

FIELD HANDBOOK

KEY TO SHETLAND VEGETATION TYPES

Explanation of Ecological Descriptions

These are intended to provide an introduction to the fuller type summaries and to give a rapid means of checking the affinities of a given plot. Words are generally used instead of figures except for pH (provided by the summaries) but all the phrases have been standardised as far as possible. The ranges of the various categories, combined with the phrases used are given on the next page.

Heterogeneous:	Heterogeneity Index between 2.9 - 5.3
Average Heterogeneity:	" " " 5.4 - 7.8
Low Heterogeneity:	" " " 7.9 -10.5
High species complement:	Between 16 and 13 species/plot
Average species complement:	Station 31 and 41 " "
Low species complement:	" 46 and 60 " "
Major cover species -	species attaining a cover of over 50% in more than 30% of plots

Selective species - species occurring significantly more often in the type than in the whole population. Lichens are included separately but only in the top 10. The type name species is also omitted.

Occurrence assessed over the whole system of islands with the percentage of grid squares covered by the types as follows:

Limited occurrence: 6-16%
Average occurrence: 17-27%
Widespread occurrence: 28-38%

Constant species groups were those found in more than 90% of the plots in the type. The associated features were obtained mainly from the habitat categories characteristic of the types, with some information from the ecological interpretation of the selective species.

Soil depth: many soils were over 50 cm in depth but the remainder were divided into the following categories:

16 - 30 shallow 31 - 40 medium 47 deep

Wetness: mean soil moisture index, calculated from soil data sheet as follows:

Dry = 0 Damp = 1 V. Wet = 3 submerged = 4

pH: measured in a sample taken from the top 10 cm of soil excluding litter

pH 4.3 - 4.9 = acid, 5.0 - 5.6 average pH 5.7 - 6.3 high pH

INDICATOR SPECIES

Negative

Empetrum nigrum
Eriophorum angustifolium
Tricophorum caespitosum

Positive

Cerastium vulgatum
Holcus lanatus
Leontodon autumnalis
Plantago maritima
Prunella vulgaris
Trifolium repens
Viola palustris

Score -1 or less 2
Score +1 or more 17

INDICATOR SPECIES

Negative

Cladonia arbuscula
Cornicularia aculeata
Sphagnum cuspidatum

Score +1 or less 3
Score +2 or more 10

Positive

Agrostis tenuis
Anthoxanthum odoratum
Festuca vivipara/ovina
Galium saxatile
Mnium hornum
Polytrichum commune

INDICATOR SPECIES

Negative

Drosera rotundifolia
Pleuraxia purpurea

Score +2 or less 4
Score +3 or more 7

Positive

Agrostis canina
Carex binervis
Cladonia pyxidata (S.L.)
Frullania tamarisci
Juncus squarrosus
Molinia caerulea
Nardus stricta
Potentilla erecta

INDICATOR SPECIES

Negative

Cornicularia aculeata
Erica cinerea

Score +1 or less 5
Score +2 or more 6

Positive

Calyptogeia spp
Frullania tamarisci
Hylocomium splendens
Lophocolea bidentata
Mnium hornum
Plagiothecium undulatum
Pleurozium schreberi
Sphagnum papillosum/palustre

INDICATOR SPECIES

Negative

Campylopus pyriformis
Cladonia pyxidata (S.L.)
Cornicularia aculeata
Juncus squarrosus
Pleurozium schreberi

Score 0 or less = Type 1
Score 1 or more = Type 2

Positive

Dicranum scoparium
Diplophyllum albicans
Drosera rotundifolia
Pinguicula vulgaris
Pleurozia purpurea

INDICATOR SPECIES

Negative

Carex nigra
Ericophorum vaginatum
Juncus squarrosus

Score +1 or less = Type 3
Score +2 or more = Type 4

Positive

Cladonia arbuscula
Erica cinerea
Erica tetralix
Frullania tamarisci
Mylia taylori
Pleurozia purpurea
Sphagnum plumulosum

