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## A21

### *Ranunculus baudotii* community

### *Ranunculetum baudotii* Br.-Bl. 1952

#### Constant species

*Ranunculus baudotii*.

#### Rare species

*Ranunculus baudotii*.

#### Physiognomy

The *Ranunculetum baudotii* comprises stands of vegetation dominated by open or closed covers of *Ranunculus baudotii*. It can grow as an annual or perennial plant and is morphologically very variable, being found sometimes with laminar leaves, sometimes without, and able to thrive submerged, when it forms spreading to erect clumps, or terrestrially, when it assumes a prostrate form.

No other species is constant throughout, but there are occasional plants of *Zannichellia palustris*, *Ceratophyllum submersum*, *Potamogeton pectinatus*, *Ruppia maritima*, *Callitriche stagnalis*, *C. obtusangula* and *C. platycarpa* among submerged stands, with floating *Lemna minor* and *L. gibba*. *Hippuris vulgaris* is also locally common among this kind of vegetation. Where the community occurs on moist ground, *Callitriche* and *Lemna* spp. are the usual associates.

#### Habitat

The community is of local occurrence around the coast of Britain, mainly in the south, where it is characteristic of the shallows and margins of standing and slow-moving, usually brackish, waters in streams, dykes and pools, often now among reclaimed grazing marshes, sometimes in dune-slacks. Disturbance of moist ground in such situations may favour the local spread of this vegetation and it can become prominent in ephemeral habitats, but overall the range of the plant seems to be declining.

*R. baudotii* has an Oceanic Southern distribution through Europe as a whole (Matthews 1955) and, although it has scattered stations along those parts of the Scottish coast where the winters tend to be more

equable, it is much more common around the seaboard of southern Britain (Perring & Walters 1962). It has been reported from some inland salt marshes (Rich & Rich 1988) and saline stretches of the Chesterfield canal (M. Palmer, personal communication), but almost all records occur on and around coastal and estuarine sites and, though the plant is tolerant of both fresh and salt water in cultivation (Cook 1966), it strongly favours brackish conditions in the wild.

It also prefers standing or at most sluggishly moving waters, so it is concentrated in that zone where fresh water draining across flat or gently sloping land meets the influence of tidal or estuarine flow. In unreclaimed coastal marshland, the community thus occurs in slow-moving streams that wind their way on to the upper salt-marsh, but very many stands are now found in and around the artificial drainage channels associated with reclaimed marshes, often embanked and used for pasture.

Pools in such habitats, and less frequently among dune systems, also provide congenial conditions and the ability of *R. baudotii* to persist on moist ground means that this vegetation will survive around fluctuating waters and temporary wet hollows. Disturbance by grazing stock or by wildfowl helps keep such situations open for the prostrate crowfoot plants.

#### Zonation and succession

The *Ranunculetum baudotii* is usually found with a number of other communities of aquatics adapted to the brackish environment, often with transitions along drainage systems where there are shifts to more or less saline conditions. Distinctive kinds of swamp or wet grassland vegetation commonly occur in close association with the community and, where silting is progressive, emergents eventually shade out the crowfoot. Frequently, however, the clearing or dredging of dykes, or disturbance by stock, helps maintain the *Ranunculetum baudotii* as a more or less permanent feature.

Other assemblages occurring with the community in

standing or sluggish waters of a brackish character, are the *Ceratophylletum submersi* and the *Potamogeton pectinatus* vegetation. In the former, *R. baudotii* can remain very frequent, but *C. submersum* becomes obviously dominant; in the latter, the *P. pectinatus* is usually overwhelmingly abundant, with *R. baudotii* rather scarce. Richer *Potamogeton-M. spicatum* vegetation can also be found, and all three of these associated communities often continue into fresher waters of dyke systems where the *Ranunculetum baudotii* becomes rare. There, too, other aquatics may increase in prominence, with stands of *Elodea canadensis* vegetation and the *Ceratophylletum demersi* frequently making a contribution. Floating mats of the *Lemnetum minoris* or the *Lemnetum gibbae* also become more abundant in these fresher conditions.

