MG11
Festuca rubra-Agrostis stolonifera-Potentilla anserina grassland

Synonymy
Potentilla anserina nodum Adam 1976; *Lolio-Agrostetum stoloniferae* Page 1980.

Constant species
Agrostis stolonifera, *Festuca rubra*, *Potentilla anserina*.

Physiognomy
The *Festuca rubra-Agrostis stolonifera-Potentilla anserina* community is a somewhat variable vegetation type including generally species-poor, open and closed swards in which *A. stolonifera* with *F. rubra* and/or *P. anserina* are usually the most abundant species. No other grass is frequent throughout, although *Poa pratensis* (and *P. subcaerulea* in the north), *Holcus lanatus* and *Elymus repens* occur occasionally and each can be abundant. *Carex distans*, *Juncus articulatus* and *J. gerardi* are infrequent but sometimes conspicuous in particular stands.

The cover of *P. anserina* is very variable and on occasion it may dominate. Other dicotyledons are usually few and only *Trifolium repens* occurs frequently. *Stellaria media*, *Cirsium arvense*, *Rumex crispus*, *Plantago lanceolata*, *Cerastium fontanum* and *Ranunculus acris* are occasional in generally smaller amounts.

Bryophytes are usually very sparse.

Sub-communities

***Lolium perenne* sub-community:** *Lolio-Cynosuretum lotetosum uliginosi* Sissingh & Tideman 1960 *p.p.*; *Potentilla anserina* nodum Adam 1976 *p.p.*; *Lolio-Agrostetum stoloniferae* Page 1980; *Potentilla anserina-Poa trivialis* community Birse 1980. In the generally closed swards of this sub-community, *L. perenne* is often co-dominant with *A. stolonifera* with varying amounts of *F. rubra* and *P. anserina*. Other grasses are rather more prominent here than in the other sub-communities with *H. lanatus*, *Festuca pratensis*, *Dactylis glomerata*, *Agrostis capillaris* and *Phleum pratense* ssp. *pratense* preferential and often producing large amounts of succulent herbage. *Trifolium repens*, *Ranunculus repens*, *Taraxacum officinale* agg., *Cerastium fontanum* and *Cirsium arvense* are the most frequent dicotyledons and *Rumex obtusifolius* partially replaces *R. crispus*, being especially conspicuous on poached areas. In salt-marsh stands, there are occasional records for *Juncus gerardi*, *Triglochin maritima*, *Carex distans*, *Glaux maritima*, *Atriplex prostrata*, *Matricaria maritima* and *Oenanthe lachenalii*. *Stellaria media* and *Urtica dioica* sometimes become prominent in patches, the latter being especially conspicuous in small dense stands up to 50 cm tall. Bryophytes are somewhat more frequent in this sub-community and, especially on bare damp areas in winter, *Eurhynchium praelongum* may be abundant.

***Atriplex prostrata* sub-community:** *Stellaria media* salt-marsh McVean 1961; *Potentilla anserina* nodum Adam 1976 *p.p.* Here, *A. stolonifera* and *P. anserina* are generally co-dominant with usually smaller amounts of *F. rubra*. Apart from *Elymus repens* and *Poa pratensis*, both of which can be abundant, other grasses, including *L. perenne*, are rare. *Trifolium repens*, *Cirsium arvense* and *Rumex crispus* remain quite frequent and *Stellaria media* is often conspicuous in dense low patches. The most distinctive feature of this sub-community is the preferential occurrence of a group of species of disturbed and saline habitats: *Atriplex prostrata*, *Matricaria maritima*, *Polygonum aviculare* and, less frequently and abundantly, *Oenanthe lachenalii* and *Silene vulgaris* ssp. *maritima*. Bryophytes are generally absent.

