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.

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 ancient woodland, 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 An Suidhe (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 (EIA) would be sufficient to inform the Environmental Appraisal (EA) being submitted for the Project and no further ornithology surveys were required[1].

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 EIA Report (EIAR) was undertaken as the Associated Development element of the Project will tie-into the larger reinforcement project.

Consultations with the Argyll Raptor Species Group (ARSG), Scotland's Raptor Study Group (SRSG) and The Royal Society for the Protection of Birds (RSPB) have been undertaken. Data was requested for Schedule 1 and Birds of Conservation Concern (BoCC) raptor species within 2 km of the proposed An Suidhe 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. As of January 2022, the ARSG recorded one known Peregrine falcon (*Falco peregrinus*) site as present within 2 km of the Project area at Beinn Dhearg. The RSPB registered two separate recordings of two Black grouse (*Lyrurus tetrix*) singing/displaying males, once in 2017 and once in 2018.

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)

[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.

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 An Suidhe 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.

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 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 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.

Mitigation for the Project is split into two categories, embedded mitigation and additional mitigation. Additional mitigation is detailed within **Section 1.5** and sets out any further mitigation required to reduce the residual impact to not significant.

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

4.3 Baseline

4.3.1 General Ecological Context

The Project Site 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. There are a number of watercourses and some large areas of broadleaved woodland in the surrounding area. The Douglas Water is located approximately 200 m east of the Proposed Development as shown on **Figure 4.3** of this EA. Some of the conifer plantations within the red line boundary have been felled recently[4] to allow for the construction of SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project, as shown in **Figure 4.3**[5]. Some nearby areas of plantation were felled a number of years ago and not replanted.

[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] East Loch Awe East Lochaweside Inveraray Argyll and Bute Land Management Plan (2017)
[5] Inveraray to Crossaig 275 kV Overhead Line EIAR. Available at https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00000456

4.3.2 Designated Sites and Ancient Woodland

No sites designated for their nature conservation importance lie within the site identified for the Project. Three sites lie within 10 km of the Project (see **Figure 4.1**). The nearest designated site to the Project and the only site designated for biological features is Ardchyline Wood Site of Special Scientific Interest (SSSI[1]), which at its nearest point is located 4.9 km east of the eastern end of the Project.

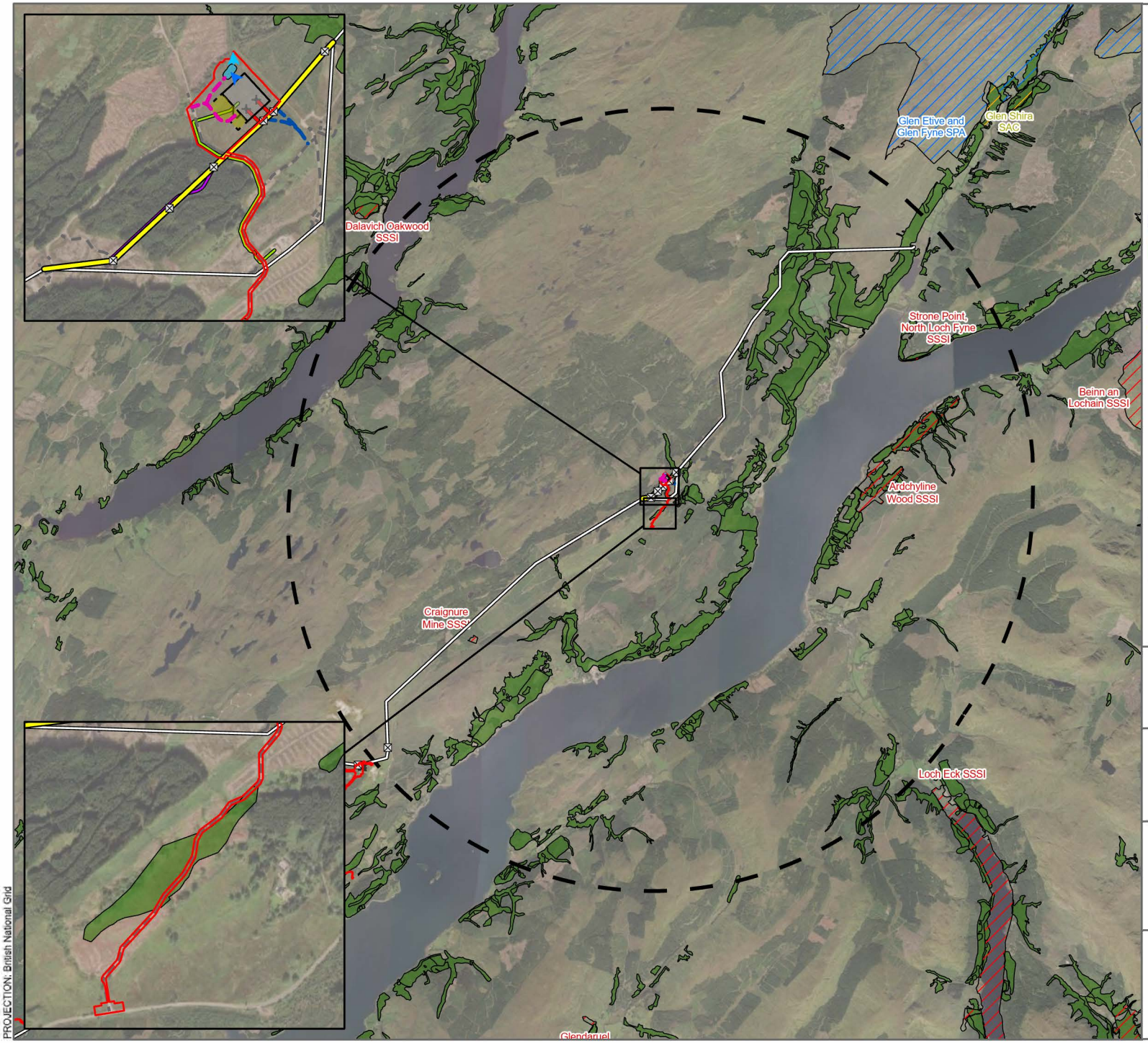
Ardchyline Wood SSSI covers approximately 176.07 hectares (ha)[2] and represents one of the best examples of upland oak woodland in Cowal, Argyll and Bute. The woodland is notable for its size and is one of the largest remaining oak woodlands in Argyll, with over one hundred species of woodland vascular plants recorded. The woodland canopy is dominated by sessile oak (*Quercus petraea*) and downy birch (*Betula pubescens*) with an understory comprised of eared willow (*Salix aurita*), grey willow (*Salix cinerea*), hazel (*Corylus avellana*) and rowan (*Sorbus aucuparia*). Within the woodland are open areas of grassland, flushes, streams and gorges which add to the diversity of the site. Purple moor-grass (*Molinia caerulea*) and sharp-flowered rush (*Juncus acutiflorus*) are abundant in these open areas and there are several orchid-rich glades. The oceanic influence on the woodland is evident in the presence of bryophytes, lichens and ferns at this site.

