Scottish & Southern Electricity Networks

Fanellan Hub 400 kV Substation and Converter Station Environmental Impact Assessment Report Volume 4 | Technical Appendices

Appendix 9.1 – Habitats Baseline

February 2025

CONTENTS

EXECUTIVE SUMMARY

Scottish Hydro Electric Transmission plc (hereafter the 'Applicant'), operating and known as Scottish and Southern Electricity Networks Transmission (hereafter 'SSEN Transmission'), seeks consent under the Town and Country Planning (Scotland) Act 1997 (as amended) to construct and operate a proposed new 400 kV substation and a new High Voltage Direct Current (HVDC) converter station at Fanellan, Beauly, near Inverness (hereafter the 'Proposed Development'). This would be located on land southwest of Kilmorack and the River Beauly; approximate National Grid Reference at centre NH 48736 43135.

To inform an Environmental Impact Assessment of the Proposed Development, a UK Habitat Classification (UKHab) survey; and a National Vegetation Classification (NVC) survey have has been undertaken in relation to habitats within the Proposed Development's red line boundary and its surrounding area. The footprint of the Proposed Development's permanent construction elements and vegetation clearance areas are hereafter referred to as the 'Direct Impact Areas'.

Generally, the Direct Impact Areas comprised modified grassland and agricultural land, interspersed by built features/developed land. Minor areas of broadleaved woodland were mapped within the Direct Impact Areas. Other linear habitat features that were recorded include non-priority hedgerows and minor watercourses. The assessed NVC habitats within the Direct Impact Areas aligned to community W23 '*Ulex europaeus–Rubus fruticosus* scrub'; and M25/M4, a '*Molinia caerulea–Potentilla erecta* mire' / '*Carex rostrata–Sphagnum recurvum* mire' NVC mosaic.

No Annex 1 habitat types, important peat-forming habitats, or irreplaceable habitat areas were identified within the Proposed Development's footprint. Three individual veteran trees were identified outwith the Direct Impact Areas but within the south-western portion of the Proposed Development's red line boundary. These veteran trees and their protection are presented and considered further in **Volume 2, Chapter 15: Forestry** of the EIA Report.

Areas of upland heathland; wet woodland; upland birchwood; and lowland mixed deciduous woodland within the Direct Impact Areas align to the Scottish Biodiversity List's priority habitat definitions and are recognised by the Highland Nature Biodiversity Action Plan's statements on 'Priority Species and Actions for Habitats'.

Rhododendron, an invasive and non-native species, was recorded at various locations during the UKHab field survey, predominantly scattered within the understorey of the various woodlands.

1. INTRODUCTION

1.1 Proposed Development

1.1.1 Scottish Hydro Electric Transmission plc (hereafter the 'Applicant'), operating and known as Scottish and Southern Electricity Networks Transmission (hereafter 'SSEN Transmission'), seeks consent under the Town and Country Planning (Scotland) Act 1997[1] (as amended) to construct and operate a proposed new 400 kV substation and a new High Voltage Direct Current (HVDC) converter station at Fanellan, Beauly, near Inverness (hereafter the 'Proposed Development'). This would be located on land southwest of Kilmorack and the River Beauly; approximate National Grid Reference at centre NH 48736 43135. The footprint of the Proposed Development's permanent construction elements and vegetation clearance areas are hereafter referred to as the 'Direct Impact Areas'. The location of the Direct Impact Areas is shown on **Figure 1.1 - Location Plan** and the layout of the Proposed Development is shown on **Figure 3.1 - Proposed Development**; both included in **Volume 3: Figures** of the Environmental Impact Assessment (EIA) Report. For full details of the Proposed Development, please refer to **Volume 2, Chapter 3: Description of the Proposed Development** of the EIA Report.

1.2 Scope of Report

1.2.1 WSP UK Ltd. (WSP) was commissioned to undertake ecological studies to identify the baseline of the Proposed Development's red line boundary and surrounding area, which have been used to inform **Volume 2, Chapter 10: Ecology and Nature Conservation** of the EIA Report.

1.2.2 This report presents methods and baseline findings of studies relating to the habitats present within and surrounding the Proposed Development's red line boundary. This comprised UK Habitat Classification (UKHab) and National Vegetation Classification (NVC) surveys. The objectives of the surveys were to:

- Spatially map and describe the primary habitats present within the Proposed Development's red line boundary and up to its outer 250 m buffer using UKHab methods.
- Identify primary habitats of elevated importance with reference to national and local biodiversity priority lists.
- Identify NVC communities within and surrounding the Proposed Development's red line boundary with the potential to be Groundwater Dependent Terrestrial Ecosystems (GWDTEs); priority peatland; or other habitats of elevated importance, subject to further assessment.

