Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 3

Technical Appendix A6.1: Habitats

Document prepared by Gavia Environmental Ltd for Beinneun 2 Ltd

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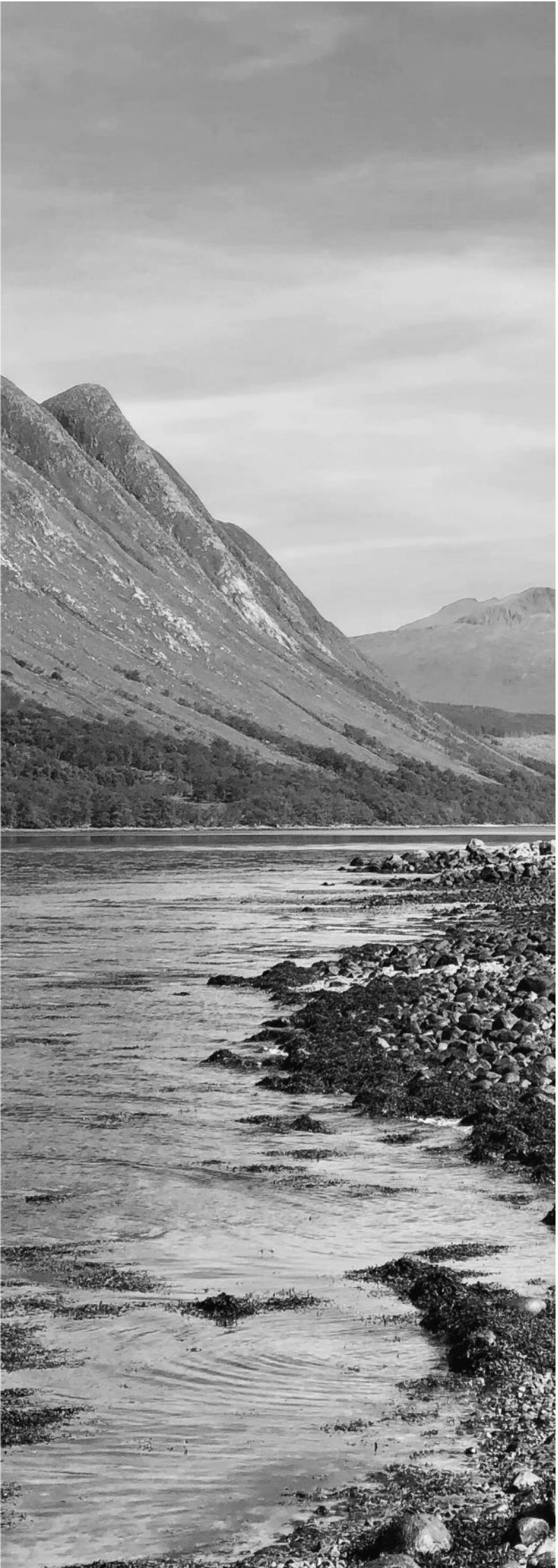

BEINNEUN 2 WIND FARM

TECHNICAL APPENDIX A6.1: HABITATS

ENVAMS LTD.

1/08/2025

Gavia Environmental Ltd

Inveralmond Business Centre
Auld Bond Road
Perth
PH1 3FX
01738 718 685

HQ
20-23 Woodside Place
Glasgow
G3 7QL
0141 401 0699

Basepoint
Crab Apple Way
Vale Park
Evesham
WR11 1GP
01386 764 797

36 Albert Embankment
London
SE1 7TL
www.gavia-environmental.co.uk

Report prepared for ENVAMS Ltd.

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Prepared by Aiden Berg

Approved by Chris Baker

Revision History

Revision	Date	Prepared By	Reviewed By	Approved By	Comments
V0.1	26/11/2024	ET			Pre-reporting set-up
V0.2	17/02/2025	ET	JM		First draft
V1.0	26/02/2025	ET	JM	CB	First draft comments addressed
V2.0	09/07/2025	AB	SG	CB	New site layout
V3.1	31/07/2025	AB		CB	New layout, need data added from other windfarms – Client comments updated

Quality Assurance

This report has been prepared according to Gavia Environmental Quality Management Process. Gavia Environmental employs consultant scientists who are members of appropriate professional institutions and adhere to professional codes of conduct.

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Contents

1 Introduction

1.1 Aims and Objectives

Gavia Environmental Ltd ('GEL') was commissioned by ENVAMS Ltd on behalf of Beinneun 2 Ltd ('the Client') to undertake baseline habitat assessments, including Phase 1 Habitats, National Vegetation Classification (NVC) and potential Groundwater Dependent Terrestrial Ecosystems (GWDTE) habitats at the proposed Beinneun 2 Wind Farm Site ('the Site'), which is located at National Grid Reference (NGR) NH 22538 06216, approximately 8.5km northwest of Invergarry in the Highlands. The area of the proposed Site boundary was 1154.13ha.

The NVC survey comprised the Site and an additional 250m buffer (the Survey Area) to account for potential presence of Scottish Biodiversity List habitats and potential GWDTEs that may be impacted by the proposed development.

This report aims to describe the NVC habitats identified on Site, and identify which habitats have potentially low, moderate, and high dependency on groundwater according to the Scottish Environment Protection Agency (SEPA) Land Use Guidance Note 31 'Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems' (SEPA, 2017). This report is supported by figures 6.1.1 – 6.1.6.

1.2 Legislation

Legislation relating to habitats and protected species is included in **Appendix A**.

2 Methodology

2.1 Desk Study

Prior to the commencement of field surveys, a desk study was undertaken to provide a baseline and up to date ecological information on statutory designated sites. Sites designated for protected habitats were searched for within 10km of the Site. Information was sought from the following sources:

- NatureScot Sitelink (2021);
- Highland Council Local Biodiversity Action Plan 2021-2026;
- British Geological Society Onshore 'Geoindex' database (2022); and
- Scottish Biodiversity List.

In addition, previous and surrounding windfarm applications were used to get an understanding of the site including the following:

- Beinneun 2 Environmental Impact Assessment Scoping Report (2023), which includes information from Beinneun Windfarm Extension Environmental Statement (2014) and Beinneun Wind Farm Environmental Statement (2011);
- Bunloinn Windfarm Environmental Impact Assessment Report (2022); and
- Millennium South Wind Farm Environmental Statement (2014).

2.2 Field Surveys

2.2.1 Phase 1 Habitats

The habitats within the Site were initially mapped to a broad scale using JNCC (2010) methodology. The Phase 1 Survey documents habitats to a recognised standard and also records any stands of invasive non-native plants. This level of survey allows for the broad habitat types to be mapped in order to identify potentially sensitive habitats such as wetland areas which may have GWDTE potential or areas of habitat which may qualify as EC Annex 1 habitats (at time of UK exit). Valued Ecological Receptors VERs are species and habitats that

are both valued (at EU, UK and national scale) and could be affected by the proposed development.

To inform the subsequent field survey (see below), aerial photography was overlain on the Site to produce a preliminary map of habitat extents. British Geological Survey (2024) online maps were consulted to inform the Site's hydrogeology and any likely peat deposits present within the survey Areas. The identified habitat extents were marked onto maps using QGIS software and assessed in closer detail (ground-truthed) in the field.

It should be noted that the Phase 1 methodology does not constitute a full botanical survey but allows a professional judgement to be made as to whether or not further specialist surveys would be advisable – either in relation to the planning application / design stage or subsequently. Habitat surveys were undertaken in 14th, 15th and 29th November 2024.

2.2.2 National Vegetation Classification

The NVC survey and GWDTE assessment were carried out on 14th, 15th and 29th November 2024. During the surveys, habitat polygons digitised from aerial photography were ground-truthed and vegetation boundaries adjusted, where relevant. Transects were walked on slopes at various heights to intersect the differing Phase 1 habitats with particular focus on wet flush points identified during the desk study and initial Phase 1 habitat surveys. Surveyors were Chris Baker CEnv MCIEEM and Adrian Davis MCIEEM. Chris Baker was on the board for the Scottish BSBI for several years and has 20 years' experience of NVC surveys of the Scottish uplands, with a GWDTE specialism. Adrian Davis has over 30 years of NVC survey experience and has been a Habitat Advisor to Scottish Natural Heritage and delivers training in NVC for the Chartered Institute of Ecology and Environmental Management CIEEM.

The vegetation was classified using a modified version of the standard methodology published by the Joint Nature Conservation Committee (JNCC), 'National Vegetation Classification Users Handbook' (JNCC, 2006), whereby at least two quadrats of a size appropriate to the habitat type were taken per habitat. Reference was also made to 'British Plant Communities' Volumes 1–3, (Rodwell, 1991a–b & 1997) and an 'Illustrated Guide to British Upland Vegetation' (Averis, 2004). Higher plant nomenclature follows that of Stace (2010), and bryophyte nomenclature follows that of the British Bryological Society (2010).

