

Glendye Wind Farm Overhead Line Grid Connection

Environmental Impact Assessment (EIA)
Volume 4 | Appendix 7.2

UKHAB Classification and National Vegetation
Classification (NVC) Survey Report
October 2025





APPENDIX 7.2: UKHAB CLASSIFICATION AND NATIONAL VEGETATION CLASSIFICATION (NVC) SURVEY REPORT

APPENDIX 7.2: UKHAB CLASSIFICATION AND NATIONAL VEGETATION

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1. INTRODUCTION

1.1 Overview

- 1.1.1 ITPEnergised (now part of SLR) was appointed by Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to undertake habitat surveys of lands between the consented Glendye Wind Farm and the existing Fetteresso substation, situated near the Kirktown of Fetteresso, Aberdeenshire (Central grid reference NO 71275 81895) as shown on Figure 3.1a-e (see Volume 2 of this EIA Report).
- 1.1.2 This report details the results of UK Habitat Classification (UKHab) and National Vegetation Classification (NVC) surveys.

1.2 Survey Area

- 1.2.1 The Survey Area is centred along the route of the Proposed Development, between the consented Glendye Wind Farm on-site substation and the existing Fetteresso substation, situated near the Kirktown of Fetteresso, Aberdeenshire.
- 1.2.2 The lands within the western reaches of the Survey Area are predominantly upland mire habitats largely managed as grouse moors. Central and northern reaches of the Study Area are dominated by coniferous plantation woodland managed by Forestry Land Scotland (FLS). In addition, the lowland eastern reaches of the Survey Area are categorised by agricultural and livestock farmland and associated buildings and hedgerows.
- 1.2.3 The Survey Area is dissected by several watercourses, the largest of which includes the Water of Charr and Bervie Waters, with associated hydrological networks.

1.3 Survey Scope

- 1.3.1 The Survey Area (**Figure 7.3** contained within Volume 2 of this EIA Report) comprised all areas under consideration for the Proposed Development, including ancillary infrastructure (see **Chapter 3: The Proposed Development**).
- 1.3.2 The following buffers were applied to define this Survey Area:
 - A 250 m buffer around the proposed OHL alignment and the associated Limit of Deviation (LoD) (defined as 50 m either side of the proposed OHL alignment); and
 - A 50 m buffer around new access tracks, or those requiring upgrade.
- 1.3.3 Specific study objectives were to:
 - Map baseline habitats present on site using UKHab and NVC survey protocols and record data in geospatial mapping software (ESRI ArcGIS); and
 - Identify and quantify any habitats of nature conservation importance within the Survey Area (including Annex 1 habitats¹, those listed within the Scottish Biodiversity List², and areas with potential for groundwater dependency³).
 - The results of the study provide baseline information on the nature conservation value of habitats identified within the Survey Area and areas of potential ground water dependency. This data is used to inform the infrastructure design stage and the Environmental Impact Assessment (EIA) process.

¹ Habitats listed on Annex 1 of the Council Directive EEC of 21 May 1992 on the Conservation of Natural Habitats and Wild Fauna and Flora (the Habitats Directive).

² NatureScot (2020). The Scottish Biodiversity List. Available online from: https://www.nature.scot/doc/scottish-biodiversity-list [Accessed July2025].

³ Scottish Environment Protection Agency (2024). Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available online at Guidance and advice notes | Scottish Environment Protection Agency (SEPA) (accessed July 2025).



2. METHODOLOGY

2.1 UK Habitat Classification Survey

- 2.1.1 UKHab is a comprehensive habitat classification system that is used for rapidly recording and classifying terrestrial, freshwater, and coastal habitats across the UK⁴. The system enables habitats to be mapped using a hierarchical 'Primary Habitat' system (capturing ecosystems, broad habitats, priority habitats and Annex 1 habitats) and non-hierarchical Secondary Codes. The system has been designed to build on existing habitat mapping techniques and enable integration with European Union and other UK classification systems, including Phase 1 Habitat Survey, NVC, and European Union Nature Information Systems (EUNIS).
- 2.1.2 The UKHab survey was carried out in accordance with the method described in the UK Habitat Classification User Manual. During the survey, habitats within the Survey Area were digitised in geospatial mapping software (ArcGIS).

2.2 National Vegetation Classification

- 2.2.1 The survey followed the methodology described in the NVC Users Handbook⁵. Plant communities were identified from representative quadrat samples with reference to the standard community descriptions and constancy tables in Rodwell *et al.* (1991 *et seq.*)⁶. The survey excluded certain non-natural, modified or mosaic habitats anthropogenically altered that do not fit into NVC categories, such as lands within conifer plantations and agricultural areas, which are classified using the UK Habitat Classification⁴.
- 2.2.2 The vegetation was mapped and classified using the standard methodology^{5,6}. It involved mapping polygons of apparently homogenous vegetation by eye and then sampling the vegetation within polygons. This was done using both quantitative (quadrat) and qualitative sampling.
- 2.2.3 Sampling involved recording the species present together with their abundances using the Domin scale and noting other relevant information, such as any evidence of management.
- 2.2.4 NVC communities were identified by eye, with a representative 2x2 m quadrat taken in each community where access was possible. Within each quadrat the cover of individual plant and bryophyte species was recorded using the Domin scale, shown in **Table 1** below:

Table 1: Domin Scale

<4% few individuals	26 – 33% cover	
<4% several individuals	34 – 50% cover	
<4% many individuals	51 – 75% cover	
4 – 10% cover	76 – 90% cover	
11 – 25% cover	91 – 100% cover	

- 2.2.5 In qualitative descriptions of vegetation communities, the DAFOR scale (Dominant; Abundant; Frequent; Occasional; Rare) was used.
- 2.2.6 The vegetation was assigned to vegetation communities in accordance with the British Plant Community Keys⁶.

⁴ UKHab Ltd (2023). UK Habitat Classification Version 2.0. Available online from: https://www.ukhab.org [Accessed July 2025].