1.2.3 This report is linked to the Proposed Development's Biodiversity Net Gain Report, which is presented as a stand-alone document and which considers the condition, distinctiveness and spatial extent of habitats permanently or temporarily affected by the Proposed Development's construction. The Biodiversity Net Gain Report aims to demonstrate how positive effects for biodiversity could be achieved through habitat creation and/or enhancement, should the Proposed Development be consented.

[1] Town and Country Planning (Scotland Act) 1997. Available at: https://www.legislation.gov.uk/ukpga/1997/8/contents [Accessed: June 2024].

2. METHODS

2.1 UK Habitat Classification

2.1.1 A UKHab survey was undertaken during the Proposed Development's detailed site selection stage in December 2022 of the initial proposed red line boundary. Another survey to review the initial UKHab mapping during a more optimal time of year for botanical interests and extend the coverage across the Proposed Development's preliminary design red line boundary for planning and up to its outer 250 m buffer (hereafter the 'Study Area') was undertaken during April 2024. The surveys were led by an ecologist who is experienced at a 'capable'[2] level of surveying similar habitat types encountered in the geographical region and land-use setting. Habitat types have been recorded using the UKHab system[3,4]. UKHab mapping covered the full extent of the Study Area.

2.1.2 The UKHab system classifies habitats according to their vegetation types and structure, following a principal hierarchy of 'Primary Habitats'. Primary Habitats include ecosystems (level 1), broad habitat types (level 2 and 3); defined habitats, including UK Biodiversity Action Plan Priority Habitats[5] (level 4); and further defined habitats, including EU Habitats Directive Annex 1 habitats (level 5). Each Primary Habitat has an alpha-numeric code, unique to UKHab (i.e., different to other habitat survey methods such as Phase 1 and National Vegetation Classification).

2.1.3 A non-hierarchical system of numeric codes ('Secondary Codes') can then be used to provide more information on a habitat.

2.1.4 A Primary Habitat and any relevant Secondary Codes were assigned to each area-based polygon, point or linear feature mapped from the Study Area. Habitats were marked on a handheld mapping device using Geographical Information System (GIS) software. The smallest area to be mapped was 0.01 ha, which was selected as a suitable scale to sample the range of different vegetation types present.

2.1.5 Text descriptions to qualify habitat assignment, including plant species, were also recorded. The scientific names for plant species follow those in the New Flora of the British Isles[6] and Mosses and Liverworts of the British Isles[7].

2.1.6 Additional data on habitat condition for area-based habitats and linear features were also recorded during the UKHab surveys using the system presented in Natural England's Biodiversity Metric V3.1[8]. This has been used to inform a separate and stand-alone Biodiversity Net Gain Report for the Proposed Development.

2.2 National Vegetation Classification

2.2.1 The UKHab data were reviewed to identify areas with potential to be GWDTEs; priority peatland; or other habitats of elevated importance (e.g., EU Habitats Directive Annex 1 habitats). Any areas with potential to represent these were subject to additional botanical assessment via NVC survey. The data review and NVC survey were undertaken by an ecologist who is 'accomplished'[2] in habitat assessment. The targeted NVC survey was undertaken in the field during September 2024 to assess and assign NVC communities to the targeted areas.

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[2] CIEEM (2021). Competency Framework. Available at: https://cieem.net/resource/competency-framework/

[3] UKHab Ltd. (2020). UK Habitat Classification, Version 1.1. Available at: https://www.ukhab.org

[4] It is acknowledged that a more recent Version 2.0 is available however, Version 1.1 was current at the time of survey.

[5] Where UK Biodiversity Action Plan Priority Habitats have been identified, these have been assessed against the relevance within the Scottish Biodiversity List.

[6] Stace, C. A. (2019). New Flora of the British Isles. Fourth Edition. C&M Floristics, Suffolk.

[7] Atherton, I., Bosanquet, S., Lawley, M. eds. (2010). Mosses and Liverworts of the British Isles: a field guide. British Bryological Society.

