4. ECOLOGY AND ORNITHOLOGY

4.1 Introduction

This Chapter provides an appraisal of the potential effects on ecology and ornithology (ecological features) as a result of the Project.

The specific objectives of this Chapter are to:

- describe the ecological baseline;
- describe the potential effects, including direct, indirect and cumulative effects, on ecological features;
- describe the mitigation measures proposed to address likely significant effects; and,
- assess the significance of any residual effects remaining following the implementation of mitigation.

In this Chapter the Proposed Development, Permitted Development, Associated Development, and areas within the red line boundary that contain no infrastructure are referred to as the project footprint.

4.2 Methodology

4.2.1 Desk Study and Consultation

A desk study was undertaken to determine the presence of any designated nature conservation sites, within 10 km of the Project Survey Area (see **Figure 4-1**) and for any woodland listed on the ancient woodland inventory (AWI), tree preservation orders and records of protected species within 2 km of the Project within the last 25 years.

In September 2021, ERM consulted with NatureScot on behalf of SSEN Transmission to agree an approach to ornithology surveys for Crossaig (see **Annex F**). It was agreed with NatureScot that the breeding bird surveys undertaken in 2015-2016 to inform SSEN Transmission's Inveraray to Crossaig 275 kV Overhead Line (OHL) Reinforcement Project 2018 Environmental Impact Assessment Report (EIAR) would be sufficient to inform the Environmental Appraisal (EA) being submitted for the Project and no further ornithology surveys were required[1].

In addition, a desk study was also undertaken to determine the presence of any records of protected fauna species within 2 km of the red line boundary within the last 25 years. As part of the desk study, a review was undertaken of the following relevant EIAR's:

- Inveraray to Crossaig 275kV OHL Reinforcement Project;
- Eascairt Wind Farm; and,
- High Constellation Wind Farm

A request for information regarding designated sites, species records and, information on the habitats present was submitted to the Argyll Biological Record Centre (ABReC). However, the ABReC advised this data request could not be processed[2]. In the absence of local records, reference was made to the 2010-2015 Argyll and Bute Council Local Biodiversity Action Plan (LBAP)[3] and a review of SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIAR was undertaken as the Associated Development element of the Project will tie into the larger reinforcement project. The definition of the Associated Development is detailed in **Chapter 1, Section 1.2**.

[1] Ornithology field surveys undertaken to inform the Inveraray to Crossaig EIAR were carried out between 2015-16 and included Vantage Point (VP), nesting diver, moorland/forestry birds, black grouse lek, breeding raptor and eagle nest surveys. Further VP surveys and eagle nest checks commenced in February 2017.

[2] The data request submitted requested information over the last ten years regarding designated sites, species records and, information on the habitats present. The search area for this information request extended for 2 km from the red line boundary of the Proposed Development area. However, on 9 December 2021, ABReC contacted ERM to advise they are currently unable to produce data search reports.

[3] This is the latest LBAP to be published by Argyll and Bute Council and is yet to be replaced.

Consultations were undertaken with the Argyll Raptor Species Group (ARSG), Scotland's Raptor Study Group (SRSG) and The Royal Society for the Protection of Birds (RSPB). Data was requested for Schedule 1 and Birds of Conservation Concern (BoCC) raptor species within 2 km of the proposed Crossaig substation from the ARSG and data on other protected and sensitive species from the RSPB. At the time of writing, responses from all groups have been received. No data was found in RSPB records for protected species, including black grouse (*Lyrurus tetrix*) within the search area, however, the ARSG data confirmed the presence of a known golden eagle (*Aquila chrysaetos*) eyrie and hen harrier (*Circus cyaneus*) nest approximately 2 km from the footprint of the Project. Further details are presented in the **Confidential Annex.**

Due to the extent of the red line boundary applicable to the Project (i.e. including the Cross Kintyre Haul Road and Cour Estate Road), the **'**Project Footprint' refers primarily to the location of the proposed Crossaig North substation development (and existing Crossaig substation).

4.2.2 Field Survey

An Extended Phase 1 Habitat Survey (EP1HS) was undertaken in October 2021 within the Project Survey Area (see **Figure 4-2**) and was based on the methods described in Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey (2010)[1] as extended for use in Environmental Assessment[2]. A walkover survey for protected and priority species was undertaken during the EP1HS, which included a search for signs/sightings of species likely to occur in the locality and in the habitats present. The survey method for each species is detailed in the Crossaig Extended Phase 1 Habitat and Protected Species Survey Report, (see **Annex G**).

A National Vegetation Classification (NVC) survey of habitats with the potential to support potential Groundwater Dependent Terrestrial Ecosystem (GWDTE) was undertaken alongside the EP1HS. The survey was based on the methods described in JNCC's National Vegetation Classification: Users' Handbook[3] with communities being identified by eye. The NVC and GWDTE survey results are detailed in the Crossaig Extended Phase 1 Habitat and Protected Species Survey Report, (see **Annex G**).

4.2.3 Impact Assessment

This impact assessment follows an approach whereby the sensitivity of an ecological receptor has been determined and assessed against the magnitude of the effect the activities associated with the Project may have on that receptor and the subsequent significance. The approach takes into account the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland[4] and refers to not significant, rather than negligible.

The impact assessments on designated sites, habitats and flora, and GWDTE have been assessed for both the **Proposed Development** and the **Associated Development** in order to determine the impact each development is having on each of these features and reported accordingly. The definitions of the Proposed and Associated Developments are detailed in **Chapter 1, Section 1.2 and** together these are referred to as the 'Project'.

The impact assessment on protected species has been undertaken at a Project scale as habitats impacted by the separate developments which could potentially be used by protected species cover the Proposed Development and the Associated Development. As the footprints of the Proposed Development and Associated Development are located in the same sections of habitat, the impact assessment on protected species has been undertaken on a Project scale.

[1] Joint Nature Conservation Committee (2010 reprint) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit, Joint Nature Conservation Committee, Peterborough. Reprinted in 2010, with minor corrections addressed in 2016.
[2] Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment, Spon, London.
[3] Joint Nature Conservation Committee National Vegetation Classification: Users' handbook (2006), Peterborough.
[4] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

The assessment has taken into account the potential impacts that could occur from the Project during construction and operation for example:

- direct habitat loss due to permanent and temporary facilities;
- effects on habitats in the surrounds (*e.g.* from incursion by workforce, pollution / spillages, dust, effects on surface / groundwater);
- direct effects on fauna, including their killing and injury and the destruction of their places of shelter;
- indirect effects on fauna species including disturbance / displacement.

Given the type of development, there are anticipated to be little or no effects on habitats and species in the area during the operational phase. Hence the focus of the assessment is largely on the construction effects of the Project.

Mitigation for the Project is split into two categories, embedded mitigation and additional mitigation.

Embedded mitigation measures will be implemented during the construction work, including the timing of installation and careful siting of permanent and temporary structures to avoid or minimise interaction with sensitive receptors. Compliance with project wide and site-specific environmental management procedures, with reference to SSEN Transmission Construction Environmental Management Plans (CEMPs) will also be implemented. This will outline the proposed approach to construction methods and environmental protection during construction of the Project, including details of ecological constraints and measures (e.g., no night-time working, control of light spill, noise emissions, pollution, avoiding incursion into habitats to be retained), procedures for surface water management and, pollution prevention guidelines.

Measures to protect biodiversity will include a pre-construction site walkover survey of the Project by a suitably qualified ECoW, focussing on habitats to be directly and indirectly impacted by the Project. The purpose of the survey would be to confirm any changes in use of the site by protected species, as many of the species are highly mobile. Should a species be identified, the appropriate Species Protection Plans (SPPs) (included within the CEMP) would be followed during construction of the Project.

SSEN Transmission have well-established SPPs for a number of protected species, which have been developed in consultation with NatureScot and are currently being used on other SSEN Transmission projects. Each SPP provides details on what actions are required should species be encountered during construction of the Project (see **Annex H**).

A Construction Traffic Management Plan (CTMP) will also be in place to avoid / manage effects on habitats in the surrounds of the areas to be directly affected, for example to prevent spillages, discharges, incursion into habitats not required for the footprint and to allow construction, control dust etc.

Additional mitigation is detailed within **Section 4.6** and sets out any further mitigation required to reduce the residual impact to not significant.

4.3 Baseline

4.3.1 General Ecological Context

The survey area is located in a rural part of Argyll that is dominated by commercial forestry (that is felled on a rotational basis) and associated access roads/tracks. The habitat in and around the footprint of the survey area is dominated by mature conifer plantation woodland which has a boggy understory in places that are associated with natural watercourses or dysfunctional drainage. Other habitats occur to the east of the survey area, with marshy and neutral grassland and areas of broadleaved woodland and continuous scrub being the most frequent. An existing wayleave for the existing Inveraray to Crossaig 275 kV OHL Reinforcement Project is present to the north east of the Project site, as shown in **Figure 4-2**.