⁵ Rodwell, J.S. (2006). *NVC Users' Handbook*. Peterborough, Joint Nature Conservation Committee.

⁶ Rodwell, J.S. (ed.) (1991 et seq.). *British Plant Communities*. 5 volumes: Vol. 1 (1991) - Woodlands and Scrub; Vol. 2 (1991) - Mires and Heaths; Vol. 3 (1992) - Grasslands and Montane Communities; Vol. 4 (1995) - Aquatic Communities, Swamps and Tallherb Fens; Vol. 5 (2000) - Maritime Cliffs, Sand Dunes, Saltmarshes and Other Vegetation. Cambridge University Press, Cambridge.



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 - 2.2.7 Communities will be evaluated in terms of their nature conservation interest, e.g. through inclusion on the Scottish Biodiversity List (SBL) or local Biodiversity Action Plan (LBAP), as well as the Scottish Environmental Protection Agency (SEPA) criteria for assessing areas of potential groundwater dependence³.
 - 2.2.8 The survey types conducted, along with the extents, dates, and surveyor as listed in **Table 2** below:

Table 2: Habitat Survey Dates

Survey Type	Extent of Survey Area	Survey Date	Surveyor
UK Habitat Classification Surveys	OHL LoD & 250 m buffer Access tracks and 50 m buffer	13 th -17th May 2024 16 th - 20th September 2024 16th – 18th December 2024 24th – 27th March 2025	ITPEnergised / SLR
National Vegetation Classification (NVC) Surveys		16 th - 20th September 2024 31st March – 2nd April 2025	ITPEnergised / SLR

2.3 Ground Water Dependent Terrestrial Ecosystems

- 2.3.1 The potential for groundwater dependent terrestrial ecosystems (GWDTEs) being present within the Study Area has been considered and assessed in conjunction with the NVC survey, by defining areas with a botanical structure and species assemblage that indicate they may be fed via an underlying aquifer and so require further specialist (hydro/hydrogeological) consideration. GWDTEs are protected under the Water Framework Directive (Directive 2000/60/EC), transposed into Scottish Law in 2003 through the Water Environment and Water Services (Scotland) Act (WEWS) 2003.
- 2.3.2 Detection of potential GWDTEs is based on NVC communities as detailed in the SEPA 'Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems'^{3.} Guidance Note 31 lists NVC community types which, if present, indicate that a wetland has the potential to be groundwater dependent (depending on the hydrological/hydrogeological setting).

2.4 Survey Limitations

2.4.1 The Survey Area (details of which are noted in **Table 2**) was largely accessible during surveys; however, it is noted that habitat surveys conducted in December 2024 and March 2025 to account for iterative design changes and access restrictions were undertaken outside of the optimum time of the year for full botanical surveys, which is from April/May to September, inclusive. Some plant species could have been in their vegetative state and therefore not recorded; however, this is not considered a significant limitation since it was still possible for the surveyor to identify and distinguish habitat types and NVC communities in most cases. In some areas, stands of smaller or less complex vegetation were categorised by the surveyor "by eye" to a vegetative community, without collecting quadrat data. Though this may have resulted in a reduced plant species list, it is not considered to have significantly limited the ability of the surveyor to correctly classify habitats within the Survey Area. NVC communities are not listed where botanical data was limited and appropriate mitigation measures such as pre-construction surveys are incorporated into **Chapter 7**: **Ecology** to account for limitations.



3. RESULTS

3.1.1 Habitat communities from UKHab and NVC surveys are shown on Figure 7.2 and Figure 7.3 (see Volume 2 of this EIA Report) respectively. Sub-communities are not shown on Figures 7.2 and 7.3 but are referred to in the text. Table 3 below summarises the results (some of the NVC communities occurred in mosaics - the area stated in Table 3 comprises the total area of all polygons in which that NVC community is dominant (including in mosaics)).

Table 3: Summary of NVC Survey Results

UK Habitat Classification	NVC Community	Conservation Status	Area/Length within Survey Area (ha/km)
g Grassland	N/A	Referred to within LBAP as wider habitat resource for supporting limited fauna and provide enhancement opportunities	1.41 ha
g1 Acid grassland	N/A	LBAP	15.1 ha
g1b6 Other upland acid grassland	N/A	LBAP	14.8 ha
g1b6 Other upland acid grassland	U4 Festuca ovina - Agrostis capillaris - Galium saxatile grassland	LBAP	3.52 ha
g1b6 Other upland acid grassland	U5 Nardus stricta- Galium saxatile grassland	LBAP	13.78 ha
g1b6 Other upland acid grassland	Je Juncus effusus community	LBAP	20.36 ha
g1c Bracken	U20 Pteridium aquilinum – Galium saxatile community.	None	11.17 ha
g3c Other neutral grassland	N/A	LBAP	43.7 ha
g3c7 Deschampsia neutral grassland	MG9 Holcus lanatus – Deschampsia cespitosa grassland	LBAP	0.58 ha
g3c8 Holcus- Juncus neutral grassland	MG10 Holcus lanatus - Juncus effusus rush pasture	LBAP	14.18 ha
g4 Modified grassland	MG6 Lolium perenne - Cynosurus cristatus grassland	Referred to within LBAP as wider habitat resource for supporting limited fauna	161.83 ha
g4 Modified grassland	MG7 Lolium perenne leys and related grasslands	Referred to within LBAP as wider habitat resource for supporting limited fauna	74.4 ha

