Sedum villosum L.

Hairy Stonecrop

Sedum villosum is a small, hairy stonecrop with attractive pink flowers that is confined to flushes and mires in the uplands of Northern England and Scotland. It is associated with gravelly soils derived from base-rich rocks (e.g. limestone, basalt), usually on flat or slightly sloping ground where there is a constant supply of moisture. It appears to be declining in many areas due to moorland drainage and burning, and possibly also as a result of atmospheric pollutants. It is categorised as Near Threatened in Britain and as Vulnerable in England.

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IDENTIFICATION

Sedum villosum is an attractive, glandular hairy biennial to perennial stonecrop with alternate leaves and pink flowers. The glabrous Arctic variety *glabratum* is grown in gardens and has been found naturalized in Cork.

SIMILAR SPECIES

Sedum villosum is unlikely to be confused with any other British stonecrop, even when vegetative, due to the presence of numerous glandular hairs and the alternate semi-cylindric leaves. Very occasionally glabrous plants do occur in Britain, but these can be told from *S. anglicum* by their semi-cylindric and not ovoid leaves and obtuse to subacute (not acute to acuminate) petals (Stace, 2010).

In Teesdale *Sedum villosum* can be found within coppery-green coloured flushes dominated by the mosses *Palustriella falcata* and *P. commutata*. ©Jeremy Roberts

The southern European species *S. dasyphyllum* is also glandular-hairy but has opposite leaves and is confined to old walls in the lowlands (Preston *et al.*, 2002).

HABITATS

In Britain *S. villosum* is confined to open, moist gravelly soils and moss-cushions in flushes and fell-fields, on rock exposures by streamsides and depressions on limestone pavement (Braithwaite, 1994b; Halliday, 1997; Preston *et al.*, 2002). Most populations occur on flat or very gently sloping exposures with at least some moisture and base enrichment but it occurs on steeper slopes at higher altitudes.

The associated vegetation has not been studied in detail but the most typical appears to be NVC M32 *Philonotis fontana – Saxifraga stellaris* springs and NVC M10 *Carex dioica – Pinguicula vulgaris* mires (Averis *et al.*, 2004; K.J. Walker, pers. obs.). On Tertiary basalts on the west coast of Scotland it also grows with *Arenaria norvegica* and *Koenigia islandica* in NVC M34 *Carex demissa – Koenigia islandica* flushes (Averis *et al.*, 2004).

BIOGEOGRAPHY

Sedum villosum is a Boreo-arctic montane species occurring in Greenland, Iceland and Scandinavia, extending southwards to the mountains of Spain, Portugal and Morocco (Braithwaite, 1994).

The core of its British range is centred on the Southern Uplands of Scotland with notable clusters in Moray, Perthshire, Cheviot, the North Pennines and limestone regions of the Yorkshire Dales. Most populations occur between 250 and 500 m but it extends to 850 m on Cross Fell in England and 1000 m on Ben Lawers.

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ECOLOGY

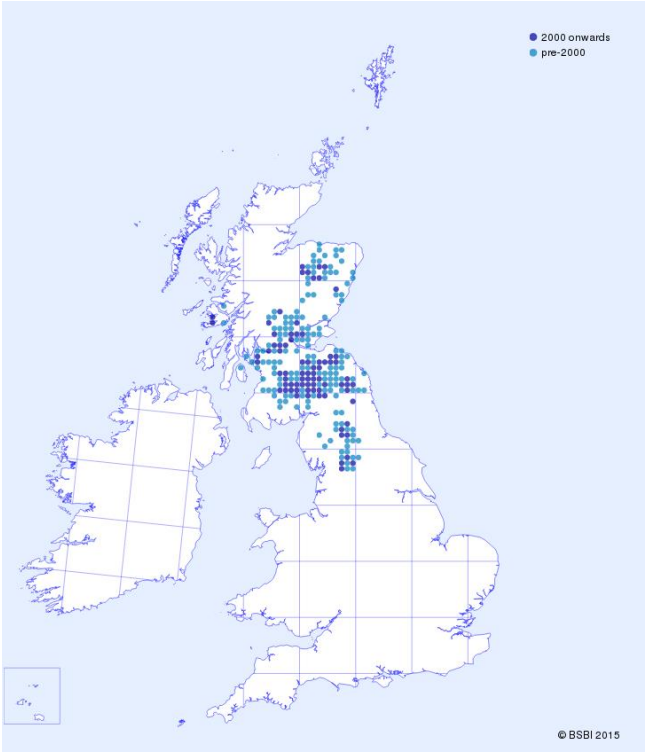
Despite its rarity very little is known about the ecology of *S. villosum*. It is a perennial, perhaps sometimes biennial chamaephyte, reproducing mainly by seed with a limited capacity to spread laterally via vegetative offshoots. Unlike other native stonecrops its leaves are not wintergreen (Poland & Clement, 2009).

