March 2025

Glen Earrach Pumped Storage Hydro

Environmental Impact Assessment Report

Volume 2: Main Report
Chapter 7: Terrestrial Ecology

Glen Earrach Energy Ltd

Glen Earrach AECOM

Quality information

Prepared by	Checked by	Verified by	Approved by
ND MCIEEM JD ACIEEM	TM CEcol MCIEEM	TM CEcol MCIEEM ND MCIEEM	JD
Associate Director Senior Ecologist	Technical Director	Technical Director Associate Director	Associate Director Town Planning

Issue History

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

Table of Contents

Tables

Figures (Volume 3: Figures)

Appendices (Volume 5: Appendices)

Confidential Appendices (Volume 6: Condifential Appendices)

Confidential Appendix 7.2: Sensitive Terrestrial Ecology Information

7. Terrestrial Ecology

7.1 Introduction

7.1.1 This chapter addresses the potential impacts and effects of the Pre-Construction and Enabling, Construction and Operation Phases of the Proposed Development on terrestrial ecology features. Where appropriate, it provides details of committed mitigation, compensation and/or enhancement measures identified to minimise or offset adverse effects on these features.

7.1.2 This chapter concerns terrestrial ecological features, including designated nature conservation sites, habitats and species. **Chapter 8: Ornithology** and **Chapter 9: Aquatic & Marine Ecology (Volume 2: Main Report)** are relevant to other ecological features. This chapter is supported by the following figures (**Volume 3: Figures**):

- Figure 7.1: Northern Highlands Natural Heritage Zone;
- Figure 7.2: European Sites: Special Areas of Conservation;
- Figure 7.3: Sites of Special Scientific Importance, Ancient Woodland and Important Invertebrate Areas;
- Figure 7.4: Terrestrial Ecology Survey Areas and Camera Trap Locations;
- Figure 7.5: Habitats;
- Figure 7.6: National Vegetation Classification;
- Figure 7.7: Peatland;
- Figure 7.8: Notable Plants and Species-rich Habitats;
- Figure 7.9: Potential Groundwater Dependent Terrestrial Ecosystems (GWDTE);
- Figure 7.11: Water Vole Survey Results and Incidental Records;
- Figure 7.12: Pine Marten, Badger and Red Squirrel Survey Results and Incidental Records; and
- Figure 7.13: Incidental Records of Other Important and Notable Species.

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

- Appendix 7.1: Method for Assessment of Ecological Impacts;
- Appendix 7.2: Statement to Inform Habitats Regulations Appraisal;
- Appendix 7.3: Habitats;
- Appendix 7.4: Mammals;
- Appendix 7.5: Biodiversity Net Gain; and
- Appendix 7.6: Outline Peatland Restoration Plan.

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

- Confidential Appendix 7.2 Sensitive Terrestrial Ecology Information complete with associated figure Figure 7.10: Otter Survey Results and Incidental Records.

7.1.5 **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5: Appendices)** has been submitted as part of the Section 36 application for the Proposed Development, and is referred to where relevant in this chapter. This describes the assessment conducted to test for adverse effects from the Proposed Development on the qualifying features of European sites, which comprise Special Areas of Conservation (SAC) and Special Protection Areas (SPA). SAC are relevant to this chapter, but SPA are designated for the conservation of bird species and are therefore dealt with in **Chapter 8: Ornithology** (**Volume 2: Main Report**).

7.1.6 Also relevant is **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**, which provides details for the provision of ecological compensation and enhancement.

7.1.7 In this chapter, animal and vascular plant species are given their common and scientific names when first referred to and their common names only thereafter. Common names of bryophytes are not well-known therefore only

scientific names are used. Animal scientific names follow those used by the National Biodiversity Network (NBN). Vascular plant scientific names follow Stace[1], and Atherton *et al*[2] for bryophytes. Locations are given as Ordnance Survey Grid References (OSGR). All distances are cited as the shortest distance 'as the crow flies', unless otherwise specified.

7.1.2 As described within **Chapter 2 Project and Site Description** and summarised within **Chapter 3 Evolution of Design and Alternatives (Volume 2: Main Report)**, the Proposed Development presents two options, Option A and Option B. The differences between these options involve the location of the below ground works and the associated positioning of the Upper Control Works within the Headpond footprint. This assessment has considered both Options A and B; regardless of which option is taken forward, the conclusions of the Terrestrial Ecology assessment remain the same for both.

7.2 Legislation and Policy

Legislation

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

- Convention on Wetlands of International Importance ('Ramsar Convention');
- Conservation (Natural Habitats, &c.) Regulations 1994 and The Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations');
- Wildlife and Countryside Act 1981 (the 'WCA');
- Nature Conservation (Scotland) Act 2004;
- Wildlife and Natural Environment (Scotland) Act 2011 (the 'WANE Act');
- Protection of Badgers Act 1992;
- Water Environment (Controlled Activities) (Scotland) Regulations 2011 ('CAR'); and
- Water Environment and Water Services (Scotland) Act 2003 ('WEWS Act').

7.2.2 Details of how this legislation applies to specific habitats and species can be found in **Appendix 7.3: Habitats (Volume 5: Appendices)** and **Appendix 7.4: Mammals** (**Volume 5: Appendices**).

Planning Policy

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

National Planning Policy

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

7.2.5 Prior to the UK's exit from the European Union (EU), Scotland's SACs and SPAs were part of a wider European network of such sites known as the 'Natura 2000 network'. They were consequently referred to as 'European sites'. Now that the UK has left the EU, Scotland's SACs and SPAs are no longer part of the Natura 2000 network

[1] Stace, C. (2019). New Flora of the British Isles. 4th edition. C&M Floristics, Middlewood Green.
[2] Atherton, I., Bosanquet, S. and Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland – a Field Guide. British Bryological Society, London.

but form part of a UK-wide network of designated sites referred to as the 'UK site network'. However, it is current Scottish Government policy to retain the term 'European site' to refer collectively to SACs and SPAs[3].

Local Planning Policy

7.2.6 The Proposed Development lies within The Highland Council local planning authority area. Relevant local planning policies are stated in the Highland-wide Local Development Plan (HwLDP)[4], adopted in 2012, and discussed in context within the Inner Moray Firth LDP[5], adopted in 2015 and currently under review. **Table 7-1: Summary of Relevant Policies Within the HwLDP** lists those adopted policies relevant to nature conservation.

Table 7-1: Summary of Relevant Policies Within the HwLDP

Planning Policy	Relevant Purpose
Policy 28: Sustainable Design	Developments would be supported which promote and enhance environmental wellbeing. Assessment of the impact on resources including habitats, freshwater systems, and species would be made, and proposals must be compatible with the Sustainable Design Guide.
Policy 51: Trees and Development	Developments would be supported which promote protection of existing hedges, trees and woodlands, and which are designed to create and enhance existing woodland, with compensatory planting and woodland management where required.
Policy 52: Principle of Development in Woodland	Developments are expected to demonstrate the need to develop a wooded site, that the site has capacity, and that it is sustainable, with increased community benefit and woodland expansion or enhancement as appropriate.
Policy 57 Natural, Built and Cultural Heritage	Developments are expected to address effects on natural heritage (including designated sites). For features of local/regional importance, developments must demonstrate no unacceptable impact. For features of national importance, developments must not compromise the natural environment, and significant adverse effects must be clearly outweighed by social or economic benefits of national importance. Developments affecting features of international importance would not be permitted unless the Habitats Regulations Appraisal process has been followed and a conclusion of no adverse effect on site integrity is reached.
Policy 58: Protected Species	Summarises the legal requirements for protected species that developments are expected to comply with.
Policy 59: Other Important Species	Developments are expected to also address effects on notable species not protected by legislation or site designations, including Scottish Biodiversity List (SBL) and Local Biodiversity Action Plan (LBAP) species.
Policy 60: Other Important Habitats	Developments are expected to also address effects on notable habitats not protected by site designations, including watercourses, Annex I habitats, habitats of priority or protected species, and SBL/LBAP habitats.
Policy 63: Water Environment	The Council would support proposals that do not compromise the protection and enhancement of the water environment required under the Water Framework Directive. In assessing proposals, the Council would take into account River Basin Management Plans and supporting information on enhancement opportunities and constraints in the water environment.
Policy 74: Green Networks	Development in areas identified for the creation of green networks should avoid fragmenting the network and take steps to improve connectivity, where appropriate, to maintain and enhance the existing green network.
Policy 75: Open Space	The aims for open space include that it supports and enhances biodiversity.

Local Biodiversity Action Plan

7.2.7 Highland Nature (2021-2026)[6], Highland Council's LBAP, includes several priority habitats and a list of priority species for local conservation, many of which may be potentially relevant to the Proposed Development, including wildcat *Felis silvestris*, water vole *Arvicola amphibius*, pine marten *Martes martes*, red squirrel *Sciurus vulgaris* and mountain hare *Lepus timidus*.

[3] Scottish Government (2020). *EU Exit: The Habitats Regulations in Scotland. December 2020.* (online) Available at: https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/.
[4] Scottish Government (2012) *Highland Wide Local Development Plan* (online) Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan.
[5] Scottish Government (2024) *Inner Moray Firth Local Development Plan 2* (online) Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/202/inner_moray_firth_local_development_plan.
[6] Highland Environment Forum (2021) *Highland Nature Biodiversity Plan 2021-2026* (online) Available at: https://www.highlandenvironmentforum.info/wp-content/uploads/2021/07/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf.

7.3 Consultation

7.3.1 The assessment of impacts on terrestrial ecology features has been informed and influenced by consultation held with several statutory and non-statutory stakeholders. A summary of the consultation held, the information/recommendations provided by consultees, and details of how this EIAR has responded to consultee feedback is provided in **Table 7-2: Summary of Consultation**.

Table 7-2: Summary of Consultation

Consultee	Summary of Response	Action Taken
NatureScot	NatureScot provided their response to the Scoping Opinion request on 25 June 2024. In relation to terrestrial ecology, the key issue identified by NatureScot is the potential for adverse effects on Urquhart Bay Wood SAC. NatureScot defer to The Highland Council regarding biodiversity enhancement opportunities. NatureScot advised that their detailed guidance on peatland, carbon-rich soils and priority peatland habitats should be followed, and stated that they would comment on a Peatland Restoration Plan.	• **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) considers in detail the possible impacts and effects of the Proposed Development on Urquhart Bay Wood SAC, and any other European sites within the zone of influence (ZoI). • Cognisance has been given to NatureScot guidance[7] on peatland, including in regard to the amount of peatland restoration required to achieve compensation and enhancement, and accordingly **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)** has been produced.
The Highland Council	The Highland Council provided their response to the Scoping Opinion request on 19 September 2024. In their response they requested the following: • That the EIAR should provide a baseline survey of the bird and animals on site, details of impacts (particularly on bog habitat) and provide proposals for mitigation; • A Peat Assessment and National Vegetation Classification (NVC) survey should be carried out; • An assessment of impacts on wild deer should be undertaken (if relevant);and • A Biodiversity Enhancement Management Plan should be provided demonstrating that the Proposed Development would significantly enhance the biodiversity of the site from its pre-development state by at least 10%. The Highland Council also noted the following in regard to forestry: • That significant areas of woodland are present along the side of Loch Ness, around Glen Coiltie and in the Forestry and Land Scotland (FLS) woodland to the south of the A831; • That native woodland should be identified and fully considered; • The EIAR should provide a baseline survey of all woodlands/trees present in the site and a breakdown of the impacts by woodland type; and • Minimise impacts as far as possible through design and provide a landscape mitigation planting plan.	Baseline information presented in this chapter includes the results of detailed habitat and protected/important species surveys. The impacts on ecological features identified in the baseline conditions, including bog, are assessed, and mitigation, compensation and enhancement proposals are prescribed: • The results of peatland surveys are detailed separately in **Chapter 15: Geology and Ground Conditions** (**Volume 2: Main Report**); • NVC survey results (including of native woodland habitats) are discussed in this chapter and detailed in **Appendix 7.3: Habitats** (**Volume 5: Appendices**); • The potential for increased deer pressure on retained terrestrial habitats, through loss of habitats used by deer to the Proposed Development, has been considered within this chapter; • Proposed biodiversity enhancement and compensation measures are detailed in **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**; • Biodiversity Net Gain calculations are reported in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**. Note that blanket bog is regarded as 'irreplaceable' in BNG metrics, and is instead addressed under the NatureScot lost:restored + enhancement ratio of 1:10 + 10%, carried out by on-site and (mainly) off-site restoration; • All woodland has been identified through field survey and desk study, and impacts on woodland are addressed in this chapter and **Chapter 18: Forestry** (**Volume 2: Main Report**); • The design has been adjusted to largely avoid ancient woodland and minimise loss; and • Woodland, montane scrub and other habitat measures to provide compensation and enhancement are set out in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**.
Forestry and Land Scotland	Communication during a meeting on 13 March 2024 indicated that FLS would be open to discussion regarding FLS land being utilised for	Woodland loss would be minimal and no planting within FLS land is proposed.

[7] NatureScot (2023) *Advising on peatland, carbon-rich soils and priority peatland habitats in development management* (online) Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management.

Consultee	Summary of Response	Action Taken
	native broadleaved tree planting as part of proposed mitigation/enhancement for the Proposed Development.	
Scottish Environment Protection Agency (SEPA)	SEPA provided their response to the Scoping Opinion request on 05 July 2024. In their response they noted the following: • That a Peat Management Plan would be required, supported by suitable probing information; • Disturbance of peat should be minimised; • That the final submission should include a plan showing the extent of disturbed peat. The area of peatland disturbed (including by inundation and erosion) should be confirmed; • Information should be provided on how areas of disturbed and undisturbed peat within the inundation area would be managed so that carbon loss is reduced; • A requirement for layout drawings with the extent of peat excavation required and showing, among other information, peatland condition; and • That reference should be made to NatureScot for guidance on peatland restoration.	These responses are not directly relevant to terrestrial ecology and are addressed in **Chapter 15: Geology and Ground Conditions** (**Volume 2: Main Report**) and supporting appendices, including **Appendix 15.2: Outline Peat Management Plan** (**Volume 5: Appendices**). NatureScot guidance on peatland restoration has been referred to these documents, and also in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**.
Buglife	Buglife provided their response to the Scoping Opinion request on 27 June 2024. Buglife noted the following in their response: • That the Proposed Development could result in significant adverse effects on ecological features; • The presence of the East Inverness-shire Important Invertebrate Area (IIA) adjacent to the Proposed Development Site, and the known presence of brilliant emerald dragonfly *Somatochlora metallica* (vulnerable) and a cranefly *Tipula limbata* (rare) nearby; • Requested that adequate surveying be undertaken of invertebrate communities and provided suggested methodology; • Noted their concern that further surveying of invertebrates had been scoped out of the assessment; • Requested that a worst-case scenario of a maximum Operational drawdown of over 1 m should be considered; • Stated that using 'River Invertebrates WHPT UKTAG Method Statement' to survey lochs would not be appropriate; and • The body of the response identifies taxa known to be present in Loch Ness.	• This chapter assesses the potential impacts and effects on ecological features, including important terrestrial invertebrates; • Regarding terrestrial invertebrates, habitat impact primarily involves blanket bog and wet heath, which are unlikely to support significant invertebrate assemblages and also occur very extensively beyond possible impact. Sphagnum-rich lochan peripheries potentially suitable for emerald dragonflies is most obvious at certain lochans north of the Headpond, all of which are retained. There are minimal impacts on woodland; • Targeted survey for terrestrial invertebrates was therefore scoped out for the reasons above and because desk study information supplemented by incidental records was considered sufficient to carry out the assessment. Habitat enhancement, as set out in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**, includes creation of substantial ponds for emerald dragonflies, near trees/shrubs and with *Sphagnum*-rich parts; and • The remaining points made by Buglife in their response concern aquatic invertebrate species. Details of the action taken regarding these are provided in **Chapter 9: Aquatic & Marine Ecology (Volume 2: Main Report)**.
Glen Urquhart Community Council	Glen Urquhart Community Council provided their response to the Scoping Opinion request on 25 July 2024. In their response they requested the following: • That full surveys of all habitats, especially rare and threatened ones, be carried out; • That habitat enhancement and mitigation measures be detailed within the application; • That species within the Highland Nature Biodiversity Plan be considered; and • That Habitat Regulations Appraisal be carried out.	• Detailed habitat survey including NVC survey, and surveys of protected/important species, have been carried out. The results are described in this chapter; • Proposed biodiversity enhancement and compensation measures have been developed with cognisance of protected and otherwise important species including LBAP species, and are detailed in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**; and • **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) describes the assessment of potential effects on European sites.

7.4 Study Area

7.4.1 The Zone of Influence (ZoI) of the Proposed Development is the area over which ecological features may be subject to impacts as a result of Pre-Construction and Enabling, Construction and Operation Phases. The ZoI would vary for different ecological features depending on their sensitivity to environmental change. It is therefore appropriate to identify different ZoI for different features and impacts. As recommended by the Chartered Institute of Ecology and Environmental Management in CIEEM[8], professionally accredited or published studies and guidance, where available, were used to help determine the likely ZoI, as well as professional judgement. However, CIEEM also highlight that establishing the ZoI should be an iterative process informed by both desk study and field survey. Where limited information was available, the Precautionary Principle[9] was adopted and a ZoI estimated on that basis.

7.4.2 The desk study and field survey areas were designed to allow sufficient data to be collected to establish the baseline condition of ecological features and determine the impacts of the Proposed Development. The ZoI may extend beyond the development and survey areas. The field survey areas adopted for this assessment were sufficiently precautionary to allow assessment of potentially significant effects from the Proposed Development on ecological features, including within the wider ZoI beyond the field survey areas.

7.5 Methodology

Guidance and Standards

7.5.1 The following guidance was used when designing the field surveys carried out to inform this assessment and to determine the scope and method of the assessment itself:

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine[8];
- General Pre-application and scoping advice for onshore wind farms published by NatureScot[10];
- Standing advice notes for protected species published by NatureScot[11]; and
- Assessing the Cumulative Impact of Onshore Wind Energy Developments[12].

Assessment Scope

7.5.2 The scope of survey and assessment described in this chapter was informed by the guidance contained in the published documents listed in **Section 7.5 Methodology, Guidance and Standards,** on the responses of consultees (as set out in **Table 7-2: Summary of Consultation**), and on the results of detailed study once underway.

7.5.3 NatureScot has devised 21 ‘Natural Heritage Zones’ (NHZ) covering the whole of Scotland, which reflect biogeographical differences across the country. Assessment of the impacts on ecological features in this EIAR has been carried out in the context of the Northern Highlands Natural Heritage Zone (NHZ 7), within which the Proposed Development is located (see **Figure 7.1: Northern Highlands Natural Heritage Zone** (**Volume 3: Figures**)).

7.5.4 The guidelines for EcIA published by CIEEM[8] recommend that only those features that are ‘important’ and that could be significantly affected by the Proposed Development require detailed assessment, stating that “*it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and would remain viable and sustainable*”.

[8] CIEEM (2024). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.3 – updated September 2024). Chartered Institute of Ecology and Environmental Management, Winchester.
[9] UNESCO (2005). *The Precautionary Principle*. United Nations Educational, Scientific and Cultural Organisation, Paris. Available from: https://unesdoc.unesco.org/ark:/48223/pf0000139578.
[10] NatureScot (2024) *Pre-application guidance for onshore wind farms* (online) Available at: https://www.nature.scot/doc/general-pre-application-and-scoping-advice-onshore-wind-farms.
[11]NatureScot (2024) *Planning and development: protected species* (online) Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species.
[12] SNH (2018). *Assessing the Cumulative Impact of Onshore Wind Energy Developments*. (online) Available from: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments. There is no specific guidance for pumped storage hydro schemes, however this detailed wind farm-related guidance is applicable to them in many respects.

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

- Qualifying non-avian features of SACs or other international designations within 10 km (or further where connectivity exists) of the Proposed Development;
- Notified non-avian features of Sites of Special Scientific Interest (SSSIs) or other national designations within 2 km (or further where connectivity exists) of the Proposed Development;
- Habitats listed on Annex I of Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (more commonly referred to as the 'Habitats Directive');
- Woodland listed on the Ancient Woodland Inventory (AWI);
- Species listed on Schedules 2 and 4 of the Habitats Regulations;
- Species listed on Schedules 5 and 8 of the WCA;
- Badger *Meles meles*, afforded protection under the Protection of Badgers Act;
    - Habitats and species listed on the SBL, which are thus identified as being of principal importance for biodiversity conservation in Scotland;
    - All species on the Highland Nature LBAP; and
    - Invasive non-native species (INNS) listed on Schedule 9 of the WCA (although this no longer legally applies in Scotland), those considered to be of European Union (EU) concern under the Invasive Alien Species Regulation and those listed in Annex B of the NatureScot *Developing with Nature Guidance*[13].

7.5.6 Other habitats or species that may be rare, scarce or otherwise important were also included, where deemed appropriate through available information and/or professional judgement.

7.5.7 The assessment considers the effects during three phases of the Proposed Development lifespan as identified in **Section 2.18** to **Section 2.20** of **Chapter 2: Project and Site Description (Volume 2: Main Report)**. The phases are Pre-Construction and Enabling, Construction and Operation.

7.5.8 Decommissioning has been scoped out of assessment as the decommissioning of large-scale pumped storage hydro projects is extremely rare due to the long Operational lifespan of such facilities. Potential decommissioning effects are therefore considered to be similar to and associated with the components described in the Construction phase, and are not separately assessed. However, a decommissioning survey and plan would be produced when required.

Baseline Data Collection

Desk Study

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

- International nature conservation designations within 10 km of the Proposed Development (or further afield where there is clear connectivity, for example through hydrological linkage or where the qualifying species are known to range over a wider distance);
- National statutory nature conservation designations within 2 km of the Proposed Development (or further afield where there is clear connectivity);
- Local non-statutory nature conservation designations within 1 km of the Proposed Development;
- Woodland listed on the AWI within 1 km of the Proposed Development;
- Areas identified by Buglife as Important Invertebrate Areas (IIA) within 1 km of the Proposed Development;
- Records of important species within 1 km of the Proposed Development (or extended beyond this where additional context was required).

[13]NatureScot (2024) *Developing with Nature guidance* (online) Available at: https://www.nature.scot/doc/developing-nature-guidance.

7.5.10 These search distances are shown on **Figure 7.2: European Sites: Special Areas of Conservation** and **Figure 7.3: Sites of Special Scientific Importance, Ancient Woodland and Important Invertebrate Areas** (**Volume 3: Figures**).

7.5.11 The desk study was carried out using the data sources detailed in **Table 7-3: Desk Study Data Sources.**

Table 7-3: Desk Study Data Sources

Data Source	Date Last Accessed	Data Obtained
Buglife website (https://www.buglife.org.uk/)	12 December 2024	• Locations of Buglife IIAs.
The Highland Council website (https://www.highland.gov.uk/)	30 October 2024	• Local Development Plan policies relevant to nature conservation. • Information on relevant planning applications for cumulative assessment.
The Highland Council Open Map Data website (https://map-highland.opendata.arcgis.com/)	30 October 2024	• Information on local non-statutory nature conservation designations.
Highland Environment Forum website (https://www.highlandenvironmentforum.info/biodiversity/action-plan/)	30 October 2024	• Details on local priority species and habitats contained within the Highland Nature: Biodiversity Action Plan 2021 – 2026.
NatureScot SiteLink website (https://sitelink.nature.scot/home)	14 October 2024	• Information on international and national statutory designations within the ZoI of the Proposed Development.
NBN Atlas Scotland (https://scotland.nbnatlas.org/)	08 November 2024	• Commercially available post-2000 records of important species within 1 km of the Proposed Development (or further, where considered necessary), made from 2004 onwards, including those collated by Highland Biological Records Group (HBRG).
Ordnance Survey (OS) 1:25,000 and 1:50,000 maps and aerial photography (https://www.bing.com/maps/)	08 November 2024	• Habitats and connectivity relevant to interpretation of planning policy and potential protected/ important species constraints.
Saving Scotland's Red Squirrels (https://scottishsquirrels.org.uk/)	08 November 2024	• Commercially available post-2000 records of red squirrel and grey squirrel within 1 km of the Proposed Development.

Field Study

7.5.12 Ecological field surveys were carried out within the Proposed Development and surrounding area between April 2024 and October 2024. Detailed descriptions of the methods adopted for each survey type are provided in **Appendix 7.3: Habitats (Volume 5: Appendices)** and **Appendix 7.4: Mammals** (**Volume 5: Appendices**). The following guidance was used.

- For habitats and important or notable flora:
  - Original NVC volumes[14,15,16,17,18];
  - Other NVC guidance[19,20];
  - UK Habitat Classification guidance[21];
  - Joint Nature Conservation Committee Handbook for Phase 1 habitat survey[22]

[14] Rodwell, J.S. (ed.) (1991a). British Plant Communities Volume 1 Woodlands and Scrub. Cambridge University Press, Cambridge.
[15] Rodwell, J.S. (ed.) (1991b). British Plant Communities Volume 2 Mires and Heaths. Cambridge University Press, Cambridge.
[16] Rodwell, J.S. (ed.) (1992). British Plant Communities Volume 3 Grassland and Montane Communities. Cambridge University Press, Cambridge.
[17] Rodwell, J.S. (ed.) (1995). British Plant Communities Volume 4 Aquatic Communities, Swamps and Tall-herb Fens. Cambridge University Press, Cambridge.
[18] Rodwell, J.S. (ed.) (2000). British Plant Communities Volume 5 Maritime Communities and Vegetation of Open Habitats. Cambridge University Press, Cambridge.
[19] Averis, A.M., Averis, A.B.G., Birks, H.J.B., Horsfield, D., Thompson, D.B.A. and Yeo,m.J.M. (2004). An Illustrated Guide to British Upland Vegetation. Joint Nature Conservation Committee, Peterborough.
[20] Hall, J.E., Kirby, K.J. and Whitbread, A.M. (2004). National Vegetation Classification: Field guide to woodland. JNCC, Peterborough.
[21] UKHab Ltd (2023). UK Habitat Classification Version 2.0 (https://www.ukhab.org).
[22] Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC.

  - Defra Biodiversity Net Gain condition guidance[23]; and
  - Peatland Action peatland categorisation and peat depth guidance[24].
- For bats:
  - Daytime Bat Walkover (DBW) methodology as detailed in Bat Conservation Trust (BCT) *Good Practice Guidelines*[25].
- For otter *Lutra lutra*:
  - Monitoring the Otter Lutra lutra, Conserving Natura 2000 Rivers Monitoring Series No. 10.[26];
  - Otter Breeding Sites. Conservation and Management, Conserving Natura 2000 Rivers Conservation Techniques Series No. 5[27]; and
  - National survey of otter Lutra lutra distribution in Scotland 2003-04[28].
- For water vole:
  - Water Vole Conservation Handbook[29]; and
  - The Water Vole Mitigation Handbook[30].
- For wildcat and pine marten:
  - Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation[31].
- For badger:
  - Surveying Badgers – An occasional publication of the Mammal Society, No. 9.[32]; and
  - Surveying for Badgers: Good Practice Guidelines[33].

7.5.13 There is no such specific published methodology for camera trap monitoring. Camera traps were set at a range of locations with a higher likelihood of picking up mammal movements, such as on existing mammal trails and next to fence-lines.

7.5.14 Other important mammals not listed above (such as mountain hare), as well as reptiles, amphibians and invertebrates, were recorded incidentally when encountered during the course of the above surveys.

7.5.15 The survey buffers were based on the design as it stood at the time of scoping (hereafter the “Scoping Layout”), and involved applying appropriate distances around above ground infrastructure (including access routes). The areas within the survey buffers are referred to together as the ‘survey area’, and vary according to survey type. Surveys covered suitable habitat for each target feature within the survey areas. The adopted field survey areas for each survey type, along with location of camera traps, are shown on **Figure 7.4: Terrestrial Ecology Survey Areas and Camera Trap Locations** (**Volume 3: Figures**).

7.5.16 A summary of the ecological field surveys completed between April 2024 and October 2024 is provided in **Table 7-4: Summary of Ecological Surveys Carried out for the** .

[23] Available at https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides
[24] Available at https://www.nature.scot/doc/peatland-action-peat-depth-and-peat-condition-survey-guidance-and-recording-form-guidance
[25] Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 4th Edition. Bat Conservation Trust, London.
[26] Chanin, P. (2003). *Monitoring the Otter* Lutra lutra*,* Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough.
[27] Liles, G. (2003). *Otter Breeding Sites.* Conservation and Management, Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.
[28] Strachan, R. (2007). *National survey of otter* Lutra lutra *distribution in Scotland 2003-04.* Scottish Natural Heritage Commissioned Report No. 211 (ROAME No. F03AC309).
[29] Strachan, R., Moorhouse, T. and Gelling, M. (2011). *Water Vole Conservation Handbook*. 3rd Edition. Wildlife Conservation Research Unit, University of Oxford.
[30] Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook.* Mammal Society Mitigation Guidance Series. The Mammal Society, London.
[31] Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trewhella, W.J., Wells, D. and Wray, S. (eds.) (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation*. The Mammal Society, Southampton.
[32] Harris, S., Cresswell, P. and Jefferies, D. (1989). *Surveying Badgers – An occasional publication of the Mammal Society*, No. Mammal Society, London.
[33] Scottish Badgers (2018). *Surveying for Badgers: Good Practice Guidelines.* Version 1.

Table 7-4: Summary of Ecological Surveys Carried out for the Proposed Development

Ecological Survey		Date of Survey	Survey Area
Habitat survey		08 April 2024 – 24 October 2024	The survey extent is as shown by the extent of mapped habitats on **Figure 7.5 Habitats (Volume 2: Figures)**. It is not a consistent distance from the Proposed Development owing to evolution of the design throughout and beyond the survey period, which was not finalised until December 2024. The original survey buffer was 500 m, 250 m for later-designed northern compounds and access routes (excluding the section using existing large forestry tracks through conifer plantation, which was not closely inspected). Additionally, there are local reductions in these survey buffers owing to design changes – these are explained in the Limitations section of **Appendix 7.3 Habitats (Volume 5: Appendices)**, and for the reasons given do not affect the robustness of the assessment of habitats..
Daytime Bat Walkover		08 April 2024 – 07 August 2024	Suitable habitat within minimum 50 m of Scoping Layout (excluding below ground components).
Otter survey		08 April 2024 – 07 August 2024	Suitable habitat within 200 m of Scoping Layout (excluding below ground components).
Water vole survey	Water vole survey 1	08-12 April 2024 (main suitable area covered on these dates) 29 April – 03 May 2024 10-14 June 2024	Suitable habitat within 200 m of Scoping Layout (excluding below ground components).
	Water vole survey 2	29 July – 02 August 2024 05-07 August 2024	Suitable habitat within 200 m of Scoping Layout (excluding below ground components). This was reduced to within 50 m where there was a risk of disturbance to red-throated diver– see **Section 7.5 Methodology, Limitations and Assumptions**.
Wildcat survey		08 April 2024 – 07 August 2024	Suitable habitat within 50 m of Scoping Layout (excluding below ground components), extended to 200 m along watercourses.
Pine marten survey		08 April 2024 – 07 August 2024	Suitable habitat within 50 m of Scoping Layout (excluding below ground components), extended to 200 m along watercourses.
Badger survey		24-28 June 2024	Suitable habitat within 50 m of Scoping Layout (excluding below ground components), extended to 200 m along watercourses.
Camera trap monitoring		25-27 June 2024 until 11-12 November 2024 (for CT08 see **Section 7.5 Methodology, Limitations and Assumptions**)	Suitable habitat at accessible locations within 400 m of Scoping Layout (excluding below ground components).

7.5.17 Note that detailed ground level tree assessment (GLTA) for bat roosts was not carried out (see **Section 7.5 Methodology, Limitations and Assumptions**).

Desk-based analysis

7.5.18 Further analysis of data collected was carried out following field surveys. The methods for this desk-based analysis are summarised below and detailed in **Appendix 7.4: Mammals** (**Volume 5: Appendices**).

Water vole Relative Population Density

7.5.19 The method outlined in The Water Vole Mitigation Handbook[30] was used to assign Relative Population Density (RPD) to stretches of water vole evidence, and thus the parts of the survey area most valuable to water vole, using the density of water vole latrines found during survey.

Review of Camera Trap Recordings

7.5.20 Trail camera footage/ images were analysed to determine which species were present at which camera trap, and the number of days on which videos/ photographs of different species were recorded.

Exclusions from Survey Scope

Other Bat Surveys

7.5.21 Potential Roost Assessment (PRA) of buildings and structures was not carried out because there are no buildings or structures with any potential suitability for roosting bats within or near the Proposed Development Site.

7.5.22 For the reasons described below in **Section 7.6 Baseline Environment, Bats**, the Proposed Development Site was assigned Low suitability for potential flight-paths and foraging habitats for bats, in accordance with the definition used by BCT[25]. While BCT suggest some limited bat activity survey may be required for Low suitability sites, it also recognises that professional judgment can be applied in such situations, and that survey may not be necessary. Given the higher altitude and open nature of the majority of the Proposed Development Site, lack of higher quality features for commuting/foraging within the Headpond area (where by far the most habitat impact occurs), the isolation of the Headpond area within the wider landscape, and that woodland impacts are minor and negligible in scale compared to the existing woodland resources in the area, it was considered that that no bat activity surveys were required for the purposes of this assessment.

Great Crested Newt

7.5.23 The Proposed Development is located in the Scottish Highlands, a region identified as 'unsuitable' for great crested newt *Triturus cristatus* by the Great Crested Newt Habitat Suitability Index[34], although the species has been locally and infrequently recorded in locations near Inverness, including once near Bunloit, approximately 1.8 km from the Proposed Development Site, in 2017. However, waterbodies within the Proposed Development Site are located in unfavourable habitat such as extensive upland blanket bog and heathland, and for this reason are themselves liable to be unfavourably acidic. Therefore, great crested newt has been assumed likely absent from the ZoI of the Proposed Development Site, and no specific surveys for this species were carried out.

Beaver

7.5.24 The current distribution of beaver *Castor fiber* in Scotland does not extend to the area within which the Proposed Development Site is located. The species is therefore considered likely absent, and no surveys were carried out for beaver. However, the field signs of this species are particularly obvious, and would have been noted during other survey works, especially for otter/water vole.

Red Squirrel

7.5.25 Red squirrel *Sciurus vulgaris* is the only squirrel species in the vicinity of the Proposed Development and can be assumed to use all established woodland. Construction of the Proposed Development would have limited impact on woodland given that, where access tracks pass through woodland, they would largely use existing forestry tracks. Although there would be localised woodland loss around the Lower Control Works (LCW), this would be small in comparison to the woodland resource along and inland of this part of Loch Ness. Impacts on red squirrel would therefore be limited, with no effect on local conservation status, and possible impacts on individual dreys can be addressed by standard temporal avoidance and pre-works survey. Therefore, no targeted red squirrel survey was carried out, but the locations of camera traps which recorded the species were noted.

Mountain Hare

7.5.26 Mountain hare *Lepus timidus*, although a priority species in Scotland (listed on the SBL, and now subject to legal protection, although offences are unlikely from construction activities), is widespread in suitable upland moorland around Loch Ness. No targeted mountain hare survey was carried out, however incidental observations during various ecological surveys were noted.

Hedgehog

7.5.27 Although a priority species in Scotland (listed on the SBL), hedgehog *Erinaceus europaeus* receives no legal protection. Hedgehog is highly likely to occur in the lower altitude parts of the Proposed Development Site, including around the LCW and access tracks. Hedgehog can reliably be assumed absent from the unwooded, higher altitude parts of the Proposed Development Site, including the Headpond area, where there is no suitable habitat for the species. No targeted hedgehog survey was carried out.

[34] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt* (Triturus cristatus). *Herpetological Journal* 10(4), pp 143-155.

Common Amphibians and Reptiles

7.5.28 Only common reptile and amphibian species are likely to occur within the vicinity of the Proposed Development, and none are specially protected. The upland habitats dominating the Proposed Development Site can reliably be assumed to support such reptiles and amphibians, and standard mitigation can be implemented to reduce impacts on them. Therefore, no targeted reptile or amphibian surveys were carried out, however incidental observations of reptiles and amphibians made during the course of other terrestrial ecology surveys were noted.