2.3 Rare Plants

The British Bryological Society's Revised List of Nationally Scarce and Rare Bryophytes (Pescott, 2016) was used to identify potential rare moss and liverwort species recorded within the Survey Area.

2.3.1 Identification of Ground Water Dependent Terrestrial Ecosystems (GWDTE)

Aerial photography was again overlain across the Site to map habitat extents and identify any likely groundwater dependent terrestrial ecosystem (GWDTE) features. Typically, GWDTE habitats are linear in shape with widening of the habitat common on flatter areas at the bottom of hill slopes, where 'flushing out' of water occurs.

Following the results of the NVC survey, habitats were assigned a potential GWDTE rating as per SEPA's Land Use Guidance Note 31 'Guidance on Assessing the Impacts of Development. Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems' (SEPA 2017). **Table 2** shows the description for each GWDTE rating.

Table 1: GWDTE dependency ratings

GWDTE Rating	Summary of Consultee Response
High	Strong dependency upon groundwater discharge from bedrock or superficial aquifers at majority of Sites.

Moderate	Likely to be some dependency on groundwater discharge at most sites – either direct from likely recognised aquifers or indirectly as recharge from minor aquifers in superficial deposits. Water from other sources (surface runoff, overbank flooding etc.) may also be important.
Low	Groundwater discharge usually irrelevant, site fed by other water sources. This may also include components of ombrogenous systems with intrinsic groundwater system fed by rain.

2.4 Incidental observations

During the NVC surveys, surveyors noted down any incidental sightings or signs of protected species. However, a comprehensive protected species walkover was out with the scope of this survey and a protected species report is provided separately.

2.5 Limitations

The NVC survey was conducted out with the flowering season for many species, which could limit the capacity to assess the species richness of flowering vascular plants. This limitation was unlikely to impact the quality of the results, owing to the nature of the vegetation types on Site that means most species, especially bryophytes and lichens, were identifiable year-round, and because both surveyors had over 20 years of NVC survey experience.

3 Results

3.1 Desk Study

3.1.1 Designated Sites

Using Sitelink by NatureScot to look for Sites of International, National and Local designations. The following nature conservation designations are present within 10km of the proposed Site Area:

- **River Moriston** (SAC) – Located 2km north of Site at its closest point. It contains Atlantic Salmon (*Salmo salar*) and Fresh water pearl mussel (*Margaritifera margaritifera*) features.
- **West Inverness-shire Lochs** (SSSI) – Located in the surrounding area of the Site, approximately 0.16km at its closest point. Its features include breeding black-throated diver (*Gavia arctica*) and Common Scoter (*Melanitta nigra*).
- **Garry Falls** (SSSI) – Located 3km southeast of the Site at its closest point with Bryophyte assemblage and upland mixed ash woodland.
- **South Laggan Fen** (SSSI) – Located 7km southeast from the Site at its closest point, it contains transition open fen.

The River Moriston could be affected by hydrological impacts from the Development by catchment drains, therefore a CEMP is proposed in Chapter 12: Hydrology, with an outline CEMP provided as EIA Report Technical Appendix A4.1 and a Habitat Regulations Assessment provided in Technical Appendix A12.3.

None of the other sites are considered to be functionally connected to the Site.

3.1.2 Ancient Woodland Inventory

34 patches of woodland within 2km of the Site appear on the Ancient Woodland Inventory (AWI). One area of ancient woodland was found on Site. The closest proposed turbine location to the 2.64 ha of ancient woodland within the Site boundary was planned to be 400m northeast. Impacts to the ancient woodland close to the access track should be considered if expanding the track to within 100m of the woodland.

Table 2 shows information related to each woodland patch.

Table 2: Ancient Woodland overlapping with the Site Boundary.

AWI ID	GR	Area of Woodland Patch (ha)	Area overlapping with Site (ha)
2944	NH241046	8.30	2.64

Although there is no legislation specifically protecting ancient woodland, Scottish Planning Policy identifies it as an important and irreplaceable national resource that should be protected and enhanced.

3.1.3 Previous and nearby Windfarm Applications

The Scoping Report described habitat diversity to be limited and dominated by wet heat with discrete patches of montane heath, blanket bog, and bog pools. These were identified as Class 1 and 2 peatland habitats with high conservation value and potential ground-water dependent terrestrial habitats.

3.2 Field Survey

3.2.1 Phase 1 Habitats

The combined total of the habitats surveyed within the Site is approximately 1154.13ha, and 1860.86ha including the 250m buffer. Ten broad habitat types were identified across the Site. The habitats recorded, their codes and their area within the Site are presented in the **Table 3** in order of area (hectares).

Table 3: Phase 1 Habitats within the Site and 250m buffer

Phase 1 Code	Phase 1 Habitat Description	Area within Survey Area (ha)
E1.6.1	Blanket bog	658.57
D2	Wet dwarf shrub heath	496.69
E1.7	Wet modified bog	396.17
D1.1	Dry dwarf shrub heath, acid	133.59
A1.2.2	Coniferous woodland, plantation	111.27
D3	Lichen/bryophyte heath	23.03
E2.1	Flush and spring, acid	20.64
A1.1.1	Broadleaved woodland, semi-natural	10.19
C1.1	Bracken	5.68
B1.2	Acid grassland, semi-improved	3.03
Total		**1860.86**

3.2.2 NVC Habitats

Following the Phase 1 Habitat survey, NVC surveys were undertaken within the Site. **20** dominant habitat types were recorded, often occurring within mosaics, with a combined total

of approximately 1860.86ha. The NVC habitats recorded, their area within the Survey Area, their area within the entire survey area including the 250m buffer, and potential of GWDTE habitats to be dependent upon a groundwater source are presented in **Table 4** in order of area (hectares). Where a mosaic is present, potential groundwater dependency is classified by the dominant habitat within the mosaic. Habitats which were too small to map are listed as target notes and described in **Annex C**, including an area of species-rich *Festuca ovina–Agrostis capillaris–Thymus praecox* grassland, CG10, one of *Carex rostrata-Potentilla palustris* tall-herb fen, S27, and one of *Pinus sylvestris–Hylocomium splendens* woodland, W18.

Table 4: NVC Habitats within the Site.

NVC Code	NVC Habitat Description	Area within Site and 250m buffer (ha)	GWDTE Potential (SEPA, 2017)
M15	*Scirpus cespitosus–Erica tetralix* wet heath	620.29	Moderate
M17	*Scirpus cespitosus–Eriophorum vaginatum* blanket mire	420.22	Low
M25	*Molinia caerulea–Potentilla erecta* mire	226.88	Moderate
PCW	Plantation coniferous woodland (Sitka spruce, Scot's pine)	105.46	Low
M19	*Calluna vulgaris – Eriophorum vaginatum* blanket mire	101.86	Low
H21	*Calluna vulgaris–Vaccinium myrtillus – Sphagnum capillifolium* heath	86.84	Low
H10	*Calluna vulgaris – Erica cinerea* heath	64.10	Low
M6	*Carex echinata–Sphagnum recurvum/auriculatum* mire	56.35	High
H12	*Calluna vulgaris – Vaccinium myrtillus* heath	48.85	Low
M16	*Erica tetralix–Sphagnum compactum* wet heath	42.44	High
M1	*Sphagnum auriculatum* bog pool community	19.52	Low
H14	*Calluna vulgaris – Racomitrium lanuginosum* heath	16.25	Low
U4	*Festuca ovina–Agrostis capillaris–Galium saxatile* grassland	15.64	Low
M4	*Carex rostrata - Sphagnum recurvum* mire	9.04	Low
H13	*Calluna vulgaris – Cladonia arbuscula* heath	8.79	Low
U20	*Pteridium aquilinum–Galium saxatile* community	7.11	Low
W11	*Quercus petraea–Betula pubescens–Oxalis acetosella* woodland	6.11	Low
U5	*Nardus stricta–Galium saxatile* grassland	4.28	Low (U5c Moderate)
M2	*Sphagnum cuspidatum/recurvum* bog pool community	0.79	Low
M3	*Eriophorum angustifolium* bog pool community	0.03	Low
Total		**1860.86**	

Of the habitats detailed above, comparison was undertaken with those NVC communities listed under SEPA's LUPS GU4 planning guidance documents (2017). Habitats with NVC codes listed on the LUPS GU4 guidance as either highly or moderately groundwater dependent are considered suitable to support potential GWDTEs and are discussed further in **Section 3.2.3** below. While the surface habitat may indicate a potential GWDTE, a hydrological assessment is needed to prove whether there is actual connectivity to groundwater.