INDICATOR SPECIES

Negative

Cetraria islandica
Rhytidiadelphus squarrosus

Score +1 or less 8
Score +2 or more 9

Positive

Drosera rotundifolia
Hylocomium splendens
Juncus bulbosus
Luzula multiflora
Mnium hornum
Plagiothecium undulatum
Sphagnum papillosum/palustre
Sphagnum plumulosum

INDICATOR SPECIES

Negative

Cornicularia aculeata
Frullania tamarisci
Mnium hornum

Positive

Agrostis tenuis
Carex demissa
Campylopus atrovirens
Eriophorum vaginatum
Festuca vivipara/ovina
Narthecium ossifragum
Polygala serpyllifolia

Score +2 or less = Type 5
Score +2 or more = Type 6

INDICATOR SPECIES

Negative

Juncus squarrosus

Positive

Calypogeia spp
Carex panicea
Drosera rotundifolia
Isoetes myosuroides
Molina caerulea
Nyctelia anomala/taylori
Pinguicula vulgaris
Sphaerophorus globosus
Sphagnum plumulosum

Score +2 or less = Type 7
Score +3 or more = Type 8

INDICATOR SPECIES

Negative

Galium saxatile
Plagiothecium undulatum
Pleurozium schreberi
Polytrichum commune

Positive

Carex demissa
Carex echinata
Euphrasia officinalis
Selaginella selaginoides
Sieglingia decumbens
Viola riviniana

Score 0 or less 11
Score +1 or more 14

INDICATOR SPECIES

Negative

Agrostis tenuis
Aira praecox
Campylopus flexuosus
Galium saxatile

Score 0 or less 12
Score +1 or more 13

Positive

Calypogeia spp
Diplophyllum albicans
Erica tetralix
Rhaconitrium lanuginosum
Scapanis gracilis/undulatum
Tricopherum caespitosum

INDICATOR SPECIES

Negative

Cladonia impexa
Cladonia uncialis
Erica tetralix
Sphagnum rubellum
Tricopherum caespitosum

Score 0 or less = Type 9
Score +1 or more = Type 10

Positive

Anthoxanthum odoratum
Carex nigra
Lophoclelea bidentata
Rhytidiadelphus squarrosus
Rumex acetosa

INDICATOR SPECIES

Negative

Anthoxanthum odoratum
Aulacomnium palustre
Carex echinata
Narthecium ossifragum
Sphagnum cuspidatum

Score -1 or less = Type 11
Score 0 or more = Type 12

Positive

Agrostis tenuis
Erica cinerea
Festuca rubra
Rhytidiadelphus squarrosus
Thuidium tamariscinum

INDICATOR SPECIES

Negative

Calluna vulgaris
Carex panicea
Carex pulicaris
Cladonia impexa
Hypnum cupressiforme
Selaginella selaginoides
Viola riviniana

Score -1 or less 18
Score 0 or more 25

Positive

Poa annua
Ranunculus acris
Trifolium repens

INDICATOR SPECIES

Negative

Carex echinata
Galium saxatile
Holcus lanatus
Hylocomium splendens
Juncus squarrosus
Mnium punctatum
Polytrichum commune

Score -1 or less 19
Score 0 or more 22

Positive

Carex pulicaris
Plantago maritima
Prunella vulgaris

INDICATOR SPECIES

Negative

Flagellothecium undulatum
Polytrichum juniperinum

Score +2 or less 20
Score +3 or more 21

Positive

Bellis perennis
Carex echinata
Cirsium palustre
Juncus articulatus
Juncus bulbosus
Narthecium ossifragum
Fellia epiphylla/neesiana
Ranunculus flammula

INDICATOR SPECIES

Negative

Erica tetralix
Plantago maritima
Succisa pratensis

Positive

Carex echinata
Juncus bulbosus
Juncus effusus
Pellia epiphylla/neesiana
Rhytidiadelphus squarrosus
Sphagnum papillosum/palustre
Thuidium tamariscinum

