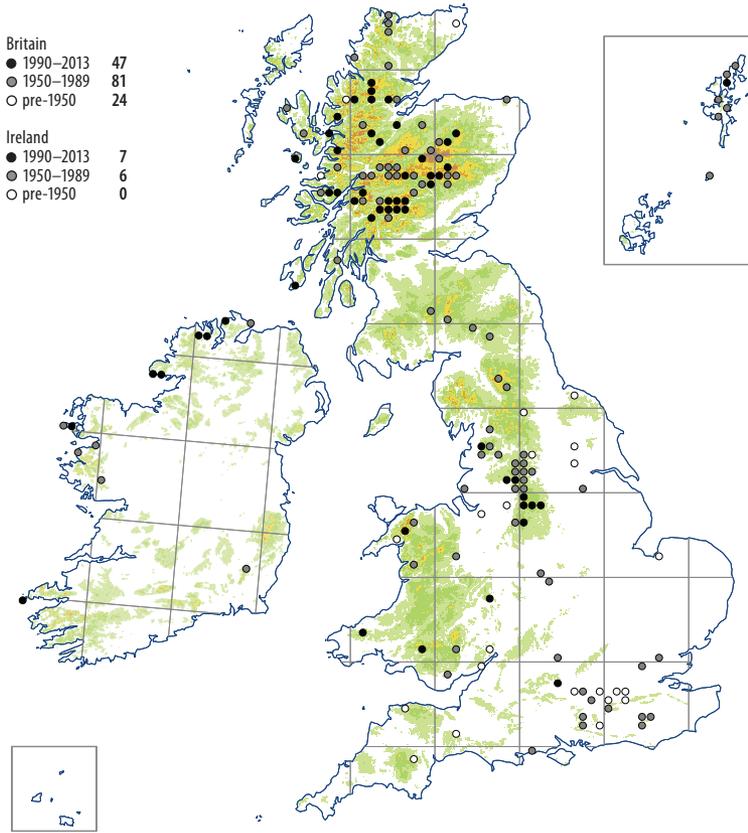


Nardia geoscyphus



There are two forms of *Nardia geoscyphus* in Britain and Ireland. Small-celled plants that have flagella are found in Scotland, N Wales and Ireland. This form extends from sea level to over 1000 m altitude, and habitats include coastal rocky cliffs, streamsides and, in the uplands, flushes, mineral soil and gravel banks, and crags. The substrate varies from acid to moderately base-rich, and associates include *N. scalaris*, *Cephalozia bicuspidata*, *Scapania scandica*, *Jungermannia pumila* and *Frullania tamarisci*. The large-celled form lacks flagella and has been recorded from scattered localities in England, southwards from parts of Yorkshire and Lancashire, and from S Wales. It has been reported in a range of habitats that are consistently acid, including disturbed ground by ditches, paths and roads, in quarries, on shaded sandstone outcrops, and in heath and open woody vegetation. It is usually found on mineral soils that are often

somewhat sandy or peaty, commonly with *N. scalaris* and *Cephalozia bicuspidata*. Altitudinal range: 15–1000 m.

Nardia geoscyphus appears to have undergone a dramatic decline since 1960 in lowland areas. However it is easily overlooked and many of its Pennine sites are probably still extant. There has also been an overall decline in the Netherlands (BLWG, 2013) and on the North German Plain (Meinunger & Schröder, 2007).

Poikilous. Capsules are common, ripe in spring and early summer. Gemmae are unknown.

In view of the differences in both morphology and habitat range between the two forms currently included within *N. geoscyphus*, it is likely that they warrant taxonomic recognition (Blackstock, 1995; Paton, 1999). However, this awaits further assessment of the variation in other parts of its range.

Circumpolar Boreo-arctic montane. In Europe commonest in northern Scandinavia. It extends southwards to the mountains of the Mediterranean region. Macaronesia, Caucasus; Russia, Japan, NE China; northern and western N America, Greenland.

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