

CONTENTS

5.	ECOLOGY	5-2
5.1	Introduction	5-2
5.2	Scope of Appraisal	5-2
5.3	Consultation	5-2
5.4	Methodology	5-3
5.5	Baseline Conditions	5-7
5.6	Potential Effects	5-14
5.7	Ecological Receptors	5-14
5.8	Assessment of Likely Effects	5-17
5.9	Mitigation	5-20
5.10	Monitoring	5-22
5.11	Residual Effects	5-22
5.12	Cumulative Impacts	5-24
5.13	Summary	5-24

Figures

Figure 5.1a: Internationally important sites designated for nature conservation

Figure 5.1b: Nationally important sites designated for nature conservation

Figure 5.2a-d: Phase 1 Habitat Survey Results

Figure 5.3a-d: GWDTE Category Survey Results

Figure 5.4-d: Protected Species Survey Results (**Confidential**)

Appendices

Appendix 5.1: Field Survey Methodology

Appendix 5.2: Target Notes

Appendix 5.3: Protected Species Records (**Confidential**)

Appendix 5.4: HMP Appraisal

5. ECOLOGY

5.1 Introduction

- 5.1.1 This Chapter evaluates the importance of the nature conservation interest (terrestrial) and the potential effects likely as a result of the Proposed Development between the consented Bhlaraidh Extension Wind Farm and Fort Augustus substation.
- 5.1.2 This Chapter outlines the methodologies used to assess potential effects on internationally and nationally protected habitats, flora and fauna (non-avian) both within the footprint of the Proposed Development and the surrounding area. It presents an assessment of the significance of potential impacts on sensitive ecological receptors, along with suggested mitigation measures to avoid or reduce the impacts, and an assessment of likely residual impacts of the Proposed Development after mitigation measures have been implemented.
- 5.1.3 The assessment has been prepared by Adam Fraser MRes, MSc, BSc (Hons), Director of Blairbeg Consulting Ltd, a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), based in Inverness-Shire, Scotland. Mr Fraser has 15 years' experience of producing EIAs and EAs for renewable energy and infrastructure developments across Scotland. The assessment has been carried out in line with CIEEM's code of conduct and relevant standards and guidance.

5.2 Scope of Appraisal

Study Area

- 5.2.1 The Proposed Development (OHL) is approximately 14.5 km in length in total. The Study Area for this assessment incorporates land within 250 m of the Proposed Development and within 250 m of the proposed UGC as described in **Chapter 3: The Proposed Development** of this Environmental Appraisal (EA). The Study Area comprises conifer plantation woodland managed for commercial forestry, native woodland fragments and open heath and mire habitats. Sections of commercial forestry through which the OHL passes through have been clearfelled. Within the forestry complex there are open rides and firebreaks dominated by bog, mire, bracken and grassland communities, along with several minor watercourses and small lochans. The River Moriston is the only major waterbody within the Study Area.
- 5.2.2 There are several watercourses within the Study Area that would be oversailed by the OHL. The majority of the Study Area lies within the River Moriston catchment.

5.3 Consultation

- 5.3.1 A Screening Request for the Proposed Development was submitted in November 2021 and the Scottish Government issued its response in March 2022. The Screening process is described in Chapter 1 of this EA report. Key points raised by consultees during the optioneering stages which are of relevance to the subject area of ecology are detailed in **Table 5-1**:

Table 5-1: Consultation Responses of Relevance to Ecology

Consultee	Issue	Action
Statutory consultees		
Scottish Environment Protection Agency (SEPA)	Concerns relate to the protection of peatland and GWDTEs including: <ul style="list-style-type: none"> - Poles and associated construction works for poles should not be located in wetland areas identified as part 	Areas of GWDTE have been mapped in Figure 5.3 and their NVC communities described in Section 5.5.

Consultee	Issue	Action
	<p>of the extended phase 1 habitat survey; and</p> <ul style="list-style-type: none"> - If this is not possible then our Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems should be followed. <p>SEPA also recommend use of low pressure tracked vehicles over boggy/soft ground and bog matting to be used in preference to stone tracks, with minimal use to protect sensitive habitats from potential damage.</p>	<p>Potential effects of the Proposed Development of GWDTE habitats are described in Section 5.7 and 5.8.</p> <p>Mitigation measures including mitigation by design and mitigation by practice are described in section 5.9.</p>
NatureScot	<p><u>Protected Species</u></p> <p>NatureScot advise that surveys should be undertaken to inform the presence of protected species. If a protected species could be affected by the proposal, mitigation should be identified and a Species Protection Plan supplied within the EA report.</p>	<p>Protected species surveys were undertaken in line with methodologies described in Appendix 5.1. This chapter assesses the potential effects the Proposed Development may have on protected species in Section 5.7 and 5.8, with appropriate mitigation to reduce any potential impacts detailed in Section 5.9. See also Appendix 3.2 which includes SSEN Transmission's Species Protection Plans for the aforementioned species.</p>
Non-statutory consultees		
John Muir Trust	<p>John Muir Trust suggest that native woodlands are protected and welcome assurances for no net loss of native woodland (in particular Caledonian pinewood) by provision of compensatory planting.</p>	<p>Compensatory planting for loss of native woodland will be undertaken. SSEN Transmission has maintained direct communications with FLS throughout the route and alignment selection process in order to identify options with the least impact on woodland, on balance with other factors. The BNG assessment will include proposals for habitat creation and will aim to achieve no net loss in biodiversity.</p>
RSPB Scotland	<p>RSPB Scotland highlight the potential loss of native woodland.</p>	<p>Compensatory planting for loss of native woodland will be undertaken. SSEN Transmission has throughout the route and alignment selection process aimed to identify options with the least impact on woodland, on balance with other factors. The BNG assessment will include proposals for habitat creation and will aim to achieve no net loss in biodiversity.</p>

5.4 Methodology

Desk Study

- 5.4.1 Baseline data on the nature conservation interest of the Study Area and its surroundings, including information on sites designated for nature conservation and protected species records, were sought from the following sources:

- Joint Nature Conservation Committee (JNCC) website (<http://www.jncc.gov.uk/>) – accessed August 2022;
- NatureScot Site Link website (<http://gateway.snh.gov.uk>) – accessed August 2022;
- Habitat Map of Scotland (HabMoS), accessed August 2022. HabMoS is a national repository for habitat and land use data and comprises a composite map, containing data from many different sources. Currently available data includes the following datasets of relevance to this project:
 - Native Woodland Survey Scotland (NWSS) 2006 – 2013;
 - National Forest Inventory (NFI) 2015;
 - Ordnance Survey (OS) delineation of Inland Surface Waters 2017;
 - Trees for Life National Vegetation Classification (NVC) data for Dundreggan Estate 2007; and
- large-scale 1:10,000 Ordnance Survey (OS) maps in conjunction with colour 1:25,000 OS map (to determine the presence of ponds and other features of nature conservation interest).

5.4.2 Further information on the potential nature conservation features that have potential to be affected by the Proposed Development was obtained through searches of internet sources (e.g. UK Biodiversity Action Plans (UKBAP), Scottish Biodiversity List (SBL), the Local Biodiversity Action Plan (LBAP)) and relevant published literature (i.e. relevant guidance documents and scientific papers).

Field Survey

5.4.3 The field survey methodology is detailed within **Appendix 5.1**.

Issues Scoped Out

5.4.4 The following surveys have been scoped out of the assessment:

- freshwater Habitat Survey: it is anticipated that construction will be undertaken in accordance with best practice measures and pollution prevention guidelines, with wood poles located at a minimum of 15 m from watercourses, therefore significant impacts to fish and their habitats are not anticipated; and
- specific surveys for reptiles and amphibians will not be required. With implementation of best practice construction methodology and adoption of SSEN Transmission's Species Protection Plans (SPPs) (**Appendix 3.2**), significant effects on these ecological receptors are not anticipated.

