Carn Fearna Wind Farm Technical Appendix 8.1: Habitats and Vegetation





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1 INTRODUCTION

- 1.1.1 This Technical Appendix has been prepared to accompany **Chapter 8: Ecology**, in **Volume 2**, of the Environmental Impact Assessment (EIA) Report for Carn Fearna Wind Farm (the Proposed Development).
- 1.1.2 The objectives of this Technical Appendix are to:
 - establish the spatial distribution of habitats and vegetation communities which may be impacted by the Proposed Development;
 - identify the presence and distribution of any Annex I habitat types¹, habitats that are listed on the Scottish Biodiversity List², and/or which represent potential Groundwater Dependent Terrestrial Ecosystems³ or priority peatland⁴; and
 - record the presence of any protected or non-native plant species.
- 1.1.3 Survey methodologies and the subsequent interpretation of results in this Technical Appendix refer to key pieces of guidance, which are listed in **Section 7**.
- 1.1.4 It should be read with reference to the following figures, which are included within **Volume 3a** of the EIA Report:
 - Figure 8.1: Ecological Statutory Designated Sites for Nature Conservation.
 - Figure 8.2a: Phase 1 Habitat Survey Plan (the site).
 - Figure 8.2b: Phase 1 Habitat Survey Plan (Off-site turning circle).
 - Figure 8.3: National Vegetation Classification (NVC) Survey Plan.
 - Figure 8.4: Peatland Condition Assessment.
- 1.1.5 Common species names are used throughout the text of this Technical Appendix. The only exception is where species are stated in the name of NVC communities and in the NVC data in **Annex 2**. The corresponding scientific names for all listed species are supplied in **Annex 5**.

1.2 Site Overview

- 1.2.1 The land identified for the Proposed Development ('the site') is located on the land at Carn Fearna, near Garve, in Ross shire, Highlands.
- 1.2.2 The site is upland in nature and comprises a mosaic of boggy, rough pasture, moorland with some heather, some early-stage woodland regeneration and some limited semi-mature forestry plantation. Mixed livestock grazing within the site has resulted in a mixture of sward lengths.

¹ The Habitats Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora). As per guidance JNCC (2019).

² Habitats of principal importance for biodiversity conservation in Scotland (NatureScot, 2020).

³ As per guidance from Scottish Environment Protection Agency (2017).

⁴ As per guidance from NatureScot (2023).

2 METHODOLOGY

2.1 Desk Study

2.1.1 A desk study was undertaken to identify the proximity of the site to any designated sites for nature conservation with habitat or botanical qualifying interest. This used publicly available datasets as well as consultation with the relevant Biological Records Centre (**Table 2.1**).

Table 2:1. Ke	y desk study	y sources and the in	formation obtained.

Key Source	Date of Consultation	Information Sought	Search Area
NatureScot's Sitelink	November 2024	Statutory designated sites, with habitats and/or botanical interests.	Within 10 km of the site
Highland Biological Recording Group (HBRG)	April 2023	Existing records of protected and notable species (lower plants).	Within 2 km of the site.

2.2 Field Surveys

- 2.2.1 Field surveys were conducted between 2023 and 2024 in accordance with standard methodologies (see **Table 2.2**):
 - A Phase 1 habitat survey and NVC survey was undertaken by M. Wood during August 2023. The survey area included all land within the site, and a 250 m buffer around the periphery of the site.
 - A peatland condition assessment was undertaken by J. Morton in July 2024. This survey covered all plant communities defined as priority peatland within the site and buffer zone, as per guidance from NatureScot (2023), which in this case constituted M15 wet heath, M17 and M19 blanket bog, and M20 and M25 mire. A check and update of the NVC survey data was also conducted at the same time.
 - A Phase 1 habitat survey was also conducted of land adjacent to the A835 road at Inchbae Lodge, which is west of the site, for use as an area where abnormal indivisible load vehicles can turn and access the site from the north. This land has been referred to in this Technical Appendix as the 'Off-site turning circle'. The survey was undertaken by J. Morton in July 2024.
- 2.2.2 All field personnel are competent ecologists and botanists, with considerable experience of undertaking these methodologies across numerous comparable sites in Scotland.
- 2.2.3 The NVC survey data were reviewed by C. Dean, a competent botanist with experience of undertaking and analysing NVC surveys.

Limitations

2.2.4 All parts of the site (and buffer) and Off-site turning circle were accessible, so no limitations were identified.

2.2.5 The desk study records were gathered based on an original (reduced) site boundary. Given the final site boundary has only modestly altered from the original boundary, the desk study results are considered robust and have identified records of relevant botanical species that may be present at the locality to supplement the field surveys.

Survey Type	Brief Description	Key Outcomes	Guidance
Phase 1 Habitat	Habitat types are classified based on vegetation, observable hydrology, topography, and land use. Small features of interest are recorded and mapped using 'target notes'. The survey can be extended to also record signs of the presence, or potential presence, of protected species (e.g. mammals) including the presence of habitat types that might provide suitable breeding or refuge areas.	A broad overview of the habitat types occurring within an area and their extent. Corresponding to priority habitats listed on the Scottish Biodiversity List. Identify the presence or potential presence of species listed on Schedules 8 and 9 of the Wildlife and Countryside Act (1981) and/or the Scottish Biodiversity List.	Handbook for Phase 1 habitat survey – a technique for environmental audit (JNCC, 2010)
National Vegetation Classification (NVC)	Data are collected on the identity and abundance of all plant species present within 2 m ² quadrats, which are distributed throughout homogenous stands. These data are then analysed, and each homogenous stand is classified to an NVC vegetation community.	Providing a finer level of detail than provided by Phase 1 habitat survey. Specific NVC communities signify possible Annex I habitats, Priority Peatland, and/or Groundwater Dependent Terrestrial Ecosystems (GWDTE).	National Vegetation Community Users' Handbook (Rodwell, 2006) British Plant Communities (JNCC, 1991a, b and 1992) MAVIS Plot Analyser (2016)
Peatland Condition Assessment	Bog communities signifying priority peatland are assessed on whether they have features (specific vegetation, absence of disturbance) which are indicators of being high quality and in a near-natural condition. The survey is restricted to plant communities that are classed as blanket bog, or than can be classed as blanket bog when occurring on deep peat.	To assess whether the identified 'Priority Peatland habitats' are of possible national interest.	Advising on peatland, carbon-rich soils and priority peatland habitats in development management (NatureScot, 2023). Guidelines for the selection of biological SSSIS – 8 Bogs (JNCC, 1994).

Fable 2:2. Descriptions of the s	urvey methodologies	used for this report.
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3 RESULTS

3.1 Desk Study

Statutory Designated Sites for Nature Conservation

3.1.1 The site itself does not form a part of any internationally or nationally designated site for nature conservation. However, there are eight statutory designated sites with qualifying habitat and/or botanical interest within 10 km of the site (**Table 3.1** and **Figure 8.1**).

Table 3:1. Statutory designated sites with habitat and/or botanical qualifying features located within 10km of the Site.

Designated Site	Designation(s)	Distance / Orientation	Qualifying Botanical and/or Habitat Interest
Nationally Designated Site	S		
Ben Wyvis	SSSI SAC NNR	1.35 km, north-east	Habitats: blanket bog, upland assemblage, dystrophic and oligotrophic lochs.
			Botanical: "a diverse upland plant assemblage supporting approximately 50 nationally scarce species including flowering plants, lichens and mosses"
Conon Islands	SAC	5.94 km, south- east	Habitat: Alder woodland on floodplains.
Lower River Conon	SSSI	5.94 km, south- east	Habitats: Wet woodland, open water transition fen (includes swamp), saltmarsh.
Loch Ussie	SSSI SAC	6.64 km, south- east	Habitats: Oligo-mesotrophic loch, upland oak woodland.
Allt nan Caorach	SSSI	9.02 km, north-east	Habitats: subalpine dry heath, upland birch woodland

Ramsar Site: Wetland of International Importance, SAC = Special Area of Conservation, SSSI = Site of Special Scientific Interest, NNR = National Nature Reserve.

Non-statutory Designated Sites for Nature Conservation

- 3.1.2 Consultation with HBRG indicated that the site does not form part of any non-statutory designated site for nature conservation and no such sites were found to be located within 2 km of the site.
- 3.1.3 A review of NatureScot's Open Data Geoportal identified that part of the site is located within the Transitional Zone of the Wester Ross Biosphere Reserve, which is recognised as an internationally world class environment for people and nature. The Wester Ross Biosphere Reserve, which overlaps

with the north-western area of the site, is known to include mountains, forests, waterfalls, seascapes and lochs⁵.

Priority Habitats

- 3.1.4 No information on priority habitats was returned by the HBRG data search.
- 3.1.5 An area of long-established (of plantation origin) woodland, as listed on Scotland's Environment Map (ancient woodland inventory), is present within the site; this area of woodland overlaps with a small area of the site, towards the south-west.

Botanical Records

Protected Species

3.1.6 The HBRG data search returned seven records of locally notable bryophyte species within 2 km of the site. This included a record of green shield-moss, which was found growing on fallen alder branches in woodland located between Garve and Loch Garve (NH 4034 6084). This moss is a protected species, listed on Schedule 8 of the Wildlife and Countryside Act (1981), and is on the Scottish Biodiversity List.

