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Glen Earrach Pumped Storage Hydro

Environmental Impact Assessment Report

Volume 5: Appendices
Appendix 6.4: Outline Landscape and Ecology Management Plan

Glen Earrach Energy Ltd

Glen Earrach AECOM

Quality information

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Issue History

Issue	Issue Date	Details	Authorised	Name	Position
1	March 2025	Submission	DL	David Lee	Technical Director – Renewable Energy

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1. Introduction

1.1.1 This outline Landscape and Ecology Management Plan (oLEMP) sets out the proposed landscape and ecological measures that would be implemented prior to (as far as possible) and during the Pre-Construction and Enabling Phase and Construction Phase of the Proposed Development (these are defined in **Chapter 2: Project and Site Description (Volume 2: Main Report)**), as well as outline management and monitoring to be implemented once the measures are in place (likely during the construction Phase) and onwards into liesthe Operational Phase of the Proposed Development, in order to achieve sufficient landscape and ecological mitigation, compensation and enhancement.

1.1.2 This oLEMP primarily supports and should be read in conjunction with **Chapter 6: Landscape and Visual, Chapter 7: Terrestrial Ecology** and **Chapter 18: Forestry (Volume 2: Main Report)**. It also contains proposed measures concerning important bird species and is therefore also relevant to **Chapter 8: Ornithology (Volume 2: Main Report)**. In respect of peatland, it is important to note that the extent of peatland restoration that will be undertaken to compensate for blanket bog loss is detailed separately in **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**. Habitat measures proposed in this oLEMP contribute to Biodiversity Net Gain (BNG) and are referenced in **Appendix 7.5: Biodiversity Net Gain (Volume 5: Appendices)**. This oLEMP also refers to **Appendix 3.1 Outline Construction Environmental Management Plan** (oCEMP) **(Volume 5: Appendices)** and **Appendix 15.2 Outline Peat Management Plan (Volume 5: Appendices)**.

1.1.3 This oLEMP is supported by the following figures, located in **Annex A. Figures** at the end of the document:

- Figure 6.4.1: Outline Landscape and Ecological Mitigation – project wide;
- Figure 6.4.2: Outline Landscape and Ecological Mitigation – Lower Control Works; and
- Figure 6.4.3: Lower Control Works Illustrative Cross Sections (Sheet 1 and Sheet 2).

1.2 The Purpose of this oLEMP

1.2.1 This oLEMP provides outline details for implementation of the extensive proposed native planting and regeneration zones.

1.2.2 The primary purposes of the proposed planting and regeneration measures are set out as follows:

- To integrate the Proposed Development into its landscape setting and avoid or minimise adverse landscape, biodiversity, heritage and visual effects as far as practicable. This includes reinstatement of temporarily lost habitats, or replacement with habitats of greater biodiversity and contribution to landscape character;
- To provide habitat compensation and enhancement measures including native woodland planting sympathetic to the composition of existing natural woodland and in suitably natural locations, to enhance and expand existing woodland features within the landscape;
- To provide further information on proposed faunal compensation and enhancement measures;
- To guide the design and management of landscape and biodiversity components that respond to and enhance the character of the landscape, local distinctiveness and sense of place;
- Implementation where possible of advanced native woodland planting (prior to works proceeding) to provide earlier establishment of woodland, which will help ensure that proposed screening of infrastructure (including temporary infrastructure) occurs in the shortest possible timeframe, and thereby also provides quicker provision of biodiversity gains; and
- Forming the basis of potential planning conditions related to the implementation and restoration of the Proposed Development Site and wider estate.

1.2.3 It is important to note that as an irreplaceable habitat neither this oLEMP nor the BNG calculation address blanket bog loss. Blanket bog loss will be separately addressed in accordance with the lost:restored compensation ratio of 1:10 (plus 10% enhancement) stipulated by NatureScot (NS), or a ratio that may be

subsequently agreed, and further specifics on this are provided in **Appendix 7.6: Outline Peatland Restoration Plan (Volume 5: Appendices)**.

1.2.4 The proposals within this oLEMP have been designed to be delivered either within the boundary of the Proposed Development Site, or within the wider ownership of the estate in which the Proposed Development lies[1], and with agreement already in place by said estate. During the iterative landscape and ecological design process, there has been consultation with land managers, including those concerned with forestry and those concerned with deer management (such as for the maintenance of the sporting, cultural and historic heritage of the estate).

1.2.5 The principal proposed landscape and ecological measures are illustrated in **Figure 6.4.1: Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)**. This oLEMP also outlines the long-term management principles that would run for a 30-year period.

1.3 Governance and Responsibilities

1.3.1 The final LEMP would be based on this oLEMP. Should the Proposed Development be granted consent, a final and more detailed Landscape and Ecological Management Plan (LEMP) would be developed based on the principles set out in this oLEMP. The final LEMP would be produced by the Applicant together with ecological and forestry advisor(s) (which may include the appointed Ecological Clerk of Works (ECoW)) and would be subject to approval by The Highland Council (THC), and in consultation as necessary with other statutory consultees. There would be ongoing dialogue with stakeholders leading up to and during the Pre-Construction and Enabling Phase and Construction Phase of the Proposed Development, to ensure they are kept informed and satisfied of the implementation of the proposed measures.

1.3.2 All aspects of the LEMP that would be provided during the Pre-Construction and Enabling Phase or Construction Phase of the Proposed Development would be the responsibility of the Construction Contractor under guidance from the ECoW or any other appointed ecological and forestry advisors.

1.3.3 Responsibilities for aspects of the LEMP that would take place post-construction (which includes monitoring that extends after the completion of Construction, and remedial action if post-construction monitoring requires it) would be defined during the production of the final post-consent LEMP.

[1] The Applicant, Glen Earrach Energy Ltd., is 100% owned by Balmac Forest Limited (Balmacaan Estate), which owns Balmacaan Estate within which the Proposed Development Site lies.

2. Proposed Development Site and Existing Features

2.1 The Proposed Development Site

2.1.1 The Proposed Development Site includes three key areas:

- The Headpond is located to the west of the summit of Meall Fuar-mhonaidh, and would be constructed during the Construction Phase along with associated access tracks and compounds. The Headpond would replace and be larger than the existing Loch nam Breac Dearga and would be bound by the Main Dam, Saddle Dam 1 and Saddle Dam 2, a Spillway and the plateau landscape of the lower parts of Meall Fuar-mhonaidh and Glas-bheinn Mhòr. Directly to the west of the Main Dam would be a Valve House (to provide compensatory water flow to the existing stream, and to release water in an emergency), the small Secondary Bund to attenuate water energy during testing of the scour valve and in the event of emergency water release, and a short section of Permanent Access Track;
- The Lower Control Works (LCW), which would be constructed during the Construction Phase, is located on the western bank of Loch Ness approximately 8 kilometres (km) southwest of Drumnadrochit, opposite the village of Foyers on the eastern side of the loch. The LCW is where Waterways passing between the Headpond and Loch Ness would emerge. These would be located in the narrow strip of land between the A82 and Loch Ness, and extending into the peripheral water of Loch Ness;
- The third key area is the Glen Coiltie works area, north of the Headpond in the valley of and close to the River Coiltie, which contains a number of proposed Permanent Compounds and Temporary Construction Compounds, which would be constructed during the Pre-Construction and Enabling Phase. These would include two permanent northern Tunnel Portal (exit) compounds and a permanent Gas Insulated Switchgear (GIS) Switchyard, and several Temporary Construction Compounds including the Temporary Workers Accommodation. The existing forestry track off the A831 at Balnain (the Balnain Main Access) would be utilised and would be extended to cross the River Coiltie to meet the aforementioned compounds.

2.1.2 The majority of the Proposed Development Site is located south west of the settlement of Drumnadrochit between the River Coiltie and Meall Fuar-mhonaidh, within undulating upland environment of rugged steep to flat terrain dominated by bog and heath moorland, and incorporating moderately-sized summits, rocky knolls, scattered lochs and lochans, several small to very small watercourses, and one larger river (the River Coiltie). The higher ground rises to a maximum of approximately +699 m AOD at the summit of Meall Fuar-mhonaidh (although only rarely does the proposed infrastructure exceed +540 m AOD, and only slightly). There are extensive large cliffs and crags on both sides of Meall Fuar-mhonaidh, and smaller crags locally elsewhere. The area contains appreciable peat, hence the frequency of blanket bog and wet heath, however peat depth is mostly fairly shallow and only locally (within the area subject to peat probing survey) does it exceed 1 m depth (see **Chapter 15: Geology and Ground Conditions (Volume 2: Main Report)**.

2.1.3 Other parts of the Proposed Development are lower-lying. The LCW is located at the loch shore of Loch Ness. It is near the A82, a thin peripheral strip of ancient semi-natural woodland and much more extensive commercial conifer plantation. The northern section of the Balnain Main Access is also lower-lying, passing from Balnain to the River Coiltie through further commercial forestry.

2.1.4 Existing landscape features and important biodiversity features have informed the proposed measures in this oLEMP and are summarised below. Full details of relevant baseline landscape, terrestrial ecology and ornithology features can be found in **Chapter 6: Landscape and Visual**, **Chapter 7: Terrestrial Ecology** and **Chapter 8: Ornithology (Volume 2: Main Report)**.

2.2 Landscape Context

Designated Landscapes

2.2.1 The Proposed Development Site boundary lies partly within the Loch Ness and Duntelchaig Special Landscape Area (SLA) and the majority of the SLA lies within the Study Area identified within the Landscape and Visual chapter (refer to **Figure**

6.4: Landscape Designations and Operational Zone of Theoretical Visibility (Volume 3: Figures) and **Chapter 6: Landscape and Visual (Volume 2: Main Report)**). An overview of the SLA, its key characteristics and Special Qualities is contained in **Chapter 6: Landscape and Visual (Volume 2: Main Report)**.

Landcover

2.2.2 The main part of the Proposed Development Site is open moorland (see **Figure 7.5: Habitats (Volume 3: Figures)**). The A82 runs through the Proposed Development Site parallel to Loch Ness and the LCW. The proposed Headpond area is dominated by peatland bog and heath, with a few moderately sized natural lochans nearby and the more substantial Loch nam Breac Dearga within the Headpond zone itself. To the immediate west of the proposed Headpond there are moderately steep mountain slopes, with local small crags, as well as flatter and more shallowly sloping peaty terrain to the north, leading on to variable upland terrain of further bog and heath with rocky knolls and widely scattered lochans. To the immediate east of the Headpond is the very steep western slope of Meall Fuar-mhonaidh. The Great Glen, the nearer parts of which are not visible from the Headpond owing to the bulk of Meall Fuar-mhonaidh, lies further east. Within the Great Glen, at the edge of Loch Ness, the LCW is located within a thin strip of ancient woodland and within the context of extensive conifer plantation.

2.2.3 The Permanent and Temporary Compounds in the Glen Coiltie works zone are located in heathy moorland, near ancient semi-natural woodland and extensive commercial conifer plantation leading northwards to Balnain along the Balnain Main Access, with nearby pastures on the lowest ground towards Drumnadrochit.

Pattern and Landform

2.2.4 The plateau moor rises from the wooded shores of Loch Ness and the rocky edge of Loch Ness. These are generally large-scale landscapes with extensive blocks of coniferous forestry plantation, which reduces this pattern in places. The landform within the Proposed Development Site is variable and includes gentle to considerable undulations with several high points on moderate mountains. The Loch Ness shore part of the Proposed Development Site is lower in level but includes considerable steep wooded slopes of mainly conifer plantation dropping down from the moorland to Loch Ness, with undulating views to each side.

Recreation and Connectivity

2.2.5 There are several A and B roads within the Study Area which are interconnected to a series of minor roads serving local towns and villages. This includes the A82 which runs within and adjacent to the Proposed Development Site connecting Invermoriston to Drumnadrochit and continues north to Inverness on the western side of Loch Ness. The A831 lies to the north of the Proposed Development Site, connecting Drumnadrochit to Cannich to the west. The B852 lies close to the edge of the loch on the eastern side of Loch Ness.

