Carex ericetorum Pollich

Rare Spring-sedge

Carex ericetorum is an early flowering sedge of short, species-rich calcareous grassland, often growing with the similar looking *C. caryophyllea*. It has a thin, compact, cylindrical male spike and deep-chestnut to purplish-brown male and female glumes with fringed and almost colourless papery margins. The majority of populations occur on limestone in northern England and on sandy soils in the Brecklands of East Anglia, with single colonies surviving in Cambridgeshire, Derbyshire and Northamptonshire. It is assessed as Vulnerable in Britain due to substantial declines across its range.

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IDENTIFICATION

Carex ericetorum is relatively easy to identify when in flower (April-May) due to the dark, chestnut-brown to purplish glumes of the thin, compact and cylindrical male spikes, and the obtuse female glumes with a broad scarious, often fimbriate margin (much more so when in fruit). The leaves (15 cm × 1.5-4 mm) are rigid, curving and with narrow scarious margins. The upper surface can be rough to the touch due to the presence of papillae (Jermy et al. 2007). Bluntly trigonous, slender stems are 2-20 (30) cm tall, glabrous, either ascending or erect, and usually leafless.

SIMILAR SPECIES

C. ericetorum grows with *C. caryophyllea* in all its sites and with *C. capillaris* in Teesdale and Westmorland. When in flower there is unlikely to be any confusion with *C. capillaris* but *C. caryophyllea* is superficially similar. However, C. *ericetorum* has a much shorter basal sheath on the lowest female spikelet (see photo above) and darker glumes with scarious margins.

Recording *Carex ericetorum* at Crosby Gill, Cumbria. ©Jeremy Roberts.

Vegetative material is much more difficult to separate, as all three species have glabrous, solid shiny-green leaves with a short ligule, stomata on the underside and a trigonous tip (Poland & Clement 2009). *C. ericetorum* has a longer trigonous tip (5-15 mm) than both *C. caryophyllea* (3-4 mm) and *C. capillaris* (5 mm), and the leaves are generally wider than in *C. capillaris,* although with some overlap (2-4 mm and 1.5-3 mm respectively). *C. capillaris* also has a more tufted growth-from. In Teesdale, habitat is a good separator: *C. ericetorum* is confined to NVC CG10 *Festuca ovina-Agrostis capillaris-Thymus praecox* grassland, and *C. caryophyllea* CG9d *Sesleria albicans-Galium sterneri* grassland, *Carex capillaris-Kobresia simpliciuscula* sub-community.

HABITATS

In Britain, *C. ericetorum* is associated with dry, grazed grassland on infertile calcareous soils. In northern England, most populations occur within NVC CG9d *Sesleria albicans-Galium sterneri* grassland, *Carex capillaris-Kobresia simpliciuscula* sub-community, including those at higher altitudes on limestones in Westmorland and Teesdale. In a few places it is a characteristic species of the sunnier aspects of anthills (e.g. Scout Scar).

Further south, *C. ericetorum* is a plant of very short, often sheep and rabbit-grazed grassland on highly calcareous, in some cases drought-prone soils, including chalky 'stone stripes' amongst *Calluna* heath in East Anglia (David 1994),

where it is found with plants of local interest such as *Astragalus danicus* and *Botrychium lunaria*. It is most often associated with three main vegetation communities: CG2 *Festuca ovina-Avenula pratensis* grassland and CG7 *Festuca ovina-Hieracium pilosella-Thymus praecox/pulegioides* grassland on chalk and CG5 *Bromus erectus-Brachypodium pinnatum* grassland on limestone.

