W24
Rubus fruticosus-Holcus lanatus underscrub

Synonymy
Marginal Society Salisbury 1916, 1918*a p.p.*; Marginal flora Tansley 1939 *p.p.*

Constant species
Rubus fruticosus agg., *Holcus lanatus*.

Physiognomy
The *Rubus fruticosus* agg.-*Holcus lanatus* underscrub is typically dominated by mixtures of brambles, rank grasses and tall dicotyledons, forming an untidy cover of rather variable height, but usually less than 1 m. Although it is very commonly found in close association with taller woody vegetation, in active successions and in stabilised zonations around scrub and woodland margins, trees and shrubs are characteristically sparse within the community itself. There are sometimes scattered *Crataegus monogyna*, *Prunus spinosa*, *Sambucus nigra* and saplings of *Fraxinus excelsior*, *Acer pseudoplatanus*, *Fagus sylvatica* or *Quercus robur*, but their total cover is generally low.

R. fruticosus agg. is a constant component of the vegetation but its abundance is rather variable. In many stands it is very plentiful, forming dense clumps of tangled arching shoots and, in such cases, most of the other plants are confined to the margins of the bushes or areas between them. In other stands, brambles occur as more widely scattered bushes or as sparse shoots throughout, when the proportion of herbs is consequently greater. Where the community occurs on hedgebanks, where it typically forms a narrow zone between hedge and verge, the bramble cover may be occasionally cut back, but this vegetation is not regularly mown. Other undershrubs are relatively infrequent but *Rosa canina* agg. or *R. arvensis* are sometimes found and, on more acid soils, there can be some *Ulex europaeus*.

A rank growth of grasses is usually a prominent feature of the community. The commonest species throughout are *Holcus lanatus* and *Dactylis glomerata*, but *Arrhenatherum elatius* also occurs quite frequently and, with *Festuca rubra*, is especially characteristic of one kind of *Rubus-Holcus* underscrub. *Brachypodium sylvaticum* is occasionally found on more base-rich soils and, where drainage is impeded, *Deschampsia cespitosa* can be abundant. Where there is little or no grazing, the usual state of affairs, these species grow as bulky tussocks between or fronting the bramble; where herbivores have gained access after the bramble cover has developed, the grasses may continue to bulk large in the cropped sward extending between the stabilised or regressing bush cover. Smaller grasses, too, can make some contribution to the vegetation. *Poa trivialis* occurs occasionally and can extend as a patchy mat beneath quite dense bramble and, in more open, weedy vegetation, *Agrostis stolonifera* is common. On more acidic soils, species such as *Agrostis capillaris* and *Anthoxanthum odoratum* can be found, though an increase in such grasses, and in the abundance of *Ulex europaeus*, usually marks a transition to the *Ulex-Rubus* scrub.

In this coarse, grassy ground, taller dicotyledons occur as scattered plants or with patchy local abundance. *Urtica dioica*, often accompanied by scrambling *Galium aparine*, is common throughout but most of the remaining species segregate into two groups, each characteristic of the different kinds of *Rubus-Holcus* underscrub. In the *Arrhenatherum-Heracleum* subcommunity, plants of unmown and ungrazed grasslands predominate with umbellifers like *Heracleum sphondylium*, *Anthriscus sylvestris* and *Chaerophyllum temulentum* figuring frequently; in the *Cirsium* sub-community, such plants occur occasionally, but the vegetation has a more marked weedy element with *Cirsium arvense*, *C. vulgare* and *Epilobium angustifolium* occurring commonly. In contrast to the *Pteridium-Rubus* underscrub, where some of these species are also represented, along with brambles and certain of the grasses, *Pteridium aquilinum* is rare here.