3.2.3 Potential GWDTE Habitats

The groundwater dependency of each habitat is listed in **Table 4** above. Of the habitats recorded during the NVC survey, the following potential GWDTE habitat was identified with a 'High' potential groundwater dependency:

- M6 - *Carex echinata–Sphagnum recurvum/auriculatum* mire;
- M16 - *Erica tetralix–Sphagnum compactum* wet heath; and
- CG10 - *Festuca ovina – Agrostis capillaris – Thymus praecox* grassland.

The following potential GWDTE habitats were identified with a 'Moderate' potential groundwater dependency:

- M15 - *Scirpus cespitosus–Erica tetralix* wet heath;
- M25 - *Molinia caerulea–Potentilla erecta* mire;
- U5 - *Nardus stricta–Galium saxatile* grassland;
- S27 - *Carex rostrata - Potentilla palustris* tall-herb fen.

The total areas of all potential 'Moderate' and 'High' GWDTE habitats within the Site are presented in **Table 5** below.

Table 5: Potential GWDTE Cover on Site

GWDTE Dependency	Area (ha)	Survey Area (%)
Low/None	910.61	48.94
Moderate	851.46	45.76
High	98.79	5.31
Total	**1860.86**	**100**

5 Valued Ecological Receptors (VERs)

Table 6 below presents a summary of the valued ecological receptors identified during the surveys.

Table 6: Valued Ecological Receptors

VER	Sensitivity
GWDTEs	GWDTEs are fully protected under the Water Framework Directive (WFD) 2000/60/EC (2014). Habitats with 'high' and 'moderate' dependency upon a groundwater source are outlined in **Section 3.2.3**. Refer to the GWDTE Assessment Report in the EIA Report Technical Appendix A6.4.
Lowland dry acid grassland (U4-5)	Identified as threatened and requiring conservation under the Scottish Biodiversity List, Highland LBAP and Annex 1. U5c has 'High' and U6 has 'Moderate' potential groundwater dependency (WFD).
Blanket mire (M1, M17-19, M25)	Scottish Biodiversity List, Highland LBAP and Annex 1. M21 has 'High' and M25 has 'Moderate' potential groundwater dependency (WFD)
Wet heath (M15-16)	Scottish Biodiversity List, Highland LBAP and Annex 1. M14 and M16 have 'High' potential groundwater dependency.
Upland dry heath (H10, H12-15, H21)	Scottish Biodiversity List, Highland LBAP and Annex 1.
Upland flushes (M6)	Scottish Biodiversity List, Highland LBAP, 'High' potential groundwater dependency (WFD), and Annex 1.
Upland calcareous grassland (CG10)	Scottish Biodiversity List, Highland LBAP, 'High' potential groundwater dependency (WFD), and Annex 1.
Swamp and tall-herb fen (S27)	Scottish Biodiversity List, Highland LBAP, 'Moderate' potential groundwater dependency (WFD), and Annex 1.
Upland birchwoods / Wet woodland (W11)	Scottish Biodiversity List, Highland LBAP and Annex 1.
Protected and rare species (*Juniperus communis*)	Identified as threatened under the Scottish Biodiversity List.

7 Summary

The Site is located approximately 5.4km northwest of Invergarry in the Highland Council area. The proposed works consist of the construction of a new access track and associated turning points, 19 new wind turbines and associated infrastructure. The Site comprised diverse upland habitats, dominated by blanket bog mosaics on deep peat, and interspersed with wet and dry montane heath, bog pools, flushes, acid grassland and some species-rich calcareous grassland.

The Site contained a broad range of priority habitats important for supporting rare species such as calcareous grassland (CG10), wet woodland (W11), a variety of mire habitats (M1, M6, M17-19, M25), upland/montane dry heath (H10, H12-H15) and wet heath (M15 and 16) and a small patch of W18 pine woodland. All of these habitats are protected under Annex 1, the Scottish Biodiversity List, and the Highlands Local Biodiversity Action Plan. One protected (threatened) species, prostrate Juniper, was recorded on Site within the areas of montane heath (H13/H14).

The proposed turbine locations are situated within habitats including mosaics of M15-19, M25, M1, M6, H10, H14 and U4, and are indicated in **Figure 6.1.1 – 6.1.6**. It is worth noting that at the time of writing, the proposed turbine positions have not yet been finalised and may be subject to change (design drawing Fairhurst, 2024).

Potential 'High' dependency GWDTE habitats identified on Site included M6, M16, and CG10. Potential Moderate dependency GWDTE habitats were M15, M25, and S27. The presence of potential GWDTEs both on Site and within 100m of the development requires a GWDTE assessment to assess actual dependence and potential impact of the development on surrounding habitats.

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Appendix A Legislation

Habitats

The Habitats Directive (1992) protects over 1.000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

- Annex II species (about 900): core areas of their habitat are designed as sites of Community importance (SCI's) and included in the UK site network. These sites must be managed in accordance with the species own ecological needs.
- Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and out-with Natura 2000 sites.
- Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.
- The objectives in relation to the UK site network (previously Natura 2000 sites) are to:
- i. maintain or restore certain habitats and species listed in the Habitats Directive to favourable conservation status (FCS)
- ii. contribute to ensuring the survival and reproduction of certain species of wild bird in their area of distribution and to maintaining their populations at levels which correspond to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements.

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended on numerous occasions). These Regulations apply on land in Scotland, and in Scottish inshore waters (the area of sea adjacent to Scotland from 0 to 12 nautical miles).

The Nature Conservation (Scotland) Act 2004 provides for the notification, management and protection of Sites of Special Scientific Interest (SSSI). This designation underpins the majority of terrestrial SACs and SPAs, with the site protection provisions from SSSIs forming appropriate steps to comply with article 6.2 of the Habitats Directive.

European marine sites and European offshore marine sites continue to contribute to Scotland's MPA network. The network also includes Marine Protected Areas (MPAs), Sites of Special Scientific Interest (SSSIs) and Ramsar sites.

GWDTEs

GWDTEs are fully protected under the Water Framework Directive (WFD) 2000/60/EC (SNIFFER, 2009). The WFD is transposed into Scottish legislation in the Water Environment and Water Services (Scotland) Act (2003) (known as WEWS), which introduces regulatory controls to the Scottish Ministers and the Scottish Environment Protection Agency (SEPA) to protect and improve the Scottish water environment.

To fulfil the objectives of the WFD, any development must not cause a decline in the quality or quantity of groundwater supplied to a GWDTE. SEPA require any GWDTE located within 250m from excavations >1m deep to be avoided, or for any impacts to be mitigated against. SEPA consider any decline in groundwater status to be a contravention of the EU WFD.

Invasive Non-native Species

The Wildlife and Countryside Act 1981 (external link) (Sections 14 to 14P) is the principal legislation dealing with non-native species in Scotland. Section 14 (1) of the Act makes it illegal to release or otherwise cause an INNS to be at a place out with its native range.

Appendix B Figures

Figure 6.1.1 – 6.1.4 National Vegetation Survey

Figure 6.1.5 Phase 1 & Target Notes East

Figure 6.1.6 Phase 1 & Target Notes West

Beinneun 2 Wind Farm
EIAR Chapter 6: Ecology
Technical Appendix 1

Figure 6.1.1
National Vegetation Classification (NVC)

Key

- Site Boundary
- 250m Buffer

NVC Habitats

- H21 - Calluna vulgaris – Vaccinium myrtillus – Sphagnum capillifolium heath
- M15 - Scirpus cespitosus – Erica tetralix wet heath
- M25 - Molinia caerulea – Potentilla erecta mire
- M19 - Calluna vulgaris – Eriophorum vaginatum blanket mire
- M6 - Carex echinata – Sphagnum recurvum/auriculatum mire
- H10 - Calluna vulgaris – Erica cinerea heath
- H12 - Calluna vulgaris – Vaccinium myrtillus heath
- M1 - Sphagnum auriculatum bog pool community
- M17 - Scirpus cespitosus – Eriophorum vaginatum blanket mire
- U4 - Festuca ovina – Agrostis capillaris – Galium saxatile grassland
- U20 - Pteridium aquilinum – Galium saxatile community
- PCW - Planted Coniferous Woodland

N

Scale @ A3: 1:9,300

0 230 460 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

219000 220000 221000

808000 807000 806000

219000
220000
221000
805000
804000

Beinneun 2 Wind Farm
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Figure 6.1.2
National Vegetation Classification (NVC)

Key

Site Boundary

250m Buffer

NVC Habitats

- M15 - Scirpus cespitosus – Erica tetralix wet heath
- M25 - Molinia caerulea – Potentilla erecta mire
- M19 - Calluna vulgaris – Eriophorum vaginatum blanket mire
- M6 - Carex echinata – Sphagnum recurvum/auriculatum mire
- H10 - Calluna vulgaris – Erica cinerea heath
- H12 - Calluna vulgaris – Vaccinium myrtillus heath
- M16 - Erica tetralix – Sphagnum compactum wet heath
- M17 - Scirpus cespitosus – Eriophorum vaginatum blanket mire
- M18 - Erica tetralix – Sphagnum papillosum raised and blanket mire
- PCW - Planted Coniferous Woodland

