

Biodiversity Net Gain Assessment Report

Bingally 400 / 132 kV Substation



TEM-NET-ENV-XXX	Biodiversity Net Gain Assessment Report		Applies to
			Transmission ✓
Revision: 1.00	Classification: Public	Issue Date: September 2023	Review Date: *Parent Doc*

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Executive Summary

This report sets out the results of the Biodiversity Net Gain (BNG) calculations and the approach to delivering on SSEN Transmission's BNG commitments for the Proposed Development.

This report details the BNG assessment undertaken to construct and operate a new 132 / 400 kV substation and access track located approximately 1.2 km east of Tomich and 1 km east of the existing Fasnakyle substation to support the upgrading of the existing Beaully-Denny 275 kV circuit to a 400 kV circuit under the Accelerated Strategic Transmission Investment (ASTI) project (herein the 'Proposed Development').

This report includes:

- A calculation of baseline Biodiversity Units (BU) for the Proposed Development following the guidance outlined within SSEN Transmission's Biodiversity Net Gain Toolkit User Guide (hereafter referred to as 'the User Guide')
- A calculation of the area of irreplaceable habitats which will be lost to the development and recommendations to compensate for this loss;
- A prediction of the post development on-site BU's following successful implementation of a Landscape & Habitat Management Plan;
- A qualitative assessment against the Biodiversity Net Gain Good Practice Principles; and
- Details of the required habitat creation or enhancements required to achieve a biodiversity net gain.

Irreplaceable habitats are acknowledged for their particular importance, therefore appropriate mitigation has been identified for any impacts on these habitats and an appropriate scale of compensation recommended. SSEN Transmission consider irreplaceable habitats within their network to be Ancient Woodland (categories 1a & 2a of the Ancient Woodland Inventory (AWI)), ancient or veteran trees, and blanket bog or raised bog in good or moderate condition. In the case of bogs and ancient woodland these are quantified in area and in the case of ancient and veteran trees these are quantified as individual trees.

This Proposed Development will result in the loss of irreplaceable habitat; blanket bog in good and moderate condition (1.11 ha) and areas listed as category 2a of the AWI of which 2.17 ha is currently wooded and is considered irreplaceable habitat.

Opportunities for off-site habitat creation and enhancement will be explored to ensure that compensation for the loss of blanket bog is achieved, targeting a 1:10 ratio, plus an addition an additional 10% for enhancement as per NatureScot standing advice. Suitable compensation for the loss of ancient woodland will also be sought by the Applicant.

The predicted post-development Biodiversity Area Units are 1275.89 BU, meaning that the Proposed Development is predicted to achieve a 4% net loss. To achieve a 10% gain, 186.16 units will be sought offsite.

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1 Introduction

1.1 Background of the Project

- 1.1.1 Scottish and Southern Electricity Networks (SSEN Transmission), operating under licence held by Scottish Hydro Electric Transmission plc, to operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands commissioned AECOM to undertake a Biodiversity Net Gain (BNG) assessment for Bingally 132 / 400 kV Substation using the Toolkit. SSEN Transmission, hereafter referred to as 'the Applicant' propose to construct and operate a new 132 / 400 kV substation and approximately 9 km access track (referred to hereafter as the 'Proposed Development') south of Tomich to support the upgrading of the existing Beauly-Denny 275 kV circuit to a 400 kV circuit under the ASTI project. The purpose of this report is to assess the biodiversity net gains or losses resulting from the impacts of the Proposed Development.
- 1.1.2 The Applicant is seeking planning permission under the Town and County Planning (Scotland) Act 1997, (as amended) (hereafter the '1997 Act') from the Highland Council. The application will be supported by a Voluntary Environmental Appraisal (Voluntary EA).

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1.2 Site Description

- 1.2.1 The extent of the wider 'Site' is defined by the 'Red Line Boundary' shown on the Baseline and Post-Development habitat plans in Appendix B and Appendix C, respectively.
- 1.2.2 The Site is located in The Highland Council area, between the access track site entrance off the A831 east of Cannich, extending approximately 9.6 km south-west to the proposed substation site. The width of the Site is variable, from approximately 410 m at its narrowest and 1.2 km at its widest. The existing Fasnakyle substation is situated approximately 800 m west of the Site at its nearest point.
- 1.2.3 Within the Site, the location proposed for the substation platform is dominated by commercial forestry plantation, formerly dominated by Sitka spruce and currently clear-felled. This felled woodland, with deep ridge and furrow, drains and abundant stumps from felled trees, has developed a form of species-poor M15 wet heath (not considered a Scottish Biodiversity List (SBL) priority habitat). The vast majority of habitats within forestry plantation areas are subject to on-going negative impacts from drainage, nutrient-enrichment and disturbance.
- 1.2.4 The area of the proposed access track is largely a near-natural mosaic of woodlands, which are split across upland birchwood, wet woodland, and other broadleaved woodland (often dominated by birch species), heaths and bogs in good condition. Much of the open ground and woodland in the first 4 km of the track (from north to south) were burnt in a fire in May/June 2023. The area of the proposed access track includes large tracts of pristine blanket bog and wet heath, along with occasional patches of species-poor purple moor-grass dominated mires, dry upland acid grassland and bracken-dominated habitat in a mosaic with heathland.
- 1.2.5 Other habitats within the Site, present in smaller extents, are upland flushes, fens and swamps; upland acid grassland; lowland heathland; bracken; mixed scrub (predominantly willow); other mixed woodland (typically birch and Sitka spruce); other coniferous woodland (Sitka spruce plantation); other Scots pine woodland; and small areas of existing hardstanding (predominantly the existing access track). Aerial imagery¹ suggests that the wider landscape is of a similar composition, with many areas of conifer plantation (either felled or present). No statutory designated sites are present within the Site; however, the Corrimony Royal Society for Protection of Birds (RSPB) reserve is present in the north of the Site, and across part of the access track and associated verge.

1.3 Proposed Development Description

- 1.3.1 Components of the Proposed Development which are subject to the consent under the '1997 Act'² consist of:
- Substation platform of approximately 376 m x 271 m with associated earthworks;

1.1

¹ Google earth, 2024

² Town and Country Planning (Scotland) Act 1997

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- Two 400/132 kV Super Grid Transformers (SGTs), four two 400 kV future bays, four 132 kV future bays, a new 400/132 kV double busbar and ancillary equipment;
- A new control building with dimensions 48 m x 24 m x 7 m (height);
- Establishment of approximately 9.5 km of access track, comprising upgrade of approximately 6.1 km of existing track and construction of approximately 3.4 km of new track; and
- Permanent drainage systems, to include sustainable drainage system (SuDS) ponds and drainage lagoons.

1.4 Scope of Study

- 1.4.1 This report sets out the results of the BNG assessment and the approach to delivering on SSEN Transmission's BNG commitments for the Proposed Development. This report identifies the baseline biodiversity measured in Biodiversity Units (BU), the change in BU's as a result of the Proposed Development and details of measures to be implemented to ensure positive effects for biodiversity are achieved.

1.5 Policy and Legislation

- 1.5.1 National Planning Framework 4³ (NPF4) requires biodiversity enhancements be provided in addition to any proposed mitigation stating that *“Development proposals for national or major development that require an Environmental Impact Assessment will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks, so that they are in a demonstrably better state than without intervention. This will include future management. To inform this, best practice assessment methods should be used.” (Policy 3b)*. By implementing measures to achieve net gain, the Proposed Development will achieve compliance with this aspect of NPF4, and this BNG assessment provides details of how this will be achieved. This is aligned to the Scottish Government's NPF4 Policy 3 for proposed developments to contribute to biodiversity enhancement.
- 1.5.2 A biodiversity site optioneering assessment was undertaken early in the Project design to inform the site selection process based on the habitats identified through this assessment. The mitigation hierarchy has been applied to avoid impacts to biodiversity, where avoidance is not possible, these impacts have been minimised.

³ Scottish Government (2023). National Planning Framework 4

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2 Methodology

2.1 Area and Surveys

Desk Based Assessment

- 2.1.1 A desk study to help establish baseline conditions has been completed, this information was also used to inform strategic significance values. Ecological features searched for included:
- Any designated nature conservation sites, including locally-designated sites listed in the Local Development Plan (LDP) or Local Biodiversity Action Plan (LBAP);
 - Priority habitats listed in the LBAP or SBL that might reasonably occur within the Site; and
 - Records of protected and/or notable habitats and species.
- 2.1.2 The following sources were used for the desk study:
- Highland Council Local Development Plan⁴;
 - Highland Nature: Biodiversity Action Plan 2021 – 2026⁵;
 - NatureScot SiteLink webpage⁶;
 - NatureScot Natural Spaces webpage⁷;
 - National Biodiversity Network (NBN) Atlas Scotland⁸;
 - Ordnance Survey (OS) 1:25,000 maps and aerial photography⁹; and
 - Scottish Forestry Open Data¹⁰.
- 2.1.3 The Information from The Highland Council Local Development Plan and Highland Nature LBAP was obtained to assess the strategic significance scores. These have been assigned as follows, based on habitats identified of local importance:
- Woodlands (with the exception of non-native plantation), upland heath and blanket bog have been assigned high strategic significance;
 - All habitats which are not formally identified but ecologically desirable have been assigned medium strategic significance; and
 - Habitats which are neither formally identified nor ecologically desirable such as urban habitats, plantation woodland (including felled plantation) have been assigned low strategic significance.

1.1

⁴ Highland Council website. [Online] Available at: https://www.highland.gov.uk/downloads/file/1506/proposals_map

⁵ Highland Environment Forum. [Online] available from: <https://www.highlandenvironmentforum.info/biodiversity/action-plan/>

⁶ Nature Scot. SAC, RAMSAR and SSSIs. [Online] available from: <https://sitelink.nature.scot/home>

⁷ Nature Scot. Natural Spaces webpage. AWI and NWSS for Scotland [Online] available from NatureScot Spatial Data Hub

⁸ NBN Atlas Scotland. Commercially available records of protected species. [Online] available from: <https://scotland.nbnatlas.org/>

⁹ Bing Maps. OS 1:25,000 maps and aerial photography. [Online] available from: <https://www.bing.com/maps/>

¹⁰ Scottish Forestry Open Data. Caledonian Pinewood Inventory. [Online] available from: <https://open-data-scottishforestry.hub.arcgis.com/>

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Field Assessment

- 2.1.4 Baseline habitat data were recorded using UK Habitat Classification (UKHab) categories¹¹. In addition, Phase 1 categories¹² and relevant habitat details (including dominant, characteristic, and notable flora and ecological characteristics, particularly those pertaining to condition), as well as National Vegetation Classification¹³ (NVC) types, were also recorded. Condition of baseline habitats was assessed in the field by the field surveyor using the condition criteria set out for Defra Biodiversity Metric 3.1¹⁴.
- 2.1.5 Collection of habitat data was carried out on between May and June 2024 by suitably experienced ecologists, using a GPS-enabled tablet running ESRI FieldMaps loaded with recent aerial photography. The habitat data were refined as necessary using desktop ESRI ArcGIS and recent aerial photography, to maximise habitat mapping accuracy.
- 2.1.6 Relevant attribute data were extracted from ESRI ArcGIS, including area/length, habitat category and habitat condition, and entered into the Toolkit.

Evidence of technical competence

- 2.1.7 The habitat surveys were undertaken by two Associate members of CIEEM, one with over 16 years' professional experience as an ecologist with specialism in habitats, and one with over 6 years' experience as an ecologist. The report was authored by a Qualifying member of CIEEM with over 3 years' professional experience as an ecologist and a Chartered Ecologist, with 20 years' professional experience. The report was checked by AECOM Technical Director, Tony Marshall. Tony is a Chartered Ecologist and full member of CIEEM, with over fourteen years' experience as a professional ecological consultant. It was verified by a full member of CIEEM and Chartered Environmentalist also specialising in functions of habitats, with over 20 years' professional experience.

1.1

¹¹ Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). UK Habitat Classification V1.1 <http://ukhab.org>

¹² Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey – a technique for environmental audit. Joint Nature Conservation Committee, Peterborough.

¹³ Averis et al (2004) An Illustrated Guide to British Upland Vegetation; Averis, B. and Averis A., (2015) Plant Communities Found In Surveys By Ben And Alison Averis But Not Described In The UK National Vegetation Classification. Unpublished document; British Plant Communities Volume 3 Grassland and Montane Communities. Cambridge University Press, Cambridge.; Rodwell, J.S. (ed.). (1991a). British Plant Communities Volume 1 Woodlands and Scrub. Cambridge University Press, Cambridge.; Rodwell, J.S. (ed.). (1991b). British Plant Communities Volume 2 Mires and Heaths. Cambridge University Press, Cambridge.

¹⁴ Natural England (2022). *Biodiversity Metric 3.1 - Habitat Condition Assessment Sheets*

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2.2 Approach to Biodiversity Net Gain

- 2.2.1 A full BNG Assessment was undertaken for the Proposed Development. The BNG assessment was completed within the Toolkit following the User Guide. This method has been revised to align with Natural England Biodiversity Metric 3.1, adapted to reflect the requirements of Scottish habitats, to quantify losses and gains of biodiversity. Data were collected on type, area, and condition of the habitat of the Proposed Development, indicating the biodiversity present on-site before the work begins. The same Toolkit was used to calculate the biodiversity losses and the units resulting from the proposed habitat creation and restoration after works. The outcomes have been used to ensure the biodiversity targets are being met for the Proposed Development.
- 2.2.2 The Toolkit assesses losses of area and linear habitats separately. The Toolkit produces a Unit score for three categories of habitat: Biodiversity Units, Linear Hedgerow (H) Units and Linear Watercourse (W) Units. Linear Hedgerow Units are not relevant to this BNG assessment because there are no hedgerows or lines of trees in the Site.
- 2.2.3 Appendix A sets out a qualitative assessment of the Proposed Development against the UK Good Practice Principles for Biodiversity Net Gain¹⁵.