UK Habitat Classification	NVC Community	Conservation Status	Area/Length within Survey Area (ha/km)
w1 Broadleaf and mixed woodland	N/A	LBAP	0.2 km
w1g Other broadleaved woodland	N/A	SBL, LBAP	11.1 ha / 0.26 km
w1h6 Other woodland; mixed; mainly conifer	N/A	LBAP	0.38 ha
w2b Other Scot's Pine woodland	N/A	LBAP	10.73 ha
w2c Other coniferous woodland	N/A	LBAP	618.33 ha
h1 Dwarf shrub heath	N/A	SBL, LBAP	12.6 ha
h1b Upland heathland	N/A	SBL, LBAP	8.78 ha
h1b5 Dry heaths; upland (H4030)	H10 Calluna vulgaris – Erica cinerea heath	Annex 1, SBL, LBAP	1.69 ha
h1b5 Dry heaths; upland (H4030)	H12 Calluna vulgaris – Vaccinium myrtillus heath	Annex 1, SBL, LBAP	119.73 ha
h2a6 Other native hedgerow	N/A	SBL, LBAP	1.96 km
h3e Gorse scrub	W23 Ulex europaeus–Rubus fruticosus scrub	LBAP	23.03 ha
h3h Mixed scrub	N/A	LBAP	1.3 ha
f1a Blanket bog	M2 Sphagnum cuspidatum/ recurvum bog pool community	SBL, LBAP	Too small to map
f1a Blanket bog	M19 Calluna vulgaris – Eriophorum vaginatum blanket mire	SBL, LBAP	434.79 ha
f1a Blanket bog	M20 Eriophorum vaginatum blanket and raised mire	SBL, LBAP	43.45 ha

UK Habitat Classification	NVC Community	Conservation Status	Area/Length within Survey Area (ha/km)
f2 Fen, marsh and swamp	S9 <i>Carex rostrata</i> swamp	SBL, LBAP	Too small to map
f2 Fen, marsh and swamp	N/A	LBAP	2.44 ha
f2c Upland flushes, fens and swamps	M6 Carex echinata – Sphagnum recurvum/auriculatum mire	SBL, LBAP	46.1 ha
f2f Other wetlands	M23 Juncus effusus/acutiflorus – Galium palustre rush- pasture	LBAP	0.78 ha
c1 Arable and horticulture	N/A	None	11.34 ha
c1c Cereal crops	N/A	None	32.48 ha
c1f Horticulture	N/A	None	1.46 ha
u1 Built-up areas and gardens	N/A	None	0.2 ha
u1b5 Buildings	N/A	None	0.1 ha
u1b6 Other developed land	N/A	None	6.22 ha
u1c Artificial unvegetated, unsealed surface	N/A	Referred to within LBAP as wider habitat resource for supporting limited fauna	0.5 ha
u1d Suburban mosaic of developed and natural surface	N/A	LBAP	8.91 ha
u1e Built linear feature (Roads/tracks)	N/A	None	35.02 km
r1 Standing open water and canals	N/A	LBAP	0.12 ha
r1a6 Other eutrophic standing waters	N/A	SBL, LBAP	0.25 ha
r2a Rivers (priority habitat)		SBL, LBAP	19.2 km



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UK Habitat Classification	NVC Community	Conservation Status	Area/Length within Survey Area (ha/km)			
r2b Other rivers and streams	N/A	LBAP	16.3 km			
Clearfell	N/A	None	54.28 ha			
Not Accessed	N/A		0.5 ha			
Area Total	Area Total 1844.35 ha					
Linear feature	73 km					

3.1.2 The vegetative communities identified in habitats across the Survey Area are described in detail below. For reasons of brevity only common names are referred to in the main report text. For scientific names please refer to **Annex A**, **Table A-1**.

3.2 Grasslands communities

Acid Grassland (UKHab g1b, g1b6 and g1c)

3.2.1 Upland acid grassland (g1b and g1b6) is present in several regions of the Survey Area. In the west of the Survey Area, acid grassland habitats were recorded to NVC level (see below). Within central and eastern areas of the Survey Area upland acid grassland is recorded in linear sections associated with forestry 'rides' and adjacent to existing forestry tracks within dense conifer plantation. Larger areas of acid grassland are present in areas of clearfell resulting from forestry management, thus are associated with high disturbance and presence of forest brash. Acid grassland habitats often supported a mix of species such as mat grass and occasionally more neutral grassland species such as tufted hair grass, Yorkshire fog and common bent. As shown in Plate 1 below, this habitat type is of a disturbed nature and presents as a mosaic with scattered dwarf shrubs including heather and bilberry, scattered gorse and bracken and scattered self-set commercial plantation trees including Sikta spruce and larch. Within these areas forb diversity was largely limited to tormentil and occasional heath bedstraw with scattered foxglove in disturbed areas.

Plate 1: Acid grassland associated within open forestry section with scattered trees and dwarf shrubs (left) and in mosaics with blanket bog (right)



U4 Festuca ovina-Agrostis capillaris-Galium saxatile grassland

3.2.2 There are small patches of U4 acid grassland throughout the western parts of the Survey Area, often associated with changes in elevation and the presence of small water courses or flushes (corresponding to U4



- and U5 NVC communities). This habitat type is recorded in mosaics with heath and mire habitats and often presents as an ecotone between habitat types, with evidence of grazing and trampling pressure from red deer.
- 3.2.3 The habitat is dominated by acidic grasses such as common bent, wavy hair-grass and mat-grass, with a low number of herbs such as tormentil and heath bedstraw. Some patches are dominated by hummocks of the moss common haircap with other areas supporting heath species such as heather, bilberry or cowberry throughout.
 - U5 Nardus stricta-Galium saxatile grassland
- 3.2.4 The U5 mat-grass dominated grassland was recorded in the south of the Survey Area. The communities were dominated by mat-grass with purple moor-grass frequent throughout; in more mature patches a variety of other acid grassland species were present. No Sphagnum species were recorded, but the presence of purple moor-grass indicates slightly damp peaty ground. On higher ground bryophytes (mostly common haircap, glittering woodmoss, and red-stemmed feather-moss) co-dominate with grasses and cowberry. Patches and runs of rushes are scattered throughout.
 - Je Juncus effusus commununity
- 3.2.5 An area was labelled under NVC surveys as 'Je', this refers to a damp area dominated by soft rush but with a distinctly acid understory, supporting species such as heath bedstraw. The habitat is not described in NVC but is known to occur commonly throughout Scotland.
 - U20 Pteridium aquilinum-Galium saxatile community
- 3.2.6 Continuous areas of bracken (g1c), NVC community U20 within the Survey Area are largely associated with open patches of forestry plantation or adjacent to burns within forested areas. The habitat is dominated by bracken with scattered grasses such as Yorkshire fog and soft rush throughout, with occasional heather or common nettle in the more nutrient rich influenced areas.

