4. ECOLOGY AND ORNITHOLOGY

4.1 Introduction

This Chapter provides an appraisal of the potential effects of the Project on ecology and nature conservation.

The specific objectives of the 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.

A separate Habitats Regulations Appraisal is provided in **Annex I** that describes potential for effects on European and Ramsar sites of nature conservation importance.

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 4.3**) 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 Craig Murrail (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 EA being submitted for the Project and no further ornithology surveys were required[1].

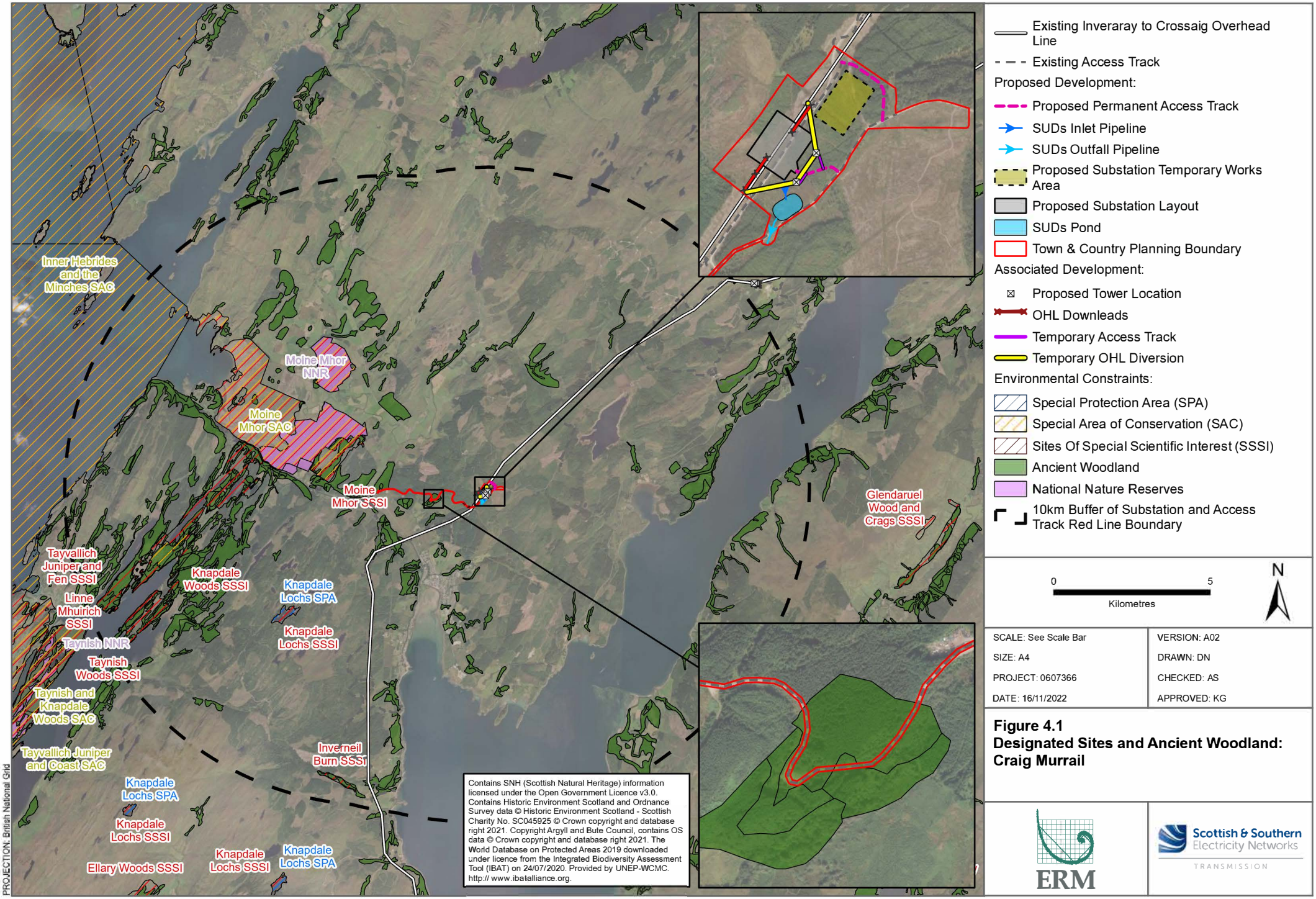
A request for information regarding designated sites, species records and, information on the habitats present was submitted to the Argyll Biological Record Centre (ABReC). However, the ABReC advised this data request could not be processed[2]. In the absence of local records, reference was made to the 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 Environmental Impact Assessment 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 BoCC raptor species within 2 km of the proposed Craig Murrail 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 Black grouse (*Lyrurus tetrix*) nor were there any known sites of Schedule 1 Raptor species provided by the ARSG within 2 km of the footprint of the Project.

[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.



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 Craig Murrail 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

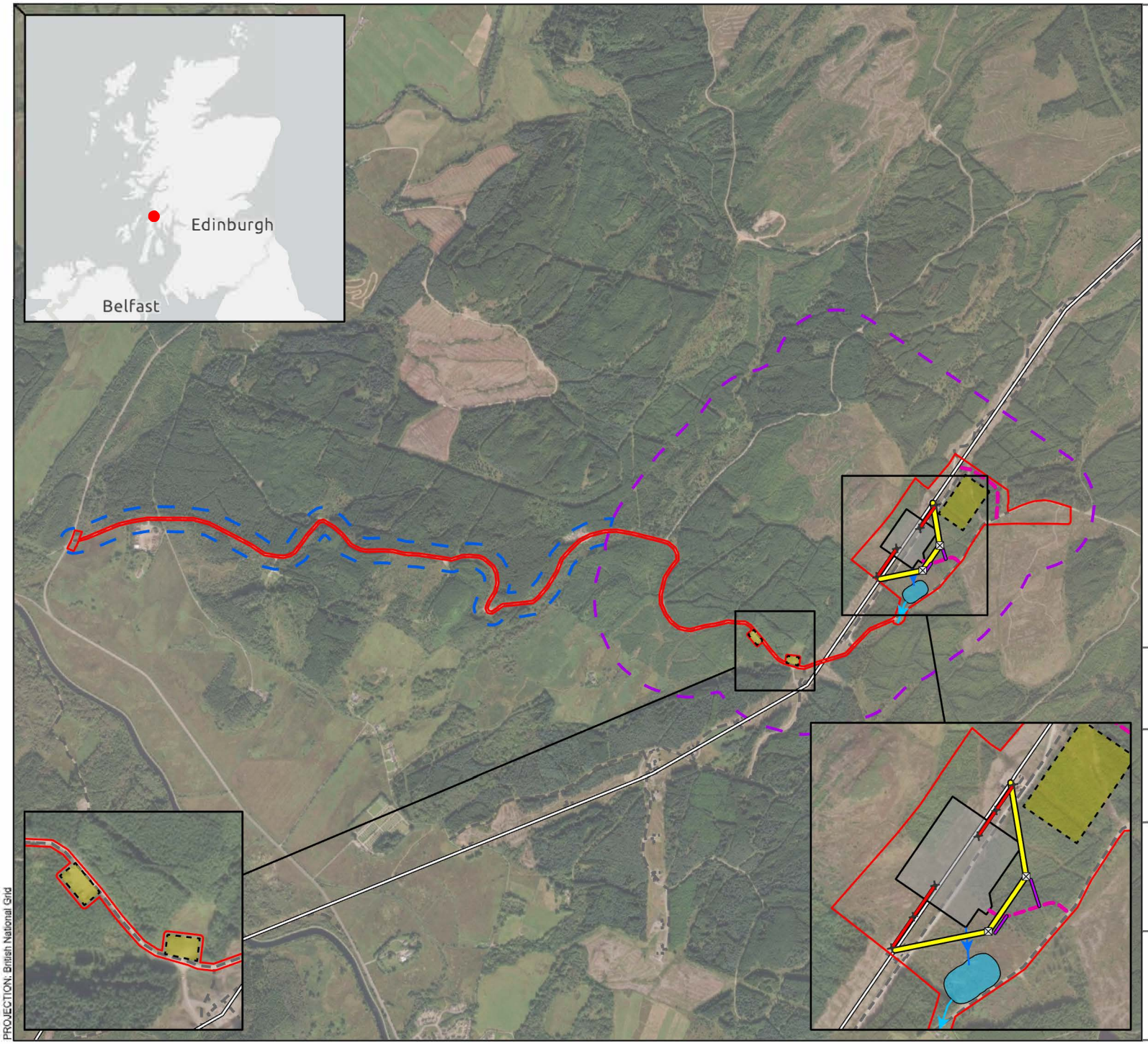
The impact assessment follows an approach whereby the sensitivity of an ecological receptor has been determined and assessed against the magnitude of the effect the activities associated with the Project may have on that receptor and the subsequent significance. The approach takes into account the CIEEM 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 pGWDTE 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 footprint 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 4.5** and sets out any further mitigation required to reduce the residual impact to not significant.