***Honkenya peploides* sub-community:** Transitional Agropyrion pungentis Nodum Hilliam 1977. In this sub-community, *F. rubra* and *P. anserina* tend to co-dominate with, less frequently, a little *A. stolonifera*. *Trifolium repens*, *Plantago lanceolata* and *Cerastium fontanum* remain frequent and, among the dicotyledons present throughout the community, *Lotus corniculatus*,

Ranunculus acris and *Rumex acetosa* are preferential. Good differentials here are species of disturbed and sandy or shingly places such as *Honkenya peploides*, *Carex arenaria* and *Sagina procumbens* and, less frequently though sometimes prominently, *Elymus farctus*, *Ammophila arenaria* and the distinctive coastal form of *Silene dioica* characterised by some as ssp. *zetlandica* (Clapham *et al.* 1962).

Habitat

The *Festuca-Agrostis-Potentilla* community is characteristic of a wide variety of moist but free-draining circumneutral soils which are, in many cases, frequently inundated with fresh or brackish surface water. It is a lowland vegetation type, especially frequent near sea-level, and it occurs as extensive stands in the flood-plains of major rivers and on the upper salt-marsh where it is frequently used as pasture. More fragmentary stands occur on strandlines, alongside drainage ditches, in damp woodland rides and on road verges.

Species-poor swards dominated by various mixtures of *A. stolonifera*, *F. rubra* and *P. anserina* are probably the natural vegetation of light-textured brown earths and alluvial soils which experience fairly frequent superficial wetting and drying but which are sufficiently stable to allow the formation of a more or less intact turf. Without improvement, such vegetation has relatively few mesotrophic grassland species at high frequency although high soil moisture levels can result in a luxuriant herbage and even the poorer stands may provide a valuable supplement to grazing land. Cattle and sheep are often pastured on this community but care is needed to avoid poaching when the soil is wet, especially with the former.

The *Lolium* sub-community includes stands inundated by fresh or brackish water which have been improved by artificial fertilisers (often those rich in nitrogen) and sometimes by ploughing and re-seeding for intensive use as pasture. *L. perenne* is able to survive some exposure to salt-spray and occasional inundation by sea-water and has been recommended for the re-seeding of land flooded by sea-surges (Chippindale 1954). The *Atriplex* sub-community is also often grazed but it is exclusively a salt-marsh vegetation type, especially characteristic of muddy drift-lines and disturbed areas in the upper marsh. In both these sub-communities, local disturbance and eutrophication by stock can produce a patchy abundance of nitrophilous species such as *Urtica dioica* (especially in the *Lolium* sub-community) and *Stellaria media* (especially in the *Atriplex* sub-community which frequently provides a high-tide refuge for grazing animals).

The *Honkenya* sub-community seems to replace the *Atriplex* sub-community on sand and shingle drift-lines where there is sufficient fresh-water seepage and freedom from disturbance to allow the patchy development of a grassy sward.

Zonation and succession

Zonations involving the community most frequently reflect patterns of soil moisture and, on salt-marshes, the frequency of inundation of salt-laden water. Inland stands of the *Lolium* sub-community are frequently rather uniform but, where this vegetation occurs patchily in less well-managed grasslands, it grades, on drier ground, to some form of pasture, such as the *Lolio-Cynosuretum* or the *Lolium-Alopecurus-Festuca* community, and, around open water, to the *Agrostis stolonifera-Alopecurus geniculatus* grassland or to more open inundation communities.

Salt-marsh stands of the *Lolium* sub-community and the *Atriplex* sub-community often pass down-marsh to some form of the *Juncus maritimus* community or *Juncetum gerardi* (such as the *Leontodon* sub-community or its derivatives). Secondary successions to the latter can sometimes be seen in turf-cuttings in the upper marsh which may be quickly colonised by *P. anserina* and have temporary stands of the *Festuca-Agrostis-Potentilla* community. Up-marsh, zonations are frequently terminated artificially by a sea-wall or bank but the community sometimes grades to a less frequently inundated form of pasture, free of halophytes. Similarly, the *Honkenya* sub-community may form a transition zone between more unstable and halophytic strandline or shingle vegetation and essentially inland grassland.