Smaller dicotyledons are often overwhelmed by the dense brambles and bulky herbage but a variety of species occur at low frequencies throughout. Some of

these, like *Ranunculus acris*, *Equisetum arvense*, *Trifolium repens*, *Hypochoeris radicata* and *Lotus corniculatus* are survivors from the previous herbaceous vegetation which persist in more open places. Others can tolerate considerable shade and form a patchy understorey to less dense bramble covers, being especially well developed where the community forms a stabilised fringe to hedges or woodland. In such situations, a ground carpet of *Hedera helix* is characteristic and there can be scattered plants of *Geranium robertianum*, *Geum urbanum*, *Veronica chamaedrys*, *Viola riviniana*, *Arum maculatum* and, where the community abuts on to older woods and hedges, *Mercurialis perennis*.

Bryophytes are generally sparse but *Eurhynchium praelongum* occurs occasionally and there are infrequent records for *Pseudoscleropodium purum*, *Hypnum cupressiforme* and *Brachythecium rutabulum*.

Sub-communities

***Cirsium arvense-Cirsium vulgare* sub-community.** The general feature of complementary proportions of brambles and herbs in a patchy mosaic is preserved here but, among the latter, bulkier grasses, apart from *Holcus lanatus*, tend to be less prominent: *Dactylis* and *Arrhenatherum* are fairly infrequent and *Festuca rubra* absent. *Agrostis stolonifera*, on the other hand, is preferentially frequent and sometimes abundant as a ground carpet between the bramble with occasional *Ranunculus repens*, *Glechoma hederacea*, *Prunella vulgaris* and *Fragaria vesca*. But, more obviously here, there are preferentially frequent records for taller weedy species: along with *Urtica*, *Cirsium arvense* and *C. vulgare* are common and there can be prominent clumps of *Epilobium angustifolium*. On drier, more base-poor soils, *Digitalis purpurea* and *Silene dioica* can be found and there may be some *Ulex europaeus*. On wetter ground, as where this sub-community develops near to areas of open water or on ill-drained land where pools form in hollows, plants such as *Epilobium hirsutum*, *Phalaris arundinacea* or *Phragmites australis* can be locally abundant and there may be some *Solanum dulcamara*.

***Arrhenatherum elatius-Heracleum sphondylium* sub-community.** This kind of *Rubus-Holcus* underscrub is less diverse than the above but consistently enriched by a very distinctive group of preferentials, whose general affinities are clearly with Arrhenatherion grasslands. *Rubus* remains very frequent and can be abundant but, among the grasses, *Dactylis* increases in frequency somewhat and *Arrhenatherum* and *Festuca rubra* become constant; *Poa pratensis* is also recorded occasionally. Along with the frequent *Holcus lanatus*, the total cover of these species is generally high. Then, *Urtica* is joined here by frequent *Heracleum sphondylium*, *Anthriscus sylvestris* and, especially characteristic of this kind of vegetation, *Chaerophyllum temulentum*, the sequential flowering of these umbellifers being very prominent through the early summer months. Other frequent herbs here, of slightly shorter stature, are *Cruciata laevipes*, *Achillea millefolium*, *Stellaria holostea*, *Lapsana communis* and, more occasional but very conspicuous as a front to recently-disturbed hedgerow stands, *Alliaria petiolata*. In more open places, *Taraxacum officinale* agg. may be prominent: it can be a marked feature when flowering in spring along the trampled or mown margins of the *Rubus-Holcus* underscrub on verges. A further element is provided by scrambling or climbing herbs: *Galium aparine* is constant and occasionally accompanied by *Lathyrus pratensis*, *Vicia sepium* or *V. sativa* ssp. *nigra*. Where the soil is moist, as where this vegetation grows over roadside ditches, *Filipendula ulmaria* can be locally abundant.