The few hermaphrodite flowers are produced on lax cymes and are pollinated by insects. The ripe carpels are held erect and contain hundreds of tiny seeds (0.02 mg). The seeds have no specialized structures to aid dispersal; colonisation of news sites is therefore likely to be in soil stuck to the feet of livestock, vehicles or humans. Plants flower from June until September.

THREATS

Recent research has revealed a steady decline in the number of *S. villosum* populations in Scotland (Amphlett, 2010; Braithwaite, 2010a, b). Braithwaite (1994) suggests a number of causes, the most important of which, historically, is the excavation of 'sheep drains' (grips) to improve upland grazing. These divert base-rich waters away from flushes thereby causing them to become more acid leading to the loss of localized species, most notably *Saxifraga hirculus* in the North Pennines (Roberts, 2010; Robinson, 2012).

Other factors include high sheep grazing pressure, muir-burn and eutrophication caused by atmospheric pollutants (mainly nitrogen) which is possibly one of the most pervasive pressures causing degradation of weakly buffered sites in the threats in the uplands today.



Distribution of *Sedum villosum* in Great Britain and Ireland.

MANAGEMENT

Most populations of *S. villosum* occur within extensively grazed pastures in the uplands where numbers of sheep are difficult to control. Consequently losses have been reported as a consequence of both over- and under-grazing leading to the loss of its fragile habitat. Ideal management is likely to comprise low levels of grazing throughout the year, by sheep rather than cattle, as these can damage its sensitive flush and mire habitats.

REFERENCES

Amphlett, A. *Sedum villosum* (Hairy Stonecrop) in Banffshire v.c. 94. *BSBI Website* (http://bsbi.org.uk, accessed Aug 2013).

Averis, A., Averis, B., Birks, J., Horsfield, D., Thompson, D. & Yeo, M. 2004. *An Illustrated Guide to British Upland Vegetation*. Joint Nature Conservation Committee, Peterborough.

Braithwaite, M.E. 1994. *Sedum villosum* L. In: A. Stewart, D.A. Pearman & C.D. Preston (eds), *Scarce Plants in Britain*, p.377. Joint Nature Conservation Committee, Peterborough.

Braithwaite, M.E. 2010a. A wake-up call for the future of Britain's montane flora? – *Sedum villosum* in decline in Berwickshire. *BSBI News* 115, 15-17.

Braithwaite, M.E. 2010b. Berwickshire's disappearing scarce plants. *Watsonia* 28, 129-140.

Halliday, G. 1997. *A Flora of Cumbria*. Centre for North-west Regional Studies, Lancaster.

Poland, J. & Clement, E. 2009. *The Vegetative Key to the British flora*. Botanical Society of the British Isles (BSBI), London.

Preston, C.D., Pearman, D.A. & Dines, T.D. (eds & comps) 2002. *New Atlas of the British and Irish flora*. Oxford University Press, Oxford.

Roberts, F.J. 2010. *Marsh Saxifrage* Saxifraga hirculus*; status of English Sites in 2009*. Unpublished report to Natural England.

Robinson, L.M. 2012. Observations on the decline of *Saxifraga hirculus* (Marsh Saxifrage) in the North Pennines. *BSBI News* 121, 53-56.

Stace, C.E. 2010. *New Flora of the British Isles*. Third edition. Cambridge University Press, Cambridge.

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