Invertebrates

7.5.29 No targeted survey for notable terrestrial invertebrates was undertaken for the reasons described above in **Table 7-2: Summary of Consultation**, however important terrestrial invertebrates were recorded when encountered incidentally during other surveys. A habitat-based approach was used for assessment of effects on notable terrestrial invertebrates, considering the favoured habitats of relevant species and the presence/absence and impacted extents of such habitats.

7.5.30 Targeted surveys for aquatic invertebrates were undertaken, and these are detailed in **Chapter 9: Aquatic & Marine Ecology** (**Volume 2: Main Report**).

Assessment Methodology

7.5.31 The assessment of impacts and effects on terrestrial ecological features described in this chapter was conducted in accordance with the guidelines published by CIEEM[8]. The principal steps involved in the CIEEM approach can be summarised as:

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

7.5.32 When baseline conditions have been determined, it can become apparent that there is no possibility of effect on certain ecological features, and in this case such features are scoped out of further assessment.

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

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

7.5.34 Impacts are assessed in view of the conservation status of the species under consideration. Conservation status is defined as follows:

- Habitats – the sum of influences acting on it that may affect its extent, structure/functions, distribution and typical species within a given geographical area[8]; and
- Species – the sum of influences acting on it that may affect its long-term distribution and abundance within a given geographical area[8]. Similarly, conservation objectives for European sites indicate that to contribute to favourable conservation status, the following must be maintained: the population as a viable component of its habitats, distribution, and sufficiency of supporting habitats, processes and prey.

7.5.35 NatureScot recommends that the concept of the favourable conservation status for species should be applied at a national (Scottish) level in order to determine the level of significance of an effect arising from the impact(s) of development[12]. However, consideration of effects at all scales is important[8], and where an impact may not affect conservation status at the national level, the potential for effects on conservation status within the context of NHZ 7, as well as at local scales, has been considered (see **Appendix 7.1: Method for Ecological Impact Assessment (Volume 5: Appendices)** for the definitions of regional and local).

7.5.36 For the purposes of this EIA, effects predicted to be significant on an ecological feature at the Regional or greater geographic level are considered to be 'Significant' in broader EIA terms, whereas those predicted to be significant only at the Local level, or to have Negligible effect, are considered to be 'Not Significant'. The latter does not, however, necessarily imply that mitigation is not required, or that other legal requirements do not necessarily apply.

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

Limitations and Assumptions

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

7.5.39 For habitats (see **Figure 7.4 Terrestrial Ecology Survey Areas and Camera Trap Locations (Volume 3: Figures)**), the original survey buffer was generally 500 m from the Proposed Development, to minimise risk of insufficient survey extent if design iterations significantly moved infrastructure components. However, design changes that were not finalised until December 2024 (beyond the survey period) mean that the habitat survey buffer is not now a consistent distance from the Proposed Development. For the Headpond and large sections of access routes, the original survey buffer of 500 m remains. The buffer was 250 m for later-designed northern compounds and access routes (excluding the long commercial forestry section of the Balnain Main Access). There are local reductions in these survey buffers, such as at temporary compound TC05. These are explained in the Limitations section of **Appendix 7.3 Habitats (Volume 5: Appendices)**, and for the reasons do not detract from the robustness of the assessment of habitats.

7.5.40 The survey areas for other ecological features were created based on the Scoping Layout (excluding below ground infrastructure) (see **Section 7.5 Methodology, Baseline Data Collection)**. Subsequent to the survey areas being devised, and most of the terrestrial ecology survey work being completed, the design of the Proposed Development changed. Most significantly, the access routes were re-designed. A former possible access route to the Headpond from Grotaig in the east has been removed from the design and replaced with access from the north. This would utilise existing FLS tracks between Balnain, on the River Enrick, to the River Coiltie, before running southwest across the open moorland to the Headpond area. Access over the open moorland would require the Construction of new access tracks (initially for Construction but the majority retained in narrower width as permanent access tracks, hereafter "Permanent Access Tracks" – see **Chapter 2: Project and Site Description (Volume 2: Main Report)**). The majority of this access track area was not subject to detailed terrestrial protected species survey (See **Figure 7.4: Terrestrial Ecology Survey Areas and Camera Trap Locations (Volume 3: Figures)**). From aerial imagery, and observations made during ornithological surveys (which covered a significantly larger area than the protected species surveys), the habitat in this area is similar to that in the surveyed parts of the open moorland, including habitats with some potential to support the protected/important species found within the survey area. However, given the relatively small amount of suitable habitat for otter, bats and pine marten here, and the relatively minor nature of works (when compared to Construction of the Headpond), minor additional impacts to these species would not alter the significance of assessed effects described in this chapter. Locally along watercourses, there is habitat that could support additional populations of water vole, that would likely be low density similarly to the majority of cases in the surveyed area; similarly, impacts from Construction of tracks in the vicinity of such watercourses would have very minimal impact on water voles owing to the narrow width of the tracks and would not alter the significance of assessed effects described below.

7.5.41 Also due to design changes, the LCW moved north-east along the bank of Loch Ness. Protected species surveys therefore did not cover a full buffer around this area. It is possible that unrecorded otter or pine marten refuges

may be present in this area. However, the small number of possible additional refuges that could be present are unlikely to alter the significance of effects presented in this chapter.

7.5.42 The DBW identified one main group of trees with the potential to support roosting bats, located on the bank of Loch Ness around the LCW, south of the A82. A general impression of the suitability of this area for roosting bats was gained during visits to this area. However, full GLTA for features with bat roost suitability was not carried out here due to safety concerns surrounding proximity to the busy and fast A82 road, the steep banks, the large amount of fly-tipped rubbish and poor visibility due to foliage at the time of survey. Moreover, as described above, the LCW changed location following the surveys. However, the general size of trees here (many are relatively small, with more localised larger oaks – see example photographs in **Appendix 18.1: Wood Report, Loch Ness (Volume 5: Appendices)**) and geographical location, it is relatively unlikely that large roosts would be present, and if present the species involved are unlikely to be other than common and widespread bat species. It is also important to recognise that the amount of woodland loss is extremely small compared to the wider woodland in the LCW vicinity and around Loch Ness, thus a negligible amount of the semi-natural woodland resource available to bats would be impacted. The trees elsewhere within the Proposed Development Site are very unlikely to be of significant importance to roosting bats for reasons described in **Section 7.6 Baseline Environment, Bats**– these trees are along existing access tracks where tree loss will be minimal, and are mostly conifers, with local upland birch.

7.5.43 Access to several areas was limited for safety reasons. Specifically, watercourses adjacent to existing access routes from the north (along the Balnain Main Access, referred to as within this EIAR as the Balnain Main Access) and southwest (along the existing Alltsigh track) are often located in steep-sided valleys within dense conifer plantation, some of which have been felled by wind-blow. These areas could not be safely accessed by surveyors. In addition, only the south bank of the River Coiltie was surveyed due to restricted access. These are not considered significant limitations as works in these areas are limited to upgrades to existing access tracks, and any unidentified features are unlikely to be impacted.

7.5.44 The majority of the habitat survey took place within the summer growing season which is considered optimal for plant and habitat identification. A minority of the habitat survey work took place in October, beyond the ideal season for habitat survey. However, highly proficient National Vegetation Classification (NVC) surveyors were employed, well-capable of identifying vegetative plant material at this time of year, and this does not therefore impact the robustness of the habitat survey.

7.5.45 The Water Vole Mitigation Handbook[30] recommends that two water vole survey visits are carried out, and that these are spaced out, ideally by two months, to account for variations in habitat suitability across the water vole breeding season. In upland Scotland, the optimum months for water vole survey are given as June, July and August. Owing to the size of the survey area it was not possible to fit all water vole surveys into this narrow window, or to allow two months between visits at all locations. However, all locations received two visits, at least one of which was within the optimal survey window. The open hill around the Headpond area and upper Alltsigh access track, the only place with a substantial amount of suitable habitat (and also the place where the most significant work is planned), was first surveyed in April, outside of the optimal season. However, the second visit in late-July/early-August was within the optimal season, under optimal conditions, and identified a large amount of water vole evidence in the majority of suitable habitat. Thus, the timings of water vole survey are not considered to be a significant limitation to the assessment.

7.5.46 In one location, northeast of the Headpond, the second water vole survey visit was limited to within 50 m of the Proposed Development due to the presence of apparently nesting red-throated diver *Gavia stellata*, and the risk of disturbing them during survey. However, sufficient information on the presence of water vole was collected from elsewhere and from the first water vole survey, and, regardless, water vole within this un-surveyed area would not be impacted by works.

7.5.47 Camera trap CT08 was missing when surveyors returned to collect it, and is assumed to have been stolen. Thus images/videos recorded by this camera from 1 August onwards were not available. This is not considered a significant limitation to the assessment given that images/videos before 1 August were available from this location, the area around CT08 was subject to field survey, and the other nine camera traps functioned for the whole period and recorded the majority of species expected to be present.

7.5.48 It was not always possible to confirm species recorded on camera traps. This was due to a combination of poor photograph quality and individuals moving quickly, which is however not an uncommon occurrence with camera traps. Where it was considered likely that such a record was a protected or otherwise important mammal species, this was recorded as a ‘possible’ record of that species on a precautionary basis. However, the majority of camera

trap photographs and videos were clear, and identification of species was confirmed. Given the extensive data recorded during camera trap surveys, this is not considered to alter the assessment.

7.5.49 The likelihood of deviations from baseline conditions increases with elapsed time since survey. While the baseline is not expected to change sufficiently to alter the impact assessment by the time of Construction, the precise situation regarding protected/notable species may nevertheless differ (for example, new otter holts may become established). It is not likely that baseline habitats would significantly change for several years at least in the absence of other development or significant changes to land management.

7.5.50 Further detail on the above limitations is provided in **Appendix 7.3: Habitats (Volume 5: Appendices)** and **Appendix 7.4: Mammals** (**Volume 5: Appendices**).

7.5.51 There were no other significant limitations to the desk study, field survey or subsequent analysis.

7.6 Baseline Environment

7.6.1 Detailed baseline information regarding important habitats and mammals is available in **Appendix 7.3: Habitats (Volume 5: Appendices)** and **Appendix 7.4: Mammals** (**Volume 5: Appendices**).

7.6.2 Designated Sites

Statutory Designated Sites

7.6.1 There are three SACs within 10 km and four SSSIs within 2 km of the Proposed Development Site with terrestrial ecology interests, summarised in **Table 7-5: Statutory Designated Sites** and shown on **Figure 7.2: European Sites: Special Areas of Conservation** and **Figure 7.3 Sites of Special Scientific Interest, Ancient Woodland and Important Invertebrate Areas (Volume 3: Figures)** (for designations with ornithological interests, see **Chapter 8: Ornithology (Volume 2: Main Report)**, and for designations with aquatic or marine interests see **Chapter 9: Aquatic & Marine Ecology (Volume 2: Main Report)**). There are no local statutory designations within 2 km of the Proposed Development Site.

Table 7-5: Statutory Designated Sites

Designation	Reason(s) for Designation (terrestrial ecology features only)	Relationship to the Proposed Development
Ness Woods SAC	The designated features are: • mixed woodland on base-rich soils associated with rocky slopes; • western acidic oak *Quercus* spp. woodland; • otter.	There are three components to Ness Woods SAC – a northern component, a central component and a southern component. The northern component is at closest located approximately: • 1.3 km east of the Red Line Boundary; • 3.9 km east of the Proposed Development at closest (LCW); • 6.3 km north-east of the Headpond. The central component is at closest located approximately: • 0.7 km south of the Red Line Boundary; • 1.5 km south of the Proposed Development (existing Alltsigh track); • 4 km south of the Headpond; • 3.1 km south of the LCW. The southern component is considerably further south, at closest approximately 18 km from the LCW and 12 km from the Red Line Boundary. The central and northern components are separated from the Proposed Development by Loch Ness. The southern component is along a watercourse beyond the southern end of Loch Ness.
Urquhart Bay Wood SAC	Alder *Alnus glutinosa* woodland on floodplains.	Urquhart Bay Wood SAC is at closest located approximately: • 1.9 km east of the Red Line Boundary; • 1.9 km east of the Proposed Development (Balnain Main Access • 8.8 km northeast of the Headpond; • 7.8 km northeast of the LCW. Intervening land predominantly comprises the village of Drumnadrochit, woodland and farmland near the Permanent Access Track, with a large expanse of upland moorland between the SAC and the Headpond area.
Loch Ruthven SAC	• Clear-water lakes or lochs with aquatic vegetation and poor to	Loch Ruthven SAC is at closest located approximately: • 9.8 km east of the Red Line Boundary; • 10.5 km east of the Proposed Development at closest (Balnain Main Access);

	• moderate nutrient levels; • otter.	• 14.7 km east of the Headpond; • 12 km northeast of the LCW. Intervening land comprises Loch Ness, agricultural fields and moorland.
Easter Ness Forest SSSI	Upland mixed ash *Fraxinus excelsior* woodland and upland oak woodland.	Coincident with the southern component of Ness Woods SAC.
Inverfarigaig SSSI	Upland mixed ash woodland.	Coincident with the northern component of Ness Woods SAC.
Urquhart Bay Wood SSSI	Wet woodland.	Coincident with Urquhart Bay Wood SAC.

Non-statutory Designated Sites

7.6.2 There are no locally designated sites within 2 km of the Proposed Development Site. However, as mentioned in **Section 7.3 Consultation**, Buglife indicated in their response to the Scoping opinion request that the Proposed Development Site is adjacent to the Inverness-shire IIA. Buglife defines IIAs as *"places that are home to nationally or internationally significant invertebrate populations and their habitats"*[35]. The Proposed Development Site is surrounded by the Inverness-shire IIA to the north, south and west but enters it only in the south via the existing Alltsigh track (see **Figure 7.3: Sites of Special Scientific Importance, Ancient Woodland and Important Invertebrate Areas** (**Volume 3: Figures**)). Therefore no construction works would take place within Inverness-shire IIA.

7.6.3 A Buglife B-Line also runs along the opposite side of Loch Ness[36], approximately 1.5 km from the Proposed Development Site at closest. B-Lines are a network of routes throughout the UK designed to connect habitats suitable for pollinators, within which wildflower-rich habitats are being created.

Habitats

7.6.4 This section summarises the findings of the habitat surveys. For further detail, refer to **Appendix 7.3: Habitats (Volume 5: Appendices)**.

7.6.5 The majority of habitat within the footprint of the Proposed Development and around it comprises blanket bog, wet heath and (within the Headpond) oligotrophic standing water (the latter almost entirely comprising Loch nam Breac Dearga – see **Chapter 9: Aquatic and Marine Ecology (Volume 2: Main Report)** with further regard to aquatic habitats). There are smaller extents of other habitats within the footprint including dry heath (locally species-rich), montane heath (very small extents only), species-rich grassland, acid grassland, rock/scree and locally (along the Balnain Main Access route and at the LCW) woodland (including in places ancient semi-natural woodland).

7.6.6 Notable terrestrial habitats within the surveyed area that are beyond the footprint of the Proposed Development comprise transition mire (wet vegetation transitional between blanket bog and flush within or at the edge of lochans), M25c species-rich purple moor-grass grassland, CG10 species-rich basic grassland, U17 species-rich ledge and W18 Scots pine woodland.

7.6.7 Impact on standing waters is addressed in **Chapter 9: Aquatic ecology (Volume 2: Main Report)**, however it is noted here that of 34.8 ha of natural oligotrophic standing water in the habitat survey area, 24.2 ha would be lost, almost entirely comprising Loch nam Breac Dearga. There are approximately 51 lochs and lochans of oligotrophic standing water in the wider Balmacaan estate.

Woodland

7.6.8 Within the study area, the Ancient Woodland Inventory (AWI) indicates several areas of ancient semi-natural woodland (ASNW); see **Figure 7.3: Sites of Special Scientific Importance, Ancient Woodland and Important Invertebrate Areas (Volume 3: Figures)**). The most relevant to this assessment are:

- in a thin strip on steep ground at the edge of Loch Ness in the vicinity of both the LCW and existing Alltsigh track, and extensively around Loch Ness;
- along and near the River Coiltie, including in the vicinity of the northern Access Track; and
- within Urquhart Bay Wood SAC and Ness Woods SAC, parts of which meet Loch Ness.

[35] BugLife (2024) *Important Invertebrate Area* (online)Available at: https://www.buglife.org.uk/our-work/important-invertebrate-areas/
[36] BugLife (2024) *B-Line* (online) Available at: https://www.buglife.org.uk/our-work/b-lines/

7.6.9 Ancient woodland in the LCW vicinity is basic rather than acidic, corresponding to NVC type W9. The LCW is largely situated in a gap in the AWI-indicated ASNW. However, although the 1st edition OS mapping has a gap here, there is still a line of trees shown along the loch edge. Moreover, the species composition in the thin strip does not appear clearly different whether indicated as ancient in AWI or not. On a precautionary basis it has all been treated as such. This woodland is steeply sloping and therefore constitutes Annex I H9180 Tilio-Acerion forests of slopes, screes and ravines (Annex I habitats are those listed under Annex I of the Habitats Directive – see **paragraph 7.5.5**).

7.6.10 ASNW in the vicinity of the Alltsigh access includes both basic W9 and acidic W17/W11, and locally wet W7 including a few potential ancient woodland indicators. Along and near the River Coiltie it is acidic upland birchwood, mostly heathy W17. The majority of woodland at Urquhart Bay SAC is also ASNW, classed as Annex I H91E0 in the SAC and SSSI documentation, although a large part is drier W9 with W7 concentrated towards the Loch Ness shore.

7.6.11 Surveyed semi-natural broadleaved woodland that is not ancient (for example, patches near the River Coiltie) comprises further upland birchwood, generally heathy or mossy, in places grassy or bracken dominated. There are also small patches of acidic wet birch or willow corresponding to W4. Within the surveyed area, but beyond any possible impact, there is also localised semi-natural heathy Scots pine woodland corresponding to W18, on steep rock exposure by the Allt Saigh.

7.6.12 The majority of woodland within the survey area above the west side of Loch Ness is commercial conifer plantation. Much of this is Plantation on Ancient Woodland (PAWS). It is dominated by non-native conifers. There is also extensive commercial conifer plantation along the Balnain Main Access, again dominated by non-native conifers, with occasional planted Scots pine.

Montane scrub

7.6.13 Recorded montane scrub includes montane willow and dwarf birch *Betula nana*. Montane scrub here also includes other more common woody species at moderate to high altitude that also occur at low altitude, such as very sparse juniper *Juniperus communis* and a few other tree/shrub species on Meall Fuar-mhonaidh. The dwarf birch is mostly in M19c, occurring within and outside the Headpond. The montane willow scrub includes a small amount of whortle-leaved willow *Salix myrsinites*, as well as common willow species, on the west side of Meall Fuar-mhonaidh. Whortle-leaved willow is listed as Endangered in the Vascular Plant Red Data List[37]. Montane willow scrub constitutes Annex I H4080 Sub-Arctic *Salix* spp. scrub, and Willow Scrub priority SBL habitat.

Blanket bog

7.6.14 Both M17 and M19 blanket bog are widespread in the surveyed area. Drier M19 is the most abundant, but is locally notable (including in parts of the Headpond) for presence of dwarf birch. The M19 also locally includes the *Sphagnum fuscum*. The majority of the M17 is M17b, which is less wet than M17a, and gullied in places with localised bare peat. M17a is however also present, and is wetter with extensive sheets of sphagnum including *Sphagnum papillosum*. Locally (including within the Headpond but mostly outside it) some M17 supports *Sphagnum austinii*, The M17a sometimes includes few-flowered sedge *Carex pauciflora* and rarely slender sedge *Carex lasiocarpa*. Bog pools (mostly in the M17) are locally frequent.

7.6.15 Categorisation of the blanket bog according to the Peatland Action types indicates that substantial parts of the blanket bog are Drained (i.e. within 30 m of haggs/gullies or flat bare peat). Outside of Drained areas, the majority of the bog is drier (either M19 or M17b, or M15 wet heath vegetation on interpolated peat depth of 0.5 m or greater) and falls into the Peatland Action Modified category (although parts of this are not without interest, in particular where dwarf birch is present). The Peatland Action category of Near Natural, with continuous wet ground containing abundant sphagna, is localised.

7.6.16 All blanket bog constitutes Annex I H7130 Blanket bog (whether modified or not).

Wet heath

7.6.17 The majority of surveyed wet heath is M15c, a very common open and often rocky form. Cross-leaved heath *Erica tetralix* is invariably present, as well as smaller amounts of heather *Calluna vulgaris* and occasionally other ericoids. More locally on lower ground, particularly in topographical depressions and along streams, the wet heath tends to become thicker and taller with more and denser purple moor-grass (M15b). There are small, scattered

[37] 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, ISSN 1473-0154.

extents of M15a, often resembling a basic flush, and often species-rich. Occasionally, dwarf birch was recorded in M15c wet heath.

7.6.18 All wet heath constitutes Annex I H4010 North Atlantic wet heaths with, and Upland Heathland priority SBL habitat, although wet heath is also common locally and regionally.

Dry and montane heaths

7.6.19 Numerous forms of dry heath were recorded. By far the most common and the most impacted are forms of H10 and H12, that latter with abundant bilberry *Vaccinium myrtillus* and common on steeper dry slopes, the former on southerly aspects with abundant bell heather *Erica cinerea*. Heather on steeper northerly aspects generally conformed to H21, being damper with *Sphagnum capillilfolium*. Species-rich basic H10 was rarely recorded, and herb-rich H12 with species similar to those in adjacent species-rich grassland was recorded on Meall Fuar-mhonaidh.

7.6.20 Recorded montane heaths occur in extremely small quantity within the footprint of the Proposed Development (typically on the summits of knolls) and beyond it. These includes prostrate forms of heather with lichen, moss and bearberry *Arctostaphylos* spp.

7.6.21 All dry and montane heaths constitute H4030 European dry heaths and H4060 Alpine and boreal heaths respectively, and all are Upland Heathland priority SBL habitat.

Flush, fen and swamp

7.6.22 Recorded flushes are mainly basic including M10 and M11, mostly narrow and stony. Some include flushed wet heath M15a. Typical base-indicator mosses and sedges are present, occasionally including the scarce northern deergrass *Trichophorum cespitosum*[38], Scottish asphodel *Tofieldia pusilla*, broad-leaved cottongrass *Eriophorum latifolium*, and rarely *Sphagnum warnstorfii* and *Sphagnum contortum*. Species-poor acid flush, mainly M6c, is local. Swamp is extremely localised, most often species-poor bottle sedge *Carex rostrata* swamp around the peripheries of lochans, rarely other forms such as slender sedge and water horsetail *Equisetum fluviatile* swamp.

7.6.23 All basic flushes constitute Annex I H7230 Alkaline fens. Together with acid flush and swamp they constitute Upland Flush, Fen and Swamp priority SBL habitat.

Grassland

7.6.24 Grassland is very localised in the surveyed area, which is dominated by blanket bog and wet heath. It is largely confined to small extents of damp species-poor purple moor-grass (typically along watercourses), and dry acid and basic grasslands (the latter species-rich, including U5c) on the lower western slopes of Meall Fuar-mhonaidh and very locally on Glas-bheinn Mor and elsewhere. Basic CG10 grassland is extremely local and far beyond the Proposed Development footprint. Small extents of agriculturally improved grassland occur at the eastern and northern limits of the surveyed area.

7.6.25 The dry species-rich grassland types (U4c, U5c and CG10) all constitute Annex I H6230 Species-rich *Nardus* grasslands on siliceous substrates in mountain areas. They are also Upland Calcareous Grassland priority SBL habitat.

Natural cliff/crag

7.6.26 Rocky cliffs are abundant on the side of Meall Fuar-mhonaidh. They include a large amount of dry heath, and small amounts of U17 species-rich ledge vegetation. The U17 constitutes Annex I H6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels. Locally, montane willow scrub with whortle-leaved willow was recorded (see **paragraph 7.8.167**). A crag on the southern part of Meall Fuar-mhonaidh extending southwards from the Headpond includes a rocky gully with notable species including small-white orchid *Pseudorchis albida*. Local crags elsewhere that are not part of Meall Fuar-mhonaidh are more acidic and did not include such notable species.

Other habitats

7.6.27 Other terrestrial habitats are very limited in extent and comprise vegetation of generally low value such as bracken, gorse and artificial features such as tracks.

[38] Note that this is the former name of common deergrass, now *Trichophorum germanicum*; northern deergrass is scarce but certainly under-recorded.

Important Flora

7.6.28 Several notable botanical species were recorded, which are set out in detail in **Appendix 7.3: Habitats (Volume 5: Appendices)**, and include whortle-leaved willow (Endangered), dwarf birch, *Sphagnum austinii*, *Sphagnum fuscum*, various orchids and lichen *Peltigera britannica*.

Bats

7.6.29 The NBN Atlas Scotland held a total of twelve records of bats from within the desk study area, comprising those of brown long-eared bat *Plecotus auritus* (seven records), soprano pipistrelle *Pipistrellus pygmaeus* (two records), unidentified pipistrelle (two records) and an unidentified bat species (one record). None of these were of roosts, and all were from the lower slopes around Loch Ness associated with Grotaig or Foyers, or from near Balnain.

7.6.30 The Proposed Development Site is considered to be of extremely limited value to foraging and commuting bats for the following reasons:

- Bat roosting opportunities are extremely limited within the vicinity of the Headpond and thus bats would need to travel significant distances to use the area;
- The Headpond area lacks woodland habitat, treelines or hedges which would provide the best foraging resource for bats;
- Although upland habitats can support good populations of invertebrate prey, the lack of vegetated linear features which could be used as sheltered commuting routes means that most parts of the Headpond area are isolated from the wider landscape; and
- More suitable habitat within the Proposed Development Site (e.g. broadleaved woodland around the LCW, between Loch Ness and the A82), is localised and covers a tiny proportion of the Proposed Development Site as a whole.

7.6.31 The Proposed Development Site has therefore been assessed as having Low suitability for potential flightpaths and foraging habitats, according to the assessment criteria detailed in the BCT Good Practice Guidelines[25].

7.6.32 The DBW identified one main group of trees with the potential to support roosting bats, located around the LCW, between the A82 and Loch Ness. This woodland comprises mature birch, oak and hazel *Corylus avellana* which is continuous with the woodland strip along the loch-side, and some of which is ancient woodland of semi-natural origin. The GLTA for features with bat roost suitability was not carried out here due to safety concerns, which are detailed in **Section 7.5 Methodology, Limitations and Assumptions**. A general impression of the suitability of this area to support roosting bats was gained during other surveys, and it was noted that the majority of trees appear to be semi-mature and therefore less likely to provide high quality roosting habitat for roosts of multiple bats, as they are unlikely to contain features typically associated with older trees such as rot holes, fallen branches, etc.

7.6.33 The majority of trees elsewhere within the Proposed Development Site are within non-native conifer plantation or are lone or scattered birch and (rarely) Scots pine, including immature and stunted trees, such as along the River Coiltie. These trees have extremely limited suitability for roosting bats because they generally lack the crevices and cavities possessed by older, larger and more damaged trees, and, although they may be used by individual or small numbers of bats, it is extremely unlikely that they have the larger cavities required for breeding/hibernation roosts.

Otter

7.6.34 The NBN Atlas Scotland held a single record of otter from 2004 within the desk study area, from a small tributary of the River Enrick, approximately 340 m north of the Permanent Access Track.

7.6.35 The majority of the larger watercourses within the survey area are suitable for refuge creation by otter, particularly the Allt Saigh, Allt Loch an t-Sionnaich, River Coiltie and River Enrick. The waterbodies including Loch nam Breac Dearga are also locally suitable. All watercourses and waterbodies within the survey area have the potential to be used by foraging and commuting otter. The bank of Loch Ness is suboptimal for refuge creation around the LCW due to the often bare rocky substrate.

7.6.36 During the field surveys, a large quantity of otter field signs were found throughout the survey area. In total, 29 otter refuges comprising two holts (OR14 and OR17) and 27 lay-ups were identified within the survey area. Spraints were frequently found on the majority of watercourses and on the banks of waterbodies.

7.6.37 OR03, though not located within 200 m of the Proposed Development, is thought to have the potential to be used as a breeding holt given its secluded location, access to a waterbody which is unlikely to flood, and with numerous spraints and an area of flattened vegetation indicating extensive recent use of this feature by otter.

7.6.38 Of the 27 confirmed lay-ups, four are located within 30 m of proposed infrastructure (OR15, OR16, OR22 and OR23) and are therefore at risk of damage, destruction or disturbance. No additional lay-ups are known within 100 m of blasting that would take place at the Headpond borrow pit (nor of proposed Borrow Pit 2 at an existing quarry within FLS forestry – see **Chapter 2: Project and Site Description (Volume 2: Main Report)**). No otter refuges are known in the LCW vicinity (although, since the LCW location moved after the otter survey, part of the LCW was not subject to survey, therefore it is possible that otter refuges may exist within disturbance distance of LCW works – this to be addressed through pre-construction survey).

7.6.39 Otter were not recorded by any of the camera traps.

7.6.40 Further detail is provided in **Confidential Appendix 7.2: Sensitive Terrestrial Ecology Information (Volume 6: Confidential Appendices)** and survey results are shown in its associated figure **Figure 7.10 Otter Survey Results and Incidental Records (Volume 6: Confidential Appendices.**

Wildcat

7.6.41 The desk study indicated that the Proposed Development Site, and wider parts of the Highlands, is within the range of wildcat based on information provided by the Mammal Society[39].

7.6.42 The Proposed Development is located in proximity to an area investigated by NatureScot as a potential priority area for wildcat conservation, referred to as Stratherrick. A study commissioned by NatureScot[40] into the presence of wildcat in this area resulted in a recording of a single hybrid cat but no other evidence of wildcat, either through genetic analysis of scats or by live capture. It was concluded by the study that there is little evidence of a sizeable population of wildcat in this area and it was recommended that Stratherrick should not be taken forward as a priority area for the conservation of this species.

7.6.43 The Scottish Wildcat Action: Final Summary Report[41] reported on records of wildcat submitted to iRecord by the public between April 2015 and March 2020, and these also indicate “plausible” (as opposed to “Correct”) record(s) of hybrid wildcat in the study area. The nearest records of non-hybrid wildcat from the dataset are ‘Correct’ records from near Foyers (on the south bank of Loch Ness), 9.5 km south of the Proposed Development, and Cannich, 11.2 km northwest of the Proposed Development.

7.6.44 The NBN Atlas Scotland did not hold any recent records of wildcat within 1 km of the Proposed Development Site. The closest recent records held by the NBN were from 2013 and 2007, both from Aigas, approximately 19.9 km north of the Proposed Development Site.

7.6.45 Some suitable wildcat habitat is present within the survey area, particularly along woodland edges and where there are rocky areas suitable for den creation. The large expanse of open moorland is sub-optimal for the species. Further detail is provided in **Appendix 7.4: Mammals (Volume 5: Appendices).**

7.6.46 No evidence of wildcat was identified during the surveys, including by camera traps.

7.6.47 Wildcat is therefore assumed to be likely absent from the Proposed Development Site.

Water Vole

7.6.48 The NBN Atlas Scotland held no records of water vole from within the study area. The nearest records were two associated with the Grotaig Burn, one from 2024 and located approximately 3 km north-east of the Headpond, and one from 2014, 3.5 km north east of the Headpond.

7.6.49 In total, the NBN Atlas Scotland held 91 commercially available records of water vole within NHZ 7, made from 2004 onwards. These are scattered throughout the NHZ.

[39] Mammal Society (2018) Species – Wildcat. [Online] Available from: https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-wildcat/ (Accessed 12 November 2024)
[40] Littlewood, N.A., Campbell, R.D., Dinnie, L., Gilbert, L., Hooper, R., Iason, G., Irvine, J., Kilshaw, K., Kitchener, A., Lackova, P., Newey, S., Ogden, R. and Ross, A. (2014). *Survey and scoping of wildcat priority areas*. Scottish Natural Heritage Commissioned Report No. 768.
[41] Campbell R. D., Gaywood M.J., & Kitchener A.C. (eds.) (2023). *Scottish Wildcat Action: Final Summary Report*. NatureScot, Inverness.

7.6.50 The water vole survey results are summarised as follows:

- Suitable habitat was identified during water vole surveys, or, for areas that were not subject to water vole survey, from habitat data alongside aerial imagery. Suitable habitat is located mainly in flat or shallowly sloping areas and comprises grassy banks of a soft substrate along slow flowing, narrow watercourses or around pools, and also flushes and other damp areas dominated by soft rush or purple moor-grass. Some parts of smaller watercourses are partially underground, and these have been included where known and where the terrestrial habitat is suitable for the species. For the purpose of this assessment, suitable habitat also includes that considered to be sub-optimal. Rockier, faster flowing or larger watercourses (e.g. the Allt Saigh or River Coiltie) are considered unsuitable;
- Within the Headpond area and adjacent land to the west and north, water vole evidence (both fresh and likely historical) was found in almost all areas of suitable habitat;
- Water vole burrows were abundant throughout the Headpond area and to the west and north, both as clusters and scattered more sparsely. Approximately 722 water vole burrows were identified during surveys;
- Latrines and droppings were found less frequently than burrows, and were more often present as localised clusters, always associated with nearby burrows when found in the Headpond area. Several of the more isolated burrows had no latrines/droppings associated with them on either the first or second water vole survey visits, indicating that they may have persisted from previous years and may now be unoccupied;
- Outside of the Headpond area and away from Allt Loch nam Breac Dearga/Allt Loch an t-Sionnaich, evidence within the survey area was very sparse; and
- A much greater amount of water vole evidence was identified during the second water vole survey visit, compared to the first.

7.6.51 Using the method outlined in The Water Vole Mitigation Handbook30, whereby the density of latrines is used to calculate Relative Population Density (RPD), it was found that all but four locations were Low RPD, with the following four Medium RPD locations:

- Within the Headpond area, partly extending within Saddle Dam 1, and northwards beyond it;
- Within the Headpond area, at the Main Dam locations;
- West of the Headpond area, along Allt Loch nam Breac Dearga; and
- West of the Headpond area, along a tributary of Allt Loch nam Breac Dearga. This location is separated from the other Allt Loch nam Breac Dearga location above by approximately 120 m and an intermediate Low RPD stretch of watercourse.

7.6.52 The Water Vole Mitigation Handbook[30] also states that *"Water voles can exist as a dispersed meta-population, within individual sites at the periphery showing water voles present in some years and absent in others as sites are colonised, abandoned and recolonised, depending on chance extinction events and local population fluctuations".*

7.6.53 Water voles are considered to be capable of recolonising suitable habitat within 1-2 km of source populations[42] , and they may travel over land (rather than always along watercourses) to do so[43,44]. The distances between blocks of suitable habitat in the Headpond area are well within this, and it is considered that the Headpond area supports a single connected population of water voles, comprising multiple distinct colonies. These colonies (and thus the population as a whole) likely extend into adjacent suitable un-surveyed habitat. As suggested above by The Water Vole Mitigation Handbook[30], not all suitable habitat is occupied at all times.

7.6.54 The boundaries of distinct colonies cannot easily be determined, and instead, as shown on **Figure 7.11: Water Vole Survey Results and Incidental Records (Volume 3: Figures)**, professional judgement based on the most obvious divisions between groups was used to spatially separate the evidence found to allow it to be effectively described.

[42] Capreolus Wildlife Consultancy (2005). *The ecology and conservation of water voles in upland habitats*. Scottish Natural Heritage Commissioned Report No. 099 (ROAME No. F99AC320).
[43] Telfer, S. (2000). *Dispersal and metapopulation dynamics in water vole populations*. D. Phil. thesis. University of Aberdeen.
[44] Telfer, S., Holt, A., Donaldson, R. and Lambin, X. (2001). *Metapopulation processes and persistence in remnant water vole populations*. Oikos 95: 31–42.

7.6.55 Although numerous water vole burrows were identified, only latrines and droppings can be used to confirm current occupation by water voles. This is due to the ability for burrows to persist, potentially between years (burrows of brown rat *Rattus norvegicus* can be similarly sized, however presence of brown rat on moderate altitude upland moorland is very unlikely).

7.6.56 Water vole were not recorded by any of the camera traps.

7.6.57 A single image was recorded on camera trap CT02 which resembled American mink *Neovison vison*. The individual photographed could not be conclusively identified but appeared to be a mustelid of appropriate size for mink, and with darker fur than would be expected for pine marten. American mink, an INNS, predate water vole and are considered one of the leading causes of their decline. American mink are known in the wider area, and the NBN Atlas Scotland held records of the species mainly from lower lying areas around Drumnadrochit and Invermoriston, and their presence at CT02 cannot be ruled out.

