Scottish & Southern Electricity Networks

TRANSMISSION

Annex G - Extended Phase 1 Survey Report

September 2022

Scottish & Southern Electricity Networks

TRANSMISSION

Argyll and Kintyre 275 kV Substations: LT155 Craig Murrail

Extended Phase 1 Habitat Survey and European Protected Species Survey

Project No.: 0607366

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Acronyms and Abbreviations

Name	Description
ABReC	Argyll Biological Record Centre
ABC	Argyll and Bute Council
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
°C	Centigrade
CC	Cloud Cover
DEL	Direct Ecology Ltd
EA	Environmental Appraisal
ECoW	Ecological Clerk of Works
EP1HS	Extended Phase 1 Habitat Survey
ERM	Environmental Resources Management Ltd
pGWDTE	Potential Groundwater Dependent Terrestrial Ecosystem
HGV	Heavy Goods Vehicle
JNCC	Joint Nature Conservation Committee
Km	Kilometre
kV	Kilovolt
NBN	National Biodiversity Network
NNR	National Nature Reserve
NVC	National Vegetation Classification Survey
OHL	Overhead Line
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SHE Transmission	Scottish Hydro Electric Transmission plc
SPA	Special Protected Area
SSEN Transmission	Scottish and Southern Electricity Networks
SSSI	Site of Special Scientific Interest
Temp	Temperature
TN	Target Note
WS	Wind Speed

1. INTRODUCTION

1.1 Background to the Project

This report has been prepared by Environmental Resources Management (ERM) on behalf of Scottish Hydro Electric Transmission plc ("the Applicant") who, operating and known as Scottish and Southern Electricity Networks Transmission ("SSEN Transmission"), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands. In this report the Applicant and SSEN Transmission are used interchangeably unless the context requires otherwise.

The Applicant has a statutory duty under Schedule 9 of the Electricity Act 1989 to develop and maintain an efficient co-ordinated and economical electrical transmission system in its licence area.

The Applicant proposes to construct a new 275 kilovolts (kV) electricity substation (located at Grid Ref 187725 691030) at Craig Murrail, to the north of Lochgilphead. The new substation will connect into the recently completed overhead line between Inveraray and Crossaig which is capable of operation at 275kV. Works are required to the overhead line to divert it temporarily to allow for the substation to be constructed, with the construction of two temporary towers. Post construction, the overhead line will be realigned to its existing alignment and the temporary towers will be removed. The substation and overhead line will support the continued export of renewable energy generated within the Argyll area.

1.2 Consent Requirements

The Applicant is seeking consent from Argyll and Bute Council under the Town and Country Planning (Scotland) Act 1997, (as amended) for construction and operation of the substation (hereby referred to as 'the Proposed Development'.

The size of the grid transformers falls under the National Planning Framework 3 Annex 3 description of High Voltage Electricity Transmission Network and is therefore categorised as 'National Development' under the Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009 (The Hierarchy Regulations).

The works to the overhead line (hereby referred to as 'the Associated Development') which comprises of the construction of two temporary steel lattice towers will be the subject of an application to the Scottish Ministers under section 37 of the Electricity Act 1989.

1.3 The Project

Although the Proposed Development and the Associated Development are being submitted under separate consenting regimes, both developments are integral to the development at Craig Murrail and will therefore hereby be collectively referred to as 'the Project'.

The location of the Project is shown in **Appendix A Figure 1**.

The Proposed Development which is the subject of an application under the Town and Country Planning Act comprises:

- A substation platform of 2.93 ha;
- A transformer building, control building and Gas Insulated Switchgear (GIS)[1] building;

[1] Within a GIS, live electrical equipment uses special gas as the insulating medium, usually sulphur hexafluoride (SF6) gas. The live electrical equipment is enclosed in a building, rather than exposed. The use of gas reduced the clearance distances required between electrical equipment, resulting in a small footprint, when compared to using an Air Insulated Switchgear (AIS) solution.

- Temporary works areas (TWA):
    - One area adjacent to the Proposed Development site, of 2.26 ha. and
    - Two areas, south westt of the Proposed Development site, adjacent to the existing access track, of approximately 0.5 and 0.2 ha respectively.
- Access to the substation platform over an existing forestry access track, approximately 5 km in length, to the new access track being constructed for the new substation referred to below;
- Construction of two new permanent access tracks:
    - One of approximately 153 m , connecting the substation to the existing private forestry tracks adjacent to the Proposed Development site; and
    - One of approximately 191 m, providing access to the TWA and existing Inveraray to Crossaig overhead line (OHL).
- Landscape planting to screen the Proposed Development and provide biodiversity enhancement.

- In addition, tree felling and compensatory planting will be required, as described in Chapter 5 Forestry Appraisal and Appendix J.

Components of the Associated Development which is the subject of an application under section 37 of the Electricity Act 1989 are:

- Construction of two temporary steel lattice towers to support the temporary realignment of the existing overhead line during construction. Post construction, the overhead line will be realigned to its existing alignment and connected into the new substation and the temporary towers will be removed;
- Two temporary access tracks leading the existing forestry access track to the temporary towers:
    - One of approximately 51 m in length; and
    - One of approximately 36 m in length.

Further details on the Project Description can be found in **Chapter 2: Project Description** of this EA.

1.4 Scope

Environmental Resources Management Ltd (ERM) was commissioned by SSEN Transmission to undertake an Extended Phase 1 Habitat Survey (EP1HS) and European Protected Species survey in October 2021 at the Project site[2]. The survey area comprised the red line site boundary plus a 250 m buffer around this boundary where the Project is located[3] and a 50 m buffer around the red line boundary along the proposed main access track[4] (as shown in **Appendix A, Figure 2**). A National Vegetation Classification (NVC) survey was undertaken alongside the EP1HS where potential was noted for habitats to be groundwater dependent.

[2] As part of the consenting process, SSEN Transmission have also commissioned ERM to undertake the Environmental Appraisal (EA) and Biodiversity Net Gain (BNG) assessment for the project. Reporting for both these works will be submitted at a later date.

[3] The 250 m buffer follows Scottish Environment Protection Agency Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available at https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf

[4] The 50 m buffer was used to allow for any direct effects to the existing access track.

This report presents the findings of the EP1HS, protected species and NVC survey undertaken in October 2021 by Direct Ecology Ltd (DEL) and ERM within the survey area.

1.5 Site Location and Description

The Project site and survey location is located in Argyll and Bute, West Scotland, at National Grid Reference NR 87708 91000, approximately 2.5 kilometres (km) north east of Lochgilphead and 4 km south west of Loch Glashan. The Project is located wholly within the Argyll and Bute Local Authority. The survey area and immediate surrounds predominantly consists of coniferous and mixed woodland plantation, some of which are managed for commercial use, sections of continuous bracken and running water.

The Project location, survey area and SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project (which runs through the Project site) is shown in Appendix A Figure 2.

2. METHODOLOGY

2.1 Desk Study

A desk study was undertaken to determine the presence of any designated nature conservation sites, within 10 km of the survey area and for any ancient woodland, tree preservation orders and records of protected species within 2 km of the survey area. Only records within the last 25 years have been included.

The following sources were consulted:

- NatureScot SiteLink[5] - data on designated sites and notable species in Scotland;
- NatureScot Scottish Biodiversity List (SBL)[6] - a list of species which are important for Scotland's Biodiversity;
- Scotland's Environment Web Map [7]- an interactive map which shows biodiversity areas across Scotland;
- National Biodiversity Network (NBN) Atlas[8] - a national interactive map that shows biodiversity areas;
- Scottish Forestry[9] - Guidance Note 33: Forest operations and red squirrels: November 2006;
- Argyll Biological Record Centre (ABReC) - a data request was submitted for information over the last ten years regarding designated sites, species records and, information on the habitats present (see **Section 2.6**),
- Argyll Raptor Species Group (ARSG) and Scotland's Raptor Study Group (SRSG): a data request was submitted for information over the last ten years regarding raptor species records. At the time of writing, responses from the ARSG and SRSG had not been received;
- In September 2021, ERM consulted with NatureScot on behalf of SSEN Transmission to agree an approach to ornithology surveys for the North Argyll 275 kV Upgrade, which includes the proposed substation at Craig Murrail (see **Appendix D**). It was agreed with NatureScot that the use of ornithology data collected during surveys undertaken in 2015/2016 to inform the Environmental Impact Assessment (EIA) for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project was deemed acceptable and no additional ornithology surveys would be required, assuming baseline conditions had not changed; and
- EIA for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project was also reviewed in relation to the wider ecological findings.

Before the EP1HS was undertaken, preliminary mapping of the habitats within the Project and survey buffers was undertaken using the Habitat Map of Scotland (HabMoS)[10] open source data. This mapping was then ground truthed during the survey.

5 NatureScot SiteLink. Available at https://www.nature.scot/information-hub/snhi-data-services

6 NatureScot Scottish Biodiversity List. Available at https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list

7 Scotland's Environment Web Map. Available at https://map.environment.gov.scot/sewebmap/

8 National Biodiversity Network Atlas. Available at https://nbnatlas.org/

9 Scottish Forestry: Forest Operations and Red Squirrels in Scottish Forests. Available at, https://forestry.gov.scot/publications/24-forest-operations-and-red-squirrels-in-scottish-forests

10 Habitat Map of Scotland. Available at https://www.environment.gov.scot/our-environment/habitats-and-species/habitat-map-of-scotland/

2.2 Extended Phase 1 Habitat Survey

An EP1HS was undertaken by DEL and ERM within the Project survey area as described in **Section 1.4** (see **Figure 2**). The survey was based on the methods described in Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey (2010)[11] as extended for use in Environmental Assessment[12]. The alphanumeric Phase 1 habitat codes have been reported in the findings. Target notes of features of interest were recorded, each with a geographic reference and accompanying photograph(s) (see **Appendix B**).

2.3 National Vegetation Classification Survey

An NVC survey of habitats with the potential to support Groundwater Dependent Terrestrial Ecosystem (GWDTE) was undertaken by DEL within the survey area (see **Figure 2**). The survey was based on the methods described in JNCC's National Vegetation Classification: Users' Handbook[13] with communities being identified by eye. Target notes of features of interest were recorded with a geographic reference and photographs taken (see **Appendix B**).

2.4 Fauna Surveys as Part of the Extended Phase 1

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 **Sections 2.4.1 to 2.4.9**.

2.4.1 Bats

Habitats suitable for bats were identified and an assessment undertaken of their likely suitability to support foraging / commuting bats and bat roosts, taking account of guidance from the Bat Conservation Trust (BCT)[14] (see **Table 2.1**). The assessment of the potential for bat roosts in the habitats was made based on ground observations focused in areas that would be directly affected and selected areas adjacent to within at least 30 m of the red line boundary. In areas of more mature dense conifers it was restricted largely to the edges of the plantations along tracks / rides, as access into the plantation was not possible (see **Section 2.6**).

Table 2.1 BCT Categories of Suitable Roosting Habitats and Commuting and Foraging Habitats

Suitability Category	Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by the individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation).	Habitat that could be used by small numbers of commuting bats such as fragmented hedgerows or an unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat.

11 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.
12 Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment, Spon, London.
13 Joint Nature Conservation Committee National Vegetation Classification: Users' handbook (2006), Peterborough.
14 Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines.3rd edition. The Bat Conservation Trust, London.