Habitat

The *Rubus-Holcus* underscrub is a very typical community of abandoned and neglected ground in the British lowlands where it can be found on a wide variety of circumneutral and less oligotrophic soils. It is extremely common on derelict land, in run-down arable, pasture and meadow and over disused gardens, allotments and graveyards and here it can represent an early stage in successions to mixed deciduous or less calcifugous oak-birch woodlands. But many stands appear to be static and the community is very frequent as a component of stabilised zonations around wood margins and along hedgerows. It can also figure as a temporary or persistent vegetation type where woodland has been coppiced or cleared.

R. fruticosus agg. is a very ready and early invader of a wide range of soil types and can quickly establish itself as a dominant. The *Rubus-Holcus* underscrub includes the kind of vegetation where brambles, along with a variety of mesophytic herbs, become prominent on profiles which are less extreme in their base-status and moisture content. The community is best developed on fairly deep, moist, circumneutral brown earths, the vigorous growth of grasses such as *Holcus lanatus*, *Dactylis* and *Arrhenatherum* and dicotyledons like the *Cirsium* spp. and the umbellifers being a good indication of these edaphic conditions. Although the soils may be patchily wet, as where the *Rubus-Holcus* underscrub develops over unevenly-draining ground or spreads over ditches, uniform or prolonged waterlogging is not characteristic: in such situations, the community is generally replaced by immature kinds of *Alnus-Urtica* woodland, often dominated by osiers. Nonetheless, soil moisture may sometimes be too excessive here to allow the spread of *Pteridium*: the rarity of bracken is one good criterion for separating this community from the *Pteridium-Rubus* underscrub.

Towards the other extreme, the *Rubus-Holcus* under-

scrub does not extend far on to sharply-draining soils, whether these are base-rich or base-poor. On the former profiles, it is usually replaced by immature stands of calcicolous *Crataegus-Hedera* scrub, on the latter by *Ulex-Rubus* scrub, in both of which *R. fruticosus* agg. can be represented (though often not very vigorously) but where mesophytic associates are scarce. Typically, such soils as these are oligotrophic, whereas the profiles of the *Rubus-Holcus* underscrub are either naturally quite rich mulls or soils where disturbance or manuring have enhanced fertility: the prominence of such species as *Urtica* and *Galium aparine* in this vegetation is a good indication of this.

Circumneutral and mesotrophic soils of the kind likely to be invaded by the *Rubus-Holcus* underscrub are very widespread through the British lowlands, developing naturally from a diverse range of parent materials. Similar edaphic conditions are also found on a variety of man-made soils on road verges and restored land and the community will also develop on man-made raw soils as over demolished buildings and quarry waste with some admixture of fine material. In some of these situations, the community develops directly on open ground, either naturally exposed, as in landslips in soft cliffs (locally common around the south and much more extensive along the east coasts of England) or artificially cleared, as on derelict land and abandoned arable fields and gardens. Very often, though, the *Rubus-Holcus* underscrub grows up subsequent to the occupation of the ground by some kind of herbaceous vegetation, either an earlier stage in natural colonisation or grassland previously maintained as a plagioclimax by grazing or mowing. The differences between the two sub-communities can be largely understood in terms of a complex of factors related to these various modes of development and to the nature of the soils associated with each.

The *Cirsium* sub-community is characteristic of a wide variety of situations where brambles are fairly early invaders of more open ground, often with recent disturbance. It is very characteristic of waste-ground and tips of soil, but also develops on abandoned arable land and in coppice plots and cleared woodland where the soil has been greatly churned up. In such cases, the pre-existing vegetation, if there is any, or the associated flora invading with the bramble, is marked by a prominent weedy element (*Cirsium* spp.) and, since the ground conditions are very heterogenous, by a patchy development of species favouring locally wet conditions (*Epilobium hirsutum*, *Phalaris*, *Phragmites*) or picking out sites of enrichment, as around bonfires (*Urtica*, *Galium aparine*). Disturbance of more acidic soils, as in calcifugous woodlands or in heaths, allows plants like *Digitalis* and *Silene dioica* to flourish in some stands.