7.6.58 Further detail is provided in **Appendix 7.4: Mammals** (**Volume 5: Appendices**) and survey results are shown on **Figure 7.11: Water Vole Survey Results and Incidental Records** (**Volume 3: Figures**).

Pine Marten

7.6.59 The NBN Atlas Scotland held eleven records of pine marten, all from near Loch Ness from between 2006 and 2014, and likely recorded from the A82 (or from roads around Foyers).

7.6.60 Suitable woodland habitat is present along the banks of Loch Ness and along the existing Alltsigh track and Balnain Main Access. On the open hill, including in the Headpond, suitable habitat for refuge creation is more localised, with most suitable habitat associated with rocky hillsides, watercourses and large boulders. Pine marten may occasionally use this area for foraging or commuting, and a few scattered possible pine marten dens and scats were identified. Pine marten may predate the water vole present around the Headpond.

7.6.61 Surveyors observed a live pine marten between the A831 and the River Enrick, approximately 500 m north of the Balnain Main Access on 27 June 2024.

7.6.62 Pine marten scats were identified throughout the survey area, most commonly on existing forestry tracks. A total of nine possible pine marten dens were identified. Not all possible pine marten dens were associated with recent pine marten evidence, however all are suitable for use by pine marten.

7.6.63 Pine marten was recorded by camera traps CT01, CT04, CT05, CT09 and CT10, all of which were deployed in woodland and not on moorland habitats associated with the Headpond. CT01 recorded a particularly large amount of pine marten activity: 402 visits across the survey period over 112 days. Pine marten was therefore detected on 81.8% of the deployment days. This included ‘playful’ behaviour between two individuals, presence of likely juveniles, scent marking/ scatting and carrying prey. CT10 also recorded two individuals at times, but recorded only twelve visits overall over nine days (6.4% of deployment days). CT04, CT05 and CT09 recorded two, one and three visits by individual pine marten over two, one and three days, respectively (1.5%, 0.7% and 2.1% of the deployment days).

7.6.64 Further detail is provided in **Appendix 7.4: Mammals** (**Volume 5: Appendices**) and survey results are shown on **Figure 7.12: Pine Marten, Badger and Red Squirrel Survey Results and Incidental Records** (**Volume 3: Figures**).

Red Squirrel

7.6.65 The Saving Scotland’s Red Squirrels website and NBN Atlas Scotland hold records indicating that red squirrel is ubiquitous in woodland in this region.

7.6.66 No sightings of red squirrel or of other evidence (e.g. feeding remains) were made by surveyors, however red squirrel was recorded by camera traps CT01, CT02, CT05 and CT10, all of which were deployed in woodland and not on moorland habitats associated with the Headpond. The largest amount of red squirrel activity was recorded at CT01, where 62 visits of the species were recorded, including one visit by two individuals. These visits took place over 35 days, 25.5% of the deployment days. CT10 recorded 32 visits by the species over 19 days (13.6% of the deployment period), with five and one visit recorded at CT02 and CT05 respectively, over 2 days (1.4%) and one day (0.7%), all by individuals.

7.6.67 Further detail is provided in **Appendix 7.4: Mammals** (**Volume 5: Appendices**) and survey results are shown on **Figure 7.12: Pine Marten, Badger and Red Squirrel Survey Results and Incidental Records** (**Volume 3: Figures**).

Badger

7.6.68 No recent records of badger were held by NBN Atlas Scotland within the desk study search distances.

7.6.69 Habitats within the Proposed Development Site are generally considered sub-optimal for badger, being dominated by open, upland habitats. Areas of broadleaved woodland are considered more suitable, with the woodland at the banks of Loch Ness (around the LCW) having the sloping banks preferred for sett creation.

7.6.70 Badger evidence was limited within the survey area, and where present, was located within woodland. Evidence was largely limited to latrines, with other evidence comprising footprints, snuffle holes and evidence of digging. No badger setts were found.

7.6.71 Badger was recorded by camera traps CT01, CT02, CT03, CT04, CT05, CT06, CT09 and CT10, all of the camera trapping locations except those located within the Headpond. All were deployed in woodland or along woodland edges except for CT06, which was located in heathland/ bracken to the east of the Headpond. None of the cameras recorded large amounts of badger activity, with the greatest number of badger visits (eleven) recorded at CT04 and spread over 11 days (8% of the deployment days). The remaining cameras recorded four (CT01), eight (CT02), six (CT03), seven (CT05), one (CT06), four (CT09) and one (CT10) visits by badger, over four (2.9% of deployment days), five (3.6%), five (3.6%), four (2.9%), one (0.7%), four (2.9%) and one day (0.7%). In all cases these were lone badgers. All badgers appeared to be commuting past the cameras, including via push-unders beneath fences.

7.6.72 Further detail is provided in **Appendix 7.4: Mammals** (**Volume 5: Appendices**) and survey results are shown on **Figure 7.12: Pine Marten, Badger and Red Squirrel Survey Results and Incidental Records** (**Volume 3: Figures**).

Other Important Mammals

7.6.73 The NBN Atlas Scotland held three records of mountain hare, two of which are from the 1 km grid square containing Loch nam Breac Dearga (the Headpond). Two incidental sightings of mountain hare were made over the course of the surveys, one from where the existing Alltsigh track exits the conifer plantation, and one on the eastern slopes of Meall Fuar-mhonaidh.

7.6.74 The NBN Atlas Scotland held eight records of hedgehog, all of which were from Foyers, on the opposite side of Loch Ness from the Proposed Development. Hedgehogs were not observed incidentally during surveys.

7.6.75 The NBN Atlas Scotland held seven records of brown hare *Lepus europaeus*, all from low-lying areas near Drumnadrochit and Foyers. A single incidental record of brown hare was made during the surveys of an individual on the forest track to the north, between the Rivers Enrick and Coiltie.

7.6.76 None of these species were recorded by camera traps.

Amphibians and Reptiles

7.6.77 Numerous incidental sightings of amphibians and reptiles were made during surveys.

7.6.78 For reptiles, the majority of these were of common lizard *Zootoca vivipara* which were frequently observed throughout the survey area. Less commonly recorded were slow worm *Anguis fragilis*, which were observed twice, once on the existing Alltsigh track and once adjacent to Allt Coire an Ruighe, 1.1 km northeast of the Headpond. Adder *Vipera berus* was observed once; a male was recorded adjacent to a tributary of the Allt Coire an Ruighe, a location that is no longer relevant to the Proposed Development.

7.6.79 Adder and common lizard were recorded by camera trap CT04, located immediately adjacent to the River Coiltie where it is crossed by the Permanent Access Track. Records of both species comprised single visits by individuals on two separate days each.

7.6.80 Incidental observations of adder and slow worm (including the location of the camera trap where adder was recorded) are shown on **Figure 7.13: Incidental Records of Other Important and Notable Species** (**Volume 3: Figures**).

7.6.81 Regarding amphibians, small newts, all of which were likely palmate newt *Lissotriton helveticus* given the upland and northern setting (and several of which were confirmed as such), were numerous, particularly within peaty pools associated with the Allt Loch nam Breac Dearga (immediately west of the Headpond). Also often recorded were common frog *Rana temporaria* and common toad *Bufo bufo*, including a single recording of common frog by camera trap CT10 (adjacent to the existing Alltsigh track).

Terrestrial Invertebrates

7.6.82 As described in **Section 7.6 Baseline Environment, Designated Sites**, the Proposed Development Site is located near to and partly within the East Inverness-Shire Buglife IIA. Although no works are proposed within the IIA itself, much of the habitat within the Proposed Development Site is similar to that within the IIA and has the potential to support the same important invertebrate species.

7.6.83 The NBN Atlas Scotland held post-2000 records of important invertebrates, listed below with the reasons for each species' importance in brackets on the first mention. Some species are considered to be important for their conservation status in the UK (as defined in the Odonata Red Data List for Great Britain[45] and A Revised Red List of British Butterflies[46]), rather than through inclusion on the SBL or within legislation. Where a species is considered to have a conservation status of 'Least Concern', the conservation status is not included. NBN Atlas Scotland held records of the following important invertebrates:

- Pearl-bordered fritillary *Boloria euphrosyne* (WCA, SBL, LBAP, Vulnerable) from the 1 km grid square overlapping the northern extent of the Balnain Main Access, where it crosses the River Enrick (109 records);
- Small pearl-bordered fritillary *Boloria selene* (SBL, Vulnerable), from the 1 km grid square overlapping the northern extent of the Balnain Main Access, where it crosses the River Enrick (40 records);
- Dingy skipper butterfly *Erynnis tages* (SBL), from the 1 km grid square overlapping the northern extent of the existing Balnain Main Access, where it crosses the River Enrick (75 records);
- Small heath butterfly *Coenonympha pamphilus* (SBL, Vulnerable), from the 1 km grid square overlapping the northern extent of the Balnain Main Access, where it crosses the River Enrick (three records) and from the northern bank of Loch Ness, approximately 270 m west of the LCW (one record);
- Brilliant emerald dragonfly (Vulnerable[45]), one record from Loch Dubh (700 m east of the Permanent Access Track), two records from two small lochans to the north (800 m north of the Balnain Main Access), four records from along Bunloit Road (3.5 km east of the Permanent Access Track at closest) and two records from the opposite bank of Loch Ness (2.4 km south of the LCW);
- northern emerald dragonfly *Somatochlora arctica* (Near Threatened[45]), a single record from Lochan Dubh (120 m west of the Permanent Access Track); and
- a cranefly *Tipula limbata* (SBL, Rare[47]), two 2015 records from two 1 km grid squares overlapping the Headpond and existing Alltsigh track.

7.6.84 Records of downy emerald dragonfly *Cordulia aenea* were also returned from the wider area, approximately 2.9 km to the northeast at nearest (near Milton). This species is uncommon in Scotland, with its main population base in the south of England[48].

7.6.85 Plant species suitable as larval food plants for butterfly species were found to be localised within the survey area. Fine-leaved grasses potentially suitable for small heath occur in patches of very localised acid grassland on steeper slopes, and in some flushes and dry heaths; these habitats are far more abundant outside the Proposed Development Site than within it. Common dog-violet *Viola riviniana* and marsh violet *Viola palustris*, potentially suitable for pearl-bordered fritillary and small pearl-bordered fritillary, are also very localised to some acid grasslands, dry heath and flushes, which are again more extensive outside the Proposed Development Site than within it.

[45] Daguet, C., French, G. and Taylor, P. (eds). (2008). *The Odonata Red Data List for Great Britain*. Joint Nature Conservancy Council, Peterborough, UK.
[46] Fox, R., Dennis, E.B., Brown, A.F., and Curson, J. (2022). *A Revised Red List of British Butterflies*. Insect Conservation and Diversity, Royal Entomological Society.
[47] Shirt, D.B. (1987*). British Red Data Books: 2. Insects. Institute of Terrestrial Ecology, Natural Environment Research Council.* (online) Available at: https://data.jncc.gov.uk/data/74deffdb-9866-412e-af2a-bc57f4e67bf0/british-red-data-books-2-insects-part-1.pdf
[48] British Dragonfly Society (2024) *Where to see Downy Emerald* (online) Available at: https://british-dragonflies.org.uk/species-map/downy-emerald/

7.6.86 No records of Scotch argus *Erebia aethiops* (Vulnerable) were provided by NBN Atlas Scotland, though purple moor-grass, the main caterpillar food plant of this species in Scotland, is common within the survey area.

7.6.87 Dingy skipper and northern brown argus butterfly *Aricia artaxerxes* (SBL, Vulnerable) are less likely to occur within the Proposed Development Site as the main caterpillar food plant of these species, common bird's-foot-trefoil and rock rose *Helianthemum nummularium* respectively, are very uncommon within the survey area.

7.6.88 Suitable breeding habitat for dragonflies and damselflies is common around the Proposed Development Site in the form of acidic pools and ditches with ample sphagnum moss, a sluggish flow, a soft, peaty substrate and, locally, emergent vegetation.

7.6.89 A record of a notable cranefly, *Tipula limbata*, was provided by NBN Atlas Scotland and highlighted by Buglife in their scoping response. *Tipula limbata* is described as a species of bog woodland and acid flushes[49,50] and, as strays, high moorland[51]. Habitat within the Proposed Development Site is locally suitable, but lacks the bog woodland frequently mentioned as the preferred habitat of this species.

7.6.90 Five important invertebrate species were recorded incidentally during ecological field surveys:

- Small pearl-bordered fritillary, one observation within the Headpond;
- unknown fritillary species (likely small pearl-bordered fritillary and/or marsh fritillary *Euphydryas aurinia)*, two observations (one of which was of two individuals) within and immediately west of the Headpond;
- an unknown emerald dragonfly *Corduliidae* sp., (unknown), one observation associated with a small lochan 150 m north of the Headpond; and
- Black darter dragonfly *Sympetrum danae* (see below), one observation 125 m north of the Existing Allt Saigh Access Track.

7.6.91 In August 2024, a European Red List providing the updated conservation status of dragonflies and damselflies in a European context was released[52]. The European Red List suggests that brilliant emerald dragonfly is also Vulnerable at a European level, although northern emerald and downy emerald are not mentioned. The European Red List also suggests that black darter, which is widespread in the Scottish Highlands[53] and which was recorded within the Proposed Development Site, is Endangered at a European level.

7.6.92 An unidentified blue butterfly (likely common blue butterfly *Polyommatus icarus*), four-spotted chaser dragonfly *Libellula quadrimaculata* and golden-ringed dragonfly *Cordulegaster boltonii* were also recorded incidentally.

7.6.93 Incidental records of important invertebrates are shown on **Figure 7.13: Incidental Records of Other Important and Notable Species** (**Volume 3: Figures**).

7.6.94 The results of targeted surveys for aquatic invertebrates are detailed in **Chapter 9: Aquatic & Marine Ecology** (**Volume 2: Main Report**).

Wild Deer

7.6.95 Deer are not an 'important' ecological feature in the context of the EcIA guidelines[8] and do not warrant detailed impact assessment from the perspective of their conservation. However, they can impact habitat through grazing pressure, and the following points are noted:

- Red deer were regularly observed during field surveys, sometimes in large numbers, however details were not recorded given that they are not protected or notable species;
- Grazing pressure appears low generally (see **Appendix 7.3: Habitats (Volume 5: Appendices)**), although it was noted that benefits could be gained by reduced grazing pressure (for example, dwarf

[49] Roper, P. (1998). *The Diptera of East and West Sussex. Part 1: Tipulidae – The Larger Craneflies*. Available online at: https://www.prassociates.co.uk/environmental/articles/craneflies Article.htm
[50] Boyce, D.C. (2002). *English Nature Research Reports Number 452: A review of seepage invertebrates in England*. English Nature. (online) Available at: https://publications.naturalengland.org.uk/publication/127034
[51] Stubbs, A.E., (1992). *Provisional atlas of the long-palped craneflies* (Diptera: Tipulinae) *of Britain and Ireland*. Institute of Terrestrial Ecology, Natural Environment Research Council. https://nora.nerc.ac.uk/id/eprint/7499/1/Long-palpedCraneflies.pdf
[52] De Knijf, G., Billqvist, M., van Grunsven, R.H.A., Prunier, F., Vinko, D., Trottet, A., Bellotto, V., Clay, J. and Allen, D.J. (2024). *Measuring the pulse of European biodiversity: European Red List of Dragonflies & Damselflies (Odonata).* Brussels, Belgium: European Commission.
[53] British Dragonfly Society (2024) *Black Darter* (online) Available at: https://british-dragonflies.org.uk/species/black-darter/

birch is almost invariably browsed and would likely attain greater stature and perhaps reproductive success and spread under lower levels of grazing), and deer contribute to localised peat exposure; and

- A mix of red deer and roe deer *Capreolus capreolus* were recorded by all camera traps except for CT07 (located in the middle of the Headpond). The greatest amount of deer activity was recorded at CT02, CT05 and CT10, which recorded deer on 15.1%, 13.6% and 14.3% of deployment days, respectively. The locations of camera traps where wild deer were recorded are shown on **Figure 7.13: Incidental Records of Other Important and Notable Species** (**Volume 3: Figures**).

Feral Pig

7.6.96 NatureScot use the term 'feral pig' to refer to wild boar *Sus scrofa*, hybrids between wild boar and domestic pigs *Sus scrofa domesticus* and other free-roaming pigs[54]. Wild boar were historically native to Scotland prior to being hunted to extinction by 1300 AD[55]. Feral pigs now exist as localised populations originating from escaped and released individuals. Wild boar are considered to be 'former natives', however due to hybridisation with domestic pigs, the free-roaming feral pigs in Scotland are not considered by NatureScot to be native, and are not subject to any legal protection.

7.6.97 Feral pig was recorded by camera traps CT01, CT03, CT05, CT09 and CT10. These cameras are all associated with woodland along the northern bank of Loch Ness and with woodland along the Divach Burn. The amount of feral pig activity recorded was low, with the greatest amount recorded at CT01 – six visits over six days, 4.4% of the deployment days at this location. No feral pigs were recorded in the Headpond or elsewhere on the open moorland. The locations of camera traps where feral pig was recorded are shown on **Figure 7.13: Incidental Records of Other Important and Notable Species** (**Volume 3: Figures**).

Invasive Non-native Plants

7.6.98 Only two individual plants of two species of plant INNS were identified during the habitat surveys, both at Alltsigh:

- One individual cotoneaster *Cotoneaster* sp. adjacent to the existing well-used forestry track at Alltsigh; and
- One individual Pontic rhododendron *Rhododendron ponticum* in woodland between the A82 and Loch Ness at Alltsigh.

Future Baseline

Baseline at Time of Construction

7.6.99 Pre-Construction and Enabling, and later construction works, for the Proposed Development are expected to take approximately eight years to complete. No other major land use changes are expected within the Proposed Development Site prior to commencement of Pre-Construction and Enabling.

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

Baseline in Absence of the Proposed Development

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

[54] NatureScot (2024) *Managing feral pigs in Scotland* (online) Available online at: https://www.nature.scot/professional-advice/land-and-sea-management/managing-wildlife/managing-feral-pigs-scotland
[55] NatureScot, (2022). *Updated non-native species risk assessment of feral pigs in Scotland*. NatureScot Research Report 1288. Inverness. Available online at: https://www.nature.scot/doc/naturescot-research-report-1288-updated-non-native-species-risk-assessment-feral-pigs-scotland.

hotter periods but also increased rainfall (e.g. on blanket bog) could counteract. In summary, the future baseline in the absence of the Proposed Development is likely to be similar to current baseline.

7.7 Embedded Mitigation

7.7.1 Embedded mitigation measures are incorporated into the design of a development and aim to avoid or reduce adverse effects, including those on ecological features. Embedded mitigation can be considered at the impact assessment stage, whereas specific mitigation measures which are not part of the design and are developed after the initial impact assessment, are assessed at a later stage when considering the residual effects. For specific additional mitigation see **Section 7.9 Additional Mitigation.**

Infrastructure Design

7.7.2 The Proposed Development has sought to avoid impacts on ecological features as far as possible by several infrastructure refinements embedded into the design, as set out below:

- The principal borrow pit has been purposefully located within the Headpond inundation zone, and thus avoids further habitat loss. A small borrow pit to facilitate the Pre-Construction and Enabling has been removed from the design and replaced by use of an existing rock quarry in the FLS land through which the northern Access Track passes;
- The location of the LCW was amended to take advantage of a gap in ASNW shown in the AWI (although field evidence suggests that the thin strip of woodland at the edge of Loch Ness in this gap is similar to the adjacent woodland beyond the AWI gap, and all of it has precautionarily been treated as ancient);
- All compounds (permanent and temporary) have been located to maintain at least 50 m from watercourses and generally the same distance or more from lochans and significant bog pools (of potential value to fauna such as birds, fish, invertebrates, otter and common amphibians, as well as of intrinsic habitat interest). The only exception to this is a lochan north of the Headpond where a minimum 30 m separation has been maintained;
- By far the largest compound (for workers accommodation, TC05) has been sited to minimise impact on blanket bog and to completely avoid ancient woodland and other semi-natural woodland, largely affecting common forms of wet heath;
- Access tracks have been routed to avoid deeper peat to a very large extent, such that access tracks generally avoid higher quality blanket bog, and in particular avoid those areas where the wettest and most sphagnum-rich bog type (NVC type M17a) is dominant. The access tracks also avoid impacts (directly or indirectly) on notable *Sphagnum austinii*, which tends to be associated with wetter blanket bog, and have minimal impact on dwarf birch and *Sphagnum fuscum*;
- Most construction tracks follow the routes of permanent tracks and thus minimise habitat impacts. With very little exception, construction tracks that are additional to those following the routes of permanent tracks are located within the Headpond inundation zone. Construction compound(s) in the Headpond vicinity would also be located within the Headpond inundation zone. As such, these would incur negligible further habitat loss;
- The northern Access Track was revised to avoid all direct impact on the Coiltie ancient semi-natural woodland, by crossing the River Coiltie at a gap in woodland cover where there is an existing ford, rather than by linking through ancient woodland to the existing Euroforest track as was previously proposed. Beyond the crossing of the River Coiltie northwards, the Balnain Main Access route also uses an existing large forestry track through commercial FLS plantation, thereby incurring minimal impacts along this section;
- The southern access route from Alltsigh has been revised to be used on an infrequent basis (taken as twice per year) by smaller vehicles such as 4x4s only, with negligible works required to the existing rough track, and requiring a relatively short section of new track at the northern end to reach the Headpond;
- The design includes compensation flow discharge from the Headpond via permanent compound PC12 into the Allt Loch an t-Sionnaich, to maintain its typical hydrological regime, which would minimise impact on associated terrestrial riparian habitats. The discharge rate would be agreed with SEPA;

- As far as possible, watercourse crossings would be constructed as clear-span structures and the natural bed and channel of watercourses retained, as per SEPA guidance[56], to remain passable to aquatic species under most conditions; and
- Water intake/discharge at the LCW would not exceed a velocity of 0.3 ms^{-1} at the smolt screens and 1.0 ms^{-1} at the diffusers inside the smolt screens, both well below the upper swimming speeds of otter as further discussed in **paragraph 7.8.167** in the assessment of Operational effects on otter. The smolt screens would also prevent reduction in the fish prey resource of Loch Ness.

7.7.3 The following mitigation is not associated with the design itself but has been agreed by the Applicant and is therefore considered embedded:

- Deer density across the estate has been reported by the estate to be 9.5 deer km^{-2}. The actual number of deer on the estate would need to be reduced to maintain this density, owing to an appreciable loss of existing deer habitat to the Headpond and to deer-fenced exclusion zones (as proposed for native woodland planting and natural regeneration). It should be noted that this is already below the density of 10 deer km^{-2} advised by NatureScot as best practice to avoid significant habitat damage. However, deer density on retained open moorland throughout the estate (where deer are not excluded for planting/natural regeneration) would be maintained at an improved density of 8.5 deer km^{-2}. This would firstly ensure that loss of wild deer habitat (to the Proposed Development and proposed deer exclosures for native woodland/scrub) does not increase deer pressure on retained habitat, but would also beneficially result in an average decrease in deer pressure on retained habitat within the estate of approximately 16%, across a large area of approximately 59 km^2 (of retained habitat not affected directly or indirectly by infrastructure, and not within proposed or existing deer exclosures)[57].

Standard Measures

7.7.4 A range of measures that are standard good practice for development of this type, and which are required to comply with environmental protection legislation, would also be implemented. These are well-developed and have been successfully implemented on infrastructure projects across the country and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. Details of this mitigation are included in an Outline Construction Environmental Management Plan (oCEMP) (see **Appendix 3.1: Outline Construction Environmental Management Plan (Volume 5: Appendices)**), which would be updated and finalised post-planning and submitted for approval by The Highland Council, in consultation with SEPA and NatureScot, where necessary, prior to commencement of Construction. The oCEMP would set out all environmental management measures and the roles and responsibilities of Construction personnel. Measures would include:

- An Ecological Clerk of Works (ECoW) and/or Environmental Clerk of Works (EnvCoW) (referred to collectively hereafter as 'ECoW') would be employed for the duration of the Construction of the Proposed Development. The remit of the ECoW would include, but may not be limited to:
  - If appropriate, undertaking the pre-works surveys described in Section 7.9 Additional Mitigation, Pre-works Surveys for Protected Species;
  - Ensuring that all personnel involved in the Pre-Construction and Enabling, and Construction of the Proposed Development are made aware of the ecological features within the ZoI and the mitigation measures and working procedures that must be adopted. This would be achieved as part of the induction process and through the delivery of Toolbox Talks, where required;
  - Advising on exact infrastructure placement within micro-siting tolerances;
  - Monitoring of, and advising on, storage of overburden to minimise habitat damage;
  - Monitoring of any peat/vegetated turves that may be stored for later reinstatement;
  - Advising on habitat reinstatement;
  - Monitoring of pollution control measures and advising on placement of ditches, settlement ponds, etc. to minimise habitat damage;

[56] SEPA (2010). *Engineering in the water environment: good practice guide – River crossings*. 2nd edition. SEPA.
[57] Estate area = 81.6 km^2; existing/proposed deer-fenced areas = 12.8 km^2/7.2 km^2; habitat affected by Proposed Development = 2.5 km^2.

  - Monitoring and advising on the additional control measures (e.g. Construction lighting, standard wildlife protection measures etc) mentioned below; and
  - Monitoring and advising on adherence to Species Protection Plans (see **Section 7.9 Additional Mitigation, Species-specific Additional Mitigation**) as required.
- Sightings of protected and/or important species within the Proposed Development Site during the Construction period would be recorded. If any evidence or sightings of protected species are recorded in the works area, then works would stop immediately and the ECoW would be contacted for further advice;
- During all phases of the Proposed Development, pollution prevention measures would be adopted, following SEPA Pollution Prevention Guidelines (PPG) and Guidance on Pollution Prevention (GPP), including the following:
  - Controls and contingency measures would be provided to manage run-off from Construction areas and to manage sediment;
  - All oils, lubricants or other chemicals would be stored in an appropriate secure container in a suitable, bunded storage area, with spill kits provided at the storage location and at places across the Proposed Development Site;
  - To avoid pollution impacts to soils, vegetation and watercourses/waterbodies during Construction, all refuelling and servicing of vehicles and plant would be carried out in a designated area which is bunded and has an impermeable base. This would be situated at least 50 m away from any watercourse;
- Works near or at any retained native trees or semi-natural woodland would follow guidance in British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*[58];
- Construction traffic would be subject to controls including on speed;
- Any artificial lighting required for construction works would as far as possible be directional to avoid or minimise light spill beyond immediate works areas; and
- Standard good practice measures to protect wildlife would be implemented, including providing overnight means of escape from excavations and capping pipes that animals might enter.
- A best practice Biosecurity Management Plan (BMP) would be prepared to address the very low risk of spreading invasive non-native species (INNS) in the wild, in contravention of the WANE Act. This primarily concerns a single cotoneaster *Cotoneaster* sp. bush beside the existing access track at Alltsigh; a single rhododendron *Rhododendron ponticum* also at Alltsigh within woodland beside Loch Ness is located beyond possible impact). Pre-works ECoW inspections would ensure no other plant INNS could be impacted, or if found would similarly be addressed in the BMP.

7.8 Assessment of Effects

Features Scoped Out of Further Assessment

7.8.1 As stated in **Section 7.5 Methodology, Assessment Scope.** relevant ecological features are those that are 'important' and have the potential to be significantly affected by the Proposed Development[8]. In view of the baseline data obtained through desk study and field survey, the features in **Table 7-6: Ecological Features Scoped Out of Further Assessment** have been excluded from further assessment because: a) available data indicate that they are likely to be absent from the ZoI of the Proposed Development; b) it is clear that no impact from the Proposed Development is possible; and/or c) they are features that, although identified as being 'important' by the criteria given in this chapter, are common and widespread and/or their conservation status is clearly not threatened by the Proposed Development.

Table 7-6: Ecological Features Scoped Out of Further Assessment

Ecological Feature	Rationale for Exclusion from Further Assessment
Levishie Wood SSSI	No impacts on Levishie Wood SSSI are considered possible as a result of the Proposed Development. This is because the SSSI is located 2.3 km away from the nearest part of the Proposed Development (the existing Alltsigh track) and therefore there would be no direct loss

[58] British Standards Institution (2012). *British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.

Ecological Feature	Rationale for Exclusion from Further Assessment
	of habitat from the SSSI. This is also sufficiently far as to prevent indirect impacts from pollution during Construction which are in any case addressed by embedded mitigation. Furthermore, Levishie Wood SSSI is not located on the bank of Loch Ness and therefore would not be subject to impacts resulting from changes to water levels, and there is no other hydrological connection.
Long-established plantation woodland	There would not be any significant ecological impact on long-established plantation woodland. The AWI shows long-established plantation along part of the Balnain Main Access route, where the existing large forestry track through the FLS plantation would be used. Small amounts of felling adjacent to the existing track for widening and core path diversion would affect a negligibly small proportion of the plantation, and there is no likelihood of significant pollution effects owing to adherence to standard controls set out in the oCEMP and levels of Construction traffic that would not exceed those at which gaseous emissions require consideration. Moreover, the relevant parts of the woodland are dominated by non-native conifers and managed as commercial forestry plantation.
Woodland that is neither semi-natural nor long-established plantation	Such woodland comprises conifer plantation, which despite local dominance of planted Scots pine is largely dominated by non-native conifers, and is managed as commercial forestry with negligible ecological interest.
Acid flush and rush-pasture	This comprises acid flush and neutral rush-dominated vegetation. Acid flush is generally species-poor and common in small extents in upland areas. The latter comprises lower-diversity forms of M23 that are also common in small extents in upland fringes. These habitats are potentially groundwater-dependent, but are not of special note.
Other common and non-notable terrestrial habitats	This comprises all other terrestrial habitats not listed above or in **Table 7.7: Importance of Ecological Features**. It includes typical upland acid grassland, bracken stands, ubiquitous forms of neutral and improved grassland, and widespread scrub types.
Foraging and commuting bats	As set-out in **Section 7.6 Baseline Environment, Bats**, the Proposed Development Site is considered to be of extremely limited value to foraging and commuting bats. In addition, there are vast amounts of similar habitat surrounding the Headpond area, and much more suitable habitat in the wider area such as all along the bank of Loch Ness, along the River Moriston and around Drumnadrochit. The very small amount of habitat loss, relative to the available resource, would therefore have negligible impact on foraging/commuting bats.
Wildcat	Recent NatureScot studies[40,41] did not provide evidence of any non-hybrid wildcats in the study area or nearby, and concluded that there is unlikely to be a sizable population of the species in the Stratherrick potential priority area for wildcat (which contains the Proposed Development Site). In addition, no nearby records of wildcat were provided by the NBN Atlas Scotland, no evidence of wildcat was identified during the surveys and no images/ footage of wildcat were recorded by camera traps. This species is therefore considered likely absent from the survey area. Embedded mitigation including standard animal protection measures, ECoW appointment and pre-works survey would inform any more specific mitigation or licensing requirements. This would be sufficient to address legal obligations. No significant impacts are therefore considered possible on wildcat.
Red squirrel	Red squirrel are widespread and common across most of Scotland, in particular Highland Scotland, including NHZ 7 and in the vicinity of the Proposed Development. Tree loss, and therefore impacts on red squirrel would be extremely minimal, particularly in comparison to the very extensive woodland resource in this area. Embedded mitigation including standard animal protection measures, ECoW appointment and pre-works survey would inform any more specific mitigation or licensing requirements. This would be sufficient to address legal obligations.
Badger	Badgers are widespread and common throughout Scotland, and evidence of their presence was found during surveys. However, no badger setts were found during any field surveys, and none would be impacted by works. Habitat within the majority of the Development Site is of very low quality for badger. Consequently, the Proposed Development would have negligible impact on this species. Embedded mitigation including standard animal protection measures, ECoW appointment and pre-works survey would inform any more specific mitigation or licensing requirements. This would be sufficient to address legal obligations.
Mountain hare, hedgehog and brown hare	Mountain hare were recorded within the Proposed Development Site, and the species is widespread in suitable upland environments and is often reasonably common. Ample suitable habitat is available in the vicinity of the Proposed Development, and in the wider local area, including across NHZ 7. Mountain hare, including their young, are highly mobile and able to avoid construction works. Although SBL priority species, hedgehog and brown hare remain widespread in Scotland. The vast majority of the Proposed Development Site is upland and unsuitable for hedgehog and brown hare. Habitat loss in woodland, more suitable for hedgehog, would be extremely minor, and no habitat loss in lowland, grassland habitats, more suitable for brown hare, would occur. Therefore, there is likely to be negligible impact on the conservation status of mountain hare, hedgehog and brown hare (including locally), and standard animal protection measures

Ecological Feature	Rationale for Exclusion from Further Assessment
	embedded in the oCEMP (such as provision of means of escape from excavations) would be sufficient to minimise the risk of harm to these species.
Amphibians/reptiles other than adder and slow worm	The amphibians likely to be present in the Proposed Development Site (common frog, common toad and palmate newt) receive no protection relevant to the Proposed Development and are widespread. Common lizard is very common and widespread throughout similar habitat in Scotland. Standard mitigation would be implemented to reduce impacts on amphibians and reptiles.
Wild deer	Wild deer are not protected species. They are mentioned in this chapter with regard to wild deer impacts on retained habitats (following loss of deer habitat to the Proposed Development and associated deer exclusion areas for planting), and to mitigation and enhancement.
Feral pig	Feral pigs are considered non-native, and the Proposed Development provides no means by which their spread could be exacerbated.
INNS	Only two individual potentially invasive non-native plants were identified (single cotoneaster and rhododendron bushes). They are located by the bottom of the existing Alltsigh track or the adjacent A82. This access route is already regularly used by forestry, estate and other vehicles with no sign of spread of the recorded species. Moreover, this access route would not be used for Construction, and rarely for 4x4 access only. Thus, vehicular passage would not appreciably change from baseline, and there is negligible risk of spreading these species in the wild. However, the spread of invasive non-native species in the wild is an offence and therefore standard mitigation including pre-works surveys and biosecurity management measures (if deemed necessary by the ECoW) would be embedded in the oCEMP.

Importance of Ecological Features

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

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

7.8.4 With regard to assessment of aquatic habitats including standing waters, refer to **Chapter 9: Aquatic ecology (Volume 2: Main Report)**.

