla erecta</i> mire (on peat >50cm) - W17 <i>Quercus petraea</i>-<i>Betula pubescens</i>-<i>Dicranum majus</i> woodland (oak dominated) - W18 <i>Pinus sylvestris</i> – <i>Hylocomium splendens</i> woodland (within Caledonian Pinewood Inventory Core Zone)			
Non-NVC Communities (UKHab Habitats) - Modified Grassland - Other Scot's Pine Woodland - Other Coniferous Woodland - Upland Heathland over Clear-fell - Upland Flushes, Fens, and Swamps over Clear-fell - Inland Rock (Quarries) - Buildings - Other Developed Land	Within the PDA.	Scoped out	These habitats are present within the PDA or adjacent; however, impacts on the habitats are expected to be limited and not to affect their conservation status in the locale.
Terrestrial Mammals			
Bats - Common pipistrelle (<i>Pipistrellus pipistrellus</i>) - Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) - Daubenton's bat (<i>Myotis daubentonii</i>) - Brown long-eared bat (<i>Plecotus auritus</i>)	Within and up to 50m from the PDA	Scoped out	Features with the potential to support roosting bats are present within the PDA, however, their suitability is low and no roosting bats have been identified during the surveys. Although limited negative effects on foraging and commuting bats within the PDA are possible, it is not expected that the local conservation status of bats would be affected as a result of the proposed works on the SAR and PSH.
Badger (<i>Meles meles</i>)	Within and up to 100m from the PDA	Scoped out	The majority of the PDA provide little suitability for badger. An active badger sett was identified within the Study Area; however, the sett was situated over

IEF	Zol	Scoping Decision	Justification
			100m of distance from the PSH working area and, as a result it is considered to be outwith the Zol.
Otter (<i>Lutra lutra</i>)	Within and up to 250m up and downstream from watercourses within the PDA	Scoped in	The major rivers in the locale where proposed bridges are expected to be built, provide suitable resources for otter. Two potential holt features were identified within the Zol and otter spraint has been identified along multiple watercourses within the PDA, and as a result, some negative effects on otter are expected.
Water Vole (<i>Arvicola amphibius</i>)	Within and up to 250m up and downstream from watercourses within the PDA	Scoped out	The majority of the watercourses within the PDA display limited suitability for water vole and presence of American mink was identified within the PDA. The only section of watercourses that could potentially provide a limited suitability for water voles are located over 250m away from the SAR and, therefore, are located outwith the Zol.
Pine Marten (<i>Martes martes</i>)	Within and up to 50m from the PDA	Scoped in	Areas of pine woodland and other coniferous woodland within the PDA for the SAR, offer opportunities for foraging, sheltering and commuting pine marten. As a limited amount of vegetation removal is expected, some negative effects on pine marten may be present.
Red Squirrel (<i>Sciurus vulgaris</i>)	Within and up to 50m from the PDA	Scoped in	Areas of pine woodland and other coniferous woodland within the PDA for the SAR, offer opportunities for drey creation, foraging and commuting red squirrel. As a limited amount of vegetation removal is expected along the SAR, some negative effects on red squirrel may be present.
Mountain Hare (<i>Lepus timidus</i>)	Within and up to 50m from the PDA	Scoped out	The upland habitats within the PDA offers suitable opportunities for sheltering, foraging and commuting mountain hare. However, these habitats are widespread in the locale and their loss is not expected to significantly affect the local conservation status of mountain hare.

IEF	Zol	Scoping Decision	Justification
Red Deer (<i>Cervus elaphus</i>) & Roe Deer (<i>Capreolus capreolus</i>)	Within the PDA	Scoped out	Both red and roe deer are widespread in the locale and the loss of suitable foraging impacts within the PDA is not expected to have negative effects on deer. Furthermore, it is not expected that the loss of habitats within the PDA would lead to a significant increase in foraging pressures by deer on other habitats in the locale and the local population of deer is actively managed by the Knoydart Deer Management Group.
Other Species			
Amphibians Common toad (<i>Bufo bufo</i>)	Within and up to 50m from the PDA	Scoped in	A high degree of suitable habitat for amphibians is present throughout the PDA particularly across the heathland and woodland where bog pools, ponds, and wet ditches are a prevalent feature, with resources to support breeding and hibernating populations present in the locale at all times of the year.
Reptiles - Slow worm (<i>Anguis fragilis</i>) - Common lizard (<i>Zootoca vivipara</i>) - Adder (<i>Vipera berus</i>)	Within and up to 50m from the PDA	Scoped in	Slow worm have been identified along the SAR within the PDA. The habitats along the SAR and PSH provide good opportunities for reptiles and reptiles are likely to be using the areas for commuting and basking.
Invertebrates - Argent and sable (<i>Rheumaptera hastata</i>) - Broom moth (<i>Ceramica pisi</i>) - Large heath butterfly (<i>Coenonympha tullia ssp. scotica</i>) - Moss carder bee (<i>Bombus muscorum</i>) - Billberry bumblebee (<i>Bombus monticola</i>) - Northern dart (<i>Xestia alpicola</i>) - Small heath butterfly (<i>Coenonympha pamphilus</i>) - Small pearl-bordered fritillary (<i>Boloria selene</i>)	Within the PDA	Scoped in	The following SBL invertebrate species of conservation concern were identified during invertebrate field studies and desk studies as occurring within wet heathland and blanket bog habitats, which are anticipated to be the most impacted by the proposed development. Consequently, negative effects on these species are expected due to habitat loss

IEF	Zol	Scoping Decision	Justification
Odonates - Azure hawker (<i>Aeshna caerulea</i>) - Northern emerald (<i>Somatochlora arctica</i>) - White-faced darter (<i>Leucorrhinia dubia</i>)	Within the PDA	Scoped in	Azure hawker and northern emerald are both species confirmed to be present within the development footprint. The habitats within the PDA offer suitable opportunities for azure hawker, northern emerald and white-faced darter and the PDA for the PSH is considered to be a stronghold for azure hawker and negative effects on the species, as well as other odonates are expected.

8.3 Legislation, Policy and Guidance

Legislative Context

8.3.1 The following legislation has been considered in the assessment:

- International Union for the Conservation of Nature (IUCN) Red List of Threatened Species¹.
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (The Habitats Directive)².
- Environmental Impact Assessment (EIA) Directive (2014/52/EU) on assessing the potential effects of projects on the environment³.
- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017⁴.
- The Water Environment and Water Services (Scotland) Act 2003 (WEWS Act)⁵.
- Wildlife and Countryside Act 1981 (as amended) (WCA)⁶.
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)⁷.

Policy Context

8.3.2 The following policy has been considered in the assessment:

- National Planning Framework 4⁸.
- Scottish Biodiversity List (SBL)⁹.
- Scotland's Biodiversity Strategy to 2045¹⁰.
- The Highland-wide Local Development Plan (LDP).

Technical Guidance

8.3.3 The following technical guidance has been considered in the assessment:

- British Standard (BS) 42020:2013: Biodiversity Code of Practice for Planning and Development 2013¹¹.
- The Highlands Local Biodiversity Action Plan (LBAP)¹².

¹ Available from: [IUCN Red List of Threatened Species](#) (Accessed September 2024)

² Available from: [The Habitats Directive - European Commission](#) (Accessed September 2024)

³ Available from: [Environmental Impact Assessment - European Commission](#) (Accessed September 2024)

⁴ Available from: [The Town and Country Planning \(Environmental Impact Assessment\) \(Scotland\) Regulations 2017](#) (Accessed September 2024)

⁵ Available from: [Water Environment and Water Services \(Scotland\) Act 2003](#) (Accessed September 2024)

⁶ Available from: [Wildlife and Countryside Act 1981](#) (Accessed September 2024)

⁷ Available from: [The Conservation \(Natural Habitats, &c.\) Regulations 1994](#) (Accessed September 2024)

⁸ Available from: <https://www.gov.scot/publications/national-planning-framework-4-revised-draft/> (Accessed September 2024)

⁹ Available from: <https://www.nature.scot/doc/scottish-biodiversity-list> (Accessed September 2024)

¹⁰ Available from: <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/documents/> (Accessed October 2024)

¹¹ Available from: [BS 42020:2013 | 31 Aug 2013 | BSI Knowledge](#)

¹² Available from: [Highland Nature: Biodiversity Action Plan 2021 – 2026 - Highland Environment Forum](#) (Accessed September 2024)

- Energy Supplementary Guidance¹³.
- CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, *Version 1.3*¹⁴.
- NatureScot Development on Peatland Guidance¹⁵.

8.4 Methodology

Desk Study

- 8.4.1 A desk study for the PSH area was conducted in June 2023 and updated in July 2024 (together with the inclusion of the SAR area), to gather baseline data in relation to the site. The following sources were checked:
- Highland Biological Record Centre (HBRC) Biological Records supplied records for notable and protected floral species within 2km of the site.
 - NatureScot Sitelink website¹⁶ for statutory designated sites up to 5km from the site (PSH & SAR).
 - The Highland-wide Local Development Plan (LDP)¹⁷ for non-statutory designated sites up to 2km from the site.
 - Records of ancient woodland and Scottish native woodland available through Scotland's Environment Web¹⁸, within a 2km radius of site.
 - The Caledonian Pinewood Inventory¹⁹ to identify areas to identify areas of Caledonian pinewood, regeneration zones, and buffer zones within or adjacent to the site.
 - Oceanic Bryophytes Hydro Planning Database²⁰ to identify sensitive bryophyte communities of conservation concern.
 - NBN Atlas²¹ records for notable or protected species records within a 2km of the site.
 - Saving Scotland's Red Squirrel (SSRS) Sightings Map²², for records of squirrel sightings within a 2km radius from the site.
 - The Scottish Biodiversity List²³ for priority habitats and species.

¹³ Available from: [Renewable Energy Supplementary Planning Guidance | Scottish Borders Council](#) (Accessed September 2024)

¹⁴ Available from: [EcIA-Guidelines-v1.3-Sept-2024.pdf](#) (Accessed September 2024)

¹⁵ Available from: [Advising on peatland, carbon-rich soils and priority peatland habitats in development management | NatureScot](#) (Accessed September 2024)

¹⁶ Available from: [SiteLink - Map Search](#) (Accessed September 2024)

¹⁷ Available from: [Highland-wide Local Development Plan | Highland-wide Local Development Plan | The Highland Council](#) (Accessed September 2024)

¹⁸ Available from: <https://www.environment.gov.scot/maps/scotlands-environment-map/> (Accessed September 2024)

¹⁹ Available from: [Caledonian Pinewood Inventory - data.gov.uk](#) (Accessed September 2024)

²⁰ Available from: [Oceanic Bryophytes Hydro Planning Database](#) (Accessed September 2024)

²¹ Available from: [NBN Atlas - UK's largest collection of biodiversity information](#) (Accessed September 2024)

²² Available from: [Saving Scotland's Red Squirrels – Transforming hope for Scotland's red squirrels](#) (Accessed September 2024)

²³ Available from: [Scottish Biodiversity List | NatureScot](#) (Accessed September 2024)

- The Highland LBAP 2021-2026¹², for local priority habitats and species; and
- Aerial imagery from Google Earth²⁴.
- Peatland and Carbon Map (2016) ²⁵.
- British Geology Survey Viewer Tool²⁶.
- Ordnance Survey 1:25,000 and 1:50,000 maps²⁷.

Field Surveys

- 8.4.2 Field studies at the Fearna PSH and SAR sites were conducted between June 2023 and August 2024. The results of these surveys are presented in Volume 4: Appendices of this EIA Report. Details of the field studies are detailed below:
- 8.4.3 A Protected Species Survey and NVC survey of the PSH was undertaken by EnviroCentre Limited over five days between the 12th - 16th of June 2023. The surveys were designed using the guidelines endorsed by NatureScot and CIEEM, as well as the Joint Nature Conservation Committee (JNCC) handbook and focussed on appraising vegetation communities on the site and those species which have potential to utilise habitats in or around the site.
- 8.4.4 The Protected Species and National Vegetation Classification (NVC) of the SAR was undertaken by EnviroCentre Limited over nine days between 13th - 17th of May 2024 and 10th - 14th June 2024.
- 8.4.5 An otter monitoring survey via camera trapping was undertaken over the course of three weeks (6th August – 29th August 2024), at the location of a potential holt near the Glen Garry car park on the SAR. The otter monitoring was undertaken in accordance with current guidelines²⁸ for otter monitoring and camera trapping.
- 8.4.6 An invertebrate survey was undertaken at the PSH and SAR between 6th and 8th August 2024. The survey was designed using the Buglife survey guidelines²⁹.
- 8.4.7 An odonate survey was undertaken at the PSH and SAR over the course of nine days between 9th – 11th July 6th – 8th August, and 19th – 21st August 2024. The survey was designed according to current guidelines by the British Dragonfly Society (BDS) for undertaking adult, larvae and exuviae sampling of odonates³⁰.

Evaluation of Important Ecological Features

- 8.4.8 The evaluations are applied to those sites, habitats and species that have been scoped into the assessment. These are termed Important Ecological Features (IEFs).
- 8.4.9 European, national and local governments and specialist organisations have together identified a large number of sites, habitats and species that provide the key focus for biodiversity conservation in the UK and Ireland, supported by policy and legislation. These provide an objective starting point for identifying the important ecological features that need to be considered. **Table 8-3** below shows a procedure for determining the geographical level of importance of site designations, habitats and

²⁴ Available from: [Google Earth](#) (Accessed September 2024)

²⁵ Available from: [Scotland's Soils - soil maps \(environment.gov.scot\)](#) (Accessed September 2024)

²⁶ Available from: [GeoIndex - British Geological Survey \(bgs.ac.uk\)](#) (Accessed September 2024)

²⁷ Available from: [Bing Maps - Directions, trip planning, traffic cameras & more](#) (Accessed September 2024)

²⁸ Chanin, P. (2003) Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No.10. English Nature, Peterborough.

²⁹ Buglife, 2019. Good Practice Planning for Invertebrate Surveys and Mitigation. [pdf] Available from: <https://cdn.buglife.org.uk/2019/07/Good-practice-planning-surveys.pdf>

³⁰ British Dragonfly Society Survey Guidance. Available from: <https://british-dragonflies.org.uk/wp-content/uploads/2019/04/Survey-guidance.pdf>

species. Where a feature is important at more than one level in the table, its overriding importance is that of the highest level. Usually only the highest level of legal protection is listed.

Table Error! No text of specified style in document.-3: Geographical Level of IEFs.

Level of Importance	Sites	Habitats	Species
International	Designated, candidate or proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; UNESCO (Ecological) World Heritage Sites; UNESCO Biosphere Reserves; Biogenetic Reserves.	A viable area of habitat included in Annex I of the EC Habitats Directive; a habitat area that is critical for a part of the life cycle of an internationally important species.	A European Protected Species; an IUCN Red Data Book species that is globally Vulnerable, Endangered or Critically Endangered.
National (UK)	Sites of Special Scientific Interest; National Nature Reserve; Marine Conservation Zones (UK offshore).	An area of habitat fulfilling the criteria for designation as an SSSI or MCZ; a habitat area that is critical for a part of the life cycle of a nationally important species.	An IUCN Red Data Book species that is Vulnerable, Endangered or Critically Endangered in the UK; a species that is Rare in the UK (<15 10km grid squares); a Schedule 5 (animal) or Schedule 8 (plant) species included in the Wildlife and Countryside Act (WCA) 1981; any species protected under national (UK) legislation where there is the potential for a breach of the legislation; a species that is Vulnerable, Endangered or Critically Endangered in The Vascular Plant Red Data List for Great Britain ³¹ .
National (Scotland)	National Parks; Marine Protected Areas; Marine Consultation Areas.	SBL Priority Habitats and Priority Marine Features (PMFs) ³² (Scotland); semi-natural and ancient woodland.	Species of principal importance for biodiversity in the relevant countries ³³ , including SBL Priority Species and PMFs (Scotland). Species protected under the Marine Scotland Act 2010.
Regional	Regional Parks (Scotland).	Regional Local Biodiversity Action Plan habitats noted as requiring protection.	A species that is Nationally Scarce in the UK (present in 16-100 10km grid squares); a species that is included in the Regional LBAP; an assemblage of regionally scarce species.

³¹ Cheffings, C.M. & Farrell, L. (eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. (2005) *The Vascular Plant Red Data List for Great Britain. Species Status No. 7*. JNCC, Peterborough. Available from: <https://hub.jncc.gov.uk/assets/cc1e96f8-b105-4dd0-bd87-4a4f60449907> (Accessed October 2024)

³² In July 2014, Scottish Ministers adopted a list of 81 priority marine features (PMFs) – many of which are features characteristic of the Scottish marine environment. Most are on other conservation status lists so may be valued higher than this.

³³ These are all the species that were identified as requiring action in the UKBAP and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

Level of Importance	Sites	Habitats	Species
County / Metropolitan	Woodland Trust Sites; Royal Society for the Protection of Birds Sites; Scottish Wildlife Sites.	County LBAP habitats noted as requiring protection.	A species that is included in the County LBAP; an assemblage of species that are scarce at the county level.
Local		Semi-natural habitats that are unique or important in the local area.	Species as defined by Local Authority lists (if available).
Site		Common and widespread habitats not covered above.	Common and widespread species not covered above.
Negative			An Invasive Non-Native Species (INNS) as defined by the GB Non-Native Species Secretariat (NNSS) and supported by the GB Invasive Non-native Species Strategy (2015).

