

= *Eriophorum angustifolium* =

Eriophorum angustifolium, commonly known as common cottongrass or common cottonsedge, is a species of flowering plant in the sedge family Cyperaceae. Native to North America, North Asia, and Northern Europe, it is often found on peat or acidic soils, in open wetland, heath or moorland. It begins to flower in April or May and, after fertilisation in early summer, the small, unremarkable brown and green flowers develop distinctive white bristle-like seed heads that resemble tufts of cotton; combined with its ecological suitability to bog, these characteristics give rise to the plant's alternative name, bog cotton.

Eriophorum angustifolium is a hardy, herbaceous, rhizomatous, perennial sedge, able to endure in a variety of environments in the temperate, subarctic and arctic regions of Earth. Unlike *Gossypium*, the genus from which cotton is derived, the bristles which grow on *E. angustifolium* are unsuited to textile manufacturing. Nevertheless, in Northern Europe, they were used as a substitute in the production of paper, pillows, candle wicks, and wound dressings. The indigenous peoples of North America use the plant in cooking and in the treatment of digestive problems. Following a vote in 2002, Plantlife International designated *E. angustifolium* the County Flower of Greater Manchester, as part of its British County Flowers campaign.

= Description =

In the wild, *Eriophorum angustifolium* is a creeping rhizomatous perennial sedge, with an abundance of unbranched, translucent pink roots. Fully grown, it has a tall, erect stem shaped like a narrow cylinder or triangular prism; it is smooth in texture and green in colour. Reports of the plant's height vary; estimates include up to 60 cm (24 in), 15–75 cm (5–29 in), and up to 100 cm (39 in). *E. angustifolium* has "stiff grass-like foliage" consisting of long, narrow solidly dark green leaves, which have a single central groove, and narrow from their 2–6 millimetre (0.08–0.24 in) wide base to a rust-coloured triangular tip. Up to seven green and brown aerial peduncles and chaffs, roughly 4–10 millimetres (0.16–0.39 in) in size, protrude from umbels at the top of the stem from which achenes are produced after fertilisation, each with a single pappus; these combine to form a distinctive white perianth around 5 centimetres (2 in) long.

Eriophorum angustifolium is described as "a rather dull plant" in winter and spring, but "simply breathtaking" in summer and autumn, when 1–7 conspicuous inflorescences composed of hundreds of white pappi comparable to cotton, hair, tassels, and / or bristles stand out against naturally drab surroundings.

Eriophorum angustifolium differs from other species within the genus *Eriophorum* in its habitat and morphology. Its multiple flower heads and growth from rhizomes distinguish it from *E. vaginatum*, which has a single flower head and grows from dense tussocks. Although *E. latifolium* has 2–12 flower heads, it has laxly caespitose (tufted) growth, and its pappi are forked. The smooth peduncles and preference for acidic soil pH distinguishes *E. angustifolium* from *E. gracile*, which grows in swamp with a neutral pH and has scabrid (rough) peduncles.

= Distribution and ecology =

= Distribution =

Eriophorum angustifolium is native to the Northern Hemisphere, and distributed across Eurasia, North America and the British Isles, where there is open bog, heath, wetland and moorland, with standing water and calcareous peat or acidic soil. It can survive in the Subarctic and Arctic, and is found in Alaska, Finland and Greenland as far north as 83° N. The British botanist William Turner Thiselton-Dyer recorded *E. angustifolium* in the South African Republic in 1898.

In North America, *Eriophorum angustifolium* is found in the north from Alaska through Manitoba

and the Canadian Prairies to Newfoundland and Labrador , down the Pacific Northwest and the state of Washington , across the Midwestern United States through Michigan and Iowa , down the Eastern Seaboard as far south @-@ east as New York and New Jersey , and reaching as far south @-@ west as New Mexico . In Eurasia , *E. angustifolium* is distributed throughout the Caucasus , European Russia and North Asia , including Siberia and the Kamchatka Peninsula , and south @-@ east to Manchuria and Korea . It grows throughout continental Europe , with the exception of those parts within the Mediterranean Basin , growing in Scandinavia in the north , and as far south as the Norte Region of Portugal and the Pierian Mountains of Greece .

Eriophorum angustifolium is the most common of the four native species of *Eriophorum* in the British Isles , and has been recorded as having existed in all vice @-@ counties , thriving particularly well in Ireland and northern and western regions of Great Britain , but less so in southern and eastern areas . In the mires of Northern Ireland and the South Pennines , it considered a ruderal , pioneer and keystone species , because it can quickly colonise and repair damaged or eroded peat , encourage the re @-@ vegetation of its surroundings , and retain sediment and its landscape to serve as a carbon sink . In central and southern counties of England , the species is rare or absent , and was " completely destroyed " in Cambridgeshire , The Broads , The Fens and other parts of the East of England by human activities such as land reclamation . Within the British Isles , *E. angustifolium* thrives at a range of altitudes from sea @-@ level fens and lowland meadows , to exposed upland moors when provided with a habitat of acid bog or waterlogged heath . It has an altitudinal limit of 1 @, @ 100 metres (3 @, @ 600 ft) above sea level , reaching 854 metres (2 @, @ 802 ft) in the Wicklow Mountains of Ireland , and 1 @, @ 060 metres (3 @, @ 480 ft) in the Scottish Highlands .

