

Alopecurus magellanicus Lam

Alpine Foxtail

Alopecurus magellanicus has oblong to ovoid ‘thunder-cloud-grey’ panicles with awnless or shortly-awned lemmas, and hairy awnless glumes. It is restricted to oligotrophic springs and flushes above 450m, and is often visible along the margins amongst taller vegetation where flowers are protected from hard grazing. Core populations are found in the Cairngorms National Park, the Southern Uplands, and the North Pennines. It appears to be tolerant of grazing, surviving vegetatively and flowering when livestock numbers are reduced or excluded. Assessed as of Least Concern in Great Britain but Near Threatened in England due to the low number of individuals.



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IDENTIFICATION

Alopecurus magellanicus has erect or ascending culms (-45 cm) with a bulbous swelling at the base and smooth sheaths which are slightly inflated in the upper parts of the culm (Cope & Gray 2009).

When in flower, this species is easily recognized by the oblong to ovoid panicle (15–30 × 7-12 mm) and the awnless or shortly-awned lemmas (1-2 mm) which are usually much longer than in *A. pratensis* (3-5 mm). The inflorescence is soft due to glumes having silky-hairs on the keels and flanks.

It has been known by two different species names in recent times: *A. ovatus* and *A. borealis*.



Alopecurus magellanicus flowering at Green Fell, Cumberland.
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SIMILAR SPECIES

Awned forms of *A. magellanicus* can resemble *A. pratensis* and are then best distinguished by the degree of fusion of the lemma margins and the more inflated sheaths (Cope & Gray 2009).

It is told from *Phleum alpinum*, with which it often grows in Scotland, by the hairy, awnless glumes and the colour of the flower-heads which are red-purple in *P. alpinum* and the colour of a ‘thunder-cloud’ in *A. magellanicus* (Raven & Walters 1956).

HABITATS

In Britain, *A. magellanicus* is restricted to the banks of mountain streams and oligotrophic springs and flushes e.g. NVC M32 *Philonotis fontana*-*Saxifraga stellaris* spring, often associated with late snow-beds e.g. M33 *Pohlia wahlenbergii* var. *glacialis* spring, at between 450-1220 metres.

Plants usually grow in the centres of flushes, although inflorescences are more commonly encountered along the margins where taller vegetation affords greater protection from grazing animals (Corner 1994). *A. magellanicus* is found over a wide range of acidic to slightly basic substrates, often with *P. alpinum*, especially at high altitudes in Scotland.

BIOGEOGRAPHY

Alopecurus magellanicus has a bipolar distribution, occurring in the Falkland Islands and South America (where Darwin collected it during The Beagle Voyage in 1833) and to 83°N in the High Arctic. In the Northern Hemisphere it occurs in North America, Greenland, Svalbard, arctic Russia, the Urals

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and Britain. British populations are notable in being the most southerly in Europe (Preston 2007).

It was first discovered in the Scottish Highlands in 1794 (Lochnagar), in the Southern Uplands in 1956 (Ratcliffe 1959) and in northern England in 1959 (Ratcliffe & Eddy 1960).

In the north Pennines, following the relaxation of grazing on the high fells after the 2001 foot and mouth outbreak, *A. magellanicus* has appeared, often in great abundance, in places where it was not previously known, including one site well to the south of its former range (Robinson 2008). It is possible that *A. magellanicus* occurs in many if not all of the high-level flushed grasslands of the north Pennines (Roberts 2010a, b), and further targeted surveys may well lead to the discovery of new populations, especially in the 'gaps' between clusters of sites.

ECOLOGY

Alopecurus magellanicus is a loosely tufted perennial patch-forming grass with slender rhizomes, flowering between June and August.

Overall plant biomass and flower production vary considerably from year to year, possibly in response to temperature differences, as growth has been shown to increase markedly under elevated soil temperatures (Gornall *et al.* 2011). By contrast, competition, particularly from mosses, has been shown to significantly reduce overall plant size (Gornall *et al.* 2011).

Little is known about its reproductive biology although the

instability in chromosome number ($2n = 100, c.112, 117$) may indicate a degree of agamospermy. The discovery of new populations following the relaxation of grazing in northern England suggests that it is palatable to stock but can persist vegetatively for decades or even millennia under these conditions (Roberts 2010b).

THREATS

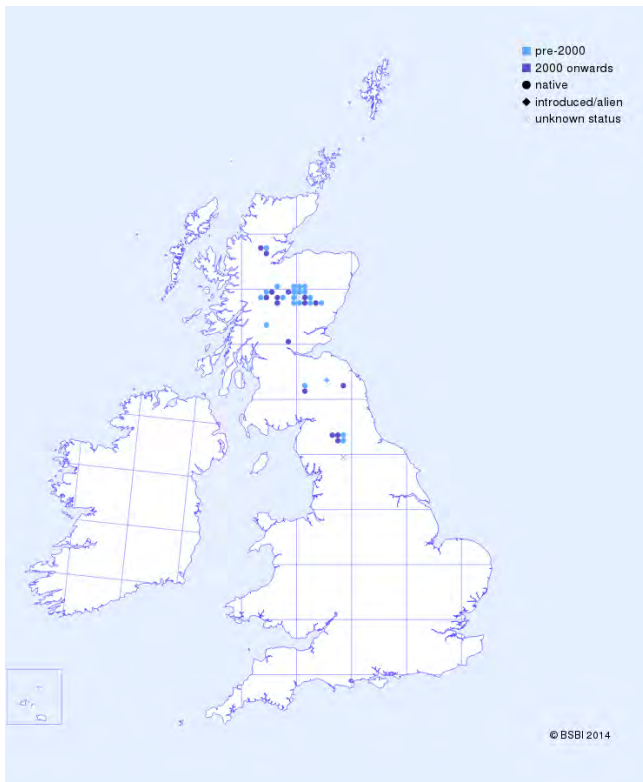
In the past the main threats to *A. magellanicus* have been over-grazing and, in the North Pennines, recreational disturbance caused by 'off-road' vehicles (Robinson *et al.* 2006). However, under-grazing may be more of a threat today as increased competition from mosses and higher plants (e.g. *Saxifraga hypnoides*) may reduce both vegetative and reproductive vigour in the longer term.

MANAGEMENT

Alopecurus magellanicus appears to be tolerant of hard grazing over prolonged periods, although some threatened taxa that occur in or close to its preferred habitat are often not, and so an extensive grazing regime that leads to the removal of biomass but still allows flowering and seed setting in the summer months in most years is desirable.

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Distribution of *Alopecurus magellanicus* in Great Britain and Ireland.

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AUTHOR VERSION

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