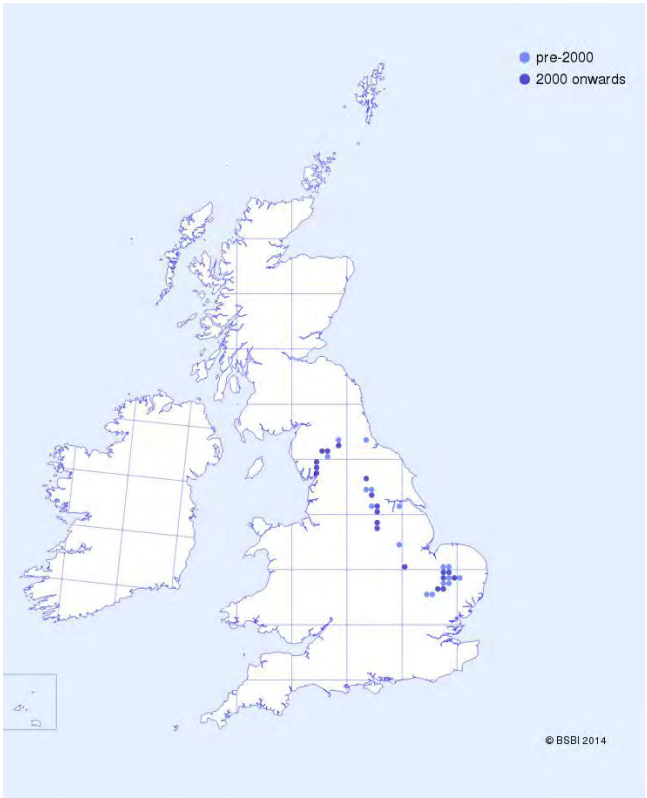
In eastern Europe and Siberia, *C. ericetorum* is also frequently associated with dry sandy soils under pine woods, and rocky, dry slopes, moorlands and dry waterways (Bojňanský & Fargašová 2007).

BIOGEOGRAPHY

A Boreo-temperate species, occurring throughout northern and central Europe from Scandinavia and northern Russia (to 68 °N), as far south as northern Spain, where it is found at an altitude of up to 2700 m, central France, northern Italy, Yugoslavia, Bulgaria and the Caucasus, ascending to 2460 metres in the mountains. It is also found in Siberia (Urals). It reaches its north-western limit in England (David 1981).

In Britain *C. ericetorum* is mainly confined to East Anglia (Breckland), limestones around Morecambe Bay and the 'upland' limestones of Westmorland and Teesdale, where it reaches its highest elevation at 540 m on Cronkley Fell (David 1981). Elsewhere single colonies survive in Cambridgeshire, Derbyshire, Northamptonshire, South and North Yorkshire.

ECOLOGY



Distribution of *Carex ericetorum* in Great Britain and Ireland.

C. ericetorum is a shortly-rhizomatous, mat-forming perennial with individual tufts extending very slowly by means of pioneer rhizomes. In Teesdale, at the northern edge of its British range, plants are winter-green unlike populations in more continental areas (e.g. Breckland; Bradshaw 1985). It also reproduces by seed, although flower and fruit production are limited by the severity of climate, and in some seasons it flowers only sparingly, especially at high altitude, and much of the seed is lost before maturity, possibly as a result of grazing or disturbance by livestock (Bradshaw 1985). Flowering may extend into late June in northern England, whist populations in southern England can flower from March onwards.

A poor competitor (Hill et al. 2004), *C. ericetorum* requires the maintenance of open conditions to survive, although most Teesdale sites either have no livestock grazing or are only very lightly grazed, including populations on Cronkley Fell that have been fenced since the 1960s (Elkington 1981). Populations have also persisted on ungrazed sites in Breckland, such as Knettishal Heath, where it reappeared after grazing was reintroduced. This suggests that populations are able to persist vegetatively in low fertility swards overlying very thin soils until more open conditions suited to flowering and fruiting are available, although how long vegetative plants may persist in such conditions is not known.

THREATS

Historically, lowland populations of *C. ericetorum* have been lost to ploughing and quarrying, but today the main threats are eutrophication and competition from coarse grasses following reductions in grazing levels combined with eutrophication. This includes upland sites, such as Widdybank Fell and Orton Scar in Cumbria, where there have been significant reductions in sheep numbers.

In Teesdale it is thought that 40% of the Widdybank Fell population was lost during the construction of Cow Green Reservoir (Bradshaw 1985).

MANAGEMENT

Like many threatened species of unimproved species-rich calcareous turf, *C. ericetorum* is a poor competitor and requires open conditions achieved through grazing with (ideally hardy breeds of) sheep. Grazing usually takes place during the late summer, autumn and winter months, with the aim of producing a short sward for the spring and summer months, allowing flowering and seed setting for a wide range of species throughout the growing season.

Occasional scrub clearance may be necessary, particularly on sites where invasive species have established a foothold (e.g. *Quercus cerris* at Barnack Hills and Holes, Northamptonshire) or at sites where there has been a cessation in grazing for a prolonged period of time in the past.

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AUTHOR VERSION

Kevin Walker & Peter Stroh. Version 1: 30 January 2015.

SUGGESTED CITATION

Walker, K.J. & Stroh, P.A. 2015. *Carex ericetorum* Rare Spring-sedge. Species Account. BSBI.