11. Biodiversity

11.1. Introduction

11.1.1. This chapter reports the outcome of the assessment of likely significant effects of the Proposed Scheme on both terrestrial and aquatic ecological receptors. Information on the biodiversity assessment methodology and the baseline conditions relevant to this assessment, embedded mitigation and a summary of the potential significant effects leading to the additional mitigation measures required to avoid, reduce, restore or offset any likely significant adverse effects, are presented in this chapter. Any likely significant residual effects and any required monitoring after these measures have been employed, are also presented along with enhancement measures.

11.1.2. This chapter is accompanied by the following Volume 4 Technical Appendices and their associated Figures. Reference should also be made to the introductory chapters of this EIA Report (Volume 2, Chapters 1 to 6, including the description of the Proposed Scheme in Chapter 4):

- Appendix 11.1 – Report to Inform Habitats Regulations Appraisal
- Appendix 11.2 – Biodiversity Legislation, Policy and Guidance
- Appendix 11.3 – Biodiversity Methodology
- Appendix 11.4 – Designated Sites and Terrestrial Habitat Report
- Appendix 11.5 – Bryophyte Report
- Appendix 11.6 – Aquatic Receptor Report
- Appendix 11.7 – Breeding Bird Report
- Appendix 11.8 – Otter Report
- Appendix 11.9 – Pine Marten Report
- Appendix 11.10 – Red Squirrel Report
- Appendix 11.11 – Bat Report
- Appendix 11.12 – Badger Report
- Appendix 11.13 – Invertebrate Report 2023 – 2024
- Appendix 11.14 – Reptiles and Incidental Records Report

- Appendix 11.15 – Outline Landscape and Ecology Management and Monitoring Plan (OLEMMP)
- Appendix 11.16 – Enhancement Site Survey Report.

11.1.3. This chapter is intended to be read in conjunction with the other inter-related chapters and these are referred to where relevant.

11.2. Approach and Methods

11.2.1. The scope of this chapter has been established through an ongoing iterative scoping process taking into consideration the conservation importance of ecological features. Further information can be found in Volume 2, Chapter 6: Consultation and Scoping.

Study Area

11.2.2. The Study Area was chosen to include areas over which the Proposed Scheme would potentially exert biophysical changes (both direct and indirect effects) that might impact upon ecological features, i.e. the Ecological Zone of Influence (EZoI). The Chartered Institute of Ecology and Environmental Management's Ecological Impact Assessment Guidelines (CIEEM EcIA Guidelines) define the EZoI as the area over which Important Ecological Features (IEFs) may be subject to significant effects resulting from the Proposed Scheme; this may extend beyond the footprint of the Proposed Scheme.

11.2.3. The EZoI of the Proposed Scheme varies for each IEF due to the varying mobility range of the feature being assessed. For example, the EZoI for otter and bats (which are mobile) will be greater than the EZoI for habitats.

11.2.4. Desk studies and baseline data were collected across survey areas encompassing the EZoI of the Proposed Scheme and additional buffer areas to provide wider context.

Desk Study / Consultation / Field Surveys

11.2.5. Consultation on the approach and methods of assessment for the EIA included engaging with the A83 Environmental Steering Group (ESG). The key issues raised during the consultation process and its responses are set out in Volume 4, Appendix 6.1 Summary of Scoping Consultation Responses. Consultation included discussion of elements such as approaches to potential mitigation, and consultee

comments have been taken into account in shaping the mitigation proposals, particularly the habitat enhancement areas. There were two comments specifically relevant to the methodology. NatureScot highlighting the presence of notable bryophytes in the local area. This was taken into account by undertaking targeted bryophyte survey. Loch Lomond & The Trossachs National Park stated support for the approach to surveys and assessment, including agreeing with the planned approach that the decision to scope certain species out would be kept under review if any signs of these species were identified during other surveys. No such signs were found so the scoping approach did not change from the approach consulted on.

11.2.6. Reviews of survey data collected in 2022 and desk-based reviews of publicly available data sources were conducted during the Proposed Scheme's DMRB Stage 2 - Route Options Assessment. Further update desk studies and surveys were undertaken. The desk study included sending a 2km data request for biological records to the Argyll Biological Records Centre (ABReC) in January 2023. Email Correspondence from the Data Manager, Argyll Biological Records Centre (27/01/2023) states: "*Sorry for the delay in replying, I regret that owing to illness we not in a position to produce full data search reports at the moment. However, you are welcome to download our data from the NBN atlas free of charge and use it in any reports that relate to this*."

11.2.7. All desk-based work and field surveys were undertaken by a team of competent ecologists who hold current CIEEM membership, have experience undertaking ecological data reviews, and sufficient experience in surveying the habitats and protected and priority species likely to be encountered across the prevailing landscape.

11.2.8. Volume 4, Appendices 11.4 – 11.14 and 11.16 of this EIA Report provide full details of the desk study and field study methodologies and areas.

11.2.9. Field surveys included:

- Terrestrial habitats
- Bryophytes survey of the zone around a section of Croe Water
- Aquatic habitats and species (watercourse walkover survey, watercourse River Condition Assessment: Modular Physical (MoRPh) survey, watercourse electric

fishing survey, watercourse and loch aquatic macroinvertebrate survey, and loch macrophyte survey)

- Breeding birds (assemblage survey, black grouse suitability and lek surveys, and barn owl suitability and presence / likely absence surveys)
- Otter
- Pine marten
- Red squirrel
- Bats
- Badger
- Terrestrial invertebrates
- Suitability survey for reptiles and notable species (amphibians, mountain hare and red deer) and
- Invasive non-native species (INNS) and other incidental records made during National Vegetation Classification (NVC) and other surveys were also recorded.

Assessment Methodology

11.2.10. The detailed methodology that has informed this assessment is provided in Volume 4, Appendix 11.3 Biodiversity Methodology. The assessment approach has been informed by the Design Manual for Roads and Bridges (DMRB) LA 104 Environmental assessment and monitoring and LA 108 Biodiversity. The assessment of an ecological receptor's importance for nature conservation follows that of CIEEM EcIA Guidelines. The approach and methods have been informed by legislation, policy and guidance and a list of relevant legislation and policy is contained in Volume 4, Appendix 11.2 Biodiversity Legislation, Policy and Guidance.

11.2.11. The first step in the EcIA process is to determine the IEFs, which are then subject to detailed assessment if they are likely to be affected by the Proposed Scheme. Assigning importance to ecological features is based on professional judgement informed by available guidance, information and expert advice, and the approach is set out in Volume 4, Appendix 11.3 Biodiversity Methodology.

11.2.12. It is not necessary to carry out a detailed assessment of features that are sufficiently widespread and resilient, and features of less than local nature conservation importance are scoped out; this approach follows CIEEM EcIA

Guidelines. In addition, this assessment also considers legal protection of habitats and species, where relevant to the Proposed Scheme, whether they are an IEF or not.

11.2.13. Whilst widespread, deer are discussed in this chapter in the context of potential for vehicle collisions during the construction and operational phases of the Proposed Scheme, which could have implications regarding human safety and animal welfare. INNS are discussed in the context of their potential as a risk to biodiversity and legal responsibilities, under the Wildlife and Countryside Act 1981 (as amended by the Wildlife & Natural Environment Act amendment of 2012) (Volume 4, Appendix 11.2 Biodiversity, Legislation, Planning Policy and Guidance).

11.2.14. The impact assessment considers the effects of the Proposed Scheme with the application of embedded mitigation and additional mitigation. The final significance of residual effects takes both embedded and additional mitigation into account.

11.2.15. The importance of each IEF (Table A11-3.1 in Volume 4, Appendix 11.3 Biodiversity Methodology) and level of impact (Table A11-3.2 in Volume 4, Appendix 11.3 Biodiversity Methodology) has been used to determine the significance of effect based on a Significance of Effect Matrix in Table A11-3.3 in Volume 4, Appendix 11.3 Biodiversity Methodology.

Limitations and Assumptions

11.2.16. Ecological surveys are limited by factors that affect the detection of and presence of plants and animals such as the time of year, weather, migration patterns and behaviour. Therefore, the ecological surveys undertaken to support this assessment have not produced a complete list of plants and animals and the absence of evidence of any species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. Several locations within the survey area could not be accessed as they were on land to which access permission was not available or there were health and safety concerns. In some instances, limited access led to deviation from survey guidance (e.g. for bats) and surveys were conducted outside the optimal or preferrable timeframes.

11.2.17. This assessment assumes watercourses of similar character exhibit similar habitats and species assemblages.

11.2.18. This assessment assumes that where any European Protected Species (EPS) or any other protected species licences are applied for and granted, appropriate compensation and other mitigation measures will be implemented to maintain the favourable conservation status of the species being licensed. This assessment assumes that general good practice measures for construction will be adopted during both construction and operational maintenance procedures.

11.2.19. Full lists of any identified limitations are provided in the relevant IEF baseline appendices (Volume 4, Appendix 11.4 – Appendix 11.14 and 11.16).

11.3. Baseline Conditions

11.3.1. The following IEFs have been identified and are considered in this chapter: Glen Etive and Glen Fyne Special Protection Area (SPA), Loch Lomond Woods Special Area of Conservation (SAC), Beinn an Lochain Site of Special Scientific Interest (SSSI), terrestrial habitats, aquatic ecological receptors, breeding birds, otter, pine marten, red squirrel, bats, badger, terrestrial invertebrates, reptiles, amphibians, red deer, brown hare, mountain hare and INNS.

11.3.2. A summary of baseline conditions recorded for each IEF is presented in Tables 11-1 to 11-5 together with the geographical context in which each IEF is considered important. Further information on the features described in these tables is provided in Volume 4, Appendices 11.1 and 11.4 to 11.14 and 11.16 together with the relevant Figures within Volume 3.

11.3.3. Table 11.3 should be read in conjunction with Volume 3, Figure 11.4a Terrestrial Habitats (UKHab) and Volume 3, Figure 11.4b Terrestrial Habitats (National Vegetation Classification).

11.3.4. The following habitats have been scoped out:

- Habitats that are present within the survey area, but no impacts are predicted: blanket bog (outside the SSSI); transition mires and quaking bogs; priority habitat purple moor grass and rush pasture (M26) and clear-water lakes and lochs with aquatic vegetation.
- Habitats scoped out because they are not IEFs as their importance is less than Local: marshy grassland, other coniferous woodland and bracken / bramble-dominated plant communities. However, these habitats are still included in the

Biodiversity Net Gain Calculations (Volume 4, Appendix 4.1 Biodiversity Net Gain / Natural Capital Report).

11.3.5. No ancient woodland is included on NatureScot's Ancient Woodland Inventory within 2km of the Proposed Scheme. No non-statutory designated sites for nature conservation are present within 1km of the Proposed Scheme. Therefore, both ancient woodlands and non-statutory designated sites for nature conservation have been scoped out.

11.3.6. The following species have been scoped out because the location of the Proposed Scheme is outside of their habitat range, or because no field signs or suitable habitats are present within the survey area: beaver, freshwater pearl mussel, great crested newt, Scottish wildcat and water vole.

Table 11.1 - Ecological Features and their Importance: Designated Sites (Volume 4, Appendices 11.1 and 11.4)

Feature	Level of Geographical Importance	Baseline Data (Desk-based and Field Survey)
The Glen Etive and Glen Fyne SPA - NatureScot Site Code: 10113 (EU Site Code: UK9020307)	International	Approximately 1.8km to the north of the Proposed Scheme Boundary at its closest point. The SPA regularly supports a population of European importance of the Annex I species golden eagle (19 active territories in 2003, more than 4.2% of the GB population).
The Loch Lomond Woods SAC - NatureScot Site Code: 8298 (EU Site Code: UK0013573)	International	Approximately 3.1km to the east of the Proposed Scheme Boundary at its closest point. A primary reason for designation of this site is the presence of the Annex I habitat 91A0 Old sessile oak woods with *Ilex* and *Blechnum* (Western acidic oak wood). The Annex II species, otter, is present as a qualifying interest feature, but not a primary reason for site selection. The Proposed Scheme contains watercourses that are functionally linked with the SAC.
Beinn an Lochain SSSI - NatureScot Site Code: 163 (EU Site Code:135092)	National	A small section of this SSSI lies within the north west part of the Proposed Scheme Boundary. This SSSI is designated for: Siliceous scree (includes boulder fields); Tall herb ledge; An upland habitat assemblage (including acid grassland, alpine summit communities, blanket bog, calcareous grassland, mire grassland and rush pasture, subalpine dry dwarf-shrub heath, spring-head and rill and flush).

