

# Ireland's Lusitanian heathers – an *Erica mackayana* perspective

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**Abstract.** *Erica mackayana* occurs only in western Ireland and N Spain. In Ireland, where it spreads only by cuttings, it has a very disjunct and localised distribution. *Erica tetralix*, however, is very common and where *Erica mackayana* occurs, the hybrid *E. x stuartii*, is frequent, though never more than 1–2 km from *Erica mackayana*. The restricted distribution in Ireland of parent and hybrid raises questions as to their origin. Like *Erica erigena*, *Erica mackayana* may have been introduced from Spain by traders as packing for goods; the remote location of the sites suggests it may even have arrived with smugglers.

**Key words:** Atlantic fringe, localised distribution, NW Spain, smuggling, trade.

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## 1. Introduction

Because Ireland has a hyperoceanic climate, on the edge of the Atlantic Ocean, it supports extensive peatlands and much of the west-coast habitat is blanket bog. The habitat and climate result in the predominance of ericaceous species in many regions. Ireland has many species in common with other European Atlantic countries, the so-called Hiberno-Lusitanian species. Several of these are members of the Ericaceae and occur in Ireland but not in Britain, such as *Arbutus unedo* and the heathers *Daboecia cantabrica*, *Erica erigena* and *E. mackayana*.

Ericaceous pollen is not produced in abundance and is hard to distinguish even to genus, so that it is usually recorded as 'Ericaceae' pollen. Therefore the origins of the so-called 'Irish' Ericaceae have long been a subject of debate. Such species of localised occurrence might also include *Erica ciliaris* and *E. vagans* that are very rare in Ireland and in Britain are localised in the south-west. Outside Britain and Ireland, the heathers occur only in north and north-west Spain and/or the south-west coast of France. One such species of most restricted distribution is *Erica mackayana*, now known at six sites along the Irish Atlantic coast and elsewhere in the world only in north-west Spain

(Webb, 1955; Nelson & Fraga, 1983; Sheehy Skeffington & Van Doorslaer, in prep.). Its distribution in Ireland is very localised, partly because it does not set seed in Ireland (Webb, 1955) and possibly partly because of the history of its arrival in Ireland. The detailed mapping of species and hybrid demonstrates just how localised the distribution of *Erica mackayana* is, even compared to that of its hybrid and thus can inform debate as to their origin in Ireland.

## 2. Methods and study area

For her PhD research in the summers of 1987–1989, Van Doorslaer walked and mapped all the then-known sites of occurrence of *E. mackayana* and its hybrid with *E. tetralix*, *E. x stuartii* in Ireland, using an Ordnance Survey 1:10500 (6") map and distinguishing species from hybrid using a hand-lens to check ovary hairiness (see Nelson, 1981). More recently-discovered sites (Nelson, 2005; Sheehy Skeffington & Sheppard, 2015) were mapped by the present author using a hand-held Garmin 60 GPS; and, though each plant was not noted, the full extent of occurrence of both species and hybrid was mapped.

### 3. Results

All sites were on Atlantic blanket bog, within 10 km of the sea. Both species and hybrid had a very localised distribution at each site, especially *E. mackayana* which was almost entirely confined to peat-banks (often hand-cut for turf extraction), along streams, around lakeshores or in forestry, always within 1km of a minor road or track (Fig. 1; Donegal and Galway sites, not shown here, are similar). Though *E. mackayana* does not set seed in Ireland, it readily propagates from cuttings, thus accounting for its abundance on peat-banks, eroded naturally or cut by human activity. Forestry machinery and more recently, mechanical peat extraction must also have played a role in its spread locally. The hybrid was always more widespread at sites, no doubt as *E. mackayana* pollen (which is mostly viable)

will travel long distances and the other parent, *E. tetralix* is very common in Irish blanket bogs.

In each case, *E. mackayana* occurs in remote areas, most within 10km of the sea. In Donegal, the nearest access to the sea is less than 5km to the west, where the road ends at a sheltered bay (Fig 2a). In Mayo, the biggest site (Nephin) is on an old cattle drovers' trail that is now a walking route through the mountains. This drovers' trail starts by the sea at a sheltered bay east of Achill Island (Fig 2b). The other sites in Co. Galway and Co. Kerry are also in remote regions, just inland from sheltered bays; that of Kerry also being on an old drovers' route inland over a pass to Killarney. In Donegal, Nephin and Kerry, the heather occurs where the route inland reaches the first range of relatively high mountains.