Festuca arundinacea is a sometimes conspicuous occasional in the *Festuca-Agrostis-Potentilla* community and probably increases its cover with a relaxation of grazing. Zonations between this community and the *Potentillo-Festucetum arundinaceae* may therefore be a reflection of successions between these two vegetation types mediated by changes in pasturing intensity.

Distribution

The *Lolium* sub-community has been recorded mainly from lowland river valleys in the Midlands and south-west and, with the *Atriplex* sub-community, from salt-marsh sites on the west coast. The *Honkenya* sub-community has been encountered only in Shetland and along the west coast of Scotland with a single sample from Gwynedd in north Wales.

Affinities

The *Festuca-Agrostis-Potentilla* community is a somewhat diffuse vegetation type with diverse affinities. It is generally distinct from the bulk of mesotrophic grasslands in the poor representation of either Arrhenatherion or Cynosurion species, although the improved *Lolium* sub-community provides a floristic link with some richer pasture types. It shares certain features (the

abundance of *A. stolonifera* and the occurrence of Rumices, for example) with some more open communities of silts and sands more frequently inundated by fresh-water. Traditionally these have been placed in the Elymo-Rumicion crispi, a rather diverse and somewhat contentious alliance (e.g. Westhoff & den Held 1969). The halophytic sub-communities of *Atriplex* and *Honkenya* show a similar relationship to vegetation types of silts, sands and shingle moistened by brackish water or receiving very occasional inundation by tides and generally allocated to the Elymion pycnanthi (e.g. Adam 1976, Hilliam 1977).

Floristic table MG11

	a	b	c	11
Agrostis stolonifera	V (1–8)	IV (2–7)	III (1–6)	IV (1–8)
Potentilla anserina	III (2–8)	V (7–10)	V (1–7)	IV (1–10)
Festuca rubra	III (4–7)	IV (3–7)	V (1–6)	IV (1–7)
Lolium perenne	V (1–9)	I (3)	I (3)	III (1–9)
Holcus lanatus	III (2–9)	I (3–5)	II (1–6)	II (1–9)
Ranunculus repens	II (2–5)	I (4)		I (2–5)
Taraxacum officinale agg.	II (1–4)		I (4)	I (1–4)
Dactylis glomerata	II (3–9)			I (3–9)
Festuca pratensis	II (1–8)			I (1–8)
Rumex obtusifolius	II (1–6)			I (1–6)
Potentilla reptans	I (1–4)			I (1–4)
Phleum pratense pratense	I (3–4)			I (3–4)
Atriplex prostrata	I (2–3)	III (2–6)		II (2–6)
Matricaria maritima	I (1–2)	II (3–6)		I (1–6)
Polygonum aviculare	I (3–4)	II (2–6)		I (2–6)
Oenanthe lachenalii	I (2–3)	II (1–3)		I (1–3)
Silene vulgaris maritima		I (1–6)		I (1–6)
Cochlearia anglica		I (2–3)		I (2–3)
Halimione portulacoides		I (1)		I (1)
Honkenya peploides			III (2–7)	II (2–7)
Carex arenaria			II (2–7)	I (2–7)
Sagina procumbens			II (1–3)	I (1–3)
Silene dioica			II (1–6)	I (1–6)
Elymus farctus			II (4–8)	I (4–8)
Ammophila arenaria			I (1–4)	I (1–4)
Sonchus asper			I (3)	I (3)
Senecio aquaticus			I (1)	I (1)
Trifolium repens	III (2–8)	III (2–6)	III (1–3)	III (1–8)
Stellaria media	II (1–6)	III (2–5)	I (1–3)	II (1–6)
Poa pratensis	I (2–8)	II (2–7)	I (1–3)	II (1–8)
Cirsium arvense	II (1–5)	II (2–6)	I (1–3)	II (1–6)
Rumex crispus	I (1–4)	II (1–5)	I (2)	II (1–5)
Plantago lanceolata	II (1–5)	I (1)	III (1–6)	II (1–6)
Cerastium fontanum	III (1–4)	I (2–3)	III (1–3)	II (1–4)
Elymus repens	I (3–4)	III (2–6)	II (3)	II (2–6)
Ranunculus acris	I (1–3)	I (2–3)	III (1–3)	II (1–3)
Rumex acetosa	I (2–4)	I (2–4)	II (1–3)	I (1–4)
Lotus corniculatus	I (3–4)	I (2)	II (1–4)	I (1–4)

