

Skye Reinforcement Kinloch and Kyleakin Hills SAC

Compensation Plan

Technical Appendix

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1 INTRODUCTION

The Skye Reinforcement Kinloch and Kyleakin Hills Special Area of Conservation (SAC) Compensation Plan has been informed and developed using various sources of desk-based information as well as contemporary survey data collected for, and presented within, the Proposed Developments Environment Impact Assessment Report (EIAR).

This Technical Appendix presents the results of additional field surveys undertaken in 2023 to further inform the selection and refinement of compensation areas, based upon the initial outline compensation search areas as proposed in the outline compensation plan¹.

2 SEARCH AREAS & SURVEY AREA

As previously outlined¹, three compensation search areas (i.e., Search Areas A, B and C) were identified around the Kinloch and Kyleakin Hills Special SAC (hereafter, 'the SAC') as potentially offering suitable and connected land for compensatory measures, via both the inclusion of existing habitats that are SAC qualifying habitat types², and the restoration or creation of SAC qualifying habitats from non-qualifying habitats (e.g. plantation to bog restoration).

The respective survey areas covered each of these three compensation search areas, totalling 692.7 hectares (ha), and as per Figure 1 (405.8 ha in search area A, 167.2 ha in search area B and 119.7 ha in search area C).

3 SURVEYS UNDERTAKEN

Additional field surveys undertaken in these three search areas comprised:

- National Vegetation Classification (NVC)³ and Phase 1 habitat surveys⁴ including the collection of target notes (TNs)⁵;

¹ MacArthur Green (February 2023). Skye Reinforcement Kinloch and Kyleakin Hills SAC Outline Compensation Plan. Report for SSEN.

² In this case: blanket bog, dry heaths, western acidic oak woodland and wet heathland with cross-leaved heath.

³ The vegetation was surveyed by Ben Averis, Alison Averis and Jason Mackay using the NVC scheme (Rodwell, 1991-2000; 5 volumes) and in accordance with NVC survey guidelines (Rodwell, 2006).

⁴ The NVC and mapping data was also correlated to their equivalent habitats according to the Phase 1 habitat classification (JNCC, 2010), considering the species composition and habitat quality. The Phase 1 characterisation has been utilised to allow a broader visual representation of the habitats within the survey area. Polygons or areas where there are mosaic NVC communities have generally been assigned a single Phase 1 classification based on the dominant NVC type (despite some polygons containing multiple Phase 1 types, often in low percentages). Therefore, the Phase 1 characterisation is generally a broader overview, and the NVC data should be referred to for further detail in any specific area.

⁵ TNs were recorded to collect general habitat or species information as well as specific information on grazing/browsing, rare or notable species, presence of invasive non-native species (INNS), and presence of self-seeding non-native conifers.

- Common Standards Monitoring (CSM) of Upland Habitats⁶ for SAC qualifying habitat types; and
- Peat depth probing and peat condition surveys.

4 SURVEY DETAILS & LIMITATIONS

Surveys were undertaken in the survey area as follows:

- NVC, Phase 1 and CSM, March 2023 (undertaken by MacArthur Green⁷); and
- Peat depth probing and peat condition surveys, May 2023 (undertaken by SLR Consulting).

No limitations were experienced with regards the field NVC, Phase 1 and CSM surveys, with all areas of the survey area accessible and the weather amendable to survey.

A methodological limitation was evident with regards the CSM surveys of broadleaved woodland. The broadleaved woodland in the search areas is generally small and fragmented patches rather than extensive stands whereas woodland CSM surveys would normally be carried out on larger scale landscape scale woodlands rather than the smaller patches present in the survey area; nevertheless, the CSM data can provide some insights into the current state of the woodland present.

As a result of difficult ground conditions caused by a combination of felled and dense forestry areas, peat probing was not possible in the very north-western area of compensation search area A⁸.

5 RESULTS & DISCUSSION

This section provides a summary of the survey results, more detailed data is also provided in Annexes A to C.

The surveys covered the full extents of search areas A, B and C, respectively. However, following surveys and in combination with other data and consultation, these search areas have been refined into the compensation areas A, B and C (as per Figures 3, 4 and 5).

This technical appendix reports on the data within the full search areas, as this provides valuable contextual information with regards the decision-making process and refinement of compensation areas.

⁶ Blanket bog, wet heath and dry heath assessed using JNCC (2009). Common Standards Monitoring Guidance for Upland Habitats. Version July 2009. ISSN 1743-8160. Woodland assessed using JNCC (2004). Common Standards Monitoring Guidance for Woodland Habitats. ISSN 1743-8160 (online).

⁷ Ben Averis, Alison Averis and Jason Mackay.

⁸ In total 617 of the proposed 727 peat probing sample locations were surveyed (see Figure 2).

5.1 NVC Surveys

5.1.1 Habitat Mapping

Across the survey area in search areas A, B and C, collectively 29 NVC communities (and various associated sub-communities) and 11 non-NVC communities/types were recorded within the survey area; the list with full community names is provided in Annex A. Figures 3 to 5 present the results of the habitats survey.

Table 5-1 to Table 5-3 provides the baseline habitats data composition for each compensation area search area. Table 5-4 to Table 5-6 then provides the baseline habitats data for each of the refined compensation areas. Following these tables there is a summary of the character and quality of the SAC qualifying habitat types in the search areas, as observed during the NVC survey.

Table 5-1 Compensation Search Area A: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	4.27	W4, W4c	1.463	Western acidic oak woodland	0.36	1.05
		W11, W11b, W11c	1.693		0.42	
		W17, W17a, W17b	0.984		0.24	
		SBT	0.126		0.03	
Coniferous Plantation Woodland (A1.2.2)	177.91	CP & YCP	177.908	-	43.84	43.84
Dense/Continuous Scrub (A2.1)	0.08	W23	0.082	-	0.02	0.02
Recently Felled Coniferous Woodland (A4.2)	132.30	CF, CF>M6c, CF>M15, CF>M15b, CF>M17, CF>M19a, CF>M25, CF>M25a*, CF>Je,	132.303	-	32.60	32.60
Unimproved Acid Grassland (B1.1)	0.04	U4	0.029	-	0.01	0.01
		U6	0.013	-	<0.01	
Marsh/Marshy Grassland (B5)	20.96	M25a, M25b	20.469	-	5.04	5.16
		Je	0.490	-	0.12	
Continuous Bracken (C1.1)	4.06	U20, U20a	4.06	-	1.00	1.00

⁹ N.B. Only SAC qualifying habitat types requiring compensatory measures are detailed here.

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Tall Herb & Fern: Non-Ruderal (C3.2)	0.40	U16c	0.400	-	0.10	0.10
Acid Dry Dwarf Shrub Heath (D1.1)	0.58	H10, H10a, H10c	0.228	Dry heath	0.06	0.14
		H21, H21a	0.354		0.09	
Wet Dwarf Shrub Heath (D2)	14.73	M15a, M15b, M15c	14.730	Wet heathland with cross-leaved heath	3.63	3.63
Blanket Bog (E1.6.1)	27.88	M1	0.206	Blanket bog	0.05	6.87
		M2	0.518		0.13	
		M17a, M17b, M17c	15.919		3.92	
		M19a	11.236		2.77	
Wet Modified Bog (E1.7)	15.42	M20a	0.563	Blanket bog	0.14	3.80
		M25a*	14.855		3.66	
Acid Neutral Flush (E2.1)	5.48	M6c	5.483	-	1.35	1.35
Standing Water (G1)	0.33	SW	0.331	-	0.08	0.08
Bare Ground (J4)	1.36	BG	1.363	-	0.34	0.34
TOTAL	405.80					

Table 5-2 Compensation Search Area B: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1)	5.42	W4a, W4b	0.526	Western acidic oak woodland	0.31	3.24
		W7a	0.028	-	0.02	
		W11, W11b	1.344	Western acidic oak woodland	0.80	
		W17a, W17b, W17c	3.243		1.94	
		WLz	0.283		0.17	
Coniferous Plantation Woodland (A1.2.2)	65.71	CP	65.714	-	39.31	39.31

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Dense/Continuous Scrub (A2.1)	0.05	W23	0.045	-	0.03	0.03
Unimproved Acid Grassland (B1.1)	1.61	U4a	1.100	-	0.66	0.96
		U5a, U5b	0.508	-	0.30	
Marsh/Marshy Grassland (B5)	5.71	M23b	0.112	-	0.07	3.41
		M25, M25a, M25c	5.121	-	3.06	
		MG10	0.013	-	0.01	
		Je	0.390	-	0.23	
		Ja	0.071	-	0.04	
Continuous Bracken (C1.1)	18.54	U20, U20a, U20b	17.205	-	10.29	11.09
		W25, W25a	1.338	-	0.80	
Tall Herb & Fern: Non-Ruderal (C3.2)	0.12	U16c	0.121	-	0.07	0.07
Acid Dry Dwarf Shrub Heath (D1.1)	6.68	H10a, H10b, H10c	5.441	Dry heath	3.25	3.99
		H21a	1.238		0.74	
Wet Dwarf Shrub Heath (D2)	45.41	M14	0.116	Wet heathland with cross-leaved heath	0.07	27.16
		M15a, M15b, M15c	45.290		27.09	
Montane Heath/Dwarf Herb (D4)	0.01	U10b	0.010	-	0.01	0.01
Blanket Bog (E1.6.1)	16.60	M17a, M17b	2.148	Blanket bog	1.28	9.93
		M19a	14.455		8.65	
Acid/Neutral Flush (E2.1)	0.37	M6c, M6d	0.330	-	0.20	0.22
		PC	0.038	-	0.02	
Basic Flush/Spring	0.07	M10a	0.042	-	0.03	0.04
		M37	0.032	-	0.02	
Standing Water (G1)	<0.01	SW	0.008	-	<0.01	<0.01
Bare Ground (J4)	0.88	BG	0.878	-	0.53	0.53
TOTAL	167.19					

Table 5-3 Compensation Search Area C: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	3.91	W4, W4b, W4c	0.858	Western acidic oak woodland	0.72	3.27
		W11, W11b, W11c	1.744		1.46	
		W17, W17a, W17b, W17c	1.212		1.01	
		SBT	0.101		0.08	
Coniferous Plantation Woodland (A1.2.2)	2.77	CP & YCP	2.773	-		2.77
Dense/Continuous Scrub (A2.1)	0.28	W23	0.281	-	0.23	0.23
Recently Felled Coniferous Woodland (A4.2)	71.96	CF, CF>M6c, CF>M15b, CF>M17, CF>M17a, CF>M25, CF>M25a*, CF>W4, CF>U4, CF>U20, CF>H21a, CF>Je	71.960	-	60.11	60.11
Unimproved Acid Grassland (B1.1)	0.15	U4	0.147	-	0.12	0.12
Marsh/Marshy Grassland (B5)	7.36	M25, M25a, M25b	7.115	-	5.94	6.15
		Je	0.247	-	0.21	
Continuous Bracken (C1.1)	7.09	U20, U20a, U20b	6.947	-	5.80	5.92
		W25, W25a	0.145	-	0.12	
Tall Herb & Fern: Non-Ruderal (C3.2)	0.34	U16c	0.343	-	0.29	0.29
Acid Dry Dwarf Shrub Heath (D1.1)	0.91	H9c	0.059	Dry heath	0.05	0.76
		H10a, H10c	0.434		0.36	
		H10-H12	0.222		0.19	
		H21a	0.193		0.16	
Wet Dwarf Shrub Heath (D2)	7.83	M15b, M15c	7.834	Wet heathland with cross-leaved heath	6.54	6.54
Blanket Bog (E1.6.1)	6.29	M17a, M17b	6.00	Blanket bog	5.01	5.26
		M19a	0.292		0.24	

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Search Area	Phase 1 % of Search Area
Wet Modified Bog (E1.7)	9.09	M25a*	9.091	Blanket bog	7.59	7.59
Acid/Neutral Flush (E2.1)	0.74	M6c	0.742	-	0.62	0.62
Running Water (G2)	0.09	RW	0.092	-	0.08	0.08
Bare Ground (J4)	0.88	BG	0.880		0.74	0.74
TOTAL	119.71					

Table 5-4 Compensation Area A: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	2.58	W4, W4c	1.131	Western acidic oak woodland	0.68	1.54
		W11, W11b, W11c	0.665		0.40	
		W17, W17a, W17b	0.651		0.39	
		SBT	0.130		0.08	
Coniferous Plantation Woodland (A1.2.2)	70.93	CP	70.934	-	17.48	42.36
Dense/Continuous Scrub (A2.1)	0.06	W23	0.056	-	0.01	0.03
Recently Felled Coniferous Woodland (A4.2)	57.13	CF, CF>M15, CF>M17, CF>M19a, CF>M25	57.133	-	14.08	34.12
Unimproved Acid Grassland (B1.1)	0.04	U4	0.029	-	0.02	0.03
		U6	0.013		0.01	
Marsh/Marshy Grassland (B5)	5.55	M25a	5.138	-	3.07	3.32
		M25b	0.199		0.13	
		Je	0.218		0.12	
Continuous Bracken (C1.1)	2.58	U20, U20a	2.562	-	1.53	1.54
		W25	0.017		0.01	

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
Tall Herb & Fern: Non-Ruderal (C3.2)	0.11	U16c	0.112	-	0.07	0.07
Acid Dry Dwarf Shrub Heath (D1.1)	0.32	H10, H10a, H10c	0.208	Dry heath	0.12	0.19
		H21a	0.114		0.07	
Wet Dwarf Shrub Heath (D2)	7.79	M15a, M15b, M15c	7.792	Wet heathland with cross-leaved heath	4.65	4.65
Blanket Bog (E1.6.1)	12.64	M1	0.053	Blanket Bog	0.03	7.55
		M2	0.323		0.19	
		M17a, M17c	5.187		3.10	
		M19a	7.078		4.23	
Wet Modified Bog (E1.7)	5.88	M20a	0.318	Blanket Bog	0.19	3.51
		M25a*	5.564		3.32	
Acid/Neutral Flush (E2.1)	1.71	M6c	1.709	-	1.02	1.02
Bare Ground (J4)	0.12	BG	0.118	-	0.07	0.07
TOTAL	167.45					

Table 5-5 Compensation Area B: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1)	0.24	W7a	0.002	-	<0.01	0.30
		W17a, W17b	0.217	Western acidic oak woodland	0.27	
		WLz	0.020		0.02	
Coniferous Plantation Woodland (A1.2.2)	17.62	CP	17.623	-	21.92	21.92
Unimproved Acid Grassland (B1.1)	1.20	U4a	0.696	-	0.87	1.50
		U5a, U5b	0.508		0.63	
Marsh/Marshy Grassland (B5)	3.19	M25a	2.889	-	3.59	3.96
		Je	0.296		0.37	
Continuous Bracken (C1.1)	2.32	U20, U20a, U20b	2.324	-	2.89	2.89

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
Tall Herb & Fern: Non-Ruderal (C3.2)	0.12	U16c	0.121	-	0.15	0.15
Acid Dry Dwarf Shrub Heath (D1.1)	4.18	H10a, H10b, H10c	3.295	Dry heath	4.10	5.20
		H21a	0.883		1.10	
Wet Dwarf Shrub Heath (D2)	35.21	M14	0.022	Wet heathland with cross-leaved heath	0.03	43.80
		M15a, M15b, M15c	35.188		43.77	
Blanket Bog (E1.6.1)	16.10	M17a, M17b	2.148	Blanket Bog	17.36	20.13
		M19a	1.955		2.67	
Acid/Neutral Flush (E2.1)	0.06	M6c	0.060	-	0.07	0.07
Basic Flush (E2.2)	0.06	M10a	0.032	-	0.04	0.08
		M37	0.032		0.04	
Standing Water (G1)	0.01	SW	0.008	-	0.005	0.01
Bare Ground (J4)	0.07	BG	0.073	-	0.04	0.09
TOTAL	80.39					

Table 5-6 Compensation Area C: Baseline Habitats

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	1.74	W4, W4c	0.314	Western acidic oak woodland	0.98	5.42
		W11, W11b, W11c	0.971		3.02	
		W17, W17b, W17c	0.360		1.12	
		SBT	0.097		0.30	
Coniferous Plantation Woodland (A1.2.2)	1.34	CP	1.336	-	4.16	4.16
Recently Felled Coniferous Woodland (A4.2)	17.87	CF, CF>W4, CF>M6c, CF>M15b, CF>M25, CF>M25a,	17.873	-	55.61	55.61

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ⁹	NVC % of Refined Area	Phase 1 % of Refined Area
		CF>U4, CF>U20, CF>Je				
Marsh/Marshy Grassland (B5)	3.53	M25, M25a	3.526	-	10.97	10.97
Continuous Bracken (C1.1)	3.10	U20, U20b	3.104	-	9.66	9.66
Tall Herb & Fern: Non-Ruderal (C3.2)	0.04	U16c	0.038	-		0.12
Acid Dry Dwarf Shrub Heath (D1.1)	0.26	H10a	0.037	Dry heath	0.12	0.81
		H10-H12	0.222		0.69	
Wet Dwarf Shrub Heath (D2)	0.96	M15a, M15b, M15c	0.960	Wet heathland with cross-leaved heath	2.99	2.99
Wet Modified Bog (E1.7)	2.73	M25a*	2.727	Blanket Bog	8.49	8.49
Acid/Neutral Flush (E2.1)	0.57	M6c	0.566	-	1.76	1.76
Bare Ground (J4)	0.01	BG	0.005	-	0.02	0.02
TOTAL	32.14					

The following paragraphs summarise the character of the SAC qualifying habitat types within the search areas.