[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] Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, freshwater, coastal and marine. Version 1.1 - Updated September 2019. Available at https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1Update.pdf



Existing Access Track
Existing Inveraray to Crossaig Overhead Line

Proposed Development:

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

Associated Development:

Proposed Tower Location
OHL Downleads
Temporary Access Track
Temporary OHL Diversion

Survey Area Buffers:

50 m Buffer of Access Track
250 m Buffer of Substation Red Line Boundary

0 250 500 750 1,000
Metres

N

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SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.2
Craig Murrail Survey Area

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PROJECTION: British National Grid

Maxar, Microsoft, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS

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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 small watercourses and occasional areas of broadleaved woodland in the surrounding area which also contains small villages and properties. Some of the conifer plantations in the Project Site area have been felled recently to allow for the construction of SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project, as shown in **Figure 4.3**[1]. Some nearby areas of plantation have been felled a number of years ago and not replanted.

4.3.2 Designated Sites and Ancient Woodland

No sites designated for their nature conservation importance lie within the Project Site. Nine sites lie within 10 km of the Project (see **Figure 4.1**). The nearest designated sites to the Project Site are Moine Mhor Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI).

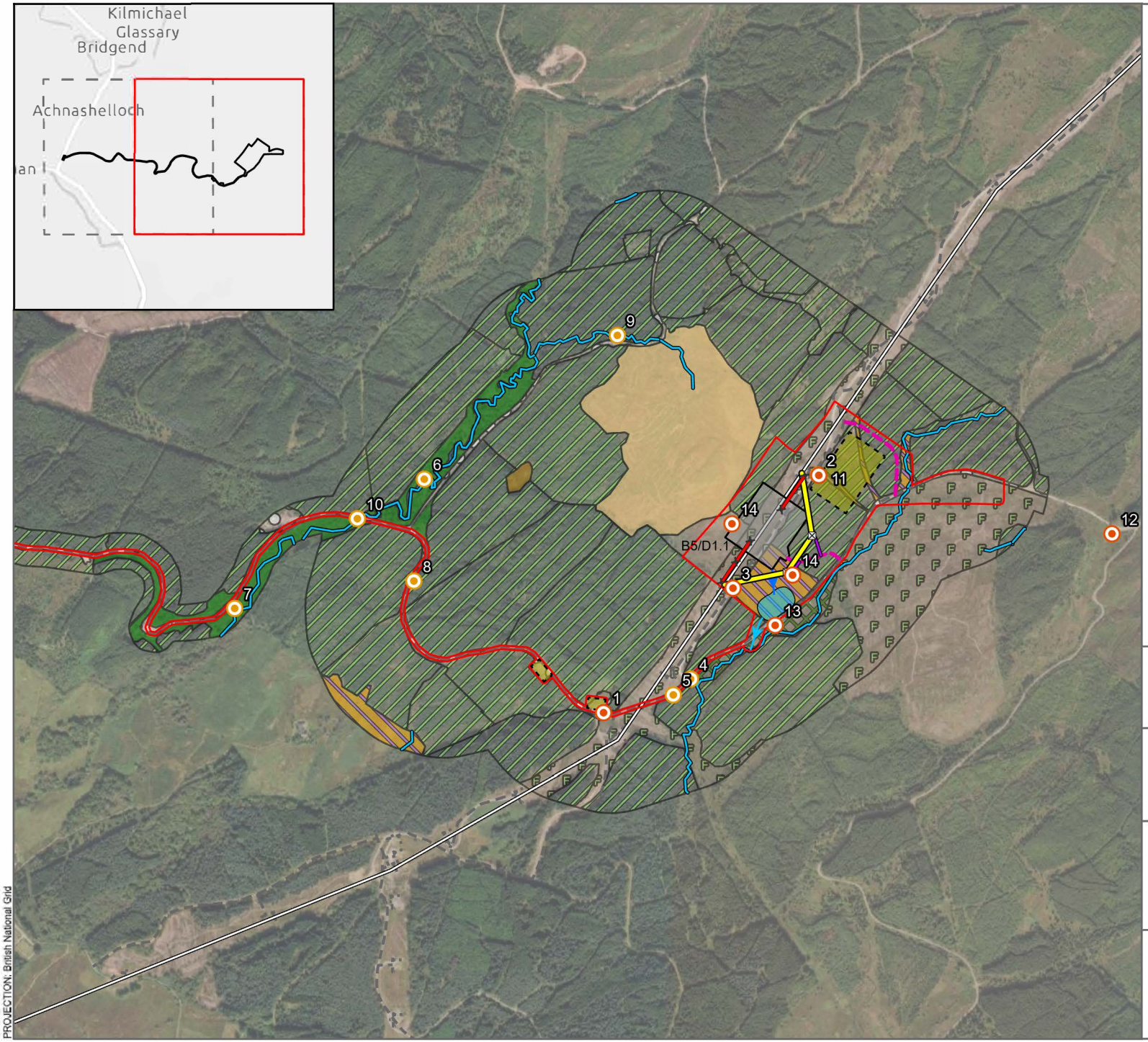
Moine Mhor SAC is located approximately 1.47 km north west of the red line boundary for the existing access track and approximately 4 km north west of the footprint of the Proposed Development and Associated Development. The SAC covers approximately 1149 ha[2] and is designated primarily for the presence of Annex I habitats including, active raised bogs (which is the priority feature of the site) and covers approximately 105.1 ha of the SAC. The SAC is also primarily designated for its degraded raised bogs still capable of natural regeneration, which cover approximately 688 ha. Other Annex I habitats present, which are not the primary reason for designation include: Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), which cover approximately 93.4 ha of the site; old sessile oak woods with holly (*Ilex*) and hard fern (*Blechnum*) in the British Isles, which cover approximately 116.7 ha of the SAC; and mudflats and sandflats not covered by seawater at low tide, which cover approximately 140 ha of the SAC. Annex II qualifying species within the site, also not the primary reason for designation include marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia* and otter *(Lutra lutra*).

Moine Mhor SSSI is located approximately 1.47 km north west of the red line boundary for the existing access track and approximately 4 km north west of the footprint of the Proposed Development and Associated Development. The SSSI covers largely the same area as the SAC, approximately 1172 ha[3] and supports saltmarsh and estuarine raised bog habitats that together comprise a nationally uncommon habitat transition. The SSSI also supports upland oak woodland, marsh fritillary butterfly and a breeding bird assemblage, which includes hen harrier *(Circus cyaneus*), short-eared owl *(Asio flammeus*), red-breasted merganser *(Mergus serrator*), redshank *(Tringa tetanus*), curlew *(Numenius arquata*) and snipe *(Gallinago gallinago*). In winter, Greenland white fronted geese *(Anser albifrons*) and greylag geese *(Anser anser*) roost and feed on the bog and mudflats. The winter hen harrier roost is of local importance and part of the national harrier winter roost survey. In addition, the bay provides feeding for one of the largest concentrations of teal *(Anas crecca*), wigeon *(Anas Penelope*), shelduck *(Tadorna tadorna*) and mallard *(Anas platyrhynchos*) in mainland Argyll and acts as a staging post for migrating birds such as whooper swan *(Cygnus cygnus*).