[8] Natural England (2023). Biodiversity Metric 3.1 (JP039). Technical Annex 1 - Condition Assessment Sheets and Methodology. Available at: https://publications.naturalengland.org.uk/publication/5850908674228224

2.2.2 The field survey classification methods followed industry standard guidelines[9]. At the targeted areas, homogenous stands and mosaics of vegetation were mapped as polygons on field survey maps. These polygons were surveyed quantitively with dominant and constant species, sub-dominant species and other species present across homogenous stands and mosaics. Vegetative data gathered within each stand in the field were analysed against published floristic tables[10] using surveyor experience to determine NVC communities.

2.2.3 An assessment of the targeted NVC survey areas' potential to represent GWDTEs is covered in **Volume 2, Chapter 13: Hydrology, Hydrogeology, Geology and Soils** of the EIA Report.

2.3 Priority Habitat Identification

2.3.1 The UKHab system allows for identification of priority habitats by aligning certain Primary Habitat definitions to the UK Biodiversity Action Plan (UKBAP), which can be applied to the Scottish Biodiversity List[11] (SBL) with consideration of geographical relevance. It also considers EU Habitats Directive Annex 1 habitat types[12].

2.3.2 A review of the Highland Nature Biodiversity Action Plan's[13] (HNBAP) statements on 'Priority Species and Actions for Habitats' has also been completed to help identify priority floral species and habitats.

2.4 Limitations

2.4.1 Access to portions of the Study Area were restricted due to landowner permissions and/or free roaming cattle posing a safety risk. These habitats were surveyed from their perimeter using binoculars and assumptions were made on their composition and condition based on closer inspection of habitats that were accessible with a similar structural appearance, land-use and locality. These areas of limited access are highlighted in the associated habitat results mapping. Given the homogeneity of habitats within the Direct Impact Areas and surrounding area, same broad land-use, and relatively low biodiversity value of these grasslands, the habitat mapping is still considered valid for the purposes of subsequent assessment.

2.4.2 The NVC surveys were undertaken towards the end of the botanical season, when species identification can be more difficult because it may rely upon vegetative parts of some plants. However, it was still possible to reliably assign the NVC communities based on their structure, the remnant vegetative plant material, setting, and professional experience.

[9] Rodwell, J. S. (2006). NVC Users' Handbook.

[10] Rodwell, J. S. (Ed), et al. (1991 – 2000). British Plant Communities (5 volumes).

[11] Scottish Ministers (2012). Scottish Biodiversity List. Available: https://www.nature.scot/doc/scottish-biodiversity-list

[12] Annex 1 habitat types which occur in the UK are listed here: https://sac.jncc.gov.uk/habitat/

[13] Highland Nature (online). Highland Nature Biodiversity Action Plan. Available: https://www.highland.gov.uk/downloads/download/2260/highland_nature_biodiversity_action_plan_2021_to_2026

3. RESULTS

3.1 UK Habitat Classification

3.1.1 The spatial extents of the UKHab Primary Habitats in the Study Area are shown on **Volume 3, Figure 9.1.1 - UK Habitat Classification**. A plant species list is provided in **Annex A: Table 5-1**. Recorded UKHab Secondary Codes are provided in **Annex A: Table 5-2**. A description of each Primary Habitat is listed in **Table 3-1**, including identification of priority habitats.

3.1.2 No Annex 1 habitat types, important peat-forming habitats, or irreplaceable habitat areas were identified within the Direct Impact Areas. Three individual veteran trees were identified outwith the Direct Impact Areas but within the south-western portion of the Proposed Development's red line boundary. These veteran trees and their protection are presented and considered further in **Volume 2, Chapter 15: Forestry** of the EIA Report.