Table 7-7: Importance of Ecological Features

Ecological Feature	Importance	Rationale
Ness Woods SAC	International	These are European sites, which were selected and remain legally protected for the international importance of their qualifying features.
Urquhart Bay Wood SAC		
Loch Ruthven SAC		
Easter Ness Forest SSSI	National	This is a nature conservation site designated at a national level.
Inverfarigaig SSSI	National	This is a nature conservation site designated at a national level.
Ancient semi-natural woodland	National	Ancient woodland is considered irreplaceable in NPF4, and ancient semi-natural woodland holds the most ecological value of any woodland.
Other semi-natural woodland	Local	Other semi-natural woodland mainly comprises younger planted or regenerated patches of upland birchwood, and very small areas of common types of acidic wet woodland of birch and/or willow. These contribute to development of a more natural local woodland network where, as is often the case, woodland that would naturally have been present on non-peatland areas is generally lacking.
Montane scrub	Regional	Montane scrub most notably includes whortle-leaved willow, a Nationally Scarce species observed in limited quantity on the steep western side of Meall Fuar-mhonaidh. Montane scrub also includes dwarf birch which is frequent in parts of the Headpond and adjacent area. Dwarf birch is widespread but local. Montane willow scrub is scarce and extremely vulnerable to grazing, and would be scarce in the local area because suitably inaccessible steep or cliff-like habitat of sufficient altitude is highly localised.
Blanket bog	Regional	Blanket bog is irreplaceable, and constitutes Annex I H7130 and priority SBL habitat. Parts within the Headpond include dwarf birch and very locally *Sphagnum austinii* and *Sphagnum fuscum* (these sphagna being more abundant but localised beyond the Proposed Development, and with dwarf birch thinly scattered but locally frequent beyond it). However, a proportion of the bog within the Proposed Development and in the wider surveyed area is

Ecological Feature	Importance	Rationale
		drained in Peatland Action terms owing to gullying and, locally, flat bare peat (very locally, there is also bog with encroaching conifers and a few small recently burnt patches). Blanket bog within the surveyed area amounts to 8.22 km^2. However, there are over 1 million ha of blanket bog in Scotland[59], and it is common in north-west Scotland both generally and locally. By reference to Class 1 and 2 peatland (which are likely to be blanket bog) in the NatureScot Carbon and Peatland 2016 dataset, there are estimated to be approximately 58 km^2 of blanket bog within Balmacaan estate[60] alone. In view of these points, blanket bog within the surveyed area is considered of Regional importance. Note that extremely small extents of transition mire (Annex I H7140 transition mire) at lochan edges are considered here as part of the wider blanket bog.
Wet and dry heaths – widespread forms	Local	Although wet and dry heaths constitute Annex I H4010 and H4030 respectively, the common forms (not flushed and not montane, i.e. mainly NVC types M15c, which is extremely abundant, M15b, H10a/b/c, H12a/b/c and H21a) are abundant and ubiquitous in north-west Scotland as well as regionally and locally. Moreover, under more natural circumstances a large proportion of this heathland below or around the tree line would likely be woodland or montane scrub. As such, they are of Local importance only.
Montane heaths	Local	No rare types of montane heath were recorded, but those recorded (mainly prostrate heather H13/14 and bearberry *Arctostaphylos uva-ursi* and arctic bearberry *Arctostaphylos alpina* H16/17) are localised to small patches on the tops of exposed knolls and locally more extensively on Meall Fuar-mhonaidh. They can be expected to be widespread in small quantity on similar knolls and hill summits in the surrounding area.
Basic flushes	Local	These habitats tend to be species-rich, and appreciably enrich the otherwise fairly species-poor acidic environment. They are localised and often small to very small in extent, as is normally the case. Most are typical and the forms recorded are widespread locally and throughout the Highlands, although some support notable species such as the moss *Drepanocladus trifarius.*
Species-rich grasslands and related habitats	Local	This category includes species-rich forms of U4 and U5 as well as more obviously basic CG10, all of which constitute Annex I H6320. For this assessment, it also includes U17 species-rich ledge vegetation, which was recorded very locally outside the Proposed Development footprint. These vegetation types are likely to be widespread, although local, on similar bedrock regionally, where this is close to the surface.
Natural cliffs/crags	Regional	Natural cliffs/crags are small in extent within the surveyed area other than on Meall Fuar-mhonaidh, where they are extensive. Large cliffs/crags such as these are uncommon locally, therefore Regional importance is appropriate.
Roosting bats	Local	All bat species found in Scotland are European Protected Species (EPS) and are strictly protected under the Habitats Regulations. The Proposed Development Site has extremely limited opportunities for roosting bats, with only a small area of woodland around the LCW (and individual scattered trees elsewhere) having any potential to be used as roosts. Given the vast amount of woodland, and large number of older buildings, with much greater suitability for roosting bats in NHZ 7, Regional importance would be disproportionate.
Otter	Local	Otter is an EPS and is strictly protected under the Habitats Regulations. Otter evidence was frequently recorded in the Proposed Development Site, including a number of refuges. Rivers, streams and standing waters (including the Headpond) contain suitable fish prey resources. However, otter are widespread, including in NHZ 7, with around 8,000 individuals in Scotland[61]. Otter home ranges are also very large, extending to around 15 km or more of typical freshwater watercourse for females and much more for males[62]. Consequently, otter within the ZoI of the Proposed Development are considered to be of Local importance only.
Water vole	Regional	Water vole are protected under Schedule 5 of the Wildlife and Countryside Act. A large amount of water vole evidence was recorded around the Headpond area and access tracks on the open hill. Water vole have been subject to an on-going, dramatic national population decline, particularly from lowland waterways. However, mainland Scotland is thought to support 40% of the national population, and the Scottish uplands,

[59] https://data.jncc.gov.uk/data/aadfff3d-9a67-467a-ac65-45285e123607/UKBAP-BAPHabitats-03-BlanketBog.pdf
[60] The northern edge of Balmacaan estate follows the southern edge of FLS plantation from near Drumnadrochit in the east to Suidhe Ghuirmain in the west. The western boundary extends from there to Meall nan Oighreagan near Loch a' Chrathaich, and thence south-eastwards to the Allt Saigh. The boundary then follows the upper edge of FLS plantation to Grotaig, where it takes an irregular path northwards to the River Coiltie.
[61] NatureScot (2024) *Otter* (online) Available at: https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/otter
[62] Harris, S. and Yalden, D.W. (2008). Mammals of the British Isles: Handbook (4th Edition). The Mammal Society, Southampton.

Ecological Feature	Importance	Rationale
		where water vole populations are widespread but fragmented, is considered an important refuge. NHZ 7 contains a vast amount of suitable habitat similar to that within the Proposed Development Site, and water vole is known to be widespread in NHZ 7 (NBN Atlas Scotland holds 91 commercially available records of water vole from 2004 onwards, spread across NHZ 7). Given the above, National importance would be disproportionate, but, taking account of the species decline, Regional importance is considered appropriate.
Pine marten	Local	Pine marten is widespread and frequent across much of Scotland, in particular highland Scotland, including NHZ 7. Therefore, Regional importance would be disproportionate.
Adder and slow worm	Local	Adder and slow worm are widespread across highland Scotland, including NHZ 7. Therefore, Regional importance would be disproportionate.
Terrestrial invertebrates	Local	The Proposed Development Site has the potential to support several invertebrate species of conservation importance, including those listed as Vulnerable in Britain. The habitat within the Proposed Development Site, mainly upland heathland and bog, is extremely common within NHZ 7, and the invertebrate assemblage can be assumed to be similar where suitable habitat exists in this region. Therefore, Regional importance would be considered disproportionate. However, the Proposed Development Site is located partly within East Inverness-shire IIA, and does contain a small amount of particularly suitable habitat (local sphagnum-rich lochans potentially suitable for notable dragonfly larvae). Thus, Local importance is considered appropriate.

The Potential Impacts of the Proposed Development

7.8.5 The following broad categories of impact could arise during the Pre-Construction and Enabling, Construction and Operation of the Proposed Development and are considered, where potentially relevant, in relation to each of the ecological features scoped in to detailed assessment in **Table 7-7: Importance of Ecological Features**:

- Impacts on the qualifying features of Ness Woods SAC, Urquhart Bay Wood SAC, and Loch Ruthven SAC;
- Limited direct loss of ancient semi-natural woodland;
- Direct loss of blanket bog, and of smaller extents of potential GWDTE and other priority or Annex I habitats;
- Indirect hydrological impact on blanket bog and potential GWDTE (including wet woodland);
- Loss of important flora directly or via adverse effect on supporting habitat;
- Direct harm to protected species;
- Direct damage or destruction of refuges of protected species;
- Disturbance or displacement of protected species;
- Loss or fragmentation of supporting habitat and populations of protected species as a result of the Construction of infrastructure associated with the Proposed Development; and
- Cumulative impacts arising in combination with other energy developments or due to other land use changes within NHZ 7.

7.8.6 There are no likely pathways for pollution of surface water, groundwater, soils or vegetation given that industry-standard good practice mitigation measures would be implemented at all stages of the Proposed Development to meet legal and regulatory requirements, as described in **Section 7.7 Embedded Mitigation, Standard Measures**. These measures are considered as embedded, and this impact is therefore not considered for any ecological feature.

7.8.7 According to Institute of Air Quality Management (IAQM) guidance[63], dust generated by plant and machinery on construction sites can have a 'medium' impact on habitats located at distances 20-50 m from works areas, and that this impact lessens with increasing distance. However, as stated previously, standard pollution prevention

[63] IAQM (2024). Guidance on the assessment of dust from demolition and construction. Version 2.2 – January 2024. Institute of Air Quality Management, London.

techniques would be implemented during the Construction of the Proposed Development, and this would include dust suppression (for example through wetting of access tracks during periods of dry weather), where necessary.

7.8.8 The Design Manual for Roads and Bridges (DMRB) advises that air quality impacts only need to be assessed where a project would increase annual average daily traffic (AADT) of light vehicles (e.g. cars) by more than 1,000 movements and/or heavy duty vehicles (HDV) by more than 200 movements[64]. Tunnel excavation for an estimated 7.5 months during the Pre-Construction and Enabling phase is estimated to require 60-120 large dumper truck movements per day; this would continue for tunnelling and cavern excavation through the Construction phase for several years (total 8 years for the combined Pre-construction and Enabling phase and Construction phase). Allowing for additional but far fewer movements of excavators and similar plant per day, the number of HDV movements during Pre-Construction and Enabling, and Construction is not expected to exceed 200 per day. This is a worst-case scenario because it assumes that all excavated rock from the excavated tunnels and cavern is transported to the Headpond, whereas in reality a significant amount would likely be used to prepare ground for compounds near the tunnel portals (including the large temporary workers compound, TC05), which would require only very short-distance plant movements. Therefore, it is not expected that the DMRB screening thresholds would be exceeded, and consequently it can be stated that there would be no significant impacts on designated sites or habitats as a result of airborne pollution generated by emissions from Construction traffic, during either the Pre-Construction and Enabling or Construction phase. The functioning of the Development during Operation, with infrequent small-scale maintenance attendance, would also not incur appreciable airborne pollution emissions. Therefore, significant airborne pollution effects are not considered possible and are not considered further.

7.8.9 Note that for the purposes of this chapter, habitats directly lost to the Headpond are considered to be lost during the Construction phase. Large parts of the Headpond vegetation would be lost to direct Construction and quarrying activity, as well as track Construction and establishment of undetermined temporary compound(s) within the Headpond zone. Although some vegetation within the Headpond would be retained until it is filled, the exact extents cannot be easily estimated, and degradation would begin as soon as the Headpond is filled. Loss of any remaining (degraded) vegetation following Headpond flooding would likely proceed rapidly, rather than as a permanent on-going effect of Operation. Such loss has therefore been treated as a Construction impact.

Impacts on Ness Woods SAC

7.8.10 A detailed assessment of the potential impacts and effects of the Proposed Development on Ness Woods SAC is provided in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

Pre-Construction and Enabling and Construction Phases

7.8.11 For the same reasons discussed in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**), there are no likely significant effects on the qualifying features of Ness Woods SAC during either the Pre-Construction and Enabling or Construction phases of the Proposed Development.

7.8.12 In summary, for qualifying habitats, this is because any changes to surface water hydrology as a result of Pre-Construction and Enabling or construction works would be extremely small in magnitude, would not significantly impact groundwater (particularly because most of the Proposed Development is on strata considered essentially impermeable – see **Chapter 10: Water Environment (Volume 2: Main Report**), would not impact Loch Ness water levels, and could not affect qualifying woodland habitat on the opposite side of Loch Ness.

7.8.13 For the qualifying otter population, the reasons are as follows:

- Although the Proposed Development lies within the potential home range of otter associated with Ness Woods SAC, given the substantial distances between the SAC and the Proposed Development, it is unlikely that individuals would regularly commute between the two locations, with the possible exception of the LCW on Loch Ness;
- The loss of habitat from the Proposed Development would be very small in the context of the size of otter home ranges;
- Only four otter lay-ups would be lost, two on Loch nam Breac Dearga and two on an unnamed tributary of Allt an t-Sionnaich which flows from Loch nam Breac Dearga (hereafter referred to as ‘Allt Loch nam

[64] Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2019). *Design Manual for Roads and Bridges. Sustainability & Environment Appraisal LA 105 Air quality.* (online) Available at: https://www.standardsforhighways.co.uk/tses/attachments/10191621-07df-44a3-892e-c1d5c7a28d90?inline=true.

Breac Dearga'). These would be lost to Construction of the Headpond and to upgrades to existing tracks. An additional 23 lay-ups (and many other features with the potential to be used as lay-ups) were identified within the survey area and would not be lost to the Proposed Development. No holts would be lost and neither Loch nam Breac Dearga nor the tributary are of particular importance to otter;

- In the event that otters associated with Ness Woods SAC occur on or near the Proposed Development Site they are likely to do so at night, generally at times when above-ground works are generally not taking place, and thus they are unlikely to be disturbed. The distance over which otters could be disturbed/displaced by any works which are taking place is only likely to extend over a short distance;
- There is a very large area of suitable habitat which is likely to be of much greater importance to otter between the Proposed Development Site and Ness Woods SAC. In particular this includes Loch Ness and the larger watercourses flowing into it; and
- Given that otters associated Ness Woods SAC are unlikely to commute to the Proposed Development Site, and even less so during the daytime while the majority of Construction takes place, the risk of injury/ mortality of these otters is extremely low. In the unlikely event that an otter was to be killed, the resulting vacant territory would likely be quickly reoccupied by another individual from the ample suitable habitat in the surrounding area within which otter can be reliably assumed to be present.

7.8.14 A conclusion of no likely significant effects on the qualifying features of a European site can be drawn even where minor negative impacts are predicted, so long as these do not prevent the relevant Conservation Objectives of the given site from being met. Therefore, adopting EcIA terminology, while there may be very slight negative impacts on the qualifying otter population of Ness Woods SAC from the Construction of the Proposed Development, these would be **Negligible** and **Not Significant**.

Operational Phase

7.8.15 The Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**) concluded no adverse effect on site integrity for Ness Woods SAC during Operation. In summary, this is primarily because the qualifying woodland interests (dry woodland types equating to NVC types W9 and W17) are on significantly sloping ground rising up from Loch Ness, and the changes to Loch Ness water level are small (maximum and minimum baseline water levels are not exceeded, and see exceedances given in **Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**), and given also that no adverse effect on site integrity was predicted for Urquhart Bay Wood SAC where the Loch Ness edge is far more shallow sloping. Therefore, there would be no compromise of the conservation objectives, and no adverse effect on site integrity.

7.8.16 No likely significant effects on the qualifying otter population are considered possible during Operation of the Proposed Development for the following reasons:

- During the Operational phase, the presence of personnel and vehicles would be substantially reduced. Most works would also take place during daylight hours, when otter are less active. It is therefore unlikely that disturbance would be caused, and even if this were to occur, it would be minor and temporary; and
- Otter is an adaptable species that can forage in a wide range of aquatic environments, including standing freshwater, watercourses and other areas of wetland (e.g. for amphibians). They have a wide diet. Further, the home range of otter is very large, and for individuals associated with Ness Woods SAC, home ranges would likely encompass a number of watercourses and lochs/lochans in addition to Loch Ness. Consequently, it is very unlikely that fluctuations in water levels in Loch Ness would prevent otter from having access to sufficient prey. With reference to the Conservation Objectives for the SAC, therefore, water level changes in Loch Ness would not prevent the population and distribution of otter within the site from being maintained, or the habitats and availability of food for otter from also being maintained.

7.8.17 It is therefore concluded that there would be **Negligible effect** on Ness Woods SAC from Operation of the Proposed Development and this is **Not Significant**.

Impacts on Urquhart Bay Wood SAC

7.8.18 A detailed assessment of the potential impacts and effects of the Proposed Development on Urquhart Bay Wood SAC is provided in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

Pre-Construction and Enabling and Construction Phases

7.8.19 Pre-Construction and Enabling works and Construction-related changes to surface water hydrology would be of extremely small magnitude, would not significantly impact groundwater (particularly because most of the Proposed Development is on strata considered essentially impermeable – see **Chapter 10: Water Environment (Volume 2: Main Report)**), and would not impact Loch Ness water levels, and would therefore not have significant effects on the qualifying wet woodland habitat of Urquhart Bay Wood SAC.

7.8.20 It is therefore concluded that there would be **Negligible effect** on Urquhart Bay Wood SAC from both Pre-Construction and Enabling and Construction of the Proposed Development, and this is **Not Significant**.

Operational Phase

7.8.21 The Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)) concluded no adverse effect on the integrity of Urquhart Bay Wood SAC from Operation of the Proposed Development (note that mitigation for aquatic ecological impacts includes an improved seasonal variable Dochfour Weir).

7.8.22 In summary, the HRA concluded that inundation levels caused by changes to Loch Ness water level would be insufficient to cause significant effect on alder, the key tree species of the qualifying wet woodland (Annex I H91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)). Water level exceedances in spring, summer and autumn (inundation during the growing season being much more critical than the dormant season) at the lowest peripheral level of the SAC are within a small vertical distance (by 15.9 m AOD, 8 cm above baseline mean loch level) within the flood tolerance of alder, which is demonstrated to be highly flood tolerant. This is especially the case in view of the high frequency of Operational water level fluctuation (over hours rather than days or weeks), very shallow depths of flooding during the most frequent inundations, and the alluvial substrate that drains well. As such, there was not considered to be any more than a *de minimis* effect which would not compromise the conservation objectives and thereby result in no adverse effect on site integrity. Detail on this including literature information on flood tolerance of alder is given in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

7.8.23 Consequently, there would be **Negligible effect** on Urquhart Bay Wood SAC during Operation, which is **Not Significant**.

Impacts on Loch Ruthven SAC

7.8.24 A detailed assessment of the potential impacts and effects of the Proposed Development on Loch Ruthven SAC is provided in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

Pre-Construction and Enabling and Construction Phases

7.8.25 For the same reasons discussed in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal (Volume 5: Appendices)**), no likely significant effects on the qualifying features of Loch Ruthven SAC are considered possible during either the Pre-Construction and Enabling phase or Construction phase of the Proposed Development.

7.8.26 In summary, for qualifying habitat, this is because Loch Ruthven SAC is located on the opposite side of Loch Ness from the Proposed Development and at a significantly higher altitude than Loch Ness. Therefore, neither changes to surface water hydrology (including water levels in Loch Ness) nor direct waterborne pollution could affect the qualifying freshwater habitat of this European site.

7.8.27 For the qualifying otter population, the reasons are as follows:

- Although the Proposed Development lies within the potential home range of otter associated with Loch Ruthven SAC, given the substantial distances involved, it is unlikely that individuals would regularly commute between the two locations, with the possible exception of the LCW on Loch Ness;
- The loss of habitat from the Proposed Development would be very small in the context of the size of otter home ranges;
- Only four otter lay-ups would be lost, two on Loch nam Breac Dearga and two on Allt Loch nam Breac Dearga. These would be lost to Construction of the Headpond and to upgrades to existing tracks. An additional 23 lay-ups (and many other features with the potential to be used as lay-ups) are present

within the survey area and would not be lost to the Proposed Development. No holts would be lost and neither Loch nam Breac Dearga nor the tributary are of particular importance to otter;

- In the event that otters associated with Loch Ruthven SAC occur on or near the Development Site they are likely to do so at night, generally at times when above-ground works are not taking place, and thus they are unlikely to be disturbed. The distance over which otters could be disturbed/displaced by any works which are taking place is only likely to extend over a short distance;
- There is a very large area of suitable habitat which is likely to be of much greater importance to otter between the Proposed Development Site and Loch Ruthven SAC. In particular this includes Loch Ness and the larger watercourses flowing into it; and
- Given that otters associated with Loch Ruthven SAC are unlikely to commute to the Proposed Development Site, and even less so during the daytime while Pre-Construction and Enabling works and Construction take place, the risk of injury/ mortality of these otters is extremely low. In the unlikely event that an otter was to be killed, the resulting vacant territory would likely be quickly reoccupied by another individual from the ample suitable habitat in the surrounding area within which otter can be reliably assumed to be present.

7.8.28 It is therefore concluded that there would be **Negligible effect** on Loch Ruthven SAC from both Pre-Construction and Enabling Construction of the Proposed Development and this is **Not Significant**.

Operational Phase

7.8.29 As stated above in relation to the Pre-Construction and Enabling and Construction phases, a detailed assessment of the potential impacts and effects of the Proposed Development on Loch Ruthven SAC is provided in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

7.8.30 No likely significant effects on the qualifying features of Loch Ruthven SAC are considered possible during Operation of the Proposed Development.

7.8.31 For qualifying habitat, the reasons for this are as described above for the Construction phase.

7.8.32 For the qualifying otter population, the reasons are as follows:

- During the Operational phase, the presence of personnel and vehicles would be substantially reduced. Most works would also take place during daylight hours, when otter are less active. It is therefore unlikely that disturbance would be caused, and even if this were to occur, it would be minor and temporary; and
- Otter is an adaptable species that can forage in a wide range of aquatic environments, including standing freshwater, watercourses and other areas of wetland (e.g. for amphibians). They have a wide diet. Further, the home range of otter is very large, and for individuals associated with Loch Ruthven SAC, home ranges would likely encompass a number of watercourses and lochs/lochans, as well as potentially Loch Ness. Consequently, it is very unlikely that fluctuations in water levels in Loch Ness would prevent otter from having access to sufficient prey. With reference to the Conservation Objectives for the SAC, therefore, water level changes in Loch Ness would not prevent the population and distribution of otter within the site from being maintained, or the habitats and availability of food for otter from also being maintained.

7.8.33 It is therefore concluded that there would be **Negligible effect** on Loch Ruthven SAC from Operation of the Proposed Development and this is **Not Significant**.

Impacts on Easter Ness Forest SSSI and Inverfarigaig SSSI

Pre-Construction and Enabling, Construction and Operational Phases

7.8.34 Easter Ness Forest SSSI and Inverfarigaig SSSIs are coincident with the central and northern components of Ness Woods SAC, respectively, and are designated for the ash and oak woodlands that are also qualifying features of the SAC. As such, the impacts on the notified features of Easter Ness Forest SSSI and Inverfarigaig SSSI are effectively evaluated in the assessment for Ness Woods SAC (**Section 7.8 Assessment of Effects, Impacts on Ness Woods SAC**).

7.8.35 Therefore, for the reasons set out in that section, **Negligible effects** from the Pre-Construction and Enabling, Construction and Operational phases of the Proposed Development are predicted on Easter Ness Forest SSSI and Inverfarigaig SSSI, and this is **Not Significant**.

Impacts on Urquhart Bay Wood SSSI

Pre-Construction and Enabling, Construction and Operational Phases

7.8.36 Urquhart Bay Wood SSSI is coincident with Urquhart Bay Wood SAC, and the notified interest is the same alluvial alderwood constituting the qualifying habitat of Urquhart Bay Wood SAC. As such, the impacts on Urquhart Bay Wood SSSI are effectively evaluated in the assessment for Urquhart Bay Wood SAC (**Section7.8 Assessment of Effects, Impacts on Urquhart Bay Wood SAC**).

7.8.37 Therefore, for the reasons set out in that section, there would be a **Negligible effect** on Urquhart Bay Wood SSSI, which is **Not Significant**.

7.8.38 A detailed assessment of the potential impacts and effects of the Proposed Development on Urquhart Bay Wood SAC is provided in the Statement to Inform Habitats Regulations Appraisal (**Appendix 7.2: Statement to inform Habitats Regulations Appraisal** (**Volume 5: Appendices**)).

Impacts on Ancient Semi-natural Woodland

Pre-Construction and Enabling Phase

Direct Loss of Ancient Semi-natural Woodland

7.8.39 Direct loss of ASNW would take place almost entirely at the LCW, which would not take place during the Pre-Construction and Enabling phase but rather during the Construction phase. Local trimming of woodland along the Balnain Main Access along the existing FLS section through commercial plantation would be a small loss of 0.03 ha of upland birchwood that is ancient (see **Appendix 18.2: Wood Report – Glen Urquhart (Volume 5: Appendices)**) .

7.8.40 Therefore, there would be a **Permanent adverse effect of Local significance**, which is **Not Significant**, by direct loss of ASNW during the Pre-Construction and Enabling phase.

Hydrological Impact on Ancient Semi-natural Woodland

7.8.41 Where the proposed Balnain Main Access route crosses the River Coiltie, and either side of this crossing point, there is an existing gap in ASNW cover, at an existing ford. The existing ASNW at this location does not comprise wet woodland NVC types, is very narrow and is more or less confined to thin strips at the edge of the River Coiltie, and the ground it lies on slopes down to the river. The hydrological condition of this woodland results from water percolating down the river banks from the moorland above, and, to a much lesser extent at the water's edge, from the river itself. As such, Construction of the crossing of the River Coiltie and immediately connecting access track is very unlikely to have any perceptible hydrological impact on nearby retained ASNW.

7.8.42 There is no possibility of hydrological impact on other ASNW during the Pre-Construction and Enabling phase.

7.8.43 Consequently, there would be **Negligible effect** on retained ASNW via hydrological impact during Pre-Construction and Enabling works, which is **Not significant**.

Construction Phase

Direct Loss of Ancient Semi-natural Woodland

7.8.44 Direct loss of ASNW during the Construction phase would take place entirely at the LCW. Embedded design refinements have ensured that ASNW elsewhere would not be lost. For the reasons set out in **Section 7.6 Baseline Environment, Habitats**, the thin strip of loch-edge semi-natural woodland in the LCW vicinity that is not included in the AWI is nevertheless similar to the adjacent thin strips that are within the AWI, and the entirety is precautionarily treated as ASNW. Construction of the LCW and associated access road is therefore considered to incur loss of 1.27 ha of ASNW.

7.8.45 To place this in context, the Native Woodland Survey of Scotland (NWSS) was inspected together with the AWI, contour data and aerial photography, to identify areas of woodland between Loch Ness and the A82, or meeting the edge of the opposite side of Loch Ness, that are similarly sloping and native or nearly-native in the NWSS (or known to be native or largely so from field survey) and located within or largely within ASNW polygons in the AWI. Woodland matching these criteria amounts to 566 ha. In this comparison, ASNW lost to the LCW represents approximately 0.2% of this resource, leaving 99.8% intact. This is a conservative comparison since it excludes much other ASNW confirmed as native in the NWSS and included within the AWI but set further upslope from the edge of Loch Ness, or on flatter ground and liable to be a different type of woodland. The loss would be proportionally much smaller still if all such ASNW around Loch Ness was also taken into account (accounting for

all ASNW indicated in the AWI within 10 km of the Proposed Development, loss to the LCW represents 0.02% of the resource).

7.8.46 Construction phase loss of ASNW is therefore sufficiently small that it is considered disproportionate to assign a National level of effect (the level of importance assigned to ancient woodland as a whole, and therefore the highest level of significance that the effect could have). However, ASNW is the most ecologically valuable type of woodland. In view of this, the small area lost, and the great extents of ASNW locally as set out in the previous paragraph, this is considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.

Hydrological Impact on Retained Ancient Semi-natural Woodland

7.8.47 Retained ASNW either side of the LCW lies on steep ground dropping to Loch Ness, does not comprise wet woodland NVC types (it is W9 dry basic woodland), and its hydrological condition results largely from water percolating down the steep slopes from above (there is no appreciable hydrological contribution from Loch Ness here; the woodland remains steep down to the edge of Loch Ness where there is a drawdown strip of rock/pebbles that is periodically inundated). Therefore, it is very unlikely that Construction of the LCW and associated access track would have any perceptible hydrological impact on adjacent retained ASNW.

7.8.48 No other ASNW would be impacted hydrologically during Construction.

7.8.49 Consequently, there would be **Negligible effect** on retained ASNW via hydrological impact during Construction, which is **Not significant**.

Operational Phase

7.8.50 Waterborne and airborne pollution impacts have been scoped out as discussed in **Section 7.8 Assessment of Effects, The Potential Impacts of the Proposed Development**, in part owing to embedded mitigation within the oCEMP.

Hydrological Impact on Retained Ancient Semi-natural Woodland

7.8.51 Retained thin strips of ASNW either side of the LCW are on slopes that drop steeply down to Loch Ness, with a drawdown strip of rock/pebbles that is periodically inundated. Similar ASNW occurs frequently around Loch Ness, including at Ness Woods SAC which includes acidic as well as basic woodland. For the same reasons set out for Ness Woods SAC in **Section 7.8 Assessment of Effects, Impacts on Ness Woods SAC**, and Urquhart Bay Wood SAC and **Section 7.8 Assessment of Effects, Impacts on Urquhart Bay Woods SSSI**, there would not be significant impacts on retained ASNW around the edge of Loch Ness during Operation.

7.8.52 Therefore, there would be **Negligible effect** on retained ASNW during Operation, which is **Not Significant**.

Impacts on Other Semi-natural Woodland

Pre-Construction and Enabling Phase

Direct Loss of Other Semi-natural Woodland

7.8.53 There would be loss to the northern Access Track of a strip of less mature semi-natural birchwood (not ancient or long-established), corresponding to W17b/c. Accounting for the full Construction width, approximately 0.17 ha would be lost. W17b is common in this region and is the dominant woodland type amongst the surveyed extensive semi-natural woodland along the River Coiltie, where similar tree species exist amongst the dominant birch, in more notable and often ancient woodland. This loss amounts to 0.16% of approximately 105 ha of semi-natural woodland in the surveyed area (including ancient woodland), of which approximately half (47 ha) are W17.

7.8.54 Consequently, direct loss of other semi-natural woodland during Pre-Construction and Enabling works is considered a **Negligible effect**, which is **Not Significant**.

Hydrological Impact on Retained Other Semi-natural Woodland

7.8.55 The only location where there is potential for hydrological impact during Pre-Construction and Enabling works is either side of the short stretch of the northern Access Track that passes through a block of non-ASNW younger birchwood to reach the FLS plantation. However, this woodland does not comprise wet woodland types but essentially dry W17.

7.8.56 There is consequently likely to be **Negligible effect**, which is **Not significant**.

Construction Phase

Direct Loss of Other Semi-natural Woodland

7.8.57 An extremely small patch of birchwood (also containing small amounts of willow, aspen and young oak), corresponding to NVC type W17b and located on a small rock exposure at the eastern edge of Loch nam Breac Dearga, would be lost to the Headpond but amounts to less than 0.01 ha. W17b is common in this region and is the dominant woodland type amongst the surveyed extensive semi-natural woodland along the River Coiltie, where similar tree species exist amongst the dominant birch, in more notable and often ancient woodland. This loss amounts to less than 0.01% of approximately 105 ha of semi-natural woodland in the surveyed area (including ancient woodland), of which approximately half (47 ha) are W17.

7.8.58 Consequently, direct loss of other semi-natural woodland during Construction is considered a **Negligible effect**, which is **Not Significant**.

Hydrological Impact on Retained Other Semi-natural Woodland

7.8.59 There is no location where there is potential for hydrological impact on other semi-natural woodland during the Construction phase. There is consequently **No effect**.

Operation Phase

7.8.60 No operational impacts on other semi-natural woodland are anticipated. Woodland for which there is potential for operational impacts is ASNW and/or located in Urquhart Bay SAC/SSSI, and such impacts are discussed in those sections. Therefore, there would be **No effect** on other semi-natural woodland during operation.

Impacts on Montane Scrub

Pre-Construction and Enabling Phase

7.8.61 No montane scrub occurs within the Pre-Construction and Enabling works zone, therefore there would be **No effect**.

Construction Phase

Direct Loss of Montane Scrub

7.8.62 Once the Headpond is inundated, it would incur loss of habitat on the lower slopes of the steep west side of Meall Fuar-mhonaidh. A target-noted rocky slope just above the very small patch of loch-side birchwood was noted to support whortle-leaved willow, as well as eared willow *Salix aurita,* stone bramble *Rubus saxatilis*, rowan *Sorbus aucuparia* and a diversity of herbs similar to those recorded in adjacent species-rich grassland. This target-noted rocky slope with whortle-leaved willow would be inundated by the Headpond and permanently lost. A greater abundance of montane willow scrub with whortle-leaved willow and other more common species was also noted on nearby parts of the largely inaccessible cliffs, within the wider cliff zone that lies above the upper water level of the Headpond and would not be impacted (the zone marked as a mosaic of rock and heath on **Figure 7.5 Habitats (Volume 3: Figures)**, extending to approximately 17 ha). Thus, more whortle-leaved willow would be retained than lost. Although the majority of the cliffs could not be closely inspected during field survey for reasons of safety, the cliff habitat is similar throughout this zone and there may be additional whortle-leaved willow plants across these wider cliffs, however abundance across the inaccessible cliffs is not certain.

7.8.63 There are 79 recorded locations of dwarf birch in the surveyed area, of which 35 would be lost to the Headpond and another two probably lost to access tracks. Thus approximately 44% of recorded dwarf birch locations would be lost. Although dwarf birch is a widespread species, it is susceptible to burning and overgrazing.

7.8.64 Given the uncertainty over the degree of loss to whortle-leaved willow, and taking a worst-case scenario where there is no other whortle-leaved willow other than the small amount seen, and given its endangered and Nationally Scarce status and rarity of montane willow scrub generally, together with the losses to dwarf birch, this is considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.

Indirect Loss of Montane Scrub

7.8.65 Montane scrub within the zone of possible indirect modification is scarce (five of 79 locations of dwarf birch) and is not likely to all be lost through hydrological modification, since this species often occurs in drier bog and occasionally heathland. Therefore, there would be **Negligible effect**, which is **Not Significant**.

Operational Phase

7.8.66 There are no anticipated operational impacts on montane scrub. Operation of the Headpond does not provide a mechanism by which montane willow scrub on steep slopes above the upper water level of the Headpond could be adversely affected. Therefore, there would be **No effect**.

Impacts on Blanket Bog

Pre-Construction and Enabling Phase

Direct Loss of Blanket Bog

7.8.67 The Pre-Construction and Enabling phase would impact little blanket bog vegetation because it would not extend (above ground) south of permanent compound PC08, and the vegetation in the vicinity of all Pre-Construction and Enabling phase infrastructure on open moorland (compounds TC01, TC02, TC03, PC04, TC05, TC06, PC07 and PC08, and associated access tracks) is primarily wet heath. Permanent loss of blanket bog to Pre-Construction and Enabling works would be only 0.24 ha. This would affect both M17 and M19 NVC types, but wetter and sphagnum-rich M17a (including a notable form with slender sedge in the sward) would be unaffected. A large proportion of the affected small area of blanket bog comprises M15 wet heath vegetation that was subsequently determined from interpolated peat depths to be on at least 0.5 m of peat and is therefore considered degraded blanket bog. Given the minor extent of loss and the lower quality of much of the affected vegetation, loss of blanket bog to the Pre-Construction and Enabling works is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Hydrological modification of Blanket Bog

7.8.68 3.39 ha of blanket bog would be subject to potential permanent indirect modification through proximity to built infrastructure at the Pre-Construction and Enabling works stage. As for loss to Pre-Construction and Enabling works, this would affect both M17 and M19 NVC types, but wetter and sphagnum-rich M17a (including a notable form with slender sedge in the sward) would be unaffected. A large proportion of the affected blanket bog comprises M15 wet heath vegetation that was subsequently determined from interpolated peat depths to be on at least 0.5 m of peat and is therefore considered degraded blanket bog. Given the minor extent of modification and the lower quality of much of the affected vegetation, permanent indirect modification of blanket bog to the Pre-Construction and Enabling works is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Construction Phase

Direct Loss of Blanket Bog

7.8.69 There would be considerable permanent loss of blanket bog, primarily to the Headpond, with much smaller permanent losses to access tracks and permanent compounds (there are six permanent compounds, which are not large, and as noted the access tracks avoid blanket bog as far as possible). Permanent loss to blanket bog amounts to 81.3 ha. To place this loss of blanket bog in context, there is 822 ha (8.2 km^2) of blanket bog in the surveyed area, and much more within the wider estate (approximately 37 km^2 by reference to Class 1 and Class 2 peatland in the NatureScot Carbon and Peatland 2016 dataset). Of the blanket bog that would be permanently lost, 90.3% comprises drier and less sphagnum-rich types (principally M19 and M17b), falling into the Peatland Action Modified category. A smaller but significant area around gullies and locally flat bare peat falls into the Peatland Action Drained category. Deer footprints were invariably present wherever bare peat was seen, and deer are likely the primary cause of bare peat. Whilst the wider survey found localised areas of bog that were degraded in other ways (conifer encroachment and, very locally, obvious recent burning) these types of degraded bog are outside the zones of direct or indirect impact.

7.8.70 Some of the M19c (and occasionally non-bog vegetation such as H21a dry heath and M15c wet heath), within the Headpond including within parts of the Peatland Action Modified category, is notable for the presence of dwarf birch, and more locally *Sphagnum fuscum*. There is also a small amount of M17 within the Headpond containing small numbers of *Sphagnum austinii* hummocks. There is, however, far more *Sphagnum austinii* and *Sphagnum fuscum* beyond possible impact in the wider surveyed area (although both species are localised), and also much dwarf birch beyond impact, particularly on the unaffected southern slopes of Glas-bheinn Mor but widely and thinly scattered elsewhere (see **Figure 7.8 Notable Plants and Species-rich Habitats (Volume 3: Figures)**). Dwarf birch is relatively palatable to deer and tends to be killed by burning, thus where present it suggests lower grazing levels and lack of burning; however, observed dwarf birch was browsed and could achieve greater stature (and perhaps increased reproductive capacity) under lower grazing pressure. The proportions of locations of dwarf birch, *Sphagnum austinii* and *Sphagnum fuscum* that would be lost are discussed further in **Section 7.8 Assessment of Effects, Impacts on montane heaths** and **Impacts on notable flora**.

