Clinopodium calamintha (L.) Stace

Lesser Calamint

Clinopodium calamintha has pale lilac flowers and greyish-green leaves smelling strongly of mint. It occurs in well-drained chalky, sandy or gravelly soils, favouring open and warm south-facing banks. It is now mainly a species of roadside verges, wood margins, churchyards, disused railway lines and waste ground. The core British range lies in eastern England, but with outliers as far west as the Forest of Dean. *C. calamintha* is absent as a native from Scotland, Wales and Ireland. It is assessed as 'Least Concern' in England. However, a marked historical decline in distribution, comparable with a 'Vulnerable' threat status, was detected when pre-1930 records were taken into account for the England Red List analysis.

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IDENTIFICATION

Clinopodium calamintha has erect downy stems up to 60 cm tall and pale lilac flowers (corolla 10-15 mm; Stace, 2010) that at a distance can appear to be a pale bluish grey (Adams, 2016). The stalks are branched 1-3 times in lower clusters of flowers and at least once in upper clusters (Easy, 1993), giving the plant a rather bushy appearance.

The greyish-green oppositely arranged leaves, which smell strongly of mint, are small (less than 2 cm) on the main axis, and upper leaves are usually deeply but few-toothed, almost appearing lobed (Easy, 1993).

Close-up of *Clinopodium calamintha*, showing key floral characters. ©Lliam Rooney

SIMILAR SPECIES

Clinopodium calamintha is very similar to *C. ascendens*, and although they can be separated vegetatively (see Poland & Clement, p. 267), it is recommended that identification is attempted when plants are in flower.

Clinopodium calamintha usually has a smaller calyx (3 mm – 6 mm long) than *C. ascendens* (5 mm – 8 mm) covered in shorter hairs (most less than 0.1 mm, as opposed to more than 0.2 mm), giving the calyx of *C. calamintha* a neater appearance. This is accentuated by the lower two calyx teeth (1 mm – 2 mm) that are only slightly longer than the other calyx teeth in the upper clusters of flowers, as opposed to the consistently much longer lower teeth (2 mm – 4 mm) in *C. ascendens*. Hairs on the two lower calyx teeth are either absent or very short and curved in *C. calamintha*, but medium to long and straight in *C. ascendens* (Adams, 2016). Finally, hairs in the throat of the calyx protrude beyond the opening in *C. calamintha* (clearly visible when the corolla is shed), whereas in *C. ascendens* the hairs remain mostly within the throat (Stace, 2010).

A key written by Ken Adams is very useful, providing photographs of the main differences; see http://www.kenadams.org.uk/esb/CALAMINT%20I.D..htm.

HABITATS

Lesser Calamint is a plant of well-drained chalky, loamy, sandy or gravelly soils, favouring fairly open and warm south-facing banks.

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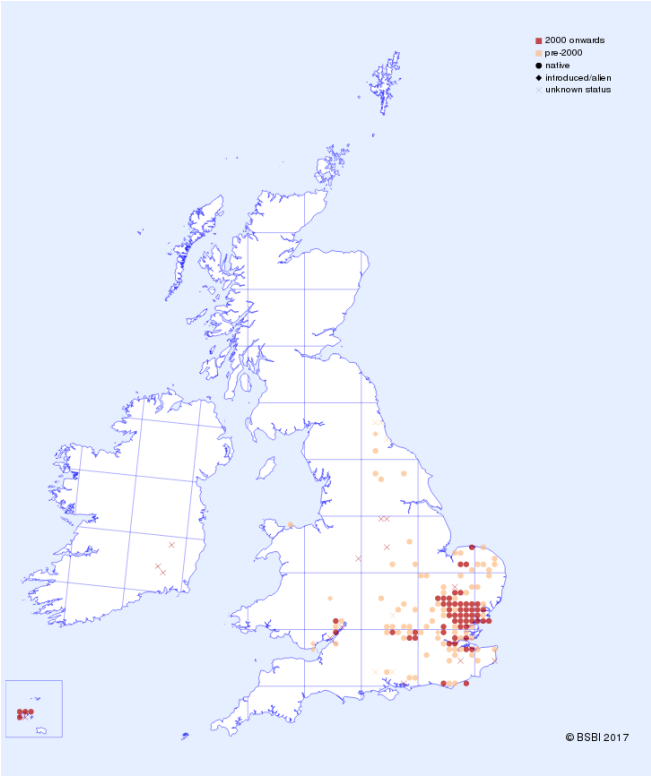
It may be found on roadside verges, disused railway lines, churchyard lawns and walls, wood margins, waste ground and, more commonly in the past, in lightly grazed calcareous pastures (Easy & Adams, 1994; Crawley, 2005; Sanford & Fisk, 2010; Kitchener, 2016).