Non-Native Invasive Species

3.1.7 No records of non-native invasive plant species were returned by the data search.

3.2 Field Surveys

The Site

- 3.2.1 These results should be read with reference to:
 - Figure 8.2a: Phase 1 Habitat Survey (the site).
 - Figure 8.3: NVC Survey.
- 3.2.2 Phase 1 Target Notes are detailed in **Table A1.1** in **Annex 1** and corresponding photographs are presented in **Annex 4**, **Photos 6 14**. Full NVC survey data are presented in **Annex 2**.
- 3.2.3 The surveys recorded the following 18 Phase 1 habitats on the site, with the following listed NVC communities classified:
 - A1.1.1 Broad-leaved woodland semi-natural: W4.
 - A1.2.2 Coniferous woodland plantation.
 - A2 Scrub.
 - A4 Recently felled woodland.
 - B1.1 Acid grassland unimproved: U4a.
 - B5 Marshy grassland: M23b.
 - C1 Bracken: U20.
 - D1 Dry heath: H10, H12a, H17.
 - D2 Wet heath: M15b/c.
 - D5 Dry heath / acid grassland: H12a/U4a.
 - D6 Wet heath / acid grassland: M15b/U4a.
 - E1.6.1 Blanket bog: M17, M19.

⁵ https://www.wrb.scot/why-wester-ross (accessed November 2023).

- E1.7 Wet modified bog: M20, M25.
- E2.1 Flush acid: M6c.
- F1 Swamp: S9a.
- G1.4 Standing water dystrophic.
- G2.4 Running water dystrophic.
- J3 Built-up areas.

A1.1.1 Broad-leaved Woodland – semi-natural

3.2.4 <u>W4 Betula pubescens - Molinia caerulea woodland</u>: This woodland community is found around much of the lower slopes on the periphery of the site, particularly in the west and south, on sloping ground where the terrain is a bit drier. The trees are dominated by downy and silver birch, rowan, hazel, and occasional eared willow and sessile oak. The mature woodland height varies between 8 m and 15 m in height. There are also a few areas of naturally regenerating birch around the site's edges. The woodland has a quite open structure, allowing a mix of bracken, purple moorgrass tussocks, and/or acid grassland-like communities to occur as an understory.

A1.2.2 Coniferous Plantation

3.2.5 This habitat is found within the site buffer and is a mix of planted Scots pine, lodgepole pine and Sitka spruce. There are also a few shelter belt areas in the north-west of the site which are composed of Sitka spruce. The trees in these areas are between 15 m and 20 m in height. The understory below the Sitkas is covered only with dead needles, whereas grasses and ericoid sub-shrubs occur beneath the more open Scots pine areas.

A2 Scrub

3.2.6 There is a little natural regenerating birch scrub, and also some planted areas of mostly birch, rowan, alder, and Scots pine. This scrub habitat is found growing within a mix of bog, wet heath and dry heath, mostly in the buffer zone and peripheries of the site.

A4 Recently Felled Woodland

3.2.7 There is one area of clear-fell (coniferous plantation) in the north-west buffer zone. Some dry heath and acid grassland habitat is returning to the clear-fell area.

B1.1 Acid Grassland – unimproved

3.2.8 <u>U4 Festuca ovina - Agrostis capillaris grassland (U4a typical sub-community</u>): This acid grassland is found in scattered patches across much of the site, especially the higher areas on shallow, well-drained soil, on sloping to steep ground. It generally occurs in a mosaic with adjacent areas of dry heath, wet heath, and bracken. Grazing pressure from wild deer and sheep appears reasonably high. The community is dominated by a mix of grasses such as common bent, sheep's fescue, and sweet vernal-grass with occasional heath-grass and mat-grass. Forbs are represented by tormentil, heath bedstraw, with regular heath wood-rush and numerous mosses, mostly springy turf-moss.

B5 Marshy Grassland

3.2.9 <u>M23 Juncus effusus - Galium palustre rush pasture (M23b Juncus effusus sub-community)</u>: This marshy grassland community is scarce on the site. It occurs only in the north-west corner, on somewhat damp lower areas of terrain, within acid grassland used for grazing livestock. The community is dominated by large dense tussocks of soft rush with some Yorkshire fog and forbs like creeping buttercup, marsh thistle, marsh willowherb, marsh bedstraw, and common sorrel.

C1 Bracken

3.2.10 <u>U20 Aquilinum pteridium - Galium saxatile community</u>: This community is widespread on the lower slopes of the site where it occurs on well-drained soils on steep or sloping ground. It often forms a mosaic with adjacent areas of acid grassland and dry heath, or within woodland. The vegetation is dominated by tall dense stands of bracken with little else. The understory in some parts can resemble acid grassland with sheep's fescue often occurring with heath bedstraw and heath dog violet.

D1 Dry Heath

- 3.2.11 <u>H10 Calluna vulgaris Erica cinerea heath</u>: This dry heath community is found scattered around the site on very steep slopes on very shallow, well-drained soil. It usually occurs in a mosaic with adjacent areas of H12a dry heath and sometimes acid grassland. The vegetation is dominated by ericoid sub-shrubs, mainly a mix of bell heather and common heather, with lesser amounts of bilberry. Sparse grasses include common bent and purple moorgrass, and forbs are represented by tormentil with occasional devil's-bit scabious.
- 3.2.12 <u>H12 Calluna vulgaris Vaccinium myrtillus heath (H12a Calluna vulgaris sub-community</u>): This dry heath community is quite widespread across the site, found on areas of shallow, well drained peat and soils often on sloping or steep terrain. It often forms a mosaic with adjacent areas of H10 dry heath, wet heath, and acid grassland. Grazing seems fairly light in most places, with the shrubs being reasonably bushy. The vegetation is dominated by common heather with an understory of hypnoid mosses such as red-stemmed feather-moss. Bilberry is sparse but constant, with some heath rush and occasional hard fern and reindeer lichen.
- 3.2.13 There are also scattered locations in the centre of the site and in the eastern buffer zone that occur as a mixture of H12a heath and U4a grassland and as such have been mapped as 'D5 dry heath / acid grassland mosaic'.
- 3.2.14 <u>H17 Calluna vulgaris Arctosaphylos alpinus heath</u>: This heathland community is found on the highest parts of the site in the north-east, around the summit of Little Wyvis. It occurs on very shallow peat and where the terrain is most exposed to strong winds, keeping the vegetation very short. The ground here is very dry and appears moderately grazed. The vegetation is characterised by short common heather with a lesser amount of crowberry, bilberry, cowberry, and alpine bearberry. Reindeer lichen and woolly fringe-moss are also both often abundant with Bigelow's sedge occurring regularly.

D2 Wet Heath

- 3.2.15 <u>M15 Tricophorum germanicum Erica tetralix wet heath</u>: This community is abundant across the site on shallower peat but in damper and less well drained areas compared to the dry heath. It often forms a mosaic with dry heath as well as blanket bog and acid grassland. Grazing pressure seems to be of light to medium intensity. Two sub-communities were recorded:
- 3.2.16 <u>M15b Typical sub-community</u>: This occurs on both sloping and flat terrain. The vegetation is dominated by purple moorgrass, with some common heather and cross-leaved heath. Tormentil is common, and common cottongrass and bog asphodel occur regularly.
- 3.2.17 <u>M15c Cladonia sub-community:</u> This is predominantly found on exposed hill tops, on shallower peat than M15b. The vegetation is dominated by tussocks of deergrass, common heather, and some cross-leaved heath. There is a dense understory of reindeer lichen with occasional woolly fringe-moss, heath rush, acute-leaved bog-moss, and heath plait-moss.
- 3.2.18 There are two small areas in the east of the site that are a mixture of M15b heath and U4a grassland and so have been mapped as '*D6 wet heath / acid grassland*'.

E1.6.1 Blanket Bog

- 3.2.19 <u>M17 Tricophorum germanicum Eriophorum vaginatum mire</u>: This blanket bog community is found in scattered localities across the site, in areas where deep, wet peat sits on level ground, surrounded by slopes containing larger amounts of M19 blanket bog. Grazing appears moderate. The vegetation is dominated by deergrass and common heather, with cross-leaved heath, common and hare's-tail cottongrass. Bog-mosses are regular, mostly acute-leaved and papillose, and most areas have a high abundance of reindeer lichen.
- 3.2.20 <u>M19 Calluna vulgaris Eriophorum vaginatum mire</u>: This blanket bog community is widespread across the site, including on the higher ground in the north-east, and occurs on deep peat on flat or gently sloping terrain. It mosaics and transitions with adjacent areas of M17 blanket bog and areas of wet heath. The bog surface is quite dry and there is limited grazing. The vegetation is dominated by a mix of common heather and hare's-tail cottongrass with lesser amounts of cross-leaved heath and some acute-leaved bog-moss. Reindeer lichen is also regular as well as some hypnoid mosses like red-stemmed feather-moss. Crowberry, cranberry, cloudberry, and round-leaved sundew occur occasionally.
- 3.2.21 Areas of this community in the west of the site correspond to the <u>M19a Erica tetralix sub-community</u>, but much of the M19 community on the site does not fall neatly within one of the M19 sub-community categories.
- 3.2.22 Some of the M19 blanket bog on the site occurs at over 600 m above sea level and can therefore be classed as montane bog. This is discussed in more detail in **Section 5**.