7.8.71 Given the very considerable extent of retained blanket bog in the wider estate, its abundance regionally, that some within the Headpond is degraded, but also that dwarf birch, *Sphagnum austinii* and *Sphagnum fuscum* are locally present within the Headpond area, loss of blanket bog during the Construction phase is considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.

Hydrological modification of Blanket Bog

7.8.72 33.9 ha of blanket bog would be subject to potential permanent indirect modification through proximity to built infrastructure at the Construction stage. As for losses during Construction, this would affect both M17 and M19 NVC types, including a small minority of wetter and sphagnum-rich M17a but mainly drier M17b and M19 types. A significant proportion of the affected blanket bog is drained in Peatland Action terms through gullying or, locally, flat bare peat. Some of the affected blanket bog also comprises M15 vegetation that was subsequently determined from interpolated peat depths to be on at least 0.5 m of peat and is therefore considered degraded blanket bog. A small minority (three each) of the recorded dwarf birch and *Sphagnum fuscum* locations are within the zone of permanent indirect modification. No *Sphagnum austinii* would be affected.

7.8.73 Locally within the modification zone (generally closest to the permanent infrastructure) there could be a change of vegetation type from M17 to M19 or possibly M20, with higher dominance of hare's-tail cottongrass *Eriophorum vaginatum* under the drier conditions. However, hydrological modification of the bog is not very likely to change the habitat fully away from bog, and in most cases the NVC community would also likely remain the same albeit somewhat drier. Dwarf birch in blanket bog would be unlikely to be lost from the modification zone, because this species also grows in drier vegetation than M19 bog such as H21a damp heath and occasionally M15c wet heath. *Sphagnum fuscum* also has some tolerance of drier conditions, occurring in drier M19 type vegetation. There is no recorded *Sphagnum austinii* (which would likely be more susceptible to adverse hydrological change) within the indirect modification zone.

7.8.74 Given the large extent of indirect hydrological modification, permanent indirect modification of blanket bog due to the construction works is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Operational Phase

7.8.75 Where blanket bog vegetation lies within 30 m of the proposed Headpond, but not within 30 m of any proposed infrastructure, it would likely experience a slight increase in wetness from water in the Headpond at times when at or near the upper water level. This could render blanket bog vegetation in this zone slightly wetter with possible concomitant increases in sphagnum abundance. However, since the Headpond water level would frequently be below the upper water level, there is no certainty that this beneficial effect would occur, and it would occur over a relatively very small area.

7.8.76 There are no other anticipated operational impacts on blanket bog. Adverse impacts on blanket bog occur during the Construction phase, and to a much lesser extent the Pre-Construction and Enabling phase.

Impacts on wet and dry heaths

Pre-Construction and Enabling Phase

Direct Loss of wet and dry heaths

7.8.77 The Pre-Construction and Enabling phase would largely impact wet heath because this habitat dominates the works vicinity from the tunnel portals at permanent compound PC08 northwards. Permanently lost wet heath during the Pre-Construction and Enabling phase would involve a fairly even split between M15c and M15b, which is to be expected at lower altitude in the valley of the River Coiltie which is more favourable for typically more densely-vegetated M15b. An extremely small amount of flushed M15a, of no particular note in floristic composition, would also be lost. The permanent loss of wet heath to Pre-Construction and Enabling works would amount to 2.77 ha. Temporary loss (eight years duration) of a further 16.34 ha would take place, primarily to the workers accommodation (temporary compound TC05). However, wet heath of these forms is extremely abundant within the surveyed area, totalling 834 ha (8.34 km^2), and moreover is similarly abundant in the wider surrounding area, as well as regionally. Given the extent of retained unaffected wet heath, these effects during Pre-Construction and Enabling works are of less significance than the level of importance assigned to wet heath as a whole.

7.8.78 A negligible amount of dry heath would be permanently lost to the Pre-Construction and Enabling works (0.02 ha). Temporary impact on dry heath would affect up to 1.1 ha but is temporary (up to eight years duration). Given the extent of retained dry heath (161 ha within the surveyed area alone, with much more likely to be present on

drier and steeper slopes in the wider estate), and that the affected forms are typical and common H10a and H21a, these effects are of less significance than the level of importance assigned to dry heath as a whole.

7.8.79 Consequently, direct impact on wet and dry heath during Pre-Construction and Enabling works is considered a **Negligible effect**, which is **Not Significant**.

Hydrological modification of wet and dry heaths

7.8.80 Permanent hydrological modification of wet heath, using a worst-case 30 m buffer, could occur during Pre-Construction and Enabling works across 8.86 ha. A further 4.79 ha could be modified temporarily (eight years). However, for the same reasons given for direct loss during Pre-Construction and Enabling works (the widespread and common nature of the relevant wet heath types, and the abundance of unaffected retained wet heath), the effect would be of less significance than the importance assigned to wet heath as a whole.

7.8.81 Further dry heath (0.33 ha) lies within the 30 m indirect modification zone of Pre-Construction and Enabling works. Some H21a, which is damp, might be slightly affected by drying, however the dampness of H21a is primarily a factor of its northerly aspect and not surface water (which if significant would likely result in wet heath rather than H21). H10a favours dry and southerly aspects and often occurs on steep rocky slopes that are inherently lacking in significant surface water. As such, dry heath is unlikely to be appreciably impacted by drying caused by infrastructure, and the relevant infrastructure would not cause significant wetting of dry heath.

7.8.82 Therefore, hydrological modification of wet and dry heaths is considered a **Negligible effect**, which is **Not Significant**.

Construction Phase

Direct Loss of wet and dry heaths

7.8.83 Direct losses to wet heath during Construction would largely occur at the Headpond, and would amount to 16.35 ha. Temporary loss (eight years duration) to temporary construction track of 1.47 ha would also occur. This would largely comprise M15c (very common at moderate to high altitude in the surveyed area, the wider estate and throughout the Highlands), plus a small amount (1.2 ha) of M15b (ubiquitous at lower altitude locally and throughout the Highlands) and a very small amount (0.51 ha) of M15a. The latter is more notable because it can be species-rich, however there are 60 ha of flushed heath (M15a) in the surveyed area, and although more localised it is similarly widespread throughout the Highlands. The total area of all wet heath in the surveyed area is 834 ha (8.34 km^2). Given the extent of retained unaffected wet heath, these impacts are considered minor.

7.8.84 A total of 9.84 ha of dry heath would be permanently lost during the Construction phase, out of a total within the surveyed area of 161 ha. Of this, 3.5 ha comprises H12a (typical and widespread *Calluna* heath) and H21a (related damp *Calluna* heath on slopes on northerly aspects, also widespread in the Highlands although more localised to generally steeper ground). Small to very small amounts of other ubiquitous forms of H12, H10 (*Calluna* heath with bell heather) and transitional H10-H12 heath would also be lost, totalling 4.7 ha. More notably, 1.61 ha of herb-rich H12 (out of a recorded total of approximately 3.1 ha) would be lost by Headpond inundation from the lower western slope of Meall Fuar-mhonaidh. However, it must be noted that the bulk of the western side of Meall Fuar-mhonaidh comprises cliffs that are approximately 70% dry heath, which for the most part could not be closely inspected for reasons of safety, and given that the geology is the same throughout these slopes (conglomerate; see **Chapter 15: Geology (Volume 2: Main Report)**) it is likely that further species-rich dry heath occurs elsewhere on the unaffected but inaccessible wider slopes.

7.8.85 Consequently, direct impact on wet and dry heath during Construction is considered a **Permanent Adverse effect** of **Local significance** only, which is **Not Significant**.

Hydrological modification of wet and dry heaths

7.8.86 Permanent hydrological modification of wet heath, using a worst-case 30 m buffer, could occur during Pre-Construction and Enabling works across 29.02 ha. A further 1.47 ha could be modified temporarily (eight years). However, for the same reasons given for direct loss during Pre-Construction and Enabling works (the widespread and common nature of the relevant wet heath types, and the abundance of unaffected retained wet heath), these impacts are considered minor.

7.8.87 Further dry heath (2.29 ha) lies within the 30 m indirect modification zone of Pre-Construction and Enabling works, again H10a and H21a. For the same reasons given above for indirect effects during Pre-Construction and Enabling works, dry heath is unlikely to be appreciably impacted by drying caused by infrastructure, and the relevant infrastructure would not cause significant wetting of dry heath.

7.8.88 Therefore, hydrological modification of wet and dry heaths is considered a **Negligible effect**, which is **Not Significant**.

Operation Phase

7.8.89 There are not expected to be any Operational effects on wet or dry heath.

Impacts on montane heaths

Pre-Construction and Enabling Phase

7.8.90 As would be expected, no montane heaths were recorded in the vicinity of the Pre-Construction and Enabling works, which are at relatively low altitude. Therefore, there would be **No effect** on montane heaths during the Pre-Construction and Enabling phase.

Construction Phase

Direct loss of montane heath

7.8.91 Of the montane heaths, H13, H14 and H17 were not recorded within the proposed Headpond. They would be impacted to a small degree by the combined construction/permanent tracks, which very locally pass through habitat polygons in which very small amounts of these vegetation types were recorded, typically on the summits of exposed knolls rising amongst other vegetation. H17 was rarely recorded, as very small components of mosaics on slopes of Glas-bheinn Mor and the summit of a small hill between the proposed north-eastern dam and spillway (some arctic bearberry was recorded outside of H17 in such small quantity that designation as H17 was not appropriate, however all these locations are beyond direct or indirect impact). H16 occurs within and outside the proposed Headpond, but generally again as extremely small patches, and was recorded much more widely than other montane heaths, on various parts of Glas-bheinn Mor, Glas-bheinn Beag, Meall Fuar-mhonaidh. A further NVC type that can constitute montane heath is H18. H18 was recorded only on the lower parts of the western slope of Meall Fuar-mhonaidh, and would be partly inundated and effectively lost.

7.8.92 Owing to the very small extents of these montane heaths, and that they typically occur on rocky prominences that access track routing would generally avoid, it is quite possible that no H13, H14 or H17 would be directly impacted by the narrow construction/permanent tracks that pass through them. However, a limited amount of H16 within the Headpond would be inundated. Taking the worst-case, the lost montane heath would comprise 0.005 ha of H13, 0.005 ha of H14, 0.03 ha of H16, a few square metres only of H17, and 0.35 ha H18. This compares to 3.8 ha H13, 1.74 ha H14, 1.8 ha H16, 0.007 ha H17 and 0.67 ha H18 in the surveyed area. Considering that the affected H18 is not at particularly high altitude (mostly below 530 m) and on slopes that are accessible to deer (rather than adjacent cliffs a large part of which would not be accessible to deer), it is likely that at least some of the H18 that would be lost is derived from other heath by grazing.

7.8.93 Since the majority of montane heath would remain, the affected H18 is likely at least partly unnatural, and the same montane heath NVC types can reliably be expected to occur in limited quantity elsewhere in the local area on similar rocky knolls, hill summits and steep slopes, direct loss of montane heaths during the Construction phase is considered a **Permanent Adverse effect** of **Local significance** only, which is **Not Significant**.

Hydrological modification of montane heath

7.8.94 Hydrological modification of montane heaths by drying is improbable because they comprise vegetation types in exposed rocky conditions where the substrate is already essentially dry. The infrastructure is not liable to cause wetting of such retained montane heaths, which are invariably located on raised rocky knolls, hill summits and similar. Consequently, there is likely to be **No effect** on montane heath by hydrological modification during the Construction phase.

Operation Phase

7.8.95 There are not expected to be any Operational effects on montane heath. Impacts on montane heath would only occur during the Construction phase.

Impacts on basic flush

Pre-Construction and Enabling

7.8.96 No basic flushes were recorded in the vicinity of the Pre-Construction and Enabling works. Consequently, there would be **No effect** on basic flushes during the Pre-Construction and Enabling phase.

Construction Phase

Direct loss of basic flush

7.8.97 Recorded basic flushes comprise M10 and M11, and both would be impacted by the Construction phase. Directly lost basic flush amounts to 0.004 ha and would be largely lost to the Headpond. However, there is a total of 0.75 ha of basic flush within the surveyed area, with many on unaffected parts of Glas-bheinn Mor, Glas-bheinn Beag, Meall Fuar-mhonaidh and hill slopes further southwest and northeast. Of 57 separately recorded and notably species-rich basic flushes, only two would be lost to the Proposed Development. Whilst basic flushes also occur as very small components of NVC mosaics that were not individually noted, including on the western slopes of Meall Fuar-mhonaidh and partly within the Headpond inundation zone, such basic flush mosaic components occur in many unaffected habitat polygons scattered through the surveyed area. Thus, the majority would be retained and unaffected. Some basic flushes include the notable bryophytes *Drepanocladus trifarius* (formerly *Pseudocalliergon trifarium*), *Sphagnum warnstorfii* or *Sphagnum contortum*, however all recorded locations of these species are well beyond possible impact.

7.8.98 Therefore, direct loss of basic flush is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Hydrological modification of basic flush

7.8.99 Very few NVC polygons with minor basic flush mosaic components, and only two separately noted basic flushes, occur within the zones of possible indirect modification. Consequently, there would be **Negligible effect** on basic flushes through hydrological modification.

Operational Phase

7.8.100 There are not expected to be any Operational effects on basic flushes. Impacts on basic flushes would only occur during the Construction phase.

Impacts on species-rich grasslands

Pre-Construction and Enabling Phase

7.8.101 No species-rich grassland was recorded in the vicinity of the Pre-Construction and Enabling works. Consequently, there would be **No effect** on species-rich grasslands during the Pre-Construction and Enabling phase.

Construction Phase

Direct loss of species-rich grassland

7.8.102 Once the Headpond is filled, it would incur loss of habitat on the lower slopes of the steep west side of Meall Fuar-mhonaidh. The lower slopes are dominated by heaths but also support a minor proportion of species-rich grasslands constituting Annex I H6230 (NVC types U4c and U5c)**.**. The area of such species-rich grassland that would be lost is 0.86 ha. The total amount of species-rich grassland in the surveyed area (including CG10, which is not impacted by the Proposed Development) is 3.7 ha. Therefore, just under one quarter would be lost. Recorded species-rich grassland with particularly notable species (such as frog orchid *Dactylorhiza viridis*) would not be affected.

7.8.103 As such, loss of species-rich grassland during Construction is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Hydrological modification of species-rich grassland

7.8.104 CG10 is considered potentially of high groundwater dependency. However, no CG10 lies within the indirect modification zone. U5c, and potentially U4c, include basiphilous species and therefore could also be potentially groundwater dependent. However, retained U4c and U5c within the zone of potential modification is located on slopes rising steeply up from the Headpond on Meall Fuar-mhonaidh, and there is consequently no likelihood of any hydrological impact on this retained grassland, whose hydrological state is likely to be heavily influenced by water percolating down the steep slopes from above.

7.8.105 Therefore, there is considered to be **Negligible effect** on species-rich grasslands through hydrological modification.

Operational Phase

7.8.106 There are not expected to be any Operational effects on species-rich grasslands. Impacts on species-rich grasslands would only occur during the Construction phase.

Impacts on natural cliffs/crags

Pre-Construction and Enabling Phase

7.8.107 No natural cliffs/crags exist in the vicinity of the Pre-Construction and Enabling works. Consequently, there would be **No effect** on natural cliffs/crags during the Pre-Construction and Enabling phase.

Construction Phase

Direct loss of natural cliffs/crags

7.8.108 Inundation of the Headpond to upper water level would impact a negligibly small amount of acidic crag with ericoids on the north-west edge of the Headpond, a single small rock exposure with trees on the southwest edge of Loch nam Breac Dearga, and proportionally extremely small amounts of steep rocky ground on the lower west side of Meall Fuar-mhonaidh. The vast majority of natural rocky cliffs/crags on Meall Fuar-mhonaidh, where they are abundant and extensive, are above the upper water level, and small crags at the western edge of the Headpond are also almost entirely above it. No other infrastructure impacts natural cliffs/crags.

7.8.109 As such, loss of natural cliffs/crags during Construction is considered a **Negligible effect**, which is **Not Significant**.

Hydrological modification of natural cliffs/crags

7.8.110 The natural cliffs/crags at the Headpond edge receive water primarily from upslope steep ground and are largely colonised by non-wetland species (notwithstanding small amounts of U17 that are beyond possible impact). Therefore, there is considered to be **No effect** on natural cliffs/crags through hydrological modification.

Operational Phase

7.8.111 There are not expected to be any Operational effects on natural cliffs/crags. Impacts on natural cliffs/crags would only occur during the Construction phase.

Impacts on notable flora

7.8.112 This section excludes whortle-leaved willow and dwarf birch, which as montane scrub species have been addressed under montane scrub above.

Pre-Construction and Enabling Phase

7.8.113 No specially notable flora were recorded within the zones of Pre-Construction and Enabling works or sufficiently close for indirect impact. Consequently, there would be **No effect** on notable flora during the Pre-Construction and Enabling phase.

Construction Phase

Loss of notable flora

7.8.114 Excluding whortle-leaved willow and dwarf birch, which are addressed under montane scrub above, notable flora that would be impacted comprise *Sphagnum austinii* and *Sphagnum fuscum*.

7.8.115 Four recorded locations of *Sphagnum austinii* would be directly lost and two others are very close to the Headpond edge or temporary track and have been assumed to also be lost. A total of approximately twelve hummocks would be affected. A further 116 hummocks of *Sphagnum austinii* were recorded in the wider survey area (including six compound hummocks with both *Sphagnum austinii* and *Sphagnum fuscum*). *Sphagnum fuscum* (also notable but in general less scarce than *Sphagnum austinii* and like dwarf birch also tending to favour M19) is also present within the Headpond area, and five locations with approximately seven hummocks would be lost; another seven are within the zone of indirect modification and might be affected (although this species often grows in drier M19 bog and would not be as liable to suffer from slight drying). There are approximately 73 recorded *Sphagnum fuscum* hummocks in the wider surveyed area. It is not very likely that many other large hummocks exist, because they tend to be prominent, but there may be unrecorded small hummocks. There are probably more unrecorded hummocks of *Sphagnum fuscum,* which can be less prominent. In view of the preceding, up to approximately 10% of recorded *Sphagnum austinii* hummocks and 19% of recorded *Sphagnum fuscum* hummocks could be lost.

7.8.116 Given that approximately 90% and 81% respectively of recorded *Sphagnum austinii* and *Sphagnum fuscum* hummocks would be retained, the losses to these species is considered a **Permanent Adverse effect** of **Local significance**, which is **Not Significant**.

Operational Phase

7.8.117 There are not expected to be any Operational effects on notable flora. Impacts on notable flora would only occur during the Construction phase.

Impacts on Roosting Bats

7.8.118 Bats are protected by the Habitats Regulations, and it is an offence to deliberately or recklessly:

- capture, injure, kill or harass a bat;
- disturb a bat while in a roost or whilst rearing/caring for its young;
- obstruct access to or deny a bat use of a roost;
- disturb a bat such that local species distribution/abundance is likely to be significantly affected;
- disturb a bat such that its ability to survive, breed or rear/care for young is likely to be impaired; and
- disturb a bat whilst it is migrating or hibernating.

7.8.119 It is also an offence, whether or not carried out deliberately or recklessly, to damage or destroy a bat roost, whether occupied or not.

7.8.120 The results of the below assessment do not negate the legal requirements relating to bats, which are discussed in **Section 7.9 Additional Mitigation.**

Pre-Construction and Enabling Phase

Direct Loss of Bat Roosts

7.8.121 Bat roosts within trees could potentially be lost during the Pre-Construction and Enabling phase which would involve the felling of woodland in the north of the Proposed Development Site to allow the Permanent Access Track to connect with the Balnain Main Access. No buildings would be destroyed as a result of works.

7.8.122 The area of woodland (i.e. the area of bat roosting habitat) that would be lost amounts to, at most, approximately 0.1 ha from a narrow strip (<10 m wide) through ~100 m of woodland with a further 0.6 ha lost during track widening (excluding loss of non-native conifer plantation) – a total of 0.7 ha. This is an extremely small area and would amount to <1% of the similar woodland (and therefore bat roosts) that would be retained along the River Coiltie in the immediate vicinity. Other woodland with suitability for roosting bats is present around the majority of the perimeter of Loch Ness and extends up the Rivers Moriston and Enrick. Approximately 6,553 ha ancient semi-natural woodland (as listed on the AWI) is present within 10 km of the Proposed Development, and can be assumed to provide similar (or, where larger and older trees are present, likely more suitable) opportunities for roosting bats. The 0.7 ha of woodland lost represents approximately 0.01% of this.

7.8.123 No GLTA was carried out, and the full extent of use of the woodland in the area around the Balnain Main Access by roosting bats is unknown. However, a general impression of this woodland suggests that it has extremely limited suitability for supporting bat roosts as it is non-ancient birchwood, and as such the majority of trees are relatively thin and lack the crevices and cavities possessed by older, more damaged trees and trees of larger species such as oak. Although these trees may be used by individual or small numbers of bats, they are very unlikely to possess the larger cavities required to support breeding/ hibernation roosts.

7.8.124 Consequently, direct impacts on roosting bats as a result of the loss of roost sites are considered to be unlikely. Further, even if they were to occur, given the nature of the trees which would be lost during the Pre-Construction and Enabling phase, they would very likely involve only a small number of bats, and not a roost of greater conservation significance (e.g. a hibernation or breeding roost). Considering this, and the substantially larger area of much higher quality roosting habitat in even the Local area (i.e. within 10 km of the Proposed Development Site), the direct loss of bat roosts during the Pre-Construction and Enabling phase is likely to have **Negligible effect** on the conservation status of bat species, which is **Not Significant**.

Disturbance of Retained Bat Roosts

7.8.125 As discussed above, it is very unlikely that a bat roost of conservation significance would be present within the woodland which would be lost during Pre-Construction and Enabling works. Given this, and that only a small number of bats would be impacted, disturbance of a bat roost is unlikely to have an effect on the Local population of the species involved, and Pre-Construction and Enabling works-related disturbance would have **Negligible effect** on the conservation status of bat species. This is **Not Significant**.

Construction Phase

Direct Loss of Bat Roosts

7.8.126 Bat roosts within trees could potentially be lost during the Construction phase which would involve the felling of woodland around the LCW. No buildings would be destroyed as a result of works.

7.8.127 A small area of this woodland, approximately 1.2 ha, spread along approximately 500 m of bankside, would be lost to the Proposed Development.

7.8.128 As described above for the Pre-Construction and Enabling phase, ample woodland with suitability for roosting bats is present within the wider local area. The 1.2 ha of woodland lost represents approximately 0.02% of the 6,553 ha ancient semi-natural woodland present within 10 km of the Proposed Development.

7.8.129 No GLTA was carried out, and the full extent of use of the woodland around the LCW by roosting bats is unknown. However, similar to woodland which would be lost during the Pre-Construction and Enabling phase, a general impression of woodland at the LCW suggests that it is sub-optimal for supporting bat roosts as the majority of trees are relatively thin and not mature, and therefore lacking the crevices and cavities possessed by older, larger and more damaged trees. Although they may be used by individual or small numbers of bats, they are very unlikely to possess the larger cavities required to support breeding/ hibernation roosts.

7.8.130 As set-out in **Section 7.6 Baseline Environment, Bats**, the majority of trees outside of the LCW area (including woodland which would be lost during the Pre-Construction and Enabling phase) are within non-native conifer plantation or are scattered immature/ stunted birch and pine. These trees have extremely limited suitability for roosting bats because, as mentioned above, they generally lack the crevices and cavities possessed by older, larger and more damaged trees. Furthermore, these trees are located mainly along existing access tracks, and as such tree loss is expected to be minimal.

7.8.131 Consequently, direct impacts on roosting bats as a result of the loss of roost sites are considered to be unlikely. Furthermore, as discussed for the Pre-Construction and Enabling phase, even if roost loss were to occur, given the nature of the trees which would be lost during the Construction phase, it would very likely involve only a small number of bats, and not a roost of greater conservation significance (e.g. a hibernation or breeding roost). Considering this, and the substantially larger area of much higher quality roosting habitat in even the Local area (i.e. within 10 km of the Proposed Development Site), the direct loss of bat roosts during the Construction phase is likely to have **Negligible effect** on the conservation status of bat species, which is **Not Significant**.

Disturbance of Retained Bat Roosts

7.8.132 As discussed above, it is very unlikely that a bat roost of conservation significance would be present within the Proposed Development Site. Given this, and that only a small number of bats would be impacted, disturbance of a bat roost is unlikely to have an effect on the local population of the species involved, and Construction-related disturbance would have **Negligible effect** on the conservation status of bat species. This is **Not Significant**.

Operational Phase

Disturbance of Retained Bat Roosts

7.8.133 Disturbance of retained bat roosts during Operation would likely have a lesser effect than (the unlikely) disturbance of any bat roosts during Construction given that vehicle movements and general activity in the area would be far less during Operation.

7.8.134 Consequently, disturbance of retained bat roosts during the Operational phase would have **Negligible effect** on the conservation status of bat species, and this is **Not Significant**.

Impacts on Otter

7.8.135 Otter are protected by the Habitats Regulations, and it is an offence to deliberately or recklessly:

- capture, injure, kill or harass an otter;
- disturb an otter while at a place used for shelter/protection, or whilst rearing/caring for its young;
- obstruct access to or deny an otter use of a breeding site or resting place;
- disturb an otter such that local species distribution/abundance is likely to be significantly affected; and
- disturb an otter such that its ability to survive, breed or rear/care for young is likely to be impaired.

7.8.136 It is also an offence, whether or not carried out deliberately or recklessly, to damage or destroy an otter refuge, whether occupied or not.

7.8.137 The results of the below assessment do not negate the legal requirements relating to otter, which are discussed in **Section 7.9 Additional Mitigation.**

Pre-Construction and Enabling Phase

Direct Loss of Otter Habitat

7.8.138 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, Potential Impacts of the Development**, in part owing to embedded measures within the oCEMP.

7.8.139 A very small amount of optimal otter habitat is relevant to the Pre-Construction and Enabling phase. This is at the crossing point for the Permanent Access Track over the River Coiltie, and would result in the loss of, at most, <10 m of watercourse and bankside. The loss of associated bankside habitat is likely to be permanent given. However, the foraging habitat within the river itself would likely only be 'lost' for the length of time taken to construct the crossing, which is expected to be significantly less than the estimated nine month timeframe for the Pre-Construction and Enabling phase as a whole. Following the installation of this culvert, otter are expected to be able to continue foraging within the watercourse beneath it. An additional small amount of sub-optimal habitat (smaller, shallower watercourses), estimated at <30 m, is expected to be permanently lost where the small size of water courses would not allow for crossings to span them in such a way that allows continued otter passage. No otter refuges would be lost.

7.8.140 Abundant similar suitable habitat is available to otter in the immediate vicinity along the River Coiltie and tributaries and would be retained. The habitat that would be lost (<10 m suitable habitat and <30 m of sub-optimal habitat) is clearly less than 1% of this. Furthermore, no spraints were identified immediately adjacent to the crossing point, indicating it is unlikely to be of particular importance to otter. Otters have large home ranges (discussed in further detail for the Construction phase – below) and the loss of this small area is extremely unlikely to have any perceptible impact on the single otter (or very small number of otters) that likely uses it.

7.8.141 Consequently, otter population change through direct losses to otter habitat as a result of Pre-Construction and Enabling works (both temporary and permanent) would have a **Negligible effect** on the conservation status of the species, and this is **Not Significant**.

Mortality of Otter

7.8.142 Direct harm to otters during Pre-Construction and Enabling works is very unlikely owing to: a) their high degree of mobility including in water (except when recently born); b) low plant/vehicle speeds in the Construction area; and, c) the embedded standard mitigation of overnight means of escape from excavations and capping of pipes that otters might enter.

7.8.143 Consequently, otter population change through direct mortality of individuals as a result of Pre-Construction and Enabling works would have a **Negligible effect** on the conservation status of the species, and this is **Not Significant**.

Disturbance of Otter

7.8.144 No otter refuges are at risk of disturbance from the Pre-Construction and Enabling works, using the distances specified by NatureScot for normal construction activities (30 m[65] for a non-breeding otter refuge or 200 m for an otter breeding (or 'natal') holt).

7.8.145 Disturbance from Pre-Construction and Enabling works would be over the course of approximately nine months. Any disturbance would largely occur in daylight outside the key crepuscular activity periods of otter and therefore disturbance of foraging/ commuting otter is likely to be extremely limited, especially as no otter refuges are known in the immediate vicinity of the Pre-Construction and Enabling works, and nor were any spraints which, as mentioned above, would indicate that the area may be of some particular importance to otter. The single otter (or very small number of otters) that use this area would likely continue to do so (with the exception of habitat immediately adjacent to works) during their usual key activity periods which would coincide with the times during which work has ceased.

[65] NatureScot (2024) *Standing advice for planning consultations – Otters* (online) Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-otters.

7.8.146 Consequently, otter population change through disturbance of individuals a result of Pre-Construction and Enabling works would have a **Negligible effect** on the conservation status of the species, and this is **Not Significant**.

7.8.147 Disturbance of otter in the areas relevant to the Pre-Construction and Enabling works would not cease once the Pre-Construction and Enabling works were complete – vehicles would continue to use the new access tracks and compounds to facilitate Construction of the Proposed Development, and this is discussed below for the Construction phase.

Construction Phase

Direct Loss of Otter Habitat and Refuges

7.8.148 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, Potential Impacts of the Development**, in part owing to embedded measures within the oCEMP.

7.8.149 Approximately 6 km of linear habitat suitable for otter habitat would be lost to the Headpond comprising watercourses (excluding very small, mossy and peaty channels which are of limited suitability for otter), existing bankside around Loch nam Breac Dearga and around two small, peaty waterbodies. The distribution of otter refuges and spraints identified during the surveys indicate that Loch nam Breac Dearga, Allt Loch nam Breac Dearga, Allt Loch an t-Sionnaich, Allt Saigh and some smaller tributaries of these are used by otter. However, all the spraints that were found (including within refuges on Loch nam Breac Dearga and tributaries of Allt Loch nam Breac Dearga) were old at the time of survey, indicating that this area is not frequently used. No evidence of otter was found around the smaller waterbodies/ watercourses, although a single old spraint containing frogspawn was found in the open moorland and was associated with an underground watercourse, indicating that otter are not strictly foraging/commuting along obvious watercourses.

7.8.150 The number of refuges within the Headpond area, the main area of construction activity, is small when compared to the number of refuges within the survey area which would be retained. Two lay-ups were identified within the Headpond area, and these would be destroyed to facilitate construction of the Proposed Development. An additional two lay-ups on Allt Loch an t-Sionnaich would be destroyed by upgrades to an existing water crossing. These four refuges represent 13% of the 31 otter refuges which were identified within the survey area. The refuges which would not be impacted include seven lay-ups along the surveyed extent of Allt Loch an t-Sionnaich, and a holt and a lay-up on the Allt Loch nam Breac Dearga (and tributaries). These are well connected to the refuges which would be lost, and would still be available for use by otter. The area where the most spraints (an indicator of otter activity) were recorded, including the only fresh spraint found over the course of surveys, is around Loch nan Oighreagan and the two small lochans nearby, at nearest 89 m north of the Headpond. This area would not be directly impacted by works.

7.8.151 The home range of a female otter along freshwater watercourses is known from limited studies to be around 15 km or more of watercourse, with one study finding riverine female otter using 23 holts[62]. For male otters, the home range in such habitat could be around 40 km or more, and the same study found male otter using 37 holts[62]. Given these home ranges and the numbers of known holts, it is very likely that otters occurring in the Headpond area also use the ample similar (and often more suitable) habitat in the wider area, including the River Moriston, the wider River Coiltie and River Enrick (where these occur outside the Proposed Development Site) and Loch Ness, which all likely support greater and more varied fish populations and thus better foraging opportunities, as well as the numerous lochans similar to Loch nam Breac Dearga (for example Loch a' Chràthaich) to the west of the survey area.

7.8.152 The extent of linear habitat which would be lost to the Headpond (approximately 6 km as described above) potentially represents 40% of the habitat in the home range of a female otter, or 15% of the habitat in the home range of a male otter. The loss of bankside habitat elsewhere in the Proposed Development Site is not included given that it comprises only limited stretches of habitat which are sub-optimal for otter. Considering the small size of the watercourses (including Allt Loch nam Breac Dearga, which does not exhibit natural flow and often contains only a small trickle due to the impact of the existing small hydroelectric dam), and the lack of fresh or recent spraints within habitats which would be lost, it is likely that these water features and refuges along them represent less than these proportions of local otter home ranges.

7.8.153 The lost refuges, of which there are four, potentially represent around 17% of the refuges in the home range of a female otter, or 11% of the refuges in the home range of a male otter, though this is likely an over-estimation of the importance of these refuges given that only lay-ups would be lost to the Proposed Development and published literature[62] refers only to holts (not lay-ups). The loss of four lay-ups is therefore considered to be insignificant to

individual otters given the large number of other refuges, and lay-ups in particular, likely in use and which would be retained.

7.8.154 Since otter home ranges overlap, especially those of males/females[62], the home ranges of two and possibly more adult otters could likely be impacted, and this could include breeding female(s). However, as explained above, the home ranges of otters using the Headpond area would extend far beyond it, and they would be expected to have numerous alternative refuges and foraging resources within these home ranges. Any impacts would not be significant at the regional scale of NHZ 7, which encompasses abundant suitable otter habitat, including numerous substantial lochs, lochans and rivers, and would hold a significant proportion of the estimated 8,000 otters in Scotland[66]. The continued suitability of the Headpond for fish prey resources (such as brown trout *Salmo trutta*) as it floods (and thereafter), which would otherwise provide some balancing, is not likely, owing to the great fluctuation in water level, and that fish would be liable to be drawn into the Headpond turbines.

7.8.155 Consequently, otter population change through direct losses to otter habitat and refuges as a result of construction works is considered to represent a **Permanent Adverse effect of Local significance**, which is **Not Significant.**.

Mortality of Otter

7.8.156 For the same reasons described for the Pre-Construction and Enabling phase, direct harm to otters during Construction is very unlikely.

7.8.157 Consequently, otter population change through direct mortality of individuals during Construction is considered a **Negligible effect**, which is **Not Significant**.

Disturbance of Otter

7.8.158 NatureScot consider disturbance of a non-breeding otter refuge to be possible within 30 m[65] for normal construction activities, or up to 100 m for certain, particularly intensive works. The latter would include blasting, which would take place in the Headpond area, and piling, which would occur at the LCW. NatureScot consider disturbance of an otter breeding (or 'natal') holt to be possible within 200 m of Proposed Development activities.

7.8.159 Otters using refuges within 30 m of the Proposed Development would be at risk of disturbance during Construction of the Proposed Development. This is limited to the four otter lay-ups in the previous section, which would likely be disturbed prior to being destroyed.

7.8.160 No additional otter refuges are known within 100 m of blasting/ piling works, nor are any holts with the potential to be used as breeding holts known within 200 m.

7.8.161 Disturbance would be over prolonged periods, given a Construction timescale of approximately seven years, although it would occur at various times and locations within the Proposed Development Site, depending on precise construction activity at any point. It would largely occur in daylight outside the key crepuscular activity periods of otter and therefore disturbance of foraging/ commuting otter is likely to be limited, however otters using refuges during the day could still be disturbed. Given the abundance of otters in Scotland and regionally, the net effect of disturbance would be similar to the eventual complete removal of the refuges and associated water features within it, as discussed in the previous section and considered an Adverse Effect of Local significance.

7.8.162 Disturbance would only take place until either a refuge is destroyed or construction activities are complete, and would therefore be temporary. Thus, disturbance to otters from works during the Construction phase is considered a **Temporary Adverse effect of Local significance,** which is **Not Significant.**

Operational Phase

Impacts on Retained Otter Habitat

7.8.163 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, Potential Impacts of the Development**, in part owing to embedded measures within the oCEMP.

