

Appendix 10B

Phase 1 Habitat Survey and National Vegetation Classification and Peatland Condition Report



RWE Renewables UK Ltd

Eredine Wind Farm Environmental Impact Assessment Report

Appendix 10B: Phase 1 Habitat Survey and National
Vegetation Classification and Peatland Condition Report



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Report for

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1. Introduction

1.1 Purpose of this Report

- 1.1.1.1 This report presents the results of an Extended Phase 1 habitat survey, National Vegetation Classification (NVC) survey and Peatland Condition Assessment (PCA) of the proposed Eredine Wind Farm (the 'Proposed Development'). The rationale for using these survey methods was determined through a combination of desk study, as described in the desk study report (**Technical Appendix 10A**) and consultation (**Table 10.6, Chapter 10**).
- 1.1.1.2 To allow analyses of potential impacts of the Proposed Development, the surveys extended out 250m from the Development Site. The area that extends out from the Development Site is referred to as the 'buffer zone'. The total area subject to Phase 1 habitat survey and NVC survey was approximately 31km².
- 1.1.1.3 An Extended Phase 1 habitat survey covered of the entirety of the Development Site and buffer zone, with the exception of existing access roads for forestry operations. The NVC methodology is not as wide ranging as that for Phase 1 habitat survey as the former focusses principally on natural vegetation. The NVC does not include plantation woodland; including felled areas, recently planted plantation or immature or mature plantation. Such features were surveyed and described using Extended Phase 1 habitat survey.

2. Methods

- 2.1.1.1 The ecological surveys covered in this report were undertaken following current guidelines for ecological impact assessment [CIEEM (2018) and NatureScot (2020)] and were undertaken within the appropriate survey windows.
- 2.1.1.2 All field surveyors had appropriate qualifications, training and experience of the methods applied, particularly for renewal energy projects in upland habitats.
- 2.1.1.3 For the sake of clarity this report uses common species names and only uses scientific species names for species groups where this is the convention, e.g. bryophytes.

2.2 Study Area and Buffers

- 2.2.1.1 The Study Area and buffers are defined in **Figure 10B-1**. At the time of survey, a defined Developable Area was identified within the wider Development Site in which all habitats and vegetation communities were recorded and mapped. This area was extended with a 250m buffer; and a 100m buffer around the access track, to allow for the extension of potential, hydrological effects. Within this buffer, only groundwater dependent terrestrial ecosystems (GWDTE) are mapped. Within the boundary and buffer, distinctive or demonstrative features are recorded as 'Target Notes' (TNs).

2.3 Ecological Evaluation

- 2.3.1.1 The status of all habitats and vegetation communities / sub-communities and plant species recorded within the survey area has been determined, to identify any species protected by European or UK legislation, including:
- The Conservation (Natural Habitats, &c) Regulations 1994 (as amended in Scotland) (The Habitats Regulations); and
 - The Wildlife & Countryside Act (WCA) 1981 (as amended).
- 2.3.1.2 Records of notable vegetation communities / sub-communities and plant species (including legally controlled species) were also made including any in the following:
- Annex 1 habitats¹;
 - The Scottish Biodiversity List (SBL)²; and
 - Argyll & Bute Local Biodiversity Action Plan (LBAP)³;
- 2.3.1.3 The potential presence of GWDTE is given based on SEPA best practice guidance (SEPA, 2017).
- 2.3.1.4 In addition to indicating the presence of plant species of higher conservation value, an NVC survey is also an effective method for surveying aggressively invasive species, e.g. Japanese knotweed (*Fallopia japonica*), as listed in Schedule 9 (Part 2) of the *Wildlife and Countryside Act, 1981* (as amended), and the *Noxious Weeds Act*.

¹ <https://webarchive.nationalarchives.gov.uk/20190405130848/http://jncc.defra.gov.uk/page-1523>

² <https://www.nature.scot/scottish-biodiversity-list>

³ <https://www.argyll-bute.gov.uk/sites/default/files/planning-and-environment/AandB%20BAP%20Draft.pdf>

2.4 Field Survey

- 2.4.1.1 There are three elements to the survey: a 'Phase 1' habitat survey and more detailed NVC of vegetation within the habitats and a peatland condition assessment (PCA). The data from these is mapped and described and supplemented by field assessment of habitat/vegetation condition and groundwater dependency. The survey methods are described in the following sections.

2.4.2 Extended Phase 1 Habitat Survey

- 2.4.2.1 An Extended Phase 1 habitat survey (JNCC, 2010) of the Development Site and buffer zone was undertaken from the 27 to 31 July 2020. Follow up visits to ground-truth vegetation communities and site conditions were undertaken in June 2022 and November 2023. Distinct habitats were identified, and any features of interest were recorded and included on a Phase 1 habitat map (**Figure 10B-3**) as target notes (TN) (**Annex A**). TN provide greater detail on specific habitats and plant communities of particular interest or features too small to clearly map but which merit mentioning. The DAFOR⁴ scale was used throughout to approximate the cover of plant species. Hand-held GPS devices were used to accurately locate features of particular ecological interest.
- 2.4.2.2 Habitats and species of principal importance were recorded specifically where encountered as TN, as were legally controlled invasive plant species.
- 2.4.2.3 Species lists that were compiled were not comprehensive, rather they describe the general composition of each habitat type. Botanical nomenclature follows Stace (2019) for vascular plants and Atherton *et al.* (2010) for bryophytes.

2.4.3 NVC Survey

- 2.4.3.1 NVC survey (Rodwell (ed.), Volumes 1 to 4, 1991 to 1995) was undertaken of the Development Site and buffer zone from the 14 to 18 September 2020; and a follow up walkover survey was undertaken in June 2022 and November 2023 in order to establish whether environmental conditions had changed across the Development Site. The NVC methodology provides a detailed classification and survey of a wide range of natural plant communities (and some man-made plant communities, e.g. pastureland) that occur within Great Britain. In addition, Averis *et al.* (2004) provides a good overview of the NVC of upland areas and clarifies the NVC system, which is especially useful for renewable energy projects in mainly upland settings, such the Proposed Development.
- 2.4.3.2 The survey involved walking the Development Site following a route determined by topography/viewpoints and the need to sample distinctive areas. Homogenous areas were mapped onto rectified aerial photographs overlain with contours and other physical features to ensure accuracy.
- 2.4.3.3 Plant species were identified and recorded as per the Extended Phase 1 habitat survey, described above. If necessary, TN were made to supplement those taken during Phase 1 habitat survey. Records were made of specific locations using hand-held GPS devices, notes on the heights of species and notes on soil drainage, slope, aspect, grazing levels, land management, and other potentially relevant data.

⁴ D – Dominant, A – Abundant, F – Frequent, O – Occasional and R – (locally) Rare.

2.4.4 NatureScot Peatland Classification

2.4.4.1 The Carbon and Peatland Map 2016⁵ was consulted to determine likely peatland classes present within the Proposed Development Area. The map is a high-level planning tool that provides an indication of the likely presence of peat at a coarse scale and identifies areas of nationally important carbon-rich soils, deep peat and priority peatland habitat⁶ as Class 1 and Class 2 peatlands.

2.4.4.2 **Figure 10B-2** presents the Peatland Classification map of the Development Site and wider area.

2.4.5 Peatland Condition Assessment

2.4.5.1 As a large proportion of the Development Site is situated on peatland, consideration was given to the condition of the peatland based on the Peatland Condition Assessment (PCA) guide (Peatland Action, 2016). A PCA walkover survey of the Study Area (**Figure 10B-1**) was undertaken in October 2023.

2.4.5.2 PCA bases the condition of blanket bog on indicators such as bog-moss cover, extent of bare peat and evidence of grazing and burning (Peatland Action, 2016). The PCA recognises four categories of peatland condition:

- Near-Natural - peat forming bog-mosses dominant, with no recent fires, little or no grazing pressure and little or no bare peat, heather is not dominant.
- Modified - bare peat is in small patches, fires may be recent, grazing impacts are evident, bog-mosses are absent or rare, extensive cover of heather or purple moor-grass.
- Drained - within 30m either side of an artificial drain or a revegetated hagg or gully system.
- Actively Eroding - actively eroding hagg/gully system, extensive continuous bare peat surfaces.

2.4.5.3 The PCA Support Tool also gives descriptions of peatlands as being in good, intermediate or bad condition (Glenk et al, 2017). The criteria for these are shown in **Table 2.1**.

Table 2.1 PCA Tool categories

Signs	Good	Intermediate	Bad
Water	Plenty of water, visible on the surface.	Surface water is rarely visible.	Deep gullies have formed from wind and water erosion.
Vegetation	Small grasses, bog-mosses (<i>Sphagnum</i> spp.) common and very wet.	Taller plants, such as cotton grasses (<i>Eriophorum</i> spp.) and heather.	Rarely any plants grow on the areas that are exposed. Patches of grasses or heather are still found on 'islands' in between exposed bare peat.
Bare peat	Little to no bare peat patches.	Bare peat patches are occasional, burning may occur.	Bare peat areas will continue to expand, leaving less plant cover as

⁵ SNH (2016) Carbon and Peatland 2016 map. Available at: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map> [Accessed 05/01/2024]

⁶ Priority peatland habitat is land covered by peat-forming vegetation or vegetation associated with peat formation.

			protection on the surface. Peat will continue to be lost until the solid rock is exposed.
Water quality	Water flowing from good quality peatland is clear.	Water flowing from peatland likely to be slightly brown, especially after heavy rainfall.	Bad water quality, it can be dark brown from the peat content.
Wildlife	Good for wildlife.	Wildlife less abundant than in good condition.	Home too little wildlife.
Resultant activity level	Active.	Stopped growing, inactive.	Inactive.

2.4.6 Groundwater Dependent Terrestrial Ecosystems

2.4.6.1 Potential GWDTE were identified during the NVC survey according to the current SEPA guidance (Guidance Note 31) (SEPA, 2017).

3. Baseline Results

3.1 General Site Description

- 3.1.1.1 The Development Site is located between two large areas of open water, which include Loch Fyne (a sea loch) to the south of the Development Site and Loch Awe (a freshwater loch) to the north of the Development Site. The Development Site and the wider Study Area, which are heavily forested with commercial conifer plantation, comprise an area of 31.46km² which is roughly oblong-shaped, orientated in a south westerly to north easterly direction.
- 3.1.1.2 The highest elevation within the Development Site is at Beinn Dearg, coordinates E 202400, N 705000, at 482 metres Above Ordnance Datum (AOD) in the south-east of the Development Site. High elevations are also found at Beinn Dubh Airigh (460m AOD, coordinates E 195912 N 703492) and Beinn Laoigh (435m AOD, coordinates E 196850, N 701160), in the west and south-west of the Development Site respectively. The remainder of the Development Site is predominantly on a high plateau (generally above 300m AOD), decreasing in elevation towards the base of the Abhainn a' Bhealaich valley in the north-west at approximately 250m AOD.
- 3.1.1.3 An Suidhe Wind Farm is located within a few hundred metres of the northern margins of the Development Site and is located in an area (approximately 2 km²) of undulating, open land reaching up to 514m ASL (An Suidhe hill). The wind farm is accessed by a forestry road, which is also the main access route to the Proposed Development.
- 3.1.1.4 The 1:50,000 ordnance survey map of the area indicates the presence of 50 individual areas of open, standing water of various size. They are referred to in this report as small lochs. They vary from less than one hectare to a few hectares in size and are present across the Development Site and buffer zone (and are commonplace in the surrounding area). The largest is Loch Leacann, approximately 40ha in area and over one kilometre in length, which is located near the southern edge of the Development Site. Loch Leacann is a reservoir, with a small dam at its south-east 'corner'. All other areas of open water in the area are natural.
- 3.1.1.5 Several local-scale watercourses drain the Development Site, flowing either south to Loch Fyne or north to Loch Awe.

3.2 Survey Limitations

- 3.2.1.1 Most of the land within the Development Site boundary was accessed, apart from areas of densely-planted immature conifer plantation, rough areas of clear-felled plantation, and some very steep ground located at the southern margins of the survey area. These are not considered to be a significant constraint to the surveys.
- 3.2.1.2 Descriptions of the Development Site's watercourses and areas of open, standing water are covered in **Technical Appendix 10C (Protected Species Survey Report)** and **Technical Appendix 10E (Fish Habitat Assessment)**.
- 3.2.1.3 Much of the land at the edge of the westernmost margins of the Development Site and buffer zone was remote and it was not practically possible due to health and safety considerations to undertake NVC mapping of this section.
- 3.2.1.4 There were no seasonally-associated limitations to the surveys.

3.3 Field Surveys

- 3.3.1.1 Much of the Development Site comprised existing conifer plantation, recently planted conifers on open land where conifer plantation had been clear-felled, or clear-felled land that had not yet been replanted with conifers. Such areas often contained patchy areas of soft rush, and less commonly some areas of purple moor-grass, in less disturbed areas of land, however the ground was generally too rough with stumps and brash from forestry felling operations to merit detailed habitat mapping. This also applied to the NVC survey of such areas as the vegetation was too disturbed and patchy to be considered by this methodology.
- 3.3.1.1 Phase 1 habitat maps of the Development Site are presented in **Figure 10B-3**, with the accompanying TNs listed within **Annex A**. A list of all recorded floral and faunal species is presented in **Annex C**. An NVC Quadrat location plan is presented in **Figure 10B-4** and NVC communities recorded within the Development Site are presented in **Figure 10B-5**.
- 3.3.1.2 Survey data allow correlations to be made with Phase 1 habitats and NVC vegetation communities/sub-communities and these are summarised in **Table 3.1**.