	A tree of sufficient size and age to contain potential roost features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

2.4.2 Otter (Lutra lutra)

Accessible areas of suitable habitat to support otters within the survey area were surveyed for evidence of otter activity in the form of spraints, slides, holts, couches, tracks, and resting up sites (survey limitations are detailed in **Section 2.6**). The suitable habitat surveyed included, running freshwater, field drains, culverts, semi natural broadleaved and coniferous plantation woodland where adjacent to watercourses and, areas of continuous bracken. A number of culverts of varying size were identified throughout the survey area, however, all were deemed too small to be used by otters and were not assessed further (TN 2, TN 4, TN 5).

2.4.3 Water Vole (Arvicola amphibius)

Accessible areas of suitable habitat to support water voles within the survey area were surveyed for evidence of water vole activity in the form of droppings, latrines, feeding remains, nests, and burrows (survey limitations are detailed in **Section 2.6**). Within the survey area, there are areas of running freshwater (burns and field drains) offering suitable bankside habitat for water vole.

2.4.4 Badger (Meles meles)

Accessible areas of suitable habitat to support badgers within the survey area were surveyed for evidence of badger activity, including sett entrances, bedding, scratch marks, paths, prints, guard

hairs, latrines, dropping and signs of foraging (survey limitations are detailed in **Section 2.6**). Within the survey area, there are areas of semi-natural broadleaved woodland and coniferous plantation offering suitable habitat for badgers.

2.4.5 Pine Marten (*Martes martes*)

Accessible areas of suitable habitat to support pine marten within the survey area were surveyed for evidence of pine marten activity in the form of dens, feeding signs and scat (survey limitations are detailed in **Section 2.6**). Within the survey area, there are areas of semi-natural broadleaved woodland and coniferous plantation offering suitable habitat for pine marten.

2.4.6 Red Squirrel (*Sciurus vulgaris*)

Accessible areas of suitable habitat to support red squirrel within the survey area were surveyed for evidence of red squirrel activity in the form of dreys, feeding signs and scat (survey limitations are detailed in **Section 2.6**). Within the survey area, there are areas of semi-natural broadleaved woodland and coniferous plantation offering suitable habitat for red squirrel.

2.4.7 Wildcat (*Felis silvestris*)

Accessible areas of suitable habitat to support wildcat within the survey area were surveyed for evidence of wildcat activity in the form of dens, feeding signs and scat (survey limitations are detailed in **Section 2.6**). Within the survey area, there are areas of coniferous plantation offering suitable habitat for wildcat.

2.4.8 Birds

As mentioned in **Section 2.1**, following a consultation with NatureScot in September 2021, it was agreed the use of ornithology data collected during surveys undertaken in 2015/2016 to inform the EIA for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project was deemed acceptable and that no additional ornithology surveys would be required, assuming baseline conditions had not changed.

As the baseline had not changed to the extent that additional bird surveys were deemed to be required, only incidental records of bird species seen and heard during the EP1HS were recorded to supplement the existing bird data available.

2.4.9 Other Fauna

The presence of habitat with the potential to support any other species of note (e.g., Scottish Biodiversity List species, Local Biodiversity Action Plan species, reptiles, amphibians), or direct field signs of species themselves, was recorded.

2.5 Survey Personnel and Timing

The EP1HS was carried out by Anna Dennis (DEL Senior Ecologist) who has 7 years' experience, supported by Alexander Sharp (ERM Senior Ecologist, ACIEEM) who has 10 years' experience. Survey timing and conditions are detailed in **Table 2.2**.

Table 2.2 Survey details

Date	Surveyor	Survey Type	Approximate survey start/end	Weather
11th October 2021	Anna Dennis Alexander Sharp	Extended phase 1 survey European Protected Species walkover	1400/1800	Rain: Intermittent drizzle; Temp: 14°C; Beaufort wind force scale (WS)[15]: 4; Cloud cover (CC)[16]: 8.
12th October 2021	Anna Dennis Alexander Sharp	Extended phase 1 survey European Protected Species walkover	0930/1700	Rain: 1; Temp: 13°C; WS: 4; CC: 8.

2.6 Limitations

As stated in **Section 2.1**, a data request was submitted to the ABReC. However, on 9th December 2021, ABReC contacted ERM to advise they are currently unable to produce data search reports.

Due to the extent of the survey area and the habitats present meant that it was not possible to walk through all areas as part of the EP1HS. This was made more difficult due to the extent of dense mature coniferous plantation woodland and boggy ground conditions (TN 8). As a result of this restricted access, it is possible field signs for badgers, red squirrel, pine marten and wildcat could be present within the survey area but were not recorded as they were inaccessible and obscured from view. Therefore, the suitability for these areas of dense woodland habitats to support these and other protected species was undertaken from the woodland edges and considered further in the context of other desk study information.

Although all burns and drainage ditches within the survey area were assessed, it was not possible to fully survey along their full extent for field signs of otter, or water vole. Reasons for this include the extent of dense vegetation, unsafe fast flowing water and steep sided margins.

15 Met Office Beaufort wind force scale. Available at https://www.metoffice.gov.uk/weather/guides/coast-and-sea/beaufort-scale

16 Royal Meteorological Society Weather Symbols and Synoptic Charts. Available at https://www.metlink.org/resource/student-charts/

3. DESK STUDY FINDINGS

3.1 Statutory Designated Sites

Nine sites designated for nature conservation value were identified within 10 km of the Project. These sites are listed in **Table 3.1** and shown in **Figure 3**.

Table 3.1 Statutory Designated sites of International / National Importance within 10 km of the Project

Site Name	Designation	Approximate Distance to The Project	Reason for Designation	Considered further in the assessment
Knapdale Lochs	SPA	6.8 km	■ Nationally important breeding population of black-throated diver (*Gavia arctica*) (four pairs, 2% of GB).	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Moine Mhor	SAC	1.5 km	Annex I habitats, including: ■ Active raised bogs; and ■ Degraded raised bogs still capable of natural regeneration. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ■ Mudflats and sandflats not covered by seawater at low tide; ■ Atlantic salt meadows; and ■ Old sessile oak woods with Ilex and Blechnum in the British Isles. Annex II species present as a qualifying feature, but not a primary reason for site selection: ■ Marsh fritillary butterfly; and ■ Otter.	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Taynish and Knapdale Woods	SAC	3.7 km	Annex I habitats and species, including: ■ Old sessile oak woods with Ilex and Blechnum in the British Isles; and ■ Marsh fritillary butterfly. Annex I habitats and species present as a qualifying feature, but not a primary reason for selection of this site: ■ Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea; and Otter.	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.

Site Name	Designation	Approximate Distance to The Project	Reason for Designation	Considered further in the assessment
Inner Hebrides and the Minches	SAC	8.0 km	Harbour porpoise (*Phocoena phocoena*)	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Moine Mhor	SSSI	4 km	■ Saltmarsh and estuarine raised bog habitats. ■ Upland oak woodland; ■ Marsh fritillary butterfly (*Euphydryas (Eurodryas, Hypodryas) aurinia*); and ■ Breeding bird assemblages.	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Knapdale Wood	SSSI	6.83 km	■ Oak woodland habitats; ■ Lichens; ■ Bryophytes; ■ Freshwater habitats; ■ Dragonflies; and ■ Breeding woodland bird assemblages.	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Knapdale Lochs	SSSI	7 km	■ Nationally important breeding population of black-throated diver (*Gavia arctica*) (four pairs, 2% of GB).	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Inverneil Burn	SSSI	9 km	■ Woodlands: Upland oak woodland; ■ Non-vascular plants: Bryophyte assemblage; and, ■ Non-vascular plants: Lichen assemblage.	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.
Moine Mhor	NNR	4 km	■ Active raised bog* (Estuarine raised bog); ■ Degraded raised bog; ■ Atlantic salt meadows (saltmarsh); ■ Intertidal mudflats and sandflats; ■ Western acidic oak woodland (Upland oak woodland); ■ Marsh fritillary butterfly (UKBAP and LBAP species); ■ Large heath butterfly (UKBAP species); ■ Otter (UKBAP and LBAP species); ■ Breeding bird assemblage (over 235 species); and ■ Hen harrier (LBAP species).	No, due to the distance, lack of connectivity and impact pathways for designated features between sites.

Key:
SPA – Special Protected Area
SAC – Special Area of Conservation

Site Name	Designation	Approximate Distance to The Project	Reason for Designation	Considered further in the assessment

SSSI – Site of Special Scientific Interest
NNR – National Nature Reserve

3.2 Non-statutory Designated Sites and Ancient Woodland

3.2.1 Non-statutory Sites

No non-statutory sites designated for nature conservation value were identified within 2 km of the Project.

3.2.2 Ancient Woodland

A review of the Ancient Woodland Inventory (using publically available data from NatureScot[17]) identified four unnamed Ancient Woodlands within 2 km of the Project, all located adjacent to the existing access track (see **Table 3.2** and **Figure 3** Designated Sites).

Table 3.2 Named and Unnamed Ancient Woodlands within 2 km of the Redline Boundary

Site Name	Designation[18]	Approximate Distance to Redline Boundary	Considered further in the assessment
Unnamed Ancient Woodland	Other (not listed)	0 km	The unnamed ancient woodland which is adjacent to the existing access track, could be impacted by potential pruning and removal of the trees. Further recommendations are detailed below with regards to this Ancient Woodland. The existing access track is currently used for commercial forestry access purposes and the frequency of vehicles using the track will not increase significantly.
Unnamed Ancient Woodland	LEPO[19]	0 km	
Unnamed Ancient Woodland	Ancient (of semi-natural origin)	0 km	
Unnamed Ancient Woodland	Ancient (of semi-natural origin)	0 km	

Key:
LEPO – long established (of plantation origin)

17 SNH - SNH Natural Spaces - Ancient Woodland Inventory Available at https://gateway.snh.gov.uk/natural-spaces/dataset.jsp?dsid=AWI

18 A guide to understanding the Scottish Ancient Woodland Inventory is available at https://www.nature.scot/doc/guide-understanding-scottish-ancient-woodland-inventory-awi

19 LEPO are woodlands interpreted as plantation from maps of 1750 or 1860 and have been continuously wooded since. Many of these sites have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland.

3.3 Protected and Priority Species Records

As detailed in **Section 2.1**, a request to ABReC for protected and priority species data within 2 km of the red line boundary of the Project. However, as stated in **Section 2.6**, ABReC contacted ERM in December 2021 to advise they are currently unable to produce data search reports.

In the absence of local records, a review was undertaken of the findings of surveys reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA, as the route of this OHL crosses the Project. Whilst protected species including bats, otter, badger, pine marten and red squirrel were recorded in the wider area along the alignment of the OHL, none were reported in the area of the Project. Water vole was not recoded although the Project lies in a part of Argyll area they are known to exist[20]. In addition the consultation responses within the EIA did not highlight any protected species within the Project.

The breeding bird surveys undertaken in 2015-2016 to inform SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA within the vicinity of the Project recorded breeding willow warbler (*Phylloscopus trochilus*), chaffinch (*Fringilla coelebs*), siskin (*Carduelis spinus*), coal tit (*Periparus ater*) and meadow pipit (*Anthus pratensis*), but no Schedule 1 species. Baseline conditions within the Project survey area were considered not to have changed to the extent that additional bird surveys were required.

[20] Mammal Society: Water Vole. Available at https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-water-vole/

4. SURVEY FINDINGS

4.1 Extended Phase 1 Habitat Survey Results

The following broad habitat categories were recorded within the survey area during the EP1HS:

- broadleaved woodland - semi-natural (A 1.1.1);
- coniferous woodland – plantation (A 1.2.2);
- scrub - dense (A 2.1);
- mixed parkland/scattered trees (A 3.3);
- coniferous woodland - recently felled (A 4.2);
- marsh/marshy grassland (B 5);
- bracken – continuous (C 1.1);
- dry dwarf shrub heathland - acid (D 1.1);
- running water (G 2);
- bare ground (J 4); and
- invasive non-native species.