2.2.6 There are several long-distance recreational routes within the surrounding landscape as well as core paths. Named walking and cycling trails are found within the wider landscape, connecting various popular recreational routes and settlements (refer to **Figure 6.6 Local Walking Routes, Recreational Routes, Core Paths and Operational Zone of Theoretical Visibility (Volume 3: Figures)**). The majority are around and within close proximity to Loch Ness, as well as a small concentration of routes around Glen Urquhart. Several walking routes are found within and near to the Proposed Development Site, including the Glen Coiltie Walking Loop, a route along the River Coiltie from Drumnadrochit, the Meall Fuar-mhonaidh Route and Loch Nam Breac Dearga Trail. For detail on such routes, refer to **Chapter 6: Landscape and Visual (Volume 2: Main Report)**.

2.3 Biodiversity Context

Designated Nature Conservation Sites

2.3.1 The closest designated site to the Proposed Development is North Inverness Lochs Special Protection Area (SPA) and Special Site of Scientific Interest (SSSI), for which Slavonian grebe *Podiceps auritus* is the qualifying feature. This SPA is 750 m north of the closest constructed part of the Proposed Development (the Balnain Main Access). Other designated sites further afield have been assessed in **Chapter 7: Terrestrial Ecology** and **Chapter 8: Ornithology (Volume 2: Main Report)** and **Appendix 7.2 Statement to Inform HRA (Volume 5: Appendices)**. The most relevant designated site to this oLEMP is North Inverness Lochs SPA,

given its relative proximity and observed occurrences of Slavonian grebe closer to the Proposed Development.

Habitats and Flora

2.3.2 The great majority of habitat impacted by the Proposed Development comprises blanket bog and wet heath. By far the most impact on these habitats, and habitat loss in general, is incurred by the Headpond, which is dominated by blanket bog and wet heath. The other extensive habitat in the Headpond area is oligotrophic standing water represented almost entirely by Loch nam Breac Dearga, a highly natural loch (apart from absence of fish migration caused by a downstream watercourse hydroelectric scheme) which would also be lost to the Headpond. However, peat depth is generally not particularly deep, and depths of 1 m or more are relatively localised. Both wetter and drier forms of blanket bog are present. The latter is more abundant and in places supports dwarf birch *Betula nana*, a widespread but localised species of less-disturbed upland habitat (mainly naturally-drier forms of blanket bog but occasionally also wet and damp heath); dwarf birch is also widely scattered in the survey area beyond possible impact. Very locally within the Headpond, and more abundantly beyond impact in the wider survey area, two notable sphagnum species occur: *Sphagnum austinii* and *Sphagnum fuscum*. Some parts of the blanket bog within and beyond the Proposed Development contain gullying and localised areas of flat bare peat.

2.3.3 Other habitats of smaller extent within the Headpond include dry heath and species-rich grassland, which are locally abundant particularly on the steep western side of Meall Fuar-mhonaidh, where there are also substantial cliffs. There are also localised occurrences of species-rich base-rich flushes in the Headpond area, and more abundantly outside it.

2.3.4 Proposed Permanent and Temporary Compounds (including the Temporary Workers Accommodation) and associated Access Tracks in the Glen Coiltie works zone near the River Coiltie primarily impact wet heath, and only very small amounts of blanket bog and other habitats. There is extensive ancient semi-natural woodland dominated by birch *Betula* spp. beside the River Coiltie. However, the Proposed Development has been designed to avoid direct impact upon it, crossing the River Coiltie at an existing gap in the ancient woodland where there is an existing ford.

2.3.5 Access Tracks between the Glen Coiltie works zone and the Headpond have been designed to keep as far as possible to the shallowest peat, and as a result they mainly impact relatively small amounts (compared to the Headpond) of wet heath and drier bog. A proposed relatively short stretch of new track west of the Headpond, to allow later access by 4x4s only from Alltsigh, also mainly impacts wet heath and drier bog. A long section of the Balnain Main Access utilises an existing large forestry track used by timber-carrying trucks, and therefore incurs only a small amount of habitat impact through localised trimming back of trees.

2.3.6 Other than the aforementioned dwarf birch, *Sphagnum austinii* and *Sphagnum fuscum*, a few other notable botanical species were recorded. The most notable of all is whortle-leaved willow *Salix myrsinites*, a Nationally Scarce montane willow scrub species that was found in small quantities on the lower west side of Meall Fuar-mhonaidh. Some of the observed whortle-leaved willow lies within the upper inundation zone of the Headpond, and more lies above it; owing to the inaccessibility of the cliffs in this area, there may be more beyond the known locations. Three scarce species of orchid were found, however all are located beyond possible impact, either amongst crags south east of the Headpond Main Dam, in species-rich grassland much higher on Glas-bheinn Mhòr than the Headpond, or in species-rich wetland habitat far north east of the Headpond towards the Euroforest track (which was an access route in previous abandoned design iterations). A few other scarce bryophyte and lichen species were recorded, but again these lie beyond impact; they include the lichen *Peltigera britannica* in the ancient semi-natural woodland by the River Coiltie.

Protected and Notable Fauna

2.3.7 There are notable ornithological interests in the general vicinity of the Proposed Development, including Slavonian grebe, red-throated diver *Gavia stellata* and greenshank *Tringa nebularia*. This oLEMP includes proposed enhancements for Slavonian grebe and red-throated diver, and the proposed extensive native woodland planting is also considered to benefit the local black grouse *Tetrao tetrix* population, and thereby also species that prey upon them, whilst maintaining the majority of baseline open moorland as open moorland.

2.3.8 Small watercourses in the Headpond and beyond it were found to support water vole *Arvicola amphibius*. The ecological impact on water vole is considered low owing to their apparent frequency in the surrounding area and regionally, however

they are nevertheless subject to legal protection. As estimated in **Chapter 7: Terrestrial Ecology (Volume 2: Main Report)**, approximately 50 water voles would likely require to be captured and translocated to created habitat nearby, under a derogation licence from NatureScot.

2.3.9 Evidence of otter *Lutra lutra* was recorded in vicinity of the Proposed Development but there are currently no known otter holts close enough to works to be subject to disturbance. Potential pine marten dens were recorded but few would be within disturbance distance of works and would only be relevant if pre-works surveys found actual evidence of pine marten at them. Red squirrel *Sciurus vulgaris* exists in the area but negligible impact is expected given the limited degree of impact on mature trees. Currently there are also no known bat roosts that would be impacted. However, owing to survey limitations and changes in design of the Proposed Development, further survey works will be completed prior to the commencement of development with regard to potential bat roosts in trees. Note, if bat roosts are confirmed, given the geographical location it is improbable that they would involve anything other than common bat species. Badger *Meles meles* is present in the Drumnadrochit area, however no evidence was found of badger near proposed works, which are largely in unfavourable upland terrain.

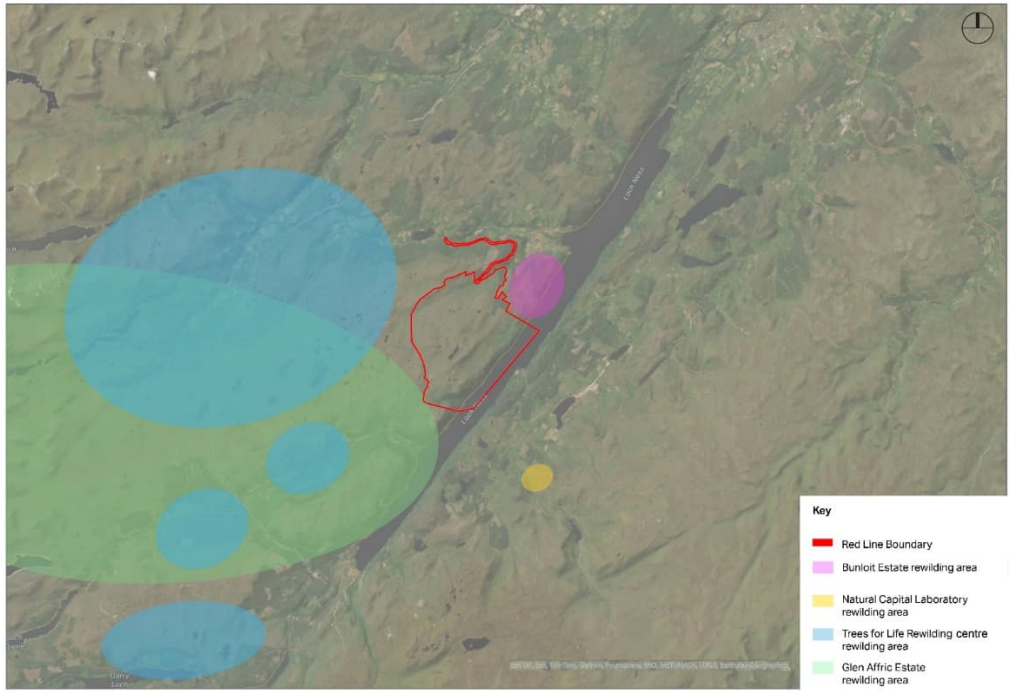
2.3.10 Common reptiles are present in area, most notably including adder *Vipera berus*, however the altitude and nature of the habitat across most of the Proposed Development precludes significant impacts upon them. Great crested newt *Triturus cristatus* is considered absent, and only unprotected common amphibians are deemed present.

2.3.11 Some invertebrates of note are present in the area, including the cranefly *Tipula limbata* and uncommon emerald dragonfly species (the latter comprises two *Somatochlora* species and one *Cordulia* species). No significant effects were predicted for invertebrates. However, enhancement is proposed in this oLEMP for emerald dragonflies (one of which was seen north of the Headpond during fieldwork) by provision of suitable ponds in appropriate locations.

2.4 Wider Rewilding Context

2.4.1 The Proposed Development Site is surrounded by several rewilding schemes operated by various private entities. These aim to restore Scotland's natural and cultural heritage while supporting local livelihoods through rewilding of the Highlands. They are shown on **Insert 1** and comprise:

- Trees for Life Rewilding Centre – involved in several rewilding schemes near or relatively near the Proposed Development;
- Bunloit Estate – an area just north east of the Proposed Development Site in which rewilding has been promoted and some measures have visibly been undertaken, including removal of conifer plantation from bog (however, the wider ownership of which Bunloit Estate is a part is in the process of being split and sold, thus further rewilding may not take place);
- Glen Affric Estate – Glen Affric Estate includes a large rewilding area west of the Proposed Development; and
- Natural Capital Laboratory (NCL) – a small area near Whitebridge south east of Loch Ness in which rewilding is undertaken and monitored.



Insert 1: Map Showing Approximate Locations of Rewilding Schemes in the Region Around the Proposed Development

Management Aims and Objectives

2.4.2 This section sets out the management and maintenance objectives for the protection and enhancement of the landscape and biodiversity fabric of the Proposed Development. A detailed LEMP will be developed alongside the detailed landscape and ecological design. The maintenance and management plan would cover the first 30 year period of operation of the Proposed Development. Within the first five years after planting, any plants found to be dead or dying would be replaced within the first planting season.

2.4.3 In general terms, the landscape and ecological management aims for the Proposed Development Site are to:

- Secure the long-term future of the landscape;
- Enhance local landscape character, particularly in the context of the SLA;
- Integrate the Proposed Development Site into the surrounding landscape and local views;
- Retain and manage existing native woodland areas in combination with new areas of native woodland planting to maintain their screening function, contribution to local landscape character at the loch shore, provide ecological habitat and an amenity resource which can be used by local people and visitors;
- Create, maintain and enhance habitats of value to wildlife to provide benefits for the local environment and biodiversity; and
- Establish a flexible management and maintenance regime with associated monitoring mechanisms, able to respond to changing needs or objectives.

Construction Mitigation

2.4.4 The overall construction working methods to be implemented during the Construction Phase are outlined in the outline **Appendix 3.1: Outline Construction Environmental Management Plan (CEMP) (Volume 5: Appendices)**. Therefore, these are not repeated here.