Table 3.1 Phase 1 Habitats, NVC Communities and Sub-communities Present

Phase 1 Habitat Type	NVC Community	NVC Sub-communities	Target Notes and Quadrats
Blanket bog	M2 <i>Sphagnum cuspidatum/fallax</i> bog pool community	-	Q16, Q28, Q32, Q69, Q71
	M17 <i>Trichophorum cespitosum</i> – <i>Eriophorum vaginatum</i> blanket mire	M17a <i>Drosera rotundifolia</i> - <i>Sphagnum</i> species sub-community M17b - <i>Cladonia</i> species sub-community	Q4, Q5, Q51, Q93, Q95, Q96, Q99, Q101, Q111, Q112, Q113, Q116, Q135, Q43, Q88
	M18 <i>Erica tetralix</i> – <i>Sphagnum papillosum</i> blanket mire	M18a <i>Sphagnum magellanicum</i> - <i>Andromeda polifolia</i> sub-community	Q9, Q41
Wet modified bog	M19 <i>Calluna vulgaris</i> – <i>Eriophorum vaginatum</i> blanket mire	M19a <i>Erica tetralix</i> sub-community	Q8, Q13, Q25, Q29, Q36, Q37, Q57, Q59, Q65, Q72, Q73, Q79, Q87, Q97, Q104, Q105, Q114, Q115, Q123, Q125
	M20 <i>Eriophorum vaginatum</i> mire	M20b <i>Calluna vulgaris</i> - <i>Cladonia</i> species sub-community	Q139
	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	M25a <i>Erica Tetralix</i> sub-community M25b <i>Anthoxanthum odoratum</i> sub-community	Q12, Q20, Q21, Q35, Q44, Q66, Q68, Q77, Q90, Q91, Q94, Q100, Q130,
Dry dwarf-shrub heath	H12 <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> heath	H12a <i>Calluna vulgaris</i> sub-community.	Q75, Q106, Q108, Q117

Montane heath	H14 <i>Calluna vulgaris</i> - <i>Racomitrium lanuginosum</i> heath	H14a <i>Festuca ovina</i> sub-community.	Q27
Wet dwarf-shrub heath	M15 <i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Typical sub-community M15b; <i>Cladonia</i> sub-community M15c <i>Vaccinium myrtillus</i> sub-community M15d	Q2, Q52, Q1, Q7, Q26, Q34, Q42, Q45, Q48, Q56, Q60, Q67, Q70, Q89, Q102, Q14, Q17, Q15, Q24, Q30, Q31, Q40, Q50, Q61, Q78, Q82, Q92, Q98, Q118, Q119, Q120, Q121, Q126, Q127, Q133
	M17 <i>Trichophorum cespitosum</i> - <i>Eriophorum vaginatum</i> blanket mire	<i>Drosera rotundifolia</i> - <i>Sphagnum species</i> sub-community M17a	Q103, Q109, Q132
Acid flush	M6 <i>Carex echinata</i> – <i>Sphagnum fallax/denticulatum</i> mire	M6b <i>Carex nigra</i> - <i>Nardus stricta</i> sub-community M6c <i>Juncus effusus</i> sub-community M6d <i>Juncus actutiflorus</i> sub-community	Q15, Q39, Q46, Q55, Q63, Q47, Q3, Q22, Q80, Q128
	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	M25a <i>Erica Tetralix</i> sub-community M25b <i>Anthoxanthum odoratum</i> sub-community	Q6, Q10, Q62, Q129, Q131, Q134, Q136, Q83
	M29 <i>Hypericum elodes</i> – <i>Potamogeton polygonifolius</i> soakway	-	-
Base-rich flush	M10 <i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire	-	Q11, Q33, Q48, Q49
Marshy grassland	M23 <i>Juncus/effusus/acutiflorus</i> - <i>Galium Palustre</i> rush-pasture	-	Q81
Acid grassland	U4 <i>Festuca ovina</i> – <i>Agrostis capillaris</i> – <i>Galium saxatile</i> grassland	-	Q18, Q38, Q54, Q64, Q74, Q76, Q86, Q110, Q122
	U5 <i>Nardus stricta</i> – <i>Galium saxatile</i> grassland	-	Q84, Q85, Q107, Q137, Q138
Swamp	S4 <i>Phragmites australis</i> swamp, S9 <i>Carex rostrata</i> swamp, S8 <i>Scirpus lacustris</i> ssp. <i>lacustris</i> swamp, S11 <i>Carex vesicaria</i> swamp	-	-

3.3.1.3 The findings of the Extended Phase 1 habitat and NVC surveys are combined for each broad habitat type, e.g. woodland, grassland, tall herb and fern, mire, and swamp. The results for heathland, standing water, rock exposure and miscellaneous are generally based on the findings of Extended Phase 1 habitat survey.

3.3.2 Woodland

- 3.3.2.1 Woodland habitat covers 1859.42ha (59.1% of the Development Site and buffer zone), comprising almost entirely compartments of conifer plantation of varying ages, mainly composed of densely planted, Sitka spruce. Several small compartments of lodgepole pine were also present. Typically, afforested land has been mechanically furrowed for planting to improve drainage in poor-draining land. Ground flora in the conifer plantations is generally poor, at most comprising a carpet of common mosses. Woodland-associated flora was virtually absent, although in one instance common primrose was recorded close to the bank of a watercourse bordering conifer plantation in the north of the Development Site (TN3).
- 3.3.2.2 Windblown mature conifers are commonly present across a number of coupes within the Development Site (e.g. TN7) and common on steeper ground, climatically exposed woodland edges and in areas of boggy ground. Some areas of conifer plantation are situated on blanket bog (e.g. TN19) and consequently the trees were stunted due to waterlogging and acidic groundwater conditions.
- 3.3.2.3 Many conifer plantation coupes have been clear-felled in recent years and subsequently replanted with conifers (e.g. TN4). The ground flora of such areas typically contained stands of soft rush.
- 3.3.2.4 Small sections of the Development Site (53.05ha and 1.7% of the Development Site) comprised recently-felled conifer plantation (e.g. TN30), characterised by disturbed ground with brash and tree stumps.
- 3.3.2.5 The Phase 1 habitat survey indicated that conifer plantation was the most common habitat of the Development Site and buffer zone, particularly in the centre, north and north-east. Much of the conifer plantation within the Development Site was, at least, in the second generation of planting.
- 3.3.2.6 No stands of semi-natural woodland were recorded within the Development Site and buffer zone. Several minor areas of scrub vegetation were recorded and are summarily described in the NVC woodland section below.
- 3.3.2.7 A few small-scale plantings of rowan, downy birch and eared willow were present in the central part of the Development Site (TN19 and TN22), enclosed by deer fencing. These have been planted in areas of blanket bog, which is not particularly suitable for woodland, being waterlogged with acidic groundwater. A couple of small-scale plantings of broad-leaved trees had also been made across the Development Site (e.g. TN16) and one was unsuccessful (TN18).
- 3.3.2.8 A few minor stands of willow scrub (too small to map, and not deemed significant) bordering a forestry road in the north-west of the Development Site were composed of eared willow. These were broadly consistent with a W1 *Salix cinerea* - *Galium palustre* woodland community.

3.3.3 Grassland

- 3.3.3.1 Grassland habitats covered 22.25ha, which was a small proportion of the Development Site and buffer zone (less than 0.01%). Of this 20.89 ha was acid grassland habitat (e.g. TN1 and TN2) and 1.36 ha was marshy grassland (e.g. TN21). Only acid grassland (unimproved) was present and there were no neutral or improved grasslands present. Small stands of acid grassland were rarely present in areas of mire (e.g. TN1 and TN18) or heath.
- 3.3.3.2 No land within the Development Site had likely been used for livestock grazing in recent years. Consequently, the grasslands (and other open habitats, such as heath and mire) of

the Development Site were not notably overgrazed, although the impacts of deer grazing⁷ on some areas of grassland were notable (e.g. TN2).

- 3.3.3.3 U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland was the most common community recorded (10.96ha, recorded by nine quadrats), with U5 *Nardus stricta*-*Galium saxatile* grassland being marginally less abundant (9.93ha, recorded by five quadrats). The former community was characterised by swards of constant cover of common bent and sweet vernal grass, with some cover of wavy hair-grass, mat grass, and a few common species of flowering plants and mosses. Lower cover of a small number of common species, namely, common thyme, marsh violet and common blaeberry, was also present. U5 grassland was characterised by constant cover of mat grass, wavy hair grass, with moderate cover of a range of other common species, e.g. common heather, common sedge species and common mosses. No species of higher conservation interest was recorded in grasslands of the Development Site.
- 3.3.3.4 Two sub-communities of U4 grassland were recorded, most common was U4a (typical sub-community) with a cover of 7.47ha, with sub-community U4e *Vaccinium myrtillus*-*Deschampsia flexuosa* about as half as common (3.49ha). U4e sub-community was more heath-like than U4a, with moderate, constant cover of common blaeberry. Both sub-communities were mainly located in the north-east of the Development Site in areas of thin soil, in open habitats at the edges and clearings in conifer plantation. Both sub-communities formed a small amount of the large area of open habitats in the south of the Development Site (mainly of wet heath and mires). Moreover, U4a sub-community was rarely present in higher ground in the north-east of the Development Site.
- 3.3.3.5 Only one sub-community of U5 grassland was recorded, *Calluna vulgaris*-*Danthonia decumbens* sub-community U5d. This was characterised by having a heath-like appearance with variable cover of common heather and occasional presence of heath grass. The vegetation was mainly recorded in the north-east of the Development Site in areas of thin soil, in open habitats at the edges and clearings in conifer plantation. The sub-community was not recorded elsewhere.
- 3.3.3.6 Marshy grassland comprised M23 *Juncus effusus* / *acutiflorus*-*Galium palustre* rush-pasture community. M23b *Juncus effusus* sub-community was the most common (0.94ha) with M23a *Juncus articulatus* sub-community being less common (0.42ha). The former sub-community was dominated by soft rush and the latter sub-community was dominated by sharp-flowered rush.
- 3.3.3.7 Although M23b sub-community had higher cover than M23a sub-community, its occurrence was limited to one stand, bordering much of the reach of a small watercourse in the south-east of the Development Site in an area mainly comprising conifer plantation. M23a sub-community had a wider distribution, characterising some of the open land at the edges of forestry in the north-east of the Development Site and sparsely present in the east of the Development Site (in an area mainly containing heaths and mires).
- 3.3.3.8 The low abundance of rush-pasture vegetation and grassland vegetation probably reflects the abundance of peaty substrates within the Development Site, which was mainly characterised by mire, acid flush and wet heath vegetation in areas that were not afforested.

3.3.4 Tall Herb and Fern

- 3.3.4.1 Stands of bracken or other fern species, continuous or scattered, were virtually absent from the Development Site. Some scattered bracken was present by the forestry road, located

⁷ Deer species graze on herbaceous vegetation, such as grasses, and also browse on higher growing plants, such as shrubs and tree seedlings etc.

to the east of the Development Site, which is the main access route to the Development Site. This habitat category does not merit any further consideration in this report.

3.3.5 Mire

3.3.5.1 Mire habitats covered at total area of 363 ha of the Development Site and buffer zone, which is 11.5% of the area. The mire habitats of the Development Site were:

- Blanket bog (E1.6.1) - total cover 139ha - TN11, TN12, TN14 and TN15;
- Wet modified bog (E1.7) - total cover 216ha - TN1, TN3, TN5, TN16, TN18, TN19, TN22, TN25, TN26, TN27, TN31 to 36 and TN40;
- Acid flush (E2.1) - total cover 8ha - TN17; and
- Basic flush (E2.2) - total cover 0.09ha.

3.3.5.2 Blanket bog habitat within the Development Site was mainly composed of Sphagnum moss rich habitat, with or without an abundance of deergrass, and a moderate cover of common heather, cross-leaved heath and common blaeberry. Crowberry species were occasionally present. Wet modified bog was characterised by either an abundance of purple moor-grass, common heather or cottongrass species (mainly hare's-tail cottongrass), with low to moderate abundances of sphagnum mosses. Sedges were less common compared to the wet heath habitats of the Development Site and bell heather was absent from bog habitat. Flush habitats were found as isolated small areas of boggy ground, typically on slopes, and less commonly in low lying, poorly drained areas, that received constant surface water drainage from wet habitats such as bogs, wet heaths, or even from wet areas in conifer plantations. Flushes mainly comprised dense stands of either soft rush or sharp-flowered rush with a ground layer of commoner Sphagnum species, or open vegetation that were species-rich with a particular abundance of *Carex* species. No occurrence of rarer bog species were recorded by the survey, e.g. *Sphagnum magellanicum* or less common species of orchid. A more common species of orchid of peatland habitats, heath spotted-orchid, was only recorded at one locality in the bog habitat of the Development Site (TN27).

3.3.5.3 Areas of blanket bog habitat and wet modified bog were commonly present in the lower lying areas surrounded by the extensive wet heathland habitats outside the forestry plantation (**Figure 10B-5**). Blanket bog habitat was also commonplace at the northernmost part of the Development Site. Wet modified bog had a wider distribution than blanket bog, occurring occasionally at the edges of forestry plantations and clearings, sometimes bordering small lochs. The habitat was also present at the north-western edge of the Development Site.

3.3.5.4 Blanket bog and wet modified bog habitats were mainly in areas of peat that were at least 0.5m deep, however such habitats were occasionally present in areas with shallow peat deposits. This is addressed in the NVC section on mire habitats (see below).

3.3.5.5 Some areas of blanket bog and wet modified contained peat hags (e.g. TN11, TN12, TN33, TN34 and TN40). Also, bog ponds were occasionally present in these habitats (e.g. TN15, TN32 and TN36)

3.3.5.6 The following vegetation communities and sub-communities were present, with total area coverages where known:

- M17 *Trichophorum cespitosum* - *Eriophorum vaginatum* blanket mire⁸;

⁸ Some stands of M17 vegetation were found in areas with peat depths of under 0.5m and can be classed as wet heath habitat. They were less common than stands of M17 vegetation in areas with peat depth of at least 0.5m.

- o M17a *Drosera rotundifolia* - *Sphagnum* species sub-community - 91ha;
- o M17b - *Cladonia* species sub-community – two small stands too small and not deemed significant to map (Q43, Q48);
- M18 *Erica tetralix*-*Sphagnum papillosum* blanket mire, M18a *Sphagnum magellanicum* - *Andromeda polifolia* sub-community - 0.56ha;
- M19 *Calluna vulgaris* - *Eriophorum vaginatum* blanket mire, M19a *Erica tetralix* sub-community - 62ha;
- M20 *Eriophorum vaginatum* blanket mire, M20b *Calluna vulgaris* - *Cladonia* species sub-community - 1ha;
- M25 *Molinia caerulea* - *Potentilla erecta* mire⁹;
 - o M25a *Erica Tetralix* sub-community - 140ha; and
 - o M25b *Anthoxanthum odoratum* sub-community - 2.9ha.

3.3.5.7 In addition to the above, stands of bog pool vegetation were mapped within the more extensive areas of mire and wet heath vegetation, with a total coverage of 1.99ha. The M2 *Sphagnum cuspidatum/fallax* bog pool community, was mainly recorded in an area dominated by M15 wet heath vegetation in the southern, central part of the Development Site (Q28 and Q32), and in an area of M15 wet heath vegetation and M19 mire vegetation in the south-west of the Development Site (Q69 and Q71).