Assessment of Effects

5.4.5 The assessment has been undertaken according to the current guidance detailed by the CIEEM (2018)¹.

5.4.6 The assessment of the significance of predicted impacts on ecological receptors is based on both the 'sensitivity' of a receptor and the nature and magnitude of the effect that the Proposed Development will have on it. Effects in biodiversity may be direct (e.g. the loss of species or habitats), or indirect (e.g. effects due to noise, dust or disturbance on receptors located within or outside the Study Area).

Sensitivity / Importance

5.4.7 The evaluation methodology has been adapted from the CIEEM Guidelines. A key consideration in assessing the effects of any development on flora and fauna is to define the areas of habitat and the species that need to be considered. This requires the identification of a potential zone of influence, which is defined as those areas and resources that may be affected by biophysical changes caused by project activities, however remote from a site.

¹ Chartered Institute of Ecology and Environmental Management (2018). Guidelines for ecological impact assessment in the UK and Ireland. Winchester: CIEEM

- 5.4.8 In identifying these receptors, it is important to recognise that a development can affect flora and fauna directly (e.g. the land-take required) and indirectly, by affecting land beyond the development site (e.g. through noise generation or hydrological impacts). The approach that has been undertaken for this assessment is to identify 'sensitive ecological receptors' (species and habitats that are both valued in some way and could be affected by the Proposed Development) and separately, to consider legally protected species.
- 5.4.9 It is impractical for an assessment of the ecological effects of a development to consider every species and habitat that may be affected; instead it should focus on valued ecological receptors. These are species and habitats that are both valued in some way and could be affected by the Proposed Development. Where there is no potential for valued ecological receptors to be affected significantly, it is not necessary for them to be considered.
- 5.4.10 The sensitivity of species populations and habitats is assessed with reference to:
- their importance in terms of 'biodiversity conservation' value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations);
 - any social benefits that species and habitats deliver (e.g. relating to enjoyment of flora and fauna by the public); and
 - any economic benefits that they provide.
- 5.4.11 Both species' populations and habitats have been valued using the following scale: Very High, High, Medium, Low, Very Low and Negligible.
- 5.4.12 The approach taken in this assessment is that a species population that is considered to be of medium or greater importance in biodiversity conservation terms is considered to be a sensitive ecological receptor. Therefore, if a species population is considered to be of low value, the Proposed Development will not have a significant effect on the receptor in question. Exceptions are if the species population has been identified as having a high social or economic value or if the species is legally protected.
- 5.4.13 A similar approach is adopted for habitats i.e. if a habitat is considered to be of very low value, the Proposed Development will not have a significant effect on the receptor in question. The exception would be if the habitat has economic or social value (e.g. an open space that is used extensively for informal recreation by local people, where the area's wildlife is an important contribution to this value).
- 5.4.14 Ecological features have been valued using the scale set out in **Table 5-2** below, with examples provided of criteria used when defining the level of value.

Table 5-2: Scale of Value

Sensitivity of Receptor	Examples (Guidance to Evaluation)
Very High (International)	An internationally important site e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (or a site proposed for, or considered worthy of such a designation); A regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive)
High (National)	A nationally designated site e.g. Site of Special Scientific Interest (SSSI), or a site proposed for, or considered worthy of, such designation; A viable area of a habitat type listed in Annex 1 of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole; A regularly occurring substantial population of a nationally important species, e.g. listed on Schedules 5 & 8 of the 1981 Wildlife and Countryside Act;

	A feature identified as a priority species / habitat in the UK BAP.
Medium (Regional)	Regional areas of internationally or nationally important habitats which are degraded but are considered readily restored; A regularly occurring, locally significant population of a species listed as being nationally scarce.
Low (Local)	Viable areas of priority habitat identified in the LBAP or smaller areas of such habitat which are essential to maintain the viability of a larger habitat as a whole; A site designated as a non-statutory designated site e.g. Site of Importance for Nature Conservation (SINC), or a site listed on the Ancient Woodland Inventory (AWI) or Semi-natural Ancient Woodland Inventory (SNAWI); A regularly occurring, substantial population of a nationally scarce species, including species listed on the UK and LBAPs e.g. common frog (a UK BAP species). Areas of nationally important habitats which are degraded and have little or no potential for restoration; A good example of a common or widespread habitat in the local area, e.g. those listed as broad habitats on the LBAP; Species of national or local importance, but which are only present very infrequently or in very low numbers within the subject area.
Very Low (Local)	Areas of habitat which have value to the local environment, or populations of regularly occurring common species of local conservation interest; Local areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest; Common and widespread species.
Negligible	Areas of limited ecological value, which are not representative of semi-natural habitat and do not support wildlife of conservation interest.

Magnitude of Effect

5.4.15 Effects can be permanent or temporary; direct or indirect; adverse or beneficial and can be cumulative. Effects can vary according to scales of size, extent, duration, timing and frequency of impacts. These factors are brought together to assess the magnitude of the effect on the 'conservation status' of the particular valued ecological receptors, and on the 'integrity' of the habitats that support them:

- integrity is the coherence of the ecological structure and functions of a site or habitat that enables it to sustain its plant and animal communities and populations; and
- conservation status is the ability of a habitat, a plant or animal community or population to maintain its distribution and / or extent / size.

5.4.16 Conservation status is therefore largely determined by the extent to which integrity is maintained. It follows that habitats may or may not be valued ecological receptors in their own right.

5.4.17 Wherever possible, the magnitude of the effect is quantified. Professional judgement is then used to assign the effects on the receptors to one of four classes of magnitude, as defined in **Table 5-3**.

Table 5-3: Magnitude of Effect

Magnitude	Definition
High	A permanent or long-term effect on the integrity of a site or conservation status of a habitat, species assemblage / community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status

Medium	A permanent or long-term effect on the integrity of a site or conservation status of a habitat, species assemblage / community, population or group. If adverse, this is unlikely to threaten its sustainability; if beneficial; this is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short-term but reversible effect on the integrity of a site or conservation status of a habitat, species assemblage / community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but reversible effect on the integrity of a site or conservation status of a habitat, species assemblage / community population or group that is within the normal range of annual variation.

Significance of Effect

5.4.18 The significance of an effect results from the value of the ecological receptor and the magnitude of effect on it. **Table 5-4** below illustrates a matrix, which is used in this assessment as guidance for impact assessment. Effects rated **Moderate** or **Major** are considered to be significant.

5.4.19 Where effects are considered Major, further detailed assessment should be carried out as per EIA Regulations.

Table 5-4: Magnitude of Effect

Value of Receptor	Magnitude of Impact			
	High	Medium	Low	Negligible
Very High	Major	Moderate or Major	Minor or Moderate	Negligible or Minor
High	Moderate or Major	Moderate or Major	Minor or Moderate	Negligible
Medium	Moderate or Major	Moderate	Minor	Negligible or Minor
Low	Minor or Moderate	Minor	Negligible or Minor	Negligible
Very Low	Negligible	Negligible or Minor	Negligible	Negligible

Limitations to the Assessment

5.4.20 Phase One habitat surveys were conducted in July 2022, in the optimal time of year (i.e. between the months of April to September) within the Study Area; however, it is recognised that some early flowering species may not have been apparent at the time of survey.

5.4.21 There were some small areas within the Study Area that were inaccessible for ecological surveys, these were restricted to a handful of areas of dense conifer plantation and wind-thrown trees. This lack of access is considered unlikely to affect the conclusions of this assessment.

5.5 Baseline Conditions

Designations

5.5.1 The zone of sensitivity for ecological features varies according to the characteristics of the feature and the nature of the potential impact. In this assessment, impacts are assessed for the site (defined as the Study Area) and the zones as displayed on **Figure 5.1** and described below.

Internationally Designated Sites

5.5.2 Potential effects of the Proposed Development on internationally designated sites are considered for all sites that fall within 10 km of the Proposed Development.