2.3 Limitations and Assumptions

- 2.3.1 To produce this assessment, certain assumptions have been made:
- Only habitats to be directly affected by the Proposed Development and associated landscaping are included within the BNG assessment;
 - Habitats (that are not already hardstanding) within the Proposed Substation and Access Track elements of the Proposed Development are assumed to be completely and permanently lost; and
 - Part of the Site consists of an area of felled plantation. The habitat here is heavily modified and although the ground flora includes some species associated with heath habitat, to accurately reflect its current baseline value, it has been mapped as felled plantation, rather than as upland heath. As it is known that prior to felling, the woodland was a plantation of Sitka spruce, the condition for the felled plantation has been set at poor. This is a deviation from Metric 3.1 values, which the User Guide follows, which states that recently felled woodland should be valued as good condition. This is not considered appropriate in this instance as it would over-value the baseline habitat (following the condition assessment methodology, undertaking condition assessment of standing Sitka spruce plantation, typically records the woodland as being in poor condition).
- 2.3.2 The following assumptions have been applied to the post-development habitats:
- Where habitats can be reinstated following the construction period the following approach has been taken:

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- Habitats will be reinstated to baseline conditions (both habitat type and condition), except for where felled plantation is present. In these locations, either blanket bog or upland heath will be restored, based on the habitats present in the immediate area. Where blanket bog will be restored, the restoration will target good condition. For small fragments, 0.1 ha or under, poor condition is targeted, as given the small area, achieving good condition is likely to be difficult to achieve;
- The time to target condition and difficulty values used follow Metric 3.1 values, with the exception of the values used for blanket bog. For habitats to be reinstated following the construction, an additional five years has been added to the time to target condition to account for the construction period. With respect to blanket bog, it is acknowledged that the values used within the Metric, may not be fully applicable in Scotland, which is considered to be the case for this habitat type. The draft planning guidance with respect to Biodiversity¹⁶, notes that where the Metric or a BNG tool is used, it should be demonstrated how Scotland's habitats and environmental conditions are taken into account and where modifications are made, the reasons should be set out clearly. Scottish Government commissioned research into the use of Metrics in Scotland¹⁷ concluded that Metric 3.1 could be adapted for planning and development use in Scotland. Specifically for blanket bog, following consideration of the baseline conditions, difficulty has been set at medium (deviating from high in Metric 3.1), and time to target condition is set at 20 years, plus an additional 5 years where being reinstated to account for the construction period (deviating from 30 years in Metric 3.1). The rationale for this is set out in Appendix B;
- Where habitat creation and restoration measures are proposed in locations not affected by the Proposed Development, the baseline habitats in these locations will be retained and enhanced. The habitat creation and restoration design has considered the baseline habitat types in these locations, to ensure they are suitable for tree planting to create woodland areas. For example, wet woodland creation will be located in areas with wetter baseline habitats, often dominated by purple moor grass and located in proximity to watercourses. Scots pine woodland will be located in areas with heath and acid grassland understory. The time to target values here, follow Metric 3.1, with the exception to blanket bog, which has been adjusted as per the rationale above. The time to target condition for these habitats does not include the construction period, as the value of these habitats will not be affected until the habitat creation and restoration commences;
- The following enhancements are proposed:
 - Blanket bog from poor to good condition through peatland restoration.

1.1

¹⁶ Scottish Government (2023) Biodiversity: draft planning guidance Biodiversity: draft planning guidance

¹⁷ McVittie, A., Cole, L., McCarthy, J., Fisher, H., and Rudman, H. (2023) Research into approaches to measuring biodiversity in Scotland

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- Scots pine woodland planting within areas of blanket bog, acid grassland mixed scrub, upland heath and areas of existing broadleaved woodland. Low density Scots pine woodland is proposed in a number of locations, to provide both visual screen and also woodland habitat in keeping with the local area. 1.30 ha of upland heath will be planted with Scot's pine woodland, which will comprise a mix of Scot's pine, downy birch, rowan and hazel. The current understory in the planting locations contains common heath, bog myrtle, with purple moor grass and bell heather, noting that these species may form the natural understory of a NVC W18 woodland. In these locations, it is therefore considered that the addition of tree planting is appropriate in the context of the Site. The tree planting may alter one condition assessment criteria relating to the heath, criteria 8, which relates to tree cover, however it is considered that the other criteria would remain passed and therefore good condition of the heath would be maintained. (It should be noted that this approach gives an overall loss of biodiversity units within the toolkit for these locations, and thus clearly does not represent an overestimation in value).
- Upland acid grassland to wet woodland (these enhancement areas have targeted locations where the grassland is damp/ wetter in nature, and would naturally form the baseline habitat beneath this woodland type. Tree planting will occur within the grassland, rather than requiring removal of the grassland habitat). Both habitats are high distinctiveness, but it is considered that in this area of the highlands, upland acid grassland is a relatively common habitat, while the provision of wet woodland provides a biodiversity benefit, through diversifying the habitats present.
- In a small number of locations (totalling 1.71 ha), wet woodland is proposed where the currently baseline habitat is heath, in areas adjacent to watercourses. The species mix currently present includes common heather, bog myrtle, purple moor grass and deer grass, this mix is considered appropriate for the creation of a NVC class W4 woodland type. In these locations, the baseline habitat type is recorded as retained, with the addition of woodland planted recorded as an enhancement as is considered to provide a biodiversity benefit through diversification of the habitats present (although it should be noted that this approach gives an overall loss of biodiversity units within the toolkit for these locations, and thus clearly does not represent an overestimation in value); and
- There are no proposed watercourse diversions. There is the potential for existing culverts to be upgraded or widened and there will be new watercourse crossings as part of the new access track. Where these culverts are in place, the actual length of watercourse will not be changed, and as such watercourse lengths have not been included within the Toolkit and no value for watercourse units has been calculated.
- Further details on the post development target conditions for all habitats are detailed in **Appendix B**.

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2.3.3 The following minor limitations apply:

- All baseline habitat areas/lengths have been calculated in ESRI ArcGIS from the digitised features of the baseline habitat map. Where habitat boundaries coincided with discernible boundaries on aerial imagery available at the time of survey, accuracy is as determined by the accuracy and clarity of the aerial imagery. Otherwise, habitat boundaries are as estimated in the field. Note also that habitats often grade into each other without a sharp boundary, and in these cases best placement of the boundary has been estimated. For these reasons, baseline habitat areas/lengths are approximations only;
- A drainage/SuDS basin is proposed post-development, in the southern part of the Site. However, there is no specific category within the Toolkit for SuDS basin. This will be planted with a wetland grassland mix, the water level will be variable within this and it is likely to be permanently wet. This is recorded in the Toolkit as 'other neutral grassland', as this is the best fit for the proposed grassland following UKHab classification definitions;
- Calculations involving habitat areas/lengths are rounded to two decimal places in the Toolkit, therefore the calculations are to that level of accuracy; and
- Baseline habitats and conditions may change with further elapsed time since the field surveys informing this BNG assessment were completed. However, it is unlikely given the current ownership and management of the Site, and the nature of habitat present, that there would be significant changes to baseline habitats for several years at least.

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3 Results

3.1 Biodiversity Baseline

- 3.1.1 The baseline habitats affected by development are shown in the baseline habitat plan (see **Appendix B**) detailed in the Toolkit and are summarised here in **Table 3-1**.

Table 3-1 Baseline line habitats types, condition and areas.

Habitat type	Condition				Total area Ha
	Good	Moderate	Poor	N/A	
Developed, sealed surface / Urban – artificial unsealed surface	-	-	-	3.8	3.8
Blanket bog	1.20 (irreplaceable habitat)	0.02 (irreplaceable habitat)	35.07	-	36.29
Bracken	-	-	3.17 (plus 0.09 is listed on the AWI)	-	3.26
Mixed scrub	-	0.20	0.70 (plus 0.22 is listed on the AWI)	-	1.12
Other broadleaved woodland	-	2.30	0.37 (plus 0.72 is listed on the AWI)	-	3.39
Upland birchwoods	-	0.91 (listed on the AWI)	-	-	0.91
Other coniferous woodland	-	-	0.02 (plus 0.16 is listed on the AWI)	-	0.18
Other mixed woodland	-	1.31	0.37 which is listed on the AWI	-	1.68

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Habitat type	Condition				Total area Ha
	Good	Moderate	Poor	N/A	
Felled woodland	-	-	50.92	-	50.92
Upland acid grassland	17.96 (of which 3.40 is listed on the AWI)	14.52		-	32.48
Upland flushes fens and swamps	0.03	-	0.87	-	0.9
Upland heathland	12.70	0.09	0.91	-	13.70

3.1.2 The baseline area of irreplaceable habitats comprises the following: 1.22 ha of blanket bog in good and moderate condition and 5.51 ha of habitat listed on the AWI. It is noted that of the area listed on the AWI, only 2.17 ha of this area supports woodland habitats. 3.34 ha is not wooded, consisting of 3.40 ha of acid grassland, and the remainder being a combination of bracken and mixed scrub. Given the high levels of disturbance in the area from forestry it is considered unlikely that these non-wooded areas contain a woodland seedbank and they are not considered irreplaceable and are included within the main toolkit.

3.1.3 The baseline BU's for the non-irreplaceable habitats are 1329.14 BU.

3.2 Temporary Impacts

3.2.1 Impacts to habitats which are considered reversible are those where the habitat can return to the same extent and ecological condition within two years of the initial impact; these are considered temporary. There are no habitats which fall into this category, as any changes to habitats will not be reversed within two years.

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3.3 Post-development Biodiversity Units

- 3.3.1 The post-development units have been calculated based on the Proposed Development design, associated landscaping and proposed habitat restoration and enhancement, as shown on the Post Development Habitat Plan in **Appendix C**.
- 3.3.2 The predicted post-development BU's are 1,275.89.
- 3.3.3 Opportunities for habitat creation and enhancement on Site have been identified as shown on the Post Development Plan in Appendix C, which contribute the post-development value.
- 3.3.4 There are five types of habitat creation and restoration proposed for the Site. This includes reinstatement of existing habitats, where these will be lost temporarily to facilitate construction and habitat creation and restoration within the wider Site.

Scots Pine Woodland Planting

- 3.3.5 Scots pine woodland planting to the south and west of the substation, and along certain sections of the proposed Bingally Substation access track where soil conditions are suitable. This woodland will include a mix of Scots pine, downy birch, silver birch and rowan.

Wet Woodland Planting

- 3.3.6 Wet woodland planting is proposed to support the transition from woodland and peatland restoration through creating habitat connectivity. The woodland will include a mix of common alder, downy birch, grey willow and goat willow.

Heathland Seeding

- 3.3.7 Heathland seeding is proposed along the proposed access track, with the aim of establishing a diverse heathland sward. The species mix will include heather, crowberry, bell heather, cross-leaved heath, common cotton grass, hare's tail cotton grass, heath rush, bilberry and cowberry.

Peatland Seeding and Peatland Restoration

- 3.3.8 Peatland seeding is proposed along areas where earthworks will occur within the Site. This is proposed as a seed mix informed by Site conditions and specialist ecologists and will include heather, crowberry, bell heather, cross-leaved heath, common cottongrass, hare's-tail cottongrass, heath rush, bilberry and cowberry. The areas proposed around the access track will help buffer the woodland planting and its low height will add structure to the landscape, ensuring the woodland planting integrates seamlessly into the landscape and habitat compensation.
- 3.3.9 Peatland habitats within the Site have been badly disturbed by former forestry operations, leaving the land heavily ridged and drained. Good condition blanket bog will be targeted through interventions using recognised best practice techniques (e.g. smoothing and/or drainage channel blocking (which would likely make use of excess peat won from the proposed substation platform area)) to bring the water table at/near the bog surface all year, with ongoing maintenance of tree/scrub clearance.

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- 3.3.10 The measures include a sizable area (35.28 ha) of peatland restoration, restoring the area previously used for forestry to bog habitat. This is in line with the Highland Biodiversity Action Plan, which sets a vision to restore blanket bogs to their full function. Woodland planting is also proposed, as an enhancement to the Site. Trees will be planted into the existing baseline habitats, where appropriate to do so. The woodland has been designed in accordance with the current baseline conditions, with areas of proposed wet woodland (28.60 ha), targeting wetter areas of the Site, which are currently dominated by purple moor grass, and Scots pine woodland (8.78 ha), targeting areas that have previously been subject non-native forestry, areas with a heath ground flora, and enhancing areas of broadleaved woodland with a more diverse mix of tree species. A further 3.40 ha of wet woodland is proposed, with planting into an area of purple moor grass (recorded in the Toolkit as acid grassland), which is listed on the AWI, thus restoring woodland in this location. This woodland creation is in line with the BAP which has an aim to protect, regenerate and restore native woodland.
- 3.3.11 The predicted post development BU value that can be achieved through the on-Site habitat reinstatement, creation and enhancement is 1275.10. This equates to a 4% net loss in BU.

3.4 Habitat Creation (Off-Site)

- 3.4.1 Off-site habitat creation is only required when all options for on-site biodiversity enhancement provision has been explored. If no on-site opportunities can be identified, off-site habitat creation will be undertaken but kept within the locale of the Proposed Development. Habitat creation and restoration should be targeted at delivering net gains that are ecologically equivalent in type and condition to the habitats lost, following the 'like for like or better' principle.
- 3.4.2 Locations for off-site habitat creation will be explored to provide the remaining BUs to achieve a 10% net gain.

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4 Summary

- 4.1.1 The post-development Biodiversity Area Units are 1,275.89 BU, meaning that the Proposed Development will result in a 4% net loss. **Table 4-1** presents a summary of the results. To achieve a 10% gain, 186.16 units are required offsite.
- 4.1.2 Irreplaceable habitats will be lost as a result of the Proposed Development, as follows:
- 1.11 ha of blanket bog in good or moderate condition.
 - 2.17 ha of woodland habitat listed on the AWI.
- 4.1.3 In addition, 0.11 ha of blanket bog, will be planted with low density Scot's pine to provide screening, this may result in a reduction in the condition of the blanket bog.
- 4.1.4 An area of habitat listed on the AWI will be permanently lost to the Proposed Development, 2.47 ha. 2.17 ha is currently wooded and the remaining 0.31 ha is not currently wooded. The Applicant has committed to providing compensation for 2.17 ha of woodland habitat lost. and Options will be explored to identify a suitable location to provide compensation, through actions to support the restoration of a greater area of ancient woodland than is lost.
- 4.1.5 Blanket bog will be permanently lost to the Proposed Development, totalling 1.11 ha, along with 0.11 ha where the condition may be reduced as a result of proposed tree planting. NatureScot peatland guidance¹⁸ states offsetting should be in the order of 1:10 (lost:restored) plus an additional 10% of the baseline area (in this instance this equates to 0.12 ha). Taking this into account, SSE commit to providing an area of 12.32 ha of blanket bog restoration to provide this compensation, plus the additional enhancement.
- 4.1.6 The habitat creation/enhancements have been designed to be achieved within a reasonable timeframe and with reasonable certainty as the outcomes from the Toolkit have been informed by the Natural England Biodiversity Metric 3.1. The restoration and enhancement of biodiversity will be conducted in accordance with local and national guidance, such as that developed by Peatland Action¹⁹. It is considered that these measures provided are appropriate to the nature and scale of development. These enhancements have considered surrounding habitats and strengthening nature-networks, with wet woodland areas to be created alongside watercourses.
- 4.1.7 The project will achieve positive effects for biodiversity if sufficient off-site habitat measures are identified and implemented, and if this is ensured then the project will leave the natural environment in a demonstrably better state than before development.