5.1.1.1 *Blanket Bog and Wet Modified Bog*

Areas of blanket bog and wet modified bog are present in each search area. Search areas A and C have many relatively small and often fragmented patches of bog persisting within plantation openings or along forest rides, peat forming species remain present here in the remnant areas of bog. There are several larger patches of relatively undisturbed blanket bog in the west of search area B despite the moderately steep slopes which it is sited on, particularly on open ground to the east of Beinn na Caillich, and south of Allt a Choire Bhuidhe (Figure 4). Blanket bog is often present here in complex mosaics and transitional areas with other related vegetation types, such as wet heath and *Molinia caerulea* dominated marshy grassland.

As noted in the tables above, blanket bog in the survey area is underpinned by the NVC communities M1, M2, M17 and M19; areas of wet modified bog are underpinned by M25a*. M1 and M2 are bog pool features which cover a very small extent in search area A. The bulk of the blanket bog vegetation present comprises M17 and M19. Of these communities M17 tends to be considered of relative higher quality due to its wetness and increased cover of Sphagna, often found on flatter terrain and deeper peat. M19, whilst still a blanket bog community, tends to be drier than M17 with

a higher cover of *Calluna vulgaris* and less *Sphagna*, and it can be found on a range of peat depths and can also cover sloping ground.

Within the search areas M19 is much more prevalent in search area B (Table 5-2), which is unsurprising given the slopes present. Search areas A and C are flatter with generally deeper peats (see Section 5.3). In search area A there are relatively even amounts of M17 and M19, whereas in search area C M17 remains relatively common here in the remaining patches of blanket bog, despite the various negative effects of commercial conifer plantation.

With respect to the areas of M17, M17a is the most common and extensive sub-community. Areas of M17a were generally present on level to very gently sloping deep peat and the flora consists mainly of a mixture of *Calluna vulgaris*, *Erica tetralix*, *Molinia caerulea*, *Trichophorum germanicum*, *Eriophorum vaginatum*, *E. angustifolium*, *Myrica gale*, *Narthecium ossifragum*, the mosses *Sphagnum capillifolium*, *S. papillosum* and *Hypnum jutlandicum*, and the liverworts *Odontoschisma sphagni* and *Pleurozia purpurea*; it is locally common, especially in areas A and C. Areas of M17b are present in each search area but its extent is much smaller, the vegetation in M17b is similar to the M17a just described but with less *Sphagnum papillosum* and with frequent *Racomitrium lanuginosum*, *Cladonia portentosa* and *C. uncialis*. This difference in species composition reflects the slightly drier conditions here compared with those in M17a.

Areas of M19 were all M19a, this is dense, tussocky bog vegetation consisting mainly of *Calluna vulgaris*, *Eriophorum vaginatum* and extensive carpets of the mosses *Hylocomium splendens*, *Pleurozium schreberi*, *Hypnum jutlandicum* and *Sphagnum capillifolium*. It is common on deeper peat on level or gently sloping ground on the upper western parts of search area B and locally in search area A. Some of the M19 in search area B contains much *Molinia caerulea* but its species composition and structure are otherwise a good fit for M19 (and it lacks the *Sphagnum papillosum* found commonly in M17). In a few places in search area B, M19a was found to contain sparse *Erica cinerea* (unusual in bog habitats because it typically prefers drier conditions) and, in some other M19 in search area B, *Breutelia chrysocoma* (unusual in bog because it typically favours at least mild flushing).

Areas of wet modified bog have been identified by the presence of M20 and/or M25a*. The Asterisk indicates that this M25a is likely present on peat 0.5m in depth or greater¹⁰ and has been classified as E1.7 wet modified bog in Phase 1 survey terms, whereas M25a (no Asterisk) has been assigned the Phase 1 code of B5 marsh/marshy grassland as it is likely present on peat or peaty soils under 0.5m in depth. Within M25a* *Molinia caerulea* is dominant and is typically accompanied by smaller amounts of *Calluna vulgaris*, *Erica tetralix*, *Myrica gale* and mosses such as *Sphagnum capillifolium*, *S. fallax*, *Hylocomium splendens*, *Pleurozium schreberi*, *Hypnum jutlandicum* and *Polytrichum commune*. The habitat is generally peaty and the vegetation appears to be derived, probably by a combination of grazing and historical burning, from previous wet heath or bog. Examples on clearly deeper peat commonly includes scattered *Eriophorum vaginatum* and appears to be derived from previous M17 blanket bog vegetation. M25a* is relatively common on level to sloping ground within search areas A and C, but was not recorded in search area B.

¹⁰ N.B. NVC surveys were undertaken before any peat depth surveys.

5.1.1.2 Wet Heath

Existing areas of wet heath are most extensive in the elevated open ground in the west of search area B, often in mosaics and transitional zones with blanket bog. Elsewhere in search area B wet heath is scattered in generally smaller patches in woodland openings and forest rides.

Wet heath is also present and more scattered in search areas A and C within patches of open ground in woodland coupes and in existing and former forest rides. In some locations in search areas A and C there is also an indication that some patches of clear-felled former plantation appear to be recovering and regenerating to a wet heath vegetation type. The majority of wet heath recorded is M15 (sub-communities a, b and c) with some smaller patches of M14 recorded in search area B.

M15a is a flushed wet heath in which an open cover of *Calluna vulgaris*, *Erica tetralix*, *Molinia caerulea* and *Trichophorum germanicum* is accompanied by many other species including *Narthecium ossifragum*, *Carex panicea*, *Eriophorum angustifolium*, the mosses *Breutelia chrysocoma*, *Sphagnum denticulatum*, *S. capillifolium*, *Racomitrium lanuginosum* and *Hylocomium splendens*, and the liverwort *Pleurozia purpurea*. In some places, where there is evidently more base enrichment, there is also a little *Schoenus nigricans* and the mosses *Campylium stellatum* and *Ctenidium molluscum*. Small patches of M15a are scattered widely on gently sloping peaty ground in search area B, typically among surrounding M15b or M15c.

M15b is wet heath with a dense cover of vegetation made up largely of *Calluna vulgaris*, *Erica tetralix*, *Molinia caerulea* and *Trichophorum germanicum*. In much of this M15b *Calluna* and *Molinia* are the most abundant species. Other species include *Myrica gale*, *Narthecium ossifragum*, *Eriophorum angustifolium* and the mosses *Sphagnum capillifolium*, *Hylocomium splendens*, *Pleurozium schreberi* and *Hypnum jutlandicum*. M15b is widespread and common, mainly on gently sloping peaty ground, in search areas A, B and C.

Areas of M15c are rather like M15b but with some differences in the flora that reflect the slightly drier conditions (commonly with the peat shallower than in M15b and in places broken up by rock outcrops): less *Sphagnum* and more *Erica cinerea*, *Racomitrium lanuginosum* and *Cladonia* spp. lichens. It is widespread and common in the survey area, mainly on gentle to moderate slopes. It varies from:

- (1) vegetation with very abundant *Trichophorum germanicum* and *Racomitrium lanuginosum*, mixed with *Calluna vulgaris* and *Erica cinerea* but with comparatively little *Molinia caerulea*, to
- (2) taller, denser swards with very abundant *Calluna* and *Molinia* and smaller amounts of *Trichophorum germanicum* and *Racomitrium lanuginosum*, appearing much like *Calluna/Molinia*-dominated M15b but differing from M15b in containing abundant *Erica cinerea*.

In both forms of M15c *Erica tetralix* is generally sparse and varies from frequent to very rare – hence it was not found within the 20 m radius of some CSM survey plots in wet heath (see Section 5.2 and Annex C).

M14 vegetation was found locally on flushed slopes in the lower parts of search area B, typically among M15a, b or c wet heaths. Tussocks of *Schoenus nigricans* are very abundant to dominant

here, with *Molinia caerulea*, *Erica tetralix*, *Breutelia chrysocoma* (these three species are also abundant and *Molinia* and *Breutelia* being of at least moderately high cover) and generally smaller amounts of *Calluna vulgaris*, *Trichophorum germanicum*, *Narthecium ossifragum*, *Succisa pratensis*, *Pinguicula lusitanica*, *Pedicularis sylvatica*, *Hypericum pulchrum*, *Blechnum spicant*, *Salix aurita*, *Scorpidium scorpioides*, *Campylium stellatum*, *Ctenidium molluscum*, *Sphagnum inundatum*, *Racomitrium lanuginosum*, *Pleurozia purpurea* and *Cladonia portentosa*.

5.1.1.3 Dry Heath

As seen in Table 5-1, Table 5-2 and Table 5-3 the extent of existing dry heath is relatively low within the search areas, with the largest extent found in search area B (Table 5-2). The majority of dry heath present falls within the H10 and H21 communities, with very small areas of H9c recorded once in search area A and H10-H12 intermediate heath recorded once in search area C.

With respect to H10 in the survey area, the H10a is generally dry heath with a dense and mostly tall (30-60cm) canopy of *Calluna vulgaris* with scattered *Erica cinerea*, growing over a lower layer of mosses including *Hypnum jutlandicum*, *Hylocomium splendens*, *Pleurozium schreberi*, *Rhytidiadelphus loreus* and *Dicranum scoparium*. Thin tufts of *Avenella flexuosa* and *Carex binervis* occur too but are only sparse. *Pteridium aquilinum* fronds are thinly scattered in some places. H10a occurs locally in search area B on steep, well-drained slopes.

H10b resembles the H10a described above but is a little shorter and has a less continuous dwarf shrub carpet mixed with moss carpets including the same species as listed above and also including H10b occurs locally on well-drained rocky slopes in search area B patches of *Racomitrium lanuginosum*. H10b occurs locally on well-drained rocky slopes in search area B.

Patches of H10c has the same flora as the H10a described above, but with the dwarf shrubs forming a distinctly patchy cover interspersed with shorter grassy and mossy swards including *Agrostis capillaris*, *Festuca ovina*, *Nardus stricta*, *Carex binervis* and the mosses listed for H10a. H10c occurs on some well-drained slopes in search area B and appears to be in places that are quite heavily grazed.

The areas of H21/H21a dry heath generally have a tall (30-70cm) canopy of *Calluna vulgaris* mixed with some *Vaccinium myrtillus* and *Erica cinerea*, over a mossy lower layer in which patches of *Sphagnum capillifolium* are very common along with other mosses such as *Hypnum jutlandicum*, *Hylocomium splendens*, *Pleurozium schreberi* and *Rhytidiadelphus loreus*. Many patches of H21a were recorded in search area B, mostly on north-facing slopes. The community was found in just a few places in search areas A and C.

5.1.1.4 Broadleaved Woodland

Existing broadleaved woodland is of low total cover within the search areas and generally comprises of small and very fragmented patches, rather than forming any large stands. The largest and most contiguous patches of broadleaved woodland are riparian and associated with gullies in search area B, especially those along Allt Grianach and Allt a Choire Bhuidhe.

Broadleaved woodland in search area A is comprised of several very small stands, most of which are again riparian and associated with a narrow fringe around minor watercourses, although there

are some small trackside patches also. The main extent of broadleaved woodland in search area A is around Allt Lochain na Sàile.

Broadleaved woodland in search area C is comprised of a number of very small patches, with a mix of riparian patches (e.g., along Allt Anavig) and small fragmentary stands persisting in more open ground since conifer plantation felling, there are also patches of naturally regenerating woodland and scattered broadleaved trees within search area C.

The woodland communities present are generally mixtures of W4, W11 and W17, although there are some very small and scrub like areas of W7 and patches of a non-NVC woodland, coded 'WLz'.

The W4 woodland here generally has a canopy of mainly *Betula pubescens* but also including some *Salix aurita* and, locally, *Sorbus aucuparia*. The ground layer has abundant *Molinia caerulea* and other species including *Calluna vulgaris*, *Blechnum spicant*, *Dryopteris aemula*, *Juncus effusus*, *Sphagnum palustre*, *S. capillifolium*, *Polytrichum commune*, *Breutelia chrysocoma*, *Hylocomium splendens* and *Thuidium tamariscinum*. W4 is scattered patchily on damp to wet ground in search areas B and C. Most of the W4 was classifiable as the W4b *Juncus effusus* sub-community (e.g., with *Juncus effusus*), but some did not fit any sub-community and was classified only to NVC community level only. In one place in search area B the ground layer includes *Dryopteris dilatata*, *Rubus fruticosus* and *Lonicera periclymenum* and was classed as the W4a *Dryopteris dilatata*-*Rubus fruticosus* sub-community. Some W4c was also recorded in search area A. Epiphytes on *Salix* spp. and *Sorbus aucuparia* in W4 in the survey area include some oceanic bryophytes and *Lobarion* lichens.

The W11 woodland has a canopy of mainly *Betula pubescens* and *Sorbus aucuparia*, with some *Salix caprea*, *S. aurita* and *Ilex aquifolium*. The ground layer contains varied combinations of species including *Pteridium aquilinum*, *Dryopteris* species (including *D. aemula*), *Blechnum spicant*, *Agrostis capillaris*, *Holcus mollis*, *Oxalis acetosella*, *Primula vulgaris*, *Hylocomium splendens*, *Thuidium tamariscinum*, *Pleurozium schreberi*, *Rhytidiadelphus squarrosus*, *Loeskeobryum brevirostre* and *Kindbergia praelonga*. It is mostly classifiable as the W11b *Blechnum spicant* sub-community (e.g., with much *Blechnum* and/or small herbs such as *Primula vulgaris*) but some does not fit any sub-community and was classified only to NVC community level. Some patches of W11c were also recorded. Epiphytes on *Salix* spp. and *Sorbus aucuparia* in W11 here include various oceanic bryophytes and *Lobarion* lichens.

The W17 woodland generally has a canopy of mainly *Betula pubescens* and *Sorbus aucuparia*, with some *Salix caprea*, *S. aurita* and *Ilex aquifolium*. The ground layer has much *Vaccinium myrtillus* (abundant in the W17b Typical sub-community) and/or *Avenella flexuosa* (abundant in W17b and also the W17a *Isothecium myosuroides* - *Diplophyllum albicans* and W17c *Anthoxanthum odoratum*-*Agrostis capillaris* sub-communities), and is typically accompanied by other species including *Calluna vulgaris*, *Erica cinerea*, *Pteridium aquilinum*, *Dryopteris* species (including *D. aemula*), *Blechnum spicant*, *Galium saxatile*, *Hylocomium splendens*, *Thuidium tamariscinum*, *Pleurozium schreberi*, *Rhytidiadelphus squarrosus*, *R. loreus*, *Dicranum majus* and *Plagiothecium undulatum*. W17b is the heathiest form of W17 here, with much *V. myrtillus* and some *Calluna* and *Erica cinerea*. W17c has a grass/moss-dominated ground layer. W17a, occupying steep, rocky terrain, is rather like W17b or c but with a distinctive bryophyte element on rocks and rocky banks including *Isothecium*

myosuroides, *Diplophyllum albicans* and oceanic species such as *Scapania gracilis*, *Plagiochila spinulosa*, *Saccogyna viticulosa* and *Hymenophyllum wilsonii*. Epiphytes in W17 here include *Hymenophyllum wilsonii*, oceanic bryophytes such as *Scapania gracilis*, *Plagiochila punctata*, *Leptoscyphus cuneifolius* and *Douinia ovata*, and *Lobarion* lichens.