5.5.3 Two Special Areas of Conservation (SACs) sites were identified within 10 km of the Proposed Development. Summaries of their citations are provided in **Table 5-5** and their locations shown on **Figure 5.1**.

Table 5-5: Summary of Internationally Designated Sites

Site Name	Distance from Application Site and Direction	Reason for Designation
River Moriston SAC	0 km The Proposed Development crosses this SAC in the mid-section of the route	Designated for internationally important populations of Atlantic salmon (<i>Salmo salar</i>) and Freshwater pearl mussel (<i>Margaritifera margaritifera</i>). There are no terrestrial ecology receptors associated with this designation. Given the proximity of the designation to the Proposed Development evaluation of potential effects are included in this assessment.
Ness Woods SAC	2.4 km The Proposed Development is located to the west of the designation	The designation is located on the eastern banks of Loch Ness and along the River Tarff, south-east of Fort Augustus. Qualifying interests include mixed woodland on base-rich soils associated with rocky slopes and western acidic woodland. The site is also designated for internationally important populations of Otter (<i>Lutra lutra</i>). There is not considered to be any connectivity between the proposed development and the designation or it's qualifying interests and as such it is scoped out of further assessment.

Nationally Designated Sites

5.5.8 Potential effects of the Proposed Development on nationally designated sites are considered for all sites that fall within 5 km of the Proposed Development.

5.5.9 One Site of Special Scientific Interest (SSSIs) designated for biological features was identified within 5 km of the Proposed Development. A summary of the citation is provided in **Table 5-6** and its location shown in **Figure 5.1**.

Table 5-6: Summary of Nationally Designated Sites

Site Name	Distance from Application Site and Direction	Reason for Designation
Levishie Wood SSSI	1.1 km The Proposed Development is located to the west of the designation.	This site is designated for upland birch woodland. Levishie wood is an ancient semi-natural birch-juniper woodland and is amongst the largest example within Inverness-shire. The woodland supports a diverse range of tree species, and has a rich ground flora, reflective of a range of soil types within the designation. There is not considered to be any connectivity between the proposed development and the designation or it's qualifying interests and as such it is scoped out of further assessment.

Local Sites of Nature Conservation Interest

5.5.14 Ancient woodland sites are extensive across the River Moriston catchment, in Bhlaraidh and Inverwick woodlands. The majority of ancient woodlands are considered to be of semi-natural origin and comprise Scot's pine and Upland birch woodlands.

- 5.5.15 There are no Local Nature Reserves, wildlife sites or other local designated sites within 5 km of the Proposed Development.
- 5.5.16 Priority peatland mapping² indicates areas of Class 1 peatland (areas likely to be of high conservation value) in the northern section of the Study Area and within open areas within the Inverwick forest complex.
- 5.5.17 Whilst not designated for nature conservation, a small area of new native woodland establishment south of Bhlaraidh Wind Farm has been created under planning condition as part of the Bhlaraidh Wind Farm Habitat Management Plan (HMP). In order for SSE Renewables (SSER) to fulfil the relevant planning condition, any effect on land managed as part of the HMP must be compensated for. Consideration for this aspect is provided in **Appendix 5.4**, which details the potential impacts from the Proposed Development on the HMP area and resulting options for mitigation and compensation.

Habitats and Vegetation

- 5.5.18 **Figure 5.2** shows the vegetation according to Phase One Habitat types. Areas of habitat identified as GWDTE are mapped in **Figure 5.3**. Target Note locations and photographs are presented in **Appendix 5.2**.
- 5.5.19 Full descriptions of habitats, vegetation communities therein and associated notes on location and condition are included below.
- 5.5.20 A total of 990.88 hectares (Ha) of habitats were mapped in the Study Area. Habitat types recorded are summarised in **Table 5-7** and described below.

Table 5-7: Phase One Habitats recorded within the Study Area

Phase One Habitat	Area (Ha)
Roads and tracks	33.33
Acid grassland - unimproved	5.26
Basin mire	0.60
Blanket bog	18.95
Bracken - continuous	22.66
Broadleaved woodland - plantation	0.14
Broadleaved woodland - semi-natural	61.70
Buildings and gardens	7.75
Coniferous woodland - plantation	267.64
Coniferous woodland - recently-felled plantation	90.81
Coniferous woodland - semi-natural	83.90
Flush and spring - acid flush	0.11
Mixed woodland - plantation	22.66
Mixed woodland – semi-natural	44.19
Neutral grassland - semi-improved	21.33
Quarry	2.72
Running water	1.42
Standing water	40.47
Wet dwarf shrub heath	211.23
Wet heath / Scattered scrub	5.87
Wet modified bog	48.14
Total	990.88

² Scottish Natural Heritage (2016). The Carbon and Peatland Map. <http://gateway.snh.gov.uk/natural-spaces/index.jsp>

Habitat Descriptions

Acid grassland

5.5.21 Acid grassland is found in discrete areas on better drained soils within the Study Area. It is restricted to small areas adjacent to access tracks and roads, along some drier banks of watercourses and on knolls. The largest extent of acid grassland is located to the north of Bhlaraidh wood (Target Note 17). The majority of acid grassland within the Study Area was unimproved and corresponded to the NVC U4b *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile*, *Holcus lanatus*-*Trifolium repens* sub-community. These areas were grazed short by deer, with little in the way of shrubs present. Sheep's fescue (*Festuca ovina*) and wavy hair-grass (*Deschampsia flexuosa*) were the dominant grass species, with sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*) and occasional common bent (*Agrostis capillaris*). The most commonly occurring herbaceous plants were tormentil (*Potentilla erecta*) and heath bedstraw (*Galium saxatile*), with heath rush (*Juncus squarrosus*) and eyebright (*Euphrasia* sp.) also present.

Bare Ground

5.5.22 Small discrete areas of bare ground present within the Study Area include lay-down areas for forestry purposes or access to existing transmission infrastructure. These habitats are included within area calculations for roads and tracks.

Basin Mire

5.5.23 A single area of basin mire, a type of fen habitat, is located within an existing overhead line wayleave within Coille Bhlaraidh north of the River Moriston. The area has a cover of common reed (*Phragmites australis*) over a carpet of semi-aquatic *Sphagnum* moss. Bottle sedge (*Carex rostrata*) is present within the vegetation layer, with only small tussocks of soft rush (*Juncus effusus*) and purple moor-grass present (TN 25). *Sphagnum* mosses were abundant around the edges of the water logged area and were likely present throughout, but access to the centre of the mire was not possible due to its 'quaking' surface. This is an example of a S26 *Phragmites australis*-*Urtica dioica* tall-herb fen.

Blanket bog

5.5.24 Blanket bog comprises only 2% of the Study Area. The greatest extents of intact blanket bog occur near the consented Bhlaraidh Extension Wind Farm substation. Elsewhere within the Study Area, this habitat occurs in smaller patches, often in a mosaic with other habitats such as modified bog and wet heath. Blanket bog habitats within the Study Area were frequently found in a mosaic with bog pools, conforming most commonly with M2 *Sphagnum cuspidatum/recurvum* and M3 *Eriophorum angustifolium* bog pools communities (TN 27-30, 33, 34, 38, 40-42, 44, 46-50).

5.5.25 The M17 *Trichophorum germanicum* – *Eriophorum vaginatum* blanket mire was the most common mire community within the Study Area. This community had an abundance of heather, cross-leaved heath, deergrass, roundleaved sundew and a carpet of *Sphagnum* moss including *Sphagnum capillifolium* and *S. papillosum*. Where the M17b *Cladonia* sub-community was found, *Racomitrium lanuginosum* mounds were common. Smaller areas of M17a *Drosera rotundifolium*-*Sphagnum* sub-community was found within wetter areas of the blanket bog, particularly on flatter areas near Bhlaraidh Extension Wind Farm substation.