Plate 2: Bracken dominated habitat within areas of plantation forestry



3.3 Neutral Grassland (UKHab g3c)

Limited expanses of neutral grassland are present within the Survey Area (these were not identified to NVC level) and are generally associated with grazed pasture and road verges, including two larger fields undergoing conversion to forestry plantation at Tipperty Farm. Areas associated with pasture were dominated by perennial rye grass, sweet vernal grass and Cock's foot. Forb diversity was low with white clover and creeping buttercup recorded in abundance.

Some areas of neutral grassland grading to acid grassland along a road verge was characterised by assemblages of sweet vernal grass, Yorkshire fog and tufted hair-grass, with scattered soft rush on wetter



ground along with scattered scrub species including broom and grey willow. Introduced garden daffodil was recorded sporadically.

MG9 Holcus lanatus-Deschampsia cespitosa grassland (UKHab g3c7)

3.3.1 There is a single strip of g3c7 habitat, NVC community MG9, located along a road. This habitat was characterised by tufted hair-grass, with Yorkshire fog, common bent and creeping bent, and scattered soft rush on wetter ground.

MG10 Holcus lanatus-Juncus effusus rush-pasture (UKHab g3c8)

3.3.2 There are few areas of g3c8 habitat type, NVC community MG10, on higher ground on a road verge and within the pasture areas to the east of the Survey Area. The habitat is dominated by soft rush and Yorkshire fog, with occasional sharp-flowered rush, tufted hair-grass and few herbs.

Plate 3: Roadside presence of g3c8 & g3c7 habitats (left) and pasture (right)



Modified Grassland (UKHab g4)

3.3.3 Modified grassland is dominant in the east of the Survey Area, managed under agricultural practices and grazed by sheep and cattle.

Plate 4: Modified grassland - cattle grazed



MG6 Lolium perenne - Cynosurus cristatus grassland

3.3.4 MG6 was recorded mostly in grazed pasture areas, and in one area of clearfell where the habitat grades towards the more acid heath habitat. The MG6 habitat typically has abundant perennial ryegrass and crested dogs-tail with a variety of grasses such as Yorkshire fog, sweet vernal grass and common bent, with herbs such as daisy, white clover and creeping buttercup.



MG7 Lolium perenne leys and related grasslands

3.3.5 The MG7 habitat was recorded in grazed pasture areas, and is typical in being very species-poor, and well-drained. The habitat contains significant amounts of perennial ryegrass, white clover, and daisy, with occasional rough meadowgrass, dandelion and creeping buttercup.

3.4 Woodlands and Scrub

Broadleaf and mixed woodland (UKHab w1)

3.4.1 This habitat type was identified sporadically across the Survey Area at Brawliemuir Farm and at residential property north-west of Ruehill Wood. Pockets of broadleaf and mixed woodland were present adjacent to the property and the existing farm track. Canopy species were categorised by assemblages of mature beech, ash, oak, Sikta spruce, larch, and sycamore. Understorey species consisted of soft rush, tufted hair-grass, springy turf moss, common nettle and cleavers.

Plate 5: Linear woodland strip near Brawliemuir Farm (left) and mixed woodland at residential property (right)





Other broadleaved woodland (UKHab w1g)

- 3.4.2 This habitat type was recorded in the south of the Study Area at Drumtochty Forest and several areas in the east of the Survey Area bounded by existing agricultural land or roadways/residential properties.
- 3.4.3 Drumtochty Castle forested areas were dominated by sycamore and beech, with frequent ash and occasional horse chestnut and holly. Understorey species were categorised by cherry laurel, white butterbur, lesser celandine, hairy sedge, wood sedge, opposite leaved saxifrage, ground elder, snowdrop, broad buckler fern, tuberous comfrey and soft rush in riparian zones. This habitat is subject to disturbance from walkers and forestry traffic and occurred adjacent to coniferous woodland discussed separately.
- 3.4.4 A strip of riparian woodland was recorded adjacent to the Bervie Water, which is braided in sections. Tree species were dominated by birch, alder and goat willow, with occasional rowan. Understorey species consisted of greater pond-sedge, opposite leaved golden saxifrage, lesser celandine and soft rush with the introduction of species present within the adjacent farm including gorse, common sorrel, broad-leaved dock, yarrow, creeping buttercup and vetch.



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Plate 6: Broadleaf woodland at Drumochty Forest (left) and riparian woodland at the Bervie Water (right)





3.4.5 Broadleaf woodland of plantation origin was present in several areas of FLS ownership associated with forestry management practices or roadside linear areas. These were typically beech or sycamore dominated with poor understorey diversity as a result of shading and trampling.

Plate 7: Beech dominated woodland of plantation origin



Other woodland; mixed; mainly conifer (UKHab w1h6)

3.4.6 This habitat was limited in its extent to Fourart Wood at the edge of the Survey Area. Canopy species were primarily Scot's pine with rowan and birch also recorded. Understorey species were similar to the adjacent agricultural farmland, largely dominated by perennial ryegrass and creeping buttercup.

Other Scot's Pine woodland (w2b)

3.4.7 Other Scot's Pine woodland was recorded in pockets between large areas of Sikta spruce and larch plantations managed by FLS and is of plantation origin. Notable areas include pockets adjacent to the burn of brumlieshank, Maxie burn and Bogton farmlands.