3. Proposed LEMP Measures

3.1 Overview

3.1.1 The primary aims of the oLEMP are to best assimilate the Proposed Development into the host landscape and habitats, and to implement ecological improvements to retained habitats to fulfil both habitat compensation and to further provide a large degree of biodiversity and landscape enhancement.

3.1.2 To this end, a suite of extensive measures is proposed, that together provide landscape-scale enhancement of biodiversity and landscape character.

3.1.3 The proposed planting-related measures comprise:

- 54 ha ancient semi-natural woodland enhancement, in Glen Coiltie, by protection from deer to encourage regeneration;
- 22 ha ancient woodland regeneration buffer around the above ancient semi-natural woodland in the River Coiltie area;
- 552 ha native broadleaved woodland provision (including riparian planting where within 10 m of watercourses) and a further 19 ha of Scots pine *Pinus sylvestris* woodland provision at various locations, both beside the Proposed Development in the Glen Coiltie area, and extensively in the wider estate;
- 76 ha dwarf birch montane scrub zones, supplemented with juniper *Juniperus communis* and Scots pine;
- 27 ha of montane willow scrub planting and regeneration zone; and
- Small amounts of further native planting on reinstated slopes within the Lower Control Works construction area beside Loch Ness.

3.1.4 Measures specifically related to non-ornithological fauna comprise:

- Water vole habitat creation; and
- Emerald dragonfly pond creation (three ponds).

3.1.5 Measures specifically related to ornithological interests comprise:

- Provision of red-throated diver rafts; and
- Provision of small areas of additional lochan swamp for Slavonian grebes.

3.1.6 The above proposals are illustrated on Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide and Figure 6.4.2 Outline Landscape and Ecological Mitigation – Lower Control Works (Annex A. Figures).

3.1.7 As noted above, peatland restoration is separately addressed in Appendix 7.6 Outline Peatland Restoration Plan (Volume 5: Appendices).

3.1.8 There will also be a requirement to reinstate habitat at temporary infrastructure once this is removed, which will either comprise reinstatement of the baseline habitat or in some cases replacement with habitat of higher biodiversity or contribution to landscape character. This is addressed separately below under '**Reinstatement of Temporary Infrastructure**'.

3.1.9 Additionally, and as noted in the previous section, protection measures will be implemented during construction for retained woodland (including retained ancient semi-natural woodland beside the LCW at Loch Ness) and for other retained habitats. These will include standard tree protection and pollution controls as set out in **Appendix 3.1: Construction Environmental Management Plan (CEMP) (Volume 5: Appendices)**.

3.2 Woodland and Montane Scrub Measures

3.2.1 The following paragraph is critical for the avoidance of adverse effects on notable bird species and will be adhered to throughout the lifetime of the LEMP:

3.2.2 All planting and associated works (such as fencing) will be cognisant of the potential presence of breeding birds, particularly those legally protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended in Scotland). Baseline information on notable birds is provided in **Chapter 8: Ornithology (Volume 2: Main Report)**. If any such works are to be undertaken during the breeding bird season, they will be informed by pre-works surveys of the relevant areas and appropriate buffer zones as informed by the ECoW / ornithologist. The ECoW / ornithologist will advise on any restrictions to be applied or any mitigation

options to minimise impacts. See also the comment on seasonal restrictions attached to **Native Woodland Planting** in the Central Zone at the Allt Carn na Fiacail (**paragraph 3.2.43**).

Coiltie Ancient Woodland Enhancement

3.2.3 The existing ancient semi-natural woodland in the River Coiltie area, near the Glen Coiltie works zone, lacks regeneration and recruitment of trees despite its situation within a deer-fenced area which is much larger than the ancient woodland. The existing deer fence exclosure in this area is reported to have been established in the 1990s for a woodland grant scheme, however this scheme failed. The existing exclosure was seen during fieldwork to contain small numbers of red deer *Cervus elaphus* and Sika deer *Cervus nippon*, which can evidently breach the deer fence. It may be that roe deer *Capreolus capreolus* can also currently gain access. It is the presence of the deer that has prevented any regeneration of the ancient woodland within this exclosure and would also prevent success of planting within it (see **Native Woodland** section below).

3.2.4 All this ancient semi-natural woodland is birch-dominated, although small numbers of other species occur too. Beyond the ancient woodland extent and south of the River Coiltie, mature trees are very rare but include a few mature willows *Salix* sp. and a single large and mature Scots pine. Mature Scots pine also exists in a tiny patch 1.8 km west of the historic ford over the River Coiltie, where it is over-grazed beneath.

Location(s)

3.2.5 The bulk of the ancient semi-natural woodland is situated immediately south of the River Coiltie, opposite Forestry and Land Scotland (FLS) owned commercial forestry land. It narrows to an extremely thin strip upstream towards the existing small-scale hydroelectric dam. There is an existing gap at a historic ford where the Balnain Main Access would cross the river without impacting the ancient woodland. In the vicinity of the hydroelectric dam and upstream of it the ancient woodland widens but does not achieve the considerable width downstream of the historic ford. There are some slightly separated patches of woodland that are considered part of the ancient semi-natural woodland, most substantially a patch on steeply sloping north facing ground over 1 km east of the historic ford.

3.2.6 Note that in defining the extent of the ancient semi-natural woodland in this area, account has been taken not only of the parcels outlined by the Ancient Woodland Inventory (AWI) but also of actual woodland on the ground as found by field survey, the extents of which were refined by inspection of current aerial photography. The AWI is based on historic mapping and is therefore often not particularly accurate in this regard, including in this case some ground that is open and appears to have been for a long time. The extent of ancient woodland enhancement shown on **Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)** thus represents actual existing woodland that lies within parcels outlined by the AWI, and is not simply a copy of the relevant AWI parcels.

3.2.7 Some more recent birchwood north of the River Coiltie does not lie within the parcels outlined by the AWI and does not have the character of the ancient semi-natural woodland in this area, and thus it is not considered part of the ancient semi-natural woodland. However, it lies within the wider deer exclosure in this area, and will also benefit from this.

Intervention details

3.2.8 The existing deer fence in this area would initially be subject to the following treatment at a minimum:

- Existing fencing to be inspected thoroughly along the entire length and any breakages or vulnerabilities to deer access repaired or the fence improved wherever required;
- New deer fencing likely to be required along the River Coiltie where this is adjacent to the FLS plantation, which appears to be in poor condition, in places. The replacement deer fencing would ideally be in the same place on the north side of the River Coiltie. This may be FLS property, and if there are difficulties with securing deer fencing here then it should instead (but less desirably) be placed on the south side of the River Coiltie where possible;
- The existing northern edge of this exclosure (which lies approximately 600-700 m north of the River Coiltie) would be moved northwards to encompass proposed planting (see **Native Woodland** below) rather than have two nearby parallel deer fences; and
- To align with proposed adjacent Native Woodland planting zones, the existing southern, south western and south eastern deer fencing of this exclosure

would be moved where necessary to encompass said proposed Native Woodland planting, to again avoid having two deer fences in close proximity.

3.2.9 In repairing the existing deer fence, consideration will be given as to whether any parts of the deer fence need to be raised in height or moved to prevent deer access.

3.2.10 There are existing deer within the exclosure which would require removal. Upon completion of the above tasks to ensure the exclosure is properly deer-proof, any deer still remaining within the exclosure would be removed.

3.2.11 Thereafter, monitoring would take place as follows:

- Periodic inspection would be undertaken of the woodland within the exclosure to ensure a) no deer are seen, and b) no new deer damage to trees is present and, in due course, signs of natural regeneration are apparent;
- Periodic inspection would be undertaken of the perimeter deer fence to ensure that condition is good and that there are no breakages or vulnerabilities allowing or potentially allowing deer access, and if so then remedial action would be taken; and
- If any deer or signs of them are observed within the exclosure, they would be removed and the deer fence inspected to locate and repair any weaknesses that afforded access.

Timing

3.2.12 This measure can be commenced at any time and would begin as soon as practicable following the Proposed Development receiving consent. This would likely be during the Pre-Construction and Enabling Phase or shortly after, since there will then be a new construction track nearby.

3.2.13 In order to ensure long-term survival of the ancient semi-natural woodland, it will be necessary to monitor and maintain the exclosure.

Outcome

3.2.14 Monitoring should demonstrate that there is no deer damage within the ancient woodland and that there is evidence of natural regeneration to allow trees to be recruited that can replace those older existing trees that will likely die over the coming decades. This is of obvious biodiversity benefit in ensuring the continued existence of the ancient woodland, and also has long-term contribution to landscape character in the preservation of native woodland cover.

River Coiltie Ancient Woodland Regeneration Buffer

3.2.15 The area of ancient semi-natural woodland in the River Coiltie that is being enhanced (see previous section) would be provided with a regeneration buffer (where feasible) of 30 m width. It is intended that the ancient woodland expand into this buffer by natural regeneration from its own seed sources.

Location(s)

3.2.16 The regeneration buffer around the ancient semi-natural woodland lies where shown on **Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)**. It is indicated along most of the ancient woodland edge within ownership of the estate in which the Proposed Development lies. However, it has not been shown for the stretch adjacent to the proposed Temporary Worker Accommodation (TC05), GIS Switchyard (PC04) and adjacent Temporary Construction Compound (TC03). The reason for this is that in these locations the implementation of a 30 m buffer alongside the ancient woodland would not allow for woodland planting which is required here to provide screening to more quickly address landscape and visual impacts (notwithstanding that there is a small zone of blanket bog between PC04 and TC03 that cannot be planted).

Intervention details

3.2.17 No further intervention should be required beyond that set out for the River Coiltie Ancient Woodland Enhancement above, since the deer exclosure for the latter largely follows the existing deer fence and thereby automatically includes the regeneration buffer.

3.2.18 However, in the event that regeneration is found not to be progressing as expected after a period of 5-10 years, and in agreement with relevant forestry authorities, supplementary planting may be carried out.

Timing

3.2.19 This measure would be commenced concurrently with implementation of the above-described River Coiltie Ancient Woodland Enhancement.

3.2.20 As for the River Coiltie Ancient Woodland Enhancement, it will be necessary for the long-term survival of regenerated woodland to monitor the exclosure periodically and maintain it.

Outcome

3.2.21 Monitoring should demonstrate in due course that natural regeneration is occurring within the regeneration buffer. This may not be universal because pockets of ground may be unsuitable for tree growth, however this is to be expected and would not be a detraction as clearings and glades within woodland is a positive feature. This is of obvious biodiversity benefit in allowing the ancient woodland to naturally expand and also has long-term contribution to landscape character in the natural expansion of native woodland cover.

Native Woodland Planting

3.2.22 Native woodland planting is proposed on a large scale in the zones indicated on Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide and Figure 6.4.2 Outline Landscape and Ecological Mitigation – Lower Control Works (Annex A. Figures). In keeping with the geographic location, altitude, topography and existing local native woodland, this will be primarily birch-dominated, but will also include other appropriate species. The proposed native woodland areas fall into four general zones:

- River Coiltie zone (including the Glen Coiltie works vicinity);
- Eastern zone near or towards the Euroforest track and an existing deer-fenced area;
- Northern zone at the periphery of the estate, adjacent to commercial conifer plantation and between other existing deer-fenced areas; and
- Central zone with planting areas on the south sides of Meall Fuar-mhonaidh and Glas-bheinn Beag, and west of Glas-bheinn Mhor.

3.2.23 Proposed native woodland areas in the River Coiltie zone, the eastern zone and some of the central zone are within detailed habitat survey areas. Within these planting locations, National Vegetation Classification (NVC) results and species notes have been used to exclude habitats that should not be planted. These include blanket bog, potentially highly Groundwater Dependent Terrestrial Ecosystems (GWDTE) such as flushes (in particular, base-rich flushes which in this area include local species such as Scottish asphodel *Tofieldia pusilla*), species-rich grasslands (including some significant areas of basic CG10 towards the Euroforest track), and (locally) other species-rich habitats including unusually species-rich dry heath and bracken east and north of Meall Fuar-mhonaidh (with species such as globeflower *Trollius europaeus* and wood cranesbill *Geranium sylvaticum*).