Table 3-1: UKHab Primary Habitats within the Study Area

Primary Habitat	Description	Study Area - Area (ha) / length (m)[14]	Direct Impact Areas - Area (ha) / length (m)[14]
c1 - Arable and horticulture c1c - Cereal crops c1c5 - Winter stubble	Large portions of the Study Area were used for arable purposes at the time of survey, which comprised over 20% of the Direct Impact Areas. This included fields mapped as cereal crops (c1c) and winter stubble (c1c5). These were actively managed habitats which are common and widespread in the wider landscape. These do not qualify as SBL priority habitats.	56.61 ha	11.35 ha
f1a - blanket bog	One proportionately small area of blanket bog occurred within the far-western extent Study area, but outwith the Direct Impact Areas. This area occurs approximately 290 m west/southwest of the Direct Impact Areas. The floral species present comprised: hare's-tail cottongrass (*Eriophorum vaginatum*); soft bog-moss (*Sphagnum tenellum*); red bog-moss (*Sphagnum capillifolium*); bog asphodel (*Narthecium ossifragum*); cross-leaved heath (*Erica tetralix*); heather (*Calluna vulgaris*); common sedge (*Carex nigra*); star sedge (*Carex echinata*); and common haircap moss (*Polytrichum commune*). This area was included in the NVC survey. More detailed botanical assessment is recorded in **Section 3.2**. This qualifies as an SBL priority habitat habitatand is applicable to the 'Peatland and wetland' priority habitat actions of the HNBAP.	0.03 ha	none
f2c - Upland flushes, fens and swamps	Four small areas of fen marsh and swamp habitat occurred within the Study Area but outwith the Direct Impact Areas. One of which occurs to the north of the	1.02 ha	none

[14] Rounded to two decimal places.

Primary Habitat	Description	Study Area - Area (ha) / length (m)[14]	Direct Impact Areas - Area (ha) / length (m)[14]
	Direct Impact Areas, with the remaining three areas in the western extent of the Study Area. The area to the north of the Direct Impact Areas was dominated by compact rush (*Juncus conglomeratus*) with frequent heather. The mosses present were dominated by common haircap moss. The areas to the west were dominated by bottle sedge (*Carex rostrata*), with occasional hare's-tail cottongrass; silver birch (*Betula pendula*); cross-leaved heath; *Sphagnum* mosses; common haircap moss; common sedge; and soft rush (*Juncus effusus*). These areas were included in the NVC survey. More detailed botanical assessment is recorded in **Section 3.2**. These qualify as SBL priority habitats and are applicable to the 'Peatland and wetland' priority habitat actions of the HNBAP.		
g1b - Upland acid grassland	One area of upland acid grassland occurred within the western extent of Study Area, the majority of which lay outwith the Direct Impact Areas and comprising approximately 0.01% of the Direct Impact Areas. This area was dominated by tufted hairgrass (*Deschampsia cespitosa*) with scattered soft rush. This area was included in the NVC survey. More detailed botanical assessment is recorded in **Section 3.2**. This does not qualify as an SBL priority habitat.	1.75 ha	0.01 ha
g1c - Bracken	Areas of bracken-dominated habitat were present, predominantly in the west and northwestern portions of the Study Area. The majority of which lay outwith the Direct Impact Areas. This does not qualify as an SBL priority habitat.	2.58 ha	0.21 ha
g4 - Modified grassland	Modified grassland was present across the Study Area, comprising approximately 35 % of the habitats in the Study Area and over 66 % of the Direct Impact Areas. This is a modified habitat of relatively low species diversity, which is common and widespread in the landscape. In all areas of modified grassland, species diversity was relatively poor, with less than nine species per square metre and predominantly fast-growing grasses providing the cover. This does not qualify as an SBL priority habitat.	146.81 ha	37.52 ha
h1b - Upland Heathland	Two areas of upland heathland occurred within the Study Area, but all outwith the Direct Impact Areas. The largest of collection occurred in the southwestern	2.94 ha	none

Primary Habitat	Description	Study Area - Area (ha) / length (m)[14]	Direct Impact Areas - Area (ha) / length (m)[14]
	extent, with a second in the northeast, beyond the River Beauly. These areas were dominated by heather with a mosaic of occasional: broom (*Cytisus scoparius*); gorse (*Ulex europaeus*); and glittering wood-moss (*Hylocomium splendens*); with immature, self-seeded Sitka spruce (*Picea sitchensis*); birch; rowan (*Sorbus aucuparia*); and blaeberry (*Vaccinium myrtillus*). These areas were included in the NVC survey. More detailed botanical assessment is recorded in **Section 3.2**. This qualifies as an SBL priority habitat and is applicable to the 'Peatland and wetland' priority habitat actions of the HNBAP.		
h3e - Gorse scrub h3h - Mixed scrub	Areas of gorse-dominated and mixed scrub- habitat were present in the Study Area. The majority of which lay outwith the Direct Impact Areas. These do not qualify as SBL priority habitats.	9.07 ha	0.76 ha
r1 - Standing open water and canals	One large standing waterbody occurred at the edge of the western extent of the Study Area, outwith the Direct Impact Areas. The waterbody was not observed to support exceptional numbers of key biotic groups and is not present within a limited geographic distribution recognised as important because of their age, rarity of type or landscape context. The waterbody does not meet the criteria for a UK Biodiversity Action Plan (UK BAP) priority habitat description[15], from which the SBL is derived.	0.07 ha	none
r2a - Rivers (priority habitat)	The portions of the River Beauly that fell within the outer north and northeastern portions of the Study Area comprised r2a - Rivers habitat. All lay outwith the Direct Impact Areas. This qualifies as an SBL priority habitat[16] due to being near-natural in formation and is applicable to the 'Freshwater: rivers, burns and lochs' priority habitat actions of the HNBAP.	6.06 ha	none
r2b - Other rivers and streams	Various small, linear watercourses were present within the Study Area. The majority comprised	7,360 m	635 m