1.1

¹⁸ NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management (online) Available at: [https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=Our%20current%20recommendation%20is%20that,and%20restored%20areas%20\(e.g.%2030m\)](https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=Our%20current%20recommendation%20is%20that,and%20restored%20areas%20(e.g.%2030m))

¹⁹ NatureScot (2024) Peatland Action (online) Available at: <https://www.nature.scot/doc/peatland-action-technical-compendium>

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Table 4-1 Summary of biodiversity units from non-irreplaceable habitats

Habitat Type	Baseline Biodiversity Units	Post-Development Biodiversity Units	Difference in Biodiversity Units	Difference in Biodiversity Units (%)	Biodiversity Units Required Off-site to achieve 10% gain
Area	1329.14	1275.89	-53.25	-4%	186.16

4.2 Biodiversity Outcomes

4.2.1 In summary, the outcome of the proposed habitat works and further biodiversity enhancement/ creation measures will be:

- Wet woodland creation: 28.60 ha
- Scots pine woodland creation: 8.78 ha
- Peatland restoration: 35.28 ha.

4.2.2 In addition to this habitat creation and enhancement, habitats temporarily effected during the construction period will be reinstated.

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Appendix A Good practice principles for biodiversity net gain

The project has applied the UK good practice principles for biodiversity net gain (CIRIA C776a Biodiversity net gain. Good practice principles for development. Part A: A practical guide) below:

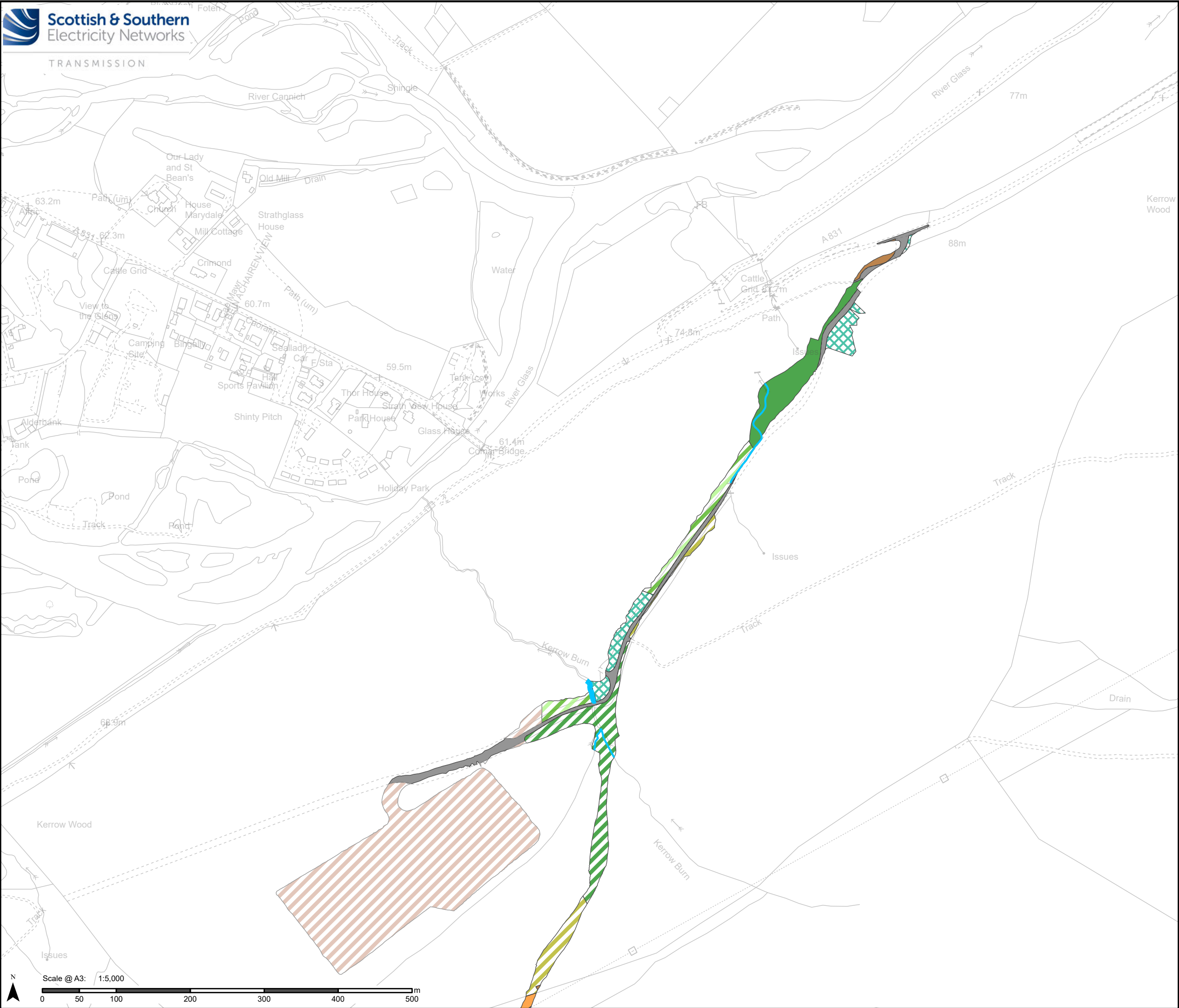
Principle	Summary of project actions
Apply the mitigation hierarchy	The mitigation hierarchy has been followed through the design development and EA undertaken as part of the planning application.
Avoid losing biodiversity that cannot be offset elsewhere	<p>No designated Sites will be directly impacted within the Site. Irreplaceable habitat will be lost as a result of the Proposed Development. 2.47 ha of habitats listed on the AWI will be lost, of which 2.17 is currently wooded (the remaining habitats are not considered to support any features associated with ancient woodland and given the levels of disturbance the soil is unlikely to support a viable ancient woodland seedbank). Suitable compensation will be sought to account for the 2.17 ha of woodland. It is also noted that a total of 37.38 ha of woodland will be created targeting native Scot's pine and wet woodland.</p> <p>1.11 ha of irreplaceable blanket bog will be permanently lost, along with 0.11 ha where the condition maybe reduced as a result of proposed tree planting. In order to compensation for this loss, in line with NatureScot recommendation, the Applicant will seek to compensation for this loss at a 1:10 ratio, with an additional 10% for enhancement.</p> <p>Taking this into account, SSE commit to providing an area of 12.32 ha of blanket bog restoration to provide this compensation, plus the additional enhancement.</p>
Be inclusive and equitable	Through the EA process and EIA Screening discussions have been held with statutory bodies and stakeholders to explore and agree approaches for biodiversity.
Address risk	<p>The habitat reinstatement in the areas of temporary loss will follow recognised best practice techniques to minimise the risk of damage to the soils and aid recovering habitats.</p> <p>A Landscape and Habitat Management Plan (LHMP) has been produced for the Proposed Development. Should habitat reinstatement or enhancement be unsuccessful in any location, the LHMP will include a feedback loop, to ensure that active management is undertaken, and remedial measures are implemented.</p>

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Principle	Summary of project actions
Make a measurable net gain contribution	A clear goal has been made by SSEN Transmission in respect of BNG: to achieve NG on all new infrastructure projects from May 2023. The Proposed Development will result in a 4% net loss, and options will be explored off-site to ensure that the Proposed Development achieves a 10% gain.
Achieve the best outcomes for biodiversity	<p>The landscape design sets out a detailed plan to create woodland habitats within the Site and restore areas of degraded blanket bog.</p> <p>These habitat restoration and creation measures are in line with local and national targets.</p> <p>Implementation of the LHMP will ensure that proposed landscaping is successfully implemented.</p>
Be additional	The BNG Assessment of the Proposed Development demonstrates that additional positive outcomes will be achieved for biodiversity through the proposed habitat restoration and creation. Further to the measures to be implemented on Site, additional off-site habitat creation or restoration will be sought to ensure a 10% gain is achieved.
Create a net gain legacy	<p>The habitat creation and enhancement as part of the Proposed Development will provide long-term benefits by adaptive management planning and dedicated funding for long-term management.</p> <p>Additionally, biodiversity benefits will extend beyond the Site by providing suitable foraging, resting, breeding habitats for notable or protected species within the wider landscape and provides higher distinctiveness habitats than the current baseline.</p>
Optimise sustainability	BNG has been integrated from the start of the initial development design stages with input across multiple disciplines to optimise the sustainability of the final Proposed Development.
Be transparent	SSEN Transmission are keen to ensure that approaches following on from this Proposed Development are shared to ensure that any lessons learnt through BNG assessment, habitat enhancement/creation and habitat management can be factored into future projects. Opportunities to share information on the Proposed Development and its approach will be sought.

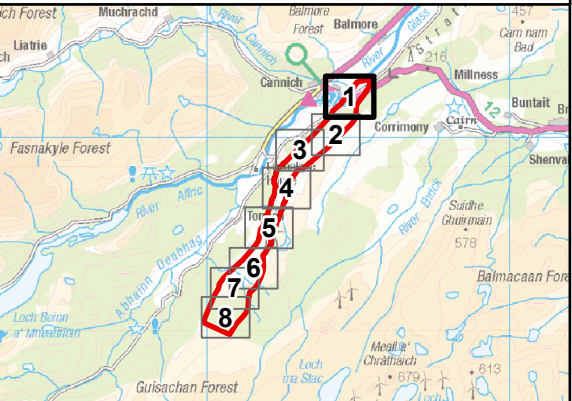
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Appendix B Baseline Habitat Plan



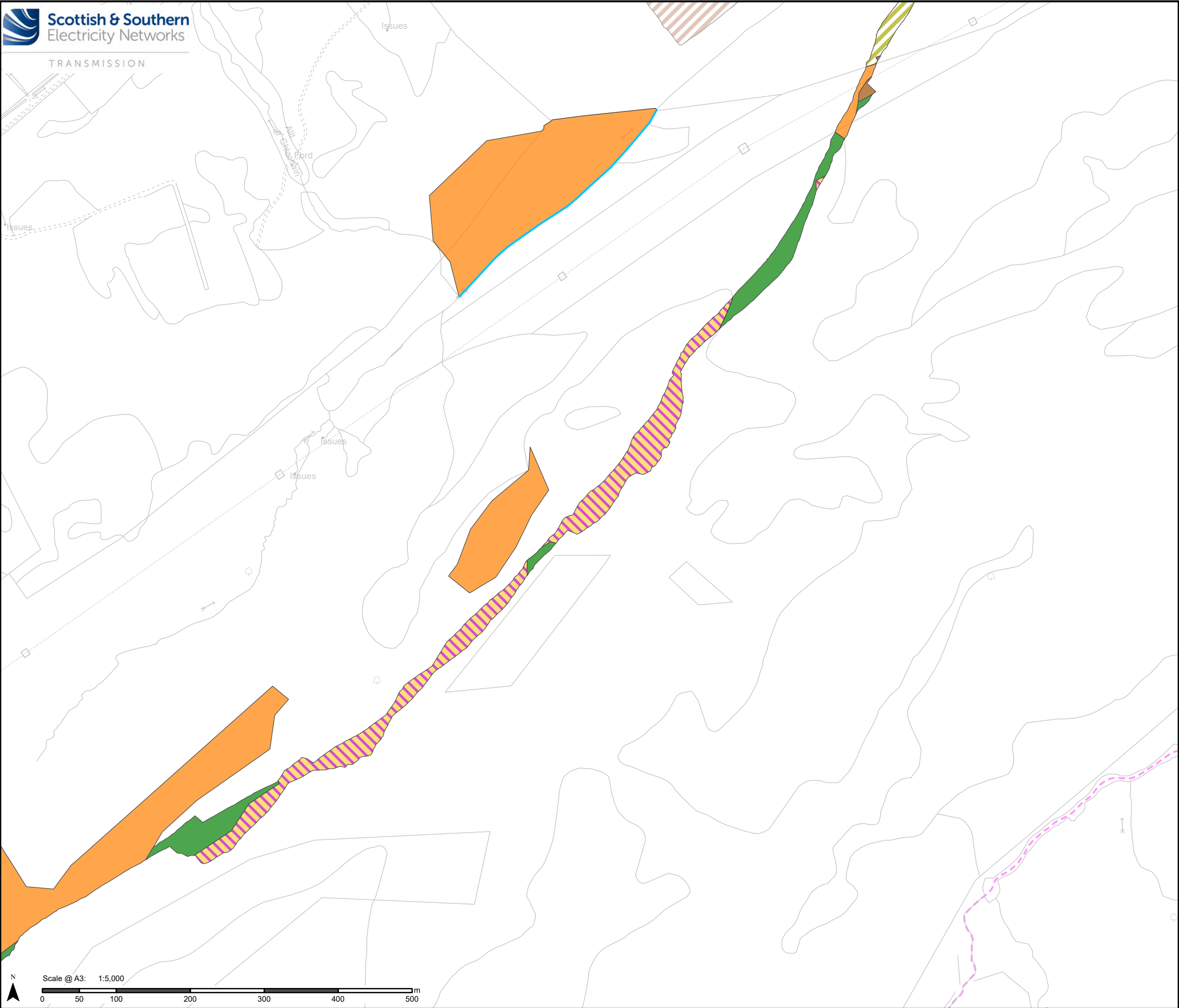
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- UK Habitat Classification
- g1b6 - Other upland acid grassland
 - g1c - Bracken
 - h3 - Dense scrub; plantation (29)
 - u1c - Artificial unvegetated, unsealed surface
 - w1e - Upland birchwoods
 - w1g - Other woodland; broadleaved
 - w1h - Other woodland; mixed
 - w2c - Other coniferous woodland
 - w2c - Other coniferous woodland (felled)
 - r2a - Rivers (priority habitat)
 - r2b - Other rivers and streams