Plate 8: Other coniferous woodland (w2c and clearfell)



- 3.4.8 In the central and eastern section of the Survey Area commercial plantation coniferous woodland is the dominant habitat type. Species assemblages were dominated by Sitka spruce, followed by larch with occasional pockets of Scot's pine. The ground flora is typically poor with steep slopes, acidic soils and lack of light, often dominated by bare needles with occasional scattered broom and gorse scrub, common haircap moss and heather in more open areas with reduced density of planting. Forested areas are under active management for felling cycles therefore age classes vary throughout the Survey Area. In addition, substantial areas of clearfell were recorded.
- 3.4.9 Within the plantation, forestry rides are present, with larger areas supporting scattered acidic grassland species, including bracken, ferns, scattered gorse, broom and heather (See Section 3.2.1). Wetter areas included greater presence of mosses, including common haircap, heath plait-moss and red stemmed feather moss. The vascular plant stag's-horn clubmoss was also recorded.

Plate 9: Forestry plantation of larch (left) and spruce (right) under active forestry management



3.5 Heathland and scrub

Dwarf shrub heath (UKHab h1 and h1b)

3.5.1 Dry heath is formed on shallow, acid soils, often on sloping ground, and the similar wet heath is usually formed on damper areas of shallow peat, on gently sloping ground. This habitat is widespread in the Scottish uplands,



with Scotland being a stronghold for upland heath in Europe, estimated to cover 21-31% of Scottish land. Heathland is also listed on the Scottish Biodiversity List ⁷ and LBAP. Heathlands are the result of ongoing landscape management, where the land would likely be re-colonised by trees and eventually become a heathy acid woodland in the absence of management.

3.5.2 Non-Annex 1 heath habitats (h1 and h1b UKHab categories) were associated with open areas within the forestry plantation, including forestry rides and regenerating areas of clear-fell. Dominated by heather, the habitat features scattered juvenile spruce, gorse and broom, in addition to tussocks of acid grassland and bracken, with common haircap moss and soft rush in wetter areas. Within larger zones of previous clear-fell regeneration, heathland species include dominant heather with scattered bilberry. Grasses recorded include frequent purple moor-grass, occasional wavy hair-grass and soft rush, with wetter mosses present including red-stemmed feather-moss.

Dry heaths: upland (H4030) (UKHab h1b5)

3.5.3 Dry and wet heath is recognised as internationally important under the EU Habitats Directive (as an Annex 1 habitat). Within the Survey Area, these Annex 1 heathland habitats are present throughout the western reaches of the Survey Area and are largely managed as grouse moors. These areas are comprised of young, short heather, a few years into recovering from historical burning or mowing and also taller heather where grouse moor management is of a reduced intensity. Areas of dry heath were largely associated with slopes and were present in mosaics with blanket bog. Deer pressure is recorded throughout the Survey Area in the form of trampling.

Plate 10: Dry heath subject to burning management within Glendye Grouse Moors (left) and taller heathland with presence of cottongrasses (right)



H10 Calluna vulgaris – Erica cinerea heath

3.5.4 The H10 dry heath was recorded in a two areas; towards the west of the Survey Area in patches surrounded by blanket bog and the similar H12 habitat. The habitat is dominated by heather, with bilberry and bell heather present over a dry *pleurocarp* moss understory.

H12 Calluna vulgaris-Vaccinium myrtillus heath

3.5.5 The H12 dry heath is frequent across the Study Area, particularly in the upland habitats to the south-west. This habitat is dryer than the surrounding mire, with dominant heather often occurring in mature, leggy stands to the south-west, and in shorter stands on steeper slopes and where burning has taken place. The heath was usually underlain by a carpet of *pleurocarpous* mosses, with bilberry and cowberry frequent and scattered

⁷ NatureScot, 2020. Scottish biodiversity list. (online), Available at: https://web.archive.org/web/20240422023328/https://www.nature.scot/doc/scottish-biodiversity-list



graminoids such as wavy hair-grass and green-ribbed sedge. Some areas had frequent hare's-tail cottongrass scattered throughout, indicating peat presence in the soil, either naturally as shallow peat, or as part of a degraded bog area. However, the hare's-tail cottongrass did not occur frequently enough, and there was not sufficient *Sphagnum*, to classify these areas as bog.

Other native hedgerow (UKHab h2b6)

3.5.6 Hedgerows were recorded occasionally within the east of the Survey Area at road verges and field boundaries. Hedgerows were highly managed with low height due and were dominated by gorse and hawthorn.

Plate 11: Gorse hedgerow (left) and modified hawthorn dominated hedgerow (right)





Gorse and mixed scrub (UKHab h3e and h3h)

- 3.5.7 Gorse scrub (h3e) was the dominant scrub habitat type found throughout the Survey Area. This was largely observed in agricultural areas in dense pathches often associated with steeper slopes and water courses. Monocultures of gorse scrub were also present as field boundaries and along road verges within agricultural areas with occasional broom and willow. Presence of gorse scrub within forestry areas was limited to sections of open habitat and occurred in mosaics with upland heath and acid grassland. Gorse was the dominant species type with frequent broom and juvenile Sitka spruce present following clearfell. Disturbance associated species were recorded including spear thistle, foxglove, and raspberry.
- 3.5.8 Mixed scrub (h3h) is recorded adjacent to the Maxie Burn (within Bogton Wood). Species diversity was low with gorse, broom, and bracken dominant and presence of scattered trees.

Plate 12 Gorse scrub (h3e) (left) and mixed scrub (h3h) adjacent to Maxie Burn (right)







W23 Ulex europaeus-Rubus fruticosus scrub

3.5.9 Areas of scrub surveyed to NVC level included W23 gorse scrub, dominated by gorse as shown in Plate 12 above, with little in the understory except a few scattered graminoids.