== Ecology ==

Eriophorum angustifolium is a hardy , herbaceous , rhizomatous , perennial plant , meaning that it is resilient to cold and freezing climatic conditions , dies back at the end of its growing season , has creeping rootstalks , and lives for over two years . It grows vigorously from seed over a period of 2 ? 5 years , and thrives particularly well in freshly disturbed , cut or eroded peat . *E. angustifolium* is protogynous .

Sexual reproduction in *Eriophorum angustifolium* begins with flowering in spring or early summer (in or around May) , when groups of 3 ? 5 brown flowers are produced . Fertilisation usually takes place in May or June , via anemophily (wind @-@ pollination) , and the white bristle @-@ like perianth , composed of achenes with pappi (seeds with hairs) then grows outwards to appear like short tufts of cotton thread . These pappi endure well into summer , lasting from around June to September . Like the pappus of *Taraxacum* (dandelions) , this aids in wind @-@ dispersal , and also serves as thermal insulation , conserving the temperature of the plant 's reproductive organs by trapping solar radiation .

== Conservation ==

Eriophorum angustifolium has a NatureServe conservation status of G5 , meaning that the species is considered to be ecologically secure by NatureServe , lacking any threats to its global abundance .

== In human culture ==

Eriophorum angustifolium seeds and stems are edible and are used in traditional Native American cuisine by Alaska Natives , Inuit and Inupiat people . The leaves and roots of *E. angustifolium* are also edible and , because of their astringent properties , used by the Yupik peoples for medicinal purposes , through a process of decoction , infusion or poultice , to treat ailments of the human gastrointestinal tract , and in the Old World for the treatment of diarrhoea . In abundance , *E. angustifolium* can grow with enough density to disguise wetland and bog . Consequently , it may be

used as a natural indicator of areas which are hazardous and to avoid travelling through . Attempts to make a cotton @-@ like thread from the hairs of the plant 's seed @-@ heads have been thwarted by its brittleness , but it has been used in the production of paper and candle wicks in Germany , and was used as a feather substitute in pillow stuffing in Sweden and Sussex , England . In Scotland , during World War I , it was used to dress wounds .

In 2002 , the County Flowers campaign of Plantlife International , which asked members of the public to nominate and vote for a wildflower emblem for each of the counties and metropolitan areas of the United Kingdom , resulted in *Eriophorum angustifolium* being announced as the County Flower of Greater Manchester .

= = Taxonomy = =

The species was named *Eriophorum angustifolium* in 1782 by the German botanist Gerhard August Honckeny . The German botanist Albrecht Wilhelm Roth published this name in 1788 , referring to Honckeny 's work , and is sometimes erroneously considered the author of the species name . The genus name *Eriophorum* consists of two Ancient Greek roots ? (*erion* , " wool ") and - (*-phoros* , " -bearing ") ? referring to the fibrous seed @-@ heads of the genus , which resemble tufts of thread . The specific epithet *angustifolium* is composed of the Latin words *angustus* (" narrow ") and *folium* (" leaf ") . The Linnaean name *Eriophorum polystachion* is a *nomen rejiciendum* , being based on a mixed batch of specimens . *Scirpus angustifolius* is a later combination published by the Japanese botanist Tetsuo Koyama in 1958 , but this generic assignment is not widely accepted .

Two subspecies are recognised within *E. angustifolium* . The autonymous subspecies , *E. angustifolium* subsp. *angustifolium* , is found in more southerly sites , while *E. angustifolium* subsp. *triste* has an overlapping distribution centred further north . The two also differ in height and the roughness of the peduncles , with *E. a.* subsp. *angustifolium* being up to 100 cm (39 in) tall and having smooth @-@ surfaced peduncles , while *E. a.* subsp. *triste* has rough peduncles and only reaches 30 cm (12 in) tall .

In English , *E. angustifolium* is known by a variety of common names (with various spellings) , including common cottongrass , common cotton @-@ grass , common cottonsedge , tassel cotton grass , many @-@ headed cotton @-@ grass , thin @-@ scale cotton @-@ grass , tall cotton @-@ grass , downy ling and bog cotton .

= = Cultivation = =

Although " difficult to grow under cultivation " , The Royal Horticultural Society states *Eriophorum angustifolium* can be cultivated as a low @-@ maintenance wildflower , suitable for meadows , ponds margins or bog gardens . This may be done in sheltered or exposed terrain , but best accomplished with full sun at a south- or west @-@ facing aspect , in water up to 5 centimetres (2 @-@ 0 in) deep . Poorly @-@ drained peat , sand , clay or loam with an acidic soil pH is required . Division in spring is the recommended form of propagation for the species , and regular deadheading is the recommended method of pruning . *Narthecium ossifragum* and *Myrica gale* are suitable for companion planting with *E. angustifolium* . *Eriophorum angustifolium* is " generally pest free " . As a seedling and young plant it is eaten by sheep and cattle , and a variety of goose species . It is tolerant to chalybeate (iron @-@ enriched) water , but may succumb to powdery mildews .