N

Scale @ A3: 1:9,400

0 240 470 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

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Figure 6.1.3
National Vegetation Classification (NVC)

Key

- Site Boundary
- 250m Buffer

NVC Habitats

- H21 - Calluna vulgaris – Vaccinium myrtillus – Sphagnum capillifolium heath
- M15 - Scirpus cespitosus – Erica tetralix wet heath
- M25 - Molinia caerulea – Potentilla erecta mire
- M6 - Carex echinata – Sphagnum recurvum/auriculatum mire
- H10 - Calluna vulgaris – Erica cinerea heath
- H14 - Calluna vulgaris – Racomitrium lanuginosum heath
- M16 - Erica tetralix – Sphagnum compactum wet heath
- M17 - Scirpus cespitosus – Eriophorum vaginatum blanket mire
- U5 - Nardus stricta – Galium saxatile grassland
- M18 - Erica tetralix – Sphagnum papillosum raised and blanket mire
- U4 - Festuca ovina – Agrostis capillaris – Galium saxatile grassland
- PCW - Planted Coniferous Woodland
- W11 - Quercus petraea – Betula pubescens – Oxalis acetosella woodland

N

Scale @ A3: 1:11,000

0 270 540 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

Beinneun 2 Wind Farm
EIAR Chapter 6: Ecology
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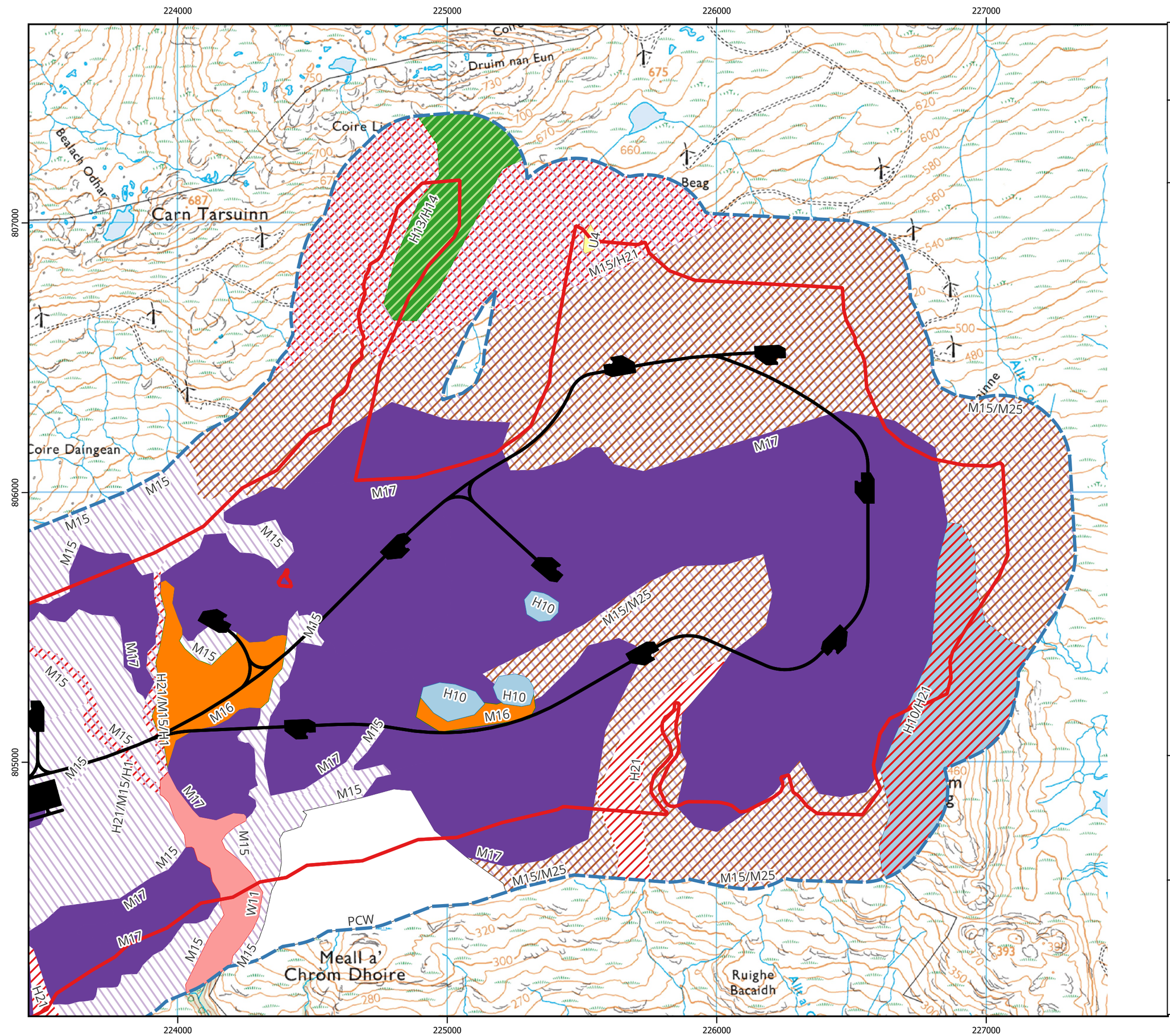
Figure 6.1.4
National Vegetation Classification (NVC)



Key

- Site Boundary
- 250m Buffer

NVC Habitats

- H13 - Calluna vulgaris – Cladonia arbuscula heath
- H21 - Calluna vulgaris – Vaccinium myrtillus – Sphagnum capillifolium heath
- M15 - Scirpus cespitosus – Erica tetralix wet heath
- M25 - Molinia caerulea – Potentilla erecta mire
- H10 - Calluna vulgaris – Erica cinerea heath
- H14 - Calluna vulgaris – Racomitrium lanuginosum heath
- M16 - Erica tetralix – Sphagnum compactum wet heath
- M17 - Scirpus cespitosus – Eriophorum vaginatum blanket mire
- U4 - Festuca ovina – Agrostis capillaris – Galium saxatile grassland
- PCW - Planted Coniferous Woodland
- W11 - Quercus petraea – Betula pubescens – Oxalis acetosella woodland

N

Scale @ A3: 1:13,000

0 320 650 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

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Figure 6.1.5
Phase 1 Habitats & Target Notes
East

Key

- Site Boundary
- 250m Buffer
- Target Notes

Phase 1 Habitats

- A1.1.1 - Semi-natural broadleaved woodland
- A1.2.2 - Planted coniferous woodland
- B1.2 - Acid grassland, semi-improved
- D1.1 - Dry dwarf shrub heath, acid
- D2 - Wet dwarf shrub heath
- D3 - Lichen/bryophyte heath
- E1.6.1 - Blanket bog
- E1.7 - Wet modified bog

N

Scale @ A3: 1:16,000

0 390 780 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

Beinneun 2 Wind Farm
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Figure 6.1.6
Phase 1 Habitats & Target Notes
West

Key

- Site Boundary
- 250m Buffer
- Target Notes

Phase 1 Habitats

- A1.2.2 - Planted coniferous woodland
- B1.2 - Acid grassland, semi-improved
- C1.1 - Bracken
- D1.1 - Dry dwarf shrub heath, acid
- D2 - Wet dwarf shrub heath
- D3 - Lichen/bryophyte heath
- E1.6.1 - Blanket bog
- E1.7 - Wet modified bog
- E2.1 - Flush and spring, acid

N

Scale @ A3: 1:16,000

0 390 780 m

GAVIA environmental

Date: 04-08-2025

Prepared By: AB

Reviewed By: SG

Approved By: CB

Appendix C Habitat Target Notes

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
1	219790	806393	M25		*Molinia caerulea, Calluna vulgaris, Myrica gale, Potentilla erecta*	CB	
2	219804	806379	U4		*Blechnum spicant, Narthecium ossifragum, Galium saxatile, Eriophorum angustifolium*	CB	
3	219781	806375	M15		*Erica tetralix, Trichophorum germanicum, Calluna vulgaris, Molinia caerulea*	CB	
4	219790	806397	M10		*Narthecium ossifragum, Juncus bulbosus, Erica tetralix*	CB	
5	219795	806368	H10		*Erica cinerea, Calluna vulgaris, Racomitrium lanuginosum, Blechnum spicant*	CB	
6	219661	806299	H21		*Sphagnum capillifolium, Vaccinium myrtillus, Calluna vulgaris, Blechnum spicant*	CB	
7	225216	805028	M19		*Sphagnum papillosum*	CB	
8	220825	806645	M1		*Eriophorum angustifolium, Sphagnum cuspidatum, Sphagnum denticulatum*	CB	
9	220879	806664	U4		*Galium saxatile, Lotus corniculatus, Hygrocybe chlorophana, Festuca ovina, Agrostis sp., Deschampsia flexuosa*	CB	
10	220759	807061	W18		*Betula pendula, Pinus silvestrus, Sorbus aucuparia, Salix cinerea*, (Understory - *Vaccinium myrtillus, Luzula sylvestris* in cleuch)	CB	
11	224320	807071	H13		*Racometrium lanuginosum,* notably no *Cladonia arbuscula*	CB	
12	224389	805817	M19/M1		TN 21 / TN 18	CB	M19 habitat with M1 bog pools throughout
13	224984	805500	M1 with A10		Standing water with *Polygonum amphibium.*	CB	Single stand of *Polygonum amphibium*, with A10.
14	225033	805115	M16		As TN 19	CB	
15	225037	807262	H14		*Racometrium lanuginosum,* 8, V *Calluna vulgaris,* 8-9, V *Cladonia arbuscula,* 4, III *Trichophorum germanicum*, 5, I *Carex biglowii*, 5, V *Cladonia impexa*, 5, V *Cladonia unicialis*, 4, V *Empetrum nigrum hermaphroditum*, 5, IV	CB	Patches of W6 throughout this habitat; prostrate heather