Impact Assessment

8.4.10 The assessment of impacts describes how the baseline conditions would change as a result of the project and its associated activities and from other developments. The term 'impact' is used commonly throughout the EIA process and is usually defined as a change experienced by a receptor (this can be positive, neutral or negative). The term 'effect' is commonly used at the conclusion of the EIA process and is usually defined as the consequences for the receptor of an impact after mitigation measures have been taken into account. The EIA Regulations specifically require all likely significant effects to be considered. Therefore, impacts and effects are described separately and the effects for the IEFs are assessed as being either significant or not according to the importance and sensitivity of the IEF.

8.4.11 Significant cumulative effects can result from the individually insignificant but collectively significant effects of actions taking place over a period of time or concentrated in a location, for example:

- Additive / incremental.
- Associated / connected.

Assessment Criteria – Magnitude

8.4.12 The CIEEM guidance states that when describing changes/activities and positive or negative impacts, reference should be made to the following parameters where relevant:

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

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

8.4.14 Criteria for describing the magnitude of an impact are presented in **Table 8-4** overleaf.

Table Error! No text of specified style in document.-4: Criteria for Describing Magnitude of Impact.

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

Assessment Criteria – Significance

- 8.4.15 Significance is a concept related to the weight that is attached to effects when decisions are made. For the purposes of EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for IEFs. In broad terms, significant effects encompass effects on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).
- 8.4.16 Significant effects are quantified with reference to an appropriate geographic scale (see **Table 8-4** above). The CIEEM guidance has one 'level of importance' and a geographical 'scale of significance'. This is to deal with the fact that the geographical scale at which the effect is significant is not necessarily the same as the geographic level of importance of the IEF.
- 8.4.17 A sensitivity scale is used to assist in the determine the significance of effects, as shown in **Table 8-5** below:

Table Error! No text of specified style in document.-5: Sensitivity of Important Ecological Features.

Sensitivity	Definition
High	Tolerance: The IEF has a very limited tolerance of the effect.
	Adaptability: The IEF is unable to adapt to the effect.
	Recoverability: The IEF is unable to recover, resulting in permanent or long term (>10 years) change.
Medium	Tolerance: The IEF has limited tolerance of the effect.
	Adaptability: The IEF has limited ability to adapt to the effect.
	Recoverability: The IEF is able to recover to an acceptable status over the medium term (5-10 years).
Low	Tolerance: The IEF has some tolerance of the effect.
	Adaptability: The IEF has some ability to adapt to the effect.
	Recoverability: The IEF is able to recover to an acceptable status over the short term (1-5 years).
Negligible	Tolerance: The IEF is generally tolerant of the effect.
	Adaptability: The IEF can completely adapt to the effect with no detectable changes.
	Recoverability: The IEF is able to recover to an acceptable status near instantaneously (<1 year).

- 8.4.18 Consideration of conservation status is important for assessing the significance of effects of impacts on individual habitats and species. The Habitats Directive provides a helpful definition of conservation status for habitats and species (as defined by Articles 1 (e) and 1(i)):
- 8.4.19 *For habitats, conservation status is determined by the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area; and*
- 8.4.20 *The conservation status of natural habitats will be taken as 'favourable' when:*
- its natural range and areas it covers within that range are stable or increasing, and
 - the species structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
 - the conservation status of its typical species is favourable as defined in Article 1(i).
- 8.4.21 *For species, conservation status is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.*
- 8.4.22 *The conservation status of species will be taken as 'favourable' when:*
- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
 - the natural range of the species is neither being reduced for the foreseeable future, and
 - there is, and would probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.
- 8.4.23 The scientific evidence gathered during the assessment process is used along with professional judgement where appropriate to determine the significance of effects according to the guidance above. Where it is not possible to justify a conclusion of no significant effect, a significant effect is assumed based on the Precautionary Principle.

Assessment Criteria – Confidence in Predictions

- 8.4.24 CIEEM does not cover levels of confidence in predictions adequately, therefore an approach has been adopted based on river conservation evaluation³⁴. A simple, qualitative index based on professional judgement is assigned to each predicted effect as follows:
- A: High Confidence
B: Intermediate Confidence
C: Low Confidence
- 8.4.25 Factors influencing confidence include:
- The frequency and effort of field sampling.
 - Constraints to the field study.
 - The completeness of the data (field and desk).
 - The age of the data (although recent data are not necessarily always more reliable than old data).
 - The state of scientific knowledge relating to the predicted effects of development activities on the IEF (the accuracy of the magnitude assessment).
 - The accuracy of the assessment of significance.

³⁴ SERCON: System for Evaluating Rivers for Conservation, Version 2, Technical Manual. Scottish Natural Heritage (2001).

Assessment Criteria – Success of Mitigation

- 8.4.26 The word ‘mitigation’ has developed a wider meaning and common usage in environmental assessment than its strict meaning related to reducing the severity of something. Mitigation can sometimes be used as a generic term for a wide range of counter-acting measures, all of which, as the Directive and Regulations prescribe, are intended to *prevent, reduce and where possible offset any significant adverse effect on the environment*. Mitigation can be used to encompass measures intended to avoid, minimise or compensate for adverse effects (this is the ‘mitigation hierarchy’).
- 8.4.27 Mitigation and compensation measures often carry a degree of uncertainty. Uncertainty associated with a design would vary according to a number of factors, such as:
- The technical feasibility of what is proposed.
 - The overall quantity of what is proposed.
 - The overall quality of what is proposed.
 - The level of commitment provided to achieve what is proposed.
 - The provision of long-term management.
 - The timescale for predicted benefits.
- 8.4.28 The following objective scale is used for the success of mitigation:
- Certain/near certain: probability estimated at 95% chance or higher.
 - Probable: probability estimated above 50% but below 95%.
 - Unlikely: probability estimated above 5% but less than 50%.
 - Extremely unlikely: probability estimated at less than 5%.

8.5 Baseline Conditions

Habitats

- 8.5.1 Fifteen NVC communities and one non-NVC community that were recorded within the PDA or directly adjacent to it have been taken forward for assessment. The NVC Survey Plan and full description of communities can be found in **Appendix 8.1a: PSH National Vegetation Classification Survey Report** and **Appendix 8.1b: SAR National Vegetation Classification Survey Report**.
- 8.5.2 The PSH area was characterized by a mosaic of upland habitats, primarily comprising M15 wet heath and M17 bog (including M1 and M3 bog pools), particularly concentrated within the Loch Fearnna upper reservoir inundation area and the hill access track. Less extensive habitats within the inundation area included H14 and H17 alpine dry heath on exposed promontories and M10 and M6 flushes on steep slopes within the Coire. Loch Fearnna itself supported the A22 aquatic community. Restricted W17 woodland was present along the banks of the Allt Fearnna, which was intercepted by the hill track. The lower-altitude areas designated for the powerhouse and switchyard were dominated by a mosaic of M25 mire interspersed with M15 heath. The peatlands within the PSH area supported grazing by sheep and red deer. While there was no evidence of historical drainage, multiple areas, particularly north of Loch Fearnna, showed signs of peat erosion and haggings.
- 8.5.3 Within land surrounding the PSH, dense, expansive stands of rhododendron were present, particularly to the west along the C1144 road, within woodland surrounding the Allt a’ Mheil, and along the shore of Loch Quoich. Further scattered stands of rhododendron were present throughout the moorland east of Allt a’ Mheil and in Coire Dubh up to 550m altitude.
- 8.5.4 The western section of the SAR traversed a non-native conifer plantation, intersected by forestry rides that supported M25 mire habitat. Further west, beyond the forestry zone, the SAR primarily intersected M15 wet heath, with some areas of M17 blanket bog. The route crossed the Gearr Garry watercourse and ran adjacent to pools that supported the A24 aquatic community.

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- 8.5.5 The central and eastern sections of the SAR followed an existing track that passed through areas of native, semi-natural woodland, primarily comprising W17 and W18 woodland communities. Some of these woodlands were classified as ancient woodland and/or Caledonian pinewood. Twelve parcels of ancient woodland were intercepted or were situated directly adjacent (within 50m) of the SAR. Nine of these were situated within the eastern half of the SAR, within the densest distribution of ancient woodland within the first c. 4.5km from the eastern extent of the SAR.
- 8.5.6 The SAR intercepts the Glen Garry Caledonian Pinewood, consisting of many fragmented pockets of pinewood interspaced by other native woodland habitats and non-native commercial forestry plantation. Areas of Caledonian pinewood were restricted to the east side of the SAR route, spanning from Garrygualach at the western extent of Loch Garry to Gleann Laogh, near the eastern extent of Loch Garry.
- 8.5.7 The SAR also intersected open areas of M15 wet heath and ran adjacent to smaller, isolated patches of M17 blanket bog and M25 mire. To the west, the SAR passes Lochan an Staic which supports the A22 aquatic community and has an outflow with meandering channels supporting the S9 swamp community.
- 8.5.8 Non-native conifer plantations formed the dominant canopy cover along the SAR, with stands of varying maturity and extensive areas of clear-fell, particularly in the central region of the route. Current land management practices in this area were commercial forestry, with periodic clear-felling and replanting cycles. Grazing by red deer and other herbivores also impacted the woodland regeneration and habitat structure within the semi-natural woodland and peatland habitats.
- 8.5.9 Areas of rhododendron were recorded within the woodlands at the eastern extent of the SAR, where this species was a frequent component of the woodland understorey, particularly surrounding the existing access road and the Glen Garry car park.
- 8.5.10 The Main Site Compound area, located to the east of the SAR, primarily occupied a zone of commercial forestry clear-fell, interspersed with small, isolated patches of H21 dry heath, M15 wet heath, and M6 flush. These patches were likely remnants of semi-natural habitats that had established within forestry rides and clearings.
- 8.5.11 **Table 8-6** overleaf provides a summary of the NVC communities which have been taken forward for assessment.
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Table Error! No text of specified style in document.-6: NVC Communities Recorded Within the Proposed Development Area That Have Been Scoped into the Assessment.

Broad Habitat	NVC Community (or equivalent)	UKHab Habitat Code	Potential Groundwater Dependence (SEPA LUPS 31)	Corresponding SBL Priority Habitat ³⁵	Corresponding Annex 1 Habitat ³⁶
Aquatic	A22 <i>Littorella uniflora</i> - <i>Lobelia dortmanna</i> community	r1c6 Clear-water lakes or lochs with aquatic vegetation (H3130)	No GWDTE	Oligotrophic and Dystrophic Lakes	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea
	A24 <i>Juncus bulbosus</i> community	r1c Oligotrophic and dystrophic lakes	No GWDTE	Oligotrophic and Dystrophic Lakes	3160 Natural dystrophic lakes and ponds
Heath	H14 <i>Calluna vulgaris</i> - <i>Racomitrium lanuginosum</i> heath	h1b5 Dry heaths – upland (H4030)	No GWDTE	Upland Heathland	4030 European dry heaths
	H17 <i>Calluna vulgaris</i> - <i>Arctostaphylos alpinus</i> heath	h1b5 Dry heaths – upland (H4030)	No GWDTE	Upland Heathland	4030 European dry heaths
	H21 <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> - <i>Sphagnum capillifolium</i> heath	h1b5 Dry heaths – upland (H4030)	No GWDTE	Upland Heathland	4030 European dry heaths
Mire	M1 <i>Sphagnum denticulatum</i> bog pool community	f1a5 Blanket bog	No GWDTE	Blanket Bog	7130 - Blanket bogs
	M3 <i>Eriophorum angustifolium</i> bog pool community	f1a5 Blanket bog	No GWDTE	Blanket Bog	7130 - Blanket bogs

³⁵ UK Biodiversity Action Plan (2011): Priority Habitat Descriptions. Available from: <https://data.incc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf> (Accessed October 2024).

³⁶ JNCC Habitats List. Available from: <https://sac.incc.gov.uk/habitat/> (Accessed October 2024).

Broad Habitat	NVC Community (or equivalent)	UKHab Habitat Code	Potential Groundwater Dependence (SEPA LUPS 31)	Corresponding SBL Priority Habitat ³⁵	Corresponding Annex 1 Habitat ³⁶
	M6 <i>Carex echinata-Sphagnum fallax/denticulatum</i> mire	f2c Upland flushes, fens, and swamps	Highly Groundwater Dependent	Upland Flushes, Fens, and Swamps	N/A
	M10 <i>Carex dioica-Pinguicula vulgaris</i> mire	f2c Upland flushes, fens, and swamps	Highly Groundwater Dependent	Upland Flushes, Fens, and Swamps	7230 Alkaline fens
	M15 <i>Trichophorum cespitosum-Erica tetralix</i> wet heath	h1b6 Wet heathland with cross-leaved heath - upland	Moderately Groundwater Dependant	Upland Heathland	4010 - Northern Atlantic wet heaths
	M17 <i>Trichophorum cespitosum-Eriophorum vaginatum</i> blanket mire	f1a5 Blanket bog	No GWDTE	Blanket Bog	7130 - Blanket bogs
	M25 <i>Molinia caerulea-Potentilla erecta</i> mire	f2c Upland flushes, fens, and swamps	Moderately Groundwater Dependant	M25a - Typical sub-community is Blanket Bog	N/A
				M25b is Upland Flushes, Fens, and Swamps	
	M29 <i>Hypericum elodes-Potamogeton polygonifolius</i> soakway	f2c Upland flushes, fens, and swamps	Highly Groundwater Dependent	Upland Flushes, Fens, and Swamps	
Swamp	S9 <i>Carex rostrata</i> swamp	f2c Upland flushes, fens, and swamps	No GWDTE	Upland Flushes, Fens, and Swamps	N/A

Broad Habitat	NVC Community (or equivalent)	UKHab Habitat Code	Potential Groundwater Dependence (SEPA LUPS 31)	Corresponding SBL Priority Habitat ³⁵	Corresponding Annex 1 Habitat ³⁶
Grassland	U5 <i>Nardus stricta</i> - <i>Galium saxatile</i> grassland	g1b Upland acid grassland	No GWDTE	<i>Nardus stricta</i> - <i>Galium saxatile</i> grassland	N/A
Woodland	W4c <i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland, <i>Sphagnum</i> sub-community	w1d Wet woodland	Highly Groundwater Dependent	Wet Woodland	N/A
	W17 <i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland	w1e Upland birchwoods	No GWDTE	Upland Birchwoods	N/A
		w1a5 Western acid oak woodland		Upland Oakwood	91A0 - Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i>
	W18 <i>Pinus sylvestris</i> – <i>Hylocomium splendens</i> woodland	w2a Native pine woodlands	No GWDTE	Native Pine Woodlands	N/A
		w2a5 Caledonian forest (examples located within zone identified by Caledonian Pinewood Inventory)			91C0 - Caledonian forest
No NVC	Cliff Face	S1a Inland rock outcrops and scree habitats	No GWDTE	Inland Rock Outcrop and Scree Habitats	N/A

Faunal Species and Species Groups

- 8.5.12 The following sections should be read in conjunction with the baseline results included in **Appendix 8.2a: PSH Protected Species Survey Report** and **Appendix 8.2b: PSH Protected Species Survey Report**, as well as other targeted species reports as listed in the relevant sections below.

Otter

- 8.5.13 This section should be read in conjunction with the baseline results and monitoring included in **Appendix 8.3: Otter Survey and Monitoring Report**.
- 8.5.14 One record of otter was returned via HBRG, recorded in 2016 by Wild Surveys and comprising a spraint identified along the River Garry, outwith the survey area. Two potential holt sites were identified within the Study Area surrounding the SAR. The first was located along the River Garry, at the eastern extent of the SAR, approximately 35m away from the existing access track. Four otter spraints were identified at the entrance to this feature. The second potential holt site was identified at the Kingie Pool located at the confluence of Gearr Garry and the River Kingie, at the western extent of the SAR, approximately 165m away from the proposed new track, and considered to be outside of the predicted Zol.
- 8.5.15 The camera trap monitoring at the potential holt site on the River Garry in 2024 revealed no otter activity. Based on this observation, the feature has been classified with a "Low" resting site status³⁷, indicating limited evidence of otter use.
- 8.5.16 Otter spraints indicating presence were found on a range of watercourses across the site. The River Garry, Gearr Garry, and River Kingie and adjoining tributaries provision a high degree of suitability for otter. The surrounding catchment, extending from Loch Quoich in the west through to Loch Oich in the east and beyond, is known to support salmonids and other fish species, therefore providing a key prey source for otter.
- 8.5.17 Otter are classed as vulnerable within the Red List of Scotland's Mammals³⁸. Otter population status is increasing, range status is increasing, and their habitat status is stable³⁹**Error! Bookmark not defined..**

Pine Marten

- 8.5.18 One record of pine marten within the PDA was returned by NBN Atlas, recorded by Scottish Natural Heritage [NatureScot] in 2015 indicated a pine marten sighting within woodland to the east of the SAR area.
- 8.5.19 Field visits confirmed ongoing activity with a direct sighting of a pine marten within the woodlands to the south of Loch Garry. In addition, nine scats were identified across major woodland parcels, encompassing both native and non-native forestry intersected by the SAR. To the west of the PDA, a fresh scat was found near Allt Fearna, close to the PSH area, suggesting active use across the PDA by pine martens.
- 8.5.20 The PDA and SAR area provide abundant foraging resources for pine martens, including invertebrates, small rodents, amphibians, and ground-nesting birds. The habitat is well-connected to the surrounding countryside, promoting dispersal. However, there is a limited presence of essential

³⁷ Bassett, S., & Wynn, J. (2010). *Otters in Scotland: How Vulnerable Are They to Disturbance?* CIEEM In Practice, (70), 19–22.