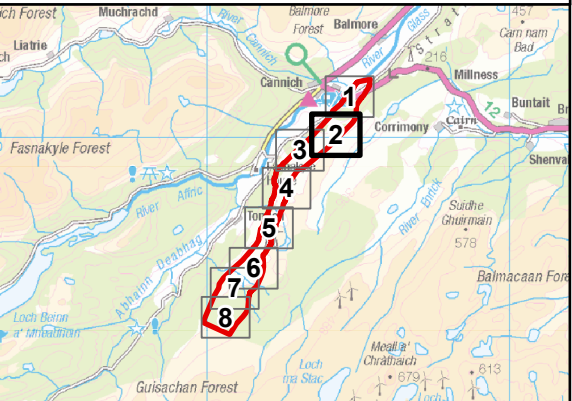
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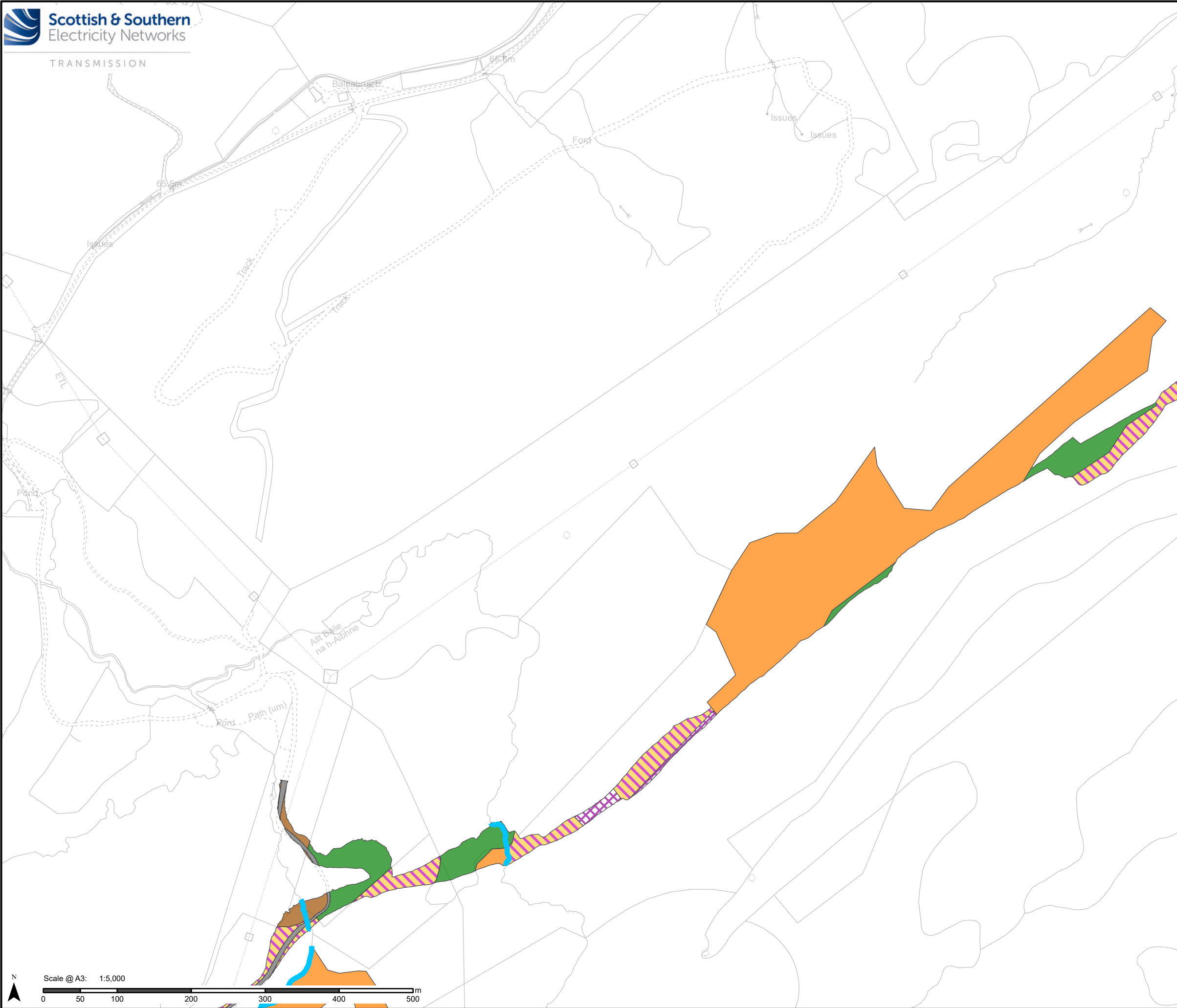
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- UK Habitat Classification
- g1b6 - Other upland acid grassland
 - g1c - Bracken
 - h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
 - w1e - Upland birchwoods
 - w2c - Other coniferous woodland
 - w2c - Other coniferous woodland (felled)
 - r2b - Other rivers and streams



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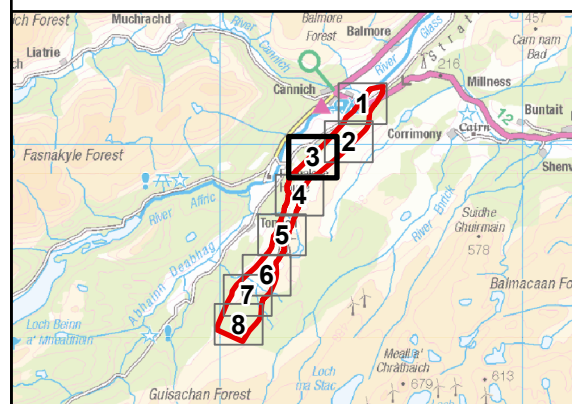
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Legend

UK Habitat Classification

- f1a6 - Degraded blanket bog
- g1b6 - Other upland acid grassland
- g1c - Bracken
- h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
- u1c - Artificial unvegetated, unsealed surface
- w1e - Upland birchwoods
- r2a - Rivers (priority habitat)



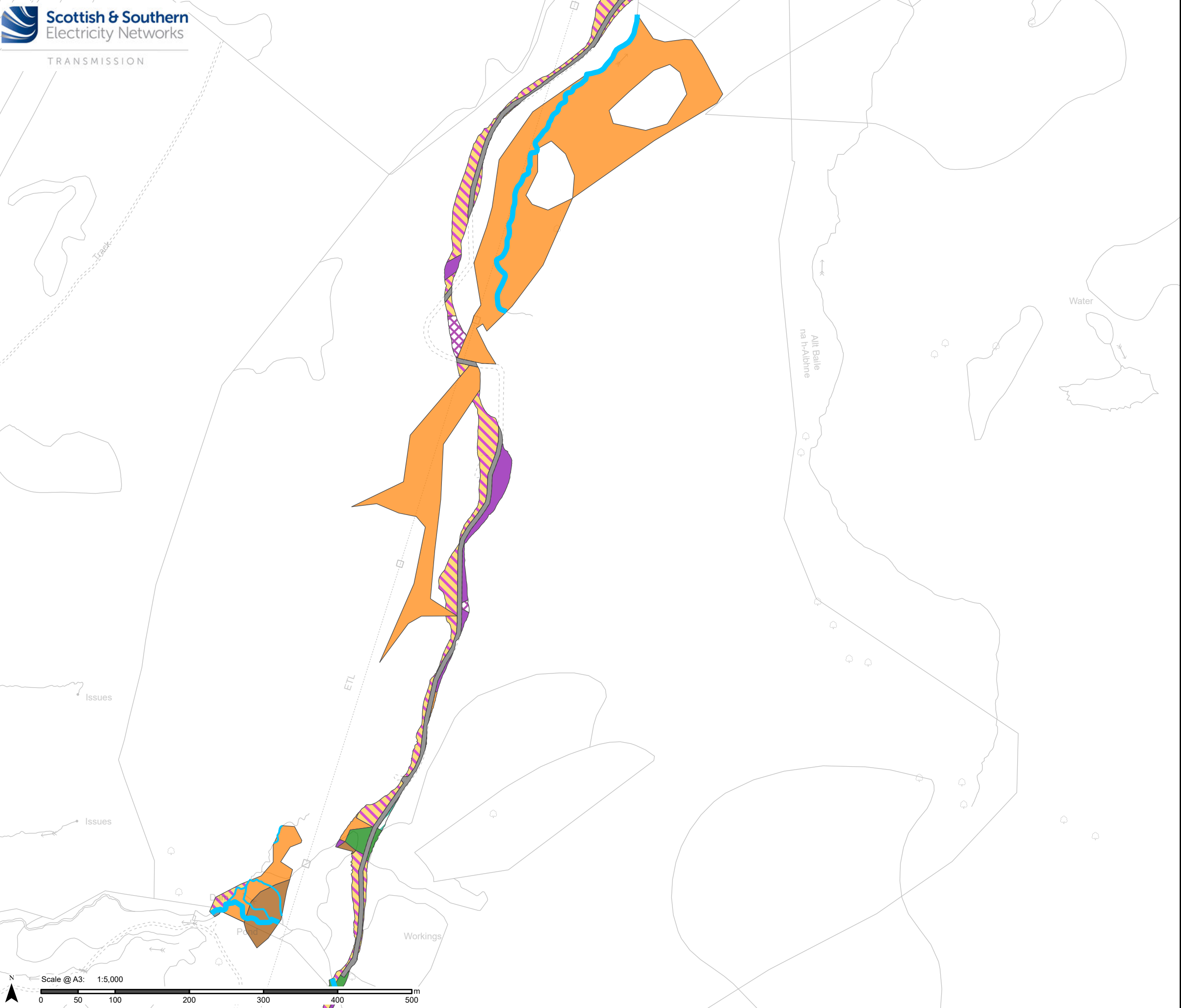
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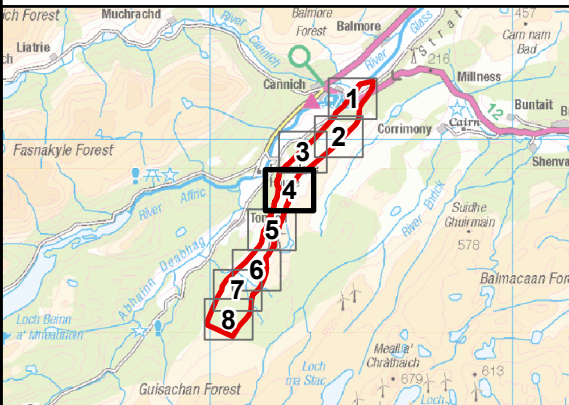
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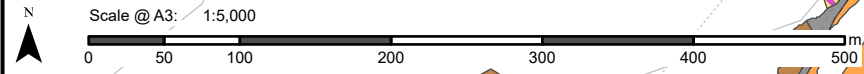
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- UK Habitat Classification
- f1a5 - Blanket bog (H7130)
 - f1a6 - Degraded blanket bog
 - g1b6 - Other upland acid grassland
 - g1c - Bracken
 - h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
 - u1c - Artificial unvegetated, unsealed surface
 - w1d - Wet woodland
 - w1e - Upland birchwoods
 - r2a - Rivers (priority habitat)
 - r2b - Other rivers and streams














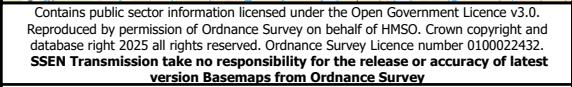
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UK Habitat Classification

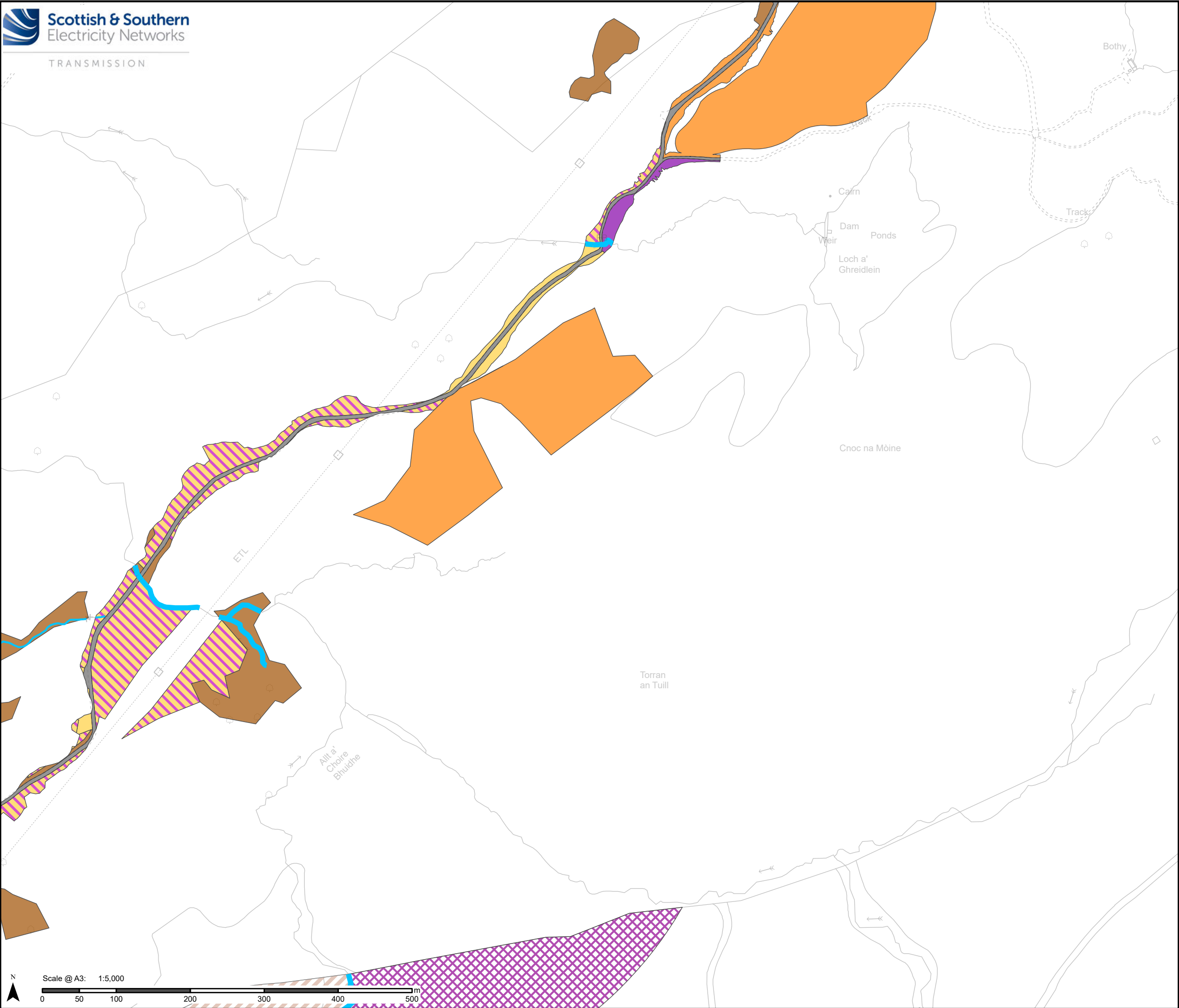
- | | |
|---|--|
|  | f1a5 - Blanket bog (H7130) |
|  | f1a6 - Degraded blanket bog |
|  | f2c7 - Calcium-rich springwater-fed fens; upland (H7230) |
|  | g1b6 - Other upland acid grassland |
|  | g1c - Bracken |
|  | h1a5 - Dry heaths; lowland (H4030) |
|  | h1b5 - Dry heaths; upland (H4030) |
|  | h1b6 - Wet heathland with cross-leaved heath; upland (H4010) |
|  | u1c - Artificial unvegetated, unsealed surface |
|  | w1e - Upland birchwoods |
|  | r2a - Rivers (priority habitat) |