3.3.5.8 Most M17 mire was characterised by vegetation with an almost constant cover of deergrass and common heather, albeit with variable levels of abundance. *Sphagnum* mosses were commonplace, particularly *Sphagnum capillifolium* but *Sphagnum papillosum* was mostly uncommon. Cross-leaved heath was only occasionally present. A good varied of common flowering species and common mosses were present, along with occasional presence of some heath rush and star sedge. The more common sub-community M17a *Drosera rotundifolia* - *Sphagnum*, was indicated by infrequent occurrence of round-leaved sundew and a generally reasonable range of plant species. The less common sub-community M17b *Cladonia* species, was less rich in character with constant cover of some *Cladonia* species, mainly *Cladonia portentosa*. The M17a sub-community was abundant in the northernmost part of the Development Site (particularly the buffer zone), had some extensive stands in the central, south of the Development Site, and as a couple of moderate-sized stands in the north-west of the Development Site. The M17b sub-community was found in the eastern and central parts of the large area of open habitats in the south of the Development Site. It is considered possible that most stands of M17 mire were 'active' blanket mire, i.e. they were continuing to create peat.

3.3.5.9 The M18 mire community was not particularly species-rich but included considerable cover of *Sphagnum* moss species, including *Sphagnum papillosum*. Other constants were bog asphodel and common crowberry. Round-leaved sundew was occasionally present, with variable levels of cover of common heather, cottongrasses and cross-leaved heath. The mire was located in particular wet, low-lying areas of the central, southern part of the Development Site. M18 mire was in some instances surrounded by M15 wet heath vegetation or by M17 or M25 mire vegetation. It is considered possible that many stands of M18 mire were 'active' blanket mire, i.e. they were continuing to create peat.

3.3.5.10 M19 *Calluna vulgaris*-*Eriophorum vaginatum* blanket mire was a moderately commonplace mire vegetation community of the Development Site. Only one sub-community was present, namely M19a *Erica tetralix*. The vegetation of this community, which was synonymous with

⁹ Some stands of M25 vegetation were located in areas with peat depth of less than 0.5m and can be classed as acid flush habitat. They were less common than stands of M25 vegetation in areas with peat depth of at least 0.5m.

wet modified bog habitat, was moderately species-rich but tended to have a rather 'heathy' appearance. Characteristic species were common heather, hare's-tail cottongrass, a number of common mosses (e.g. *Pleurozium schreberi*), a near constant cover of *Sphagnum capillifolium*, and occasional common crowberry, common blaeberry, deergrass, purple moor-grass, cross-leaved heath and rarely, cowberry. M19 mire community had a reasonably wide distribution (See **Figure 10B-5**) with moderately to small stands scattered across much of the open areas in the south of the Development Site and at the north-west of the Development Site. M19 mire community was also commonplace in the area of mire, heath and grasslands located in vicinity to the An Suidhe Wind Farm in the north of the Development Site.

- 3.3.5.11 M20 *Eriophorum vaginatum* blanket mire was uncommon in the Development Site and only one sub-community was present, namely M20b *Calluna vulgaris* - *Cladonia* species sub-community. The vegetation was generally species-poor but not as much as the M20a species poor sub-community (not present). The characteristic species of the sub-community was *Cladonia portentosa*. The vegetation was present in low-lying area of relict blanket bog in clearings surrounded by conifer plantation.
- 3.3.5.12 M25 *Molinia caerulea* - *Potentilla erecta* mire vegetation was commonplace across the Development Site (recorded by 21 quadrats) and was synonymous with wet modified bog habitat. A few areas of M25 vegetation were located in areas of peat less than 0.5m deep and were rather acid flush-like. Such areas were uncommon within the Development Site compared to M25 mire community on peat over 0.5m deep.
- 3.3.5.13 M25 vegetation was predominantly composed of stands of purple moor-grass with a rather 'patchy' composition of other species, e.g. common heather, *Sphagnum* mosses, deergrass, cross-leaved heath, a few flowering species typical of mires, star sedge and some commoner mosses. The most common sub-community was M25a *Erica Tetralix*. Cross-leaved heath was not particularly commonplace in the sub-community and its general characteristic was the dominance of purple moor-grass. The much less common sub-community of the Development Site, M25b *Anthoxanthum odoratum*, was indicated by its grassy 'sward' typically containing moderate cover of sweet vernal-grass.
- 3.3.5.14 Stands of M25a sub-community were scattered across the Development Site and was particularly commonplace in the north-west of the Development Site and its buffer zone. The sub-community was also present across much of the lower lying areas in the large open area of habitats in the south of the Development Site and stands were also present in areas dominated by conifer plantation (including large clearings and beside lochs). M25b sub-community was only present in two areas of open land located to the north side of the main forestry access road in the north of the Development Site.
- 3.3.5.15 Flush vegetation was uncommon in the Development Site and was mainly composed of acid flush. The vegetation communities were, with total coverages:
- M6 *Carex echinata*-*Sphagnum fallax/denticulatum* mire with three sub-communities:
 - M6b *Carex nigra*-*Nardus stricta* sub-community - 4.8ha;
 - M6c *Juncus effusus* sub-community - 0.2ha; and
 - M6d *Juncus actutiflorus* sub-community - 2.6ha.
 - M10 *Carex dioica* – *Pinguicula vulgaris* mire - <0.1ha
 - M29 *Hypericum elodes* – *Potamogeton polygonifolius* soakway - 0.4ha;
- 3.3.5.16 M6b sub-community was by far the richest example of M6 vegetation of the Development Site and was much more lower growing (as common rush species or tall grasses were rarely present). It contains a good variety of mosses, *Carex* sedges, acidic grass species, rushes

and common flowering lant species of wetlands and acid habitats in particular. No species of higher conservation interest were recorded by the survey in this sub-community. Stands of M6b sub-community were spread across a large area of open habitats in the south of the Development Site and in the area of mire, heath and grasslands located in vicinity to the An Suidhe Wind Farm in the north of the Development Site.

- 3.3.5.17 M6c sub-community was rarely present and was characterised by flush vegetation mainly comprising soft rush and *Sphagnum fallax*. The vegetation was present in the east of the large area of open habitats in the south of the Development Site.
- 3.3.5.18 M6d sub-community was mainly characterised by flush vegetation comprising sharp-flowered rush and a few commoner species of Sphagnum moss, e.g. *Sphagnum fallax*. The sub-community was occasionally present as moderately to small stands in the large area of open habitats in the south of the Development Site and in a clearing in conifer plantation near the centre of the Development Site.
- 3.3.5.1 M10a vegetation was indicative of basic flushes (due to the seepage of calcium rich groundwaters from springs) and M6 vegetation is a commonplace acid flush vegetation type.
- 3.3.5.2 M10a vegetation was species-rich and located in stony flushes, comprising a good range of Carex sedge species, flowering species (e.g. common butterwort), common mosses and rush species. No species of higher conservation interest were recorded by the survey in this community. This community was recorded a single location within open habitats in the south of the Development Site.
- 3.3.5.3 M29 vegetation was indicative of seepage channels in places grading in or out of M6 vegetation and was localised acid flush vegetation type.
- 3.3.5.4 M29 vegetation was generally species-poor and located seepage channels and sloping ground, comprising *Potamogeton polygonifolius* and *Sphagnum denticulatum*, with *Juncus bulbosus*, *Eriophorum angustifolium* and other common mosses and rush species. No species of higher conservation interest were recorded by the survey in this community. The community was present across the large area of open habitats in the south of the Development Site.

3.3.6 Swamp

- 3.3.6.1 Swamp habitat was not present within the Development Site, being limited to emergent vegetation in areas of standing, open water. Consequently, such habitats and vegetation are described in Section 3.3.8.

3.3.7 Heathland

- 3.3.7.1 Heathland (heath) was commonplace within the Development Site and buffer zone, covering 700.83ha (22.3% of the survey area), with the majority being wet heath (e.g. TN9, TN10, TN13, TN14, TN20, TN21, TN24, TN28, TN29, TN36, TN38 and TN43) with limited cover of dry dwarf-shrub heath (7.9ha) (e.g. TN8) and minor cover of montane heath (0.07ha). Large tracts of wet heath were commonplace across most of the sections of the Development Site, and buffer zone, which were not afforested. The only exception to this was the very northern most area, which was dominated by blanket bog.
- 3.3.7.2 The main characteristic species of wet heath of the Development Site were; deergrass, cross-leaved heath, common heather, purple moor-grass, common blaeberry, bog asphodel, *Sphagnum capillifolium*, and *Racomitrium lanuginosum*, and tormentil. Hare's-tail cottongrass, common cottongrass and common butterwort were locally less common in the Development Site's wet heath.

- 3.3.7.3 Wet heath was present in areas underlain by peat-rich soil that was up to 0.5m deep, which was typically poorly draining but firmer underfoot than the mires habitats of the Development Site.
- 3.3.7.4 Dry dwarf-shrub heath was uncommon in the Development Site and displayed little species variation, being mainly composed of common heather, bell heather, wavy hair-grass, common blaeberry, a few common mosses, and occasional occurrence of green-ribbed sedge and/or cowberry. The habitat was found on steeper sections of the higher ground of the Development Site, which were better drained (possible underlain by free draining soils or scree), in the east of the Development Site on more elevated ridges and in the north-west of the Development Site along steep sloping base of a slope in an area dominated by wet heath.
- 3.3.7.5 Montane heath was composed of low growing, common heather, some mountain crowberry and a few common species of mosses, lichens and clubmoss. It is often termed 'wind clipped heath' as its low growing character is due to harsh climatic conditions. Montane heath was only found in the south of the Development Site in an area mainly composed of wet heath with subordinate cover of mire habitats.
- 3.3.7.6 Wet heath habitat occasionally contained some botanical interest. No plant species of higher conservation interest were recorded but species of local conservation interest were:
- Heath spotted-orchid in wet heath in the south-west of the Development Site (TN24);
 - Cloudberry, primrose and lady's mantle by boulders in wet heath in the north-west of the Development Site (TN28);
 - Yellow saxifrage with common butterwort in wet heath in the east of the Development Site (TN29); and
 - Arctic bearberry on rocky, wet heath in the east of the Development Site (TN38).
- 3.3.7.7 All wet heath belonged to the M15 *Trichophorum cespitosum-Erica tetralix* wet heath community (37 quadrats were recorded in total). Three sub-communities were recorded, namely;
- Typical sub-community M15b - covering 12.3ha;
 - *Cladonia* sub-community M15c - covering 138ha; and
 - *Vaccinium myrtillus* sub-community M15d - covering 543ha.
- 3.3.7.8 M15b sub-community was uncommon in the Development Site, being only present in the south-east of the area on the lower slopes of a large open area of higher ground dominated by the other two sub-communities of wet heath. M15b sub-community was characterised by rather species-poor wet heath vegetation, with the only constant species being common heather and hare's-tail cottongrass and *Sphagnum capillifolium*. Less prevalent species were; cross-leaved heath, common blaeberry, cowberry and a few common moss species.
- 3.3.7.9 M15c sub-community was only present in the large area of open habitats in the south of the Development Site and was less prevalent compared to M15d sub-community. The vegetation was moderately species-rich in places, with the characteristic species being common *Cladonia* lichen species. Also, the moss *Racomitrium lanuginosum* was commonplace, with frequent deergrass and occasional crowberry and mountain crowberry.
- 3.3.7.10 M15d sun-community was the most common vegetation of the Development Site. The sub-community was the predominant in the main area of open habitats in the south of the Development Site, at the north-west of the Development Site, and was located along much of the buffer zone at the west and south edges of the Development Site. The sub-community

was also commonplace at the edges of conifer plantation and in clearings in the central and eastern parts of the Development Site and buffer zone.

- 3.3.7.11 M15d sub-community was the most floristically-variable variant of the M15 community present and moderately species-rich in places, albeit with commonplace species of flowering species, rushes, grasses, sedges and mosses. The only constant species in sub-community M15d was common heather, and either cross-leaved heath or bell heather were occasionally present. An indicator species of M15d is the common moss, *Pleurozium schreberi*.
- 3.3.7.12 Dry dwarf-shrub heath was H12 *Calluna vulgaris*-*Vaccinium myrtillus* heath community. Only one sub-community was present, which was H12a *Calluna vulgaris* sub-community.
- 3.3.7.13 Montane heath was H14 *Calluna vulgaris*-*Racomitrium lanuginosum* community. Only one sub-community was present, which was determined to be H14a *Festuca ovina* sub-community.

3.3.8 Open Water

Standing Water

- 3.3.8.1 Many lochs of varying size are located within the Development Site and buffer zone (e.g. TN16, TN19, TN23, TN25, TN26, TN30, TN43. TN1, TN13, TN14, TN15, TN32 and TN41). Open water covered a total area of 97.03ha, which is 3.1% of the Development Site. The largest lochs are mainly located in the lower lying areas of the Development Site, particularly in areas of heath (e.g. TN14, TN23, TN36 and TN41) and mire habitats (e.g. TN26 and TN27), which were most common in the east, central and north-west edge of the Development Site. However, lochs and ponds were also present in clearings in conifer plantation in the central and east of Development Site (e.g. TN1, TN16, TN19, TN25 and TN30). In addition, the higher areas of the Development Site also featured some small lochs and ponds (e.g. TN43) in areas of mainly heath with subordinate cover of bog.
- 3.3.8.2 The vegetation of standing, open water habitats of the Development Site were recorded where practically possible. The vegetation of a large pond located in a conifer plantation dominated area near the centre of the Development Site (TN1) could not be correlated with the NVC. No species of special conservation interest was present in the pond and therefore it does not merit any further consideration in this report.
- 3.3.8.3 Recent signs of goose species activity (probably roosting) were recorded by the edge of a loch (TN25) located near the centre of the Development Site.
- 3.3.8.4 The otter habitat potential of much of the standing water habitats of the Development Site were considerable as a feeding resource although no definite evidence of this was found during Extended Phase 1 habitat survey.
- 3.3.8.5 NVC communities present in areas of open, standing water habitat were:
- S4 *Phragmites australis* swamp - TN26;
 - S9 *Carex rostrata* swamp - TN13, TN41;
 - S8 *Scirpus lacustris* ssp. *lacustris* swamp - TN23; and
 - S11 *Carex vesicaria* swamp - TN16, TN19, TN30 TN43;
- 3.3.8.6 Although vegetation survey of open, standing water of the Development Site cannot be considered to be exhaustive, the results of the 2020 survey provided a robust description

of swamp (emergent) vegetation. S11 swamp was the most common swamp community and had the greatest total cover (estimated at approximately 1ha).