The very small patches of W7a in search area B are small wet, flushed areas on very steep banks in a wooded ravine and have sheets of *Chrysosplenium oppositifolium* and can be seen as tiny patches of W7a. It is common for W7a to occur as small, flushed patches on very steep woodland banks in woods in upland Britain generally. The occurrence of *Ranunculus repens* and *Chrysosplenium oppositifolium* beneath a few *Salix aurita* bushes just south-east of the road in the conifer plantation in the northern part of search area B also constitutes a very small patch of scrubby W7a.

The patches recorded as the non-NVC code WLz indicate that the dominance of *Luzula sylvatica* (greater woodrush) in the field layer is such that it is not possible to assign the vegetation to any particular woodland NVC community.

5.1.2 Target Notes

A total of 207 TNs were collected; 83 in search area A, 66 in search area B and 58 in search area C. These TNs include the TNs recorded in the January 2023 walkover survey of the same area, as reported within the Outline Compensation Plan¹, as well as additional TNs collected during the March 2023 survey.

The following paragraphs provide some summarised TN information from the respective search areas; however, the full detailed TN information is presented in Annex B. Figures 6, 7 and 8 present the location of TNs.

The TNs (as well as NVC data) in search area A indicate that much of the bog and heath present, despite being in relatively good condition, is subject to encroachment and invasion by self-seeded conifers stemming from the abundant commercial conifer plantation in these areas. There is also a scattering of invasive non-native species (INNS) present. Notes on deer browsing indicate it is generally light-moderate.

TNs in search area B indicate the presence of self-seeded conifers, some browsing of young trees, oceanic bryophytes and lichens, and the presence of some INNS. With respect to the INNS these are primarily *Rhododendron ponticum*, and one record of *Cotoneaster* sp. The extent and distribution of INNS in search area B is much less than the other search areas and is more concentrated to the very southern tip and near the forestry tracks.

TN information relating to search area C also indicates the presence of self-seeding conifers and that INNS are particularly commonplace, including abundant to frequent patches of *Rhododendron ponticum*, *Cotoneaster* sp., *Gaultheria mucronata* and *Gaultheria shallon*.

5.2 CSM Surveys

5.2.1 Overview

To gather information on the quality and condition of existing areas of relevant SAC qualifying habitats within the respective search areas a suite of CSM surveys were undertaken.

In each search area CSM surveys were undertaken for each SAC qualifying habitat where this was present, with the number of habitat-specific samples correlating to the abundance of the respective habitat type.

The CSM methodology for blanket bog, wet heath and dry heath followed the JNCC methods and guidance⁶. The CSM surveys for woodland also followed the JNCC methodology, however within the woodland CSM methodology there is flexibility to include further additional attributes and targets that are ‘indicators of local distinctiveness’, which can be tailored more to, for example, the survey scope, geographical location or other desirable criteria. For these surveys on Skye, the woodland CSM pro-forma was therefore extended to also include the following information: bryophytes & lichens - presence of oceanic/rainforest/*Lobarion* species in suitable habitats, tree/shrub species present, field layer height, height (cm) and browsing (Low/Medium/High) of *Calluna vulgaris*/ *Vaccinium* spp./ *Erica cinerea*, invasive species, and any additional notes.

In total 41 CSM survey plots were recorded, 14 in search area A, 15 in search area B and in 12 search area C. In terms of habitat types surveyed, the survey plots comprised; blanket bog x 12, wet heath x 13, dry heath x 6, and woodland x 10. The location of CSM survey plots is presented in Figures 9, 10 and 11.

When a survey plot does not meet the requirements or criteria of a CSM attribute or target then this constitutes a CSM ‘failure’, of that particular CSM attribute or target. The number of CSM failures provides an indication of the condition and quality of the habitat, with no failures generally indicating a habitat in good condition, and many CSM failures indicating a habitat in poor condition. The types of CSM failure can also provide further insight into factors affecting a particular area. Repeat CSM surveys of the same plots over time can also provide information on habitat condition trends.

Table 5-7 below provides a summary of the CSM monitoring locations (see also Figures 9 to 11), the types of habitats surveyed, and the number of CSM failures at each survey plot. The detailed CSM data is provided in Annex C.

Table 5-7 CSM Survey Locations and Results

Search Area	CSM Type	CSM Plot ID	Grid Reference	No. of CSM Failures
A	Blanket Bog	A01	NG 70818 23884	0
A	Blanket Bog	A02	NG 71006 24262	0
A	Blanket Bog	A03	NG 71209 24496	0
A	Blanket Bog	A04	NG 72315 24212	0
A	Blanket Bog	A05	NG 73824 24188	0
A	Dry Heath	A10	NG 73281 24606	0
A	Wet Heath	A06	NG 71354 23328	0
A	Wet Heath	A07	NG 71597 23229	0
A	Wet Heath	A08	NG 70918 23019	0
A	Wet Heath	A09	NG 72292 24145	0

Search Area	CSM Type	CSM Plot ID	Grid Reference	No. of CSM Failures
A	Woodland	A11	NG 70610 23539	2
A	Woodland	A12	NG 71721 24224	1
A	Woodland	A13	NG 73309 24734	0
A	Woodland	A14	NG 73342 23892	0
B	Blanket Bog	B01	NG 78084 22001	1
B	Blanket Bog	B02	NG 78068 22166	0
B	Blanket Bog	B03	NG 77678 22573	0
B	Blanket Bog	B04	NG 78063 23018	1
B	Dry Heath	B09	NG 78698 22855	2
B	Dry Heath	B10	NG 79202 23240	1
B	Dry Heath	B11	NG 78722 22931	0
B	Wet Heath	B05	NG 78625 21311	0
B	Wet Heath	B06	NG 78077 22137	0
B	Wet Heath	B07	NG 78173 22636	3
B	Wet Heath	B08	NG 79106 22807	2
B	Woodland	B12	NG 79089 22765	1
B	Woodland	B13	NG 78626 22139	7
B	Woodland	B14	NG 78883 22644	5
B	Woodland	B15	NG 78675 22322	4
C	Blanket Bog	C01	NG 73922 25882	1
C	Blanket Bog	C02	NG 73942 25450	0
C	Blanket Bog	C03	NG 74171 25551	0
C	Dry Heath	C09	NG 74690 25226	2
C	Dry Heath	C10	NG 73769 25700	1
C	Wet Heath	C04	NG 73991 25096	0
C	Wet Heath	C05	NG 73898 25955	1
C	Wet Heath	C06	NG 73808 25846	2
C	Wet Heath	C07	NG 73887 25467	2
C	Wet Heath	C08	NG 73918 25502	4
C	Woodland	C11	NG 74682 25164	6
C	Woodland	C12	NG 74024 25046	6

The following paragraphs provide a summary of the CSM results for each habitat type within the search areas.

5.2.2 Blanket Bog

Blanket bog was surveyed at five locations in search area A, four in search area B and three in search area C. There were no CSM failures at any of the locations in search area A, indicating that the blanket bog that remains is generally in good, or favourable, condition.

Of the four survey locations in search area B, two locations recorded no CSM failures, with one CSM failure noted in the other two survey plots. Plot B01 failed on the number of indicator species (five present rather than the minimum six required to meet the target criteria) and plot B04 failed due to the presence of >1% cover of *Pinus contorta* invasion.

Of the three survey locations in search area C, two locations recorded no CSM failures, with one CSM failure noted in the other survey plot (C01). Plot C01 failed due to the abundance of self-seeded and encroaching *Pinus contorta* and *Picea sitchensis* as well as the presence of INNS (i.e., *Gaultheria mucronata* and *Rhododendron ponticum*).

5.2.3 Wet Heath

Wet heath was surveyed at four locations in search area A, four in search area B and five in search area C. There were no CSM failures at any of the locations in search area A, indicating that the wet heath that remains is generally in good, or favourable, condition.

Of the four survey locations in search area B, two locations recorded no CSM failures, with two (plot B08) and three (plot B07) CSM failures noted in the other two survey plots respectively. Plot B08 failed on absence of *Erica tetralix* and that dwarf shrubs make up more than 75% of the vegetation cover, plot B07 also failed on these criteria as well as indicating that more than 33% of the last complete growing season's shoots of dwarf-shrub species appeared browsed.

In search area C only one of the five plots surveyed had no CSM failures (plot C04). The other plots had one (C05), two (C06 and C07) and four (C08) CSM failures respectively. Plots C05, C06 and C07 generally failed certain criteria due to the abundance of self-seeded and encroaching *Pinus contorta* and *Picea sitchensis* as well as the presence of INNS. Plot C08 also had additional CSM failures relating to browsing and ground disturbance and erosion.

5.2.4 Dry Heath

Dry heath is less extensive within the search areas and stands tend to be of a small size. As a result, dry heath was surveyed at one location in area A, three in area B and two in area C. No CSM failures were noted in area A.

Of the three survey locations in search area B there were zero (B11), one (B10) and two (B09) CSM failures respectively. Plot B10 failed on the abundance of bracken within the dry heath, B09 similarly failed on the abundance of bracken as well as lacking the younger growth stages of *Calluna vulgaris*.

In search area C the two survey plots had one and two CSM failures. Plot C10 failed on the abundance of INNS present, whereas plot C09 failed on abundance of bracken and scattered trees and scrub.

5.2.5 Broadleaved Woodland

As described above (Section 5.1.1.4) the broadleaved woodland in the search areas is generally small and fragmented patches rather than extensive stands, and as further noted in Section 4 the small stand size has an impact on woodland CSM results, as woodland CSM surveys would normally be carried out on larger scale landscape scale woodlands rather than the small fragmented patches present in the survey area. With such small woodland areas, it is expected there may be numerous CSM failures, nevertheless the data can provide some insights into the current state of the woodlands.

Woodland was surveyed at four locations in areas A and B, and at two locations in area C. The patches in area A had a range of zero to two CSM failures, generally failing on the amount of fallen trees/standing deadwood and medium levels of deer browsing.

The CSM results in search area B were varied, with one CSM failure at plot B12, four failures at B15, five failures at B14 and seven failures at B13. These failures were due to a range of factors, including mainly, lack of understorey, lack of at least three age classes present (lacking young trees/sapling), lack of mature/old growth (most trees medium aged), lack of seedlings, lack of fallen trees/standing deadwood, and medium-heavy browsing. However, despite the number of CSM failures, the ravine or riparian woodlands in search area B are rich in indicators of local distinctiveness such as oceanic bryophytes and lichens (see Annex C).

The two woodland CSM plots in search area C had six CSM failures each, for the same reasons as outlined for search area B above; these patches of woodland also included the indicators of local distinctiveness.

5.3 Peat Depth Probing and Peat Condition Surveys

Peat depth probing and condition surveys were undertaken by SLR within search areas A and C. Search area A was peat probed on a 100m x 100m grid (Figure 2). Search area C was peat probed using a combination of 100m x 100m grid and 50m x 50m grid; the 50m x 50m grid was targeted towards an area north and west of Allt a' Ghleannain and along Allt Anavig where the habitats information suggested suitable locations for SAC woodland expansion and creation (Figure 2). The higher resolution probing was employed here to give confidence with regards the amount of potentially plantable ground. The peat condition information collected in these areas is used for the Peat Landslide and Hazard Risk Assessment (PLHRA).

No peat depth surveys were carried out in search area B given the steepness of the forested areas (and therefore the low likelihood of deep peat deposits) and that the target habitats for creation following conifer plantation removal in search area B does not include blanket bog.

The peat probing surveys in search area A indicate that much of the area is underlain by peat deposits greater than 0.5 m in depth, although there are some areas where deposits of peaty-soil or organo-mineral soils are present under 0.5 m in depth. These shallower layers tend to appear where there is an increase in slope. Much of the peat over 0.5 m in search area A is in the 0.5-1 m depth category, however there are several scattered small deeper pockets ranging from 2–5.3 m in depth.

In search area C, more of the area is underlain by peaty-soil or organo-mineral soils under 0.5 m in depth, although there are some areas of peat over 0.5 m in depth, particularly in the centre of search area C and in the west, to the west of Allt Anavig. In these areas the most common depth category is 0.5-1 m, however peat depths of up to 4 m were recorded (Figure 2).

ANNEX A. LIST OF NVC & NON-NVC COMMUNITIES RECORDED DURING COMPENSATION AREA SURVEYS

Table A-1 provides a list of all the NVC communities (including sub-communities) and non-NVC communities or features recorded during surveys of the compensation search areas.

Table A-1 NVC and Non-NVC Communities/Features Recorded

NVC or Non-NVC Code	NVC or Non-NVC Community Name/Feature
Woodland and Scrub	
W4	<i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland
W4a	<i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland, <i>Dryopteris dilatata</i> - <i>Rubus fruticosus</i> sub-community
W4b	<i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland, <i>Juncus effusus</i> sub-community
W4c	<i>Betula pubescens</i> - <i>Molinia caerulea</i> woodland, <i>Sphagnum</i> spp. sub-community
W7a	<i>Alnus glutinosa</i> - <i>Fraxinus excelsior</i> - <i>Lysimachia nemorum</i> woodland, <i>Urtica dioica</i> sub-community
W11	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Oxalis acetosella</i> woodland
W11b	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Oxalis acetosella</i> woodland, <i>Blechnum spicant</i> sub-community
W11c	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Oxalis acetosella</i> woodland, <i>Anemone nemorosa</i> sub-community
W17	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland
W17a	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland, <i>Isoetecium myosuroides</i> - <i>Diplophyllum albicans</i> sub-community
W17b	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland, typical sub-community
W17c	<i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland, <i>Anthoxanthum odoratum</i> - <i>Agrostis capillaris</i> sub-community
W23	<i>Ulex europaeus</i> – <i>Rubus fruticosus</i> scrub
W25	<i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> underscrub
W25a	<i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> underscrub, <i>Hyacinthoides non-scripta</i> sub-community
Mires	
M1	<i>Sphagnum denticulatum</i> bog pool community
M2	<i>Sphagnum cuspidatum/fallax</i> bog pool community
M6c	<i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire, <i>Juncus effusus</i> sub-community
M6d	<i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire, <i>Juncus acutiflorus</i> sub-community
M10a	<i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire, <i>Carex viridula</i> - <i>Juncus bulbosus/kochii</i> sub-community
M14	<i>Schoneus nigricans</i> - <i>Narthecium ossifragum</i> mire
M15a	<i>Trichophorum germanicum</i> - <i>Erica tetralix</i> wet heath, <i>Carex panicea</i> sub-community
M15b	<i>Trichophorum germanicum</i> - <i>Erica tetralix</i> wet heath, typical sub-community

NVC or Non-NVC Code	NVC or Non-NVC Community Name/Feature
M15c	<i>Trichophorum germanicum</i> - <i>Erica tetralix</i> wet heath, <i>Cladonia</i> spp. sub-community
M17a	<i>Trichophorum germanicum</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Drosera rotundifolia</i> - <i>Sphagnum</i> spp. sub-community
M17b	<i>Trichophorum germanicum</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Cladonia</i> spp. sub-community
M17c	<i>Trichophorum germanicum</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Juncus squarrosus</i> - <i>Rhytidiadelphus loreus</i> sub-community
M19a	<i>Calluna vulgaris</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Erica tetralix</i> sub-community
M20a	<i>Eriophorum vaginatum</i> blanket, species-poor sub-community
M23b	<i>Juncus effusus/acuteiflorus</i> - <i>Galium palustre</i> rush-pasture, <i>Juncus effusus</i> sub-community
M25a	<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire, <i>Erica tetralix</i> sub-community
M25a* ¹¹	<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire, <i>Erica tetralix</i> sub-community
M25b	<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire, <i>Anthoxanthum odoratum</i> sub-community
M25c	<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire, <i>Angelica sylvestris</i> sub-community
M37	<i>Palustriella commutata</i> - <i>Festuca rubra</i> spring
Dry Heaths	
H9c	<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> heath, species-poor sub-community
H10	<i>Calluna vulgaris</i> - <i>Erica cinerea</i> heath
H10a	<i>Calluna vulgaris</i> - <i>Erica cinerea</i> heath, typical sub-community
H10b	<i>Calluna vulgaris</i> - <i>Erica cinerea</i> heath, <i>Racomitrium lanuginosum</i> sub-community
H10c	<i>Calluna vulgaris</i> - <i>Erica cinerea</i> heath, <i>Festuca ovina</i> - <i>Anthoxanthum odoratum</i> sub-community
H10-H12	H10-H12 Intermediate heath
H21	<i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> - <i>Sphagnum capillifolium</i> heath
H21a	<i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> - <i>Sphagnum capillifolium</i> heath, <i>Calluna vulgaris</i> - <i>Pteridium aquilinum</i> sub-community
Acid Grassland, Fern and Montane Communities	
U4	<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> grassland
U4a	<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> grassland, typical sub-community
U5a	<i>Nardus stricta</i> - <i>Galium saxatile</i> grassland, species-poor sub-community
U5b	<i>Nardus stricta</i> - <i>Galium saxatile</i> grassland, <i>Agrostis canina</i> - <i>Polytrichum commune</i> sub-community
U6	<i>Juncus squarrosus</i> - <i>Festuca ovina</i> grassland

¹¹ The Asterisk indicates that this M25a is likely present on peat 0.5m in depth or greater and has been classified as E1.7 wet modified bog in Phase 1 survey terms, whereas M25a (no Asterisk) has been assigned the Phase 1 code of B5 marsh/marshy grassland as it is likely present on peat or peaty-soils under 0.5m in depth.