E1.7 Wet Modified Bog

- 3.2.23 <u>M20 Eriophorum vaginatum blanket and raised mire</u>: This community occurs in only one small area on the site. It represents a modified form of blanket bog, with abundant wavy hairgrass growing among tussocks of hare's-tail cottongrass. There are runnels in between the tussocks which are somewhat wet (or flushed) where some flat-topped bog-moss and common haircap is present. The area is adjacent to wet and dry heaths on shallow peat, as well as bracken and significant areas of encroachment from young birch trees.
- 3.2.24 <u>M25 Molinia caerulea Potentilla erecta mire</u>: There is one small homogenous stand of this community on the site, which appears to have been derived from blanket bog, but has become degraded likely due to drainage, grazing and potentially burning. The vegetation is dominated by purple moorgrass tussocks, with scattered hare'-tail and common cottongrasses, cross-leaved heath and common heather. The peat is dry, and bog-mosses appear to be absent.
- 3.2.25 In addition, this community occurs in one mosaic with M15b wet heath on a moderate slope. This slope has multiple artificial drains, and the M25 tends to occupy the areas adjacent to the drains where the peat is drier. Some bog/heath associates are found but overall, the community is species-poor, purple moorgrass litter is abundant between the tussocks and bog-mosses appear absent.

E2.1 Flush – acid

3.2.26 <u>M6 Carex echinata - Sphagnum fallax mire (M6c Juncus effusus sub-community)</u>: This flush community is located in a few small pockets in the centre of the site, on sloping terrain where there is some lateral movement of water. The soil is of variable depth, but always damp to wet. The community transitions into adjacent areas of bog and wet heath and grazing appears limited. The community is dominated by soft rush, with an understory of mosses such as blunt-leaved and flat-topped bog-mosses, and common haircap. A few other species such as star sedge, marsh violet, and chickweed-wintergreen also occur.

F1 Swamp

3.2.27 <u>S9a Carex rostrata swamp (Carex rostrata sub-community</u>): This swamp community is found around the edges of a loch in the centre-south of the site, and in smaller amounts on a few of the other lochs around the site. It consists almost entirely of bottle sedge which is growing marginally and as an emergent within the shallow edges of the loch. There is some bog pondweed floating beneath it in the water.

<u>G1.4 Standing Water – dystrophic</u>

3.2.28 There are four lochs and a couple of ponds within the site, these are of varying size and depth and are detailed in the target notes (**Table A1.1**, **Annex 1**). Generally, they contain heavily peat-stained water with minimal vegetation growing within or around the edges. Some have emergent bottle sedge, some floating bog pondweed and eared willow and birch around the edges.

G2.4 Running Water - dystrophic

3.2.29 There are many small streams and a couple of larger watercourses across the site. These are generally fast flowing, rock or pebble based, with clear to heavily peat-stained water. Individual water courses are detailed in the target notes (**Table A1.1**, **Annex 1**).

J3 Built-Up Areas

3.2.30 There are some large sheds made of metal sheet panelling near to the site entrance in the north-west corner of these site, which are in use, and some occupied homes within the site boundary. These are detached buildings with sloping tiled or metal roofs.

Protected Species

- 3.2.31 The surveys did not find any plant species that are listed under Schedule 8 of the Wildlife and Countryside Act 1981, or on the Scottish Biodiversity List, as having special protected status.
- 3.2.32 The peatland condition survey noted dwarf birch growing on some of the higher altitude blanket bog, which is a species listed as 'scarce' in Great Britain (BSBI, 2009).

Non-Native Invasive Species

3.2.33 The surveys found Some rhododendron that has begun to self-generate on parts of the bog surface on the site. This species listed under Schedule 9 of the Wildlife and Countryside Act 1981.

Peatland Condition Assessment

- 3.2.34 Figure 8.4 shows a map of the areas on the site which are defined as priority peatland, and photographs in Annex 4, Photo 21 32, show some of the features discussed in the condition notes summarised below. The full Peatland Condition Assessment results are presented in Annex 3.
- 3.2.35 The survey identified 18 instances of priority peatland communities on the site where their condition indicates blanket bog where any impacts from development would be of possible national interest. These were:
 - Three areas of M17 blanket bog.
 - Fifteen areas of M19 blanket bog, including three areas of montane bog.

- 3.2.36 A further four areas of M15b and three areas of M15c wet heath were found to be in good condition, with comparatively few signs of disturbance or modification, but have not been considered as of possible national interest because they have a shallower peat layer (<50cm) at the surface⁶.
- 3.2.37 Overall, there are widespread signs of modification and degradation of the priority peatland communities across the site, demonstrated by peat erosion features and drying out of the bog surface. The survey notes point to artificial drainage, high levels of grazing and burning as contributing factors to this degradation. Some erosion features appear to be revegetating and contain abundant bogmosses or other bog indicator species.
- 3.2.38 There also remains some areas of much better condition bog on the site, where there are fewer signs of degradation, the peat is moist and there is a higher abundance of peat-forming species. Importantly, some areas of the M19 blanket bog were also identified as montane bog due to their altitude and character.
- 3.2.39 Small bog pool features were found during the peatland condition assessment and Phase 1 survey, the locations of which are listed below:
 - NH 42769 61198.
 - NH42883 61857.
 - NH 42057 62337.
 - NH 43469 62475.
 - NH 43603 63031.
 - NH 44101 62347.
 - NH 42444 62900.

Condition Notes

M15b Wet Heath

- 3.2.40 Some stands in the east of the site, which mosaic with areas of blanket bog on deeper peat, are in relatively good condition with few signs of erosion. The peat is moist and there is an array of peat-forming species including bog-mosses.
- 3.2.41 However, the majority of stands of M15b are clearly modified. Burning, grazing and trampling have reduced dwarf-shrub cover in some stands, leading to a relative dominance of deergrass, there are signs of peat micro-erosion, and a scarcity of bog-mosses. Other stands have become dry likely as a result of proximity to artificial drains or hagg/gully systems. Here again, bog-mosses are scarce, occurring underneath a dry and dense field layer of primarily common heather and purple moorgrass.
- 3.2.42 Occasionally, and primarily on the western slopes, M15b contains more bog associates than would be expected, tending towards M19 vegetation, but on shallow peat.

M15c Wet Heath

3.2.43 Grazing, burning and trampling have had a negative impact on this habitat. Hoof-prints from deer are often visible in the peat, and deergrass often dominates, with dwarf shrubs lower in abundance than would be expected. Bog-mosses are scarce if present at all, and bare peat is visible among the vegetation.

M17 Blanket Bog

⁶ Thus are only classified as 'peaty' not 'peat', as per NatureScot (2023) guidance.

- 3.2.44 Towards the south-west of the site the bog has been extensively drained, and the peat surface is essentially dry, bog-mosses are greatly reduced in cover and there are patches of bare peat visible. The drains themselves are often wet and filled with bog-mosses, demonstrating a lowered water table compared with the surrounding bog surface.
- 3.2.45 Elsewhere, this community is drained by hag systems. There is a clear difference between the main bog surface and the wet erosion channels, which often resemble M1/2/3 bog pool communities. These hag systems resemble the artificially drained areas.
- 3.2.46 There are some areas of M17 that appear to be in a more intact state. These areas are modified, and do not show the natural surface pattern of hummocks and hollows, but they do contain a much healthier assortment of bog-mosses (primarily lawns of papillose and acute-leaved) on peat that remains wet, with no obvious drainage features nearby or evidence of erosion.
- 3.2.47 There are other areas of M17 which do not show natural surface patterning and there is some conifer seedling encroachment, but the wet peat supports a reasonable degree of bog-moss cover (notably papillose and acute-leaved) and there are no obvious drainage or erosion features. Resultantly, such areas have been assessed as being of possible national importance.

M19 Blanket Bog

- 3.2.48 The majority of M19 bog on the site is modified to some extent, with areas that are hagged and/or artificially drained. Bog-mosses are restricted to hummocks of acute-leaved bog-moss and very occasional lustrous bog-moss. Grazing and burning have likely impacted this habitat further, with a reduction in ericoids in some stands, along with some micro-erosion. This habitat is often impacted further by the encroachment of exotic conifer saplings from nearby forestry (some Scots pine also), self-sown birch saplings, and rhododendron.
- 3.2.49 Additionally, this habitat appears to be drained in places by the vehicle tracks on-site. In these areas a relatively dry, modified peat surface meets an abrupt stop where it has been cut through for track access, creating a flushed bank with much acute-leaved and flat-topped bog-mosses, but acting as a drain on the main bog surface.
- 3.2.50 Many of the drainage features in these areas are wet and revegetating, with similarities to M1/2/3 bog pool communities; the lowered water table is apparent, and the primary bog surface is modified, but these areas contain a much higher abundance of bog-mosses.
- 3.2.51 Away from the drainage/erosion features, there are some areas which remain moist, with a more natural surface pattern, no exposed peat, and an improved abundance and diversity of peat-building species. These areas are difficult to fully quantify due to the mosaiced occurrence of M19 bog, however a number of areas of M19 with possible national interest have been identified.

M19 Montane Blanket Bog

- 3.2.52 Three stands of M19 have been identified as montane bog due to their altitude, occurring at over 600m above sea level, and based on their overall character.
- 3.2.53 These areas are invariably hagged, often extensively, and as such the water table is lower and the peat surface rather dry. Bog-mosses are restricted to occasional isolated hummocks of acute-leaved bog-moss, and more rarely rusty bog-moss. Woolly fringe-moss is common, as are reindeer lichens. Dwarf birch also occurs here. These areas have however been assessed as being of potential national importance, despite the modifying factors described above, because of their classification as montane and because of the presence of indicator species (dwarf birch, rusty bog-moss).

- 3.2.54 As with the M19 elsewhere on the site, hags are in various stages of revegetation, with some lower wetter features containing abundant bog mosses. Some wet erosion features resemble M1 bog pools with cow-horn bog-moss, and some are largely bare peat with common cottongrass (M3 bog pool).
- 3.2.55 Some stands of M19 at lower elevations (400 m 600 m) share a certain montane character, with dwarf birch, cloudberry and other associated species, but these have not been categorised as montane due to not meeting the altitude threshold.