These habitats are described below. They are listed in the order found within the *Handbook for Phase 1 Habitat Survey* (JNCC, 2010), not in order of ecological value.

The mapped findings of the EP1HS are presented in **Appendix A** (see **Appendix A Figure 4.** Target Notes are presented in **Appendix B**.

4.1.1 Broadleaved Woodland - Semi-natural (A1.1.1)

Two areas of broadleaved woodland are found within the survey area; one is located along the Auchoish Burn near the western boundary of the Project. 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*). The second woodland is located to the south east of the Project and comprised a mix of scattered downy birch of various ages, and self seeded Sitka spruce (Picea sitchensis), with willow scrub and ferns dominating the ground flora in some places, with bracken (*Pteridium aquilinum*), male fern (*Dryopteris filix-mas*) and scaly male fern (*Dryopteris affinis* agg). Where the ground flora is grassy, species present include red fescue (*Festuca rubra*), common bent grass (*Agrostis capillaris*), purple moor-grass (*Molinia caerulea*) and tufted hair-grass (*Deschampsia cespitosa*), along with heath bedstraw (*Galium saxatile*), tormentil (*Potentilla erecta*), heather (*Calluna vulgaris*), red-stemmed feather moss (*Pleurozium schreberi*), glittering wood-moss (*Hylocomium splendens*), common haircap (*Polytrichum commune*), flat-topped bog-moss (*Sphagnum fallax*) and acute-leaved bog-moss (*Sphagnum capillifolium*). Along the watercourse located to the western boundary of the site, sharp-flowered rush (*Juncus acutiflorus*) dominates in places that appear subject to regular inundation.

4.1.2 Coniferous woodland – plantation (A1.2.2)

The survey area, including along the existing access track, is dominated by coniferous plantation woodland comprising Sitka spruce, with occasional Norway spruce (*Picea abies*) and lodgepole pine (*Pinus contorta*). The age of the trees varies from young and recently planted to dense plantations where mature. The ground flora therefore also varies; under the mature trees it is species-poor, often dominated by mosses such as common tamarisk-moss (*Thuidium tamariscinum*) and common haircap with few associates, while in areas of young plantation it is variously rush-dominated (often where the area has been disturbed through felling and replanting), or more heath-dominated, with

species such as heather, soft rush (*Juncus effusus*), purple moor grass (*Molinia caerulea*), tufted hair grass, foxglove (*Digitalis purpurea*), marsh thistle (*Cirsium palustre*), flat-topped bog-moss and acute-leaved Bog-moss.

4.1.3 Scrub - dense (A2.1)

A small area of dense scrub is located to the south of the existing access track and contains a mix of scattered downy birch of various ages and self-seeded Sitka (see **Section 4.1.4**), with eared willow scrub (*Salix aurita*) and bracken dominating the shrub layer.

4.1.4 Mixed parkland/scattered trees (A3.3)

Downy birch of various ages and self-seeded Sitka are scattered along the small watercourse to the south of the existing access track with eared willow and bracken below.

4.1.5 Recently felled coniferous woodland (A4.2)

A large area of recently felled coniferous woodland, taken to create a wayleave for SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA wayleave, runs through the Project. The ground within this area is disturbed and comprises of sharp-flowered rush, soft rush, purple moor grass, heather, eared willow, marsh thistle, foxglove, bramble (*Rubus fruticosus agg.*), common haircap, heath plait-moss (*Hypnum jutlandicum*) and flat-topped bog-moss.

Other areas of felled coniferous woodland are present within the surrounding area, however, a review of aerial imagery suggests these areas were felled some time within the last seven years, which has led to the reestablishment of other habitat types (discussed below) in these areas in the interim.

4.1.6 Marsh/marshy grassland (B5)

Extents of marshy grassland are scattered within the survey area, dominated by soft rush and purple moor grass, with sharp-flowered rush, star sedge (*Carex echinata*), Yorkshire fog, tufted hair grass, bulbous rush (*Juncus bulbosus*), pointed spear-moss (*Calliergonella cuspidate*), blunt-leaved bog-moss (*Sphagnum palustre*), flat-topped bog-moss, and acute-leaved Bog-moss.

4.1.7 Bracken -continuous (C1.1)

A chambered cairn is located in the west of the Project, which is dominated by bracken and bramble, with remnant heath including heather, blaeberry (*Vaccinium myrtillus*), purple moor grass, bell heather, woolly fringe-moss (*Racomitrium lanuginosum*), glittering wood-moss, and *Cladonia* spp.

4.1.8 Dry Dwarf Shrub Heathland - acid (D1.1)

To the north-west of the wayleave, the marshy grassland of the recently felled ground gives way to a dry dwarf shrub heath as the ground rises, dominated by heather (*Calluna vulgaris*), with common bent (*Agrostis capillaris*), Yorkshire fog (*Holcus lanatus*), viviparous sheep's fescue (*Festuca vivipara*), tormentil (*Potentilla erecta*), bell heather (*Erica cinerea*) and eared willow. The area was previously forested but was felled sometime between 2010 and 2014.

4.1.9 Running Water (G2)

Small mapped watercourses are located to the west and east of the Project. The Auchoish Burn near the western boundary of the Project western watercourse has an approximate depth of two to four feet and flows principally through an area of mixed plantation woodland, before slowly flowing underneath the existing access track to the west of the Project. The bankside had dense sections consisting of a mixture of rushes, bracken and small silver birch. The eastern watercourse is shallow, only approximately a few inches deep at its closest point to the Project and largely flows (slowly) through extents of mature and recently felled coniferous plantation with a mixture of low growing rushes and recently felled tree stumps along the very shallow banksides.

4.1.10 Bare Ground (J4)

The existing access track onto site comprises an un-metalled road, with a small number of laydown/storage areas. No notable vegetation is associated with this habitat.

4.1.11 Invasive Non-Native Species

No invasive non-native species were recorded within the survey area at the time of the survey.

4.2 NVC Habitats with the Potential to support GWDTE

The following NVC habitats with GWDTE were recorded within the survey area during the EP1HS:

- W4 - *Betula pubescens* - *Molinia caerulea* woodland;
- W7 - *Alnus glutinosa* - *Fraxinus excelsior* - *Lysimachia nemorum* woodland;
- M6 - *Carex echinata* - *Sphagnum fallax/denticulatum* mire;
- M23 - *Juncus effusus/acutiflorus* - *Galium palustre* rush-pasture; and
- M25 - *Molinia caerulea* - *Potentilla erecta* mire.

The mapped results of the NVC survey are presented **Appendix A Figure 5.** The GWDTE classification for the survey area are presented in **Appendix A Figure 6**. Target Notes are presented in **Appendix B**.

4.2.1 W4 Betula pubescens - Molinia caerulea Woodland

Extents of woodland scattered within the survey area are assessed to have an affinity for W4 *Betula pubescens* - *Molinia caerulea* woodland. The canopy is dominated by downy birch and grey willow, with eared willow, rowan and hazel. The ground flora is variable, in some places dominated by bracken, while elsewhere it comprises purple moor grass with heather, cross-leaved heath, scaly male fern, acute leaved bog moss, *Sphagnum fallax* and *Sphagnum palustre*. The community has High potential to be groundwater-dependent, although in places it is associated with drains and small watercourses, indicating a surface water influence.

The area classified as W4 to the east of the Project is not easily classified into one community. Eared willow is a significant component, whilst downy birch is relatively sparse. Bracken is present within this area, but this was deemed to be encroaching into the W4 community, rather than being a U20 community in its own right. Therefore, due to the presence of both downy birch and purple moor grass, it is felt that W4 is the most accurate classification.

4.2.2 W7 Alnus glutinosa - Fraxinus excelsior - Lysimachia nemorum Woodland

The woodland along the watercourse in the west of the survey area is assessed to comprise W7 *Alnus glutinosa* - *Fraxinus excelsior* - *Lysimachia nemorum* woodland. The canopy is dominated by alder, with locally dominant downy birch, abundant eared willow and grey willow, and frequent rowan. Planted sessile oaks are present, as is young Sitka spruce regeneration. The ground flora varies from relatively dry, with red fescue, Yorkshire fog, common bent grass, tufted hair grass, heath bedstraw, *Pleurozium schreberi* and common haircap, to wetter areas dominated by sharp-flowered rush with *common haircap* and *Sphagnum fallax.* These wetter areas have an affinity for the rush-dominated sub-communities of M6 *Carex echinata* - *Sphagnum fallax/denticulatum* mire. The community has High potential to be groundwater-dependent, although as it is associated with a watercourse this indicates a surface water influence.

4.2.3 M6 Carex echinata - Sphagnum fallax/denticulatum Mire

Areas of rush-pasture within the survey area dominated by soft rush with associated sphagnum species comprise M6c *Carex echinata - Sphagnum fallax/denticulatum* mire, *Juncus effusus* sub-community and are found along former rides. In addition, this community and the M6d *Juncus acutiflorus* sub-community are found in areas of felled woodland along the new wayleave (TN 1, TN 3), in mosaic with the M25 community (see below). However, much of the wayleave comprises disturbed ground including extents of peat with limited vegetation, and therefore the extents of well-developed rush pasture are likely to correspond to former rides. The community has High potential to be groundwater-dependent, although as it is associated with rides and therefore forestry drainage, this may indicate a surface water influence.

4.2.4 M23 Juncus effusus/acutiflorus - Galium palustre Rush-pasture

Further areas of rush-pasture within the survey area are dominated by soft rush but lack sphagnum species and are assessed to be M23 *Juncus effusus/acutiflorus - Galium palustre* rush-pasture, with a mosaic of the M23a *Juncus acutiflorus* and M23b *Juncus effusus* subcommunities. The community comprises a mix of soft rush and sharp-flowered rush, with tufted hair-grass, creeping buttercup *Ranunculus repens*, marsh thistle, *Rhytidiadelphus squarrosus* and *Calliergonella cuspidata*. Scattered eared willow and Sitka regeneration are present in places. The community has High potential to be groundwater-dependent, although as it is associated with rides and therefore forestry drainage, this may indicate a surface water influence.

4.2.5 M25 Molinia caerulea - Potentilla erecta Mire

Within the recently felled woodland, including along the new wayleave (TN 1, TN 3), are extents of M25 *Molinia caerulea - Potentilla erecta* mire. The community is dominated by purple moor grass on disturbed peat, with heather, star sedge, soft rush, foxglove, common haircap and *Sphagnum palustre*. The community has a Moderate potential to be groundwater-dependent.

4.3 Protected Species Survey Findings

4.3.1 Bats

4.3.1.1 Bat Roost Potential

No buildings are present within the Project.

No trees offering bat roosting potential were recorded during the survey and also the findings of the surveys reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA did not identify any field signs to suggest roosting bats were supported in the area.

There will be no habitat loss and no significant increase in vehicle activity or night time use along the existing access track (where large sections of coniferous woodland are present), hence the risk of effects on any bats present along the existing access track will be negligible.

Trees located within the broadleaved woodland to the west of the Project were not mature and offered no roosting features. Equally, no bat roost potential was identified in the area of scrub and scattered trees to the south east of the Project, which consisted of a mix of scattered downy birch of various ages, and self seeded Sitka spruce, with willow scrub and bracken below (TN 13).

The small uniform coupe of coniferous plantation (predominantly Sitka spruce) that will be impacted by the Project offers negligible potential to support roosting bats due to the young age of the trees (TN 11) and no surveys for roosting bats are required.