Score +2 or less 15
Score +3 or more 16

INDICATOR SPECIES

Negative

Aulacomnium palustre
Campylopus atrovirens
Carex dioica

Positive

Calypogeia spp
Cetraria islandica
Isotheceium myosuroides
Lophozia ventricosa
Scilla verna
Thaliotrum alpinum
Thymus drucei

Score 0 or less = Type 13
Score +1 or more = Type 14

INDICATOR SPECIES

Negative

Anthoxanthum odoratum
Calypogeia spp
Hylacomnium splendens
Pleurozium shoreberi

Positive

Campylopus atrovirens
Carex pulicaris
Molinia caerulea
Potamogeton polygonifolius
Ranunculus flammula
Selaginella selaginoides

Score 0 or less = Type 15
Score +1 or more = Type 16

INDICATOR SPECIES

Negative

Euphrasia officinalis
Frullania tamarisci
Plantago lanceolata
Plantago maritima
Sieglingia decumbens
Thymus drucei

Score -1 or less = Type 17
Score 0 or more = Type 18

Positive

Campylopus flexuosus
Erica cinerea
Plagiothecium undulatum
Sphagnum papillosum/palustre

INDICATOR SPECIES

Negative

Aira Præcox
Hylocomium splendens
Rumex acetosa
Sagina procumbens
Trifolium repens

Score -1 or less = Type 19
Score 0 or more = Type 20

Positive

Acrocladium cuspidatum
Eriophorum angustifolium
Pinguicula vulgaris
Potamogeton polygonifolius
Sphagnum subsecundum

INDICATOR SPECIES

Negative

Holcus lanatus
Fellia epiphylla / neesiana
Polytrichum juniperinum
Prunella vulgaris

Score +1 or less 23
Score +2 or more 24

Positive

Antennaria dioica
Cladonia impeza
Cladonia uncialis
Erica cinerea
Rhaconitrium lanuginosum
Thalictrum alpinum

INDICATOR SPECIES

Negative

Plantago coronopus

Positive

Bellis perennis
Dianthus scoparium
Mnium punctatum
Narthecium ossifragum
Pedicularis sylvatica
Pinguicula vulgaris
Polytrichum juniperinum
Rhytidiadelphus loreus
Succisa pratensis

Score +3 or less = Type 21
Score +4 or more = Type 22

INDICATOR SPECIES

Negative

Erica cinerea
Linum catharticum
Thymus drucei

Positive

Anthoxanthum odoratum
Carex nigra
Holcus lanatus
Lotus corniculatus
Luzula multiflora
Peltigera canina
Trifolium repens

Score +1 or less = Type 23
Score +3 or more = Type 24

INDICATOR SPECIES

Negative

Plantago lanceolata
Plantago maritima
Stellaria media
Thymus drucei

Positive

Carex nigra
Juncus squarrosus
Luzula multiflora
Mnium punctatum
Polytrichum commune
Rhytidiadelphus squarrosus

Score 0 or less 26
Score +1 or more 29

INDICATOR SPECIES

Negative

Agrostis canina
Dactylis glomerata
Luzula multiflora

Positive

Agrostis stolonifera
Armeria maritima
Bellis perennis
Carex ovalis
Festuca rubra
Plantago coronopus
Potentilla anserina

Score +1 or less 27
Score +2 or more 28

INDICATOR SPECIES

Negative

Dactylis glomerata
Poa annua
Poa pratensis

Positive

Bellis perennis
Euphrasia officinalis
Luzula multiflora
Plantago maritima
Plantago lanceolata
Potentilla anserina
Prunella vulgaris

Score +1 or less = Type 25
Score +2 or more = Type 26

INDICATOR SPECIES

Negative

Anthoxanthum odoratum
Euphrasia officinalis
Luzula multiflora
Leontodon autumnalis
Hardenbergia stricta
Plantago coronopus
Plantago maritima
Potentilla erecta
Sieglingia decumbens
Thymus drucei