³⁸ The Mammal Society (2020) *Red List for Scotland's Mammals*. Available from: [MS_RL20_Scotland.pdf](#) (Accessed October 2024)

³⁹ New England Joint Publication (2018) *A Review of the Population and Conservation Status of British Mammals: Technical Summary* (Accessed October 2024)

denning features nearby the SAR. There are potential breeding denning opportunities within native riparian woodlands in the wider study area.

- 8.5.21 Pine martens are classified as least concern on the Red List for Scotland's Mammals³⁸. Their range predominantly includes northern Scotland, with especially high densities in the northwest Highlands. Smaller populations are also located in Scotland's central belt, Dumfries and Galloway, and even in parts of Wales. Pine marten population size and range is increasing in Scotland and its habitat status is stable³⁹**Error! Bookmark not defined..**

Red Squirrel

- 8.5.22 A total of 29 records of red squirrel were returned via NBN Atlas, identified between 2017 to 2023 by a number of local recorders contributing to the Scottish Squirrel Database. Records are largely concentrated around the village of Invergarry, as well as the adjoining woodlands at the eastern extent of the SAR.
- 8.5.23 Evidence of red squirrel, in the form of foraging signs, was identified within forestry plantation and native pine woodlands along the SAR. An individual red squirrel was recorded within the woodland along the River Garry as part of targeted camera monitoring in August 2024.
- 8.5.24 No red squirrel sightings were recorded within the PSH or surrounding Study Area.
- 8.5.25 The cone-producing trees that comprise the areas of forestry plantation of a greater maturity along the SAR, as well as the parcels of mature to ancient native pinewoods, provide an abundance of foraging resources for red squirrel in the locale. Opportunities for drey creation and associated breeding are also present within these habitats, extending into the broadleaf woodlands where component mature trees are present along riparian corridors.
- 8.5.26 Red squirrel population size and range are in decline across Britain. It is listed as Endangered in the IUCN Red List for Britain's mammals; however, it is reduced to near threatened in Scotland's Red List³⁸. Red squirrel population status is in decline, range status is in decline, and habitat status is stable³⁹.

Amphibians

- 8.5.27 Three records of common toad were returned from the desk study via HBRG, with the most recent record being from 2021. Three records of common toad were returned via NBN Atlas, provided by Amphibian and Reptile Conservation (ARC) between 2014 and 2016, indicating observations of this species to the east and west of the Study Area.
- 8.5.28 Terrestrial-stage common toad were sighted throughout the SAR study area, particularly within areas of wet heath and blanket bog.
- 8.5.29 As evident, a high degree of habitat suitability is present throughout the access route study area for amphibians, particularly across the heathland and woodland where bog pools, ponds, and wet ditches are a prevalent feature, with resources to support breeding and hibernating populations present in the locale at all times of the year.
- 8.5.30 Common toad is listed as near threatened on the IUCN GB Red List and are described as a widespread species in Scotland⁴⁰.

⁴⁰ NatureScot (2024) Scotland's native reptiles and amphibians. Available from: [Scotland's native reptiles and amphibians | NatureScot](#) (Accessed September 2024)

Reptiles

- 8.5.31 One record of common lizard was returned via NBN Atlas, identified in 2016 by a local recorder and provided by Amphibian and Reptile Conservation (ARC).
- 8.5.32 An individual slow worm was sighted along the existing forestry track along the SAR, within an area of conifer regeneration, at the boundaries of an old clear-fell block. Common lizard sightings were recorded within the PSH area within wet heath habitat.
- 8.5.33 The upland heathland mosaic, including wet and dry heaths, bogs, open acid grasslands, and woodland edges, provisions extensive suitable foraging and commuting resources for reptiles, with the scattered rocky outcrop and scree habitats throughout this mosaic providing basking and hibernation opportunities. The quality of reptile habitat within the open moorland habitats within the SAR and PSH is considered to be **high** due to suitable vegetation cover with ample foraging opportunities, basking sites, and a range of refugia, along with good connectivity to other high-quality reptile habitats in the broader landscape.
- 8.5.34 According to the IUCN Red List, common lizards and slow worms are classified as "Least Concern" and remain relatively widespread across Scotland⁴¹. While adders are also listed as "Least Concern," research has documented a concerning decline in their abundance since the mid-20th century. This decline is driven by multiple factors, including habitat loss, persecution, predation, disturbance, habitat burning, and forestry practices⁴². In Scotland, habitat fragmentation due to commercial forestry and possible predation by non-native game species, such as pheasants, present additional pressures on adder populations.

Invertebrates

- 8.5.35 The following sections should be read in conjunction with the baseline results included in **Appendix 8.4: Invertebrate Survey Report**.
- 8.5.36 A range of habitats of importance to invertebrates are present within the PDA (particularly within the PSH), including native broadleaf and conifer woodlands, wetland, heathland, regenerating clear-fell, lochs, bog pools, drainage ditches, grasslands, bare rock, and screes. Species associated with blanket bog and wet heathland have been taken forward for assessment.
- 8.5.37 The following SBL listed invertebrate species were returned from the desk study, as displayed in **Table 8-7** overleaf:

⁴¹ NatureScot (2024) Scotland's native reptiles and amphibians. Available from: [Scotland's native reptiles and amphibians | NatureScot](#) (Accessed September 2024)

⁴² Julian, A., Oliver, A., Thorpe, R., Lloyd, H., & Blake, S., 2024. *Adder Survey of Scotland 2022–2024*. Glasgow Natural History Society. Available from: https://www.glasgownaturalhistory.org.uk/gn28_2/Julian_etal_Adder_Survey_2022-24.pdf (Accessed November 2024)

Table Error! No text of specified style in document.-7: SBL Invertebrate Species Returned from the Desk Study.

Common Name/ Scientific Name	Dispersal Ability	Habitat/Range (Scotland)	Larval Food Plants	Conservation Status ^{43 44 45}	Population Trend
Large heath butterfly <i>Coenonympha tullia</i> ssp. <i>scotica</i>	They live in large colonies of up to 15,000 individuals but rarely fly far after emerging, leading to isolated and more vulnerable populations.	Lowland raised bog, upland blanket bog and wet moorlands. Throughout Highland Scotland and the Islands. Up to 500-600m altitude.	Hare's-tail cottongrass (<i>Eriophorum vaginatum</i>), common cottongrass (<i>E. angustifolium</i>) and jointed rush (<i>Juncus articulatus</i>).	European IUCN Red List Status: Vulnerable GB Red List Status: Endangered.	Population has decreased by 58% between 1976 and 2014 ⁴⁶ .
Moss carder bee <i>Bombus muscorum</i>	Moss Carder Bee has low dispersal ability and populations require at least 15 km ² of suitable habitat to avoid inbreeding problems ⁴⁷ .	Upland grassland, bogs, wetlands, and moorland. In Scotland it is mostly found in the northwest Highlands and Islands. No altitudinal information.	Red clover (<i>Trifolium pratense</i>) and common knapweed (<i>Centaurea nigra</i>).	European IUCN Red List Status: Vulnerable.	Population shows signs of severe decline since 1970.
Argent and sable <i>Rheumaptera hastata</i>	Strong flyer capable of rapid dispersal.	Birch regeneration, blanket bog, and wet moorland.	Predominantly bog-myrtle (<i>Myrica gale</i>) but also birch (<i>Betula</i> spp.) and willow. (<i>Salix</i> spp.).	Global IUCN Red List Status: Least Concern.	Population shows signs of decline since 1970.

⁴³ Joint Nature Conservation Committee (JNCC), 2010. *The State of Butterflies in the UK 2010*. [pdf] Peterborough: JNCC. Available from: <https://data.jncc.gov.uk/data/08e25223-1b26-4c73-978c-b36bfc5294dc/SpeciesStatus-12-Butterfly-WEB-2010.pdf> (Accessed October 2024)

⁴⁴ Fox, R., Parsons, M.S., Chapman, J.W., Woiwod, I.P., Warren, M.S. and Brooks, D.R., 2022. *A review of the status of the macro-moths of Great Britain*. [pdf] Butterfly Conservation. Available from: <https://butterfly-conservation.org/sites/default/files/2022-01/S19-17%20A%20review%20of%20the%20status%20of%20the%20macro-moths%20of%20Great%20Britain.pdf> (Accessed October 2024)

⁴⁵ IUCN, 2012. IUCN Red List of Bees: Version 3.1, 2nd ed. Gland, Switzerland and Cambridge, UK: IUCN. Available from: <https://portals.iucn.org/library/sites/library/files/documents/RL-4-019.pdf> (Accessed October 2024)

⁴⁶ Butterfly Conservation. Large Heath. Large Heath. Available from: <https://butterfly-conservation.org/butterflies/large-heath> (Accessed October 2024)

⁴⁷ Available from: <http://www.gittings.ie/bombus%20muscorum.htm#:~:text=Genetic%20studies%20indicate%20that%20the,habitat%20to%20avoid%20inbreeding%20problems>. (Accessed October 2022)

Common Name/ Scientific Name	Dispersal Ability	Habitat/Range (Scotland)	Larval Food Plants	Conservation Status ^{43 44 45}	Population Trend
		Widely distributed in western Scotland. No altitudinal information.			
Northern dart <i>Xestia alpicola</i>	Data deficient	Mainly distributed in the mountains of Scotland, occupying habitat usually above 450m elevation	Crowberry and heather.	Global IUCN Red List Status: Least Concern. GB Rarity status: Nationally Scarce.	Population shows signs of decline since 1970; however, this species is under-recorded, and difficult to determine trends ⁴⁸ .
Small heath butterfly <i>Coenonympha pamphilus</i>	Forms discrete colonies. Minimal adult dispersal.	Heathland, moorland, grassland and coastal habitats. Widespread in the Scotland. No altitudinal information but avoids montane habitats.	Bramble (<i>Rubus fruticosus</i> agg.), buttercups (<i>Ranunculus</i> spp.), common fleabane (<i>Pulicaria dysenterica</i>), devil's-bit scabious (<i>Succisa pratensis</i>), greater stitchwort (<i>Stellaria holostea</i>), kidney vetch (<i>Anthyllis vulneraria</i>), ragworts (<i>Jacobaea</i> spp.), tormentil (<i>Potentilla erecta</i>) and yarrow (<i>Achillea millefolium</i>).	IUCN European Status: Least Concern. GB Red List Status: Vulnerable.	Since 1976, the species has shown a rapid decline of - 43.3%. Over the last 20 years, its status has stabilised with a 22.6% increase, and in the past 10 years, a stable trend continues with a 52% increase ⁴⁹ .

8.5.38 The following SBL listed invertebrate species were identified within the site during 2024 invertebrate survey, as displayed in Table 8-8 overleaf:

⁴⁸ Butterfly Conservation. (2022) A review of the status of the macro-moths of Great Britain. Available from: <https://butterfly-conservation.org/sites/default/files/2022-01/S19-17%20A%20review%20of%20the%20status%20of%20the%20macro-moths%20of%20Great%20Britain.pdf> (Accessed November 2024)

⁴⁹ UK Butterfly Monitoring Scheme. (n.d.) Small Heath. Available from: <https://ukbms.org/index.php/species/small-heath> (Accessed November 2024)

Table Error! No text of specified style in document.-8: SBL Invertebrate Species Recorded During 2024 Field Survey.

Common Name/Scientific Name	Dispersal Ability	Habitat/Range (Scotland)	Larval Food Plants	Conservation Status ^{43,44,45,48,49}	Population Trend
Broom moth <i>Ceramia pisi</i>	Data deficient	Open woodland and heathland. Widely distributed throughout Scotland. Altitudinal range unknown but occurs in Iceland and in the Alps.	Wide range of species including heather, broom (<i>Cytisus scoparius</i>), bracken (<i>Pteridium aquilinum</i>), and other woody plants.	Global IUCN Red List Status: Vulnerable. GB Red List Status: Vulnerable.	Steep population decline ⁴⁸ .
Bilberry bumblebee <i>Bombus monticola</i>	Data deficient	It is associated with higher altitude habitats including grassland, moorland and mountains Distributed throughout the mainland Highlands.	Bilberry (<i>Vaccinium myrtillus</i>), cowberry (<i>Vaccinium vitis-idaea</i>), heather, white clover, and bird's foot trefoils (<i>Lotus</i> spp.).	European IUCN Red List Status: Least Concern.	Evidence of serious decline.
Small pearl-bordered fritillary <i>Boloria selene</i>	Data deficient	Damp grassland, flushes, moorland, scrub, and woodland edge. Widely distributed throughout Scotland. No altitudinal information.	Violets (<i>Viola</i> spp.), particularly common dog-violet (<i>Viola riviniana</i>) and marsh violet (<i>Viola palustris</i>).	European IUCN Red List Status: Least Concern. GB Red List Status: Vulnerable.	Widespread and locally abundant in Scotland especially in the north and west.

Odonates

- 8.5.39 The following sections should be read in conjunction with the baseline results included in **Appendix 8.5: Odonata Baseline Assessment Report**.
- 8.5.40 A total of 32 records of azure hawk were returned from the desk study via the British Dragonfly Society (BDS)⁵⁰. Of these, 17 were located in moorland habitat near the Loch Quoich dam. A total of four records of northern emerald were returned via the BDS, the closest of which was located approximately 250m south of the Loch Quoich dam.
- 8.5.41 A total of two adults, 39 larvae/nymphs and 12 exuviae azure hawk were identified on-site. Likewise, a total of one adult and six larvae/nymphs of northern emerald dragonfly were identified on-site.
- 8.5.42 The habitats surrounding the PSH provided suitable foraging and commuting opportunities for azure hawk and white-faced darter adults and suitable bog pools were found in areas of blanket bog for their larvae/nymphs. Along the SAR, suitable foraging and commuting habitat, including of bog pools, was identified for azure hawk and northern emerald and larvae/nymphs.
- 8.5.43 Azure hawk is listed as a vulnerable and Northern emerald is listed as near threatened species within the British Odonata Red List. The distribution of both species is unknown; however, it is estimated that both species are primarily found within the northwest highlands in the north of Scotland. Azure hawk is undergoing inferred decline and only occurs in seven British 10-km grid squares. Northern emerald is a rare species occurring in just over 50 10-km grid squares in Scotland⁵¹.

Evaluation

- 8.5.44 The evaluations have been applied only to those habitats and species that have been scoped into the assessment and those where there is the potential for impacts that could result in significant adverse ecological effects as a result of the proposed development. The IEFs and the evaluations are presented in Table 8-9 below.

Table Error! No text of specified style in document.-9: Evaluation of Important Ecological Features.

IEF	Present on-site?	Present in Locale?	Importance	Justification
A22 <i>Littorella uniflora</i> - <i>Lobelia dortmanna</i> community	Yes	Yes	International	Equivalent to Annex 1 habitat 3130 - Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>
A24 <i>Juncus bulbosus</i> community	No	Yes	International	Equivalent to Annex 1 habitat 3160 Natural dystrophic lakes and ponds
H14 <i>Calluna vulgaris</i> - <i>Racomitrium lanuginosum</i> heath	Yes	Yes	International	Equivalent to Annex 1 habitat 4030 European dry heaths

⁵⁰ Data Source: British Dragonfly Society (2017-2018)

⁵¹ Cham, S. (2008). Odonata Red List for Great Britain [pdf] Peterborough: Joint Nature Conservation Committee. Available at: <https://data.jncc.gov.uk/data/8e18c30d-794e-4b0c-8d1c-378c3faf0e7c/SpeciesStatus-11-Odonata-WEB-2008.pdf>

IEF	Present on-site?	Present in Locale?	Importance	Justification
H17 <i>Calluna vulgaris</i> - <i>Arctostaphylos alpinus</i> heath H21 <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> - <i>Sphagnum capillifolium</i> heath				
M1 <i>Sphagnum auriculatum</i> bog pool community M3 <i>Eriophorum angustifolium</i> bog pool community M17 <i>Trichophorum cespitosum</i> - <i>Eriophorum vaginatum</i> blanket mire M25 <i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire (on peat >50cm)	Yes	Yes	International	Equivalent to Annex 1 habitat 7130 - Blanket bogs
M6 <i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire M29 <i>Hypericum elodes</i> - <i>Potamogeton polygonifolius</i> soakway S9 <i>Carex rostrata</i> swamp	Yes	Yes	National (Scotland)	Equivalent to SBL Priority Habitat Upland Flushes, Fens, and Swamps
M10 <i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire	Yes	Yes	International	Equivalent to Annex 1 habitat 7230 Alkaline fens
M15 <i>Trichophorum cespitosum</i> - <i>Erica tetralix</i> wet heath	Yes	Yes	International	Equivalent to Annex 1 habitat 4010 - Northern Atlantic wet heaths
U5 <i>Nardus stricta</i> - <i>Galium saxatile</i> grassland	Yes	Yes	National (Scotland)	Equivalent to SBL Priority Habitat <i>Nardus stricta</i> - <i>Galium saxatile</i> grassland
W4c <i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland, <i>Sphagnum</i> sub-community	No	Yes	National (Scotland)	Equivalent to SBL Priority Habitat Wet Woodland
W17 <i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland (oak dominated)	Yes	Yes	International	Equivalent to Annex 1 habitat 91A0 - Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i>
W17 <i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland (birch dominated)	Yes	Yes	National (Scotland)	Equivalent to SBL Priority Habitat Upland Birchwoods
W18 <i>Pinus sylvestris</i> - <i>Hylocomium splendens</i> woodland (outside Caledonian Pinewood Inventory Core Zone)	Yes	Yes	National (Scotland)	Equivalent to SBL Priority Habitat Native Pine Woodlands
W18 <i>Pinus sylvestris</i> - <i>Hylocomium splendens</i> woodland (within	Yes	Yes	International	Equivalent to Annex 1 habitat 91C0 - Caledonian forest

IEF	Present on-site?	Present in Locale?	Importance	Justification
Caledonian Pinewood Inventory Core Zone)				
Otter	Yes	Yes	International	European Protected Species
Pine Marten	Yes	Yes	National (UK)	WCA Schedule 5 species
Red Squirrel	Yes	Yes	National (UK)	WCA Schedule 5 species
Amphibians • Common toad	Yes/Likely	Yes	National (Scottish).	SBL species
Reptiles • Slow worm • Common lizard • Adder	Yes/Likely	Yes/Likely	Up to National (Scottish)	All species are listed on the SBL
Invertebrates • Argent and sable • Broom moth • Large heath butterfly • Moss carder bee • Billberry bumblebee • Northern dart • Small heath butterfly • Small pearl-bordered fritillary	Yes/Likely	Likely	All species are National (Scottish)	All species are listed on the SBL
Odonates • Azure hawk • Northern emerald	Yes	Yes	All species are Regional	These species are included on the Odonata Red List. Azure Hawk is an LBAP Priority Species. Both species occur in less than 100 10km grid squares in the UK.