4.3.1.2 Bat Habitat Assessment

Much of the survey area is dominated by coniferous plantations and areas where trees have been felled in the past, or more recently. Those areas that will be directly affected are dominated by Sitka spruce, or include areas of more recent felling and are considered to be less favoured by foraging bats. Smaller area of preferred habitats for foraging bats occur in the surrounds of the Project. For example, the broadleaved woodland and associated small woodland burn located over 700 m to the west of the areas directly affected. The loss of woodland edge is unlikely to affect any commuting routes across the area used by bats in any significant way and bats were not reported from this area in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA (see **Section 2.1**).

Given the above, no bat surveys are required .

4.3.2 Otter

No field signs of otter were identified during the EP1HS. This mirrors the survey findings reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA, where detailed otter surveys were undertaken of suitable watercourses along the OHL route.

Suitable habitat to support otters (including commuting, foraging and resting up sites) identified during the survey is located approximately 700 m to the west/north west of the footprint of the Project and were found along the existing access track (TN 7), within the broadleaved woodland to the west of the Project (TN 6) and, within an area of coniferous woodland plantation (TN 9).

Due to the distance between the broadleaved woodland to the west of the Project (TN 6) and between the area of coniferous woodland plantation and the Project (TN 9), it is unlikely there will be any direct disturbance to otters in these areas.

A small burn located to the east of the Project may be used as a commuting corridor but due to its shallow depth, small width and surrounding habitats consisting of rush pasture and gravely stones, it is unlikely the burn will support holts or be important foraging (TN 12).

As there will be no habitat loss or significant increase in vehicle activity along the existing access track, any direct disturbance to otters associated with the Project along the existing access track will be negligible.

Given these findings, it is not proposed that any additional surveys for otters are required.

4.3.3 Water Vole

No field signs of water vole were identified during the EP1HS within the Project. Suitable habitat to support water vole was identified along the watercourse flowing through the semi-natural broadleaved woodland that lies approximately 700 m to the west of the Project footprint, and that is crossed already by the existing access road. The small burn located to the east of the Project was deemed unsuitable to support water vole due to its shallow bankside, shallow water depth, likely variation in water flows, and small width (TN 12). No further surveys for water vole are considered necessary.

4.3.4 Badger

No evidence of badger activity was recorded during the EP1HS, mirroring the findings of SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA in this area (see **Section 2.1**). Whilst coniferous plantations can support badgers, the underlying habitat in areas likely to be directly affected and in the immediate surrounds was boggy and unlikely to be used by badgers for the creation of setts. No further surveys for badgers are considered to be necessary.

4.3.5 Pine Marten

A suspected pine marten scat was found within the survey area on a bridge along the main access track (TN10). No dens were identified. The findings of the surveys reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project recorded few pine marten, suggesting populations were low in this general area (see **Section 2.1**). Whilst pine martens favour native woodlands they can live in conifer plantations[21]. Large areas of conifer plantation occur in and around the survey area, including where habitat loss will occur for the Project, temporary works area and new access tracks. Further focused surveys are required in and adjacent to these areas likely to be directly affected, to determine if pine marten are present.

4.3.6 Red Squirrel

No field signs of red squirrel were identified during the EP1HS. This may reflect the dominance of Sitka spruce in a number of areas, including within the footprint of the Project. Red squirrels are less likely to create dreys in Sitka spruce plantations and they are not their favoured feeding areas (Scottish Forestry Guidance Note[22]). The findings of the surveys reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA recorded few red squirrels throughout the alignment, suggesting populations are low in this general area (see **Section 2.1**). However, there are extensive areas of coniferous plantations and other woodland in and around the survey area that could still support red squirrels, including in areas where there will be habitat loss to accommodate the Project footprint. Further focused surveys are required in and adjacent to the areas that will be directly affected.

4.3.7 Wildcat

No field signs of wildcat were identified during the EP1HS[23]. However, wildcat are native to Scotland and are known to be present in the area of the Project [24]. Wildcat have a preference for woodland edges, uplands with rough grazing and moorlands with limited pastures in the west of Scotland[25]. Although the habitat to support them is declining across much of Scotland leading to a decline in their distribution range and population[26]. Extensive areas of coniferous plantation in and around the survey area could support wildcat, including areas where there will be habitat loss to accommodate the Project. Therefore, further focussed surveys are required in and adjacent to the areas that will be directly affected.

[21] Pine Marten, NatureScot. Available at https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/pine-marten

[22] Scottish Forestry: Forest Operations and Red Squirrels in Scottish Forests. Available at, https://forestry.gov.scot/publications/24-forest-operations-and-red-squirrels-in-scottish-forests

[23] Surveys followed guidance and methodology as described in Forestry Commission Scotland Guidance Note 35d: Forest operations and wildcats in Scotland. Available at https://forestry.gov.scot/publications/36-forest-operations-and-wildcats-in-scotland/viewdocument/36

[24] Natural England Joint Publication JP025. A Review of the Population and Conservation Status of British Mammals: Technical Summary 2018. Available at https://www.mammal.org.uk/wp-content/uploads/2021/06/MAMMALS-Technical-Summary-FINALNE-Verision-FM3290621.pdf

[25] Scottish wildcats Naturally Scottish. Nature Scot, 2011. Available at https://www.nature.scot/sites/default/files/2017-07/Publication%202011%20-%20Naturally%20Scottish%20-%20Wildcats.pdf

[26] Natural England Joint Publication JP025. A Review of the Population and Conservation Status of British Mammals: Technical Summary 2018. Available at https://www.mammal.org.uk/wp-content/uploads/2021/06/MAMMALS-Technical-Summary-FINALNE-Verision-FM3290621.pdf

4.3.8 Birds

No birds with special protection under Schedule 1[27] were recorded during the EP1HS.

Suitable habitat to support other breeding birds was identified during the survey and a number of common and widespread bird species (listed below) were recorded during the EP1HS.

- UK Red Status Birds of Conservation Concern (BoCC)[28] including, Tree Pipit (*Anthus trivialis*).
- UK Amber Status Birds of Conservation Concern (BoCC)[29] including, Song Thrush (*Turdus philomelos*), Woodpigeon (*Columba palumbus*) and, Wren (*Troglodytes troglodytes*).
- UK Green Status BoCC including Blackbird (*Turdus merula*), Carrion Crow (*Corvus corone corone*), Chaffinch (*Fringilla coelebs*), Coal Tit (*Parus ater*), Jackdaw (Corvus monedula), Pied Wagtail (*Motacilla alba*), Raven (*Corvus corax*), Robin (*Erithacus ruhecula*), Siskin (*Carduelis spinus*) and Treecreeper (*Certhia familiaris*).
- SBL species recorded during EP1HS: Song Thrush and Siskin.

These incidental records of bird species recorded during the survey are similar to the species identified during SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA with common woodland and upland bird species recorded. The recording of similar bird species indicates the underlying conditions around the Project have not changed since the surveys undertaken to inform SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project, therefore, no additional bird surveys are required.

4.3.9 Other Fauna

There are no waterbodies present within the survey area to support breeding amphibian species. The areas of recently felled coniferous woodland to be lost due to the Project offer good foraging and basking habitat for reptile species, with additional areas of continuous bracken and recently felled coniferous woodland within the wider survey area offering suitable habitat for reptiles. It is therefore recommended that further focused surveys in habitat suitable to support reptiles that will be lost due to the Project are required to determine if reptiles are present.

No field signs of any other mammal species were identified, although the habitat present across the Project is suitable to support deer or rabbit species.

[27] RSPB The Schedules. Available at: https://www.rspb.org.uk/birds-and-wildlife/advice/wildlife-and-the-law/wildlife-and-countryside-act/schedules/

[28] Birds of Conservation Concern 5. Available at https://www.bto.org/sites/default/files/publications/bocc-5-a5-4pp-single-pages.pdf

[29] Birds of Conservation Concern 5. Available at https://www.bto.org/sites/default/files/publications/bocc-5-a5-4pp-single-pages.pdf

5. SUMMARY AND RECOMMENDATIONS

5.1 Summary

The habitat in and around the footprint of the Project is predominantly young operational conifer plantation and areas that have been felled at various times including some as recently as 2018 – 2020. In areas where the felling has been occurred and there has been no replanting, there are signs of recovery to what may have been the original habitat type before the trees were planted (*e.g.* wetland habitats and heathland such as dry acid dwarf shrub heath, although Sitka regeneration is threatening this in places).

Areas of moderate and high GWDTE were identified within the survey area (see **Figure 6**). However, on the basis of the information collected, it appears that the habitats are influenced also by surface water, and the extent to whether they are groundwater influenced needs to be confirmed.

The initial surveys for protected species as part of the EP1HS recorded no signs of specially protected species in habitats that would be directly affected, or in the immediate surrounds. Some parts of the conifer plantations were dense and were not accessible during the EP1HS. These findings mirror those reported in SSEN Transmission's Inveraray to Crossaig 275 kV OHL Reinforcement Project EIA for the part of the OHL alignment that crossed the area of the Project.

A suspected pine marten scat was found approximately 1 km to the south west of the footprint of the Project sites.

Whilst conifer plantations can provide suitable habitat for several protected species there are reasons why those trees that will be lost are unlikely to support some of them 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.

A watercourse runs approximately 168 m to the east of the habitats to be lost, but in the vicinity of the works, it is not considered suitable for otter holts, or for use by water voles.

Despite the above it is still possible that the areas of conifer plantation could be used by red squirrel, pine marten and wildcat and further surveys should be undertaken (see below).

All bird species and their nest / eggs / young are protected and the habitats to be lost will support some common breeding bird species.

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

The EP1HS recorded habitats and species signs, but as the development will use the existing access track unchanged, no further surveys are considered necessary along the main access route.

5.2 Recommendations

Following the completion of the EP1HS and the NVC surveys, no further habitat / flora surveys are necessary, with the exception of a potential Ancient Woodland survey.

There is the possibly that tree pruning and tree removal maybe required on trees within the unanamed Ancient Woodland adjacent to the existing access track. If works are required with the woodland, then the following is to be undertaken:

- 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.

As stated in **Section 5.1**, further surveys (see below) are recommended for red squirrel, pine marten, wildcat and reptiles to determine if they are present and to understand any mitigation that may be required before construction can commence (see below).

- Pine marten – in the areas of conifers to be lost and in a buffer of up to at least 100 m in where suitable habitat occurs. Further scats should be sought also from the previous location where they were identified (bridge at TN10) that lies along the watercourse to the west of the Project. Any scats found should be collected and sent for eDNA analyses to confirm that they are pine marten.
- Red squirrel – in the areas of conifers to be lost and a buffer of 50 m (red squirrel) where suitable habitat occurs.
- Wildcat - in the areas of conifers to be lost and in a buffer of up to at least 200 m in where suitable habitat occurs.
- Reptiles – in the areas of recently felled conifer woodland to be lost and in a buffer of up to at least 30 m where suitable habitat occurs.

Much of the habitat to be lost will be coniferous plantation and it is evident from the Extended Phase 1 Habitat Survey that it is often dense and access may not be easy, or even possible, in places (see **Section 2.6**). Given the comparatively small area to be surveyed further, the survey effort should include more detailed surveys along the margins / rides where present and seeking to access the more dense areas.

Where access prevents any detailed surveys, consideration should be given to the use of camera traps to seek to confirm presence, or a precautionary approach should be undertaken during construction with reliance on the implementation of the SHE Transmission Species Protection Plans (SPPs) that have been developed and agreed with NatureScot. If the latter approach is adopted, it is possible that delays to the construction programme may occur if presence of protected species in these dense conifer plantations is confirmed during the removal of the trees (where necessary).