7.8.164 Hydrological impacts could occur through changes to water flows in retained water features used by otter. However, in this regard, the embedded design of the Proposed Development includes a continuous supply of sufficient water to maintain normal flow along the retained parts of Allt Loch nam Breac Dearga, Allt Loch an t-Sionnaich and Allt Saigh, all located downstream of the Headpond. Currently, natural flow on the Allt Loch nam Breac Dearga ceases approximately 1.6 km downstream of Loch nam Breac Dearga, owing to a small existing

[66] NatureScot (2024) *Otter* (online) Available at: https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/otter

hydroelectric dam. A more natural flow is re-established a further 2.5 km downstream at the confluence of Allt Loch nam Breac Dearga and Allt Loch an t-Sionnaich. The upstream end of Allt Loch nam Breac Dearga (and smaller tributaries) would be lost to the Headpond and Main Dam, however this stream would continue to receive a compensatory water supply from the Headpond, and water from the majority of contributing slopes, such that flow is not expected to significantly change in this stream. Small tributaries of Allt Loch nam Breac Dearga and Allt Loch an t-Sionnaich southeast of the Headpond area would also retain all or the great majority of contributing land and would similarly be negligibly affected.

7.8.165 Lochans beyond the Headpond would not be hydrologically or otherwise affected by the Proposed Development. As explained for the cumulative assessment of Urquhart Bay Wood SAC, hydrological modelling taking a worst case (of 'all schemes', i.e. the Proposed Development plus all other pumped storage schemes that may be Operational, and a seasonal variable Dochfour weir to control water flow into the River Ness north of Loch Ness, that would operate in summer but not winter), indicates that the existing baseline upper water levels of Loch Ness would not be exceeded, and the minimum water level would not be lower the existing baseline. As a result, there would be negligible hydrological impact on shoreline habitat along Loch Ness used or potentially used by otters. Changes in water level within Loch Ness itself are not expected to significantly impact the fish prey resource within it (see **Chapter 9: Aquatic & Marine Ecology (Volume 2: Main Report)**).

7.8.166 Consequently, impacts on retained supporting habitats of otter during Operation are considered to result in a **Negligible effect**, which is **Not Significant**.

Mortality of Otter

7.8.167 Smolt screens at the LCW would prevent otter access from the water. The velocity of water discharge/abstraction at the smolt screens would be (at maximum) 0.3 ms^{-1}. The underwater swimming speed of otter is given as approximately 0.26 ms^{-1} [62], however, this is the speed of otter while searching for prey – the maximum speed horizontally was measured for immature (yearling) otter as 1.2 ms^{-1}, rising to 1.5 ms^{-1} for adult otter[67]. Otters would therefore be readily able to swim against the flow at the smolt screens, rather than be held against it. Although otters could theoretically bypass the smolt screens at the landward edge (a somewhat unlikely scenario given that no fish prey would be present inside the smolt screens, and the nature of the operating LCW environment), the water intake speed at the diffusers would be 1 ms^{-1} and therefore still below the speeds at which otters can swim; there would also be a further screen with 10 cm between bars that would prevent at least adult otters from accessing. Similar mechanisms are present at the existing Foyers scheme. There is consequently considered to be negligible risk to foraging or commuting otters in the vicinity of the LCW.

7.8.168 The Headpond would not support a significant fish population owing to unsuitability caused by the very large degree of water level fluctuation in the operating Headpond, and also that fish in the Headpond would be liable to be taken into the turbine system. Otter may still make use of the operating Headpond to forage for amphibians or other species. However, the approach velocity of water at the Headpond intake (at maximum) is estimated to average 1 ms^{-1}, which (given the above information) otters would be able to swim against. More importantly, however, the water level in the Headpond would seldom be at or near minimum operating level (close to the turbine intake level) but mostly considerably higher, which very much reduces the likelihood of otters closely approaching the intake at the Upper Control Works (UCW). For these reasons, otter mortality at the UCW by its Operation its likely to occur very rarely, if at all.

7.8.169 Consequently, mortality of otter as a result of Operation is considered a **Negligible effect**, which is **Not Significant**.

Disturbance of Otter

7.8.170 Lighting at the LCW during Operation would be motion-operated and therefore not permanently on, and the extent of shoreline affected by it would be negligibly small compared to the total shoreline of Loch Ness. This would therefore have very limited impact on otter.

7.8.171 Maintenance attendance would be infrequent, small-scale and largely in daylight, and not liable to cause any appreciable disturbance of otter.

7.8.172 Consequently, disturbance of otter as a result of Operation is considered a **Negligible effect**, which is **Not Significant**.

[67] Nolet, B.A, Wansink, E.H. and Kruuk, H. (1993). *Diving of otters (Lutra lutra) in a marine habitat: use of depths by a single-prey loader*. Journal of Animal Ecology 62: 22-32.

Impacts on Water Vole

7.8.173 Water vole burrows (or other refuges) are legally protected from intentional or reckless damage, destruction or obstruction, and the animal itself is protected from disturbance while using such a place. The results of the below assessment do not negate the legal requirements relating to water vole, which are discussed in **Section 7.9 Additional Mitigation**.

Pre-Construction and Enabling Phase

Direct Loss of Water Vole Habitat

7.8.174 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, The Potential Impacts of the Proposed Development**, in part owing to embedded measures within the oCEMP.

7.8.175 Water vole were found to be widespread in parts of the Headpond area and other parts of the open moorland, and could feasibly colonise and inhabit any areas of suitable habitat in any given year. This assessment has therefore been carried out under the assumption that all suitable habitat within the Proposed Development Site is occupied by, or could become occupied by, water vole. Suitable habitat comprises suitable watercourses and also flushes and damp areas dominated by purple moor-grass and rushes as described in **Section 7.6 Baseline Environment, Water Vole.**

7.8.176 Although (see **Section 7.5 Methodology, Limitations and Assumptions**) the Pre-Construction and Enabling works area was not surveyed for water vole, only a short section of suitable stream habitat – approximately 160 m – would be lost during the Pre-Construction and Enabling works. This would be within the footprint of permanent compound PC04, temporary compound TC05 and associated access track. Of this, 60 m would be permanently lost to permanent compound PC04 and the associated access track. The remaining 100 m would be temporarily lost to temporary compound TC05 for the duration of the Pre-Construction and Enabling and subsequent Construction phases.

7.8.177 Similar suitable habitat is widespread along watercourses in more gently sloping or flat parts of the adjacent open moorland and in the wider local area. The 160 m of suitable habitat that would be lost (both permanently and temporarily) is an extremely small proportion of the available resource, and thus its loss would impact a very small proportion of the local population of water voles (estimated at <1%, at most if the relevant stretch is occupied by water voles at the time of works affecting it).

7.8.178 Thus, the direct loss of water vole habitat caused by the Pre-Construction and Enabling phase would have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Mortality of Water Vole

7.8.179 Where active water vole burrows occur within the Proposed Development, they are at risk of destruction during Pre-Construction and Enabling works. Any water voles within such burrows, or nearby, would be at risk of death or injury.

7.8.180 As mentioned above, suitable habitat which would be impacted by the Pre-Construction and Enabling works was not surveyed but it can be reasonably assumed to be used, or potentially used, by water vole.

7.8.181 Only a very small number of water voles could potentially occupy the 160 m of suitable habitat within which Pre-Construction and Enabling works would destroy burrows (if present) and thus result in water vole mortality. Using the reasoning laid out below for the Construction phase, whereby water voles within the Proposed Development Site are expected to have the maximum territory size (and thus lowest density) for a breeding female (150 m^{30}), it can be estimated that approximately two water voles (one male and one female) are present within the suitable habitat that would be lost during the Pre-Construction and Enabling phase. Therefore, approximately two water vole are at risk of death/injury during this phase. This is a tiny proportion of the number of water vole likely to be present within the immediate surrounding area, given that water vole evidence was nearly ubiquitous in suitable habitat within the survey area, and an even smaller proportion (<1%) of those present in the wider local area.

7.8.182 Mortality (or injury) of water voles away from their burrows during the Pre-Construction and Enabling phase, for example while crossing tracks during dispersal, is very unlikely owing to: a) their high degree of mobility; b) that water vole do not regularly travel far from the suitable habitat immediately surrounding their burrows; c) low plant/vehicle speeds in the Construction area; and, d) the embedded standard mitigation of overnight means of escape from excavations and capping of pipes that water vole might enter.

7.8.183 Thus, water vole mortality caused by the Pre-Construction and Enabling phase is expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Disturbance of Water Vole

7.8.184 Where disturbance of water vole burrows occurs within the Proposed Development Site (in the absence of mitigation), this is likely to result from activities that would also destroy burrows, and which would therefore result in the death of at least some water voles. The impacts of disturbance on *most* of the water voles from the Pre-Construction and Enabling works are therefore as assessed above for mortality of water voles.

7.8.185 However, water voles occupying habitat immediately adjacent to parts of the Proposed Development impacted by Pre-Construction and Enabling works may be at risk of disturbance without destruction of their burrows occurring, for example from the frequent passage of vehicles, Operation of loud machinery or from Construction personnel.

7.8.186 NatureScot suggest 10 m exclusion zones around active water vole burrows to prevent disturbance. In the absence of these exclusion zones, it is considered that water vole in burrows located within 10 m of the Proposed Development are at risk of disturbance.

7.8.187 In a worst case scenario, all retained habitat within 10 m of the Proposed Development would be disturbed to the point that it is made unsuitable for water vole, and water vole that were present would move away. Thus, the amount of suitable habitat available around the Proposed Development would be reduced.

7.8.188 Disturbance to water vole from the Pre-Construction and Enabling works would only impact water voles within a total of 10 m of adjacent suitable habitat. This is small when compared to the 160 m of habitat which would be lost to the Pre-Construction and Enabling works (6.25%) and tiny when compared the areas of suitable habitat in the survey area and wider local area which water vole would not be disturbed.

7.8.189 In addition, The Water Vole Mitigation Handbook[30] state that *"noise and visual disturbance are, in most cases, unlikely to have a significant effect on water voles"*. Furthermore, as discussed in **Section 7.7 Embedded Mitigation**, an ECoW would be employed and would advise on micro-siting, including by implementing 10 m exclusion zones where possible.

7.8.190 Thus, disturbance of water vole caused by the Pre-Construction and Enabling phase is expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Construction Phase

Direct Loss of Water Vole Habitat

7.8.191 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, Potential Impacts of the Development**, in part owing to embedded measures within the oCEMP.

7.8.192 As discussed for the Pre-Construction and Enabling works, this assessment has been carried out under the assumption that all suitable habitat within the Proposed Development Site is occupied by, or could become occupied by, water vole. Suitable habitat is as described for the Pre-Construction and Enabling phase and in **Section 7.6 Baseline Environment, Water Vole.**

7.8.193 Construction of the Proposed Development would result in the loss of approximately 4 km of linear suitable water vole habitat, comprising 3.8 km lost to the Headpond and approximately 0.2 km lost to proposed access tracks.

7.8.194 The habitats occupied by water vole within the survey area – mainly blanket bog, acid grassland dominated by purple moor-grass with soft rush and, locally, wet heath and flush along watercourses where the gradient is relatively flat – are extremely common in upland parts of Scotland, including within NHZ 7, and the loss of 4 km of suitable habitat would be extremely unlikely to have an adverse effect on water vole at a regional scale given that NHZ 7 would contain much similar upland habitat and that water vole records are widespread.

7.8.195 However, in the context of the local area, a significant proportion of suitable water vole habitat is likely to be permanently lost, especially given that suitable water vole habitat within the Local area is relatively localised, with the surrounding land outside of the Proposed Development Site including a large proportion of less suitable, lower lying, wooded or built-up habitat around Loch Ness and along the Rivers Enrich and Moriston (which themselves are not suitable). It is also possible that some of the blanket bog and other suitable upland habitats within the Local area may be isolated in the landscape and "unsuitable" because they cannot be accessed by water vole populations.

7.8.196 Consequently, water vole population change through direct loss of water vole habitat during the Construction phase is considered to represent a **Permanent Adverse effect of Local significance**, which is **Not Significant**.

Mortality of Water Vole

7.8.197 Where active water vole burrows occur within the Proposed Development, they are at risk of destruction during Construction. Any water voles within such burrows, or nearby, would be at risk of death or injury.

7.8.198 Construction of the Proposed Development would involve the destruction of the approximately 722 water vole burrows (and approximately 70 latrines) within the footprint of the Headpond (as were present at the time of water vole survey 2), and the likely mortality of at least some of the water voles using these burrows. There is no reliable way to estimate the number of water voles present based on the number of burrows, latrines or other evidence.

7.8.199 Large amounts of water vole evidence were identified within the Proposed Development Site, particularly within the Headpond. However, the greatest levels of activity were observed immediately north and west of the Headpond, in areas that would not be impacted.

7.8.200 Of the four Medium RPD stretches, one is completely within the footprint of the Main Dam (WV16) and one is partly within the footprint of Saddle Dam 1 but extends north into suitable adjacent habitat (WV09). Only one other group of latrines was identified within the Headpond area (WV11). Latrines here were not of sufficient density to qualify the stretch as Medium RPD, but the area is notable for being a distinct stretch of habitat with fairly constant signs of current use. The longest stretches of Medium RPD that were found were outside of the Proposed Development Site to the west, and associated with Allt Loch nam Breac Dearga and tributaries (both within WV15).

7.8.201 Water vole mortality associated with access track works is likely to be extremely low, owing to the very minor loss of habitat to these works.

7.8.202 Assuming the minimum published territory size for breeding female water voles (50 m)[30], and assuming all suitable habitat was occupied by water vole (and thus the highest possible density of water vole), the loss of 4 km of suitable habitat would equate to the potential loss of the active territories of 80 breeding females, or 160 water voles in total, assuming an equal sex ratio (as a general rule the territories of female water voles do not overlap one another, but do overlap with those of males). Thus, a maximum of 160 water voles could potentially be killed during Construction in the absence of mitigation.

7.8.203 However, the number of active territories lost, and thus the number of water voles which could potentially be killed during Construction, is likely to be significantly less than 160 given the following:

- Water voles exist in meta-populations, and as such a proportion of the suitable habitat is likely to be uninhabited at any one time, as was seen to be the case during surveys where in some cases burrows were found but no other evidence; and
- The density of water voles within the Headpond is extremely unlikely to approach one breeding female per 50 m given that the number of latrines present at all locations indicated only Low or, occasionally, Medium RPD, and never High RPD.

7.8.204 It is therefore considered that the density of water voles within the Proposed Development Site is more likely to be similar to that indicated by the maximum territory size (and thus lowest density) for a breeding female (150 m)[30]. In this scenario it is estimated that up to 53 water voles could potentially be killed during Construction, in the absence of mitigation.

7.8.205 As mentioned above, the surrounding region (where the upland habitat mosaic is similar) will likely contain a great deal of similarly suitable water vole habitat to that within the Headpond area. Water vole records are thinly spread throughout much of NHZ 7 (91 records since the year 2004) and it can be reasonably assumed that they occupy a large proportion of the available suitable habitat. Therefore, the mortality of approximately 53 water voles as a result of Construction of the Proposed Development is not significant at a Regional level.

7.8.206 The rather thin spread of water vole records in the wider region is very likely a result of under-recording rather than representing the actual distribution of water vole. For example, water voles were recorded close to the Proposed Development Site during surveys for Bhlaraidh Wind Farm and near Fasnakyle, and it is likely that they extend into nearby suitable habitat. During non-mammal surveys for the Proposed Development beyond the water vole survey area (for example, during moorland bird surveys and habitat surveys), local occurrences of apparently suitable habitat (generally along slow-flowing small watercourses in locally flatter terrain) were mostly seen (without detailed survey) to contain at least some probable water vole burrows, and this also suggests that water

voles are more widespread locally than the commercially-available NBN records indicate. However, on a precautionary basis the number voles that could (without mitigation) be killed during Construction is considered potentially of local significance. This is consistent with the assessment above for habitat loss during the Construction phase.

7.8.207 Mortality (or injury) of water voles away from their burrows during Construction is extremely unlikely for the same reasons described above for the Pre-Construction and Enabling phase.

7.8.208 Thus, water vole population change through mortality caused by the Construction phase is considered to represent a **Permanent Adverse effect of Local significance**, which is **Not Significant.**

Habitat Severance

7.8.209 Construction of the Headpond would create a barrier between water vole from colonies to the west (associated with Allt Loch nam Breac Dearga) and north of the Headpond (associated with Loch nan Oighreagan). This due to Construction of the Main Dam, which would be a steep and high structure which the species would not be able to easily cross, and due to the loss of intermediate suitable habitat, and because intermediate colonies currently acting as 'stepping-stones' between these areas would also be lost. Any water vole attempting to pass between these colonies would have to travel around the edge of the Headpond, possibly over the steep, rocky slopes associated with Glas-bheinn Mhòr in the north and Meal Fuar-mhonaidh in the south.

7.8.210 However, colonies in both the west and north have access to additional suitable habitat (as assessed from aerial imagery) in the wider landscape. Colonies in the west are connected to a network of small lochans with surrounding peatland, and to grassland/ peatland along Allt Carn na Fiacail. A single burrow identified incidentally during other ecological field survey suggests that water vole have occupied this area previously, though it is not known if they continue to do so. Colonies in the north are connected to suitable habitat between Glas-bheinn Mhòr and Glas-bheinn Bheag, and along Allt Glas Mor, including to areas of suitable habitat associated with the Permanent Access Track, along which a small number of single burrows were incidentally identified. As above, it is not known if these areas are currently occupied by water vole. Both Allt Carn na Fiacail and Allt Glas Mor are tributaries of the upper River Coiltie. The River Coiltie itself appears too large to be used by water vole in this location, however there is extensive and relatively flat wetland habitat with numerous small channels between the two confluences which could support connectivity between the populations.

7.8.211 It is therefore unlikely that Construction of the Headpond would cause colonies in the west or north to be sufficiently isolated from the wider population such as to increase its risk of the extinction by, for example, population decline due to a lack of re-colonisation events, and the colonies are still considered linked in a local context. Furthermore, both the west and north colonies would retain areas of slightly greater population density – Medium RPD in 2024 – which are more likely to act as core "source" populations than the numerous areas with Low RPD, providing a source of water voles from which other adjacent suitable habitats can be repopulated.

7.8.212 Furthermore, it is not expected that the existing corridor between Glas-bheinn Mhòr and Meal Fuar-mhonaidh would become completely impassible to water voles, given that they may still travel along the narrow strip of remaining locally flat and boggy habitat to the north, or around the edge of the Headpond.

7.8.213 New access tracks would cross suitable water vole habitat at a total of nine locations. It is not known if all of this habitat is occupied by water voles, however incidentally identified burrows indicate that it potentially could be. However, given the narrow width of these tracks it is considered that water vole would cross them as needed during dispersal.

7.8.214 Thus, water vole population change through the severance of habitat between water vole populations caused by the Construction phase is expected to result in a **Negligible effect**, which is **Not Significant**.

Disturbance of Water Vole

7.8.215 Where disturbance of water vole burrows occurs within the Proposed Development Site (in the absence of mitigation), this is likely to result from activities that would also destroy burrows, and which would therefore result in the death of at least some water voles. The impacts of disturbance on *most* of the water voles within the Proposed Development Site are therefore as assessed above for mortality of water voles.

7.8.216 However, water voles occupying habitat immediately adjacent to the Proposed Development may be at risk of disturbance without destruction of their burrows occurring, for example from the frequent passage of vehicles, Operation of loud machinery or from Construction personnel.

7.8.217 NatureScot suggest 10 m exclusion zones around active water vole burrows to prevent disturbance. In the absence of these exclusion zones it is considered that water vole in burrows located within 10 m of the Proposed Development are at risk of disturbance.

7.8.218 In a worst case scenario, all retained habitat within 10 m of the Proposed Development would be disturbed to the point that it is made unsuitable for water vole, and water vole that were present would move away. Thus, the amount of suitable habitat available around the Proposed Development would be reduced.

7.8.219 However, given the large size of the Proposed Development, the number of water voles within 10 m would be very small compared to those within the wider Proposed Development Site due to the areas involved. For the Headpond, the length of suitable habitat within a 10 m buffer surrounding it is only 2% of that within the Headpond itself.

7.8.220 It is therefore considered that the effect of disturbance on water voles would not approach Local significance.

7.8.221 In addition, The Water Vole Mitigation Handbook[30] state that *"noise and visual disturbance are, in most cases, unlikely to have a significant effect on water voles"*. Furthermore, as discussed in **Section 7.7 Embedded Mitigation**, an ECoW would be employed and would advise on micro-siting, including by implementing 10 m exclusion zones where possible.

7.8.222 Thus, disturbance of water vole caused by the Construction phase is expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Operational Phase

Impacts on Retained Water Vole Habitat

7.8.223 With regard to supporting habitats, waterborne and airborne pollution impacts have been scoped out, as discussed in **Section 7.8 Assessment of Effects, Potential Impacts of the Development**, in part owing to embedded measures within the oCEMP.

7.8.224 Hydrological impacts on the majority of retained suitable water vole habitat during Operation of the Proposed Development are unlikely because the majority of suitable habitats (e.g. flushes, watercourses, lochans) are wet either rainfall or through downslope movement of water from unaffected surrounding land. Although Loch Ness would be subject to water level fluctuation this would likely have negligible impact on water vole given that it is unlikely that the species is present in the vicinity of the loch due to its large size and often rocky and wooded banks.

7.8.225 Consequently, impacts on retained habitats which support water vole caused by the Operational phase are expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Mortality of Water Vole

7.8.226 Mortality (or injury) of water vole within burrows during Operation is considered extremely unlikely given that, once built, vehicles and other plant would be restricted to roads and other man-made surfaces which are not suitable for water vole burrows, and it is considered that no additional burrows would be destroyed during Operation.

7.8.227 Mortality (or injury) of water voles away from their burrows during Operation, for example while crossing tracks during dispersal, is very unlikely owing to: a) their high degree of mobility; b) that water vole do not regularly travel far from the suitable habitat immediately surrounding their burrows; c) low plant/vehicle speeds on access tracks; and, d) the embedded standard mitigation of overnight means of escape from excavations and capping of pipes that water vole might enter.

7.8.228 Consequently, water vole mortality caused by the Operational phase is expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Disturbance of Water Vole

7.8.229 Disturbance during Operation is expected to be extremely minor given that, once built, vehicles and other plant would be restricted to roads and other man-made surfaces which are not suitable for water vole burrows.

7.8.230 As mentioned above, The Water Vole Mitigation Handbook[30] states that *"noise and visual disturbance are, in most cases, unlikely to have a significant effect on water voles"*, and water vole have been known to acclimatise to human disturbance[68].

7.8.231 Thus, disturbance to water vole caused by the Operational phase is expected to have a **Negligible effect** on the conservation status of the species, which is **Not Significant**.

Impacts on Pine Marten

7.8.232 Pine marten are legally protected by the WCA, and it is an offence to intentionally or recklessly;

- Kill, injure or take a pine marten;
- Damage, destroy or obstruct access to any structure or place used by pine marten for shelter or protection; and
- Disturb a pine marten when it is occupying a nest or den for shelter or protection (except when this is inside a dwelling house).

7.8.233 The results of the below assessment do not negate the legal requirements relating to pine marten, which are discussed in **Section 7.9 Additional Mitigation**.

Pre-Construction and Enabling Phase

Direct Loss of Pine Marten Habitat and Refuges

7.8.234 No possible pine marten dens would be destroyed by the Pre-Construction and Enabling phase of the Proposed Development.

7.8.235 The area of woodland (i.e. the area of most suitable pine marten habitat) that would be lost amounts to, at most, approximately 0.1 ha from a narrow strip (<10 m wide) through ~100 m of woodland with a further 0.6 ha lost during track widening (excluding loss of non-native conifer plantation) – a total of 0.7 ha.

7.8.236 NatureScot suggest that pine marten are mainly reliant on woodland, and that each pine marten requires between 86 to 166 ha of woodland within its territory, but that they do not have minimum requirements for the amount of other habitats in their territories. Studies[70,71,70] referred to by Harris and Yalden[62] suggest that a breeding pair of pine marten require between 194 ha and 274 ha woodland (there can be partial overlap between the territories of male and female pine marten). The 0.7 ha of woodland lost during the Pre-Construction and Enabling works would therefore represent between 0.4% and 0.8% of the woodland habitat within the territory of a single pine marten, or between 0.3% and 0.4% within that of a breeding pair. The loss of this woodland is therefore extremely unlikely to have a perceptible negative effect on the individual pine marten or pair of pine martens that use it.

7.8.237 A large area of similar woodland would be retained along the River Coiltie (in the immediate vicinity) and wider local area. In addition, though less suitable for the species, the non-native conifer plantation is readily used by pine marten and huge areas of this would remain.

7.8.238 Thus, direct loss of pine marten habitat as a result of Pre-Construction and Enabling works is predicted to have a **Negligible effect** on pine marten, which is **Not Significant**.

Mortality of Pine Marten

7.8.239 Direct harm to pine martens during Pre-Construction and Enabling works is unlikely owing to: a) their high degree of mobility (except when recently-born); b) low plant/vehicle speeds in the Construction area; and, c) the embedded standard mitigation of overnight means of escape from excavations and capping of pipes that pine martens might enter.

7.8.240 Consequently, there would be **Negligible effect** on pine marten from direct mortality during the Pre-Construction and Enabling phase and this is **Not Significant**.

[68] Robyn A. Stewart, Tyler J. Clark, John Shelton, Matt Stringfellow, Catherine Scott, Stewart A. White, Dominic J. McCafferty, *Urban grasslands support threatened water voles*, Journal of Urban Ecology, Volume 3, Issue 1, January 2017, jux007, https://doi.org/10.1093/jue/jux007

Disturbance of Pine Marten

7.8.241 NatureScot consider disturbance to be possible within 30 m of a non-breeding pine marten den and 100 m for a breeding den[74].

7.8.242 Three possible pine marten dens - PM01, PM03, PM04 - are within 30 m of the Proposed Development where Pre-Construction and Enabling works would take place. PM03 and PM04 would be disturbed by Construction of the northern Access Track where it links to the Balnain Main Access, and PM01 by adjacent tree felling to allow track widening. All three would be disturbed by any noise/vibration etc produced by the use of the Balnain Main Access during this phase. No additional possible pine marten dens are known within 100 m of the Pre-Construction and Enabling works.

7.8.243 Disturbance would be over the course of approximately nine months, for the duration of the Pre-Construction and Enabling works, particularly during the Construction of the northern Access Track. At worst, disturbance could cause PM01, PM03 and PM04 to be unsuitable for pine marten for the duration of the Pre-Construction and Enabling phase, although impacts are unlikely to be this extreme given that Construction of the track is unlikely to take the full nine months. The Balnain Main Access is already used by forestry and estate vehicles, and thus pine marten using adjacent habitat/refuges are likely already acclimatised to some level of vehicular disturbance. In addition, PM01, PM03 and PM04 are located, at nearest, 15 m from the track.

7.8.244 The disturbance of three possible pine marten dens could impact, at most, six individuals (three pairs).

7.8.245 The actual number of pine marten disturbed is likely to be less than this because: i) as discussed for habitat loss, the area of woodland that would be destroyed likely forms part of the home range for only one pine marten or a pair of pine martens; ii) NatureScot state that pine martens have several dens in their territories, and thus at least some of the dens are likely to be utilised by the same pine marten (or pair of pine martens); and, iii) because the possible pine marten dens appeared suitable for use by the species, but were not proven to be in use, and it is possible that here are fewer than three pine marten dens in active use within the disturbance distance of the Pre-Construction and Enabling.

7.8.246 Pine martens have large territories which likely extend beyond the Proposed Development Site, and impacts on six pine marten (but likely fewer) would therefore be significant at a Local scale.

7.8.247 Any temporary contraction in carrying capacity would not be significant at the regional scale of NHZ 7, which encompasses abundant suitable pine marten habitat including numerous wooded valleys and blocks of conifer plantation, and would hold a significant proportion of the estimated 3,700 pine marten in Scotland.

7.8.248 Disturbance from Pre-Construction and Enabling would take place until Pre-Construction and Enabling activities were complete, over a period of approximately nine months. Lower level disturbance would continue during the Construction phase (see below) however, disturbance from these phases together would still be temporary, as would any impacts on pine marten. Disturbance to pine marten dens during the Pre-Construction and Enabling phase is therefore considered a **Temporary Adverse Effect of Local significance**, which is **Not Significant** in the context of this EIA.

7.8.249 Pre-Construction and Enabling would predominantly take place during daylight hours, when pine marten are less active, and disturbance would only occur within a short distance of works (30 m). Disturbance of commuting/foraging pine marten would therefore largely be avoided. Where works are required during hours of darkness, any lighting used would be directed onto the works area, and light spill onto surrounding habitat would be minimised. However, even if pine marten commuting and/or foraging through the Site were to be disturbed by on-going works, this is very unlikely to have a significant effect given the areas of woodland habitat which could possibly be impacted would be very small. **Negligible effect** on commuting/foraging pine marten is expected due to disturbance from Pre-Construction and Enabling activities, which is **Not Significant**.

Construction Phase

Direct Loss of Pine Marten Habitat and Refuges

7.8.250 One possible pine marten den – PM09 – is within the footprint of the LCW and would be destroyed by Construction of the Proposed Development.

7.8.251 NatureScot state that pine martens have several dens in their territories, and the loss of a single den would impact a pair of pine marten (at most). However, pine martens have large territories which likely extend beyond the Proposed Development Site, and impacts on a pair of pine marten would therefore be significant at a Local scale.

7.8.252 Pine marten utilise open upland habitats in addition to woodland. Pine marten evidence around the Headpond area was sparse, indicating that this area is not of particular importance to the species, and this is consistent with Harris and Yalden[62], which states that pine marten prefer well-wooded areas, and that areas devoid of tree or shrub cover, including open moor, are little used.

7.8.253 Woodland loss would be extremely minor and be restricted to 1.2 ha in the LCW area. As described for the Pre-Construction and Enabling, individual pine marten require approximately 86 to 166 ha of woodland[69] within their territories, with a pair of pine marten requiring between 194 ha and 274 ha woodland[62,70,71,72]. The 1.2 ha of woodland lost to the LCW would therefore represent between 0.7% and 1.4% of the woodland habitat within the territory of a single pine marten, or between 0.4% and 0.6% within that of a breeding pair. It is therefore possible that the loss of this woodland could have a perceptible negative effect on a single pine marten, given that it may exceed 1% of a single territory. Pine marten have large home ranges, it is therefore expected that the territories of any pine marten using the Proposed Development Site would extend far beyond it into the abundant surrounding suitable habitat. Negative impacts on a single pine marten therefore have the potential to negatively impact the local population of the species, and would therefore be significant at a local scale.

7.8.254 Any contraction in carrying capacity would not be significant at the regional scale of NHZ 7, which encompasses abundant suitable pine marten habitat including numerous wooded valleys and blocks of conifer plantation, and would hold a significant proportion of the estimated 3,700 pine marten in Scotland[73].

7.8.255 Thus, direct loss of pine marten habitat and dens as a result of Construction is predicted to have a **Permanent Adverse effect of Local significance**, which is **Not Significant.**.

Mortality of Pine Marten

7.8.256 For the same reasons described for the Pre-Construction and Enabling phase, direct harm to pine marten during Construction is very unlikely.

7.8.257 Consequently, there would be **Negligible effect** on pine marten from direct mortality during the Construction phase and this is **Not Significant**.

Disturbance of Pine Marten

7.8.258 NatureScot consider disturbance to be possible within 30 m of a non-breeding pine marten den and 100 m for a breeding den[74].

7.8.259 Four possible pine marten dens are within 30 m of the Proposed Development - PM01, PM03, PM04 and PM09. Disturbance of PM01, PM03 and PM04 during the Construction phase would only result from the use of the Balnain Main Access and northern Access Track by vehicles (given that all infrastructure in this area would be built during the Pre-Construction and Enabling phase). No further Construction phase works are proposed in this area. PM09 is within the footprint of the LCW and any disturbance to this possible den would likely immediately precede its destruction, thus impacts from disturbance would be as discussed above for the loss of this refuge. No additional possible pine marten dens are known within 100 m.

7.8.260 Disturbance would be over prolonged periods, given a Construction timescale of approximately eight years, although it would occur at various times and locations within the Proposed Development Site, depending on precise construction activity at any point. At worst, disturbance could cause PM01, PM03 and PM04 to be unsuitable for pine marten for the duration of the Construction period, although impacts are unlikely to be this extreme given that, as discussed for the Pre-Construction and Enabling phase, the Balnain Main Access is already used by forestry and estate vehicles, and thus pine marten using adjacent habitat/refuges are likely already acclimatised to some level of vehicular disturbance, and they are located, at nearest, 15 m from the track.

[69] NatureScot (2024) *Pine Marten* (online) Available at: https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/pine-marten.
[70] Halliwell, E.C. (1997) *The ecology of red squirrels in Scotland in relation to pine marten predation*. PhD Thesis, University of Aberdeen.
[71] Balharry, D. (1993). *Factors affecting the distribution and population density of pine martens* (Martes martes L.) *in Scotland.* PhD Thesis, University of Aberdeen.
[72] Bright, P.W. & Smithson, T.J. (1997). *Species recovery programme for pine marten in England: 1995-1996.* Unpublished report to the People's Trust for Endangered Species. London and English Nature, Peterborough.
[73] Mathews F, Kubasiewicz LM, Gurnell J, Harrower CA, McDonald RA, Shore RF. (2018) *A Review of the Population and Conservation Status of British Mammals*. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough. ISBN 978-1-78354-494-3.
[74] NatureScot (2025) *Standing advice for planning consultations – Pine Marten* (online) Available at: https://www.nature.scot/doc/standing-advice-planning-consultations-pine-martens.

7.8.261 The disturbance of four possible pine marten dens could impact, at most, eight individuals (four pairs). The actual number of pine marten which would be disturbed is likely to be less than this for the reasons described for the Pre-Construction and Enabling phase.

7.8.262 As previously discussed, any temporary contraction in carrying capacity would not be significant at the regional scale of NHZ 7, which encompasses abundant suitable pine marten habitat, and would hold a significant proportion of the national population.

7.8.263 Disturbance would only take place until construction activities were complete and therefore any impacts on pine marten from disturbance would be temporary. Disturbance to pine marten dens during the Construction phase is considered a **Temporary Adverse Effect of Local significance**, which is **Not Significant.**.

7.8.264 For the reasons described as for the Pre-Construction and Enabling phase, a **Negligible effect** on commuting/foraging pine marten is expected due to disturbance from construction activities, which is **Not Significant**.

Operational Phase

Impacts on Retained Pine Marten Habitat

7.8.265 Indirect effects on retained pine marten habitat would be so slight as to be imperceptible. Woodland favoured by pine marten is dry and there is no likelihood of perceptible hydrological impacts from the permanent Access Track on retained adjacent dry woodland, and although there may be minimal floristic changes in close proximity to permanent Access Track constructed through or beside retained woodland, this would impact a negligibly small proportion of retained woodland, and would have no likely impact on the local pine marten population. Air pollution impacts on habitats have been scoped out. Following Construction, no further suitable habitat, including woodland, would be removed for the Proposed Development.

7.8.266 Thus, there would be **No effect** in relation to habitat loss during the Operational phase and this is **Not Significant**.

Mortality of Pine Marten

7.8.267 The effect of direct mortality on pine marten during Operation would be, at most, similar to that discussed above for Construction.

7.8.268 Consequently, direct mortality of pine marten during Operation would have **Negligible effect**, which is **Not Significant**.

Disturbance of Pine Marten

7.8.269 Lighting at the LCW during Operation would be motion-operated and therefore not permanently on, and the extent of woodland affected by it would be negligibly small compared to the enormous extents of woodland on the slopes around and above Loch Ness. This would therefore have very limited impact on pine marten.

7.8.270 Maintenance attendance would be infrequent and small-scale. Such attendance would take place largely in daylight, and is not liable to cause any appreciable disturbance of pine marten.

7.8.271 Consequently, disturbance of pine marten as a result of Operation of the Proposed Development would have **Negligible effect** and this is **Not Significant**.

Impacts on Adder and Slow Worm

7.8.272 No specially protected reptiles are present in Scotland. Adder and slow worm (and common lizard) are however protected from intentional or reckless killing or injury. The results of the below assessment do not negate the legal requirements relating to these species, which are discussed in **Section 7.9 Additional Mitigation.**

Pre-Construction and Enabling Phase

Direct Loss of Adder and Slow Worm Habitat

7.8.273 The Development Site as a whole is not considered of particular importance to adder or slow worm. This is because it is overall suboptimal habitat, owing to a lack of widespread cover and the high altitude of most of the Development Site. This is discussed in more detail for the Construction phase, below.

