

Further Notes on *Mimulus repens*

Steve Benham

Mimulus repens, otherwise known as creeping musk or native musk, is a somewhat unassuming but charming herb found on wet muddy margins of estuaries and lagoons.

The species is shared with all Australian states where it is commonly known as creeping monkey flower. Elliot & Jones (1993) suggests that it 'adapts well to cultivation but must not have extended dry periods, otherwise it can die.' The authors go on to say that 'this species needs maximum sunshine for good growth.'

Sadly for New Zealand, it is one of the many regionally declining species, being listed as regionally threatened endangered (Stanley et al. 2005), while at a national level it is regarded as "At Risk/Sparse_{DP,SO}" (de Lange et al. 2004).

In 1925 Cheeseman recorded the native musk in 'Salt marshes from North Cape to south of Otago, not uncommon.' Moore and Irwin (1978) suggest that it's still abundant in some districts, as around the shores of Lake Ellesmere where it flowers most attractively about Christmas time.' Thomas Kirk made an early collection on the shores of the Manukau at Onehunga.

Nearer to home, eighteen years ago Rhys Gardner described a new location, Traherne Island, on the shores of the Waitemata, and his collection AK 180183 was lodged at the Auckland Museum Herbarium. The Auckland Museum Herbarium also records a specimen AK 11613 collected by Joan Dingley from the south side of the Manukau at Karaka Point near Waiuku. Another location, the Puhinui Reserve, requires a further inspection as Rhys found one reasonably large-sized colony in November 1996 and prior to this sighting Marjorie Cutting had recorded the species in the same area. On the 6th May 2000 the Auckland Botanical Society botanised the Reserve with Rhys as their leader but unfortunately they didn't make it to the southern end of the coastal saltmarsh where it was found in 1996.

Several years ago now, I mentioned to Terry Hatch that I was going out to Miranda seed collecting from manuka, harakeke, kowhai, ti kouka and *Coprosma propinqua* for the *Ileostylus micranthus* Restoration Project. Knowing my interest at Miranda in native herbs he described the location where he had previously found the native musk.

Rhys had collected (AK 179834) from this same location in March 1988.

The seed collecting trip took place in February which is an ideal time to find this species in flower. *Mimulus repens* shows a resemblance to the unrelated

makoako or sea primrose (*Samolus repens*). At Miranda they are to be found coexisting and entwined with one and other. Their growth habit, leaf and stem colourings are all quite similar until one gets down to eye level and then you discover that the leaves are slightly fleshy and pitted with small pinhead sized indentations. Some forms of creeping musk are predominantly violet-coloured whereas the Miranda population has only a pale flush of violet with much white on the tube and lobes which make it even more difficult to find amongst the white-flowered makoako.



Mimulus repens (Drawn by Sri K. Benham)

Out on the salt meadows there is a small overgrown area that had been fenced off a good number of years ago, presumably to protect the creeping musk from being trampled and grazed by the resident cattle. However, today this form of protection just doesn't seem to work with the heavy weed infestations that pose serious problems to these fragile ecosystems. Such weedy vegetation needs to be control grazed so as to keep the site open for the survival of these herbs. Also, I am convinced that the trampling of cattle hooves helps to cut up the prostrate stems which soon take root if not already rooted, enabling them to grow into new plants and establish new colonies. This helps to invigorate the population and prevents plants from becoming moribund which eventually leads to their demise.

In such a case as this, controlled herbivore grazing cannot be underestimated as a 'tool' for plant conservation?

Acknowledgements

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New Zealand geographical limits of native vascular plant species in the Auckland region: past & present

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Introduction

The Auckland region (see Fig. 1) is not strong in native vascular plant geographical limits because there is adjoining land to the north (Northland), south (Waikato) and higher land to the east (Te Moehau). In fact, Te Moehau at 892m asl is the northern limit for 20 species (excluding *Cordyline indivisa*) (Gardner & Smith-Dodsworth 1984), and in latitude it is level with Waiwera in the Auckland region. The high points in the Auckland region are: Little Barrier Island (722m), Kohukohunui in the Hunua Ranges (688m) and Mt Hobson on Great Barrier Island (627m) – each of these high points is associated with at least one geographical species limit.

Also the Tamaki Ecological District (ED) (see Fig. 1) has been a major urban centre for a long time: it had a very large Maori population in the 17th century and was cultivated long before that. When Europeans first arrived most of the Auckland isthmus was fern and scrubland – the forests had gone (Millener 1965, Cranwell 1981, Esler 2004). Thus primary habitat which might have been repositories was already much depleted even when the first botanical records were being collected.

Historical and extant populations at their geographical limits are important because they indicate whether a species is expanding geographically, receding or remaining static. Some native species appear to be rapidly spreading, e.g. *Epilobium nummulariifolium* south from North Auckland and northern Coromandel Peninsula (Raven & Engelhorn 1971) and *Schoenoplectus pungens* appears to be actively moving north up Auckland's west coast (Cameron & Bellingham 2002). Of course this requires a suitable habitat to spread or retreat into, and often for anthropomorphic reasons this is no longer available. Geographical limits have important implications for conservation and restoration, because these natural limits should not be artificially enhanced or extended by planting (unfortunately some already have been).

They also provide a means to test global warming theories - as northern cold-sensitive species should expand their southerly ranges at the expense of southern cold-tolerant species.

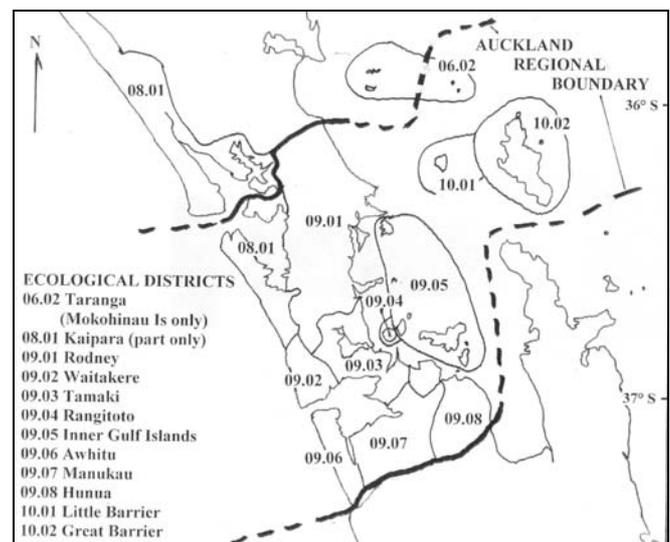


Fig. 1. Auckland region showing the 12 Ecological Districts.

The records presented here are mostly based on the specimens held in the Auckland Museum herbarium (AK), which now also includes the former Auckland University herbarium (AKU). Where there are several collections for the same species, the earliest record is generally cited. Only published taxa are considered – no tag name entities are included. For a few of the species there may not be universal acceptance whether they are native or naturalised, e.g. *Centipeda elatinoidea*, *Gratiola pubescens* and *Polygonum plebeium* – I have treated them here as indigenous.

There are seven vascular plant taxa considered endemic to the Auckland region (with the Ecological Districts where they occur): *Celmisia major* var. *major* (09.02, 10.02), *Hebe pubescens* subsp. *rehuarum* (10.02), *H. pubescens* subsp. *sejuncta* (06.02, 10.01,