Positive

Score ~~+1~~⁴ or less = Type 27
Score ~~+2~~⁵ or more = Type 28
~~(No plots with spp values of +4 to +6)~~

INDICATOR SPECIES

Negative

Eurhynchium praelongum
Nardus stricta
Rumex acetosella

Positive

Caltha palustris
Carex panicea
Carex nigra
Epilobium palustre
Juncus articulatus
Ranunculus flammula
Rumex acetosa

Score +1 or less 30
Score +2 or more 31

INDICATOR SPECIES

Negative

Dicranum scoparium
Festuca vivipara/ovina
Luzula multiflora
Polytrichum commune

Positive

Acrocladium cuspidatum
Carex echinata
Epilobium palustre
Eurhynchium praelongum
Juncus bulbosus
Poa pratensis

Score 0 or less = Type 29
Score +1 or more = Type 30

INDICATOR SPECIES

Negative

Carex echinata
Juncus effusus
Juncus squarrosus
Peltigera canina
Prunella vulgaris
Rhaconitrium lanuginosum

Positive

Lotus corniculatus
Molinia caerulea
Narthecium ossifragum
Plantago lanceolata

Score -3 or less = Type 31
Score -1 or more = Type 32

Type 1. CLADONIA ARBUSCULA/CLADONIA TYPE

A type of low heterogeneity and with a low species complement, most closely related to types 2 and 4. Calluna, Eriophorum angustifolium and Racomitrium lanuginosum are the major cover species but with much bare peat also present. The latter is also a selective species with a high frequency, as are Sphagnum cuspidatum and Eriophorum with Cornicularia aculeata and Cladonia pyxidata amongst the lichens. The type is of limited occurrence away from the coast and is absent from Unst. Species groups A and B are constants. The type is usually associated with eroded surfaces, with bare peat exposed and with water seepage often present. The vegetation is usually growing on deep, wet, acid (pH 4.3) peat.

Type 2. DROSERA ROTUNDIFOLIA/CALLUNA TYPE

A type of low heterogeneity and with a low species complement, most closely related to types 1 and 4. Calluna, Eriophorum angustifolium, Racomitrium lanuginosum and Triophorum caespitosum are the major cover species, with little bare peat. Fleurozia purpurea, Sphagnum cuspidatum and Erica tetralix are selective species with a high frequency, with Cladonia arbuscula and Cladonia uncialis among the lichens. The type is of average occurrence but is limited to the north of the mainland and Yell. Species groups A and B are constants. The type is usually associated with surface water or trickles but with little evidence of erosion. The vegetation is usually growing in deep wet acid (pH 4.5) peat.

Type 3. ERIOPHORUM VAGINATUM/CALLUNA TYPE

A type with a low heterogeneity and low species complement, most closely related to types 4 and 7. Calluna and Eriophorum angustifolium are the major cover species, with little bare peat. Drosera rotundifolia, Fleurosium schreberi and Empetrum nigrum are selective species with a high frequency. The type is usually of average occurrence, mainly inland and is absent from Unst. Species groups A, B and C are constants. The type is usually associated with extensive surface water, but often with drier tussocks emerging from Sphagnum lawn. The vegetation is usually growing on deep wet acid (pH 4.4) peat.

Type 4. MYLIA TAYLORI/CALLUNA TYPE

A type with a low heterogeneity but with an average complement of species most closely related to types 1 and 2. Calluna, Rhacomitrium lanuginosum, Sphagnum rubellum and Eriophorum angustifolium are the major cover species with little bare peat. Diplophyllum albicans, Erica tetralix and Tricophorum caespitosum are selective species with a high frequency, with Cladonia arbuscula and Cladonia uncialis among the lichens. The type has an average occurrence, mainly inland and has species groups A, B and C as constants. The type is often associated with ditches or with pools on the eroded peat surface and is always very wet. The vegetation is usually growing on deep, wet acid (pH 4.5) peat.