3.6 Wetlands

Blanket bog (UKHab f1a)

3.6.1 Blanket bog habitats recorded in the western section of the Survey Area were mostly confined to the southwestern section. These habitats were classified under the UKHab classification system as blanket bog due to the presence of peat-forming *Sphagnum* species, categorised to a "Level 4". Efforts to accurately categorise to Level 5 were constrained by evident historical and active management practices, with pressures within the Survey Area affecting peat conditions. Whilst peat forming *Sphagnum* species were identified within the Survey Area, classifications to Annex I are made where bog is observed to support "significant" areas of vegetation that are peat-forming and therefore categorised as 'active', according to Joint Nature Conservation Committee (JNCC) criteria⁸. While the blanket bog found in this part of the Survey Area may at least partly align with the description for Annex 1 habitat, it is apparent that there is wide-spread degradation of the peatland as a result of management practices evidenced through areas of muirburn and drainage practices (i.e. grips and ditches), leading to large areas being hydrologically impaired. Additional trampling and browsing pressure form red deer was also evident. Habitat degradation is further demonstrated with areas of hagging exposing bare peat, peat pans, as well as evidence of grazing with dung and pulled up vegetation.

Plate 13: Blanket bog with evidence of deer grazing and burning management (left) and blanket bog mosaic with heath (right)



M2 Sphagnum cuspidatum/ recurvum bog pool community

3.6.2 The M2 community was recorded as small target notes in several locations (NO 63376 80989; NO 68382 81988) within the upland blanket bog habitat to the west of the Survey Area. The habitat is formed of small, waterlogged acidic pools dominated by *Sphagnum cuspidatum*, sometimes with little else, or with common or hares-tail cottongrass scattered throughout. Some bog pools suppported areas of standing water with little vegetation present.

⁸ JNCC, 2008. (Ed. Maddock. A). UK Biodiversity Action Plan priority habitat descriptions (updated in 2011.) Available at. https://data.jncc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf [Last accessed 19/09/2025]



Plate 14: M2 Bog pool within blanket bog habitat



M19 Calluna Vulgaris- Eriophorum Vaginatum blanket mire

3.6.3 Most blanket bog comes under M19 blanket bog, with heather and hare's-tail cottongrass co-dominant with an understory of *Sphagnums* such as papillose bog-moss, red bog-moss and blunt-leaved bog-moss, scattered through with cloudberry, deergrass and bog asphodel. Some patches are drier, with *pleurocarpous* mosses starting to replace the *Sphagnum* species, particularly where degradation has caused hagging.

M20 Eriophorum vaginatum blanket and raised mire

3.6.4 The M20 blanket bog areas were less frequent than M19, but were recorded throughout the south-west of the Survey Area in patches. The habitat is a more degraded form of the M19, with heavy dominance of hare's-tail cottongrass, with other higher plants such as purple moor-grass, cross-leaved heath and heather sparse but frequent. In most areas *Sphagnum* species cover the ground layer, though some areas are drier with common haircap and red-stemmed feather-moss frequent. Some areas with more heather scattered through look like a transitional community between the heathery M19 and M20, caused by degradation.

Fen, marsh and swamp (UKHab f2)

- 3.6.5 Areas of waterlogged soils with high presence of soft rush were present within open areas of forestry and associated with depressions in agricultural fields. High presence of soft rush was recorded with tufted hair grass, bent species and wavy hair grass. Forbs included more acid species such as tormentil, and heath bedstraw. Species present at sloped depressions included broad-leaved dock, creeping buttercup and willow.
- 3.6.6 Snowberry was recorded at one location, which has an invasive nature.
- 3.6.7 This habitat type is recorded in a mosaic with a pond east of the Carron Water with tufted hair-grass and bog pondweed.



Plate 15: S9 Carex rostrata swamp



A patch of S9 (Shown in **Plate 15**) swamp was recorded as a target note in the upland part of the Survey Area to the west (NO 75222 83834). The habitat comprises a waterlogged area as part of damp run, dominated by bottle sedge with some base enrichment.

Upland flushes, fens and swamps (UKHab f2c)

Several flushes or damp runs were recorded across the east of the Survey Area. This habitat type is associated largely with small burns or where small damp or waterlogged patches support a clearly distinctive plant community compared to surrounding mire habitats.

3.6.8 Flushes are classified as priority habitat on the SBL ('upland flushes, fens and swamps').

Plate 16: Acidic flush with scattered acid grassland



M6 Carex echinata – Sphagnum fallax/S. denticulatum mire

3.6.9 Areas of M6 were recorded in damp runs and hollows throughout the upland area in the south-west of the survey area. The habitat is dominated by rushes, primarily soft rush, over a carpet of *Sphagnum*, usually blunt-leaved bog-moss or *Flat-topped bog-moss*. The habitat forms where moisture flushes downhill, forming a damp peaty run, or where the peaty mire habitat transitions to a watercourse.

Other wetlands (UKHab f2f)

M23 Juncus effusus/acutiflorus - Galium palustre rush-pasture

3.6.10 Waterlogged soils dominated by soft rush were present in patches across the western reaches of the Survey Area, fitting NVC community M23. The habitats were often associated with depressions in the landscape and typically occurred near water bodies. Species recorded included sharp-flowered rush, Yorkshire fog and sweet vernal grass.

3.7 Cropland

Arable and horticulture (UKHab c1, c1c and c1f)

3.7.1 Arable fields were recorded throughout the eastern Survey Area within expanses of managed farmland. Field were observed with planted cereal crops or recently ploughed.





3.8 Urban

Built-up areas and gardens (UKHab u1b5, u1b6, u1c, u1d and u1e)

3.8.1 Urban areas across the Study Area presented as existing roads (B947), tracks routed through moorland and commercial forestry, residential properties and farm steadings, and the existing Fetteresso substation.

3.9 Rivers and Lakes

Standing open water and canals (r1 and r1a6)

3.9.1 Agricultural ponds are identified across the east of the Survey Area and are subject to cattle access with wildfowl recorded within. In addition, bog pools were recorded in the western reaches of the Survey Area, corresponding to M2 NVC community.

