

Gnaphalium sylvaticum (L.)

Heath Cudweed

Gnaphalium sylvaticum is a perennial herb with a distinctive white-felt on the stem and underside of the leaves. The stem leaves become noticeably shorter and narrower higher up on the stem. The inflorescences comprise numerous small, dark-brown flower heads with distinctive green phyllaries that have a brown papery margin. In the British Isles it is associated with infertile damp or dry acid soils, and habitats include woodland rides, glades, heaths and pastures, quarries and dune slacks. Its core distribution is now in Scotland, having substantially declined elsewhere, leading to an assessment of Endangered in Great Britain and England and Critically Endangered in Wales.



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IDENTIFICATION

Gnaphalium sylvaticum has erect, grey-woolly unbranched stems up to 70 cm, but often much smaller (<30 cm). Plants produce numerous small, tubular, dark-brown flower heads that are either solitary or in clusters, loosely arranged in the axils among the slender upper stem leaves (typically >10 per stem), and have pappus hairs united at the base (Stace 2010). The phyllaries (20-25) are green with a brownish-scarious margin, and often have a conspicuous dark-brown spot towards the apex (Wu et al. 2011).

The leaves (2-8 cm long, 2-8 mm wide) are alternate, distinctly one-veined and often recurved at the tip. They are dull green and glabrous on the upper surface, and whitish or silvery grey-felted beneath (Poland & Clement 2009). The stalked lower stem leaves are lanceolate and pointed, and



Gnaphalium sylvaticum near Kindrogan, Perthshire. ©Fred Rumsey

become progressively narrower, shorter and stalkless further up the stem.

SIMILAR SPECIES

G. norvegicum has leaves that are clearly 3(-5) veined and that only become narrower in the top half of the stem (Stace 2010). *G. uliginosum* is branched, smaller, has flower heads in a tight cluster, and does not have leaves that diminish in size up the stem. In addition, the outer bracts (phyllaries) are pale-brown (not green) with dark brown tips (Stace 2010).

HABITATS

G. sylvaticum occurs on infertile, damp or dry, often sandy or gravelly acid soils. It is most often found in canopy gaps within open or semi-shaded woodland and along the edges of forestry rides. Across its global range *G. sylvaticum* is also a component of the vegetation of seasonally disturbed logging roads created by large vehicles when extracting timber from forestry plantations (Zika 1990; Šomšák & Vykoukova 2001). In Britain and elsewhere *G. sylvaticum* can also be found in moorland, sparse turf on grassy heaths, upland pastures, sand-pits, gravel quarries, sandy field edges, dune slacks, and the edges of farm tracks (Halliday 2002; Forbes 2007).

BIOGEOGRAPHY

In Europe *G. sylvaticum* has a Eurosiberian Boreo-temperate distribution, occurring as far north as northern Norway, extending east to the Caucasus, Iran and Siberia. It is also present in North America, where it is widespread in eastern Canada and northern New England, but is threatened in Maine and Michigan and endangered in Vermont and New

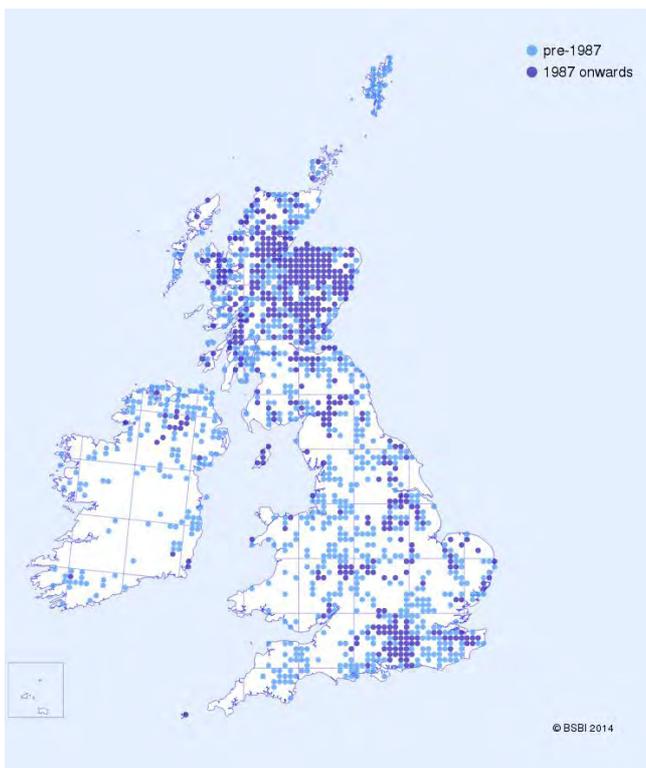
Gnaphalium sylvaticum (L.)

