

Chamaemelum nobile (L.) All

Chamomile

Chamaemelum nobile has greyish-green, 'feathery' leaves that are distinctly aromatic when crushed and solitary flowers with papery scales on the receptacle. It is a plant of moderately acid, nutrient-poor, sandy or gleyed winter-wet soils, associated with old village greens and playing fields, woodland glades and coastal grasslands. Its distribution is now largely confined to lowland areas of southern England, notably Cornwall, Dartmoor and the New Forest, south-west Ireland and coastal areas of Wales. Due to substantial declines it is assessed as Vulnerable in Britain and England and as Endangered in Wales.



©Bob Gibbons

IDENTIFICATION

Chamaemelum nobile has alternately arranged, linear-subulate (tapering to a fine point) leaves **with a 'feathery'** appearance, 2-3 times pinnate and with sparsely hairy leaflet lobes (2.5-4 × 0.5 mm) that are a greyish-green colour (Poland & Clement 2010). Crushing of the leaves will produce a fresh apple scent, a particularly useful character if the location where the plant grows is under heavy grazing pressure.

Solitary flower heads are 18-25 mm across, and have oblong-acuminate papery receptacular scales at the base of the white ray petals (Stace 2010). There is also a noticeable swelling at the base of the corolla tubes that cover the top of achenes in a 'hood' (Rose 2006).



Chamaemelum nobile on grazed heathland at Corfe Common, Dorset. ©Nick Upton.

SIMILAR SPECIES

The smell of the crushed leaves combined with the presence of papery receptacular scales separate *C. nobile* from superficially similar species in the *Asteraceae*. Beatrix Potter made famous its use as a soothing herbal beverage (Potter 1902), with double-flowered forms are most often grown for this purpose (Roman **Chamomile**, cv. 'Flore Pleno'); **although** its close relative, *Matricaria recutita*, is thought to make the **best 'chamomile' tea**. Chamomile lawns were often planted with the ornamental cv. 'Trenague' (Kay & John 1993).

HABITATS

C. nobile is found in moderately acid, unimproved and seasonally winter-wet lowland grasslands on dry, sandy or gleyed soils (Winship & Chatters 1994). Habitats include sandy heaths, cricket pitches, playing fields, mown or grazed commons, old village greens, open woodland glades and on coastal winter-wet acid grassland where salt spray, exposure or trampling maintain a short sward (Killick 2002; Rand & Mundell 2011).

It is frequently associated with the margins of NVC M35 *Ranunculus omiophyllus*–*Montia fontana* rills and flushes (Rodwell 1991). In the New Forest, one of the remaining strongholds for this species, it typically occurs in pony-trampled damp commons and clearings, sometimes with *Cicendia filiformis*, *Mentha pulegium* and other threatened species (Pilkington 2007). On the Lizard it may be found with nationally declining species such as *Pilularia globulifera* and *Illecebrum verticillatum* (Bilton et al. 2009). In France, it has also been recorded from the grazed banks of old polders along west Atlantic coastal areas (Bonis et al. 2005).

Chamaemelum nobile (L.) All

BIOGEOGRAPHY

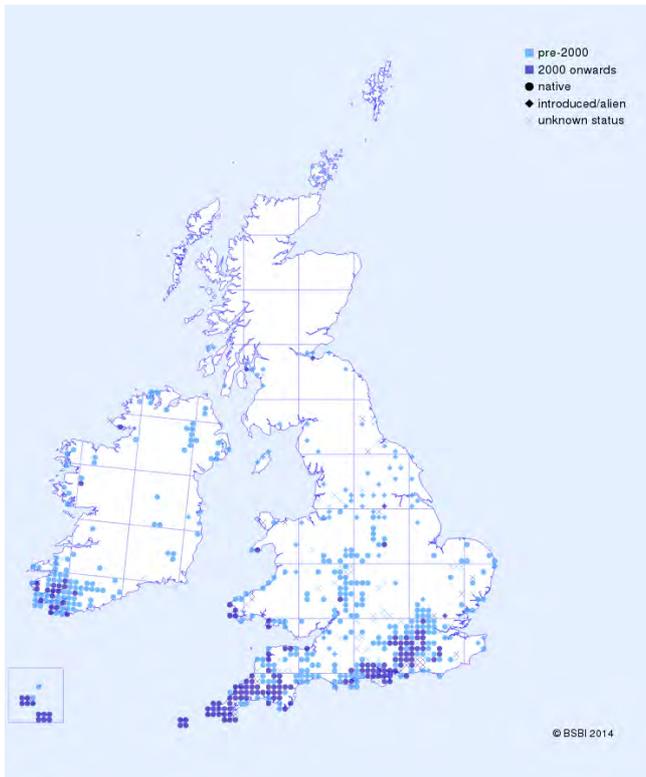
C. nobile belongs to the Sub-oceanic Southern Temperate biogeographical element (Preston & Hill 1997), and is often referred to as having an **'Atlantic' distribution**. It is widespread in western Europe from Belgium, southwards to Algeria and the Azores (Winship & Chatters 1994), and reaches its absolute northern limit in west Donegal (Preston 2007). It is commonly recorded as a garden escape in North America, and is naturalised in Tasmania (Baker & de Salas 2012).

In Britain and Ireland, *C. nobile* was once relatively widespread throughout most of central, western and southern England and southern Ireland. However, following substantial declines in some regions (e.g. Byfield & Pearman 1994) it is now largely confined to southern England, south-west Ireland and coastal regions of Wales, with core populations persisting on the Lizard Peninsula (West Penwith Moors), mid-Cornish moors, Bodmin Moor, the Isles of Scilly, Dartmoor, the New Forest, St. David's Head (Pembrokeshire) and the Gower Peninsula.