Plate 18: Agricultural pond





Rivers (priority habitat) (r2a)

- 3.9.2 Priority rivers with the Survey Area have been defined as those which are classified as high hydromorphological or ecological status, and includes the headwater tributaries that are associated with priority rivers. This excludes small tributaries of plantation origin and agricultural modification which are discussed under UKHab r2b.
- 3.9.3 The Water of Dye / Water of Charr (SEPA ID: 23911) and Water of Dye / Spittal Burn (SEPA ID: 23912) are located in the western reach of the Survey Area flowing east and north. Overall ecology status is classified as Good and High respectively. There are several smaller tributaries flowing into the main water body, including; Pitlethen Burn, Old Hangy Burn, Stag burn, Cairn burn and several unnamed streams.
- 3.9.4 Waterbodies such as those shown in Plates 19, 20 and 21 below, are subject to limited modification and are situated within large expanses of upland moorland habitats. See Chapter 9: Geology, Hydrology and Hydrogeolgy for details of the hydrology associated with these watercourses.

Plate 19: Water of Charr downstream (left) and upstream (right)







Plate 20: Pitlethen Burn (left) Stag burn (right)





3.9.5 The Bervie Water – upper catchment (SEPA ID: 23262) is located within the centre of the Survey Area flowing southwards where channel modification increases. Within the Survey Area the waterbody is braided within a riparian zone characterised by broadleaf woodland bounded by agricultural grassland and associated farmland practices. Tributaries including the Burn of Guinea, Burn of Brumlieshank and Maxie Burn are routed through existing plantation and steeper gradients before discharging into the Bervie Water. The Burn of Brumlieshank was too steep for safe survey access.

Plate 21: Bervie Water (left) and Maxie Burn (right)





Other rivers and streams (r2b)

- 3.9.6 There are multiple water bodies across the Survey Area that do not fit the description of priority rivers: this includes burns that are not visible on OS mapping, or are heavily modified /degraded.
- 3.9.7 Watercourses in this habitat category are typical of the agricultural dominated areas in the west of the Survey Area and include the Carron Water (SEPA ID: 23257) (Bad ecological status) and its tributaries, including the Burn of Annamuick. Additional smaller burns in this area include the Bernie Shag, Greys Burn, West Burn, and



several streams subject to agricultural modification, including the Burn of Bankhead and additional unnamed streams.

3.9.8 Burns originating from conifer plantations are considered of greater acidity and were largely void of in-stream plant vegetation. Such water courses include the source tributary of Slack Burn, which was observed to be dry in sections, with flowing water present within the gorge north-east of Thorter Hill, associated with the Luther Water sub catchment (source to Dowrie Burn confluence (SEPA ID:5706)). Downstream monitoring has categorised this river as Bad ecological status.

Plate 22: Burn of Bankhead (left) and unnamed stream west of Fetteresso substation (right)





3.10 Invasive Non-Native Species

3.10.1 No scheduled invasive non-native species were noted during the survey. However, the non-native shrub species, snowberry, was recorded in the wider vicinity near residual properties which has an invasive nature.

3.11 Notable Plant Species

3.11.1 No notable or rare species were recorded during the survey.



4. EVALUATION OF BOTANICAL INTEREST

- 4.1.1 The habitats recorded during the field survey can be compared with several classification systems to assess their nature conservation interest and potential groundwater dependency. These classifications include:
 - Annex I habitats listed under Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive)⁹;
 - Priority habitats detailed within the Scottish Biodiversity List (SBL)¹⁰; and
 - Habitats listed on the North East Scotland Biodiversity Partnership¹¹ (LBAP); and
 - Potentially groundwater dependant terrestrial ecosystems (GWDTEs) as defined by SEPA³.

4.2 Annex I Habitats

- 4.2.1 Annex I habitats are natural habitat types whose conservation requires the designation of Special Areas of Conservation (SAC) and are generally regarded as being of European importance.
- 4.2.2 The following habitats recorded within the Survey Area are classified with links to Annex I habitats:
 - European dry heaths H4030 (UKHab: h1b5, NVC: H10, H12); and
 - Blanket Bog H7130 (modified and degraded).

4.3 Scottish Biodiversity List Habitats

- 4.3.1 The Scottish Biodiversity List (SBL) is a list of animals, plants and habitats which the Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The purpose of the list is to identify species and habitats which are the highest priority for conservation in Scotland, of which are termed 'priority habitats'.
- 4.3.2 Habitats identified that correspond with SBL priority habitats can be summarised as follows:
 - Lowland mixed deciduous woodland (UKHab w1,w1g)
 - Hedgerows (UKHab: h2a6);
 - Upland heathland (UKHab: h1, h1b, h1b5, NVC: H10, H12)
 - Upland flushes, fens, and swamps (UKHab: f2c, NVC: M6)
 - Blanket bog (UKHab: f1a5, NVC: M2, M19, M20);
 - Eutrophic standing waters and ponds (UKHab r1, r1a6); and
 - Rivers (r2a, r2b).

4.4 Ancient Woodland Directory

4.4.1 Areas of woodland occurring within the Survey Area and classified under the Ancient Woodland Inventory (AWI) are shown on **Figure 7.2b** (see Volume 2 of this EIA Report) and summarised as follows:

⁹ European Commission, 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive.)

¹⁰ NatureScot (2020) Scottish Biodiversity List. Available at: https://eur-lex.europa.eu/eli/dir/1992/43/oj/eng

¹¹ North East Scotland Biodiversity Partnership. (2019) *Important Habitats for Biodiversity – our Local Biodiversity Action Plan*. Available at: https://www.nesbiodiversity.org.uk/biodiversity-information-for-developers/important-habitats-for-biodiversity-in-the-north-east-of-scotland/

- TRANSMISSION
 - Shoolbraid/Belhangie WDS. Woodland ID: 22194. Categorised as 2b Long-Established (of plantation origin);
 - Fournart Wood. Woodland ID: 22201. Categorised as 2b Long-Established (of plantation origin);
 - No Site Name. Woodland ID: 21981. Categorised as 2a Ancient (of semi-natural origin);
 - No Site Name. Woodland ID: 21980. Categorised as 2b Long-Established (of plantation origin), and;
 - No Site Name. Woodland ID: 21912. Categorised as 2a Ancient (of semi-natural origin).