Future Baseline

- 8.5.45 The following section aims at predicting potential significant changes for the scoped IEF, in the event of the proposed development not taking place.

Woodland

- 8.5.46 Parcels of native woodland, including ancient woodland and Caledonian pinewood within the PDA, may be impacted in the future by the encroachment of non-native conifer species from nearby forestry plantations and the spread of invasive non-native species (INNS) such as rhododendron and giant rhubarb (*Gunnera* spp.). Non-native conifers can form dense canopies within native woodlands, limiting light penetration and leading to a loss of biodiversity in the understory. As these conifers become dominant canopy species, they reduce specific niches and microhabitats that are crucial for specialist invertebrate species relying on native Scots pine (*Pinus sylvestris*) and oak (*Quercus* spp.), which in turn could decrease diversity further up the food web.
- 8.5.47 Non-native conifers may introduce or exacerbate pest and disease pressures that native trees are not well adapted to combat. For instance, Sitka spruce and rhododendron can be affected by the fungal-like pathogen *Phytophthora ramorum* which can weaken both non-native and native tree populations, destabilising the woodland ecosystem.

- 8.5.48 Climate change poses potential risks, including habitat loss for woodland species adapted to cooler climates and increased invasive species spread within ancient woodlands due to rising temperatures and changing precipitation patterns. Climate projections point to a warmer climate with hotter, drier summers with greater extremes, and warmer, wetter winters, with more intense rainfall events⁵². Predicting and quantifying these changes remains challenging due to the complexity of climate impacts.

Peatland Habitats

- 8.5.49 Priority peatland habitats adjacent to forestry plantations are also at risk of encroachment by non-native conifers, especially within areas surrounding the SAR where remnant blanket bogs are isolated and bordered by plantations. The establishment and expansion of non-native trees, such as Sitka spruce, can lead to drying effects on peat and carbon-rich soils due to increased water uptake by tree roots. This results in the drying of blanket bogs, reducing floral diversity and the loss of key species such as Sphagnum moss, in turn reducing habitat availability for specialist invertebrate species. Drying of peat accelerates decomposition, releasing stored carbon into the atmosphere and reducing the habitat's role in carbon sequestration.
- 8.5.50 *Rhododendron ponticum* could also spread within the Study Area, particularly in peatland habitats extending up to areas like Coire Dubh, could also contribute to peat drying and biodiversity reduction. *Rhododendron* tends to establish dense monocultures, shading out and outcompeting native species, which degraded peatland habitats and results in habitat loss for specialised species.
- 8.5.51 Climate change could exacerbate these impacts, as increasing temperatures and changing precipitation patterns further dry peatlands⁵². Combined with conifer and INNS encroachment, this can create a feedback loop where both factors accelerate peatland degradation, leading to higher carbon emissions and loss of climate-resilient habitats.

Faunal Species and Species Groups

Otter

- 8.5.52 Based on the current distribution of otter in Scotland, no significant changes to its local conservation status within the PDA and the locale are predicted.

Pine Marten

- 8.5.53 Based on the current distribution of pine marten in Scotland, no significant changes to its local conservation status within the PDA and the locale are predicted.

Red Squirrel

- 8.5.54 Based on the current distribution of red squirrel in Scotland, no significant changes to its local conservation status within the PDA and the locale are predicted.

Amphibians

- 8.5.55 Based on the current distribution of common toad in Scotland, no significant changes to the local conservation status for this species within the PDA and the locale are predicted. Droughts or other extreme weather events impacting on the local water tables could result in further habitat degradation for amphibians in the locale through the drying of pools and wetlands; however, these events and their impact are difficult to predict and quantify.

⁵² Available from: [Scotland and climate change - Adaptation Scotland](#) (Accessed October 2024)

Reptiles

- 8.5.56 Incidental spread of non-native conifers into grassland and heathland habitats could potentially further degrade and fragment suitable habitat for reptiles within the PDA. However, significant changes to the conservation status of reptiles in the locale are not expected.

Other Invertebrates

- 8.5.57 Incidental spread of non-native conifers into suitable habitat for invertebrates could degrade suitable habitat and limit resources for pollinators within the PDA. However, significant changes to the conservation status of invertebrates in the locale are not expected.

Odonates

- 8.5.58 Incidental spread of non-native conifers could potentially further fragment and degrade suitable habitat for odonates within the PDA. Droughts or other extreme weather events impacting on the local water tables could result in habitat degradation for odonates in the locale through the drying of pools and wetlands. However, significant changes to the conservation status of odonates in the locale are not expected.

8.6 Mitigation by Design

Avoidance/Minimise Effects on Sensitive Habitats

- By situating borrow pits within areas that would later be inundated (such as the Fearna Reservoir area), the project reduces habitat loss and allows for natural recovery in non-operational areas
- By using an already existing reservoir (Quoich reservoir), the project minimises new land disturbance and avoids habitat loss in areas that would otherwise require significant modification.
- The SAR was selected to minimise disruption to sensitive IEFs, such as the West Inverness-shire Lochs SPA and SSSI. This route was chosen over the C1144 road to reduce ecological impacts, community disturbance, and landscape changes.
- Existing exiting access tracks would be utilised (and upgraded) where possible, in preference to creating new tracks, in order to reduce land-take of ecologically sensitive habitats. Reducing the width of the access tracks and utilising passing places would minimise land-take.
- Only trees directly in the SAR path would be removed, leaving canopy cover as intact as possible and avoiding the creation of large clear-cut areas.
- To minimise impacts on ecologically important habitats, the construction of passing places and road widening along the SAR would avoid the clearance of mature trees, especially Scots pine and oak. This approach would preserve important habitat features suitable for pine marten and red squirrel foraging and denning, while also retaining suitable habitats for SBL lichens and bryophytes of conservation concern, which would depend on the retention of mature trees.
- The Main Site Compound area has been sited on an area of regenerating clear-fell which is of low conservation importance compared to surrounding semi-natural habitat.
- Areas temporarily disturbed by borrow pits and compound sites are planned for restoration⁵³, which would allow vegetation to recover and reduce the long-term ecological footprint.
- The stretch of road widening of the SAR adjacent to Lochan an Stac has been micro-sited to the north to maximise the distance between the track and the waterbody.

⁵³ Excluding Poulary East Quarry will not be reinstated and will be left for future extraction of material by FLS

- The hill track to the inundation area would align with natural land contours to reduce erosion risks and avoid low-lying wetland areas which are more susceptible to damage from waterlogging and vehicle traffic.
- All required peat removal to facilitate the dam, upland track to the inundation area, and western extent of the SAR would be stored and reused for restoration elsewhere on-site, where possible, or used to build bunds along the track edges to restore natural contours and hydrology.
- Tracks over peatland habitat have been designed to be as shallow as possible with materials that don't require extensive peat excavation.

Avoidance/Minimise Effects on Protected and Other Notable Faunal Species

- The proposed bridge crossings on the River Garry and Gear Garry have been designed sensitively for bats, by maintaining a free flight of 2 m above water level to allow free movement and foraging from *Myotis* sp. bats; and minimising tree loss in these areas, particularly of mature oaks within the Annex 1 Old sessile oak woods.
- Bridges would be used instead of culverts at new watercourse crossing points wherever feasible. These bridges would extend beyond the riverbanks to preserve existing bank vegetation. Where banks would be fully submerged at high water levels, a ledge would be incorporated to support otter movement along the watercourse.
- In cases where culverts are used, bottomless culverts would be installed to maintain the natural riverbed, ensuring continuity of the commuting corridor for otters and supporting fish prey species.
- The temporary construction lighting is designed to avoid unnecessary illumination or light spill, which can disrupt nocturnal and crepuscular species.
- All tracks within the site including the SAR and the hill track to the upper reservoir would be unlit for the duration of the construction and operational phase.
- The use of vegetated bunds, especially around the Main Site Compound area, would provide screening for wildlife.
- There would be no operational external lighting within the PSH area including the dams, and only task lighting would only be used as required.

8.7 Impact Assessment

- 8.7.1 This section considers the predicted impacts and significance of the associated effects during the construction and operation of the Proposed Development based on the typical activities described in **Chapter 2: The Proposed Development**. Expected negative effects on IEFs are subdivided between the PSH and SAR.

Habitats

Construction Effects

PSH

- 8.7.2 Within the PSH, the construction of the proposed dams, access tracks, powerhouse and switchyard and the subsequent inundation area of the upper reservoir would lead to the permanent loss of the identified Annex 1 habitats (A22, H14, H17, H21, M1, M3, M10, M15, M17 and M25) and priority habitats (M6 and W17), including permanent loss of priority and non-priority peatland habitats (M1, M3, M15, M17, and M25)¹⁵.
- 8.7.3 Within the PSH working area, temporary habitat loss would occur during the construction phase, affecting Annex 1 habitats and Priority Habitats, with plans for reinstatement wherever feasible once

construction is complete. To accommodate construction activities such as movement, material storage, slope creation, and drainage, a general buffer of 30 meters has been established around the working area, including the proposed dam and hill track. In certain areas, this buffer has been reduced: a 20-meter buffer applies around the powerhouse area near the Loch Quoich dam and nearby hardstanding areas, while a 10-meter buffer has been set for the predicted inundation extent of the upper reservoir and sections of the C1144 road designated for widening.

- 8.7.4 Temporary habitat losses are predicted within the buffer zones due to construction activities. New drainage systems and construction could disrupt natural water flow, leading to drying, loss, modification, or disturbance of adjacent peatland and wetland habitats within the buffer zone. Disturbance of peat and carbon-rich soils (notably habitats classified as M1, M3, M15, M17, and M25) may alter soil structure and local drainage patterns, impacting the stability of nearby wetland and bog habitats within the buffer zone, reducing their water retention capacity, and causing drying along habitat boundaries. This could result in a shift in vegetative composition, with native wetland specialists being replaced by species that tolerate drier conditions, thereby degrading habitat quality and biodiversity.
- 8.7.5 Habitat losses within the footprint of structures such as dams and powerhouse, as well as the area proposed to be inundated and the access road, would be permanent.
- 8.7.6 **Table 8-10** below presents the total area of predicted losses for each vegetation community within the PSH.

Table Error! No text of specified style in document.-10: Predicted Habitat Losses within the PSH.

NVC Community	Predicted Temporary Habitat Loss (Ha)	Predicted Permanent Habitat Loss (Ha)
A22	0.00	10.16
H14	0.68	0.16
H17	0.85	0.14
M1	Unknown*	Unknown*
M3	Unknown*	Unknown*
M6	0.07	0.28
M10	Unknown*	Unknown*
M15	24.19	49.84
M17	7.25	54.5
M25	6.99	9.06
W17	0.14	0.01

* Habitats with unknown area are generally isolated, small, or occurring as a component of other NVC habitats. These habitats occur across the study area but are not feasible to map individually and an area estimate has not been provided.

- 8.7.7 Besides the loss of habitats to accommodate the PSH, further off-site negative effects on retained habitats are predicted during the construction phase, including:
- Reduced stability of peat-based habitat (M15 and M25) on steep slopes, which in turn may have further impacts on habitat and species should a peat slide event occur
 - There is a risk of contamination from silt-laden runoff, fuel, or oil spills resulting from excavation activities (especially in borrow pits) and track surface degradation. These could release sediments and pollutants that may degrade nearby wetland freshwater, and downstream habitats reliant on clean water.
 - Construction activities increase the risk of introducing invasive plant species (e.g., rhododendron) which could spread to retained habitats leading to habitat degradation over time.
 - Dust generation may smother adjacent vegetation, inhibiting photosynthesis, reducing plant growth, and altering sensitive plant communities. It can also impact soil and peat quality by changing pH levels and nutrient availability
 - Heavy machinery can compact soils and peat making it difficult for native vegetation to recover and affecting water filtration, affecting drainage patterns and altering the native vegetation composition over time.

SAR

- 8.7.8 Works along the SAR are sub-divided into two different areas (western extent, generally comprising new track, and the eastern extent, comprising provision of passing places and road widening), which would lead to different negative effects on habitats. The SAR (western extent) would be primarily subject to vegetation clearance works required to extend the existing access track across approximately 4.2km of previously undeveloped ground. This would lead to the loss, modification and/or disturbance of identified Annex 1 habitats (M15, M17, M25, and S9).
- 8.7.9 To account for loss of habitat predicted during the construction phase, a 20m buffer has been applied to all sections of the SAR (western extent) subject to road creation and widening works. All habitat loss and alterations within the development footprint is predicted to incur permanent habitat losses, while sections of habitat within the buffer zone are predicted to incur temporary habitat losses.
- 8.7.10 **Table 8-11** below presents the total area of predicted losses for each vegetation community within the western extent of the SAR.

Table Error! No text of specified style in document.-11: Predicted Habitat Losses within the SAR (Western Extent).

NVC Community	Predicted Temporary Habitat Losses (ha)	Predicted Permanent Habitat Losses (ha)
M15	5.28	2.56
M17	0.45	0.42
M25	1.97	1.67
S9	0.09	0.03

- 8.7.11 As vegetation removal works would be limited to creating a new linear feature, negative effects on adjacent habitats may include impacts similar to the ones listed for the PSH, as per Section 8.6.7.

- 8.7.12 The SAR (passing places and felling works) comprises the existing section of the Glen Garry access track where new passing places and sections of road widening would be developed. A new section of track and bridge connecting to the A87 to the Glen Garry access track where would be constructed as well as a working area required to facilitate the construction of a new bridge over the Gearr Garry. The above proposed works would lead to the loss, modification and/or disturbance of the identified Annex 1 habitats (M15, M17, M25, W17, W18⁵⁴) and priority habitats (W4, W11). Felling within woodland habitats would be minimal, primarily involving the removal of self-seeded young trees from road verges. To mitigate impacts, passing places would be micro-sited to avoid older native trees, ensuring an appropriate stand-off distance from their root protection zones is maintained.
- 8.7.13 To account for temporary habitat loss to accommodate the working area, cut and fill slopes, and new drainage ditches, where applicable, a 10m buffer has been applied to all sections of the SAR subject to either road widening works or the development of passing places. Buffers applied to areas proposed to be subject to felling works vary depending on the ecological value of the habitats, with habitats of a higher ecological value (e.g. western acid oak woodlands) being assigned a 30m buffer, while areas of forestry plantation not being subject to any buffer. All habitat loss within the development footprint are predicted to incur permanent habitat losses, while sections of habitat within the buffer zone are predicted to incur temporary habitat losses.
- 8.7.14 **Table 8-12** below presents the total area of predicted losses for each vegetation community within SAR (construction of passing places and road widening).

Table Error! No text of specified style in document.-12: Predicted Habitat Losses within the SAR (Passing Places and Felling Works).

NVC Community	Predicted Temporary Habitat Losses (ha)	Predicted Permanent Habitat Losses (ha)
M15	0.19	0.02
M17	0.05	0.01
M25	0.46	0.2
W4	0.04	0
W11	1.35	0.11
W17	0.3	0.01
W18	0.42	0.04

⁵⁴ Note: W17 and W18 NVC communities are considered to be of international importance only along the specific areas of the SAR which align with sections of Caledonian Pine Forest and Annex 1 Western Acidic Oak woodland; both habitats which are absent from the PSH.

- 8.7.15 Negative effects from the proposed works on habitats along the SAR (passing places and felling works) include impacts similar as the ones listed for the PSH, as per paragraph 8.7.6.

Main Site Compound

- 8.7.16 The Main Site Compound area, located beside the SAR, is predicted to incur habitat losses related to the installation of the compound itself, which is expected to occupy the area throughout the duration of the PSH development (approximately eight years). The above proposed works would lead to the loss, modification and/or disturbance of the identified Annex 1 habitats (M15 and M25) and M6 Priority Habitat.
- 8.7.17 To account for temporary perimeter habitat loss a 10m buffer was applied around the entirety of the Main Site Compound area. As the majority of the area comprises clear fell with early successional heathland vegetation regeneration present, and due to the temporary nature of the proposed Main Site Compound area, most of the habitat losses within this area are considered to be temporary. However, permanent losses of small area of habitats of conservation important (M6, M15, and M25), are predicted due to the timescales required for the reinstatement of these habitats following their complete removal.
- 8.7.18 **Table 8-13** below presents the total area of predicted losses for each vegetation community within the Main Site Compound area.

Table Error! No text of specified style in document.-13: Predicted Habitat Losses within the Main Site Compound.