The existing access track is approximately 24 km long, running from the west coast of the Kintyre peninsula, starting at the A83 near Killean, heading east across the peninsula before finishing to the south of the existing Crossaig substation. Adjacent to the access track, heath communities are present, including an expanse of blanket bog at the highest point. Pockets of broadleaved semi-natural and recently felled conifer woodland are found in a number of locations along the route.

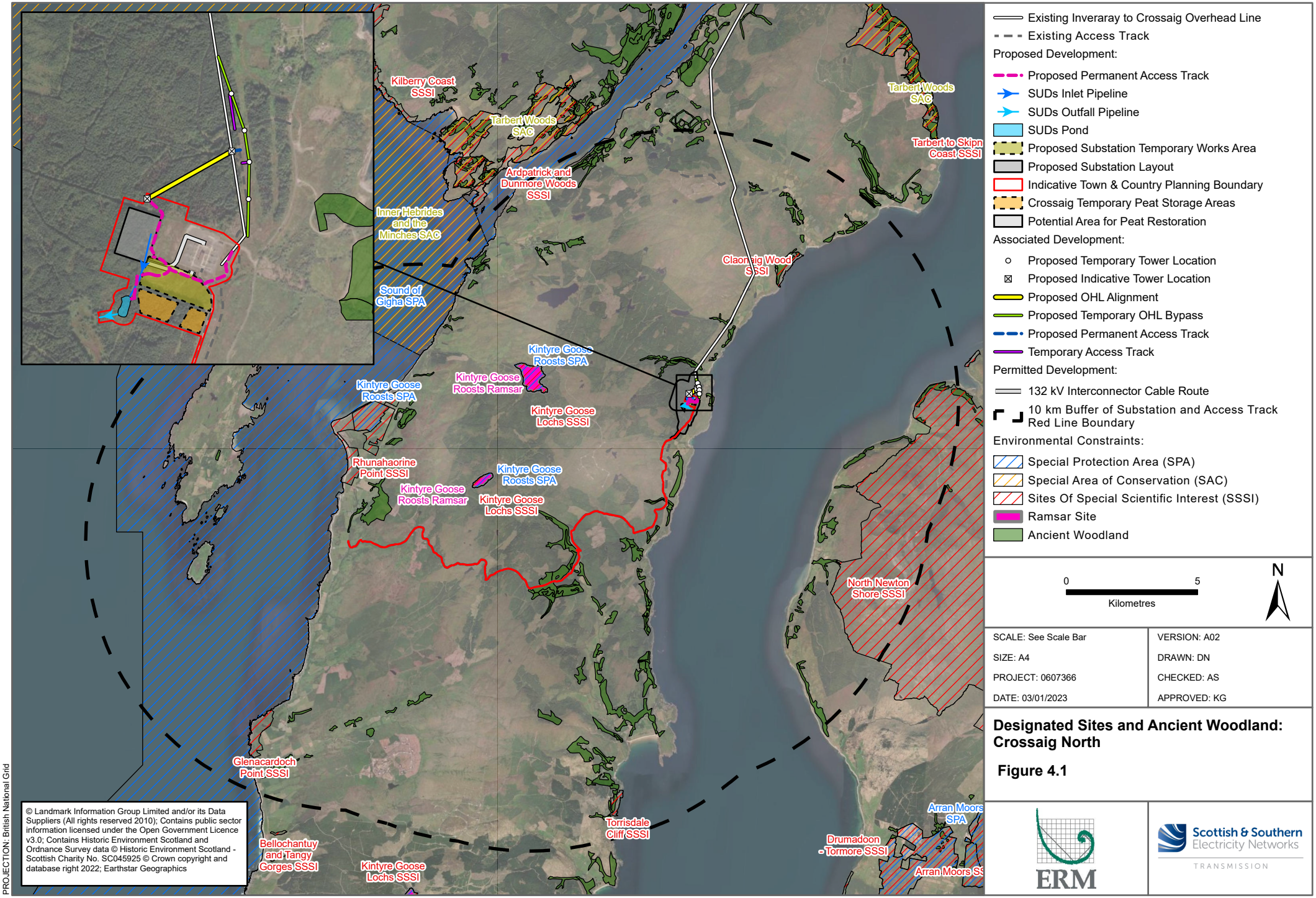
4.3.2 Designated Sites and Ancient Woodland

No sites designated for their nature conservation importance lie within the Project boundary. Ten sites lie within 10 km of the Project (see **Figure 4-1**). The closest site to the footprint of the Project is Kintyre Goose Roosts Special Protected Area (SPA), RAMSAR and Site of Special Scientific Importance (SSSI) which are located across six distinct locations. Two locations of the Kintyre Goose Roosts Special Protected Area (SPA), RAMSAR and Site of Special Scientific Importance (SSSI) are situated approximately 5 km west of the proposed substation and approximately 2.5 km north of the access track. The closest site to the existing access track is the Sound of Gigha SPA, which is located approximately, 0.67 km west of the Project red line boundary. These sites are detailed below in **Table 4-1** and shown in **Figure 4-1**. Eight woodlands listed on the AWI also lie adjacent to the existing access track.

Table 4-1 Designated Sites within 10 km Buffer of the Project

Site Name	Designation	Approx. Distance to Redline Boundary and Project Footprint	Reason for Designation
Sound of Gigha	SPA/Ramsar	- 0.67 fkm from red line boundary - 9.5 km from project footprint	■ Supporting wintering population of European importance of great northern diver (*Gavia immer*). ■ Slavonian grebe (*Podiceps auritus*). ■ Populations of European importance of migratory species: common eider (*Somateria mollissima*). ■ Red-breasted merganser (*Mergus serrator*).
Kintyre Goose Roosts	SPA/Ramsar	- 4.8 km from red line boundary - 5.0 km from Project Footprint	■ Supporting internationally important wintering population of Greenland white-fronted goose.
Inner Hebrides and the Minches	SAC	- 8.3 km from red line boundary - 10.0 km from the Project Footprint	■ Harbour porpoise (*Phocoena phocoena*).
Rhunahaorine Point	SSSI	- 2.1 km from red line boundary - 11 km from the Project Footprint	■ Shingle. ■ Non-breeding, overwintering population of Greenland white-fronted goose (*Anser albifrons flavirostris*). ■ Breeding population of Little tern (*Sternula albifrons*).
Kintyre Goose Lochs	SSSI	- 2.4 km from red line boundary - 5.3 km from Project Footprint	■ Nationally or internationally important numbers over the winter months of Greenland white-fronted geese (*Anser albifrons flavirostris*).
Claonaig Wood	SSSI	- 5.0 km from red line boundary - 5.0 km from the Project Footprint	■ Upland Oak Woodland.
Arran Northern Mountains	SSSI	- 7.1 km from red line boundary - 7.1 km from the Project Footprint	■ Geological: Igneous petrology: Ordovician Igneous. ■ Geological: Igneous petrology: Tertiary Igneous. ■ Biological: Upland habitat assemblage. ■ Biological: Upland birch woodland.

Site Name	Designation	Approx. Distance to Redline Boundary and Project Footprint	Reason for Designation
			■ Biological: Vascular plant assemblage. ■ Biological: Breeding bird assemblage. ■ Biological: Dragonfly assemblage. ■ Biological: Beetle assemblage.
Glenacardoch Point	SSSI	- 6.8 km from red line boundary - 19.6 km from the Project Footprint	■ Quaternary geology and geomorphology, including nationally important assemblage of relict coastal landforms, shore platforms and raised beaches.
Torrisdale Cliff	SSSI	- 8.3 km from red line boundary - 14.7 km from the Project Footprint	■ Upland mixed ash woodland.
North Newton Shore	SSSI	- 10.0 km from red line boundary - 10.0 km from the Project Footprint	■ Stratigraphy: Non-marine Devonian.