[15] BRIG (ed. Ant Maddock) (2008). UK Biodiversity Action Plan, Priority Habitat Descriptions, Ponds. Available at: https://data.jncc.gov.uk/data/dec49c52-a86c-4483-90f2-f43957e560bb/UKBAP-BAPHabitats-42-Ponds.pdf

[16] BRIG (ed. Ant Maddock) (2008). UK Biodiversity Action Plan, Priority Habitat Descriptions, Rivers (Updated December 2011). Available at: https://data.jncc.gov.uk/data/01d6ab5b-6805-4c4c-8d84-16bfebe95d31/UKBAP-BAPHabitats-45-Rivers-2011.pdf

Primary Habitat	Description	Study Area - Area (ha) / length (m)[14]	Direct Impact Areas - Area (ha) / length (m)[14]
	agricultural field ditches and limited instances of small streams within woodlands. The majority flow in an east/northeasterly direction, to ultimately merge with the River Beauly outwith the Study Area. From Ordinance Survey (OS) mapping and observations on Direct Impact Areas, it would appear that some of the ditches have been modified in places for agricultural drainage (e.g., some sections straightened). These watercourses would not qualify as SBL priority features due to be being constructed; ditches; or otherwise not meeting the priority habitat description criteria[16].		
u1 - Built-up areas and gardens u1b - Developed land; sealed surface u1b5 - Buildings u1b6 - Other developed land u1c - Artificial unvegetated, unsealed surface	Buildings and other developed land were mapped across the Study Area. These comprised: private residences and their gardens/outbuildings; farm structures; linear connecting roads and tracks; as well as the Kilmorack Dam to the north and an industrial shed in the central portion of the Study Area. These areas of urban habitats and developed land do not qualify as priority habitats.	10.87 ha	0.73 ha
w1d - Wet woodland w1e - Upland birchwoods w1f - Lowland mixed deciduous woodland	Two areas of w1d - wet woodland were present in Study Area. One outwith the Direct Impact Areas, in the north of the Study Area and one overlapping a vegetation clearance portion of the Direct Impact Areas in the west of the Study Area. The northern area was dominated by silver birch and alder (*Alnus glutinosa*). The western area's trees were dominated by downy birch (*Betula pubescens*) and Scot's pine (*Pinus sylvestris*). Combined, these comprised approximately 5 % of the Direct Impact Areas. Areas of w1e - upland birchwoods occurred across the Study Area, but predominantly in the northern portion. The majority of which lay outwith the Direct Impact Areas. These areas were dominated by silver birch with rare occurrences of beech (*Fagus sylvatica*); oak (*Quercus* sp.); Scot's pine; and Sitka spruce. Three areas of w1f - Lowland mixed deciduous woodland occurred in the northern portion of the Study Area, all of which lay outwith the Direct Impact Areas. These were dominated by oak; sycamore (*Acer pseudoplatanus*); beech, birch; and willow (*Salix* sp.); and rare occurrences of Scot's pine and horse chestnut (*Aesculus hippocastanum*).	44.61 ha	2.64 ha