York State, where a single population exists in the Adirondack Mountains of northeastern New York on an old grassy logging road (Zika 1990).

It was once widespread throughout much of Britain and Ireland, but declines in recent years have led to its apparent disappearance from large swathes of England, Wales and Ireland, despite extensive afforestation operations occurring at the same time that should theoretically have benefitted the species (Halliday 2002).

The core of its range is now in northern and particularly north-eastern Scotland. In England it has declined but is thinly scattered and still locally common in south Northumberland, Cumberland, north Lincolnshire, west Norfolk, and southern and south-east areas, particularly the South and North Downs. In Wales, there are recent records from Brecknockshire, Caernarvonshire, Denbighshire and Monmouthshire, although it may only persist in the latter. Ireland has also suffered substantial fragmentation and isolation of populations, and most sites are now found in the northern counties (Forbes 2007). In the south, there are a small number of populations persisting in Wexford, and a single record post-1987 from north Kerry.

G. sylvaticum is a predominantly lowland species, although it has been recorded to 950 m at Knockchoilum, Inverness (Farrell 1994). It is rare north of the Arctic Circle, where it is replaced by *G. norvegicum*. In Lapland and Finland, both species can be found growing together, although *G. norvegicum* usually prefers damper ground.



Distribution of *Gnaphalium sylvaticum* in Great Britain and Ireland.

ECOLOGY

An early successional, short-lived rhizomatous perennial herb, flowering from July to September (-October). The small flowers of *G. sylvaticum* are occasionally visited by insects, and are probably wind-pollinated (Farrell 1994).

G. sylvaticum has elliptic, yellowish brown fruits (cypselas) with slightly brown-red unbranched hairs. It reproduces by seed (Grime et al. 2007) which become airborne and germinate in the autumn and/or spring, producing a basal leaf rosette from which a woody rootstock develops (Forbes 2007). Seeds may be long-lived in the soil, with germinants from one study in southern Sweden recorded from the seed bank but not from the above ground vegetation after 18 years (Milberg 1995).

Germination is thought to depend, at least in part, on the availability of damp, bare areas in full or partial sunlight, located near to the parent plant. Many of its habitats are subject to periodic disturbance, and consequently, populations may fluctuate greatly in numbers from year to year. It is speculated that a widespread but subtle decline in small-scale disturbance, including within mature plantations, has resulted in substantial decline, and this has been exacerbated by the isolation and fragmentation of sites through direct habitat loss and poor dispersal ability. However, more research into the reasons for the continuing decline of *G. sylvaticum* is urgently required.

THREATS

G. sylvaticum continues to decline throughout its range (Halliday 2002; Rand & Mundell 2011). It has been hypothesised that this is linked to a variety of factors, including the depletion of the seed bank through widespread application of herbicides and agrochemicals, herbicide drift, and a move towards winter-sown crops that greatly reduce the availability of suitable habitat (Forbes 2007). In addition, widespread soil nutrient enrichment and/or a prolonged cessation in woodland ride management or other small-scale disturbance activities is likely to have led to less open swards to the advantage of more vigorous competitors. Road building, mineral and rock extraction, and the spraying of forest track-ways have also been cited as possible reasons for decline.

MANAGEMENT

A grazing or mowing regime (with arisings removed) helps to retain an open sward and also maintain the low nutrient value of grassland habitat. Small-scale disturbance is desirable, but frequent and excessive poaching or rutting may be damaging.

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Gnaphalium sylvaticum (L.)

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