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Agrostis capillaris	II (3–7)		II (3)	I (3–7)
Plantago maritima	I (2–3)	II (2–3)	II (1–3)	I (1–3)
Cirsium vulgare	I (1–2)	I (1)	I (1–2)	I (1–2)
Galium aparine	I (2–3)	I (2–4)	I (1–3)	I (1–4)
Cochlearia officinalis	I (2)	I (2)	I (1–3)	I (1–3)
Bellis perennis	I (1–4)	I (3)	I (1–3)	I (1–4)
Hypochoeris radicata	I (2)	I (3)	I (1)	I (1–3)
Alopecurus geniculatus	I (3)	I (2)	I (1)	I (1–3)
Poa annua	I (2–3)	I (3)	I (3)	I (2–3)
Juncus articulatus	I (5)	I (4)	I (1)	I (1–5)
Leontodon autumnalis	I (3–4)	I (2–3)	I (1)	I (1–4)
Brachythecium rutabulum	I (2–4)		I (1)	I (1–4)
Festuca arundinacea	I (2–4)	I (2–5)		I (2–5)
Juncus gerardi	I (3–5)	I (2–5)		I (2–5)
Urtica dioica	I (2–6)	I (2–3)		I (2–6)
Triglochin maritima	I (2–3)	I (2–5)		I (2–5)
Carex distans	I (2–3)	I (1–6)		I (1–6)
Poa trivialis	I (1–7)	I (2–6)		I (1–7)
Plantago major	I (1–3)	I (3)		I (1–3)
Parapholis strigosa	I (2–3)	I (2)		I (2–3)
Arrhenatherum elatius	I (4)	I (3–4)		I (3–4)
Glaux maritima	I (2–4)	I (4)		I (2–4)
Chamomilla suaveolens	I (2)	I (3)		I (2–3)
Bromus hordeaceus hordeaceus	I (3–4)	I (5)		I (3–5)
Odontites verna	I (2–3)	I (3)		I (2–3)
Juncus bufonius	I (3)	I (4)		I (3–4)
Number of samples	50	27	17	94
Number of species/sample	11 (4–25)	10 (5–14)	13 (7–29)	11 (4–29)

a *Lolium perenne* sub-community
b *Atriplex prostrata* sub-community
c *Honkenya peploides* sub-community
11 *Festuca rubra-Agrostis stolonifera-Potentilla anserina* grassland (total)

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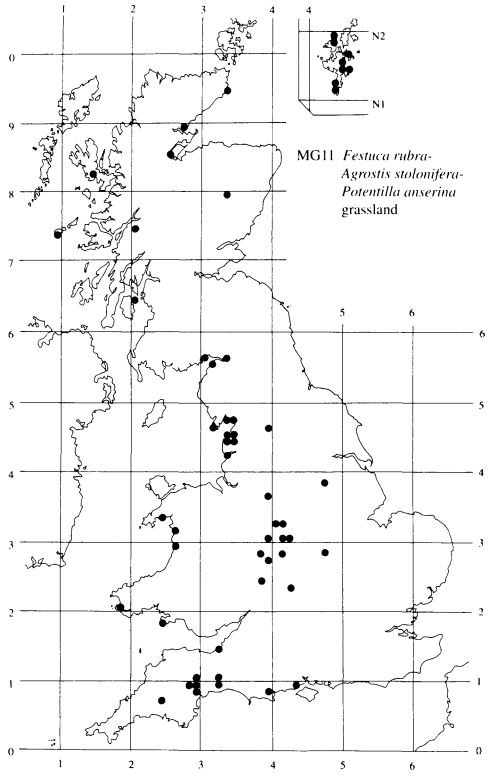