3.2.24 Other proposed native woodland areas at the northern periphery of the estate, west of Glas-bheinn Mhor and south of Meall Fuar-mhonaidh, are beyond the detailed habitat survey area. For these areas, the NS Carbon and Peatland 2016 dataset was utilised to remove all Class 1 and Class 2 peatland from these planting areas. Class 1 and Class 2 peatland are very likely to be dominated by blanket bog, therefore the majority of blanket bog is likely to have been excluded from these planting areas. Given that the vast majority of non-bog habitat in the local area is wet heath, it is reasonable to assume that planting in these areas would be mainly on wet heath (and this assumption was made for BNG purposes).

3.2.25 Buffers of 10 m width have been applied to small watercourses in the planting areas, in which specific riparian planting would be carried out, bearing in mind that all such watercourses within planting areas are well below the tree line and would very likely under more natural circumstances support riparian trees and/or shrubs. This is important from a BNG perspective, since it allows sufficient watercourse gain to be achieved to compensate for the loss of small to very small streams at the Headpond.

3.2.26 In particular in those planting areas beyond the detailed habitat survey area, and potentially locally within it, there may be other patches of habitat that are not conducive to planting. Consequently, shortly prior to planting and in common with standard procedure, an inspection of the proposed planting areas would be carried out to identify any patches not already identified that should not be planted.

3.2.27 Proposed native woodland planting is primarily on wet heath or, more locally, dry heath. These habitats would likely, under more natural circumstances, be native woodland, and planting upon them to expand the native woodland network is desirable and generally encouraged. In planting birch-dominated woodland on heathland, an appropriate ground flora for Upland Birchwood (mostly corresponding to the NVC type W17) would automatically be provided. This is instrumental for the purposes of BNG, since the existing heathland vegetation is not removed but becomes the (suitable) ground flora of the planted Upland Birchwood (or in places other woodland such as native Scots pine woodland).

3.2.28 The primary driver for the extensive proposed native woodland planting is one of biodiversity. However, all such woodland is important in strengthening landscape character and is of particular importance at the Glen Coiltie works zone to as far as possible provide screening of infrastructure and its integration within the landscape. Since some of this infrastructure is temporary, including the Temporary Workers Accommodation (TC05), planting in the Glen Coiltie works vicinity would be commenced in advance and as early as possible.

Locations

3.2.29 Native woodland planting is proposed in the following areas, as shown on Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide and Figure 6.4.2

Outline Landscape and Ecological Mitigation – Lower Control Works (Annex A. Figures):

3.2.30 Glen Coiltie Zone:

- Coiltie South – in the vicinity of existing (currently ineffective) deer-fenced area south of the River Coiltie, including the main Glen Coiltie works zone; and
- Coiltie North – largely within the existing (currently ineffective) deer-fenced area south of the River Coiltie.

3.2.31 Eastern Zone:

- Sron Dubh – on the northern and eastern sides of Sron Dubh, approaching the Euroforest track and estate edge;
- Meall a' Choire – on the eastern side of Meall a' Choire and along or near parts of the Allt Coire an Ruighe, at the northern end closely approaching the Euroforest track; and
- Meall Fuar-mhonaidh Eastern Flank – west of and abutting the south western edge of an existing deer-fenced area (containing existing regenerating birch and juniper).

3.2.32 Northern Zone:

- Carn na h-Imrich – on the lower northern slopes of Carn na h-Imrich between existing deer-fenced areas and FLS commercial forestry further north; and
- Ard an t-Sidhein – north west of Carn Macsna, again between existing deer-fenced areas and abutting FLS commercial forestry.

3.2.33 Central Zone:

- Meall Fuar-mhonaidh South – on lower moorland between the higher parts of Meall Fuar-mhonaidh and Creag Dearg;
- Glas-bheinn Beag – on the southern and eastern flanks of Glas-bheinn Beag, and also in a narrow riparian zone along a nearby stretch of the Allt Coire an Ruighe; and
- Allt Carn na Fiacail – an elongated planting zone west of Glas-bheinn Mhor along the Allt Carn na Fiacail.

Intervention details

Glen Coiltie Zone:

3.2.34 Coiltie South – planting in this zone south of the River Coiltie is mainly within but in places beyond the existing (currently incompletely-effective) deer fence discussed under Coiltie Ancient Woodland Enhancement above. It critically includes planting around the Glen Coiltie works zone of Permanent Compounds (PC) PC04, PC07 and PC08, Temporary Compounds (TC) TC01, TC02, TC03, TC05 (by far the largest compound, for the temporary workers accommodation) and TC06, and associated Access Track. This planting zone also extends eastwards well beyond the Glen Coiltie works area to the edge of the estate. Apart from already-prescribed gaps (some substantial) where the baseline habitat is not considered suitable for planting, and the 30 m unplanted buffer for natural regeneration of the existing ancient woodland (see previous section), this planting area essentially fills the gap between the existing ancient woodland and the existing (currently ineffective) deer fence. This planting area includes riparian planting along small streams, where the species composition will be adjusted accordingly. The existence of a single large, mature Scots pine near the western edge of this planting zone supports the planting of areas of indigenous-sourced Scots pine woodland, rather than only birch-dominated woodland. This planting area, particularly the area around the Glen Coiltie works zone, is the area in which advance planting at as early a date as possible is most critical, to optimise the establishment period for landscape and visual assimilation and reduce the visual impacts of the Glen Coiltie infrastructure (in particular, the Temporary Workers Accommodation).

3.2.35 Coiltie North – some of this planting is on slopes beyond the current deer fence and thus requires part of the fence to be moved. Large areas have been excluded from planting within this zone – these are either existing woodland or (on the higher ground) blanket bog (either seen during field survey or extended using Class 1 and Class 2 peatland categories from the NS Carbon and Peatland 2016 dataset). This planting zone would extend existing native woodland onto suitable connected ground. There is a small amount of riparian planting in this zone along a small watercourse.

Eastern Zone:

3.2.36 Sron Dubh – areas encompassing base-rich flush and associated open ground (some particularly species-rich) and blanket bog have been excluded from planting here. On the west side of Sron Dubh, deer fencing must closely follow the planting edges as shown on **Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)** for ornithological reasons (black grouse lek). Additionally, deer fencing nearest Loch Dubh must also follow the planting edges shown on that figure, in order to maintain a minimum standoff from Loch Dubh of 100 m for ornithological reasons (primarily use of Loch Dubh by red-throated diver, and presence of breeding greenshank). It includes riparian planting along small watercourses. This planting zone is not near any proposed infrastructure.

3.2.37 Meall a' Choire – large areas have been excluded from planting here that correspond to very species-rich basic grassland, some species-rich heath and bracken, flush/fen areas that are particularly extensive and in places species-rich in the floor of the valley of the Allt Coire an Ruighe, and blanket bog. There are zones of riparian planting in this area, which closely approaches an existing deer-fenced area that extends eastwards (containing existing regenerating birch and juniper). This zone is not near any proposed infrastructure. Deer fencing in this zone should follow the lowest edges of the planting as closely as possible, in particular to leave the floor of the valley of the Allt Coire an Ruighe (which includes significant areas of species-rich habitat) still open to low-level deer grazing.

3.2.38 Meall Fuar-mhonaidh Eastern Flank – deer fencing for this zone should closely follow the proposed lower edges of the planting, in order to leave notably species-rich heath and bracken still open to low-level deer grazing. Where this zone directly abuts the existing deer-fenced area, the common section of deer-fence will serve no purpose and could be removed. Planting exclusions in this zone include flushes (some base-rich) and blanket bog. There is proposed riparian planting along small watercourses. This zone is not near any proposed infrastructure.

Northern Zone:

3.2.39 Carn na h-Imrich – a planting zone on the lower northern slopes of Carn na h-Imrich between existing deer-fenced areas and FLS commercial forestry further north. The required extent of new deer fencing is therefore limited, however existing fencing would be inspected and may require improvements which would be remedied. A large part of this zone has been excluded from planting on the basis of presence of Class 1 or Class 2 peatland in the NS Carbon and Peatland 2016 dataset. Ground-truthing may result in refinement of this exclusion zone. There are small stretches of riparian planting along small watercourses. This zone is very distant from prominent proposed infrastructure and amongst the lowest priority for advance planting.

3.2.40 Ard an t-Sidhein – a planting zone north west of Carn Macsna, again between existing deer-fenced areas and abutting FLS commercial forestry. The required extent of new deer fencing is therefore limited, however existing fencing would be inspected and may require improvements which would be remedied. A substantial part has been excluded from planting on the basis of presence of Class 1 or Class 2 peatland in the NS Carbon and Peatland 2016 dataset. Ground-truthing may result in refinement of this exclusion zone. There are several stretches of riparian planting along small watercourses. This zone is very distant from prominent proposed infrastructure and amongst the lowest priority for advance planting.

Central Zone:

3.2.41 Meall Fuar-mhonaidh South – there are two proposed planting areas here, on lower moorland between the higher parts of Meall Fuar-mhonaidh and Creag Dearg. Small exclusions to planting here have been made where there is Class 1 or Class 2 peatland in the NS Carbon and Peatland 2016 dataset. Ground-truthing may result in further exclusion refinements. Deer fencing near the lochans beside Creag Dearg must for ornithological reasons be situated at the edge of planting shown on **Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)**, to maintain a minimum 100 m stand-off from these lochans.

3.2.42 Glas-bheinn Beag – there are two planting zones on the southern and eastern flanks of Glas-bheinn Beag, and a third narrow riparian zone along a nearby stretch of the Allt Coire an Ruighe. Exclusions from planting have been made based on surveyed blanket bog and flushes. However, some of this planting zone is on habitat mosaics of heath and bog in which ground-truthing will need to specify precise planting areas so that mosaic blanket bog components are left unplanted. The narrow riparian planting zone along the Allt Coire an Ruighe is intended to extend an existing downstream length of narrow native woodland within a ravine, and would complement the species composition of that ravine woodland.

3.2.43 Allt Carn na Fiacail – an elongated planting zone west of Glas-bheinn Mhor along the Allt Carn na Fiacail. Where adjacent to the watercourse, the planting would be adjusted to be suitably riparian. Otherwise, it would comprise further birch- or Scots

pine-dominated woodland. Planting and fencing works and any other works along the Allt Carn na Fiacail must be carried out in the period September to December inclusive, and not in any other months, for ornithological reasons.

3.2.44 Planting of trees in each planting zone will be guided by the ECoW, ecologist and/or forestry expert, with NVC and/or extensive upland woodland planting experience, who will inspect each planting zone and advise on any refinements of planting to best match ground conditions, and where present to blend as best as possible with any existing adjacent woodland. Particularly where proposed planting extends beyond the habitat survey carried out for the Proposed Development, the ECoW will identify any patches that should not be planted and that have not already been excluded from planting, such as blanket bog, flushes or notably species-rich habitat, which will be left unplanted. Conversely, if the ECoW finds that any parts excluded from planting (in particular where arising only presence of Class 1 or Class 2 peatland in the NS Carbon and Peatland 2016 dataset) are not blanket bog and could be planted, this would also be advised.

3.2.45 All native woodland planting would be graded in density so that the higher parts are less dense and more naturalistic (corresponding to low density Upland Birchwood or low density Scots Pine woodland).

3.2.46 All planting will be subject to monitoring, to ensure correct establishment of planted trees, to rectify any planting failures, and to ensure maintenance of deer fencing.

3.2.47 Regarding sourcing of native trees and shrubs for planting, refer to the below section ‘Sourcing of tree and shrub species for planting’.

Species composition of native woodland planting

3.2.48 Woodland planting at all the above native woodland planting zones would primarily aim to complement the existing (including ancient) woodland by mainly simulating NVC type W17 with birch dominant. Trees and shrubs are anticipated to include the following species, noting that this will be subject to refinement in the finalised LEMP:

- Downy birch *Betula pubescens* (dominant);
- Sessile oak *Quercus petraea* (minor component on lower drier ground);
- Aspen *Populus tremula* (minor component on less strongly acid ground);
- Rowan *Sorbus aucuparia* (minor component on drier or rocky areas); and
- Juniper *Juniperus communis* (minor component on drier ground).