7.8.274 The Pre-Construction and Enabling area is the most likely part of the Proposed Development within which that adder and slow worm would be encountered, with its lower altitude, proximity to an adder sighting (recorded by

trail camera CT04) and more suitable habitat (including gappy woodland and bracken with open heathy areas). However, the vast majority of more suitable habitat along the lower River Coiltie valley would be unaffected (loss to compounds and access tracks would be restricted to very small proportions of the abundant open heathland, and very limited dense birchwood), and suboptimal habitats similar to those lost to the Headpond and other access tracks and compounds are very extensive in the surrounding area and across the 81 km^2 of the estate.

7.8.275 In view of these points, direct loss of adder/slow worm habitat during the Pre-Construction and Enabling phase, and associated reduction in carrying capacity for their local populations, is considered a **Negligible effect**, which is **Not Significant**.

Mortality of Adder and Slow Worm

7.8.276 As mentioned above, the Proposed Development Site as a whole is not considered to be of particular importance to adder or slow worm, though there is some suitable habitat within with the Pre-Construction and Enabling area, and an adder sighting (recorded by CT04) occurred here.

7.8.277 During the active season, when temperatures are sufficiently warm, adder and slow worm would be readily able to move away from construction activities. At other times of year, the risk of accidental injury/mortality of amphibians and reptiles by construction works is increased, particularly if features which could be suitable for use as refugia or hibernacula are damaged or destroyed.

7.8.278 However, the death of a small number of individuals occupying the Pre-Construction and Enabling area is extremely unlikely to have an adverse effect on the Local populations of adder and slow worm given that, as discussed above, ample more suitable habitat is present in the Local area.

7.8.279 Thus, mortality of adder and slow worm as a result of Pre-Construction and Enabling is likely to have **Negligible** effect on populations of the two species, which is **Not Significant**.

Construction Phase

Direct Loss of Adder and Slow Worm Habitat

7.8.280 As briefly mentioned above for the Pre-Construction and Enabling, the Development Site as a whole is not considered of particular importance to adder or slow worm. This is because it is overall suboptimal habitat, owing to (in the larger part of the Development Site, including the Headpond vicinity) a lack of habitats affording the cover that is often used by these species (such as bracken, scrub or open woodland), and the altitude of most of the Proposed Development Site. The Headpond has a minimum altitude of 460 m, higher than the majority of records analysed by McInerny and Minting[75], the frequency of which decreases significantly above altitudes of 250 m for adder and above altitudes of 150 m for slow worm. Edgar *et al*[76] also states that moorland used by adder and slow worm is usually at low altitude, and that adder tends not to be found in high, rugged, mountainous terrain. The incidental records of adder and slow worm were from altitudes below that of the Headpond, at 305 m (sighting) and 260 m (camera trap record) for adder, and 430 m (sighting) and 150 m (sighting) for slow worm. Although slow worm spend much of their time underground and are less likely to be detected[75], these few records are consistent with the above statement that the Proposed Development Site is for the most part not of particular importance to adder.

7.8.281 It is therefore likely that local adder and slow worm populations largely reside outside the Headpond area. As mentioned above, the Pre-Construction and Enabling area is considered to be the most likely part of the Proposed Development where adder and slow worm would be encountered, and no additional habitat loss would occur in this area during the Construction phase. In addition, as discussed for the Pre-Construction and Enabling phase, extensive similar habitat in the surrounding area and across the 81 km^2 of the estate (which includes further unaffected areas of more optimal habitat for these species, in particular towards Grotaig and Alltsigh, and at other peripheral lower-altitude locations) would be retained.

7.8.282 In view of these points, direct loss of adder/slow worm habitat as a result of the Construction phase, and associated reduction in carrying capacity for their local populations, is considered a **Negligible effect**, which is **Not Significant**.

[75] McInerny, C.J. and Minting, P.J. (2016). *The Amphibians and Reptiles of Scotland*. The Glasgow Natural History Society, Glasgow, Scotland.
[76] Edgar, P., Foster, J. and Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Mortality of Adder and Slow Worm

7.8.283 As discussed above, the Proposed Development Site is for the most part not considered to be of particular importance to adder or slow worm owing to higher altitude and lack of ideal habitat.

7.8.284 The Pre-Construction and Enabling area is considered to have the greatest suitability for adder and slow worm, however activities in this area during the Construction phase would be limited to the use of compounds and tracks created during the Pre-Construction and Enabling phase, and are not expected to extend into supporting habitats (which could result in the injury/death of reptiles).

7.8.285 During the active season, when temperatures are sufficiently warm, adder and slow worm would be readily able to move away from construction activities. At other times of year, the risk of accidental injury/mortality of amphibians and reptiles by construction works is increased, particularly if features which could be suitable for use as refugia or hibernacula are damaged or destroyed.

7.8.286 As for the Pre-Construction and Enabling phase, the death of a small number of individuals occupying the Proposed Development Site is extremely unlikely to have an adverse effect on the Local populations of adder and slow worm given that, as discussed above, ample more suitable habitat is present in the Local area, and the numbers of adder and slow worm in the Headpond area are likely to be low, if any.

7.8.287 Thus, mortality of adder and slow worm during Construction is likely to have **Negligible** effect on populations of the two species, which is **Not Significant**.

Operational Phase

Mortality of Adder and Slow Worm

7.8.288 Maintenance and Operation of the Proposed Development would require passage of vehicles along access tracks. These would be infrequent and travelling at low speed. Therefore, although adder and slow worm may use the access tracks for basking, reptile mortality by this means would be rare because, as discussed above, these species are readily able to move away from construction activities while not hibernating.

7.8.289 It is therefore concluded that there would be **Negligible Effect** on adder and slow worm during Operation of the Proposed Development and this is **Not Significant**.

Impacts on Terrestrial Invertebrates

Pre-Construction and Enabling Phase

Direct Loss of Terrestrial Invertebrate Habitat

7.8.290 There would be negligible loss of vegetation of potential high value to terrestrial invertebrate assemblages during the Pre-Construction and Enabling phase. This is because a) access from the north uses the Balnain Main Access, incurring only very slight felling impacts through widening and core path diversion, which very largely affect commercial forestry dominated by non-native conifers; b) there is no impact on the Coiltie ancient woodland, the access track being routed through an existing gap across the river at an existing ford; c) an insignificant amount of non-ancient birchwood, which is extensive in this area, would be lost; and d) the Pre-Construction and Enabling phase tracks and compounds very largely affect common forms of wet heath and locally poor forms of blanket bog (also abundant in the wider area) that would not be of significant value to the important terrestrial invertebrates identified in the baseline information.

7.8.291 Therefore, loss of habitat during the Pre-Construction and Enabling phase would have a **Negligible effect** on terrestrial invertebrates, which is **Not Significant.**.

Construction Phase

Direct Loss of Terrestrial Invertebrate Habitat

7.8.292 The vast majority of terrestrial habitat that would be lost in the Headpond area comprises blanket bog and wet heath; moderate extents of dry heath would also be lost, and the existing Loch nam Breac Dearga. Small areas of acid grassland/flush and wet sphagnum-rich habitat (the most potentially suitable habitats of the important species listed in **Section 7.6 Baseline Environment, Terrestrial Invertebrates**) would be lost, and this loss is permanent.

7.8.293 The wet sphagnum-rich habitat comprises a mosaic of sphagnum and open water adjacent to a small lochan. The amount of this that would be lost to the Headpond is extremely localised, amounting to only approximately 0.09

ha. Approximately 0.13 ha of similar habitat exists immediately north of the Headpond around Loch nan Oighreagan and the other minor lochans nearby, and this would be retained. It was in the vicinity of these retained lochans that an incidental sighting of an unidentified emerald dragonfly took place. Further similar suitable habitat is widespread but localised in the surrounding area. For example, approximately 0.03 ha is present adjacent to Lochan Dubh (west of the Permanent Access Track and, although not closely inspected during habitat surveys, approximately 2 ha is known to present adjacent to Loch Dubh and Loch na Faoileige, north and northwest of the Pre-Construction and Enabling area. Desk study records indicate the presence of northern emerald dragonfly at Lochan Dubh and brilliant emerald dragonfly at Loch Dubh. These retained areas are considered of higher importance to emerald dragonfly species than that which would be lost, and would be unaffected by works.

7.8.294 The Proposed Development Site has some suitability for the notable cranefly *Tipula limbata*, and records of *Tipula limbata* within or adjacent to the Proposed Development Site exist. A small amount of flush habitat would be lost, which is one of the preferred habitats of this species. However, the majority of habitat that would be lost is blanket bog and, given the lack of bog woodland, it is not optimal for this species. It is very unlikely that *Tipula limbata* occurs only in habitats within the Headpond, since other habitats of the same types occur more extensively beyond impact, including flush habitat (for example, of 85 locations of notably species-rich basic flushes, only four are likely to be impacted by the Proposed Development).

7.8.295 Only a very small proportion of the flush/grassland habitats which support the foodplants of the relevant notable butterfly species – particularly violet species used by small pearl-bordered fritillary, which are known to be present – would be lost to the Headpond. A large amount of this habitat would be retained, particularly on the south facing lower slopes of Glas-bheinn Mhor, and along the Allt Coire an Ruighe and River Coiltie, none of which would be affected.

7.8.296 In view of the above, a very limited extent of habitat potentially suitable for important terrestrial invertebrates would be lost to the Proposed Development, and much more potentially suitable habitat would be retained.

7.8.297 Therefore, loss of habitat during Construction is considered to have, at most, a **Permanent Adverse effect of Local Significance** on important terrestrial invertebrates, which is **Not Significant.**.

Operational Phase

Impacts on Retained Terrestrial Invertebrate Habitat

7.8.298 No significant impacts on retained suitable habitats are anticipated during Operation because no further habitat would be lost, and with rare exception (a recorded basic flush just beyond the Main Dam) retained damp/wet habitats of potential suitability for terrestrial invertebrates would continue to receive water naturally from surrounding slopes or rainfall, and are not expected to be degraded.

7.8.299 Consequently, impacts on retained habitats during Operation would have a **Negligible effect** on important terrestrial invertebrates, which is **Not Significant**.

7.9 Additional Mitigation

7.9.1 Embedded design mitigation and standard environmental measures are set out in **Section 7.7: Embedded Mitigation** and have been accounted for in the above assessment.

7.9.2 Specific mitigation measures would be implemented to avoid or minimise adverse effects on ecological features. Although mitigation is not required to ameliorate non-significant effects (i.e. where assessed as Locally significant or of Negligible significance), measures would in some cases still be implemented where these can be readily achieved and represent best practice or are required to ensure compliance with legislation.

Habitats

7.9.3 Proposed habitat measures that are not already embedded represent compensation and enhancement and not mitigation, and therefore should not be considered during assessment of residual effects. Habitat compensation and enhancement measures are summarised in **Section 7.12 Compensation, Enhancement and Monitoring**, set out in **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** and shown on **Figure 6.4.1: Outline Landscape and Ecological Mitigation – Project Wide (Volume 3: Figures)**.

Pre-works Surveys for Protected Species

7.9.4 Even where the effects on protected species are predicted to be Not Significant, the refuges of several of the species present (or with the potential to become present), and the animals themselves, are nevertheless subject to legal protection regardless of the importance of individual refuges or populations. Additionally, although the Pre-Construction and Enabling phase works may proceed in 2026, Construction phase works would be later, by which time protected species may well have established new refuges and/or the distribution of the species within the Proposed Development may have changed. Currently, and bearing in mind that the protected species surveys informing this EIA were carried out in 2024, NatureScot consider survey data for protected species to be out-of-date after two years.

7.9.5 To comply with protected species legislation, policy and best practice, pre-works protected species surveys (excluding bats, for which see below) would be carried out no more than three months before works (including Pre-Construction and Enabling such as vegetation clearance or creation of compounds) commence, in order to avoid project delays in the event that derogation licensing and associated mitigation is required (should protected species refuges be found that would be subject to damage, disturbance or obstruction by the works). Further seasonal constraints apply for some surveys – for water vole, surveys should ideally take place in June, July and August, and the NatureScot water vole licence application form states that surveys must have been completed within the last 18 months.

7.9.6 The surveys would cover protected species known to occur in the vicinity of proposed works, or for which there is a reasonable possibility of such species moving into this vicinity. This would comprise surveys for otter, water vole, badger, pine marten and red squirrel. These surveys would follow standard guidance and would take place within the survey buffers typically required by NatureScot.

7.9.7 GLTA of any trees which may be directly impacted (i.e. subject to lopping or felling) would also be conducted, in line with BCT Good Practice Guidelines[25]. Additional bat roost survey (for example, dusk emergence surveys or tree-climbing/endoscope survey) would be carried out as necessary on trees which are found to have Potential Roost Features (PRF). Pre-works bat roost surveys should be completed as close to the start of works as possible, and always within the most recent survey period pre-works.

7.9.8 All surveys would be undertaken by a suitably experienced ecologist.

7.9.9 Depending on findings of the pre-works survey, the results would be used to inform species-specific Species Protection Plan (SPPs) (see **Section 7.9 Additional Mitigation**).

Species-specific Additional Mitigation

7.9.10 Embedded mitigation is set out in **Section 7.7**. **Embedded Mitigation** includes, appointment of an ECoW, micro-siting of Proposed Development components and implementation of general measures related to pollution prevention, water crossing design, sensitive lighting and wildlife protection.

7.9.11 Where SPPs are mentioned below, these would be appended to the oCEMP and submitted to the appointed Construction Contractor, The Highland Council and NatureScot, and would provide detailed information on the measures which must be adopted during construction works to comply with relevant legislation and reduce impacts on the relevant species.

Bats

7.9.12 Species-specific additional mitigation for bats would be informed by the results of GLTA and pre-works surveys. If roosts were found to be present, and would be destroyed/ disturbed by works, then this would constitute an offence, and a bat derogation would be required from NatureScot to permit such works. A bat derogation licence would therefore be obtained, and an SPP would be produced to support the application for such a licence. The SPP would likely include (but not be limited to) specifications relating to ECoW supervision of works, restrictions on the timing of works/ lighting and details on works methods such as soft-felling.

7.9.13 Depending on the exact nature of any roosts to be lost, the SPP would include details of compensation measures, most likely comprising the installation of bat boxes (see **Section 7.12 Compensation, Enhancement and Monitoring**).

Otter

7.9.14 It is expected that (as informed by the 2024 surveys) four otter lay-ups would be destroyed by works. Works resulting in the destruction of otter refuges require an otter derogation licence from NatureScot. An otter licence would therefore be obtained, and an SPP would be produced to support the application for such a licence. The

SPP would likely include (but not be limited to) specifications relating to ECoW supervision of works, restrictions on the timing of works and methods used. The exact content of the SPP would be informed by the results of pre-works surveys.

7.9.15 Until such as time as an appropriate otter derogation licence is obtained, works exclusion zones would be implemented around any otter refuges identified during pre-works survey to prevent destruction/ disturbance. These would comprise a 30 m buffer around non-breeding refuges extended to 100 m where works are particularly disturbing (e.g. blasting, piling), or a 200 m buffer around possible breeding holts.

Water Vole

7.9.16 It is expected that (as informed by the 2024 surveys) a minimum of approximately 722 water vole burrows, at least some of which are likely to be active at the time of Construction, would be destroyed by Construction of the Proposed Development (including by Pre-Construction and Enabling such as vegetation clearance or creation of compounds). Further active water vole burrows are likely to be disturbed by Construction. Works resulting in the destruction and/or disturbance of active water vole burrows requires a water vole derogation licence from NatureScot. A water vole derogation licence would therefore be obtained, and an SPP would be produced to support the application for such a licence. The SPP would be informed by the results of pre-works surveys, and would likely include (but not be limited to):

- specifications relating to ECoW supervision of works;
- restrictions on the timing of works;
- restrictions on the works methods to be used; and
- detailed methods for translocation / displacement of water voles.

7.9.17 It would be appropriate to carry out translocation, or, locally, to potentially displace water voles by habitat removal[30]. Translocated voles would be trapped and moved to suitable created habitat established beforehand, in part as compensation for lost water vole habitat (see compensatory water vole habitat creation in **Section 7.12 Compensation, Enhancement and Monitoring**). Translocation / displacement would follow best practice as described in The Water Vole Mitigation Handbook[30] and Water Vole Conservation Handbook[29], including by:

- Creating the compensatory habitat / receptor sites in advance of works, as described below in **Section 7.12 Compensation, Enhancement and Monitoring;**
- Carrying out trapping between mid-March and 15 April inclusive, as is suggested for upland Scotland[30];
- Assessing whether receptor site vegetation is sufficiently developed prior to release, and if not, consider taking trapped water voles into captivity or holding them in ‘complete cages’ within the receptor site until vegetation is suitable;
- Releasing water voles using soft-release protocol[30] once the receptor site is ready; and
- For water voles less than 50 m from the edge of works, potentially displacing individuals out of the area into adjacent, suitable retained habitat as is set out as an option within guidance, though evidence suggests this may not always be effective[77,29].

7.9.18 Given the challenging nature of the terrain within the Proposed Development Site, it may not be practical to fully implement all measures suggested in The Water Vole Mitigation Handbook[30], and alternatives to, for example, the construction of water vole exclusion fencing around the full trapping area may need to be considered, as informed by the results of pre-works surveys.

7.9.19 The precise methods of water vole trapping, translocation, displacement and habitat creation, and any deviations to standard guidance would be set out in detail in the SPP. These activities would need to be carried out under a water vole derogation licence issued by NatureScot.

Pine Marten

7.9.20 It is expected that (as informed by the 2024 surveys) one possible pine marten den would be destroyed by construction works, and three possible pine marten dens would be disturbed by Construction. Works resulting in the destruction and/or disturbance of pine marten dens require a pine marten derogation licence from NatureScot. This would therefore be required for construction works, and an SPP would be produced to support the application for such a licence. The SPP would likely include (but not be limited to) specifications relating to ECoW supervision

[77] Gow, D, Andrews, A & Smith, D. (2012). *Water vole mitigation guidance - Important updates for evidence-based good practice*. Unpublished. http://www.watervoles.com/index_htm_files/water%20vole%20mitigation%20guidance.pdf

of works, restrictions on the timing of works and methods used. The exact content of the SPP would be informed by the results of pre-works surveys.

7.9.21 Until an appropriate pine marten derogation licence is obtained, works exclusion zones would be implemented around any possible pine marten refuges identified during pre-works survey to prevent destruction/ disturbance. These would comprise a 30 m buffer around possible pine marten dens extended to 100 m where works are particularly disturbing (e.g. blasting, piling) or where dens are known or suspected of being used for breeding.

Red Squirrel

7.9.22 Species-specific additional mitigation for red squirrel would be informed by the results of pre-works surveys for red squirrel dreys, and by additional pre-works checks undertaken by the ECoW immediately prior to the relevant works.

7.9.23 All felling of trees containing red squirrel dreys, or felling or construction works close enough to cause disturbance, would be carried out under licence issued by NatureScot. Disturbance of dreys is possible within 50 m of a breeding drey during the breeding season (February to September, inclusive); or within 5 m (or the neighbouring tree, whichever is less) for non-breeding dreys (i.e. all dreys outside the breeding season, or those confirmed as non-breeding within the breeding season). An SPP would be produced to support the application for such a licence. The SPP would likely include (but not be limited to) details relating to ECoW supervision and the timing and nature of tree felling.

7.9.24 Should any red squirrel dreys be found (or suspected) by pre-works survey or pre-works ECoW checks, they would be monitored to confirm whether they are occupied and (if in the breeding season) to establish their breeding status. If a drey is considered to be occupied but not being used for breeding, the tree would be climbed (where this is safely possible) by a qualified ecologist and the drey carefully inspected for the presence of red squirrel. Any animals present would likely leave the drey on approach of the tree climber. Where tree climbing is not possible, the tree would be subject to observations over at least three dawns in suitable weather conditions, either by an ecologist or camera traps[78]. Once the ecologist is satisfied that the drey is empty, the tree would immediately be felled. Felling is not normally permitted by NatureScot where it is suspected that the trees contains a drey which is at that time is being used for breeding, until such time as breeding activity at the drey has finished. Thus, felling would preferably take place outside the breeding season (February to September, inclusive).

7.9.25 Until such as time as an appropriate red squirrel derogation licence is obtained, works exclusion zones would be implemented around any red squirrel dreys identified during pre-works survey (or pre-works checks by the ECoW) to prevent destruction / disturbance. These would be set at the distances indicated above for the disturbance of dreys (50 m for active breeding dreys and otherwise 5 m or neighbouring tree).

Badger

7.9.26 Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended). This makes it an offence to wilfully kill, injure or take a badger; or to intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in a sett. It is also an offence to knowingly cause or permit an act that would cause any of these offences.

7.9.27 Species-specific additional mitigation for badger would be informed by the results of pre-works surveys for badger setts, and by additional pre-works checks undertaken by the ECoW immediately prior to the relevant works. Any works which could damage, destroy, obstruct or disturb a badger sett would be done under licence issued by NatureScot. An SPP would be produced to support the application for such a licence. The SPP would likely include (but not be limited to) details relating to ECoW supervision and the timing and nature of works.

7.9.28 Until an appropriate badger derogation licence is obtained, works exclusion zones would be implemented around any badger setts identified during pre-works survey to prevent destruction/ disturbance. These would comprise a 30 m buffer around setts (as recommended by NatureScot[79]), extended to 100 m where works are particularly disturbing (e.g. blasting, piling).

Amphibians and Reptiles (including adder and slow worm)

7.9.29 Any features identified by the ECoW during Pre-Construction and Enabling checks as having suitability to be used by amphibians or reptiles as terrestrial refugia or hibernacula would be carefully dismantled by hand or under a watching brief by the ECoW in the summer months (when amphibians and reptiles are active) closest to the Construction period of the infrastructure in question. Any amphibians or reptiles found during these works would be allowed to safely leave the area or would be captured and relocated to suitable habitat elsewhere (if safe to

[78] https://www.nature.scot/doc/standing-advice-planning-consultations-red-squirrels
[79] https://www.nature.scot/doc/standing-advice-planning-consultations-badgers

do so). For adder, this would at minimum be the opposite side of the River Coiltie from the Pre-Construction and Enabling, or similarly suitable heathland with bracken and patchy trees adjacent to the Euroforest track. Any potential refugia/hibernacula that cannot be avoided by construction works would be rebuilt in a suitable location as advised by the ECoW.

Terrestrial Invertebrates

7.9.30 No specific additional mitigation is proposed for terrestrial invertebrates.

7.10 Residual Effects

7.10.1 For the purposes of this assessment, only effects deemed to be Regionally, Nationally or Internationally Significant (according to the CIEEM method for EcIA[8]) are considered Significant in EIA terminology. On this basis, and accounting for the specified mitigation, there are three **Significant Adverse residual effects** predicted for terrestrial ecological features:

- the loss of ASNW during construction works is considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.
- The loss of montane scrub during the construction works is, in a worst-case scenario, considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.
- The loss of blanket bog during the construction works is considered a **Permanent Adverse effect** of **Regional significance**, which is **Significant**.

7.10.2 However, compensation has been proposed that is deemed to sufficiently address these significant effects such that are not considered to be any significant post-compensation effects (see **Section 7.12 Compensation, Enhancement and Monitoring** and **Section 7.13 Post-compensation Effects**).

7.10.3 The majority of mitigation described in **Section 7.9: Additional Mitigation** would be implemented to meet legal obligations and adhere to best practice guidance. Though already not significant, the magnitude of effect on water vole is expected to be reduced.

7.10.4 Following implementation of trapping and translocation (and displacement), and assuming recolonisation of the Proposed Development Site following trapping can be prevented at least partially during Pre-Construction and Enabling and Construction (thus preventing mortality of additional voles moving into the area), the number of water voles which would be killed as a direct result of works would be reduced. There are limited studies examining the success of water vole translocation, however one study[80] found that translocated water voles released in autumn were not significantly less likely to be recaptured over winter than resident water voles, with spring re-capture acting as a proxy for over-winter survival. Thus it is reasonable to assume that, given adherence to the SPP which would be informed by best practice guidance, including successful establishment of a receptor area (see **Section 7.12 Compensation, Enhancement and Monitoring**), that the number of water voles likely to be killed during Construction (estimated at 53 individuals in **Section 7.8 Assessment of Effects, Impacts on Water Vole**) would be significantly reduced. Some water vole mortality during Construction is likely to be unavoidable given the scale of works and the disruptive nature of trapping and relocation. This is difficult to quantify, and it is possible that the level of mortality may still be significant at a local level. However, this effect is expected to be temporary as, if provided with an effectively managed suitable receptor site, water vole populations would recover relatively quickly.

7.10.5 Thus, following additional mitigation, water vole population change as a result of mortality during Construction and Pre-Construction and Enabling is considered to result in a **Temporary adverse effect of Local significance**, rather than a Permanent adverse effect of Local significance, which is **Not significant**.

[80] Baker, R., Scott, D.M., Keeling, C. and Dwight, C. (2018). *Overwinter survival and post-release movements of translocated water voles: implications for current mitigation guidance*. Eur J Wildl Res 64, 56. https://doi.org/10.1007/s10344-018-1216-8

7.11 Cumulative Effects

Inter-Cumulative Effects

Scope of Assessment of Inter-Cumulative Effects

7.11.1 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location[8]. The assessment of cumulative effects has been carried out in the context of the Northern Highlands NHZ (NHZ 7). However, to assess every development in the whole of NHZ 7 would be impossible due to the number of developments this would include and the lack of available data for many. This constraint is recognised by NatureScot[12].

7.11.2 A list of schemes for which cumulative assessment may be necessary is identified in **Chapter 4: Approach to EIA** (**Volume 2: Main Report**). The full list of schemes is not reproduced here, but those most important to ecological features are considered to be those schemes which are located within 10 km of the Proposed Development Site. A 10 km buffer is considered proportionate because the habitats present within the Proposed Development Site are ubiquitous across northern Scotland, and consideration of projects any further afield would not be meaningful. However, the 10 km search distance has been extended in relation to other pumped storage hydro schemes which may impact ecological features associated with Loch Ness. Some schemes have been omitted where they are already Operational (this includes Foyers Pumped Storage Hydro, which as a baseline existing scheme is accounted for in the hydrological modelling for the Proposed Development), and thus their impacts accounted for in the baseline (in accordance with CIEEM guidelines[8]), or where they are very small schemes unlikely to have a significant effect on any features, either alone or cumulatively with the Proposed Development.

7.11.3 The key schemes for cumulative assessment for terrestrial ecology are therefore those set out in **Table 7-8: List of Schemes Most Important to Cumulative Assessment**.

Table 7-8: List of Schemes Most Important to Cumulative Assessment

Scheme	Description	Status	Location OSGR	Approximate distance from Proposed Development Site
Bhlaraidh Wind Farm Extension	Extension to existing Bhlaraidh Wind Farm comprising up to fifteen turbines with maximum blade tip height of 180 m with associated infrastructure and access.	Consented	NH 39265 20931	3.4 km
Loch Kemp Pumped Storage Hydro	New 600 MW pumped storage scheme utilising the existing Loch Kemp as the upper storage reservoir and Loch Ness as the lower reservoir with associated infrastructure and access.	Application	NH 46888 16474	6.1 km
Chrathaich Wind Farm	New wind farm comprising a total of fourteen turbines with maximum blade tip height of up to 149.9 m with associated infrastructure and access.	Application	NH 35489 23998	8.9 km
Loch Liath Wind Farm	New wind farm comprising a total of thirteen wind turbines with maximum blade tip height of 200 m with associated infrastructure and access.	Application	NH 35796 23139	9.5 km
Cnoc Farasd Wind Farm	New wind farm comprising a total of up to nine wind turbines with a maximum blade tip height of 220 m, battery energy storage system (BESS) and associated infrastructure.	Pre-Application (Scoping)	NH 41271 31596	10 km
Loch na Cathrach Pumped Storage Hydro (formerly Red John Pumped Storage Hydro)	A 450 MW pumped storage scheme involving creation of a new upper storage reservoir and using Loch Ness as the lower reservoir with associated infrastructure and access.	Consented	NH 61470 32705	19.2 km
Ness Weir II	A proposed weir at the north end of Loch Ness, associated with Loch Kemp Pumped Storage Hydro. There is no detailed information available on this weir.	Pre-Application	NH 61261 39589	20 km (19 km to Balnain Main Access)

7.11.4 An assessment of the potential cumulative effects of the Proposed Development is given for each of the schemes listed in **Table 7-8: List of Schemes Most Important to Cumulative Assessment**. It seeks to determine whether the Proposed Development could act cumulatively with any of these schemes to negatively affect the conservation status of these features within NHZ 7 (or more widely).

Bhlaraidh Wind Farm Extension

7.11.5 No significant adverse residual effects were reported in the Bhlaraidh Wind Farm Extension EIAR.

7.11.6 The Bhlaraidh Wind Farm Extension does not report significant adverse effects on designated sites relevant to terrestrial ecology. Since the Proposed Development also lacks significant effects on designated sites relevant to terrestrial ecology, there is no likelihood of significant cumulative effects.

7.11.7 TheBhlaraidh Wind Farm Extension also reports no significant effects on habitats. Given also the much smaller footprint of the wind farm compared to the Proposed Development, there is no likelihood of significant cumulative effects.

7.11.8 Following mitigation/ compensation, the residual effects of Bhlaraidh Wind Farm Extension on protected/ important terrestrial species are considered to be negligible. The effects of this scheme are likely to be extremely minor when compared to the Proposed Development, especially given that Construction would be more localised and limited to only turbines and associated infrastructure. In particular, there would be no effect on water vole as micro-siting away from water vole burrows would be possible for this scheme. There is no possibility of negligible effects acting cumulatively with the effects of the Proposed Development to increase significance. Therefore, for protected/ important terrestrial species, there is no likelihood of significant cumulative effects.

7.11.9 It is therefore concluded that Proposed Development would not act cumulatively with Bhlaraidh Wind Farm Extension to give rise to additional significant adverse effects on ecological features.

Loch Kemp Pumped Storage PSH

7.11.10 No significant adverse residual effects were reported in the Loch Kemp PSH EIAR.

7.11.11 The Loch Kemp PSH does not report significant adverse effects on designated sites relevant to terrestrial ecology. It has an initial significant effect on SAC-designated woodland, for which compensatory woodland measures are proposed. Since the Proposed Development also lacks significant effects on designated sites relevant to terrestrial ecology (and includes Loch Kemp PSH in Operational hydrological modelling), there is no likelihood of significant cumulative effects.

7.11.12 The Loch Kemp PSH also reports no significant effects on habitats. Loch Kemp PSH reports impacts on far less blanket bog than the Proposed Development and provides compensatory blanket bog measures, and as such cumulative blanket bog impact with Loch Kemp PSH would not reach a significance level higher than that of the Proposed Development alone (which itself is considered Regionally significant in the case of blanket bog). The effect of Loch Kemp PSH on ancient woodland is reportedly much larger than that of the Proposed Development, however it is also subject to compensation measures to enhance and expand the affected woodland. The Loch Kemp EIAR concludes that there will thus be no adverse effect. Therefore, there is no likelihood of significant cumulative effects.

7.11.13 Following mitigation/compensation, no significant residual effects from Loch Kemp PSH on protected/ important terrestrial species are considered likely. It is extremely unlikely that the non-significant effects of this scheme would act together with the non-significant effects of the Proposed Development to produce significant adverse effects. Therefore, for protected/ important terrestrial species, there is no there is no likelihood of significant cumulative effects.

7.11.14 It is therefore concluded that Proposed Development would not act cumulatively with Loch Kemp PSH to give rise to additional significant adverse effects on terrestrial ecological features.

Chrathaich Wind Farm

7.11.15 No significant adverse residual effects were reported in the Chrathaich Wind Farm EIAR.

7.11.16 The Chrathaich Wind Farm does not report significant adverse effects on designated sites relevant to terrestrial ecology. Since the Proposed Development also lacks significant effects on designated sites relevant to terrestrial ecology, there is no likelihood of significant cumulative effects.

7.11.17 The Chrathaich Wind Farm also reports no significant effects on habitats. Given also the much smaller footprint of the wind farm compared to the Proposed Development, there is no likelihood of significant cumulative effects.

7.11.18 Following mitigation / compensation, no significant residual effects from Chrathaich Wind Farm on protected / important terrestrial species are considered likely. The impacts of this scheme are likely to be extremely minor when compared to the Proposed Development, especially given that Construction would be more localised and limited to only turbines and associated infrastructure. It is extremely unlikely that the non-significant effects of this scheme would act together with the non-significant effects of the Proposed Development to produce significant effects. Therefore, for protected / important terrestrial species, there is no likelihood of significant cumulative effects.

7.11.19 It is therefore concluded that Proposed Development would not act cumulatively with Chrathaich Wind Farm to give rise to additional significant adverse effects on ecological features.

Loch Liath Wind Farm

7.11.20 No significant adverse residual effects were reported in the Loch Liath Wind Farm EIAR.

7.11.21 The Loch Liath Wind Farm does not report significant adverse effects on designated sites relevant to terrestrial ecology. Since the Proposed Development also lacks significant effects on designated sites relevant to terrestrial ecology, there is no likelihood of significant cumulative effects.

7.11.22 The Loch Liath Wind Farm also reports no significant effects on habitats, with expanded blanket bog restoration measures proposed following initial NatureScot objection. Given also the much smaller footprint of the wind farm compared to the Proposed Development, there is no likelihood of significant cumulative effects.

7.11.23 Following mitigation / compensation, no significant residual effects from Loch Liath Wind Farm on protected / important terrestrial species are considered likely, and the measures detailed within the EIAR are considered to results in a minor positive effect on all features. There is no possibility of positive effects acting together with the effects of the Proposed Development to produce additional significant adverse effects. Therefore, for protected/ important terrestrial species, there is no likelihood of significant cumulative effects.

7.11.24 It is therefore concluded that Proposed Development would not act cumulatively with Loch Liath Wind Farm to give rise to additional significant adverse effects on ecological features.

Cnoc Farasd Wind Farm

7.11.25 Cnoc Farasd Wind Farm was still at pre-application stage at the time of writing and as such no EIAR is available.

7.11.26 Cnoc Farasd Wind Farm is small compared to the Proposed Development and appears to be situated mainly within non-native conifer plantation. Few, if any, significant effects from Cnoc Farasd Wind Farm are likely considering that non-native conifer plantation is not valuable habitat for the majority of protected / important terrestrial species, and that peat beneath conifer plantation is likely to be degraded. Effects on red squirrel, bats or pine marten are likely or possible, but unlikely to be significant given the lower value of conifer plantation (especially Sitka spruce plantation) to these species. However, given the anticipated very minor effects on pine marten and bats and negligible effect on red squirrel from the Proposed Development itself, there is no likelihood of significant cumulative effects. In addition, the Cnoc Farasd Wind Farm Scoping Report indicates that biodiversity enhancement would be considered.

7.11.27 It is therefore concluded that Proposed Development would not act cumulatively with Cnoc Farasd Wind Farm to give rise to additional significant adverse effects on ecological features.

Loch na Cathrach Pumped Storage Hydro

7.11.1 Significant adverse residual effects were reported in the Loch na Cathrach (formerly Red John) Pumped Storage Hydro EIAR in relation to habitats.

7.11.2 Loch na Cathrach PSH does not report significant adverse effects on designated sites relevant to terrestrial ecology. Since the Proposed Development also lacks significant effects on designated sites relevant to terrestrial ecology (and includes Loch na Cathrach PSH in Operational hydrological modelling), there is no likelihood of significant cumulative effects.

7.11.3 Loch na Cathrach PSH impacts large areas of conifer plantation. The more significant habitat impacts of Loch na Cathrach PSH concern local impacts on ancient woodland and blanket bog. The blanket bog impacted by Loch na Cathrach PSH is of much less extent than that impacted by the Proposed Development and does not include the notable bog species dwarf birch, *Sphagnum austinii* and *Sphagnum fuscum.* Consequently, the cumulative impact regarding blanket bog would not exceed that determined for the Proposed Development alone (i.e. Regionally significant).