The Moine Mhor National Nature Reserve (NNR) is located approximately 1.7 km north west of the Project and covers approximately 487 ha. The NNR is an internationally important peatland site in mid-Argyll. This extensive lowland raised bog supports biodiversity and plays a significant role in storing carbon. It is an important wildlife tourism site for mid-Argyll[4].

[1] Inveraray to Crossaig 275 kV Overhead Line EIAR. Available at https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00000456
[2] Moine Mhor SAC Natura 2000 Data Form. Available at: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0019839.pdf
[3] NatureScot SiteLink Moine Mhor SSSI. Available at: https://sitelink.nature.scot/site/1174
[4] NatureScot Moine Mhor NNR. Available at: https://www.nature.scot/enjoying-outdoors/scotlands-national-nature-reserves/moine-mhor-nnr/moine-mhor-nnr-about-reserve

Four areas of Ancient Woodlands lie adjacent to the existing access track. A further Ancient Woodland (Coille Mhor) lies approximately 1.5 km north west of the Project.



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
SUDs Pond
Proposed Substation Temporary Works Area
Associated Development:
Proposed Tower Location
OHL Downleads
Temporary Access Track
Temporary OHL Diversion
Habitat Note Type:
Habitat Target Note
Mammal Target Note
Phase 1 Habitat Classification:
G2 - Running water
Phase 1 Habitat Classification:
A1.1.1 - Broadleaved woodland - semi-natural
A1.2.2 - Coniferous woodland - plantation
A2.1 - Scrub - dense/continuous
A4.2 - Coniferous woodland - recently felled
B5 - Marsh/marshy grassland
C1.1 - Bracken - continuous
D1.1 - Dry dwarf shrub heath - acid
G2 - Running water
J4 - Bare ground
B5 - Marsh/marshy grassland / D1.1 - Dry dwarf shrub heath - acid

0 250 500 750
Metres

N

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Figure 4.3
Extended Phase 1 Habitat Survey (Oct 2021) Craig Murrail Substation
Page 1

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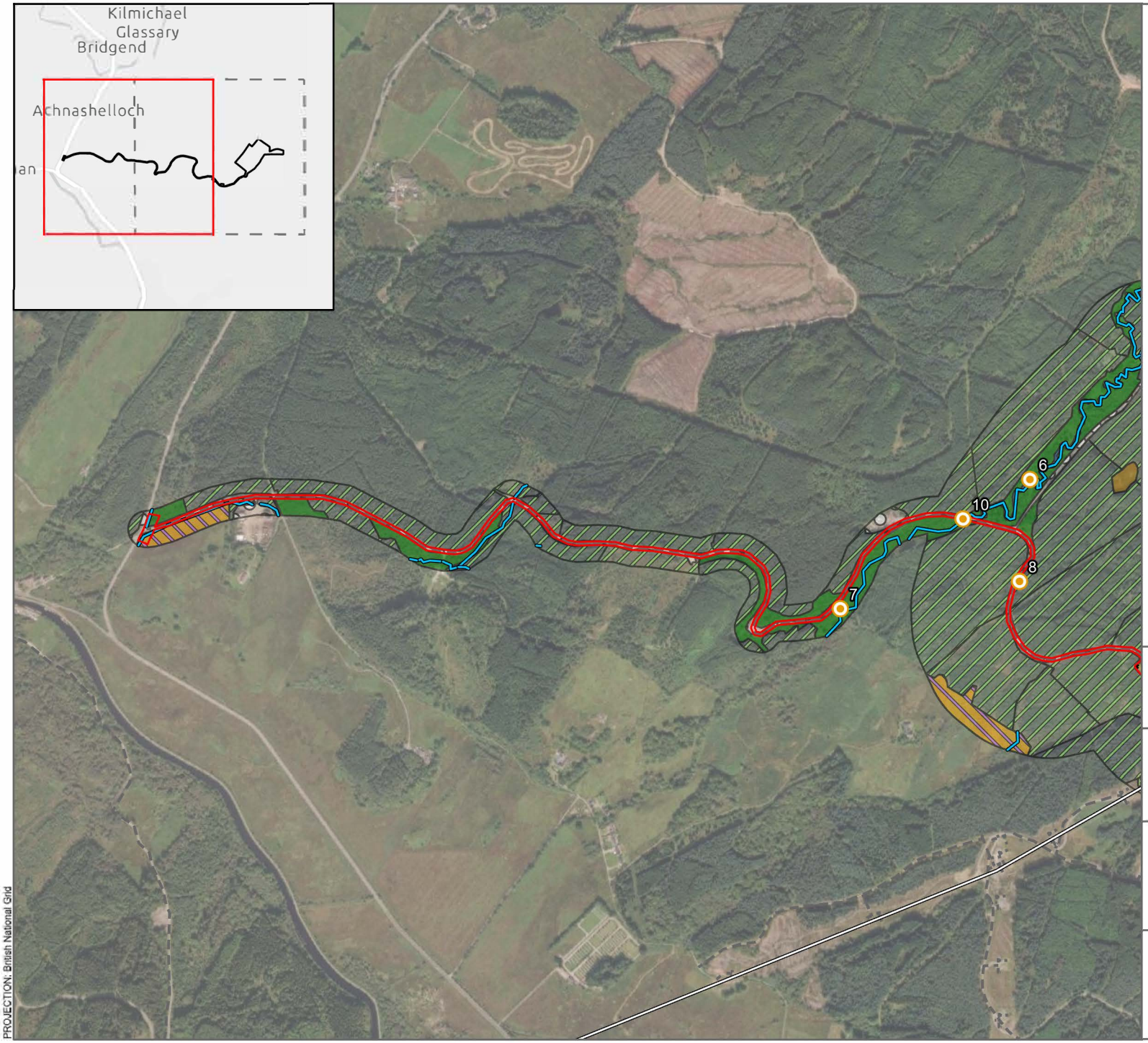

Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
Habitat Note Type:
Mammal Target Note
Phase 1 Habitat Classification:
G2 - Running water
Phase 1 Habitat Classification:
A1.1.1 - Broadleaved woodland - semi-natural
A1.2.2 - Coniferous woodland - plantation
A4.2 - Coniferous woodland - recently felled
B5 - Marsh/marshy grassland
C1.1 - Bracken - continuous
G2 - Running water
J4 - Bare ground

0 250 500 750
Metres

N

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Figure 4.3
Extended Phase 1 Habitat Survey (Oct 2021) Craig Murrail Substation
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4.3.3 Habitats and Flora Species

The Phase 1 Habitat maps are presented in **Figure 4.2**. Further details about the surveys including the approach and Target Notes are contained in **Annex G**.

The Project Site and much of the immediate surrounds is dominated by dense commercial conifer plantations of varying ages (see **Figure 4.2**), 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. A review of aerial imagery suggests trees within the wayleave for the OHL have been felled recently (between October 2019 and September 2020). Outside the wayleave the conifers appear to have been felled sometime between December 2010 and August 2014 and in these areas, marshy grassland, wetland and heathland habitats are present. It is likely that these were the original habitats prior to the planting of the trees. On higher ground where dry acid dwarf shrub heath was developing, there was evidence of some Sitka spruce (*Picea sitchensis*) regenerating. 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 is a small area of broadleaved semi-natural woodland located along the Auchoish Burn approximately 700 m to the west of the footprint of the Project, most of which lies outside the planning Red Line Boundary. Tree species recorded in this area include sessile oak (*Quercus petraea*), pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*), downy birch (*Betula pubescens*), alder (*Alnus glutinosa*), rowan (*Sorbus aucuparia*), hazel (*Corylus avellana*), grey willow (*Salix cinerea*) and eared willow (*Salix aurita*). A second area of broadleaved semi-natural woodland is located approximately 900 m to the south of the footprint of the Project comprising a mix of scattered downy birch of various ages, and self seeded Sitka spruce with various scrub species dominating the understory. Pockets of continuous bracken *(Pteridium aquilinum)* are also found within the Project survey area.