5.5.26 M19 *Calluna vulgaris*-*Eriophorum vaginatum* blanket mire is also present. The co-dominants, heather and hare's tail cottongrass form a sward with common cottongrass (*Eriophorum angustifolium*) and cross-leaved heath (*Erica tetralix*), with *Sphagnum capillifolium*, *Cladonia*, and occasionally *Hylocomium splendens* the main species present in the bryophyte layer. The small shrubs of Dwarf birch (*Betula nana*) was found occasionally within this habitat (TN 32, 35, 37, 39, 45).

Bracken

- 5.5.27 Extensive stands of Bracken (*Pteridium aquilinum*) are present within existing overhead line wayleaves at forest edges (TN26) and within forest rides. The community is dominated by a canopy of Bracken, with scattered heather, sweet vernal grass, Yorkshire fog, bramble (*Rubus fruticosus*), chickweed wintergreen (*Trientalis europaeus*) often dominant in the field layer.

Broadleaved Woodland

- 5.5.28 Native broadleaved woodland is present within Coille Bhlaraidh (TN22), along the banks of the River Moriston (TN63) and within woodland around Allt Phocaichain (TN78). Most broadleaved woodland is dominated, almost exclusively in places, by downy birch (*Betula pubescens*) with a grassy or Bracken dominated field layer. Along the Allt Bhlaraidh there are some scattered mature sessile oak (*Quercus petraea*) trees. Rowan (*Sorbus aucuparia*), Holly (*Ilex aquifolium*) and goat willow (*Salix caprea*) are found occasionally.

Buildings and Gardens

- 5.5.29 Buildings and gardens present within the Study Area are limited to Bhlaraidh and at Dundreggan Dam along the A887 corridor and at the Fort Augustus substation at the southern terminus of the grid connection.

Coniferous Woodland

- 5.5.30 A significant proportion of the Study Area (36%) is comprised of coniferous plantation, either as standing commercial crop or recently felled, most of which is managed by Forestry and Land Scotland (FLS). Sitka spruce (*Picea sitchensis*) and Lodgepole pine (*Pinus contorta*) are the main tree species present. The plantations are at various stages; but generally dominated by mature Sitka spruce. There are smaller stands of younger Sitka spruce reaching thicket stage and large areas of the woodland within the Study Area (6%) that has been felled. Shrub and field layers are absent from the majority of the standing plantation woodland (eg. TN11). Within mature stands, little light penetrates through the canopy and the field layer beneath the trees is dominated by dropped needles with no vegetation except for at the edges of the coupes. In the open rides between the coupes, remnant bog vegetation remains, with the predominant habitat being wet modified bog. Thicket and pre-thicket stage newly planted coupes on previously felled areas have varied vegetation present between the planted trees, including rosebay willowherb (*Chamerion angustifolium*), heather and purple moor-grass.
- 5.5.31 In areas where felling has taken place, the ground is disturbed and brash remains in many coupes at various stages of decay. Brash mats used to extract timber are still evident in many coupes (TN 11). In other areas, the majority of brash has been removed from the coupe (TN 23). Vegetation regenerating in these felled areas varies dependent on the ground conditions and the time elapsed since felling. In drier areas, rosebay willowherb has become the dominant species growing throughout the brash (Target Note 9), in other wetter areas, bog species such as hare's tail cottongrass and *Sphagnum* mosses are recolonising.
- 5.5.32 Stands of semi-natural coniferous woodland are present within Inverwick forest in the area around Allt Phocaichain (TN67), along the Allt Bhlaraidh (TN14) and the banks of the River Moriston. These areas are dominated by mature Scot's pine (*Pinus sylvestris*), reflecting Caledonian pinewood habitat. These areas are classified as W18 *Pinus sylvestris* – *Hylocomium splendens* woodland. Scattered Juniper (*Juniperus communis*) is present, along with occasional downy birch, rowan and willow sp. The understorey is typically dominated by dwarf shrubs heather, bilberry (*Vaccinium myrtillus*), cowberry (*Vaccinium vitis-idaea*), scattered Bracken and wavy-hair grass *Deschampsia flexuosa*. In wetter areas hummocks of *Sphagnum capillifolium* can be frequent.

Dry Dwarf Shrub Heath – Acid

5.5.33 Dry heath is infrequent across the Study Area and is restricted to small discrete areas, typically along banks of watercourse or on track-side bunds. Typically dry heaths are transitional to the 'dry' M15c *Trichophorum germanicum-Erica tetralix* wet heath *Cladonia* sub-community, with abundant bell heather *Erica tetralix* and deergrass.

Flush and spring – acid flush

5.5.34 Acid flush habitats were widespread and found along slow moving watercourses and in wet, gently sloping areas with dense stands of soft rush co-dominant with star sedge (*Carex echinata*). The flush habitats were all acidic due to the water coming off the surrounding peaty soils being acidic and low in base nutrients. The M6c *Carex echinata* – *Sphagnum recurvum/auriculatum* mire, *Juncus effusus* sub-community is the most prevalent type of acid flush found within the Study Area (TN 19, 31). These flushes were generally species poor with *Potentilla erecta*, *Polytrichum commune* and *Sphagnum spp.* throughout (TN 19, 31). Smaller areas of the star-sedge sub-community M6a are present in some of the wetter areas. This vegetation community does not typically support a rich flora or rare plant species, however it does contribute to the diversity of vegetation of upland marginal habitats, with wet soft areas providing valuable habitat to invertebrates. Typically the water table is high in these habitats.

Flush and spring – basic flush

5.5.35 Basic flush habitats are rare within the Study Area, and found on higher rockier ground near Bhlaraidh Extension Wind Farm substation. These flush communities reflect M11 *Carex demissa-Saxifraga aizoides* mires, with a sparse vegetation cover of small-yellow sedge (*Carex demissa*), monoecious sedge (*Carex dioica*), carnation sedge (*Carex panicea*), round-leaved sundew (*Drosera rotundifolia*), butterwort (*Pinguicula vulgaris*) and tufts of yellow saxifrage (*Saxifraga aizoides*). These are very restricted in extent and not mapped, but highlighted in target notes (TN43).

Neutral Grassland – Semi-improved

5.5.36 Semi-improved neutral grassland was restricted to small areas around the in-bye fields on the southern banks of the River Moriston (TN60). These areas are subject to extensive drainage and were most likely marsh / marshy grassland prior to drainage. The grass species present were sweet vernal-grass, red fescue (*Festuca rubra*) and Yorkshire fog (*Holcus lanatus*). Soft rush was present in small tussocks but was not a dominant feature of the vegetation unlike marshy grassland.

Quarry

5.5.37 A large quarry is present within the Study Area adjacent to the tracks within Coille Bhlaraidh.

Roads and Tracks

5.5.38 The single carriageway A887 public road runs perpendicular to Proposed Development on the north side of the River Moriston. Within the forested areas and north to Bhlaraidh Wind Farm there are a number of existing access tracks. Several existing bridges and culverts are in place where the tracks traverse watercourses within the forested area.

Running Water

5.5.39 The majority of the Study Area lies within the River Moriston Catchment. The main watercourses present within the Study Area are:

- The River Moriston;
- the Allt Bhlaraidh, Allt Phocaichain, Allt na Fearnna and Auchteraw burn.

5.5.40 Throughout the Study Area there are several other smaller unnamed tributaries and ditches. Further details on watercourses within the Study Area is contained in Chapter 7: Hydrology, Hydrogeology and Soils.

Standing Water

5.5.41 The Dundreggan reservoir sits to the north of the Proposed Development west of the Dundreggan dam on the River Moriston. Smaller waterbodies are present near Bhlairaidh Wind Farm Extension substation including Loch an Dubhair, Loch Righ Guidh, and several unnamed lochans.

Wet Dwarf Shrub Heath

5.5.42 Wet dwarf shrub heath comprises 21% of the Study Area and occurs as extensive habitats on mid-slopes of Levishie forest (TN18), open ground within Inverwick and Inchnacardoch forest and in smaller areas within rides and open glades within the forestry.