NVC Community	Predicted Temporary Habitat Losses (ha)	Predicted Permanent Habitat Losses (ha)
M6	0.10	0
M15	0.50	0
M25	1.19	0

- 8.7.19 Negative effects from the proposed works on habitats along the Main Site Compound include:
- There is a risk of contamination from silt-laden runoff, fuel, or oil spills resulting from excavation activities (especially in borrow pits) and track surface degradation. These could release sediments and pollutants that may degrade nearby wetland and downstream habitats reliant on clean water.
 - Construction and new drainage systems could alter natural water flow, which may lead to the drying, loss, modification, or disturbance of retained peatland and wetland habitats.
 - Dust generation may smother adjacent vegetation, inhibiting photosynthesis, reducing plant growth, and altering sensitive plant communities. It can also impact soil and peat quality by changing pH levels and nutrient availability
 - Heavy machinery can compact soils and peat making it difficult for native vegetation to recover and affecting water filtration, affecting drainage patterns and altering the native vegetation composition over time.

Borrow Pits

- 8.7.20 There are potential impacts on retained habitats of conservation concern during excavation for borrow pits, primarily due to the possible release of sediments from stockpiling areas which could pollute downstream habitats that depend on clean water inputs. Additionally, contaminated surface water runoff, along with potential fuel or oil spills, poses a risk of degradation to nearby retained habitats

Overall Impact

- 8.7.21 Table 8-14 overleaf below presents the total area of predicted losses for each vegetation community within the PDA.

Table Error! No text of specified style in document.-14: Overall Predicted Habitat Losses Across the PDA.

Habitat	Predicted Temporary Habitat Losses (ha)	Predicted Permanent Habitat Losses (ha)
A22	0	10.16
Dry Heath (H14 & H17)	1.53	0.3
M6	0.07	0.28
M15	29.71	52.42
M17	7.75	54.93
M25	9.83	10.93
S9	0.09	0.03
W4	0.04	0
W11	1.35	0.11
W17	0.17	0.02
W18	0.42	0

- 8.7.22 The construction impacts on habitats within all areas of the Proposed Development are considered to be of **low** to **moderate** magnitude and the IEF to be of **medium** to **high** sensitivity. The confidence level for the assessment is high.

Operational Effects

- 8.7.23 No changes to habitats are expected during the operational phase for the PSH and no negative effects on this IEF are predicted.
- 8.7.24 The SAR is only expected to be utilised infrequently during the operational phase for any major maintenance or refurbishment works and no further negative effects on the habitats are predicted.
- 8.7.25 The operational impacts are considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high.

Otter

Construction Effects

- 8.7.26 While it is unlikely that any local population of otters solely relies on the site due to the abundance of suitable habitat in the wider area, habitat loss and degradation of woodland, wetland, and watercourses within the PDA, particularly along the SAR, would temporarily reduce commuting and foraging opportunities. Additionally, disturbance impacts and the risk of injury or death to individuals would extend throughout the construction phase, which is expected to last approximately eight years. Construction phase impacts are expected to increase during the approximately five year period where construction activities would be concentrated within the PSH.
- 8.7.27 The otter holt feature situated on the southern bank of the River Garry was assessed as being non-active during 2024 monitoring. However, it is possible that this feature could become active during the intervening period prior to the construction phase. Furthermore, new otter holt sites could become established within the PDA, or adjacent areas ahead of construction commencing, or during the construction period. It is possible that newly established holt features could be damaged, destroyed, or abandoned as a result of construction activities, leading to stress and displacement of adult otter, injury and/or death of young otter, impact on breeding success, and a breach of wildlife protection laws.
- 8.7.28 During the construction phase, there is a risk of otter injury or death due to vehicle movements on tracks, especially in early morning and evening hours when otters are most active. Surface work is scheduled from 07:00 to 19:00; however, underground operations would continue 24 hours a day, resulting in continuous vehicle traffic within the western SAR between the main compound area and the PSH area. However, no nighttime traffic is forecast between the A87 and the Main Site Compound area. Traffic during the dusk, night and dawn period would coincide with peak otter activity time significantly increasing the risk of otters being struck, injured, or killed on tracks, leading to a potential loss of a small number of individuals nearby busier sections of track. Estimated daily vehicle trips range from 11 to 48 between Invergarry and the Main Site Compound and from 30 to 269 between the Main Site Compound and the PSH, depending on the project phase. This risk is heightened during phases with higher traffic volumes including a period of approximately 5 years which incorporates the main construction period within the PSH. High-activity periods are predicted to coincide with elevated risk to otters. Additional effects of increased traffic volume are that otter would be displaced from habitat immediately surrounding the SAR.
- 8.7.29 Death or injury to otter could also occur as a result of a pollution incident, either through direct contact with a contaminant or indirectly through consumption of affected prey items. Prey populations in the locale could also be temporarily reduced in the short term if they are affected by a pollution incident. In the scenario of a pollution incident, there is also a potential for negative effects to otter via the biomagnification of pollutants through the local food chain, which could lead to the spread of the original pollutant. However, the pollution event is likely to be restricted in its extent and there is abundant alternative foraging ground available in the wider landscape.
- 8.7.30 During construction, an increase in visual, artificial light, vibration, and noise disturbances may displace otters that currently use the area for foraging and commuting. With the workforce expected to reach around 500 people at peak construction, there would be a substantial contribution to noise and light pollution. Temporary lighting is required for all external construction activities during hours

of darkness and low natural light. However, this workforce would be primarily concentrated in the PSH and Main Site Compound area, representing only a small portion of the overall site.

- 8.7.31 Disturbance-intensive activities, such as surface blasting, would be limited to daytime hours between 08:00 and 20:00 to avoid peak otter activity times, though these hours would coincide with otter activity in from early September to early April when daylight hours are shorter. The primary expected response from otters is avoidance of the disturbed areas, which could lead to habitat fragmentation, particularly around high-activity zones. This displacement may disrupt otter movement and foraging patterns, reducing habitat connectivity and potentially impacting local otter populations. This would reduce the availability of foraging habitat for the local otter population, though alternative foraging areas and commuting routes are considered sufficient to sustain the population.
- 8.7.32 During construction, open trenches within active work areas could result in death/injury to otter.
- 8.7.33 All of the above negative effects are considered to be temporary and there is not predicted to be an effect on the overall conservation status of otter in the locale.
- 8.7.34 The impacts of the construction phase on otter are considered to be of **low to moderate** magnitude and the IEF to be of **low** sensitivity. The confidence level for the assessment is high.

Operational Effects

- 8.7.35 During the operational phase, no significant effects on otter are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss would be required. External lighting would only be provided at key areas, such as the powerhouse and switchyard and would only be used during essential operational and maintenance activities. Staff vehicles for powerhouse staffing, routine operations, and maintenance would use the existing access tracks and powerhouse area, where a 15mph speed limit would be enforced. These visits would include daily visits to the powerhouse, weekly visits to the dams, and non-routine maintenance of the infrastructure. For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.
- 8.7.36 As such the impacts of the operational phase on otter is considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high.

Pine Marten and Red Squirrel

Construction Effects

- 8.7.37 It is not considered that any local population of pine marten or red squirrel would solely rely on the site given the abundance of suitable habitat in the wider area; however, habitat loss, degradation, and disturbance of woodland within the PDA, and particularly within the SAR, would lead to temporary reduction of resting, commuting, and foraging opportunities. Additionally, disturbance impacts and the risk of injury or death to individuals would extend throughout the construction phase (refer to otter section for approximate timeframe).
- 8.7.38 No active pine marten dens or red squirrel dreys were identified during the protected species survey, but this does not confirm their absence due to pine martens' elusive, den-switching behaviour and red squirrels' habit of building multiple dreys. This, coupled with the secretive nature of pine martens and the arboreal habitats of red squirrels, makes locating dens and dreys challenging. This highlights the need to preserve mature tree cover as a precaution. Vegetation clearance for the western SAR section and its connection to the A87 would result in a loss of woodland habitat, potentially causing displacement of both species from areas surrounding the SAR. However, the landscape offers abundant, well-connected woodland of similar quality, expected to support both pine martens and red squirrels throughout construction.

- 8.7.39 Specific habitats within the construction area provide important resources for each species. The established clear-fell habitat in the Main Site Compound area supports prey such as field voles (*Microtus agrestis*) for pine martens, while native Scots pine and non-native conifer woodlands within the SAR supply red squirrels with food sources and nesting sites. The restricted loss of these habitats is not expected to have a significant negative impact, given the availability of similar habitats in the locale.
- 8.7.40 There is a risk of injury or death to both species from vehicle movements on the SAR, especially during dawn and dusk when pine martens are most active (see other section for schedule and traffic details). Although a 15mph speed limit on the SAR aims to reduce collision risks, both species remain vulnerable to construction-related traffic.
- 8.7.41 During construction, increased visual disturbances, artificial light, vibration, and noise may displace both pine martens and red squirrels from areas used for foraging and commuting (refer to other section for disturbance details). Both species are likely to avoid disturbed areas, which could lead to temporary habitat fragmentation around high-activity zones. This may disrupt movement and foraging patterns, though alternative foraging areas and commuting routes should be sufficient to sustain local populations. During construction, open trenches within active work areas could result in death/injury to pine marten and red squirrel if they enter these areas accidentally.
- 8.7.42 All of the above negative effects are considered to be temporary.
- 8.7.43 The impacts of the construction phase on pine martens and red squirrels are considered to be of **low** to **moderate** magnitude, with these IEFs assessed as having **low** sensitivity. The confidence level for these assessments is high.

Operational Effects

- 8.7.44 During the operational phase, no significant effects on pine marten and red squirrel are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss is expected.
- 8.7.45 The SAR would not be in use during the operational phase. Staff vehicles for powerhouse staffing, routine operations, and maintenance would use the hill tracks and powerhouse area, where a speed limit would be enforced. No presence of pine marten or red squirrel is expected along the hill track and powerhouse area, as the habitats are considered to be of negligible suitability for the species. All excavation activities would have ceased during the operational phase. For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.
- 8.7.46 As such the impacts of the operational phase on pine marten is considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high.

Amphibians

Construction Effects

- 8.7.47 Significant negative effects on amphibians, particularly common toad, are predicted within both the PSH and SAR areas. The loss of wetland and aquatic habitats within the PDA is expected to result in potential injury, death, or displacement of individual toads. This habitat loss may disrupt local population dynamics by fragmenting connectivity between suitable habitats. Although abundant foraging habitat is available nearby, the immediate reduction in high-quality wetland could lead to localised declines, particularly within the PSH area. Over time, however, individuals are expected to adapt to alternative habitats, mitigating long-term impacts.
- 8.7.48 The PSH works are also anticipated to lead to some habitat fragmentation, potentially impacting amphibian commuting routes and mating opportunities. However, connectivity would be retained, particularly along the southern slopes of Leac Doire Lochaidh.

- 8.7.49 Vegetation clearance activities pose a risk of direct harm to amphibians, which may be injured, killed, or disturbed while sheltering, foraging, or basking in the vegetation. Disturbance during active periods could displace amphibians from suitable habitat, while injury or mortality may occur if they are unable to escape from machinery in time. This impact is particularly significant during the hibernation period. If disturbed while hibernating, amphibians may be exposed to harmful conditions, increasing their risk of fatal exposure to cold or dehydration due to limited winter mobility. Such losses could lead to localised declines in the amphibian population.
- 8.7.50 Edge effects, such as silt runoff from construction, are anticipated to impact terrestrial habitat for amphibians within a 30-meter buffer around the PDA. Increased siltation could degrade adjacent habitat for amphibians, leading to further medium-term displacement during the construction phase.
- 8.7.51 Pollution incidents would result in direct injury or death to amphibians and indirect effects through contamination of prey species within the local area. Biomagnification of pollutants through the food chain, starting with invertebrates, and leading to broader effects on amphibians and predatory species which rely on these food sources. In the immediate vicinity, pollution could reduce the abundance of key prey items causing localised food scarcity for amphibians. Additionally, waterborne pollutants may alter water quality in nearby bog pools or wetlands, potentially affecting amphibian breeding sites by lowering reproductive success, reducing larval survival rates, and impacting the health of juvenile and adult amphibians.
- 8.7.52 Along the SAR, the permanent removal of 0.17ha of native woodlands is expected to contribute to the loss of suitable habitat for hibernating amphibians that rely on woodland features during the winter including leaf litter, fallen logs, and heaving root plates. Furthermore, the inundation of the PSH area would result in the loss of boulders within the moorland that may provide further hibernation habitat. The loss of this resource could increase the local population of amphibians' vulnerability to colder temperatures, dehydration, and predation during hibernation periods. However, given the limited scale of felling/boulder removal required for the construction of the Proposed Development, and the abundance of similarly suitable woodland and boulder habitats in the surrounding area, no significant impact on the local amphibian population is anticipated.
- 8.7.53 Increased vehicular activity on the SAR and hill track is predicted to heighten the risk of collision-related injury or death for amphibians attempting to cross these tracks.
- 8.7.54 Open trenches and excavation works pose a risk of trapping amphibians, which could lead to injury, death, or potential breaches of wildlife protection laws.
- 8.7.55 Any construction effects except for habitat loss are considered to be temporary, as the SAR is expected to be in only very occasional use following the completion of the construction phase of the Proposed Development.
- 8.7.56 The impacts of the construction phase on amphibians are considered to be of **low-moderate** magnitude and the IEF to be of **low** sensitivity. The confidence level for the assessment is moderate.

Operational Effects

- 8.7.57 During the operational phase, no significant negative effects on amphibians are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss is expected.
- 8.7.58 The use of rock armour and bund features within the development would create additional hibernation opportunities for amphibians within open moorland habitats.
- 8.7.59 Staff vehicles for powerhouse staffing, routine operations, and maintenance would use the existing C1144 road, hill track, and powerhouse area. The SAR would only be utilised very occasionally during the operational phase. For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.

- 8.7.60 As such the impacts of the operational phase on amphibians is considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high

Reptiles

Construction Effects

- 8.7.61 The Proposed Development would lead to the permanent loss of approximately 118 hectares of upland habitats suitable for reptile foraging, hibernation, and basking, particularly within the PSH area and the western extent of the SAR. This includes high-quality reptile habitats, such as dry heath, wet heath, blanket bog, and tussocky grassland, which are essential for species like the common lizard and adder. The loss of these habitats may reduce local population sizes of common lizard and adder due to the decreased availability of suitable habitat. Displaced individuals may face increased competition and predation risks in remaining habitats. However, given the abundance of similar habitat types in the surrounding landscape, this habitat loss is not expected to lead to a decline in the overall local population.
- 8.7.62 Additionally, within the wider PDA, the permanent removal woodland edge habitat would result in a localised reduction of suitable habitat for slow worms. Despite this loss, suitable habitat remains prevalent in the site and wider landscape, and therefore, this is not predicted to significantly impact the local slow worm population.
- 8.7.63 Vegetation clearance activities pose a risk of direct harm to reptiles, as described in the amphibian section above. This impact is especially significant during the hibernation period, when reptiles are less mobile and more vulnerable to injury or fatal exposure if disturbed.
- 8.7.64 Along the SAR, increased vehicular and personnel activity is expected to raise the probability of collisions with reptiles using the track for basking, particularly slow worms, common lizards, and potentially adders. This risk is especially pronounced in early spring when reptiles have just emerged from hibernation and are sluggish in their movements. The heightened risk of collision due to construction traffic could lead to direct injury or mortality of individual reptiles, potentially reducing local population numbers.
- 8.7.65 Pollution incidents could lead to direct injury or death for reptiles and indirect effects through contamination of prey species within the local area (as described in the Amphibian section above). Additionally, contaminants that accumulate in soil or water could degrade the quality of retained habitats, such as bog pools and wetlands, which reptiles use for foraging and hydration, potentially impacting their overall health and survival.
- 8.7.66 The construction phase would involve the use of existing quarries along the SAR for borrow pits and to store construction materials. These quarries provide suitable basking resources for reptiles and the temporary usage of these areas may lead to a limited and localised displacement of a small number of reptiles. Likewise, the storage of heavy materials in quarries and newly built areas of hardstanding is also expected to increase the probability of death and/or injury of reptiles that may find themselves trapped or crushed under stones, rubble or other construction materials.
- 8.7.67 Within both the SAR and PSH, presence of open trenches and other excavation works are expected to take place, which would pose a risk to reptiles that may remain trapped and potentially pose a breach of wildlife protection laws.
- 8.7.68 Any negative effects on reptiles related to works within the SAR and PSH (excluding habitat loss) are, however, considered to be temporary, as the SAR would only be expected to be in very occasional use following the construction phase of the Proposed Development.
- 8.7.69 The impacts of the construction phase on reptiles are considered to be of **low to moderate** magnitude and the IEF to be of **medium** sensitivity. The confidence level for the assessment is moderate.