3.2.49 A minority of the planting area would also simulate NVC type W18 with Scots pine dominant:

- Scots pine *Pinus sylvestris* (from local indigenous stock) dominant;
- Downy birch (minor component);
- Aspen (minor component on less strongly acid ground);
- Rowan (minor component on drier or rocky areas); and
- Juniper (minor component on drier ground).

3.2.50 Riparian planting alongside watercourses would simulate NVC type W4:

- Downy birch (co-dominant);
- Eared willow *Salix aurita* (co-dominant); and
- Grey willow *Salix cinerea* (instead of eared willow on lower ground).

Outcomes

3.2.51 The native woodland planting zones would result in large-scale expansion of the native woodland network in a naturalistic pattern, comprising species that are appropriate to the locality and locally sourced, and supplementing existing ancient semi-natural woodland and nearby rewilding and regeneration zones. These planting zones being situated on habitat dominated by heathland that, given that they are below the tree line, would under more natural circumstances likely be native woodland. The planted woodland also contributes positively to carbon absorption, and has strong visual benefits in integrating parts of the infrastructure into the landscape and strengthening its natural character.

Dwarf Birch Montane Scrub Zones

3.2.52 Dwarf birch was found during the habitat survey to be common on the lower southern slopes of Glas-bheinn Mhor, in a zone that lies partly within the Headpond and partly beyond it, and more thinly scattered elsewhere. The dwarf birch montane scrub zones compensate, and owing to their substantial size provide further enhancement, for losses of dwarf birch that would arise from Headpond construction. There are two main central zones, and a smaller supplementary zone, proposed primarily for the establishment of dwarf birch. Note that dwarf birch very commonly grows (including in this area) in drier forms of blanket bog amongst heather and hare's-tail cottongrass (often NVC type M19, sometimes M17, also in places in H21 damp heath and occasionally M15 wet heath). Thus this is the only LEMP measure where planting (of dwarf birch only) would take place within blanket bog habitat, as well as associated wet and damp heath. The proposed dwarf birch zones accordingly include areas of drier bog where M19 is known or likely to be present, and appreciably sloping ground where H21 is known or likely to be present.

3.2.53 During baseline surveys very small juniper bushes or seedlings were occasionally found widely scattered across less wet moorland. There is also an existing large, mature, living Scots pine approximately 600 m north of the Headpond, that lies within the western-most proposed dwarf birch zone, and the proposed dwarf birch zones are below or around the natural tree line. It is therefore considered appropriate to include small amounts of juniper and Scots pine within the dwarf birch zones, in appropriate (drier) habitat patches. The Scots pine on higher slopes would likely remain small owing to exposure, however it is a natural aspect of montane scrub that tree species (which would clearly include Scots pine in this area) can occur within it as increasingly small forms with increasing altitude, forming a transition to more scrub-like vegetation.

3.2.54 Note that all proposed dwarf birch zones are situated far from any woodland containing other birch species. This is purposeful, to minimise the chance of hybridisation of dwarf birch with other birches. Note also that dwarf birch, although technically a 'tree', is extremely small and does not exceed the height of the heather and other larger plants amongst which it grows by much. It is relatively inconspicuous and does not form 'woodland' or even 'scrub' in the normal sense (although it is considered a montane scrub species), but rather adds to the structural and species diversity of the bog and heath in which it grows, without large-scale changes to the general visual character of that bog and heath.

Location

3.2.55 The two main dwarf birch zones are located on the north sides of Glas-bheinn Mhor and Glas-bheinn Beag. A third smaller zone is located on a prominent steep-sided small hill just north east of the Headpond.

Intervention details

3.2.56 Prior to planting, the dwarf birch zones would be deer-fenced to ensure planted dwarf birch, juniper and Scots pine achieve the highest possible rate of success.

3.2.57 Dwarf birch is reported to be relatively easy to grow, and would be grown from seed of local origin before being transplanted to the proposed dwarf birch zones. Regarding seed of local origin and growing of young plants from this seed, see Sourcing of tree and shrub species for planting below.

3.2.58 Grown plants of local seed origin would be planted out in patches of vegetation within the dwarf birch zones that correspond to the NVC type M19 bog as a priority (and within this, prioritising M19c, and secondarily M19a if present), followed in order of preference by NVC types H21 damp heath, drier M17b bog and M15c wet heath. In order that this be satisfactorily achieved, the dwarf birch zones would be inspected on a fine scale prior to planting to determine those planting patches likely to be most successful, and this would necessarily be carried out by an NVC expert.

3.2.59 The planting of dwarf birch is not intended to be across all suitable habitat within the dwarf birch zones, but in patches of the most suitable habitat scattered across them. Subsequently, dwarf birch would be left to natural regenerate, along with any regeneration of juniper and Scots pine that may take place in the long term.

3.2.60 Juniper and Scots pine would be planted only in small quantities on local drier patches of vegetation (not bog).

Timing

3.2.61 This measure does not provide screening of infrastructure, since it only locally approaches it and mainly involves short-growing vegetation. However, to achieve biodiversity gain in these zones sooner rather than later, they would be progressed

as soon as is practicable, which would likely be during the early construction Phase when the nearest construction tracks have been built.

Outcomes

3.2.62 The key outcome would be significant areas of bog and heath with frequent montane dwarf birch, that would go beyond compensation for dwarf birch lost to the Headpond and also provide enhancement.

Montane Willow Scrub Zone

3.2.63 Small amounts of whortle-leaved willow are known to be present on the lower west side of Meall Fuar-mhonaidh, some of which would be inundated by the Headpond when complete. This is a Nationally Scarce species, and montane willow scrub in general is also very scarce, requiring no or very little grazing.

Location

3.2.64 The proposed Montane Willow Scrub Zone encompasses the steep to very steep slopes on the western side of Meall Fuar-mhonaidh, above the upper water level of the proposed Headpond (see **Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures)**).

Intervention details

3.2.65 The proposed Montane Willow Scrub Zone would require to be deer-fenced.

3.2.66 Whortle-leaved willow would be grown from harvested seed, and the nursery-grown plants planted sparsely within the Montane Willow Scrub Zone. Existing plants that would be lost to the Headpond would also be translocated nearby within the Montane Willow Scrub Zone, as far as possible. Further details on seed harvesting and translocation are provided in **Sourcing of Tree and Shrub Species for Planting** below.

3.2.67 The Montane Willow Scrub Zone would be expected to largely develop through natural regeneration, supplemented initially by the planting and translocation. Other common woody species that are also already present in limited quantity would be expected to develop and expand in due course, and contribute to the montane scrub.

Timing

3.2.68 Establishment of the Montane Willow Scrub Zone and associated fencing would be initiated as soon as it is practical to do so. If possible this would commence two years before the Headpond would be inundated. Earlier commencement would advance progress and would be sought.

LCW Native Planting

3.2.69 There are two sections of the LCW, primarily the LCW platform and the access road from the A82. Construction of the LCW will involve the removal of woodland between the A82 and loch shore, which lies partly within the AWI; however all woodland within LCW construction area, including that beyond the AWI, has been treated as ancient for the reasons explained in **Chapter 7: Terrestrial Ecology (Volume 2: Main Chapter)**.

3.2.70 Mitigation of views of the LCW from the A82, Foyers and from recreational users of Loch Ness, will be achieved by a combination of material choice and surface treatment of the LCW platform, treatment of the access road structure and the extension of the foreshore and native woodland planting. The objective of these key interventions is to ensure that the LCW has minimal intervention on the Loch shore landscape and in views. The use of materials and the detailed design of the LCW will be undertaken as part of a condition post consent but will comprise a selection of surface materials and treatments which mimic colours and tones in the surrounding landscape.

3.2.71 The elevated bridge structure will be designed to have slender piers and will be clad using a system of timber panels. The bridge structure will screen the concrete deck which will create a more natural treatment and a visually recessive structure and bridge profile. The timber structure will continue around the edge of the smolt screen and the diffusers which would add accents of natural materials across the new structure. The LCW platform will be broken up using a variety of muted surface treatments reflecting the colours in the landscape and natural rock tones. Concrete test panels will be prepared to investigate the finishes achievable using pigmented concrete, to reflect tones in the surrounding landscape. Various pattern profile finishes will also be investigated, so that shadow breaks up the otherwise plain expanse of concrete. Areas of raised planting beds with native understorey and tree planting in keeping with retained adjacent native woodland will further break up and soften the retaining wall and the newly created rocky shoreline in between the diffusers will help integrate the LCW into the loch shore landscape.

Intervention details

3.2.72 Prior to construction proceeding at the LCW, and following felling, subject to practical considerations (eg the LCW area is quite steeply sloped), the preferred approach is for the soil from the felled woodland to be stripped and appropriately stored (with subsoil, topsoil and vegetation turves stripped and stored separately). On retained open slopes, once reprofiled and as soon as possible during the construction Phase of the LCW, the woodland soils and turves will be replaced in the same order. This will preserve part of the area of woodland flora, seed bank and microfauna. The subsoil, topsoil and turf storage areas will be agreed in advance with the ECoW.

3.2.73 Native woodland will be planted around the final LCW access road, bridge and loch shore as shown on Figure 6.4.2 Outline Landscape and Ecological Mitigation – Lower Control Works and Figure 6.4.3 Lower Control Works Illustrative Cross Sections (Annex A. Figures). Due to visibility splay requirements the higher edge of the engineered slope will be planted with native shrub planting to safeguard from obstructing views. Planting around the access road and bridge will be designed to create a natural pattern which resembles the loss of Ancient Woodland while mitigating views of the access road from Foyers and recreational users on Loch Ness. Planted tree / shrub species will simulate as far as possible the felled woodland type (National Vegetation Classification (NVC) type W9), which is basic (not acid) and dry, mainly comprising silver birch *Betula pendula*, hazel *Corylus avellana* and wych elm *Ulmus glabra*, with smaller amounts of sessile oak *Quercus petraea* and holly *Ilex aquifolium*. If and where the ECoW considers it appropriate, the re-laid turves may be supplemented with appropriate ground flora planting of honeysuckle *Lonicera periclymenum*, greater woodrush *Luzula sylvatica*, common male-fern *Dryopteris filix-mas,* bluebell *Hyacinthoides non-scripta* and dog's mercury *Mercurialis perennis*.

3.2.74 Within the LCW platform larger native trees (heavy standards with a 12-14cm girth) will be planted within the containerised section with native understorey species to partially screen the retaining wall after construction is complete.

Timing

3.2.75 Planting (preceded by soil replacement) at the LCW will be undertaken as soon as possible after completion of construction of the relevant parts of the LCW and engineered slopes.

Outcomes

3.2.76 This measure would result in partial reinstatement of native woodland between the A82 and Loch shore around the LCW, providing landscape integration of the infrastructure including screening of the retaining wall. It also provides partial

compensation in biodiversity terms in preserving a minority of the lost native woodland soil and provided localised replanting of trees on retained non-engineered slopes outside the visibility splay. Planting will comprise species that are appropriate to the locality and locally sourced.

[2] Available at https://map.environment.gov.scot/sewebmap/#panel2

Sourcing of Tree and Shrub Species for planting

3.2.77 All planted tree and shrub species would be of as local origin as possible. There is local expertise in harvesting tree and shrubs seeds of local origin and growing them on for planting. Such an organisation (such as Trees for Life) or similar, would be appointed to provide locally-sourced planting material.