The *Arrhenatherum-Heracleum* sub-community, by contrast, is much more typical of situations where the *Rubus-Holcus* underscrub has developed within established grassland, either later in successional sequences or, more usually, where grazing and mowing have been abandoned in agricultural land, grassy open spaces or on verges. Natural decline in herbivore populations, as after myxomatosis, can also precipitate the development of this sub-community. In many of the places where this kind of *Rubus-Holcus* underscrub appears, the soils are more mature and of greater fertility, frequently because of the past addition of fertilisers. The characteristic associates of the bramble here are Arrhenatherion species typical of ungrazed and unmown swards on such profiles and, being often of bulky physiognomy or of climbing or scrambling habit, they can maintain themselves consistently among the bramble cover. Very often, too, this sub-community occurs in a stabilised form as a narrow fringe between woodlands, scrub or hedges to the one side and pasture, meadow, mown verge or arable land to the other.

Where the *Rubus-Holcus* underscrub develops in coppice plots or on the site of cleared woodland, some woodland herbs can persist as a shade-tolerant field layer beneath the developing bramble but such plants may also migrate in if the community occupies ground adjacent to established woodland for some considerable time. Although some species found in the open grassy areas can grow in the shade of the bramble (e.g. *Brachypodium sylvaticum*, *Poa trivialis*, *Ranunculus repens*), there is often a fairly sharp disjunction in extensive stands between the vegetation within and outside the *Rubus* cover. In much-compressed hedgebank sequences, where there is shade cast from above but light admitted from the side, much more intimate mixtures of woodland and grassland herbs occur in stands of the community.

Zonation and succession

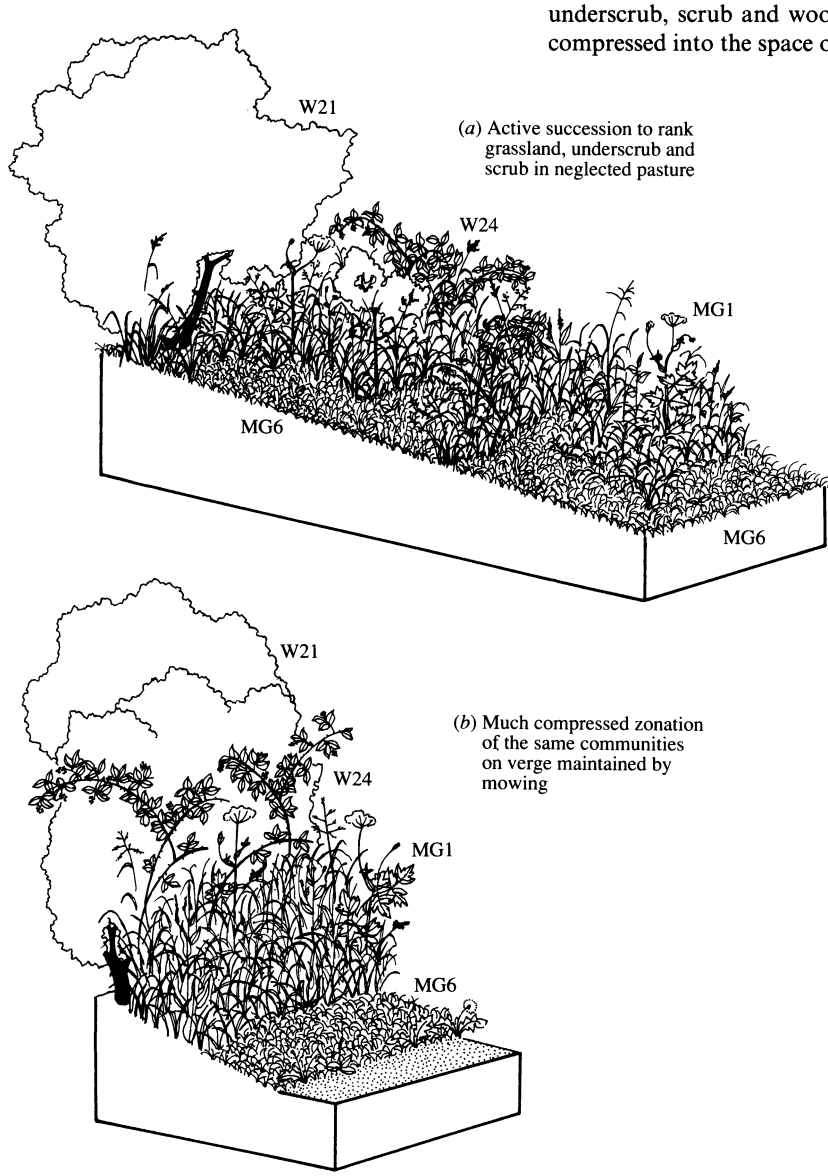
The *Rubus-Holcus* underscrub is found in mosaics and zonations with a wide variety of herbaceous communities but a relatively small number of scrubs and woodland types. Often, these patterns are a clear expression of seral sequences in various stages of active development but many are incomplete or, very commonly, stabilised, either by their coming to a natural halt or by being subject to some form of treatment along their margins.

