



Bloch Wind Farm

Technical Appendix 7.1: Phase 1 and NVC Habitat Surveys 2022

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1.1 Introduction

- 1.1.1 This report presents the habitat survey work that has been carried out for the proposed Bloch Wind Farm (the ‘proposed development’). The surveys were undertaken by Steve Percival, a highly experienced ecological surveyor with over 20 years ecological surveying for renewable energy projects (exceeding CIEEM competency requirements).

1.2 Study Area

- 1.2.1 The proposed development is located south of the B7068, approximately 5.5km¹ south-west of Langholm in Dumfries and Galloway. The survey area was chosen to include all areas within the potential zone of ecological influence of the proposed development and a buffer around that to be contextual information on the site’s habitats. The survey area covered a total area of 17.8km² (see Figure 1 and 2). It comprised predominantly upland moorland habitat, currently used mainly for grazing sheep, with the Solwaybank Wind Farm adjacent to the west. It lies mainly within the ‘Border Hills’ NatureScot Natural Heritage Zone (NHZ20), though the southern edge of the survey area is within the ‘West Southern Uplands and Inner Solway’ (NHZ19).

1.3 Survey Methods

Phase 1 Habitat Survey Methods

- 1.3.1 An extended Phase 1 survey was carried out during 27-29 July 2022, including identification and mapping of the vegetation communities present within the study area, following the standard (JNCC 2016²) Phase 1 survey methodology. Any rare or scarce plant species found were also recorded, and habitat suitability was assessed for protected species (to inform the need for any further surveys). Aerial photography was used to help define habitat boundaries.

NVC Habitat Survey Methods

¹ This distance is given to the approximate centre point of the site boundary.

² JNCC 2016. Handbook for Phase 1 habitat survey. A technique for environmental audit.

- 1.3.2 Further, more detailed, h+abitat surveys (Phase 2) were undertaken to map the NVC across the site at the same time as the Phase 1 surveys. This included the acquisition of vegetation species composition and percentage cover data from a series of representative quadrats from each community. These data also informed the potential GWDTE within the site. These were mapped and have been assessed as part of the hydrological impact assessment (see Chapter 9: Hydrology, Hydrogeology, Geology and Soils of the EIA Report).
- 1.3.3 The vegetation communities within each of the survey fields were mapped to a minimum mappable polygon size of 150m². At least five 2x2m quadrat sample of vegetation composition and cover (recorded to the estimated percentage cover) were taken in each vegetation class of the main stand types (following Rodwell et al. 1992³). A total of 67 quadrats were sampled. The field quadrat samples were assigned to NVC class using the MAVIS analysis software (Smart et al. 2016⁴) and professional judgement.
- 1.3.4 Limitations and Assumptions
- 1.3.5 No significant information gaps have been identified. Inevitably with any ecological survey it cannot be guaranteed to detect all target species/individuals and surveys cannot be fully representative of all conditions (e.g. severely reduced visibility). However, in this case it was concluded that the baseline surveys provide a robust baseline data set.

1.4 Survey Results

Phase 1/NVC habitats

- 1.4.1 The Phase 1 habitats recorded in the survey area are summarised in Table 7.1.1, and their distributions are shown in EIA Report Figure 7.3. Table 7.6 also gives details of the NVC communities recorded and their distributions are shown in EIA Report Figure 7.4.
- 1.4.2 Summary quadrat data for each vegetation type are given in Appendix 7.1.1. This includes a species list, mean percentage cover and constancy value (1-5, after Rodwell 1992).

³ Rodwell, J. S. (1992) British Plant Communities: Volume 3 Grasslands and montane communities, Cambridge: Cambridge University Press.

⁴ Smart, S., Goodwin, A., Wallace, H. and Jones, M. (2016). MAVIS (Ver 1.03) User Manual. <https://www.ceh.ac.uk/services/modular-analysis-vegetation-information-system-mavis>

Table 7.1.1: Phase 1 and NVC habitats within the ecology survey area.