- 3.3.8.7 Many areas of open, standing water of the Development Site (and buffer zone) contained no notable vegetation cover that could be recorded using the Phase 1 habitat survey and NVC methodologies. However, it is possible that submerged aquatic plant species could be present in some areas of standing, open water.

Running Water

- 3.3.8.8 Several local-scale watercourses drain the Development Site, flowing either south to Loch Fyne or north to Loch Awe. In general, watercourses were small to medium size (widths less than 10m) with flow regimes of riffles and runs over coarse sediments, although some gravel beds were present. Typically, the banks of watercourses were either composed of marshy grassland, acid flush, blanket bog and acid grassland habitats. Some watercourses flowed directly through conifer plantation habitat.

3.3.9 Rock Exposure

- 3.3.9.1 Rock exposure, in the form of natural cliffs, some scree and man-made exposures (borrow pits for the construction of forestry roads), formed a minor part of the Development Site and their cover was estimated to be in the order of one to two hectares. Rock exposure habitat does not merit any further detailed consideration in this report.

3.3.10 Miscellaneous Habitats

- 3.3.10.1 Non-linear miscellaneous habitats, such as buildings or other man-made structures, were virtually absent from the Development Site. The main man-made features present were forestry roads, the mains for former tracks (e.g. TN20), a few bridges which carried forestry roads over watercourses, and a few old borrow pits. The total coverage of hardstanding areas was 21.42ha (0.7% of the Development Site).
- 3.3.10.2 A few ruins of small stone buildings ('old shielings' on ordnance survey maps) dating back to historical times were present in the lower lying parts of the Development Site. They are roofless and are rarely of any ecological value.
- 3.3.10.3 Wire and post fences were occasionally present within the Development Site and date back to when much of the land was used for sheep farming and/or game hunting. The fences were unmanaged and typically dilapidated. No dry-stone walls were present.

3.4 Peatland Condition Assessment

- 3.4.1.1 **Table 3.2** gives the condition of the peatland within the Study Area according to the four PCA categories. **Table 3.3** provides an evaluation of the peatland quality within the Study Area. The PCA plan is shown in **Figure 10B-6**.

Table 3.2 Evaluation of the Peatland Condition within the Study Area

Peatland Condition Categories	Comment	NVC Communities	Example Photos
Near-Natural: Peat forming bog-mosses dominant, with no recent fires, little or no grazing pressure and little or no bare peat, heather is not dominant.	No areas of near natural bog were identified within the Study Area	-	-
Modified: Bare peat is in small patches, fires may be recent, grazing impacts are evident, bog-mosses are absent or rare, extensive cover of heather or purple moor-grass.	The great extent of the Study Area comprises conifer plantation and recently felled plantation. In open areas the majority of peatland habitats comprise wet heath communities and structure of the vegetation demonstrated modification with grazing impacts evident.	M17, M18, M19, M20, M25	

Drained: Within 30m either side of an artificial drain or a revegetated hagg or gully system.	Drainage ditches within and around the conifer plantation were common as well as larger gulleys across the Study Area.	M17 and M19	
Actively Eroding: Actively eroding hagg/gully system, extensive continuous bare peat surfaces.	Extensive bare peat patches were not evident, however actively eroding hagg/gully systems were apparent across the Study Area.	M17, M19, M20	

Table 3.3 Evaluation of the Peatland Quality within the Study Area

Signs	Good	Intermediate	Bad	Study Area	Photos
Water	Plenty of water, visible on the surface.	Surface water is rarely visible.	Deep gullies have formed from wind and water erosion.	The Study Area is very wet in places, with surface water pooling in lower lying troughs and bowls and flushing on hill slopes. Bog pools were recorded sporadically, within mire and wet heath vegetation. In places, extensive gullies have formed due to water erosion within and around areas of forestry.	 

Vegetation	Small grasses, bog-mosses common and very wet.	Taller plants, such as cotton-grasses and heather.	Rarely any plants grow on the areas that are exposed. Patches of grasses or heather are still found on 'islands' in between exposed bare peat.	Within the Study Area there is localised bog habitats with extensive bog-moss coverage; however the greater extent of the Study Area comprises wet heath vegetation with constants including heather and cross-leaved heath or bell heather.	
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Bare peat	Little to no bare peat patches.	Bare peat patches are occasional, burning may occur.	Bare peat areas will continue to expand, leaving less plant cover as protection on the surface. Peat will continue to be lost until the solid rock is exposed.	Bare peat is widespread and form localised hagged complexes across the Study Area, which are likely to contributing to progressive erosion and degradation of peatland communities.	
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Water quality	Water flowing from good quality peatland is clear.	Water flowing from peatland likely to be slightly brown, especially after heavy rainfall.	Bad quality, it can be dark brown from the peat content.	Water quality around more extensive haggd or actively eroding areas within and around the forestry components of the Study Area were slightly brown, whilst peatland across more open areas of the Development Site were found to be running relatively clear.	
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- 3.4.1.2 The least modified blanket bog community, which was considered closest to 'Near-Natural' (albeit still modified), was the M18 community. The M18 community comprised considerable cover *Sphagnum* moss species, including *Sphagnum papillosum*. Other constants were bog asphodel and common crowberry. Round-leaved sundew was occasionally present, with variable levels of cover of common heather, cottongrasses and cross-leaved heath. The mire was located in particular wet, low lying areas of the central, southern part of the Development Site. *Sphagnum magellanicum*, which is a species indicative of intact blanket mires, was not recorded. Although some grazing impacts were evident the bog-moss carpet was fairly intact.
- 3.4.1.3 Most of the remaining blanket bog recorded was considered to be modified through forestry, drainage, grazing and possibly other historic management practices such as burning. This included much of the M17, M19 and M20 communities.
- 3.4.1.4 Across the Study Area (focussing primarily on the open areas of blanket bog outside the forestry plantation) there are numerous hagg and gulley complexes (both active and drained), as well as eroding gulleys and peat pipes which in some cases are contributing to further active erosion of the bog. These areas of active erosion are localised across the Development Site and are found in following communities M15, M17, M19 and M20.
- 3.4.1.5 Using the 'PCA support tool' the blanket bog in the Study Area was considered mostly to be of intermediate condition, with areas of 'bad quality' where the erosion was most pronounced and small areas of 'good quality' where there was a higher water table and sphagnum carpets (but no surface water pools, hummocks or natural surface pattern).
- 3.4.1.6 As a result, much of the M19, M20 and M25 blanket mire across the Study Area could be judged to be inactive and so is likely to be a carbon source, rather than a carbon sink. However, this is a broad-brush, subjective tool, and does not take into account subtleties and variation within the blanket bog. In general, actively eroding blanket bog is thought to be a carbon source rather than a sink and unlikely to be active. However, there is a degree of uncertainty as to the activity level of more modified blanket bog within the Development Site. It is therefore considered that the blanket bog in the Study Area is likely to have areas that are active or partially active (e.g. parcels of M17 and the smaller areas of M18).

3.5 GWDTEs

- 3.5.1.1 GWDTEs could potentially be affected by below ground works as a result of a development, which may change the quantity or quality of groundwater supplying the GWDTEs. This comes under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) and SEPA requires sufficient information in relation to GWDTE to advise the determining authority of the likelihood of an authorisation being granted. Potential GWDTEs present included flush, rush-pasture, wet heath and some blanket bog (See **Table 4.1** and **Figure 10B-7**)

Table 3.4 Conservation Status of the Phase 1 Habitat and NVC Communities Present

Phase 1 Habitat	NVC Community	Annex 1 Habitat	Scottish Biodiversity List	Argyll & Bute LBAP	Potential GWDTE
Blanket Bog	M2 <i>Sphagnum cuspidatum/fallax</i> bog pool community	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	No
	M17 <i>Trichophorum cespitosum</i> – <i>Eriophorum vaginatum</i> blanket mire	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	No
	M18 <i>Erica tetralix</i> – <i>Sphagnum papillosum</i> blanket mire	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	No
Wet Modified Bog	M19 <i>Calluna vulgaris</i> – <i>Eriophorum vaginatum</i> blanket mire	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	No
	M20 <i>Eriophorum vaginatum</i> mire	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	No
	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Overlaps with Blanket Bog (Active)	Blanket Bog	Blanket Bog	Moderate
Dry Dwarf-shrub Heath	H12 <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> heath	European Dry Heaths	Upland Heathland	Upland Heathland	No
	H14 <i>Calluna vulgaris</i> - <i>Racomitrium lanuginosum</i> heath	Alpine and Boreal Heaths	Mountain Heaths	Upland Heathland	No
Wet Dwarf-shrub Heath	M15 <i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Northern Atlantic Wet Heaths with <i>Erica tetralix</i>	Upland Heathland	Upland Heathland	Moderate
Acid Flush	M6 <i>Carex echinata</i> – <i>Sphagnum fallax/denticulatum</i> mire	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	High
	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	Moderate

Phase 1 Habitat	NVC Community	Annex 1 Habitat	Scottish Biodiversity List	Argyll & Bute LBAP	Potential GWDTE
	M29 <i>Hypericum elodes</i> – <i>Potamogeton polygonifolius</i> soakway	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	High
Base-rich Flush	M10 <i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	High
Marshy Grassland	M23 <i>Juncus effusus/ acutiflorus</i> - <i>Galium Palustre</i> rush-pasture	No	Purple Moor-grass and Rush Pastures (Lowland)	Upland flushes, fens and swamps	High
Acid Grassland	U4 <i>Festuca ovina</i> – <i>Agrostis capillaris</i> – <i>Galium saxatile</i> grassland	No	No	No	No
	U5 <i>Nardus stricta</i> – <i>Galium saxatile</i> grassland	No	No	No	No
Swamp in Open Standing Water	S4 <i>Phragmites australis</i> swamp	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	No
	S9 <i>Carex rostrata</i> swamp	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	No
	S8 <i>Scirpus lacustris</i> ssp. <i>lacustris</i> swamp	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	No
	S11 <i>Carex vesicaria</i> swamp	No	Upland flushes, fens and swamps	Upland flushes, fens and swamps	High

4. Evaluation

4.1 Summary

4.1.1.1 **Table 4.1** summarises the conservation values of the habitats and vegetation.

4.1.1.2 The Development Site contained a good variety of habitats considering that the majority of the area (60.8%) was intensively managed for commercial forestry. Habitats judged to be of reasonable value for nature conservation were

- Blanket bog habitats;
- Flush habitats;
- Heath habitats, particularly wet heath;
- Running water;
- Standing water (some with emergent vegetation); and
- Acid grassland habitats.

4.1.1.3 The Development Site was not species-rich in overall terms. This may be due to persistently high levels of grazing and browsing by deer across the mire, heath and grassland habitats of the Development Site.

4.1.1.4 Locally rare plant species recorded during the survey included:

- Yellow saxifrage;
- Arctic bearberry; and
- Cloudberry.

4.1.1.5 The above noted species are locally common in mainland Britain, although Arctic bearberry is only found in Northern Scotland. The species have no special conservation status.

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Annex A Target Notes for Extended Phase 1 Habitat Survey

TN	OS GR	Phase 1 Code(s)	Description
1	NN 00090 05799	G1 E1.7 B1.1	Large pond in valley-like area dominated by conifer plantation of Sitka spruce. Edges of the pond featured wet modified bog and minor areas of acid grassland. Species present (margins) of the pond were bogbean, <i>Sphagnum cuspidatum</i> , <i>Sphagnum palustre</i> , soft rush and lesser spearwort. Floating vegetation on pond composed of broad-leaved pondweed and floating sweet-grass. The vegetation could not be correlated with the NVC.
2	NN 00201 05673	B1.1 A1.2.2	Clearing in steep ground in area dominated by conifer plantation of moderately mature, Sitka spruce. Acid grassland present, with deer tracks (red deer and roe deer). Grassland was grazed by deer species.
3	NM 98405 05934	A1.2.2 E1.7	Wet modified bog in clearing in area by south side of watercourse in area dominated by conifer plantation of moderately mature, Sitka spruce. Some primrose present close to bank of watercourse.
4	NM 98993 05481	A1.2.2	Area of recently-felled conifer plantation, replanted with spruce species. Soft rush abundant.
5	NM 99609 05101	E1.7 A1.2.2	Small clearing in moderately mature, conifer plantation with wet modified bog, with abundant purple moor-grass. Other species present with lower levels of cover were; common heather, cross-leaved heath, <i>Sphagnum capillifolium</i> , <i>Sphagnum fallax</i> , <i>Sphagnum papillosum</i> , hare's-tail cottongrass and tormentil. Conifer plantations surrounding were mainly in well drained with abundant common moss species, e.g. <i>Pleurozium schreberi</i> .
6	NM 97272 04359	A1.2.2	Area of moderately mature, conifer plantation of Sitka spruce (much thrown trees present) with recently replanted conifer plantation stand to south.
7	NM 96271 03276	A1.2.2	Area of moderately mature conifer plantation of Sitka spruce on wet and boggy ground, steep in places. Windthrown trees commonplace. Some recently replaced conifer plantation in area.
8	NM 96832 02221	D1 D2	Small area of dry heath (too small to map) on steep slope by edge of small valley leaving to higher ground to east. Composed of bell heather, common heather, wavy hair-grass, hard fern, and self-sown spruce seedlings. Some eared willow sapling and spruce sapling by small watercourse in valley. Extensive area of wet heath on higher ground to east of; common heather, cross-leaved heath, <i>Sphagna</i> species, deergrass and bog asphodel. Small, isolated areas of conifer plantation present by the upper sides of the valley.
9	NM 96817 02076	D2	Western edge of extensive upland area of wet heath. Typically composed of; deergrass, cross-leaved heath, common heather, purple moor-grass, common blaeberry, common butterwort, bog asphodel, <i>Sphagnum capillifolium</i> , <i>Racomitrium lanuginosum</i> and clubmoss. Fox moth caterpillars common in habitat.
10	NM 96943 01940	D2	Wet heath on undulating high ground with rocky ground in places. Similar habitat to TN9 but with deergrass and hare's-tail cottongrass and common cottongrass commonplace and common heather with a patchy distribution.