5.5.43 The M15c *Trichophorum germanicum* – *Erica tetralix*, *Cladonia* sub-community is the sub-community occurring most frequently within the Study Area. In this habitat, cross-leaved heath (*Erica tetralix*) and Purple moor-grass are locally abundant in places. *Sphagnum capillifolium* was the most commonly found *Sphagnum* species, with *Cladonia* lichens and *Racomitrium lanuginosum* mounds found frequently throughout the bryophyte layer. Other species present within the sward included round-leaved sundew (*Drosera rotundifolia*), bog myrtle (*myrica gale*), bog asphodel (*Narthecium ossifragrum*), marsh lousewort (*Pedicularis palustris*) and heath milkwort (*Polygyna serpyllifolia*). M15b *Trichophorum germanicum* – *Erica tetralix* wet heath, the typical sub-community was found to occur less frequently than M15c and has a reduced occurrence of *Cladonia* lichens in the bryophyte layer. On the southern banks of the River Moriston wet heath communities exist in mosaic with Juniper scrub.

5.5.44 Waterlogged depressions and shallow pools were common in wet heath habitats: M2 *Sphagnum cuspidatum/recurvum* and M3 *Eriophorum angustifolium* bog pools communities were both present.

Wet Modified Bog

5.5.45 Wet modified bog comprises 5% of the Study Area. This habitat was found across open ground at higher elevations between Inverwick and Inchnacardoch forests. Typically, purple moor-grass was the dominant plant species with occasional hare's tail cottongrass, deergrass, heather and cross-leaved heath. *Sphagnum* mosses were not as frequently recorded in this habitat compared to the M19 and M17 blanket mire habitats (TN 81).

5.5.46 The wet modified bog habitats were mostly represented by transitional habitat between M17 blanket mires as described above and M25a *Molinia caerulea* – *Potentilla erecta* mire *Erica tetralix* sub-community. Wet modified bog is often transitional to wet heath communities on shallower peat soils.

Notable Plant Species

5.5.47 The majority of the plant species recorded within the Study Area are not considered to be of particular conservation concern (e.g. nationally threatened or rare) and are typical of the habitats in which they were found. However, the nationally scarce dwarf birch (*Betula nana*) was found within 250m of the proposed development (refer to **Appendix 5.2**)

Invasive Species

5.5.48 No invasive species listed under Schedule 9 of the Wildlife and Countryside Act were found within the Study Area.

Protected Species

5.5.49 Protected species surveys recorded signs of badger, otter and pine marten within the Study Area. Locations of recorded signs and shelters are displayed in **Figure 5.4** and further details are given in **Appendix 5.3**.

Badger

5.5.50 Evidence of badger was found within Inverwick forest in the central area of the Study Area. A badger sett was identified, and associated signs (tracks, paths and latrines) were also recorded in the vicinity of the sett.

Otter

5.5.51 Evidence of otter was found along the River Moriston in the central section of the Study Area. Evidence of otters was restricted to a low number of spraints and a collection of footprints, no resting sites or shelters were identified, indicating that otters may use the Study Area for foraging and be breeding elsewhere.

Pine Marten

5.5.52 Pine marten activity in the form of scats was frequent throughout the forestry components of the Study Area. Pine marten scat was identified in a total of thirteen locations and were usually found along tracks, paths and forestry rides. No den sites were located during surveys, although suitable habitat for breeding pine marten does exist in the Study Area in areas where remaining stumps and brash provide hollows and crevices and amongst the remaining conifer timber crop.

Other

5.5.53 No evidence of any other protected mammal species was identified during the course of surveys.

5.6 Potential Effects

5.6.1 During the enabling and construction works, forestry felling, the installation of temporary access routes and the installation of wood poles all have the potential to impact upon the ecological environment.

5.6.2 Based on the consultation responses and known environmental sensitivities, this assessment considers the following potential effects:

- impacts on designated sites;
- habitat loss;
- fragmentation of habitats;
- impacts on Groundwater Dependant Terrestrial Ecosystems (GWDTE); and
- disturbance and displacement of protected species.

5.6.3 The potential effects which may arise from the Proposed Development relate to the construction phase. There are no anticipated effects from the operational phase of the Proposed Development. It is anticipated that construction would commence in August 2024.

5.7 Ecological Receptors

5.7.1 Following the results of the desk study and baseline surveys detailed in Section 5.4, a number of Valued Ecological Receptors (VERs) have been identified. These VERs and their assessment values are shown in **Table 5-8** below.

Table 5-8: Summary of Valued Ecological Receptors (VERs) within the Study Area.

Valued Ecological Receptor	Legislation and Guidance	Conservation Value
Designated Sites		
River Moriston SAC	The designation is overailed by the overhead line, designated for internationally important populations of freshwater pearl mussel and Atlantic salmon.	International
Ancient Woodland Inventory sites	Located throughout forested areas within the Study Area, sites listed on the ancient woodland inventory are dominated by native pinewood and upland birchwood habitat types, with smaller fragments of upland oakwood also present along the River Moriston.	Regional
Habitats		
Coniferous woodland – semi-natural	Semi-natural coniferous woodland is represented by Caledonian pinewood habitat types, and is found in fragments along Allt Phocachain in Inverwick forest. Approximately 2km of the proposed development passes through Caledonian pinewood regeneration zone in this area.	National
Blanket bog	Blanket bog is localised to Levishie forest and in areas above Inverwick forest within the Study Area, with several habitat types present categorised as EC Habitats Directive Annex I habitats. Areas of this habitat are classified as Class 1 peatland in the Carbon and Peatland Map ³ . This habitat supports the nationally scarce dwarf birch which was found occasionally within the Study Area.	Regional
Wet dwarf shrub heath	Wet heath is the most commonly recorded habitat within the Study Area, and is categorised as EC Habitats Directive Annex I habitat.	Regional
Broadleaved woodland – semi-natural	Semi-natural broadleaved woodlands are mostly reflected by Upland birch woodlands but EC Habitats Directive Annex 1 habitats present include old sessile oak woods with Ilex and Blechnum, present along the northern banks of the River Moriston near Dundreggan dam.	Regional
Acid flush	Acid flush is present throughout the Study Area along slow moving watercourses and in gently sloping areas. The M6 NVC community is listed in the Scottish Biodiversity List as a priority habitat and is considered to have a high dependency on groundwater.	Regional
Unimproved acid grassland	This habitat accounts for a very small proportion of the overall area within the Study Area, but a large extent is present near Bhlaraidh wood.	Local
Dry dwarf shrub heath	This is categorised as EC Habitats Directive Annex I habitat, and discrete mappable areas are not found within the Study Area. Instead the habitat is found in small localised pockets where the ground is better drained, and is often transitional habitat to wet dwarf shrub heath.	Local
GWDTE	GWDTE are specifically protected under the Water Framework Directive. GWDTE are both present as large expanses of continuous habitat type (eg. Wet heath habitats) or discrete areas associated with localised hydrological conditions (eg. Acid flush, fen habitats). Areas of habitat considered highly dependent on groundwater are extremely restricted in extent within the Study Area.	Local
Species		

³ Scottish Natural Heritage (2016). The Carbon and Peatland Map. <http://gateway.snh.gov.uk/natural-spaces/index.jsp>

Badger	A badger sett and signs were recorded above Inverwick forest. The species is protected by the Wildlife and Natural Environment (Scotland) Act 2011.	Local
Otter	Otter was found to be present at low frequency throughout the Study Area and was not found to be breeding. Otter is a European Protected Species, and fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994, as amended.	Local
Pine marten	Pine marten scats were recorded along access tracks and within forestry rides and suitable breeding habitat is present within the Study Area. The species is protected through Schedules 5 and 6 of the Wildlife and Countryside Act 1981.	Local

Statutory Designated Sites

- 5.7.2 The Proposed Development crosses the River Moriston SAC. The overhead line would oversail the SAC east of Dundreggan dam.
- 5.7.3 The Proposed Development could potentially affect the River Moriston SAC through degradation of water quality, disturbance of aquatic habitats and disturbance and / or mortality or injury of qualifying interest protected species.