Operational Effects

- 8.7.70 During the operational phase, no significant effects on reptiles are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss is expected.
- 8.7.71 The use of rock armour and bund features within the development would create additional hibernation opportunities for reptiles within open moorland habitats.
- 8.7.72 Staff vehicles for powerhouse staffing, routine operations, and maintenance would use the existing C1144 road, hill track, and powerhouse area. The SAR would only be utilised very occasionally during the operational phase. For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.
- 8.7.73 As such the impacts of the operational phase on reptiles is considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high

Invertebrates

Construction Effects

- 8.7.74 The permanent loss of high altitude habitat within the PSH area due to the construction of dams, hill tracks, and the inundation area could result in potential death, injury, or displacement of invertebrates, including the moss carder bee, bilberry bumblebee, argent and sable moth, and northern dart moth. Permanent loss of lower altitude habitats within the PSH and western extent of the SAR could result in potential death, injury, or displacement of large heath, small heath, broom moth, and small pearl-bordered fritillary. However, suitable habitats for these upland specialists, such as blanket bog, wet grassland, woodland edge, and upland moorland—are abundant and well-connected in the surrounding landscape, supporting their larval and adult food plants. Therefore, these habitat losses are not expected to impact the conservation status of these invertebrates, which generally have more stable population trends in the Scottish Highlands than in the lowlands or the rest of the UK.
- 8.7.75 Construction along the SAR would involve the permanent removal of 52.42ha of wet heathland, 54.93ha of blanket bog, and 0.17ha of native woodland habitat suitable for invertebrates. However, due to the smaller scale of habitat loss and fragmentation compared to the PSH area, along with the availability of similar or higher-quality habitats in the vicinity, these changes are not predicted to negatively affect the conservation status of invertebrate species along the SAR.
- 8.7.76 Construction activities may lead to the degradation of adjacent, retained habitats for invertebrates due to edge effects, including increased dust, silt runoff, and pollution. Dust and silt deposition on vegetation can reduce the availability and quality of nectar and larval food plants, impacting species such as large heath and small pearl-bordered fritillary. Pollution, including potential fuel or oil spills, may alter soil and water quality, further degrading the habitat suitability for sensitive invertebrates. These edge effects could reduce food resources, lower breeding success, and lead to local declines in invertebrate populations that rely on these retained habitats.
- 8.7.77 Increased risk of vehicular collision is not expected to pose a major negative effect for invertebrates. Although, the increased number of vehicles along the SAR during the construction phase would be likely to lead to an increased probability of death and/or injury on a limited number of flying invertebrates. It is not expected that the death of a limited number of invertebrates as a result of vehicular collision would negatively effect on their conservation status in the locale.
- 8.7.78 Any negative effects on invertebrates related to works within the SAR and PSH (excluding habitat loss) would, however, be considered to be temporary, as the SAR is only expected to be in very occasional use following the completion of the construction phase of the Proposed Development.

- 8.7.79 The impacts of the construction phase on invertebrates are considered to be of **low** to **moderate** magnitude and the IEF to be of **low** sensitivity. The confidence level for the assessment is moderate.

Operational Effects

- 8.7.80 During the operational phase, no significant effects on invertebrates are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss is expected.
- 8.7.81 For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.
- 8.7.82 As such the impacts of the operational phase on invertebrates is considered to be of **negligible** magnitude and the IEF to be of **negligible** sensitivity. The confidence level for the assessment is high

Odonates

Construction Effects

- 8.7.83 As with the invertebrate section above, the loss of bog pools and blanket bog for the creation of the dams, hill track, inundation zone, and western extent of the SAR may lead to the death/injury and/or displacement of northern emerald and white-faced darter. However, suitable habitats for these species are present in the locale and it is not expected that the habitat losses alone would affect the local conservation status of any these species.
- 8.7.84 The inundation process itself is expected to lead to the death and/or injury of azure hawker larvae, which are abundantly found within bog pools within the dam and inundation zone boundary. The loss of a significant number of azure hawker individuals has the potential to lead to significant negative effects on the local conservation status of the species due to their restricted range.
- 8.7.85 Along the SAR, the road widening works and creation of passing places is predicted to result in the loss of Sphagnum-filled ditches which are currently hosting larvae/nymphs of odonates, particularly azure hawker and northern emerald. This could potentially lead to the death and/or injury of odonate larvae, as well as the displacement of a small number of individuals. However, the majority of the Sphagnum-filled along the SAR provide only a limited suitability for common odonate species, and their removal is not expected to negatively affect on the conservation status for any Red List odonates in the locale.
- 8.7.86 Edge effects on surrounding habitats, particularly bog pools, for example changes in the water pH or drying effects and vegetation changes, would also be expected to further increase the area of impacts for odonates to around 30m around the PDA boundaries.
- 8.7.87 As a freshwater dwelling taxonomic group, odonates are particularly susceptible, even among invertebrates, to pollution events. As a result, any potential pollution events such as oil spills, would be expected to lead to significant negative effects on the local odonate communities. Moreover, any pollution event negatively affecting on odonates, would also have the potential for cascading effects on the local food chains, either via the reduction of prey items or via biomagnification.
- 8.7.88 Increased risk of vehicular collision with adult odonates as a result of increased vehicular activity along the SAR is possible, however, it is not expected that the resulting death of a small number of odonates would pose a significant conservation risk.
- 8.7.89 Any negative effects on odonates related to works within the SAR and PSH (excluding habitat loss) are, however, considered to be temporary, as the SAR would only be expected to be in use very occasionally after completion of the construction phase of the Proposed Development.

- 8.7.90 The impacts of the construction phase on odonates are considered to be of **low to moderate** magnitude and the IEF to be of **moderate** sensitivity. The confidence level for the assessment is moderate.

Operational Effects

- 8.7.91 During the operational phase, no significant effects on odonates are predicted, beyond those already identified within the construction phase assessment. Infrastructure would already be in place and no further habitat loss is expected.
- 8.7.92 For major maintenance events, temporary on-site storage of hazardous chemicals may be necessary, with standard pollution prevention controls in place to ensure safety.
- 8.7.93 As such the impacts of the operational phase on odonates is considered to be of **negligible** magnitude and the IEF to be of **moderate** sensitivity. The confidence level for the assessment is high.

8.8 Cumulative Impacts

- 8.8.1 Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.
- 8.8.2 This section of the EcIA assesses the ecological effects of the proposed development cumulatively with the ecological effects of other developments that have either received planning permission or are the subject of a planning application which has not yet been determined.
- 8.8.3 The Highland Council Interactive Planning Map⁵⁵ was utilised to identify nearby developments. The recent developments (registered / approved within the past 5 years) listed below were identified within 5km of the site, where development could lead to potential cumulative impacts on IEFs associated with the Fearna PSH development.

Bunloinn Wind Farm

22/01760/S36

- 8.8.4 **Planning status:** Approved by Scottish Ministers
- 8.8.5 **Project description:** Erection and operation of a wind farm for a period of 35 years, comprising 10 wind turbines with a maximum blade tip height of 230m, access tracks, borrow pits, battery energy storage system, substation, control building, and ancillary infrastructure.
- 8.8.6 The proposed location of the wind farm is located between Loch Loyne and Loch Cluanie, approximately 8km from the closest point of the SAR and over 10km from the Fearna PSH development. As a result, the wind farm development is not considered to be within the Zol for any of the terrestrial IEFs and no cumulative effects are expected.

Millenium East Wind Farm

24/00359/SCOP

- 8.8.7 **Planning status:** Currently in EIA Scoping Phase.

⁵⁵ Available from: [View planning applications | Planning permission | The Highland Council](#) (Accessed October 2024)

- 8.8.8 **Project description:** Erection and operation of a wind farm, comprising 8 wind turbines with a maximum blade tip height of 200m, energy storage facility, and ancillary infrastructure.
- 8.8.9 The proposed location of the wind farm is located approximately 8km southwest of Fort Augustus, over 5km from the nearest point of the SAR and over 20km from the PSH development. As a result, the wind farm development is not considered to be within the ZoI for any of the ecological IEFs and no cumulative effects are expected.

Tomchrasky Wind Farm

22/05955/S36

- 8.8.10 **Planning status:** Awaiting decision.
- 8.8.11 **Project description:** Erection and operation of a wind farm comprising 14 wind turbines with a maximum blade tip height of 185m, up to 50 battery storage units, anemometer mast, access tracks, four borrow pits and associated infrastructure.
- 8.8.12 The proposed location of the wind farm is located approximately 14km west of Fort Augustus, over 10km from the nearest point of the SAR and over 20km from the PSH development. As a result, the wind farm development is not considered to be within the ZoI for any of the ecological IEFs and no cumulative effects are expected.

Corriegarth 2 Wind Farm

21/00101/S36

- 8.8.13 **Planning status:** Approved by Scottish Ministers
- 8.8.14 **Project description:** Erection and Operation of a Wind Farm for a period of 30 years, comprising of 16 Wind Turbines with a maximum blade tip height of 149.9m, access tracks, borrow pits, substation, control building, and ancillary infrastructure.
- 8.8.15 The proposed location of the wind farm is located approximately 14km northeast of Fort Augustus, over 20km from the nearest point of the SAR and over 40km from the PSH development. As a result, the wind farm development is not considered to be within the ZoI for any of the ecological IEFs and no cumulative effects are expected.

Chrathaich Wind Farm

23/03311/S36

- 8.8.16 **Planning status:** Awaiting decision.
- 8.8.17 **Project description:** Erection and operation of a wind farm for a period of 30 years, comprising of 14 wind turbines with a maximum blade tip height of 149.9m, access tracks, borrow pits, substation, control building, and ancillary infrastructure.
- 8.8.18 The proposed location of the wind farm is located approximately 12km northwest of Fort Augustus, over 20km from the nearest point of the SAR and over 30km from the PSH development. As a result, the wind farm development is not considered to be within the ZoI for any of the ecological IEFs and no cumulative effects are expected.

Loch Liath Wind Farm

23/02462/S36

- 8.8.19 **Planning status:** Under consideration.

- 8.8.20 **Project description:** Erection and operation of a wind farm for a period of 35 years, comprising a total of 13 wind turbines with Turbines 2, 3, 4, 5, 8, 9, 10, 11, 12, and 13 having a maximum blade tip height of 200m, and Turbines 1, 6 and 7 having a maximum blade tip height of 180m, access tracks, borrow pit, substation, control building, anemometer mast, and ancillary infrastructure.
- 8.8.21 The proposed location of the wind farm is located approximately 7km north of Fort Augustus, over 15km from the nearest point of the SAR and over 30km from the PSH development. As a result, the wind farm development is not considered to be within the Zol for any of the ecological IEFs and no cumulative effects are expected.

Dell 2 Wind Farm

24/00933/S36

- 8.8.22 **Planning status:** Under consideration.
- 8.8.23 **Project description:** Erection and operation of a wind farm for a period of 35 years, comprising of 9 wind turbines, 4 with a maximum blade tip height of 180m and 5 with a maximum blade tip height of 200m, access tracks, borrow pits, substation, control building, and ancillary infrastructure.
- 8.8.24 The proposed location of the wind farm is located approximately 9km northeast of Fort Augustus, over 20km from the nearest point of the SAR and over 40km from the PSH development. As a result, the wind farm development is not considered to be within the Zol for any of the ecological IEFs and no cumulative effects are expected.

Fiodhag Wind Farm

19/05046/SCOP

- 8.8.25 **Planning status:** Scoping Application Decision Issued.
- 8.8.26 **Project description:** Construction of wind farm comprising of 46 turbines (height to blade tip 149.9m)
- 8.8.27 The proposed location of the wind farm is located approximately 15km northwest of Fort Augustus, over 20km from the nearest point of the SAR and over 30km from the PSH development. As a result, the wind farm development is not considered to be within the Zol for any of the ecological IEFs and no cumulative effects are expected.

Skye Transmission Reinforcement Project

22/04580/S37

- 8.8.28 **Planning status:** S37 Raise Objection.
- 8.8.29 **Project description:** Construct and operate approximately 110 kilometres (km) of new double circuit steel structure 132 kV overhead transmission line and associated infrastructure.
- 8.8.30 This new line is running along the north side of Loch Garry which is part of the West Inverness-shire Lochs SPA. The 5km buffer extends to Loch Loyne, Lochan Bad an Losguinn and Loch Lundie which is also part of the designated area for these species.
- 8.8.31 A new section of steel lattice towers and related power lines is proposed to be installed along the existing road forming the western extent of the SAR and pumphouse section of the PSH. At least eight new steel lattice towers are proposed to be installed in the area immediately adjacent to the Loch Quoich dam. The powerline would then run along the entire length of Loch Garry before intersecting the A87.

- 8.8.32 The development of the line along the northern banks of Loch Garry, and especially near Loch Quoich, is expected to contribute to localised habitats losses that could have cumulative negative effects on annexe 1 habitats of international importance (M15, M17 and M25 primarily) and SBL priority habitats of national importance (U5 and W17), which are located along the existing road connecting the dam and the A87. However, the habitat losses required for the installation of steel lattice towers are relatively small compared to the availability of the habitats affected within the wider area, and it is not expected that the cumulative loss of habitats would significantly alter the conservation status or availability of any of the habitats in the locale.
- 8.8.33 The further loss of habitats, paired with the added disturbances from construction works, could, however, contribute to the local displacement of otter, pine marten, amphibians, reptiles and invertebrates (including odonates). However, the road along which the powerline is proposed to be installed, is expected to experience high volume of traffic for the Fearn PSH development alone, with an average of up to 269 vehicle trips per day during the construction phase. As a result, the disturbances caused by the Fearn PSH development are expected to surpass the temporary disturbances caused by the installation of a powerline, and it is not expected that the cumulative effects caused by further noise disturbances along the road for the installation of the Skye Reinforcement Project powerline would lead to significant displacement of wildlife.
- 8.8.34 No significant cumulative effects on any of the other IEFs are expected.

Replacement of the existing Quoich 132kV switchgear

22/03165/SCRE

- 8.8.35 **Planning status:** Awaiting decision.
- 8.8.36 **Project description:** Replace the existing 132kV switchgear at the switching station as a recent condition assessment highlighted the need for this asset to be replaced.
- 8.8.37 The new switch station is located to the north of Loch Garry, approximately 4km from the nearest point along the Fearn SAR.
- 8.8.38 The replacement of the switchgear is expected to slightly increase the ecological footprint of the switching station, which may lead to the loss of M15 and M25 habitats. However, these losses are considered to be limited, in relation to the availability of similar or better-quality habitats in the locale and no cumulative effects with any of the IEFs for the Fearn PSH or SAR developments are expected.

Construction and operation of new 400kV substation

23/05219/SCOP

- 8.8.39 **Planning status:** Scoping application decision issued.
- 8.8.40 **Project description:** Proposed construction and operation of new 400kV substation and platform with control building, access, laydown area(s), associated landscaping, and ancillary works.
- 8.8.41 The new substation is proposed to be located near the western banks of Loch Oich, approximately 3km east of the easternmost extent of the Fearn SAR. The development of the proposed substation and related access road is expected to primarily lead to a further loss of forestry plantation woodland in the wider area; however, some localised losses of M15, M25 habitats are possible. Due to the abundance of similar or better-quality habitats in the locale, significant negative cumulative effects on habitats are not expected.
- 8.8.42 Although the increased loss of forestry plantation could further contribute to the disturbance and displacement of pine marten and red squirrel in the wider area, suitable habitat for the species in the locale remains abundant and widespread. Furthermore, the woodlands along the Fearn SAR and the site of the proposed substation are considered to be fragmented due to the presence of the

A87 and over 2km of open moorland habitats. Therefore, no significant cumulative effects are expected for pine martin and red squirrel.

8.8.43 No significant cumulative effects on any of the other IEFs are expected.

Coire Glas – Revisited Pumped Storage Scheme

18/01564/S36 & 17/02403/SCOP

8.8.44 **Planning status:** Approved by Scottish ministers.

8.8.45 **Project description:** Development of a pumped storage scheme at Coire Glas, south of Loch Garry.

8.8.46 The Coire Glas pumped storage scheme is located less than 5km from the eastern portion from the SAR and approximately 20km from the Fearna PSH. The access road for the Coire Glas development, overlaps with the initial section of the Fearna SAR.

8.8.47 Road widening works along the Coire Glas access road, are expected to lead to loss of mainly forestry plantation habitats; however, small sections of W17 woodlands may be affected. However, the loss of these habitats is considered limited compared to the presence of similar or better-quality habitat in the locale and no significant cumulative effects on woodland habitats (including ancient woodlands) are predicted.

8.8.48 The development of the Coire Glas pumped storage scheme is expected to contribute to the local loss of blanket bog (M17) and wet heath (M15). However, as the Coire Glas and Fearna PSH developments are located over 20km away from each other, no significant cumulative effects are predicted from the loss of habitats.

8.8.49 The combination of the works along the Coire Glas access road and Fearna SAR, have the potential for causing significant cumulative effects via the disturbance and displacement of pine marten and red squirrels, via the removal of suitable woodland habitat, as well as otters utilising the River Garry. However, there is an abundance of suitable habitat for these species within the wider area and any negative cumulative effects are likely to be only temporary.

8.8.50 The loss of bog pools within both Coire Glas and the Fearna PSH, has the potential to lead to significant negative cumulative effects on invertebrates, including odonates, due to the loss of two suitable areas for sheltering, foraging and mating. However, as the two development areas are located over 20km away from each other, it is likely that any cumulative effects would be restricted to a very small number of invertebrate and odonate species capable of commuting longer distances.

8.8.51 No significant cumulative effects on any of the other IEFs are expected.

Coire Glas - Proposed new switching station

23/01651/PAN

8.8.52 **Planning status:** Unknown

8.8.53 **Project description:** Proposed new switching station to connect the Coire Glas Pumped Storage Scheme with platform, access, laydown area(s), landscaping and ancillary works (National Development)

8.8.54 The new switching station is approximately 1km to the south of Loch Garry. The 5km buffer extends to Loch Loyne, Lochan Bad an Losguinn and Loch Lundie which is also part of the designated area for these species.

8.8.55 The proposed location of the switching station is located alongside the eastern section of the SAR, within the existing Glen Garry forestry track. The development of the switching station is expected to

lead to further contribute to the loss of forestry plantation habitats, which do not constitute an important ecological risk.