In areas of more open ground, the community, usually represented by the *Cirsium* sub-community, typically occurs with weedy vegetation in which *Chenopodium* spp., *Artemisia vulgaris*, Rumices, *Epilobium angustifolium*, *Urtica dioica* or, along pathways, trampling-resistant plants like *Plantago major* and *Poa annua*, occur: mosaics of communities dominated by such species, with patchy *Rubus-Holcus* underscrub among them, are very characteristic of derelict land. Continuing disturbance (often including burning) and the shortage of seed-parents often limits colonisation by

shrubs and trees but zonations sometimes continue to *Crataegus-Hedera* scrub and even to woodland, usually some form of *Quercus-Pteridium-Rubus* woodland. Less frequently, the *Cirsium* sub-community can be found among various kinds of heath on disturbed commons, though here it usually marks out small enclaves of more enriched soils among stretches of *Ulex-Rubus* scrub.

The usual context for the *Arrhenatherum-Heracleum* sub-community is an agricultural landscape where this type of *Rubus-Holcus* underscrub generally forms a part of patterns involving pastures like the *Lolio-Cynosuretum*, grazed and mown grasslands like the *Centaureo-Cynosuretum* or periodically-cut swards like the *Arrhenatheretum*. Transitions through to scrub and woodland are more common here where neglect has been of long standing, and usually involve the *Crataegus-Hedera* or *Prunus-Rubus* scrubs and the *Quercus-Pteridium-Rubus* woodland or its beech analogue, the *Fagus-Rubus* woodland. On somewhat more base-rich brown earths, the *Fraxinus-Acer-Mercurialis* woodland may figure. The *Arrhenatherum-Heracleum* sub-community is also very widespread in zonations around wood margins and along hedgebanks, where sequences of these grassland, underscrub, scrub and woodland communities can be compressed into the space of a few metres (Figure 25).

Figure 25. Patterns of grassland, underscrub and scrub in neglected pasture and on managed verge.
W21 *Crataegus-Hedera* scrub
W24 *Rubus-Holcus* underscrub
MG1 *Arrhenatherum* grassland
MG6 *Lolium-Cynosurus* grassland



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In such situations and in more extensive stands where dense growth of the brambles may hinder invasion by shrubs or trees, the *Rubus-Holcus* underscrub can attain some degree of stability. Often, however, taller woody species invade with the *Rubus* and overtake it in a progression to scrub and woodland. In most cases, the *Quercus-Pteridium-Rubus* woodland appears to be the natural climax on the kinds of soils typical of the *Rubus-Holcus* underscrub or, more locally, the *Fagus-Rubus* woodland. In both of these communities, brambles play an important role in the field layer and, in younger stands of the *Quercus-Pteridium-Rubus* woodland, *Holcus lanatus* and various of the other mesophytic or weedy species important here, continue to be well represented. It is in this kind of woodland, too, that the *Rubus-Holcus* underscrub shows its most prominent resurgence after coppicing or clear-felling and dense stands of the community may hinder regrowth of stools or establishment of any new planted saplings.