Table 11.2 – Ecological Features and their Importance: Terrestrial Habitats (Volume 4, Appendix 11.4 Designated Sites and Terrestrial Habitats)

Feature (UKHab Habitat)	Geographical Importance	Summary of Baseline Assessment
f2c7 Calcium-rich springwater-fed fens: upland (NVC M10)	Regional	M10 *Pinguiculo-Caricetum* mire was localised to two areas in the survey area, between the A83 and the OMR. This habitat equates with the Annex 1 habitat H7230 Alkaline fens and is also a priority habitat (Upland Flushes, Fens and Swamps) that has potential high ground water dependency. M10 mires are small, calcareous flush communities characterised by a high diversity of small sedges that are dependent on base-enrichment. As plant communities that form components of priority habitats, these have the potential to be of national importance as defined in Table A11-3.1. Although not considered to be good examples, due the influence of the nearby A83 and agricultural management, these communities are of great value for their conservation interest and contribute to the diversity of upland vegetation. They have, therefore, been assessed as being of Regional importance.
f2c Upland flushes, fens and swamps (NVC M6 and M23)	County	M6 *Carex echinata-Sphagnum recurvum* mire and M23 *Juncus effusus* / *acutiflorus-Galium palustre* rush-pasture are priority habitats (Upland Flushes, Fens and Swamps) and have a potential high ground water dependency. Both communities are widespread throughout the survey area, with M6 found in flushes and M23 often recorded in mosaic with M25 *Molinia caerulea – Potentilla erecta* mire. As plant communities that form components of priority habitats, these contribute to the diversity of upland vegetation and can be valuable habitats for birds (notably waders and some ducks) together with invertebrates. As such, these communities have the potential to be of national importance as defined in Table A11-3.1. However, they are very common communities in Scotland and the communities within the survey area have, therefore, been assessed as being of County importance.

Feature (UKHab Habitat)	Geographical Importance	Summary of Baseline Assessment
h1b5 Dry heaths; upland (NVC H9, H12, H13, H14 and H21)	County	Five dry heath communities were recorded within the Proposed Scheme Boundary. These equate to the Annex 1 habitat H4030 European dry heaths and are a priority habitat (Upland heathland). None of these communities have a potential groundwater dependency. H9 *Calluna vulgaris-Deschampsia flexuosa* heath was present as small stands scattered throughout the southern side of the survey area. This is the least natural form of upland heath in Great Britain and generally supports a poor flora. H12 *Calluna vulgaris-Vaccinium myrtillus* heath is a widespread community in the British uplands and is often the dominant community on well-drained, gentle to steep slopes. Within the survey area, it was found most extensively in areas of forestry clear-fell where it was often recorded as a transitional community in mosaic with H14 *Calluna vulgaris-Racomitrium lanuginosum* heath; M25 *Molinia caerulea – Potentilla erecta* mire; U5 *Nardus stricta-Galium saxatile* grassland; and U2 *Deschampsia flexuosa* grassland. H13 - *Calluna vulgaris-Cladonia arbuscula* heath was recorded in a small patch in the north of the survey area between the A83 and the OMR. This is a near-natural, high-altitude heath community, bordered by the A83 to the north and a complex mix of mesotrophic grasslands, rush pasture and bracken-dominated vegetation. H14 *Calluna vulgaris-Racomitrium lanuginosum* heath is a near-natural heath community and was a frequent community within the survey area, especially in the northern part. However, it is often grazed and showed signs of grazing damage. H21 *Calluna vulgaris-Vaccinium myrtillus-Sphagnum capillifolium* heath is a bryophyte-rich community that was recorded in small patches throughout survey area. The area that may be impacted by the works is in a mosaic with M25 *Molinia caerulea – Potentilla erecta* mire to the north of the OMR. As plant communities that form components of priority habitats, these have the potential to be of national importance as defined in Table A11-3.1. However, for the reasons noted above for the individual communities, these communities within the survey area have been assessed as being of County importance.
g2b6 Species-rich grassland with mat-grass in upland areas (NVC CG10 and CG11)	County	CG10 *Festuca ovina-Agrostis capillaris-Thymus praecox* grassland community and CG11 *Festuca ovina-Agrostis capillaris-Alchemilla alpina* grass-heath both equate to the Annex 1 habitat H6230 Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). They are also a priority habitat (upland calcareous grassland) and have potential high groundwater dependency. These communities were present in a small area of pasture between the A83 and the OMR in the north of the survey area. They are species-rich upland calcareous grassland communities and, as plant communities that form components of priority habitats, these have the potential to be of national importance as defined in Table A11-3.1. However, they are currently heavily grazed and have high levels of disturbance from trampling. They have, therefore, been assessed as being of County importance.
w1e Upland birchwoods (NVC W4)	County	W4 *Betula pubescens -Molinia caerulea* woodland is a priority habitat (Upland Birchwoods) and has a potential high ground water dependency. As a plant community that forms a component of a priority habitat, this has the potential to be of national importance as defined in Table A11-3.1. This community was present on either side of the Croe Water north-east of the A83 but only as small, fragmented, stands of recent origin and of a type that is widespread in Argyll and Bute. As a result, it has been assessed as being of County importance.

Feature (UKHab Habitat)	Geographical Importance	Summary of Baseline Assessment
f2b Purple moor grass and rush pastures (NVC M25)	Local	M25 *Molinia caerulea – Potentilla erecta* mire is not a priority habitat and has a potential moderate groundwater dependency. This community was an abundant and generally species-poor community occurring throughout the survey area in both grazed pasture and regenerating forestry clear-fell. It has some value in the local context as a semi-natural habitat and has, therefore, been assessed as being of Local importance.
g1b Upland acid grassland (NVC U2, U4, U5 and U21)	Local	Four acid grassland communities were recorded within the Proposed Scheme Boundary. These are not priority habitats and have no potential groundwater dependency. U2 *Deschampsia flexuosa* grassland was present in a small area of regenerating forestry clear-fell on the southern side of the survey area, between the A83 and OMR. U4 *Festuca ovina - Agrostis capillaris - Galium saxatile* grassland was widespread throughout pasture in the survey area. U5 *Nardus stricta-Galium saxatile* grassland was present over a small area of pasture on the northern side of the survey area in mosaic with H14 *Calluna vulgaris-Racomitrium lanuginosum* heath; U20 *Pteridium aquilinum-Galium saxatile* community; and M23 *Juncus effusus / acutiflorus-Galium palustre* rush-pasture. U5 is listed on the Scottish Biodiversity List (watching brief only). U21 *Cryptogramma crispa-Deschampsia flexuosa* grassland was present in the north of the survey area adjacent to the A83. These communities have some value in the local context as a semi-natural habitat and have, therefore, been assessed as being of Local importance
h3h Mixed scrub (NVC W1)	Local	W1 *Salix cinerea-Galium palustre* woodland is not a priority habitat and has a potential moderate groundwater dependency. This community was present throughout the survey area as scattered stands of regenerating grey willow dominated woodland, generally in areas that were not grazed by livestock. It is of some value in the local context as a semi-natural habitat and has, therefore, been assessed as being of Local importance.

Table 11.3 – Ecological Features and their Importance: Bryophytes (Volume 4, Appendix 11.5)

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey)
Bryophytes	National	**Desk Study:** 1360 records comprising 349 species of bryophytes were returned from the National Biodiversity Network (NBN) Atlas data search. This included 11 near threatened and four vulnerable IUCN listed species; 37 Nationally Scarce and two Nationally Rare species; five priority species; 37 oceanic / hyperoceanic species and 31 temperate rainforest indicator species. No Schedule 8 protected species were returned from the search. **Field Surveys:** 115 bryophyte taxa. Of these, 37 species were oceanic or hyperoceanic, and 30 species were indicators of temperate rainforest. Two stands of Near Threatened / Nationally Scarce / Scottish Biodiversity List moss *Bryum dixonii* were recorded. Areas which have notable assemblages are localised on the Coire Croe burn upstream of the Proposed Scheme. The most valuable elements of the bryophyte assemblages present are considered to be of National Importance due to the presence of oceanic species that score the Coire Croe burn field survey area as category A and likely meets the definition of temperate rainforest.

Table 11.4 – Ecological Features and their Importance: Aquatic Habitats and Species (Volume 4, Appendix 11.6)

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey)
Headwaters / Minor Tributaries of the Croe Water, including the eastern bifurcation of the Croe Water flowing under the A83.	County	**Desk Study:** A total of 53 headwaters / minor tributaries of the Croe Water (including the eastern bifurcation of the Croe Water) were identified in the aquatic receptor Study Area. 46 of these are crossed by the Proposed Scheme and seven are within 150m of the Proposed Scheme but are not crossed. Whilst these watercourses fall within the Croe Water Framework Directive (WFD) catchment, none are mainstem reportable WFD water bodies (see Volume 3, Figure 19.1 WFD waterbodies). Historical (2008) fish monitoring on the water body by Argyll Fisheries Trust recorded brown trout (a priority species), within the lower extent of the eastern bifurcation of the Croe Water, near its confluence with the High Glen Croe Tributary (i.e. below the A83). No Scottish Environment Protection Agency (SEPA) biological monitoring data are available for these watercourses and no records of priority species were returned from any other desk study data. **Field Survey:** All river MoRPh surveys undertaken identified the same river habitat typology under MoRPh definitions and a range of river MoRPh conditions from Fairly Poor to Fairly Good. Negative MoRPh indicators are predominantly associated with reduced riparian habitat complexity and limited riparian and in-channel wooded features normally associated with tree cover, the absence of which is a legacy of agricultural land use. Outside of the MoRPh survey extents, other river modifications are associated with the A83 and OMR (culverts and headwalls). Aquatic invertebrate surveys identified high community species richness (with a total of 71 species recorded across all watercourses). Biological community metrics are indicative of minimally sedimented systems with a species assemblage sensitive to flow reduction and organic pollution. Community Conservation Index (CCI) scores are variable and are indicative of species assemblages of moderate to high conservation importance, with two priority (Nationally Scarce) species identified *Ameletus inopinatus* (a mayfly) and *Laccobius ytenensis* (a beetle). Watercourse gradients as well as the size and ephemeral nature of some of these watercourses make them broadly unsuitable for fish, particularly upstream of the A83. Fish surveys suggest that the downstream extents of some of the watercourses support a species-poor fish community around their confluence with the Croe Water (brown trout being recorded in low density). Given the level of agricultural (including forestry) modification and infrastructure development (A83, OMR and associated infrastructure), the systems intersecting the Proposed Scheme are considered to have been significantly altered from their natural state and are, therefore, excluded from the priority habitat definition. Rivers can also qualify as priority habitat based on the species they support. With reference to species recorded (desk study and field survey, including bryophyte species associated directly with watercourses – see Volume 4, Appendix 11.5 Bryophyte Report), the systems do not fulfil criteria for recognition as priority habitat.