Primary Habitat	Description	Study Area - Area (ha) / length (m)[14]	Direct Impact Areas - Area (ha) / length (m)[14]
	The areas of w1d - Wet woodland were included in the NVC survey. More detailed botanical assessment is recorded in **Section 3.2**. These qualify as SBL priority habitats and are applicable to the 'Woodland and forest' priority habitat actions of the HNBAP.		
w1g - Other woodland; broadleaved w1g6 - Line of trees w1h - Other woodland; mixed w2b - Other Scot's Pine woodland w2c - Other coniferous woodland	Areas of non-priority woodland occurred across the Study Area, comprising approximately one third of the habitats within it but only approximately 6 % of the Direct Impact Areas. The deciduous species predominantly comprised sycamore; beech; birch; oak; with occasional willow and ash (*Fraxinus excelsior*). The conifer plantations were dominated by Scot's pine and Sitka spruce with occasional cypress (*Cupressus* sp.). These do not qualify as SBL priority habitats.	136.81 ha	3.55 ha
h2b - Other hedgerows	Four unconnected, non-priority hedgerows were present within the Study Area, none of which occurred within Direct Impact Areas. The majority of these comprised linear lengths of overgrown scrub with scattered mature and semi-mature trees, including: willow; Hawthorn (*Crataegus monogyna*); birch; and oak. These do not qualify as SBL priority habitats due to dominance of scrub and gaps between native wood species, covering less than 80 % of the hedge length[17].	535 m	89 m

3.2 National Vegetation Classification

3.2.1 The NVC communities identified during the NVC survey are described below. **Volume 3, Figure 9.1.2 - National Vegetation Classification** shows the spatial extent of the targeted NVC survey areas.

H10/M15/W23 - Calluna vulgaris–Erica cinerea heath / Scirpus cespitosus–Erica tetralix wet heath / Juncus effusus/acutiflorus–Galium palustre rush-pasture mosaic

3.2.2 Mosaics of H10/M15/W23 communities were present, outwith the Direct Impact Areas, in the southwestern end of the Study Area. The floral species present in these mosaics comprised: heather; glittering wood-moss; Sitka spruce; birch; cross-leaved heath; wavy hair grass (*Deschampsia flexuosa*); bell heather (*Erica cinerea*); rowan; blaeberry; broom; and gorse.

M4 - Carex rostrata–Sphagnum recurvum mire

3.2.3 Areas of M4 communities were present, outwith the Direct Impact Areas, in the western and north/northwestern portions of the Study Area. The floral species present comprised: birch; bittercress (*Cardamine hirsuta*); bottle

[17] BRIG (ed. Ant Maddock) (2008). UK Biodiversity Action Plan, Priority Habitat Descriptions, Hedgerows. Available at: https://data.jncc.gov.uk/data/ca179c55-3e9d-4e95-abd9-4edb2347c3b6/UKBAP-BAPHabitats-17-Hedgerows.pdf

sedge; carnation sedge (*Carex panicea*); common cottongrass (*Eriophorum angustifolium*); common sedge; compact rush; cross-leaved heath; glittering wood-moss; hare's-tail cottongrass; heath rush (*Juncus squarrosus*); heather; larch (*Larix decidua*); marsh cinquefoil (*Comarum palustre*); spear-leaved willowherb (*Epilobium lanceolatum*); common haircap moss; purple moor-grass (*Molinia caerulea*); Scot's pine; sedges (*Cyperaceae* spp.); sharp-flowered rush (*Juncus acutiflorus*); rosebay willowherb (*Chamerion angustifolium*); sneezewort (*Achillea ptarmica*); soft rush; red bog-moss; flat-topped bog-moss (*Sphagnum fallax*); papillose bog-moss (*Sphagnum papillosum*); Sitka spruce; star sedge; tormentil (*Potentilla erecta*); and violets (*Violaceae* spp.).

M19 - Calluna vulgaris–Eriophorum vaginatum blanket mire

3.2.4 One area of M19 community was present, outwith the Direct Impact Areas, in the southwestern end of the Study Area. The floral species present comprised: hare's-tail cottongrass; soft bog-moss; red bog-moss; bog asphodel; cross-leaved heath; heather; common sedge; star sedge; and common haircap moss.

M25/M4 - Molinia caerulea–Potentilla erecta mire / Carex rostrata–Sphagnum recurvum mire mosaic

3.2.5 A mosaic of M25/M4 communities was present in the western portion of the Study Area. This mosaic partially overlaps the Direct Impact Areas. The floral species present comprised the same as community M4, described above, with a dominant mosaic of purple moor-grass and a lack of sphagnum mosses.