PROJECTION: British National Grid

SCALE: See Scale Bar	VERSION: A02
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: AS
DATE: 03/01/2023	APPROVED: KG

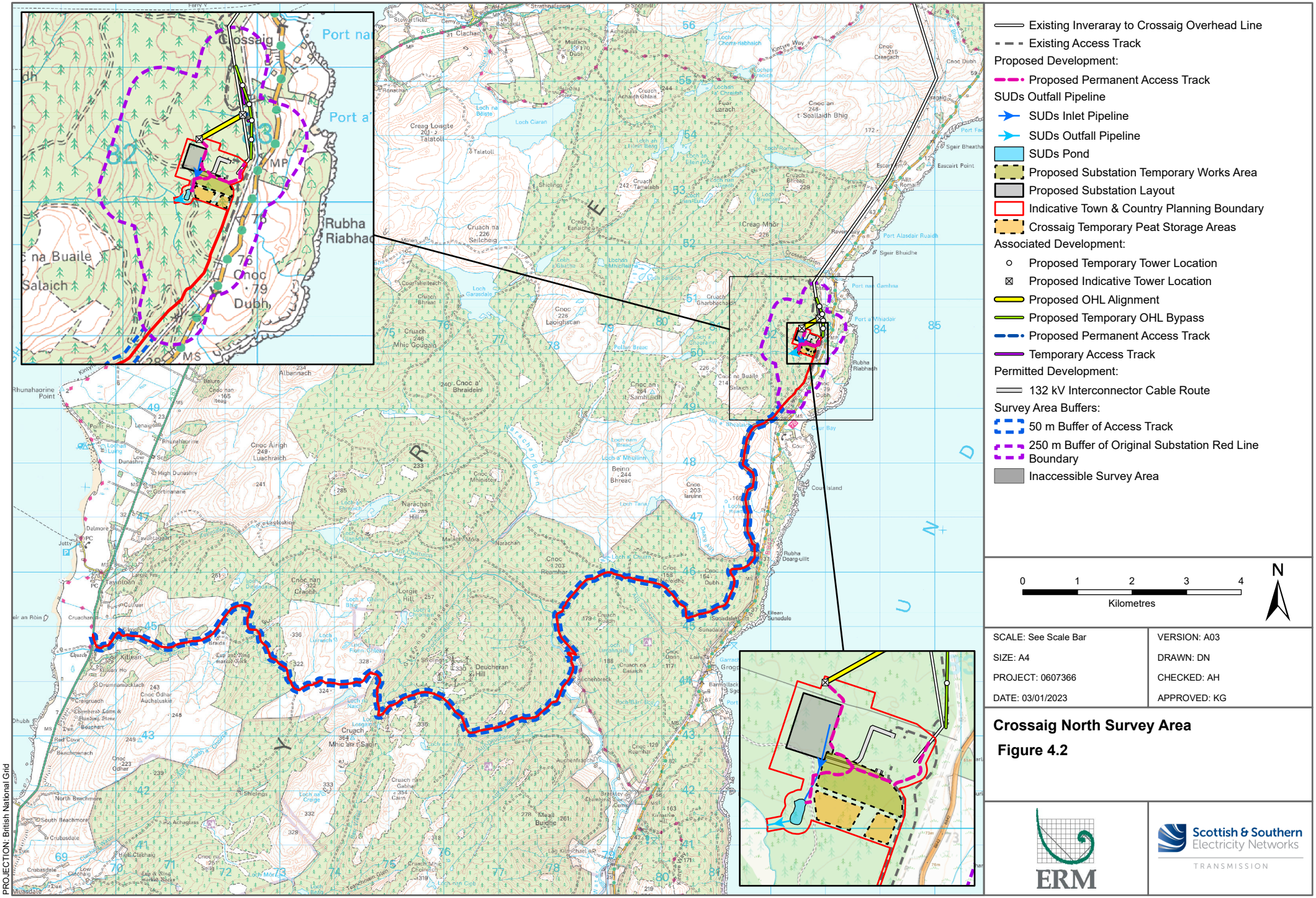
Designated Sites and Ancient Woodland: Crossaig North

Figure 4.1

ERM

Scottish & Southern Electricity Networks TRANSMISSION

Path: \\uksprdgisfs01\Data\London\0607366 - SSE Argyll Substations\MAPS\20210930_Argyll_HabitatMapping\0607366 - SSE_Argyll_HabitatMapping.aprx\0607366_DesignatedSites_10km_Crossaig_A03


Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Proposed Permanent Access Track
SUDs Outfall Pipeline
SUDs Inlet Pipeline
SUDs Outfall Pipeline
SUDs Pond
Proposed Substation Temporary Works Area
Proposed Substation Layout
Indicative Town & Country Planning Boundary
Crossaig Temporary Peat Storage Areas
Associated Development:
Proposed Temporary Tower Location
Proposed Indicative Tower Location
Proposed OHL Alignment
Proposed Temporary OHL Bypass
Proposed Permanent Access Track
Temporary Access Track
Permitted Development:
132 kV Interconnector Cable Route
Survey Area Buffers:
50 m Buffer of Access Track
250 m Buffer of Original Substation Red Line Boundary
Inaccessible Survey Area
0
1
2
3
4
Kilometres
N
SCALE: See Scale Bar
VERSION: A03
SIZE: A4
DRAWN: DN
PROJECT: 0607366
CHECKED: AH
DATE: 03/01/2023
APPROVED: KG
Crossaig North Survey Area
Figure 4.2
ERM
Scottish & Southern Electricity Networks
TRANSMISSION
PROJECTION: British National Grid
Path: \\uksprdgisfs01\Data\London\0607366 - SSE Argyll Substations\MAPS\20210930_Argyll_HabitatMapping\0607366 - SSE_Argyll_HabitatMapping.aprx\0607366_HabitatSurveyAreas_Overview_ERM_MapSeries_A03

4.3.3 Habitats and Flora Species

The Project site (footprint and red line boundary) and much of the immediate surrounds is dominated by dense mature commercial conifer plantations consisting of Sitka spruce (*Picea sitchensis*). A review of aerial imagery suggests the conifer plantation surrounding the Project is longstanding, with the most recent harvesting taking place between 2011 and 2014, as part of the construction for the existing Crossaig substation. Aside from this felling, aerial imagery suggests there has been no felling within the footprint of the Project and its surrounds since 2005. A small area of marshy grassland is present within the construction footprint of the Project with further extents of marshy grassland present in the conifer plantation surrounding the Project's footprint and further east on the other side of the B842 in areas used for pastoral grazing. Throughout the survey area, most of this habitat is rush-pasture dominated by soft rush (*Juncus effusus*) and/or sharp-flowered rush (*Juncus acutiflorus*), with associate species such as bulbous rush (*Juncus bulbosus*), tufted hair-grass (*Deschampsia cespitosa*), Yorkshire fog (*Holcus lanatus*), purple moor-grass (*Molinia caerulea*), marsh thistle (*Cirsium palustre*), creeping buttercup (*Ranunculus repens*), marsh ragwort (*Senecio aquaticus*), selfheal (*Prunella vulgaris*), common knapweed (*Centaurea nigra*), broadleaved dock (*Rumex obtusifolius*), devil's-bit scabious (*Succisa pratensis*) and tormentil (*Potentilla erecta*). In some instances, sphagnum species are present including *Sphagnum capillifolium* (acute-leaved bog-moss), *Sphagnum fallax* (flat-topped bog-moss) and *Sphagnum palustre* (blunt-leaved bog-moss). Small areas of broadleaved woodland plantation containing sycamore (*Acer pseudoplatanus*), Scots pine (*Pinus sylvestris*), pedunculate oak (*Quercus robur*), downy birch (*Betula pubescens*) and hazel (*Corylus avellana*). Recently felled conifer plantation, semi-natural grassland and semi natural broadleaved woodland consisting primarily of pedunculate oak are also present to the east and north east of the Project footprint, over the B842 and in pockets along the existing access track.

Along the extent of the existing access track there are several large sections of commercial conifer plantation consisting of Sitka spruce with lodgepole (*Pinus contorta*). This is interspersed with small sections of semi natural broadleaved woodland, recently felled conifer plantation, dry and wet dwarf shrub heath and marshy grassland. Towards the western end of the red line boundary, the existing access track climbs in altitude where pockets of dry heath are mainly present. At its peak, the existing access track passes through a continuous section of wet modified bog, before descending back through habitats seen at lower altitudes along the existing access track, such as conifer plantation, recently felled conifer plantation and marshy grassland.

At the western end of the survey area there is a small section of semi-natural broadleaved woodland located adjacent to the existing access track. This woodland is dominated by sycamore and ash (*Fraxinus excelsior*), with frequent beech (*Fagus sylvatica*), and occasional downy birch, hazel, wych elm (*Ulmus glabra*), holly (*Ilex aquifolium*), and common lime (*Tilia x europaea*). There is a steep-sided watercourse, the Killean Burn, that flows through the woodland and which is approximately 1.8 m deep in places with a small artificial weir present.

One small watercourse, the Allt na Buaile Salaich is within the west of the Site. The Allt na Buaile Salaich flows south before passing under the existing access track and discharging into Cour Bay and the Kilbrannan Sound. This watercourse principally flows through an area of commercial conifer plantation and is approximately two to four feet deep with steep banksides where observed. An unnamed watercourse also rises to the north of the Site and flows east, north of the proposed overhead line and overhead line access track, approximately 30 m north of the northern proposed permanent tower.