Type 5. CETRARIA ISLANDICA/CALLUNA TYPE

A type with a low heterogeneity and species complement, most closely related to types 8 and 6. Calluna, Rhacomitrium lanuginosum and Eriophorum angustifolium are the major cover species with a very large cover of bare peat. Erica cinerea, Frullania tamarisci and Rhacomitrium lanuginosum are selective species with a high frequency, with Cornicularia aculeata and Cladonia arbuscula among the lichens. The type has an average occurrence but is absent from south mainland and Unst. Species groups A, B and C are constants. The type is usually associated with extensively eroded peat, with some bared and relatively dry areas. The vegetation is usually growing on wet deep acid (pH 4.5) peat.

Type 6. CLADONIA PYXIDATA/CALLUNA TYPE

A type with a low heterogeneity but with an average species complement most closely related to types 8 and 5. Calluna and Rhacomitrium lanuginosum are the major cover species and there is also a considerable cover of bare peat present. The latter is also a selective species with a high cover, as are Tricophorum caespitosum and Erica tetralix, with Cladonia cervicola and Cetraria islandica amongst the lichens. The type has an average occurrence but is absent from Unst. Species groups A, B, C and D are constant. The type is often associated with the later stages of eroding peat where erosion has proceeded as far as underlying stones.

The vegetation is usually growing on deep, wet acid (pH 4.5) peat.

Type 7. LISTERA CORDATA/CALLUNA TYPE

A type of low heterogeneity but with an average species complement most closely related to types 3 and 4. The major cover species are Calluna and Eriophorum angustifolium, with some bare peat present. Sphagnum cuspidatum, Empetrum nigrum and trichophorum caespitosum are selective species with a high frequency. The type is of average occurrence but absent from south mainland and Unst. Species groups A, B and C are constants. The type is usually associated with some erosion and often has water channels intersecting the surface; usually with much free water present alternating with some drier areas. The vegetation is usually growing on deep, wet acid (pH 4.5) peat.

Type 8. SPHAGNUM FLUMULOSUM/CALLUNA TYPE

A type of low heterogeneity but with an average species complement most closely related to types 5 and 6. The major cover species are Calluna, Rhacomitrium lanuginosum and Eriophorum angustifolium, with a low amount of bare peat. Drosera rotundifolia, Erica tetralix, and Pinguicula vulgaris are selective species with a high frequency. The type is of average occurrence throughout the islands with species groups A, B, C and D present as constants. The type is usually associated with streambanks containing aquatic vegetation, with some drier banks. The vegetation is usually growing on wet, deep acid (pH 4.7) peat.

Type 9. GALIUM SAXATILE/CALLUNA TYPE

A type with an average heterogeneity and species complement, most closely related to types 11 and 12. Calluna and Nardus stricta are the major cover species and there is an average cover of bare ground. Polytrichum juniperinum, Luzula multiflora and Campylopus flexuosus are selective species with a high frequency, with Cladonia uncialis amongst the lichens. The type is of widespread occurrence throughout the islands, except Unst, and has species groups A, B and C as constants. The type is usually associated with eroded drier peat surfaces and the vegetation is usually growing on deep damp, acid (pH 4.4) peat.

Type 10. POLYTRICHUM COMMUNE/CALLUNA TYPE

A type with an average heterogeneity and species complement most closely related to types 9 and 18. Calluna and Juncus squarrosus are the major cover species with little bare ground. Galium saxatile, Carex nigra and Anthoxanthum odoratum are selective species with a high frequency. The type is of average occurrence, with species groups A, B, C and F as constants. The type is often associated with peat diggings and there is also evidence of erosion. The vegetation is usually growing on deep, damp, acid (pH 4.4) peat.