OV27 - Epilobium angustifolium community

3.2.6 One area of OV27 community was present, outwith the Direct Impact Areas but within the central portion of the Proposed Development's planning application boundary. The floral species present comprised: rosebay willowherb; common hogweed (*Heracleum sphondylium*); common nettle (*Urtica dioica*); perennial rye-grass (*Lolium perenne*); hard fern (*Blechnum spicant*); raspberry (*Rubus idaeus*); soft rush; Yorkshire fog (*Holcus lanatus*); creeping buttercup (*Ranunculus repens*); and cleavers (*Galium aparine*).

U20 - Pteridium aquilinum–Galium saxatile community

3.2.7 Two areas of U20 community were present, outwith the Direct Impact Areas, in the southwestern end of the Study Area, dominated by bracken.

W7 - Alnus glutinosa–Fraxinus excelsior–Lysimachia nemorum woodland

3.2.8 One area of W7 community was present, outwith the Direct Impact Areas, in the northern portion of the Study Area. The floral species present in the canopy comprised: alder; birch; ash; and wild cherry (*Prunus avium*). The ground flora comprised: tufted hairgrass; lady's bedstraw (*Galium verum*); wood-sorrel (*Oxalis acetosella*); violets; bracken; common bent (*Agrostis capillaris*); bluebell (*Hyacinthoides* sp.); common haircap moss; woundwort (*Stachys* sp.); opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*); herb robert (*Geranium robertianum*).

W23 - Ulex europaeus–Rubus fruticosus scrub

3.2.9 Areas of W23 were present in the southwestern end of the Study Area, one of which partially overlaps the Direct Impact Areas. The floral species were dominated by gorse and broom scrub. One area of W23 comprised a mosaic with scattered young, planted trees, with the species comprising: gorse; broom; birch; rowan; bramble (*Rubus fruticosus*); and bracken.

3.3 Invasive and Non-Native Species

3.3.1 Rhododendron (*Rhododendron ponticum*) was recorded at various locations in the Study Area, predominantly scattered within the understorey of the various woodlands.

3.3.2 No other Invasive Non-Native Species (INNS) of plants were recorded in the Study Area.

4. CONCLUSION

4.1.1 UKHab surveys have been undertaken of the Proposed Development's red line boundary and surrounding area. Generally, the Direct Impact Areas comprised modified grassland and agricultural land, interspersed by built features/developed land. Minor areas of broadleaved woodland were mapped within the Direct Impact Areas. Other linear habitat features that were recorded include non-priority hedgerows and minor watercourses.

4.1.2 No Annex 1 habitat types, important peat-forming habitats, or irreplaceable habitat areas were identified within the Direct Impact Areas. Three individual veteran trees were identified outwith the Direct Impact Areas but within the south-western portion of the Proposed Development's red line boundary. These veteran trees and their protection are presented and considered further in **Volume 2, Chapter 15: Forestry** of the EIA Report

4.1.3 The assessed NVC habitats within the Direct Impact Areas aligned to community W23 '*Ulex europaeus–Rubus fruticosus* scrub'; and M25/M4, a '*Molinia caerulea–Potentilla erecta* mire' / '*Carex rostrata–Sphagnum recurvum* mire' NVC mosaic. An assessment of the targeted NVC survey areas' potential to represent GWDTEs is covered in **Volume 2, Chapter 13: Hydrology, Hydrogeology, Geology and Soils** of the EIA Report.

4.1.4 Rhododendron, an INNS, was recorded at various locations in the Study Area, predominantly scattered within the understorey of the various woodlands.

5. ANNEX A: SURVEY DATA

Table 5-1: Recorded Plant Species in Study Area

Common name	Scientific name
Alder	*Alnus glutinosa*
Ash	*Fraxinus excelsior*
Beech	*Fagus sylvatica*
Bell heather	*Erica cinerea*
Bittercress	*Cardamine hirsuta*
Blaeberry	*Vaccinium myrtillus*
Bluebell	*Hyacinthoides* sp.
Bottle sedge	*Carex rostrata*
Bracken	*Pteridium aquilinum*
Bramble	*Rubus fruticosus*
Broadleaved dock	*Rumex obtusifolius*
Brome grass	*Bromus* sp.
Broom	*Cytisus scoparius*
Carnation sedge	*Carex panicea*
Chickweed	*Stellaria media*
Cleavers	*Galium aparine*
Cocksfoot	*Dactylis glomerata*
Comfrey	*Symphytum* sp.
Common bent	*Agrostis capillaris*
Common cottongrass	*Eriophorum angustifolium*
Common haircap moss	*Polytrichum commune*
Common hogweed	*Heracleum sphondylium*
Downy birch	*Betula pubescens*
Flat-topped bog-moss	*Sphagnum fallax*
Hare's-tail cottongrass	*Eriophorum vaginatum*
Heath rush	*Juncus squarrosus*
Heather	*Calluna vulgaris*
Common mouse-ear chickweed	*Cerastium fontanum*
Common nettle	*Urtica dioica*
Common sedge	*Carex nigra*
Compact rush	*Juncus conglomeratus*
Cottongrass	*Eriophorum* sp.
Cow parsley	*Anthriscus sylvestris*
Creeping buttercup	*Ranunculus repens*
Creeping thistle	*Cirsium arvense*
Cross-leaved heath	*Erica tetralix*
Cypress	*Cupressus* sp.