Off-Site Turning Circle

- 3.2.56 These results should be read with reference to Figure 8.2b: Phase 1 Habitat Survey (Off-site turning circle).
- 3.2.57 Phase 1 Target Notes are detailed in **Table A1.2** in **Annex 1** and corresponding photographs are presented in **Annex 4**, **Photos 15 20**.
- 3.2.58 The Phase 1 survey of the Off-site turning circle recorded nine habitats. These are:
 - A1.1.1 Broadleaved woodland semi-natural.
 - A3 Parkland and scattered trees.
 - B1.2 Acid grassland semi-improved.
 - B2.2 Neutral grassland semi-improved.
 - B4 Improved grassland.
 - B5 Marshy grassland.
 - C3.1 Tall ruderal.
 - G2 Running water.
 - I1.4 Other exposure.

A1.1.1 Broadleaved Woodland – semi-natural

- 3.2.59 Semi-natural broad-leaved woodland occurs to the west of the field boundary, fringing the river Black Water. The canopy is dominated by birch, with alder, rowan and scarce grey willow. The field layer contains grasses such as creeping soft-grass, red fescue, sweet vernal grass, and occasional tufted hairgrass tussocks on moister ground. Forbs include common dog violet, wood sorrel and harebell, and bryophytes such as springy turf-moss. In rocker areas there is a notable quantity of hard fern, with some boulders covered by swan's-neck thyme-moss and plait-moss.
- 3.2.60 On the southern edge is an area of woodland which is more fragmented and accessible to grazing animals and consists of stands of alder, with extensive common nettle and some tufted hairgrass forming an understorey. Some water mint occurs here as isolated examples.

A3 Parkland and Scattered Trees

3.2.61 A cluster of predominantly mature beech trees occur within the field of improved grassland. There is no woodland field layer below the trees, just the improved grassland, and an area of poached ground where sheep have clearly used the base of the trees for shelter.

B1.2 Acid Grassland – semi-improved

3.2.62 This habitat occurs on the land within the Off-site turning circle area, on thinner and reasonably dry soils, generally on sloping ground around some of the field margins and on a small slope within the field itself. It is likely to reflect the original soils of the area. A mixed grass sward consists of sweet vernal-grass, common bent, red fescue, perennial ryegrass and crested dog's-tail, reflecting the

somewhat improved nature of these stands. Forbs consist of heath bedstraw and harebell, along with ribwort plantain, creeping buttercup and dandelion. There is also occasional soft rush (in small depressions), common nettle and yarrow. The bryophyte layer is not well-developed but there is some springy turf-moss. This habitat is grazed, although seemingly less preferentially so than the adjacent improved grassland.

B2.2 Neutral Grassland – semi-improved

3.2.63 This habitat occurs as very narrow strips within the Off-site turning circle area, adjacent to the A835 and appears to be more neutral in character than the nearby semi-improved acid grassland, despite a similar mix of grasses. Bird's-foot trefoil, creeping buttercup, tufted vetch, broadleaf plantain, silverweed, yarrow and self-heal were also recorded here, reflecting a certain level of disturbance which may be explained by the roadside position of this habitat. Grazing appears low, but these verges appear to be mown, with some sections kept very short.

B4 Modified Grassland

3.2.64 The majority of the Off-site turning circle land area is made up of this habitat, which is species-poor and actively grazed. The sward is dominated by perennial ryegrass and crested dog's-tail, with some occasional Yorkshire fog and common bent. Occasionally the sward is dotted with examples of creeping thistle, common nettle, bitter dock and soft rush. Forbs are generally scarce, but include white clover, creeping and meadow buttercups, dandelion and occasional lesser stitchwort. The bryophyte layer is not well-developed but there is some springy turf-moss.

B5 Marshy Grassland

3.2.65 This habitat occurs in small patches, generally in shallow depressions and margins where the ground is moist to wet. This is a species-poor habitat dominated by soft rush. Marsh thistle is present here, with some Yorkshire fog and occasionally tufted hairgrass tussocks. Forbs are scarce, but include creeping buttercup and common sorrel, with some marsh marigold and scarce marsh violet. The ground in this habitat is often poached and uneven, although grazing appears low to moderate.

C3.1 Tall Ruderal

3.2.66 This habitat comprises tall monotypic stands of common nettle. This is typical of nutrient enrichment, in this case likely caused by inputs from livestock. Whilst common nettle is present more widely, areas mapped as C3.1 indicate dense stands where the nettles are dominant.

G2 Running Water

3.2.67 The River Black Water runs along the boundaries of the land to the west and south. Vegetation appears minimal, except for some small eddies at the sides of the watercourse which contain sparse bog pondweed. There does appear to be some runoff from roadworks upstream to the north, adding a murky sediment to the water. The smaller section which runs along the western boundary of the Offsite turning circle appears to be roughly 5 m across and up to 50 cm deep. This increases to approximately 25 m across at the widest section along the southern boundary. Depth is highly variable and uneven due to the substrate, which comprises large boulders and rocks, with some smaller rocks and pebbles.

11.4 Other Exposure

3.2.68 This comprises a strip of boulders and other large rocks adjacent to the river. These areas are primarily unvegetated, although scattered individuals of wild thyme and marsh violet are present among the smaller rocks.

4 **DISCUSSION**

4.1.1 **Table 4.1** shows the NVC communities identified on the site that have any designations relating to habitat status or groundwater dependence.

4.2 Annex I Habitats

- 4.2.1 The heathland communities on the site correspond to habitat types described in Annex I of the Habitats Directive. The H10 and H12 dry heath communities come under '4030 European dry heaths' and the H17 heath under '4060 Alpine and Boreal heaths'. The M15b/c wet heath communities are classed as '4010 Northern Atlantic wet heaths with *Erica tetralix*'.
- 4.2.2 The M17 and M19 blanket bog communities have been assessed to meet the requirements for '7130 blanket bogs', despite showing signs of degradation. To qualify for this habitat type, the blanket bog must be active (peat forming), which is indicated by an abundance of peat-forming species, particularly bog-mosses. The quadrat data (see **Tables A2.7** and **A2.8** in **Annex 2**) do show that bog-mosses and other bog indicator species are present within these communities, if at lower abundances than would be desirable. The peatland condition assessment survey found signs of modification and erosion, however JNCC guidance (2019) states that "sites, particularly those at higher altitude, characterised by extensive erosion features, may still be classed as 'active' if they otherwise support extensive areas of typical bog vegetation, and especially if the erosion gullies show signs of recolonisation". This fits well with the description from the peatland condition assessment survey, where many signs of recolonisation were recorded.
- 4.2.3 The peat-stained lochs recorded on the site qualify for '3160 Natural dystrophic lakes and ponds'.
- 4.2.4 W4 woodland can sometimes correspond to '91D0 Bog woodland', however it is not thought to be the case for the W4 community on the site as this was reported to occur on the lower slopes next to the bog, not as an ecologically stable component of the bog itself (as would fit the description for bog woodland).

4.3 Scottish Biodiversity List

- 4.3.1 The above-mentioned Annex I qualifying communities also have corresponding habitats on the Scottish Biodiversity List (NatureScot, 2020).
- 4.3.2 In addition, the M20 and M25 modified bog communities have also been tentatively included within the 'blanket bog' category. For this designation, the active status is not a prerequisite, but rather that blanket bog indicator species are still present within the species assemblage (JNCC, 2024). Based on the survey notes of these communities on the site, some bog indicator species remain (hare's-tail cottongrass, in particular).
- 4.3.3 The burns running through the site qualify for the 'rivers' category because evidence of water vole (priority species) was recorded in association with this habitat (see **Technical Appendix 8.2**) (JNCC, 2024). The River Black Water running along the boundary of the Off-site turning circle area may also qualify if priority species (for example, water vole or otter) occupy this habitat.
- 4.3.4 The M6 and S9 communities correspond to 'upland flushes, fens and swamps', but the M23b subcommunity does not, as this is a particularly species-poor example of the community type.
- 4.3.5 The W4 woodland qualifies as 'upland birchwoods'. The scattered trees (A3) within the Off-site turning circle do not qualify as 'wood pasture and parkland' due to the very small areas these trees cover and the absence of qualifying features such as ancient or veteran trees.

4.4 Priority Peatland

- 4.4.1 Based on guidance from NatureScot (2023) M17 and M19 blanket bog communities can represent priority peatland communities where impacts from development have the potential to raise issues of national interest, because these community types can be representative of blanket bog in a near natural condition. Looking at the results of the peatland condition assessment conducted on the site, it can be seen that some of the blanket bog is degraded (not near natural) and so unlikely to raise issues of national interest. However, there remain some patches of more intact blanket bog of possible national interest.
- 4.4.2 This includes the following habitats (listed in **Annex 3**) which were appraised as having features in a near natural state (although this did not preclude the possibility for some modification/degradation to have been identified within the polygon and/or mosaic):
 - M19 mosaic 7;
 - M17 mosaic 1;
 - M17 polygon;
 - M19 polygon 2; and
 - M17 mosaic 3.
- 4.4.3 Additionally, some areas of M19 on the site were identified as montane bog, which is more likely to raise issue of national importance due to the sensitivity of this habitat type (NatureScot, 2023).
- 4.4.4 The survey found some small bog pool features resembling M1 M3 bog pool community types which are possibly peat disturbance features that are wet and revegetating. There were also many erosion channels that have been revegetated with bog-pool like vegetation. Guidance from NatureScot (2023), states that bog pool communities should be completely avoided by development activities.
- 4.4.5 The NatureScot (2023) guidelines also include M15, M20 and M25 communities as priority peatland where development activities are unlikely to raise issues of national interest (but where measures should still be taken to mitigate impacts). Indeed, on the site the M15 wet heath was found to occur on shallow peat, and the M20 and M25 bog communities were categorised as a degraded version of blanket bog (therefore not near natural).