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					Arctostaphylos alpinus, 3, II *Arctostaphylos uva-ursi*, 4, II *Nardus stricta*, 3, I *Huperzia selago*, 1, I *Diphasiastrum alpinum*, 4, II *Juniperis communis nana*, 1, I *Festuca ovina*, 2, I *Antennaria dioica*, 2, I *Empetrum nigrum subsp. nigrum*, 1, I *Juncus squarrosus*, 4, I *Polytrichum piliferum*, 1, I *Festuca vivipara*, 2, I		
16	225224	804990	H21		*Calluna vulgaris,* 8, V *Sphagnum capillifolium,* 6, V *Deschampsia flexuosa,* 4, V *Vaccinium myrtillis,* 4, V *Blechnum spicant,* 4, V *Cladonia impexa,* 2, II *Festuca ovina,* 5, II *Erica cinerea,* 5, I	CB	
17	226230	805150	M19		*Sphagnum papillosum,* 8, V *Eriophorum vaginatum,* 7, V *Calluna vulgaris,* 6, III *Narthecium ossifragum,* 4, V *Erica tetralix,* 4, V *Cladonia impexa,* 1, I *Cladonia arbuscula,* 1, I *Sphagnum capillifolium*, 6, II	CB	
18	224781	805658	M1		*Sphagnum denticulatum,* 8, V *Eriophorum angustifolium,* 7, V *Sphagnum cuspidatum,* 5, V	CB	
19	225287	804876	M16		*Molinia caerulea*, 4, V *Cladonia impexa*, 6, I *Succisa pratensis*, 2, I *Erica tetralix*, 6, V *Trichophorum germanicum,* 8, V *Sphagnum compactum*, 4, I *Narthecium ossifragum*, 8, V *Juncus squarrosus*, 4, V *Calluna vulgaris*, 4, V *Pedicularis palustris*, 1, I	CB	
20	225178	805489	M1		TN 18	CB	
21	224242	805738	M19		*Eriophorum vaginatum,* 7 *Erica tetralix ,* 8 *Calluna vulgaris* 8 *Juncus squarrosus ,* 3 *Vaccinium myrtillus ,* 2 *Empetrum nigrum nigrum ,* 2 *Polytrichum spp ,* 2 *Sphagnum capillifolium ,* 8 *Cladonia portentosa,* 9 *Hylocomium splendens,* 3 *Pleurozium schreberi,* 6 *Racomitrium lanuginosum,* 4	AD	Extensive blanket bog mosaics on deep peat. Hummocky with peat pools M1 and M2 also present in saddle and valley mires with occasional wet heath M15.
22	224197	805195	M19		*Eriophorum vaginatum,* 9 *Erica tetralix ,* 7 *Calluna vulgaris ,* 7 *Molinia caerulea ,* 3 *Trichophorum germanicum ,* 2	AD	As TN 21.

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					Narthecium ossifragum , 3 *Eriophorum angustifolium* , 4 *Polygala serpyllifolium* , 3 *Carex echinata*, 3 *Sphagnum capillifolium*, 8 *Sphagnum papillosum* , 6 *Pleurozium schreberi*, 3		
23	224128	805421	M16		*Trichophorum germanicum*, 3 *Polygala serpyllifolium* , 2 *Erica tetralix*, 7 *Narthecium ossifragum*, 8 *Calluna vulgaris*, 5 *Juncus squarrosus*, 4 *Sphagnum compactum*, 7 *Potentilla erecta*, 3 *Pleurozium purpurella*, 6 *Eriophorum angustifolium*, 3 *Racomitrium lanuginosum*, 3	AD	Gentle hillside on very wet peaty slopes with rocky knolls and occasional peat pools. Heavily deer grazed and poached in places with *Narthecium ossifragum* clear dominant sometimes with *Erica tetralix*.
24	221253	804732	CG10		*Thymus polytrichus , 6* *Carex pulicaris, 3* *Carex flacca , 5* *Agrostis capillaris, 3* *Prunella vulgaris , 3* *Nardus stricta, 3* *Danthonia decumbens, 3* *Festuca ovina , 7* *Luzula campestris, 3* *Carex caryophyllea, 2* *Pteridium aquilinum, 3* *Potentilla erecta, 2* *Anthoxanthum odoratum , 3* *Calluna vulgaris, 4* *Viola rivinniana , 3* *Ranunculus acris , 3* *Rytidiadelphus loreus, 3* *Hylocomium splendens, 3* *Trichophorum germanicum , 1* *Polygala serpyllifolium , 2* *Carex viridula , 2* *Galium spp, 2* *Huperzia selago, 3* *Rhytidiadelphus loreus, 4* *Pleurozium schreberi, 4* *Carex caryophyllea, 2*	AD	Steep hillsides with rock outcrops, possibly limestone. Open patches of grassland with CG10 and encroaching wet heath M15 and dry heath H10, bracken heavily grazed by deer.
25	221248	804737	CG10		*Thymus polytrichus*, 5 *Carex pulicaris*, 2 *Carex flacca* , 4 *Agrostis capillaris*, 3 *Prunella vulgaris* , 3 *Nardus stricta*, 4 *Danthonia decumbens*, 3 *Festuca ovina*, 6 *Luzula campestris*, 3 *Carex caryophyllea*, 2 *Anthoxanthum odoratum* , 5 *Calluna vulgaris*, 5 *Carex panicea*, 2 *Viola rivinniana*, 3 *Ranunculus acris*, 3 *Rytidiadelphus loreus*, 4 *Pleurozium schreberi*, 6 *Hylocomium splendens*, 3	AD	As TN 24.

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					Carex viridula, 2 *Galium spp*, 2 *Rhytidiadelphus loreus*, 4 *Carex caryophyllea*, 2		
26	224250	805689	M17		*Eriophorum vaginatum*, 5 *Erica tetralix*, 7 *Calluna vulgaris*, 7 *Trichophorum germanicum*, 6 *Narthecium ossifragum*, 4 *Eriophorum angustifolium*, 6 *Sphagnum capillifolium*, 7 *Cladonia portentosa*, 5 *Racomitrium lanuginosum*, 5 *Sphagnum pulchrum*, 5 *Pleurozia purpurea*, 6	AD	Blanket bog on deep peat with peat pools.
27	224269	805565	M17		*Eriophorum vaginatum*, 4 *Erica tetralix*, 6 *Calluna vulgaris*, 7 *Trichophorum germanicum*, 7 *Narthecium ossifragum*, 4 *Eriophorum angustifolium*, 5 *Sphagnum capillifolium*, 7 *Cladonia portentosa*, 6 *Sphagnum pulchrum*, 4 *Pleurozia purpurea*, 3 *Molinia caerulea*, 6 *Carex echinata*, 6 *Potentilla erecta*, 3 *Sphagnum papillosum*, 4 *Cladonia unicalis*, 3 *Hylocomium splendens*, 4	AD	Extensive blanket bog on deep peat with peat pools and some *Carex rostrata* swamp on deep pools. Hummocky with peat pools M1 also present in saddle and valley mires.
28	224159	804936	M17		*Eriophorum vaginatum*, 3 *Erica tetralix*, 5 *Calluna vulgaris*, 9 *Trichophorum germanicum*, 3 *Narthecium ossifragum*, 3 *Eriophorum angustifolium*, 7 *Sphagnum capillifolium*, 9 *Cladonia portentosa*, 3 *Pleurozia purpurea*, 4 *Molinia caerulea*, 3 *Carex echinata*, 3 *Potentilla erecta*, 3 *Sphagnum papillosum*, 5 *Cladonia unicalis*, 2 *Polygala serpyllifolium*, 3	AD	Blanket bog on deep peat with peat pools.
29	224179	805516	M15		*Molinia caerulea*, 3 *Trichophorum germanicum*, 7 *Erica tetralix*, 3 *Narthecium ossifragum*, 3 *Calluna vulgaris*, 8 *Juncus squarrosus*, 3 *Cladonia portentosa*, 5 *Cladonia bellidiflora*, 3 *Sphagnum capillifolium*, 7 *Pleurozium shreberi*, 5 *Potentilla erecta*, 3 *Eriophorum angustifolium*, 2	AD	Extensive wet heath on hillsides occasional flushes and peaty knolls. Hilly crests with shallow peat.
30	224122	805588	M17		*Eriophorum angustifolium*, 4 *Eriophorum vaginatum*, 7 *Erica tetralix*, 5 *Calluna vulgaris*, 8	AD	Gently sloping peaty ground with extensive *Calluna vulgaris*