TN	OS GR	Phase 1 Code(s)	Description
			A few small pools in present with hare's-tail cottongrass and <i>Sphagnum cuspidatum</i> .
11	NM 96885 01740	E1.6.1	Small stand of blanket bog in area of mainly wet heath (TN10). Peat hags present Grouse dropping recorded, possibly red grouse.
12	NM 96780 01718	E1.6.1	Similar to TN11. Peat hags in isolated, small area of blanket bog, surrounded mainly by wet heath. Bog dominated either by common heather or deergrass. A few self-sown spruce saplings and seedlings in area.
13	NM 97389 02179	D2 G1	Pond, about 15x5m across, in low lying area of wet heath. Bottle sedge was abundant in the pool with <i>Sphagnum cuspidatum</i> at the edges. Estimated to be S9 <i>Carex rostrata</i> swamp NVC community.
14	NM 97399 02280	D2 G1	Small pond in area of wet heath. No vegetation of note present.
15	NM 97838 02837	E1.6.1 A1.2.2 G1	Flat area of mainly blanket bog by northern edge of open area of bog and wet heath. Old fence line with conifer plantation dominating lower ground to north (planted in bog). Bog appeared eroded in places but not excessively. Small pond present with no notable vegetation.
16	NM 99983 05377	G1 E1.7 A1.2.2	Small loch in area dominated by conifer plantation of Sitka spruce. Edges of small loch composed of wet modified bog. Edges of loch with emergent stands of lesser bladder sedge (NVC community S11 <i>Carex vesicaria</i> swamp) and floating vegetation of broad-leaved pondweed. Recently replanted conifer plantation stands in area. A few broad-leaved trees had been recently planted in area in tree tubes.
17	NN 00235 05411	A2.1 A1.2.2	Low lying and poorly drained, linear-shaped clearing in moderately mature, conifer plantation of Sitka spruce. Clearing composed vegetated by acid flush with sharp-flowered rush, <i>Sphagnum fallax</i> and purple moor-grass.
18	NN 00353 05261	E1.7 B1.1	Undulating area of species-poor wet modified bog dominated by purple moor-grass with minor areas of acid grassland on the summits of hillocks (too small to map). <i>Racomitrium lanuginosum</i> common on boulders. A few broad-leaved tree plantings have been attempted in this area but have been unsuccessful (evidenced by empty tree tubes). A few Scotch argus butterflies were recorded in this area (weather was sunny and calm).
19	NN 00865 05457	E1.7 A1.1.2	Area of species-poor wet modified bog similar to TN18 in low lying area, partly planted with conifers. Higher area ground has been planted with some downy birches protected by a deer fence enclosure. Conifers planted in the bog are rather stunted due to the wet, acidic conditions. Small loch in low area with floating vegetation of bogbean and emergent vegetation of lesser bladder sedge (NVC community S11 <i>Carex vesicaria</i> swamp). Some small areas of marsh with rush species also evident (too wet to access).
20	NN 00975 05487	D2	Lower slopes of hillside, with some rock exposures and boulders, rising to south-east. Hillside was dominated by wet heath. Remains of old track in area, perhaps dating back to when the area was farmland and/or hunting estate.
21	NN 01181 05586	D2	Slope rising to south-east comparable to TN20. Mainly species were common heather and purple moor-grass. Minor stands of marshy grassland present on lower slopes which were particularly poorly drained.

TN	OS GR	Phase 1 Code(s)	Description
22	NN 00290 05116	E1.7 A1.1.2	Midpoint between small planting of rowan and eared willow enclosed by deer fencing. In area of species-poor wet modified bog composed mainly of purple moor-grass and lesser cover of common heather. The latter species was abundant inside the enclosures.
23	NM 99384 03834	G1 F1	Emergent swamp composed of open stands of common club-rush located at the northern margins of a small loch (Loch an Fhìdhleir). Stands of this vegetation covered a few 10's square metres. Estimated to be S8 <i>Scirpus lacustris</i> ssp. <i>lacustris</i> swamp NVC community. Loch was located in an area dominated by wet heath habitat, with the northern edge of the loch characterised by a narrow area of blanket bog, bordered by extensive conifer plantation.
24	NM 96811 02280	D2	Plant of heath spotted-orchid in area of wet heath.
25	NN 00440 05189	G1 E1.7 A1.2.2	Several fresh goose species droppings on the southern side of a loch (Loch Dubh-ghlas) composed of a narrow area of wet modified bog bordered by conifer plantation.
26	NM 99663 04042	G1 F1 E1.7	Small loch, with abundant stands of swamp composed of common reed, surrounded by wet modified bog dominated by purple moor-grass. Estimated to be S4 <i>Phragmites australis</i> swamp NVC community. It was not dense enough to be classed as a reed-bed.
27	NM 95731 04264	E1.7	Heath spotted-orchid plant recorded in area dominated by wet modified bog near southern shore of Loch Leachd.
28	NM 95777 03662	D2	Steep slope with wet heath, strewn with some large boulders. Plants of cloudberry on boulders, sheltered area of rich vegetation in between boulders of; tufted hair-grass, primrose, lady's mantle, greater wood-rush, marsh violet, devil's-bit scabious, marsh thistle and marsh hawk's-beard.
29	NN 01545 04867	D2	A few plants of yellow saxifrage on gentle, north facing, slope characterised by wet heath. Other species of note at the locality were common butterwort, star sedge and devil's-bit scabious.
30	NM 96603 02692	G1 F1	Small loch (Loch Sitheanach) in low lying area bordered by recently felled conifer plantation (felled in 2020). The loch was mostly covered with emergent aquatic vegetation dominated by badder sedge, with an estimated total area of 05ha. This was NVC community S11 <i>Carex vesicaria</i> swamp. Due to the roughness of the felled ground, which was also wet and boggy, this locality could only be recorded from a safe distance.
31	NN 00244 04143	E1.7	Soft and wet area of flat ground, mainly composed of <i>Sphagnum fallax</i> , in area of wet modified bog.
32	NN 00231 04112	G1 F1 E1.7	Bog pond, approximately 20m in diameter, in area dominated by wet modified bog.
33	NM 98193 02498	E1.7	Peat hags in small areas of wet modified bog, surrounded by wet heath.
34	NM 97820 02186	E1.7	Peat hags in moderate-sized area of wet modified bog, bordered to the north by wet heath.
35	NM 97571 02455	E1.7	Possible water vole runs in area of wet modified bog.

TN	OS GR	Phase 1 Code(s)	Description
36	NM 97534 02149	D2 E1.7	Common redshank (wading bird) recorded by small ponds in area of wet heath with minor areas of wet modified bog.
37	NN 02322 04899	G1	Four black grouse recorded in area dominated by wet heath.
38	NN 02428 05008	D2	Small stand Arctic bearberry recorded by rock in area of mainly wet heath.
39	NM 96759 01625	D2	Possible water vole runs in area of mainly wet heath.
40	NM 96889 01380	E1.7	Peat hags in small area of wet modified bog, surrounded by wet heath.
41	NM 96847 01294	G1 D2	Large pond (15x8m) with bottle sedge and <i>Sphagnum cuspidatum</i> in area dominated by wet heath. Estimated to be S9 <i>Carex rostrata</i> swamp NVC community.
42	NM 96128 00719	D2	Probable pine marten scat in area of mainly wet heath.
43	NM 96068 03685	G1 F1	Small loch located in a 'corrie-like' area of rough upland terrain (mainly containing wet heath). Loch contained a stand of lesser bladder sedge (NVC community S11 <i>Carex vesicaria</i> swamp) covering about 10% of the loch, also with some floating vegetation of broad-leaved pondweed.

Annex B

Quadrat Data

H12 *Calluna vulgaris*-
Vaccinium myrtillus heath
Calluna vulgaris sub-
community H12a

Species	Q75	Q106	Q108	Q117	Domin range	Frequency
<i>Blechnum spicant</i>	-	-	-	4	0-4	I
<i>Calluna vulgaris</i>	7	7	9	9	7-9	IV
<i>Carex binervis</i>	-	3	-	-	0-3	I
<i>Carex nigra</i>	4	-	-	-	0-4	I
<i>Cladonia portentosa</i>	-	-	1	-	0-1	I
<i>Deschampsia flexuosa</i>	6	3	2	1	1-6	IV
<i>Erica cinerea</i>	7	4	4	4	4-7	IV
<i>Galium saxatile</i>	4	-	-	4	0-4	II
<i>Hylocomium splendens</i>	7	-	-	-	0-7	I
<i>Hypnum jutlandicum</i>	-	4	4	-	0-4	II
<i>Nardus stricta</i>	-	7	-	-	0-7	I
<i>Pleurozium schreberi</i>	-	-	4	6	4-6	II
<i>Potentilla erecta</i>	-	4	-	-	0-4	I
<i>Racomitrium lanuginosum</i>	-	-	4	-	0-4	I
<i>Vaccinium myrtillus</i>	6	-	3	4	3-6	III
<i>Vaccinium vitis-idaea</i>	-	3	-	-	0-3	I
	NM 96636 00899	NN 00813 04577	NN 00867 04448	NN 01478 04854		

**H14 *Calluna vulgaris*-*Racomitrium*
lanuginosum heath
Festuca ovina sub-community H14a**

Species	Q27
Bare peat	4
<i>Calluna vulgaris</i>	6
<i>Cladonia portentosa</i>	3
<i>Deschampsia flexuosa</i>	4
<i>Empetrum nigrum</i> ssp. <i>Hermaphroditum</i>	3
<i>Euphrasia officinalis</i>	2
<i>Lycopodium clavatum</i>	3
<i>Polygala serpyllifolia</i>	1
<i>Racomitrium lanuginosum</i>	7

NM 98162
02553

**M2 *Sphagnum*
cuspidatum/fallax
bog pool
community
M2b *Sphagnum fallax* sub-community**

Species						Domin range	Frequency
Water	Q16	Q28	Q32	Q69	Q71		
<i>Calluna vulgaris</i>	-	-	-	8	-	0-8	I
<i>Carex echinata</i>	5	3	4	-	-	0-5	III
<i>Carex flacca</i>		4	4	-	-	0-4	I
<i>Eriophorum angustifolium</i>	5	-	-	-	-	0-5	I
<i>Eriophorum vaginatum</i>	4	5	4	5	4	4-5	V
<i>Equisetum fluviatile</i>	-	4	4	-	5	0-5	III
<i>Juncus bulbosus</i>	-	-	-	4	-	0-4	I
<i>Molinia caerulea</i>	-	-	-	-	4	0-4	I
<i>Nardus stricta</i>	3	-	-	-	-	0-3	I
<i>Pinguicula vulgaris</i>	4	-	-	-	-	0-4	I
<i>Polytrichum commune</i>	2	-	-	-	-	0-2	I
<i>Racomitrium lanuginosum</i>	-	-	-	-	3	0-3	I
<i>Sphagnum capillifolium</i>	-	-	-	5	-	0-5	I
<i>Sphagnum cuspidatum</i>	6	5	5	-	-	0-6	III
<i>Sphagnum fallax</i>	-	5	7	8	6	0-8	V
<i>Sphagnum papillosum</i>	4		-	-	-	0-4	I
<i>Vaccinium myrtillus</i>	4	7	6	3	8	3-8	V
<i>Viola palustris</i>	-	-	-	-	5	0-5	I
	1	-	-	-	-	0-1	I

NN 00077 06220
 NM 98167 02542
 NM 97876 02291
 NM 96972 01609
 NM 97116 01617

**M10 *Carex dioica*-*Pinguicula vulgaris* mire,
Carex viridula ssp. *oedocarpa*-*Juncus bulbosus* sub-
 community M10a**

Species	Q11	Q33	Q48	Q49	Domin range	Frequency
Peat	6	6	-	-	0-6	III
Rock	4	4	6	4	4-6	V
<i>Calluna vulgaris</i>	-	-	4	3	0-4	I
<i>Carex dioica</i>	4	-	-	-	0-4	I
<i>Carex echinata</i>	4	5	-	-	0-5	III
<i>Carex panicea</i>	-	-	4	2	0-4	I
<i>Drosera rotundifolia</i>	-	-	1	1	0-1	I
<i>Erica tetralix</i>	1	-	-	1	0-1	I
<i>Juncus articulata</i>	4	-	-	2	0-4	I
<i>Juncus bulbosus</i>	-	5	3	2	0-5	III
<i>Juncus squarrosus</i>	-	4	-	-	0-4	I
<i>Molinia caerulea</i>	4	-	-	-	0-4	I
<i>Narthecium ossifragum</i>	-	4	5	3	0-5	III
<i>Pinguicula vulgaris</i>	-	2	2	2	0-2	III
<i>Potamogeton natans</i>	4	-	-	-	0-4	I
<i>Potentilla erecta</i>	3	-	-	-	0-4	I
<i>Scorpidium scorpioides</i>	4	6	6	3	4-6	V
<i>Sphagnum capillifolium</i>	4	4	-	2	0-4	III
<i>Sphagnum palustre</i>	5	-	-	-	0-5	I
	NN 00165 04568	NM 97771 02140	NN 01750 05450	NN 01812 05481		

M6 Carex echinata-Sphagnum fallax/denticulatum
mire
Carex nigra-Nardus stricta sub-community
M6b

Species	Q15	Q39	Q46	Q55	Q63	Domin range	Frequency
<i>Anthoxanthum odoratum</i>	-	-	-	-	4	0-4	I
<i>Calluna vulgaris</i>	3	-	-	-	-	0-3	I
<i>Carex binervis</i>	-	3	-	4	-	0-4	II
<i>Carex echinata</i>	6	6	5	5	5	5-6	V
<i>Carex panicea</i>	-	-	4	-	-	0-4	I
<i>Carex viviparus</i>	3	-	-	-	-	0-3	I
<i>Cirsium palustre</i>	4	-	-	-	-	0-4	I
<i>Deschampsia flexuosa</i>	-	4	4	4	-	0-4	III
<i>Eriophorum vaginatum</i>	-	-	6	-	-	0-6	I
<i>Epilobium palustre</i>	4	-	-	-	-	0-4	I
<i>Festuca ovina</i>	3	-	-	4	4	0-4	III
<i>Galium saxatile</i>	4	-	-	-	-	0-4	I
<i>Holcus lanatus</i>	4	-	-	-	4	0-4	II
<i>Hylocomium splendens</i>	-	-	-	-	4	0-4	I
<i>Juncus acutiflorus</i>	-	-	-	-	4	0-4	I
<i>Juncus squarrosus</i>	-	-	-	-	4	0-4	I
<i>Molinia caerulea</i>	4	-	-	5	5	0-5	III
<i>Nardus stricta</i>	5	-	-	4	5	0-5	III
<i>Narsturtium officinales</i>	-	-	-	5	-	0-5	I
<i>Narthecium ossifragum</i>	-	-	-	-	5	0-5	I
<i>Pleurozium schreberi</i>	8	-	-	-	-	0-8	I
<i>Polytrichum commune</i>	-	-	3	-	-	0-3	I
<i>Potentilla erecta</i>	5	-	4	-	-	0-4	II
<i>Racomitrium lanuginosum</i>	-	-	-	4	-	0-4	I
<i>Rhytidadelphus loreus</i>	6	-	4	-	-	0-6	II
<i>Sphagnum capillifolium</i>	-	4	5	-	5	0-5	III
<i>Sphagnum fallax</i>	-	5	-	-	-	0-5	I
<i>Sphagnum palustre</i>	-	5	8	6	-	0-8	III
<i>Succisa pratensis</i>	4	5	-	5	4	0-5	IV
<i>Viola palustre</i>	5	-	-	4	4	0-5	III
	NN 00062 06217	NM 97571 02455	NN 01563 05364	NN 09202 05413	NM 96681 01889		