One Ancient Woodland[3] lies adjacent to the existing access track for approximately 50 m in length, located south of the Project. Since the ecological survey the Ancient Woodland adjacent to the track is no longer present and has been felled. Another Ancient Woodland is also located adjacent to the Project and is situated east of the Douglas water located 250 m away from the Project. A further 19 Ancient Woodlands lie within 2 km of the proposed Project.

[1] Nationally important site for nature conservation designated by NatureScot under the Nature Conservation (Scotland) Act 2004

[2] NatureScot SiteLink Moine Mhor SSSI. Available at: https://sitelink.nature.scot/site/1174

[3] Land that is currently wooded and has been continually wooded, at least since 1750



Existing Inveraray to Crossaig Overhead Line
Existing Access Track

Proposed Development:

Proposed Permanent Access Track
SUDs Inlet Pipeline
SUDs Outfall Pipeline
Proposed Substation Layout
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
SUDs Pond

Associated Development:

Proposed Tower Location
Proposed OHL Alignment
OHL Downleads
Proposed Permanent Access Track
Temporary Access Track

Permitted Development:

33kV Interconnector Cable Route

Environmental Constraints:

Special Protection Area (SPA)
Special Area of Conservation (SAC)
Sites Of Special Scientific Interest (SSSI)
Ancient Woodland
10 km Buffer of Substation and Access Track Red Line Boundary

0 5
Kilometres

N

SCALE: See Scale Bar	VERSION: A03
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.1:
Designated Sites and Ancient Woodland: An Suidhe

ERM

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECTION: British National Grid

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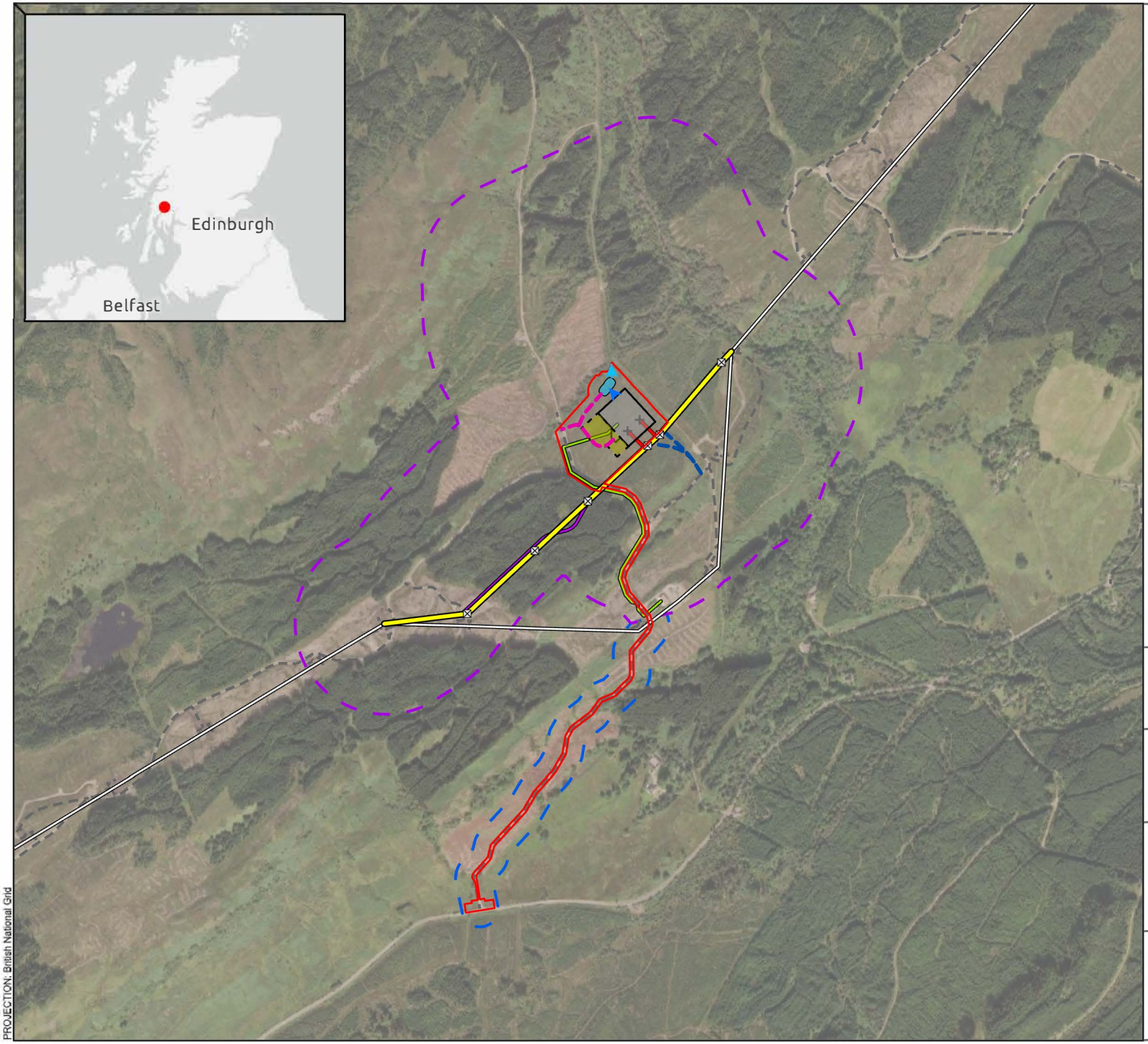

Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Proposed Permanent Access Track
SUDs Inlet Pipeline
SUDs Outfall Pipeline
Proposed Substation Temporary Works Area
Proposed Substation Layout
SUDs Pond
Town & Country Planning Boundary
Associated Development:
Proposed Tower Location
Proposed OHL Alignment
OHL Downleads
Proposed Permanent Access Track
Temporary Access Track
Permitted Development:
33kV Interconnector Cable Route
Survey Area Buffers:
50 m Buffer of Access Track
250 m Buffer of Substation Red Line Boundary

0 250 500
Metres

N

SCALE: See Scale Bar	VERSION: A01
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: AH
DATE: 16/11/2022	APPROVED: KG

Figure 4.2
An Suidhe Survey Area

ERM

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECTION: British National Grid

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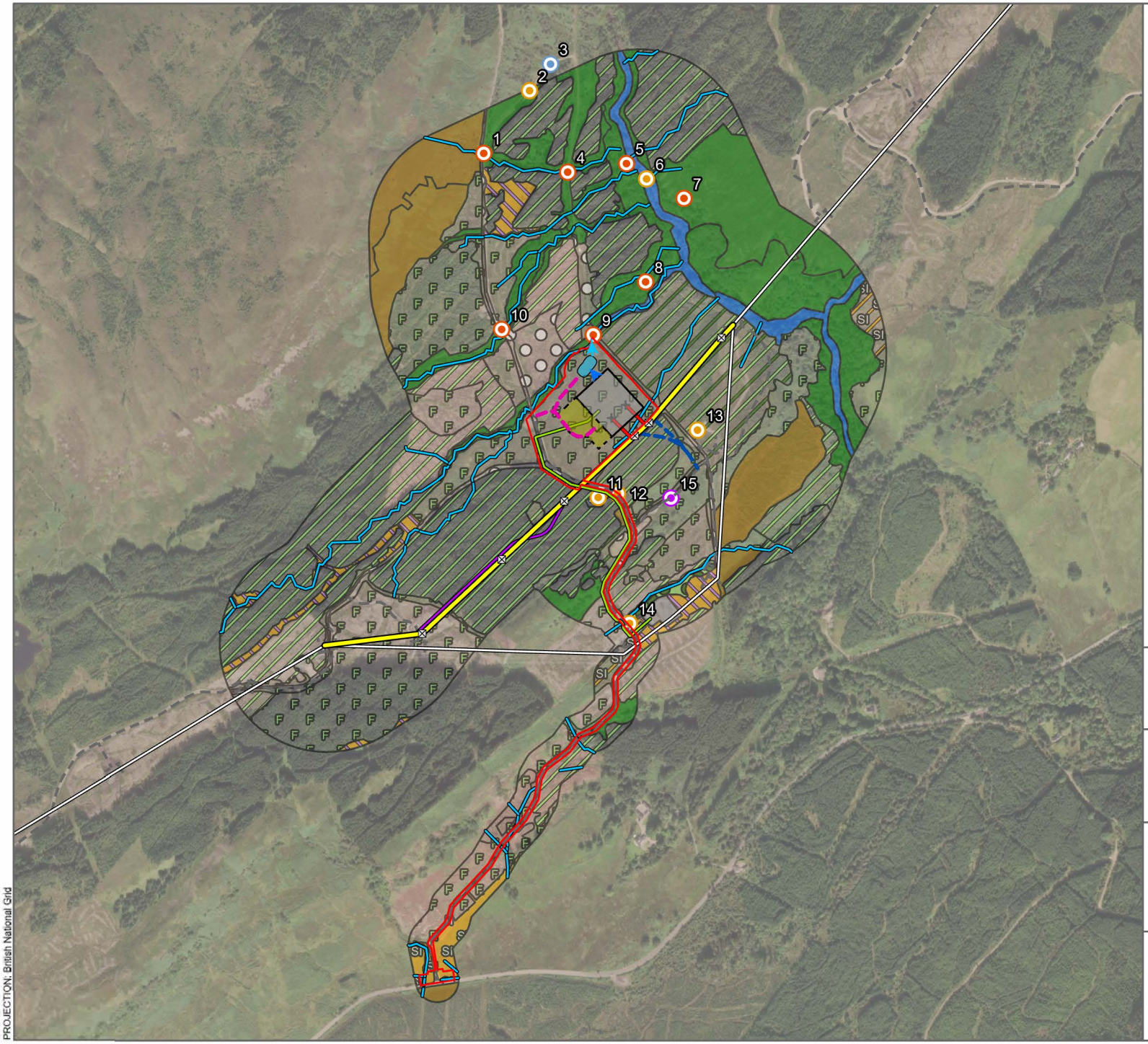

Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Proposed Permanent Access Track
SUDs Inlet Pipeline
SUDs Outfall Pipeline
SUDs Pond
Proposed Substation Temporary Works Area
Proposed Substation Layout
Town & Country Planning Boundary
Associated Development:
Proposed Tower Location
Proposed OHL Alignment
OHL Downleads
Proposed Permanent Access Track
Temporary Access Track
Permitted Development:
33kV Interconnector Cable Route
Bird Target Note
Habitat Target Note
Mammal Target Note
Safety Observation Note
Phase 1 Habitat Classification:
A1.1.1 - Broadleaved woodland - semi-natural
A1.1.2 - Broadleaved woodland - plantation
A1.2.2 - Coniferous woodland - plantation
A1.3.1 - Mixed woodland - semi-natural
A1.3.2 - Mixed woodland - plantation
A4.2 - Coniferous woodland - recently felled
B1.2 -Acid grassland - semi-improved
B2.2 - Neutral grassland - semi-improved
B5 - Marsh/marshy grassland
C1.1 - Bracken - continuous
G2 - Running water
J1.3 - Cultivated/disturbed land - ephemeral/short perennial
J3.6 - Buildings
J4 - Bare ground
G2 - Running water

0 500
Metres

N

SCALE: See Scale Bar	VERSION: A04
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.3
Extended Phase 1 Habitat Survey (Oct 2021)
An Suidhe Substation

ERM

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECTION: British National Grid

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4.3.3 Habitats and Flora Species

Habitats within the Project Site and much of the immediate surrounds are dominated by dense commercial conifer plantations of varying ages. An area of sapling mixed woodland plantation is located to the east of the Survey Area, surrounded by a deer fence (see **Figure 4.3**). There are a few large sections of which have recently been felled either as part of the typical commercial rotation, or for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIAR. Within the footprint of the Project further felling of conifers will be required, predominantly young Sitka spruce trees likely to be less than 15 years old.

There are several relatively large areas of broadleaved semi-natural woodland comprising of dominate downy birch (*Betula pubescens*) with the occasional hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*) and willow species (*Salix* species), located within the footprint of the Project, most of which lies outside the planning red line boundary and were recorded along the burns and Douglas Water across the Survey Area. Moreover, along the northern side of the existing substation building there is an area of land which comprises semi-natural mixed woodland.

There are several types of grassland within the Project and along access tracks. Acid grassland runs along the east of Douglas Water, semi-improved neutral grassland borders the access track from the main road and there are areas of marshy grassland recorded within the plantation rides, along the north west hill side and a separate area adjacent to the existing substation. In addition, areas of continuous bracken were recorded along the hillside to the north west of the Survey Area and within the broadleaved woodland areas as the understorey habitat.

There are five burns which flow across the Survey Area west to east, all flowing into the Douglas Water. The burns are steep sided approximately 30-degree angle with fast flow. Additionally, a small pond is located adjacent to the wind farm access track within the Survey Area.

Areas of bare ground are spread across the Survey Area, which consisted of the access tracks of gravel.

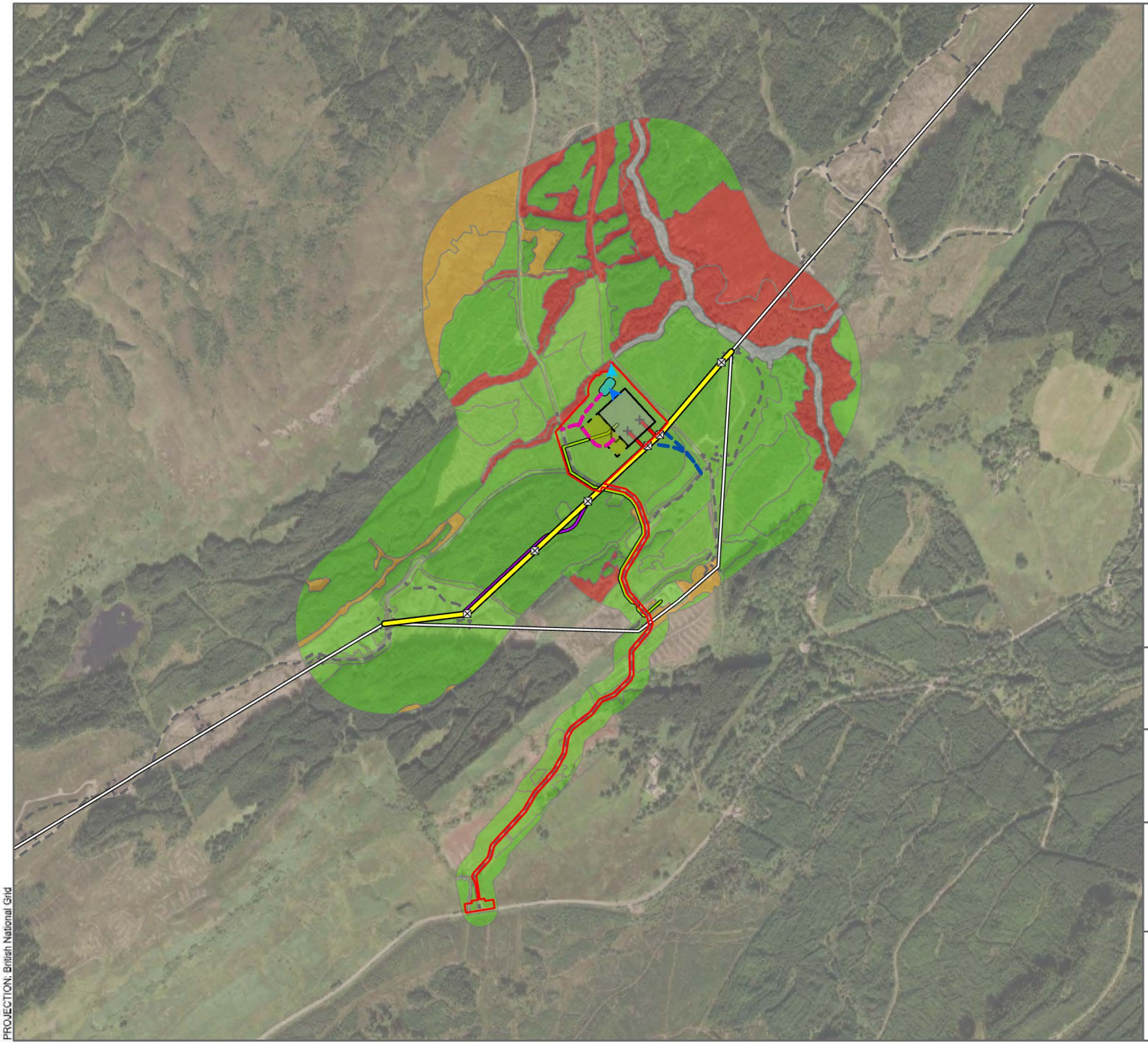
As part of the Phase 1 walkover survey, wetland habitats that could be dependent on groundwater (i.e., potential GWDTE (pGWDTE)) were identified. In these habitats, more detailed NVC surveys were undertaken to allow comparison of the habitats with those listed in SEPA guidance as likely to be highly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