NVC or Non-NVC Code	NVC or Non-NVC Community Name/Feature
U10b	<i>Carex bigelowii</i> - <i>Racomitrium lanuginosum</i> moss - heath, typical sub-community
U16c	<i>Luzula sylvatica</i> - <i>Vaccinium myrtillus</i> tall-herb community, species-poor sub-community
U20	<i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community
U20a	<i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Anthoxanthum odoratum</i> sub-community
U20b	<i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Vaccinium myrtillus</i> - <i>Dicranum scoparium</i> sub-community
Mesotrophic Grassland	
MG10	<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture
Non-NVC Community or Features	
CP	Coniferous plantation
YCP	Young coniferous plantation
CF	Clear-felled woodland
CF>	Clear-fell regeneration. This code, where used, is followed by an NVC community, e.g., CF>M25. This indicates that the area mapped was once conifer plantation that has since been felled and is now in the process of transitioning towards a vegetation assemblage generally reflecting the NVC stated. Respective codes recorded in this survey were: CF>W4CF>M6c, CF>M15, CF>M15b, CF>M17, CF>M19a, CF>M25, CF>M25*, CF>H21a, CF>U4, CF>U20, and CF>Je.
WLz	Broadleaved woodland with a species-poor ground layer dominated by <i>Luzula sylvatica</i> ¹²
SBT	Scattered broadleaved trees
Je	<i>Juncus effusus</i> acid grassland community
Ja	<i>Juncus acutiflorus</i> acid grassland community
PC	<i>Polytrichum commune</i> vegetation
SW	Standing or open surface waters
BG	Bare ground occurrences including roads, tracks, and rocky outcrops on hill ground

¹² The dominance of *Luzula sylvatica* (greater woodrush) is such that it is not possible to assign the vegetation to any particular woodland NVC community. This code was used widely in the Forestry Commission's Native Woodland Survey of Scotland (NWSS).

ANNEX B. NVC TARGET NOTES

Several TNs were made during surveys, often to pinpoint an area or species of interest, INNS etc. These TNs are shown on Figures 6, 7 and 8 and detailed within Table B-1 below.

Table B-2 Survey Area Target Notes

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TA01	NG 73280 24775	General	Young to medium-age woodland of birch, willow and pine, with a little spruce. Ground layer = W17 with <i>Calluna vulgaris</i> , <i>Blechnum spicant</i> , pleurocarpous mosses, <i>Polytrichum commune</i> and <i>Sphagnum capillifolium</i> , and a little <i>Molinia caerulea</i> .
TA02	NG 73280 24820	General	M15 with abundant young birch and some pine.
TA03	NG 73300 24765	General	Wayleave with U20 bracken and U16 <i>Luzula sylvatica</i> , and some <i>Myrica gale</i> and a little young birch.
TA04	NG 73290 24740	General	Dense growth of young to medium-age birch and pine, with willow, bramble, <i>Juncus effusus</i> , <i>Luzula sylvatica</i> , <i>Polytrichum commune</i> and <i>Sphagnum fallax</i> .
TA05	NG 73505 24710	General	W4 birch woodland just southwest of track.
TA06	NG 73710 24670	General	Eastward continuation of Target Note TC29 but with more birch/willow and less rowan than in TC29.
TA07	NG 73780 24500	General	Open/patchy birch woodland along stream.
TA08	NG 73510 24620	General	Willow/birch woodland along stream. Also occasional to frequent rowan and a little spruce. W11/17 and some W4, opening out into U20, U16 and M15. Species include bracken, <i>Luzula sylvatica</i> , <i>Holcus mollis</i> , pleurocarpous mosses, <i>Dryopteris aemula</i> , <i>Frullania teneriffae</i> and <i>Lobarion</i> lichens.
TA09	NG 73550 24350	General	Appears to be unploughed/unplanted M15/25 and patches of U20, but not seen closely.
TA10	NG 71925 23760	General	Well-grown <i>Salix aurita</i> with epiphytes including the lichens <i>Lobarina scrobiculata</i> (very good population), <i>Lobaria pulmonaria</i> , <i>Sticta limbata</i> and <i>S. sylvatica</i> , and the liverwort <i>Frullania teneriffae</i> .

¹³ TA = TN in search area A, TB = TN in search area B and TC = TN in search area C.

¹⁴ The additional information included here on 'TN type' is aimed at providing additional spatial context when cross-referred to Figures 6 to 8 or to pinpoint areas where certain TN information may be clustered. TNs were assigned one of four categories and are symbolised as such. These four categories are: presence of invasive species; presence of self-seeded non-native conifers; browsing/grazing; and, general. The general category covers a broad range of information, from general habitats/species compositions, species lists, presence of a particular species, other anthropogenic factors or contextual information, or to pinpoint certain features (e.g., a spring or flush). Several TNs can include information relevant to more than one TN type category, in these cases as TN type has been assigned using professional judgement as to the main information contained within the TN.

¹⁵ 'Birch' refers to downy birch (*Betula pubescens*) throughout unless otherwise stated. 'Pine' refers mostly to Lodgepole pine (*Pinus contorta*) throughout but also includes some Scots pine (*Pinus sylvestris*). 'Spruce' refers to Sitka spruce (*Picea sitchensis*) throughout.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TA11	NG 72000 23550	General	Rocky gully with H21 and M15b/c heaths on steep slopes above stream. Species include <i>Calluna</i> , <i>Vaccinium myrtillus</i> , <i>V. vitis-idaea</i> , <i>Erica tetralix</i> , <i>Molinia</i> , <i>Blechnum</i> , <i>Luzula sylvatica</i> , <i>Empetrum nigrum</i> , pleurocarpous mosses, <i>Sphagnum capillifolium</i> , <i>S. subnitens</i> , <i>Racomitrium lanuginosum</i> , <i>Breutelia chrysocoma</i> , <i>Bazzania tricrenata</i> , <i>Anastrepta orcadensis</i> , <i>Frullania teneriffae</i> , <i>Scapania gracilis</i> , <i>Colura calyptrifolia</i> (on <i>Calluna</i> stems), <i>Lobaria pulmonaria</i> (on rowan) and <i>Cladonia portentosa</i> .
TA12	NG 71910 23720	Invasive Species	<i>Gaultheria mucronata</i> on stony ground (around end of forest road).
TA13	NG 72075 23910	General	Willows on northwest side of forest road. Partly cut back (for road access). Epiphytes include the lichen <i>Lobarina scrobiculata</i> .
TA14	NG 72180 23980	General	Willows just northwest of forest road.
TA15	NG 72220 24000	General	Unploughed/unplanted M15 and M25 on gently sloping peaty ground on both sides of forest road. Some scattered willows here.
TA16	NG 72750 24400	Self-seeded Conifers	Unploughed/unplanted M17/19/25 in flat depression. Also, small patches of M6c and a very little young pine (to 4 m tall).
TA17	NG 72580 24160	General	Scattered birches and willows, and a little pine, in M15/M25 just north-northwest of forest road.
TA18	NG 72375 24195	General	M19 bog with some M15 wet heath.
TA19	NG 72320 24220	General	M17 bog.
TA20	NG 72325 24255	General	M17 and (bog form) M25, and a little M6c west of lochan.
TA21	NG 72400 24280	General	M25 <i>Molinia</i> northeast of lochan.
TA22	NG 72370 24250	General	Small lochan.
TA23	NG 72800 24300	General	Birch, willow, rowan, pine and broom on bank northwest of forest road.
TA24	NG 72700 24230	General	M15 and M25 on gentle northwest-facing slope.
TA25	NG 72810 24490	Invasive Species	Two <i>rhododendron</i> bushes <1 m tall at northwest edge of M17 bog.
TA26	NG 72810 24460	General	M17 bog.
TA27	NG 72990 24395	General	Scrubby woodland near stream has canopy of willow and birch with smaller amounts of rowan, holly and (very little) spruce. Opens out in places into M15 and M25.
TA28	NG 72905 24330	General	Birch, willow, rowan and a little holly among M15 and H21 heaths just southeast of forest road.
TA29	NG 73000 24370	General	Rowans and (rare) holly in M15 heath and U20 bracken on southeast side of forest road.
TA30	NG 73035 24335	General	M15 wet heath and M25 <i>Molinia</i> .
TA31	NG 71655 24360	General	Birch woodland with some rowan, pine, spruce and larch.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TA32	NG 71725 24250	General	Birch woodland.
TA33	NG 71700 24260	General	M15, M25 and U20 with scattered birch (rare) and young pine and spruce (occasional).
TA34	NG 71428 24713	Invasive Species	Gaultheria mucronata on stony/soily ground at end of track, and M15 wet heath south of track.
TA35	NG 71170 24510	General	M17a bog and some M6c, M25 and bog pools, in shallow depression among felled plantation. M17 is good bog with species including Calluna, Molinia, Erica tetralix, Eriophorum vaginatum, Narthecium and Sphagnum papillosum.
TA36	NG 70900 24500	General	M25 and M6c in largely unploughed/unplanted area among felled plantation.
TA37	NG 71180 24630	General	M15 and some M25 on south-facing slope; surrounded by felled plantation.
TA38	NG 73215 24655	General	Vegetation along course of stream: M25a and M6c, and a very little U16.
TA39	NG 73250 24880	General	Woodland (W17) of birch, willows, rowan and pine. Lightly grazed and with good Lobarion lichen vegetation on rowan and willow.
TA40	NG 70540 24090	Self-seeded Conifers	Unploughed/unplanted M15 and M25 just N/W of conifer plantation. Occasional scattered young pine (1-4 m in height), and a very little spruce (6 m).
TA41	NG 70445 24015	Invasive Species	Rhododendron bush 1.5 m tall, at edge of conifer plantation.
TA42	NG 70420 23950	Invasive Species	Two rhododendron bushes 1 m tall by fence. More rhododendrons to west of fence (just outside survey area).
TA43	NG 70440 23905	Invasive Species	Rhododendron bush 1 m tall, at edge of conifer plantation.
TA44	NG 70925 23055	Invasive Species	Rhododendron bush <1 m tall, at eastern corner of pylon base.
TA45	NG 70950 23045	Invasive Species	Rhododendron bush 60 cm tall.
TA46	NG 70970 23100	Self-seeded Conifers	M15b/c wet heath and M19a bog, and a little M25 Molinia. Occasional young pines <3 m tall.
TA47	NG 71135 23215	General	M15 wet heath and M25 Molinia, with some M6c rush mire, H21a heath and M19 bog.
TA48	NG 71255 23060	Invasive Species	Rhododendron c. 1 m tall, within area of M15 wet heath and M19 bog and a little (c. 4%) M25 Molinia. A few young pines <2 m tall.
TA49	NG 71295 23310	Browsing	M15b/c wet heath and M17/M19 bog, and smaller amounts of M1 (c. 4%). Lightly to moderately grazed. Bog and heath in good condition. Calluna mostly about 25-30 cm tall. A little young pine and spruce <1.5 m tall.
TA50	NG 70975 23275	General	M15b/c wet heath and M17/M19 bog, and smaller amounts of M25 Molinia (c. 10%) and M1 (<1%).

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TA51	NG 71360 23415	General	Sphagnum medium in M17a bog.
TA52	NG 71500 23310	General	M25a (bog form on deep peat) and a little M6c rush mire.
TA53	NG 71765 23430	Self-seeded Conifers	M25a (bog form on deep peat) and M19 bog, with some (10%) M15 wet heath and occasional scattered young pine <1.5 m tall.
TA54	NG 71765 23220	General	M25a (bog form on deep peat) 70%, M6c rush mire 20% and M2 Sphagnum cuspidatum/fallax (+ some Polytrichum commune) bog pool 10%.
TA55	NG 71755 23150	General	M15 wet heath and M25 Molinia, with 2% M6c and 2% M19, and a very little young pine <1 m tall.
TA56	NG 71570 23215	General	M17a and M19a bog (in good condition) and 10% M15c wet heath.
TA57	NG 71610 23560	General	M25a (bog form on deep peat) 64%, M17 bog 30%, M6c rush mire 4% and M1 bog pools <1%.
TA58	NG 71580 23700	General	M25a (bog form on deep peat).
TA59	NG 71595 23735	General	Gully with heath/open woodland (H21-W17). Aspen (3 trees 5-8 m tall), Salix aurita, Breutelia chrysocoma and, as epiphytes on willow, Lobaria pulmonaria, Pectenia cyanoloma and Frullania teneriffae. Rhododendron bush 1.5 m tall at conifer edge just southwest of southwest (upstream) end of gully.
TA60	NG 71600 23770	Invasive Species	Rhododendron 1 m tall at conifer edge.
TA61	NG 71625 23800	General	Gullies with W4 woodland, M15 and H21 heath and M25 Molinia, and some M6c rush mire. Botanically rich. Willows and rowans by stream have epiphytes including Lobaria pulmonaria, Ricasolia virens, Sticta sylvatica, F. fuliginosa, Leptogium burgessii, Pectenis cyanoloma, Pannaria rubiginosa and Frullania teneriffae. Also, some Vaccinium vitis-idaea in H21 and a young spruce 3 m tall.
TA62	NG 71900 24060	General	M25 (80%) and M6c (20%)
TA63	NG 71480 24000	General	Open area with M17 (and some M19) bog, M15 wet heath and some M25 Molinia and M2 bog pool.
TA64	NG 71190 23840	Invasive Species	Rhododendron 2 m tall at north edge of conifers.
TA65	NG 71050 23840	General	M15 wet heath and M19 (and a little M17) bog.
TA66	NG 71090 23870	Invasive Species	Rhododendron 1 m tall at south edge of conifers.
TA67	NG 70800 23735	General	Mainly M15 wet heath, M25 Molinia (including deep peat form) and M17 bog. Data partly from survey in April 2022.
TA68	NG 70950 23910	General	M17 bog (80%) and M15b/c wet heath (20%).
TA69	NG 71080 23175	General	H21 and M15 heath on steep northeast-facing slope.
TA70	NG 71100 23190	General	M17 and M25 (bog form) on level ground below (northeast of) steep northeast-facing slope.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TA71	NG 72730 24610	Self-seeded Conifers	Wet heath with some scattered young pine and spruce 2-3 m tall.
TA72	NG 73150 24680	General	Dense patch of W4 willow woodland with some birch.
TA73	NG 73170 24640	General	W11 birch/willow/rowan woodland just west-northwest of road. Good epiphytes on rowans, including <i>Ricasolia virens</i> , <i>Sticta sylvatica</i> , <i>S. limbata</i> , <i>Pectenia cyanoloma</i> , <i>Pannaria rubiginosa</i> and <i>Gabura fascicularis</i> .
TA74	NG 73150 24760	General	M15 and M25 on level glen floor, and M15, H10 and U20 on sloping glen sides. Largely unploughed and unplanted. Scattered birch, rowan and willow, and smaller amounts of holly, spruce and cypress. Also, some bramble.
TA75	NG 73230 24655	General	M15b wet heath and some U20 bracken, with abundant young birch (including a little silver birch <i>Betula pendula</i>) and some rowan, willows, oak (<i>Quercus robur</i>) and young alder.
TA76	NG 71950 23600	Self-seeded Conifers	M15 wet heath and M17 bog, with some M25 <i>Molinia</i> . Thinly scattered young pine and spruce, and some very small young birches.
TA77	NG 70500 23790	General	Data from survey in April 2022. M15 wet heath and U20 bracken, with a little H10 dry heath
TA78	NG 70660 23470	General	Data from survey in April 2022. H10, H21 and M15 heaths, U20 bracken, W11 and W17 woodland, and U16 woodrush vegetation. Woodland is on steeper ground along the stream. Rowans with epiphytes including the lichens <i>Lobaria pulmonaria</i> , <i>Sticta fuliginosa</i> , <i>S. limbata</i> , <i>Pectenia cyanoloma</i> , <i>Pannaria rubiginosa</i> , <i>Nephroma laevigatum</i> and <i>Leptogium burgessii</i> , the mosses <i>Ulota phyllantha</i> and <i>U. drummondii</i> , and the liverworts <i>Cololejeunea minutissima</i> and <i>Frullania teneriffae</i> .
TA79	NG 70685 23403	Invasive Species	<i>Rhododendron ponticum</i> approximately 1m in height.
TA80	NG 72317 23649	General	Plantation woodland of lodgepole pine with open canopy areas where blanket bog and wet heath dominate.
TA81	NG 72623 23793	General	<i>Betula</i> sp. over field layer of patches of <i>Molinia caerulea</i> , <i>Agrostis</i> sp., <i>Luzula sylvatica</i> and abundant moss <i>Thuidium tamariscinum</i> .
TA82	NG 72452 24089	General	Mature <i>Betula</i> sp. tree.
TA83	NG 73340 24012	Invasive Species	<i>Rhododendron ponticum</i> approximately 1m in height. Situated on opposite side of ravine making access too difficult. It's noted on a bearing of 260° from the GPS location.
TB01	NG 77850 22550	General	Extensive M15 wet heath on upper slope, with smaller amounts of H10 dry heath and M19 bog, has been ploughed but mostly not planted (or planted but trees failed). The ploughed furrows are distinct on the aerial photo but on site are seen to be rather shallow and fully vegetated. The