Distribution

The community is ubiquitous on suitable soils throughout the British lowlands.

Affinities

This very common vegetation type has frequently been referred to in the British literature, though usually included within ill-defined scrub communities or marginal vegetation (e.g. Salisbury 1916, 1918*a*, Tansley 1939). Similar vegetation in mainland Europe has generally been placed in the Rubion subatlanticum alliance in the Prunetalia (e.g. Doing 1962, Westhoff & den Held 1969, Ellenberg 1978).

Floristic table W24

	a	b	24
Fraxinus excelsior sapling	I (4)	I (7)	I (4–7)
Acer pseudoplatanus sapling	I (3–4)	I (1)	I (1–4)
Fagus sylvatica sapling	I (1–5)	I (5)	I (1–5)
Crataegus monogyna	II (1–5)	I (5)	II (1–5)
Sambucus nigra	I (1–4)		I (1–4)
Quercus robur sapling	I (2–3)		I (2–3)
Prunus spinosa	I (1–3)		I (1–3)
Corylus avellana	I (4)		I (4)
Betula pubescens sapling	I (5)		I (5)
Rubus fruticosus agg.	V (1–8)	IV (2–6)	V (1–8)
Holcus lanatus	IV (2–8)	III (3–4)	IV (2–8)
Cirsium arvense	III (1–4)	I (1–4)	II (1–4)
Agrostis stolonifera	III (1–8)	I (3–4)	II (1–8)
Cirsium vulgare	III (1–4)	I (1)	II (1–4)
Epilobium angustifolium	II (2–8)	I (1)	II (1–8)
Glechoma hederacea	II (2–4)	I (1–2)	II (1–4)
Ranunculus repens	II (1–4)	I (3)	I (1–4)
Prunella vulgaris	II (1–5)	I (1)	I (1–5)
Silene dioica	II (2–5)	I (3–4)	I (2–5)
Digitalis purpurea	II (3–6)	I (1)	I (1–6)
Brachythecium rutabulum	II (3–4)	I (1)	I (1–4)
Fragaria vesca	II (2–5)		I (2–5)
Epilobium hirsutum	II (3–5)		I (3–5)
Solanum dulcamara	II (1–4)		I (1–4)
Ulex europaeus	II (2–5)		I (2–5)
Senecio jacobaea	I (1–3)		I (1–3)
Phalaris arundinacea	I (3–4)		I (3–4)
Phragmites australis	I (4–6)		I (4–6)
Cirsium palustre	I (1–3)		I (1–3)
Cerastium fontanum	I (2–3)		I (2–3)

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Floristic table W24 *(cont.)*