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					Cladonia portentosa, 3 *Sphagnum capillifolium,* 9 *Sphagnum papillosum,* 7 *Pleurozium schreberi,* 2 *Narthecium ossifragum,* 4 *Molinia caerulea,* 7 *Potentilla erecta,* 4		*Eriophorum vaginatum* dominated mires. Grades into M19 in places on a hillside, facing south. Several knolls with M15 and a little H10/H12 and H14. Windfarm above.
31	219355	804887	M17		*Molinia caerulea, Sphagnum capillifolium, Carex echinata*	AD	M17 along line of stream, *Molinia* and *Sphagnum capillifolium* dominant. Slightly flushed (M6) with *Carex echinata*
32	219637	804997	M15		As TN 29	AD	
33	219616	804778	M6		*Nardus stricta, Carex echinata, Carex panicea, Carex dioica.*	AD	Peat pipe, not GWDTE (deep peat).
34	219759	804867	M6		As TN 33	AD	Linear flush
35	219553	804469	Priority species		*Juniperus communis*	AD	Juniper, small single plants
36	219781	804319	M6/M15	33/70	TN 33/TN 29	AD	
37	219746	804278	M17		As TN 26	AD	
38	219842	804157	M17		As TN 26	AD	
39	219873	804220	H10		As TN 5	AD	25x5m
40	220201	804263	M17		As TN 26	AD	M17 in a linear shape downslope
41	220281	804236	M6		As TN 33	AD	M6 valley up to hills, a large basin fed by surrounding hills with deep peat. Surrounded by rocky knolls of M15
42	220318	804307	M17		As TN 26	AD	Small, occasional patches of M17
43	220544	804175	M17/M2		TN 26 and *Sphagnum cuspidatum, Erica tetralix, and Eriophorum angustifolium*	AD	M2 bog pools, with *Sphagnum cuspidatum* in a valley with re-entrants.
44	220547	804335	H14		As TN 15	AD	5x5m of H14
45	220411	804408	M16		*Erica tetralix, Narthecium ossifragum, Sphagnum compactum, Succisa*	AD	M16

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					pratensis, Potentilla erecta, and Polygala serpyllifolium.		
46	220273	804515	M17		As TN 26	AD	M17
47	220085	804518	M15/M17	50/50	TN 29/TN26	AD	M15/M17
48	220276	805055	Peat hags			AD	Damaged peat, potential avenue for mitigation efforts
49	219656	805158	Priority species		*Juniperus communis*	AD	
50	223633	805416	H14		*Calluna vulgaris, Cladonia unicalis, Racomitrium lanuginosum*	AD	
51	223308	805504	M6/M15		*Carex echinata* and *Eriophorum angustifolium (Carex viridula, Plantago lanceolata, Linum catharticum)*	AD	Small burn with flushed edges, overspilling into grassy heath mosaic. Possibly M10 but would need a further survey in summer to confirm.
52	223395	805615	M15/M6		TN 29/TN 33	AD	
53	223598	805821	M17/M15 (M2)	70/30	*Sphagnum cuspidatum, Erica tetralix, and Eriophorum angustifolium.*	AD	With M2 bog pools
54	224046	805717	M2		*Sphagnum cuspidatum, Erica tetralix, and Eriophorum angustifolium.*	AD	M2 bog pools
55	224251	805682	S27	100	*Carex rostrata 9, V Sphagnum sp.*	AD	Swamp in open water
56	224266	805571	Peat hags			AD	Damaged peat, potential avenue for mitigation efforts
57	224409	804705	PCW		*Picea sitchensis*	AD	Young conifer plantation, recently planted
58	224156	804747	H21		As TN 16	AD	On steep north-facing slope
59	224138	804507	M6		TN 33	AD	M6
60	220957	803911	M17		As TN 26 with *Carex nigra and Molinia caerulea*	AD	M17
61	221218	803978	M3		*Eriophorum angustifolium*	AD	M3 bog pool
62	221266	804046	M3		As TN 61	AD	M3 bog pool
63	221311	804118	U5		*Nardus stricta, Lotus corniculatus, Potentilla erecta, Carex nigra,*	AD	U5 in patches along small burn among M15;

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
					Pleurozium schreberi, Polytrichum commune		preferentially grazed
64	221402	804178	U5/M6		As TN 33 with *Juncus effusus, Sphagnum papillosum*	AD	U5/M6
65	221130	804510	H21/H10/ U5		TN 16/TN 5	AD	H21, with H10 on opposite bank in a semicircle with patches of U5
66	221485	804344	H21		As TN 16	AD	H21
67	221613	804622	U4		*Galium saxatile, Rumex acetosella, Festuca ovina, Deschampsia flexuosa, Nardus stricta, Deschampsia cespitosa, Pteridium aquilina, Viola riviniana, Molinia caerulea, Carex caryophyllea.*	AD	U4 in small patches
68	221282	804734	M25		As TN 1	AD	M25
69	221257	804732	M10		As TN 4	AD	M10 flush
74	221532	804763	U4		As TN 67	AD	U4
75	221242	804771	M10		*Carex panicea, Carex viridula, Philonotis fontana, Eleocharis palustris*	AD	M10 flush
76	221276	804824	H10		As TN 5	AD	H10 on limestone outcrop below M15
77	221002	804469	CG10		As TN 25	AD	Patches of calcareous grassland beneath linear crag CG10/H10
78	220897	804425	M10		As TN 4	AD	M10 flush
79	222729	805236	M15		As TN 29	CB	M15 with some M6 flushing
80	222606	805260	M1		*As TN 8* with *Sphagnum papillosum, Eriophorum angustifolium, Molinia caerulea (Narthecium ossifragum, Juncus squarrosus, Nardus stricta)*	CB	M1 bog pool
81	222578	805226	H14		*Racomitrium lanuginosum, Calluna vulgaris, Molinia caerulea, Trichophorum germanicum, Juncus squarrosus, Sphagnum capillifolium, Pleurozium schreberi, Cladonia sp., Vaccinium myrtillus*	CB	H14 on knolls, troughs contained M17
82	222735	805275	M25		As TN 1 with *Polytrichum commune*	CB	
83	222821	805244	M16		As TN 19	CB	
84	222859	805174	M16		As TN 19	CB	
85	222832	805156	M6		*Carex echinata, Narthecium ossifragum, Sphagnum papillosum*	CB	Linear flush

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
86	222838	805128	M16/M25	60/40	TN 19 / TN 1	CB	M16/M25 60:40
87	222817	805062	M15/M17 /U4		TN 29 / TN 26 / TN 67	CB	M15/M17/H21 on banks, U4 strip close to burn
88	222949	804955	M17/M6		*Eriophorum angustifolium, Narthecium ossifragum, Calluna vulgaris, Sphagnum capillifolium, Trichophorum germanicum, Molinia caerulea, Carex echinata, Carex nigra*	CB	M17/M6
89	222829	804978	U4/M25		*Nardus stricta, Calluna vulgaris, Erica tetralix, Polytrichum commune, Pleurozium schreberi, Vaccinium myrtillus, Pteridium aquilinum, Galium saxatile, Potentilla erecta, Molinia caerulea*	CB	U4 and M25, U4 is in small patches amid larger strip of M25 habitat
90	222809	804333	M6		*C. echinata, Narthecium ossifragum, Sphagnum capillifolium*	CB	M6 flush in valley amid M25
91	222774	804306	M17		*Narthecium ossifragum, Sphagnum papillosum, Trichophorum germanicum, Eriophorum vaginatum, E. angustifolium, Erica tetralix, and S. capillifolium.*	CB	M17
92	223116	804262	U4		*Nardus stricta, Potentilla erecta, Sphagnum capillifolium, Erica tetralix, and Molinia caerulea*	CB	Very small area of U4 amid M25 fringing burn
93	223173	804141	M3		*Eriophorum angustifolium, Narthecium ossifragum, Carex nigra, Sphagnum compactum, Sphagnum capillifolium*	CB	Small network of M3 bog pools
94	223160	804032	M6/U4/H 10/M25		TN 33 / TN 67 / TN 5 / TN 1	CB	H10 on banks, U4 and M25 close to burn, M6 on edges.
95	223341	803775	M6		*Sphagnum cuspidatum, Sphagnum papillosum, Carex echinata, Sphagnum capillifolium, Juncus squarrosus*	CB	M6
96	223200	803738	U4		*Nardus stricta, Molinia caerulea, Sphagnum palustre, Polytrichum commune, Plantago lanceolata, Juncus effusus*	CB	U4
97	223061	803636	M15		As TN 29	CB	M15 on rises
98	223069	803728	M17		As TN 26	CB	
99	222736	803702	M17		As TN 26	CB	
100	222560	803652	H21		*Calluna vulgaris, Sphagnum capillifolium, Polytrichum commune, Nardus stricta, Vaccinium myrtillus, Arctpstaphylos uva-ursi, Blechnum spicant, Erica tetralix.*	CB	H21 fringes burn on hillside to the west