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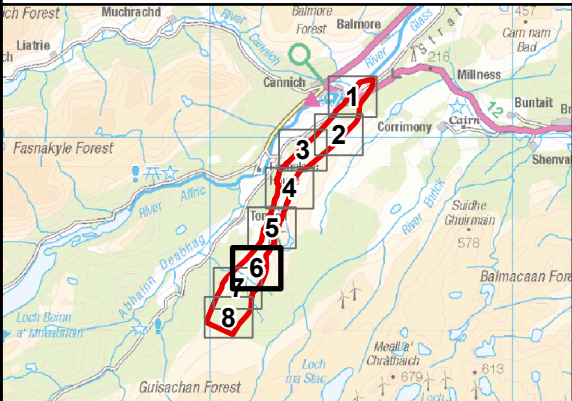
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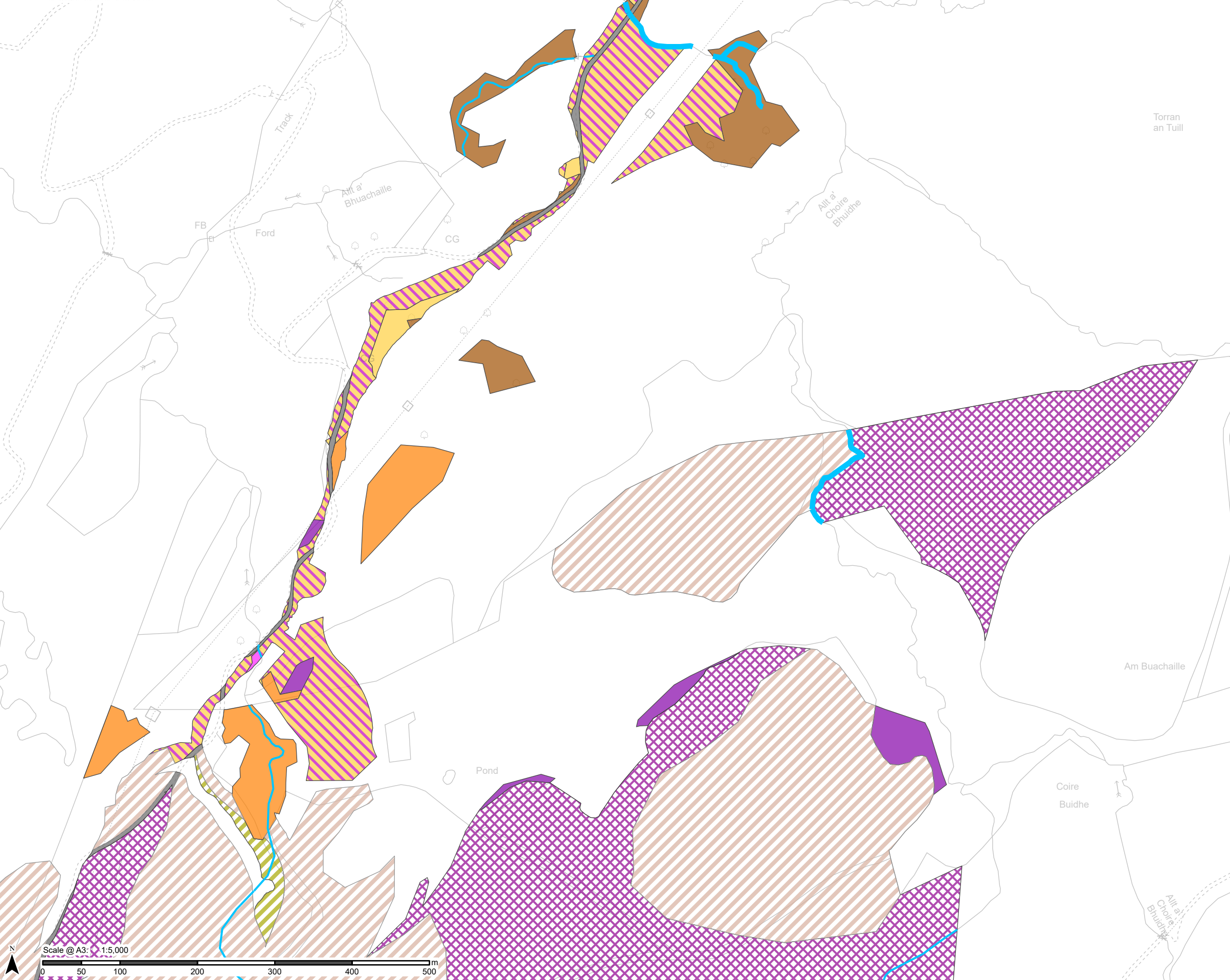
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- UK Habitat Classification
- f1a5 - Blanket bog (H7130)
 - f1a6 - Degraded blanket bog
 - g1b6 - Other upland acid grassland
 - g1c - Bracken
 - h1b5 - Dry heaths; upland (H4030)
 - h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
 - u1c - Artificial unvegetated, unsealed surface
 - w2c - Other coniferous woodland (felled)
 - r2a - Rivers (priority habitat)
 - r2b - Other rivers and streams



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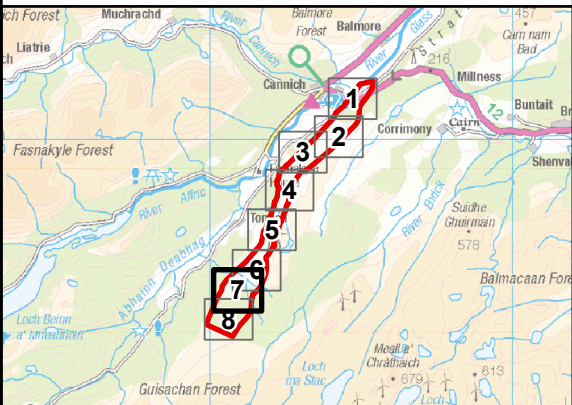
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Legend

UK Habitat Classification

- f1a5 - Blanket bog (H7130)
- f1a6 - Degraded blanket bog
- f2c - Upland flushes, fens and swamps
- g1b6 - Other upland acid grassland
- g1c - Bracken
- h1b5 - Dry heaths; upland (H4030)
- h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
- u1c - Artificial unvegetated, unsealed surface
- w2c - Other coniferous woodland
- w2c - Other coniferous woodland (felled)
- r2a - Rivers (priority habitat)
- r2b - Other rivers and streams



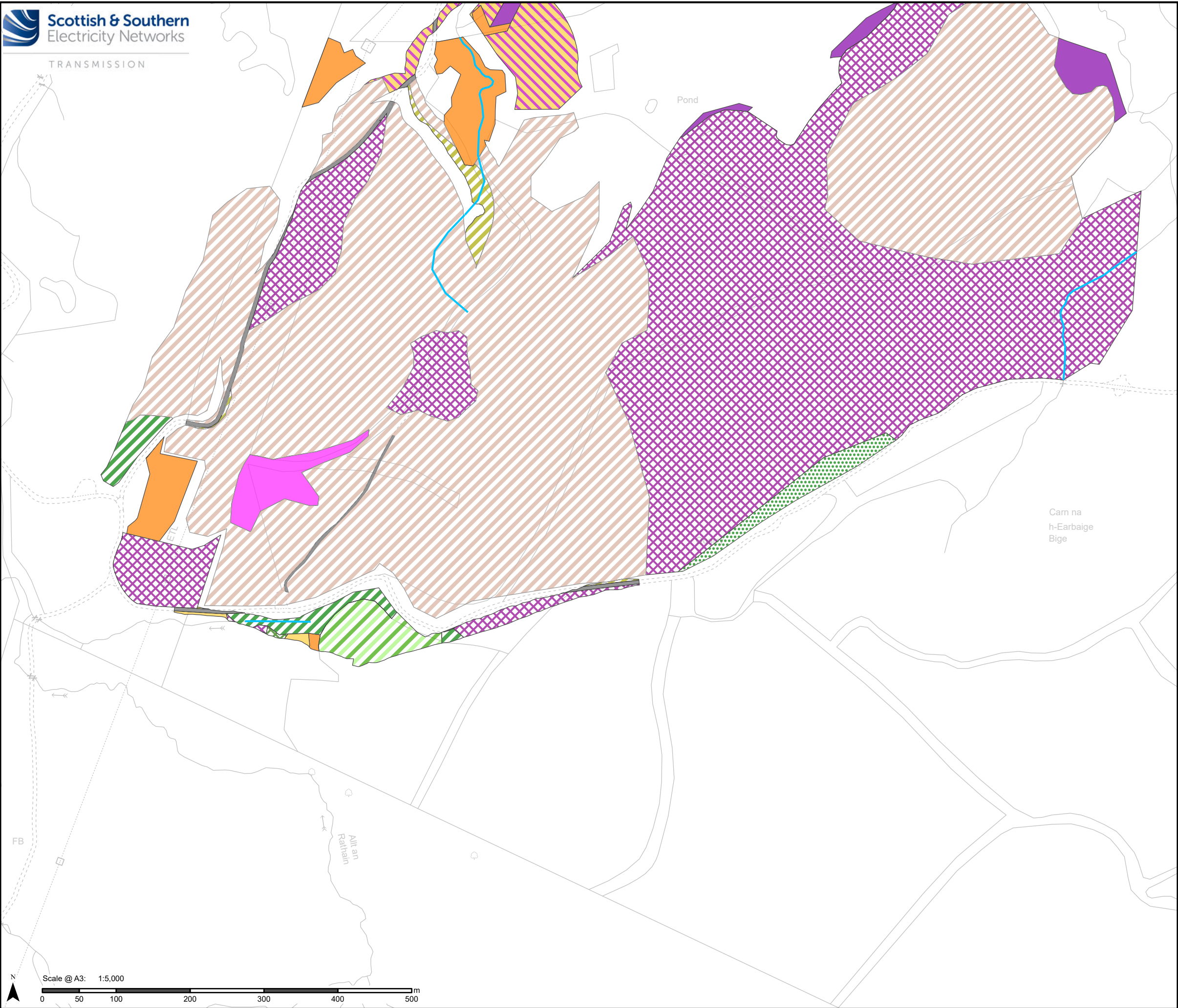
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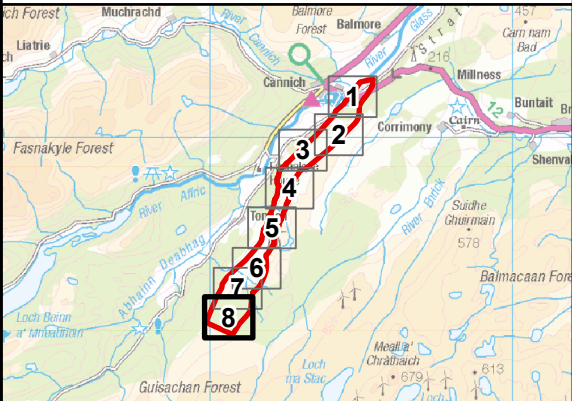
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Legend

- UK Habitat Classification
- f1a5 - Blanket bog (H7130)
 - f1a6 - Degraded blanket bog
 - f2c - Upland flushes, fens and swamps
 - g1b6 - Other upland acid grassland
 - h1b5 - Dry heaths; upland (H4030)
 - h1b6 - Wet heathland with cross-leaved heath; upland (H4010)
 - h3 - Dense scrub
 - h3 - Dense scrub; scattered trees (32)
 - u1c - Artificial unvegetated, unsealed surface
 - w1g - Other woodland; broadleaved
 - w1h - Other woodland; mixed
 - w2c - Other coniferous woodland
 - w2c - Other coniferous woodland (felled)
 - r2b - Other rivers and streams