There are several additional small watercourses and artificial drains that pass under the existing access track, including, from west to east, the Dearg Allt Burn, Close Burn, Allt na h-Uamha Burn, Allt Sunadale Burn, Carradale Water and the Allt Fheannag Burn.

As part of the Phase 1 walkover survey, wetland habitats that could be dependent on groundwater (i.e., potential GWDTE) were identified. In these habitats, more detailed NVC surveys were undertaken to allow comparison of the habitats with those listed in SEPA guidance as likely to be highly or moderately ground water dependent.

A small section of M25 *Molinia caerulea - Potentilla erecta* Mire is present to the west of the existing substation and within the footprint of the construction area for the Project and is considered to have a high potential as a GWDTE.

Other habitats that were identified out with the project footprint but within the red line boundary consisted of M6 *Carex echinata - Sphagnum fallax/denticulatum* mire, M25 *Molinia caerulea - Potentilla erecta* mire, W4 *Betula pubescens - Molinia caerulea* woodland, MG10 *Holcus lanatus - Juncus effusus* rush-pasture, U4 *Festuca ovina - Agrostis capillaris - Galium saxatile* grassland, M15 *Trichophorum germanicum - Erica tetralix* wet heath, M17 *Trichophorum germanicum - Eriophorum vaginatum* blanket mire, and M23 *Juncus effusus/acutiflorus - Galium palustre* rush-pasture. W4, M6 and M23 are considered highly GWDTE, M25, MG10, M15 are considered moderate GWDTE, and U4 and M17 are considered low GWDTE.

No invasive non-native flora species were recorded within the footprint of the Project. Areas of dense rhododendron (*Rhododendron ponticum*) was identified to the north of the existing substation, as well as buddleia (*Buddleja davidii*) which was scattered along the access track towards the east of the survey area.

Further details of the habitats identified during the EP1HS and the several figures produced from the habitat mapping (due to the long distance of the access tracks and red line boundary associated with the project) are presented in **Annex G.**

4.3.4 Fauna including Protected Species

Desk Study

The survey findings reported in the Inveraray to Crossaig 275kV OHL Reinforcement Project EIAR identified no records of protected species, including, bats, otter, badger, pine marten and red squirrel, within the footprint of the Project or its surrounds. No Schedule 1 bird species were recorded within the footprint of the Project, however, surveys undertaken in 2017 for the project identified two Schedule 1 bird species nests within the vicinity of the Project, one of which was identified as an alternative golden eagle nest to the one confirmed by the ARSG and is located approximately 750 m from the footprint of the Inveraray to Crossaig 275kV OHL Reinforcement Project. Surveys in 2017 also identified a barn owl (*Tyto alba*) nest, located approximately 475 m from the footprint of the Inveraray to Crossaig 275kV OHL Reinforcement Project.

The survey findings reported in the High Constellation Wind Farm EIAR identified no records of protected species including, bats, otter, badger, pine marten and red squirrel, within the footprint of the Project or its surrounds. The closest record identified during surveys was an otter spraint located approximately 530 m south west of the Project, along the Allt na Buaile Salaich Burn. Ornithological surveys conducted in 2017 identified golden eagles on the alternative nest site as reported in the Inveraray to Crossaig 275kV OHL Reinforcement Project survey findings, but no signs of breeding were observed. Surveys in 2018 identified a pair of golden eagles with a single chick on the preferred nest, located approximately 2 km from the High Constellation Wind Farm Project. No breeding activity for any other raptor species was recorded during baseline surveys; occasional recordings of barn owl, merlin (*Falco columbarius*), osprey (*Pandion haliaetus*), peregrine (*Falco peregrinus*), short-eared owl (*Asio flammeus*) and white-tailed eagle (*Haliaeetus albicilla*) were made during all surveys. The EIAR concluded that the site and surrounds is likely to be of minimal importance for these species. Black grouse were recorded lekking widely during surveys in 2017, with up to 12 recognisable lekking areas identified. None of the leks identified are within the footprint of the High Constellation Wind Farm Project, with the closest lek, Lek ID 12, located approximately 2.4 km south west of the High Constellation Wind Farm Project footprint and approximately 230 m east of the existing access track.

During consultation with NatureScot the presence of breeding red throated diver (*Gavia stellata*) at Loch na-Naich was identified (pers. Comm. NatureScot).

Field Surveys

Field signs of protected species were recorded during the EP1HS and throughout the Crossaig survey area.

Otter field signs

Several otter spraints were located under a bridge approximately 1.5 km south west from the footprint of the Project at the eastern end of the existing access track. Further otter spraints were recorded along the existing access track on a rock next to a culvert approximately 480 m south west from the footprint of the Project.

Pine marten field signs

Suspected pine marten scat was also recorded approximately 770 m south west from the footprint of the Project in prominent locations on a bridge that passes over the Allt na Buaile Salaich Burn towards the eastern end of the existing access track.

No field signs of other protected species were identified within the habitat to be lost under the footprint of the Project.

Habitat assessment

Although no additional field signs of protected species were located, the conifer plantation within the footprint of the Project has the potential to support bats, pine marten, red squirrel and possibly wildcat. The underlying wet ground conditions in the areas likely to be directly affected by the Project and in the immediate surrounds, suggest it is unlikely they will be used by badgers or otters to build setts/holts.

The semi-natural broadleaved woodland along the existing access track at the western end of the red line boundary has several trees that have potential bat roosting features.

There are no waterbodies in the footprint of the Project to support breeding amphibian species, and no field signs of amphibians were identified during the EP1HS.

No field signs of reptiles were identified during the EP1HS, however, the rides within the coniferous woodland plantation within the footprint of the Project offers good foraging habitat for amphibian and reptile species. Along the existing access track, areas of continuous bracken and pockets of felled coniferous woodland and to the east of the existing Crossaig substation could offer good foraging and basking habitat for reptile species.

Full details of the protected species findings from the EP1HS are provided in **Annex G**.

Ornithological findings

The baseline conditions appear to have changed little since the surveys undertaken to inform SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIAR took place. As agreed with NatureScot (**Section 4.2.1**), no additional bird surveys were deemed to be required and the baseline SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project was considered to be valid. Breeding bird survey results within these reports recorded low numbers of common woodland/upland species with records of Schedule 1 protected raptors nests; golden eagle and hen harrier, recorded approximately 2 km distance from the Project footprint. Hen harrier are also red listed on BoCC.

No black grouse were recorded, and there are no breeding diver lochans within 1 km of the Project Footprint. However, a black grouse lek was located approximately 230 m east of the existing access track and red line boundary. In addition to common woodland/upland species, during the EP1HS, the BoCC red listed tree pipit (*Anthus trivialis*) and Schedule 1 species merlin (*Falco columbarius*) were observed. The merlin was observed pursuing prey outside of the buffer along the existing access track and no confirmed nests were observed.

4.4 Appraisal – Construction Effects

The assessment has taken into account the potential impacts that could occur from the Project during construction and operation for example:

- direct habitat loss due to permanent and temporary facilities;
- effects on habitats in the surrounds (e.g., from incursion by workforce, pollution / spillages, dust, effects on surface / groundwater);
- direct effects on fauna, including their killing and injury and the destruction of their places of shelter; and
- indirect effects on fauna species including disturbance / displacement.

The 24 km of existing access track has not been included in this assessment's habitat loss calculations. Although some maintenance is expected on the existing access track, felling of trees within the existing woodland will not be undertaken.

4.4.1 Designated Sites and Ancient Woodland

The Proposed Development

No sites designated for their nature conservation importance will be directly affected by the Proposed Development. The nearest site is Kintyre Goose Roosts SPA, RAMSAR and SSSI, which are located approximately 2.5 km north of the access track and 5 km west of the proposed substation. The closest site to the existing access track is the Sound of Gigha SPA, which is located approximately, 0.67 km west of the red line boundary. See **Section 4.3.2** for descriptions of both sites.

Although no designated sites will be directly impacted by the Proposed Development, it was determined that a report should be produced to provide the competent authority with sufficient information to undertake a Habitat Regulations Appraisal (HRA). Following the submission of a Stage 1 Screening report, NatureScot advised that a Stage 2: Appropriate Assessment of the Kintyre Goose Roosts SPA site was required due to the close proximity of the existing access track to Loch na-Naich (approximately 80 m), which, although not part of the SPA site, has historically been used as a roost by part of the SPA population of Greenland white-fronted geese (*Anser albifrons flavirostris*). Following the implementation of proposed mitigation measures as detailed in the HRA[8], the Proposed Development is not predicted to have an adverse effect on the integrity of the Kintyre Goose Roosts SPA and Ramsar site (see **Annex I**).