NVC habitats identified consisted of W4 *Betula pubescens* - *Molinia caerulea* woodland, M25 *Molinia caerulea* - *Potentilla erecta* mire and MG10 - *Holcus lanatus* - *Juncus effusus* rush-pasture (see **Figure 4.5**). W4 is generally considered to be of high GWDTE though this habitat was recorded alongside small watercourses and the Douglas Water, indicating a surface water influence. M25 and MG10 are considered to be a moderate GWDTE habitat. No pGWDTE are within the Project SIte. The nearest GWDTE from the Proposed Development is approximately 50 m to the north (see **Figure 4.4**).

Habitats in the Survey Area surrounding the Project SIte were found to be similar to those within the Project Site (see **Figure 4.5**).

No invasive non-native flora species were recorded within the Survey Area during the EP1HS. There were two non-native species recorded within the Survey Area; Himalayan honeysuckle (*Leycesteria Formosa*) and butterfly bush (*Buddleja davidii*).

Further details of the habitats identified during the EP1HS are detailed in **Annex G**.



Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Proposed Permanent Access Track
SUDs Inlet Pipeline
SUDs Outfall Pipeline
SUDs Pond
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
Proposed Substation Layout
Associated Development:
Proposed Tower Location
Proposed OHL Alignment
OHL Downleads
Proposed Permanent Access Track
Temporary Access Track
Permitted Development:
33kV Interconnector Cable Route
GWDTE Classification:
High
Moderate
Low
GWDTE code not applicable

0 500
Metres

N

SCALE: See Scale Bar	VERSION: A04
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.4:
GWDTE Classification (Oct 2021)
An Suidhe Substation

ERM

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECTION: British National Grid