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
			heath and bog around here is generally in quite good condition.
TB02	NG 78068 22166	General	Moss <i>Ptilium cristacastrensis</i> in M19a bog.
TB03	NG 78107 22356	General	Rocky/heathy gully with species including liverworts <i>Scapania gracilis</i> , <i>Plagiochila punctata</i> , <i>Douinia ovata</i> , <i>Lejeunea patens</i> and <i>Frullania teneriffae</i> , and mosses <i>Ptilium cristacastrensis</i> and <i>Chionoloma hibernicum</i> (Nationally Scarce).
TB04	NG 78249 22792	General	M37 spring vegetation here includes <i>Carex demissa</i> , <i>Chrysosplenium oppositifolium</i> and the mosses <i>Palustriella commutata</i> , <i>Cratoneuron filicinum</i> and <i>Breutelia chrysocoma</i> . Adjacent H21a heath includes the liverwort <i>Anastrepta orcadensis</i> .
TB05	NG 78250 22900	Self-seeded Conifers	M15 wet heath has been ploughed but not planted, furrows shallow and well vegetated. Scattered pine and spruce in this area.
TB06	NG 78290 22665	Browsing	Some browsed young rowans <1 m tall in this area.
TB07	NG 78332 21693	General	Moss <i>Ptilium cristacastrensis</i> in U20/H21a bracken/heath.
TB08	NG 78338 21690	General	Liverworts <i>Anastrepta orcadensis</i> and <i>Scapania gracilis</i> in M15-U20 vegetation c. 10 m upslope of uppermost pines.
TB09	NG 78381 22311	Invasive Species	<i>Rhododendron</i> (c. 1 m across x 1 m tall) in M15-M19 vegetation among lodgepole pines.
TB10	NG 78400 22580	General	Herb-rich vegetation (W25, M25c and M23b) showing influence of base-enrichment. If wooded, this would probably be W7/W11b.
TB11	NG 78410 22270	Self-seeded Conifers	Some scattered conifers among open U20 and M15.
TB12	NG 78450 22350	Self-seeded Conifers	Scattered conifers in bracken and heath.
TB13	NG 78474 21498	Invasive Species	<i>Cotoneaster</i> sp. in M15 wet heath c. 20 m upslope from upper edge of conifer plantation. Other species in heath here include moss <i>Breutelia chrysocoma</i> and liverwort <i>Scapania gracilis</i> .
TB14	NG 78490 22460	General	Scattered young to medium-age birch and holly in heath.
TB15	NG 78500 22329	General	Lichens <i>Gabura fascicularis</i> and <i>Leptogium burgessii</i> on rowan among U20 bracken.
TB16	NG 78500 22515	Browsing	Clumps of young to medium-age birch frequent and willows occasional in this area of mainly bracken and heath. Small, browsed rowans are common, up to about 1 m tall and generally browsed in their upper parts. Browsed holly (2 m tall) rare.
TB17	NG 78520 21460	General	Scattered rowans in M15 wet heath and U20 bracken.
TB18	NG 78520 21775	General	Areas of broadleaved woodland around here have rowan, willow, birch, holly, rose and bramble. Browsing generally light but noticeable on rowans.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TB19	NG 78540 21855	General	Scattered medium-aged rowans (with some Lobarion lichens) and a little young spruce (up to 1 m tall) among bracken.
TB20	NG 78550 22080	Self-seeded Conifers	Rowan, birch and (scarce) young spruce <1 m tall in this area.
TB21	NG 78570 22140	General	Woodland has birch, rowan, willow, holly, bramble, spruce, honeysuckle and <i>Luzula sylvatica</i> .
TB22	NG 78600 22230	General	Birch and rowan in woodland here.
TB23	NG 78616 22598	General	<i>Schoenus nigricans</i> in M15a-c wet heath.
TB24	NG 78621 22145	General	Species in birch/rowan/eared willow/holly woodland here include <i>Luzula sylvatica</i> , <i>Lonicera periclymenum</i> , <i>Hymenophyllum wilsonii</i> , the mosses <i>Ptilium cristacastrensis</i> , <i>Hylocomiastrum umbratum</i> , <i>Hyocomium armoricum</i> and <i>Breutelia chrysocoma</i> , the liverworts <i>Frullania teneriffae</i> , <i>Leptoscyphus cuneifolius</i> (luxuriant on some birches), <i>Plagiochila spinulosa</i> , <i>P. punctata</i> , <i>Scapania gracilis</i> , <i>Saccogyna viticulosa</i> , <i>Lejeunea patens</i> , <i>Douinia ovata</i> , <i>Anastrepta orcadensis</i> , <i>Barbilophozia barbata</i> (small amounts growing, unusually, as an epiphyte) and <i>Colura calyptrifolia</i> (on spruce), and the lichens <i>Pecteniam cyanoloma</i> , <i>Pannaria rubiginosa</i> , <i>P. conoplea</i> , <i>Sticta sylvatica</i> and <i>S. fuliginosa</i> .
TB25	NG 78624 22690	Browsing	U20 bracken vegetation containing many willows up to c. 1m tall and clearly browsed; <i>Calluna</i> and <i>Erica cinerea</i> scattered here too; up to 40 cm tall and distinctly browsed.
TB26	NG 78630 22590	General	M15 wet heath, H10 dry heath, M25 <i>Molinia</i> and U20 bracken, with abundant young to medium-age birches. Occasional willows and rowan. A little holly. <i>Myrica</i> locally frequent. Some of the M25 is M25c with species including <i>Ranunculus repens</i> , <i>Oxalis</i> , <i>Ajuga reptans</i> , <i>Holcus mollis</i> , <i>Ficaria verna</i> , <i>Primula vulgaris</i> , <i>Lysimachia nemorum</i> , <i>Geum rivale</i> , <i>Geranium robertianum</i> , <i>Viola riviniana</i> , <i>Hypochaeris radicata</i> , <i>Jacobaea vulgaris</i> , <i>Prunella vulgaris</i> , <i>Deschampsia cespitosa</i> , <i>Cirsium palustre</i> , <i>Sanicula europaea</i> , <i>Succisa</i> , <i>Cardamine pratensis</i> and moss <i>Hylocomiadelphus triquetrus</i> . Signs of grazing seen in the more herb-rich ground vegetation.
TB27	NG 78640 21360	General	Small group of rowans.
TB28	NG 78650 21430	General	Rowan and goat willow with Lobarion (lichen) epiphytes west of forest road.
TB29	NG 78650 22700	General	Scattered birch in bracken and heath.
TB30	NG 78655 21535	General	<i>Schoenus nigricans</i> locally abundant on flushed banks west of road. Also around here are scattered rowan, birch, willows, ash, holly, broom, rose, pine, spruce, cotoneaster and sycamore.
TB31	NG 78660 21380	Invasive Species	<i>Rhododendron</i> 1.5 m tall, at lower edge of conifers.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TB32	NG 78660 21720	General	Approx. mid point along discontinuous line of rowans and goat willows just east of forest road, from NG 78695 21946 south to NG 78682 21527. Epiphytes on these trees include mosses <i>Plenogemma phyllantha</i> and <i>Ulota drummondii</i> , liverworts <i>Frullania teneriffae</i> and <i>Myriocoleopsis minutissima</i> , and a good representation of <i>Lobarion</i> lichens: <i>Lobaria pulmonaria</i> , <i>Lobarina scrobiculata</i> , <i>Pannaria rubiginosa</i> , <i>Pectenaria cyanoloma</i> , <i>P. atlantica</i> , <i>Peltigera collina</i> , <i>Sticta sylvatica</i> , <i>S. fuliginosa</i> , <i>S. limbata</i> , <i>Leptogium burgessii</i> and <i>L. brebissonii</i> Also the lichen <i>Hypotrachyna laevigata</i> (not a <i>Lobarion</i> species).
TB33	NG 78670 21910	General	Birch, rowan, willow, holly, gorse, bramble, pine, spruce, larch and young (1.5 m) Douglas fir in bracken and heath.
TB34	NG 78680 21405	Invasive Species	Rhododendron 1.5 m tall, just west of road.
TB35	NG 78680 22045	General	Birch, rowan, willow, holly and broom in heath.
TB36	NG 78681 21964	General	Epiphytes on rowan just west of forest road include liverwort <i>Myriocoleopsis minutissima</i> and lichens <i>Pectenaria cyanoloma</i> , <i>Sticta fuliginosa</i> , <i>Nephroma laevigatum</i> , <i>Leptogium cyanescens</i> , <i>Nevesia sampaiana</i> , <i>Parmeliella triptophylla</i> , <i>Parmotrema perlata</i> and <i>Pannaria rubiginosa</i> .
TB37	NG 78681 22168	General	Species in woodland downstream of forest road include mosses <i>Breutelia chrysocoma</i> and <i>Ulota drummondii</i> , liverworts <i>Scapania gracilis</i> , <i>Plagiochila punctata</i> , <i>Lejeunea patens</i> , <i>Cololejeunea microscopica</i> (epiphytic) and <i>Frullania teneriffae</i> , and lichens <i>Lobarina scrobiculata</i> , <i>Ricasolia virens</i> , <i>Sticta sylvatica</i> , <i>S. fuliginosa</i> , <i>S. limbata</i> , <i>Nephroma laevigatum</i> and <i>Pectenaria cyanoloma</i> .
TB38	NG 78685 22055	Invasive Species	Rhododendron 1.5 m tall 3 m east of road.
TB39	NG 78690 21305	Invasive Species	Rowans and some birch along east side of forest road. One rhododendron 1 m tall x 2 m across, 2 m east of road.
TB40	NG 78693 22838	General	<i>Schoenus nigricans</i> in wet heath.
TB41	NG 78700 21420	General	Many young birches and willows, and some young to medium-aged rowans, among bracken around here.
TB42	NG 78720 22630	General	Birch locally frequent in heath and bracken.
TB43	NG 78730 21335	General	Rowans scattered in bracken here.
TB44	NG 78730 22910	Self-seeded Conifers	Scattered pine, spruce and larch among heaths in this general area.
TB45	NG 78750 22450	General	Birch, rowan, willows, broom, gorse, honeysuckle, bramble, holly, pine and spruce scattered among bracken, heath and <i>Molinia</i> .
TB46	NG 78785 22590	General	Some holly, broom, gorse, pine, spruce (rare) and browsed (1 m) rowan among heath and bracken.
TB47	NG 78787 22500	General	Woodland of birch, rowan, goat willow, elm, hazel and holly, with species including <i>Luzula sylvatica</i> , <i>Lonicera</i>

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
			periclymenum (terrestrial and arboreal), <i>Hedera helix</i> , <i>Chrysosplenium oppositifolium</i> , <i>Dryopteris aemula</i> , <i>Hymenophyllum wilsonii</i> , <i>H. tunbrigense</i> , the mosses <i>Breutelia chrysocoma</i> , <i>Hyocomium armoricum</i> , <i>Plenogemma phyllantha</i> and (in very small quantity) <i>Hageniella micans</i> (Nationally Scarce), the liverworts <i>Scapania gracilis</i> , <i>Plagiochila spinulosa</i> , <i>P. punctata</i> , <i>Saccogyna viticulosa</i> , <i>Frullania teneriffae</i> , <i>Lepidozia pearsonii</i> , <i>Lejeunea patens</i> , <i>Leptoscyphus cuneifolius</i> , <i>Anastrepta orcadensis</i> and <i>Douinia ovata</i> , and the lichens <i>Lobaria pulmonaria</i> , <i>Lobarina scrobiculata</i> , <i>Ricasolia virens</i> , <i>Sticta sylvatica</i> , <i>S. fuliginosa</i> , <i>Leptogium burgessii</i> , <i>L. brebissonii</i> , <i>Peltigera collina</i> , <i>Pectenienia atlantica</i> , <i>P. cyanoloma</i> , <i>Nephroma laevigatum</i> and <i>Pannaria rubiginosa</i> . Rhododendron 2 m tall at east side of road at south end of road bridge.
TB48	NG 78790 22519	General	Woodland here has a canopy of birch, rowan, willow and holly.
TB49	NG 78800 22750	General	Scattered birch, willow, rowan, broom, pine and spruce in heath, <i>Molinia</i> and bracken around here.
TB50	NG 78850 22700	General	Willow, rowan, holly and young spruce scattered among bracken around here.
TB51	NG 78860 22540	General	Birch, rowan (mostly short and browsed, but at least one well grown tree), willow, holly, broom, gorse, bramble and alder scattered through bracken, heath and <i>Molinia</i> around here.
TB52	NG 78864 22644	General	<i>Ulota calvescens</i> , <i>Plenogemma phyllantha</i> and <i>Frullania teneriffae</i> on <i>Salix aurita</i> 4 m east of eastern edge of forest road.
TB53	NG 78885 22660	General	Woodland here has birch, willow, rowan, holly, rose, bramble, honeysuckle and bryophytes including the liverworts <i>Harpalejeunea molleri</i> and <i>Colura calyptrifolia</i> (these last two on streamside rocks just west (upstream) of forest road).
TB54	NG 78894 22634	General	Epiphytes in woodland here include <i>Ulota calvescens</i> , <i>Frullania teneriffae</i> , <i>Lobarina scrobiculata</i> , <i>Pectenienia cyanoloma</i> , <i>Pannaria rubiginosa</i> , <i>Nephroma laevigatum</i> , <i>Leptogium burgessii</i> and <i>Sticta fuliginosa</i> .
TB55	NG 78900 22940	General	Scattered willows and birch in an area about 150 m long, in M15 and M25.
TB56	NG 78906 22848	General	Birches, rowans, willows and (scarce) holly on very steep slope with H10 heath.
TB57	NG 78970 23020	General	A few rowans and some holly at the northwest edge of the conifers (crag here). Also, a willow 2 m upslope, with epiphytes including <i>Frullania teneriffae</i> .
TB58	NG 79000 23200	General	Occasional willow, rowan and young pine and spruce among heath and bracken.