Extents of marshy grassland are scattered within the survey area and are dominated by soft rush (*Juncus effusus*) and purple moor grass (*Molinia caerulea*).

One small watercourse, the Auchoish Burn, is located to the west of the Project before passing under the existing access track. This watercourse principally flows through an area of semi-natural broadleaved woodland and is approximately 0.6 m to 1.2 m deep with dense banksides consisting of a mixture of rushes, bracken and small silver birch. A second unnamed watercourse is located to the east of the Project, briefly passing through the Project Red Line Boundary in its north east corner. This watercourse flows through areas of mature and recently felled[1] coniferous plantation and an area of dense scrub with scattered mixed broadleaved and conifer trees located south of the Project's footprint. This watercourse is approximately 0.05 m to 0.07 m deep with a mixture of low growing rushes, bracken and felled tree stumps along the very shallow sloping banksides.

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 / moderately ground water dependent. The potential GWDTE habitats are shown in **Figure 4.4.** The results of the NVC survey are shown in **Figure 4.5**.

Habitats identified consisted of W4 downy birch (*Betula pubescens*) – purple moor-grass woodland, M6 star sedge (*Carex echinata*)-recurved sphagnum (*Sphagnum recurvum*) mire and, M25 purple moor-grass – tormentil (*Potentilla erecta*) mire (see **Figure 4.5**). M6, considered highly GWDTE and M25, considered moderate GWDTE, are within the footprint of the Project (see **Figure 4.4**).

Habitats in the survey area surrounding the Project were found to be similar to those within the Project (see **Figure 4.3**).

The classification for pGWDTE for the Project are shown in **Figure 4.4**.

[1] A review of aerial imagery shows the area to be felled between 2014 and 2018.

No invasive non-native flora species were recorded within the survey area during the EP1HS.

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

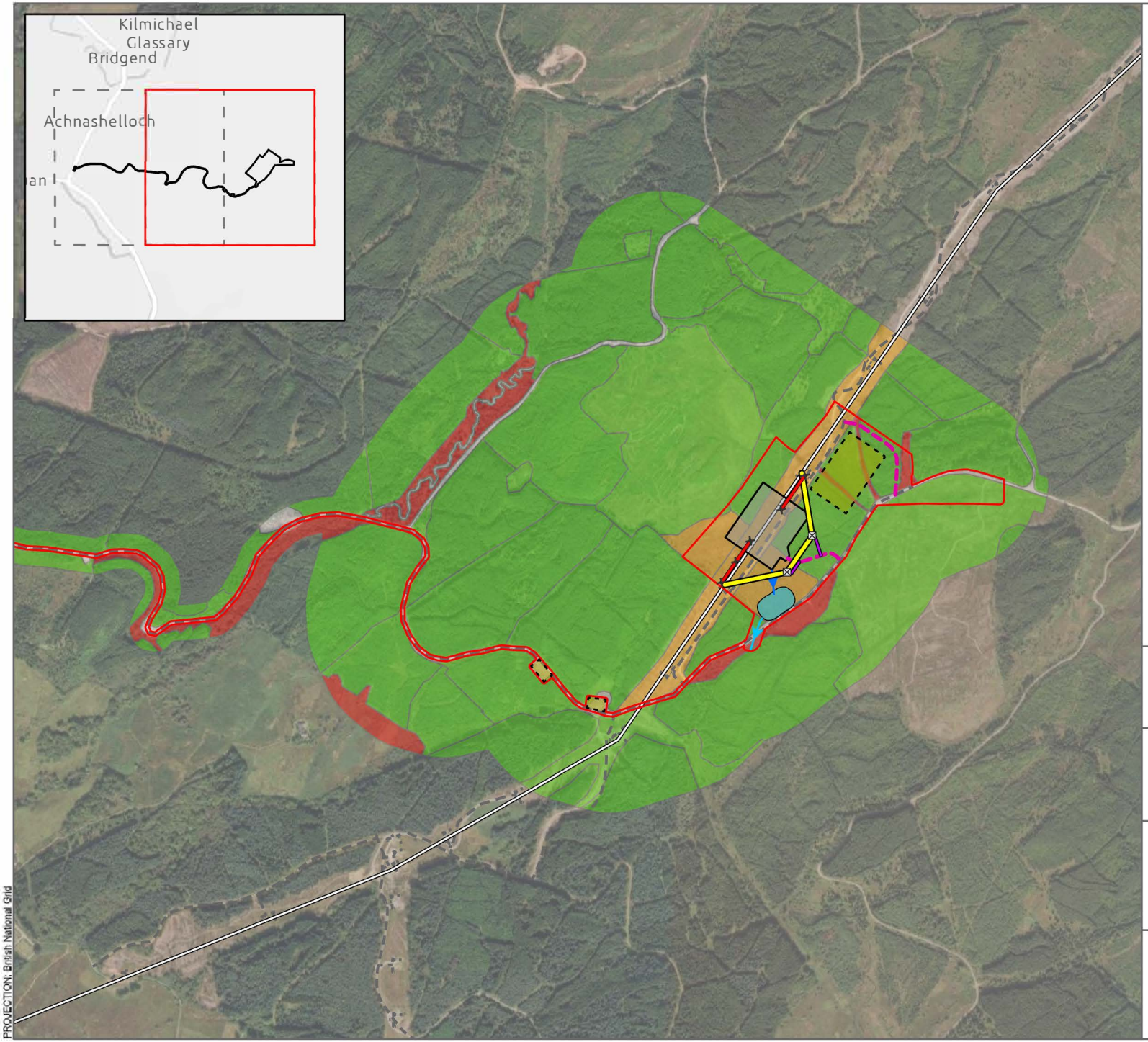

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Figure 4.4
GWDTE Classification (Oct 2021)
Craig Murrail Substation
Page 1