ECOLOGY

A long-lived perennial herb of open sunny habitats on moist or winter-wet, moderately acid soils (Grime et al. 2007), flowering from June to August.

In the first year of growth, plants produce shoots that normally form a rosette of leaves which subsequently flower in the second year. *C. nobile* appears to be strongly self-incompatible. Its primary mechanism of growth is by clonal



Distribution of *Chamaemelum nobile* in Great Britain and Ireland.

spread, extensively creeping and rooting at the nodes (Hill et al. 2004), with vegetative spread measured at 10–15 cm per year or more (Kay & John 1993). Its semi-prostrate habit means that it is capable of persisting vegetatively in heavily grazed or mown swards, provided that artificial fertilisers are not applied, and in such situations it is not uncommon for it to comprise more than 50% of the vegetation cover.

Flowers are visited by small muscid and syrphid flies (Kay & John 1993), and although plants are capable of reproduction by seed, flower-heads in large clonal and monomorphic colonies rarely do so and consequently depend on vegetative spread. Seed-set does appear to be much higher in genetically varied populations (Kay & John 1993), if given the chance to flower. When seed-set is high, seed viability is also high, with germination requirements consisting of a complex arrangement of alternating temperature and high light levels (Kay & John 1993).

Common or garden seed bank experiments using soil taken from sites in Wales with large populations of *C. nobile* detected no germination, inferring a transient seed bank (Kay & John 1993).

THREATS

A prolonged cessation in grazing or cutting regimes will result in the growth and eventual dominance of tall, rank vegetation and the eventual loss of *C. nobile*, as will excessive drainage of grasslands leading to the loss of bare areas in the spring and early summer months.

Historical declines have been attributed to the cessation of grazing, particularly on common land, alongside the clearance of heaths, the drainage of winter-wet grasslands, the loss of pasture land to arable farming and the increased use of more efficient broad-spectrum herbicides.

MANAGEMENT

Grazing or cutting is vital to maintain a short sward with open, light conditions. This is particularly true for populations with low genetic diversity, only persisting because of vegetative spread. In general terms, traditional grazing should aim to produce a short sward and areas of trampled ground, and stocking levels should be reduced in September and October to allow flowering and seed-set.

Specific management for a variety of habitats is outlined in the **'Back from the Brink' Plantlife report (2001)**. Techniques include avoiding the use of artificial herbicides, mowing no **more than once per week on 'amenity' sites, removing** clippings and mowing less frequently around the time of flowering and fruiting.

REFERENCES

- Baker, M.L. & de Salas, M.F. 2012. *A census of the vascular plants of Tasmania*. Department of Economic Development, Tourism and the Arts, Tasmania.

Chamaemelum nobile (L.) All

- Bonis, A., Bouzille, J. B., Amiaud, B. and Loucougaray, G. 2005. Plant community patterns in old embanked grasslands and the survival of halophytic flora. *Flora* 200:74–87.
- Byfield, A. & Pearman, D. A. 1994. *Dorset's disappearing heathland flora. Changes in the distribution of Dorset's rarer heathland species 1931 to 1993*. Plantlife and RSPB, London
- Grime, J.P., Hodgson, J.G. & Hunt, R. 2007. *Comparative Plant Ecology: A comparative approach to common British Species*. Castlepoint Press, Kirkcudbrightshire.
- Kay, Q.O.N & John, R.F. 1993. *Population genetics and demographic ecology of some scarce and declining vascular plants of Welsh lowland grassland*. Countryside Council for Wales Science Report 31, Bangor.
- Killick, H.J. 2002. *Chamaemelum nobile*. In: Preston, C.D., Pearman, D.A. & Dines, T.D. (eds). *New Atlas of the British and Irish flora*. pp. 648. Oxford University Press, Oxford, p.
- Pilkington, S. 2007. *Wiltshire Rare Plant Register: The rare and threatened vascular plants of north and south Wiltshire*. Privately published, Wiltshire.
- Plantlife International. 2001. *Managing your land for chamomile. Back from the Brink management series*. Plantlife International, Salisbury.
- Poland, J. & Clement, E. 2009. *The Vegetative Key to the British Flora*. Botanical Society of the British Isles, London.
- Potter, B. 1902. *The Tale of Peter Rabbit*. Frederick Warne & Co., London.
- Preston, C.D. & Hill, M.O. 1997. The geographical relationships of British and Irish vascular plants. *Botanical Journal of the Linnean Society* 124: 1-120.
- Rand, M. & Mundell, T. 2011. Hampshire Rare Plant Register. Trollius Publications.
- Rodwell, J.S. (ed.) 1991. *British Plant Communities. Volume 2. Mires and heath*. Cambridge University Press, Cambridge.
- Stace, C. A. 2010. *New Flora of the British Isles*, third edition. Cambridge University Press, Cambridge
- Winship, H. & Chatters, C. 1994. *Chamaemelum nobile* (L.) All. In: Stewart, A., Pearman, D.A. & Preston, C.D. (eds). *Scarce Plants in Britain*. pp. 110. JNCC, Peterborough.

AUTHOR VERSION

Peter Stroh. Version 1: 30 January 2015.

SUGGESTED CITATION

Stroh, P.A. 2015. *Chamaemelum nobile* (L.) All. Chamomile. Species Account. Botanical Society of Britain and Ireland.