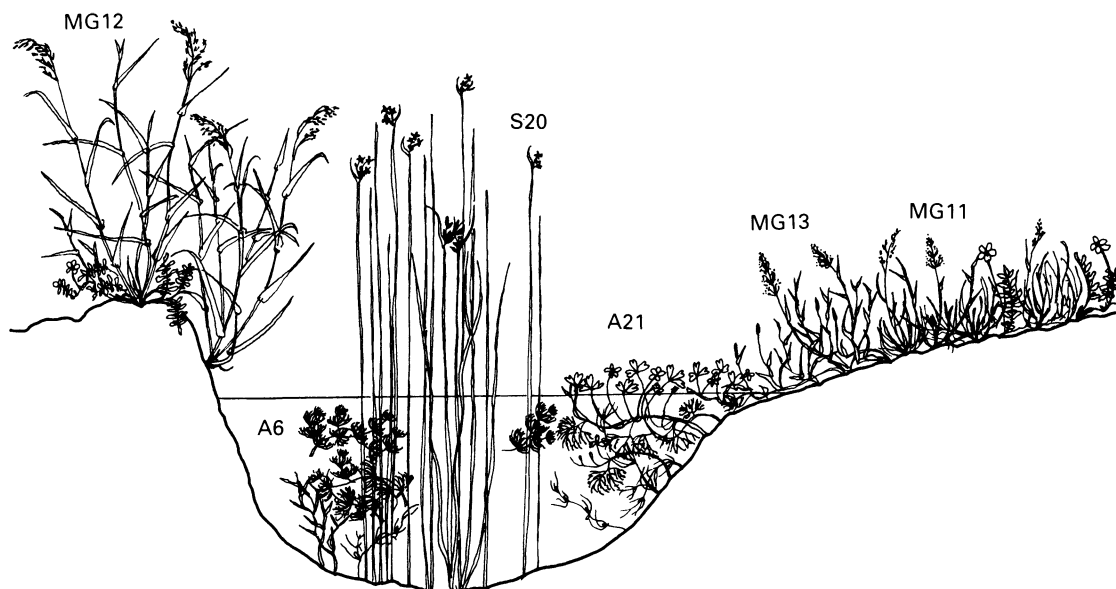
Towards the opposite extreme, where the waters become more saline, the *Ranunculetum baudotii* is quite often replaced by the *Ruppium maritima*, where *R. baudotii*, *Zannichellia* and *P. pectinatus* can all remain fairly frequent, but where *Ruppia maritima* becomes dominant, or, locally in south-east England, *R. spiralis*. Such gradients can be seen in the seaward end of marsh

dyke systems, where streams debouch on to salt-marshes and, rather strikingly, at the head of some sea-lochs on the north-west coast of Scotland. In this part of Britain, too, certain machair lochs with some maritime influence can provide a suitable habitat for the *Ranunculetum baudotii*, growing in and around the associated streams and the lake shallows. *Hippuris* is often prominent in such situations, too, and both this and *R. baudotii* continue to make a frequent contribution to the *Potamogeton filiformis* sub-community of the *Potamogeton-M. spicatum* vegetation that occurs on the shell-sand beds of the shallower loch margins.

In its characteristic marsh dyke habitat the margins of the brackish waters frequently have stands of the *Scirpetum maritimi* or the *Scirpetum tabernaemontani*, the *Phragmitetum* or, where banks shelve, the *Agrostis-Alopecurus* grassland, the shoots of which can trail out into the waters. Where emergents colonise densely, they may crowd out the *Ranunculetum baudotii*, but dyke clearance often repeatedly sets back any tendency to succession. Trampled dyke or pool margins may have fragmentary patches of the *Ranunculetum* and *Agrostis-Alopecurus* vegetation among clumps of the *Potentillo-Festucetum* and *Festuca-Agrostis-Potentilla* grasslands (Figure 7).

Figure 7. Generalised zonation across a brackish ditch.

MG12 *Potentillo-Festucetum* grassland  
A6 *Ceratophylletum submersi* community  
S20 *Scirpetum tabernaemontani* swamp  
A21 *Ranunculetum baudotii* community  
MG13 *Alopecurus-Agrostis* grassland  
MG11 *Festuca-Agrostis-Potentilla* grassland



### Distribution

The community occurs in locally suitable places around the coast of Britain, quite commonly as far north as the Solway-Forth line, rather sparsely beyond. It seems to have declined quite substantially in some places, as around the Severn estuary and along the Lancashire coast, but remains frequent in the Suffolk, Essex and

north Kent marshes, on Romney Marsh and around the Solent.

**Affinities**

Vegetation with prominent *R. baudotii* has scarcely been referred to in the British literature, but the stands included here are obviously very similar to the *Ranunculetum baudotii* described from Germany (Braun-Blanquet 1952) and The Netherlands (den Hartog 1963, Westhoff & den Held 1969). Some authors have located this kind of vegetation among the brackish communities of the Ruppion maritimae, and Birse (1984) followed this suggestion for his single Scottish stand. Other workers place it with the crowfoot assemblages of the Callitriche-Batrachion.

**Floristic table A21**

<i>Ranunculus baudotii</i>	V (1–10)
<i>Zannichellia palustris</i>	II (1–8)
<i>Lemna minor</i>	II (1–4)
<i>Ceratophyllum submersum</i>	II (2–4)
<i>Potamogeton pectinatus</i>	II (1–4)
<i>Lemna gibba</i>	II (2–4)
<i>Callitriche stagnalis</i>	II (1–4)
<i>Callitriche obtusangula</i>	II (1–4)
<i>Ruppia maritima</i>	II (1–4)
<i>Hippuris vulgaris</i>	I (2–4)
<i>Callitriche platycarpa</i>	I (3–4)
<i>Sparganium emersum</i>	I (1)
<i>Glyceria fluitans</i>	I (3)
<i>Myriophyllum spicatum</i>	I (2–4)
Number of samples	68
Number of species/sample	2 (1–7)