4.5 Groundwater Dependency

4.5.1 The results of the NVC survey identified three communities with potential for groundwater dependency, depending on the hydrogeological setting in accordance with SEPA guidance³. These communities are summarised in **Table 4** below.

Table 4: NVC Communities with Potential Groundwater Dependency

NVC Code	NVC Community Name	
M6	Carex echinata – Sphagnum fallax/S. denticulatum mire	
M23	Juncus effusus/acutiflorus – Galium palustre rush-pasture	
MG9	Holcus lanatus - Deschampsia cespitosa grassland	
MG10	Holcus lanatus - Juncus effusus rush-pasture	

4.5.2 The potential for an NVC community to be groundwater fed has been assigned solely on the SEPA guidance listings³, but these particular communities are not considered truly groundwater dependant without further hydrological/hydrogeological assessment being undertaken that demonstrates otherwise. A separate, dedicated GWDTE assessment has been undertaken within **Chapter 9: Geology, Hydrology and Hydrogeology**.



ANNEX A: SPECIES LIST

Table A-1.: Plant Species listed in this report

Taxon Group	Scientific Name	English Name	
Herb	Achillea millefolium	Yarrow	
Herb	Aegopodium podagraria	Ground elder	
Herb	Bellis perennis	Daisy	
Herb	Calluna vulgaris	Heather	
Herb	Chrysosplenium oppositifolium	Opposite-leaved golden-saxifrage	
Herb	Cirsium vulgare	Spear thistle	
Herb	Digitalis purpurea	Foxglove	
Herb	Erica cinerea	Bell heather	
Herb	Erica tetralix	Cross-leaved heather	
Herb	Ficaria verna	Lesser celandine	
Herb	Galanthus nivalis	Snowdrop	
Herb	Galium aparine	Cleaver	
Herb	Galium saxatile	Heath bedstraw	
Herb	Narcissus L.	Daffodil	
Herb	Narthecium ossifragum	Bog asphodel	
Herb	Petasites alba	White butterbur	
Herb	Potamogeton polygonifolius	Bog pondweed	
Herb	Potentilla erecta	Tormentil	
Herb	Ranunculus repens	Creeping buttercup	
Herb	Rubus chamaemorus	Cloudberry	
Herb	Rumex acetosa	Common sorrel	
Herb	Rumex obtusifolius	Broad-leaved dock	
Herb	Rumex obtusifolius	broad-leaved dock	
Herb	Symphytum tuberosum	Tuberous comfrey	
Herb	Taraxacum sp.	Dandelion	
Herb	Trifolium repens	White clover	
Herb	Urtica dioica	Common nettle	
Herb	Vaccinium myrtillus	Bilberry	
Herb	Vaccinium vitis-idaea	Cowberry	
Herb	Vicia sp.	Vetch species	
Tree/shrub	Acer pseudoplatanus	Sycamore	
Tree/shrub	Aesculus hippocastanum	Horse chestnut	
Tree/shrub	Alnus glutinosa	Alder	
Tree/shrub	Betula sp.	Birch species	
Tree/shrub	Crataegus monogyna	Hawthorn	

Taxon Group	Scientific Name	English Name
Tree/shrub	Cytisus scoparius	Broom
Tree/shrub	Fagus sylvatica	Beech
Tree/shrub	Fraxinus excelsior	Ash
Tree/shrub	Ilex aquifolium	Holly
Tree/shrub	Larix decidua	Larch
Tree/shrub	Picea sitchensis	Sitka spruce
Tree/shrub	Pinus sylvestris	Scot's pine
Tree/shrub	Prunus laurocerasus	Cherry laurel
Tree/shrub	Quercus	Oak sp.
Tree/shrub	Rubus idaeus	Raspberry
Tree/shrub	Salix caprea	Goat willow
Tree/shrub	Salix cinerea	Grey willow
Tree/shrub	Salix sp.	Willow species
Tree/shrub	Sorbus aucuparia	Rowan
Tree/shrub	Symphoricarpos albus	Snowberry
Tree/shrub	Ulex europaeus	Common gorse
Grass	Agrostis capillaris	Common bent
Grass	Agrostis stolonifera	Creeping bent
Grass	Anthoxanthum odoratum	Sweet vernal-grass
Grass	Avenella flexuosa	Wavy Hair-grass
Grass	Cynosurus cristatus	Crested dogstail
Grass	Dactylis glomerata	Cock's-foot
Grass	Deschampsia cespitosa	Tufted hairgrass
Grass	Holcus lanatus	Yorkshire fog
Grass	Lolium perenne	Perennial ryegrass
Grass	Molinia caerulea	Purple moor-grass
Grass	Nardus stricta	Mat-grass
Grass	Poa trivialis	Rough meadow-grass
Sedge	Carex binervis	Green-ribbed sedge
Sedge	Carex hirta	Hairy sedge
Sedge	Carex riparia	Greater pond-sedge
Sedge	Carex sylvatica	Wood sedge
Sedge	Eriophorum vaginatum	Hare's-tail cottongrass
Sedge	Trichophorum germanicum	Deergrass
Rush	Juncus acutiflorus	Sharp-flowered rush
Rush	Juncus effusus	Soft rush
Fern	Dryopteris dilatata	Broad buckler fern
Fern	Pteridium aquilinum	Bracken



Taxon Group	Scientific Name	English Name
Clubmoss	Lycopodium clavatum	Stag's-horn clubmoss
Moss	Hylocomium splendens	Glittering woodmoss
Moss	Hypnum jutlandicum	heath plait-moss
Moss	Pleurozium schreberi	Red-stemmed feathermoss
Moss	Polytrichum commune	Common haircap
Moss	Rhytidiadelphus squarrosus	Springy turf-moss
Moss	Sphagnum capillifolium	Red bog-moss
Moss	Sphagnum fallax	Flat-topped bog-moss
Moss	Sphagnum palustre	Blunt-leaved bog-moss
Moss	Sphagnum papillosum	Papillose bog-moss
Moss	Sphagnum sp.	Sphagnum sp.