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## CG8

### *Sesleria albicans*-*Scabiosa columbaria* grassland

#### Synonymy

Magnesian Limestone Rough Pasture Heslop-Harrison & Richardson 1953; *Seslerio-Helictotrichetum pratensis* Shimwell 1968a.

#### Constant species

*Avenula pratensis*, *Briza media*, *Carex flacca*, *Centaurea nigra*, *Festuca ovina*, *Galium verum*, *Helianthemum nummularium*, *Koeleria macrantha*, *Linum catharticum*, *Lotus corniculatus*, *Pimpinella saxifraga*, *Plantago lanceolata*, *Sanguisorba minor*, *Scabiosa columbaria*, *Sesleria albicans*, *Thymus praecox*.

#### Rare species

*Epipactis atrorubens*, *Linum perenne* ssp. *anglicum*, *Primula farinosa*, *Sesleria albicans*.

#### Physiognomy

The *Sesleria albicans*-*Scabiosa columbaria* grassland comprises generally closed swards in which *S. albicans* is usually the most abundant grass, often dominating as vigorous tussocks, especially when the sward is ungrazed. *Festuca ovina* (occasionally with a little *F. rubra*, though rarely exceeded by it) and *Briza media* are constant, but somewhat variable in abundance. *Avenula pratensis* and *Koeleria macrantha* are very frequent, too, though usually in small amounts. There is occasionally a little *Agrostis capillaris*, *Cynosurus cristatus* and *Brachypodium sylvaticum* and, in one sub-community in particular, coarser species such as *Avenula pubescens*, *Dactylis glomerata* and *Arrhenatherum elatius* lend a rank appearance to the sward. *Bromus erectus* and *Brachypodium pinnatum* occur rarely, here very much towards their northern limits in Britain and the former prominent only on south-facing slopes. *Carex flacca* is very common and, with *F. ovina*, often makes up the bulk of the sward among the *S. albicans*; *C. caryophyllea* is also frequent, though usually not so abundant.

Although this vegetation has been very intensively sampled in relation to its extent and the amount of

variation it shows, such that it appears somewhat over-solidly defined, the richness of the dicotyledonous element is a real feature of the community. As in the *Sesleria*-*Galium* grassland, *Thymus praecox* and *Helianthemum nummularium* are both constant and each can be locally prominent, and *Sanguisorba minor*, *Plantago lanceolata*, *Lotus corniculatus*, *Campanula rotundifolia*, *Linum catharticum* and *Euphrasia officinalis* agg. (mostly *E. nemorosa*) are very frequent as usually scattered individuals. Here, however, there is an additional enrichment from a group of species that are especially characteristic of lowland Mesobromion swards. Especially distinctive among these is *Scabiosa columbaria* but *Galium verum*, *Leontodon hispidus*, *Anthyllis vulneraria*, *Plantago media*, *Primula veris*, *Viola hirta*, *Centaurea scabiosa* and *Gentianella amarella* are also very common and, in two of the sub-communities, *Centaurea nigra* and *Pimpinella saxifraga* occur at high frequency.

Bryophytes vary considerably in their abundance, being generally sparse in the ranker swards, though more conspicuous and varied in damper sites and more open turf. The most frequent species throughout are *Ctenidium molluscum*, *Fissidens cristatus* and *Hypnum cupressiforme*.

#### Sub-communities

##### *Hypericum pulchrum*-*Carlina vulgaris* sub-community:

*Seslerio-Helictotrichetum pratensis* typicum and *caricetosum pulicariae* Shimwell 1968a. *S. albicans* is usually the dominant in the closed and sometimes tussocky swards here which are characterised by the preferential frequency of *Hypericum pulchrum*, *Carlina vulgaris*, *Polygala vulgaris*, and, less markedly, *Stachys betonica*, *Succisa pratensis*, *Achillea millefolium* and *Trisetum flavescens*. The rare orchid *Epipactis atrorubens* occurs in this vegetation at a few sites, sometimes in abundance, and with *Gymnadenia conopsea*, which is more widely distributed throughout the community, it can make a

splendid show when flowering in mid-summer. *Linum perenne* ssp. *anglicum* is also found in a very few stands and *Bromus erectus* and *Brachypodium pinnatum* are encountered very occasionally, locally rivalling *S. albicans* in prominence. On cooler and damper slopes, *Carex pulicaris*, which is, generally speaking, a rare plant in the community, may be present in considerable abundance, sometimes with much *Ctenidium molluscum* and *Calliergon cuspidatum* and some *Hylocomium splendens*. Here, too, there may be scattered plants of *Selaginella selaginoides* and *Pinguicula vulgaris*. It is in such vegetation, which could be characterised as a variant (cf. Shimwell 1968a), that the rare records in lowland Durham for *Antennaria dioica*, *Primula farinosa* and *Preissia quadrata* occur (Shimwell 1968a, Bellamy 1970).