Phase 1 Habitat	Phase 1 Code	NVC Class	Total Area (ha.)	% Survey Area
Broad- leaved woodland	A1.1.1	W7	9.99	0.8%
Broad-leaved plantation	A1.1.2	n/a	4.10	0.3%
Coniferous plantation	A1.2.2	n/a	154.4	12.4%
Scrub - dense/continuous	A2.1	W7	0.67	0.1%
Recently-felled conifer	A4.2	n/a	9.89	0.8%
Neutral grassland - unimproved	B2.1	MG1	1.87	0.2%
		MG10a	0.46	0.0%
Neutral grass - semi-improved	B2.2	MG6a	5.08	0.4%
		MG10a	221.3	17.8%
Improved grassland	B4	MG6a	29.04	2.3%
Marsh/marshy grassland	B5	M23a	212.7	17.1%
		M25a	200.2	16.1%
		M27c	4.30	0.3%
Bracken	C1.1	U20a	21.3	1.7%
Wet heath	D2	M16a	43.17	3.5%
Blanket bog	E1.6.1	M18b	130.7	10.5%
Wet modified bog	E1.7	M25a	187.8	15.1%
Acid/neutral flush	E2.1	M6d	3.04	0.2%
Swamp	F1	S9	0.15	0.0%
Amenity grassland	J1.2	n/a	0.28	0.0%
Building	J3.6	n/a	1.19	0.1%

Marshy Grassland

1.4.3 Marshy grassland was the most common Phase 1 habitat, covering 33% of the survey area. There were three NVC communities within the marshy grassland habitat:

- M23a - Soft/sharp-flowered rush *Juncus effusus/ acutiflorus* - Marsh bedstraw *Galium palustre* rush pasture - *Juncus acutiflorus* sub-community). Its total cover was 213ha.
- M25a - Purple moor grass *Molinia caerulea* -dominated grassland on shallower peat. Its total cover was 200ha.

- M27c - Meadowsweet *Filipendula ulmaria* - dominated swamp. It was only found in small patches along the northern edge of the site, and just to the west of the proposed substation location. Its total cover was 4.3ha.

Wet Modified Bog

- 1.4.4 Wet modified bog was the most widespread mire habitat, covering 15% of the survey area (189ha). This habitat type was classified as M25a Purple moor grass *Molinia caerulea* - Tormentil *Potentilla erecta* mire. Purple moor-grass was extensive and dominant, probably as a result of grazing and burning, with little bog moss *Sphagnum* or dwarf shrub cover.

Blanket Bog

- 1.4.5 Blanket bog covered 11% of the survey area (131ha) and supported a more-species-rich community than the wet modified bog. This included *Sphagnum* bog mosses (though cover was generally low, probably as a result of drainage, grazing and burning), more abundant dwarf shrubs including heather, cross-leaved heath *Erica tetralix* and cranberry *Vaccinium oxycoccos*, and frequent occurrence of bog rosemary *Andromeda polyfolia* (a Dumfries and Galloway LBAP priority species).
- 1.4.6 The blanket bog habitat was all classed as M18b NVC community, *Erica tetralix* - *Sphagnum papillosum* blanket mire.

Wet Heath

- 1.4.7 Heathland habitats were scarcer than the mires, covering 4% of the survey area (43ha). It was classed as NVC community M16a. It was found mainly in the southern part of the central block of the site, to the south of the Bloch Plantation (see Figure 7.3).

Acid/neutral Flush

- 1.4.8 Small areas of acid flush (3.4ha) were scattered across the survey area, covering only 0.2% of the survey area. This habitat type comprises a combination of rushes and/or sedges over a thick layer of *Sphagnum* mosses and *Polytrichum commune*. It was classified as NVC community M6d *Carex echinata* - *Sphagnum fallax/denticulatum* mire.

Neutral Grassland

- 1.4.9 Drier grassland areas across the survey area have mostly been affected by agricultural improvement and have been classed as semi-improved neutral grassland. They were extensive over the lower ground particularly in the north-eastern part of the survey area, covering 222ha in total (18% of the survey area). Most were classified as MG10a, with a smaller area of more improved MG6a. A few small patches of MG1 neutral unimproved grassland were found on the northern edge of the site.

