M3
Eriophorum angustifolium bog pool community

Synonymy
Eriophoretum angustifolii Lewis 1904, Lewis & Moss 1911, Watson 1932, Tansley 1939, all *p.p.*; *Eriophorum angustifolium* Gesellschaften Dierssen 1982.

Constant species
Eriophorum angustifolium.

Physiognomy
Eriophorum angustifolium is a frequent and locally abundant plant in both kinds of *Sphagnum*-dominated bog pool community in Britain but here it is a consistent dominant in swards where other vascular species and Sphagna play a relatively minor role. The shoot density of the cotton-grass is very variable and can change through time as clumps spread and die from behind; and the sward height may be very short or up to half a metre or more, though usually the shoots reach about 30 cm. No other vascular plants attain anything more than very occasional frequency, though a variety of Oxycocco-Sphagnetea species occur sporadically and sometimes with local prominence: there can be scattered small tussocks of *Eriophorum vaginatum* or *Molinia caerulea* or sparse individuals of *Drosera rotundifolia*, *Erica tetralix* or *Empetrum nigrum* ssp. *nigrum*.

Bryophyte cover is likewise very variable and no species is constant but *Drepanocladus fluitans* is quite frequent and characteristic of this kind of vegetation, often growing submerged in flooded stands. There may also be some sparse shoots or small tufts of Sphagna, usually *S. cuspidatum*, but sometimes *S. recurvum* or *S. papillosum*, scattered *Polytrichum commune*, *Odontoschisma sphagni* or *Gymnocolea inflata* or, on drier patches, *Campylopus brevipilus*.

Habitat
The *Eriophorum angustifolium* community is typically found as small stands on barer exposures of acid raw peat soils in depressions, erosion channels or shallow peat cuttings on a wide range of mire types.

E. angustifolium is an important coloniser of bare peat, and, freed from the shading effect that its young shoots experience in thick *Sphagnum* carpets or among the vigorous growth of other vascular plants on mire flats and hummocks, is able to expand rapidly by vegetative growth of its rhizome system and become dominant on natural or artificial exposures (Phillips 1954). It shows a fair range of tolerance of soil moisture conditions and can dominate here in permanent shallow pools or in dried-up bottoms or in situations where there is some seasonal variation in water-level (e.g. Pearsall 1938, Phillips 1954): lowland stands in particular often show marked formation of ochre or iron concretions, suggestive of periods of surface oxidation. *E. angustifolium* is also tolerant of quite a wide range of pH, and the community can occur among poor-fen complexes, though the available stands are from uniformly acid substrates.

Suitable habitats for the development of the community can arise in various ways. It can sometimes be found in natural hollows on the surfaces of more or less intact mires but it is more common among erosion features like those found so extensively on the surface and margins of Pennine blanket mires where the peat has been worn down in gullies or redistributed (e.g. Bower 1961, Tallis 1985*b*). On lowland mires, it is often, though not invariably, associated with abandoned shallow peat-workings (e.g. Rose 1953).

Zonation and succession
The *Eriophorum angustifolium* community characteristically forms a minor component in the mosaics of vegetation on intact or modified surfaces of Erico-Sphagnion mires or Ericion tetralicis wet heaths. It may represent a seral stage in the redevelopment of active mire vegetation following disruption.

Exceptionally, the community can replace the *Sphagnum*-dominated bog pools in the wetter hollows of patterned Erico-Sphagnion mires, grading, with an increase in the *Sphagnum* carpet and an appearance of

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vascular associates, to flat and hummock vegetation. Much more commonly, it forms well-delineated stands on expanses of bare peat which may or may not be flooded, passing to unvegetated ground or open water or, rather sharply, to the mire or wet heath context around. Where it occurs on eroded blanket mire, for example, it occupies part or all of stretches of the flatter gullies between the haggs, giving way to the bare hagg sides or degraded vegetation of eroded peat surfaces. In shallow peat cuttings, the stands often conform to the sharp geometric shapes of the excavations, passing abruptly to the unaltered mire vegetation on the uncut surface around or to its degraded derivatives on drained and much-modified deposits.

The occurrence of scattered patches of *Sphagnum papillosum* and tussocks of *Eriophorum vaginatum* in some stands suggests that the *Eriophorum angustifolium* community may sometimes be a precursor to renewed establishment of Erico-Sphagnion mire but such successions have not been followed.

Distribution

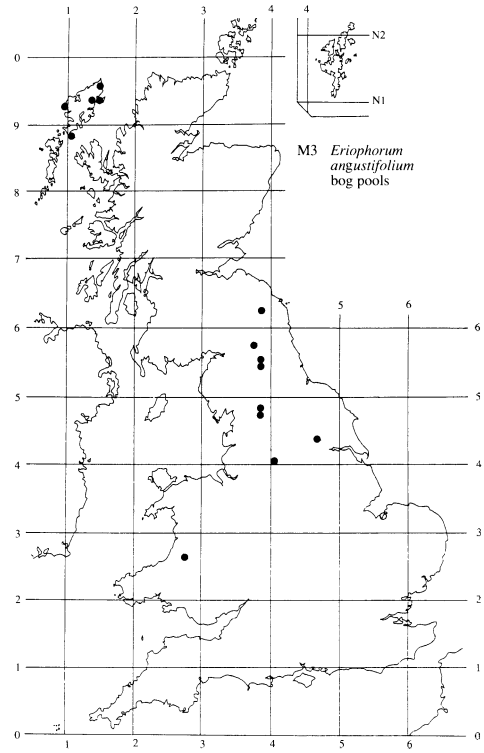
The community is particularly associated with eroded blanket mire in the north-west of Britain, being a common feature in tracts of the *Calluna-Eriophorum* and *Eriophorum* mires, less so of the *Scirpus-Eriophorum* mire. It is also widespread but local in lowland Erico-Sphagnion mires and Ericion wet heaths.

Affinities

Early descriptive accounts of an *Eriophoretum angustifolii* (Lewis 1904*a*,*b*, Lewis & Moss 1911, Watson 1932, Tansley 1939) were more broadly defined than the community characterised here, taking in vegetation of intact mire surfaces in which *E. angustifolium* continued to figure as a prominent component. In this scheme, the community is essentially a type of Rhynchosporion vegetation, closely related to *Sphagnum*-dominated bog pools. Similar communities have been described from Germany (Oberdorfer 1977), The Netherlands (Westhoff & den Held 1969), Norway and Iceland (Dierssen 1982).

Floristic table M3

Eriophorum angustifolium	V (3–9)
Drepanocladus fluitans	III (2–6)
Sphagnum cuspidatum	II (1–6)
Sphagnum papillosum	I (2–5)
Polytrichum commune	I (3–4)
Campylopus brevipilus	I (3–5)
Eriophorum vaginatum	I (5)
Erica tetralix	I (4)
Drosera rotundifolia	I (3)
Sphagnum recurvum	I (4)
Odontoschisma sphagni	I (2)
Gymnocolea inflata	I (2)
Molinia caerulea	I (4)
Empetrum nigrum nigrum	I (1)
Agrostis canina canina	I (3)
Number of samples	14
Number of species/sample	4 (1–10)
Herb height (cm)	27 (10–75)
Herb cover (%)	74 (10–100)
Bryophyte cover (%)	14 (1–35)
Altitude (m)	324 (5–770)
Soil pH	3.5 (3.3–4.5)



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