- 8.8.56 The cumulative loss of forestry plantation between the Fearna PSH works along the SAR and the Coire Glas switching station, are expected to create further localised disturbances for pine marten and red squirrels, with the potential for further displacement of these species in the locale. However, similar or better habitats for pine marten and red squirrel are present and abundant within the wider area and, it is not expected that the cumulative effects from forestry plantation removal within the proposed Coire Glas switching station and the works along the SAR, would negatively affect the conservation status of either species in the locale.
- 8.8.57 No significant cumulative effects on any of the other IEFs are expected.

Corrie Glas - Pumped Storage Scheme Connection

23/02874/S37

- 8.8.58 **Planning status:** Under consideration.
- 8.8.59 **Project description:** Erection and operation of approximately 13 km of new double circuit steel structure 400 kV overhead transmission line between the consented Coire Glas Pumped Storage Scheme 3, and Fort Augustus substation.
- 8.8.60 The line runs to the east of Loch Garry to the northwest to Forth Augustus. The development encroaches on the West Inverness-shire Lochs SPA. The 5km buffer extends to Loch Loyne, Lochan Bad an Losguinn and Loch Lundie which is also part of the designated area for these species.
- 8.8.61 The majority of the overhead transmission line is located outwith the ZOI and is not considered to cause any cumulative effects. However, a small section of overhead transmission line (approximately 2.5km in length) is proposed to be installed alongside the eastern section of the Fearna SAR.
- 8.8.62 The installation of the overhead transmission line along the SAR, combined with the road widening works for the Fearna and Coire Glas access roads, is expected to further increase the loss of forestry plantation woodland habitats in the area, with the potential to also affect small parcels of W11 and W17 woodland. Although the combined habitat losses forestry plantation are considered to be significant, the availability of similar or better quality habitat in the locale is abundant and no significant cumulative effects on habitats are expected.
- 8.8.63 The significant loss of forestry plantation would, however, risk worsening the disturbances and displacement of pine marten and red squirrels utilising the eastern section of the SAR. Although, any disturbances caused by the combined proposed works are expected to be only temporary and the availability of suitable sheltering, commuting and foraging habitat for pine marten and red squirrels in the locale is expected to largely remain intact.
- 8.8.64 No significant cumulative effects on any of the other IEFs are expected.

Coire Glas - Installation of 8 km of 400 kV Electricity Cables

24/01058/SCRE

- 8.8.65 **Planning status:** Awaiting decision.
- 8.8.66 **Project description:** Installation of 8 km of 400 kV export/import electricity cables, to connect the Coire Glas generating station to the National Grid. This project is still awaiting a decision as the EIA document is still being created. It is likely to pass as it is necessary to the larger project. As of 14th of August 2024, highland council have requested a EIA as part of the screening process.
- 8.8.67 The proposed electricity cables and related infrastructure are proposed to be located approximately 3.8km south of the eastern section of the Fearna SAR and over 20km from the PSH. No significant

loss of woodland is predicted; however, loss of blanket bog (M17) and wet heath (M15) habitats is expected along the cable route. The increased local loss of these two internationally important habitats has the potential to cause significant negative cumulative effects with the loss of similar habitats along the Fearna SAR; however, significant cumulative effects with the loss of the same habitats within the PSH are not expected due to the distance between the two proposed developments.

- 8.8.68 The loss of bog pools and wet heath along the cable route, has also the potential to cause negative cumulative effects on amphibians and invertebrates utilising these habitats, as well as the woodlands along the SAR. These cumulative effects, including loss of suitable foraging and mating habitat for invertebrates (including odonates) and the loss of suitable foraging, breeding and hibernation habitat for amphibians, is likely to be significant; however, disturbances on affected species are expected to be mostly temporary and suitable habitat is expected to be retained in the locale.
- 8.8.69 No significant cumulative effects on any of the other IEFs are expected.

Coire Glas – Kilfinnan Road Upgrade Works

23/05393/FUL, 22/05277/SCOP & 22/02648/SCRE

- 8.8.70 **Planning status:** Scoping application decision issued.
- 8.8.71 **Project description:** Kilfinnan Road Upgrade to accommodate construction of Coire Glas Pumped Storage Hydro Scheme - A82 junction works, temporary access road, new bridge, storage compounds.
- 8.8.72 Kilfinnan Road is located approximately 3.7 km south of the eastern section of Fearna SAR. The road upgrade is expected to lead to the local loss of mainly grassland, forestry plantation woodland and wet heath habitats. The loss of wet heath (M15) along the Kilfinnan Road is considered to be limited in relation to the availability of similar or better quality habitats in the locale and it is not considered likely to cause significant cumulative effects with the removal of similar habitats along the Fearna SAR.
- 8.8.73 The further loss of small parcels of woodland habitats along Kilfinnan Road, may cause limited negative cumulative effects on pine marten and red squirrel, as a result of further disturbances and potential displacement. However, the woodland parcels along Kilfinnan Road are considered to be mostly fragmented from the woodlands along the Fearna SAR, thus limiting the magnitude of the cumulative effects.
- 8.8.74 No significant cumulative effects on any of the other IEFs are expected.

8.9 Mitigation and Compensation

Mitigation During Construction

Habitats

- 8.9.1 The following measures would be implemented to reduce impacts across the range of habitats present on-site and within the ZoI.
- A Construction Environment Management Document (CEMD) would be produced, detailing environmental management and monitoring measures during the construction phase.
 - An Environmental Advisor/Manager would be employed to design and implement on-site mitigation strategies as they are required.

- An independent Ecological/Environmental Clerk of Works (ECoW) would be employed to audit and report on adherence to the CEMD as well as any other relevant planning consents, environmental permits, legislation and mitigation.
- Woodland, blanket bog, and wetland would be retained where possible to maintain resources for wildlife. Where retention is not feasible, compensatory habitat would be provided.
- In order to protect retained trees during construction, an Arboricultural Impact Assessment (AIA) including a Tree Protection Plan and Tree Constraints Plan would be undertaken and actions outlined in regards to tree protection would be implemented ahead of works and retained throughout the construction phase.
- Fencing would be used to mark the construction boundary to protect off-site habitats and limit access to the works area. No building materials, spoil, machinery, or tools would be stored in areas outside of the fencing.
- Machinery/tools and building materials would be stored on an impermeable area such as hardstanding wherever possible.
- Low ground pressure vehicles would be used in sensitive habitats, such as wetlands, peatlands, and areas with soft soils, to minimise soil compaction and reduce disturbance to vegetation. These vehicles would be restricted to designated access routes to further limit their impact. Vehicular access would be restricted across unprotected ground outwith the permanent and temporary construction footprint.
- Where possible, temporary access would be 'floated' over sensitive habitats (e.g. blanket bog and wet heath) to minimise disruption to hydrology, soil structure and vegetative material.
- The western extent of the SAR would be micro-sited to maximise distance from ecologically important pools supporting the A25 vegetation community adjacent to the Gearr Garry.
- Strict biosecurity protocol would be adhered to during the construction phase to prevent the introduction of pathogens or diseases, including cleaning and disinfecting construction equipment and vehicles arriving at the site before working near retained woodland, wetland, or blanket bog.
- Dust suppression techniques would be utilised during construction, such as water sprays, to minimise dust generation, particularly in dry conditions. Stockpiles of soil/peat and building materials would be situated away from the ancient woodland, wet heath, wetland, and blanket bog boundaries.
- A surface water management plan would be produced and adhered to during construction to prevent contaminants from reaching retained wetland, wet heath, or blanket bog habitats and impacting the water quality.
- Drainage systems would be designed as far as possible to mimic natural hydrology, preventing water flow alterations in sensitive habitats.
- Scottish Environmental Protection Agency (SEPA) pollution prevention guidelines⁵⁶ would be followed in order to prevent pollution of watercourses during site clearance/construction works.
- Borrow pit areas, except for the existing FLS Poulary Quarry⁵³ which would be left so that FLS can continue material abstraction after construction of the Proposed Development is complete, would be restored by recontouring and replanting with native species once material extraction is complete.
- Excavated materials would be stored according to best practice taking care to separate, as far as is reasonable, turves, topsoils, soil and peat layers and boulders. Reinstatement would ensure that turves would be replaced on the surface, to recreate the former habitat as far as is possible

⁵⁶ SEPA (n.d.) *Guidance Documents* [online]. Available from: <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/>

- Excavations would be managed to avoid the formation of temporary waterbodies.
- A Peat and Soil Management Plan would be produced to minimise disturbance, protect soil integrity, and support peat conservation. Peat would be stored in moist, cool conditions to prevent drying and oxidation, maintaining its structure and reducing carbon emissions. Consideration would be given to protecting exposed peat areas from erosion with geotextiles such as coir matting or wool pegged in place to aid stability over the winter months. Wherever feasible, excavated peat would be taken to its final location directly, but where the temporary storage of peat is necessary, it would if possible be limited to 1 year before it is placed in its final location.
- Before starting work, toolbox talks would be given to all personnel regarding terrestrial invasive plants.
- An INNS Management Plan would be produced detailing measures required eradicate and avoid spread of rhododendron and other relevant INNS species within the PDA and all compensatory habitat creation and biodiversity enhancement areas. Treatment of outlying rhododendron shrubs within the upper catchments would be prioritised, working methodically downstream through drainage vectors, otherwise downstream areas may be re-seeded every year.

Fauna:

8.9.2 Mitigation measures to protect and minimise disturbance to a range of protected species are summarised below:

- Species Protection Plans (SPPs) for otter, pine marten, red squirrel, reptiles, amphibians, invertebrates, and odonates detailing specific mitigation and compensation measures would be included in the CEMD.
- A Toolbox Talk would be given to all personnel prior to starting work, including an overview of relevant protected species constraints on-site.
- Prior to vegetation removal/inundation of bog pools within the PSH area, and waterlogged ditches along the SAR, azure hawkers and northern emerald dragonfly eggs and larvae would be carefully translocated to suitable nearby habitat following BDS guidelines⁵⁷. This process would involve a qualified ecologist identifying and collecting larvae from impacted areas and relocating them to ecologically similar, undisturbed habitats within the vicinity. Dragonfly relocations would aim to preserve larvae populations in the locale and within the same habitats. Larvae/nymphs would not be relocated over unsuitable habitats for each species.
- Pre-commencement checks for protected species would be undertaken by the ECoW prior to vegetation clearance. Any otter holt, red squirrel dreys, pine marten dens recorded within the woodland clearance area during the pre-works inspection would require monitoring to confirm their status. Felling or construction works up to 200m from a confirmed or suspected breeding feature would be suspended until the juveniles have dispersed or the feature is confirmed to be of non-breeding status.
- An ECoW would be employed to audit adherence to mitigation full time for the duration of the project.
- Care would be taken during vegetation clearance/groundworks to ensure wildlife is not harmed. In the event any protected species are found when the ECoW is not in attendance, works would stop, the animal would not be handled, and the ECoW contacted immediately.
- Where clearance of long grass or other dense vegetation is required in areas that serve as reptile and amphibian habitat, a two-stage cutting approach would be applied to allow any

⁵⁷ British Dragonfly Society. Best Practice for Collecting Dragonflies 2021-2026. Available at: <https://british-dragonflies.org.uk/what-we-do/codes-of-practice/members-code-of-practice-on-collecting-dragonflies-2016-2021/> (Accessed October 2024).as

reptiles, amphibians or small mammals present to disperse of their own volition. The first cut would be made to a height of no less than 150mm, with a minimum of one hour and a visual inspection before a second cut to ground level. Vegetation clearance would be systematically undertaken to encourage the movement of wildlife towards retained habitat, reducing the likelihood of animals being displaced into unsuitable areas. This directional approach aims to guide species safely away from active work zones and into areas where they can find cover and shelter.

- Whenever possible, vegetation clearance of sensitive reptile habitat would avoid winter months when these species are in hibernation, generally from mid-October to March, depending on local temperatures and weather conditions.
- Lighting utilised during the construction phase would only illuminate working areas and not be directed to adjacent habitats, including woodland, riparian zones, and waterbodies, to avoid disruption to crepuscular and nocturnal species, including otter and pine marten.
- If any otter, pine marten or red squirrel are observed on or near the PDA, then works in that area would cease until the animal has dispersed naturally. The project ECoW would be contacted immediately and informed of all sightings.
- Avoid vehicles driving over suitable habitat for dragonflies, reptiles, and amphibians such as areas of blanket bog and heathland.
- Appropriate covers would be fitted over any excavations at the end of every working day. At the very least, a shallow sloping edge or some form of ramp would be placed in the excavations to allow any animals to climb out.
- All temporarily exposed pipes would be capped overnight to prevent animals gaining access and later becoming trapped.

Mitigation During Operation

- 8.9.3 Operational impacts on IEFs are predicted to be negligible. Light pollution from security lighting would be controlled during the operational phase using downward-facing, motion-sensitive lighting to prevent disturbance to nocturnal species and maintain the natural darkness of surrounding habitats. The same mitigation measures in place for the construction phase would be adhered to during any instances of maintenance or refurbishment. Regular monitoring would be maintained to confirm that operational activities do not impact surrounding habitats and species, allowing for adaptive management if conditions change.

8.10 Licencing

- 8.10.1 Protected Species Licences for otter, pine marten, and/or red squirrel would be applied for as required in advance of any works for which they are necessary.

8.11 Biodiversity Enhancements

- 8.11.1 This section should be considered in conjunction with Technical **Appendix 8.7: OBEMP**
- 8.11.2 In order to enhance the site and wider landscape for biodiversity a full Biodiversity Enhancement and Management Plan (BEMP) would be developed for all compensatory planting and habitat enhancement measures. This would include specific, measurable objectives for enhancement and management of the woodland, wetland, and blanket bog habitats over a 30-year time scale, with management to be reviewed regularly and informed by monitoring data. It is anticipated that the following actions would be included:
- 8.11.3 Approximately 511ha of bog restoration is planned within identified areas at FLS Glengarry Forest and adjacent estates (East and West Glenquoich, Foresight). Preparatory actions include peat depth surveys, peat slide risk assessments, botanical monitoring, and detailed mapping of

- drains/hags/gullies. Key restoration techniques would involve reprofiling eroded peat hags to stable slopes, stabilising gullies with dams (e.g., peat, stone, coir logs), and revegetating bare peat using textiles, turf transplants, and Sphagnum fragments. Deer impacts would be managed through targeted culling. Peatland enhancement/restoration measures would encourage the growth of species such as bog myrtle, heather, cross-leaved heath, which are important food plants for the argent and sable, northern dart, and large heath.
- 8.11.4 Reptile refugia would be created within free-draining, sunny locations within enhancement areas following the design guidelines recommended by the People's Trust for Endangered Species (PTES)⁵⁸.
- 8.11.5 Bog pool creation/restoration would complement bog restoration efforts, focusing on supporting azure hawker dragonflies and other odonates. Pools (5-30m², 70-100cm deep) would be steep-sided and grouped in clusters, seeded with Sphagnum. Locations would be finalised after further surveys, particularly within Coires Dubh and Ghlas near existing dragonfly populations. Dragonfly larvae, including azure hawker from Coires Ghlas and Dubh, would be translocated to newly created/restored bog pools. This initiative would include pre-construction site identification and long-term monitoring.
- 8.11.6 A deer exclusion area between Poulary Bridge, Loch Garry, and Kilfinnan Farm would be reinstated/extended, facilitating natural woodland regeneration and reducing deer browsing impacts. New/replaced fencing would include bird-friendly visibility enhancements. Woodland restoration targets Annex I Caledonian pine forests (27.2ha) in areas such as Allt Garaidh Ghualaich by removing exotic species and promoting natural regeneration. Supplementary planting of native trees may be required if natural regeneration is insufficient. Timber and other biomass produced from the tree removals would be used to construct log piles to provide structure, resource for invertebrate and fungi, refuge, and overwintering habitat for small mammals and amphibians. These habitat features would be situated in full or dappled shade to encourage decay. Branch bundles would be constructed and distributed according to the recommendations in Haeler et al.'s 2024 research⁵⁹. Log and brash piles within the community woodland would be maintained and encouraged and not tidied away.
- 8.11.7 Riparian woodlands along Gearr Garry, River Kingie, River Garry, and tributaries (Allt Choire a' Bhalachain, Allt Fionn-dhail) would be expanded by targeted planting of native, fast-growing species (e.g., birch, willow, alder) in nucleated clusters. Late successional species (oak, Scots pine) would follow. Planting would avoid peatlands and protect the existing Caledonian pine buffer zone. Ancient riparian woodlands on Kingie Pool and Gearr Garry would be protected and supplemented as needed.
- 8.11.8 Invasive rhododendron would be eradicated extensively on West Glenquoich Estate (north of Loch Quoich between Allt Fearna and Allt Coire Peitireach), with subsequent native woodland regeneration supported by deer exclusion fencing and supplementary planting where necessary.
- 8.11.9 Dedicated pollinator habitats would be established by planting native flowering plants and installing bee hotels within the Main Site Compound area and along the SAR verges. This would support declining pollinator species and enhance biodiversity. To support the scoped SBL invertebrate species, larval food plants specific to each species would be incorporated into the landscape design on-site (on bunds and reinstated borrow pits) and within compensatory habitat creation in the

⁵⁸ People's Trust for Endangered Species (PTES) (2020) How to make a reptile hibernaculum. Available from: https://ptes.org/wp-content/uploads/2020/09/How-to-make-a-reptile-hibernaculum.pdf?utm_source=chatgpt.com (Accessed: December 2024).