Scots pine

3.2.78 Using seed of local origin is important and particularly so for Scots pine (origin is more specific than provenance – seeds of local provenance come from local trees, but these could have been planted from another region, whereas seeds of local origin are from trees thought to be indigenous to the region and not planted there from elsewhere). Very large mature examples of Scots pine (living and dead) were seen in small numbers in the higher parts of the FLS plantation between Alltsigh and Creag Dearg, and are possibly indigenous, as may be two isolated, large, living Scots pines seen within the habitat survey area (shortly west of TC05, the Temporary Workers Accommodation, and approximately 600 m north west of the Headpond on the lower east side of Glas-bheinn Mhor). However, there are accepted patches of indigenous Scots pine woodland listed in the Caledonian Pinewood Inventory[2] relatively nearby at Invermoriston and further west. Following advice in seed source guidance[3], Scots pine to be planted in the vicinity of the Proposed Development would at minimum be sourced from the 'North Central' Scots pine seed zone. However, it would be preferable to go beyond this in the interests of maximising preservation of genetic diversity, and the appointed supplier would be requested, if possible, to source seed from the closest accepted Caledonian Pinewood Inventory patches to the Proposed Development, which are those near Invermoriston.

Whortle-leaved willow

3.2.79 There are small amounts of known whortle-leaved willow (a Nationally Scarce species) on the west side of Meall Fuar-mhonaidh, although as stated in **Appendix 7.3 Habitats (Volume 5: Appendices),** it is quite possible that there is more amongst the extensive inaccessible cliffs. Since a smaller proportion of the known whortle-leaved willow (see **Figure 7.8 Notable Plants and Species-rich Habitats**

[3] Forestry Commission Scotland (2006). Seed Sources for Planting Native Trees and Shrubs in Scotland. Forestry Commission Scotland.

(Volume 3: Figures)) is beneath the upper water level of the Headpond and would be lost without intervention, the following procedure would be followed:

3.2.80 Following completion of deer fencing for the proposed Montane Willow Scrub zone, where possible seed would be spread and nursery-grown plants would then be planted within it in appropriate habitat by the appointed expert. The planting would be sparse given the degree of inaccessibility of much of the west side of Meall Fuar-mhonaidh. However, the planting is intended as an assistance to the natural regeneration of whortle-leaved willow (and of other montane scrub species already present, which include other common small willow species and small examples of trees such as rowan and aspen) under a reduced grazing regime afforded by the deer exclosure around the Montane Willow Scrub zone.

Dwarf birch

3.2.81 Dwarf birch is common on parts of the lower southern slopes of Glas-bheinn Mhor, and scattered elsewhere, and the recorded locations are all shown on **Figure 7.8 Notable Plants and Species-rich Habitats (Volume 3: Figures)**. It should therefore be relatively easy to visit the area of frequent existing dwarf birch and to obtain seed from them, thus obtaining seed from the immediate vicinity of the Proposed Development. This would be of absolute local origin and therefore the most preferable option. Alternatively, it may be that the appointed expert supplier of native plants already has dwarf birch seedlings grown from seed taken from the nearby area, and this would also be a good option. At minimum, the planted dwarf birch must have been grown from seed taken from seed source zone 105 in accordance with FLS guidance[3].

3.2.82 In the case that seed is sourced on-site (rather than using seedlings in nurseries grown from seed sourced locally or at minimum from seed source zone 105), it will be gathered from plants in the vicinity of the Proposed Development. In this case, it is important (and this is true for all tree seed-gathering for propagation) that seed be taken from as many separate plants as possible, spread over as large an area as can feasibly be achieved. This is to maintain genetic diversity in the nursery-grown plants and preserve local adaptations to climate etc. Given the local frequency of dwarf birch, it should easily be possible to take seed from at least 50 plants (noting that at each dwarf birch location shown on **Figure 7.8 Notable Plants and Species-rich Habitats (Volume 3: Figures)** there are commonly several separate plants in the vicinity).

Other species

3.2.83 For planting within the Glen Coiltie Zone, which is adjacent to existing ancient semi-natural woodland, and in accordance with FLS guidance[3], other planted trees and shrubs such as birch, sessile oak, rowan, juniper and eared willow would be of local origin from seed source zone 105. If prolonged shortage of plants of proven local origin from seed source zone 105 is demonstrated, plants grown from seed from well-adapted trees of local provenance (rather than strict local origin) would be used.

3.2.84 Native trees and shrubs of other species for the native planting zones not within 300 m of existing ancient semi-natural woodland would also be of local origin as far as possible, or local provenance if there is a demonstrated shortage of local origin plants, again using seed source zone 105.

Monitoring of Planting and Regeneration Zones

3.2.85 All planting and regeneration zones will require monitoring, for typically a 30 year period over which the final post-consent LEMP would be intended to last.

3.2.86 At the existing deer exclosure at Coiltie South / Coiltie North, there are existing deer within the exclosure. Upon completion of the exclosure to a deer-proof state, any deer still remaining within the exclosure would be removed.

3.2.87 Monitoring of deer-fencing around all exclosures and the habitats within them would be undertaken:

- Periodic inspection of the woodland or montane scrub within the exclosures to ensure that a) no deer are seen, and b) no new deer damage to trees / montane scrub is present and, in due course, signs of natural regeneration are apparent;
- Periodic inspection of the perimeter deer fence to ensure that condition is good and that there are no breakages or vulnerabilities allowing or potentially allowing deer access, and if so then remedial action would be taken; and
- If any deer or signs of them are observed within the exclosure, they would be removed and the deer fence inspected to locate and repair any weaknesses that afforded access.

3.2.88 However, when woodland (planted or regenerated as applicable) and montane scrub within the exclosures has reached reasonable maturity, and with a reduced deer density across the estate of 8.5 deer km^2, it may be feasible to remove deer fencing from some exclosures whilst still maintaining reasonable natural regeneration, reduced browsing pressure and alignment with long-term woodland expansion goals. In order to judge when and where this may be viable, the following long-term monitoring would be carried out:

- Continued monitoring of deer numbers;
- Herbivore Impact Assessment and vegetation surveys, both within and outside exclosures.

3.2.89 If and where herbivore impacts are demonstrably low enough to be supporting a reasonable degree of natural regeneration, deer-fencing would potentially be removed.

3.3 Reinstatement of Temporary Infrastructure

3.3.1 Environmental mitigation during construction and peat management are outlined in **Appendix 3.1 Outline CEMP (Volume 5: Appendices)** and **Appendix 15.2 Outline Peat Management Plan (Volume 5: Appendices)**, and the details are not repeated here. However, key points relevant to this oLEMP are as follows:

- Permanent Access Tracks would be in the same locations as the construction tracks. The construction track width of 8 m would be reduced following completion of construction to a permanent track width of 4 m (plus passing places approximately every 500 m);
- The majority of peat within the Proposed Development footprint lies within the Headpond, and peat within the Headpond would not be removed except where necessary for construction of dams, etc. Thus, the majority of peat within the Headpond would be retained within it and not excavated or removed;
- Peat would be excavated along access tracks and at compounds. As set out in **Appendix 15.2 Outline Peat Management Plan (Volume 5: Appendices)**, peat re-use would include creation of bunds along the edges of tracks and compounds, to prevent mixing of natural and track run-off and to help blend infrastructure into the landscape. When construction track width is partially reinstated during narrowing to permanent tracks, such peat (or other original substrate) would be reinstated, and similarly for temporary compounds;
- As also set out in **Appendix 15.2 Outline Peat Management Plan (Volume 5: Appendices)**, acrotelmic (surface) peat and vegetation would be stripped and stored separately from catotelmic peat, and less humified catotelmic peat would also be separated from amorphous catotelmic peat. These layers would be reinstated in original sequence, and handling and transportation of peat would be minimised as far as possible. Peat handling, storage and re-use would be monitored, and mixing of peat with mineral soil would be avoided. Other appropriate controls would be put in place to ensure peat is stored in accordance with best practice; and
- Peat and other excavated substrates would be stored in designated areas within compounds, and would be re-used for reinstatement as closely as possible to the storage locations and the locations that they originated from.

3.3.2 For Temporary Construction Compounds, including the Temporary Workers Accommodation (TC05), the original substrate would be replaced and ground vegetation reinstated, which will in many places likely require use of seeding, given the several years that removed substrate and vegetation would require to be stored for. The seed mixes to be used will primarily need to reinstate wet heath, and in places drier blanket bog vegetation. Details of the seed mixes would be provided in the final post-consent LEMP but would be dominated by the abundant species present in the baseline habitats, including heather *Calluna vulgaris*, cross-leaved heath *Erica tetralix*, purple moor-grass *Molinia caerulea* and (in bog areas) hare's-tail cottongrass. Other ground flora species characteristic of the local forms of these habitats would be included. A Scottish supplier of as locally-sourced seed as possible would be used.

3.3.3 Where (as in the Glen Coiltie works zone, including the Temporary Workers Accommodation (TC05)) areas of removed temporary infrastructure are to be planted with native woodland, the substrate and ground vegetation would first be put in place, and then the trees and shrubs planted in a naturalistic manner (not in continuous even density, with variety in density and more natural species placement, and becoming lower density on higher ground) with species planted in particular patches in accordance with ground conditions, and as set out for the relevant planting areas above.

3.4 Non-ornithological Faunal Measures

Water Vole Habitat Creation

3.4.1 Abundant water vole Arvicola amphibius evidence was identified by AECOM during surveys in 2024. Within the Headpond area and adjacent land to the west and north, water vole evidence (both fresh and old) was found in almost all areas of suitable habitat. Evidence was more sparse in other parts of the survey area. The results of these surveys are described in **Chapter 7: Terrestrial Ecology (Volume 2 Main Report)** and **Appendix 7.4: Mammals (Volume 5: Appendices)** and are shown on **Figure 7.10 Water Vole Survey Results and Incidental Records (Volume 3: Figures)**.

3.4.2 As explained in **Chapter 7: Terrestrial Ecology (Volume 2 Main Report),** it is likely that suitable habitat that would be lost supports approximately 53 water voles. However, this is necessarily a rough estimation, and to allow for a potentially higher number whilst also providing a degree of enhancement, sufficient habitat would be created for 100 water voles. Water voles would be translocated out of the Headpond area prior to works affecting water vole habitat. Water vole translocation measures would follow best practice as described by The Water Vole Mitigation Handbook[4] and Water Vole Conservation Handbook[5]. Details of procedures for habitat creation and translocation would be set out in detail in the Species Protection Plan (SPP) that would be required as part of the necessary water vole licence application to NS and would be based on the outline set out here. Pre-works water vole survey would support and inform the licence application and water vole SPP.

Locations

3.4.3 The exact locations and specifications of water vole habitat creation would be confirmed in the final post-consent LEMP, and included in the water vole SPP. However, it would preferentially take place within the Proposed Development Site because the population here will be part of the same meta-population that includes those within the Headpond area, and because American mink (a key water vole predator) appears to be absent (as would be expected) from these upland moorland areas. Water vole habitat creation works would be located in shallower peat (not blanket bog) in areas unaffected by the Proposed Development, including wet heath and species-poor purple moor-grass areas along watercourses, as far as possible in the same water catchment as the water vole habitat that would be lost to the Headpond (i.e. within the Allt Saigh catchment).

Intervention details

3.4.4 Water vole habitat creation in shallower peat in retained unaffected parts of the Proposed Development Site would take the following forms:

- Small slow-flowing channels and dead-ended ditches connected to small watercourses (a similar method was implemented successfully at Bhlaraidh Wind Farm); and
- Small ponds with complex irregular edges and small islands, to maximise edge habitat, or channels simulating natural back-channels in the small floodplains of small watercourses, as occur in places west of the Headpond.

3.4.5 Other methods that have been used elsewhere include re-meandering of canalised ditches and blocking of dry ditches, however, these methods are not obviously applicable within the Allt Saigh catchment, and, if water vole habitat creation is undertaken beyond the Allt Saigh catchment, do not appear likely to be of use in the wider Proposed Development Site. They could be used however, if conditions are found that render them applicable.

3.4.6 Creation of ponds as water vole habitat is preferred according to the Water Vole Mitigation Handbook[4] because they can be more effectively and easily fenced than linear water features, and because connections to existing watercourses are not required. Therefore, creation of small irregularly-edge ponds with small islands would be prioritised.

3.4.7 Though deeper peat (of 0.5 m depth or more) would be avoided, to avoid impact on blanket bog (which is universally defined in habitat systems and by NatureScot as being on 0.5 m or more peat depth), shallow peat is suitable for habitat creation, and is a favourable substrate for burrowing by water voles.