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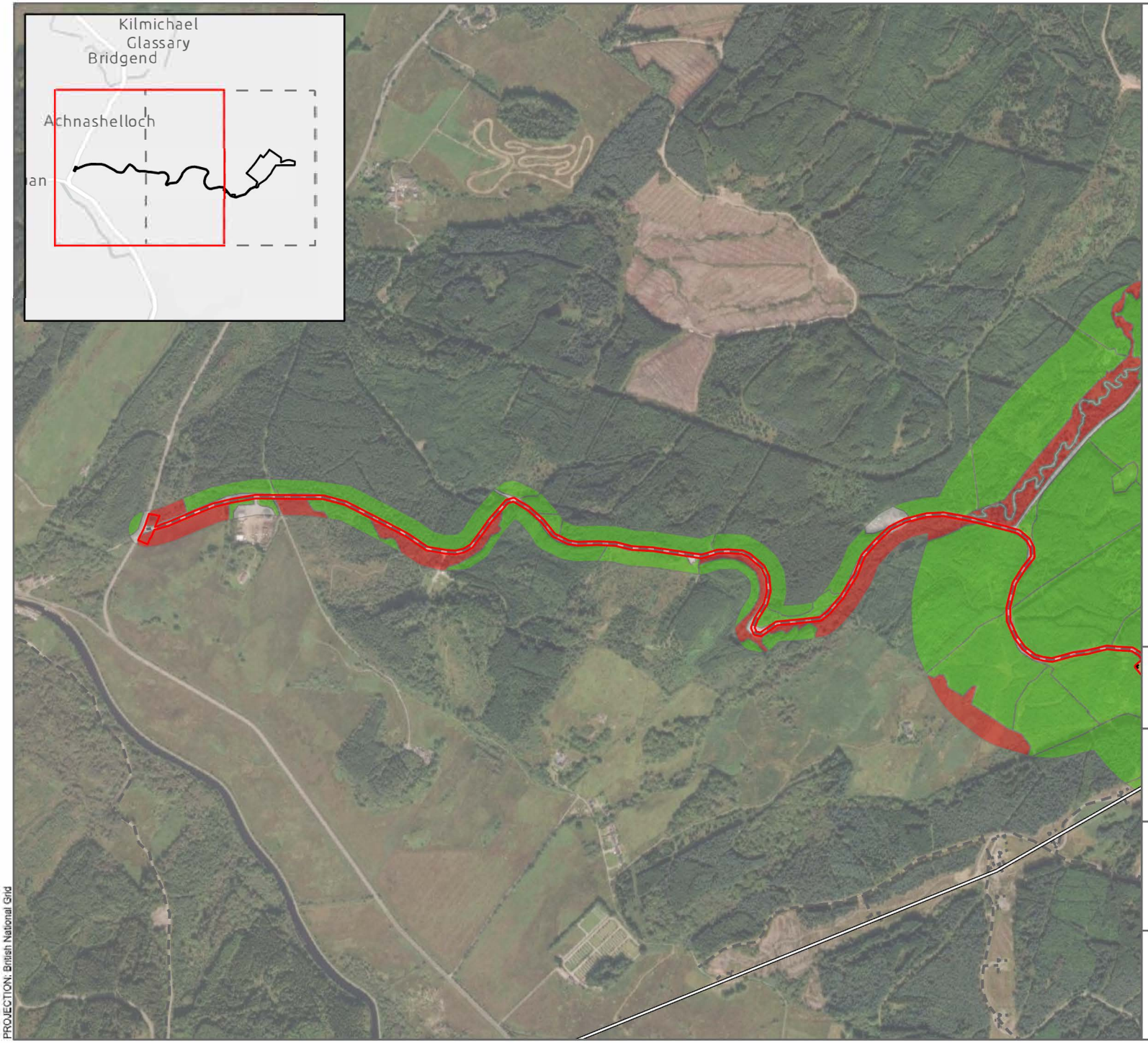

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Figure 4,4
GWDTE Classification (Oct 2021)
Craig Murrail Substation
Page 2

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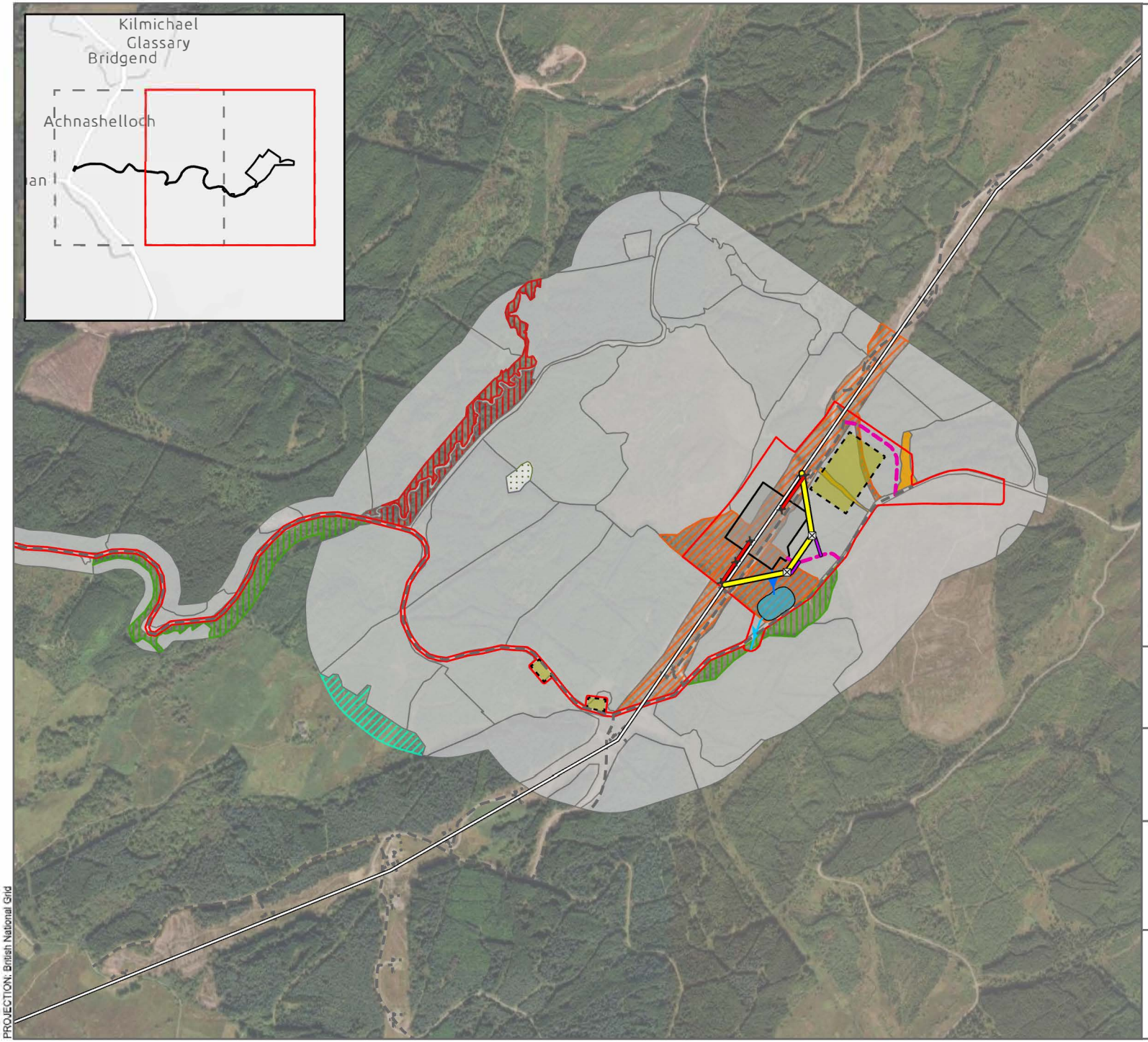

Figure 4.5
Targeted National Vegetation Classification (Oct 2021)
Craig Murrail Substation
Page 1