**M6 Carex echinata-Sphagnum
fallax/denticulatum mire
Juncus effusus sub-community M6c**

Species	Q47
<i>Deschampsia cespitosa</i>	4
<i>Juncus acutiflorus</i>	3
<i>Juncus effusus</i>	7
<i>Molinia caerulea</i>	5
<i>Potentilla erecta</i>	5
<i>Sphagnum capillifolium</i>	4
<i>Sphagnum fallax</i>	7
<i>Sphagnum palustre</i>	5
<i>Sphagnum papillosum</i>	3
<i>Succisa pratensis</i>	2
<i>Viola palustre</i>	2
	NN 01581 05377

**M6 Carex echinata-Sphagnum
fallax/denticulatum mire
Juncus acutiflorus sub-community
M6d**

Species	Q3	Q22	Q80	Q128	Domin range	Frequency
<i>Carex echinata</i>	-	8	-	-	0-8	I
<i>Deschampsia flexuosa</i>	-	-	3	-	0-3	I
<i>Epilobium palustre</i>	-	-	3	-	0-3	I
<i>Equisetum fluviatile</i>	3	-	-	-	0-3	I
<i>Galium saxatile</i>	-	-	4	3	0-4	I
<i>Juncus articulatus</i>	-	-	6	-	0-6	I
<i>Juncus acutiflorus</i>	7	7	4	8	4-8	IV
<i>Juncus conglomeratus</i>	-	-	-	3	0-3	I
<i>Luzula sylvatica</i>	-	-	-	4	0-4	I
<i>Menyanthes trifoliata</i>	4	-	-	-	0-4	I
<i>Molinia caerulea</i>	5	4	4	-	4-5	III
<i>Narthecium ossifragum</i>	-	4	-	-	0-4	I
<i>Polytrichum commune</i>	3	-	-	-	0-3	I
<i>Potentilla erecta</i>	3	4	-	3	0-4	III
<i>Sphagnum capillifolium</i>	-	5	-	-	0-5	I
<i>Sphagnum fallax</i>	-	4	-	8	0-8	I
<i>Sphagnum palustre</i>	5	-	-	5	0-5	I
<i>Sphagnum papillosum</i>	4	-	-	-	0-4	I
<i>Succisa pratensis</i>	-	5	-	-	0-5	I
<i>Viola palustre</i>	-	-	5	-	0-5	I

	NM 99593 04039	NM 98017 02890	NM 97780 04113	NM 95626 04087		
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M15 *Trichophorum cespitosum*-*Erica tetralix* wet heath
Typical sub-community
M15b

Species	Q2	Q52
<i>Calluna vulgaris</i>	8	7
<i>Cladonia portentosa</i>	-	3
<i>Erica tetralix</i>	3	-
<i>Eriophorum vaginatum</i>	6	4
<i>Hypnum cupresseforme</i>	-	4
<i>Molinia caerulea</i>	3	-
<i>Pleurozium schreberi</i>	6	-
<i>Potentilla erecta</i>	4	-
<i>Racomitrium lanuginosum</i>	-	5
<i>Sphagnum capillifolium</i>	6	8
<i>Vaccinium myrtillus</i>	-	6
<i>Vaccinium vitis-idaea</i>	-	4
	NM 98017 02871	NN 02225 05618

M15 *Trichophorum cespitosum*-*Erica tetralix* wet heath
***Cladonia* sub-community M15c**

Species	Q1	Q7	Q26	Q34	Q42	Q45	Q48	Q56	Q60	Q67	Q70	Q89	Q102	Domin range	Frequency
Bare peat	-	-	-	-	4	-	-	-	-	-	-	-	-	0-4	I
Rock	-	4	-	-	-	-	-	5	-	-	-	-	-	0-5	I
<i>Calluna vulgaris</i>	10	5	5	-	-	7	7	-	7	8	8	4	5	0-10	IV
<i>Carex binervis</i>	-	-	4	-	-	-	-	5	-	4	5	-	-	0-4	II
<i>Carex nigra</i>	-	-	4	-	-	-	-	-	-	4	-	-	-	0-4	I
<i>Cladonia portentosa</i>	3	3	-	5	6	4	4	-	4	-	4	-	4	0-6	IV
<i>Cladonia uncialis</i>	-	-	2	-	-	4	-	-	-	-	-	-	-	0-4	I
<i>Dicranum scoparium</i>	-	-	-	-	-	-	-	4	-	-	-	-	1	0-4	I
<i>Deschampsia flexuosa</i>	3	-	-	-	6	1	5	-	-	-	-	-	4	0-6	II
<i>Empetrum nigrum</i>	-	5	-	-	-	-	-	-	-	-	4	5	-	0-5	I
<i>Empetrum nigrum</i> ssp. <i>Hermaphroditum</i>	-	-	-	-	8	-	-	4	-	-	-	-	-	0-8	I
<i>Erica cinerea</i>	3	-	-	-	-	3	5	-	-	-	3	-	2	0-5	II
<i>Erica tetralix</i>	-	-	-	-	-	-	-	-	4	-	-	-	-	0-4	I
<i>Eriophorum angustifolium</i>	-	-	-	-	3	-	-	-	-	-	4	1	-	0-4	I
<i>Festuca vivipara</i>	-	-	-	-	-	-	4	-	-	-	-	-	-	0-4	I
<i>Juncus squarossus</i>	-	3	-	3	-	-	-	-	-	-	-	-	-	0-3	I
<i>Hypnum cupresseforme</i>	-	-	-	-	-	-	5	-	-	-	-	-	-	0-5	I
<i>Lycopodium clavatum</i>	-	2	-	-	-	-	3	3	-	-	-	-	-	0-3	I
<i>Molinia caerulea</i>	2	6	-	7	-	-	-	-	5	-	-	5	4	0-7	II
<i>Nardus stricta</i>	5	4	7	-	-	-	-	5	-	7	7	5	4	0-7	III
<i>Narthecium ossifragum</i>	-	7	-	4	-	-	-	-	5	4	-	-	-	0-5	I
<i>Pleurozia schreberi</i>	-	-	-	-	-	-	-	-	4	-	-	4	-	0-4	I
<i>Potentilla erecta</i>	4	5	5	4	-	1	4	3	4	4	-	2	3	0-5	IV

<i>Racomitrium lanuginosum</i>	8	8	7	9	9	9	7	8	5	7	7	-	4	5-9	V
<i>Sphagnum capillifolium</i>	-	4	-	-	3	2	-	-	7	-	-	5	-	0-4	I
<i>Trichophorum germincum</i>	5	4	7	-	-	6	-	-	-	6	5	5	4	0-7	III
<i>Vaccinium vitis-idaea</i>	4	-	-	-	6	-	4	-	-	-	-	-	1	0-6	I
<i>Vaccinium myrtyllus</i>	3	4	-	-	3	-	6	-	-	-	4	4	4	0-6	II
	NM 99567 03975	NM 99915 03933	NM 98085 02623	NM 97662 02054	NN 00946 05204	NN 01279 05156	NN 01812 05481	NN 02911 05181	NM 96644 02082	NM 96924 01570	NM 97136 01791	NM 98227 03082	NN 00843 04935		

M15 *Trichophorum cespitosum*-*Erica tetralix* wet heath

***Vaccinium myrtillus* sub-community M15d**

Species	Q14	Q17	Q19	Q24	Q3 0	Q3 1	Q4 0	Q5 0	Q5 3	Q6 1	Q7 8	Q8 2	Q9 2	Q9 8	Q11 8	Q11 9	Q12 0	Q12 1	Q12 4	Q12 6	Q12 7	Q13 3	Don n ran e	
Bare peat	2	-	-	4	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-4	
Rock	2	-	-	-	-	-	-	-	4	-	-	-	2	-	-	-	-	-	-	-	-	-	0-4	
<i>Blechnum spicant</i>	-	-	-	-	-	-	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	0-4	
<i>Calluna vulgaris</i>	8	8	8	6	7	7	7	5	7	6	6	5	8	8	5	5	1	6	8	7	8	8	0-8	
<i>Carex echinata</i>	-	-	-	3	-	-	-	-	-	-	-	-	3	-	5	-	-	4	1	-	-	-	0-5	
<i>Carex binervis</i>	-	-	-	-	-	4	-	-	-	5	-	-	1	-	-	-	-	-	-	-	-	-	0-5	
<i>Carex nigra</i>	-	-	-	-	-	4	-	-	-	4	-	6	-	-	-	-	-	-	-	-	-	-	0-6	
<i>Cladonia portentosa</i>	3	-	3	-	3	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-4	
<i>Dicranum scoparium</i>	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	0-4	
<i>Deschampsia flexuosa</i>	3	-	4	-	4	-	4	-	4	4	-	4	-	7		1	4	2	2	-	-	-	0-7	
<i>Drosera rotundifolia</i>	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-4	
<i>Empetrum nigrum</i>	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	5	4	-	0-6	
<i>Erica cinerea</i>	-	-	4	-	-	-	-	4	4	4	-	-	-	-	-		1	-	-	-	-	-	0-4	
<i>Erica tetralix</i>	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	3	4	2	0-4	
<i>Eriophorum angustifolium</i>	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	0-4	
<i>Eriophorum vaginatum</i>	-	-	-	-	-	-	7	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	0-7	
<i>Festuca ovina</i>	-	-	3	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	0-4	
<i>Festuca viviparus</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-2	
<i>Juncus squarossus</i>	3	-	-	4	-	5	-	-	-	-	-	-	3	-	-	-	1	3	-	-	-	-	0-5	
<i>Galium saxatile</i>	-	-	3	-	-	4	-	-	4	-	-	4	-	1	-	-	-	-	-	-	-	-	0-4	
<i>Hypnum cupresseforme</i>	-	-	3	-	-	-	-	-	4	-	-	7	-	-	-	-	-	-	-	-	-	-	0-7	
<i>Molinia caerulea</i>	-	-	-	4	-	-	4	-	-	-	6	-	-	1	-	7	4	-	-	-	-	-	0-7	
<i>Nardus stricta</i>	4	-	-	6	-	8	-	5	-	5	-	6	6	-	7		6	4	-	-	-	-	0-8	

<i>Narthecium ossifragum</i>	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-	3	-	-	-	4	-	5	0-3
<i>Peltigera canina</i>	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-3
<i>Plantago lanceolata</i>	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	0-3
<i>Pleurozium schreberi</i>	8	-	8	-	7	8	8	-	7	6	7	5	-	4	-	5	8	3	6	-	8	-	0-8
<i>Polygala serphyllifolia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	0-2
<i>Polytrichum commune</i>	-	5	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-5
<i>Potentilla erecta</i>	4	-	3	4	6	4	4	4	-	4	5	4	4	4	3	1	1	4	-	1	2	3	0-6
<i>Racomitrium lanuginosum</i>	4	-	-	4	-	-	-	6	-	4	-	-	-	-	4	4	-	-	-	4	-	4	0-6
<i>Rhytidiadelphus loreus</i>	-	-	4	-	-	-	4	-	4	-	-	-	-	-	-	-	-	3	4	-	1	-	0-4
<i>Rytididelphus squarrosus</i>	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	0-4
<i>Rumex acetosella</i>	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	0-3
<i>Sphagnum capillifolium</i>	-	-	-	-	-	-	7	-	-	4	-	-	5	4	4	-	-	2	-	5	5	8	0-8
<i>Succisa pratensis</i>	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	0-3
<i>Trichophorum germincum</i>	-	-	-	7	4	-	-	7	-	5	5	-	5	-	7	4	-	4	4	6	6	6	0-8
<i>Vaccinium vitis-idaea</i>	4	-	4	-	6	-	5	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	0-6
<i>Vaccinium myrtillus</i>	4	6	6	-	6	8	-	-	5	-	-	-	-	4	-	-	8	4	4	-	3	3	0-8
	NN 00055 06197	NN 00128 06207	NN 00128 06207	NM 98049 02829	NM 98142 02440	NM 98016 02345	NN 00907 05267	NN 01799 05470	NN 02371 05773	NM 96684 01976	NM 96457 00979	NN 00379 06277	NM 98418 03141	NM 99293 03595	NN 01569 04862	NM 96120 03437	NM 96154 03505	NM 96061 03612	NM 95790 03652	NM 95621 03807	NM 95708 04029	NM 96461 04311	

**M17 *Trichophorum cespitosum*-*Eriophorum vaginatum* blanket mire,
Drosera rotundifolia-*Sphagnum* species sub-community M17a**

Species	Q103	Q109	Q132	Domin range	Frequency
<i>Calluna vulgaris</i>	6	7	7	6-7	III
<i>Cladonia portentosa</i>	-	1	-	0-1	I
<i>Deschampsia flexuosa</i>	-	-	1	0-1	I
<i>Eriophorum angustifolium</i>	-	-	4	0-4	I
<i>Hypnum jutlandicum</i>	-	5	-	0-5	I
<i>Molinia caerulea</i>	4	-	-	0-4	I
<i>Pleurozium schreberi</i>	-	6	4	4-6	III
<i>Polytrichum commune</i>	-	-	1	0-1	I
<i>Potentilla erecta</i>	5	-	5	0-5	III
<i>Rhytidiadelphus loreus</i>	-	3	-	0-3	I
<i>Sphagnum capillifolium</i>	8	-	-	0-8	I
<i>Sphagnum fallax</i>	-	-	5	0-5	I
<i>Trichophorum germanicum</i>	8	8	8	8	III
<i>Vaccinium myrtillus</i>	4	2	3	2-4	III
	NN 00710 04762	NN 00858 04521	NM 96227 04502		

**M17 *Trichophorum cespitosum*-*Eriophorum vaginatum* blanket mire,
Drosera rotundifolia-*Sphagnum* species sub-
community M17a**

