

Clinopodium acinos (L.) Kuntze

Basil Thyme

Clinopodium acinos has creeping or ascending hairy stems, faintly aromatic oval-elliptical leaves, and deep-violet flowers with white markings on the 3-lobed lower lip. It grows on infertile, usually base-rich soils with habitats including short dry grassland, rocky slopes, gravel pits, arable fields, roadside and railway embankments and ride edges on former heathland. It is thinly scattered across southern, central and eastern England, becoming increasingly uncommon in northern England, rare in Scotland and Wales, and only present as an introduction in Ireland. It is assessed as Vulnerable in Great Britain.



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IDENTIFICATION

Clinopodium acinos has opposite, ovate-elliptical, slightly recurved, shallowly toothed leaves (0.5-1.5 cm) with ciliate margins (Poland & Clement 2010) and a faintly aromatic smell when crushed. The stems (~25 cm) are either erect or decumbent and have hairs that are bent back or curved downwards (retorse).

The flowers are arranged in axillary whorls of 3-8 (usually ≤6), and do not have a common stalk (Stace 2010). Each deep-violet flower (7-10 mm) has a 3-lobed lower lip with white markings and a shallowly 2-lobed flat upper lip.

The 2-lipped calyx tube is veined (11-13), curved, 4.5-7 mm long and strongly swollen near the base, especially in fruit. It has 3 teeth on the upper lip and 2 longer and narrower teeth on the lower lip (Stace 2010).



Clinopodium acinos on an abandoned railway siding, Sutton, Northamptonshire. ©Pete Stroh.

SIMILAR SPECIES

C. vulgare has a larger, more bulky appearance. It can be up to 75 cm tall, has axillary whorls of more than eight flowers (12-22 mm), a bright pinkish-purple corolla and a calyx tube that is scarcely swollen. All other *Clinopodium* species found in Britain have axillary flowers in contracted cymes with a common stalk (Stace 2010).

HABITATS

C. acinos is an annual, occasionally short-lived perennial, herb of sunny, open calcareous habitats. It is found in dry grassland, arable fields, rocky or waste ground, walls, gravel pits, eroding slopes on railway or roadside embankments, disused airfields and track and ride edges in conifer plantations on former heathland in the Brecklands of Suffolk and Norfolk (Walker 2002; Wells 2003).

It is recorded as an associate of NVC CG1 *Festuca ovina*-*Carlina vulgaris* grassland and CG7 *Festuca ovina*-*Hieracium pilosella*-*Thymus praecox/pulegioides* grassland (Rodwell 1992), as well as Other Vegetation (OV) types such as the OV39 *Asplenium trichomanes*-*Asplenium rutamuraria* community (Rodwell 2000), demonstrating the ability of *C. acinos* to colonise the sunny, lime-rich crevice vegetation of rocks and wall mortar. Outside of Britain, *C. acinos* is also a component of the species-rich alvar grasslands on limestone in Sweden and Estonia.

BIOGEOGRAPHY

C. acinos is a member of the European Temperate element, also occurring in central Asia (Preston & Hill 1997), with its range extending eastwards and northwards to Norway,

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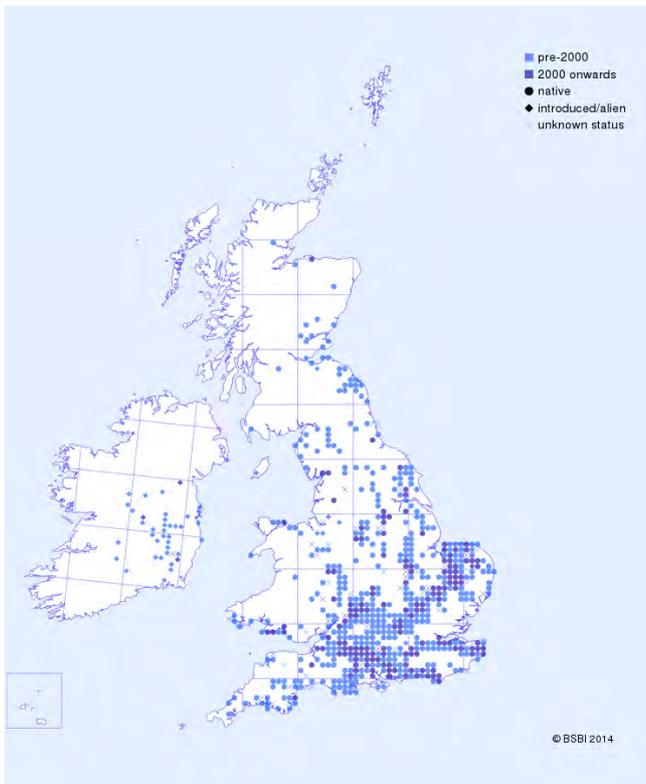
Finland and Estonia, southwards to Spain and Morocco, and across to Turkey. It is recorded as an introduction in many eastern and western states of North America.

C. acinos is widespread but now much more thinly scattered and localised in the central, southern and eastern parts of England, having suffered a considerable decline in distribution since 1930 (Stroh et al. 2014). It becomes increasingly scarce in northern England, and is rare in both Wales and Scotland, where it has also suffered substantial declines. It is considered to be an introduced species in Ireland (Scannell & Synnott 1987).

ECOLOGY

C. acinos is an annual or short-lived perennial herb of dry, early successional and/or nutrient-poor habitats, flowering from May to September. In southern Europe it completes its life cycle in a single summer, and although this is often the case in Britain, its ability to also become a short-lived perennial points to an adaptation to the shorter and cooler northern growing season.

The plant has little or no vegetative spread, and requires open, dry, and light conditions for germination and establishment (Grime et al. 2007). It is capable of forming a persistent seed bank, with a small proportion of seeds able to remain viable in the soil for more than five years (Thompson et al. 1997). Together, these characters point to the plant having a natural cycle of fluctuation in abundance, largely driven by the degree and timing of disturbance activities.



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

C. acinos was originally included in the *Satureja* complex of the *Lamiaceae* before being moved to *Acinos* (Dandy 1946). However, recent molecular and taxonomic work has led to a revision of the *Lamiaceae*, placing *Acinos* within *Clinopodium* (Harley et al. 2004).

Caterpillars of the very rare micro-moth *Coleophora tricolor* (Basil Thyme Case-bearer) are exclusively dependent on flower heads of *C. acinos* for the early stages of their development.

THREATS

Broad-spectrum herbicides and more efficient methods of weed control, alongside the conversion of chalk and limestone pastures to arable, have led to a substantial decline in Britain of c. 50% in recent years (Cheffings & Farrell 2005). In many areas it is no longer found in arable fields, surviving only in less intensively managed habitats (Walker 2002).

Extant populations are vulnerable to being outcompeted by taller vegetation, and although the preference for extremely nutrient-poor habitats would suggest that this is not an immediate threat, increased nitrogen deposition and eutrophication are likely to have long-term impacts on the distribution and survival of this species.

MANAGEMENT

Management should aim for a short sward by the end of the growing season. Depending on the habitat, this can be achieved by grazing with sheep, cutting and removing the arisings, grazing by feral rabbits, or sometimes a mixture of all three.

The occasional creation of small areas of bare ground is desirable. This is often achieved as a by-product of rabbit activity, although too much bare ground and disturbance may have negative impacts. Feral rabbit grazing may also affect the ability for plants to flower and set seed, depending on the number of animals in any one year. However, natural fluctuations in the rabbit population should, in the long-term, outweigh short-term concerns. The prevention of scrub encroachment may be necessary to maintain open conditions from time to time.

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