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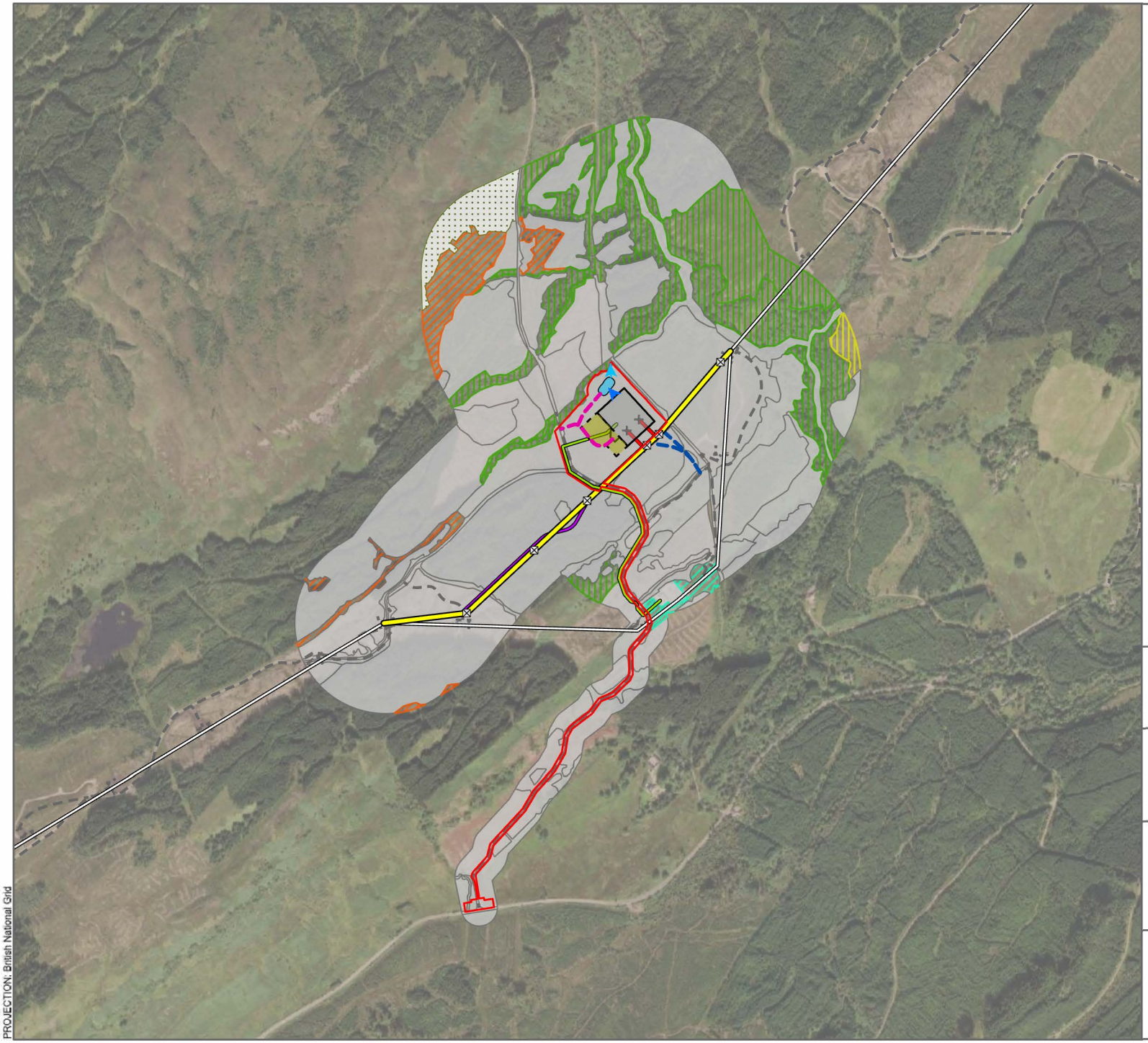

Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Proposed Permanent Access Track
SUDs Inlet Pipeline
SUDs Outfall Pipeline
SUDs Pond
Proposed Substation Layout
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
Associated Development:
Proposed Tower Location
Proposed OHL Alignment
OHL Downleads
Proposed Permanent Access Track
Temporary Access Track
Permitted Development:
33kV Interconnector Cable Route
National Vegetation Classification:
M25 - *Molinia caerulea - Potentilla erecta* mire
MG10 - *Holcus lanatus - Juncus effusus* rush-pasture
U20 - *Pteridium aquilinum - Galium saxatile* community
U4 - *Festuca ovina - Agrostris capillaris - Galium saxatile* grassland
W4 - *Betula pubescens - Molinia caerulea* woodland
No NVC survey - limited GWDTE potential

0 500
Metres

N

SCALE: See Scale Bar	VERSION: A04
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.5:
Targeted National Vegetation Classification (Oct 2021)
An Suidhe Substation

ERM

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECTION: British National Grid

4.3.4 Fauna including Protected Species

The only field signs of protected species recorded within the Project was a suspected pine marten scat identified approximately 200 m south of the Proposed Development on the track. The findings of the EP1HS mirror the findings from SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA which also found no evidence of protected species within the area of the Project that they surveyed[12].

The coniferous plantation which will be felled to accommodate the Project has the potential to support pine marten, red squirrel, badger and possibly wildcat, however no field signs at the time of the survey of protected species were identified within the habitat. Equally, due to the young age and uniformity of the coniferous plantation trees to be felled, the plantation block of trees is not considered suitable to support suitable roosting features for bats.

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 (see **Section 4.2.1**), no additional bird surveys were deemed to be required and the baseline from SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project was considered to be valid. It recorded a range of common bird species in and immediately around the Project, some of which may breed. Only a wren (*Troglodytes troglodytes*), wheatear (*Oenanthe oenanthe*) and stonechat (*Saxicola rubicola*), were recorded within 20 m of the footprint of the Project, with siskin (*Carduelis spinus*), willow warbler (*Phylloscopus trochilus*), tree pipit (*Anthus trivialis*), chaffinch (*Fringilla coelebs*), song thrush (*Turdus philomelos*), and great tit (*Parus major*) recorded in the wider area of the Project. In addition, during the EP1HS mistle thrush (*Turdus viscivorus*) and kestrel (*Falco tinnunculus*) were recorded in and/or over the footprint of the Project.

There was a small waterbody present within the Survey Area, 150 m from the Project across the access track to the west which could support breeding amphibian species. An adult female palmate newt (*Lissotriton helveticus*) was observed partially predated along the access track within the Survey Area within 50 m of the small pond. No reptile field signs were recorded but the purple moor grassland within the broadleaved woodland rides outside of the Project area offers good foraging habitat for amphibian and reptile species.

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

[12] Inveraray to Crossaig 275 kV Overhead Line Reinforcement EIA Report: Volume 2: Main Report

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.

4.4.1 Designated Sites and Ancient Woodland

The Proposed Development

No sites designated for their nature conservation importance, or woodlands listed on the Ancient Woodland inventory will be affected by the Proposed Development. The nearest designated site is Ardchyline Wood SSSI which at its nearest point is located 4.9 km east of the eastern end of the Project area and approximately 5.5 km east of the closest area of habitat to be lost for the Proposed Development, where there is no direct pathway for effect.

The Proposed Development will not result in any impact on designated sites. Construction best practice measures will be implemented (Included with the Construction Environment Management Plan (CEMP) and General Environmental Management Plan (GEMP)) to prevent indirect/accidental damage and this embedded mitigation will result in no significant effects.