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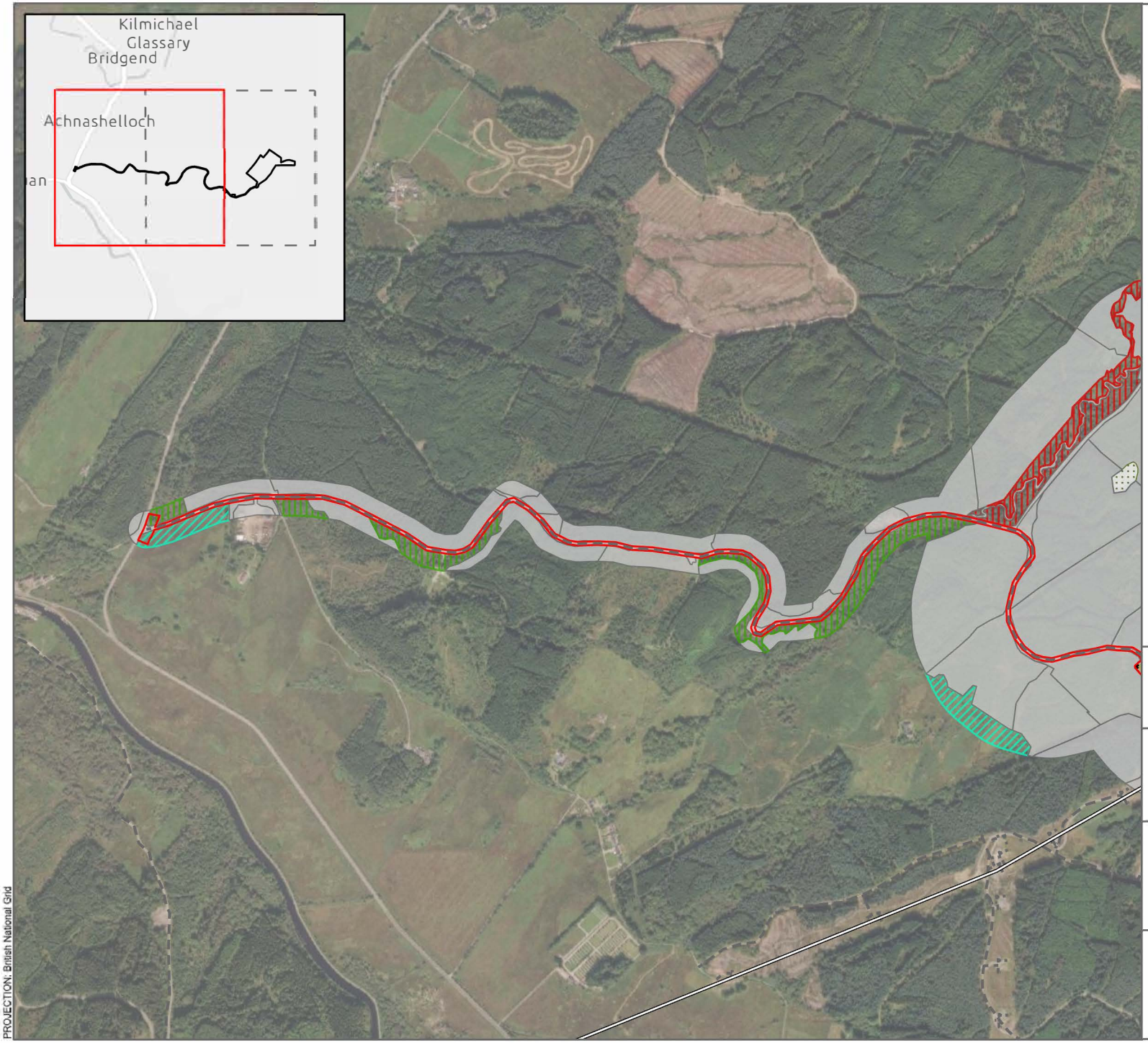
TRANSMISSION



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DATE: 16/11/2022	APPROVED: KG

Figure 4.5
Targeted National Vegetation Classification (Oct 2021)
Craig Murrail Substation
Page 2

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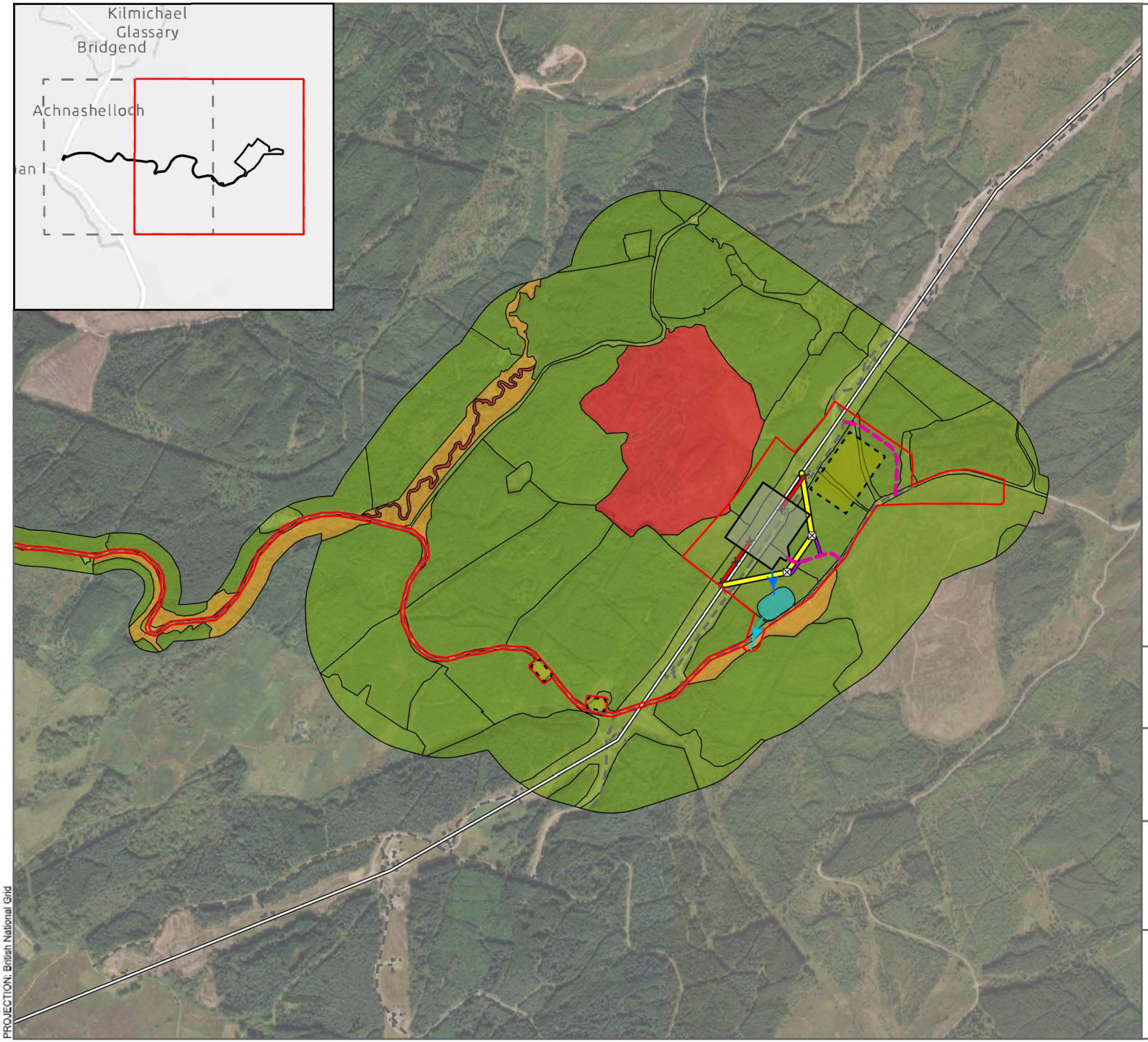

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Figure 4.6
Habitat Distinctiveness (Oct 2021)
Craig Murrail Substation
Page 1

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TRANSMISSION

PROJECTION: British National Grid

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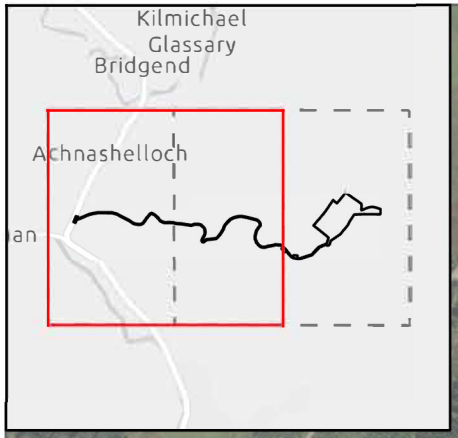

Existing Access Track

Existing Inveraray to Crossaig Overhead Line

Proposed Development:

Proposed Substation Temporary Works Area

Town & Country Planning Boundary

Habitat Distinctiveness:

High

Medium

Low

0 250 500 750

Metres

N

SCALE: See Scale Bar	VERSION: A02
SIZE: A4	DRAWN: DN
PROJECT: 0607366	CHECKED: WB
DATE: 16/11/2022	APPROVED: KG

Figure 4.6
Habitat Distinctiveness (Oct 2021)
Craig Murrail Substation
Page 2

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TRANSMISSION

PROJECTION: British National Grid

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4.3.4 Fauna including Protected Species

The only field signs of protected species recorded within the Project footprint were suspected pine marten (*Martes martes*) scats identified on a single bridge located along the existing access track, approximately 1 km west of the substation platform. The findings of the EP1HS mirror the findings from the OHL EIA which also found no evidence of protected species within the area of the Project Site that they surveyed[13].