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
101	222529	803650	U4		As TN 67	CB	U4 close to burn, in small patches
102	222406	803682	M15/M17 (M3)		TN 29 / TN 26 / TN 93	CB	M15/M17 (M3)
103	222344	803750	U5/H21		*Nardus stricta, Lotus corniculatus, Potentilla erecta, Carex nigra, Pleurozium schreberi, Polytrichum commune, (Molinia caerulea, Erica tetralix, Calluna vulgaris)*	CB	U5 along burn, with some young self-seeded spruce
104	222355	803909	M17		As TN 26	CB	
105	222259	804276	M25		As TN 1, with *Polygala vulgaris, Potentilla erecta*	CB	Long strip of M25 on flatter areas
106	222142	804479	M6		*Carex flacca, Myrica gale, Carex echinata*	CB	M6 amid M25
107	222208	804589	M3		As TN 93	CB	M3 bog pools
108	222130	804698	M15/M6		TN 29 / TN 33	CB	Small M6 flushes amid M15
109	222367	804993	U4		As TN 67	CB	
110	222840	805335	M15/M17		TN 29 / TN 26	CB	
111	219573	804963	M6/M17	60/40	TN 33 / TN 26		
112	219503	805040	M17/M6	80/20	TN 26 / TN 33		
113	219580	804263	M17/M15	80/20	TN 26		
114	219779	804312	M15/M6	70/30	TN 29 / TN 33		
115	219832	804263	M15/M6/ M17	60/20/20	TN 29 / TN 33 / TN 26		
116	220070	804122	M6/M17	80/20	TN 33 / TN 26		
117	219833	805023	M15/M17	70/30	TN 29 / TN 26		
118	219573	804741	M15/M6	70/30	TN 29 / TN 33		
119	219732	804394	M25/M6	70/30	TN 105 / TN 33		
120	219769	804610	M17/M15	80/20	TN 26 / TN 29		
121	219962	804776	M15/M17	70/30	TN 29 / TN 26		
122	220734	804506	M15/M16 (M6/H10)	80/20	TN 29 / TN 19 (TN 33 / TN 5)		
123	220333	804830	M15/M16 (H14/H10)	50/50	TN 29 / TN 19 (TN 81 / TN 5)		Patches of W6 throughout this habitat; prostrate heather

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
124	222866	805349	M15/H10	60/40	TN 29 / TN 5		
125	220081	805126	M17/M15 /M2/M3 (M18)	75/20/5	TN 26 / TN 29 / TN 54 / TN 93 with small areas of M18 containing *E. tetralix, E. angustifolium, S. capillifolium, S. papillosum, and C. vulgaris.*		
126	223243	803973	U4/M6/M 15	20/10/1970	TN 67 / TN 33 / TN 29		
127	221027	804333	M15/M17	80/20	TN 29 / TN 26		
128	223037	803874	M15/M17 /H10	70/10/20	TN 29 / TN 26 / TN 5		
129	220961	804027	M15/M17 /M6/M19	60/30/5/5	TN 28 / TN 26 / TN 33 / TN 22		
130	223423	804310	U4/M6/H 21/H10	20/10/40/30	TN 67 / TN 33 / TN 16 / TN 5		
131	220292	804259	M6/M17/ M15	40/50/10	TN 33 / TN 26 / TN 28		
132	223427	803917	M15/M17	50/50	TN 28 / TN 26		
133	223044	804215	M15/M17 /U4	50/40/10	TN 28 / TN 26 / TN 67		
134	220246	804319	M17/M6	70/30	TN 26 / TN 33		
135	223182	804202	U4/M6/M 15	20/20/60	TN 67 / TN 33 / TN 28		
136	220326	804155	M15/M16	90/10	TN 28 / TN 19		
137	221254	805162	M15/M17	30/70	TN 28 / TN 26		
138	220211	804529	M15/M16 (M17)	75/25	TN 28 / TN 19 (TN 26)		
139	221407	804449	M17/M15	60/40	TN 26		
140	221654	803855	M15/M25	90/10	TN 28 / TN 26		
141	221787	804514	M15/M6 (U5, M10)	90/10	TN 28 / TN 33 (TN 63 / TN 4)		
142	221461	804770	M15/M25 /M6/H21 (M10, H14, H10)	60/20/10/10	TN 28 / TN 105 / TN 33 / TN 16 (TN 4 / TN 81 / TN 5)		
143	221609	804271	M15/M17	80/20	TN 28 / TN 26		
144	223673	804298	M17/M15 /M16 (M6)	60/30/10	TN 26 / TN 28 / TN 19 (TN 33)		

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
145	223359	804186	M17/M15 /M16 (M6)	60/30/10	TN 26 / TN 28 / TN 19 (TN 33)		
146	221206	804240	M15/H21/ M6 (U5)	80/10/10	TN 28 / TN 16 / TN 33 (TN 63)		
147	221391	804170	M15/H21/ M6/U5 (H10)	70/10/10/10	TN 28 / TN 16 / TN 33 / TN 63 (TN 5)		
148	221166	804583	M15/M25 /H21 (M6, M10, CG10, H10)	40/35/5/20	TN 28 / TN 105 / TN 16 (TN 33 / TN 4 / TN 25 / TN 5)		
149	221253	803826	M17/M15	70/30	TN 28 / TN 26		
150	222592	804665	M17/M15 /M25/U4/ M6	30/30/20/10/1 0	TN 26 / TN 28 / TN 105 / TN 67 / TN 33		
151	223146	804473	M15/M17	50/50	TN 28 / TN 26		
152	221363	804118	M17/M15 /M3	70/25/5	TN 26 / TN 28 / TN 93		
153	223121	805466	M15/H10	50/50	TN 28 / TN 5		
154	223718	805316	M15/H10/ H14	90/5/5	TN 28 / TN 5 / TN 81		
155	223643	805217	H21/M15/ H10 (M6)	40/40/20	TN 16 / TN 28 / TN 5 (TN 33)		
156	223760	805583	M17/M19 /M15/M6	40/30/20/10	TN 26 / TN 7 / TN 28 / TN 33		
157	223755	805846	M15/M6/ H10/H14 (M19)	70/20/5/5	TN 28 / TN 33 / TN 5 / TN 81 (TN 22)		
158	223918	805302	H21/M15/ H10 (M6)	40/40/20	TN 16 / TN 28 / TN 5 (TN 33)		
159	224195	804548	W11/H10 /M15/H21 /U20 (M6)	60/10/20/10/1 0	W11 contained *Betula pendula,* with U20 containing *Pteridium aquilinum* and *Galium saxatile*, and an understory of TN 5 / TN 28 / TN 16 (TN 33)		
160	224146	804979	M17/M15 /M16	60/20/20	TN 26 / TN 28 / TN 19		
161	224237	804702	M15/H10	90/10	TN 29 / TN 5		
162	223947	804486	M17/M15 /M16	60/20/20	TN 26 / TN 28 / TN 19		
163	223851	804152	M15/M16 /M17 (M6)	50/30/20	TN 26 / TN 19 / TN 28 (TN 33)		