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey)
Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary	National	**Desk Study:** The Croe Water is a delineated mainstem reportable WFD water body over the river extent incorporating the High Glen Croe Tributary and the Croe Water (see Volume 3, Figure 19.1 WFD waterbodies). The water body is currently reported to be in moderate ecological status, with macroinvertebrates and water quality driving the overall failure to meet good ecological status. Historical (2008) fish monitoring on the water body by Argyll Fisheries Trust recorded Atlantic salmon *Salmo salar* and brown trout (both priority species), including a sea-run component to the brown trout population. The migratory component of the brown trout population, as well as the Atlantic salmon population, are considered likely to be restricted to the lower extents of the Croe Water, the majority of which falls outside of the Study Area. The main component of the fish population within the Study Area is likely to be resident brown trout. **Field Survey:** A total of nine river MoRPh surveys were undertaken throughout the High Glen Croe Tributary and the Croe Water downstream of its eastern bifurcation. All river MoRPh surveys undertaken identified the same river habitat typology and a range of river MoRPh conditions from Moderate to Fairly Good. Four aquatic invertebrate surveys were also undertaken across these watercourses (three within the Croe Water and one within the High Glen Croe tributary). Community richness was variable throughout the surveys (with a total of 43 and 18 species recorded in each watercourse respectively). Biological community metrics derived from the aquatic macroinvertebrate survey data are indicative of minimally sedimented systems with a species assemblage sensitive to flow reduction and organic pollution. CCI scores are variable and are indicative of species assemblages of Moderate to Fairly High conservation importance (as defined by the metric), with one priority (Scottish Biodiversity List) species identified *Baetis niger* (a mayfly). *Baetis niger* is also a Criterion A species under the river priority habitat definition, meaning the Croe Water qualifies as priority river habitat. Four fish surveys undertaken across the extent of the watercourses (three within the Croe Water and one on the High Glen Croe tributary) recorded brown trout at all survey sites, as well as European eel *Anguilla anguilla* at one location. Both of which are priority species.
Loch Restil	County	**Desk Study:** Loch Restil is not a WFD classified water body. Brown trout and minnow are present at the outflow of Loch Restil to Restil Water, and both are likely typical of the Loch itself. Macroinvertebrate surveys previously undertaken in support of the Stage 2 DMRB assessment indicate a typical upland waterbody species assemblage, with the exceptions of *Paraleptophlebia cincta* and *P. werneri* (mayflies), both of which are priority species. Oligotrophic and dystrophic lakes are included in the Scottish Biodiversity List. **Field Survey:** Loch aquatic macroinvertebrate communities recorded across two sites within Loch Restil are indicative of high levels of sedimentation and moderate levels of organic pollution. Communities are of low conservation value, with no priority species recorded. Macrophyte survey transects (perimeter, wader and boat) were undertaken within four sectors on Loch Restil and are indicative of LEAFPACS ecological quality ratio (EQR) representing high status. No priority species were recorded.

Table 11.5 – Ecological Features and their Importance: Protected and Notable Species. (Volume 4, Appendices 11.5 and 11.7 – 11.14)

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey) and Justification
Breeding Birds	Local	**Desk Study:** Bird species recorded were generally reflective of those recorded during the surveys and typical of the habitat types present. No records of Schedule 1 bird species within 2km were returned by the Royal Society for the Protection of Birds (RSPB). Records of nest sites for sparrowhawk (one record) and raven (two records) within the relevant search areas were returned by the Argyll Raptor Study Group (ARSG). A black grouse feather was noted incidentally during an unrelated site survey in 2021 within the north-eastern part of the Proposed Scheme. **Field Survey:** 40 bird species were recorded within the survey area (Proposed Scheme footprint and 500m buffer). No golden eagle or other species listed on Annex I of the Birds Directive or species listed on Schedules 1A or A1 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the survey area. 19 priority species were recorded within the survey area. Three species were confirmed as breeding or considered to have bred, and 16 species were probably or possibly breeding. 21 non-priority species were recorded. A small sand martin colony was also noted within an exposed sand bank adjacent to the OMR. Incidental observations outside the 500m survey buffer included merlin, an Annex 1 and Schedule 1 species, and additional likely territories of crossbill. No black grouse leks were recorded and no individuals were observed during any of the surveys, but several areas of habitat considered suitable for black grouse were noted. No confirmed or potential barn owl breeding sites were recorded during the surveys. However, several barn owl roost / potential roost sites are present within the vicinity of the Proposed Scheme and within the direct vicinity of suitable foraging habitat present within the floor of Glen Croe. With the exception of long-eared owl and crossbill, all species recorded within the survey area and its environs are considered abundant to widespread within the County. The priority species recorded are still generally widespread throughout Argyll so it is not considered that the populations within the Study Area are critical on a county or higher level. Taken as a whole, the survey area and assemblage of breeding bird species present is assessed as being of Local importance.

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey) and Justification
Otter	Local	**Desk Study:** The ABReC returned no records of otter within 2km of the Proposed Scheme. Loch Lomond Woods SAC, which has otter as a qualifying feature of interest, is approximately 3.1km east of the Proposed Scheme. A review of the historic project data from June and October 2021 highlighted the presence of four otter holts and three other otter features with the potential to be used as holts, within 250m of the Proposed Scheme (as it was at the time of survey). Spraints were also recorded during the 2021 surveys. **Field survey:** Several watercourses within 250m of the Proposed Scheme provide suitable habitat for otter to forage, shelter and commute. Terrestrial habitats adjacent to the Croe Water and some of its tributaries include parcels of plantation woodland that have the potential to offer sheltering habitat but have low potential as breeding habitat, due to the existing levels of disturbance within 250m of the Proposed Scheme. Some watercourses, small drainage channels and ditches, where no otter evidence was recorded, were still found to provide suitable commuting routes for otter, providing links to adjacent habitats for foraging and resting. None of the resting sites (potential or confirmed) identified during the field survey were noted to have breeding potential or suitability to be used as a natal resting site. Two potential resting sites are within the Proposed Scheme. A further eight potential resting sites and four confirmed resting sites are within 30m of the Proposed Scheme. Surveys indicate that otter are using many of the watercourses within, and up to 250m around, the Proposed Scheme to rest, commute and forage. Whilst otter have legal protection under national and international legislation, the habitats within the Proposed Scheme are generally used by otter in a transient way. Although small areas have some potential for use as shelter, these are considered to be limited by the proximity of the A83. Consequently, and taking into account the national stability of otter, a value of Local importance has been allocated.
Pine marten	Local	**Desk study:** The ABReC returned no records of pine marten within 2km of the Proposed Scheme. A review of the existing data provided one anecdotal den site within the Proposed Scheme and three potential den sites (all within forestry west of the OMR; now confirmed unsuitable) and four possible scats. Multiple scats were also recorded outside of the 250m survey area. **Field Survey:** Twelve potential den sites were identified within 250m of the Proposed Scheme. Although no active den sites have been confirmed within 250m of the Proposed Scheme, pine marten are known to be present. Pine marten have legal protection under national and international legislation and the habitats on and adjacent to the Proposed Scheme provide suitability for foraging, commuting and shelter. However, with limited presence, this IEF is considered to be of Local importance.

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey) and Justification
Red squirrel	Local	**Desk Study:** 256 records of red squirrel were returned for the last 10 years within the surrounding 2km area. Incidental survey records from 2022 also returned one record of squirrel feeding remains, located in conifer plantation within the Proposed Scheme. **Field Survey:** No sightings of red squirrel or dreys were found within the red squirrel survey area. However, this species is present in the area, confirmed by evidence of feeding signs within 50m of the Proposed Scheme. One potential red squirrel drey was located approximately 126m east of the Proposed Scheme. One dead conifer with chewed holes within the main stem (suitable for use by red squirrel) was located 120m west from the Proposed Scheme. A small number of feeding stations and feeding signs were found within 100m of the Proposed Scheme. Whilst red squirrel have legal protection under national legislation, with limited presence, this IEF is considered to be of Local importance.
Bats	Local	**Desk Study:** No publicly available records of bats are present within 2km of the Proposed Scheme from the last 10 years. A review of historic project data returned the following non-breeding day roosts: *Myotis* spp. roosts, soprano pipistrelle roosts, *Pipistrellus* sp. and brown long-eared bat roost and a *Myotis* spp. maternity roost was recorded in 2022. **Field Survey:** There are 11 known bat roosts within the bat survey area: one tree roost and 10 roosts within the structures / buildings. All species recorded roosting within the Proposed Scheme Boundary are common and widespread across Scotland with none of the roosts present being considered of conservation value beyond Local level. Hibernation surveys undertaken between December 2023 and March 2024 identified a single brown long-eared bat hibernating (site location 'Cave Complex') within 65m of the Proposed Scheme. Survey results also indicate that soprano pipistrelles are also likely to be hibernating within or in proximity to the Proposed Scheme. Four bat roosts were also identified outside of the survey area, mainly non-breeding day roosts. However, a *Myotis* spp. maternity roost was recorded in a tree outside the survey area. Automated static detector surveys across seven locations identified the following species: soprano pipistrelle, common pipistrelle, *Myotis sp., Pipistrellus sp.,* and brown long-eared bat. Automated Static Detector Surveys undertaken between May 2023 and September 2023 identified the Croe Water and adjacent woodland, and Loch Restil as being frequently used by bats suggesting these are important foraging and commuting habitats in the local context. Whilst bats have legal protection under national and European legislation, the receptor affected by the Proposed Scheme comprises localised areas of habitat along the existing roads, with extensive areas of similar and better habitat in the surrounding area and roosts supporting small numbers of common species. With widespread bat species using habitats typical of the area, this IEF is, therefore, considered to be of Local importance.
Badger	Less than Local	**Desk Study:** No records of badger setts were received from NBN Atlas or Scottish Badgers. Forestry Land Scotland provided incidental records of four badger setts. A total of ten Road Traffic Accidents (RTAs) records of badger were received from Scottish Badgers. Certain records of RTAs on the A83 appear to be associated with badger crossing the A83 and OMR at the northern and southern end of the Glen. **Field Survey:** The field surveys carried out during June 2023 identified signs of badger activity (setts and field signs). A substantial proportion of the Proposed Scheme and surrounding habitats provide suitable opportunities for badger to shelter, commute and forage, and badger setts were found during the surveys. Full details of badger setts and field evidence are included in the confidential Volume 4, Appendix 11.11: Badger Report and associated figures. As a common species, badger are of less than local importance; however, they are still considered due to their legal protection.

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey) and Justification
Terrestrial Invertebrates	Local	Desk Study: Seven terrestrial invertebrate species were identified during the desk study; a ground beetle *Carabus granulatus,* small heath *Coenonympha pamphilus,* glow worm *Lampyris noctiluca,* common hawker *Aeshna juncea,* large red damselfly *Pyrrhosoma numphula,* short-palped cranefly *Limonia nubeculosa* and Scotch argus *Erebia aethiops.* In addition, incidental records were made of a wood ant nest (outside the Proposed Scheme) and cinnabar moth *Tyria jacobaeae* caterpillars. Field Survey: 149 invertebrate species were recorded in the survey area in August 2023. Of these, 11 were key species. 170 species were recorded in 2024 of which 12 are key species, all bar two of which are additions, giving a total of 21 key species recorded from the site in 2023-2024. Within the survey area five key invertebrate habitats were identified; dry grass-heath, exposed riverine sediments, wet heath and bog, flower-rich tall grassland and willow scrub. The invertebrate community is as expected in the habitats present, based on the criteria in Volume 4, Appendix 11.3: Biodiversity Methodology, it was agreed with the specialist invertebrate surveyor that the invertebrate community is of Local importance.
Reptiles	Local	**Desk Study:** No records of reptiles were returned during the desk study. Five reptile records (common lizard) were obtained incidentally during wider ecological surveys undertaken from 2021 to 2023. **Field Study:** Two areas of habitats surveyed have high suitability to support reptiles, located in the northern most extent of the Proposed Scheme around Loch Restil and south of the OMR. 25 areas have moderate suitability for reptiles. These are located either side of the A83 and OMR, but primarily to the east. Seven areas of low suitability are located primarily along the west of the OMR. Three common lizards were recorded during surveys undertaken within the survey area. The Proposed Scheme area contains suitable reptile habitat, and their presence is confirmed, but populations are likely to be low and extensive areas of similar habitat are present in the local area. The widespread reptile species known to be present (common lizard) or potentially present (slow worm and adder) within the Proposed Scheme area are widespread in similar habitats, so the reptile community is considered to be of Local importance.
Other Species - Amphibians, Red Deer, Brown Hare and Mountain Hare	Less than Local	**Desk Study:** A single record of mountain hare, a single record of brown hare, and a single record of red deer were returned within 2km of the Proposed Scheme. Four amphibian records (two palmate newt, one tadpole (unidentified species) and one common frog) were obtained incidentally during wider ecological surveys undertaken from 2021 to 2023. **Field Study:** The survey area supports suitable habitat for amphibians, red deer and hare (brown and mountain) and these species are likely to be present. However, they are considered to be of Less than Local importance for the following reasons: • red deer are common and widespread, but are still considered in mitigation because of risks from RTAs • common amphibians and brown hare are also widespread • mountain hares are rarer, but suitable habitat for them is limited to higher parts of the survey area, and they would not be expected to be encountered within the Proposed Scheme area.