***Avenula pubescens* sub-community:** *Seslerio-Helictotrichetum pratensis helictotrichetosum pubescentis* Shimwell 1968a. Although *S. albicans* generally remains the most abundant species in this sub-community, there is greater variety here among the grasses, and the high frequency of *Avenula pubescens* and *Dactylis glomerata* and the more local prominence of *Arrhenatherum elatius* and *Bromus erectus* often gives the swards a coarse, tussocky appearance. *Trifolium repens* attains constancy here and the scattered occurrence of *Daucus carota* and, less frequently, *Senecio jacobaea*, *Rhinanthus minor* and *Cirsium vulgare* can increase the scruffy look of the vegetation. Seedling shrubs occur occasionally with *Crataegus monogyna*, *Ulex europaeus* and *Rosa* spp., including *R. pimpinellifolia*, *R. canina*, *R. eboracensis* and *R. afzeliana*. Where these begin to close up into scattered patches of scrub there is a consequent thinning of the grassland herbage.

***Hieracium pilosella* sub-community:** *Seslerio-Helictotrichetum* Sub-association of *Encalypta vulgaris* and *Plantago maritima* Shimwell 1968a. In the more open vegetation here, the cover of *S. albicans* is usually reduced to small tussocks and the frequency of a number of generally common species falls, e.g. *Centaurea nigra*, *Pimpinella saxifraga*, *Briza media*, *Lotus corniculatus*, *Campanula rotundifolia*, *Primula veris* and *Leontodon hispidus*. By contrast, there is an increase in *Hieracium pilosella* and hemicryptophytes characteristic of open, disturbed or marginal habitats, e.g. *Hypochoeris radicata*, *Hypericum montanum*, *Plantago maritima*, *Medicago lupulina*, *Leontodon autumnalis* and *Hieracia* of the section *Vulgata*. Orchids are common with frequent records for *Gymnadenia conopsea* and, especially distinctive here, *Listera ovata* and *Coeloglossum viride*. Bryophyte cover is usually extensive among the turf with, in addition to *Ctenidium molluscum* and *Fissidens cristatus*, patches of small acrocarps such as *Encalypta vulgaris*, *E. streptocarpa*, *Bryum argenteum* and *Ceratodon purpureus*.

### Habitat

The community is restricted to free-draining, calcareous soils over Magnesian Limestone in the cool, dry climate of lowland Durham. It is a plagioclimax vegetation maintained by the grazing of stock and rabbits and has been reduced in extent by changes in agricultural practice and myxomatosis as well as by quarrying of the bedrock. It is now largely confined to a few more intractable natural slopes and some artificial habitats such as abandoned quarries and road verges.

The climatic conditions in the region are intermediate between those of the lowland south and east and the north-west uplands. Even over the western Magnesian Limestone scarp, where most of the stands of the community occur and where rainfall is a little higher than over the plateau, the effect of the Pennine rain-shadow is felt and the climate is as dry as or drier than much of the southern Chalk with an annual precipitation of only 700–750 mm and about 120 wet days  $\text{yr}^{-1}$  (Manley 1935, *Climatological Atlas* 1952, Ratcliffe 1968, Smith 1970). However, though the winters are relatively mild, the summers are cool with mean annual maximum temperatures around 26 °C (Conolly & Dahl 1970) and annual accumulated temperatures typical of northern lowland areas above a line from the Humber to the Severn. The climate is also considerably cloudier than to the south with 1–2 hours less bright summer sunshine and occasional inland penetration of the distinctive north-east coastal hahn markedly depressing air temperatures and insolation into June (Manley 1935, Smith 1970, Chandler & Gregory 1976). Compared with the Carboniferous Limestone uplands of western Durham, however, the growing season starts up to one month earlier and lasts up to 50 days longer (Smith 1976).