Target Note	Easting	Northing	NVC Code	Code % of Habitat	Species and Abundance	Surveyor	Description
164	223641	804686	M15/M17 /M6 (M16)	75/20/5	TN 26 / TN 28 / TN 33 (TN 19)		
165	223456	804805	M17/M15 /M1	70/25/5	TN 28 / TN 26 / TN 80		
166	223347	805204	M15/M16 /M17 (M19)	80/10/10	TN 26 / TN 19 / TN 28 (TN 7)		
167	223427	804945	M15/M25 /M17/M6	80/5/10/5	TN 28 / TN 105 / TN 26 / TN 33		
168	223409	805706	M15/M6/ H14/H10	70/10/10/10	TN 26 / TN 33 / TN 81 / TN 5		
169	223403	805530	M17/M19	80/20	TN 28 / TN 7		
170	224003	805932	M15/M17 /H10 (H14)	60/30/10	TN 26 / TN 28 / TN 5 (TN 81)		
171	224623	805173	M15/M16 /M17/M6 (M19)	25/25/40/10	TN 26 / TN 19 / TN 28 / TN 33 (TN 7)		
172	224594	804896	M15/M17 /M6	70/25/5	TN 29 / TN 26 / 33		
173	224341	804601	M15/H10	90/10	TN 29 / TN 5		
174	224121	805441	M15/H10	90/10	TN 29 / TN 5		
175	224398	805020	M15/H10/ M6	70/25/5	TN 29 / TN 5		
176	224488	805486	M15/H10	90/10	TN 29 / TN 5		
177	224115	805305	M16/M15 /M17/M6	50/25/20/5	TN 19 / TN 26 / TN 28 / TN 33		
178	224313	805818	M15/H14/ H10	90/5/5	TN 26 / TN 81 / TN 7		
179	224568	805734	M17/M19 /M15/M6	60/20/10/10	TN 26 / TN 7 / TN 28 / TN 33		

Appendix D Site Photographs

Plate 1: M3 bog pool containing Eriophorum angustifolium *(TN61).*

Plate 2: H14 on slope among M15 and H10. View west from the middle of the Site.

Plate 3: CG10 habitat containing Thymus polytrichus, Carex pulicaris, Carex flacca, Agrostis capillaris, Festuca ovina *among other species. Steep hillside with rocky outcrops, possibly limestone. Wet heath M15 and dry heath H10 encroaching and nearby bracken heavily grazed by deer (TN 24).*

Plate 4: M17 habitat containing Carex nigra*,* Eriophorum vaginatum, Molina caerulea *and* Trichophorum germanicum *in the southwest part of the Site (TN 60).*

Plate 5: M6 flush containing Carex echinata *located towards a cleuch at the south edge of Site (TN 59).*

Plate 6: In the foreground, W11 Betula pendula *woodland. In the background, recently planted Sitka spruce plantation. Situated on hillside north of cleuch at the south edge of the Site (TN 57).*

Plate 7: Small patches of U5 grassland 500m south of proposed access track.

Plate 8: W11 birch woodland along entire length of a cleuch at the south edge of the Site (TN 159).

Plate 9: S27 pool containing Carex rostrata *and* Sphagnum cuspidatum *(TN 55).*

Plate 10: Peat hags beneath wind turbines towards the east part of the Site. Potential target area for restoration efforts (TN 48).

Plate 11: M25 habitat with Molinia caerulea, Calluna vulgaris, Myrica gale, Potentilla erecta *(TN 1).*

Plate 12: M15 habitat containing Erica tetralix, and Trichophorum germanicum *(TN 3).*

Plate 13: M10 habitat containing Narthecium ossifragum, Juncus bulbosus*, and* Erica tetralix *(TN 4).*

Plate 14: H10 habitat containing Erica cinerea, Calluna vulgaris, Racomitrium lanuginosum, Blechnum spicant *(TN 5).*

Plate 15: H21 habitat containing Sphagnum capillifolium, Vaccinium myrtillus, Calluna vulgaris, Blechnum spicant *(TN 6).*

Plate 16: M19 habitat containing Sphagnum papillosum *(TN 7).*

Plate 17: M1 habitat containing Eriophorum angustifolium, Sphagnum cuspidatum, *and* Sphagnum denticulatum *(TN 8).*

Plate 18: U4 habitat containing Galium saxatile, Lotus corniculatus*, yellow waxcap (Hygrocybe chlorophana) (TN 9).*

Plate 19: W18 habitat consisting of Betula pendula, Pinus silvestrus, Sorbus aucuparia, *and* Salix cinerea. *Field layer of* Vaccinium myrtillus *and* Luzula sp*. (TN 10).*

Plate 20: H13 prostrate habitat containing Calluna vulgaris, Empetrum nigrum, Vaccinium sp., Racomitrium sp.*, and* Cladonia sp. *(TN 11).*

Plate 21: M19 habitat with M1 bog pools throughout. Grid ref: NH 24389 05817 (TN 12).

Plate 22: M2 containing Carex rostrata *with A10 within the standing water (TN 121).*

Plate 23: M16 habitat containing Narthecium ossifragum *at GR NH 25033 05115 (TN 14).*

Appendix E Species List

Scientific Name	Common Name	Scientific Name	Common Name
Agrostis capillaris	Common Bent	*Deschampsia flexuosa*	Wavy Hair-grass
Antennaria dioica	Mountain Everlasting	*Diphasiastrum alpinum*	Alpine Clubmoss
Anthoxanthum odoratum	Sweet Vernal Grass	*Eleocharis palustris*	Common Spike-rush
Arctostaphylos alpinus	Alpine Bearberry	*Empetrum nigrum hermaphroditum*	Black Crowberry
Arctostaphylos uva-ursi	Bearberry	*Empetrum nigrum subsp. nigrum*	Black Crowberry
Betula pendula	Silver Birch	*Erica cinerea*	Bell Heather
Blechnum spicant	Hard Fern	*Erica tetralix*	Cross-leaved Heath
Calluna vulgaris	Heather	*Eriophorum angustifolium*	Common Cottongrass
Carex biglowii	Bigelow's Sedge	*Eriophorum vaginatum*	Hare's-tail Cottongrass
Carex caryophyllea	Spring Sedge	*Festuca ovina*	Sheep's Fescue
Carex dioica	Dioecious Sedge	*Festuca vivipara*	Viviparous Fescue
Carex echinata	Star Sedge	*Galium saxatile*	Heath Bedstraw
Carex flacca	Glaucous Sedge	*Huperzia selago*	Fir Clubmoss
Carex nigra	Common Sedge	*Hygrocybe chlorophana*	Golden Waxcap
Carex panicea	Carnation Sedge	*Hylocomium splendens*	Glittering Wood-moss
Carex pulicaris	Flea Sedge	*Juncus bulbosus*	Bulbous Rush
Carex rostrata	Bottle Sedge	*Juncus effusus*	Soft Rush
Carex viridula	Green Sedge	*Juncus squarrosus*	Heath Rush
Cladonia arbuscula	Branched Cladonia Lichen	*Juniperis communis nana*	Dwarf Juniper
Cladonia bellidiflora	Red-fruited Pixie Cup Lichen	*Linum catharticum*	Fairy Flax
Cladonia impexa	Reindeer Lichen	*Lotus corniculatus*	Bird's-foot Trefoil
Cladonia portentosa	Reindeer Lichen	*Luzula campestris*	Field Wood-rush
Cladonia unicialis	Antler Lichen	*Molinia caerulea*	Purple Moor-grass
Danthonia decumbens	Heath Grass	*Myrica gale*	Bog Myrtle
Deschampsia cespitosa	Tufted Hair-grass	*Nardus stricta*	Mat-grass

Scientific Name	Common Name	Scientific Name	Common Name
Narthecium ossifragum	Bog Asphodel	*Racomitrium lanuginosum*	Woolly Fringe-moss
Pedicularis palustris	Marsh Lousewort	*Rhytidiadelphus loreus*	Little Shaggy-moss
Philonotis fontana	Fountain Feather-moss	*Rumex acetosella*	Sheep's Sorrel
Picea sitchensis	Sitka Spruce	*Salix cinerea*	Grey Willow
Pinus silvestrus	Scots Pine	*Sorbus aucuparia*	Rowan
Plantago lanceolata	Ribwort Plantain	*Sphagnum capillifolium*	Red Bog-moss
Pleurozia purpurea	Purple Spoonwort	*Sphagnum compactum*	Compact Bog-moss
Pleurozium purpurella	A Type of Moss	*Sphagnum cuspidatum*	Feathery Bog-moss
Pleurozium schreberi	Red-stemmed Feather-moss	*Sphagnum denticulatum*	Cow-horn Bog-moss
Polygonum amphibium	Amphibious Bistort	*Sphagnum palustre*	Blunt-leaved Bog-moss
Polygala serpyllifolium	Heath Milkwort	*Sphagnum papillosum*	Papillose Bog-moss
Polygala vulgaris	Common Milkwort	*Sphagnum pulchrum*	Beautiful Bog-moss
Polytrichum commune	Common Haircap Moss	*Succisa pratensis*	Devil's-bit Scabious
Polytrichum piliferum	Bristly Haircap Moss	*Thymus polytrichus*	Wild Thyme
Potentilla erecta	Tormentil	*Trichophorum germanicum*	Deergrass
Prunella vulgaris	Selfheal	*Vaccinium myrtillus*	Bilberry
Pteridium aquilinum	Bracken	*Viola riviniana*	Common Dog-violet
Ranunculus acris	Meadow Buttercup		