Non-statutory Designated Sites

- 5.7.4 The Proposed Development passes through extensive areas listed on the ancient woodland inventory, and classified as ancient woodland of semi-natural origin. Some of these areas are also listed as important Caledonian pinewood fragments.

Habitats

- 5.7.5 Habitats identified within the Study Area include those of Regional and Local ecological value.
- 5.7.6 Habitats listed as Annex I of the Habitats Directive that were identified within the Study Area include:
- Caledonian pinewood;
 - Old sessile oakwoods with *Ilex* and *Blechnum*;
 - European dry heaths;
 - Northern Atlantic wet heaths with *Erica tetralix*; and
 - Blanket bogs.
- 5.7.7 The M17 and M19 mire, M15 wet dwarf shrub heath and H10 dry dwarf shrub heath plant community types identified are widespread and common in a Regional context. The areas of most intact blanket bog are present in the northern part of the Study Area near Bhlairidh Extension Wind Farm substation location. Wet dwarf shrub heath is also prevalent in this area, along with open ground in Inverwick forest and is often found in a mosaic with blanket bog habitats. Dry dwarf shrub heath has a very restricted range within the Study Area.
- 5.7.8 The M15 wet heath and M25 mire plant communities are indicative of disturbed areas of blanket bog habitat from a combination of drainage, forestry plantings and browsing damage and are also considered to be widespread and common in a Regional context.
- 5.7.9 The GWDTE communities identified as being present within the Study Area include:
- MG10 – *Holcus lanatus* – *Juncus effusus* rush-pasture (Moderate groundwater dependence);
 - M6 – *Carex echinata* – *Sphagnum recurvum* mire (High groundwater dependence);

- M15 – *Trichophorum germanicum- Erica tetralix* wet heath (Low-Moderate groundwater dependence);
- M25 – *Molinia caerulea – Potentilla erecta* mire (Moderate groundwater dependence);
- S26 – *Phragmites australis-Urtica dioica* fen (High groundwater dependence);
- W4 – *Betula pubescens-Molinia caerulea* woodland (High groundwater dependence); and
- W7 – *Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland (High groundwater dependence).

5.7.10 Wet heath habitats throughout the site are generally drier examples (reflected by M15c NVC sub-community) and are not considered to be groundwater dependent, instead being rain-fed and ombrotrophic in nature. As such wet heath habitats have been classified as low-moderate dependency on groundwater.

5.7.11 Some of the GWDTE habitats listed above are regularly occurring (e.g. M25 mire, M15 wet heath grassland and MG10 rush-pasture mire), often found as the dominant vegetation within forest rides or along the banks of the larger watercourses within the Study Area, whereas others occur in small discrete areas associated with the edges of small, slow flowing watercourses (e.g. M6 acid flush).

5.7.12 A small area of fen (S26 fen) is present in a woodland ride in Coille Bhlaraidh, but is avoided by the Proposed Development.

5.7.13 Wet woodlands (W4 and W7 woodlands) are restricted to banks and islands along the River Moriston, subject to occasional or seasonal flooding and with a damp understory of vegetation. These woodland types are avoided by the Proposed Development.

5.7.14 A small amount of permanent habitat will be lost around the footprint of each pole. Habitat disturbance during the installation of poles and underground cabling, and associated access tracks, may lead to changes in community composition in the areas surrounding poles, the underground cable and temporary access tracks. Pollution of habitats from sedimented surface run-off, chemicals and fuels has the potential to result in the loss of vegetation or alteration of the vegetation communities.

Protected Species

5.7.15 Badger, otter and pine marten were recorded as present within the Study Area and are considered further in this assessment. Due to their absence within the Study Area, it is unlikely that the Proposed Development would have any impact on other protected species surveyed for and these are not considered any further in this assessment.

5.7.16 Felling and construction activities have the potential to cause mortality or injury to individual animals of protected species and can disturb and displace animals by means of vehicle movements, noise or lighting.

5.7.17 There is potential for watercourses to be impacted during the construction phase by a variety of pollution types including sediment and particulate run-off, giving rise to changes in water quality and pH. Pollution can also arise through chemical spills including fuels and oils. This could result in a reduction in habitat suitability for protected species such as otter, salmonids and freshwater pearl mussel which rely on good water quality.

5.8 Assessment of Likely Effects

5.8.1 The assessment of likely significant effects associated with the Proposed Development is based on the typical activities described in Chapter 3: Description of the Development.

River Moriston SAC

5.8.2 The construction of poles either side of the River Moriston SAC has the potential to cause disturbance to sensitive aquatic ecology receptors which are listed as qualifying interests for the designation. However, no

poles would be installed closer than 15 m from the watercourse, pollution prevention measures will be installed as detailed in the Construction Environment Management Plan (CEMP) and reinstatement of habitats will occur within an appropriate timeframe.

- 5.8.3 Overall the effects on qualifying interests of the designation as a result of construction of the Proposed Development are likely to be of low magnitude and therefore **not significant**.

Ancient Woodland

- 5.8.4 Ancient native broadleaved and coniferous woodland will be impacted by the felling of a wayleave corridor through which the overhead line will pass. The wayleave corridor will be reduced within areas of native woodland to a maximum width of 50 m.
- 5.8.5 Where practicable existing wayleaves will be utilised or felled against (ie. felling will only occur on one side of the overhead line). As such area of woodland habitat loss will be minimised.
- 5.8.6 The overhead line has been routed to avoid larger fragments of Caledonian pinewood and skirts at the fringes of larger areas of native woodland along the Allt Bhlaraidh, River Moriston and Allt Phocachain.
- 5.8.7 Overall the effects on qualifying interests of the designation as a result of construction of the Proposed Development is likely to be of low magnitude and therefore be of a minor adverse impact and therefore **not significant**.

Habitats including GWDTE and Annex I

- 5.8.8 As described in Chapter 3, the existing access tracks present within the Study Area will be utilised to reduce the requirement for new access routes. Access routes to gain access to each pole location are further described in Chapter 3. Detailed access route proposals will be developed by the Principal Contractor prior to commencement of works. Temporary access tracks can be installed in a number of ways, with the preferred method for each pole access being selected based on the suitability to withstand expected construction loads, which cause least environmental disturbance and consideration of the cost of installation / recovery. The range of construction access options to be considered include:
- installation of temporary metal or plastic roadway panels (e.g. Trackway);
 - installation of a short section of stone track (approximately 20 m) to connect the southern of the two CSE to the existing access track; or
 - use of specialised low ground bearing pressure vehicles.
- 5.8.9 The following principles will apply to track siting and an Ecological Clerk of Works (ECoW) will be consulted as appropriate prior to determination of track locations to ensure impacts on habitats are minimised:
- where wetland, peatland and native woodland habitats have been identified (as shown on **Figure 5.2**), temporary access tracks will be sited to avoid these areas as far as is practicably possible;
 - within afforested areas, tracks should be sited preferentially in areas of disturbed ground (e.g. in felled areas) rather than in undisturbed habitats such as forest rides and open glades; and
 - where avoidance of peatland is not possible (e.g. on blanket bog near Bhlaraidh Wind Farm extension substation and wet modified bog in Inverwick forest) temporary Trackway and / or specialised low ground bearing pressure vehicles will be used to ensure hydrological connectivity is maintained and to avoid compaction of the peat below.
 - Vehicle movements on temporary access tracks laid over sensitive habitats will be minimised as far as is practically possible.