Eight woodlands listed on the AWI lie adjacent to the existing access track for a total of approximately 0.97 km. Maintenance will be required to the existing access track[9] and due to the small scale of this maintenance - involving pruning and removal of self-seeded trees on verges - no significant impacts on ancient woodlands are predicted. The Traffic and Transport chapter also states that traffic and transport effects arising from the construction and operation of the Project will be minor or less and that a Construction Traffic Management Plan (**CTMP**) will be developed by the appointed contractor to manage site traffic and mitigate any effects. In addition to the CTMP, construction best practice measures will be implemented (Included with the Construction Environment Management Plan **(CEMP)** and General Environmental Management Plans **(GEMPs)**) to prevent indirect/accidental damage and this embedded mitigation will result in no significant effects. Individual trees that will be impacted and have been assessed to have bat roost potential will be mitigated as explained in **Section 4.4.5.**

The Associated Development

No sites designated for their nature conservation importance, or woodlands listed on the ancient woodland inventory will be affected by the Associated Development. The nearest site is Kintyre Goose Roosts SPA,

[8] To avoid disturbance to Greenland white-fronted geese (Anser *albifrons flavirostris*) at Loch na-Naich within the wintering period (October – March), no vehicle movements will take place past Loch na Naich or within 600 m either side of the Loch during the one hour period either side of sunrise or the one hour period either side of sunset..

.

RAMSAR and SSSI, which is located approximately 2.5 km north of the access track and 5 km west of the proposed substation.

Summary of Impacts on Designated Sites and Ancient Woodland

The Proposed Development will not result in any impacts on designated sites as outlined. There is a potential for minor impacts to occur on individual trees within ancient woodlands adjacent to the existing access track. However, following the implementation of the embedded mitigation discussed above, **no significant effects** are predicted.

The Associated Development will not result in any impact on designated sites, therefore, **no effects** on designated sites or AWI are predicted.

4.4.2 Habitats and Flora

The permanent[10] and temporary[11] loss of the habitats due to the construction of the Project are shown in **Table 4-2** (also see **Figure 4-1 and Figure 4-2**).

Table 4-2: Permanent and Temporary Habitat Loss due to the Project

Habitat Type	Habitat Description and Assessment	Permanent Loss		Temporary loss	
		Proposed Development	Associated Development	Proposed Development	Associated Development
Conifer woodland - plantation	This is estimated to be at least 17 years old, based on a review of historical aerial imagery. The large stand that surrounds the existing substation and covers the footprint of the Project is dominated by mature Sitka spruce. In such areas where the trees are mature, the ground flora is limited due to the dense shading of the trees and in many places comprises little more than a bryophyte layer, Such habitat is common and widespread in this area of commercial forestry and is botanically of low value.	3.02 ha	0.14 ha	2.35 ha	1.61 ha
Mixed woodland - plantation	Small areas of mixed plantation are present around the south and western sides of the existing substation. Species present comprise of young rowan and downy birch (still in tree tubes), with extensive Sitka regeneration reflecting the previously coniferous plantation in this location. Some of this plantation lies within the footprint of the Project. Aerial imagery indicates felling was undertaken between 2011 and 2014 for the construction of the existing Crossaig substation. The ground flora is therefore very disturbed, with deadwood, brash and bare ground still present in places. Due to the age of tree species present and the disturbed nature of the field layer, this habitat is of low botanical value.	0.15 ha		0.5 ha	0.01 ha

[10] Permanent habitat loss – the permanent footprint of any component of the Project which will not be restored following construction.

[11] Temporary habitat loss – any component of the Project that will be restored following construction, for example temporary works area, temporary access tracks and temporary towers and OHL diversions.

Habitat Type	Habitat Description and Assessment	Permanent Loss		Temporary loss	
		Proposed Development	Associated Development	Proposed Development	Associated Development
Scrub - dense/continuous	There are areas of dense / continues Rhododendron scrub located to the north of the existing substation. These areas have low botanical value.				0.1 ha
Coniferous woodland - recently felled	These areas have been felled recently as are part of commercial rotational forestry. These areas have low botanical value. Such areas are common in this rotational commercial habitat as evidenced by the review of historical aerial imagery.	0.18 ha	3.39 ha		1.33 ha
Acid grassland - semi-improved	These are areas of over grazed upland grassland. Due to the quality of the habitat the area has a low botanical value.	0.20 ha			
Improved grassland	These areas are sheep grazed grassland fields. These areas have low botanical value.	0.02 ha			
Marshy grassland	A small area of marshy grassland present within the footprint of the Project will be permanently lost due to the construction of a new access road. Small areas of marshy grassland will be temporarily lost due to the temporary works area. The marshy grassland corresponds to both unmanaged areas within forestry, such as rides and wayleaves and rush pasture. Most of this habitat is rush-pasture. Marshy grassland is a common and widespread habitat type and of low value	0.42 ha	0.01 ha	01.27 ha	2.95 ha
Wet dwarf shrub heath	Small area of wet heath located adjacent to the existing access track				0.02 ha
Bare ground	These areas consist of hardcore for existing substation, gravel access track and/ or layby areas.	0.45 ha	0.06 ha	0.04 ha	0.61 ha

Embedded mitigation measures, including the timing of installation and careful siting of permanent and temporary structures to avoid or minimise interaction with sensitive receptors, SSEN's Transmission General Environmental Management Plans (GEMPs) and a post-submission CEMP and Construction Traffic Management Plan (CTMP) will be in place to avoid / manage effects on habitats in the surrounds of the areas to be directly affected, for example to prevent spillages, discharges, incursion into habitats not required for the footprint and to allow construction, control dust etc. (see **Section 4.6** on for further details on mitigation).

Given the generally low botanical value of the habitats affected by both the Proposed Development and the Associated Development, and the relatively small area of their respective footprints, significant effects on habitats or flora from the Proposed Development and the Associated Development are predicted to be **negligible**; following the implementation of the proposed embedded mitigation, and **no significant effects** are predicted.

4.4.3 GWDTE

The Proposed Development

Within the footprint of the Proposed Development a small area of habitat classed as having high GWDTE will be permanently lost (0.02 ha) due to the construction of a new access road. A small temporary loss of habitat (0.11 ha) will also take place due to the construction of the temporary works area. Within this habitat, NVC surveys identified M25 *Molinia caerulea - Potentilla erecta* mire community present in a mosaic with *M6 Carex echinata - Sphagnum fallax/denticulatum Mire* where commercial plantation has been felled and replanted with broadleaved shelter belt. On the basis of the information collected during NVC surveys, the M25/M6 mosaic community has high potential to be groundwater dependent. A detailed assessment of the extent to which the communities are groundwater dependent is discussed in the Hydrology chapter (see **Chapter 6: Hydrology, Hydrogeology and Geology**).

Standard embedded mitigation measures will be implemented during the construction work, including the timing of installation to avoid construction during wetter periods and careful siting of permanent and temporary structures to avoid or minimise interaction with sensitive receptors.

Given the relatively small area to be permanently lost (0.02 ha) of locally frequent and frequent in southern Scotland NVC habitat[12] and the reinstatement of habitat that will be temporarily lost (0.11 ha), as well as the implementation of embedded mitigation, the magnitude of the effect is predicted to be negligible, as such, significant effects on GWDTE due to the Proposed Development are predicted to be **negligible** and **no significant effects** are predicted.

The Associated Development

There will be no permanent loss of GWDTE habitats within the footprint of the Associated Development, A small temporary loss of marshy grassland habitat (0.80 ha) will take place due to the construction of the temporary bypass within the established wayleave. Within this habitat, NVC surveys identified a mosaic of M25 *Molinia caerulea - Potentilla erecta* mire community present in a mosaic with *M6 Carex echinata - Sphagnum fallax/denticulatum Mire* and *M15 Trichophorum germanicum - Erica tetralix Wet Heath*. The M15 community tends towards the M15b typical sub-community within the established wayleave and is found in a mosaic with M6 and M25 in areas of marshy grassland where heath elements thicken up slightly.

On the basis of the information collected during NVC surveys, the M15b/M25/M6 mosaic community has moderate potential to be groundwater-dependent, A detailed assessment of the extent to which the communities are groundwater dependent is discussed in the Hydrology chapter (see **Chapter 6: Hydrology, Hydrogeology and Geology**).

Given the relatively small area of the habitat to be temporarily lost (0.80 ha) and that this habitat will be reinstated following the completion of construction, as well as the implementation of embedded mitigation, the magnitude of

[12] Joint Nature Conservation Committee. National Vegetation Classification: Field Guide to Mires and Heaths. Joint Nature Conservation Committee, Peterborough. 2001.

the effect is predicted to be negligible, as such, significant effects on GWDTE due to the Proposed Development are predicted to be **negligible** and **no significant effects** are predicted.