The general floristics of the community reflect these climatic features. Only on some north- and west-facing slopes, where winter frosts and snow-lie are a little more frequent and sunshine reduced, does the vegetation begin to approach the sub-montane character of the *Sesleria-Galium* grassland of the Pennine uplands with the appearance of such plants as *Carex pulicaris*, *Selaginella selaginoides*, *Antennaria dioica* and *Hylocomium splendens*. Conversely, it is only on warmer and sunnier, south-facing slopes that *Bromus erectus* makes any prominent contribution, and all other members of that Continental element which is so conspicuous in much of the south-eastern *Festuca-Avenula* grassland are quite absent. Rather, the bulk of the frequent members of the community are species which extend in Mesobromion grassland well beyond the Humber–Severn line but which do not penetrate far into the cooler, damper climate of the upland north-west. In many respects, this vegetation looks like the *Dicranum* sub-community of the *Festuca-Avenula* grassland with an overlying dominance of *S. albicans*.

Within the region, the *Sesleria-Scabiosa* grassland is largely restricted to those few areas of the Magnesian Limestone which are free of drift (Beaumont 1970, Stevens & Atkinson 1970). Although it is found at a few isolated sites over the east Durham plateau, it is most characteristic of the steeper slopes along the western scarp, usually between 45 and 160 m altitude. Here, the soils are kept permanently immature and the profiles are typical rendzinas, often very shallow, free-draining, rich in calcium and magnesium carbonates and with a pH generally above 7 (Frisby 1961, Shimwell 1968a, Stevens & Atkinson 1970). Such soils have been described from the area within the Cornforth and Middleham series (McKee 1965). Comparable lithomorphous profiles can be found over long-abandoned rock waste such as quarry spoil.

Both the *Carlina-Hypericum* and *Avenula* sub-communities occur over these rendzina soils on natural slopes and in older artificial habitats, their good representation of calcicoles and lack of *Nardo-Galion* species reflecting the maintenance of high base-status and lack of leaching in the dry climate. Where the profiles remain base-rich, the *Sesleria-Scabiosa* grassland will also extend some way on to deeper, and perhaps more mesotrophic, brown calcareous earths. Such soils develop where there is an accumulation of colluvium towards the bottom of slopes, over more marly or friable strata of limestone which weather more deeply and over more light-textured and calcareous till (Stevens & Atkinson 1970), and they have been mapped in Durham as part of the Aberford Series (*Soil Survey* 1983).

It is likely, though, that variations in grazing also play some part in the floristic differences between these sub-communities. The *Sesleria-Scabiosa* grassland is a plagioclimax vegetation, derived ultimately from the clearance of woodland which, though perhaps early on parts of the better-drained Magnesian Limestone (e.g. Bartley *et al.* 1976), seems not to have occurred extensively over much of eastern Durham until Romano-British times and to have experienced a number of regressions after that (Roberts *et al.* 1973, Donaldson & Turner 1977, Turner & Hodgson 1979). More recently, the typical pattern of agriculture over the Magnesian Limestone has been a mixed arable/pasture economy with deeper, drift-derived soils being ploughed for cereals, roots and leys and stands of *Sesleria-Scabiosa* grassland providing additional grazing for sheep, dairy cattle and stores (Warwick Percy 1970). There is no doubt that, over the gentler slopes around plateau knolls and above and below the western scarp, there has been some loss of the community with conversion of land to arable or sown grasslands and improvement with artificial fertilisers. However, judicious grazing has been an essential element in the maintenance of the short, species-rich swards of the community and the effects of

pastoral neglect are clearly visible in places with the encroachment of scrub. As over the southern Chalk, the demise of rabbits in the 1954/5 myxomatosis epidemic has played an important part here in the loss of the more close-cropped and varied grassland. It is possible that the *Avenula* sub-community represents, at least in part, a stage in the progression through ranker, tussocky swards to scrub with such relaxation in grazing pressure. Perhaps, too, differences in grazing stock have been involved because this kind of *Sesleria-Scabiosa* grassland shows structural and floristic features which are very characteristic of grazing by cattle as opposed to sheep. Some stands may also have been derived by the recolonisation of abandoned arable land.