A pre-construction walkover survey by a suitable qualified Ecology Clerk of Works (ECoW) will be undertaken within the Project footprint no sooner than 48 hours prior to construction works commencing to establish if any protected species are present, or there are non-native species. Actions as set out in the SSEN Transmission SPPs will be implemented if necessary to avoid effects on protected species and the spread of non-native species.

Appendix A FIGURES

Figure 1 Craig Murrail Red Line Site Boundary

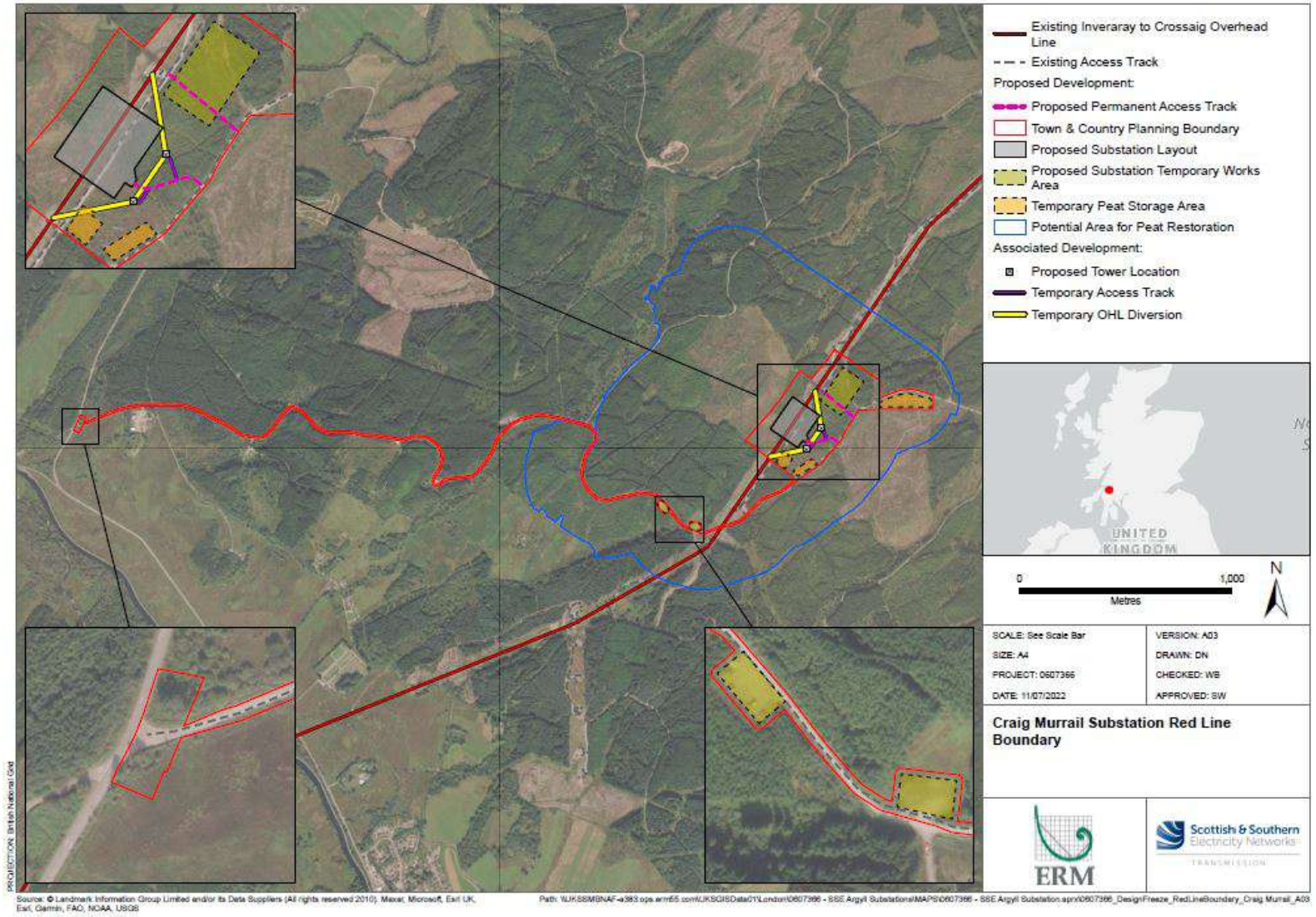


Figure 2 Craig Murrail Survey Area

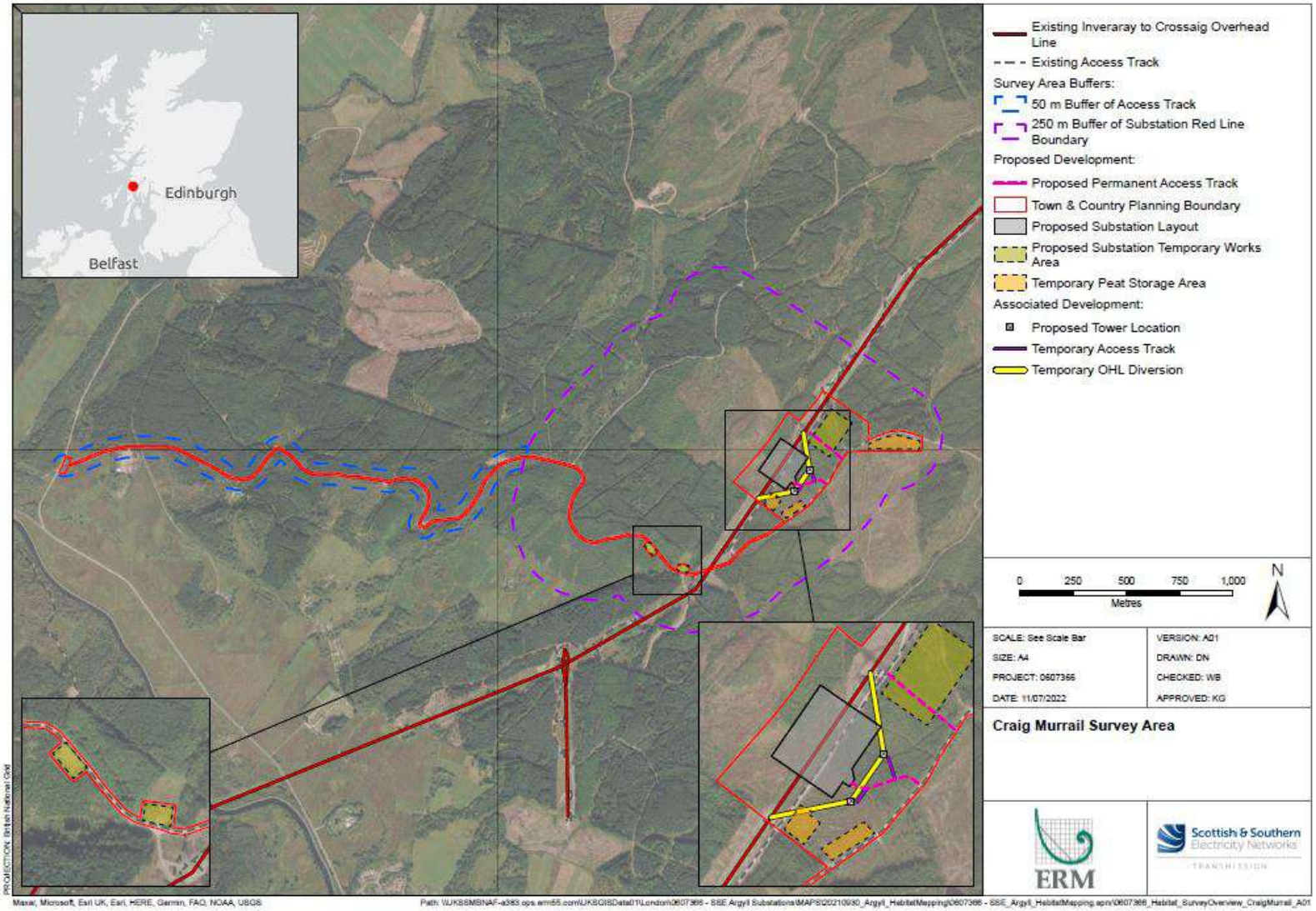


Figure 3 Designated Sites within 10 km Buffer

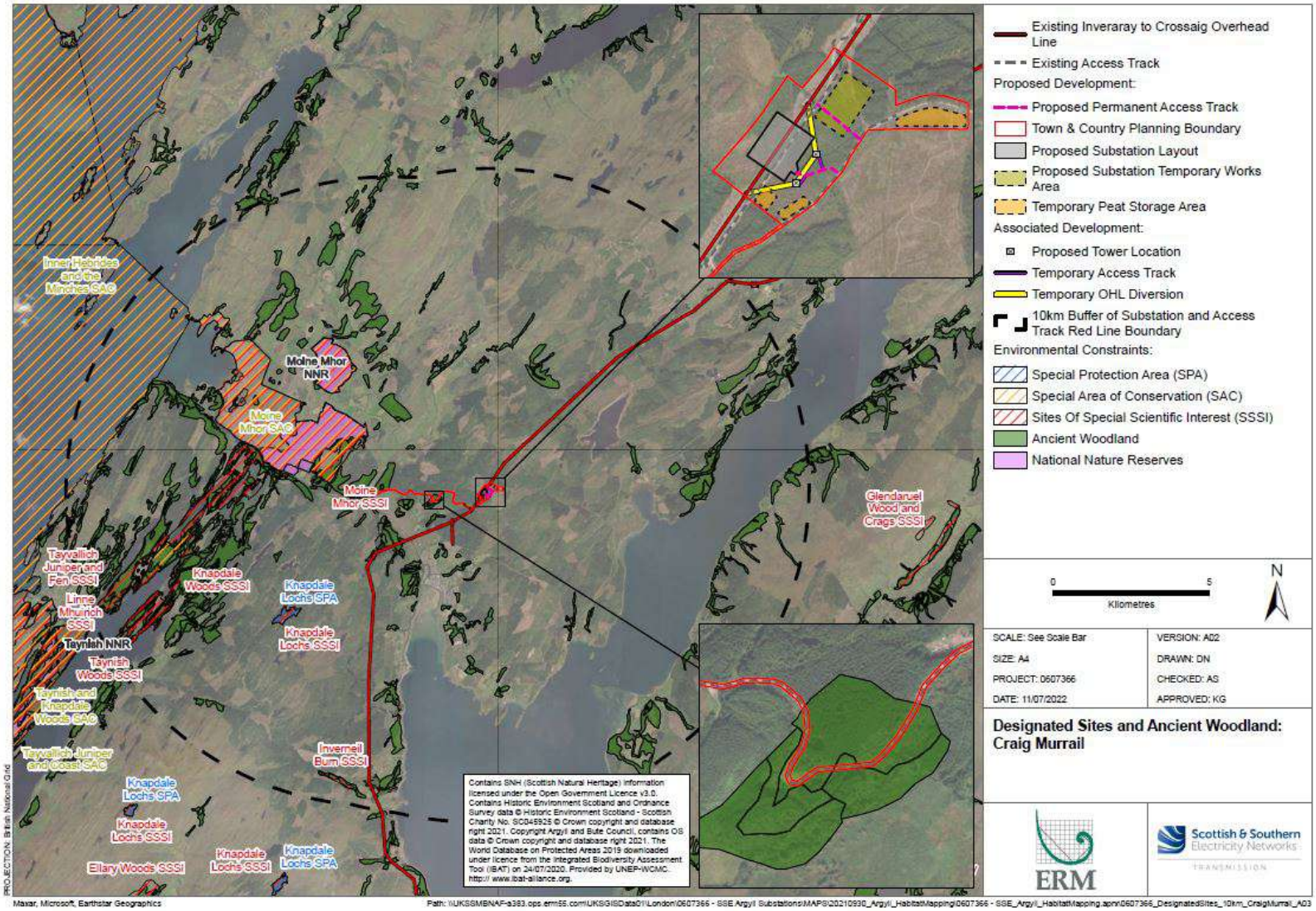
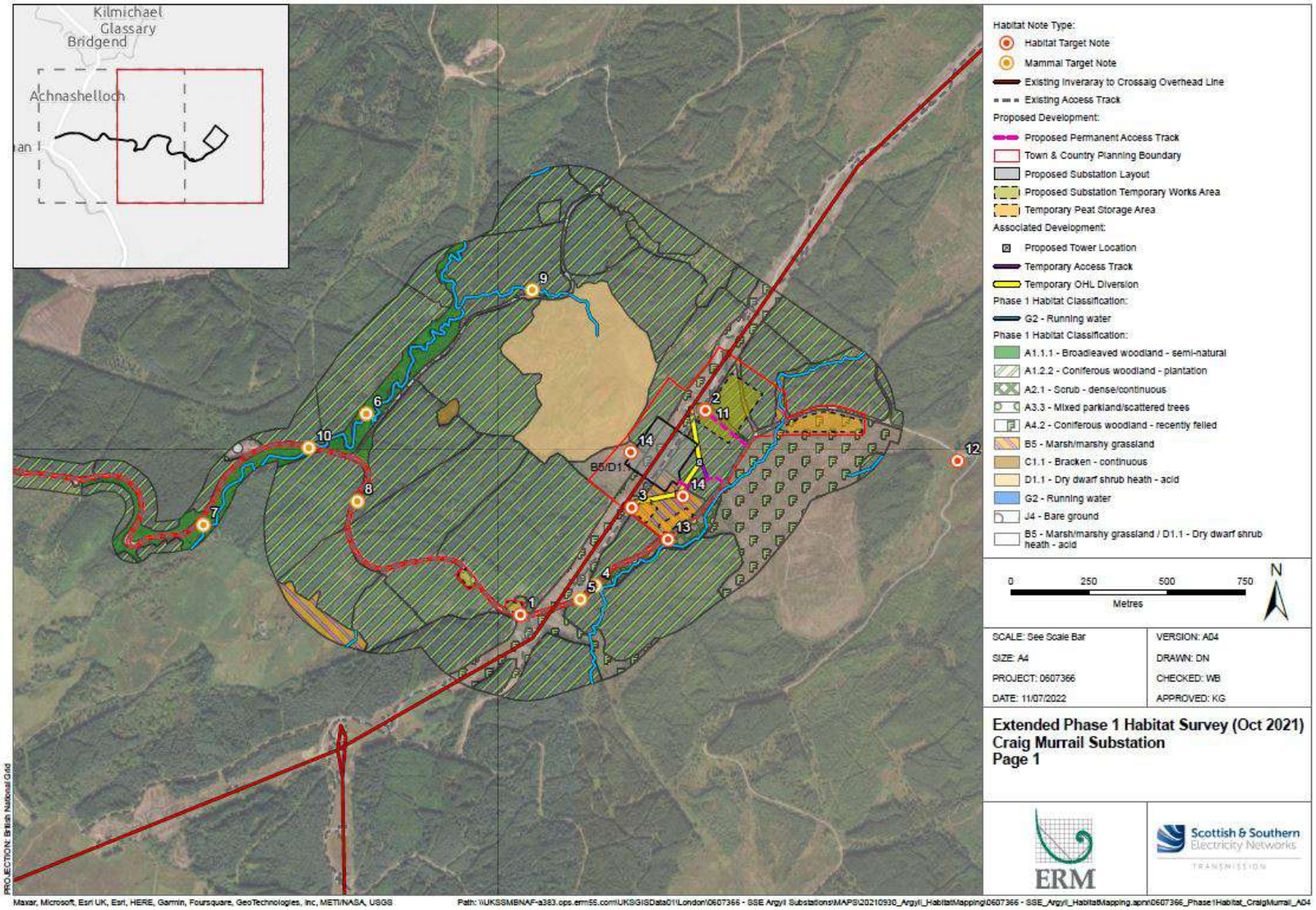


Figure 4 Extended Phase 1 Habitat Survey for Craig Murrail Substation



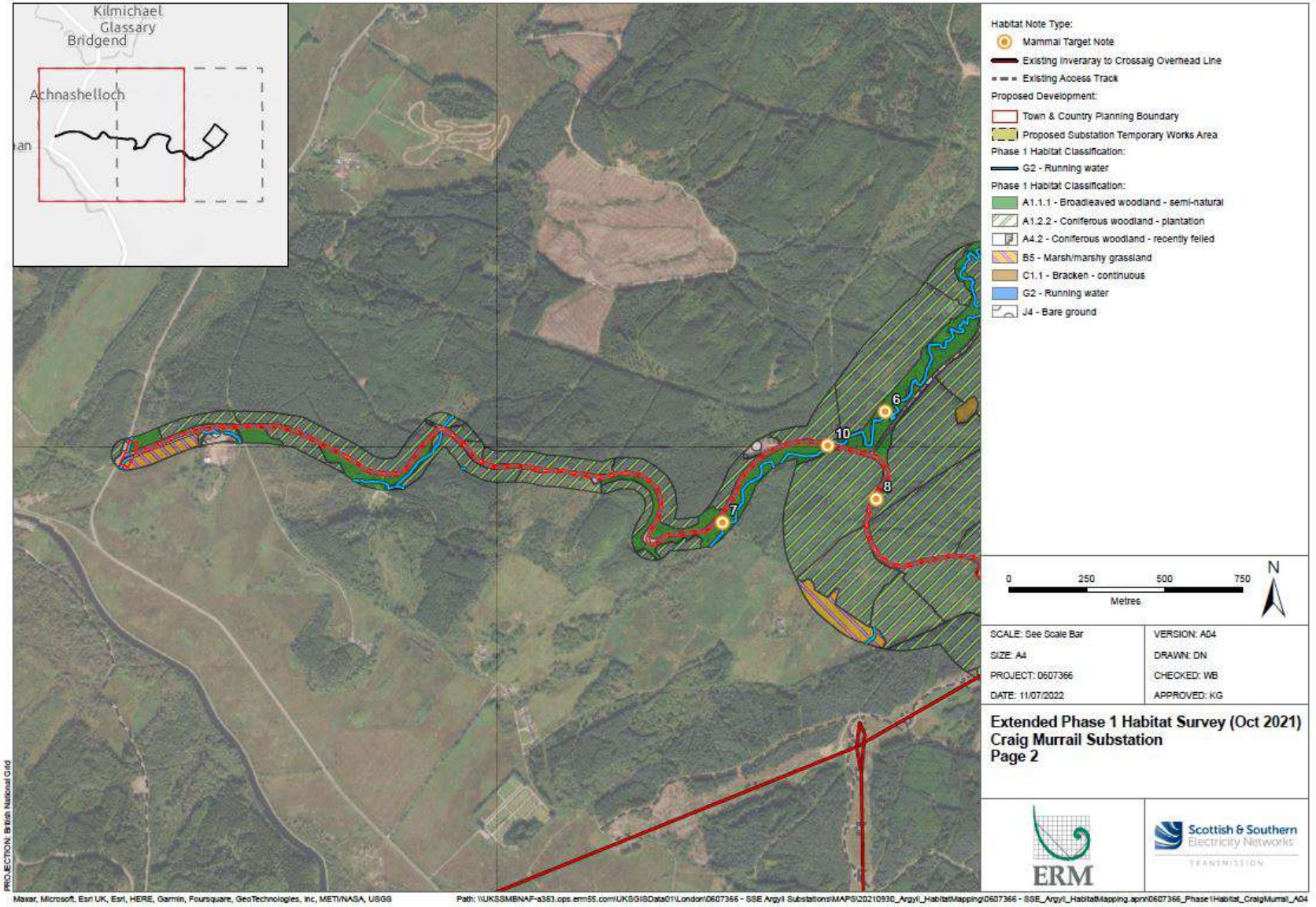
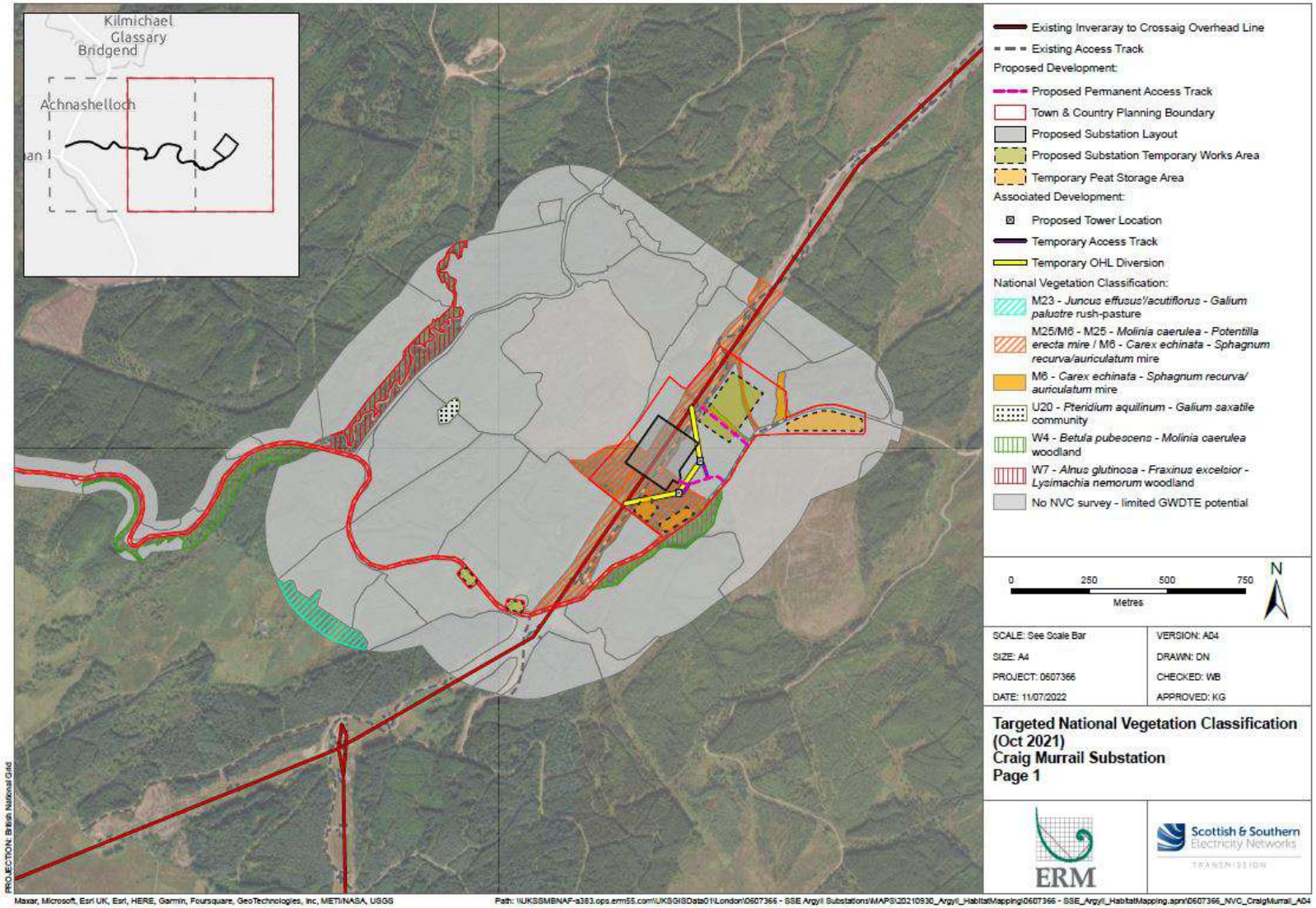
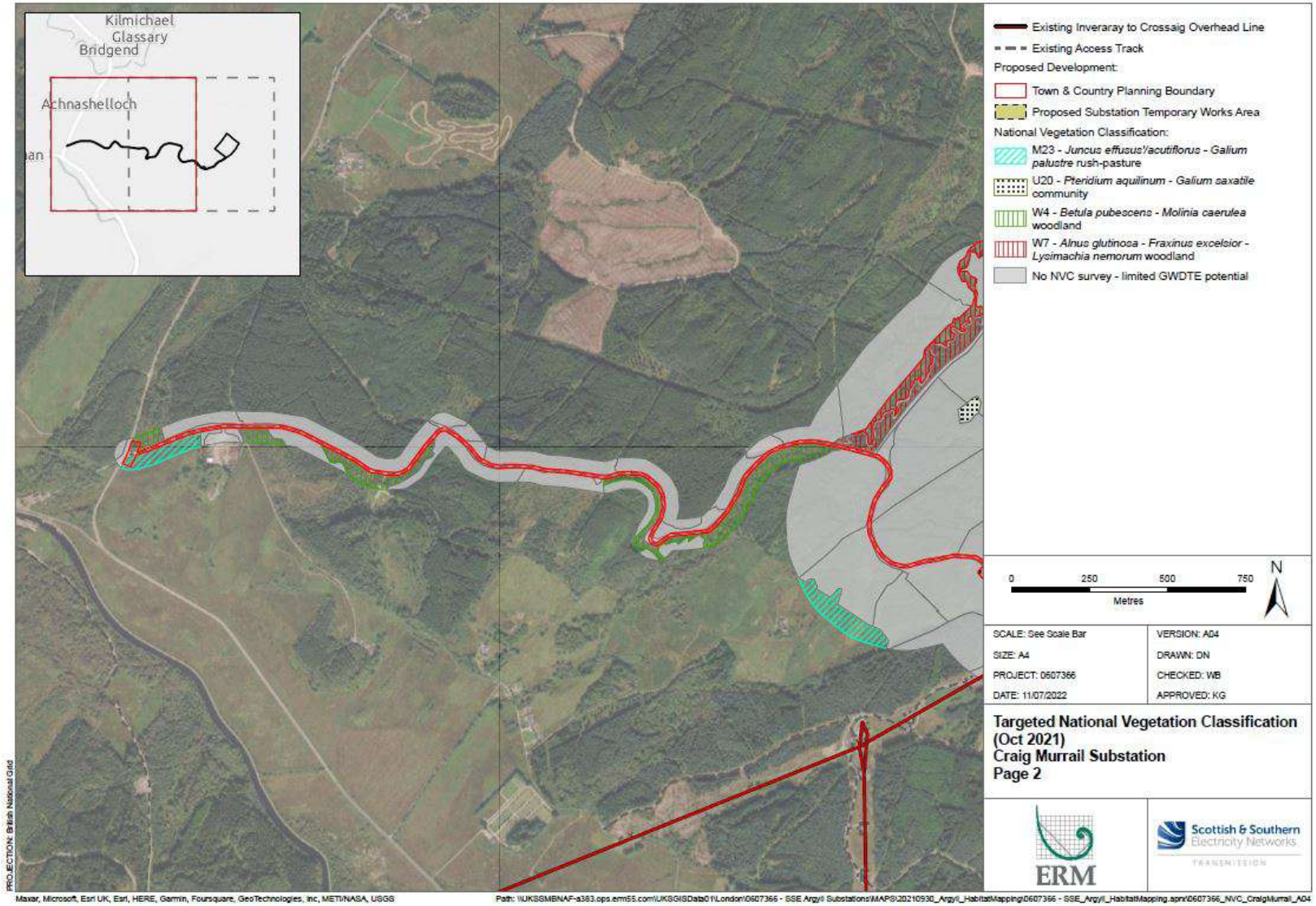