Type 11. SPHAGNUM CUSPIDATUM/CALLUNA TYPE

A type with an average heterogeneity and species complement most closely related to types 12 and 9. Calluna is the major cover species with a low cover of bare ground. Plagiobothrium undulatum, Aulacomnium palustre and Eriophorum angustifolium are selective species with a high frequency. The type is of widespread occurrence throughout the islands, with species groups B, C and A as constants. The type is usually associated with rather featureless peat with tussocks of Sphagnum. The vegetation is usually growing on deep, wet acid (pH 4.6) peat.

Type 12. CALYPCOGELIA/CALLUNA TYPE

A type with an average heterogeneity and species complement most closely related to types 11 and 9. Calluna is the major cover species with a low cover of bare ground. Listera cordata, Lophosia ventricosa and Eriophorum vaginatum are selective species with a high frequency. The type is of widespread occurrence throughout the islands with species groups A, B and C. as constants. The type is usually associated with featureless peatlands. The peat has often been burned in the recent or more distant past. The vegetation is usually growing on deep, wet acid (pH 4.5) peat.

Type 13. CAMPYLOFUS ATROVIRENS/NARDUS TYPE

A type of average heterogeneity and with an average species complement most closely related to types 14 and 16. Nardus stricta and Calluna are the major cover species, with only little bare ground. Carex dioica, Carex demissa and Polygala serpyllifolia are selective species with a high frequency. The type has an average occurrence often near the sea with species groups A, B, C, D, F and G as constants. The type is frequently associated with rock outcrops on which there are often minor water trickles but has few habitats otherwise present. The vegetation is usually growing on peat of average depth, relatively dry and acidic (pH 4.8).

Type 14. SCILLA VERNA/CALLUNA TYPE

A type of average heterogeneity but with a high complement of species most closely related to types 13 and 14. Calluna and Nardus stricta are the major cover species with a low cover of bare ground. Carex pilulifera, Laothecium myosuroides and Sieglingia decumbens are selective species with a high frequency, with Cetraria islandica among the lichens. The type has an average occurrence, often near the sea, with species groups A, B, C, D, F and G as constants. The type is often associated with rock outcrops and the vegetation is usually growing on a soil of average depth, relatively dry, and acidic (pH 4.9).

Type 15. CAREX ECHINATA/CALLUNA TYPE

A type of average heterogeneity but with a high species complement most closely related to types 9 and 13. Calluna is the major cover species, with little bare ground. Juncus bulbosus, Viola palustris and Viola riviniana are selective species with a high frequency. The type has an average occurrence with species groups A, B, C, D, F and G as constants. The type usually has marshy conditions present, often with free slowly moving water, sometimes in ditches with relatively dry banks. The vegetation is usually growing on deep, wet acidic (pH 4.7) peat.

Type 16. POTAMOGETON POLYGONIFOLIUS/CALLUNA TYPE

A very heterogeneous type with a high species complement most closely related to types 13 and 14. Calluna is the major cover species together with Nardus stricta and with little bare ground. Ranunculus flammula, Carex pulicaris and Carex echinata are selective species with a high frequency. The type is of average occurrence but is absent from Yell and Unst. Species groups A, B, C, D, G and E are constants. The type is usually associated with the sides of small stony streams or springs. The vegetation is usually growing on wet peat of average depth and with an average pH (5.1).

Type 17. PLANTAGO MARITIMA/NARDUS TYPE

A very heterogeneous type but with an average species complement most closely related to types 20 and 19. Nardus stricta and Calluna are the major cover species, with little bare ground. Thymus drucei, Viola palustris and Euphrasia officinalis are selective species with a high frequency, with Peltigera canina among the lichens. The type is of widespread occurrence always near the coast and has species groups B, C, D, F, G, J and A as constants. The type is invariably associated with rock conditions of various sorts. The vegetation is growing mainly on damp shallow soils, with average pH (5.0).