As well as losses to agriculture, there has been some destruction of the habitat of the community with quarrying of the Magnesian Limestone. Prior to 1800, this was extracted locally as a building material but now the deposits are extensively exploited for high-grade dolomite, much prized as a flux in steel- and glass-making and for refractory products, and for aggregates. In addition to the irretrievable loss of stands of the *Sesleria-Scabiosa* grassland and the gross alteration of the scarp landscape of which it forms a part, the quarrying also deposits limestone dust over the surrounding vegetation. Abandoned quarry floors and faces and spoil heaps provide some compensation for these activities, creating habitats which are colonised, first by bryophytes and ephemerals, then by grassland, scrub and woodland. The *Hieracium* sub-community, typically found in such situations, clearly represents a stage in this process of recolonisation and, with its sometimes spectacular populations of orchids, may have much floristic interest. Stands of this kind of *Sesleria-Scabiosa* grassland and more long-established areas of the other sub-communities are, however, vulnerable to tipping of rubbish and industrial waste and to renewed mineral extraction as deposits elsewhere are worked out (Woodward 1970). The rocky verges of roads cut through the Magnesian Limestone, like sections of the A1(M), provide another man-made habitat for the development of the community.

Many of the often small stands of the *Sesleria-Scabiosa* grassland occur close to settlements and their use for recreation results in trampling, disturbance and eutrophication of the vegetation.

### Zonation and succession

Since most remaining tracts of the community occur within enclosures sandwiched between plateau and vale agricultural land, natural zonation to other vegetation types developed in relation to soil sequences over the scarp are rare. In a few places, however, the *Carlina-Hypericum* sub-community can be seen grading through the *Avenula* sub-community to rank, mesotrophic swards over slope-foot colluvium.

More often, however, the community occurs in mosaics with open vegetation, rough grasslands and scrub which reflect seral progressions mediated by soil development and the amount of grazing. Colonisation of artificial habitats, such as quarry floors, ledges and spoil begins with the appearance of rank weeds such as *Epilobium angustifolium*, *Hypericum* spp. and *Erigeron acer* and, in damper places, patches of acrocarpous mosses (Shimwell 1968a, 1971b) and proceeds to the more stable vegetation of the *Hieracium* sub-community. Where grazing is absent, this can probably be quickly invaded by shrubs and trees but, where stock or rabbits have access and there is deeper accumulation of soil, it is possible that it develops into the *Carlina-Hypericum* sub-community. With light grazing, the tussocky swards of the *Avenula* sub-community may supervene and develop into patchy scrub with *Avenula pubescens* grassland or *Arrhenatheretum* between. The commonest scrub species in the area are *Crataegus monogyna*, *Prunus spinosa*, *Ulex europaeus* and *Rosa* spp. and the natural progression would be to the *Geranium* sub-community of the *Fraxinus-Acer-Mercurialis* woodland, stands of which occur in close association with *Sesleria-Scabiosa* grassland. In damper situations, *Salix* spp. may appear as early woody colonisers.

### Distribution

The community occurs only in eastern Durham where the most extensive and varied tracts are found around Cassop Vale and Thrislington Plantation with smaller stands elsewhere along the western scarp of the Magne-

sian Limestone and at a few plateau localities. Abandoned quarries and road verges provide valuable secondary habitats.

### Affinities

Essentially, the *Sesleria-Scabiosa* grassland represents a northern extension of the less Continental kind of Mesobromion grassland which is common in Derbyshire, the Yorkshire Wolds and the North York Moors into the peculiarly restricted British range of *S. albicans*. The affinities with the mainstream *Festuca-Avenula* grassland of the southern lowlands are much stronger than they are in the *Sesleria-Galium* grassland which is a more obvious transition to the montane vegetation of the Elyno-Seslerietea. Nonetheless, the most obvious position of the community is alongside the grassland in the Seslerio-Mesobromion sub-alliance (Shimwell 1968a, 1971b). Similar vegetation types have been described from France and Germany (Tüxen 1937, Schubert 1963, Stott 1970).

The core of the community is represented by the *Carlina-Hypericum* sub-community and the floristic trends seen within the other kinds of *Sesleria-Scabiosa* grassland reflect lines of variation seen among its more southerly equivalents. The *Hieracium* sub-community is a parallel vegetation type to the *Festuca-Hieracium-Thymus* grassland of very dry soils with heavy grazing and the *Avenula* sub-community equates with the more mesotrophic kinds of *Festuca-Avenula* grassland included in the *Holcus-Trifolium* sub-community.