Summary of Impacts on GWDTE

Given the relatively small area of habitat that will be permanently lost due to the Project and the reinstatement of habitat that will be temporarily lost following completion of construction activities for the Project, as well as the implementation of embedded mitigation, the magnitude of the effect is predicted to be negligible, as such, significant effects on GWDTE due to the Project are predicted to be **negligible** and **no significant effects** are predicted.

4.4.4 Fauna

Protected Species Assessment

Pine marten scat and otter spraints were found on or adjacent to the existing access tracks. There will be an increase in vehicle activity along the existing access track though this is not thought to be significant due the existing use of the track by the construction from the Inveraray to Crossaig 275 kV OHL Reinforcement Project EIAR. Therefore, no effects on protected species along the existing access track are predicted due to the Project.

No signs of protected species were recorded within the project footprint and immediate surrounds of the Project during the EP1HS. These findings mirror those reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIAR for the section of the OHL alignment that crosses the area of the Project.

The sections of dense, mature Sitka spruce dominated coniferous plantation found within the footprint of the Project can provide suitable habitat for several protected species, however, as stated in the EP1HS report (see **Annex G**), there are reasons why the trees to be lost due to the Project are unlikely to support protected species, including:

- the boggy ground conditions mean it is unlikely that they will be used by badgers or otters to build setts/ holts; and
- Sitka spruce plantations are not favoured by red squirrels for foraging and they are less likely to create dreys in them than other conifer species known to be present in the surrounding area and due to the extreme density of the plantation it unlikely they are present.

Despite the above, it is still possible that the areas of conifer plantation to be lost due to the Project could be used by red squirrel, pine marten, reptile, and wildcat. Equally, suitable ground flora habitat to support reptiles is present within the woodland edge of the small area of mixed woodland that will be permanently lost due to the construction of the temporary works area. Therefore, it is recommended that repeated pre-construction surveys are undertaken to determine if signs of badger, red squirrel, pine marten and wildcat are present in the conifer plantations to be lost and reptiles present in the edges of the mixed woodland to be lost and their immediate surrounds.

The EP1HS identified that the semi-natural broadleaved woodland along the existing access track at the western end of the Project red line boundary near the A83 has several trees that have potential bat roosting features (which may or may not be subject to limbing, trimming or felling). There will likely be no changes to the existing access track and no significant increase in vehicle activity along it and if this is the case, the risk of any additional effects on bats using the trees is predicted to be **negligible** and **no significant** effects are predicted. However, exact locations for potential tree trimming along the access tracks to enable delivery of the transformer will not be confirmed until the construction phase. As such, these trees with bat roost potential do pose a **risk** and should be treated with the following mitigation;

- A bat tree roost assessment is undertaken on all trees to be impacted (through limbing/trimming/felling) along the route. Depending on the results of these surveys, appropriate follow up bat surveys will be undertaken, such as a bat activity survey.

- Attendance of ECoW on site for any tree felling or delimbing and will supervise soft-felling as required and the ECoW will ensure the implementation of SSEN's Bat Species Protection Plan.
- Further survey is not proposed pre submission of the planning application.

Given that the areas that will be directly affected by the project are dominated by mature Sitka coniferous plantation, although initial walkover surveys of the areas of plantation to be lost due to the project did not identify any coniferous trees with bat roost potential, if bat roost potential is discovered during the construction phase, trees identified will be mitigated with the same measures.

Additional mitigation measures may be required if signs are found (see **Section 4.6** below).

Embedded mitigation measures will be implemented during the construction work, including the timing of installation and careful siting of permanent and temporary structures to avoid or minimise interaction with sensitive receptors. Compliance with project wide and site-specific environmental management procedures, with reference to SSEN Transmission GEMPs will also be implemented. This will outline the proposed approach to construction methods and environmental protection during construction of the Project, including details of ecological constraints and measures (e.g., no night-time working, control of light spill, noise emissions, pollution, avoiding incursion into habitats to be retained), procedures for surface water management and, pollution prevention guidelines.

Embedded measures to protect biodiversity will include a pre-construction site walkover survey of the Project by a suitably qualified ECoW, focussing on habitats to be directly and indirectly impacted by the Project such as ancient woodland or bat roost potential trees along the access tracks. The purpose of the survey would be to confirm any changes in use of the site by protected species, as many of the species are highly mobile. Should a species be identified, the appropriate Species Protection Plans (SPPs) (included within the GEMP) would be followed during construction of the Project, including details of ecological constraints and measures (e.g., no night-time working, control of light spill, noise emissions, pollution, avoiding incursion into habitats to be retained), procedures for surface water management and, pollution prevention guidelines.

SSEN Transmission have well-established SPPs for a number of protected species, which have been developed in consultation with NatureScot and are currently being used on other SSEN Transmission projects. Each SPP provides details on what actions are required should species be encountered during construction of the Project (see **Annex H**) further surveys should be undertaken.

Given the generally low ecological value of the habitats affected by the Project, as well as their relatively small footprints and the embedded mitigation, significant effects on protected species from the Project are predicted to be **negligible** and therefore **no significant effects** are predicted.

Birds

Information gathered from the desk study from surveys undertaken for the High Constellation Wind Farm EIAR identified up to 12 leks in their survey area, with the closest lek to the Project located approximately 2.4 km south west of the Project footprint and approximately 230 m east of the existing access track. Surveys undertaken for the High Constellation Wind Farm EIAR suggested that lek locations across their survey area can be fluid, therefore, relocation of leks away from sources of disturbance is a possibility. Although the volume of traffic using the access track is not predicted to significantly increase, studies by Ruddock and Whitfield (2007)[13] found that leks may be actively disturbed at 300 m to 500 m from the disturbance source, therefore, black grouse may be displaced from lekking, breeding or foraging habitat due to construction traffic using the existing access track.

Based on the surveys done for the High Constellation Wind Farm EIAR, assuming a worst-case loss of Lek ID12 (or any other potential lek along the existing access track in suitable habitat) due to disturbance, the unmitigated effect would be predicted to be **moderate** and is therefore potentially **significant**. Specific mitigation measures to address these effects are outlined in **Section 4.6**.

[13] Ruddock, Marc & Whitfield, D.. (2007). A review of disturbance distances in selected bird species.

Survey findings reported in the Inveraray to Crossaig OHL Reinforcement Project EIAR found an alternative golden eagle eyrie to the one confirmed by the ARSG, located approximately 750 m from the footprint of the Project. Survey findings reported in the High Constellation Wind Farm EIAR found golden eagles on the alternative nest in 2017 but with no signs of breeding and in 2018 a pair of golden eagles with a single chick were confirmed to be present on the preferred nest, which is approximately 2 km from the Project Footprint. In addition, ARSG recorded an occupied hen harrier nest with successfully fledged young in 2020 approximately 200 m from their registered golden eagle nest and therefore approximately 950 m from the Project Footprint.

These nest sites are therefore likely to be beyond any direct construction disturbance (based on the Protection Zone for golden eagles and hen harriers of between 750 m to 1000 m and 500 m to 750 m respectively, as stipulated in the SSEN Bird Species Protection Plan). Equally, much of the habitat within the footprint of the Project consists of mature conifer plantation, which is generally unsuitable for golden eagles and the edge habitat close to existing conifer plantation is unlikely to be used by golden eagles and their prey. Therefore, it is predicted that there will not be any significant disturbance to the golden eagles in the area due to construction (or operational) activities. Although a Habitat Management Plan (HMP) is proposed as part of the mitigation for High Constellation Wind Farm, this is approximately 250 m west of the Proposed Project, with existing conifer woodland separating the HMP from the Project.

Given the area of habitat to be directly impacted (both permanently and temporarily) will occur in unsuitable conifer plantation, which represents a very small area of the total habitat available to the golden eagles and hen harriers, the unmitigated effect would be predicted to be **negligible,** and **no significant effects** are predicted.

Survey findings reported in the Inveraray to Crossaig OHL Reinforcement Project EIAR identified a barn owl nest locate approximately 500 m north east of the footprint of the Project, within woodland that is intersected by the B842. This nest site is therefore likely to be beyond any direct construction disturbance (based on the Protection Zone for barn owls of between 50 m to 100 m, as stipulated in the SSEN Bird Species Protection Plan). Given this, **no effects** on this known barn owl nest are predicted and **no significant effects** are predicted.

It was determined that a Stage 2 Appropriate Assessment of the Kintyre Goose Roosts SPA site was required due to the close proximity of the existing access track to Loch na-Naich (approximately 80 m), which, although not part of the SPA site, has historically been used as a roost by part of the SPA population of Greenland white-fronted geese. Although there will likely be no changes to the existing access track and no significant increase in vehicle activity along it, assuming a worst-case scenario whereby disturbance occurs to Greenland white-fronted geese using the loch due to construction traffic along the existing access track, the unmitigated effect would be predicted to be **minor** and is therefore potentially **significant**. Specific mitigation measures to address these effects are outlined in **Section 4.6**.