Kilmichael Glassary
Bridgend
Achnashelloch
Habitat Note Type:
Mammal Target Note
Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
Phase 1 Habitat Classification:
G2 - Running water
Phase 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
6
10
8
7
0
250
500
750
Metres
N
SCALE: See Scale Bar
VERSION: A04
SIZE: A4
DRAWN: DN
PROJECT: 0607366
CHECKED: WB
DATE: 11/07/2022
APPROVED: KG
Extended Phase 1 Habitat Survey (Oct 2021)
Craig Murrail Substation
Page 2
ERM
Scottish & Southern Electricity Networks
TRANSMISSION
PROJECTION: British National Grid
Maxar, Microsoft, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS
Path: \\UKSSMBNAF-a383.ops.erm55.com\UKSIGSData01\London\0607366 - SSE Argyll Substations\MAPS\20210930_Argyll_HabitatMapping\0607366 - SSE_Argyll_HabitatMapping.aprx\0607366_Phase1Habitat_CraigMurrail_A04

Figure 5 National Vegetation Classification for Craig Murrail Substation




Kilmichael Glassary
Bridgend
Achnashelloch
Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
National Vegetation Classification:
M23 - Juncus effusus/acutiflorus - Galium palustre rush-pasture
U20 - Pteridium aquilinum - Galium saxatile community
W4 - Betula pubescens - Molinia caerulea woodland
W7 - Alnus glutinosa - Fraxinus excelsior - Lysimachia nemorum woodland
No NVC survey - limited GWDTE potential
0
250
500
750
Metres
N
SCALE: See Scale Bar
VERSION: A04
SIZE: A4
DRAWN: DN
PROJECT: 0607366
CHECKED: WB
DATE: 11/07/2022
APPROVED: KG
Targeted National Vegetation Classification (Oct 2021)
Craig Murrail Substation
Page 2
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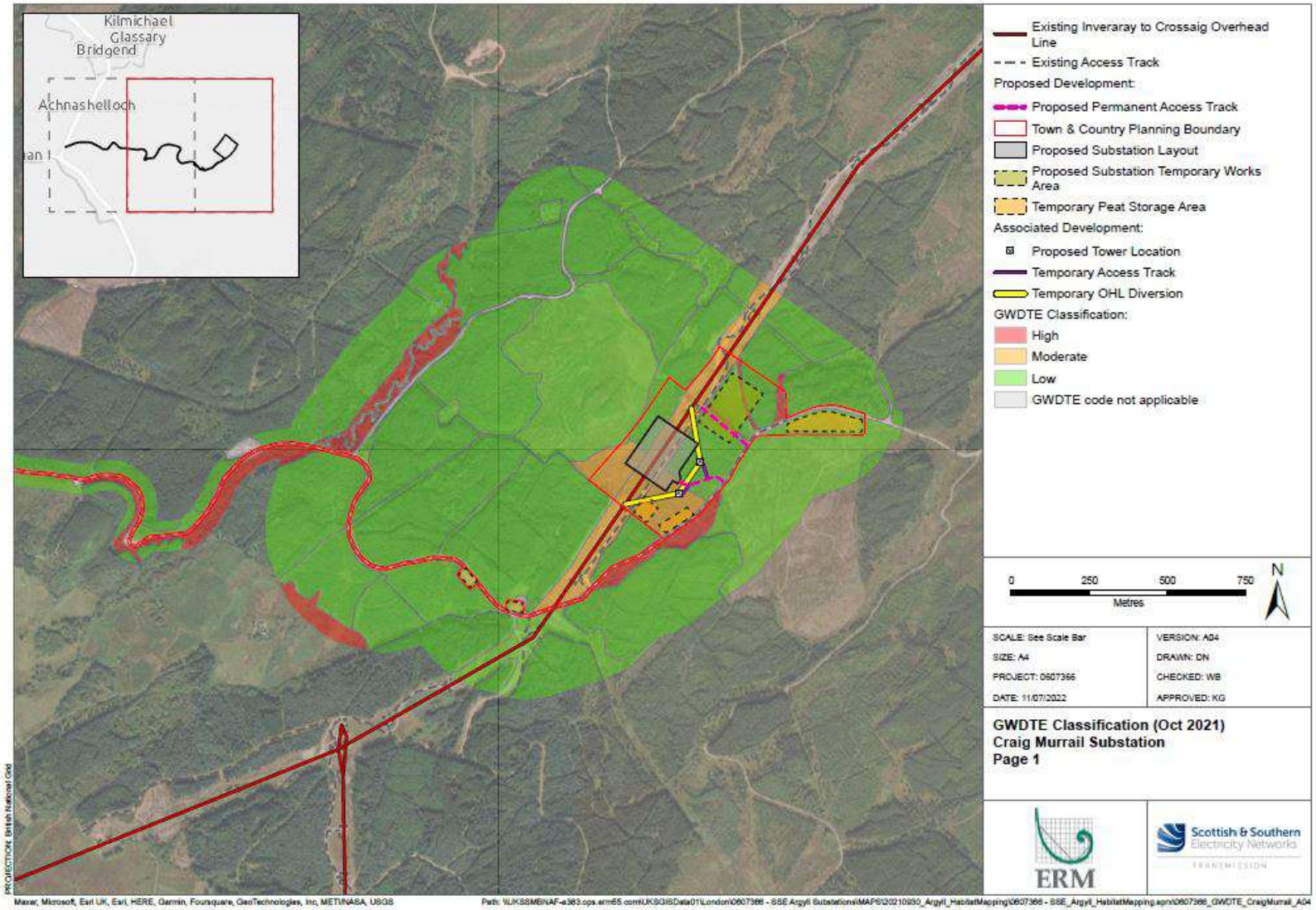
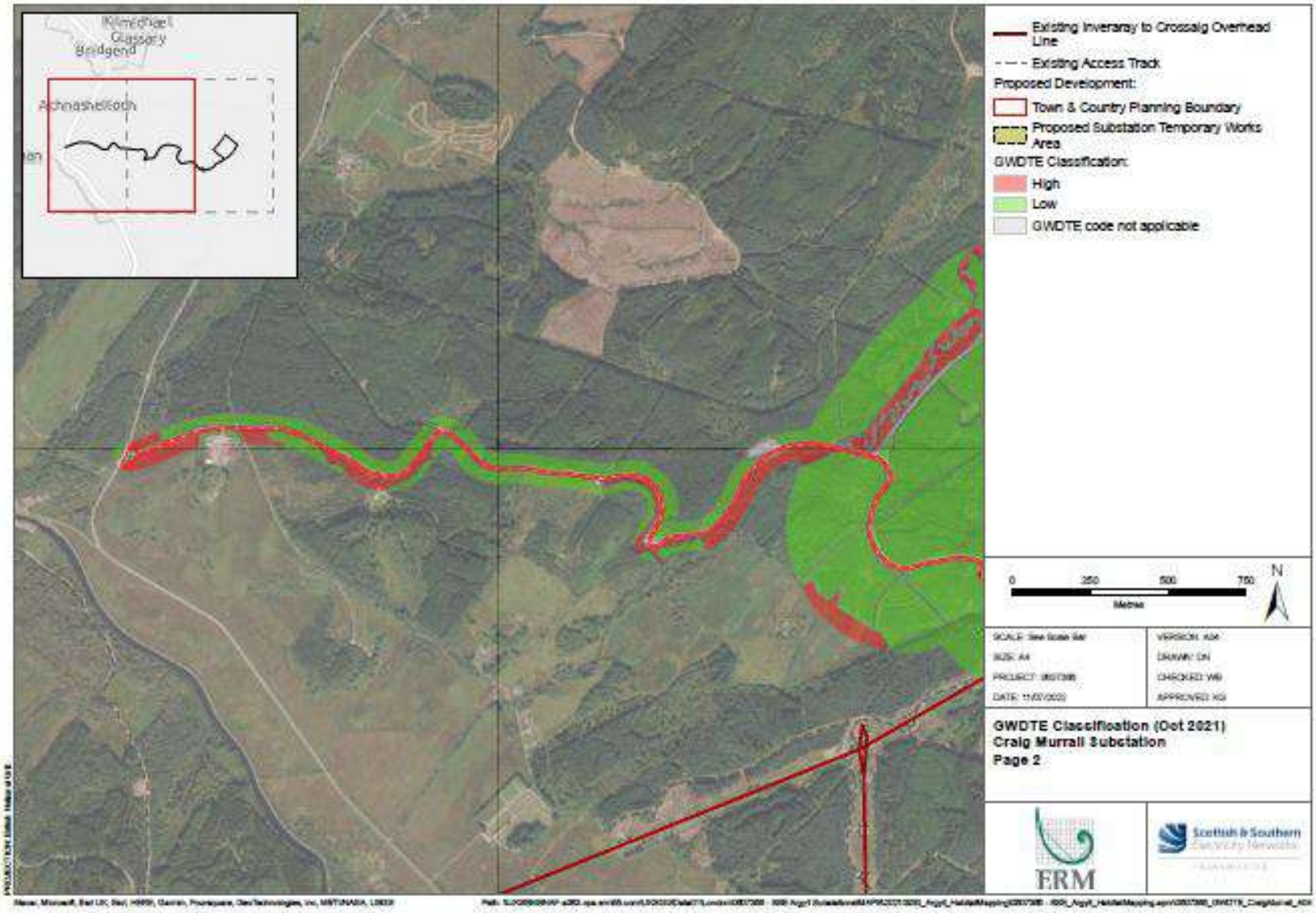
Scottish & Southern Electricity Networks
TRANSMISSION
PROJECTION: British National Grid
Maxar, Microsoft, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS
Path: \\UKSSMBNAF-a383.ops.erm55.com\UKSGISData01\London\0607366 - SSE Argyll Substations\MAPS\20210930_Argyll_HabitatMapping\0607366 - SSE_Argyll_HabitatMapping.aprx\0607366_NVC_CraigMurrail_A04