Feature	Geographical Importance	Baseline data (Desk-based and Field Survey) and Justification
INNS	Not applicable	**Desk Study:** The NBN Atlas search found records of four invasive non-native plant species within 5km of the Proposed Scheme: rhododendron, giant rhubarb, Japanese knotweed, and American skunk-cabbage. The ABReC returned no records of American mink within 2km of the Proposed Scheme. **Field Survey:** The following invasive non-native plant species were found within the survey area during the NVC Survey: rhododendron and Japanese knotweed. Sitka spruce is also present. While this is not an INNS listed in legislation, it spreads readily in many habitats.

Future Baseline

11.3.7. The data presented in the baseline of this assessment provides a 'snapshot' of the Study Area at the time of the surveys but does not guarantee that additional constraints or IEFs may not appear in the future.

11.3.8. The range and population size of the IEF species in this assessment are predicted to continue as per their current trends in the absence of development. Highly mobile species (e.g. birds, bats, badger, otter and pine marten) could travel into and out of the Study Area from further afield at any time. Climate change will result in an increased frequency of storm events and associated landslips or flooding, whilst there will be a shift towards (average) drier and warmer summers and milder and wet winters. Climate change may, therefore, lead to changes in the structure and functioning of habitats within the Study Area, although any such changes are not expected to significantly alter the importance of the ecological features that make up the current baseline.

11.3.9. South of the A83, either side of the OMR is regularly managed as farmland and there is no anticipated change in this management. No changes, such as other developments, are anticipated between the time of producing this report and the anticipated commencement of the Proposed Scheme.

11.3.10. Therefore, it is anticipated that there would be no perceptible change in the baseline conditions if the Proposed Scheme was not constructed.

11.4. Embedded Mitigation

11.4.1. Mitigation employed for the Proposed Scheme has followed the mitigation hierarchy as set out in the National Planning Framework 4 (NPF4):

- Avoid – by removing the impact.
- Minimise – by reducing the impact.
- Restore – by repairing damaged habitats.
- Offset – by compensating for any residual impact that remains, with preference to on-site over off-site measures.

11.4.2. Embedded measures are limited to those that form part of the Proposed Scheme design. Further detail on the mitigation measures is provided in the OLEMMP

(Volume 4, Appendix 11.15: Outline Landscape and Ecological Management and Monitoring Plan), which includes elements of both embedded and additional mitigation. Indicative key locations for embedded and additional mitigation measures, such as fencing and mammal ledges, are shown in Volume 3, Figure 9.3: Landscape and Ecological Mitigation Plan, which should be read with the mitigation described in this chapter, the landscape chapter (Volume 2, Chapter 9: Landscape) and the OLEMMP (Volume 4, Appendix 11.15: Outline Landscape and Ecological Management and Monitoring Plan).

Table 11.6 – Embedded Ecological Mitigation Measures

Mitigation Item and relevant IEF	Description
ECO-Embed1 Alignment and design (relevant to all IEFs)	The Proposed Scheme design has evolved to minimise impacts on: Beinn an Lochain SSSI with the removal of a proposed Sustainable Drainage System (SuDS) within the SSSI in consultation with SEPA and NatureScot, (who also confirmed that the use of filter drains would be an improvement over the current scenario): habitats; trees (including riparian trees); and protected and notable species. Efforts to reduce losses further will continue during detailed design.
ECO-Embed2 Lighting (relevant to all nocturnal and other light-sensitive IEFs)	A sensitive lighting approach has been incorporated into the design of the Proposed Scheme that considers impacts to wildlife whilst also ensuring public safety and reduced visual impacts. The lighting designers worked closely with ecologists and landscape architects in creating the design, and this collaborative approach will continue during detailed design. The design team applied their professional experience and took account of 'Bats and Artificial Lighting in the UK' Guidance Note GN 08/23 (https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/). If night time work is required, any temporary lighting will be directed towards works areas and cowling will be used to minimise light spill on sensitive receptors such as watercourses.
ECO-Embed3 Watercourse realignments and culverts (relevant to aquatic ecology and otter)	Information on watercourse realignment and aquatic mitigation of culverting is provided in Volume 2, Chapter 19: Road Drainage and the Water Environment. Sensitive ecological watercourse realignment and crossing design has been included wherever possible, whilst acknowledging the significant constraints and risks the water environment poses within the vicinity of the Proposed Scheme and the need for some hard engineering. Watercourse crossing lengths and riparian habitat loss has been minimised as far as practically possible. New or extended watercourse crossings, including culvert inlets and outlets, will be sensitively designed and constructed with reference to SEPA's Good Practice Guides (Engineering guidance | Scottish Environment Protection Agency (SEPA)). The drainage designers worked closely with ecologists and hydrologists in creating the design, taking survey data, habitat suitability for key species and professional judgement into account. This collaborative approach will continue during detailed design. Detailed designs will also ultimately be subject to SEPA authorisation for works affecting watercourses under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). Culverts will be appropriately designed to maintain in-channel habitat (i.e. sediment and flow) continuity wherever possible in line with good hydromorphological design practices (see Volume 2, Chapter 19: Road Drainage and the Water Environment). Detailed design will also incorporate safe passage for mammals where required.
ECO-Embed4 Outfalls (relevant to aquatic ecology and otter)	Volume 2, Chapter 19: Road Drainage and the Water Environment sets out measures including measures to reduce flow at outfalls. Design options are being considered to slow flow rate of water leaving the catchpit towards the Croe Water. Slowing the flow will reduce sedimentation loads and scouring when the Headwaters enter the Croe Water. This will mitigate adverse impacts on aquatic species and habitats.
ECO-Embed5	The detention basin to the south of the Proposed Scheme will remove pollutants and sediments from run-off from the Proposed Scheme prior to entering surrounding habitats and watercourses (Croe Water). Pollutants will naturally dilute out of run-off within the detention basin prior to entering any main watercourse (Croe Water). The detention basin

Mitigation Item and relevant IEF	Description
Detention Basin (SuDS) (relevant to aquatic ecology and otter)	will also provide attenuation up to the 200-year event with flows restricted to Qbar greenfield rates which will reduce flood risk associated with the Proposed Scheme. Marginal and landscape planting around this feature will benefit a range of invertebrates, enhancing the site for foraging bats and other mammals.
ECO-Embed6 Road Drainage (relevant to aquatic ecology and otter and small species)	The road drainage provides water quality treatment via the specification of filter drains and catchpit sumps prior to basin or watercourse outfalls. Their detailed design will include measures to reduce risks to animals.
ECO-Embed7 Mammal Fencing (relevant to mammals including otter, badger, pine marten, red squirrel and deer)	Temporary fencing and / or barriers will be erected to secure the working area(s) and prevent animals, including otter and badger, that rely on existing mammal pathways to navigate (for example waterways / culverts) entering the main roads during construction. Wildlife warning reflectors will also be installed along the OMR and maintained while it is used as a diversion route. Permanent wildlife fencing (if and where appropriate) will be installed to direct animals to safer crossing points. Locations will be finalised at detailed design but it is anticipated that design will include a requirement near the burn bridge to the north of the DFS, at Bridge B on the OMR and retention of mammal passage at the Croe Water culvert. Indicative key locations are shown in Volume 3, Figure 9.3 Landscape and Ecological Mitigation Plan, which should be read with the mitigation described in this chapter, the landscape chapter (Volume 2, Chapter 9) and the OLEMMP (Volume 4, Appendix 11.15). Fencing and / or landscape planting would also be designed and installed in areas near the entrances to the DFS so that species including deer, badger and pine marten are discouraged from entering the DFS (if appropriate). Fencing will be installed to stop wildlife accessing the top of the DFS, if required. The detailed design would be determined taking account of ecological professional judgement, based on the survey data that informed this EIAR, combined with any subsequent update survey data and also taking account of detailed design and ground conditions.
ECO-Embed8 Receptor Sites (relevant to bats, birds and reptiles)	Two receptor sites have been included in the Proposed Scheme. Receptor 1 will be used for installation of bat boxes (compensation under licence and for wider loss of roosting opportunities) and bird boxes. Receptor 2 will be enhanced to increase carrying capacity for reptiles and may also be used for additional bird and bat boxes depending on requirements identified during detailed design and update surveys.

11.5. Potential Impacts

Potential Impacts - Construction

11.5.1. Potential significant effects on IEFs resulting from the construction phase of the Proposed Scheme are described below, taking embedded mitigation into account. The level and significance of effect of the impacts described in Section 11.5 are theoretical, taking account of embedded mitigation but not the additional mitigation that is described below in Section 11.6. It is recognised that some of the additional measures would be required for legal compliance, and all embedded and additional measures form part of the committed mitigation.

Potential Construction Phase Impacts on Designated Sites

Glen Etive and Glen Fyne SPA (International Importance)

11.5.2. There is no potential for direct impacts on the SPA, which is approximately 1.8km from the Proposed Scheme. Disturbance of golden eagle has been considered as a potential impact. Embedded mitigation will incorporate design measures. Some of the measures set out in Volume 4, Appendix 11.1: Report to inform Habitats Regulations Appraisal go beyond embedded mitigation, particularly those relating to minimising risks of disturbance. Taking embedded mitigation alone into account, there could be risks of temporary disturbance of golden eagle. This would be a short-term reversible effect and would not affect the breeding success of the SPA golden eagle so the level of potential impact would be negligible adverse. In the absence of additional mitigation, the significance of effect on the SPA is, therefore, predicted to be Slight Adverse.

11.5.3. For avoidance of doubt, taking all embedded and additional mitigation into account, the Report to inform Habitats Regulations Appraisal (Volume 4, Appendix 11.1) concludes that there would be no adverse effects on the integrity of the European Site.

Loch Lomond Woods SAC (International Importance)

11.5.4. There is no potential for direct impacts on the SAC, which is approximately 3.1km from the Proposed Scheme. Potential for indirect impacts on the SAC through

effects on the local otter population have been considered. The Proposed Scheme has the potential to result in severance of otter habitat, and displacement of individuals away from existing known commuting routes during construction, potentially resulting in greater use of less suitable crossing points. Embedded mitigation has accounted for these potential effects.

11.5.5. Otter could also be affected by disturbance and their habitat could be affected by pollution. This would be a short-term reversible effect and would not affect the breeding success of the otter of the SAC, so the level of potential impact would be negligible adverse. In the absence of additional mitigation, the significance of effect on the SAC is, therefore, predicted to be Slight Adverse.

11.5.6. For avoidance of doubt, taking all embedded and additional mitigation into account, the Report to inform Habitats Regulations Appraisal (Volume 4, Appendix 11.1) concludes that there would be no adverse effects on the integrity of the European Site.

Beinn an Lochain SSSI (National Importance)

11.5.7. There will be a direct impact on the SSSI, comprising a small area of localised permanent habitat loss (0.10ha) and anticipated temporary habitat loss (0.22ha), which totals 0.33ha, (0.024% of the SSSI by area). Habitat loss will consist of heath, wetland and acid grassland, and temporary loss will include blanket bog (less than 0.01 ha). As embedded mitigation efforts to reduce losses further will continue during detailed design, but on a precautionary basis for this EIA Report it is assumed that these losses will occur. As a precaution, it is also assumed that areas of temporary loss may not be restored fully, although the aim will be to do so. Whilst the site is designated for some of these habitats, the scale of loss in comparison to the entire SSSI area is extremely small. The majority of habitat being lost is wetland and the existing road verge.

11.5.8. Indirect impacts such as habitat damage / degradation from construction dust, noise, and damage (via pollution events) or risks of additional direct impacts through accidental incursion have been identified on the remaining SSSI during

construction phase. In the absence of mitigation, there could be a short-term localised adverse impact due to pollution events.

11.5.9. Beinn an Lochain SSSI is of National importance, but the habitat loss would constitute a very small part of this site resulting overall in a direct, long-term, permanent, minor adverse level of impact. Taking embedded mitigation into account, the significance of effect on the SSSI is predicted to be Slight Adverse.