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TB59	NG 79015 22900	General	Birch, rowan, willow, young pine and spruce, and some rose, bramble and broom, among heath and bracken.
TB60	NG 79060 22810	General	Woodland in stream gully (and also to north in forest ride) has birch, willow and some young spruce.
TB61	NG 79060 23030	General	Some birch, young pine and 1 m-tall, browsed rowans among bracken, heath and Molinia.
TB62	NG 79089 22765	General	Birch/rowan/willow woodland with epiphytes including <i>Lobaria pulmonaria</i> , <i>Lobarina scobiculata</i> , <i>Ricasolia virens</i> , <i>Sticta sylvatica</i> , <i>S. fuliginosa</i> , <i>Pannaria rubiginosa</i> and <i>Pectenien cyanoloma</i> .
TB63	NG 79160 23190	General	Two willows forming patch of W7a 10 m southeast of road. Very mossy and with epiphytes including liverwort <i>Frullania teneriffae</i> and lichens <i>Lobaria pulmonaria</i> , <i>Lobarina scrobiculata</i> , <i>Pannaria rubiginosa</i> , <i>Leptogium burgessii</i> and <i>Sticta limbata</i> . Also birch and a small holly 40 m to the northeast (on same side of road).
TB64	NG 79210 23245	Browsing	Woodland here has birch, willow, spruce and pine; birch largely in clumps. <i>Calluna</i> tall and lightly browsed. Some rowans: mostly about 1 m tall and browsed, but a taller mature one at the forest edge.
TB65	NG 79230 23060	General	Scattered willows (occasional), birch (rare) and spruce (occasional) among heath, bracken and Molinia in this general area.
TB66	NG 79285 23260	General	Scattered birch, willow and holly among heath and bracken around here.
TC01	NG 73475 25175	General	Birch, rowan (rare), bracken and <i>Luzula sylvatica</i> in W4/11/17 by stream.
TC02	NG 73595 25720	General	Woodland of birch and willow + some rowan and pine, in bottom of shallow glen. W4 and some W11 and W17. Much Molinia and <i>Myrica</i> . Some <i>Luzula sylvatica</i> .
TC03	NG 73600 25250	General	Birch, rowan (rare), bracken and <i>Luzula sylvatica</i> in W4/11/17 by stream.
TC04	NG 73625 25470	General	U20 bracken and locally abundant <i>Luzula sylvatica</i> (some patches of U16) along course of stream. Also, some M25 Molina, a little M6c, scattered mature birch, and some willow, pine and spruce.
TC05	NG 73695 25840	General	West-facing slope with M15 and some U20. Scattered young to mature birch and young spruce. <i>Myrica</i> locally abundant and tall (to 70 cm). Lightly grazed.
TC06	NG 73720 25810	General	Small clump of young to medium-age rowans.
TC07	NG 73723 25341	Browsing	Holly (1 m tall and browsed) by path.
TC08	NG 73750 25740	Invasive Species	West-facing slope with birch, rowan, bracken, <i>Calluna</i> , <i>Vaccinium myrtillus</i> , pleurocarpous mosses, <i>Polytrichum commune</i> , <i>Sphagnum capillifolium</i> and <i>Dryopteris aemula</i> . Some young spruce and pine, and some fallen pine. <i>Gaultheria</i> spp. present too.

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TC09	NG 73765 25860	General	Open W4 with middle-aged birch and some young pine and spruce. Much <i>Molinia</i> , <i>Calluna</i> , <i>Myrica</i> and <i>Erica tetralix</i> , with pleurocarpous mosses, <i>Polytrichum commune</i> and occasional <i>Erica cinerea</i> .
TC10	NG 73769 25700	Invasive Species	<i>Gaultheria mucronata</i> and <i>G. shallon</i> in H10a dry heath.
TC11	NG 73770 25675	Invasive Species	Heath (M15 and H10) with some bracken (W25), bramble, rock outcrops and abundant <i>Gaultheria</i> spp. Scattered birch, pine and spruce. Lightly browsed, but rowan present, up to 1 m tall and with signs of browsing at tips.
TC12	NG 73808 25846	Invasive Species	<i>Ptilium cristacastrensis</i> and <i>Gaultheria mucronata</i> in M15b wet heath
TC13	NG 73845 25430	Invasive Species	M15 heath with <i>Calluna</i> , <i>Molinia</i> , <i>Myrica</i> (to 1 m tall), <i>Erica tetralix</i> , <i>Trichophorum</i> and scattered pine and spruce. Young rowan rare; young birch very rare. <i>Gaultheria mucronata</i> rare.
TC14	NG 73850 25600	General	M17 bog with <i>Sphagnum papillosum</i> , <i>S. capillifolium</i> , <i>S. medium</i> (in small quantity), <i>S. denticulatum</i> , <i>S. cuspidatum</i> , <i>Calluna</i> , <i>Erica tetralix</i> , <i>Eriophorum vaginatum</i> , <i>E. angustifolium</i> , <i>Narthecium</i> , <i>Trichophorum</i> , <i>Molinia</i> , <i>Racomitrium lanuginosum</i> , <i>Hylocomium splendens</i> , <i>Hypnum jutlandicum</i> and <i>Cladonia portentosa</i> . Some small pools. Pine and spruce seedlings rare. Has been partly ploughed but is generally intact.
TC15	NG 73871 25459	Invasive Species	<i>Cotoneaster</i> sp. In M15 wet heath.
TC16	NG 73875 25875	General	M17 bog with <i>Calluna</i> , <i>Erica tetralix</i> , <i>Eriophorum vaginatum</i> , <i>Myrica</i> , <i>Molinia</i> , <i>Narthecium</i> , <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Plagiothecium undulatum</i> and scattered <i>Gaultheria</i> spp. and young birch (up to 1 m tall), pine and spruce. Some M25 too, at edge. Locally some <i>Sphagnum papillosum</i> and <i>S. cuspidatum</i> . <i>Cladonia portentosa</i> locally abundant. <i>Breutelia chrysocoma</i> occasional.
TC17	NG 73898 25955	Invasive Species	<i>Gaultheria mucronata</i> and <i>G. shallon</i> in M15c wet heath.
TC18	NG 73910 25990	Self-seeded Conifers	N-facing slope with M15 and some H21 and U20. Lightly grazed. Abundant young pine and spruce, and frequent young birch and <i>Gaultheria mucronata</i> , and a little <i>G. shallon</i> . Dwarf shrubs (<i>Calluna</i> , <i>Erica cinerea</i> and <i>Myrica</i>) mostly up to about 50 cm tall.
TC19	NG 73918 25502	General	M15c wet heath with abundant disturbance to soils (mounding, but no planted trees seen).
TC20	NG 73928 25894	Invasive Species	<i>Rhododendron</i> 2 m tall at north edge of bog.
TC21	NG 73948 25439	General	<i>Sphagnum medium</i> in M17a bog.

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TC22	NG 73950 25470	General	Bog/M25 in wayleave in depression. Scattered birch, pine and spruce.
TC23	NG 73991 25096	General	Species in M15c wet heath include <i>Arctostaphylos uva-ursi</i> , moss <i>Ptilium cristacastrensis</i> and liverwort <i>Scapania gracilis</i> .
TC24	NG 73999 25519	General	<i>Sphagnum medium</i> in M17a bog.
TC25	NG 74016 25406	Invasive Species	<i>Gaultheria mucronata</i> in M15/M25 by track.
TC26	NG 74024 25046	General	Birch woodland, with some rowan, eared willow, holly and hybrid oak, has species including <i>Dryopteris aemula</i> , the moss <i>Plenogemma phyllantha</i> and the liverworts <i>Frullania teneriffae</i> and <i>Scapania gracilis</i> .
TC27	NG 74040 25050	General	Birch woodland (probably W11 and/or W17) on south-facing slope. This is a portion of the upper part of a larger area of woodland that is mostly outside (downslope of) the survey area.
TC28	NG 74065 26050	Invasive Species	Felled plantation revegetating to M15/W4/W17 with scattered young birches and willows (to 2.5 m tall), pine and spruce (similar height) and some bramble, <i>Gaultheria mucronata</i> and <i>G. shallon</i> . Lightly grazed. Apart from invasive shrubs the M15 seems to be in good condition.
TC29	NG 74095 26200	Self-seeded Conifers	Developing young woodland of birch, rowan and willows up to 3 m tall. Also, abundant lodgepole pine and some Sitka spruce (both up to 4 m tall) and a little holly (<1 m). Ground vegetation mainly lightly grazed M15 and W4 (and intermediates) including <i>Gaultheria mucronata</i> and <i>G. shallon</i> .
TC30	NG 74101 25398	Invasive Species	<i>Gaultheria shallon</i> in M15 wet heath.
TC31	NG 74129 25408	Invasive Species	<i>Gaultheria mucronata</i> in M15, and <i>Dryopteris aemula</i> near path.
TC32	NG 74135 25574	Invasive Species	<i>Gaultheria mucronata</i> and <i>G. shallon</i> in M17 bog.
TC33	NG 74150 25730	Invasive Species	Mainly M15 and M25 on gentle southeast-facing slope. A very little birch locally, but mostly open. Some <i>Gaultheria mucronata</i> .
TC34	NG 74160 25645	Invasive Species	<i>Rhododendron</i> bush in M15/M25.
TC35	NG 74165 25950	Invasive Species	<i>Rhododendron</i> 2.5 m tall x 4 m wide in felled plantation revegetating to M15/M25.
TC36	NG 74171 25551	General	<i>Sphagnum medium</i> in M17 bog.
TC37	NG 74183 25550	Invasive Species	<i>Gaultheria mucronata</i> in M17/25 bog/ <i>Molinia</i> .
TC38	NG 74196 25424	Invasive Species	Large <i>rhododendron</i> bush (c. 2 m tall x 4 m wide) and several smaller ones nearby; also scattered <i>Gaultheria mucronata</i> and <i>Dryopteris aemula</i> .

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TC39	NG 74200 25720	Invasive Species	M15, M25 and M6c in valley floor just southwest of woodland. Some scattered birch and willow. Also, a little rowan, pine, spruce, Gaultheria mucronata, G. shallon and raspberry.
TC40	NG 74206 25230	Invasive Species	Gaultheria mucronata in M17 bog.
TC41	NG 74240 25790	Invasive Species	W7/11/17 woodland of birch, willows, rowan, holly and pine. Also, Gaultheria mucronata, G. shallon (both plentiful) and a little Cotoneaster sp. Other species include bramble, gorse, rose, tutsan, Dryopteris aemula, and, as epiphytes, Frullania teneriffae, Lobaria pulmonaria, Ricasolia virens, Pecten cyanoloma, Pannaria rubiginosa, Sticta sylvatica and S. fuliginosa.
TC42	NG 74250 25331	Invasive Species	Gaultheria mucronata and moss Ptilium cristacastrensis in M15c/M17 heath/bog.
TC43	NG 74262 25309	Invasive Species	Gaultheria mucronata and Dryopteris aemula in M15c wet heath.
TC44	NG 74342 25398	Invasive Species	Gaultheria mucronata in M15 wet heath.
TC45	NG 74345 25750	General	A small patch of W4/17 birch with some well-grown pine on a north facing slope.
TC46	NG 74350 25505	General	Birches among U20 bracken.
TC47	NG 74359 25338	Invasive Species	Gaultheria mucronata in M15 wet heath.
TC48	NG 74365 25610	General	Patch of young to middle-aged birch (W4).
TC49	NG 74367 25202	Invasive Species	Rhododendron in M15/M25.
TC50	NG 74369 25184	Invasive Species	Gaultheria mucronata in M15-M25.
TC51	NG 74385 25472	Invasive Species	Gaultheria mucronata in M15 wet heath.
TC52	NG 74400 25497	General	Ptilium cristacastrensis in M15b wet heath.
TC53	NG 74474 25355	General	Sphagnum medium in M17a bog.
TC54	NG 74490 25300	General	Mature birch thinly scattered among revegetating felled plantation.
TC55	NG 74646 25320	General	Ptilium cristacastrensis in M25a Molinia.
TC56	NG 74682 25164	General	Species in W4/17 birch/rowan/holly woodland include Hedera helix, the mosses Ptilium cristacastrensis and Plenogemma phyllantha, the liverworts Scapania gracilis, Frullania teneriffae and Riccardia palmata, and the lichens Lobaria pulmonaria, Pannaria rubiginosa, Nephroma laevigatum, Pecten cyanoloma and P. plumbea.
TC57	NG 74385 25640	Invasive Species	Rhododendron: one bush c.2 m tall + a few others scattered around.

TN ID ¹³	Grid Reference	TN Type ¹⁴	Description ¹⁵
TC58	NG 73549 25759	Invasive Species	Gaultheria mucronata.

ANNEX C. CSM DATA

Table C-3 CSM Survey Results: Blanket Bog

	Sample Location/Map Ref	A01	A02	A03	A04	A05	B01	B02	B03	B04	C01	C02	C03
BLANKET BOG & VALLEY BOG (UPLAND)	Surveyor	JM	JM	JM	JM	JM	BA	BA	BA	AA	BA	BA	BA/AA
	Sample Grid Ref	NG 70818 23884	NG 71006 24262	NG 71209 24496	NG 72315 24212	NG 73824 24188	NG 78084 22001	NG 78068 22166	NG 77678 22573	NG 78063 23018	NG 73922 25882	NG 73942 25450	NG 74171 25551
	Survey Date	28/03/2023	28/03/2023	29/03/2023	29/03/2023	30/03/2023	28/03/2023	28/03/2023	29/03/2023	29/03/2023	27/03/2023	27/03/2023	30/03/2023
	NVC Type(s)	M17a	M17a	M17a/M17b	M17a	M17a	M19a	M19a	M19a	M17b	M17b	M17b	M17
	Mandatory Attributes	Targets											
Feature extent.	1) There should be no measurable decline in the area of the feature.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vegetation composition — frequency of indicator species.	1) At least 6 indicator species should be present (Table 1).	Y	Y	Y	Y	Y	Y (Calluna, Erica tet., Erioph. vag., Narthecium, Sphagnum, Rac. lan. + pleurocarp = 7)	Y (Calluna, Erica tet., Erioph. vag. + ang., Empetrum, Sphagnum, Rac. lan., pleurocarp + Cladonia = 8)	Y	Y (Calluna, Eriophorum vag. + ang., Erica tet., Narthecium, Trich. germ., Sphagnum, Racomit. lan., Cladonia + pleurocarps = 9)	Y (Calluna, Eriophorum vag., Erica tet., Myrica, Narthecium, Sphagnum cap., pleurocarps + non-crustose lichen (Usnea on Calluna) = 8)	Y (Calluna, Erioph. vag., Erica tet., Myrica, Sphagnum + pleurocarps = 6)	N (Calluna, Erica (tet. + cin.), Erioph. vag., Sphagnum + pleurocarp = 5)
Vegetation composition — cover of indicator species.	(1) At least 50% of vegetation cover should consist of at least 3 indicator species (Table 1).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(2) Sphagnum cover should not consist only of Sphagnum fallax.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(3) Any one of Eriophorum vaginatum, Ericaceous species collectively, or Trichophorum should not individually exceed 75% of the vegetation.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vegetation composition — cover of other species	(1) Less than 1% of vegetation cover should be made up of non-native species.	Y	Y	Y	Y	Y	Y	Y (small planted Lodgepole Pines = <1%)	N (Lodgepole Pine regeneration = >1%)	N (2% = Pinus contorta, Picea sitchensis, Gaultheria mucronata + Rhododendron pont.)	Y (<1% Pinus contorta & Picea sitchensis)	Y	Y
	(2) Less than 10% of vegetation cover should be made up of scattered native trees and scrub.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(3) Less than 1% of vegetation cover should consist of, collectively, Agrostis capillaris, Holcus lanatus, Phragmites australis, Pteridium aquilinum, Ranunculus repens.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vegetation structure — indicators of browsing.	(1) Less than 33% of the last complete growing season's shoots of dwarf-shrub species (collectively but excluding Betula nana and Myrica gale) should show signs of browsing.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(2) In pioneer stage regrowth, or where there is Betula nana or Myrica gale (at any stage of regrowth), less than 66% of the last complete	N/A	Y	Y	Y	Y	NA	NA	Y	NA	NA	NA	NA

