S7
Carex acutiformis swamp
Caricetum acutiformis Sauer 1937

Synonymy
Caricetum acutiformo-ripariae Soó (1927) 1930 *p.p.*; *Caricetum acutiformo-paniculatae* Vl. & Van Zinderen Bakker 1942 *p.p.*; *Carex acutiformis* fen Lambert 1951 *p.p.*; *Carex acutiformis* stands Meres Survey 1980 *p.p.*

Constant species
Carex acutiformis.

Physiognomy
The *Caricetum acutiformis* is always dominated by *Carex acutiformis* forming an open or closed canopy of shoots and arcuate leaves about 1 m tall. No other species is constant but there are usually some scattered tall fen herbs such as *Angelica sylvestris* and *Valeriana officinalis* and shorter species like *Galium palustre* and *Mentha aquatica*. Other swamp species, e.g. *Carex paniculata*, *Sparganium erectum* and *Typha latifolia*, may be locally prominent, and *Juncus effusus* is sometimes abundant. However, many of the occasionals reflect the particular floristic context of the often small stands.

Habitat
The community seems to be typical of situations which are, in some respects, similar to those occupied by the *Caricetum ripariae*. It has been recorded from moderately eutrophic, circumneutral substrates on the margins of slow-moving or standing lowland waters in open-water transitions, in wet hollows within flood-meadows, in ditches and alongside sluggish streams and rivers. Here the water-level may be up to about 20 cm above ground and the substrate pH 6.0–6.8. There is some evidence, however, (e.g. Haslam 1978), that the *Caricetum acutiformis* is more consistently associated with calcareous habitats than is the *Caricetum ripariae*: it occurs, for example, in ditches in fen peat and also on the margins of slow chalk streams.

Zonation and succession
Around more extensive open-water transitions, the community may form swamp which passes gradually to fen in which *C. acutiformis* remains a prominent component, e.g. some forms of the *Peucedano-Phragmitetum*, and it was from such situations that Lambert (1951) described her *C. acutiformis* sere along the Bure valley in Norfolk. At more abrupt water margins, the community occurs in often narrow and fragmentary transitions with the *Sparganietum erecti* towards deeper and, to landward, the *Glycerietum maximae* or *Phragmitetum australis*. Unlike the *Caricetum ripariae*, this community may also form swampy patches in calcareous flood-meadows and flood-pastures, passing gradually through some form of Calthion community to damp mesotrophic grassland, but, with agricultural improvement, such transitions are becoming more rare. *C. acutiformis* seems to be quite an aggressive species which may be able to readily invade riverside fields where drains become blocked. It also appears to be able to tolerate cattle grazing (Wheeler 1975).

Distribution
C. acutiformis is not so obviously restricted to the south and east as is *C. riparia* (Jermy *et al.* 1982), although, like that species, it is primarily a lowland sedge. The *Caricetum acutiformis* swamp is, however, not a common community and it has been encountered at scattered localities, notably in the Fens and Broads and around the Shropshire meres.

Affinities
Like *C. riparia*, *C. acutiformis* may also be a prominent component of both fen and fen woodland vegetation but the stands included here are distinct in their species-poverty and overwhelming dominance of the sedge. The *Caricetum acutiformis* also shows affinities with certain Calthion communities where, with other sedges, rushes and poor-fen dicotyledons, *C. acutiformis* forms a species-rich sward on gleyed soils.

Floristic table S7

Carex acutiformis	V (7–10)
Juncus effusus	III (2–4)
Galium palustre	II (1–3)
Mentha aquatica	II (3–7)
Lotus uliginosus	II (2–3)
Arrhenatherum elatius	II (1–2)
Valeriana officinalis	II (1–3)
Angelica sylvestris	II (3)
Solanum dulcamara	I (2)
Cardamine amara	I (4)
Holcus lanatus	I (3)
Rumex crispus	I (4)
Equisetum palustre	I (4)
Filipendula ulmaria	I (3)
Poa trivialis	I (4)
Carex paniculata	I (4)
Caltha palustris	I (3)
Lemna minor	I (3)
Cicuta virosa	I (2)
Ranunculus acris	I (2)
Scutellaria galericulata	I (2)
Ranunculus repens	I (2)
Epilobium hirsutum	I (2)
Juncus inflexus	I (2)
Lythrum salicaria	I (3)
Polygonum aviculare	I (5)
Phalaris arundinacea	I (2)
Sparganium erectum	I (2)
Stellaria alsine	I (3)
Symphytum officinale	I (4)
Typha latifolia	I (2)
Cirsium palustre	I (1)
Anthoxanthum odoratum	I (1)
Galium aparine	I (1)
Festuca rubra	I (1)
Lathyrus pratensis	I (1)
Polygonum hydropiper	I (1)
Urtica dioica	I (1)
Veronica beccabunga	I (1)
Brachythecium rivulare	I (1)
Number of samples	5
Number of species/sample	11 (6–25)
Vegetation height (cm)	98 (70–120)
Vegetation cover (%)	98 (90–100)

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