7.11.4 In contrast, the impact of Loch na Cathrach PSH on ancient woodland is considerably larger than that of the Proposed Development, and since the Proposed Development provides extensive woodland planting (700 ha) and ancient woodland protection (55 ha) considered to go beyond compensation to provide overall enhancement (see **Section 7.12: Compensation, Enhancement and Monitoring**), there is considered to be no significant contribution to the cumulative effect by the Proposed Development.

7.11.5 No significant adverse residual effects were reported for protected / notable species. Loch na Cathrach PSH is a significant distance from the Proposed Development, and the only connectivity is via Loch Ness, which would act as the Tailpond for both Loch na Cathrach PSH and the Proposed Development. Therefore the only relevant protected / notable species in respect of possible cumulative effects is otter, for which Loch Ness is an important feature. However, both Loch na Cathrach PSH and the Proposed Development are expected to have negligible effects on otter. There is consequently no possibility of significant cumulative effects on otter.

7.11.6 It is therefore concluded that Proposed Development would not act cumulatively with Loch na Cathrach PSH to give rise to additional significant adverse effects on ecological features.

Ness Weir II

7.11.7 As noted in **Chapter 4: Approach to EIA (Volume 2: Main Report)**, there is insufficient information available on the proposed Ness Weir II (which is connected with Loch Kemp PSH) to conduct a meaningful assessment. This is in contrast to the seasonal variable Dochfour weir proposed as mitigation for the Proposed Development, which has been incorporated into the hydrological modelling for the Proposed Development. Details of Ness Weir II with hydrological modelling would be needed to determine if there were significant cumulative effects. However, if Ness Weir II proceeded then the seasonal variable weir at Dochfour would not proceed, and the impact of the Proposed Development on Loch Ness would then be reduced. Since no significant effects are predicted from the Proposed Development on terrestrial ecological features even with the seasonal variable Dochfour weir, it is improbable that the Proposed Development would make any significant contribution to cumulative effects involving Ness Weir II.

Intra-Cumulative Effects

7.11.8 It is possible for different aspects of a single development to combine to produce greater effects.

7.11.9 Regarding designated sites with terrestrial interests, the Proposed Development itself incurs effects at Pre-Construction and Enabling, Construction and Operation phases that are negligible, to such a degree that the cumulative effect of all phases would clearly remain negligible.

7.11.10 Significant habitat impacts arise at the Headpond, with minor additional impacts elsewhere. This means that Construction habitat impacts are far more pronounced in effect than Pre-Construction and Enabling and Operational effects (where there are any). As such, there is not considered to be any intra-cumulative effect on habitats that would be more significant than the highest assessed effect significance of each phase individually.

7.11.11 For protected and notable species, impacts from the Operational phase would be extremely minor and it is therefore unlikely that they would work in combination with effects from the other phases to result in an effect of elevated significance.

7.11.12 All impacts on bats from the Pre-Construction and Enabling and Construction phases are considered to result in negligible effects and, given the relatively small areas of sub-optimal habitat involved, are extremely unlikely to work in combination to produce a significant effect.

7.11.13 For otter, pine marten and water vole, the bulk of habitat loss would occur during the Construction phase (resulting in an adverse effect of local significance), with a much smaller amount being lost during the Pre-Construction and Enabling phase (resulting in a negligible effect). Given the large territories of otter and pine marten, the combined area that would be lost to both phases is still only likely to impact a very small number of individuals, and the effect on the otter and pine marten populations as a whole would not approach regional significance. Similarly for water vole, vast amounts of similar suitable habitat exist in the surrounding area and the combined loss of habitat would not significantly affect the species at a regional scale. For water vole this also applies to mortality, given that the combined number of water voles which could potentially be killed during both phases would also not be significant at a regional scale. Thus, the combined effects for the above impacts would not exceed local significance for any of the three species.

7.11.14 Both the Pre-Construction and Enabling and Construction phases would result in potential disturbance to otter and pine marten, and it is possible that disturbance over the combined length of time for both these periods could have an elevated effect on these species when compared to the phases individually. When combined, the time

over which disturbance would have an effect on these species would increase from approximately two and a half years (for Pre-Construction and Enabling) and approximately five and a half years (for Construction) to a combined total of approximately 8 years, but would remain temporary. For both otter and pine marten, disturbance to refuges during the Construction phase is considered to result in an adverse effect of local significance. Given that, for both species, only a very small number of individuals would be impacted during the Pre-Construction and Enabling and Construction phases, and the effect on the populations as a whole would not approach regional significance, in-combination effects would not exceed local significance.

7.11.15 For adder and slow worm, the most suitable habitat would be lost during the Pre-Construction and Enabling phase with less suitable habitat lost during Construction. When combined, the amount of suitable habitat lost would still not significantly affect these species at a local scale given the vast amount of retained habitat in the surrounding area which is considered more suitable. Thus, a combined negligible effect is considered appropriate.

7.11.16 For invertebrates, most of the suitable habitat would be lost during the Construction phase, with a small amount of loss during the Pre-Construction and Enabling. When combined, the extent of habitat loss would not significantly affect terrestrial invertebrates at a regional scale, given that only small amounts of highly suitable habitat would be lost. Thus, the in-combination effect would not exceed local significance.

7.11.17 It is concluded that there are no intra-cumulative effects that would exceed in significance that stated for the individual effects alone.

Cumulative Assessment Conclusion

7.11.18 It is concluded that there are no significant cumulative effects for terrestrial ecology.

7.12 Compensation, Enhancement and Monitoring

7.12.1 Owing to the three Significant adverse residual effects remaining after mitigation, as set out in **Section 7.10 Residual Effects**, compensation measures are proposed. The proposed compensation measures are very extensive and include enhancement of a large area of ASNW, and are therefore considered to provide overall enhancement. This is reflected in the Biodiversity Net Gain (BNG) score of 22% (see **Appendix 7.5: Biodiversity Net Gain (Volume 5: Appendices)**). Note that blanket bog is not accounted for in the BNG calculation – BNG metrics regard this habitat as irreplaceable and require bespoke compensation, which is set out in **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**. Additionally, ancient woodland also does not contribute to BNG scores and bespoke compensation is required – in this case, this comprises the enhancement of existing Coiltie ancient semi-natural woodland, and the extensive native woodland planting is also considered to contribute to compensation for ancient woodland loss. Since blanket bog and ancient woodland are excluded from the BNG score calculation, the relevant habitat losses (primarily to the Headpond) in particular involve wet heath and natural oligotrophic standing water (mainly Loch nam Breac Dearga), and smaller areas of dry heath and grassland including species-rich forms on the western side of Meall Fuar-mhonaidh.

Compensation

Habitats

7.12.2 **Appendix 6.4 Outline Landscape and Ecological Management Plan (Volume 5: Appendices)** sets out a range of measures that would be implemented by the Proposed Development. From an ecological perspective, this is intended to: a) provide adequate compensation for residual significant ecological effects, and b) beyond this deliver sufficient measures to attain biodiversity net gain and to provide other non-habitat biodiversity enhancement. In summary, the principal measures to provide compensation and enhancement for terrestrial ecology comprise the following (enhancement measures for notable breeding bird species are also proposed, relevant to **Chapter 8: Ornithology (Volume 2: Main Report)**):

- Enhancement of 54 ha of ancient semi-natural woodland, through protection from deer to encourage regeneration and recruitment which are currently lacking;
- Provision of 22 ha regeneration buffer of 30 m width where feasible around the Coiltie ancient semi-natural woodland, for encouragement of natural expansion by regeneration;
- Planting of a combined area of nearly 700 ha of native woodland and montane scrub, including:
  - extensive Upland Birchwood supplemented by native Scots pine woodland;
  - riparian woodland along watercourses;

  - montane dwarf birch planting and regeneration zones, supplemented with juniper and Scots pine; and
  - montane willow scrub planting and regeneration zone (including seed harvesting of whortle-leaved willow);
- Reduction in deer density on retained open moorland (across approximately 59 km^2) from 9.5 per km^2 at last count to 8.5 per km^2;
- Provision of three ponds suitable for emerald dragonflies, uncommon species known to be present in the local area; and,
- Provision of suitable habitat for water voles to be translocated from the Headpond.

7.12.3 The provision of the native planting and regeneration areas results in considerable enhancement beyond compensation of losses to the Proposed Development results in a substantial biodiversity net gain of 22% (see **Appendix 7.5: Biodiversity Net Gain**).

7.12.4 Significantly, there would also be a separate provision of compensation for blanket bog loss (which as irreplaceable habitat is not included in the above biodiversity net gain calculation), which would follow the 1:10 + 10% NatureScot loss:compensation ratio or as may be otherwise approved by NatureScot. Further details on blanket bog compensation are set out in **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**. As set out in that appendix, the majority of compensation would necessarily be provided off-site. The Applicant is committed to providing sufficient compensatory peatland restoration, and through active discussion with a major landowner has identified areas in the Flow Country (within the same general region as the Proposed Development) to carry out peatland restoration, with a current expectation of combining standard open peatland restoration and forest-to-bog conversion (the latter returning plantation on deep peat back to open blanket bog, increasing the extent of open blanket bog). In this regard, see **Confidential Appendix 7.1: Off-site Peatland Restoration Proposal (Volume 6: Confidential Appendices)**.

7.12.5 The **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** would be updated Pre-Construction and Enabling, including through preparation of Method Statements and SPPs as necessary, to provide the full level of detail needed to ensure successful delivery of all mitigation and enhancement measures.

Bats

7.12.6 A bat SPP would be produced and would be required for applications for licences to destroy / disturb bat roosts (should pre-works surveys identify bat roosts be impacted by works). As part of the licence application, the SPP is likely to include compensation for any roosts lost, in the form of installing bat boxes.

7.12.1 Bat boxes would be installed in suitable locations in line with guidance provided by the BCT[81].

7.12.2 Bat boxes to be installed would be similar to those available from Schwegler, and would include a mix of those suitable for small and large groups of bats (including maternity roosts) and suitable for use in summer or for hibernation. An appropriate mix of bat boxes would include the 2F, 1FD and 2FS models, the numbers of which would be determined by the number of bat roosts which would be lost.

7.12.3 Approximately 571 ha of woodland (this excludes proposed montane scrub zones) is proposed to be planted or allowed to naturally regenerate, over 200 times larger than the approximate 1.9 ha of native woodland that would be lost. Once established this is expected to far more than compensate for bat habitat loss, providing very substantial enhancement for bats. Woodland creation/enhancement are outlined in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**.

Otter

7.12.4 An otter SPP would be produced and would be required for applications for licences to destroy / disturb otter refuges. The refuges which would be impacted by works are all lay-ups and not holts, which are considered to be of higher value. As such, no compensation for the loss of/ disturbance to these refuges is likely to be required as part of the license application.

7.12.5 No further specific compensation for otter is proposed.

7.12.6 However, riparian planting as outlined in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** is likely to partly compensate for the loss of otter habitat by improving bankside

[81] Bat Conservation Trust (2024) *Putting up your Box* (online) Available at: https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes/putting-up-your-box

cover and thus providing additional opportunities for holt and lay-up creation. This woodland may also have a beneficial effect on fish species, thus increasing the prey resource for otter. Similarly, the creation of ponds would likely benefit the amphibian population of the Proposed Development Site, also increasing the prey resources for otter.

Water Vole

7.12.7 A water vole SPP would be produced and would be required for applications for licences to damage, destroy or obstruct water vole burrows, or to disturb water voles while they use burrows.

7.12.8 The habitat which will be lost is estimated to support 53 water voles, and provision will be made to support more than this (100 water voles), to allow for the event that more water voles than anticipated are present. Suitable water vole habitat would be created to compensate for loss of such habitat (primarily to the Headpond), and to provide a receptor area for trapped water voles to be translocated to. An overview of compensatory habitat creation is provided in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**, with further details (once known post-consent) to be included within the final LEMP and water vole SPP.

7.12.9 It is not considered necessary to compensate for the full 4 km of habitat which will be lost because it is anticipated that habitat of higher quality than that which will be lost, capable of supporting a higher population density and thus requiring a shorter length to support 100 water voles, can be created.

7.12.10 Measures would include establishment of small slow-flowing channels in areas of shallow peat connected to small watercourses, similar to water vole habitat creation undertaken for the nearby Bhlaraidh Wind Farm. The locations for this work have not been determined at this stage, however, habitat creation within the Proposed Development Site is preferable as this area is known to be linked to existing populations, including the population that would be impacted. In addition, American mink (a water vole predator) is considered absent from the upland parts of the Proposed Development Site (mink does not favour upland habitats, and no cameras traps recorded mink other than a possible recording at camera trap CT02, at the edge of woodland at the far northeast edge of the estate, and not near the more upland Headpond location).

7.12.11 Given that enough habitat needs to be created to support an estimated 100 water voles, and that blanket bog would be avoided for such works, it may be that habitat creation takes place at more than one location. Ideally, all areas of water vole habitat creation would be within the same river catchment as the Proposed Development Site. Habitat creation is likely to include the creation of ponds with islands, re-meandering of canalised ditches and/or creation of dead-ended ditches, with possible diversions from minor watercourses. Receptor sites would be fenced initially to prevent possible natural colonisation by water voles in the wider area. Ponds are preferred by The Water Vole Mitigation Handbook[30] because they can be more effectively and easily fenced than linear water features. Should habitat creation be carried out on low ground, mink survey would be necessary and, if mink are confirmed present, would inform a programme of mink control and monitoring. Any mink management measures would be undertaken in accordance with the Water Vole Conservation Handbook[29].

7.12.12 Compensatory habitat/receptor sites should be created well in advance of works. The Water Vole Mitigation Handbook[30] suggests that it may take 9 – 15 months for newly created habitat to be suitable as a water vole receptor site.

7.12.13 As suggested in The Water Vole Mitigation Handbook[30], monitoring would include annual field sign survey and habitat assessment of receptor habitat post-release for five years.

Pine marten

7.12.14 A pine marten SPP would be produced and would be required for applications for licences to destroy and disturb the possible pine marten dens, should they be confirmed as in use by pine marten.

7.12.15 A single pine marten den box would be installed to compensate for the loss of the single possible pine marten den which would be lost at the LCW.

7.12.16 Approximately 593 ha of woodland (this excludes proposed montane scrub zones) is proposed to be planted or allowed to naturally regenerate, in order to provide sufficient BNG gain whilst also providing habitat compensation and enhancement, and landscape-related benefits (see **Chapter 6: Landscape and Visual (Volume 2: Main Report)**). The woodland provision is much more than the 1.9 ha of broadleaved woodland (optimal habitat for pine marten) that would be lost (this excludes losses to commercial conifer plantation incurred for track widening, however such losses are negligibly small compared to the extents of commercial conifer plantation in the local area, and of commercial forestry is of less value to pine marten than native woodland). Once established this is

expected to more than compensate for minor pine marten habitat loss. Woodland creation/enhancement are outlined in **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**.

Adder and slow worm

7.12.17 No specific compensation for adder and slow worm is proposed. However, woodland creation/enhancement in the Pre-Construction and Enabling and River Coiltie vicinity, as outlined in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** (which would include upland birchwood with retained clearings, on current heathland) would locally improve the habitat for these species by providing an improved mix of more open basking habitat and cover.

Terrestrial Invertebrates

7.12.18 Three ponds with sphagnum-rich shallow parts would be created to compensate for the minor loss of potential emerald dragonfly habitat. The combined area of these ponds is 0.93 ha, more than ten times that required to compensate for the 0.09 ha of similar habitat that would be lost to the Headpond. The creation of this habitat is outlined in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**.

7.12.19 Woodland creation/enhancement (including enhancement of ancient woodland) outlined in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** would provide general benefit to invertebrates, by diversifying habitat types and structure, and in due course by indirectly improving provision of invertebrate resources such as dead wood.

7.12.20 No specific compensation is proposed for notable butterfly species or for *Tipula limbata* given that a minimal amount of potentially suitable habitat for these species would be lost.

Enhancement

Habitats

7.12.21 Enhancement for habitats is included within the compensation measures outlined in **Section 7.12: Compensation, Enhancement and Monitoring**, which are considered to significantly exceed the requirements for compensation alone, and would be subject to the approval of NatureScot and other relevant statutory bodies. Biodiversity Net Gain calculations explained in **Appendix 7.5 Biodiversity Net Gain (Volume 5: Appendices)** indicate that the Proposed Development would achieve a very substantial 22% net gain for area-based habitats (approximately double the gain requirement stipulated by The Highland Council, and provided extensive native woodland and montane scrub areas) and 10% net gain for watercourses. Note that blanket bog, as irreplaceable habitat subject to a lost:restored requirement of 1:10 (+ 10% enhancement), or whatsoever other ratio that may be agreed with NatureScot, is addressed separately in **Appendix 7.6 Outline Peatland Restoration Plan (Volume 5: Appendices)**, and enhancement above the ratio is effectively additional to the aforementioned large Biodiversity Net Gain.

Bats

7.12.22 Separate from the installation of any bat boxes stipulated in the bat SPP, and regardless of the number of bat roosts which would be lost, a total of 30 bat boxes would be installed.

7.12.23 As described in **Section 7.12 Compensation, Enhancement and Monitoring**, bat boxes would be installed in suitable locations in line with guidance provided by the BCT[81].

7.12.24 Suitable locations would include larger trees in retained woodland within deer exclosures, or on retained trees along the bank of Loch Ness, in the vicinity of the LCW (but avoiding any artificial lighting that may be required).

7.12.25 Bat boxes to be installed would be similar to those available from Schwegler, and would include a mix of those suitable for small and large groups of bats (including maternity roosts) and suitable for use in summer or for hibernation. An appropriate mix of bat boxes would include the 2F, 1FD and 2FS models.

7.12.26 No specific habitat enhancement for bats is proposed, however, as mentioned for **0 Compensation**, the amount of woodland (excluding non-native conifer plantation) proposed to be planted/allowed to regenerate in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** would vastly exceed the amount of similar woodland that would be lost and, once established (and thus available for use by foraging bats, and in the longer term, when trees are mature, for roosting bats), is expected to have a beneficial effect on bats within the Proposed Development Site compared to the baseline.

7.12.27 In addition, the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** includes creation of three ponds that and would likely provide a local enhancement of the aerial invertebrate prey resource for foraging bats.

Pine marten

7.12.28 Separate from the installation of any pine marten den boxes stipulated in the pine marten SPP, and regardless of the number of pine marten dens (confirmed or possible) which would be lost, a total of five pine marten den boxes would be installed.

7.12.29 No specific habitat enhancement for pine marten is proposed, however, as mentioned for **0 Compensation**, the amount of woodland (excluding non-native conifer plantation) proposed to be planted/allowed to regenerate in **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** would greatly exceed the amount of similar woodland that would be lost and, once established (and thus available for use by pine marten), is expected to have a beneficial effect on pine marten within the Proposed Development Site compared to the baseline.

Terrestrial Invertebrates

7.12.30 As discussed for **0 Compensation**, the creation of three ponds proposed within the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** primarily for the benefit of emerald dragonflies would more than compensate for the loss of similar habitat to the Headpond, is therefore expected to have a beneficial effect on emerald dragonflies (and other dragonfly and damselfly species) within the Proposed Development Site compared to the baseline.

Monitoring

Habitats

7.12.31 Habitat monitoring is set out in the **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)**. In summary, it would include:

- Permanent monitoring on a regular basis of the effectiveness of deer fencing around all proposed native woodland and scrub planting and regeneration zones. This would include checks for deer or signs of deer within the exclosures, and inspection of the fencing. Any deficiencies in the deer fencing would be rectified as soon as possible, and any deer found within the exclosures would be removed;
- Monitoring of all native tree / scrub planting for 15 years to ensure appropriate establishment and growth. In the event that there is any failure of the planting, the cause would be identified and remedial action taken;
- Monitoring of areas of regeneration for 15 years to ensure that regeneration is naturally occurring in line with expectations. If regeneration was found to be failing, the cause would be identified and remedial action taken, which may include supplementary planting;
- Monitoring of peatland restoration areas for 10 years to ensure restoration is successful, with remedial action taken should there be any failure;
- Monitoring of deer, as already carried out on the estate, to ensure that a) the proposed reduction in density (on retained open moorland) from 9.5 per km^2 to 8.5 per km^2 is achieved, and b) that deer pressure is not increased on retained open moorland by loss of deer habitat to infrastructure and exclosures;
- Repeated herbivore impact assessment to confirm no significant increase in deer pressure on retained open moorland. This has previously been undertaken for the entire Glenmoriston deer management area. It would be continued within the estate to ensure no post-development departures from the reported generally low level of deer impact.

Water vole

7.12.1 As suggested in The Water Vole Mitigation Handbook[30], monitoring for water vole would include annual field sign survey and habitat assessment of receptor habitat post-release for five years. This would be stipulated in the water vole SPP.

7.13 Post-compensation Effects

7.13.1 The final post-compensation effects of the Proposed Development are summarised in **Table 7-9: Summary of Effects: Pre-Construction & Enabling. Table 7-10: Summary of Effects: Construction (where No effect is predicted, it is not included in this table),** and **Table 7-11: Summary of Effects: Operation (where No effect is predicted, it is not included in this table),** respectively. The mitigation and compensation measures proposed to minimise the identified effects are briefly outlined in these tables.

Table 7-9: Summary of Effects: Pre-Construction & Enabling (where No effect is predicted, it is not included in this table)

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Ness Woods SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
	Disturbance of qualifying otter	Negligible	None	Negligible	Not Significant	No	Not Significant
Urquhart Bay Wood SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Loch Ruthven SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
	Disturbance of qualifying otter	Negligible	None	Negligible	Not Significant	No	Not Significant
Easter Ness Forest SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Inverfarigaig SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Urquhart Bay Wood SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Ancient Semi-natural woodland	Loss of ASNW	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not Significant	Yes Woodland creation / regeneration	Not Significant
	Hydrological impact during on retained ASNW	Negligible	None	Negligible	Not significant	No	Not Significant
Other semi-natural woodland	Loss of other semi-natural woodland	Negligible	None	Negligible	Not significant	No	Not Significant
	Hydrological impact on other semi-natural woodland	Negligible	None	Negligible	Not significant	No	Not Significant
Blanket bog	Loss	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (peatland restoration at approved ratio)	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
	Hydrological impact on retained blanket bog	**Permanent Adverse effect** of **Local Significance**	None (embedded design for access tracks and compounds very largely avoids significant peat and wetter bog, and Construction track edges would be restored).	**Permanent Adverse effect** of **Local Significance**	Not significant	Yes (peatland restoration)	Not Significant
Wet and dry heaths	Loss of wet and dry heath	Negligible	None	Negligible	Not significant	No	Not Significant
	Hydrological impact on wet and dry heath	Negligible	None	Negligible	Not significant	No	Not Significant
Roosting bats	Direct Loss of Bat Roosts	**Negligible**	To be informed by pre-works surveys (embedded). Preparation of SPP (required for licensing to destroy/ disturb bat roosts). Implement works exclusion zones. Also embedded mitigation including, sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.	**Negligible**	Not significant	Yes Installation of bat boxes and woodland creation / regeneration.	Not Significant
	Disturbance to Retained Bat Roosts	**Negligible**		**Negligible**	Not significant	No	Not Significant
Otter	Direct loss of habitat and refuges	**Negligible**	To be informed by pre-works surveys (embedded). Preparation of SPP (required for licensing to destroy/ disturb otter refuges). Implement works exclusion zones. Also embedded mitigation including, sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.	**Negligible**	Not significant	Yes Woodland creation / regeneration and pond creation.	Not Significant
	Mortality	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance	**Negligible**		**Negligible**	Not significant	No	Not Significant
Water vole	Direct Loss of Water Vole Habitat and Burrows	**Negligible**	To be informed by pre-works surveys (embedded). Preparation of SPP (required for licensing to destroy/disturb water vole burrows and relocate/ displace water voles). Implement works exclusion zones. Create water vole receptor habitat in advance.	**Negligible**	Not significant	Yes Water vole receptor habitat creation.	Not Significant
	Mortality of Water Vole	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Habitat Severance	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance of Water Vole	**Negligible**		**Negligible**	Not significant	No	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
			Trap and relocate water vole to receptor habitat, or locally displace them to reduce mortality. Also embedded mitigation including, sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.				
Pine marten	Direct Loss of Pine Marten Habitat and Refuges	**Negligible**	To be informed by pre-works surveys (embedded). Preparation of SPP (required for licensing to disturb/destroy pine marten dens). Implement works exclusion zones. Also embedded mitigation including, sensitive lighting, best-practice wildlife protection measures during Construction and low Construction vehicle speeds.	**Negligible**	Not significant	Yes Installation of pine marten den boxes and woodland creation / regeneration.	Not Significant
	Mortality of Pine Marten	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance of Pine Marten	**Temporary Adverse Effect of Local significance**		**Temporary Adverse Effect of Local significance**	Not significant	No	Not Significant
Adder and slow worm	Direct Loss of Adder and Slow Worm Habitat	**Negligible**	Pre-works checks for terrestrial refugia/hibernacula. Where it cannot be avoided by works, terrestrial refugia or hibernacula would be carefully dismantled by hand or under a watching brief by the ECoW in the summer months (when adder and slow worm are active) closest to the Construction period of the infrastructure in question. Any adder or slow worm found during these works would be allowed to safely leave the area or would be captured and relocated to suitable habitat elsewhere (if safe to do so). The dismantled refugia/hibernacula would be rebuilt in similar suitable retained habitat that would not be affected by the construction works, under ECoW supervision.	**Negligible**	Not significant	Yes Woodland creation / regeneration.	Not Significant
	Mortality of Adder and Slow Worm	**Negligible**		**Negligible**	Not significant	No	Not Significant
Terrestrial Invertebrates	Direct Loss of Terrestrial Invertebrate Habitat	**Negligible**	None.	**Negligible**	Not significant	Yes	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
						Pond creation and woodland creation / regeneration.	

Table 7-10: Summary of Effects: Construction (where No effect is predicted, it is not included in this table)

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Ness Woods SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
	Disturbance of qualifying otter	Negligible	None	Negligible	Not Significant	No	Not Significant
Urquhart Bay Wood SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Loch Ruthven SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
	Disturbance of qualifying otter	Negligible	None	Negligible	Not Significant	No	Not Significant
Easter Ness Forest SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Inverfarigaig SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Urquhart Bay Wood SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Ancient Semi-natural woodland	Loss of ASNW beside Loch Ness to the LCW	**Permanent Adverse effect of Regional Significance**	None (embedded design largely avoids ASNW, with minimal loss only at LCW).	**Permanent Adverse effect of Regional Significance**	**Significant**	Yes (ASNW enhancement, native woodland planting)	Not Significant
	Hydrological impact during Construction on retained ASNW	Negligible	None	Negligible	Not significant	No	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Other semi-natural woodland	Loss of other semi-natural woodland	**Permanent Adverse effect** of **Local Significance**	None (embedded design already avoids woodland to a large degree).	**Permanent Adverse effect** of **Local Significance**	Not significant	Yes (native woodland planting/regeneration)	Not Significant
	Hydrological impact on other semi-natural woodland	Negligible	None	Negligible	Not significant	No	Not Significant
Montane scrub	Partial loss to Headpond	**Permanent Adverse effect** of **Regional Significance**	None	**Permanent Adverse effect** of **Regional Significance**	**Significant**	Yes (montane scrub planting/regen zones)	Not Significant
	Losses through indirect modification of habitat	Negligible	None	Negligible	Not significant	No	Not Significant
Blanket bog	Loss, primarily to Headpond	**Permanent Adverse effect of Regional Significance**	None	**Permanent Adverse effect of Regional Significance**	**Significant**	Yes (peatland restoration at approved ratio)	Not Significant
	Hydrological impact on retained blanket bog	**Permanent Adverse effect** of **Local Significance**	None (embedded design for access tracks and compounds very largely avoids significant peat and wetter bog, and Construction track edges would be restored).	**Permanent Adverse effect** of **Local Significance**	Not significant	Yes (peatland restoration)	Not Significant
Wet and dry heaths	Loss of wet and dry heath	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (suite of habitat measures)	Not Significant
	Hydrological impact on wet and dry heath	Negligible	None	Negligible	Not significant	No	Not Significant
Montane heaths	Loss of montane heath	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (suite of habitat measures)	Not Significant
Basic flush	Loss of basic flush	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (suite of habitat measures)	Not Significant
Species-rich grasslands	Loss of species-rich grasslands	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (suite of habitat measures)	Not Significant
Natural cliffs/crags	Loss of cliff/crag habitat	Negligible	None	Negligible	Not significant	No	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Notable flora	Loss of notable flora	**Permanent Adverse effect of Local Significance**	None	**Permanent Adverse effect of Local Significance**	Not significant	Yes (suite of habitat measures)	Not Significant
Roosting bats	Direct Loss of Bat Roosts	**Negligible**	Pre-works survey. Preparation of SPP / licensing as required. (Also relevant embedded mitigation including sensitive lighting).	**Negligible**	Not significant	Yes* Installation of bat boxes and woodland creation / regeneration.	Not Significant
	Disturbance to Retained Bat Roosts	**Negligible**		**Negligible**	Not significant	No	Not Significant
Otter	Direct loss of habitat and refuges	**Permanent Adverse effect of Local significance**	Pre-works survey. Preparation of SPP / licensing as required, with exclusion zones around holts if necessary. (Also relevant embedded mitigation including sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.)	**Permanent Adverse effect of Local significance**	Not significant	Yes** Woodland creation / regeneration and pond creation.	Not Significant
	Mortality	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance	**Temporary Adverse effect of Local significance**		**Temporary Adverse effect of Local significance**	Not significant	No	Not Significant
Water vole	Direct Loss of Water Vole Habitat and Burrows	**Permanent Adverse effect of Local significance**	Creation of water vole receptor habitat in advance. Pre-works survey. Preparation of SPP / licensing. Trapping and relocation of water voles in Headpond area to receptor habitat; potentially locally displace them where near works. (Also relevant embedded mitigation including sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.)	**Permanent Adverse effect of Local significance**	Not significant	Yes Water vole receptor habitat creation.	Not Significant
	Mortality of Water Vole	**Permanent Adverse effect of Local significance**		**Temporary Adverse effect of Local significance**	Not significant	No	Not Significant
	Habitat Severance	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance of Water Vole	**Negligible**		**Negligible**	Not significant	No	Not Significant
Pine marten	Direct Loss of Pine Marten Habitat and Refuges	**Permanent Adverse effect of Local significance**	Pre-works survey. Preparation of SPP / licensing if necessary (in the event that potential dens are confirmed to be in use by pine marten).	**Permanent Adverse effect of Local significance**	Not significant	Yes** Installation of pine marten den boxes and	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
			(Also relevant embedded mitigation including sensitive lighting, best-practice wildlife protection measures during works and low Construction vehicle speeds.)			woodland creation / regeneration.	
	Mortality of Pine Marten	**Negligible**		**Negligible**	Not significant	No	Not Significant
	Disturbance of Pine Marten	**Temporary Adverse Effect of Local significance**		**Temporary Adverse Effect of Local significance**	Not significant	No	Not Significant
Adder and slow worm	Direct Loss of Adder and Slow Worm Habitat	**Negligible**	Pre-works checks for terrestrial refugia / hibernacula. Where cannot be avoided, refugia / hibernacula dismantled under watching brief by ECoW in summer closest to the Construction period of the infrastructure in question.	**Negligible**	Not significant	Yes Woodland creation / regeneration.	Not Significant
	Mortality of Adder and Slow Worm	**Negligible**	If found, adder / slow worm allowed to safely leave or captured and relocated to suitable habitat, as per ECoW guidance. Dismantled refugia/hibernacula rebuilt in suitable retained habitat, under ECoW supervision.	**Negligible**	Not significant	No	Not Significant
Terrestrial Invertebrates	Direct Loss of Terrestrial Invertebrate Habitat	**Permanent Adverse effect of Local significance**	None.	**Permanent Adverse effect of Local significance**	Not significant	Yes Pond creation and other habitat creation.	Not Significant

Table 7-11: Summary of Effects: Operation (where No effect is predicted, it is not included in this table)

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Ness Woods SAC	Hydrological impact on qualifying habitat	**Negligible**	None	**Negligible**	Not Significant	No	Not Significant
Urquhart Bay Wood SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Loch Ruthven SAC	Hydrological impact on qualifying habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Easter Ness Forest SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Inverfarigaig SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant
Urquhart Bay Wood SSSI	Hydrological impact on notified habitat	Negligible	None	Negligible	Not Significant	No	Not Significant

Receptor	Description of Effect	Effect	Additional Mitigation	Residual Effects	Significance	Compensation or enhancement	Post-compensation effect
Ancient semi-natural woodland	Hydrological impact on retained ASNW	Negligible	None	Negligible	Not Significant	No	Not Significant
Roosting bats	Disturbance to retained bat roosts	**Negligible**	None. Embedded mitigation includes sensitive lighting.	**Negligible**	Not Significant	No	Not Significant
Otter	Impact on Retained Supporting Habitats of Otter	**Negligible**	None. Embedded mitigation includes sensitive lighting, sensitive water crossing design and water intake/discharge below otter swimming speeds.	**Negligible**	Not Significant	No	Not Significant
	Mortality of Otter	**Negligible**		**Negligible**	Not Significant	No	Not Significant
	Disturbance of Otter	**Negligible**		**Negligible**	Not Significant	No	Not Significant
Water vole	Impact on Retained Supporting Habitats of Water Vole	**Negligible**	None. Embedded mitigation includes sensitive water crossing design.	**Negligible**	Not Significant	No	Not Significant
	Mortality of Water Vole	**Negligible**		**Negligible**	Not Significant	No	Not Significant
	Disturbance of Water Vole	**Negligible**		**Negligible**	Not Significant	No	Not Significant
Pine marten	Impact on Retained Supporting Habitats of Pine Marten	**Negligible**	None. Embedded mitigation includes sensitive lighting.	**Negligible**	Not Significant	No	Not Significant
	Mortality of Pine Marten	**Negligible**		**Negligible**	Not Significant	No	Not Significant
	Disturbance of Pine Marten	**Negligible**		**Negligible**	Not Significant	No	Not Significant

7.13.2 Accounting for the very extensive habitat measures and other compensation and enhancement measures outlined, which would be subject to the approval of NatureScot and other relevant statutory bodies, and as set out in **Appendix 6.4: Outline Landscape and Ecology Management Plan (Volume 5: Appendices)** and **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**, there are considered to be **no significant post-compensation effects** for habitats. The peatland restoration (primarily off-site at an identified location) is sufficient to provide enhancement for peatland beyond compensation, and as set out in **Appendix 7.5: Biodiversity Net Gain (Volume 5: Appendices)**, the extensive habitat measures are calculated to result in a very substantial net gain of 22% for non-blanket bog habitats, more than double the stipulated requirement.

7.13.3 In the medium to long term, compensatory measures are expected to fully address the following significant pre-compensation residual effects:

- Losses to blanket bog, through blanket bog restoration (mainly off-site, at an identified location – see **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**), to an extent satisfying either the standard loss:compensation ratio of 1:10 plus 10% enhancement or a ratio agreed with NatureScot;
- Minor loss of ancient woodland, through improved protection for regeneration of 54 ha of ancient semi-natural woodland by the River Coiltie, and the provision of very extensive further native woodland; and,
- Loss of a small amount of montane willow scrub, through establishment of a montane willow scrub regeneration zone, and including seed-gathering and propagation from existing montane willow scrub and translocation of those bushes that would be inundated by the Headpond.

7.13.4 The following faunal residual effects were not significant but would nevertheless be subject to compensation, as good practice and (where the measures exceed compensation) to provide faunal enhancement (and net **Permanent Beneficial effects**) that are additional to the 22% net gain and peatland compensation and enhancement mentioned above:

- Minor foraging habitat and potentially roost loss for bats, which would be subject to compensation and enhancement by provision of 30 bat boxes and by extensive native woodland creation;
- Water vole habitat loss (primarily at the Headpond), which would be compensated by creation of nearby suitable slow-flowing channels to which captured water voles from the Headpond would be translocated;
- Minor habitat loss and loss of one potential den for pine marten would be subject to compensation and enhancement by the provision of extensive native woodland creation, and of six pine marten den boxes; and
- Habitat loss for terrestrial invertebrates, specifically emerald dragonfly species, which would be subject to compensation and enhancement by the creation of three ponds suitable for breeding by emerald dragonflies (with sphagnum-rich parts and near native trees / shrubs).

Glen Earrach AECOM