	Sample Location/Map Ref	A01	A02	A03	A04	A05	B01	B02	B03	B04	C01	C02	C03
BLANKET BOG & VALLEY BOG (UPLAND)	Surveyor	JM	JM	JM	JM	JM	BA	BA	BA	AA	BA	BA	BA/AA
	Sample Grid Ref	NG 70818 23884	NG 71006 24262	NG 71209 24496	NG 72315 24212	NG 73824 24188	NG 78084 22001	NG 78068 22166	NG 77678 22573	NG 78063 23018	NG 73922 25882	NG 73942 25450	NG 74171 25551
	Survey Date	28/03/2023	28/03/2023	29/03/2023	29/03/2023	30/03/2023	28/03/2023	28/03/2023	29/03/2023	29/03/2023	27/03/2023	27/03/2023	30/03/2023
	NVC Type(s)	M17a	M17a	M17a/M17b	M17a	M17a	M19a	M19a	M19a	M17b	M17b	M17b	M17
	growing season's shoots of the dwarf-shrubs, (collectively) should show signs of browsing.												
Vegetation structure —disturbance	(1) There should be no observable signs of burning into the moss, liverwort or lichen layer or exposure of peat surface due to burning.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(2) There should be no signs of burning or other disturbance (e.g. mowing) in the sensitive areas defined in Table 2.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Physical structure — peat erosion.	(1) The extent of eroding peat should be less than the extent of stable re-deposited peat and new growth of bog vegetation within the feature.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Physical structure —indicators of active drainage and/or ground disturbance due to herbivore and human activity.	(1) Less than 10% of the total feature area, should be disturbed bare ground and/or show signs of active drainage, resulting from ditches or heavy trampling or tracking.	Y	Y	Y	Y	Y	Y	Y (but old shallow forestry drains present; now well vegetated)	Y (has been deep-ploughed for forestry, but not recently)	Y	Y	Y	Y
	(2) Less than 10% of the Sphagnum cover should be crushed, broken, and/or pulled-up.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Additional Notes	Any additional notes made.						Mainly Calluna and Erioph. vag. + smaller amounts of Erica tet., Molinia, Narthecium, Sphagnum cap., Rhyt. lor., Hyloc. spl., Pleurozium, Polytrichum comm., Rac. lan. and Thuid. tam. Habitat = on a slope.	Mainly Calluna, Erioph. vag. + Hyloc. spl. with smaller amounts of Erica tet., Empetrum, Molinia, Erioph. ang., Sphagnum cap., Rhyt. lor., Pleurozium, Rac. lan., Clad. port. + C. uncialis.	Good quality M17 bog including Calluna, Eriophorum vaginatum, Erica tetralix, Trichophorum, Molinia, Narthecium (in good quantity), Sphagnum capillifolium and S. papillosum. Has been ploughed and planted, but pine crop failed.	Species seen here: Calluna, Eriophorum vag., E. ang., Erica tet., Narthecium, Trich. germ., Sphagnum cap., S. tenellum, Racomit. lan., Cladonia, Molinia, Hypnum jut., Pleurozia and Odontoschisma sphagni	Tall, thick vegetation with mainly Calluna, Eriophorum vag., Molinia & Myrica; also Erica tet., Narthecium & Sphagnum cap. Quite species-poor.	Mainly Calluna, Molinia & Myrica, with varied amounts of Erioph. vag., Erica tet., Hypnum jut., Hylocomium spl., Dicranum scop., Rhytid. loreus, Racomitrium lan., Sphagnum capillifolium and S/ medium.	Calluna and Eriophorum vaginatum co-dominant. Other species include Molinia, Erica tetralix, E. cinerea, Hypnum jutlandicum, Pleurozium, Hylocomium splendens, Rhytidadelphus loreus, Sphagnum capillifolium and Breutelia chrysocoma. Unusual to see Erica cinerea and Breutelia in bog vegetation.
CSM FAILURES		0	0	0	0	0	0	0	1	1	0	0	1

Table 1. Indicator Species				
<i>Andromeda polifolia</i>	<i>Cornus suecica</i>	<i>Eriophorum vaginatum</i>	Non-crustose lichens	<i>Sphagnum</i> spp.
<i>Arctostaphylos</i> spp.	<i>Drosera</i> spp.	<i>Menyanthes trifoliata</i>	<i>Pleurocarpus</i> mosses	<i>Trichophorum germanicum</i>
<i>Betula nana</i>	<i>Erica</i> spp.	<i>Myrica gale</i>	<i>Racomitrium lanuginosum</i>	<i>Vaccinium</i> spp.
<i>Carex bigelowii</i>	<i>Empetrum nigrum</i>	<i>Narthecium ossifragum</i>	<i>Rubus chamaemorus</i>	
<i>Calluna vulgaris</i>	<i>Eriophorum angustifolium</i>		<i>Rhynchospora alba</i>	

Table 2. Areas very sensitive to disturbance
(a) Slopes greater than 1 in 3 (18°), and all the sides of gullies.
(b) Ground with abundant and/or an almost continuous carpet of <i>Sphagnum</i> , other mosses, liverworts and/or lichens.
(c) Areas with noticeably uneven structure, at a spatial scale of around 1 m ² or less. The unevenness should be the result of <i>Sphagnum</i> hummocks, lawns and hollows, or mixtures of well-developed cotton-grass tussocks and spreading bushes of dwarf-shrubs. The surface of the vegetation canopy, including moss dominated areas will not be uniform and some parts should be at least 20 cm higher than other parts.
(d) Pools, wet hollows, hags and erosion gullies, and within 5 – 10 metres of the edge of watercourses.

Table C-2 CSM Survey Results: Wet Heath

	Sample Location/Map Ref	A06	A07	A08	A09	B05	B06	B07	B08	C04	C05	C06	C07	C08
WET HEATH	Surveyor	JM	JM	JM	JM	BA	BA	BA	AA	BA/AA	AA	BA	BA	BA
	Sample Grid Ref	NG 71354 23328	NG 71597 23229	NG 70918 23019	NG 72292 24145	NG 78625 21311	NG 78077 22137	NG 78173 22636	NG 79106 22807	NG 73991 25096	NG 73898 25955	NG 73808 25846	NG 73887 25467	NG 73918 25502
	Survey Date	27/03/2023	28/03/2023	28/03/2023	29/03/2023	28/03/2023	28/03/2023	29/03/2023	28/03/2023	30/03/2023	31/03/2023	31/03/2023	31/03/2023	31/03/2023
	NVC Type(s)	M15	M15	M15	M15	M15a/c	M15c	M15c	M15c	M15c	M15c	M15b	M15c	M15c
	Mandatory Attributes	Targets												
Feature extent	(1) There should be no measurable decline in the area of the feature.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA
Vegetation composition — frequency of indicator species	(1) <i>Erica tetralix</i> should be present within a 20m radius of the centre of the quadrat.	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y
Vegetation composition — cover.	(1) At least 50% of vegetation cover should consist of species from Table 1 and at least 20% of the vegetation cover should consist of ericoid species.	Y - See below	Y - See below	Y - See below	Y - See below	Y (Calluna, Erica tet., Myrica, Narth., Trich., Clad., Sphag., Rac., pleuroc.)	Y (Calluna, Erica tet + cin, Trich, pleuroc, Racomitrium, Sphagnum, Cladonia)	Y (Calluna, Erica cinerea + pleurocarps)	Y	Y (Calluna, Erica cin., Arctostaphylos uva-ursi, Trichophorum germ., Cladonia + pleurocarps)	Y (Calluna, Erica tet. + cin., Sphagnum cap. & pleurocarps)	Y/N (Calluna, Erica tet., Myrica, Sphagnum + pleurocarps = 5; total cover >50% = Y but ericoid cover c.20% = Y/N)	Y (Calluna, Erica tet. + cin., Trichophorum, Sphagnum cap. + ten., Racomitrium lan. & pleurocarps = 7)	Y (Calluna, Erica tet. + cin., Trichophorum, Narthecium, Racomitrium lan., pleurocarps + Cladonia port. = 7 but cover c.50% & ericoid cover c.20%)
	(2) Less than 20% of vegetation cover should be made up of scattered native trees and scrub.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(3) Less than 10% of vegetation cover should be made up of bracken.	Y- none	Y- none	Y- none	Y- none	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(4) Less than 1% of vegetation cover should be made up of non-native species.	Y- none	Y- none	Y- none	Y- none	Y	Y	Y	Y	Y (but a little young Sitka spruce present)	N (Pinus contorta, Picea sitchensis, Gaultheria mucronata and G. shallon)	Y (<1% Pinus contorta, Picea sitchensis & Gaultheria mucronata)	N (c.1% Pinus contorta & Picea sitchensis)	Y
	(5) Less than 1% of vegetation cover should consist of, collectively, <i>Agrostis capillaris</i> , <i>Holcus lanatus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i> .	Y- none	Y- none	Y- none	Y- none	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(6) Less than 10% of the vegetation cover should consist of <i>Juncus effusus</i> .	Y- none	Y	Y- none	Y- none	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(7) None of the following should make up more than 75% of vegetation cover: (a) dwarf-shrubs; or (b) graminoids.	Y	Y	Y	Y	Y	Y	Y	N (dwarf shrubs >75%)	N (dwarf shrubs >75%)	Y	Y	N (Molinia = >75%)	Y
	Vegetation structure — indicators of browsing.	(1) Less than 33% of the last complete growing season's shoots of dwarf-shrub species (collectively but excluding <i>Betula nana</i> and <i>Myrica gale</i>) should show signs of browsing.	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y/N
(2) In pioneer stage regrowth, or where there is <i>Betula nana</i> or <i>Myrica gale</i> (at any stage of regrowth), less than 66% of the last complete growing season's shoots of the dwarf-shrubs (collectively) should show signs of browsing.		Y	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vegetation structure — disturbance	(1) There should be no observable signs of burning into the moss, liverwort or lichen layer or exposure of peat surface due to burning.	Y- none	Y- none	Y- none	Y- none	Y	Y	Y	Y	Y	Y	Y	Y	Y

	(2) There should be no signs of burning and other disturbance inside the boundaries of the sensitive areas defined in Table 2.	Y - none	Y - none	Y - none	Y - none	Y	Y	Y	Y	NA	Y	NA	NA	NA
Physical structure — indicators of increased active drainage and drying-out, and peat erosion.	(1) Less than 10% of the total feature area, should show signs of active drainage, resulting from ditches or heavy trampling or tracking.	Y	Y	Y	Y	Y	Y	Y (but old forestry drains present, these now well vegetated)	Y	Y	Y	Y	Y (old forestry furrows present, but these are well vegetated and do not appear to class as active drainage)	N (see note below about mounding)
	(2) The extent of eroding peat and/or mineral soil should be less than the extent of re-deposited peat and/or mineral soil and new growth of wet heath and/or bog vegetation within the feature.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N (see note below about mounding)
Physical structure — indicators of ground disturbance due to herbivore and human activity.	(1) Less than 10% of the Sphagnum cover should be crushed, broken, and/or pulled-up.	Y	Y	Y	Y	Y	Y	NA (no Sphagnum within 2 m x 2 m plot)	Y	NA (no Sphagnum within 2 m x 2 m plot)	Y	Y	Y	NA (no Sphagnum within 2 m x 2 m plot)
	(2) Less than 10% of the ground should be disturbed bare ground.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N: habitat has been subjected to mounding; this appears to have been done in recent years; no sign of trees planted at same time as mounding; much exposed peaty soil + stones; whole habitat very disturbed; also, old forestry furrows (well vegetated).
Additional Notes	Any additional notes made.	Species present - CV, ET, NO, VM, sphagnum.	Species present - CV, TG, MC, NO, PS, DS, EN, S. papillosum, S. capillifolium.	Species present - TG, CV, NO, ET, EA, S. capillifolium, S. papillosum.	Species present - EV, TG, NO, ET, RL, S. capillifolium, S. papillosum, S. palustre.	25-50cm tall. Mainly Calluna, E. tet., Molinia, Trich. + Myrica. Also some Schoenus, Narth, m Eleoch. Mult., Pleurozia & Breutelia.	Mainly Calluna, Erica tet., E. cin., Molinia, Trichoph. ger., Rac. lan., & Hyloc. spl. Also, some Carex bin., Jun. squ., Hyp. jut., Rhyt. lor., Pleurozium, Breut., Sph. cap. + Clad. port.	Mainly Calluna, Erica cinerea, Molinia and Hylocomium splendens; also, some Hyp. jut., Pleurozium and Dicranum scoparium	Lacks Erica tetralix but includes E. cinerea.	Mainly Calluna, Erica cinerea, Molinia and Trichophorum. Cladonia portentosa plentiful. Also, some Carex bin., Arctostaphylos uva-ursi, Hylocomium spl., Hypnum jut., Pleurozium, Rhytid. lor. Dicranum scop., Ptilium cristacastrensis and Scapania grac.	Other species include Breutelia chrysocoma in good quantity. Habitat: steep N-facing slope. Abundant invasives: Gaultheria spp. + young conifers.	Tall (to 70 cm), thick vegetation. Molinia is the most abundant/extensive species here; Hylocomium splendens also very abundant, Calluna and Myrica abundant, and smaller quantities of Erica tet., E. cinerea., Hypnum jut., Pleurozium, Rhytid. loreus, Blechnum, Polytrichum commune, Sphagnum cap. & Ptilium cristacastrensis.	Mainly Calluna and Molinia; other species seen in M15c around here are Erica tet., E. cinerea, Trichophorum, Narthecium, Juncus squarrosus, Sphagnum cap., S. ten., Hypnum jut., Hylocomium spl., Pleurozium, and Racomitrium lan.	Mainly Calluna and Molinia; other species seen in M15c around here are Erica tet., E. cinerea, Trichophorum, Narthecium, Juncus squarrosus, Sphagnum cap., S. ten., Hypnum jut., Pleurozium, Leucobryum glaucum and Racomitrium lan.
CSM Failures		0	0	0	0	0	0	3	2	0	1	2	2	4

<i>Andromeda polifolia</i>	<i>Carex</i> spp.	<i>Eriophorum angustifolium</i>	Pleurocarpous mosses	<i>Salix repens</i>
<i>Arctostaphylos</i> spp	<i>Drosera</i> spp.	<i>Myrica gale</i>	<i>Racomitrium lanuginosum</i>	<i>Sphagnum</i> spp.
<i>Betula nana</i>	<i>Empetrum nigrum</i>	<i>Narthecium ossifragum</i>	<i>Rhynchospora alba</i>	<i>Trichophorum germanicum</i>
<i>Calluna vulgaris</i>	<i>Erica</i> spp.	Non-crustose lichens	<i>Rubus chamaemorus</i>	<i>Vaccinium</i> spp.

Table 2. Areas very sensitive to disturbance

- (a) Vegetation severely wind-clipped, mostly forming a mat less than 10 cm thick.
- (b) Areas where soils are thin and less than 5 cm deep.
- (c) Slopes greater than 1 in 3 (18°), and all the sides of gullies.
- (d) Ground with abundant, and/or an almost continuous carpet of *Sphagnum*, liverworts and/or lichens.
- (e) Areas with noticeably uneven structure, at a spatial scale of around 1 m² or less. The unevenness (eg. more commonly found in very old heather stands) will relate to distinct, often large, spreading dwarf-shrub bushes. The dwarf-shrub canopy will not be completely continuous, and some of its upper surface may be twice as high as other parts. Layering is likely to be present and may be common.
- (f) Pools, wet hollows, hags and erosion gullies, and within 5 – 10 metres of the edge of watercourses.