Potential Construction Phase Impacts on Terrestrial Habitats and Bryophytes (Local to National Importance)

Table 11.7 – Summary of Permanent and Temporary Habitat Losses

UKHab Habitat / NVC	Importance	Permanent loss (ha)	Temporary loss (ha)
f2c7 Calcium-rich springwater-fed fens: upland (NVC M10)	Regional	None	0.14
f2c Upland flushes, fens and swamps (NVC M6)	County	0.78	1.08
h1b5 Dry heaths; upland (NVC H9, H12, H13, H14 and H21)	County	0.10	0.45
g2b6 Species-rich grassland with mat-grass in upland areas (NVC CG10)	County	None	0.07
w1e Upland birchwoods (NVC W4)	County	<0.01	0.04
f2b Purple moor grass and rush pastures (NVC M25)	Local	0.17	0.10
g1b Upland acid grassland (NVC U2, U4, U5 and U20)	Local	0.14	0.90
h3h Mixed scrub (NVC W1)	Local	0.01	0.03
TOTALS		1.20	2.95

11.5.10. Permanent terrestrial habitat losses and the impact of temporary losses have been minimised as far as possible through the incorporation of embedded mitigation measures. In the absence of additional mitigation, the level of impact will be minor adverse, so the significance of effect on habitats is predicted to be Slight Adverse.

11.5.11. Specific consideration was given to bryophytes as the communities within the ravine of the Croe Water are considered to be of National Importance. Impacts considered included potential for habitat loss and indirect impacts through pollution such as sediment in the watercourse. The Proposed Scheme would inherently involve the loss of some bryophyte species through permanent and temporary habitat loss. However, the important bryophyte interest is concentrated either well within the ravine of the Croe Water, or approximately 30m uphill from the A83. This includes the population of Bryum dixonii, which is the most notable bryophyte species recorded during baseline surveys (of National importance).

11.5.12. With the incorporation of embedded mitigation measures, important bryophyte species along the Croe Water are not anticipated to be affected. No level of impact change in important communities is predicted. Taking embedded mitigation into account, the significance of effect on important bryophyte communities is, therefore, predicted to be Neutral.

Potential Construction Phase Impacts on Aquatic Habitats

The headwaters / minor tributaries of the Croe Water (County Importance)

11.5.13. Potential impacts considered include: habitat loss; degradation through hard engineering and pollution; and disturbance of aquatic species.

11.5.14. New and extended culverts on the OMR and the A83 (collectively approximately 620m of additional culvert extents, relative to the existing baseline), as well as the construction of nine concrete cascades between the A83 and OMR would result in both permanent and temporary habitat loss and degradation. Each cascade is anticipated to be approximately 30m in length.

11.5.15. No major works are anticipated on the headwater channels above the catchpit on the A83 (which will sit behind and under the DFS). The flow of water from above

the A83 would be temporarily blocked for work on the catchpit and cascades below (in a phased manner). Minor tributaries will be directly impacted by construction works that create the catchpit and downhill cascades.

11.5.16. Permanent losses and the impact of temporary losses have been minimised as far as possible through the incorporation of embedded mitigation measures. With the incorporation of these measures, there will still be residual loss of watercourse habitat extent and reduction in quality which is considered to be a minor adverse level of impact, so the significance of effect on aquatic habitats is predicted to be Slight Adverse.

The Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary (National Importance)

11.5.17. There are no physical works in this IEF, so no direct impacts are predicted. Associated tributaries will be subject to a range of construction activities as outlined above, and works will also be undertaken adjacent to the Croe Water and High Glen Croe Tributary. Potential impacts considered include degradation through pollution and disturbance of aquatic species.

11.5.18. If there were no pollution control measures, there could be medium-term reversible damage to the watercourse. In the absence of additional mitigation, the level of effect is minor adverse, and significance of effect on the Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary is, therefore, predicted to be Slight Adverse.

Loch Restil (County Importance)

11.5.19. There are no physical works in this IEF, so no direct impacts are predicted. Associated tributaries would be subject to a range of construction activities as outlined above, and works would also be undertaken upslope of Loch Restil. Potential impacts considered include degradation through pollution, as there is a risk that uncontrolled construction pollution on its tributary watercourses could propagate to the Loch. In the absence of additional mitigation, the level of effect is minor adverse, and the significance of effect on Loch Restil is, therefore, predicted to be Slight Adverse.

Potential Construction Phase Impacts on Species

Breeding Birds (Local Importance)

11.5.20. Potential impacts in the absence of mitigation include habitat loss and degradation, and disturbance and killing / injury of birds or harm to nests. The loss of vegetation suitable for breeding and / or feeding birds would include permanent loss of 9.60ha and temporary loss of 16.09ha. There would be long term habitat loss, and in the absence of additional mitigation there could be risks of harm to nesting birds through damage to occupied nests. However, permanent losses are limited to the immediate vicinity of the existing roads and extensive areas of similar habitat will remain in the immediate and wider area. These effects would not be predicted to affect the integrity or key characteristics of the bird assemblage.

11.5.21. Taking embedded mitigation into account, the level of impact is expected to be minor adverse and the significance of effect on breeding birds is, therefore, predicted to be Slight Adverse.

Otter (Local Importance)

11.5.22. The Proposed Scheme has the potential to result in severance of otter habitat, and displacement of individuals away from existing known commuting routes during construction, potentially resulting in greater use of less suitable crossing points. There is a risk (albeit low) of killing and injury of individuals from collision with construction plant or from other associated construction traffic (four-year traffic diversion on the OMR). Embedded mitigation includes permeability for protected mammals at key crossing points, reflectors on the OMR and refinement of proposals during detailed design may also result in additional otter fencing.

11.5.23. Otter could be affected by disturbance and pollution of their habitat. This would be a short-term reversible effect and would not affect the breeding success of the otter, so the level of potential impact would be negligible adverse. In the absence of additional mitigation, the significance of effect on otter is therefore predicted to be Neutral.

Pine Marten (Local Importance)

11.5.24. Pine marten could be affected by habitat loss and disturbance during construction. No confirmed pine marten dens have been found within 250m of the Proposed Scheme, but they are present in the area. As a highly mobile terrestrial species, pine marten can travel across the Proposed Scheme and surrounding area at any time so there is a risk (albeit low) of killing and injury of individuals from collision with plant or from other associated construction traffic. However, given the embedded mitigation of reflectors on the OMR, this is not likely to be beyond levels with normal traffic flows.

11.5.25. Due to the large territory of this species (Volume 4, Appendix 11.9 Pine Marten Report), any habitat loss resulting from the Proposed Scheme is considered unlikely to alter foraging availability or habitat permeability for this species. It is also unlikely to cause a reduced population through habitat fragmentation as habitat permeability will be retained in all directions during operation. Connectivity to alternative habitat, in all directions, will be maintained and habitat permeability east west direction is likely to only temporarily be impacted (and in a phased manner) during the construction phase.

11.5.26. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on pine marten is, therefore, predicted to be Neutral.

Red squirrel (Local Importance)

11.5.27. Red squirrel could be affected by habitat loss and by disturbance during construction. Works are considered unlikely to affect squirrel drey building opportunities. The areas affected during construction primarily consist of suitable habitat for squirrel to commute and forage. Connectivity to suitable red squirrel habitat exists in all directions, and this will be maintained through construction. Habitat permeability in an east to west direction is likely to only temporarily be impacted (as works are being completed in a phased manner).

11.5.28. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on red squirrel is, therefore, predicted to be Neutral.

Bats (Local Importance)

11.5.29. Bats could be affected by habitat loss and disturbance. As roosts are present, in the absence of mitigation there could be potential for killing / injury of bats and damage to roosts.

11.5.30. The Proposed Scheme would result in some loss of foraging and commuting habitat for bats. There will be permanent loss of 9.60ha and temporary loss of 16.09ha. However, permanent losses are limited to the immediate vicinity of the existing roads and extensive areas of similar habitat will remain in the immediate and wider area. Surveys suggest that the commuting and foraging habitats within the Proposed Scheme are along the Croe Water and in adjacent woodland, which will be retained. The Croe Water would maintain good connectivity north south through the construction period. East west links for commuting or foraging bats would be accessible during the works as any construction to headwaters would be completed in a phased manner. The landscape planting around the Proposed Scheme will contribute to replacement foraging habitat.

11.5.31. The Proposed Scheme would result in the loss of day roosts for low numbers of common and widespread bat species. Design refinements will continue to aim to reduce losses, but five bat roosts within the Proposed Scheme Boundary would potentially be lost or disturbed (BS2, BS11, BT4, BS24 and BB2 – see Volume 4, Appendix 11.11: Bat Report). These support non-breeding day roosts belonging to low numbers of common and widespread species (*Myotis* sp., soprano pipistrelle and unidentified pipistrelle species). Construction would also result in the loss of potential roosting opportunities through works to trees, culverts, rock faces and bridges.

11.5.32. Bat boxes would be provided as embedded mitigation for losses of known roosts and roosting opportunities. In the absence of additional mitigation, there would be potential for harm to individual bats using roosts in working areas. While the scale

of such impact would be small, it would take time for the local population to recover so it is considered a medium term impact and, therefore, the level of impact would be moderate adverse. Taking embedded mitigation into account, it is considered that the level of impact will be moderate adverse and the significance of effect on bats is, therefore, predicted to be Slight Adverse.

Badger (less than local importance)

11.5.33. Badger are considered to be of less than local importance; however, they require consideration as a protected species. Localised habitat loss would occur, but this would not be predicted to affect badger use of the local area. There is a risk (albeit low) of killing and injury of individuals from collision with construction plant or from other associated construction traffic (four-year traffic diversion on the OMR). Embedded mitigation includes permeability for protected mammals at key crossing points, reflectors on the OMR and refinement of proposals during detailed design may also result in additional badger fencing.

11.5.34. Disturbance of badger or damage of a sett could occur, with one non-breeding single entrance outlier badger sett located in proximity to the Proposed Scheme. If there were no mitigation, there could be harm to individual badgers and potential damage to a sett. While badger are of less than local importance in EIA terms and, therefore, there is no significance of effect, additional mitigation is required due to their legal protection.

Terrestrial Invertebrates (Local Importance)

11.5.35. Terrestrial invertebrates could be affected by habitat loss. Five key invertebrate habitats were identified within the Proposed Scheme during baseline data collection; dry grass-heath, exposed riverine sediments (primarily along the Croe Water), wet heath and bog, flower-rich tall grassland, and willow scrub. The Proposed Scheme is likely to result in the permanent loss of some of this habitat.

11.5.36. The SuDS detention basin will be of direct benefit to various invertebrate species assemblages as there is currently limited standing water available for invertebrates.

11.5.37. There would, therefore, be a mixture of habitat losses and gains and while overall the amount of suitable habitat would be reduced, similar habitat to those lost is present locally and standing water would increase. Taking embedded mitigation into account, it is considered that the level of impact will be negligible adverse and the significance of effect on terrestrial invertebrates is, therefore, predicted to be Neutral.

Reptiles (Local Importance)

11.5.38. In the absence of mitigation reptiles could be affected by habitat loss and killing / injury of individual animals. In total, 9.60ha of suitable reptile habitat would be permanently lost during construction of the Proposed Scheme and a total of 16.09ha suitable habitat for reptiles would be temporarily lost during construction of the Proposed Scheme. There is likely to be temporary habitat severance between the OMR and the A83 during bund and drainage installation works. However, access to other areas of suitable habitat within the wider area to the north and south would be available. Connectivity to suitable habitat west of the OMR and east of the A83 may be impacted by works traffic but it is not anticipated that this would have a severance impact as the A83 and OMR would still be passable.

11.5.39. There is a risk (albeit low) of killing and injuring individual reptiles during vegetation removal, but this would only be anticipated to involve small numbers so any reduction in local population would be temporary. It is anticipated that the inclusion of artificial hibernacula within Receptor 2 will increase the carrying capacity of reptiles within the Proposed Scheme boundary. With the incorporation of embedded mitigation measures, it is considered that the level of impact will be negligible adverse and the significance of effect on reptiles is, therefore, predicted to be Neutral.

Operation

11.5.40. Potential significant effects on IEFs resulting from the operational phase of the Proposed Scheme are described below, taking embedded mitigation into account.

Potential Operational Phase Impacts on Designated Sites

Glen Etive and Glen Fyne SPA (International Importance)

11.5.41. There is no potential for direct impacts on the SPA, which is approximately 1.8km from the Proposed Scheme. The Proposed Scheme comprises improvements to an existing road, so no potential operational effects on eagle are predicted. It is considered that there will be no change in the level of impact and the significance of effect on the SPA is, therefore, predicted to be Neutral.

11.5.42. For avoidance of doubt, the Report to Inform Habitats Regulations Appraisal (Volume 4, Appendix 11.1) concludes that there would be no adverse effects on the integrity of the European Site.