Common name	Scientific name
Daffodil	*Narcissus* sp.
Common daisy	*Bellis Perennis*
Dandelion	*Taraxacum* sp.
Dog's mercury	*Mercurialis perennis*
Festuca grass	*Festuca* sp.
Field wood-rush	*Luzula campestris*
Fox glove	*Digitalis purpurea*
Glittering wood-moss	*Hylocomium splendens*
Gorse	*Ulex europaeus*
Great wood-rush	*Luzula sylvatica*
Ground elder	*Aegopodium podagraria*
Ground-ivy	*Glechoma hederacea*
Hard fern	*Blechnum spicant*
Hawkweed	*Asteraceae* sp.
Hawthorn	*Crataegus monogyna*
Herb Robert	*Geranium robertianum*
Holly	*Ilex aquifolium*
Honeysuckle	*Lonicera periclymenum*
Horse chestnut	*Aesculus hippocastanum*
Larch	*Larix decidua*
Lesser celandine	*Ficaria verna*
Lime	*Tilia x vulgaris*
Maple tree	*Acer* sp.
Marsh cinquefoil	*Comarum palustre*
Papillose bog-moss	*Sphagnum papillosum*
Perennial rye-grass	*Lolium perenne*
Purple moor-grass	*Molinia caerulea*
Oak	*Quercus* sp.
Opposite-leaved golden saxifrage	*Chrysosplenium oppositifolium*
Raspberry	*Rubus idaeus*
Red bog-moss	*Sphagnum capillifolium*
Red clover	*Trifolium pratense*
Rhododendron	*Rhododendron ponticum*
Ribwort plantain	*Plantago lanceolata*
Rosebay willowherb	*Chamerion angustifolium*
Rowan	*Sorbus aucuparia*
Rockfoil	*Saxifrage* sp.
Scot’s pine	*Pinus sylvestris*
Sedges	*Cyperaceae* spp.

Common name	Scientific name
Sharp-flowered rush	*Juncus acutiflorus*
Silver birch	*Betula pendula*
Sitka spruce	*Picea sitchensis*
Soft bog-moss	*Sphagnum tenellum*
Soft rush	*Juncus effusus*
Spear-leaved willowherb	*Epilobium lanceolatum*
Spear thistle	*Cirsium vulgare*
Sphagnum mosses	*Sphagnum* spp.
Springy turf-moss	*Rhytidiadelphus squarrosus*
Star sedge	*Carex echinata*
Sycamore	*Acer pseudoplatanus*
Tormentil	*Potentilla erecta*
Tufted hair-grass	*Deschampsia cespitosa*
Violets	*Violaceae* spp.
Wavy hair grass	*Deschampsia flexuosa*
White clover	*Trifolium repens*
Wild cherry	*Prunus avium*
Wild strawberry	*Fragaria vesca*
Willow	*Salix* sp.
Wood anemone	*Anemone nemorosa*
Wood-sorrel	*Oxalis acetosella*
Woundwort	*Stachys* sp.
Yorkshire fog	*Holcus lanatus*

Table 5-2: Recorded Secondary Codes

Secondary code	Label
10	Scattered scrub
11	Scattered trees
12	Scattered bracken
14	Scattered rushes
15	Rushes dominant
36	Plantation
37	Semi-natural woodland
48	Non-native
53	Felled
57	Young trees - self-set
58	Grazed
59	Cattle grazed
60	Sheep grazed
64	Mown
73	Bare ground
75	Active Management
111	Road
119	Seasonally wet
120	Wet
191	Ditch
810	Cemetery
1011	Pasture or meadow
1012	Arable land
1173	Tree avenue/alley