- 5.8.10 Following commissioning of the Proposed Development, all construction sites including temporary access tracks, construction compounds and lay-down areas, would be reinstated. Reinstatement would form part of the contractual obligations for the Principal Contractor, with a restoration plan included as part of the CEMP.
- 5.8.11 Indicative pole locations are shown on **Figure 5.3**, some of which are currently placed within areas of wetland habitats. A micrositing allowance of pole locations will be used to move pole locations out of areas of wetland habitats and peatland as far practicably possible.
- 5.8.12 A total of nine poles will be located in wet modified bog (Peatland) habitat. These poles are all located on high ground between Inverwick and Inchnacardoch forest. The area of wet modified bog is heavily impacted by previous infrastructure developments, historic forestry management and is transitional to wet heath habitats where on shallower peat soils.
- 5.8.13 A total of 19 poles will be located in habitats dominated by wet heath, which is considered to be of low to moderate dependence on groundwater. These poles are located on higher ground in Levishie forest, and on the southern banks of the River Moriston. Wet heath habitats are widespread in the area, and considered to be ombrotrophic in nature.
- 5.8.14 The underground cable will pass through areas of blanket bog (Peatland) and wet heath (low-moderate groundwater dependency). Prompt and careful reinstatement as described above will maintain hydrological pathways in these areas.
- 5.8.15 Direct and permanent habitat loss would be limited to the pole locations. Each pole hole is excavated approximately 4 m long and 2 m wide. With a micrositing allowance of 50 m either way, several of the poles located in sensitive habitats can be moved to less sensitive areas. Micrositing of poles will significantly reduce the impacts to areas of high groundwater dependency.
- 5.8.16 Micrositing will only be undertaken where poles can be moved into an area of reduced sensitivity and where land ownership boundaries allow. Many of the poles located in wet heath cannot be microsited as the adjacent habitats are peatland and are likely to have deeper peat depths than their current position. Where micrositing poles outwith wetland and peatland habitats is not possible, peat depth data will be used to microsite poles to locations of shallower peat.
- 5.8.17 Without micrositing, the overall area of permanent habitat loss would represent a small area and is considered to be a low magnitude effect in the context of the habitats in the wider surrounding area. Micrositing poles where possible outwith wetland and peatland areas will reduce this effect further.
- 5.8.18 Overall the effects of habitat loss and disturbance as a result of construction of the Proposed Development is likely to be of low magnitude and therefore **not significant**.

Badger

- 5.8.19 A badger sett was recorded, and is located approximately 50 m from the overhead line. Without consideration of mitigation there is potential for the proposed development to have an indirect impact on badger. The impacts are likely to be of medium magnitude on a species of low (local) sensitivity, resulting in an adverse effect of **minor significance** prior to mitigation and **non-significant** effect after mitigation.

Otter

- 5.8.20 Otters are known to use the watercourses within the Study Area, several of which are crossed by existing forestry access tracks. However, as no otter holts or resting places were identified during surveys, construction activity would likely only have a localised, low magnitude disturbance effect on this species. All pole installation

activities would be no closer than 15 m from watercourses. The disturbance would be short-term, affecting the species indirectly by disturbing otter foraging habitat during the installation of poles close to watercourses and ditches throughout the Study Area that otters may utilise. Effects on otter during the construction of the Proposed Development are likely to be of low magnitude and therefore **not significant**.

Pine Marten

- 5.8.21 Pine marten were recorded within the plantation woodland. The felling of trees within the plantation will reduce the available habitat to pine martens. The total area of felling required for the Proposed Development is outlined in Chapter 9: Forestry and is assessed as part of the Woodland Impact Assessment.
- 5.8.22 As there is extensive coniferous plantation and semi-natural conifer and broadleaved woodland habitat surrounding the Proposed Development, in the wider context, the area of habitat loss suitable for pine marten is anticipated to be minor. As no dens were identified during surveys, construction activity would likely only have a localised, low magnitude disturbance effect on this species. The disturbance would be short-term, affecting the species indirectly by disturbing pine marten habitat during the felling and installation of poles within the woodland. Effects on pine marten during the construction of the Proposed Development are likely to be of low magnitude and therefore **not significant**.

5.9 Mitigation

Mitigation by Design

- 5.9.1 SSEN Transmission's approach to the EA process has been to prioritise and implement mitigation in a hierarchical way, as described in Chapter 2. This approach focuses on developing a design through the consideration of alternative routes to avoid likely significant adverse effects as far as possible.

General mitigation measures

- 5.9.2 SSEN Transmission has developed General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) for construction works that may negatively impact upon habitats and protected species (see Appendix 3.1 and Appendix 3.2). The SPPs outline the procedures that must be followed where there is a potential for protected species to be present. Each SPP outlines the responsibilities of SSEN Transmission and their Contractors, legislative protection for the protected species, best practice measures to follow and an approved methodology for carrying out certain mitigation activities. This suite of SPPs has been approved by NatureScot and would be adopted where relevant to the Proposed Development.
- 5.9.3 A Construction Environmental Management Plan (CEMP) will be developed by the Principal Contractor detailing measures to manage, control and monitor the potential effects of noise, dust, litter, pollution and personnel / vehicular movements. Best practice pollution control measures, with reference to the Scottish Environment Protection Agency (SEPA) and Control of Substances Hazardous to Health (COSHH) guidelines, will be included in the CEMP. Particular reference will be made to managing handling, storage and use of hazardous chemicals and fuels used during the construction process. A detailed spill response plan will be developed and fully-briefed to all site operatives and forms part of the CEMP.
- 5.9.4 An Ecological Clerk of Works (ECoW) would be appointed as appropriate, to provide monitoring of construction activities relating to the installation of infrastructure. The EcoW would also identify and monitor sensitive receptors immediately prior to, during and immediately after the construction phase. This would include identifying possible constraints on construction presented by the presence of protected mammals and adopting specific mitigation measures where necessary.

Measures Specific to all Habitats

- 5.9.5 Where excavation is required, materials would be excavated and stored according to best practice taking care to separate, as far as is reasonable, turves, topsoils, peat, soil and boulders.
- 5.9.6 During construction activities, surface water flows would be captured through a series of cut off drains to prevent water entering excavations or eroding exposed surfaces. If dewatering is required, pumped discharges would be passed through silt / sediment control measures.

Measures Specific to Annex I Habitats and GWDTE

- 5.9.7 Areas identified as being of high groundwater dependency are limited to small areas or linear features (e.g. flushes alongside watercourses) and would be avoided by micrositing of pole locations which would seek to avoid any construction work within habitats identified as being of high groundwater dependency. Some areas identified as being of moderate groundwater dependency are widespread in nature (e.g. wet heath). Wet heath habitats throughout the site are generally drier examples and not considered to be groundwater dependent, instead being rain-fed and ombrotrophic in nature. As such wet heath habitats have been classified as low-moderate dependency on groundwater. Micrositing of pole locations would seek to minimise the extent of construction work within wetland and peatland habitat including GWDTE habitats. Where this cannot be avoided (e.g. in the extensive blanket bog habitat areas in the north of the Study Area) pole locations would be microsited, informed by peat probing surveys, in order to avoid the deeper areas of peat.
- 5.9.8 The location of the underground cable route and new temporary access tracks would be microsited to avoid GWDTE habitats where possible and vehicular access would be restricted across unprotected ground beyond the footprint of each pole location.
- 5.9.9 Proposed works would avoid other sensitive habitats where possible (e.g. blanket bog). This would not be possible in some locations (e.g. on wet modified bog in Inverwick forest). In these areas temporary Trackway and the use of specialised low ground bearing pressure vehicles would be employed to prevent damage to the surface vegetation, avoid compaction of the peat beneath and maintain hydrological pathways to prevent the temporary infrastructure from affecting these habitats and associated hydrology. Temporary Trackway would be microsited away from any features such as hags and bare peat to avoid any further risk of erosion.
- 5.9.10 In areas where low ground bearing pressure machines are proposed to be used to reach the pole locations, the number of vehicle passes will be kept to a minimum to avoid disturbance to the surface vegetation. These machines will not be permitted to make any sharp slewing movements which can rip up the surface vegetation, exposing peat substrates. Details of vehicle movements within sensitive areas will be included in the Construction Method Statement (CMS) within the CEMP.
- 5.9.11 The extent of any excavations would be kept to a minimum during construction activities and reinstatement would be undertaken in line with the proposed restoration principles set out in the CMS within the CEMP, ensuring that vegetation is initially stripped, suitably stored and then replaced on the surface to recreate the former habitat as far as is possible. Full reinstatement of materials would be undertaken promptly to avoid degradation of vegetation and peat through drying out.
- 5.9.12 In areas of native woodland the felling area will be minimised as far as possible. Individual mature and veteran trees at the edges of wayleaves and access corridors will be identified, marked and root protection zones established to prevent additional loss of trees at the boundaries of the required felling area.