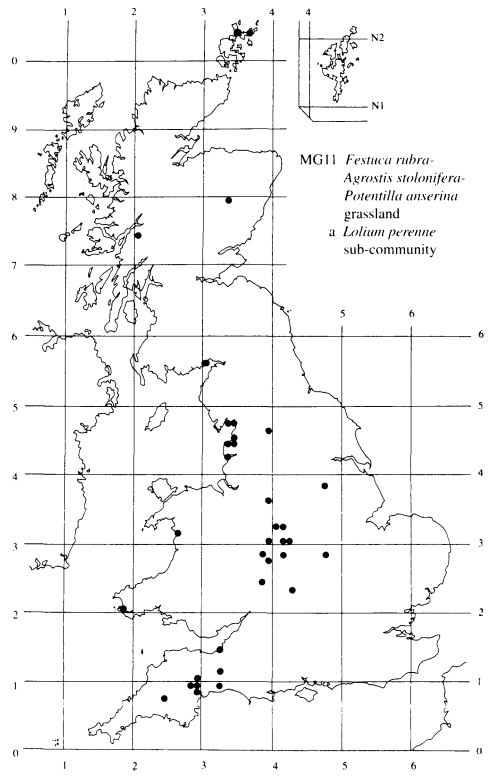

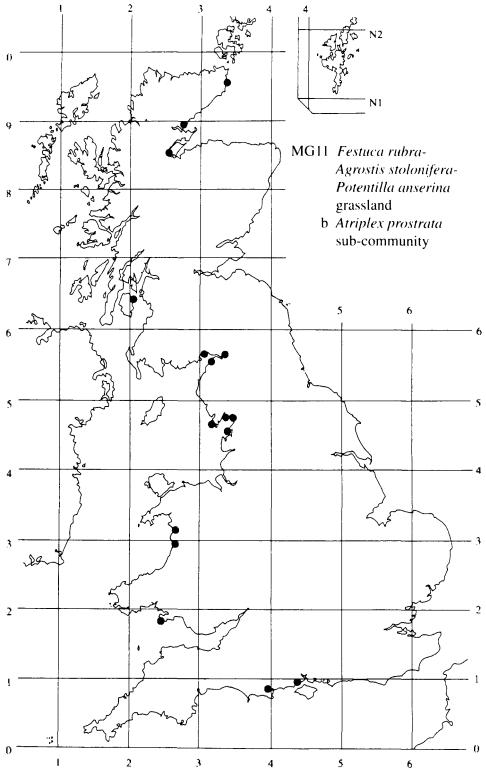

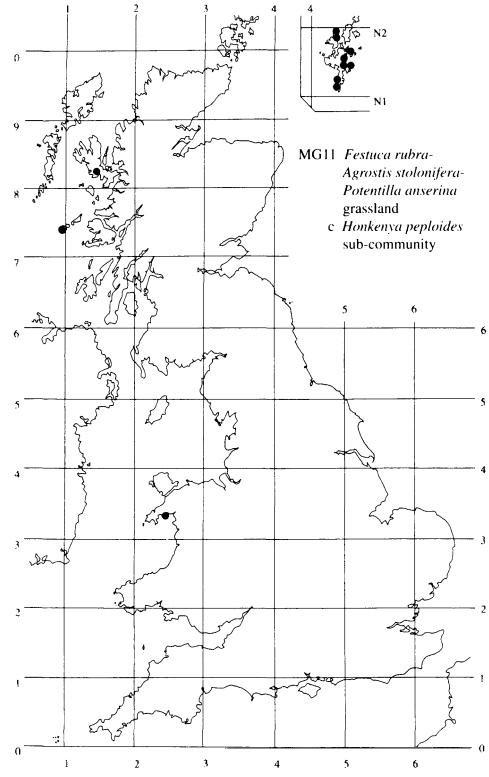

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