Improved Grassland

- 1.4.10 These were more agriculturally improved fields, with extensive seeding with perennial ryegrass *Lolium perenne*, used for silage production and more intensive stock grazing. They were classified as MG6a. They covered a total area of 29ha.

Bracken

- 1.4.11 Patches of bracken-dominated vegetation were widespread in drier parts of the survey area. A total of 21ha (2%) of the survey area was covered in continuous bracken habitat. It was classed as NVC community U20a *Pteridium aquilinum* - *Galium saxatile* community.

Swamp

- 1.4.12 One small area of swamp was located on the fringe of a small waterbody in central part of survey area on Bloch Flow, with the vegetation dominated by bottle sedge *Carex rostrata* (NVC community S9).

Woodlands

- 1.4.13 Semi-natural broad-leaved woodland was found mainly in the northern part of the survey area along the Bigholms Burn/Wauchope Water valley, with 10ha. (0.8% of the survey area) in total (plus a further 0.7ha. of scrub). Much of this has been identified as ancient woodland. It was classed as NVC community W7. There were also small areas of broad-leaved plantation (4ha.).
- 1.4.14 Much of the survey area was fringed with conifer plantation of various ages (including recent clear-fell, particularly around the Solwaybank wind farm), mainly comprising Sitka spruce *Picea sitchensis*. There has been extensive recent planting of trees along much of the southern border of the site.

Groundwater Dependent Terrestrial Ecosystems

1.4.15 Three of the NVC communities recorded have been identified by SEPA as having high potential to be GWDTE:

- Marshy grassland (M25);
- Wet heath (M16); and
- Acid flush (M6).

1.4.16 A further four habitats have moderate potential to be GWDTE:

- Neutral (semi-improved grassland (MG10);
- Marshy Grassland (M23);
- Wet modified bog (M25); and
- Marshy grassland (M27).

1.4.17 The distribution of these habitats across the site is shown in EIA Report Figures 7.3 and 7.4.

1.5 Ecological Conservation Evaluation

Conservation Evaluation of Habitats

1.5.1 The conservation value of the habitats was determined using the criteria specified in Table 7.2 of the EIA Report. The results are summarised in Table 7.1.2. All of the species with very high - low value have been taken forward in the ecological assessment (i.e. only those with nil value have been scoped out).

Table 7.1.2: Conservation Evaluation of the Habitats in the Bloch Wind Farm survey area

Habitat	NVC	EU Habs Dir priority	UK BAP priority habitat	Scottish BAP habitat	D&G LBAP habitat	Potential GWDTE	Conservation Value
Broad-leaved woodland	W7	✓	✓	✓	✓	High	High
Broad-leaved plantation	n/a						Nil
Coniferous plantation	n/a						Nil
Scrub	W7		✓	✓	✓	High	Medium
Recently-felled conifer	n/a						Nil

Habitat	NVC	EU Habs Dir priority	UK BAP priority habitat	Scottish BAP habitat	D&G LBAP habitat	Potential GWDTE	Conservation Value
Neutral grassland - unimproved	MG1						Nil
	MG10a					Medium	Nil
Neutral grass - semi-improved	MG6a						Nil
	MG10a					Medium	Nil
Improved grassland	MG6a						Nil
Marsh/marshy grassland	M23a		✓	✓	✓	High	Medium
	M25a	✓	✓	✓	✓	Medium	High
	M27c		✓	✓	✓	Medium	Medium
Bracken	U20a						Nil
Wet heath	M16a	✓	✓	✓	✓	High	High
Blanket bog	M18b	✓	✓	✓	✓		High
Wet modified bog	M25a	✓	✓	✓	✓	Medium	High
Acid/neutral flush	M6d	✓	✓	✓	✓	High	High
Swamp	S9		✓	✓	✓		Medium

1.5.2 Six habitats were classed as high sensitivity, though their listing as EU Habitats Directive Annex 1 habitats: blanket bog, wet heath, wet modified bog, marshy grassland (purple moor grass), acid/neutral flush and broad-leaved woodland.