### Floristic table CG8

	a	b	c	8
<i>Sesleria albicans</i>	V (3-8)	V (1-8)	V (3-7)	V (1-8)
<i>Carex flacca</i>	V (1-7)	V (1-5)	V (1-5)	V (1-7)
<i>Linum catharticum</i>	V (1-4)	V (1-3)	V (1-3)	V (1-4)
<i>Sanguisorba minor</i>	V (1-5)	V (1-5)	V (1-3)	V (1-5)
<i>Scabiosa columbaria</i>	V (1-4)	IV (1-3)	IV (1-3)	IV (1-4)
<i>Thymus praecox</i>	IV (1-5)	V (1-5)	V (1-3)	IV (1-5)
<i>Helianthemum nummularium</i>	IV (1-5)	V (1-7)	IV (1-3)	IV (1-7)
<i>Plantago lanceolata</i>	IV (1-4)	V (1-3)	IV (1-3)	IV (1-4)
<i>Avenula pratensis</i>	IV (1-4)	IV (1-3)	V (1-5)	IV (1-5)
<i>Lotus corniculatus</i>	IV (1-4)	IV (1-3)	III (1-3)	IV (1-4)
<i>Galium verum</i>	IV (1-3)	III (1-3)	IV (1-3)	IV (1-3)
<i>Koeleria macrantha</i>	IV (1-3)	III (1-3)	V (1-3)	IV (1-3)
<i>Festuca ovina</i>	IV (1-7)	II (1-3)	IV (1-3)	IV (1-7)
<i>Centaurea nigra</i>	IV (1-3)	V (1-3)	I (1)	IV (1-3)
<i>Briza media</i>	IV (1-7)	IV (1-3)	II (1-3)	IV (1-7)
<i>Pimpinella saxifraga</i>	IV (1-2)	V (1-3)	II (1)	IV (1-3)

<i>Stachys betonica</i>	III (1–4)	II (1–3)		II (1–4)
<i>Taraxacum officinale</i> agg.	II (1)	III (1–3)		II (1–3)
<i>Agrostis capillaris</i>	II (1–3)	II (1–3)		II (1–3)
<i>Cynosurus cristatus</i>	II (1–4)	II (1–3)		II (1–4)
<i>Rhynchospora squarrosa</i>	II (1)	I (1)		I (1)
<i>Mnium hornum</i>	I (1)	I (1)		I (1)
<i>Linum perenne anglicum</i>	I (1–6)	I (1)		I (1–6)
<i>Viola riviniana</i>	I (1)	I (1)		I (1)
<i>Campylum chrysophyllum</i>	I (1)	I (1)		I (1)
<i>Hypericum pulchrum</i>	III (1–3)	I (1)		II (1–3)
<i>Carlina vulgaris</i>	III (1–2)	I (1)		II (1–2)
<i>Polygala vulgaris</i>	III (1–2)			II (1–2)
<i>Epipactis atrorubens</i>	II (1–3)	I (1)		II (1–3)
<i>Succisa pratensis</i>	II (1–4)		I (1)	II (1–4)
<i>Eurhynchium swartzii</i>	II (1)	I (1)	I (1)	I (1)
<i>Trisetum flavescens</i>	II (1–4)			I (1–4)
<i>Achillea millefolium</i>	II (1)			I (1)
<i>Pseudoscleropodium purum</i>	II (1–3)			I (1–3)
<i>Carex pulicaris</i>	II (2–5)			I (2–5)
<i>Danthonia decumbens</i>	I (1–2)			I (1–2)
<i>Bellis perennis</i>	I (1–2)			I (1–2)
<i>Calliergon cuspidatum</i>	I (1–6)			I (1–6)
<i>Trifolium medium</i>	I (1–3)			I (1–3)
<i>Plagiomnium undulatum</i>	I (1–2)			I (1–2)
<i>Vicia cracca</i>	I (1–3)			I (1–3)
<i>Knautia arvensis</i>	I (1–2)			I (1–2)
<i>Avenula pubescens</i>	II (1–4)	V (1–5)	I (1)	III (1–5)
<i>Daucus carota</i>	I (1)	V (1)	I (1)	II (1)
<i>Dactylis glomerata</i>	II (1–4)	V (1–5)	II (1)	II (1–5)
<i>Trifolium repens</i>	II (1)	IV (1–3)	II (1)	II (1–3)
<i>Senecio jacobaea</i>	I (1)	II (1–3)	I (1)	I (1–3)
<i>Ulex europaeus</i>	I (3)	II (1)	I (1)	I (1–3)
<i>Bromus erectus</i>	I (4–6)	II (1–8)		I (1–8)
<i>Arrhenatherum elatius</i>		II (1–3)	I (1)	I (1–3)
<i>Rhinanthus minor</i>		I (1)		I (1)
<i>Lathyrus pratensis</i>		I (1)		I (1)
<i>Cirsium vulgare</i>		I (1)		I (1)
<i>Hieracium pilosella</i>	II (1–4)	II (1–3)	V (1–3)	II (1–4)
<i>Hypochoeris radicata</i>	II (1–2)		V (1–3)	II (1–3)
<i>Hypericum montanum</i>			V (1–3)	I (1–3)
<i>Encalypta vulgaris</i>			V (1–5)	I (1–5)
<i>Prunella vulgaris</i>		III (1–3)	IV (1–3)	II (1–3)
<i>Medicago lupulina</i>	II (1–3)	II (1–3)	IV (1–3)	II (1–3)
<i>Plantago maritima</i>	I (1–2)	I (1)	IV (1–3)	I (1–3)
<i>Listera ovata</i>	I (1–3)		IV (1)	I (1–3)
<i>Hieracium sect. Vulgata</i>	I (1–4)	I (1)	III (1)	I (1–4)
<i>Coeloglossum viride</i>	I (1)		III (1)	I (1)
<i>Encalypta streptocarpa</i>	I (1)		II (1–5)	I (1–5)
<i>Bryum argenteum</i>			II (1)	I (1)