Measures Specific to Protected Species

- 5.9.13 Prior to construction commencing, a professional ecologist or EcoW would undertake a pre-construction survey to ascertain the presence and level of activity of all protected mammal species in the area, with particular focus on confirmed and potential shelters identified in this report. The workforce would be briefed on the protected species present in the general area, the legislative context and potential signs of activity. The Principal Contractor will be responsible for adherence to specific measures set out in SSEN Transmission's SPP which include mitigation to reduce the likelihood of disturbance, mortality and injury to foraging protected species utilising the area surrounding the Proposed Development.
- 5.9.14 In the event of any significant signs of mammal activity being found additional to those identified during the course of surveys as described above, actions as set out in SSEN Transmission's SPP will be followed and advice sought from the appointed ECoW, and if necessary the local NatureScot office.

Measures Specific to Badger

- 5.9.15 Without appropriate mitigation, there is potential for the construction of the Proposed Development to have an adverse effect of minor significance on badger through disturbance, accidental mortality and / or injury to individuals. Prior to construction commencing a pre-construction badger survey will be undertaken, focussing on where badger have previously been identified. To minimise the risk of disturbance and injury to badger, appropriate markers will be used to define each sett entrance. In accordance with SSEN Transmission's SPP, a minimum protection zone of 30 m would be marked and signed on the ground around the sett, with appropriate material to restrict work access. All works personnel, machinery, vehicles and storage of materials would be restricted from entering protection zones. Where the existing or temporary access track passes near to the badger sett through Inverwick forest, speed will be restricted to 10 mph.
- 5.9.16 The ECoW will continue to monitor badger presence within the construction areas to ensure any new colonies that may become established during construction are adequately protected. All site personnel would be briefed on the presence of badger and mitigation measures via a Toolbox Talk.

5.10 Monitoring

- 5.10.1 Construction phase monitoring would be carried out by the appointed ECoW, to ensure compliance with environmental legislation and effective delivery of mitigation measures.

5.11 Residual Effects

- 5.11.1 A summary of potential effects on valued ecological receptors (VERs) is provided in **Table 5-9**. An assessment of the residual effects, those remaining following the implementation of the proposed mitigation and compensation measures as detailed in Section 5.9 above has been undertaken.
- 5.11.2 The implementation of mitigation measures to protect badger during construction would reduce the potential effects on these VERs from minor to negligible.
- 5.11.3 No other significant effects (pre-mitigation) were identified. Nevertheless, good practice management measures have been identified, as detailed in Section 5.9 above, to further avoid and reduce effects. The residual effects on ecological receptors are non-significant.

Table 5-9: Summary of Impacts.

VER	Potential Effects	Significance of Effect	Specific Mitigation	Residual Significance
River Moriston SAC	Pollution of terrestrial habitats; and Disturbance of sensitive terrestrial habitats	Negligible	No specific mitigation required in addition to the implementation of best practice measures detailed in the CEMP.	Negligible
Ancient Woodland Inventory sites	Tree removal resulting in loss of ancient woodland habitat; Pollution of terrestrial habitats; and Disturbance of sensitive terrestrial habitats	Minor	In addition to the implementation of best practice methods detailed in the CEMP, the following measures will be adopted: <ul style="list-style-type: none"> Tree removal within native woodland areas will be limited to within a 50 m corridor of the Proposed Development and where possible, existing wayleaves will be utilised; In areas listed on the ancient woodland inventory and/or identified as Caledonian pinewood fragments, individual mature and veteran trees will be identified and marked on a register. Root Protection Zones will be established around those trees not removed but in proximity to proposed temporary access tracks; Compensatory planting will be undertaken in an area at least equivalent to that of required deforested areas; and Poles will not be dragged across the habitats within native woodland habitats to avoid ground disturbance. 	Negligible
Blanket bog	Damage and disturbance to sensitive habitats, including Annex 1 habitats and GWDTE	Minor	No specific mitigation required in addition to the implementation of best practice measures detailed in the CEMP.	Negligible
Wet dwarf shrub heath		Minor		Negligible
Acid flush		Minor		Negligible
Unimproved acid grassland		Negligible		Negligible
Dry dwarf shrub heath		Negligible		Negligible
Otter	Disturbance and accidental mortality / injury to individuals	Negligible	No specific mitigation required in addition to the implementation of best practice methods detailed within the SPPs and the CEMP	Negligible
Pine marten		Negligible		Negligible
Badger		Minor		In addition to the implementation of best practice methods detailed within the SPPs and the CEMP, sett entrances within proximity to construction works will be marked out and exclusion zones established prior to the commencement of works.

5.12 Cumulative Impacts

5.12.1 There are two aspects of cumulative effect to consider:

- the cumulative effect of two or more developments on an individual animal or home range / territory; and
- the cumulative effect of a number of developments within a region on the local / regional population of a species or the distribution of a habitat.

5.12.2 The Proposed Development would have no significant residual effects on designated sites, habitats or species. Cumulative effects are considered to be limited to those resulting from the addition of the Proposed Development to other proposed or operational projects where there the potential for similar effects to arise. The addition of the effects identified as a result of the Proposed Development are of a sufficiently low magnitude that the likely effects associated with other developments nearby are not considered likely to result in significant cumulative effects.

5.13 Summary

5.13.1 The impact assessment on Terrestrial Ecology for the Proposed Development has been assessed under CIEEM Guidelines on Ecological Impact Assessment in the United Kingdom⁴. This determines which ecological receptors are significant within a geographical context before the assessment of the impacts of the Proposed Development on significant receptors is undertaken.

5.13.2 A desk study, habitat survey and protected species surveys were undertaken in order to establish the ecological baseline, from which the ecological receptors of the Proposed Development could be identified. A summary of the results of the ecological baseline is provided in the main body of the report, along with associated figures and supporting information provided in **Appendix 5.1 – 5.4**.

5.13.3 No habitat receptors within the Study Area have been evaluated as having higher than Regional sensitivity assigned according to their conservation status and levels of value / importance under a geographic scale.

5.13.4 Protected species surveys identified badger, otter and pine marten at low densities. To comply with legal obligations under the Protection of Badgers Act 1992 as amended by the Wildlife and Natural Environment Bill (Scotland) Act 2011, Wildlife and Countryside Act 1981 and the Natural Conservation (Scotland) Act 2004 legislation, pre-construction surveys would be undertaken and site specific mitigation included in SSEN Transmission's SPPs would be adopted as required.

5.13.5 Proposals for mitigation relevant to identified receptors includes adherence to best practice construction methods as detailed in a project CEMP, pre-construction checks to update the ecological baseline, demarcation of protected species shelter locations prior to commencement of construction and the employment of an ECoW to provide environmental guidance and monitoring during the course of the construction period.

5.13.6 The potential effects on the receptors following mitigation that has been built into the design of the Proposed Development were evaluated and the magnitude of impacts has been assessed to determine residual effects. There are no significant impacts likely as a result of the Proposed Development.

⁴ Chartered Institute of Ecology and Environmental Management (2018). Guidelines for ecological impact assessment in the UK and Ireland. Winchester: CIEEM