1.5.3 Four habitats were classed as medium conservation value: scrub, marshy grassland (rush pasture), marshy grassland (Molinia) and swamp. All were classed as medium value for their listing as UK Biodiversity Action Plan (BAP)/Scottish Biodiversity List priority habitats.

Marshy Grassland M23a (Rush Pasture)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Sneezewort	<i>Achillea ptarmica</i>	1	0.2%
Common bent	<i>Agrostis capillaris</i>	3	3.6%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	4	13.6%
Common Mouse-ear	<i>Cerastium fontanum</i>	1	0.1%
Meadow Thistle	<i>Cirsium dissectum</i>	1	0.5%
Marsh thistle	<i>Cirsium palustre</i>	3	0.8%
Crested Dog's-tail	<i>Cynosurus cristatus</i>	2	0.6%
Tufted hair-grass	<i>Deschampsia cespitosa</i>	4	6.5%
Wavy hair-grass	<i>Deschampsia flexuosa</i>	2	0.5%
Foxglove	<i>Digitalis purpurea</i>	1	0.1%
Marsh Willowherb	<i>Epilobium palustre</i>	1	0.1%
Common eyebright	<i>Euphrasia nemorosa</i>	1	0.1%
Sheep's-fescue	<i>Festuca ovina agg.</i>	1	0.5%
Marsh bedstraw	<i>Galium palustre</i>	1	0.2%
Heath bedstraw	<i>Galium saxatile</i>	1	0.5%
Yorkshire fog	<i>Holcus lanatus</i>	5	15.9%
Sharp-flowered Rush	<i>Juncus acutiflorus</i>	4	14.5%
Soft-rush	<i>Juncus effusus</i>	5	34.5%
Autumn Hawkbit	<i>Leontodon autumnalis</i>	1	0.1%
Purple moor grass	<i>Molinia caerulea</i>	3	3.2%
Mat-grass	<i>Nardus stricta</i>	2	0.6%
Star moss	<i>Polytrichum commune</i>	2	1.1%
Tormentil	<i>Potentilla erecta</i>	4	3.5%
Selfheal	<i>Prunella vulgaris</i>	1	0.1%
Meadow Buttercup	<i>Ranunculus acris</i>	2	0.5%
Creeping buttercup	<i>Ranunculus repens</i>	3	2.4%
Common sorrel	<i>Rumex acetosa</i>	2	0.3%
Broad-leaved Dock	<i>Rumex obtusifolius</i>	1	0.2%
Lesser Stitchwort	<i>Stellaria graminea</i>	2	0.3%
White clover	<i>Trifolium repens</i>	2	0.9%
Nettle	<i>Urtica dioica</i>	1	0.3%

Marshy Grassland M25a (Purple Moor Grass, on shallower peat <0.5m)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	3	3.3%
Heather	<i>Calluna vulgaris</i>	3	4.3%
Common sedge	<i>Carex nigra</i>	1	0.1%
Heath spotted-orchid	<i>Dactylorhiza maculata</i>	1	0.1%
Tufted hair-grass	<i>Deschampsia cespitosa</i>	1	0.4%
Wavy hair-grass	<i>Deschampsia flexuosa</i>	5	7.5%
Broad Buckler-fern	<i>Dryopteris dilatata</i>	2	0.2%
Crowberry	<i>Empetrum nigrum</i>	1	0.2%
Cross leaved heath	<i>Erica tetralix</i>	3	3.8%
Heath bedstraw	<i>Galium saxatile</i>	2	0.3%
Sharp-flowered rush	<i>Juncus acutiflorus</i>	1	0.2%
Soft-rush	<i>Juncus effusus</i>	2	1.4%
Heath rush	<i>Juncus squarrosus</i>	1	0.4%
Purple moor grass	<i>Molinia caerulea</i>	5	67.1%
Common milkwort	<i>Polygala vulgaris</i>	1	0.1%
Star moss	<i>Polytrichum commune</i>	2	1.0%
Tormentil	<i>Potentilla erecta</i>	4	3.7%
Bog moss	<i>Sphagnum compactum</i>	2	0.7%
Deergrass	<i>Trichophorum cespitosum</i>	2	1.3%
Bilberry	<i>Vaccinium myrtillus</i>	4	4.7%
Cranberry	<i>Vaccinium oxycoccos</i>	2	0.3%