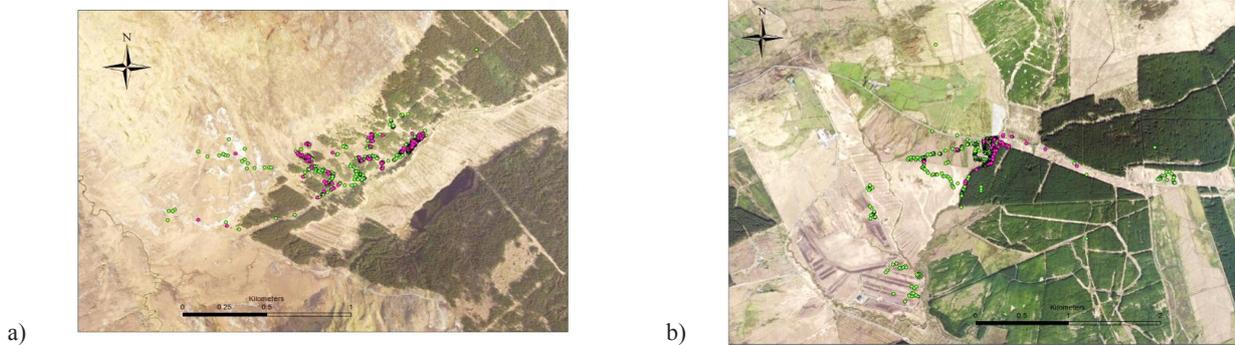


Figure 1. Extent of *Erica mackayana* (pink dots) and *E. x stuartii* (green dots) a) in Nephin, Co. Mayo; an old route, now a forestry track is visible running SW-NE; no plants were found south of this or NW of the forestry, except where shown. b) in Caunogue, Co. Kerry; a minor road runs from top left corner, south and east through the two main forestry blocks; a river crosses this at the point where *E. mackayana* is most abundant; the areas south, east, and north were checked and no other plants found

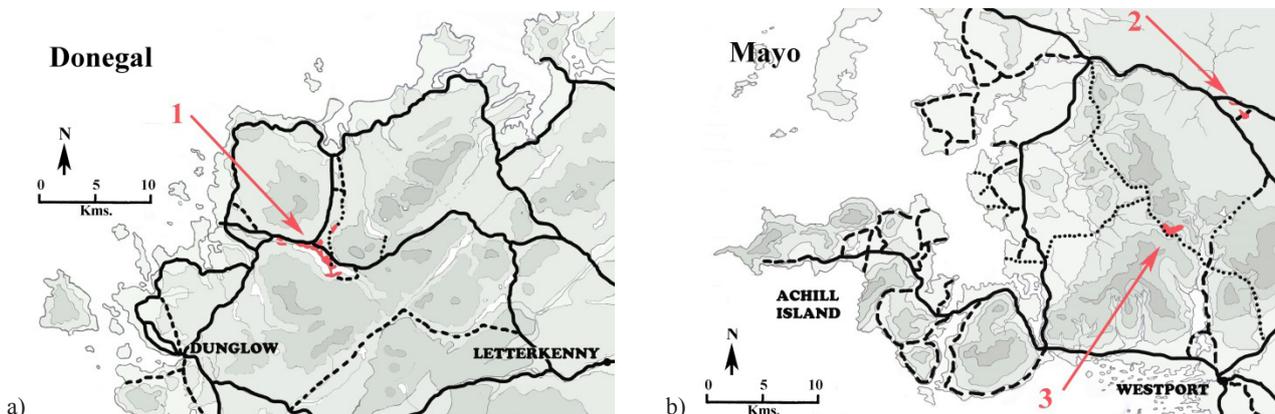


Figure 2. Location of sites in relation to the sea and to main — and minor \_\_\_ roads and tracks .... Contours are (increasingly dark shading) 100 m, 200 m and 400 m. Total area of occurrence of *E. mackayana* and hybrid in red; a) site 1 at L. Nacung, Co. Donegal b) sites 2 (Bellacorrick) and 3 (Nephin), Co. Mayo

#### 4. Discussion

The origins in Ireland of Hiberno-Lusitanian species such as *E. mackayana* have long exercised botanical minds (Webb, 1983). The fact that in Ireland *E. mackayana* does not set seed, has so far not hampered the view that it is native to Ireland (Webb, 1983; Neslon, 2005). Lieveke Van Doorslaer's very careful mapping of species and hybrid illustrated a distinct distribution pattern for both, that led us to believe that *E. mackayana* was not native. Its very localised occurrence in Ireland and its almost exclusive association with peat banks and cuttings, *i.e.* disturbed blanket peat where it propagates by cuttings, within whole regions dominated by blanket peat, is not the behaviour of a native species.

There are increasing indications that many Hiberno-Lusitanian species may have been introduced from north Spain by human activity, not least as traffic and trade was almost exclusively maritime along the European Atlantic coast for millennia (Quinn, 2004). The most compelling is the story of *E. erigena*. Its distribution in Ireland is similar to that of *E. mackayana*, if more abundant where it occurs. It is found in peatland along lakeshores, streams and disturbed habitats on the Galway-Mayo coast; in two places, it occurs near *E. mackayana*. It is more widespread, if localised in Spain, but can be found also near the north Spanish coast (Foss & Doyle, 1988). Its Irish pollen record was traced by those authors back only to the 15<sup>th</sup>/ 16<sup>th</sup> century, when there was strong trade in wines from the Galician coast in N Spain. They suggest the heather, occurring near the coast, may have been used as animal bedding or as packing for goods and then discarded. The first author saw bunches of heather being used as packing in north Spanish boats in the 1980s/90s (P. Foss, pers. comm.).

*E. mackayana* occurs in localities far distant from the ports on the west of Ireland and almost exclusively on routes inland from secluded bays. The biggest site for the heather and hybrid is on Roundstone Bog, bounded by two secluded coves and bisected by an old routeway in Connemara, which region has a long history of smuggling (Gibbons, 1995). In Kerry, the trail, known as the Smugglers' Path runs from the coast inland past the main area where *E. mackayana* occurs on the peat-banks near the road.

Thus, using detailed distribution maps of species and hybrid and careful gleaning of information from maps and local lore, it is possible to suggest that the origin of *Erica mackayana* is connected to the age-old trade, legal or otherwise, between N Spain and the west coast of Ireland.

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