There are records of red throated diver breeding at Loch na-Naich and use of the haulage road during the breeding season may result in the disturbance of nesting pairs in this location. If use of the haulage road is required during the red throated diver breeding season (April to October[14]), a suitably experienced ECoW will carry out surveys to determine the presence of breeding pairs and SSEN Transmission's Bird SPP will be implemented.

As with other protected species, it is still possible that the areas of conifer plantation to be lost due to the Project could also be used by other bird species. Therefore, removal of the coniferous woodland will be programmed out with the breeding season if practicable and an ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to breeding birds is delivered. If it is not possible to remove the woodland outside the breeding season, then pre-construction site walkover survey focussing on the habitat to be lost within the Project will be undertaken to determine if any nesting birds are present and SSEN's Bird SPP will be implemented by a suitably experienced ECoW. As part of this, if key specially protected or sensitive species are recorded during the construction phase appropriate protection zones will be established by the ECoW upon confirmation of nest building / breeding taking place. No works will be

[14] https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/red-throated-diver.

carried out if the species are building or using their nest, still dependent on their nest site, or present at roost site. The ECoW will advise when it is safe for works to be carried out.

Other Fauna

The habitat surrounding the Project offers good habitat to support Heptofauna. However, given the generally low ecological value of the habitats affected by the Project itself, as well as their relatively small footprints and the embedded mitigation, significant effects on other fauna from the Project are predicted to be **negligible** and therefore **no significant effects** are predicted.

4.5 Cumulative Assessment

4.5.1 The Proposed Development and the Associated Development

An appraisal of the cumulative impacts from both the Proposed Development and the Associated Development are presented in **Table 4-3.**

Table 4-3 Combined Assessment of the Proposed Development and the Associated Development

Receptor	Impact from the Proposed Development	Impact from the Associated Development	The Project
Designated Sites and Ancient Woodland	No significant impacts	No impacts	No significant impacts
Habitats and Flora	No significant impacts	No significant impacts	No significant impacts
GWDTE	No significant impacts	No significant impacts	No significant impacts
Protected Species	No significant impacts	No significant impacts	No significant impacts
Birds	Moderate – Minor	Moderate-Minor	Moderate-Minor

Moderate cumulative impacts are predicted on black-grouse and Minor cumulative impacts are predicted on Greenland white-fronted goose as a results of potential disturbance from construction traffic for the Proposed and Associated Developments along the access track. Specific mitigation measures to address these effects are outlined in **Section 4.6**.

4.5.2 Cumulative Impacts with other Developments

Cumulative effects include both the total effects resulting from the Project in combination with other similar proposed developments within an area of influence (AoI). As the Project will result in the permanent loss of relatively small area of habitat that is of low ecological value, an AoI for the Project of 5 km was determined to be appropriate. All relevant current and planned developments within this 5 km AoI are shown in **Table 4-4.**

Table 4-4: Current and Planned Developments

Development / Project	Description	Approximate distance to the Project	Consenting Status	Cumulative Effects
LT000228 - Inveraray - Crossaig 275kV OHL	Second phase of the new 275kV overhead line, initially operated at 132kV between Inveraray and Crossaig. Due to be fully operational in 2030.	0 km	In Construction	A cumulative effect would likely occur during the dismantling of the existing 132 kV OHL and installation of the new 275 kV section of OHL within the AoI. Two new permanent access tracks are to be constructed within the Crossaig North substation red line boundary. Low ground pressure tracked machines would be used to access tower locations. Bog mats or temporary floating stone on geotextile are also to be used to protect bog and wetlands where they cannot be avoided. Given the relatively small scale, temporary combined effects on habitats, which are predicted to recover following dismantling / construction works, and the availability of similar habitats in the surrounding area, the development will likely not result in a significant effect. As a result, **no cumulative effects** are predicted.
LT265/266 Sheirdrim Wind Farm Connection	Connection of the consented Sheirdrim Wind Farm to the existing Crossaig substation through the development of an OHL and associated infrastructure.	2 km	Planning	SSEN Transmission are developing plans to connect the consented Sheirdrim Wind Farm to the existing Crossaig substation. Bird surveys are ongoing to help inform the selection of the preferred route for the connection. The proposed wind farm would likely lead to loss of woodland and peatland habitat. However, given the relatively small habitat loss likely to occur, the availability of similar habitats in the surrounding area and the lack of impact pathways, the development will likely not result in a significant

Development / Project	Description	Approximate distance to the Project	Consenting Status	Cumulative Effects
				effect. As a result, **no cumulative effects** are predicted.
Cnoc Breacam Wind Farm	Proposed 18 turbine wind farm.	5 km	Planning	Cnoc Breacam Wind Farm is a proposed 18 turbine wind farm which will be located approximately 5 km north west of the Project. Scoping for the project was submitted in January 2021, and studies and assessment are ongoing[15]. The proposed wind farm would likely lead to loss of woodland and peatland habitat. However, given the relatively small habitat loss likely to occur, the availability of similar habitats in the surrounding area and the lack of impact pathways, the development will likely not result in a significant effect. As a result, **no cumulative effects** are predicted. Given the lack of potential impacts, and the lack of impact pathway, for impacts from the Project on ecological features, **no cumulative impacts** with the proposed wind farm are predicted.
Escairt Wind Farm	Proposed 13 turbine wind farm.	5 km	Planning	Cnoc Breacam Wind Farm is a proposed 13 turbine wind farm which will be located approximately 5 km north west of the Project. EIA for the project was submitted in 2014, and consent has been granted[16].

(15) *Cnoc Breacam Renewables LLP (2021) Cnoc Breacam EIA Scoping Report*

16 Eascairt Wind Farm – PI Renewables (2014) Eascairt Windfarm. EIA Report

Development / Project	Description	Approximate distance to the Project	Consenting Status	Cumulative Effects
				The proposed wind farm would likely lead to loss of peatland habitat. However, given the relatively small habitat loss likely to occur, the availability of similar habitats in the surrounding area and the lack of impact pathways, the development will likely not result in a significant effect. As a result, **no cumulative effects** are predicted. Given the lack of potential impacts, and the lack of impact pathway, for impacts from the Project on ecological features, **no cumulative impacts** with the proposed wind farm are predicted.

Given that once built, the Project will have no operational impacts, only construction activities are considered for cumulative effects.

Sheirdrim OHL and associated infrastructure and the Cnoc Breacam Wind Farm (see **Table 4-4**) are due to be constructed at the same time as the Project. These projects will result in a small loss and degradation of habitat, and disturbance and displacement of species in the area of the Project. However, as discussed in **Section 4.3.3**, the habitats and flora within the footprint of the Project and in the immediate surrounds are of low botanical and ecological value and are unlikely to support protected species, as such the level of effect is the same as that presented in **Section 4.4.2**.

SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project listed in **Table 4-4** will result in a small loss and degradation of habitat, and disturbance and displacement of species in the area of the Project. However, as discussed in **Section 4.3.3**, the habitats and flora within the footprint of the Project and in the immediate surrounds are of low botanical and ecological value and are unlikely to support protected species, as such the level of effect is the same as that presented in **Section 4.4.2**.

Summary of Cumulative Assessment

No cumulative effects are predicted as a result of the Project in combination with other developments. Any additional effects associated with the Project are considered to be **negligible** and **no significant cumulative effects** are predicted.

4.6 Mitigation

The Project design has sought to locate the majority of the development in habitat of less value to biodiversity (*e.g.,* existing and recently felled Sitka spruce plantation). Mitigation measures which are additional to the embedded mitigation discussed in **4.2.3** are detailed below:

4.6.1 Additional Mitigation

- As detailed in **Section 4.4.6**, to avoid effects on nesting birds, habitat removal will be undertaken outside the breeding season (March to August inclusive)[17]. If this is not possible, a pre-construction site walkover survey focussing on the habitat to be lost within the Project will be undertaken to determine if any nesting birds are present. If nesting birds are identified, the SSEN Transmission's Bird SPP will be implemented by a suitably experienced Ecological Clerk of Works (ECoW). If there is a delay to commencing construction following habitat removal, further mitigation may be necessary to deter birds using the site (e.g., regular human presence, tapes across the site, other scaring devices).
- Habitat in the smaller more open areas will be removed in a manner that allows any reptiles using it to move to other suitable habitat the remains nearby.
- Night-time working will be avoided where possible, and the site will not be permanently lit overnight, to avoid any effects on nocturnal species (e.g., otters, bats, badger) should they pass through / forage in the affected area. Hours of work is detailed within **Chapter 2: Project Description**, **Section 2.5.6**.