Marshy Grassland (M27c) Meadowsweet Swamp

Common name	Scientific name	Constancy (1-5)	Mean % cover
Wild angelica	<i>Angelica sylvestris</i>	4	2.3%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	2	1.7%
False oat-grass	<i>Arrhenatherum elatius</i>	3	8.3%
Harebell	<i>Campanula rotundifolia</i>	2	0.3%
Common Knapweed	<i>Centaurea nigra</i>	2	1.0%
Rosebay Willowherb	<i>Chamerion angustifolium</i>	2	1.0%
Creeping Thistle	<i>Cirsium arvense</i>	2	1.0%
Marsh thistle	<i>Cirsium palustre</i>	2	1.0%
Tufted hair-grass	<i>Deschampsia cespitosa</i>	5	16.7%
Marsh Willowherb	<i>Epilobium palustre</i>	1	0.3%

Common name	Scientific name	Constancy (1-5)	Mean % cover
Meadowsweet	<i>Filipendula ulmaria</i>	5	56.7%
Yorkshire fog	<i>Holcus lanatus</i>	3	5.0%
Soft-rush	<i>Juncus effusus</i>	2	3.3%
Bird's-foot-trefoil	<i>Lotus corniculatus</i>	3	1.3%
Ragged-Robin	<i>Lychnis flos-cuculi</i>	1	0.3%
Reed Canary-grass	<i>Phalaris arundinacea</i>	2	3.3%
Tormentil	<i>Potentilla erecta</i>	1	0.3%
Meadow Buttercup	<i>Ranunculus acris</i>	1	0.3%
Marsh Woundwort	<i>Stachys palustris</i>	1	0.3%
Lesser Stitchwort	<i>Stellaria graminea</i>	1	0.3%

Wet Modified Bog (M25a, on deeper peat >0.5m)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Bog-rosemary	<i>Andromeda polifolia</i>	1	0.3%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	2	1.3%
Heather	<i>Calluna vulgaris</i>	3	1.8%
Wavy hair-grass	<i>Deschampsia flexuosa</i>	4	10.0%
Cross leaved heath	<i>Erica tetralix</i>	4	5.0%
Harestail cotton grass	<i>Eriophorum vaginatum</i>	3	5.0%
Heath bedstraw	<i>Galium saxatile</i>	1	0.3%
Soft-rush	<i>Juncus effusus</i>	2	1.3%
Purple moor-grass	<i>Molinia caerulea</i>	5	66.3%
Star moss	<i>Polytrichum juniperinum</i>	3	2.0%
Tormentil	<i>Potentilla erecta</i>	3	2.0%
Bog moss	<i>Sphagnum capillifolium</i>	3	2.5%
Bog moss	<i>Sphagnum palustre</i>	2	1.3%
Bilberry	<i>Vaccinium myrtillus</i>	4	10.0%
Cranberry	<i>Vaccinium oxycoccos</i>	4	2.0%

Blanket Bog (M18b)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Bog-rosemary	<i>Andromeda polifolia</i>	4	0.8%
Heather	<i>Calluna vulgaris</i>	5	21.0%
Wavy hair-grass	<i>Deschampsia flexuosa</i>	1	0.6%
Round-leaved sundew	<i>Drosera rotundifolia</i>	1	0.6%
Crowberry	<i>Empetrum nigrum</i>	3	2.4%