4.5 Groundwater Dependence

- 4.5.1 Some of the wetter communities that are scattered across the site can signify groundwater dependent terrestrial ecosystems. Guidance from SEPA (2017) indicates that the M23, M6 and W4 communities all have possible high groundwater dependence, and that the M15 wet heath has possible moderate groundwater dependence.
- 4.5.2 The categorisation of groundwater dependent terrestrial ecosystems is preliminary and is based on vegetation communities present, and therefore confirmed categorisation is based on subsequent formal hydrological assessment.

Table 4.1: Summary of the recorded plant communities and sub-communities with relevant conservation designations and/or potential groundwater dependence.

Phase 1 Habitat	NVC Community	NVC Sub-Community	Annex I Habitat	Scottish Biodiversity List	Priority Peatland Status*	Potential Groundwater Dependence**
A1.1.1 Broadleaved	W4 Betula pubescens -	-	-	Upland	-	High
woodland – semi-natural				birchwoods		11.1
B5 Marshy grassland	M23 Juncus effusus -	M23b Juncus effusus	-	-	-	High
	Gallum palustre rush	sub-community				
D1 Dry heath	H10 Calluna vulgaris - Erica	-	4030 European dry	Upland	-	-
	<i>cinerea</i> heath		heaths	heathland		
	H12 Calluna vulgaris -	H12a Calluna vulgaris	4030 European dry	Upland	-	-
	Vaccinium myrtillus heath	sub-community	heaths	heathland		
	H17 Calluna vulgaris -	-	4060 Alpine and	Upland	-	-
	Arctosaphylos alpinus heath		Boreal heaths	heathland		
D2 Wet heath	M15 Tricophorum	M15b Typical sub-	4010 Northern	Upland	Unlikely to	Moderate
	germanicum - Erica tetralix	community	Atlantic wet heaths	heathland	raise issues of	
	wet heath		with Erica tetralix		national	
					interest	
		M15c Cladonia sub-	4010 Northern	Upland	Unlikely to	Moderate
		community	Atlantic wet heaths	heathland	raise issues of	
			with Erica tetralix		national	
					interest	
D5 Dry heath / acid	H12 Calluna vulgaris -	H12a Calluna vulgaris	4030 European dry	Upland	-	-
grassland	Vaccinium myrtillus heath /	sub-community	heaths	heathland		
	U4 Festuca ovina - Agrostis	U4a typical sub-	-	-	-	-
DOM/AL have the face of the	capillaris grassiand	community				
D6 Wet heath / acid	M15 Iricophorum	M15b Typical sub-	4010 Northern	Upland	Unlikely to	Moderate
grassland	germanicum - Erica tetralix	community	Atlantic wet heaths	neathland	raise issues of	
	wet neath / U4 <i>Festuca</i>		with Erica tetralix		national	
					interest	

Phase 1 Habitat	NVC Community	NVC Sub-Community	Annex I Habitat	Scottish Biodiversity List	Priority Peatland Status*	Potential Groundwater Dependence**
	ovina - Agrostis capillaris grassland	U4a typical sub- community	-	-	-	-
E1.6.1 Blanket bog	M17 Tricophorum germanicum - Eriophorum vaginatum mire	-	7130 Blanket bogs	Blanket bogs	Impacts have the potential to raise issues of national interest.	-
	M19 Calluna vulgaris - Eriophorum vaginatum mire	(M19a <i>Erica tetralix</i> sub- community)	7130 Blanket bogs	Blanket bogs	Sub 600m: Impacts have the potential to raise issues of national interest. <u>Montane</u> : Priority peatland which should be avoided	-
E1.7 Wet modified bog	M20 Eriophorum vaginatum blanket and raised mire	-	-	-	Unlikely to raise issues of national interest	-
	M25 <i>Molinia caerulea -</i> <i>Potentilla erecta</i> mire	-	-	-	Unlikely to raise issues of national interest	-
E2.1 Flush - acid	M6 Carex echinata - Sphagnum fallax mire	M6c <i>Juncus effusus</i> sub- community	-	Upland flushes, fens, and swamps	-	High

Phase 1 Habitat	NVC Community	NVC Sub-Community	Annex I Habitat	Scottish Biodiversity List	Priority Peatland Status*	Potential Groundwater Dependence**
F1 Swamp	S9 Carex rostrata swamp	S9a <i>Carex rostrata</i> sub- community	-	Upland flushes, fens, and swamps	-	-
G1.4 Standing water – dystrophic	-	-	3160 Natural dystrophic lakes and ponds	Oligotrophic and dystrophic lakes	-	-
G2(.4) Running water (- dystrophic)	-	-	-	Rivers	-	-

* As per guidance from NatureScot (2023). Based on the vegetation communities present and further informed by the results of the peatland condition assessment survey.

** As listed in Appendix 4 of SEPA (2017) LUPS Guidance Note 31. The categorisation of groundwater dependent terrestrial ecosystems is preliminary and is based on vegetation communities present. Confirmed categorisation is based on subsequent formal hydrological assessment.

5 **REFERENCES**

Averis, A.M., Averis, A.B.G., Birks, H.J.B., Horsfield, D., Thompson, D.B.A. & Yeo, M.J.M. (2004). *An illustrated guide to British upland vegetation*. JNCC, Peterborough. ISBN 978-1-78427-015-5.

Botanical Society of Britain & Ireland (2009). *Conservation statuses for all UK plants*. Available online: <u>https://bsbi.org/wp-content/uploads/dlm_uploads/TaxonDesignationsVascularPlants.xlsx</u>

Joint Nature Conservation Committee (1991a). British Plant Communities ed. Rodwell, J.S. Volume 1. *Woodlands and Scrub.* Cambridge University Press, Cambridge. ISBN 978-0-521-62721-4.

Joint Nature Conservation Committee (1991b). British Plant Communities ed. Rodwell, J.S. Volume 2. *Mires and Heaths.* Cambridge University Press, Cambridge, ISBN 978-0-521-62720-7.

Joint Nature Conservation Committee (1992). British Plant Communities ed. Rodwell, J.S. Volume 3. *Grasslands and Montane Communities*. Cambridge University Press, Cambridge. ISBN 978-0-521-62719-1.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey – a technique for environmental audit. Available online: <u>https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf</u>

Joint Nature Conservation Committee (2019). Annex I habitats and Annex II species occurring in the
UK.Availableonline:

https://webarchive.nationalarchives.gov.uk/ukgwa/20190301132352/http://jncc.defra.gov.uk/page-1523-theme=default

Joint Nature Conservation Committee (2024). *UK BAP Priority Habitats*. Available online: <u>https://jncc.gov.uk/our-work/uk-bap-priority-habitats/</u>

NatureScot (2020). *The Scottish Biodiversity List*. Available online: <u>https://www.nature.scot/doc/scottish-biodiversity-list</u>

NatureScot (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available online: <u>https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#Annexes</u>

NatureScot (2024). SiteLink: Map Search. Available online: <u>https://sitelink.nature.scot/map</u>

Rodwell, J.S. (2006). *National Vegetation Community Users' Handbook*. JNCC, Peterborough, ISBN 978 1 86107 574 1.

Scottish Environment Protection Agency (2017). Land Use Planning System SEPA Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available online: https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-ofdevelopment-proposals-on-groundwater-abstractions.pdf

UK Centre for Ecology & Hydrology (2016). *MAVIS Plot Analyser* (version 1.04). Available online: <u>https://www.ceh.ac.uk/services/modular-analysis-vegetation-information-system-mavis</u>

ANNEX 1 – TARGET NOTES

Table A1.1: Target Notes from the Phase 1 habitat survey of the site.