No field signs of protected species were identified within the habitat to be lost under the footprint of the proposed substation, however, the coniferous plantation to be felled to accommodate to the Project has the potential to support pine marten, red squirrel (*Sciurus vulgaris*) and possibly wildcat *(Felis silvestris)*. The underlying boggy ground conditions in the areas likely to be directly affected by the Project and in the immediate surrounds, suggest it is unlikely that they will be used by badgers (*Meles meles*) or otters to build setts/holts. Equally, due to the young age and uniformity of the coniferous plantation trees to be lost, the coupe[14] is not considered suitable to support suitable roosting features for bats.

With the exception of the wayleave created, 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 the OHL 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 willow warbler (*Phylloscopus trochilus*) was recorded in the footprint of the Project, with buzzard (*Buteo buteo*)[15], chaffinch (*Fringilla coelebs*), coal tit (*Parus ater*), robin (*Erithacus ruhecula*), and siskin (*Carduelis spinus*) recorded in the wider area of the Project. In addition, during the EP1HS carrion crow (*Corvus corone*) and raven (*Corvus corax*) were recorded in and/or over the footprint on the Project.

There are no waterbodies in the Project Site 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 areas of continuous bracken and felled coniferous woodland on the higher ground west of the proposed substation footprint where the dry shrub heath 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**.

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

[14] **A small area of forest within a compartment that is harvested in a single operation.**

[15] The buzzard was recorded over the existing access track.

4.3.5 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.

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.

4.3.6 Designated Sites and Ancient Woodland

The Proposed Development

No sites designated for their nature conservation importance will be affected by the Proposed Development. The nearest site is Moine Mhor SAC/SSSI which lies approximately 1.5 km west of the existing access track which may require upgrades and approximately 4 km north west of the footprint of the Proposed Development.

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.

Four areas of Ancient Woodland lie adjacent to the existing access track for a total of approximately 0.8 km. There is the possibility that works made need to be undertaken to expand the access track which could result in the requirement to remove 0.03 ha of the Ancient Woodland that lies adjacent to the existing access track. The Ancient Woodland is currently fragmentated by the existing access track. If these works are necessary this would be 0.2% of the overall woodland removed, which would result in a **minor** impact of **significance**.

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 Moine Mhor SAC/SSSI which lies approximately 4 km north west of the footprint of the Associated Development. Construction traffic for the Associated Development will use the same existing access track as the Proposed Development. As such, the impacts and mitigation are the same.

Summary

The Proposed Development will not result in any impact on designated sites.There is a potential for minor impacts to occur on Ancient Woodland adjacent to the existing access track associated with vehicle movement. However, following the implementation of the embedded mitigation discussed above and additional mitigation detailed in **Section 4.6**, **no significant effects** are predicted.

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

4.3.7 Habitats and Flora

The permanent[16] and temporary[17] loss of the habitats due to the construction of the Project are shown in **Table 4.1** (also see **Figure 4.3**).

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

[17] 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.

Table 4.1. 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 around 7.5 to 11 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.	1.61 ha	0.85 ha	1.72 ha	1.39 ha
Conifer woodland recently felled	These areas have been felled recently for the creation of the wayleave for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project and have low botanical value. Such areas are common in this rotational commercial habitat as evidenced by the review of historical aerial imagery.	1.45 ha	0.38 ha	1.20 ha	1.16 ha
Broadleaved woodland - semi-natural	This area is of high botanical value.	-	0.61 ha	-	-
Mixed parkland/scattered trees	Downy birch of various ages and self-seeded Sitka are scattered along the small watercourse to the south of the existing access track	-	0.14 ha	-	-
Marshy grassland	Only small areas of marshy grassland that has formed predominantly in previously felled areas of plantation, will be lost due to the southern end of the substation footprint, although small areas along the northern edge of the temporary works area will be avoided. Marshy grassland is a common and widespread habitat type and of low value	0.57 ha	0.07 ha	0.69 ha	1.17 ha
Scrub - dense/continuous	These areas of habitat consisted dense scrub is located to the south of the existing access track and contains a mix of scattered downy birch of	-	0.14 ha	-	-

Habitat Type	Habitat Description and Assessment	Permanent Loss		Temporary loss	
		Proposed Development	Associated Development	Proposed Development	Associated Development
	various ages and self-seeded Sitka spruce, with eared willow scrub and bracken.				
Bare Ground	These areas consist of gravel access track and/ or layby areas.	0.03 ha	4.23 ha	0.24 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 4.5** on for further details on mitigation).

Summary of Impacts on Habitats and Flora

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.

4.3.8 GWDTE

The Proposed Development

Within the footprint of the Proposed Development a small area of habitat classed as having moderate pGWDTE will be permanently lost (0.57 ha). 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 recently felled. On the basis of the information collected during NVC surveys, the 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 Appraisal**).

Embedded mitigation measures have been implemented throughout the projects design phase, including revising the location of permanent and temporary structures to avoid or minimise interaction with sensitive receptors.

The habitats and species of flora within the footprint of the Proposed Development are common and widespread in the surrounding area. Given this, and the relatively small area to be permanently lost (0.57 ha) as well as the implementation of embedded mitigation (including CEMPs, CTMPs and GEMPs) will be in place to avoid / manage effects on pGWDTE, the magnitude of the effect is predicted to be negligible, as such, significant effects on pGWDTE due to the Proposed Development are predicted to be **negligible** and **no significant effects** are predicted.

The Associated Development

Within the footprint of the Associated Development a small area of habitat classed as having moderate pGWDTE will be permanently lost (0.07 ha). 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 recently felled. On the basis of the information collected during NVC surveys, the 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 Appraisal**).

Embedded mitigation measures have been implemented throughout the projects design phase, including revising the location of permanent and temporary structures to avoid or minimise interaction with sensitive receptors.

The habitats and species of flora within the footprint of the Associated Development are common and widespread in the surrounding area. Given this, and the relatively small area to be permanently lost (0.07 ha) as well as the implementation of embedded mitigation (including CEMPs, CTMPs and GEMPs) will be in place to avoid / manage effects on pGWDTE, the magnitude of the effect is predicted to be negligible, as such, significant effects on pGWDTE due to the Proposed Development are predicted to be **negligible** and **no significant effects** are predicted.

Summary of Impacts on pGWDTE

Relatively small area of habitat that will be permanently lost due to the Project, and species within the footprint and surrounding area are common and widespread. These factors as well as the embedded mitigation that will be implemented mean that significant effects on pGWDTE due to the Project are predicted to be **negligible** and **no significant effects** are anticipated.

4.3.9 Protected Species Assessment

No signs of protected species were recorded within the footprint and immediate surrounds of the Project or the Associated Development 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 small sections of Sitka spruce 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 boggy ground conditions mean it is unlikely that they will be used by badgers or otters to build setts/ holts;
- the trees to be lost are also 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 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 red squirrel, pine marten, birds, reptile, and wildcat. Equally, suitable habitat to support reptiles is present in the small area of marshy grassland / dry dwarf shrub heath transition habitat[18]. Therefore, it is recommended that preconstruction surveys are undertaken to determine if signs of 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 4.5.1**).

The Craig Murrail Route Report has identified that overbridging operations will be required over the existing bridge at the Auchoish Burn, however, the exact requirements of the overbridging operation are unknown at this stage. The EP1HS identified suitable habitat to support otters (including commuting, foraging and resting up sites) along the existing access track. Although otter numbers and their range are increasing, as well as having a stable habitat status[19], given the suitable habitat present in the area to support otters, it is possible the overbridging operations could cause disturbance to otters present in the area. As such, the unmitigated magnitude of effect would be predicted to be low**,** therefore, the impact on otters has a potentially **minor significant** effect. Specific mitigation measures to address these effects are outlined in **Section 4.5**.

