OV30

Bidens tripartita-Polygonum amphibium community

Polygono-Bidentetum tripartitae Lohmeyer in R.Tx. 1950

Constant speces

Bidens tripartita, *Filaginella uliginosa*, *Phalaris arundinacea*, *Polygonum amphibium*, *Polygonum hydropiper.*

Physiognomy

The *Polygono-Bidentetum* comprises stands of open or closed vegetation variously dominated by *Bidens tripartita*, *Polygonum amphibium* or *P. hydropiper*. Other knotweeds are typically scarce but *P. persicaria* sometimes occurs. *Filaginella uliginosa* is constant but generally at low cover and there are very often some sparse shoots of *Phalaris arundinacea. Alopecurus geniculatus* and *Agrostis stolonifera* are quite common, occasionally forming dense mats of shoots and *Callitriche hamulata* occurs frequently. Other occasionals include *Alisma plantago-aquatica*, *Myosotis laxa* ssp. *cespitosa*, *Juncus bufonius*, *Plantago major*, *Potentilla anserina* and *Stellaria alsine.*

Habitat

The *Polygono-Bidentetum* is characteristic of periodically-flooded, eutrophic silts and clays towards the limit of inundation around fluctuating ponds, lakes and reservoirs.

It is the combination of periodic inundation and high levels of nitrogen in waters and/or substrates favoured by the ephemeral species of this assemblage that invade as flooding subsides. Typically, inundation occurs in winter or at least more extensively then, so that exposure of a damp, fertile substrate coincides with the warmer temperatures of spring for germination of the annual plants. In fact, some frequent species in this community are perennials, like *Polygonum amphibium* and *Phalaris arundinacea*, occurring at generally low covers but maintaining themselves towards the upper limits of flooding. *P. amphibium* has far-creeping rhizomes and a truly amphibious habit, good adaptations to the measure of unpredictability in inundation in these more or less unstable substrates. *Phalaris* is one of the very few tall helophytes tolerant of irregular flooding.

The periods of freedom from inundation may allow such species and the carpets of creeping perennial grasses like *Agrostis stolonifera* and *Alopecurus geniculatus* to become a little more extensive for a while but are never lengthy enough to permit complete colonisation of the muds, which would exclude *Bidens* and the other typical ephemerals.

Zonation and succession

The *Polygono-Bidentetum* is typically a patchy element of zonations around fluctuating open waters where shifts in composition and structure of the vegetation are related to duration and depth of inundation.

Quite commonly, this community gives way, on silts and clays subject to longer inundation, to the *Rorippa-Filaginella* community where *Bidens* remains quite common but where dominance usually passes to various annual knotweeds with *Rorippa palustris* and *Filaginella uliginosa* becoming more frequent. Upslope, at and beyond the limits of inundation, the community can give way to a zone of the *Phalaridetum arundinaceae*. Alternatively, around ponds in pastures, there can be a transition through the *Agrostis-Alopecurus* community or *Ranunculetum scelerati* to drier leys or pastures of the Lolio-Plantaginion, Cynosurion or Elymo-Rumicion types.

Distribution

The community occurs widely in suitable habitats through the lowlands of Britain.

Affinities

This community is the central type of Bidention vegetation in Britain and it clearly corresponds to the association variously described as the *Polygono-Bidentetum* Koch 1926 *emend.* Sissingh 1946 from The Netherlands (Westhoff & den Held 1969), Ireland (White & Doyle 1982) and Poland (Matuszkiewicz 1984), or the *Polygono hydropiperis-Bidentetum* Lohmeyer in R.Tx. 1950 from Germany (Oberdorfer 1983, Pott 1982) and Austria (Mucina *et al.* 1993).

Floristic table OV30

Bidens tripartita	V (4–8)
Polygonum amphibium	V (3–7)
Filaginella uliginosa	IV (2–5)
Polygonum hydropiper	IV (4–6)
Phalaris arundinacea	IV (3–5)
Alopecurus geniculatus	III (1–5)
Callitriche hamulata	III (1–3)
Agrostis stolonifera	II (2–4)
Polygonum persicaria	II (2–7)
Alisma plantago-aquatica	II (1–2)
Myosotis laxa cespitosa	II (3)
Juncus bufonius	II (6)
Plantago major	II (1–3)
Potentilla anserina	II (1–3)
Stellaria alsine	II (1–5)
Eleocharis palustris	I (3)
Iris pseudacorus	I (1)
Arrhenatherum elatius	I (2)
Berula erecta	I (4)
Calystegia sepium	I (1)
Carex vesicaria	I (6)
Chenopodium murale	I (2)
Holcus lanatus	I (1)
Juncus effusus	I (4)
Lythrum salicaria	I (4)
Chamomilla recutita	I (1)
Mentha arvensis	I (2)
Poa trivialis	I (4)
Ranunculus flammula	I (4)
Ranunculus repens	I (2)
Salix fragilis sapling	I (4)
Scirpus sylvaticus	I (5)
Solanum dulcamara	I (1)
Sparganium erectum	I (1)
Trifolium repens	I (1)
Salix cinerea sapling	I (5)
Number of samples	7
Number of species/sample	10 (5–17)
Vegetation height (cm)	30 (15–60)
Vegetation cover (%)	95 (80–100)

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