TN	Grid reference	Description	Photo(s)
1	-	Photos of the Comms antennae on the summit of Meall Ruighe an Fhirich in the east of the site. Photo 1: looking east, Photo 2: looking North, Photo 3: looking west and photo 4: looking south.	1 - 4
2	-	Area of mature broad-leaf trees next to roadside farm. A mix of beech, sycamore, and birch. Trees up to 15 to 20m in height, some with holes or crevices that could act as potential bat roots.	-
3	NH 41051 61500	Burn 0.25 m wide and 10 cm deep. Fast flowing, peat- stained water over bedrock and pebbles. Banks are mostly a mix of purple moorgrass and bell heather with some young birch and Scots pine.	-
4	NH 41067 61475	Pond 10x20 m in size and at least 0.5 m deep. Heavily peat-stained water with some emergent bulrush, bottle sedge, and overhanging birch and eared willow. A palmate newt observed.	11
5	-	Area of self-generating birch scrub on the bog surface. Mostly between 1 and 3 m in height.	-
6	NH 41539 60966	Burn 0.25 to 1 m wide and up to 30 cm deep. Heavily peat-stained water flowing quickly over a bed of boulder, pebbles and bedrock with banks of bracken, some soft rush and heathers.	5
7	NH 42541 61483	Evidence of water vole ⁷ recorded here along burn line.	6
8	NH 42541 61483	Burn 0.5 m wide and 30 cm deep. Heavily peat-stained water flowing steadily over a bed of peat and gravel with banks of dense purple moorgrass tussocks and a soft rush flush community further down-stream.	-
9	NH 42555 61556	Loch around 150x100 m in size, depth unknown but likely over 1 m. Water heavily peat stained. Peripheries covered in dense bottle sedge swamp with floating bog pondweed and some feathery bog-moss.	12
10	NH 43447 61596	Burn 0.75 m wide and 20 to 50 cm deep. Heavily peat- stained water flowing steadily over a bedrock and small boulders with banks of wet heath containing common heather, cross-leaved heath, purple moorgrass and some bracken and soft rush.	7

⁷ Included in Technical Appendix 8.2: Terrestrial Mammals

TN	Grid reference	Description	Photo(s)
11	NH 43220 62331	Burn 0.25 m wide and 20 cm deep. Heavily peat-stained water flowing fast over a bed of boulders and pebbles with banks of rush and moss dominated flushes, and purple moorgrass and hare's-tail cottongrass tussocks.	-
12	NH 43003 62385	Burn 20 cm wide and 5 cm deep. A slow flowing watercourse of heavily peat-stained water over a bed of peat and vegetation. Banks are a mix of mosses, sedges, purple moorgrass, cross-leaved heath, and tormentil.	-
13	NH 42861 62432	Loch 200x100 m in size depth unknown but easily over 1 m deep. Heavily peat-stained water, with a few margins containing some emergent bottle sedge. Banks are mostly peaty overhangs with a mix of bog and wet heath communities on them.	13
14	NH 41733 62448	Loch 400x100 m in size and likely over 1 m deep. Heavily peat-stained water with no floating or emergent vegetation Banks are a mix of small stoney beaches or over hanging peat with bog plant communities on them, mostly hare's-tail cottongrass.	-
15	NH 40821 64156	Burn 1.5 m wide and 30 cm deep. Clear water flowing fast over a bed of boulders and large pebbles with banks a mix of acid and marshy grassland species, such as sheep's fescue and soft rush with some hard fern and herbs like heath bedstraw and tormentil.	8
16	NH 41660 63588	Small trackside colony of moonwort.	9
17	NH 42437 63154	Burn 0.25 m wide and up to 30 cm deep. Slow flowing, heavily peat-stained water over a bed of peat and gravel. Evidence of water vole ⁷ recorded here.	-
18	NH 42444 62900	Bog pool on blanket bog. Water holding abundant feathery bog-moss.	10
19	NH 42481 62886	Loch 200x100 m in size and likely over 1 m deep. Water heavily peat stained with some emergent bottle sedge around the edges. Little grebe present and signs of water voles ⁷ around the periphery.	14
20	NH 42253 63737	Burn 0.24 m wide and 20 cm deep. Heavily peat-stained water flowing steadily over peat, gravel and small boulders. Banks are a mix of blanket bog species including hare's-tail cottongrass, purple moorgrass, and cross-leaved heath.	-

Table A1.2: Target Notes from the Phase	1 habitat survey of the	e Off-site turning circle.
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TN	Grid reference	Description	Photo(s)
21	NH 39978 69421	Mature beeches to 20 m tall, which may hold potential bat roost features.	15
22	NH 39832 69461	River Black Water. Looking northwards (upstream).	19
23	NH 39836 69343	Piled brash in the improved grassland.	16
24	NH 39839 69322	South-facing rocks - potentially suitable for reptiles.	17
25	NH 39852 69301	River Black Water. Southern section.	18
26	NH 39838 69314	Existing ford across Black Water.	20

ANNEX 2 – NVC SURVEY FULL RESULTS

The data in **Tables A2.2** – **A2.9** below show all data recorded in the NVC survey, with each table representing a specific NVC community. For each quadrat surveyed, a full plant species inventory is included in which the abundance of each species is represented using the DOMIN scale as shown in **Table A2.1**.

'Constancy' refers to the frequency with which each plant species occurs across all quadrats within a specific NVC community and is ranked from 1 (least frequent) to 5 (most frequent).

DOMIN code	Approximate percentage cover in quadrat
10	91 – 100 %
9	76 – 90 %
8	51 – 75 %
7	34 – 50 %
6	26 – 33 %
5	11 – 25 %
4	4 - 10 %
3	<4 % many individuals
2	<4 % a few individuals
1	<4 % one or two individuals

Table A2.1: The DOMIN scale, used to classify the abundance of plants in the NVC surveys.

Table A2.2: H10a.

Phase 1 habitat type	D1.1 Dry dw	arf shrub heat	th - acid											
NVC Community	H10a <i>Callun</i>	a vulgaris-Eric	<i>a cinerea</i> hea	th (typical sub	o-community)									
Quadrats	1	2	3	4	5									
OS grid co-ordinates	NH 41034 61882	NH 41970 61213	NH 42504 63956	NH 42493 64109	NH 42352 64421									
Soil depth (cm)	5	10	10	15	10									
Vegetation height (cm)	25	25	25	25	20									
Species		Cover (DOMIN) Const												
Agrostis capillaris		3	3	3		3								
Blechnum spicant	3		3		3	3								
Calluna vulgaris	7	5	7	7	7	5								
Carex binervis	4				3	2								
Cladonia portentosa	3					1								
Erica cinerea	6	8	6	7	8	5								
Erica tetralix			3	3		2								
Festuca ovina		3	3	3	3	4								
Holcus lanatus			3			1								
Hypnum jutlandicum	4	5	4		5	4								
Molinia caerulea			4	4	3	3								
Pleurozium schreberi		4	5	5	3	4								
Potentilla erecta	4	5	5	5	5	5								
Pteridium aquilinum		1				1								
Pseudoscleropodium purum		3		4		2								
Succisa pratensis			3	4		2								
Vaccinium myrtillus			5	3	3	3								

Table A2.3: H12a.

Phase 1 habitat type	D1.1 Dry dw	arf shrub heat	th - acid										
NVC Community	H12a Callun	a vulgaris - Va	iccinium myrti	illus heath (C.	<i>vulgaris</i> sub-c	ommunity)							
Quadrats	1	2	3	4	5								
OS grid co-ordinates	NH 41739 61127	NH 42520 62458	NH 42902 63892	NH 42905 63422	NH 41635 63590								
Soil depth (cm)	15	15	10	20	15								
Vegetation height (cm)	40	20	25	40	40								
Species	Cover (DOMIN) Constancy												
Agrostis capillaris				3		1							
Blechnum spicant					3	1							
Calluna vulgaris	9	10	8	8	10	5							
Carex echinata	3					1							
Carex flacca				3		1							
Cladonia portentosa	4	5			3	3							
Danthonia decumbens		1											
Deschampsia flexuosa			1										
Erica cinerea					4	1							
Eriophorum angustifolium					3	1							
Hylocomium splendens	7	6	5	6	6	5							
Juncus squarrosus			5	4		2							
Narthecium ossifragum					3	1							
Pleurozium schreberi	5	6	5	4	6	5							
Polytrichum commune				3		1							
Potentilla erecta			3	5	4	3							
Rhytidiadelphus sauarrosus				3		1							
Rhytidiadelphus triauetrus		4	4			2							
Sphagnum fallax	4 3 4												
Tricophorum germanicum	4 4 3 3												
Vaccinium myrtillus		4	4	5	1	4							
Vaccinium vitis-idaea			4			1							

Table A2.4: H17.

Phase 1 habitat type	D1.1 Dry dwa	arf shrub heat	h - acid										
NVC Community	H17 Calluna	vulgaris - Arct	osaphylos alpi	<i>inus</i> heath									
Quadrats	1	2	3	4	5								
OS grid co-ordinates	NH 42831 64323	NH 42972 64431	NH 43045 64202	NH 43018 63993	NH 43024 63842								
Soil depth (cm)	5	5	5	5	5								
Vegetation height (cm)	10	10	10	10	10								
Species	Cover (DOMIN) Constancy												
Agrostis capillaris				3		1							
Arctostaphylos alpinus			4	4	4	3							
Calluna vulgaris	6	7	4	5	6	5							
Carex bigelowii			4		4	2							
Carex flacca	3	4	3		3	4							
Cetraria islandica			3	1		2							
Cladonia portentosa	7	5	9	7	7	5							
Empetrum nigrum	5	4	3	4	4	5							
Juncus squarrosus			4	4		2							
Pleurozium schreberi	3				3	2							
Racomitrium lanuginosum	3	6	4	5	5	5							
Rhytidiadelphus triquetrus	4					1							
Salix sp.				5		1							
Vaccinium vitis-idaea	2 1												
Vaccinium myrtillus	3	3	3	3	3	5							

Table A2.5: M15b.

Phase 1 habitat type	D2 Wet dwa	rf shrub heath											
NVC Community	M15b Tricop	horum germa	nicum - Erica t	<i>etralix</i> wet he	ath (typical su	b-community)							
Quadrats	1	2	3	4	5								
OS grid co-ordinates	NH 41038 61554	NH 41709 63628											
Soil depth (cm)	15	25	20	30	15								
Vegetation height (cm)	40	40	35	30	40								
Species	Cover (DOMIN) Constancy												
Anthoxanthum odoratum				3		1							
Calluna vulgaris	4	6	7	6	5	5							
Carex echinata				4		1							
Carex nigra				4		1							
Cladonia portentosa		4	3			2							
Erica cinerea	4					1							
Erica tetralix	5	5	4	6	5	5							
Eriophorum angustifolium			6	3	3	3							
Hylocomium splendens	4			5	7	3							
Hypnum jutlandicum		5	3	3		3							
Molinia caerulea	9	7	4	4	8	5							
Narthecium ossifragum	3			3	3	3							
Pleurozium schreberi		3	5	3	5	4							
Polygala serpyllifolia				2		1							
Potentilla erecta	3	3	3	5	4	5							
Sphagnum capillifolium			5		5	2							
Sphagnum fallax				4		1							
Sphagnum papillosum				4		1							
Succisa pratensis				3		1							
Tricophorum germanicum		3				1							
Viola canina				3		1							

Table A2.6: M15c.

