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## SM15

# *Juncus maritimus*–*Triglochin maritima* salt-marsh community

### Synonymy

*Juncetum maritimi* auct. angl. p.p.; *Triglochin-Juncus maritimus* nodum Adam 1976.

### Constant species

*Juncus maritimus*, *Plantago maritima*, *Triglochin maritima*.

### Physiognomy

Tall tussocks of *Juncus maritimus* are always overwhelmingly dominant in this association and the associates are rather variable. However, *Triglochin maritima* and *Plantago maritima* are constant in usually small amounts in the understorey and various Puccinellion species, such as *Puccinellia maritima*, rayed *Aster tripolium*, *Armeria maritima* and *Glaux maritima*, occur frequently throughout. The association differs from the *Juncus maritimus* salt-marsh in the relative infrequency of *Agrostis stolonifera*, *Festuca rubra* and *Juncus gerardi*. Commonly the bases of the *J. maritimus* shoots support a variety of epiphytic algae, notably *Bostrychia scorpioides* and *Catenella repens*, and there may be an extensive algal mat, locally rich in dwarf free-living fucoids, on the substrate surface. Stands are often based upon discrete and sometimes large clones of *J. maritimus* but may also form a distinct zone within the marsh.

### Sub-communities

Adam (1977) suggested that there are three centres of variation within the association around which sub-communities might be erected: stands which are very species-poor, sometimes pure *J. maritimus* in vigorous, tall and dense patches; stands in which *Halimione portulacoides* and *Limonium* cf. *vulgare* are conspicuous and fairly rich stands lacking these two species.

### Habitat

*J. maritimus* is tolerant of a wide range of salinities and soil moisture conditions (Ranwell *et al.* 1964, Gillham

1957b) and the association occurs at all levels on salt-marshes and on a variety of substrates. Soil pH is generally around 7.0 but loss-on-ignition varies from 3% to more than 40%.

The most species-poor stands are found on the low marsh, usually on soft anaerobic mud (Gillham 1957a, Chater 1973, Adam 1976, 1977, Proctor 1980), though sometimes, as in Scottish sites, on shallow peaty soils over shingle (Gillham 1957b, Adam *et al.* 1977). The lowest stand for which accurate data are available experiences 220 submergences/year but many stands seem to occur at lower levels. Richer stands lacking *H. portulacoides* and *Limonium* cf. *vulgare* also occur at low levels, on western salt-marshes frequently along the foot of small erosion cliffs where there is perhaps water-seepage. Stands with these two species are found as a narrow zone in the upper parts of salt-marshes in south-east England (the *Juncetum maritimi* Chapman 1934).

The association occurs on both grazed and ungrazed salt-marshes but, even where there is grazing, stands tend to be avoided by stock.

### Zonation and succession

There is a marked difference in the relative position of the association on salt-marshes in south-east England and those elsewhere but lack of submersion data makes it difficult to assess these variations in terms of absolute relationships to tidal levels. On the west and Channel coasts, the association generally occurs at relatively low levels in association with the *Spartinetum townsendii* or more usually within or at the upper limit of the *Puccinellietum maritimae*. In the south-east, a narrow belt of the association occurs normally between the *Puccinellietum maritimae*, *Limonium*–*Armeria* sub-community, and the *Atriplici-Elymetum pycnanthi* or the tall *Festuca rubra* sub-community of the *Juncetum gerardi*. The association grades smoothly into the *Puccinellietum* which effectively constitutes the understorey of the *Juncus*–*Triglochin* vegetation. On those few ungrazed western marshes where the *Puccinellietum maritimae*,

*Limonium*-*Armeria* sub-community occurs, the association occupies the position typical of south-east salt-marshes.

In at least one site, *Juncus maritimus* has been seen as a coloniser with *Spartina anglica*.

### Distribution

The association is the most widespread community dominated by *J. maritimus* in Great Britain. It is common on the west coast and is the major *J. maritimus* community in south-east England. One of the most extensive stands in the country is at Cefni Marsh, Anglesey where the association forms mosaics with *Scirpetum maritimi* over much of the marsh (Packham & Liddle 1970).

### Affinities

The association can be seen as the northern extremity of a continuum of vegetation types in which *J. maritimus*, *Triglochin maritima*, *Limonium vulgare* and *Aster tripolium* are important components and which reaches down to the Mediterranean in the *Juncus maritimi*-*Triglochin maritima* Br.-Bl. 1931 (Braun-Blanquet & de Ramm 1957, Adam 1977). Such a range of vegetation types could be accommodated within the Puccinellion of the Asteretea which would also allow some weight to be given to the interesting low-level occurrences of *J. maritimus* vegetation.

### Floristic table SM15

<i>Juncus maritimus</i>	V (5–10)
<i>Triglochin maritima</i>	IV (2–6)
<i>Plantago maritima</i>	IV (2–8)
<i>Aster tripolium</i> (rayed)	III (2–4)
<i>Puccinellia maritima</i>	III (2–7)
<i>Armeria maritima</i>	III (2–5)
<i>Glaux maritima</i>	III (2–5)
Algal mat	III (2–8)
<i>Limonium</i> cf. <i>L. vulgare</i>	II (1–6)
<i>Cochlearia anglica</i>	II (1–4)
<i>Juncus gerardii</i>	II (3–7)
<i>Halimione portulacoides</i>	II (1–6)
<i>Festuca rubra</i>	II (2–8)
<i>Agrostis stolonifera</i>	II (2–6)
<i>Aster tripolium</i>	I (1–5)
<i>Cochlearia officinalis</i>	I (2–3)
<i>Salicornia</i> agg.	I (2–5)
<i>Suaeda maritima</i>	I (2–3)
<i>Spartina anglica</i>	I (1–5)
<i>Spergularia media</i>	I (2–4)
Turf fucoids	I (3–6)
<i>Phragmites australis</i>	I (2–6)
<i>Carex extensa</i>	I (1–3)
<i>Atriplex prostrata</i>	I (1–3)
<i>Limonium humile</i>	I (1–3)
<i>Oenanthe lachenalii</i>	I (3–4)
<i>Artemisia maritima</i>	I (1–4)
Number of samples	63
Mean number of species/sample	10 (2–14)
Mean vegetation height (cm)	57 (25–100)
Mean total cover (%)	76 (70–100)