**Floristic table CG8 (cont.)**

	a	b	c	8
<i>Leontodon autumnalis</i>			II (1)	I (1)
<i>Ceratodon purpureus</i>			II (1–3)	I (1–3)
<i>Campanula rotundifolia</i>	IV (1–3)	III (1)	II (1–3)	III (1–3)
<i>Primula veris</i>	IV (1–3)	III (1–3)	II (1)	III (1–3)
<i>Leontodon hispidus</i>	IV (1–4)	III (1)	II (1–5)	III (1–5)
<i>Carex caryophyllea</i>	III (1–3)	IV (1–3)	V (1–3)	III (1–3)
<i>Viola hirta</i>	III (1–3)	IV (1)	V (1–3)	III (1–3)
<i>Anthyllis vulneraria</i>	III (1–5)	IV (1–5)	IV (1–3)	III (1–5)
<i>Centaurea scabiosa</i>	III (1–3)	IV (1–3)	IV (1–3)	III (1–3)
<i>Plantago media</i>	III (1–5)	III (1–3)	III (1–3)	III (1–5)
<i>Gentianella amarella</i>	III (1–3)	III (1–3)	V (1–3)	III (1–3)
<i>Ctenidium molluscum</i>	III (1–4)	I (1)	IV (1–3)	II (1–4)
<i>Gymnadenia conopsea</i>	III (1–3)	I (1)	V (1–3)	II (1–3)
<i>Euphrasia officinalis</i> agg.	III (1–3)	III (1–3)	II (1–3)	III (1–3)
<i>Brachypodium sylvaticum</i>	II (1–4)	III (1–3)	II (1–3)	II (1–4)
<i>Fissidens cristatus</i>	III (1–3)	I (1)	III (1)	II (1–3)
<i>Trifolium pratense</i>	I (1–2)	II (1)	III (1)	II (1–2)
<i>Cerastium fontanum</i>	II (1–3)	II (1)	II (1)	II (1–3)
<i>Festuca rubra</i>	II (1–6)	II (1–3)	I (1)	II (1–6)
<i>Hypnum cupressiforme</i>	II (1–3)	I (1)	II (1–3)	II (1–3)
Number of samples	35	12	8	55
Number of species/sample	32 (25–40)	29 (26–32)	32 (27–38)	31 (25–40)

a *Hypericum pulchrum*-*Carlina vulgaris* sub-communityb *Avenula pubescens* sub-communityc *Hieracium pilosella* sub-community8 *Sesleria albicans*-*Scabiosa columbaria* grassland (total)