Phase 1 habitat type	D2 We	02 Wet dwarf shrub heath												
NVC Community	M15c	M15c Tricophorum germanicum - Erica tetralix wet heath (Cladonia sub-community)												
Quadrat	1	2	3	4	5	6	7	8	9	10				
OS grid co-ordinates	NH4	NH4	NH4	NH4	NH4	NH4	NH4	NH4	NH4	NH4				
	147	167	213	229	232	217	194	194	204	228				
	8	5	9	3	6	7	4	5	2	5				
	620 04	610 17	612 57	623 76	629 57	630 06	634 06	035 11	035 22	639 56				
Soil depth (cm)	10	10	10	15	20	10	10	10	10	15				
Vegetation height (cm)	20	20	20	20	20	20	20	20	20	20				
Species		Cover (DOMIN) Constancy												
Calluna vulgaris	5	7	7	5	5	6	6	6	6	5	10			
Cladonia portentosa	8	9	5	6	8	8	8	8	8	7	10			
Empetrum nigrum		3								1				
Erica tetralix	4	4	4	5	5		3	4	4	5	9			
Eriophorum angustifolium							3			3	2			
Hypnum jutlandicum		4	6	3	3		3		3		6			
Juncus squarrosus	4		5	4			5	4	4	3	7			
Molinia caerulea			4						3	4	3			
Narthecium ossifragum							3			5	2			
Pleurozia purpurea									3	3	2			
Pleurozium schreberi					4	3					2			
Potentilla erecta			3					3	3	3	4			
Racomitrium	4							4	4	5	4			
Sphaanum canillifolium		4		5	4					3	4			
Tricophorum	8	6	6	7	6	6	6	7	7	6	10			
germanicum						,		-			_0			
Vaccinium myrtillus					4						1			

Table A2.7: M17.

Phase 1 habitat type	E1.6.1 Blank	et bog												
NVC Community	M17 Tricoph	orum germani	icum - Eriopho	rum vaginatur	<i>n</i> mire									
Quadrats	1													
OS grid co-ordinates	NH 41421NH 42027NH 42088NH 41966NH 420046095463205632816317863295													
Soil depth (cm)	50	100+	100+	100+	100+									
Vegetation height (cm)	20	20	20	20	20									
Species		Cover (DOMIN) Constancy												
Calluna vulgaris	4	5	5	6	5	5								
Cladonia portentosa	4	9	8	7	8	5								
Drosera rotundifolia	3	3			2	3								
Empetrum nigrum			3	3	3	3								
Erica tetralix	5	4	4	4	4	5								
Eriophorum angustifolium	3	3	3	3	3	5								
Eriophorum vaginatum	5		3	4	3	4								
Juncus squarrosus	3					1								
Narthecium ossifragum	4		4	3		3								
Racomitrium Ianuginosum			4	4	4	3								
Sphagnum capillifolium	7	5		5	6	4								
Sphagnum compactum		3				1								
Sphagnum cuspidatum	4				4	2								
Sphagnum papillosum	4			3	4	3								
Sphagnum tenellum	3					1								
Tricophorum germanicum	4	6	7	7	7	5								

Table A2.8: M19.

Phase 1 habitat type	E1.6.1	E1.6.1 Blanket bog												
NVC Community	M19 (M19 Calluna vulgaris-Eriophorum vaginatum mire												
Quadrat	1	2	3	4	5	6	7	8	9	10				
OS grid co-ordinates	NH4	NH4												
	119	249	260	309	362	265	194	243	195	223				
	2 611	9 614	4 615	2 615	5	624	8 624	0 620	8 622	0 627				
	11	50	015	24	23	30	44	19	88	17				
Soil depth (cm)	65	60	100	50	70	100	100	50	100	100				
			+			+	+		+	+				
Vegetation height (cm)	40	40 40 35 40 40 40 35 40 35 30												
Species		Cover (DOMIN) Constancy												
Calluna vulgaris	5	6	6	6	5	7	5	3	5	6	10			
Cladonia portentosa	5	5	4	5	6	5	9		8	7	9			
Deschampsia flexuosa	3								1					
Drosera rotundifolia	2	3				2		3		3	5			
Empetrum nigrum		3 2 3					3							
Erica tetralix	5	3	3	4	5	5	5	4	4	4	10			
Eriophorum				3	2		1	3	3	3	6			
angustifolium								_						
Eriophorum vaginatum	7	7	7	7	8	5	7	8	6	5	10			
Juncus squarrosus				4	3						2			
Narthecium ossifragum	4	4			4	6				5	5			
Pleurozium schreberi		4	5	3	5	3		3		5	7			
Polytrichum commune								4			1			
Potentilla erecta					2						1			
Rhytidiadelphus triquetrus		3									1			
Sphagnum capillifolium	6	7	5	6	7	4	4	7	4	4	10			
Sphagnum papillosum	5	3	4							3	4			
Tricophorum germanicum						4			3	3	3			
Vaccinium oxycoccos								3			1			
Vaccinium myrtillus								3			1			

Table A2.9: M23b.

Phase 1 habitat type	B5 Marshy g	rassland										
NVC Community	M23b Juncu	s effusus-Galii	<i>um palustre</i> ru	ish pasture (J.	<i>effusus</i> sub-c	ommunity)						
Quadrats	1	2	3	4	5							
OS grid co-ordinates	NH 40833 64197	NH 40740 64143	NH 40876 64097	NH 40813 64423	NH 40834 64018							
Soil depth (cm)	10	15	10	15	20							
Vegetation height (cm)	70	70	80	80	70							
Species		Cover (DOMIN) Constancy										
Agrostis stolonifera		3	3			2						
Cirsium palustre	5	4	4	5	4	5						
Deschampsia cespitosa	4			3	4	3						
Epilobium palustre	4	3	3	3	3	5						
Galium palustre	4		3	3	3	4						
Holcus lanatus		3	3	3	3	4						
Juncus effusus	9	9	9	9	9	5						
Pleurozium schreberi		4	3		4	3						
Ranunculus repens	5	3	4	5	4	5						
Rhytidiadelphus squarrosus	5	4			4	3						
Rumex acetosa			3	3	3	3						

ANNEX 3 – PEATLAND CONDITION ASSESSMENT FULL RESULTS

Table A3.1. Each area assessed for the peatland condition survey (NVC community and location) and the outcomes of the assessment criteria. Each row represents an individual instance of each NVC community type, either occurring alongside other vegetation in a mosaic or occurring in a monotypic stand as a polygon. Those habitats marked in green as those assessed as being of possible national interest.

polygon)	Location	Location		Blanket bog criteria A	Blanket bog criteria B	Blanket bog criteria C				Blanket bog criteria D					sult - of nal	
Area label (m = mosaic, p =	Easting	Northing	Peat depth (cm	Peat depth (cn Montane Bog	Within continuous unit blanket bog	Peat forming vegetation	Few drains / peat cutting	Spp of low disturbance	Natural surface pattern	Absence of tree / scrub invasion	Abundant <i>Sphag-</i> rich ridges	Sphagnum- Betula nana ridges	S.fuscum or S.austinii hummocks	Peat Mounds	Rhynchospo ra fusca	Assessment re possible natior interest?
M15b m1	242165	864437	36	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M15b m2	243275	864070	20	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15b m3	242309	863931	25	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
M15b m4	242230	862390	41	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No*
M15b m5	243521	862430	22	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No*
M15b m6	241380	861256	29	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No
M15b m7	241497	861610	25	No	No	No	No	No	No	No	No	No	No	No	No	No
M15b m8	241142	862348	23	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No*
M15b m9	241589	862872	19	No	No	Yes	No	No	Yes	Yes	No	No	No	No	No	No*
M15b m10	242442	863419	6	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No
M15b p1	243061	863051	33	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M15b p2	242006	863353	9	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No
M15b m1	242165	864437	36	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M15b m2	243275	864070	20	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15b m3	242309	863931	25	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
M15c m1	243266	864035	<5	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15c m2	243181	863876	15	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15c m3	243649	863631	15	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15c m4	243299	863119	12	No	No	No	No	No	No	No	No	No	No	No	No	No