One Ancient Woodland was previously located adjacent to the existing access track. However, this woodland has since been felled and there will be no additional felling required as part of the Proposed Development. Another Ancient Woodland adjacent to the Project and is situated east of the Douglas Water and will not be affected by the Proposed Development (located 250 m away).

The Proposed Development will not result in any impact on designated sites, therefore, **no effects** on designated sites are predicted

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 designated site is Ardchyline Wood Site of SSSI which at its nearest point is located 4.9 km east of the eastern end of the Project and approximately 5.5 km east of the closest area of habitat to be lost for the Associated Development.

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

4.4.2 Habitats and Flora

The permanent[13] and temporary[14] loss of the habitats due to the construction of the Project are shown in **Table 4.1** (also see **Figure 4.1 and Figure 4.2**).

Table 4.1: Permanent and Temporary Habitat Loss due to the Project

Habitat Type	Habitat Description and Assessment	Permanent Loss		Temporary loss	
		Proposed Development (ha)	Associated Development (ha)	Proposed Development (ha)	Associated Development (ha)
Coniferous woodland plantation	This is estimated to be around 40 years old based on a review of historical aerial imagery. Such habitat is common and widespread in this area of commercial forestry and is botanically of low value.	0.52	4.83	-	0.06
Coniferous woodland recently felled	These areas have been felled recently for the creation of the wayleave for the SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project and 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.	2.67	3.83	0.62	0.13
Mixed woodland plantation	These are area of plantation woodland that have been replanted within the last 10 years. These are located to the south and east of the Proposed Development.	-	2.31	-	-
Broadleaved woodland - semi-natural	This area is of high botanical value.	0.14	-	-	0.02
Broadleaved woodland - plantation	This area is of high botanical value.	0.03	-	-	0.03
Acid grassland - semi-improved	This area of acidic grassland is of moderate botanical value.	0.06	-	-	-

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

[14] 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 (ha)	Associated Development (ha)	Proposed Development (ha)	Associated Development (ha)
Neutral grassland - semi-improved	These areas have low botanical value.	0.21	-	-	-
Marsh/marshy grassland	These areas have a moderate botanical value.	0.05	-	-	0.01
Bracken - continuous	These areas have low botanical value.	0.04	-	-	0.02
Cultivated/disturbed land - ephemeral/short perennial	These areas have low botanical value.	0.02	0.04	-	0.01
Bare Ground	These areas consist of gravel access track and/ or layby areas.	1.24	0.14	-	0.06

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

There are no GWDTE habitats directly affected by the footprint of the Proposed Development. The nearest GWDTE is approximately 50 m to the north and the NVC survey for this habitat suggests that the community (W4 *Betula pubescens - Molinia caerulea* woodland) present has the potential to be highly ground water dependent. A detailed assessment of the potential of the GWDTE status of the surrounding habitat is provided in the **Chapter 6: Hydrology, Hydrogeology and Geology**.

Given the distance of the GWDTE habitats to the Proposed Development **no significant effects** are predicted.

The Associated Development

There are no GWDTE habitats to be directly affected by the footprint of the Associated Development. The nearest GWDTE is approximately 60 m to the east across the Douglas water. The NVC survey for this habitat suggests that the community present (W4 *Betula pubescens - Molinia caerulea* woodland) has the potential to be highly ground water dependent. A detailed assessment of the potential of the GWDTE status of the surrounding habitat are discussed in **Chapter 6: Hydrology, Hydrogeology and Geology.**

Given the distance of the GWDTE habitats to the Associated Development and no direct loss, **no significant effects** are predicted.

4.4.4 Fauna

4.4.5 Protected Species Assessment

It is predicted that there a small loss (1.48 ha) of low botanical value habitat along the existing access track. 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 traffic to the existing substation and windfarm. 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 footprint and immediate surrounds of the Project during the EP1HS. The only sign recorded during the EP1HS was a pine marten scat located approximately 100 m south of the Proposed Development on the track. 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 small sections of Sitka spruce (*Picea sitchensis*) conifer 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 trees to be lost are too young to support roost sites for bats and tree cavities for pine martens; 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.

Despite the above, it is still possible that the areas of conifer plantation to be felled to accommodate the Project could be used by badger, red squirrel, pine marten, birds, reptile, and wildcat. Therefore, it is recommended that 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 immediate surrounds. 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. 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.

4.4.6 Birds

There are no schedule 1 bird species recorded within the Project footprint or surrounding the Project within 500 m. Bird species recorded during the EP1HS include both Red and Amber listed BoCC species, however with the Project relativity small footprint and embedded mitigations measures of SSE SPPs significant effects on bird species from the Project are predicted to be **negligible** and therefore **no significant effects** are predicted.

4.4.7 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 4.2.**

Table 4.2 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

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

4.5.2 Other Cumulative 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 if of low ecological value, an area of influence (AoI) for the Project of 5 km was determined. Within this 5 km AoI, a search for all relevant current and planned developments was performed, the results are shown in **Table 4.4.**

Table 4.3: Current and Planned Developments

Development / Project	Description	Approximate distance to the Project	Consenting Status	Cumulative Effects
SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project	Construction of a new 275kV between Inveraray and Crossaig	0 km	Section constructed which crosses the Project.	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. However, the section of permanent access track is short (0.15 km) and is located in habitat of an area of low botanical and ecological value. Given the relatively small scale, permanent 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.
East Loch Awe East Lochaweside Inveraray Argyll and Bute Land Management Plan	The felled conifer plantation located where the Proposed Development was felled as part of Phase 1 in 2017-2021 as part of the plan. The remaining conifer plantation proposed to be lost due to the Associated Development is current set to be felled as part of Phase 3: 2027 - 2031	0 km	In Progress	The forestry operations are currently on going. The section of forestry which the Proposed development is located has been felled. The section of forestry for the Associated Development which will be felled will be felled earlier than proposed in the forestry management plan. This section is planned to be felled in the next 5 years and given the short timescale as a result, no cumulative effects are predicted.