Species	Q4	Q5	Q51	Q93	Q95	Q96	Q99	Q101	Q111	Q112	Q113	Q116	Q135	Domin range	Frequency
<i>Calluna vulgaris</i>	6	5	4	5	5	-	8	7	8	7	5	7	6	4-8	V
<i>Carex echinata</i>	-	4	-	-	-	-	-	-	-	-	-	-	-	0-4	I
<i>Deschampsia flexuosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	4	0-4	I
<i>Drosera rotundifolia</i>	1	-	-	-	-	1	-	-	-	-	-	-	-	0-1	I
<i>Empetrum nigrum</i>	-	-	-	-	-	-	-	4	5	6	-	-	-	0-6	I
<i>Erica tetralix</i>	4	-	-	3	3	-	-	4	-	-	-	-	-	0-4	II
<i>Eriophorum angustifolium</i>	-	4	-	-	1	1	-	-	-	1	-	-	-	0-4	II
<i>Eriophorum vaginatum</i>	5	4	8	-	4	3	-	-	-	-	-	-	-	0-8	II
<i>Hypnum jutlandicum</i>	-	-	-	-	-	-	-	-	-	-	-	4	-	0-4	I
<i>Juncus squarrosus</i>	-	5	-	-	-	-	-	-	-	-	-	-	-	0-5	I
<i>Molinia caerulea</i>	7	-	4	4	-	-	4	-	-	-	6	3	-	0-7	III
<i>Narthecium ossifragum</i>	4	4	5	-	3	-	-	-	-	-	4	-	-	0-5	II
<i>Pleurozium schreberi</i>	-	-	-	-	2	-	3	5	4	5	-	-	7	0-7	III
<i>Potentilla erecta</i>	4	-	4	4	1	-	3	-	1	-	3	4	1	0-4	IV
<i>Racomitrium lanuginosum</i>	-	-	6	4	-	-	-	-	-	-	4	-	4	0-6	II
<i>Rhytidiadelphus loreus</i>	-	-	-	-	-	-	-	3	4	-	-	-	-	0-4	I
<i>Sphagnum capillifolium</i>	6	-	6	5	5	6	5	5	6	5	4	6	7	0-7	V
<i>Sphagnum cuspidatum</i>	-	4	-	-	-	3	-	-	-	-	-	-	-	0-4	I
<i>Sphagnum papillosum</i>	5	-	7	-	-	5	-	-	-	-	4	6	-	0-7	II
<i>Trichophorum germanicum</i>	5	5	-	8	7	8	8	5	7	5	7	7	8	0-8	V
<i>Vaccinium myrtillus</i>	-	-	-	-	-	-	-	4	3	2	-	-	2	0-4	II



NM 99616 04045
NM 99637 04025
NN 01921 05541
NM 98164 03015
NM 98482 03268
NM 98842 03336
NM 99402 03834
NN 00852 04963
NN 00848 04114
NN 01026 04049
NN 01115 04266
NN 01445 04862
NM 96559 04151

**M17 Trichophorum germanicum-Eriophorum
vaginatum blanket Mire
Cladonia species sub-community
M17b**

Species	Q43	Q88
<i>Calluna vulgaris</i>	5	4
<i>Cladonia portentosa</i>	5	4
<i>Erica cinerea</i>	3	-
<i>Empetrum nigrum</i> ssp. <i>Hermaphroditum</i>	3	-
<i>Eriophorum vaginatum</i>	6	7
<i>Eriophorum angustifolium</i>	-	3
<i>Molinia caerulea</i>	4	4
<i>Pleurozium schreberi</i>	4	-
<i>Potentilla erecta</i>	4	2
<i>Racomitrium lanuginosum</i>	8	-
<i>Sphagnum capillifolium</i>	6	6
<i>Hypnum jutlandicum</i>	-	3
	NN 01045 05104	NM 98164 03015

**M18 Erica tetralix-
Sphagnum papillosum
blanket mire,
Sphagnum magellanicum-Andromeda polifolia sub-community
M18a**

Species	Q9	Q41
<i>Calluna vulgaris</i>	7	3
<i>Cladonia portentosa</i>	-	3
<i>Drosera rotundifolia</i>	-	3
<i>Empertrum nigrum</i>	2	3
<i>Erica tetralix</i>	5	-
<i>Eriophorum angustifolium</i>	4	4
<i>Eriophorum vaginatum</i>	6	-
<i>Narthecium ossifragum</i>	7	5
<i>Sphagnum capillifolium</i>	8	6
<i>Sphagnum cuspidatum</i>	-	4
<i>Sphagnum papillosum</i>	6	8
<i>Vaccinium myrtilus</i>	-	5
	NN 00145 04261	NN 00941 05250

M19 *Calluna vulgaris*-*Eriophorum vaginatum* blanket mire
***Erica tetralix* sub-community M19a**

Species	Q8	Q13	Q25	Q29	Q36	Q37	Q57	Q59	Q65	Q72	Q73	Q79	Q87	Q97	Q104	Q105	Q114	Q115	Q123	Q125	Domin range
<i>Aulacomnium palustre</i>	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	0-3
<i>Calluna vulgaris</i>	8	8	7	5	-	7	-	8	8	8	-	7	6	7	7	7	8	8	8	7	0-8
<i>Carex echinata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0-2
<i>Cladonia portentosa</i>	-	4	-	-	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	1	0-4
<i>Deschampsia flexuosa</i>	-	-	-	-	4	4	-	-	-	2	3	4	4	2	-	-	-	-	-	-	0-4
<i>Empetrum nigrum</i>	-	-	4	-	-	-	-	-	3	3	-	-	-	-	5	-	4	6	4	-	0-6
<i>Erica cinerea</i>	-	-	-	-	-	-	-	-	-	3	3	-	-	4	-	-	-	-	1	-	0-4
<i>Erica tetralix</i>	-	-	3	4	-	-	-	4	4	3	-	4	-	-	-	-	-	-	-	3	0-4
<i>Eriophorum angustifolium</i>	-	-	-	-	-	-	-	-	4	-	-	-	-	1	-	-	-	-	3	2	0-4
<i>Eriophorum vaginatum</i>	8	7	7	8	8	5	7	-	7	6	7	7	7	-	-	-	-	-	-	-	0-8
<i>Galium saxatile</i>	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-3
<i>Hylocomium splendens</i>	-	-	-	-	-	-	-	-	-	6	8	-	7	-	-	-	-	-	-	-	0-8
<i>Hypnum jutlandicum</i>	-	-	-	-	-	-	-	-	3	-	-	6	-	-	-	-	-	-	3	-	0-6
<i>Juncus squarrosus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	0-5
<i>Mnium hornum</i>	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-4
<i>Molinia caerulea</i>	-	-	4	-	-	-	-	4	4	-	-	-	-	4	-	4	-	-	-	3	0-4
<i>Narthecium ossifragum</i>	-	-	-	-	-	-	4	5	4	-	-	-	-	-	-	4	-	-	3	-	0-5
<i>Polytrichum commune</i>	-	-	-	-	-	-	-	4	-	-	-	-	5	-	-	-	-	-	-	-	0-5
<i>Pleurozium schreberi</i>	8	5	5	-	8	7	5	4	-	-	-	-	-	4	4	-	4	5	6	5	0-8
<i>Potentilla erecta</i>	4	-	4	-	4	-	-	4	-	-	-	4	4	1	-	-	-	-	-	2	0-4
<i>Racomitrium lanuginosum</i>	-	-	-	7	-	5	-	-	5	5	-	-	-	-	-	-	-	-	-	4	0-7
<i>Rhytidadelphus loreus</i>	4	4	-	3	-	-	-	4	-	-	-	-	-	3	-	-	1	3	-	-	0-4
<i>Sphagnum capillifolium</i>	5	6	5	7	5	5	9	4	6	7	-	6	5	5	5	5	7	6	6	7	0-9
<i>Sphagnum palustre</i>	-	-	4	4	-	-	-	7	5	-	-	5	-	-	-	4	-	-	-	-	0-7
<i>Sphagnum fallax</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	0-3
<i>Trichophorum germanicum</i>	-	-	-	-	-	-	-	-	4	-	-	-	-	4	5	5	-	7	5	5	0-7

<i>Vaccinium myrtillus</i>	4	4	3	-	6	4	3	-	-	4	4	5	-	-	4	-	4	3	4	2	0-6
<i>Vaccinium vitis-idaea</i>	-	4	-	-	5	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	0-5
	NM 09912 03962	NN 00042 06182	NM 98090 02652	NM 98229 02526	NM 97510 01992	NM 97401 02038	NN 02891 05132	NM 96664 02125	NM 96686 01598	NM 97100 01626	NM 96809 01166	NM 96157 00688	NN 00642 06517	NM 99175 03514	NN 00815 04661	NN 00828 04630	NN 01112 04317	NN 01319 04754	NM 95934 03641	NM 95581 03638	

M20 Eriophorum vaginatum

blanket mire

M20b *Calluna vulgaris* - *Cladonia* species sub-community

Species	Q139
<i>Cladonia portentosa</i>	2
<i>Deschampsia flexuosa</i>	6
<i>Eriophorum vaginatum</i>	8
<i>Molinia caerulea</i>	4
<i>Pleurozium schreberi</i>	8
<i>Polytrichum commune</i>	4
<i>Potentilla erecta</i>	3
<i>Sphagnum capillifolium</i>	4
<i>Vaccinium myrtillus</i>	5
	NN 00862 06371

M23 *Juncus effusus/acutiflorus*-*Galium palustre* rush-pasture***Juncus acutiflorus* sub-community M23a**

Species	Q81
<i>Calliergonella cuspidata</i>	5
<i>Epilobium palustre</i>	3
<i>Galium saxatile</i>	5
<i>Holcus lanatus</i>	4
<i>Juncus acutiflorus</i>	8
<i>Pedicularis sylvatica</i>	4
<i>Ranunculus repens</i>	3
<i>Rumex acetosella</i>	6

<i>Viola palustris</i>	6
	NN 00387 06284

M25 *Molinia caerulea* –*Potentilla erecta* mire (E2.1-like habitat)
***Erica Tetralix* sub-community**
M25a

Species	Q6	Q10	Q62	Q129	Q131	Q134	Q136	Domin range	Frequency
<i>Calluna vulgaris</i>	-	4	-	3	4	-	4	0-4	IV
<i>Carex echinata</i>	3	-	-	-	-	-	-	0-3	I
<i>Deschampsia flexuosa</i>	-	-	-	-	-	4	-	0-4	I
<i>Erica tetralix</i>	-	-	-	4	2	-	-	0-4	II
<i>Galium palustre</i>	-	4	-	-	-	-	-	0-4	I
<i>Hyloconium splendens</i>	-	-	5	-	-	-	-	0-5	I
<i>Hypnum cupresseforme</i>	4	3	-	-	-	-	-	0-4	II
<i>Juncus acutiflorus</i>	-	4		4	-	-	-	0-4	II
<i>Molinia caerulea</i>	10	8	9	9	9	8	6	0-5	V
<i>Nardus stricta</i>	-	-	-	-	-	5	4	0-5	II
<i>Narthecium ossifragum</i>	-	3	4	-	1	4	-	0-4	III
<i>Pleurozium schreberi</i>	-	-	5	-	-	-	7	0-7	II
<i>Potentilla erecta</i>	4	4	4	3	3	-	-	0-4	IV
<i>Sphagnum capillifolium</i>	5	5		4	4	-	-	0-5	III
<i>Sphagnum palustre</i>	4	6	6	3	-	-	-	0-6	III
<i>Spagnum papillosum</i>	-	-	-	4	-	4	-	0-4	II
<i>Sphagnum fallax</i>	-	-	-	3	-		-	0-3	I
<i>Succisa pratensis</i>	-	4	-	-	-	4	-	0-4	II
<i>Trichophorum germanicum</i>	-	-	-	-	6	6	5	0-6	II

<i>Vaccinium myrtillus</i>	-	-	-	-	-	-	4	0-4	I
<i>Viola palustris</i>	5	4	-	2	-	-	-	0-5	II
	NM 99702 03969	NN 00211 04425	NM 96690 01915	NM 95702 04234	NM 96025 04546	NM 96527 04237	NM 96618 04051		

M25 *Molinia caerulea* –*Potentilla erecta* mire (E2.1-like habitat)
***Anthoxanthum odoratum* sub-community M25b**

Species	Q83
<i>Anthoxanthum odoratum</i>	4
<i>Eriophorum vaginatum</i>	4
<i>Festuca ovina</i>	5
<i>Galium saxatile</i>	5
<i>Molinia caerulea</i>	7
<i>Narthecium ossifragum</i>	4
<i>Sphagnum capillifolium</i>	5
<i>Sphagnum palustre</i>	8
	NN
	00367
	06267

**M25 *Molinia caerulea* –
Potentilla mire
Erica tetralix sub-
community M25a**

Species	Q12	Q20	Q21	Q35	Q44	Q66	Q68	Q77	Q90	Q91	Q94	Q100	Q130	Domin range	Frequency
<i>Calluna vulgaris</i>	-	-	-	-	-	-	6	-	5	-	-	1	1	0-6	I
<i>Cladonia</i> sp.	-	-	-	-	-	-	-	-	1	-	-	-	-	0-1	I
<i>Deschampsia flexuosa</i>	-	-	-	-	4	-	-	-	-	-	-	-	-	0-4	I
<i>Empetrum nigrum</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	0-1	I
<i>Erica tetralix</i>	1	-	-	-	-	-	4	-	4	-	-	3	2	0-4	I
<i>Eriophorum angustifolium</i>	-	-	-	-	-	-	-	-	-	-	-	-	4	0-4	I
<i>Eriophorum vaginatum</i>	-	6	7	-	-	-	-	-	-	-	-	-	-	0-7	II
<i>Galium saxatile</i>	-	-	-	-	3	6	-	-	-	-	-	-	-	0-6	II
<i>Holcus lanatus</i>	-	-	-	-	-	-	5	-	-	-	-	-	-	0-5	I
<i>Hyloconium splendens</i>	-	-	-	-	-	7	6	-	-	-	-	-	-	0-7	II
<i>Molinia caerulea</i>	9	6	8	9	9	9	8	7	8	10	10	10	8	6-10	V
<i>Narthecium ossifragum</i>	1	4	4	6	-	-	6	-	5	-	3	4	6	0-6	V
<i>Oreopteris limbosperma</i>	-	-	-	-	3	-	-	-	-	-	-	-	-	0-4	I
<i>Pleurozium schreberi</i>	-	5	-	-	4	-	-	-	-	3	-	-	-	0-4	II
<i>Polytrichum commune</i>	-	4	-	-	3	-	-	-	-	-	-	-	-	0-4	II
<i>Potentilla erecta</i>	4	4	5	-	4	5	3	-	1	4	4	2	-	0-5	V
<i>Racomitrium lanuginosum</i>	-	-	-	-	-	-	4	-	-	-	-	4	2	0-4	I
<i>Sphagnum capillifolium</i>	5	5	6	6	7	-	5	-	5	-	6	4	-	0-7	V
<i>Sphagnum palustre</i>	-	-	5	5	-	-	7	-	4	-	-	4	-	0-7	II
<i>Succisa pratensis</i>	-	-	-	-	-	-	4	-	-	-	-	-	-	0-4	I