polygon)	Location		(-		Blanket bog criteria A	Blanket bog criteria B	Blanket bog criteria C				Blanket bog criteria D					sult - of nal
Area label (m = mosaic, p =	Easting	Northing	Peat depth (cn	Montane Bog	Within continuous unit blanket bog	Peat forming vegetation	Few drains / peat cutting	Spp of low disturbance	Natural surface pattern	Absence of tree / scrub invasion	Abundant <i>Sphag-</i> rich ridges	<i>Sphagnum- Betula nana</i> ridges	<i>S.fuscum</i> or <i>S.austinii</i> hummocks	Peat Mounds	Rhynchospo ra fusca	Assessment re possible nation interest?
M15c m5	243161	863499	18	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15c m6	242138	864203	13	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M15c m7	242020	862344	14	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No*
M15c m8	244040	862415	10	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No*
M15c m9	241258	861374	16	No	No	No	Yes	No	No	No	No	No	No	No	No	No
M15c m10	241330	861279	23	No	No	No	No	No	No	No	No	No	No	No	No	No
M15c m11	241134	862377	7	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No
M15c m12	241682	862820	>5	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No*
M15c m13	242454	863430	>5	No	No	No	Yes	No	No	No	No	No	No	No	No	No
M15c p1	241435	862119	16	No	No	No	No	No	No	Yes	No	No	No	No	No	No
M17 p	241984	862381	195	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes
M17 m1	243606	863058	>250	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes
M17 m2	243313	863153	242	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M17 m3	242703	861181	>250	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes
M17 m4	241265	861460	127	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No
M17 m5	241350	861754	>250	No	No	Yes	No	No	No	No	No	No	No	No	No	No
M17 m6	241924	863103	233	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M17 m7	242366	863401	200	No	No	Yes	No	No	No	No	No	No	No	No	No	No
M17 m8	242276	863670	>250	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M19 m1	241996	864587	84	No	No	Yes	No	No	No	No	No	No	No	No	No	No
M19 m2	242156	864460	55	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M19 m3	242466	864626	71	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No
M19 m4	243022	864157	232	Yes	No	Yes	No	No	No	Yes	No	Yes	Yes	No	No	Yes

polygon)	Location		(Blanket bog criteria A	Blanket bog criteria B	Blanket bog criteria C Blanket bog criteria D					D		sult - of nal		
Area label (m = mosaic, p =	Easting	Northing	Peat depth (cn	Montane Bog	Within continuous unit blanket bog	Peat forming vegetation	Few drains / peat cutting	Spp of low disturbance	Natural surface pattern	Absence of tree / scrub invasion	Abundant <i>Sphag-</i> rich ridges	Sphagnum- Betula nana ridges	<i>S.fuscum</i> or <i>S.austinii</i> hummocks	Peat Mounds	Rhynchospo ra fusca	Assessment re possible natioi interest?
M19 m5	243386	863828	163	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes
M19 m6	243665	863670	55	No	No	Yes	No	No	No	Yes	No	Yes	Yes	No	No	Yes
M19 m7	243898	862977	158	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes
M19 m8	243183	863436	95	No	No	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	Yes
M19 m9	241741	862274	206	No	No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes
M19 m10	243585	862413	104	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
M19 m11	244073	862241	148	No	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
M19 m12	242822	861222	215	No	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	Yes
M19 m13	241466	861116	63	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No
M19 m14	241348	861716	71	No	No	Yes	No	No	No	No	No	No	No	No	No	No
M19 m15	241418	862908	98	No	No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes
M19 m16	241942	863039	69	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No	No	Yes
M19 m17	242322	863306	94	No	No	Yes	No	Yes	Yes	No	No	Yes	No	No	No	Yes
M19 m18	242083	863679	76	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No	No	Yes
M19 m19	241926	863857	82	No	No	No	No	No	No	No	No	No	No	No	No	No
M19 p1	242686	864328	126	Yes	No	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes
M19 p2	243340	862522	87	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes
M20 p1	241830	861080	202	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No
M25 m1	241479	861570	62	No	No	No	No	No	No	No	No	No	No	No	No	No
M25 p1	241612	861134	176	No	No	No	Yes	No	No	No	No	No	No	No	No	No

* Area with relatively few signs of disturbance / modification (passes blanket bog criteria C) but where peat depth is less than 50 cm.

ANNEX 4 – PHOTOGRAPHS

Target Note Photographs - the communications antennae on the summit of Meall Ruighe an Fhirich.





Phase 1 Habitat Survey Photographs



Photo 13. TN13 – loch with peat-stained water.

Photo 14. TN19 – deep loch with peat-stained water.



Photo 19. TN2 (Off-site turning circle) – River Black Water.

Photo 20. TN6 (Off-site turning circle) – ford across the river.

Peatland Condition Assessment Surveys Photographs





Photo 21. Probable re-vegetated peat cutting at NH 41313 61513.

Photo 22. Extensive hag system at NH 43312 63149.



Photo 23. Hag system at NH 43106 64064.

Photo 24. Woodland encroachment seen from NH 41820 61082.



Photo 25. Re-vegetating hags at NH 42945 64183.

Photo 26. Track drainage at NH 42438 64394.



ANNEX 5 – SCIENTIFIC NAMES

Table A5.1: The common and scientific names of plant species included in this Technical Appendix.

Common Name	Scientific Name					
Forbs						
Bird's-foot trefoil	Lotus corniculatus					
Bitter dock	Rumex obtusifolius					
Bog asphodel	Narthecium ossifragum					
Bog pondweed	Potamogeton polygonifolius					
Broadleaf plantain	Plantago major					
Chickweed-wintergreen	Lysimachia europaea					
Common dog violet	Viola riviniana					
Common nettle	Urtica dioica					
Common sorrel	Rumex acetosa					
Creeping buttercup	Ranunculus repens					
Creeping thistle	Cirsium arvense					
Devil's-bit scabious	Succisa pratensis					
Heath bedstraw	Galium saxitile					
Marsh bedstraw	Galium palustre					
Harebell	Campanula rotundifolia					
Heath dog violet	Viola canina					
Hogweed	Heracleum sphondylium					
Lesser stitchwort	Stellaria graminea					
Marsh marigold	Caltha palustris					
Marsh thistle	Cirsium palustre					
Marsh violet	Viola palustris					
Marsh willowherb	Epilobium palustre					
Meadow buttercup	Ranunculus acris					
Ribwort plantain	Plantago lanceolata					
Round-leaved sundew	Drosera rotundifolia					
Self-heal	Prunella vulgaris					
Silverweed	Potentilla anserina					
Dandelion	Taraxacum agg					
Tormentil	Potentilla erecta					

Common Name	Scientific Name					
Tufted vetch	Vicia cracca					
Water mint	Mentha aquatica					
Wild thyme	Thymus polytrichus					
Wood sorrel	Oxalis acetosella					
Yarrow	Achillea millefolium					
Grasses, sedges, and rushes						
Bigelow's sedge	Carex bigelowii					
Bottle sedge	Carex rostrata					
Brown beak-sedge	Rhynchospora fusca					
Bulrush	Typha latifolia					
Carnation sedge	Carex panacea					
Common bent	Agrostis capillaris					
Common cottongrass	Eriophorum angustifolim					
Creeping soft-grass	Holcus mollis					
Crested dog's-tail	Cynosurus cristatus					
Deergrass	Trichophorum germanicum					
Green-ribbed sedge	Carex binervis					
Hare's-tail cottongrass	Eriophorum vaginatum					
Heath rush	Juncus squarrosus					
Heath wood-rush	Luzula multiflora					
Heath-grass	Danthonia decumbens					
Mat-grass	Nardus stricta					
Perennial ryegrass	Lolium perenne					
Purple moor grass	Molinia caerulea					
Red fescue	Festuca rubra					
Sheep's fescue	Festuca ovina					
Soft rush	Juncus effusus					
Star sedge	Carex echinata					
Sweet vernal-grass	Anthoxanthum odoratum					
Tufted hairgrass	Deschampsia cespitosa					
Wavy hairgrass	Avenella flexuosa					
Yorkshire fog	Holcus lanatus					

Common Name	Scientific Name						
Mosses, ferns, and lichens							
Acute-leaved bog-moss	Sphagnum capillifolium						
Big shaggy-moss	Rhytidiadelphus triquetrus						
Blunt-leaved bog-moss	Sphagnum palustre						
Bracken	Pteridium aquilinum						
Common haircap	Polytrichum commune						
Cow-horn bog-moss	Sphagnum auriculatum						
Feathery bog-moss	Sphagnum cuspidatum						
Flat-topped bog-moss	Sphagnum fallax						
Glittering wood-moss	Hylocomium splendens						
Green shield-moss	Buxbaumia viridis						
Hard fern	Blechnum spicant						
Heath plait-moss	Hypnum jutlandicum						
Lustrous bog-moss	Sphagnum subnitens						
Moonwort	Botrychium lunaria						
Neat feather-moss	Pseudoscleropodium purum						
Papillose bog-moss	Sphagnum papillosum						
Red-stemmed feather-moss	Pleurozium schreberi						
Reindeer lichen	Cladonia portentosa						
Rusty bog-moss	Sphagnum fuscum						
Springy turf-moss	Rhytidiadelphus squarrosus						
Swan's-neck thyme-moss	Mnium hornum						
Woolly fringe-moss	Racomitrium lanuginosum						
Woody species							
Alder	Alnus glutinosa						
Alpine bearberry	Arctous alpina						
Beech	Fagus sylvatica						
Bell heather	Erica cinerea						
Bilberry	Vaccinium myrtillus						
Cloudberry	Rubus chamaemorus						
Common heather	Calluna vulgaris						
Cowberry	Vaccinium vitis-idaea						

Common Name	Scientific Name				
Cranberry	Vaccinium oxycoccos				
Cross-leaved heath	Erica tetralix				
Crowberry	Empetrum nigrum				
Downy birch	Betula pubescens				
Dwarf birch	Betula nana				
Eared willow	Salix aurita				
Grey willow	Salix cinerea				
Hazel	Corylus avellana				
Lodgepole pine	Pinus contorta				
Rhododendron	Rhododendron ponticum				
Rowan	Sorbus aucuparia				
Scots pine	Pinus sylvestris				
Sessile	Quercus petraea				
Silver birch	Betula pendula				
Sitka spruce	Picea sitchensis				
Sycamore	Acer pseudoplatanus				