⁵⁹ Haeler, E., Stillhard, J., HindenlangClerc, K., Pellissier, L., & Lachat, T. (2024). Dead wood distributed in different-sized habitat patches enhances diversity of saproxylic beetles in a landscape experiment. *Journal of Applied Ecology*, 61, 316–327. Available from: <https://doi.org/10.1111/1365-2664.14554> (Accessed October 2024)

surrounding landscape. The following native seed mixes⁶⁰ would be applied to create targeted habitats:

- Woodland Meadow Mix: This would be used within woodland edge, incorporating bugle, bluebell, common dog violet, ragged robin, and various grasses, which are essential for species such as the small pearl-bordered fritillary and small heath.
- Highland Grassland Mix: Selected for its inclusion of heather, crowberry, white clover, tormentil, and appropriate grasses this mix would be implemented in highland areas to support species such as large heath small heath, northern dart, broom moth, and bilberry bumblebee.
- Dry Meadow Mix: Targeted for drier habitats, this mix includes a variety of grasses that are essential for the Small Heath Butterfly, supporting its need for suitable larval host plants within open, well-drained soils.

8.11.10 Disturbed areas during construction would be promptly restored using carefully stored excavated materials, natural regeneration from existing seed banks, and appropriate monitoring/remediation.

8.12 Monitoring

8.12.1 Monitoring would be required to determine the success of mitigation and enhancement measures detailed within this Chapter and within **Appendix 8.7: OBEMP** and provide data on which to base adaptive management if objectives detailed within are not being achieved.

8.12.2 It is anticipated that the following construction phase monitoring would be required.

- Water quality in nearby wetlands, blanket bogs, and wet heaths would be regularly monitored, and adaptive management would be implemented if thresholds are exceeded.
- Regular monitoring would be conducted to identify and manage any invasive species that may establish as a result of construction disturbances.

8.12.3 It is anticipated that the following post-construction phase monitoring would be required:

- Monitoring of habitat restoration and enhancement efforts would be undertaken within the receptor sites to ensure that measures implemented achieve the required condition targets.
- Drone surveys and ground-based botanical monitoring (Common Standards Monitoring) to document habitat conditions and changes
- Herbivore Impact Assessments (HIA) conducted at botanical monitoring sites to assess grazing and browsing impacts, targeting 'light' impacts.
- Annual monitoring of rhododendron control areas.
- Annual monitoring of bog pools specifically created or restored for odonates, assessing adult and larval populations, water quality, and vegetation establishment.
- Monitoring newly created woodland areas at regular intervals to assess tree survival and growth.

8.13 Residual Effects

8.13.1 **Table 8-15** below summarises the assessment of potential effects on each IEF, proposed mitigation and the assessed residual effects where all recommended mitigation and enhancements are implemented.

⁶⁰ Available from: [Scotia Seeds – Wildflowers of Scotland](#)

Table Error! No text of specified style in document.-15: Summary of Residual Effects

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
Habitats	Construction	Permanent Habitat Loss of Annex 1 Habitats and Priority Habitats	A full BEMP would be implemented with 30-year measurable goals for habitat restoration and enhancement, including woodland and peatland habitat creation and enhancement in the wider Glen Garry and Clunes Forest areas.	Permanent loss of specific habitat areas; however, restoration and enhancement efforts expected to compensate for biodiversity loss long-term.	Significant at local level	Long-term	High
		Temporary Habitat Loss of Annex 1 Habitats and Priority Habitats.	Restoration efforts post-construction to reinstate temporarily disturbed habitats. Restrict activities to designated zones and use existing access tracks to minimise footprint.	Temporary habitat loss during construction; habitats expected to recover post-reinstatement.	Non-significant	Medium-term	High
		Disturbance Of Peat and Carbon-Rich Soils	Implement a Peat and Soil Management Plan to ensure soil integrity and reduce carbon emissions. Store and reuse excavated peat in restoration efforts. Minimise peat disturbance by using low-ground pressure vehicles and floating access over sensitive habitats. Peatland restoration to compensate for loss of priority peatland habitat.	Potential local peat disturbance; peat storage and reuse to mitigate loss of soil integrity and carbon emissions.	Significant at local level	Long-term	High
		Reduced Stability of Peat-Based Habitat on Slopes	Align construction with natural land contours to reduce erosion risks. Monitor peat stability on slopes, especially near steep areas, to avoid peat slides. Use bunds to restore natural hydrology in peatland areas.	Minimal long-term impacts on stability. Proactive measures should prevent significant peat slides or erosion, as detailed in Appendix 12.1: Peatland Landform and Hydrological Resilience Assessment (PLHRA),	Non-significant	Medium-term	High
		Risk Of Contamination from Runoff, Fuel, and Oil Spills	Follow SEPA pollution prevention guidelines to protect water quality. Create a surface water management plan to manage runoff. Store machinery and materials on hardstanding to avoid soil contamination	Reduced contamination risk due to runoff management. Minor potential for isolated contamination events, mitigated by controls.	Non-significant	Medium-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
		Altered Water Flow	Design drainage systems to mimic natural hydrology, minimising water flow alteration in sensitive habitats. implement buffers to protect adjacent retained wetland habitats from water flow disruptions	Minimal alteration to natural flow; buffer zones expected to reduce significant impacts on wetland habitats.	Non-significant	Medium-term	High
		Introduction of Invasive Species	Develop an INNS Management Plan targeting the removal of species like rhododendron within infestation areas. Implement a strict biosecurity protocol to prevent the spread of invasive species.	Eradication and long-term management of invasive species spread within the project vicinity. INNS management in woodland creation areas. Some risk remains but mitigated by strict protocols.	Non-significant	Medium-term	High
		Dust Generation	Use dust suppression techniques, such as water sprays, to minimise dust. Locate stockpiles away from sensitive habitat boundaries.	Temporary impact on air quality and vegetation growth near construction; expected to cease post-construction.	Non-significant	Medium-term	High
	Operational	Operational Impacts	N/A	N/A	Non-significant	Long-term	High
Otter	Construction	Habitat Loss and Degradation	Woodland and riparian habitat creation to compensate for habitat loss	Potential displacement. Restoration of habitats expected to provide suitable foraging and commuting habitats post-construction.	Non-significant	Medium-term	High
		Impact on Otter Holt Sites	Pre-works check for otter holts. Monitoring of holt site at River Garry	Minor disturbance risk to otters if active holts are present. Regular monitoring minimises long-term impacts.	Non-significant	Medium-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
		Vehicle Traffic Risks	Enforce a 15mph speed limit and use designated access routes	Small numbers of individuals may be lost to vehicle collisions; however, the population is expected to adapt to the loss over the long-term. Speed limits reduce overall risk to otters.	Significant at local level	Medium-term	High
		Pollution Risks	Dust suppression techniques. Restricted use of dangerous chemicals. Runoff management. SEPA pollution prevention guidelines.	Low risk of pollution affecting otters. Mitigation expected to prevent serious incidents.	Non-significant	Medium-term	High
		Noise, Light, and Visual Disturbance	Schedule blasting and other high-noise activities outside peak otter activity periods SAR and access tracks would be unlit.	Likely avoidance of high-activity areas due to construction disturbances, possibly leading to minor habitat fragmentation and disrupted movement and foraging patterns.	Non-significant	Medium-term	High
		Injury Risk from Construction Hazards	Cover excavations and cap pipes overnight	Low risk of injury, mitigated by site precautions.	Non-significant	Medium-term	High
	Operational	Operational Impacts	No operational external lighting in PSH to minimise disturbance. Only use task-based lighting to reduce impacts on nocturnal species	N/A	Non-significant	Long-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
Pine Marten	Construction	Habitat Loss and Degradation	Retain woodland where feasible. Provide compensatory woodland planting for any loss. Protect sensitive areas with fencing and restrict storage outside of designated zones.	Temporary displacement. Habitats expected to recover through compensatory planting and protections.	Non-significant	Medium-term	High
		Disruption of Dens	Pre-works checks for active pine marten dens, with work suspension near active sites as needed.	Low risk of den disturbance. Pre-checks reduce likelihood of impacts to active dens.	Non-significant	Medium-term	High
		Reduction of Prey Availability	Provide compensatory habitat areas to support prey species.	Short-term reduction in prey. Expected to recover in adjacent habitats or compensatory areas.	Non-significant	Medium-term	High
		Risk Of Injury or Death from Vehicle Movements	Enforce a 15mph speed limit and use designated access routes	Small numbers of individuals may be lost to vehicle collisions; however, the population is expected to adapt to the loss over the long-term. Speed limits reduce overall risk to pine marten.	Significant at local level	Medium-term	High
		Noise, Light, and Visual Disturbance	Limit lighting in sensitive areas and use directional lighting. Toolbox Talks on species protection	Likely avoidance of high-activity areas due to construction disturbances, possibly leading to minor habitat fragmentation and disrupted movement and foraging patterns.	Non-significant	Medium-term	High
		Injury Risk from Construction Hazards	Cover excavations and cap pipes overnight	Potential moderate impact from occasional collisions. Speed limits reduce overall risk to pine marten.	Non-significant	Medium-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
	Operational	Operational Impacts	No operational external lighting in PSH to minimise disturbance. Emergency-only lighting to reduce impacts on nocturnal species	N/A	Non-significant	Long-term	High
Red Squirrel	Construction	Habitat Loss and Degradation	Retain woodland where feasible. Provide compensatory woodland planting for any loss. Protect sensitive areas with fencing and restrict storage outside of designated zones.	Minor local displacement. Long-term habitat availability and enhancement expected to stabilise population	Non-significant	Medium-term	High
		Disruption of Dreys	Pre-works checks for active squirrel dreys, with work suspension near active sites as needed.	Low risk of disturbing breeding sites, monitoring minimises impacts.	Non-significant	Medium-term	High
		Risk Of Injury or Death from Vehicle Movements	Enforce a 15mph speed limit and use designated access routes	Small numbers of individuals may be lost to vehicle collisions; however, the population is expected to adapt to the loss over the long-term. Speed limits reduce overall risk to red squirrel.	Significant at local level	Medium-term	High
	Operational	Operational Impacts	N/A	N/A	Non-significant	Long-term	High
Amphibians	Construction	Permanent Habitat Loss	Restore and enhance wetland, peatland, and woodland areas in wider landscape to offset habitat loss.	Long-term habitat availability expected post-construction, though localised displacement would occur initially.	Non-significant	Long-term	Intermediate

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
		Risk of Direct Harm During Vegetation Clearance	Two-stage vegetation clearance to allow species time to vacate areas. Avoid vegetation clearance during hibernation periods	Displacement and moderate risk of harm; mitigated by timing and clearance approach.	Significant at local level	Short-term	Intermediate
		Edge Effects from Silt Runoff	Dust and silt control measures to prevent runoff contamination. Buffer zones around sensitive habitats, like wetlands, to minimise edge effects.	Temporary degradation of adjacent habitat. Quality expected to recover post-construction.	Non-significant	Medium-term	High
		Pollution Incidents	Dust suppression techniques. Restricted use of dangerous chemicals. Runoff management. SEPA pollution prevention guidelines.	Low risk of contamination affecting amphibians. Emergency protocols in place.	Non-significant	Medium-term	High
		Risk Of Injury or Death from Vehicle Movements	Enforce a 15mph speed limit and use designated access routes	Moderate risk of collision-related injury or death for amphibians crossing the SAR and hill track.	Significant at local level	Medium-term	High
		Injury Risk from Construction Hazards	Cover excavations and cap pipes overnight. Avoid creation of temporary pools	Low risk of injury, mitigated by site precautions.	Non-significant	Medium-term	High
	Operational Impacts	N/A	N/A	N/A	Non-significant	Long-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
Reptiles	Construction	Permanent Habitat Loss	Habitat compensation efforts within the BEMP, with focus on enhancing areas that support reptile populations. Creation of hibernacula. Limit disturbance in sensitive habitats like peatlands.	Long-term habitat availability expected post-construction, though localised displacement would occur initially.	Significant at local level	Long-term	Intermediate
		Risk of Direct Harm During Vegetation Clearance	Two-stage vegetation clearance to allow species time to vacate areas. Avoid vegetation clearance during hibernation periods	Displacement and moderate risk of harm; mitigated by timing and clearance approach.	Significant at local level	Short-term	Intermediate
		Edge Effects from Silt Runoff	Dust and silt control measures to prevent runoff contamination. Buffer zones around sensitive habitats, like wetlands, to minimise edge effects.	Temporary degradation of adjacent habitat. Quality expected to recover post-construction.	Non-significant	Medium-term	High
		Pollution Incidents	Dust suppression techniques. Restricted use of dangerous chemicals. Runoff management. SEPA pollution prevention guidelines.	Low risk of contamination affecting amphibians. Emergency protocols in place.	Non-significant	Medium-term	High
		Risk of Injury or Death from Vehicle Movements	Enforce a 15mph speed limit and use designated access routes	Moderate risk of collision-related injury or death for reptiles crossing SAR and hill track.	Significant at local level	Medium-term	High
		Injury Risk from Construction Hazards	Cover excavations and cap pipes overnight	Low risk of injury, mitigated by site precautions.	Non-significant	Medium-term	High

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
	Operational	N/A	N/A	N/A			
Invertebrates	Construction	Permanent Habitat Loss	Enhance blanket bog, wet grassland, and woodland edges within the compensatory habitat areas to support invertebrate populations	Minimal long-term impacts due to compensatory habitat. Temporary population reductions possible.	Non-significant	Long-term	Intermediate
		Risk of Direct Harm During Vegetation Clearance	Phased habitat clearance to minimize harm	Risk of harm to individuals; potential moderate impact.	Significant at local level	Short-term	Intermediate
		Degradation of Retained Invertebrate Habitat	Dust suppression and silt runoff controls to protect retained habitats. Buffer zones around sensitive habitats to limit edge effects	Temporary habitat quality reduction near construction areas. Full recovery expected post-construction.	Non-significant	Medium-term	High
		Risk of Vehicular Collision	Avoid additional lighting on tracks to prevent attraction of nocturnal invertebrates.	Negligible risk; low impact expected on invertebrate population.	Non-significant	Medium-term	High
	Operational Impacts	N/A	N/A	N/A	Non-significant	Long-term	High
Odonates	Construction	Permanent Habitat Loss (Northern Emerald and White-Faced Darter)	Targeted habitat restoration to create suitable breeding habitats.	Minor local habitat loss compensated by restored habitats nearby.	Non-significant	Long-term	Intermediate
		Permanent Habitat Loss (Azure Hawker)	Translocation of azure hawker larvae to suitable nearby habitat before inundation. Creation of replacement wetland areas to support azure hawker	Potential short-term local population decline. Success of habitat restoration and mitigation may maintain local population, but it is uncertain.	Significant at regional level	Long-term	Intermediate

Receptor	Phase	Potential Impact	Avoidance, Mitigation and Biodiversity Enhancement	Residual Effect	Significance of Residual Effect	Duration of Effect	Confidence in Prediction
		Risk of Direct Harm During Vegetation Clearance	Timed clearance to avoid critical life stages, such as larvae. Translocate larvae/nymphs to suitable habitats prior to clearing activities	Potential short-term local population decline. Success of novel mitigation including careful translocation and timing is uncertain.	Significant at regional level	Short-term	Intermediate
		Edge Effects on Surrounding Habitats	Dust and water management to protect nearby bog pools. Buffer zones around retained bog pools to minimize impact on sensitive odonate habitats.	Temporary degradation of adjacent habitat. Quality expected to recover post-construction.	Non-significant	Long-term	Intermediate
		Pollution Incidents	Pollution prevention protocols with SEPA guidelines. Emergency response measures for pollution events to protect odonate habitats.	Low risk of contamination affecting amphibians. Emergency protocols in place.	Non-significant	Long-term	Intermediate
		Risk of Vehicular Collision	N/A	Negligible risk. Low impact expected on invertebrate population.	Non-significant	Medium-term	High
	Operational Impacts	N/A	N/A	N/A	Non-significant	Long-term	High

8.14 Statement of Significance

- 8.14.1 The EclA for the Proposed Development highlights a range of potential impacts on sensitive habitats, protected species, and soil/peat quality during the up to eight-year construction phase. While permanent and temporary habitat loss for Annex 1 and SBL Priority Habitats is anticipated, comprehensive mitigation and biodiversity enhancement strategies, including extensive habitat creation, restoration, and enhancement in the local area is expected to offset biodiversity losses. These include peatland restoration exceeding the required 1:10 lost-to-restored ratio, bog pool creation, extensive woodland creation and restoration that far exceeds predicted native woodland loss, and INNS control and eradication. In addition, a range of other compensation and enhancement measures will be implemented to further support habitat recovery. Collectively, these measures are expected to fully mitigate impacts on habitats over time.
- 8.14.2 For sensitive species such as otter, pine marten, red squirrel, amphibians, reptiles, invertebrates, and odonates, the proposed mitigation strategies, including a full-time project ECoW, habitat restoration and enhancement measures, careful vegetation clearance, low vehicle speed limits, and pollution prevention measures, are designed to reduce direct harm, support population resilience, and maintain habitat integrity. Habitat loss and disturbance effects are primarily non-significant at regional and national scales, with the exception of localised, significant impacts on reptiles, amphibians, and invertebrates, and regional significant impacts on azure hawker as a result of permanent habitat loss, and red squirrel, pine marten, otter, amphibians, and reptiles as a result of increased traffic.
- 8.14.3 After the application of mitigation measures, the residual effects on most ecological receptors are expected to be non-significant, with a moderate to high confidence level in the effectiveness of the mitigation strategies. Long-term habitat restoration efforts are anticipated to promote recovery and provide biodiversity net gain, reducing long-term impacts on local populations and sensitive habitats.