To avoid effects on black grouse:

- ECoW should undertake a preconstruction walkover survey in the area of Lek ID12 and its surrounds and up to 2 km[18] from the Project to identify if any leks are present.
- Should any leks be identified within the footprint of the Project or with the black grouse Protection Zone as stipulated in the SSEN Transmission SPP, a 300 m to 500 m disturbance buffer will be established (as stipulated in the bird SPP). No activity will occur within these buffer areas two hours after sunrise and two hours before sunset within the main black grouse lekking season (April to May).

[17] UK Government Wild birds: surveys and mitigation for development projects. Available at https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects

[18] Scottish Natural Heritage. Assessing Connectivity with Special Protection Areas (SPAs) Guidance. Nature Scot, Version 1. 2016.

- Any maintenance activity along the existing access track, such as tree limbing, should take place outside of the black grouse breeding season (April to July) where possible, or if not, at least 300 m from lek sites and/or outside of the daily lekking period as stipulated in the SSEN Transmission SPP.
- Where possible, gates within 300 m of lek sites will remain open after first arrival, avoiding the need for every subsequent entry to open and close the gate and the associated potential disturbance to the lek due to pedestrian activity.

To avoid effects on Greenland white-fronted geese:

- In order to avoid disturbance to SPA qualifying interest features (Greenland white-fronted geese), at Loch na Naich within the wintering period (October – March), no vehicle movements will take place past Loch na Naich or within 600 m[19] either side of the Loch during the one hour period either side of sunrise or the one hour period either side of sunset.

To avoid effects on irreplaceable ancient woodlands:

- Signs should be installed along the existing access track to highlight the start / end of areas of ancient woodland and a maximum speed limit of 20 mph should be enforced.
- Heras fencing should be installed along the length of each section of ancient woodland located adjacent to the existing access track.

4.7 Residual Impacts and Compensatory Habitat

Habitats and Flora

The Project will result in the permanent loss of:

- 3.16 ha of conifer woodland plantation;
- 0.15 ha of mixed woodland plantation;
- 3.57 ha of recently felled coniferous woodland;
- 0.20 ha of semi-improved acidic grassland;
- 0.02 ha of improved grassland;
- 0.43 ha of marshy grassland; and,
- 0.51 ha of bare ground.

The above losses of habitats that are common and widespread are **not significant**.

The loss of the Sitka spruce plantation could affect red squirrel, pine marten and wildcat if present and further preconstruction surveys will be undertaken to seek to determine if there are any signs of use of the plantations by these species. However, due to the small amount of this habitat type (and other habitats) to be lost, the likely low numbers of species that would be found in this small area of habitat (if present at all), the mitigation to be implemented, and the abundance of similar habitat in the surrounding area, the effects of such losses are predicted to be **not significant**.

SSEN Transmission published a sustainability strategy in 2018[20]. Following this, in 2019 SSEN Transmission published an 'Approach to implementing a Biodiversity Net Gain'[21] (BNG) strategy approach. This document sets the target to achieve No Net Loss (NNL) on all projects gaining consent from April 2020 and Net Gain (NG) on projects gaining consent from April 2025. This will embed biodiversity considerations into all stages of project development and project lifecycle,

[19] https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance

[20] Delivering a smart, sustainable energy future: The Scottish Hydro Electric Transmission Sustainability Strategy", May 2018 https://www.ssen-transmission.co.uk/media/2701/sustainability-strategy.pdf

[21] SSEN (2019) A Network to Net Zero: Approach to Implementing Biodiversity Net Gain. https://www.ssen-transmission.co.uk/media/3459/ssen-riio-t2-bio-diversity-net-gain-paper-16pp-22789-web.pdf

The planting scheme surrounding the Project Site will consist of peatland edge woodland and bog/mire habitats. The peatland edge woodland planting will consist of:

- 20% Downy Birch (*Betula pubescens*);
- 20% Silver Birch *(Betula pendula);*
- 10% Wild Cherry *(Prunus avium);*
- 15% Alder *(Alnus glutinosa).;*
- 15% Hawthorn *(Crataegus monogyna);*
- 10% Blackthorn *(Prunus spinosa);* and,
- 10% Rowan *(Sorbus aucuparia).*

Fauna

Species-specific spatial and temporal restrictions on construction activities as outlined in **Section 4.6** are considered sufficient to reduce the likelihood of disturbance on lekking black grouse and roosting Greenland white fronted geese from Moderate adverse to **Minor adverse**, and therefore **Not Significant**.

4.8 Summary of Effects

The appraisal of ecology is summarised in **Table 4-5**.

Table 4-5 Appraisal of Ecology

Environmental Feature	Project Interaction	Embedded Mitigation	Additional Mitigation Measures	Receptor sensitivity	Magnitude of effect	Significance of effect
Designated Sites and Ancient Woodlands	Direct loss of habitat and indirect loss of connectivity.	▪ Site selection to avoid sensitive areas for biodiversity. ▪ SSEN Transmission Construction Environmental Management Plan (CEMP). ▪ General Environmental Management Plan (GEMPs) ▪ Species Protection Plans (SPPs). ▪ Construction Traffic Management Plan (CTMP).	Installation of signage and heras fencing.	N/A	N/A	N/A
GWDTE	Disruption to water flow to habitat	▪ Site selection to avoid sensitive areas for biodiversity. ▪ SSEN Transmission Construction Environmental	None required.	Low	Negligible	Negligible/Not Significant

		Management Plans (CEMP). ▪ General Environmental Management Plans (GEMPs) ▪ Species Protection Plans (SPPs). ▪ Construction Traffic Management Plan (CTMP).				
Habitats	Loss of habitat.	▪ Site selection to avoid sensitive areas for biodiversity. ▪ SSEN Transmission Construction Environmental Management Plans (CEMP). ▪ General Environmental Management Plans (GEMPs) ▪ Species Protection Plans (SPPs). ▪ Construction Traffic Management Plan (CTMP).	No additional measures required.	Low	Negligible	Negligible/Not Significant
Protected Species	Loss of habitat	▪ Site selection to avoid sensitive areas for biodiversity.	Avoidance of night-time working and lighting the site overnight.	N/A (water vole) Medium (badger, pine marten, red squirrel) High (bat, otter, wildcat)	Negligible	Negligible/Not Significant

	Effects on foraging / commuting habitat and disturbance	▪ SSEN Transmission Construction Environmental Management Plans (CEMP). ▪ General Environmental Management Plans(GEMPs) ▪ Species Protection Plans (SPPs). ▪ Construction Traffic Management Plan (CTMP).	Suitable reptile habitat removal to be done sensitively to encourage any reptiles present towards adjacent habitat that will remain unaffected.			
Birds	Habitat loss and disturbance.	▪ Site selection to avoid sensitive areas for biodiversity. ▪ SSEN Transmission Construction Environmental Management Plans (CEMP). ▪ General Environmental Management Plans (GEMPs) ▪ Species Protection Plans (SPPs); Bird Species Protection Plan. ▪ Construction Traffic Management Plan (CTMP).	Avoid habitat removal in breeding bird season. No night-time working, noise, light spill controls, pollution.	Low	Negligible	Negligible/Not Significant

Birds	Loss of nesting / foraging habitat Disturbance during construction.	▪ Site selection to avoid sensitive areas for biodiversity. ▪ SSEN Transmission Construction Environmental Management Plans (CEMP). ▪ General Environmental Management Plans (GEMPs) ▪ Species Protection Plans (SPPs). ▪ Construction Traffic Management Plan (CTMP).	Avoid habitat removal in breeding bird season. No night-time working, noise, light spill controls, pollution. Spatial and temporal restrictions around roosting lochs used by Greenland white fronted geese and leks identified for black grouse.	Low	Negligible	Negligible/Not Significant

This Chapter has considered the potential effects of the Project on the ecological and ornithological receptors. The habitats and flora identified within the footprint of the Project were found to be of low botanical value and are common in the wider area. No signs of protected species were found within the footprint of the Project and habitat present within the footprint of the Project are unlikely to support protected species. However, pre-construction checks to confirm that no protected species are present prior to construction commencing are recommended.

The Project has followed the mitigation hierarchy to avoid harm to ecological features through careful site selection and mitigating effects through embedded and additional mitigation to ensure there are no residual significant effects.

Compensation for the permanent loss of habitat due to the Project has been implemented through the use of SSEN Transmission's Biodiversity Net Gain metric, which will lead to the reinstatement of peatland edge woodland, and bog/mire habitats.

Following the implementation of the proposed embedded and additional mitigation measures outlined throughout this Chapter, there are **no significant residual impacts** on sensitive receptors predicted as a result of the Project.