Type 18. DESCHAMPSIA FLEXUOSA/JUNCUS SQUARROSUS TYPE

A type of heterogeneity and with an average species complement most closely related to types 10 and 15. Juncus squarrosus and Nardus stricta are the major cover species with an average cover of bare ground. Galium saxatile, Aira praecox and Polytrichum juniperinum are selective species with a high frequency and Peltigera canina is amongst the lichens. The type is of widespread occurrence, invariably near the sea and has species groups B, C, F, A and D as constants. The type often has peat diggings associated with it and the vegetation is usually growing on a damp deep peat that is acid (pH 4.5).

Type 19. VIOLA PALUSTRE/CALLUNA TYPE

A very heterogeneous type with a large species complement most closely related to types 17 and 20. Calluna is the major cover species with little bare ground. Cirsium palustre, Bellis perennis and Cardamine pratensis are selective species with a high frequency. The type is of average occurrence, often near the coast and is absent from Yell. Species groups B, C, F, G, J, C, A and D are constants. The type is often situated beside small streams lochs or drainage channels and has usually some mineral soil present within the plot. The vegetation is growing on damp soil of average depth and with an average pH (5.2) - the soil conditions are probably variable, within the plot.

Type 20. RANUNCULUS FLAMMULA/CALLUNA TYPE

A very heterogeneous type with a high complement of species, most closely related to types 17 and 19. Calluna is the major cover species, with little bare ground. Pellia spp., Epilobium palustre and Acrocladium cuspidatum are selective species with a high frequency. The type is of limited occurrence, mainly in coastal areas, and is absent from Yell and Unst. Species groups A, B, C, E, F, J, I, G and D are constants. The type is frequently associated with drainage ditches and channels, with water moving over gravelly beds. The vegetation is growing on deep, wet soil with an average pH (5.2) that tends to be rather variable from mineral to peat within the plot.

Type 21. PLANTAGO CORONOPUS/PLANTAGO MARITIMA

A heterogeneous type with an average species complement most closely related to types 22 and 24. Plantago maritima, Festuca rubra, Nardus stricta and Anthoxanthum odoratum are the major cover species and there is an average cover of bare ground. Plantago coronopus, Thymus drucei and Scilla verna are selective species with a high frequency. The type is a restricted occurrence in maritime areas or near the shore. Species groups B, C, D, G, J and F are constants. The type is associated with rocky areas and the vegetation is usually growing on a dry shallow mineral soil situated on rock with average pH (5.6).

Type 22. GENTIANELLA CAMPESTRIS/NARDUS STRICTA TYPE

A heterogeneous type with a high species complement most closely related to types 20 and 21. Nardus stricta and Anthoxanthum odoratum are the major cover species and there is a low cover of bare ground. Lotus corniculatus, Succisa pratensis and Prunella vulgaris are selective species with a high frequency. The type is of very restricted occurrence in maritime situations and has species groups A, B, C, D, E, F, G and I as constants. The type is also usually associated with rocky conditions and the vegetation is usually growing on damp, shallow soil, both peaty and mineral, situated directly on rock and with a high pH (5.8).

Type 23. THALICTRUM ALPINUM/CALLUNA TYPE

A heterogeneous type but with an average species complement most closely related to types 24 and 21. Calluna vulgaris, Rhacomitrium lanuginosum and Carex panicea are the major cover species and there is an average cover of bare ground in addition to rock. Antennaria dioica, Linum catharticum and Hypericum pulchrum are selected species with a high frequency and species groups A, B, C, D, G, H and J are constants. The type is mainly associated with the rocky conditions of the Serpentine in Unst but it is also found in flushes elsewhere, although rarely. The vegetation is usually growing on damp shallow rocky soils with a high pH (6.1).