Loch Lomond Woods SAC (International Importance)

11.5.43. There is no potential for direct impacts on the SAC, which is over 3km from the Proposed Scheme. If otter in proximity to the A83 were affected by operational impacts this could have an indirect impact on the SAC. This could include increased mortality, disturbance and indirect impacts through pollution.

11.5.44. Habitat fragmentation and traffic resulting in otter displacement has been considered a potential operational impact. This is highly unlikely as the Croe Water would be retained and permeability will be provided by safe crossing points on the OMR and the A83 through incorporation of fencing to direct animals at risk of collision, where required, and mammal ledges within culverts.

11.5.45. The likelihood of otter entering the DFS and not being able to exit safely or quickly has been considered as this could potentially cause increased mortality of otter. However, with the incorporation of embedded mitigation measures (culverts that permit safe passage under the carriageway or OMR at specific locations and fencing that directs this species to safer crossing points) it is considered likely that vehicle collision with otter will be avoided or is likely to remain at the current baseline. Otter already negotiate the A83 and OMR when it is in use. Increased risks are, therefore, not predicted.

11.5.46. Pollution events have been considered. The Proposed Scheme drainage design (Volume 2, Chapter 4) will mitigate any potential pollution effects on aquatic IEFs that could reduce otter prey during the operational phase.

11.5.47. With the incorporation of embedded mitigation to protect otter, it is considered that there will be no change in the level of impact and the significance of effect on the SAC is, therefore, predicted to be Neutral.

11.5.48. For avoidance of doubt, the Report to Inform Habitats Regulations Appraisal (Volume 4, Appendix 11.1) concludes that there would be no adverse effects on the integrity of the European Site.

Beinn an Lochain SSSI (National Importance)

11.5.49. During the operational phase, the SSSI would not be at increased risk of direct impacts, but there could be potential impacts through pollution causing habitat degradation.

11.5.50. The Proposed Scheme drainage design (Volume 2, Chapter 4) incorporates sustainable drainage systems (SuDS) for the treatment of surface runoff from the carriageway prior to discharging back to the water environment. This will be an improvement compared to current runoff onto the SSSI but, given the size of the SSSI, it is not considered to be a significant benefit.

11.5.51. Embedded mitigation (Volume 4, Appendix 11.15 Outline LEMMP) may include the use of temporary fencing where appropriate and to deter and redirect grazing animals (such as deer) during operation to allow reinstated habitats to establish.

11.5.52. The sensitivity of habitats in Beinn an Lochain SSSI is high. There will be beneficial changes through reduced pollution risks but changes to the habitats within this SSSI are not predicted. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on the SSSI is, therefore, predicted to be Neutral.

Potential Operational Phase Impacts on Terrestrial Habitats and Bryophytes (Local to National Importance)

11.5.53. The most likely potential pathways for indirect impacts during operation are through water pollution which could affect flushes through surface water flows or groundwater. As there is currently no existing formalised treatment of surface runoff, the Proposed Scheme drainage design represents an improvement when compared with the baseline scenario. This will be an improvement compared to current runoff onto surrounding habitats, however, given the localised nature of the habitats that would benefit it is not considered a significant improvement.

11.5.54. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on habitats outside designated sites is, therefore, predicted to be Neutral.

11.5.55. Specific consideration was given to bryophytes as the communities within the ravine of the Croe Water are considered to be of National Importance. No additional or different impacts are predicted beyond those discussed for habitats in general. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on important bryophyte communities is, therefore, predicted to be Neutral.

Potential Operational Phase Impacts on Aquatic Habitats

The headwaters / minor tributaries of the Croe Water (County Importance)

11.5.56. This IEF could be affected by habitat degradation via pollution effects, e.g. the potential surface runoff from the carriageway, as well as operational maintenance of the catchpits and cascades.

11.5.57. The Proposed Scheme drainage design (as discussed in Volume 2, Chapter 4) will mitigate any potential pollution effects on aquatic ecology during the operational phase. Noting that the existing arrangement includes no treatment or attenuation of road drainage, it is likely road drainage design under the Proposed Scheme would provide betterment over the existing scenario in terms of river water quality (see Volume 2, Chapter: 19 Road Drainage and the Water Environment). Operational

maintenance will be undertaken observing good construction practice measures (see Table 11.6). With embedded mitigation, it is considered that there will be a minor beneficial level of impact change and the significance of effect is, therefore, predicted to be Slight Beneficial.

The Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary (National Importance)

11.5.58. The improved drainage described above in relation to the headwaters could also benefit the Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary. While this is at a greater distance from the Proposed Scheme and, therefore, any benefit would be reduced in level, its National importance increases the significance of the beneficial effect. Taking the improved drainage into account, it is considered that there will be a negligible beneficial level of impact change and the residual significance of effect on the Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary is, therefore, predicted to be Slight Beneficial.

Loch Restil (County Importance)

11.5.59. The improved drainage described above in relation to the headwaters could also benefit discharge water quality from tributaries to Loch Restil. Taking the improved drainage into account, as well as the size of Loch Restil (relative to affected tributaries) and baseline water quality of Loch Restil, it is considered that there will be no change in the level of impact change and the significance of effect is, therefore, predicted to be Neutral.

Potential Operational Phase Impacts on Species

Breeding Birds (Local Importance)

11.5.60. Factors that could affect birds are not predicted to be different from the current baseline situation. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on breeding birds is, therefore, predicted to be Neutral.

Otter (Local Importance)

11.5.61. Details of potential impacts and mitigation for otter are described above in relation to the Loch Lomond Woods SAC. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the residual significance of effect on otter is, therefore, predicted to be Neutral.

Pine Marten (Local Importance)

11.5.62. Habitat connectivity to important pine marten foraging resources has been maintained and will not be impacted by operational phase of the Proposed Scheme. Landscape permeability will be provided by safe crossing points on the OMR and under the A83. Disturbance through road use and maintenance is not predicted to differ from the current baseline situation.

11.5.63. Pine marten already negotiate the A83 and OMR. The likelihood of pine marten entering the DFS and not being able to exit safely has been considered as this could potentially cause increased mortality. However, with the embedded mitigation measures (e.g. fencing to reduce risks of animals entering the DFS) it is considered likely that vehicle collision risks for pine marten is likely to remain at the current baseline level. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on pine marten is, therefore, predicted to be Neutral.

Red Squirrel (Local Importance)

11.5.64. Habitat connectivity to red squirrel habitat would not be impacted by the operational phase of the Proposed Scheme. Disturbance through road use and maintenance is not predicted to differ from the current baseline situation.

11.5.65. If red squirrel enter the DFS this could potentially cause increased mortality, but in the absence of nearby suitable habitat this is not considered likely. Vehicle collision risk for red squirrel is likely to remain at the current baseline level. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on red squirrel is, therefore, predicted to be Neutral.

Bats (Local Importance)

11.5.66. There will be no habitat fragmentation for bats during the operational phase of the Proposed Scheme. Created and enhanced habitats will be maintained during operation. Embedded mitigation includes sensitive lighting design.

11.5.67. At present bats negotiate traffic on the A83 (and the OMR when in use) at night. It is possible that pipistrelle bats (less light sensitive) would forage around lights within the DFS and it is also considered likely to offer shelter from bad weather. This does present some collision risk. However, the DFS would not contain any internal vegetated areas so would be less likely to attract foraging bats. Also, there are numerous exit points on the western face of the DFS that would give bats routes to avoid vehicles. These are illustrated on Plate 4-2 Debris Flow Shelter Visualisation (Volume 2, Chapter 4). In addition, landscape planting near the shelter will be used to encourage bats to fly up and over the DFS. Collisions of bats with vehicles, although unlikely, cannot be ruled out but risk / rates are considered unlikely to be at a higher rate than the present scenario.

11.5.68. Taking embedded mitigation into account, it is considered that there will be no change in the level of impact and the significance of effect on bats is, therefore, predicted to be Neutral.

Badger (Less than local Importance)

11.5.69. Badger do not require assessment for nature conservation reasons as a feature of less than local importance, but they are a protected species. Badger already negotiate the A83 and OMR when it is in use. The likelihood of badger entering the DFS and not being able to exit safely or quickly has been considered as this could potentially cause increased mortality. However, with the incorporation of embedded mitigation measures (e.g. fencing to reduce risks of animals entering the DFS) it is considered that risks of vehicle collision with badger are likely to remain at the current baseline. No additional mitigation is proposed, unless an unexpected increase in RTAs occurs, in which case expert ecological advice will inform further measures. While badger are of less than local importance in EIA terms and, therefore, there is no significance of effect, taking embedded mitigation into account, it is considered that there will be no change in the level of impact.

Terrestrial Invertebrates (Local Importance)

11.5.70. Terrestrial invertebrates' habitat could be affected by habitat degradation via pollution. The existing arrangement includes no treatment or attenuation of road drainage, therefore the Proposed Scheme road drainage design should provide an improvement compared to current runoff into surrounding habitats. Given the localised nature of the habitats that would benefit, the magnitude of the impact is negligible. Taking this into account, it is considered that there will be no change in the level of impact and the significance of effect on terrestrial invertebrates is, therefore, predicted to be Neutral.

Reptiles (Local Importance)

11.5.71. Habitat maintenance could affect reptiles, but this would not differ from the current baseline situation and it is considered that there will be no change in the level of impact. The significance of effect on reptiles is, therefore, predicted to be Neutral.

Notable Species (red deer)

11.5.72. Red deer do not require assessment for nature conservation reasons as a feature of less than local importance, but they are considered for safety reasons. The likelihood of red deer entering the debris flow tunnel and not being able to exit safely or quickly has been considered as this could potentially cause increased mortality and pose a risk to humans. However, with the incorporation of embedded mitigation measures (e.g. fencing that directs this species to safer crossing points) it is considered likely that the frequency of vehicle collision with red deer is likely to remain at the current baseline. Red deer already negotiate the A83 and OMR when it is in use. As on the existing road network, RTAs due to deer will continue to be recorded, and mitigation measures added if required for safety reasons. No additional mitigation is proposed, unless an unexpected increase in RTAs occurs, in which case expert ecological advice will inform further measures.

11.6. Additional Mitigation

11.6.1. Mitigation is provided through embedded mitigation, described above in Section 11.4, and additional mitigation. The additional mitigation, compensation and enhancement measures are set out below. For ease of reference, these are all

referred to collectively as ‘additional mitigation’. Measure ECO3 contributes to mitigation but also goes beyond offsetting habitat losses to deliver additional enhancement. Detail below on measures relating to golden eagle and otter duplicates the measures in Volume 4, Appendix 11.1: Report to inform Habitats Regulations Appraisal.

11.6.2. Whilst not embedded mitigation in relation to the design of the Proposed Scheme, the measures identified in this section will form part of the Construction Environmental Management Plan (CEMP), which will be included within the Construction Contract for the Proposed Scheme. These measures have been carried forward to the Schedule of Committed Mitigation as detail in Volume 2, Chapter 21: Schedule of Environmental Commitments.

11.6.3. Further detail on the mitigation measures is provided in the OLEMMP (Volume 4, Appendix 11.15). Indicative key locations are shown in Volume 3, Figure 9.3: Landscape and Ecological Mitigation Plan, which should be read with the mitigation described in this chapter, the landscape chapter (Volume 2, Chapter 9) and the OLEMMP (Volume 4, Appendix 11.15).