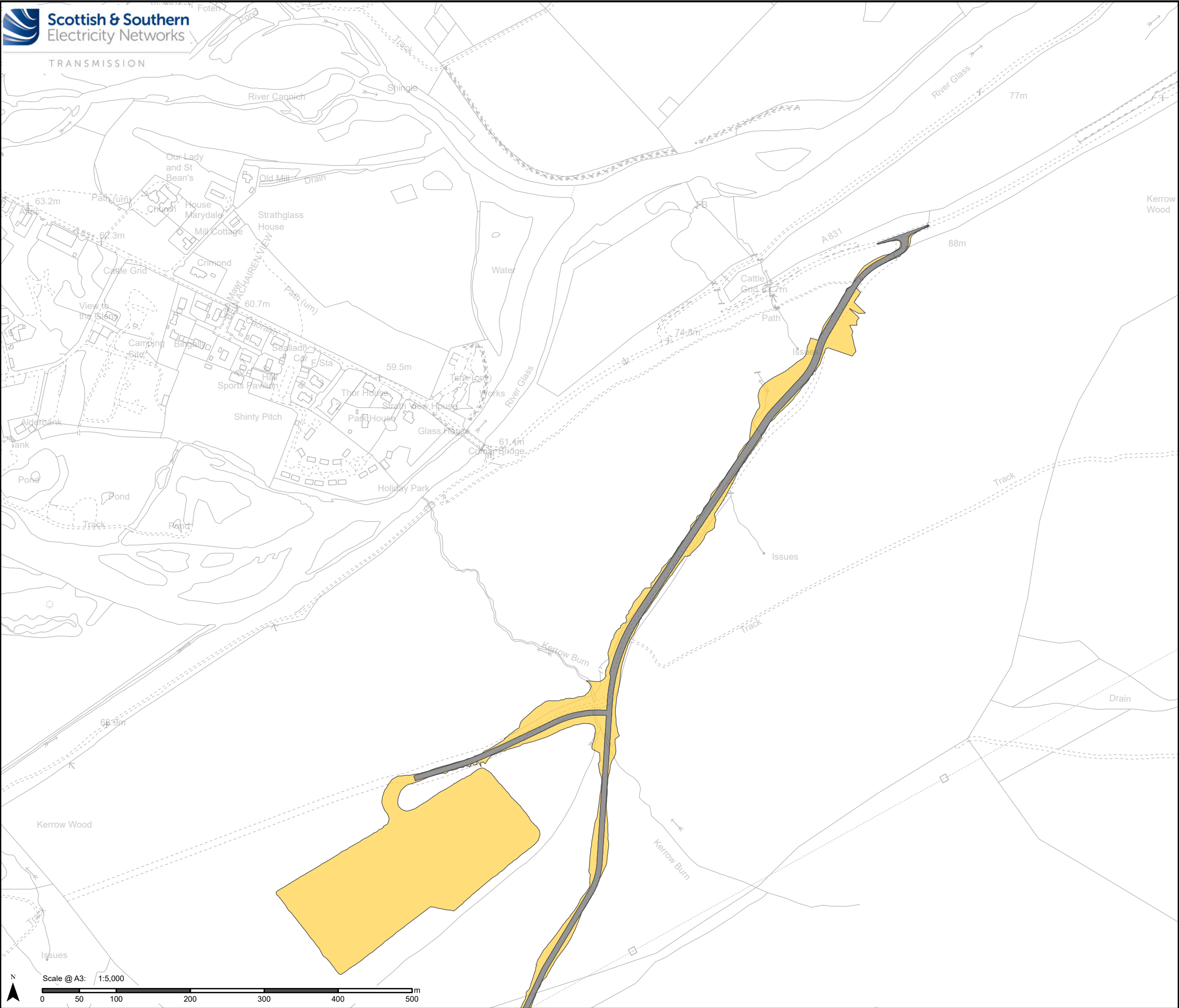


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Appendix C Post Development Plan of biodiversity enhancement and details on post development habitat target condition values

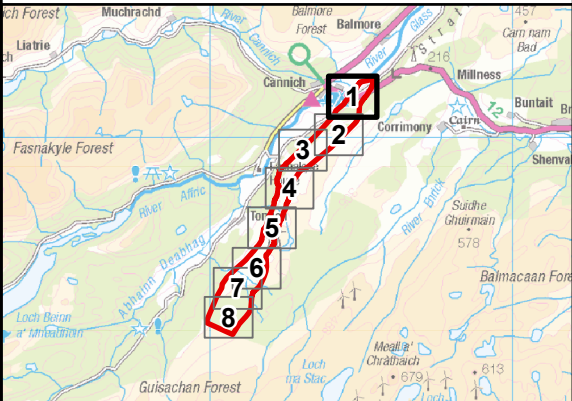


Legend

Post Development Habitats

h1b - Upland heathland

u1c - Artificial unvegetated, unsealed surfaces



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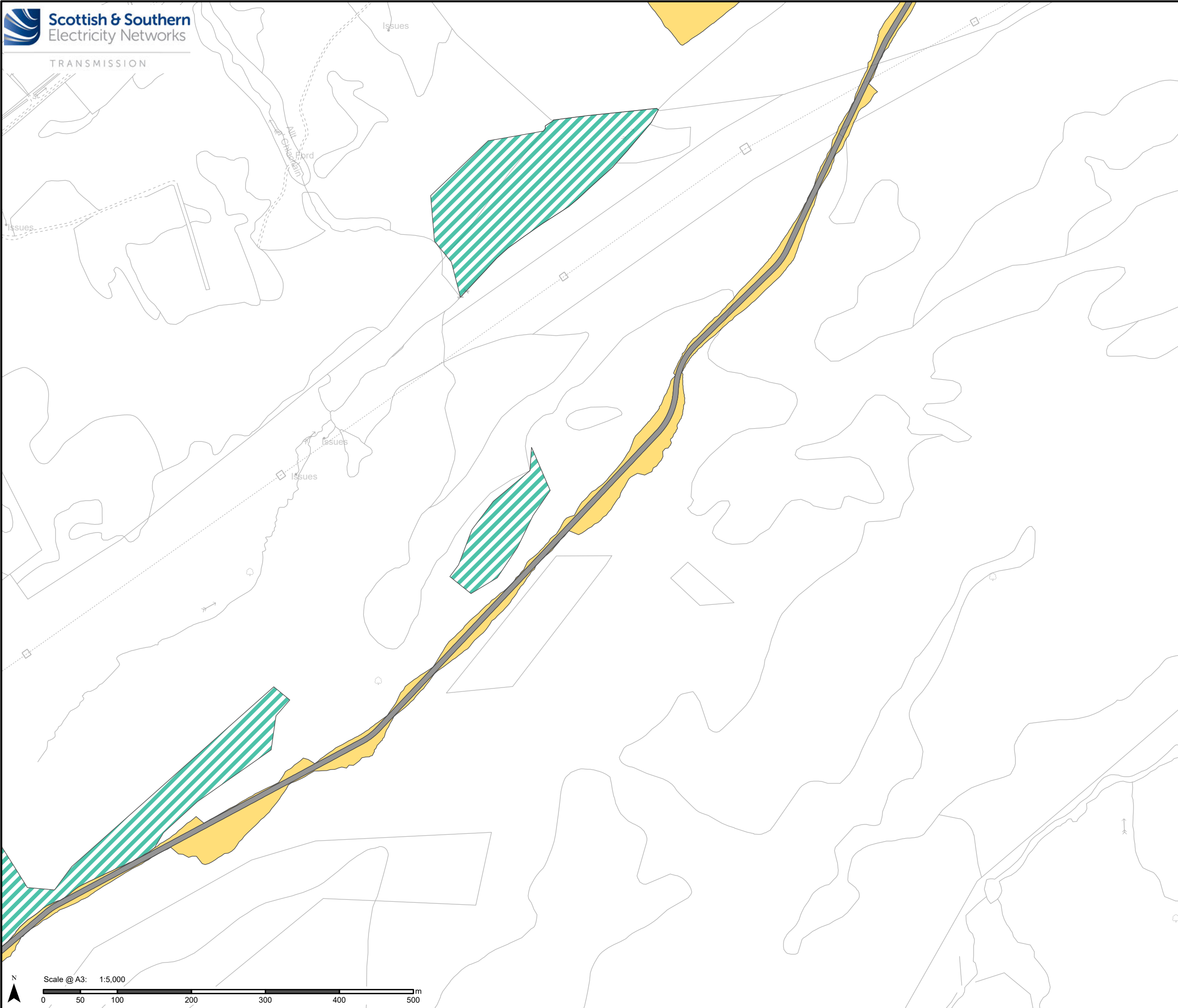
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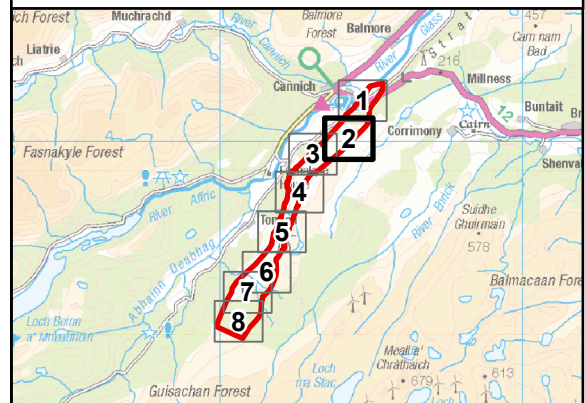
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Legend

Post Development Habitats

- h1b - Upland heathland
- u1c - Artificial unvegetated, unsealed surfaces
- w1d - Wet woodland



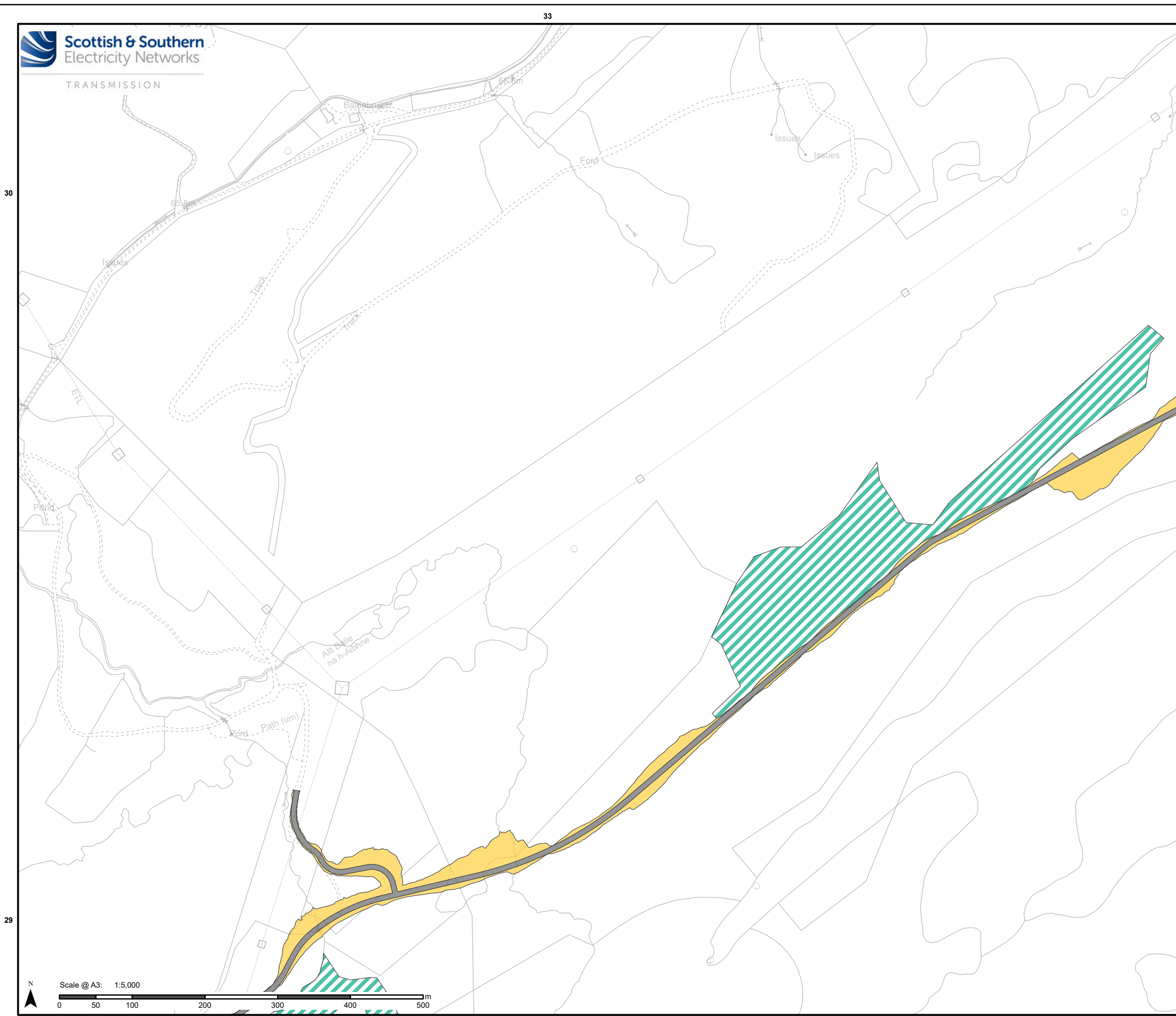
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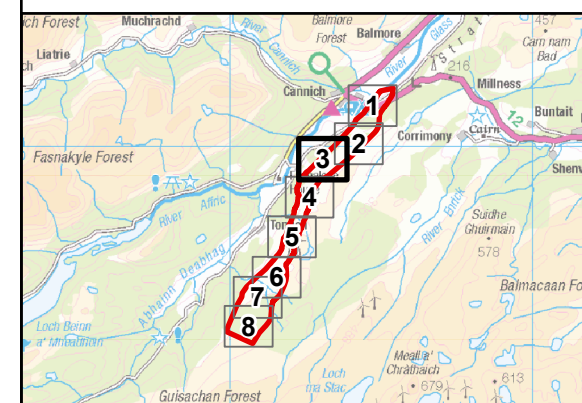
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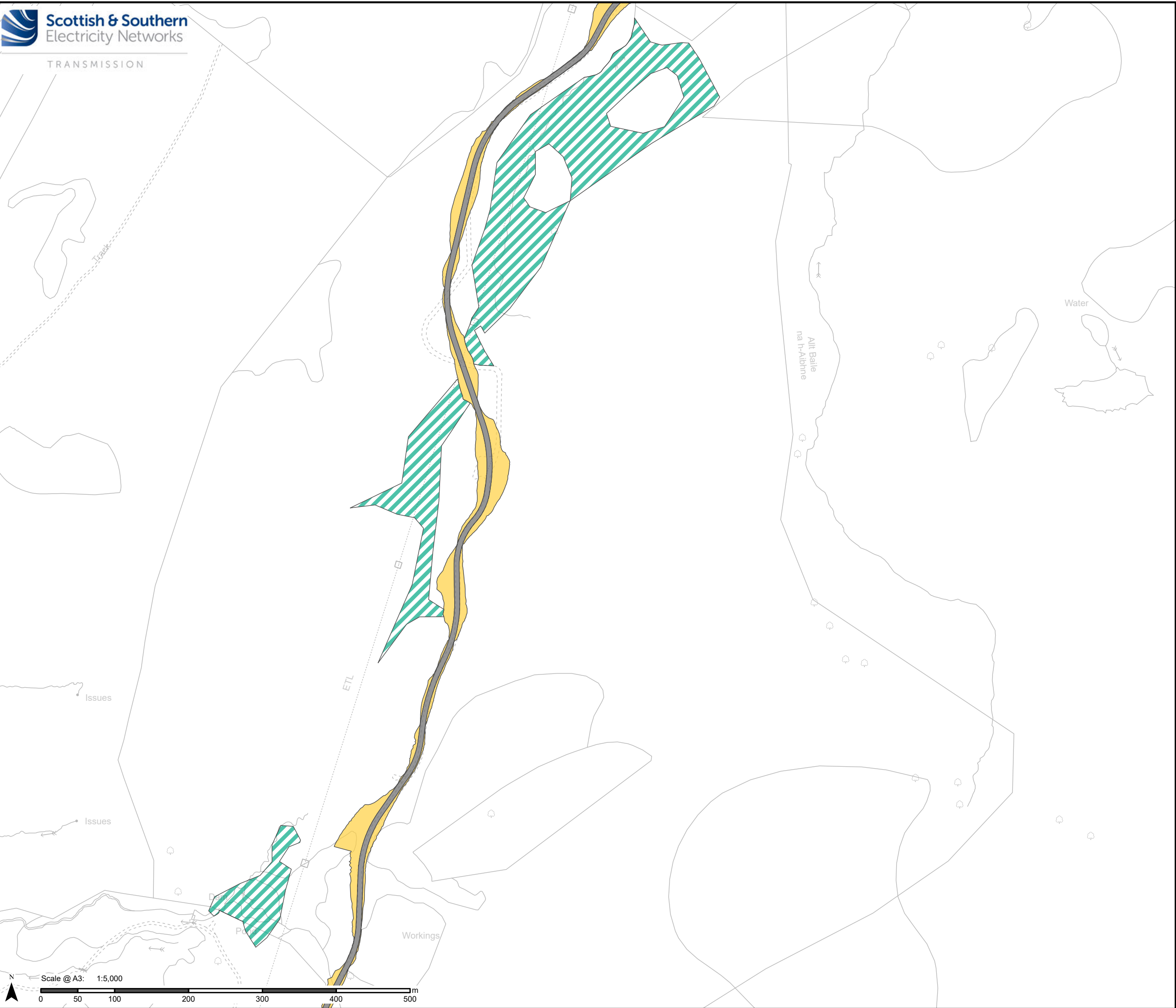
Post Development Habitats