Across its European range it is associated with similarly dry, warm and well-drained habitats, including sparsely vegetated rocky places, garrigue, pre-desert scrub and rather tall *Brachypodium phoenicoides* swards.

BIOGEOGRAPHY

Clinopodium calamintha has a Submeditteranean-Subatlantic distribution (Preston & Hill, 1997), present in south, west and south-central Europe from France to south Russia, and in North Africa, north Syria and northern Iran (Sell & Murrell, 2009). It has been introduced to several countries outside of its native range (e.g. China, Japan, North America, New Zealand) where it is used as a herb for cooking (it is famed as a culinary herb in Tuscan cuisine) and, more historically, for use as a medicinal tea which, alongside other ailments, is reputed to ease flatulence.

It reaches the extant absolute northern limit of its global range near Wells-next-the-Sea, West Norfolk (Preston, 2007). The core area for *C. calamintha* is in North Essex and, to a lesser extent, the northern margins of West Kent, with



Distribution of *Clinopodium calamintha* in Great Britain and Ireland.

populations following exposures of the pre-Anglian glaciation Kesgrave gravels of the pre-glacial Thames (Adams, unpublished). It is also frequent in southern and western areas of Suffolk, thinly scattered in West Norfolk, and localised on the chalk of south-west Cambridgeshire. *Clinopodium calamintha* is local and rare in north Berkshire, Buckinghamshire, Hertfordshire, Oxfordshire and Sussex (where it is found on Hastings Castle), and has native outliers in the Forest of Dean. In Wales there are a small number of records for *C. calamintha*, although all are thought to be of casual occurrence (Dines, 2008).

Clinopodium calamintha has been lost from a number of vice-counties, including Surrey (last record pre-1900), South Hampshire (last record 1926), Northamptonshire (last record 1950) and Leicestershire (last record pre-1930). Elsewhere it is an introduced/naturalised species. Historical records for Pembrokeshire are in error for *C. ascendens* (Stephen Evans, pers. comm.).

ECOLOGY

Clinopodium calamintha is a drought-resistant, short-lived perennial hemicryptophyte. It flowers from July until November. Flowers are hermaphrodite and are pollinated by bees and a wide range of insects.

After fertilisation the corolla drops off but the hairs in the throat of the calyx, which intersect to form a cone, delay seed drop, allowing the four nutlets to develop inside at the base of the calyx. The seeds are dark brown, elliptic (1.1 mm x 0.8 mm), with a slightly lustrous, finely reticulated surface (Bojňanský & Fargašová, 2007). Seeds eventually fall from the calyx close to the parent plant, although they can be dispersed short distances by ants (e.g. Buisson *et al.*, 2006). Easy & Adams (1994) speculated that dispersal in the past may have been assisted by attachment to the wheels of carts on muddy tracks and roads. This might well also apply to the feet of livestock.

Plants have a shallow spreading rootstock with short woody stems from the previous year's growth (Easy & Adams, 1994). It is sensitive to heavy frosts, and plants will die off after a hard winter. However, *C. calamintha* produces large quantities of seed and so populations can be replenished via seed fall and the presence of a persistent soil seed bank.

THREATS

As a short-lived perennial with a late flowering period *C. calamintha* is at risk from any mowing regime which cuts back growth without leaving time for seed-set (Kitchener, 2016). In Kent, populations are suffering from flail mowing in churchyards and on verges and are slowly disappearing from these habitats, mainly because, not being allowed to set seed in late autumn, its seed bank becomes depleted (Adams, 2016).

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MANAGEMENT

Germination and establishment of seedlings is dependent on open soil with surrounding low levels of competition, although established plants can survive in more extensive vegetative cover (Kitchener, 2016). Management should ideally involve the cutting and removal of arisings, with the timing of the cut avoiding the flowering and fruiting period.

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AUTHOR VERSION

Peter Stroh. Version 1: 19 September 2017.

SUGGESTED CITATION

Stroh, P.A. 2017. *Clinopodium calamintha* (L.) Stace. Species Account. Botanical Society of Britain and Ireland (BSBI).