Common name	Scientific name	Constancy (1-5)	Mean % cover
Cross leaved heath	<i>Erica tetralix</i>	5	23.0%
Harestail cotton grass	<i>Eriophorum vaginatum</i>	5	24.0%
Purple moor-grass	<i>Molinia caerulea</i>	2	13.0%
Bog asphodel	<i>Narthecium ossifragum</i>	4	2.2%
Sitka spruce	<i>Picea sitchensis</i>	1	0.2%
Star moss	<i>Polytrichum commune</i>	1	0.6%
Star moss	<i>Polytrichum juniperinum</i>	1	1.0%
Tormentil	<i>Potentilla erecta</i>	2	1.4%
Bog moss	<i>Sphagnum capillifolium</i>	3	2.5%
Bog moss	<i>Sphagnum papillosum</i>	5	8.0%
Deergrass	<i>Trichophorum cespitosum</i>	2	5.0%
Bilberry	<i>Vaccinium myrtillus</i>	5	6.2%
Cranberry	<i>Vaccinium oxycoccos</i>	3	1.6%

Wet Heath (M16a)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Heather	<i>Calluna vulgaris</i>	5	35.7%
Wavy hair grass	<i>Deschampsia flexuosa</i>	4	10.0%
Round-leaved sundew	<i>Drosera rotundifolia</i>	1	0.1%
Crowberry	<i>Empetrum nigrum</i>	3	1.0%
Cross leaved heath	<i>Erica tetralix</i>	5	8.3%
Harestail cotton grass	<i>Eriophorum vaginatum</i>	1	1.4%
Purple moor grass	<i>Molinia caerulea</i>	5	27.9%
Bog asphodel	<i>Narthecium ossifragum</i>	3	1.7%
Tormentil	<i>Potentilla erecta</i>	4	1.1%
Bog moss	<i>Sphagnum capillifolium</i>	1	0.7%
Deergrass	<i>Trichophorum cespitosum</i>	1	2.1%
Bilberry	<i>Vaccinium myrtillus</i>	5	8.4%
Cranberry	<i>Vaccinium oxycoccos</i>	2	0.6%

Acid/Neutral Flush (M6d)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	3	3.8%
Hard-fern	<i>Blechnum spicant</i>	1	0.3%
Marsh thistle	<i>Cirsium palustre</i>	3	0.5%

Common name	Scientific name	Constancy (1-5)	Mean % cover
Heath Spotted-orchid	<i>Dactylorhiza maculata</i>	1	0.5%
Tufted hair-grass	<i>Deschampsia cespitosa</i>	2	1.3%
Broad Buckler-fern	<i>Dryopteris dilatata</i>	4	1.8%
Marsh willowherb	<i>Epilobium palustre</i>	4	0.8%
Cross leaved heath	<i>Erica tetralix</i>	2	0.5%
Yorkshire fog	<i>Holcus lanatus</i>	4	12.5%
Marsh Pennywort	<i>Hydrocotyle vulgaris</i>	4	1.5%
Sharp-flowered rush	<i>Juncus acutiflorus</i>	4	38.8%
Soft rush	<i>Juncus effusus</i>	4	13.8%
Purple moor grass	<i>Molinia caerulea</i>	3	2.5%
Bog asphodel	<i>Narthecium ossifragum</i>	2	1.3%
Star moss	<i>Polytrichum commune</i>	5	15.0%
Tormentil	<i>Potentilla erecta</i>	4	2.0%
Common sorrel	<i>Rumex acetosa</i>	3	0.5%
Bog moss	<i>Sphagnum palustre</i>	5	6.3%
Bog moss	<i>Sphagnum papillosum</i>	2	1.3%
Devil's-bit Scabious	<i>Succisa pratensis</i>	1	0.5%