- h1b - Upland heathland
- u1c - Artificial unvegetated, unsealed surfaces
- w1d - Wet woodland



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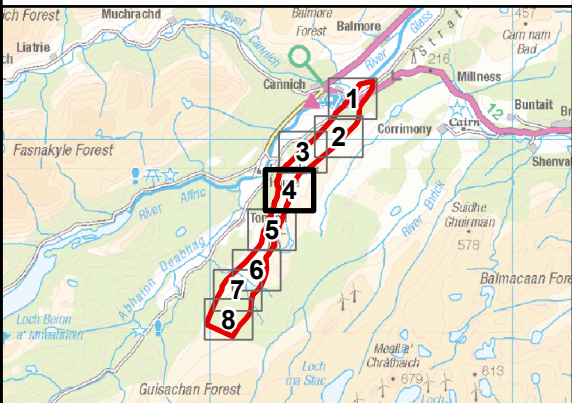
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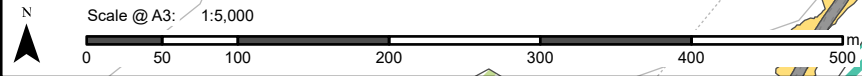
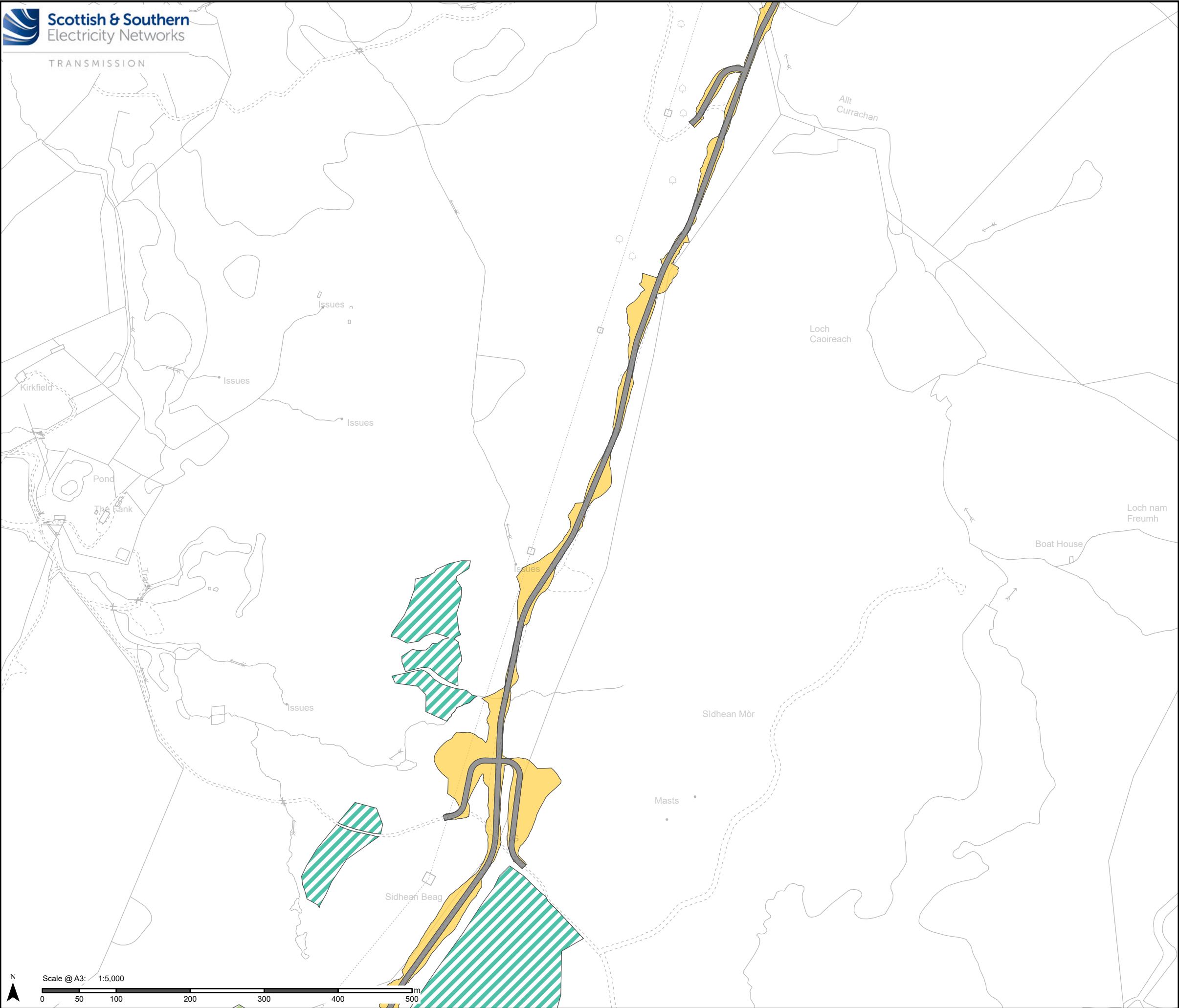
Post Development Habitats

- h1b - Upland heathland
- u1c - Artificial unvegetated, unsealed surfaces
- w1d - Wet woodland



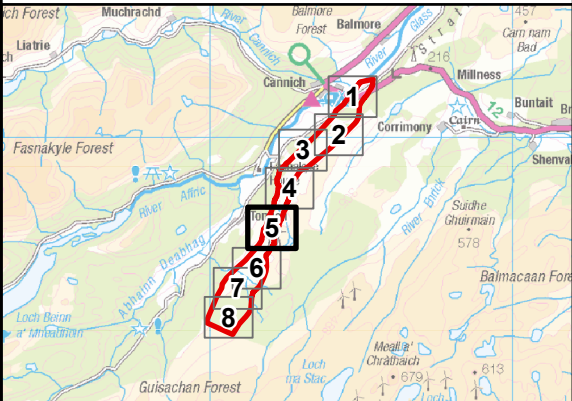
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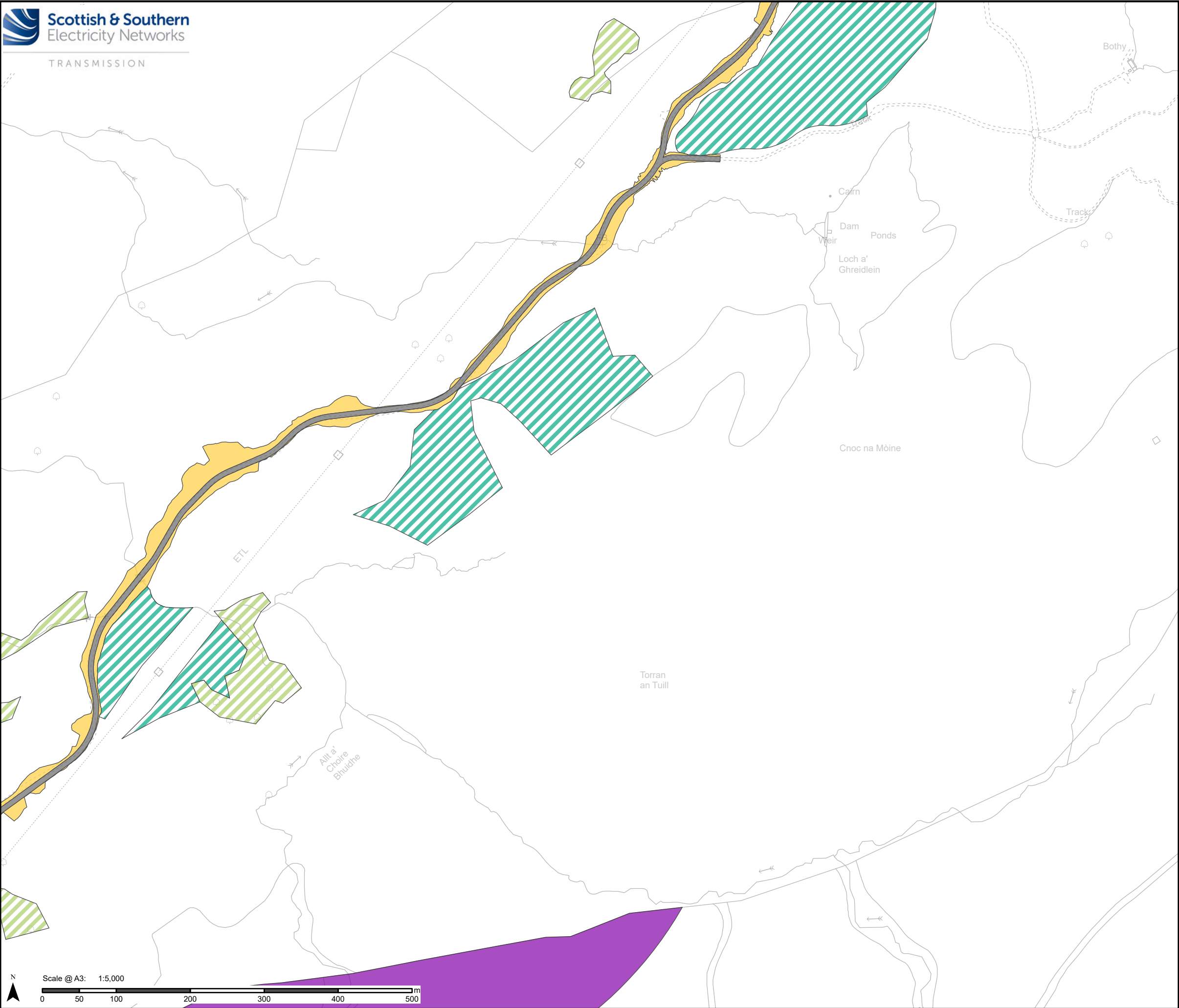
Legend

- Post Development Habitats
- h1b - Upland heathland
 - u1c - Artificial unvegetated, unsealed surfaces
 - w1d - Wet woodland
 - w2b - Other Scots Pine woodland



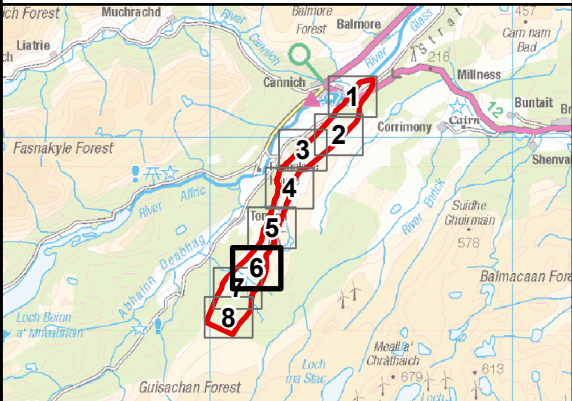
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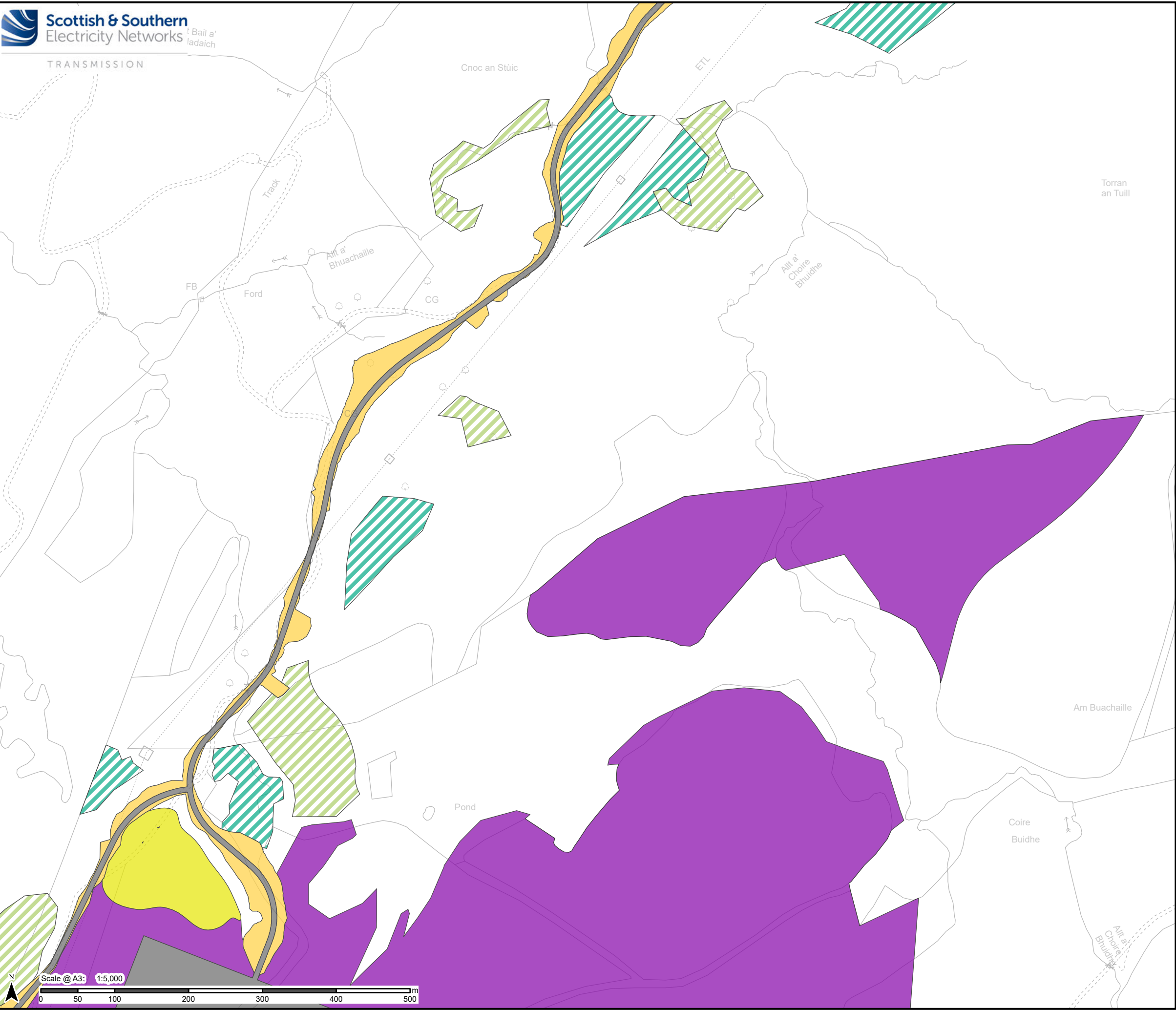
Legend