As the overbridging works are the only works planned along the existing access track and as there will be no habitat loss or significant increase in vehicle activity along the existing access track, **no effects** to protected species along the existing access track, other than the potential effects to otters detailed above, are predicted due to the Project.

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 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

[18] Shown as B5/D1.1 on **Figure 1.3**.

[19] Natural England Joint Publication JP025. A Review of the Population and Conservation Status of British Mammals: Technical Summary. Available at https://www.mammal.org.uk/wp-content/uploads/2021/06/MAMMALS-Technical-Summary-FINALNE-Verision-FM3290621.pdf

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 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**).

Summary of Impacts on Protected Species

Given the generally low ecological value of the habitats that will be permanently lost, the relatively small footprint of the Project and abundance of similar habitat in the surrounding area, as well as the embedded and additional mitigation that will be implemented, the magnitude of the effect is predicted to be negligible. As such, significant effects on protected species due to the Project are predicted to be **negligible** and **no significant effects** are predicted.

4.3.10 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.

4.3.11 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.

4.4 Cumulative Assessment

4.4.1 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 Project

Receptor	Impact from the Proposed Development	Impact from the Associated Development	The Project
Designated Sites and Ancient Woodland	No significant impacts	No effects	No significant impacts
Habitats and Flora	No significant impacts	No significant impacts	No significant impacts
pGWDTE	No significant impacts	No significant impacts	No significant impacts
Protected Species	No significant impacts	No significant impacts	No significant impacts

4.4.2 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 is 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, and are shown in **Table 4.3**.

Table 4.3. Current and Planned Developments

Development / Project	Description	Approximate distance to the Project	Consenting Status	Cumulative Effects
LT000228 - SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project	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. However, the section of permanent access track is short and is located within habitat of low botanical and ecological value. 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 significant cumulative effects are predicted.
Craig Murrail to Port Ann underground cable project	Proposed underground cable from proposed Craig Murrail substation to Port Ann substation	0 km	In development	A cumulative effect would likely occur during construction of both projects. Given the relatively small scale, temporary combined effects on habitats, which are predicted to recover 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 significant cumulative effects are predicted.

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

SSEN Transmission are proposing similar substation and OHL developments across Argyll. Those that run in parallel with the Project's construction period are located at An Suidhe, to the west of Inveraray, Crarae, to the north of Minard and Crossaig, to the north of Carradale on the Kintyre peninsula. All of these projects however 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 and underground cable development 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**.

4.4.3 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.

4.5 Mitigation

The Project design has sought to locate the development in habitat of less value to biodiversity (*eg* existing and recently felled Sitka spruce plantation).

4.5.1 Additional Mitigation

Further additional mitigation measures that go further than the embedded mitigation discussed in **Section 1.3** are listed below:

- To avoid effects on irreplaceable ancient woodland:
    - 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.
- To avoid effects on nesting birds:
    - Habitat removal will be undertaken outside the breeding season (March to August, inclusive)[20]. 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 ECoW. If there is a delay to commencing construction following habitat removal, further mitigation may be necessary to deter birds using the site to nest (e.g., regular human presence, tapes across the site, other scaring devices).
- To avoid effects on otters due to overbridging works:
    - An appropriately qualified ECoW should undertake a preconstruction walkover survey at the bridge over the Auchoish Burn and in suitable habitat to support otters within 200 m of overbridging works. Should signs of otter be identified during the preconstruction walkover survey, the ECoW will follow SSENs otter SPP and implement the appropriate mitigation.

[20] 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

- To avoid effects on Ancient Woodland if works are required to expand the access track:
    - A pre-construction Ancient Woodland survey is to be undertaken (April – June);
    - An ECoW should be present when any tree works are to be undertaken within an Ancient Woodland.
- The removal of habitat suitable to support reptiles will be done in a manner that encourages any reptiles present in the more open areas affected to move to adjacent habitat that will remain unaffected.
- Working after sunset will be avoided (where practicable), and the site will not be lit overnight, to avoid any effects on nocturnal species (e.g., otters, bats, badger).

4.6 Residual Impacts and Compensatory Habitat

4.6.1 Habitats and Flora

The Project will result in the permanent loss of:

- 2.46 ha of conifer woodland plantation.
- 1.83 ha of conifer woodland recently felled.
- 0.61 ha broadleaved woodland - semi-natural;
- 0.14 mixed parkland/scattered trees;
- 0.64 ha of marshy grassland.
- 0.14 ha scrub - dense/continuous; and,
- 4.26 ha of bare ground.

These habitats are common and widespread and these losses are **not significant**. Loss of higher value habitats are limited to small areas.

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**.

The Scottish and Southern Electricity Networks and Scottish Hydro Electric Transmission Group published a sustainability strategy in 2018[21]. Following this, in 2019 SSEN Transmission published an 'Approach to implementing a Biodiversity Net Gain'[22] (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,

Temporary loss habitats will be restored to bog/mire habitat.

[21] 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

[22] 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

4.6.2 Fauna

The additional mitigation measures outlined in **Section 4.5** are considered sufficient to reduce the likelihood of disturbance on otters from Minor adverse effect to **negligible**, and therefore **Not Significant**.

4.7 Summary

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

Table 4.4 Appraisal of Ecology

Environmental Feature	Project Interaction	Embedded Mitigation	Additional Mitigation Measures	Receptor sensitivity	Magnitude of effect	Significance of effect
Designated Sites	None predicted	Standard mitigation to prevent indirect / accidental damage on habitat and species	None required.	N/A	N/A	N/A
Ancient Woodland	Direct loss of habitat and indirect loss of connectivity.	Site selection to avoid sensitive areas for biodiversity. Implementation of SSEN Transmission CEMPs, GEMPs and CTMP. SSEN Transmission Species Protection Plans (SPPs).	Installation of signage and heras fencing. Pre – construction Ancient Woodland Survey ECoW presence	Medium	Minor	Significant
Habitats	Loss of habitat.	Site selection to avoid sensitive areas for biodiversity. Implementation of SSEN Transmission CEMPs, GEMPs. SSEN Transmission Species Protection Plans (SPPs).	No additional measures required.	Low	Negligible	Not Significant
pGWDTE	Disruption to water flow to habitat	Site selection to avoid sensitive areas for biodiversity. Implementation of SSEN Transmission CEMPs, GEMPs.	None required.	Low	Negligible	Not Significant

		SSEN Transmission Species Protection Plans (SPPs).				
Protected Species	Loss of habitat Effects on foraging / commuting habitat and disturbance	Site selection to avoid sensitive areas for biodiversity. Implementation of SSEN Transmission CEMPs, GEMPs. SSEN Transmission Species Protection Plans (SPPs).	Overbridging preconstruction surveys at the bridge over the Auchoish Burn and in suitable habitat up to 200 m from overbridging activities. Preconstruction walkover surveys in habitats to be lost identified as having potential to support protected species. Avoidance of night-time working and lighting the site overnight. Suitable reptile habitat removal to be done sensitively to encourage any reptiles present towards adjacent habitat that will remain unaffected.	N/A (water vole) Medium (badger, pine marten, red squirrel) High (bat, otter, wildcat)	Negligible	Not Significant
Birds	Loss of nesting / foraging habitat Disturbance during construction.	Site selection to avoid sensitive areas for biodiversity. SSEN Transmission CEMPs, GEMPs.	Avoid habitat removal in breeding bird season. No night-time working, noise, light spill controls, pollution.	Low	Negligible	Not Significant

		SSEN Transmission Species Protection Plans (SPPs).				
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 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. However, if works are required to expand the access track and remove 0.03 ha of Ancient Woodland then the Project would result in a minor impact of significance.

Compensation for the permanent loss of habitat due to the Project has been implemented through the use of SSEN's Biodiversity Net Gain metric, which has led to the reinstatement of bog/mire habitat.

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.