Table C-3 CSM Survey Results: Dry Heath

	Sample Location/Map Ref	A10	B09	B10	B11	C09	C10
DRY HEATH	Surveyor	JM	BA	AA	AA	AA	AA
	Sample Grid Ref	NG 73281 24606	NG 78698 22855	NG 79202 23240	NG 78722 22931	NG 74690 25226	NG 73769 25700
	Survey Date	30/03/2023	29/03/2023	28/03/2023	29/03/2023	30/03/2023	31/03/2023
	NVC Type(s)	H10	H10a	H10b/H21a	H10c	H10-12	H10a
Mandatory Attributes	Targets						
Feature extent.	(1) There should be no measurable decline in the area of the feature. Qualifiers: Exclude recently burned ground	N/A	N/A	N/A	N/A	N/A	N/A
Vegetation composition — frequency of bryophytes and lichens.	1) At least 1 species of moss or liverwort or non-crustose lichen should be present. Qualifiers: Exclude <i>Polytrichum</i> spp. and <i>Campylopus</i> spp.	Y	Y	Y	Y	Y	Y
Vegetation composition — cover and frequency of dwarf-shrubs.	(1) For herb-rich heaths (H7, H10d, H16a), 50-75 % of vegetation cover should be made up of indicator species from Table 1.	N/A	NA	NA	NA	NA	NA
	(2) For all other types of heath, at least 50% of vegetation cover should be made up of indicator species from Table 1.	Y	Y	Y	Y	Y	Y
	(3) At least 25% of dwarf-shrub cover should be made up of Group (i) indicators from Table 1.	Y	Y	Y	Y	Y	Y
	(4) Less than 50% of dwarf shrub cover should be made up of Group (ii) indicators from Table 1.	Y	Y	Y	Y	Y	Y
	(5) For all types of heath at least two indicator species should be present from Group (i) in Table 1. This is not applicable to heath in sensitive areas which may go through prolonged phases of <i>Calluna</i> dominance.	Y	Y (<i>Calluna</i> , <i>Erica cinerea</i> + <i>Racomit. lanug.</i> = 3)	Y	Y	Y (<i>Calluna</i> , <i>Erica cin</i> + <i>Vacc. myrt.</i> = 3)	Y (<i>Calluna</i> + <i>Erica cinerea</i> = 2)
Vegetation composition — cover of other species	(1) Less than 1% of vegetation cover should be made up of non-native species.	Y	Y	Y	Y	Y (one Sitka spruce present)	N (<i>Gaultheria shallon</i> A, <i>G. mucronata</i> O, <i>Picea sitchensis</i> O, <i>Pinus contorta</i> O)
	(2) Less than 10% of the vegetation cover should be made up of bracken.	Y	Y/N (c.10%)	Y/N	Y	N (20-25%)	Y
	(3) Less than 20% of the vegetation cover should be made up of scattered native trees and scrub. Exclude <i>Betula nana</i> and <i>Myrica gale</i> .	Y	Y	N	Y	Y/N (C.20%)	Y
	(4) Less than 1% of the vegetation cover should consist of invasive “weedy” species (collectively <i>Cirsium arvense</i> , <i>Cirsium vulgare</i> , large docks (excluding <i>Rumex acetosa</i>), <i>Ranunculus repens</i> or <i>Urtica dioica</i>).	Y	Y	Y	Y	Y	Y
	(5) Less than 10% of the vegetation cover should consist of <i>Juncus effusus</i> .	Y	Y	Y	Y	Y	Y
Vegetation structure — disturbance	(1) There should be no signs of burning inside the boundaries of the sensitive areas defined in Table 2.	Y	Y	Y	Y	Y	Y
	(2) On the remainder of the feature, outside areas identified in (1), all growth phases of heather should occur throughout the area. At least 10% of the heather should be in the late mature growth phase.	Y	N (lacks youngest stages)	Y	Y	Y	Y

Vegetation structure — indicators of heavy browsing.	(1) Less than 33% of the last complete growing season’s shoots of dwarf-shrub species (collectively but excluding <i>Betula nana</i> and <i>Myrica gale</i>) should show signs of browsing.	Y	Y	Y	Y	Y	Y
	(2) In pioneer stage regrowth, or where there is <i>Betula nana</i> or <i>Myrica gale</i> (at any stage of regrowth), less than 66% of the last complete growing season’s shoots of the dwarf-shrubs (collectively) should show signs of browsing.	Y	NA	Y	Y	NA	NA
Physical structure — indicators of ground disturbance due to herbivore and human activity.	(1) Less than 10% of the ground cover should be made up of disturbed bare ground*. Qualifiers: For target (1) exclude recently burnt ground.	Y	Y	Y	Y	Y	Y
Additional Notes	Any additional notes made.	Dominated by CV, EC, and mosses HS, PS, Hypnum. Partially extends over old clear fell.	Mainly Calluna, Erica cinerea and Pteridium. Also, smaller amounts of Molinia (frequent but sparse), Avenella flex., Blechnum, Teucrium, Hedera, Hypericum pulchrum, Hylocomium splendens, Pleurozium, Racomitrium lan., Dicranum scop., Breutelia and Cladonia portentosa.	Lightly browsed, with good structural and floristic diversity and rich bryophyte flora including <i>Anastrepta orcadensis</i> ; some layering Calluna.	Grazed heath with grassy channels among dwarf shrubs, but dwarf shrubs not very heavily browsed. Some scattered Blechnum spicant.	Mainly Calluna, Erica cinerea, Vaccinium myrtillus, Pteridium and Pleurozium. Smaller amounts of other species including Molinia, Hypnum jut., Hylocomium spl., Pseudoscleropodium and Dicranum scoparium.	Pleurocarps abundant among dwarf shrubs. Heath being invaded by <i>Gaultheria</i> spp.
CSM Failures		0	2	1	0	2	1

Group (i)	Group (ii)
<i>Arctostaphylos</i> spp.	<i>Genista anglica</i>
<i>Betula nana</i>	<i>Myrica gale</i>
<i>Calluna vulgaris</i>	<i>Salix repens</i>
<i>Erica</i> spp.	<i>Ulex gallii</i>
<i>Empetrum nigrum</i>	
<i>Racomitrium lanuginosum</i>	
<i>Vaccinium</i> spp.	

<p>a) Vegetation severely wind-clipped, mostly forming a mat less than 10 cm thick.</p> <p>(b) Areas where soils are thin and less than 5 cm deep.</p> <p>(c) Hill slopes greater than 1 in 2 (26°), and all the sides of gullies.</p> <p>(d) Ground with abundant, and/or an almost continuous carpet of <i>Sphagnum</i>, liverworts and/or lichens.</p> <p>e) Areas of H21 and H22.</p> <p>(f) Areas with noticeably uneven structure, at a spatial scale of around 1 m² or less. The unevenness (eg. more commonly found in very old heather stands) will relate to distinct, often large, spreading dwarf-shrub bushes. The dwarf-shrub canopy will not be completely continuous, and some of its upper surface may be twice as high as other parts. Layering is likely to be present and may be common.</p> <p>(g) Pools, wet hollows, hags and erosion gullies, and within 5 – 10 metres of the edge of watercourses.</p>
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Table C-4 CSM Survey Results: Woodland

	Sample Location/Map Ref	A11	A12	A13	A14	B12	B13	B14	B15	C11	C12
WOODLAND (SKYE)	Surveyor	JM	JM	JM	JM	AA	BA/AA	BA/AA	BA/AA	BA/AA	BA/AA
	Sample Grid Ref	NG 70610 23539	NG 71721 24224	NG 73309 24734	NG 73342 23892	NG 79089 22765	NG 78626 22139	NG 78883 22644	NG 78675 22322	NG 74682 25164	NG 74024 25046
	Survey Date	28/03/2023	28/03/2023	30/03/2023	30/03/2023	28/03/2823	28/03/2823	30/03/2023	30/03/2023	30/03/2023	30/03/2023
	NVC Type(s)	W11/W17	W11/W17	W4	W4/W11/W17	W4/11/17	W17c	W4	W11b/W17a/b + a little W7a	W17b/c	W4/W11
	Mandatory Attributes	Targets									
Feature extent.	(1) There should be no measurable decline in the area of the feature.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Structure & Natural Processes	(1) Understorey (2-5m) present over at least 20% of total stand area.	Y	Y	Y	Y	Y (willows + young birches)	N	Y	N	N	N
	(2) Canopy cover present over 30-90% of stand area.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(3) At least 3 age classes present for commonest tree spp.?	Y	Y	Y	Y	N (no seedlings seen)	N (old + middle-aged present, but young not seen)	N (all medium-age)	N (only middle-aged to moderately old seen)	N (just medium-aged trees)	N (just medium-aged trees)
	(4) Some areas of relatively undisturbed mature/old growth (or scattered large over-mature trees) = >10% of the woodland or 5-10 trees per hectare?	Y	Y	Y	Y	Y	N	N	N	N	N
	(5) At least 3 fallen trees >20 cm diameter per hectare and 4 trees per hectare allowed to die standing?	N	N	Y	Y	N/A	N	N	Y	N	N
Regeneration potential	(1) Signs of seedlings growing through to saplings to young trees (or equiv. regrowth from coppice stumps) at sufficient density to maintain canopy density over 10 year period.	Y	Y	Y	Y	Y	N	N	N	N	N
	(2) <20% of regeneration is by planting?	Y	Y	Y	Y	Y	N	N/A (no regeneration)	N/A (no regeneration)	Y	Y
	(3) All planting of local native origin?	N/A	N/A	N/A	N/A	N/A (no planting)	N/A (no planting)	N/A (no planting)	N/A (no planting within native woodland here)	N/A (no planting within native woodland here)	N/A (no planting within native woodland here)
	(4) No planting in sites where it has not occurred in last 15 years.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Composition Trees & Shrubs	(1) >95% of cover in any one layer is native or acceptable naturalised species?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	(2) Unnatural death/loss/destruction of native woodland through effects of introduced fauna or other external unnatural factors is not more than 10% (by no. of trees or by area) over 5-year period?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Indicators of local distinctiveness	(1) 80% of ground flora is referable to relevant NVC community?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	(2) Oceanic/ rainforest/ Lobarion species present in suitable-looking habitats? (Y/N + details if Y)	Y - see below	Y - see below	Y - see below	Y - see below	Y (Frullania teneriffae, Pectenata atlantica, P. cyanoloma, Lobarina pulmonaria, Lobarina scrobiculata, Ricassolia virens, Pannaria rubiginosa, Sticta sylvatica and S. fuliginosa)	Y (Hymenophyllum wilsonii, Hycomium armoricum, Hylocomium umbratum, Breutelia chrysocoma, Scapania gracilis, Plagiochila spinulosa, P. punctata, Frullania teneriffae, Leptoscyphus cuneifolius, Lejeunea patens, Douinia ovata, Anastrepta orcadensis, Pectenata cyanoloma, Pannaria conoplea, P. rubiginosa, Sticta sylvatica + S. fuliginosa).	Y (Ulota calvescens, Frullania teneriffae, Lobarina scrobiculata, Leptogium burgessii, Pannaria rubiginosa, Pectenata cyanoloma, Nephroma laevigatum and Sticta fuliginosa)	Y (Dryopteris aemula, Hymenophyllum wilsonii, H. tunbrigense, the mosses Breutelia chrysocoma, Hycomium armoricum, Plenogemma phyllantha and (in very small quantity) Hageniella micans, the liverworts Scapania gracilis, Plagiochila spinulosa, P. punctata, Saccogyna viticulosa, Frullania teneriffae, Lepidozia pearsonii, Lejeunea patens, Leptoscyphus cuneifolius, Anastrepta orcadensis and Douinia ovata, and the lichens Lobarina pulmonaria, Lobarina scrobiculata, Ricassolia virens, Sticta sylvatica, S. fuliginosa, Leptogium burgessii, L. brebissonii, Peltigera collina, Pectenata atlantica, P. cyanoloma, Nephroma laevigatum and Pannaria rubiginosa)	Y (Dryopteris aemula, Plenogemma phyllantha, Scapania gracilis, Frullania teneriffae, Lobarina pulmonaria, Pannaria rubiginosa, Pectenata cyanoloma, P. plumbea and Nephroma laevigatum)	Y (Dryopteris aemula, Plenogemma phyllantha, Frullania teneriffae and Scapania gracilis)	
Additional Information	(1) Tree/shrub species present.	Y	Y	Y	Y	Betula pubescens, Sorbus aucuparia and Salix cinerea	Betula pubescens, Sorbus aucuparia and Salix aurita + Ilex aquifolium	Betula pubescens and Salix aurita	Betula pubescens, Sorbus aucuparia, Salix caprea, Ulmus glabra, Corylus avellana and Ilex aquifolium	Betula pubescens, Sorbus aucuparia and Ilex aquifolium	Betula pubescens (dominant), Sorbus aucuparia, Salix aurita, Ilex aquifolium and Quercus petraea x robur. Also (rare) Picea sitchensis.	
	(2) Field layer height.	30 cm	20 cm	15 cm	40 cm	10-40 cm	20-40 cm	30 cm	20-40 cm	25-100 cm	15-30 cm	
	(3) Height (cm) and browsing (Low/Medium/High) of Calluna / Vaccinium / Erica cinerea.	CV - 45cm. Browsing medium.	CV - 20cm, VM - 25cm, Browsing low.	CV - 28cm. Browsing low.	CV - 50cm, EC - 30cm, VM - 22cm	15 cm; browsed	20-40 cm; medium-browsed	50-75 cm; heavily browsed	Vaccinium myrt. 30-50 cm; lightly browsed	Calluna and Vaccinium myrtillus; 25-30 cm; Calluna moderately browsed and Vaccinium heavily browsed	Calluna and Erica cinerea = sparse; 10-20 cm; heavily browsed	
	(4) Invasive aliens (Rhododendron, Gaultheria, etc).	N	N	N	N	No rhododendron or Gaultheria, but there is a little Sitka spruce regeneration	None	None	None	Not visible from this point, but there is a rhododendron (2 m tall) not far away, at the east side of the forest road at the south end of the road bridge.	Sitka spruce = rare	Sitka spruce present, growing up to 3 m tall
	(5) Additional notes.	Species to note: lichens Lobarina pulmonaria, Stricta fuliginosa, Stricta limbata, Pectenata cyanoloma, Pannaria rubiginosa, Nephroma laevigatum, and Leptogium burgessii.	Species to note: Lichens Laboria pulmonaria, Pectenata cyanoloma, Pannaria rubiginosa. Liverwort Frullania teneriffae.	Species to note: Lichens Pannaria rubiginosa, Pectenata cyanoloma, Pamelion sp., Lobarina pulmonaria, and liverwort Frullania teneriffae.	Lichens Pectenata cyanoloma, Pannaria rubiginosa and liverwort Frullania teneriffae.	Woodland along stream; other species include Luzula sylvatica, Lonicera periclymenum, Ptilium crista-castrensis and Barbilophozia barbata. Trees include a large old phoenix birch. A little spruce regeneration present.	Woodland in vicinity of small stream. Hyacinthoides non-scripta plentiful. Blechnum spicant frequent and little-grazed.	Other species include Luzula sylvatica, Lonicera periclymenum (terrestrial and arboreal), Hedera helix and Chrysosplenium oppositifolium.	Bracken is abundant to dominant in the field layer. Other species include Calluna, Vaccinium myrtillus, Molinia, Blechnum, Hedera, Hylocomium splendens, Pleurozium, Pseudoscleropodium, Ptilium cristacastrensis, Thuidium tamariscinum and, on rotting wood, Cephalozia curvifolia and Riccardia palmata.	Ground layer has abundant Molinia; other species include Blechnum (heavily grazed), Calluna, Erica cinerea, Agrostis capillaris, Avenella flexuosa, Thuidium tamariscinum, Hylocomium splendens and Pseudoscleropodium purum.		
CSM Failures		2	1	0	0	1	7	5	4	6	6	