Neutral Grassland (MG10a)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Yarrow	<i>Achillea millefolium</i>	1	0.2%
Common Bent	<i>Agrostis capillaris</i>	5	9.4%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	3	5.6%
Daisy	<i>Bellis perennis</i>	2	0.2%
Common mouse ear	<i>Cerastium fontanum</i>	4	2.1%
Meadow Thistle	<i>Cirsium dissectum</i>	3	2.4%
Marsh thistle	<i>Cirsium palustre</i>	3	0.6%
Spear Thistle	<i>Cirsium vulgare</i>	3	0.6%
Crested Dog's-tail	<i>Cynosurus cristatus</i>	3	6.1%
Tufted hair-grass	<i>Deschampsia cespitosa</i>	2	0.8%
Common eyebright	<i>Euphrasia nemorosa</i>	1	0.3%
Red Fescue	<i>Festuca rubra agg.</i>	1	0.6%
Yorkshire fog	<i>Holcus lanatus</i>	4	16.1%
Soft-rush	<i>Juncus effusus</i>	3	7.2%
Autumn Hawkbit	<i>Leontodon autumnalis</i>	3	1.6%
Perennial rye-grass	<i>Lolium perenne</i>	4	17.8%

Common name	Scientific name	Constancy (1-5)	Mean % cover
Pineappleweed	<i>Matricaria discoidea</i>	1	0.1%
Ribwort plantain	<i>Plantago lanceolata</i>	1	0.2%
Greater Plantain	<i>Plantago major</i>	2	0.7%
Rough Meadow-grass	<i>Poa trivialis</i>	3	1.4%
Creeping buttercup	<i>Ranunculus repens</i>	5	3.2%
Yellow-rattle	<i>Rhinanthus minor</i>	1	0.6%
Broad-leaved Dock	<i>Rumex obtusifolius</i>	1	1.7%
Dandelion	<i>Taraxacum agg.</i>	1	0.3%
Red Clover	<i>Trifolium pratense</i>	1	0.1%
White clover	<i>Trifolium repens</i>	5	22.8%
Nettle	<i>Urtica dioica</i>	1	0.2%

Neutral Grassland (semi-improved with rushes MG10a)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Common bent	<i>Agrostis capillaris</i>	4	7.5%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	3	2.5%
Common Mouse-ear	<i>Cerastium fontanum</i>	2	1.0%
Marsh thistle	<i>Cirsium palustre</i>	2	1.5%
Spear Thistle	<i>Cirsium vulgare</i>	4	5.0%
Crested Dog's-tail	<i>Cynosurus cristatus</i>	3	5.0%
Yorkshire fog	<i>Holcus lanatus</i>	5	17.5%
Soft rush	<i>Juncus effusus</i>	5	30.0%
Perennial rye-grass	<i>Lolium perenne</i>	3	2.5%
Mat-grass	<i>Nardus stricta</i>	3	2.5%
Rough Meadow-grass	<i>Poa trivialis</i>	2	1.5%
White clover	<i>Trifolium repens</i>	5	20.0%
Nettle	<i>Urtica dioica</i>	3	2.5%

Bracken (U20a)

Common name	Scientific name	Constancy (1-5)	Mean % cover
Common bent	<i>Agrostis capillaris</i>	2	2.0%
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	3	2.6%
Harebell	<i>Campanula rotundifolia</i>	1	0.2%
Common Mouse-ear	<i>Cerastium fontanum</i>	2	0.4%
Meadow Thistle	<i>Cirsium dissectum</i>	1	1.0%
Marsh thistle	<i>Cirsium palustre</i>	2	0.6%

Common name	Scientific name	Constancy (1-5)	Mean % cover
Yorkshire fog	<i>Holcus lanatus</i>	5	4.6%
Sharp-flowered Rush	<i>Juncus acutiflorus</i>	2	1.6%
Soft-rush	<i>Juncus effusus</i>	3	4.0%
Perennial rye-grass	<i>Lolium perenne</i>	1	0.4%
Purple moor grass	<i>Molinia caerulea</i>	3	2.6%
Tormentil	<i>Potentilla erecta</i>	3	3.0%
Bracken	<i>Pteridium aquilinum</i>	5	86.0%
Creeping buttercup	<i>Ranunculus repens</i>	2	0.4%
White clover	<i>Trifolium repens</i>	2	1.4%
Nettle	<i>Urtica dioica</i>	1	0.2%