Figure 6 GWDTE Classification for Craig Murrail Substation




Kilmichael Glassary
Bridgend
Achnashellach
Existing Inveraray to Crossaig Overhead Line
Existing Access Track
Proposed Development:
Town & Country Planning Boundary
Proposed Substation Temporary Works Area
GWDTE Classification:
High
Low
GWDTE code not applicable
0
250
500
750
Metres
N
GWDTE Classification (Oct 2021)
Craig Murrail Substation
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Appendix B TARGET NOTES

Table 5.1 Target Notes

Target note number	Approximate grid reference	Description of evidence/feature	Photograph
1	1: NR8726090462 2: NR8725990462	Habitat Target Note: OHL felled wayleave	 

2	NR87847911 22	Mammal Target Note: Small culvert near proposed sub-station. No field signs of otter present.	 

3	NR8761290809	Habitat Target Note: way leave not on map, possibly new.	 

4	1: NR8749590560 2: NR8749490559 3: NR8747790542 4: NR8747790541	Mammal Target Note: Small culvert under new wayleave road. No field signs of otter present.	 

			 
5	1: NR87446905 21 2: NR87447905 19	Mammal Target Note: Small culvert with running water passing under road. No field signs of otter present. Fencing observed along the existing access track, likely silt fencing to stop drains becoming clogged when as the track is in semi-regular use by Heavy Goods Vehicle (HGV).	

			
6	NR8676391110	Mammal Target Note: Burn with suitable habitat present in the surrounding area to support otters (holts, resting up sites and couches). No field signs of otter present.	

7	1: NR8624190750 2: NR8624090753	Mammal Target Note: Burn with flowing water located to the south of the existing access track. Suitable habitat present in the surrounding area to support otters (holts, resting up sites and couches). No field signs of otter present.	 

8	1: NR86729908 29 2: NR86734908 30	Mammal Target Note: Thick, impenetrable plantation woodland. Unable to enter to undertake detailed search for badger, pine marten, red squirrel or wildcat. No field signs for identified for any of these species at the woodland edge.	 

9	1: NR87281915 02 2: NR87290915 01 3: NR87275914 99	Mammal Target Note: Small burn approx. 10 m from an access track (not highlighted to be used for substation construction). Suitable forest and understory habitat present to support pine marten, red squirrel, otter and wildcat. No field signs for identified for any of these species at the woodland edge.	 

			
10	1: NR8657991000 2: NR8657991000 3: NR8657991000 4: NR8657991002 5: NR8657991000 6: NR8658891004 7: NR8659391005 8: NR8659291005 9: NR8657991000	Mammal Target Note: Three mammal scats identified. Situated in prominent positions on a bridge located on the access track. The bridge passes over one of the two burns in the survey area. Scat deposited in areas consistent with pine marten behavior. The scats contained hair, berries and no bones, again consistent with pine marten.	 

			  

			 

			
11	NR8784791122	Uniform coniferous woodland plantation to be impacted by the Project. Trees with negligible potential to support bat roost due to age of trees.	

12	NR 88654 90961	Small watercourse running to from the north east to south east of the Project. Watercourse passes through felled woodland habitat. Rush pasture. Shallow. No bank sides. Unsuitable for otter or water vole.	
13	NR 87727 90709	Small scattered woodland to the south east of the proposed comprising of a mix of scattered downy birch of various ages, and self seeded Sitka, with willow scrub and bracken below. No trees with bat roost potential.	

Appendix C SPECIES LIST

Table 5.2 Species List

Vascular and Nonvascular Plants		UK BAP[30]	SBL[31]	Argyll & Bute LBAP[32]
Common Name	Scientific Name			
Ash	*Fraxinus excelsior*	*N*	*N*	*N*
Acute-leaved bog-moss	*Sphagnum capillifolium*	*N*	*N*	*N*
Alder	*Alnus glutinosa*	*N*	*N*	*N*
Bell heather	*Erica cinerea*	*N*	*N*	*N*
Blaeberry	*Vaccinium myrtillus*	*N*	*N*	*N*
Blunt-leaved bog-moss	*Sphagnum palustre*	*N*	*N*	*N*
Bracken	*Pteridium aquilinum*	*N*	*N*	*N*
Bramble	*Rubus fruticosus agg*	*N*	*N*	*N*
Common haircap	*Polytrichum commune*	*N*	*N*	*N*
Common heather	*Calluna vulgaris*	*N*	*N*	*N*
Common Tamarisk-moss	*Thuidium tamariscinum*	*N*	*N*	*N*
Downy birch	*Betula pubescens*	*N*	*N*	*N*
Eared willow	*Salix aurita*	*N*	*N*	*N*
Flat-topped bog-moss	*Sphagnum fallax*	*N*	*N*	*N*
Glittering wood-moss	*Hylocomium splendens*	*N*	*N*	*N*
Grey willow	*Salix cinerea*	*N*	*N*	*N*
Hard fern	*Blechnum spicant*	*N*	*N*	*N*
Hazel	*Corylus avellana*	*N*	*N*	*N*
Heath bedstraw	*Galium saxatile*	*N*	*N*	*N*
Heath plait-moss	*Hypnum jutlandicum*	*N*	*N*	*N*
Lichen sp.	*Cladonia spp.*	*N*	*N*	*N*
Lodgepole pine	*Pinus contorta*	*N*	*N*	*N*
Male fern	*Dryopteris filix-mas*	*N*	*N*	*N*
Marsh thistle	*Cirsium palustre*	*N*	*N*	*N*

[30] UK Biodiversity Action Plan Species list. Available at: https://jncc.gov.uk/our-work/uk-bap-priority-species/#uk-bap-priority-species-list

[31] Scottish Biodiversity List. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.nature.scot%2Fsites%2Fdefault%2Ffiles%2F2020-08%2FScottish%2520Biodiversity%2520List.xls&wdOrigin=BROWSELINK

[32] Argyll & Bute Local Biodiversity Action Plan 2010-2015 (latest published plan). Available at: https://www.argyll-bute.gov.uk/sites/default/files/planning-and-environment/AandB%20BAP%20Draft.pdf

Norway spruce	*Picea abies*	*N*	*N*	*N*
Pedunculate oak	*Quercus robur*	*N*	*N*	*N*
Pointed Spear-moss	*Calliergonella cuspidata*	*N*	*N*	*N*
Purple moor grass	*Molinia caerulea*	*N*	*N*	*N*
Red fescue	*Festuca rubra*	*N*	*N*	*N*
Red-stemmed feather moss	*Pleurozium schreberi*	*N*	*N*	*N*
Rowan	*Sorbus aucuparia*	*N*	*N*	*N*
Scaly male fern	*Dryopteris affinis agg*	*N*	*N*	*N*
Sessile oak	*Quercus petraea*	*N*	*N*	*N*
Sharp-flowered rush	*Juncus acutiflorus*	*N*	*N*	*N*
Sika spruce	*Picea sitchensis*	*N*	*N*	*N*
Soft rush	*Juncus effusus*	*N*	*N*	*N*
Star sedge	*Carex echinata*	*N*	*N*	*N*
Tormentil	*Potentilla erecta*	*N*	*N*	*N*
Tufted hair grass	*Deschampsia cespitosa*	*N*	*N*	*N*
Woolly fringe-moss	*Racomitrium lanuginosum*	*N*	*N*	*N*
Yorkshire Fog	*Holcus lanatus*	*N*	*N*	*N*
Mammals				
Common Name	**Scientific Name**	**UK BAP**	**SBL**	**Argyll & Bute LBAP**
Badger	*Meles meles*	*N*	*N*	*N*
Otter	*Lutra lutra*	*Y*	*Y*	*Y*
Pine marten	*Martes martes*	*Y*	*N*	*N*
Red squirrel	*Sciurus vulgaris*	*Y*	*N*	*Y*
Water vole	*Arvicola amphibius*	*Y*	*N*	*Y*
Wildcat	*Felis silvestris*	*Y*	*Y*	*Y*
Birds				
Common Name	**Scientific Name**	**UK BAP**	**SBL**	**Argyll & Bute LBAP**
Blackbird	*Turdus merula*	*N*	*N*	*N*
Carrion Crow	*Corvus corone corone*	*N*	*N*	*N*
Chaffinch	*Fringilla coelebs*	*N*	*N*	*N*
Coal Tit	*Parus ater*	*N*	*N*	*N*
Jackdaw	*Corvus monedula*	*N*	*N*	*N*
Pied Wagtail	*Motacilla alba*	*N*	*N*	*N*

Raven	*Corvus corax*	*Y*	*N*	*N*
Robin	*Erithacus ruhecula*	*Y*	*N*	*N*
Siskin	*Carduelis spinus*	*N*	*N*	*N*
Song Thrush	*Turdus philomelos*	*N*	*N*	*N*
Tree Pipit	*Anthus trivialis*	*N*	*N*	*N*
Treecreeper	*Certhia familiaris*	*N*	*N*	*N*
Woodpigeon	*Columba palumbus*	*N*	*N*	*N*
Wren	*Troglodytes troglodytes*	*N*	*N*	*N*

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