<i>Trichophorum germanicum</i>	-	-	-	4	-	-	-	-	-	-	-	7	-	0-7	I
<i>Vaccinium myrtillus</i>	-	5	-	-	-	-	-	-	-	-	-	-	-	0-5	I
<i>Viola palustris</i>	-	-	-	-	-	-	4	-	-	-	-	-	-	0-4	I
	NM 00155 04586	NM 98050 02969	NM 98031 02915	NM 97637 02039	NN 01237 05200	NM 96752 01621	NM 96962 01598	NM 96588 00915	NM 98321 03103	NM 98369 03134	NM 98727 03401	NN 00862 05043	NM 95936 04398		

**M25 *Molinia caerulea* – *Potentilla mire*
Anthoxanthum odoratum sub-community
M25b**

Species	Q77
<i>Anthoxanthum odoratum</i>	4
<i>Holcus lanatus</i>	5
<i>Molinia caerulea</i>	7
<i>Narthecium ossifragum</i>	6
<i>Potentilla erecta</i>	3
<i>Sphagnum capillifolium</i>	5
<i>Sphagnum palustre</i>	7
NM 96588 00915	

**M29 *Hypericum elodes* – *Potamogeton polygonifolius*
soakaway community**

Species	Q77
<i>Potamogeton polygonifolius</i>	6
<i>Sphagnum denticulatum</i>	4
<i>Juncus bulbosus</i>	3
<i>Molinia caerulea</i>	3
<i>Sphagnum capillifolium</i>	3
NN 00835 05102	

**U4 Festuca ovina-Agrostis capillaris-Galium
saxatile grassland
Typical sub-community U4a**

Species	Q38	Q54	Q64	Q74	Q86	Q110	Q122	Domin range	Frequency
<i>Agrostis capillaris</i>	4	4	4	4	4	6	6	4-6	V
<i>Anthoxanthum odoratum</i>	7	6	6	6	4	4	-	4-6	V
<i>Carex nigra</i>	-	-	-	-	5	-	-	0-5	I
<i>Deschampsia cespitosa</i>	-	-	-	-	4	-	-	0-5	I
<i>Deschampsia flexuosa</i>	-	5	4	4	-	-	-	0-4	IV
<i>Festuca ovina</i>	4	-	-	-	-	4	-	0-4	I
<i>Festuca vivipara</i>	4	3	-	-	-	-	-	0-4	II
<i>Galium saxatile</i>	7	7	6	7	-	3	4	0-7	IV
<i>Hylocomium splendens</i>	-	-	8	4	-	-	-	0-8	II
<i>Holcus lanatus</i>	-	-	-	-	5	-	-	0-5	I
<i>Molinia caerulea</i>	-	-	5	-	-	-	-	0-5	I
<i>Nardus stricta</i>	-	5	-	-	5	4	7	0-7	II
<i>Narthecium ossifragum</i>	-	-	-	-	3	-	-	0-3	I
<i>Pleurozia schreberi</i>	6	7	-	-	-	4	5	0-7	II
<i>Polytrichum commune</i>	-	5	-	-	-	-	2	0-5	I
<i>Potentilla erecta</i>	-	5	4	4	-	4	2	0-5	III
<i>Prunella vulgaris</i>	3	-	-	-	3	-	-	0-3	II
<i>Ranunculus repens</i>	-	-	-	-	3	-	-	0-3	I
<i>Rhynchospora alba</i>	-	4	-	-	-	-	-	0-4	I
<i>Rhynchospora squarrosa</i>	-	-	-	7	7	-	4	0-7	II
<i>Sphagnum capillifolium</i>	-	3	-	-	-	-	-	0-3	I
<i>Thymus vulgaris</i>	3	-	-	-	-	-	-	0-3	I
<i>Viola palustre</i>	-	5	-	-	4	-	-	0-5	I
<i>Vaccinium myrtillus</i>	-	-	-	-	-	-	2	0-2	I

	NM 97366 02291	NN 02771 05660	NM 96572 01615	NM 96651 00981	NN 00515 06452	NN 00755 04192	NM 95996 03629		
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U5 *Nardus stricta*-*Galium saxatile* grassland
***Calluna vulgaris*-*Danthonia decumbens* sub-community**
U5d

Species	Q84	Q85	Q107	Q137	Q138	Domin range	Frequency
<i>Agrostis capillaris</i>	-	-	4	-	-	0-4	I
<i>Anthoxanthum odoratum</i>	-	5	-	-	4	0-5	II
<i>Blechnum spicant</i>	3	-	1	-	-	0-3	II
<i>Calluna vulgaris</i>	7	-	1	3	1	0-7	IV
<i>Carex binervis</i>	-	-	-	-	3	0-3	I
<i>Carex nigra</i>	-	5	-	3	-	0-5	II
<i>Cirsium palustre</i>	-	2	-	-	-	0-2	I
<i>Cladonia portentosa</i>	2	-	-	-	-	0-2	I
<i>Danthonia decumbens</i>	-	-	-	4	-	0-4	I
<i>Deschampsia cespitosa</i>	-	4	-	-	-	0-4	I
<i>Deschampsia flexuosa</i>	5	4	3	7	7	3-7	V
<i>Dicranium scoparium</i>	-	-	-	1	-	0-1	I
<i>Eriophorum vaginatum</i>	4	-	-	-	-	0-4	I
<i>Festuca ovina</i>	4	4	-	-	-	0-4	II
<i>Festuca vivipara</i>	3	3	-	4	4	0-4	IV
<i>Juncus squarossus</i>	5	-	-	-	-	0-5	I
<i>Galium saxatile</i>	5	5	4	-	-	0-5	III

<i>Hypnum cupresseforme</i>	5	-	-	-	-	0-5	I
<i>Luzula multiflora</i>	-	-	-	-	1	0-1	I
<i>Molinia caerulea</i>	-	-	3	3	3	0-3	III
<i>Nardus stricta</i>	8	8	7	5	6	0-8	V
<i>Narthecium ossifragum</i>	3	-	-	-	-	0-3	I
<i>Pleurozium schreberi</i>	7	-	5	8	7	0-8	IV
<i>Polytrichum commune</i>	4	-	5	-	4	0-5	III
<i>Potentilla erecta</i>	4	-	-	-	1	0-4	II
<i>Ranunculus repens</i>	-	3	-	-	-	0-3	I
<i>Rytididelfus squarrosus</i>	-	7	-	-	-	0-7	I
<i>Sphagnum capillifolium</i>	3	-	1	-	-	0-3	II
<i>Succisa pratensis</i>	-	4	-	-	-	0-4	I
<i>Trichophorum germanicum</i>	-	3	-	-	-	0-3	I
<i>Vaccinium myrtillus</i>	-	-	1	4	4	0-4	III
<i>Viola palustre</i>	-	5	-	-	-		I
	NN 00340 06290	NN 00390 06342	NN 00838 04540	NN 00910 06371	NN 00885 06357		

**U4 Festuca ovina-Agrostis capillaris-Galium saxatile
grassland
Vaccinium myrtillus-Deschampsia flexuosa sub-community
U4e**

Species	Q18	Q76
<i>Agrostis capillaris</i>	5	-
<i>Anthoxanthum odoratum</i>	5	5
<i>Carex bineveris</i>	-	6
<i>Deschampsia flexuosa</i>	5	4
<i>Festuca ovina</i>	3	-
<i>Galium saxatile</i>	5	5
<i>Nardus stricta</i>	-	6
<i>Pleurozium schreberi</i>	8	-
<i>Polytrichum commune</i>	4	-
<i>Potentilla erecta</i>	4	-
<i>Racomitrium lanuginosum</i>	-	-
<i>Rhytidiadelphus loreus</i>	7	-
<i>Vaccinium myrtillus</i>	4	5
	NN 00188 06276	NM 96607 00908

Annex C

Botanical and Faunal Species List

Common Name	Scientific Name
TREES and SHRUBS	
Arctic bearberry	<i>Arctostaphylos alpinus</i>
Downy birch	<i>Betula pubescens</i>
Common heather	<i>Calluna vulgaris</i>
Crowberry	<i>Empetrum nigrum</i>
Mountain crowberry	<i>Empetrum nigrum</i> ssp. <i>Hermaphroditum</i>
Bell heather	<i>Erica cinerea</i>
Cross-leaved heath	<i>Erica tetralix</i>
Bog myrtle	<i>Myrica gale</i>
Sitka spruce	<i>Picea sitchensis</i>
Lodgepole pine	<i>Pinus contorta</i>
Cloudberry	<i>Rubus chamaemorus</i>
Eared willow	<i>Salix aurita</i>
Rowan	<i>Sorbus aucuparia</i>
Common blaeberry	<i>Vaccinium myrtillus</i>
Common cranberry	<i>Vaccinium oxycoccos</i>
Cowberry (lingonberry)	<i>Vaccinium vitis-idaea</i>
GRASSES	
Common bent	<i>Agrostis capillaris</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Heath grass	<i>Danthonia decumbens</i>
Tufted hair-grass	<i>Deschampsia cespitosa</i>
Wavy hair-grass	<i>Deschampsia flexuosa</i>
Sheep's fescue	<i>Festuca ovina</i>
Red fescue	<i>Festuca rubra</i>
Viviparous sheep's-fescue	<i>Festuca vivipara</i>
Floating sweet-grass	<i>Glyceria fluitans</i>
Yorkshire fog	<i>Holcus lanatus</i>
Purple moor-grass	<i>Molinia caerulea</i>
Mat grass	<i>Nardus stricta</i>
Common reed	<i>Phragmites australis</i>
Annual meadow-grass	<i>Poa annua</i>
SEDGES	
Green-ribbed sedge	<i>Carex binervis</i>
Dioecious sedge	<i>Carex dioica</i>
Star sedge	<i>Carex echinata</i>
Glaucous sedge	<i>Carex flacca</i>
Common sedge	<i>Carex nigra</i>
Carnation sedge	<i>Carex panicea</i>
Bottle sedge	<i>Carex rostrata</i>
Lesser bladder sedge	<i>Carex vesicaria</i>
Common cottongrass	<i>Eriophorum angustifolium</i>

Common Name	Scientific Name
Hare's-tail cottongrass	<i>Eriophorum vaginatum</i>
Deergrass	<i>Trichophorum germanicum</i>
RUSHES	
Common spike-rush	<i>Eleocharis palustris</i>
Bulbous rush	<i>Juncus bulbosus</i>
Compact rush	<i>Juncus conglomeratus</i>
Sharp-flowered rush	<i>Juncus acutiflorus</i>
Soft rush	<i>Juncus effusus</i>
Heath rush	<i>Juncus squarrosus</i>
Heath wood-rush	<i>Luzula multiflora</i>
Greater wood-rush	<i>Luzula sylvatica</i>
Common club-rush	<i>Schoenoplectus lacustris</i>
HERBS	
Lady's mantle species	<i>Alchemilla</i> sp.
Marsh thistle	<i>Cirsium palustre</i>
Marsh hawk's-beard	<i>Crepis paludosa</i>
Heath spotted-orchid	<i>Dactylorhiza maculata</i>
Foxglove	<i>Digitalis purpurea</i>
Round-leaved sundew	<i>Drosera rotundifolia</i>
Marsh willowherb	<i>Epilobium palustre</i>
Eyebright species	<i>Euphrasia officinalis</i>
Marsh bedstraw	<i>Galium palustre</i>
Heath bedstraw	<i>Galium saxatile</i>
Mare's-tail	<i>Hippuris vulgaris</i>
Bogbean	<i>Menyanthes trifoliata</i>
Bog asphodel	<i>Narthecium ossifragum</i>
Watercress	<i>Narsturtium officinales</i>
Common lousewort	<i>Pedicularis sylvatica</i>
Common butterwort	<i>Pinguicula vulgaris</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Heath milkwort	<i>Polygala serpyllifolia</i>
Broad-leaved pondweed	<i>Potamogeton natans</i>
Tormentil	<i>Potentilla erecta</i>
Primrose	<i>Primula vulgaris</i>
Selfheal	<i>Prunella vulgaris</i>
Lesser spearwort	<i>Ranunculus flammula</i>
Creeping buttercup	<i>Ranunculus repens</i>
Sheep's sorrel	<i>Rumex acetosella</i>
Yellow saxifrage	<i>Saxifraga aizoides</i>
Devil's-bit scabious	<i>Succisa pratensis</i>
Common thyme	<i>Thymus vulgaris</i>
Marsh violet	<i>Viola palustris</i>
FERNS AND ALLIED PLANTS	
Hard fern	<i>Blechnum spicant</i>
Clubmoss	<i>Lycopodium clavatum</i>
Lemon-scented fern	<i>Oreopteris limbosperma</i>
Bracken	<i>Pteridium aquilinum</i>
BRYOPHYTES	
	<i>Aulacomnium palustre</i> moss

Common Name	Scientific Name
	<i>Calliergonella cuspidata</i> moss
	<i>Dicranium scoparium</i> moss
	<i>Hylocomium splendens</i> moss
	<i>Hypnum cupresseforme</i> moss
	<i>Hypnum jutlandicum</i> moss
	<i>Lophocolea bidentata</i> liverwort
	<i>Mnium hornum</i> moss
	<i>Polytrichum commune</i> moss
	<i>Polytrichum juniperinum</i> moss
	<i>Plagiothecium undulatum</i> moss
	<i>Pleurozium schreberi</i> moss
	<i>Racomitrium lanuginosum</i> moss
	<i>Rhytidiadelphus loreus</i> moss
	<i>Rhytidiadelphus squarrosus</i> moss
	<i>Scorpidium scorpioides</i> moss
	<i>Sphagnum capillifolium</i> moss
	<i>Sphagnum cuspidatum</i> moss
	<i>Sphagnum fallax</i> moss
	<i>Sphagnum palustre</i> moss
	<i>Sphagnum papillosum</i> moss
	<i>Thuidium tamariscinum</i> moss
LICHENS	
	<i>Cladonia uncialis</i>
	<i>Cladonia portentosa</i>
	<i>Peltigera canina</i>

Annex D

Figures