	a	b	24
Dactylis glomerata	III (1–7)	V (1–4)	III (1–7)
Urtica dioica	III (2–9)	IV (1–4)	III (1–9)
Galium aparine	II (2–6)	IV (1–4)	III (1–6)
Arrhenatherum elatius	II (1–5)	IV (2–7)	III (1–7)
Heracleum sphondylium	II (1–6)	IV (1–6)	III (1–6)
Taraxacum officinale agg.	I (1–4)	IV (1–4)	II (1–4)
Festuca rubra		IV (1–7)	II (1–7)
Anthriscus sylvestris	I (3)	III (2–5)	II (2–5)
Achillea millefolium	I (1)	III (1–3)	II (1–3)
Chaerophyllum temulentum		III (2–5)	II (2–5)
Cruciata laevipes		III (1–4)	II (1–4)
Poa pratensis	I (4)	II (1–7)	I (1–7)
Elymus repens	I (3)	II (2–3)	I (2–3)
Potentilla sterilis	I (4)	II (1–4)	I (1–4)
Dryopteris filix-mas	I (1)	II (1–3)	I (1–3)
Vicia sepium		II (2)	I (2)
Vicia sativa nigra		II (1–4)	I (1–4)
Lathyrus pratensis		II (2–6)	I (2–6)
Filipendula ulmaria		II (2–5)	I (2–5)
Stellaria holostea		II (4–7)	I (4–7)
Lapsana communis		II (1–2)	I (1–2)
Ranunculus ficaria		I (5–6)	I (5–6)
Alliaria petiolata		I (1–4)	I (1–4)
Hedera helix	II (2–3)	II (1–4)	II (1–4)
Poa trivialis	II (2–6)	II (1–6)	II (1–6)
Brachypodium sylvaticum	II (3–7)	II (1–7)	II (1–7)
Eurhynchium praelongum	II (2–3)	II (1–4)	II (1–4)
Geranium robertianum	II (1–2)	II (1–3)	II (1–3)
Geum urbanum	II (1–3)	II (1–4)	II (1–4)
Mercurialis perennis	II (2–3)	II (2–4)	II (2–4)
Veronica chamaedrys	I (3–4)	I (2–3)	I (2–4)
Ranunculus acris	I (1–4)	I (1–2)	I (1–4)
Viola riviniana	I (1–3)	I (4)	I (1–4)
Equisetum arvense	I (1–2)	I (2)	I (1–2)
Hypochoeris radicata	I (1–4)	I (1)	I (1–4)
Anthoxanthum odoratum	I (4)	I (3)	I (3–4)
Lolium perenne	I (1–4)	I (3)	I (1–4)
Rosa canina agg.	I (2–4)	I (2)	I (2–4)
Bromus sterilis	I (4–7)	I (2)	I (2–7)
Stachys sylvatica	I (2–3)	I (3)	I (2–3)
Deschampsia cespitosa	I (2–5)	I (3)	I (2–5)
Agrostis capillaris	I (1–4)	I (4)	I (1–4)
Trisetum flavescens	I (4)	I (1–3)	I (1–4)
Centaurea nigra	I (1–2)	I (4)	I (1–4)
Trifolium repens	I (3–4)	I (2)	I (2–4)
Arum maculatum	I (4)	I (4)	I (4)

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Solidago virgaurea	I (3)	I (5)	I (3–5)
Pseudoscleropodium purum	I (4)	I (1)	I (1–4)
Epilobium montanum	I (1–3)	I (1)	I (1–3)
Hypnum cupressiforme	I (5)	I (1)	I (1–5)
Rumex sanguineus	I (4)	I (1)	I (1–4)
Crataegus monogyna seedling	I (1)	I (2)	I (1–2)
Lotus corniculatus	I (4)	I (1)	I (1–4)
Number of samples	28	11	39
Number of species/sample	17 (8–39)	22 (16–33)	18 (8–39)
Shrub height (m)	4 (1–9)	3 (1–9)	4 (1–9)
Shrub cover (%)	29 (0–50)	40 (0–60)	35 (0–60)
Herb height (cm)	62 (10–150)	45 (15–150)	57 (10–150)
Herb cover (%)	86 (20–100)	88 (50–100)	87 (20–100)
Ground height (mm)	16 (10–50)	15 (10–20)	16 (10–50)
Ground cover (%)	8 (0–50)	4 (0–25)	7 (0–50)
Altitude (m)	83 (10–140)	124 (5–250)	98 (5–250)
Slope (°)	6 (0–60)	21 (0–70)	11 (0–70)

a *Cirsium arvense-Cirsium vulgare* sub-community

b *Arrhenatherum elatius-Heracleum sphondylium* sub-community

24 *Rubus fruticosus-Holcus lanatus* underscrub (total)

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