- Post Development Habitats
- f1a5 - Blanket bog
 - h1b - Upland heathland
 - u1c - Artificial unvegetated, unsealed surfaces
 - w1d - Wet woodland
 - w2b - Other Scots Pine woodland



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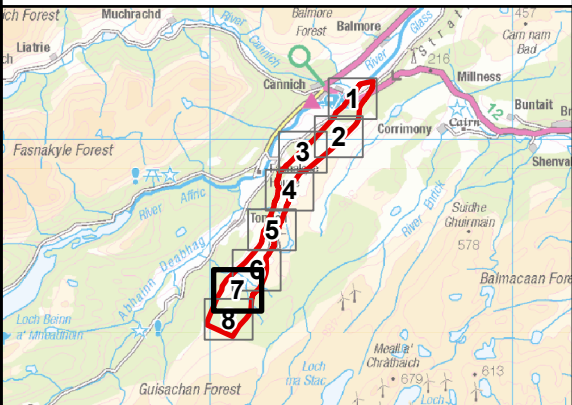
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Legend

Post Development Habitats

- f1a5 - Blanket bog
- g3c - Other neutral grassland
- h1b - Upland heathland
- u1c - Artificial unvegetated, unsealed surfaces
- w1d - Wet woodland
- w2b - Other Scots Pine woodland



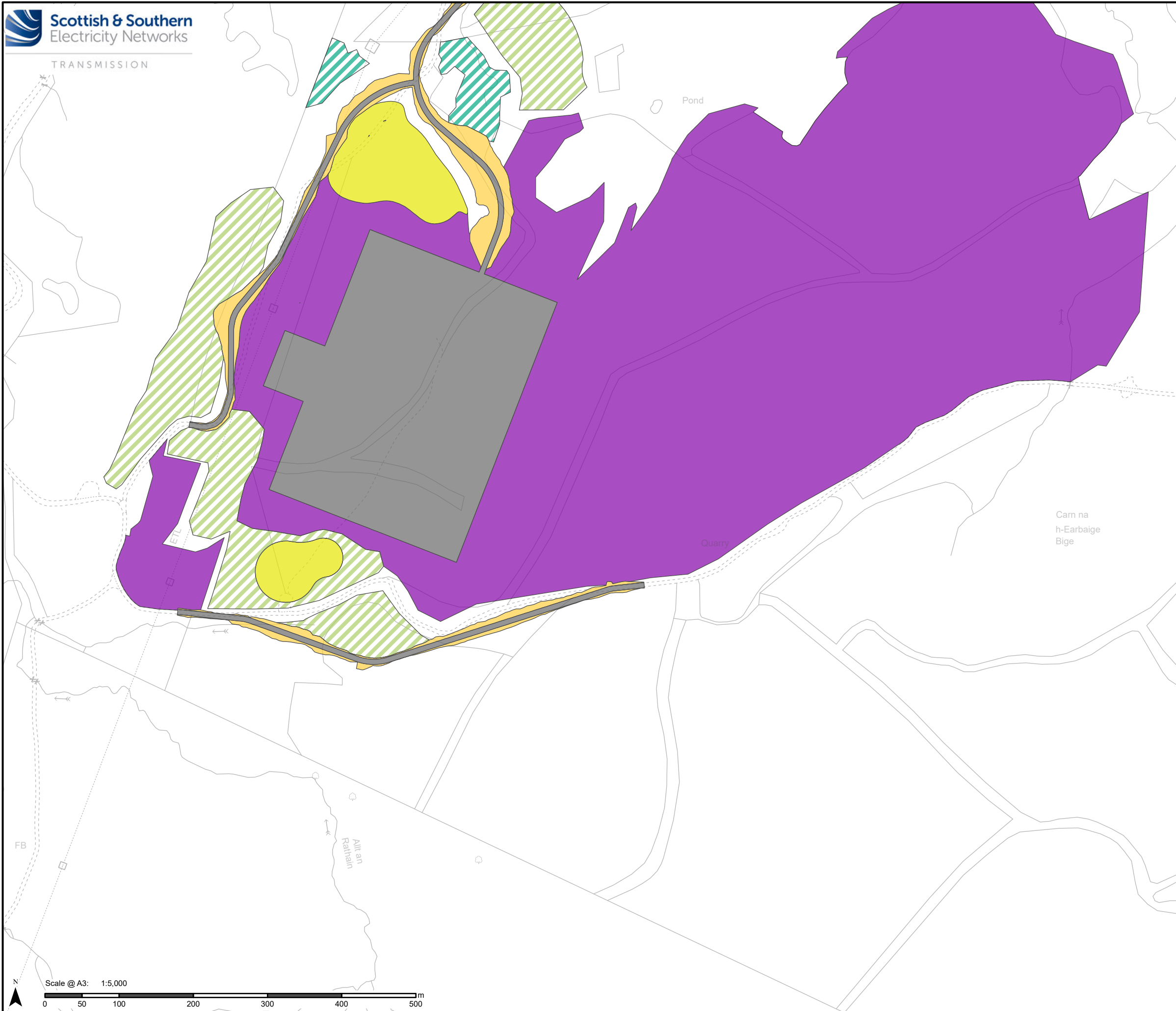
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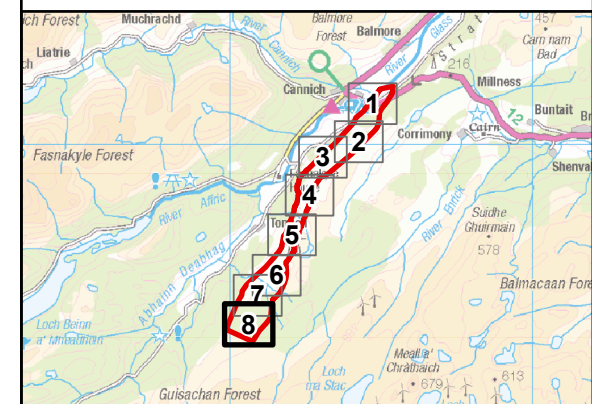
Drawing: Appendix C



Legend

Post Development Habitats

- f1a5 - Blanket bog
- g3c - Other neutral grassland
- h1b - Upland heathland
- u1c - Artificial unvegetated, unsealed surfaces
- w1d - Wet woodland
- w2b - Other Scots Pine woodland



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Table C.1 Rationale for condition habitats that will be created.

General LHMP habitat	UKHab type	Target condition	Rationale / Description
Wet woodland mix	w1d	Moderate	Woodland comprising a mix of native species. After 15 years (up to 30 years) expected to be semi-mature birch <i>Betula</i> spp./rowan <i>Sorbus aucuparia</i> with a grassy ground flora of acid species or a heathy ground flora dominated by dwarf shrubs. Moderate condition met through good diversity/cover of native tree species and controlling the extent and spread of Sitka spruce. The habitat is unlikely to achieve good condition due to criteria that could only be met in long-established or ancient woodland.
Woodland mix	w1g Other Broadleaved Woodland	Moderate	Woodland comprising a mix of native species. After 15 years (up to 30 years) expected to be semi-mature birch <i>Betula</i> spp./rowan <i>Sorbus aucuparia</i> / with a grassy ground flora of acid species or a heathy ground flora dominated by dwarf shrubs. Moderate condition met through good diversity/cover of native tree species and controlling the extent and spread of Sitka spruce. The habitat is unlikely to achieve good condition due to criteria that could only be met in long-established or ancient woodland.
Wet meadow mix	g3c Other Neutral Grassland	Moderate	Grassland comprising a mix of native species (e.g. wet meadow seed mix). No management is intended, however, some species would not persist and hence the habitat aimed for is Other Neutral Grassland. Moderate condition considered achievable due to species richness greater than 9 per sq. m.
Heathland mix	h1b Upland Heathland	Moderate	Dominated by heather with one or more dwarf shrubs (e.g. bilberry <i>Vaccinium myrtillus</i>). Moderate condition targeted as unlikely to achieve good condition due to lack of structural diversity and age classes of heather.
Heathland mix with dwarf shrub planting	h1b Upland Heathland	Moderate	Dominated by heather with one or more dwarf shrubs (e.g. bilberry). Moderate condition targeted as unlikely to achieve good condition due to lack of structural diversity and age classes of heather.

Table C.2 Rationale for condition of each additional post-intervention area-based habitat that will be created.

Proposed habitat restoration UKHab Type and condition	Baseline UKHab type and condition	Baseline condition	Predicted condition and rational for TTTC and difficulty multipliers.
f1a5 Blanket bog (priority) - poor and Felled woodland	f1a5 Blanket bog (priority) - good	<p>The baseline habitats in the locations proposed for blanket bog restoration are blanket bog in poor condition and felled woodland in poor condition.</p> <p>The blanket bog present is in poor condition as failed on the following criteria:</p> <p>A – there is artificial drainage channels and the water table is not at the surface</p> <p>B – The vegetation present does not match the UKHab description. The habitat is dominated by heather, with abundant purple moor grass and <i>polytrichum commune</i>, with limited cottongrass species and bog forming mosses.</p> <p>D – Scrub/ tree<10% - currently there are tree stumps present throughout</p> <p>H – Sphagnum and cottongrass are not frequent</p> <p>The felled woodland was previously a Sitka spruce plantation and as such was recorded as being in poor condition.</p> <p>Water table at / near surface all year, no artificial drainage. Water quality good - low turbidity and no obvious pollution. Scrub/tree <10% cover. Bare ground <5% cover. INNS absent. Peat bog indicator species (sphagnum <i>Sphagnum</i> spp. / cottongrass <i>Eriophorum</i> spp.) at least frequent, AND combined cover of ericoid dwarf-shrubs <75%.</p> <p>For poor condition blanket bog around the Sites to achieve good</p>	<p>For the degraded blanket bog to achieve good condition, favourable hydrological conditions must be restored. Following this, it is reasonable to assume the successful promotion of peat bog indicator species (from occasional to frequent) and reduced cover of ericoid shrubs (which seldom exceed 75% cover), will both occur. The IUCN details that in many cases rewetting brings back former peat forming vegetation within 5 to 10 years²⁰. The IUCN report of forest to bog restoration also notes that it is possible to rehabilitate damaged areas of peatland and return beneficial and biodiversity functions even within a 10-20 year period²¹. Good condition blanket bog was recorded in the wider area, demonstrating the suitability of the Site to support good condition blanket bog. Taking a precautionary approach, it is therefore reasonable to predict that the proposed restoration will result in passes to all of the failed condition assessment criteria, within 20 years and this has been set as the time to target condition.</p> <p>The peatland restoration will follow best practice techniques to restore the water table through ditch blocking which will likely make use of excess peat from the proposed substation platform area and methods such as smoothing to remove the current ridge and furrows in place from the historical forestry.</p> <p>With respect to the difficulty multiplier, this has been set at medium, based on</p>

²⁰ Cris,R.,Buckmaster,S.,Bain,C.&Bonn,A.(Eds.)(2011)(UK Peatland Restoration —(Demonstrating Success. IUCN UK National Committee Peatland Programme [IUCN Demonstrating Success Booklet UK.pdf](#)

²¹ Forest to Bog Restoration – Demonstrating Success’. 2024. IUCN UK Peatland Programme [Demonstrating Success Forest to Bog_small.pdf](#)

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Proposed habitat restoration UKHab Type and condition	Baseline UKHab type and condition	Baseline condition	Predicted condition and rational for TTTC and difficulty multipliers.
		condition, favourable hydrological conditions must be restored. Following this, it is reasonable to assume the successful promotion of peat bog indicator species (from occasional to frequent) and reduced cover of ericoid shrubs (which seldom exceed 75% cover), will both occur within the expected time frame of thirty years.	the growing knowledge and experience of peatland restoration techniques in Scotland. For example, the peatland ACTION programme as undertaken peatland restoration on over 51,000 ha since 2012. The Scottish Government has committed investment in peatland restoration and as a result there is a greater industry knowledge and expertise amongst contractors who undertaken restoration. Detailed guidance on restoration techniques is available, which has been developed based on experience of restoration projects. It is considered that in light of the level of industry knowledge, which has learnt from success and failures on restoration projects, there can be confidence in methods to be used on the Site.