Table 11.8 - Additional Mitigation Measures

Mitigation Reference, item and relevant IEF	Additional Mitigation Measures
ECO1 Review of mitigation after update surveys (relevant to all IEFs)	It is recognised that some additional mitigation may be required as a result of update surveys, particularly if key species colonise working areas or alter their use of areas. This will be defined and applied by the Appointed Contractor based on pre-commencement surveys.
ECO2 SSSI measures (relevant to SSSI)	While the significance of effect of residual impact on the Beinn an Lochain SSSI is predicted to be slight, opportunities to provide additional mitigation through habitat enhancement will be explored during detailed design. The approach to any such measures would be proportionate and would be finalised in consultation with NatureScot and works would be undertaken through agreement with the relevant landowner.
ECO3 Compensatory habitat enhancement (relevant to habitats, and also species IEFs)	Habitat in four areas within the Proposed Scheme Boundary will be enhanced as mitigation for terrestrial and aquatic habitat losses. These enhanced habitats will make a positive contribution to biodiversity net gain to address and go beyond the additional mitigation required to offset impacts on terrestrial and aquatic habitats. Biodiversity net gain calculations have been produced to ensure the Proposed Scheme delivers a net gain in line with NPF4 (Volume 4, Appendix 11.2: Biodiversity Legislation, Policy and Guidance). Full details of the proposals for the four enhancement sites are provided within Volume, Chapter 4: The Proposed Scheme and the four sites are described in the Enhancement Site Survey Report (Volume 4, Appendix 11.16). The overarching management and monitoring methods of all enhancement features will be set out in the LEMMP (Volume 4, Appendix 11.15: Outline Landscape and Ecological Management and Monitoring Plan). While work in the four enhancement areas are driven by habitat-based metric calculations, they will also benefit species IEFs including plants, species contributing to the aquatic ecology IEFs, birds, mammals and reptiles and priority invertebrates.
ECO4 General Measures (relevant to all IEFs)	During detailed design and construction, efforts will continue to aim to reduce habitat losses further. Construction compounds and on-site workings will be sited away from the SSSI and other sensitive habitats (including watercourses) to minimise the risk of pollution. All construction activities will follow good practice procedures to avoid or reduce polluting effects. These include implementation of pollution prevention measures, dust control, and buffer zones around sensitive features. In addition to update surveys to inform protected species licensing requirements, pre-construction ecological surveys will be conducted to update the baseline condition assessment prior to construction starting. Where possible, core hours of working will be adjusted throughout the seasons to minimise work outside hours of daylight. Surface vegetation and soil will be stored appropriately (topsoil, subsoil, and peat storage areas) until required for reinstatement. Toolbox talks will be delivered to all construction staff by the Ecological Clerk of Works (EcCoW).

Mitigation Reference, item and relevant IEF	Additional Mitigation Measures
ECO5 Construction Environmental Management Plan (relevant to all IEFs)	A Construction Environmental Management Plan (CEMP) will be produced (refer to Volume 2, Chapter 4: The Proposed Scheme and Volume 2, Chapter 21: Schedule of Environmental Commitments). Species Protection Plans (SPP) will be produced as part of the CEMP covering the following species / species groups as a minimum: otter, birds, pine marten, red squirrel, bats, badger, reptiles and any other species as deemed necessary from the pre-construction surveys conducted (see further details below). Designated Sites and Sensitive Habitats Precautionary Working Method Statement and an Aquatic Ecology SPP (see further details below) will also be produced. A suitably experienced and (where required) licensed ecologist commissioned by the Appointed Contractor will: • Complete pre- works ecology surveys to confirm the current understanding of the constraints and update the current baseline information where required. While existing data have been shared in this document, this does not take the place of the update survey that the Appointed Contractor's ecologist must undertake. • Apply for any EPS or other protected species licences if requirements for these are identified. The EcCoW will directly oversee all works within a 50m radius of designated sites for nature conservation and IEF habitats. A Designated Site and Sensitive Habitats Precautionary Working Method Statement (PWMS) will be appended to the CEMP. It will be produced in consultation with NatureScot. This PWMS will detail precautionary measures for all works within these features themselves or within a 50m radius of these designated sites for nature conservation: SSSI; Annex I habitats and other Habitat IEFs. This PWMS will also include measures relating to works at a greater distance if there are risks of indirect effects, cross referencing the main CEMP for general measures such as dust control where appropriate.
ECO6 Aquatic Ecology SPP	The Aquatic Ecology SPP will detail methods to be adhered to during all construction works, especially in-stream works. The Aquatic Ecology SPP will include timing restrictions on certain in-channel construction works to avoid sensitive lifecycle stages of the fish present, covering watercourses identified depending on their suitability for fish. This approach will be confirmed through SEPA engagement as part of the CAR authorisation process. If it is found that dewatering will be required for any watercourse extent that currently supports fish the SPP will also include translocation methods. The EcCoW will directly supervise all working within watercourses and within a 10m buffer. The Aquatic Ecology SPP will address sensitivity (to noise and vibration) of those fish species present.

Mitigation Reference, item and relevant IEF	Additional Mitigation Measures
ECO7 Bird SPP	The Bird SPP will include standard methods including timing of vegetation clearance, pre-clearance surveys and watching briefs (if required). Works in Receptor 1 will include erection of bird nesting boxes as mitigation for the reduction in nesting opportunities as vegetation created and enhanced matures. Long-eared owl have been recorded and an assumption has been made that they breed in the local area, and therefore nest baskets suitable for them will be installed as part of wider provision, contributing to mitigation on a precautionary basis. Provisions for golden eagle will be included in the Bird SPP and this will include the detailed the mitigation outlined in Volume 4, Appendix 11.1 Report to inform Habitats Regulations Appraisal. Provisions for golden eagle that will be included within the SPP / CEMP will include, but are not limited to: • Golden eagle roost surveys to be undertaken within appropriate buffer of the Proposed Scheme. The purpose of the surveys will be to establish presence / location of any roosting birds. To be undertaken by a NatureScot Schedule 1 licensed surveyor. Should roosting birds be located within the buffer, procedures will be set out to avoid impacts (e.g. stand-off periods and flexibility in working hours / locations for potentially disturbing works elements so as to prevent disturbance to individual birds). • Presence of suitably qualified and experienced and licensed ornithologist / EcCoW during relevant works. • Should helicopter use be required, flexibility in timing of, and routes used by, helicopter depending on number of journeys and time of year (i.e. seeking to avoid the sensitive eagle breeding period), and landing / take off positions with cognisance to timing and the effect these journeys may have on bird behaviour. Should helicopter use be required, a helicopter-use method statement will be agreed with NatureScot in advance of any flights commencing. • Flexibility in travel routes to and from the works areas, depending on anticipated vehicle numbers / type and with cognisance to timing and weather and the effect these may have on bird behaviour. • Consultation with ARSG, NatureScot and other relevant bodies, as appropriate. The Appointed Contractor will seek information on the movements of any satellite tagged golden eagles present with the vicinity of the Proposed Scheme prior to the start of works. • Defined working areas and exclusion areas where necessary, the latter to be agreed with the ornithologist / ECoW. • Defined flight paths for helicopter and exclusion zones (if necessary, in future). Good practice measures to mitigate general local environmental impacts such as pollution prevention measures and measures to reduce noise will also be applied through the CEMP. No additional mitigation is proposed, unless pre-works surveys or surveys during construction indicate unexpected issues, such as a Schedule 1 species being found in proximity to the works. If this occurs, then expert ecological advice will inform further measures.

Mitigation Reference, item and relevant IEF	Additional Mitigation Measures
ECO8 Otter SPP	The Otter SPP will include the detailed the mitigation outlined in Volume 4, Appendix 11.1: Report to inform Habitats Regulation Appraisal. This includes: • Detail of pre-works otter survey and appropriately experienced and licensed EcCoW to be present on-site during works (as necessary). • Restriction of working hours within the vicinity of watercourses so as to prevent disturbing works activities being undertaken when otter are most likely to be active (within two hours after sunrise and two hours before sunset). NatureScot standing advice is that this can be reduced to one hour between November and February (inclusive) because of the limited daylight. • Procedure for obtaining EPS licences as necessary. • Trenches, holes and pits will be kept covered at night or provide a means of escape for animals. • Defined working areas and exclusion areas and protection of retained habitat. • Use of lighting in accordance with BS5489 Code of Practice for the Design of Road Lighting. Any temporary lighting will be directed towards works areas to minimise light spill. • Provision of Habitat Protection Plan (HPP) detailing general good practice measures that will protect the wider local environment, including otter prey species and habitats during works. • Monitoring of flood risk potential to inform site activities. • Controls on topsoil strips and management of exposed ground. • Storage of plant and materials outside the functional floodplain. • Protocols for management of incidental spillages. • Protocols for working with sealing materials such as concrete adjacent to watercourses. • Defined working areas and exclusion areas and protection of retained habitat. • The risk of pollution will be controlled by strict adherence to best practice procedures (including Guidance for Pollution Prevention (GPP), (NetRegs, 2011), and Construction Industry Research and Information Association (CIRIA, 2001) guidance). Design measures described above, including habitat restoration and mammal fencing, will also contribute to mitigation for otter. Mammal fencing appropriate for otter will be utilised if confirmed to be required during detailed design to prevent otter being pushed onto the A83 carriageway. Under the CEMP, general good practice measures to mitigate general environmental impacts such as duration and timing of noisy activities will be minimised. Methods that reduce noise disturbance such as choice of equipment or ‘soft-start’ techniques will be used, where work increases gradually at the start of a work period.

Mitigation Reference, item and relevant IEF	Additional Mitigation Measures
ECO9 SPPs for species other than birds and otter	SPPs will be produced for: bats, badger, pine marten, red squirrel, and reptiles. Each SPP will set out necessary measures including pre-construction surveys, precautionary methods of working, cross references to any EPS or other protected species licences, and any necessary compensation and monitoring. Compensation may include licensed measures (such as bat boxes as compensation for loss of known bat roosts) or general measures (such as bat boxes to compensate for loss of wider roosting opportunities and reptile hibernacula to increase carrying capacity). All methods will follow relevant NatureScot guidance. Design measures described above, including habitat restoration and mammal fencing, will also contribute to mitigation for these species. For each species / group with legal protection, the measures will include: • timing and methods of work to protect individual animals from harm • compensation for loss of protected features, such as bat roosts • habitat restoration in temporary works areas • for species where habitat losses could affect local assemblage carrying capacity, relevant habitat enhancement. This is only anticipated to be potentially required for reptiles as part of the embedded mitigation. While no measures are set out specifically for mountain hare, brown hare or common amphibians, these species would be protected by general mitigation measures and allowed to move to safety if encountered during ecological checks prior to vegetation clearance.
ECO10 Landscape Ecological Management and Monitoring Plan (LEMMP) (relevant to all IEFs)	A Landscape Ecological Management and Monitoring Plan (LEMMP) will be prepared prior to construction by the Appointed Contractor detailing areas of habitat creation, management, and monitoring required as part of the Proposed Scheme (this will be an updated and expanded version based on the high-level contents set out in the Outline LEMMP (Volume 4, Appendix 11.15)). This will take into account the results of the pre-construction surveys. The LEMMP will include details of habitat creation, enhancement and re-instatement. The LEMMP will provide details on landscape planting, species composition (including the use of native planting) for the Proposed Scheme, including habitat enhancement plans and an appropriate INNS management plan for the enhancement sites. It will also include monitoring and maintenance of all embedded and additional mitigation measures for protected and notable species, such as bird and bat boxes, as well as any artificial compensatory badger setts and otter holts, should they be required (subject to pre-construction surveys). The information in the Outline LEMMP and this chapter will inform production of the LEMMP and CEMP, and appended documents including the SPPs and the Designated Sites and Sensitive Habitats PMWS. The Outline LEMMP should be read with Volume 3, Figure 9.3: Landscape and Ecological Mitigation Plan. Monitoring will be undertaken in accordance with any NatureScot EPS or other protected species licences required for the Proposed Scheme. Adaptive management will be applied if required, based on the results of monitoring.

11.7. Residual Effects

11.7.1. Effects remaining after all mitigation is in place are termed residual effects. The impact assessment is set out below, with embedded mitigation taken into account in the pre-mitigation assessment, and additional mitigation also taken into account in the post-mitigation assessment.

11.7.2. For avoidance of doubt, taking all embedded and additional mitigation into account, the Report to inform Habitats Regulations Appraisal (Volume 4, Appendix 11.1) concludes that there would be no adverse effects on the integrity of the Glen Etive and Glen Fyne SPA and Loch Lomond Woods SAC.

Residual Effects – Construction

11.7.3. Effects remaining after mitigation for the Construction Phase are described in the table below. Embedded mitigation is taken into account in the initial pre-mitigation assessment, as described in more detail in Section 11.5. The final post-mitigation assessment of level and significance of effect takes additional mitigation measures described above in Section 11.6 into account.

11.7.4. Among the additional mitigation measures, ECO1 is relevant to all features, as update surveys will identify if any changes in mitigation are required. Similarly, the General Measures (ECO4), CEMP (ECO5) and LEMMP (ECO10) are relevant to all features, as they set out the general good practice measures and principles of habitat creation, enhancement and restoration.