[4] Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook. Mammal Society Mitigation Guidance Series. The Mammal Society, London.

[5] Strachan, R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook. 3rd Edition. Wildlife Conservation Research Unit, University of Oxford.

3.4.8 Strips around and along created water vole habitat features will be disturbed during their creation and will then be sown with a wetland mix predominantly comprising common cottongrass *Eriophorum angustifolium*, bottle sedge *Carex rostrata* and soft rush *Juncus effusus.* These species are known to be well-utilised by water voles in upland locations as food sources (even where purple moor-grass, which is common in the surveyed baseline habitats, is dominant, since the leaves are not palatable to water voles except when very young). Soft rush is capable of quickly colonising bare, damp, peaty soils and is already present at low frequency within the area that was subject of detailed habitat survey, including in the Allt Saigh catchment. Common cottongrass is common in the area, and disturbed or open peat is a key habitat for this species. Given that the edges of created water vole habitats would therefore include significant amounts of favourable foraging plants, whereas existing habitats used by water voles in the Headpond area generally contain relatively little of these species, they are likely to be able to support a higher density of water voles than the lost habitat.

3.4.9 Newly created habitat would be fenced initially where natural barriers to water vole movement do not exist, to prevent possible natural colonisation by water voles from the wider area. An example of suitable fencing would be 2.4 m by 1.2 m plywood boards, supported by upright posts and buried to at least 0.5 m depth with an attached skirt of 1.5 cm wire mesh. This is described more fully in The Water Vole Mitigation Handbook[4].

Timing

3.4.10 Created water vole habitat ("receptor sites") would be created well in advance of water vole translocation, which itself will necessarily take place in advance of works at the Headpond. The Water Vole Mitigation Handbook[4] suggests that it may take 9-15 months for newly-created habitat to be suitable as a water vole receptor site, and recommends that in Scotland water vole trapping takes place between mid-March and 15 April (before the breeding season begins). Trapped water voles would be released into soft-release pens at the receptor sites immediately after capture.

3.4.11 Ideally, works that remove water vole habitat take place shortly after water voles have been translocated out of that habitat, to reduce the risk of neighbouring retained water voles recolonising the works area. On smaller sites, exclusion fencing around water vole habitat due to be lost can be installed to prevent recolonisation prior to destruction. However, this is not likely to be viable for the approximately 4 km of relevant small watercourses that would be lost to the Headpond area. Consequently, a phased approach may be necessary, whereby water voles are trapped and removed from specific water vole habitat stretches shortly before each stretch is destroyed by impacting work(s), which depending on the types of works (such as dam construction, borrow pit (quarry) excavation, Upper Control Works (UCW) construction, and construction of internal Headpond tracks and temporary compounds) may occur at different times, and with some water vole habitat within the Headpond potentially remaining unaffected until final inundation of the Headpond following its completion after eight years of construction.

3.4.12 However, some water vole habitat would be impacted as soon as Headpond construction begins. Therefore, creation of compensatory water vole habitat would commence at least in the spring of the year prior to the first translocation being required, to allow the created habitats sufficient time to establish properly (including a full growing season). If this is not possible, or the ECoW or other advising ecologist deems the receptor sites to be insufficiently established at the time of translocation, then as a last resort trapped water voles would either be taken into captivity elsewhere or held in provisioned cages beside the receptor sites until such time as the receptor sites are sufficiently established.

Monitoring

3.4.13 Upon their creation, water vole receptor sites would be monitored approximately bi-monthly to ensure vegetation is establishing as expected, and no other issues are arising.

3.4.14 Upon release of translocated water voles to the receptor sites, they would be subject to at least twice-yearly water vole survey and habitat inspection in the appropriate seasons, to ensure water voles are utilising the receptor sites, and to ensure the habitat is developing appropriately. This monitoring would continue for a minimum of five years at each receptor site from the date water voles are released at each one. If deficiencies are found, these would be specified and remedial action taken under the advice of the ECoW or other appointed ecological advisor.

Outcomes

3.4.15 Following habitat creation at receptor sites and translocation of water voles to them as described above, there would be a significant increase in local suitable water

vole habitat that exceeds the value to water voles of water vole habitat lost to the Headpond, accompanied by a likely slightly increased local water vole population.

Emerald Dragonfly Habitat Creation

3.4.16 Emerald dragonfly species are known to occur in the nearby area, and an undetermined emerald dragonfly species was seen during fieldwork shortly north of the Headpond. These species are uncommon to scarce, and notable. The Proposed Development will incur negligible loss of potentially suitable breeding habitat for emerald dragonflies, however creation of three ponds suitable for emerald dragonflies are proposed as enhancement (which will primarily be faunal in benefit, including for other invertebrate fauna, but would provide general habitat benefits).

Locations

3.4.17 The pond locations are shown on Figure 6.4.1 Outline Landscape and Ecological Mitigation – Project Wide (Annex A. Figures).

3.4.18 Two of the proposed ponds are situated at the locations of Temporary Compounds TC01 and TC03. The reason for choosing these locations is that a) they are on more suitable lower ground, b) they are near existing native woodland and native woodland to be planted (emerald dragonflies often prefer waterbodies with at least some adjacent native trees and shrubs), c) they are easily accessible and located where there will already have been significant habitat disturbance.

3.4.19 The third proposed pond is relatively near the Euroforest track, on ground that is shallowly-sloping, adjacent to native woodland, comprises vegetation dominated by wet heath on likely shallow peat, and is relatively easy to access.

Intervention details

3.4.20 Plant machinery would be used to excavate the three ponds. This would be done in a manner that provides extensive shallower areas of water, grading very gently to wide damp pond edges that at the upper margin are rarely inundated. In the created shallower peripheries of the ponds, appropriate (common) sphagnum species would be translocated from nearby areas in which they are plentiful, since emerald dragonflies favour sphagnum-rich ponds and lochans. Appropriate species of sphagnum would include *Sphagnum cuspidatum* in shallow but more or less permanent water, then *Sphagnum auriculatum* (formerly *Sphagnum denticulatum*) in less wet but regularly inundated zones, and *Sphagnum papillosum* around the damp peripheries.

3.4.21 Native woodland planting would have automatically taken place adjacent to the two ponds at Temporary Compounds TC01 and TC03 under the proposed Coiltie South planting set out above. However, small numbers of native shrubs would be additionally planted locally around the ponds in the event that the Coiltie South planting is considered too distant. At least 50% of the ground around the ponds will however be left unplanted, particularly the southerly aspects, in order to provide adequate sunlight. Small amounts of native shrubs would also be planted around the third pond.

Timing

3.4.22 The two proposed ponds at Temporary Compounds TC01 and TC03 would be created when these compounds are no longer required. This would occur near or at the end of the Construction Phase. However, the third pond is very distant from any infrastructure and would be created much earlier during the Construction Phase.

Monitoring

3.4.23 The ponds would be monitored annually to ensure they are developing as expected for a minimum of five years. Additionally, surveys would be conducted in summer to establish whether dragonfly species are utilising the ponds. If the ponds do not function as intended, remedial action would be taken, which might include further reprofiling of the edges to better serve the purpose of supported extensive sphagnum for potential use by emerald dragonflies.

Outcomes

3.4.24 It is hoped that the three ponds would be used for breeding by emerald dragonflies, which would significantly bolster local populations of these uncommon species. The ponds would also provide benefits for other invertebrates including more common dragonfly species, as well as enhancing habitat and botanical diversity and likely providing small enhancements for other fauna such as bats (which would very likely forage on small aerial invertebrates that are commonly associated with ponds).

3.5 Ornithological Measures

Waterbody Enhancement for Slavonian grebe

3.5.1 A number of waterbodies surveyed by AECOM in 2024 were determined to have limited or negligible suitability to support breeding Slavonian grebe owing to absence or limited extents of suitable emergent vegetation. Therefore, to improve breeding habitat and potentially local breeding success of Slavonian grebe, habitat management will be undertaken to facilitate the growth of Small bottle sedge Carex rostrata beds in certain lochans.

Locations

3.5.2 A 'long list' of potentially suitable waterbodies will be identified and subject to survey prior to construction. Surveys will comprise, at minimum, mapping the size of the waterbody, measurement of water pH and identification of any fish species present, if any. A minimum of five waterbodies will be identified for habitat enhancement. Based on surveys undertaken by AECOM in 2024, the following waterbodies are likely to be suitable (see **Figure 8.10 Breeding Diver and Grebe Survey Waterbodies (Volume 3: Figures)**):

- Loch Dubh (on Sron Dubh) (Waterbody ID 3);
- Glas-bheinn Mhòr Lochan (Waterbody ID 13);
- Loch an t-Sionnaich (Waterbody ID 20);
- Carn Loch t-Sionnaich Lochan (East) (Waterbody ID 22); and
- Loch na Faoileige (Waterbody ID 25).

Intervention details

3.5.3 Detailed specification and methodology will be included in the finalised LEMP, however it is anticipated that this will comprise the planting of small area(s) of bottle sedge within suitable section(s) of each chosen lochan, leaving at least 80% of the waterbody still unplanted. Where required, the bed of the lochan would be raised by placement of suitable site-won substrate at the planting location(s) such that water depth is within the viable range for growth of at least moderately dense bottle sedge.

Timing

3.5.4 Waterbodies located beyond the zone of potential disturbance (regarding which see **Chapter 8: Ornithology (Volume 2: Main Report)**) from works activities, including blasting, will be planted as soon as possible following commencement of construction. Any waterbodies within zones of potential disturbance will be planted as soon as possible following cessation of works within potential disturbance distance.

Monitoring

3.5.5 Monitoring of habitat creation for Slavonian grebe will be undertaken annually for a minimum of five years following planting. Planting will be inspected during the growing season to determine successful colonisation. Any plants/areas identified as having failed/died will be replaced and remediation measures undertaken as appropriate to improve the likelihood of successful colonisation.

3.5.6 Breeding Slavonian grebe surveys will continue annually post-construction for a minimum of five years. Monitoring will be undertaken across all habitat enhancement waterbodies to determine the success, or otherwise, of habitat creation in attracting breeding Slavonian grebe.

Outcome

3.5.7 If successful, this enhancement would result in a degree of improvement in the breeding success of Slavonian grebe, which would likely be of national significance given the small UK breeding population.

Red-throated diver raft provision

3.5.8 A single red-throated diver nest site was recorded during the 2024 AECOM surveys and a further four waterbodies were considered potentially suitable to support breeding red-throated diver, although none were recorded. To enhance breeding habitat for this species, and potentially local breeding success, a minimum of two breeding rafts will be installed on waterbodies within the estate in which the Proposed Development lies.

Locations

3.5.9 The locations will be confirmed on preparation of the final LEMP. Potential locations include Loch nan Eun (East) (Waterbody ID 5) or Carn Loch t-Sionnaich Lochan (East) (Waterbody ID 22), which would be of suitable size for red-throated diver.

Intervention details

3.5.10 Raft construction will follow successful methods used previously in Scotland and Finland (as detailed in e.g. Nummi et al., 20136).

Timing

3.5.11 At least one breeding raft would be installed on a suitable waterbody prior to construction, at a minimum distance of 750 m from above-ground works. The second or additional rafts, if not installed pre-construction, would be installed post-construction on other suitable waterbodies at least 750 m from above-ground works.

Monitoring

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

Outcome

3.5.13 Given that diver breeding rafts have been used successfully elsewhere, it is reasonably likely that this enhancement will improve the local breeding status of red-throated diver, and thereby positively contribute to the conservation status of this localised Schedule 1 species.

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

4. Conclusion

4.1.1 This outline Landscape and Ecology Management Plan sets out details of the extensive proposed native planting and regeneration zones that would be delivered as part of the Proposed Development. The Proposed Development Site lies in close proximity to several rewilding schemes, such as Trees for Life Rewilding Centre and the Glen Affric Estate, which sets a precedent for these types of intervention in the region, and the substantial contribution proposed here will complement these existing schemes. The aims of the landscape and ecological management target aspects such as securing the long-term future of the landscape, enhancing local landscape character, integration of the Proposed Development into views, and habitat creation, maintenance and enhancement.