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

SSEN Transmission are proposing similar substation and OHL developments across Argyll at Craig Murrail, situated to the north of Lochgilphead Crarae, situated to the north west of Minard and Crossaig North, situated to the north of Carradale, on the Kintyre peninsula. They are due to be constructed at the same time as the Project. All of these other substation projects are located beyond 5 km from the Project AoI. As such, these projects have been scoped out of this assessment.

SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project listed in **Table 4.3** 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). Further additional mitigation measures that go further than the embedded mitigation discussed in **4.2.3** are detailed below:

4.6.1 Additional Mitigation

- To avoid effects on nesting birds, habitat removal will be undertaken outside the breeding season (March to August inclusive)[15]. 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 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**.

4.7 Residual Impacts and Compensatory Habitat

The Project will result in the permanent loss of:

- 5.35 ha of conifer plantation;
- 6.5 ha of mixed woodland planation;
- 2.31 ha of recently felled conifer plantation;
- 0.14 ha semi-natural broadleaved woodland;
- 0.03 ha plantation broadleaved woodland;
- 0.03 ha semi-improved acid grassland;

[15] 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

- 0.06 ha semi-improved neutral grassland;
- 0.05 ha marsh/marshy grassland;
- 0.04 ha continuous bracken;
- 0.06 ha cultivated/disturbed land - ephemeral/short perennial; and,
- 1.38 ha of bare ground.

The above losses of habitats are of low botanical value with the exception of the broadleaved woodlands and marshy grassland. The habitat that are due to be lost are also common and widespread within the area and are therefore predicted to not be a significant loss.

The loss of the conifer plantation could affect red squirrel, pine marten, badger 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[16]. Following this, in 2019 SSEN Transmission published an 'Approach to implementing a Biodiversity Net Gain'17 (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,

Habitats which are subject to temporary loss will be restored to wet meadow which will consist of a 'Wet Meadow Mix' by Scotia Seeds or similar (20% wildflower, 80% grass mix, of Scottish provenance). The planting scheme surrounding the Project SIte will consist of native wet woodland and native scrub. The wet woodland planting will consist of:

- 15% Downy Birch (*Betula pubescens*);
- 15% Silver Birch *(Betula pendula);*
- 10% Wild cherry *(Prunus avium);*
- 10% Alder *(Alnus glutinosa).;*
- 10% Hawthorn *(Crataegus monogyna);*
- 10% Blackthorn *(Prunus spinosa);*
- 10% Hazel *(Corylus avellana);*
- 10% Rowan *(Sorbus aucuparia);* and,
- 10% Aspen *(Poulus tremula);*

The scrub will consist of:

- 20% Hawthorn (*Crataegus monogyna*);
- 20% Blackthorn *(Prunus spinosa);*
- 20% Hazel (*Corylus avellana*);
- 15% Rowan (*Sorbus aucuparia*);
- 15% Eared Willow (*Salix aurita*);
- 5% Holly (*Ilex aquifolium*); and,

[16] 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

[17] 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

- 5% Juniper (*Juniperus communis*).

4.8 Summary of Effects

The appraisal of ecology is summarised in **Table 4.4**.

Table 4.4 Appraisal of Ecology

Environmental Feature	Project Interaction	Embedded Mitigation Measures	Additional Mitigation Measures	Receptor sensitivity	Magnitude of effect	Significance of effect
Designated Sites and Ancient Woodland	None predicted	Standard mitigation to prevent indirect / accidental damage on habitat and species.	None required.	Medium	Negligible	Not Significant
Habitats	Loss of habitat.	Standard mitigation to prevent indirect / accidental damage of habitats	None required.	Low	Negligible	Not Significant
GWDTE	Disruption to water flow to habitat	Standard mitigation to prevent indirect / accidental damage of habitats	None required.	Low	Negligible	Not Significant
Bats	Loss of foraging and commuting habitat.	Standard mitigation to reduce the risk of disturbance (e.g., no night-time working, noise, light spill controls) / SPP.	None required.	High	Negligible	Not Significant
Otter	Effects on commuting routes and disturbance.	Standard mitigation to reduce the risk of disturbance (e.g., no night-time working, noise, light spill controls, pollution) / SPP.	None required.	High	Negligible	Not Significant
Water Vole	None predicted	None required	None required.	N/A	N/A	N/A
Badger Pine Marten Red Squirrel Wildcat	Loss of habitat Effects on foraging / commuting and disturbance	Standard mitigation to reduce the risk of disturbance (e.g., no night-time working, noise, light spill controls, pollution) / SPP.	Further focused pre-construction surveys and any mitigation necessary as a result	Medium (B/PM/RS) High (W)	Negligible	Not Significant

Birds	Loss of nesting / foraging habitat Disturbance during construction.	Avoid habitat removal in breeding bird season. Standard mitigation to reduce the risk of disturbance (e.g., no night-time working, noise, light spill controls, pollution) / SPP.	None required.	Low	Negligible	Not Significant
Reptiles and Amphibians	Loss of habitat. Disturbance during construction.	Standard mitigation to prevent indirect / accidental damage on animals	Habitat removed in a consistent way to allow for movement of species to adjacent habitats.	Low	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 native wet woodland, native scrub and neutral meadow.

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.