Table 11.9 - Residual Effects Construction

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Glen Etive and Glen Fyne SPA	Potential impacts on the SPA are through risks of disturbance of eagles. Negligible Adverse	Slight Adverse	ECO1, ECO4, ECO5, ECO7, ECO10 Additional mitigation measures in the Bird SPP (ECO7) will ensure that any risks of disturbance are avoided fully.	No Change	Neutral
Loch Lomond Woods SAC	Potential impacts on the SAC are through pollution and disturbance affecting otters. Negligible Adverse	Slight Adverse	ECO1, ECO3, ECO4, ECO5, ECO6, ECO8, ECO10 Risks of pollution incidents will be managed fully through the General Measures (ECO4) and CEMP (ECO5), and risks of disturbance will be managed fully through measures to be set out in the Otter SPP (ECO8) and, if update surveys indicate that one is required, an otter EPS licence. Otter will also benefit from the habitat enhancement along the watercourses under ECO3, but this is not considered likely to lead to population increases.	No Change	Neutral
Beinn an Lochain SSSI	Localised permanent habitat loss (0.10ha) and temporary habitat loss (0.22ha), totalling 0.33ha, (0.024% of the SSSI by area). Risks of indirect impacts via pollution events or additional direct impacts through accidental incursion. Minor Adverse	Slight Adverse	ECO1, ECO2, ECO4, ECO5, ECO6, ECO10 As embedded mitigation, efforts will continue to reduce losses further if possible. Risks of pollution incidents and accidental incursion will be managed fully through the General Measures (ECO4) CEMP and the Designated Sites and Sensitive Habitats Precautionary Working Method Statement (ECO5) and Loch Restil and the watercourses within the SSSI will also be protected under the Aquatic Ecology SPP (ECO6). Additional mitigation is planned in the form of compensation for the slight adverse impact on Beinn an Lochain SSSI (ECO2) through habitat loss. However, as details are not yet confirmed a slight adverse residual effect is reported as a precaution.	Negligible Adverse	Slight Adverse

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Terrestrial Habitats	There will be localised permanent and temporary habitat losses, including priority habitats. These are detailed in Table 11.7. Minor Adverse	Slight Adverse	ECO1, ECO3, ECO4, ECO5, ECO10 As embedded mitigation, efforts will continue to reduce losses further, if possible, habitat creation will be undertaken and habitat in temporary working areas will be restored. Risks of pollution incidents and accidental incursion into retained habitat areas will be managed fully through the General Measures (ECO4) and the CEMP and the Designated Sites and Sensitive Habitats Precautionary Working Method Statement (ECO 5). Taking the additional mitigation to be provided through works in the habitat enhancement areas (ECO3) into account, there will be an overall beneficial effect on terrestrial habitat. However, not all the habitats enhanced will match the habitats for which there will be losses. Therefore, as a precautionary approach, the residual significance of effects on habitats is predicted to be neutral and not significant.	Negligible Beneficial	Neutral
Bryophytes	With the incorporation of embedded mitigation measures, important bryophyte species along the Croe Water are not anticipated to be affected. No Change	Neutral	ECO1, ECO4, ECO5, ECO10 General Measures (ECO4), the CEMP and the Designated Sites and Sensitive Habitats Precautionary Working Method Statement (ECO5) provide further assurance that important bryophyte species along the Croe Water will not be affected.	No Change	Neutral

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
The headwaters / minor tributaries of the Croe Water	Potential impacts include habitat loss; degradation through hard engineering and pollution; and disturbance of aquatic species. Minor Adverse	Slight Adverse	ECO1, ECO3, ECO4, ECO5, ECO6, ECO10 As embedded mitigation, efforts will continue to reduce habitat losses further if possible. Under ECO3, enhanced habitats will make a positive contribution to biodiversity net gain to address and go beyond the additional mitigation required to offset impacts on aquatic habitats. These will include enhancement within the headwaters / minor tributaries of the Croe Water. General Measures (ECO4), the CEMP (ECO5) and the Aquatic Ecology SPP (ECO6) will protect the watercourses from indirect impacts such as pollution and disturbance of aquatic species.	Major Beneficial	Slight Beneficial
The Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary	There will be no direct losses in the Croe Water downstream of its eastern bifurcation, or High Glen Croe Tributary. Potential impacts include degradation through pollution and disturbance of aquatic species. Minor Adverse	Slight adverse	ECO1, ECO3, ECO4, ECO5, ECO6, ECO10 Under ECO3, enhanced habitats will make a positive contribution to biodiversity net gain to address and go beyond the additional mitigation required to offset impacts on aquatic habitats. These will include enhancement within this watercourse. General Measures (ECO4), the CEMP (ECO5) and the Aquatic Ecology SPP (ECO6) will protect the watercourses from indirect impacts such as pollution.	Major Beneficial	Large Beneficial

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Loch Restil	There will be no direct impacts on Loch Restil. There is potential for degradation through pollution. Minor Adverse	Slight Adverse	ECO1, ECO4, ECO5, ECO10 General Measures (ECO4), the CEMP (ECO5) and the Aquatic Ecology SPP (ECO6) will protect Loch Restil from indirect impacts such as pollution.	No Change	Neutral
Breeding Birds	There will be habitat loss for breeding birds, although extensive areas of similar habitat will still be present. Potential impacts also include harm to nesting birds or their occupied nests. Minor Adverse	Slight Adverse	ECO1, ECO3, ECO4, ECO5, ECO7, ECO10 As embedded mitigation, efforts will continue to reduce habitat losses further if possible, and breeding birds will also use habitat created in the Proposed Scheme area. Breeding birds will also benefit from the habitat enhancement under ECO3 Under ECO7 (and ECO-Embed8), bird nesting boxes will be erected as mitigation for the reduction in nesting opportunities as the vegetation created and enhanced matures. Risks to breeding birds and their occupied nests will be fully managed through additional mitigation measures in the General Measures (ECO4), CEMP (ECO5) and breeding bird SPP (ECO7).	No Change	Neutral
Otter	Embedded mitigation will manage risks of impacts through severance of otter habitat. There is potential for temporary effects through pollution and disturbance affecting otters. Negligible Adverse	Neutral	ECO1, ECO3, ECO4, ECO5, ECO6, ECO8, ECO10 Risks of pollution incidents will be managed fully through the General Measures (ECO4), the CEMP (ECO5) and Aquatic Ecology PSPP (ECO6). Risks of disturbance will be managed fully through measures to be set out in the Otter SPP (ECO8) and, if update surveys indicate that one is required, an otter EPS licence. Otter will also benefit from the habitat enhancement along the watercourses under ECO3, but this is not considered likely to lead to population increases.	No Change	Neutral

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Pine Marten	No Change	Neutral	ECO1, ECO3, ECO4, ECO5, ECO9, ECO10 Taking embedded mitigation into account, risks of significant impacts are not predicted. Pine marten will also benefit from the habitat enhancement under ECO3, but this is not considered likely to lead to significant population increases. General Measures (ECO4), the CEMP (ECO5) and the Pine Marten SPP (ECO9) will provide further assurance that pine marten will not be affected.	No Change	Neutral
Red Squirrel	No Change	Neutral	ECO1, ECO3, ECO4, ECO5, ECO9, ECO10 Taking embedded mitigation into account, risks of significant impacts are not predicted. Red squirrel should also benefit from woodland creation under ECO3, but this is not considered likely to lead to significant population increases. General Measures (ECO4), the CEMP (ECO5) and the Red Squirrel SPP (ECO9) will provide further assurance that red squirrel will not be affected.	No Change	Neutral
Bats	Bats could be affected by habitat loss and disturbance. As roosts are present, in the absence of mitigation there could be potential for killing / injury of bats and damage to roosts. Five non-breeding day roosts would potentially be lost or subject to disturbance. Moderate Adverse	Slight Adverse	ECO1, ECO3, ECO4, ECO5, ECO9, ECO10 As embedded mitigation, efforts will continue to reduce habitat losses further if possible, and bats are also likely to use habitat created in the Proposed Scheme area. Bats will also benefit from the habitat enhancement under ECO3. Under ECO9, (and ECO-Embed8) bat boxes will be erected as compensation for loss of known roosts and wider roosting opportunities. Risks of disturbance, killing or injury to bats will be fully managed through additional mitigation measures in the general measures (ECO4), the CEMP (ECO5), the Bat SPP (ECO9) and bat EPS licence.	No Change	Neutral

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Badger	While badger are not an IEF, they have legal protection. They could be subject killing or injury or disturbance at a sett. One outlier badger sett is predicted to be lost. Not applicable	Not applicable, but mitigation is required due to legal protection	ECO1, ECO4, ECO5, ECO9, ECO10 Embedded mitigation would maintain connectivity for badger. Sett closure would take place under licence and risks of disturbance, killing or injury to badger will be fully managed through additional mitigation measures in the General Measures (ECO4), the CEMP (ECO5), the badger SPP (ECO9) and badger protected species licence.	No Change	Not applicable
Terrestrial Invertebrates	There would be a mixture of habitat losses and gains and while overall the amount of suitable habitat would be reduced, similar habitat to those lost is present locally and standing water would increase. Negligible Adverse	Neutral	ECO1, ECO3, ECO4, ECO5, ECO9, ECO10 As embedded mitigation, efforts will continue to reduce losses further, if possible, habitat creation will be undertaken and habitat in temporary working areas will be restored. Risks of pollution incidents and accidental incursion into retained habitat areas will be managed fully through the General Measures (ECO4), the CEMP and the Designated Sites and Sensitive Habitats Precautionary Working Method Statement (ECO5), and these would also protect the habitats' value for invertebrates. Taking the works in the habitat enhancement areas (ECO3) into account, there will be an overall beneficial effect on terrestrial invertebrates.	Minor Beneficial	Neutral

Feature	Pre-Mitigation Effect Summary and Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Reptiles	Localised temporary and permanent habitat losses would occur, but large areas of suitable habitat would remain. Individual reptiles could be at risk of killing or injury. Negligible Adverse	Neutral	ECO1, ECO3, ECO4, ECO5, ECO9, ECO10 As embedded mitigation, efforts will continue to reduce habitat losses further if possible, and reptiles will also use habitat created in the Proposed Scheme area. Reptiles will also benefit from the works in the habitat enhancement areas under ECO3. Under the Reptile SPP (ECO9), (and ECO-Embed8) hibernacula will be installed to increase carrying capacity as compensation for habitat losses. Risks of killing or injury to reptiles will be fully managed through additional mitigation measures in the General Measures (ECO4), the CEMP (ECO5), and the Reptile SPP (ECO9).	No Change	Neutral

Residual Effects – Operation

11.7.5 As explained in Section 11.5, potential operational impacts comprise indirect impacts through pollution and risks of increased mortality on the roads. These potential operation impacts would be mitigated through embedded mitigation measures, which are all established approaches. The improved pollution control compared to baseline conditions is predicted to have a slight beneficial significance of effect. Operational residual impacts are listed together for species as the conclusions are the same for all species receptors. It is not anticipated that update surveys will indicate additional potential for impacts during operation; however, ECO1 is still relevant as additional mitigation in case this does occur.

Table 11.10 – Residual Effects Operation

Feature	Pre-Mitigation Effect Level	Pre-Mitigation Effect Significance	Additional Mitigation Measures	Post-Mitigation Effect Level	Post-Mitigation Effect Significance
Glen Etive and Glen Fyne SPA	No change	Neutral	ECO1	No change	Neutral
Loch Lomond Woods SAC	No change	Neutral	ECO1	No change	Neutral
Beinn an Lochain SSSI	No change	Neutral	ECO1	No change	Neutral
Terrestrial Habitats	No change	Neutral	ECO1	No change	Neutral
The headwaters / minor tributaries of the Croe Water	Minor Beneficial	Slight Beneficial	ECO1	Minor Beneficial	Slight Beneficial
The Croe Water downstream of its eastern bifurcation, and High Glen Croe Tributary	Negligible Beneficial	Slight Beneficial	ECO1	Negligible Beneficial	Slight Beneficial
Loch Restil	No change	Neutral	ECO1	No change	Neutral
Species	No change	Neutral	ECO1	No change	Neutral

Compliance with Planning Policy

11.7.6. Taking embedded and additional mitigation into account, the Proposed Scheme complies with relevant policy on biodiversity. Potential impacts have been minimised through design. While there will be localised habitat loss within the SSSI, this is not significant and will not compromise the overall objectives of designation or its integrity. The inclusion of enhancement areas means that the Proposed Scheme will result in biodiversity enhancement.