Type 24. ANTENNARIA DIOICA/CALLUNA TYPE

A heterogeneous type with a high species complement most closely related to types 23 and 21. Calluna vulgaris, Anthoxanthum odoratum and Carex panicea are the major cover species, with little bare ground but much rock cover. Gentianella campestris, Thalictrum alpinum and Lotus corniculatus are selective species with a high frequency. The type is of restricted occurrence, mainly on debris soils on Serpentine and has species groups A, B, C, D, E, F, G, J, H and L as constants. The vegetation is usually growing on damp shallow, stony soils with a high pH (5.8).

Type 25. DACTYLIS GLOMERATA/HOLCUS LANATUS TYPE

A type of average heterogeneity but with a low species complement most closely related to types 26 and 30. Holcus lanatus, Trifolium repens, Lolium perenne, Poa annua, Festuca rubra, Dactylis glomerata and Agrostis tenuis are the major cover species, with little bare ground. Dactylis is also a selective species with a high frequency as are Stellaria media and Ranunculus acris. The type is of limited occurrence, is absent from Unst and has species groups C, F, J, L and M as constants. The type is usually heavily grazed and the vegetation is usually growing on shallow mineral soils with a high pH (5.7) and has often been improved.

Type 26. STELLARIA MEDIA/HOLCUS LANATUS TYPE

A heterogeneous type but with an average species complement most closely related to types 29 and 30. Holcus lanatus, Festuca rubra and Agrostis tenuis are the major cover species with little bare ground. Lolium perenne, Trifolium pratense and Ranunculus acris are selective species with high frequency. Species groups G and J are constants. The type is of limited occurrence and is absent from Yell. The type is usually heavily grazed and there is much evidence of agricultural management present. The vegetation is usually growing on damp shallow mineral soils with a high pH (6.4).

Type 27. POTENTILLA ANSERINA/FESTUCA RUBRA TYPE

A type with an average heterogeneity but with a low species complement most closely related to types 26 and 28. Festuca rubra is the major cover species and although there is little bare ground, there is a high cover of rock. Agrostis stolonifera, Plantago maritima and Armeria maritima are selective species with a high frequency. The type is restricted to exposed maritime situations and is of limited occurrence. Species groups G and J are constants. The type is usually associated with rocky conditions very close to the sea and there is evidence of heavy grazing also. The vegetation is usually growing on damp shallow soil with a high pH (6.3).

Type 28. ARMERIA MARITIMA/FESTUCA RUBRA TYPE

A heterogeneous type but with an average species complement most closely related to types 32 and 26. Festuca rubra and Agrostis tenuis are the major cover species with a low cover of rock and bare ground. Plantago coronopus, Lotus corniculatus and Agrostis stolonifera are selective species with a high frequency. The type is of limited distribution, mainly in maritime situations and has species groups C, F, G, J, K and L as constants. The type is usually associated with rocky outcrops and is heavily grazed. The vegetation is usually growing on a shallow dry soil situated directly on rock with a high pH (5.8).

Type 29. TRIFOLIUM REPENS/ANTHOXANTHUM TYPE

A heterogeneous type but with an average species complement most closely related to types 30 and 31. Anthoxanthum odoratum, Agrostis tenuis and Holcus lanatus are major cover species with little bare ground. Poa annua, Rumex acetosa and Ranunculus acris are selective species with a high frequency. The type is of average occurrence, although absent from Yell and with species groups C, F, J and L as constants. The type is usually associated with agricultural management and is heavily grazed. The vegetation is usually growing on damp soils of average depth and medium pH (5.4).

Type 30. MONTIA FONTANA/AGROSTIS TENUIS TYPE

A heterogeneous type but with an average species complement most closely related to types 29 and 31. Agrostis tenuis, Holcus lanatus and Juncus effusus are the major cover species with little bare ground. Cardamine pratensis, Eurhynchium praelongum and Poa annua are selective species with a high frequency. Species groups D, C, F, J and L are constants. The type is of limited distribution, mainly near the coast and is absent from Unst. The vegetation is usually growing on damp soil of average depth with an average pH (5.5). There is evidence that there are localised wet patches and rather diverse soil within the plot.