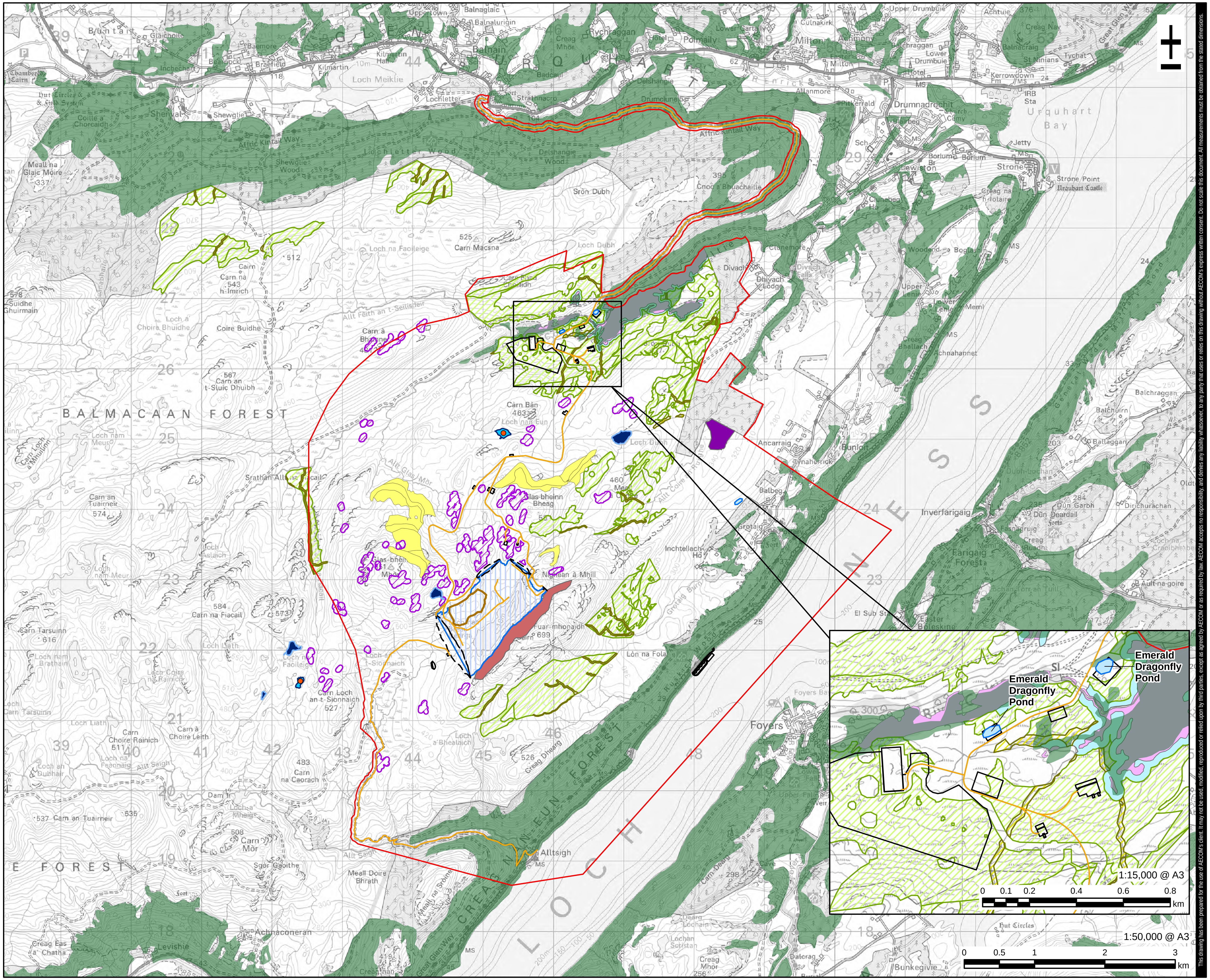
4.1.2 The proposed planting and regeneration measures include the following:

- 54 ha ancient semi-natural woodland enhancement, in Glen Coiltie, by protection to encourage regeneration;
- 22 ha ancient woodland regeneration buffer around the above ancient semi-natural woodland in the River Coiltie area;
- 552 ha native broadleaved woodland provision (including riparian planting where within 10 m of watercourses) and a further 19 ha of Scots pine woodland provision at various locations, both beside the Proposed Development in the Glen Coiltie area, and extensively in the wider estate;
- 76 ha dwarf birch montane scrub zones, supplemented with juniper and Scots pine;
- 27 ha of montane willow scrub planting and regeneration zone; and
- Small amounts of further native planting on retained slopes within the Lower Control Works construction area beside Loch Ness.

4.1.3 Together, these extensive measures provide significantly improved biodiversity value and enhanced landscape character on a landscape scale. This is reflected in the biodiversity net gain that has been calculated at 22%, far above the stipulated requirement of 10%. Additional specific faunal measures including provision of three ponds for emerald dragonflies, enhancement of lochans for Slavonian grebe and provision of red-throated diver rafts provide further enhancement that is additional to the 22% net gain, which is purely habitat-related. The provided habitats will also provide benefits for other important fauna such as pine marten, red squirrel, the general invertebrate assemblage, and black grouse (in turn providing enhancement for species that prey upon black grouse). The proposed measures also contribute to the continued existence of baseline ancient woodland and its expansion, and the native planting supplements and complements this ancient woodland. There is also substantial carbon absorption value in the extensive tree planting and regeneration, visual screening where feasible of proposed infrastructure, and a contribution to the reinstatement of historic landscape patterns and reinforcement of existing landscape character.

Annex A. Figures

Revision: 2 Drawn: FM Checked: AR Approved: RH Date: 2025-03-28



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LEGEND

- Red Line Boundary
- Access Tracks
- Above Ground Infrastructure
- Borrow Pit
- Embankments & Spillway
- Headpond
- Red-Throated Diver Breeding Rafts
- Red-Throated Diver Breeding Waterbody
- Slavonian Grebe Habitat Enhancement
- Emerald Dragonfly Pond
- Ancient Woodland

Proposed Landscape and Ecological Mitigation Types

- Coiltie Ancient Semi Natural Woodland (ASNW) Regenerative Buffer
- Coiltie Ancient Woodland Inventory (AWI) Enhancement
- Dwarf Birch / Juniper / Scots Pine
- Emerald Dragonfly Pond
- Montane Willow Scrub
- Native Woodland Planting
- Native Woodland Planting (Riparian)
- Peatland Restoration
- Peatland Restoration - Conifer Removal

NOTES

Native woodland planting around the access track, tunnel portals, switching station and permanent compounds to be designed once designs are fixed.
Native woodland planting areas to be surveyed prior to planting to verify suitability with regards peat depth and slope gradient. Some of the native woodland to incorporate areas of Emerald dragonfly habitat creation with small pools.
Proposed peatland restoration zones within this area; there will be much more extensive off-site peatland restoration.

ISSUE PURPOSE

FINAL

PROJECT NUMBER

60719875

FIGURE TITLE

Outline Landscape and Ecological Mitigation – Project Wide

FIGURE NUMBER

Figure 6.4.1

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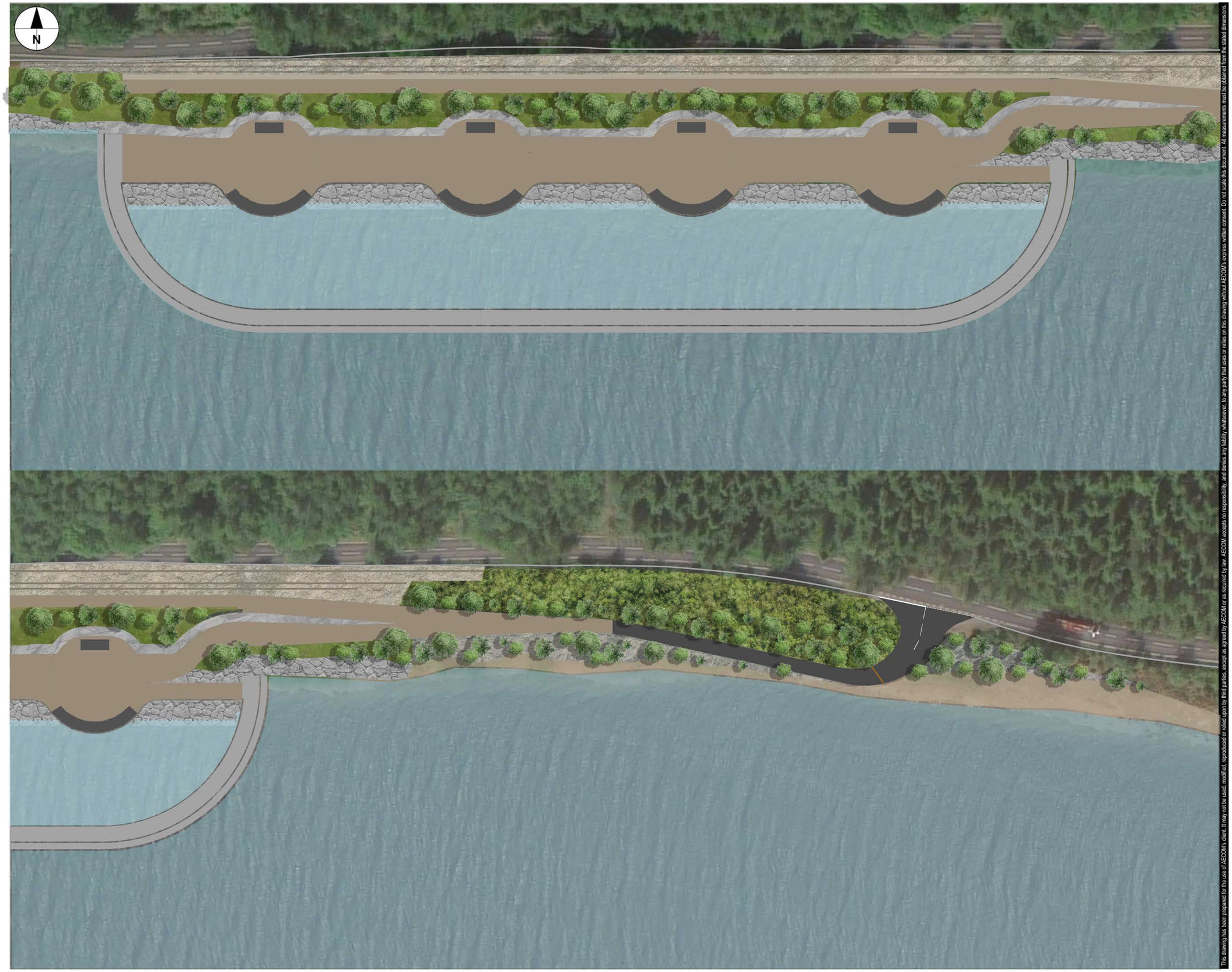

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PROJECT

GLEN EARRACH
PUMPED STORAGE HYDRO

CLIENT

Glen Earrach

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FOR LOWER CONTROL WORKS NOTES REFER TO DRAWING XX

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ISSUE PURPOSE
Work in progress

PROJECT NUMBER
60719875

FIGURE TITLE
6.4.2 Outline Landscape and Ecological Mitigation – Lower Control Works

FIGURE NUMBER
Figure 6.4.2

Revision:P01.1Drawn:KDe Ck'd:XX Appr'd: XX Date:DD/MM/YYYY

Plot Date: March 19, 2025
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FIGURE TITLE

6.4.3 Lower Control Works Illustrative Cross Sections (Sheet 1 of 2)

FIGURE NUMBER

Figure 6.4.3

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PROJECT NUMBER

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FIGURE TITLE

6.4.3 Lower Control Works Illustrative Cross Sections (Sheet 2 of 2)

FIGURE NUMBER

Figure 6.4.3

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