Mountain Cabbage Tree (*Cordyline indivisa*) in the Hunua Ranges - an observation

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In the Auckland Botanical Journal Brenda Greene (2000) noted the apparent disappearance of mountain cabbage tree, or toii (*Cordyline indivisa*) from the vicinity of Point 21 (Kohukohunui No.2), Kohukohunui Trig itself and from the main summit track to the west of Kohukohunui in the Hunua Ranges. She writes, "The Kohukohunui site record, and track edges to the summit, and Point 21 were checked at the same time, but no trees were located" (Greene 2000). While these specimens may indeed have died off, the species has not disappeared completely from the area, thankfully. It should be noted that further east of this restricted locality three very healthy (though somewhat smaller) specimens are growing in low scrub on south facing slopes. Approximately 400 m east of the Adams Lookout, on the true left of the Kohukohunui Track, the first specimen (vouchered as AK 252830), can be seen clearly, less than 3 m from the track itself. As is common with mountain cabbage tree additional specimens are located nearby, in this case within 10 m of the first. This population of three trees is growing among low, dense scrub consisting mainly of bracken (*Pteridium esculentum*), *Coprosma rhamnoides* and scrambling bush lawyer (*Rubus australis*). The specimens are 2-2.5 m tall and when last visited in late March 2001 seemed to be growing well in their exposed situation on nutrient-poor clay typical of the Hunua Ranges.

In addition to the specimens mentioned, another small population of mountain cabbage trees in the Hunua Ranges has previously gone unrecorded. Seen by S. McCraith in October 1996 this second population also consists of three trees, all of which measure between 2 m and 4 m in height (Fig. 1).

The locality is ambiguous at the very least but was well south of Kohukohunui Trig in the headwaters of the Konini Stream (west of the Mangatangi Ridge Track), on south-west facing slopes. The location was sheltered, cool and probably has a fairly stable microclimate. This site has not been visited since.

Fig.1: Mountain Cabbage Trees – Hunua Ranges October 1996

What is interesting is that the localities of both populations are at significantly lower altitudes (520 m at Adams Lookout site and c. 580 m at the Konini Stream site) than the 651 m high Point 21. Furthermore the former population (near the Adams Lookout) occurs in a rather exposed situation, in full sun, not the cooler, montane habitat traditionally thought of as supporting these trees. Presumably this is merely a case of Mother Nature having a chuckle at the expense of botanists.

Records of *Cordyline indivisa* in the forest of the Hunua Ranges have been sporadic. Andrew Dakin undertook a survey of the distribution and condition of toii on Point 21 in 1971. In notes, "...at the present day only about 10-12 plants are still in the area [Hunua Ranges]. Of these 10-12 plants, eight are known to be in the vicinity of Point 21" (Dakin 1972). In 1977 he authored a follow-up article where he writes "Earlier this year I revisited Point 21...A diligent search was made around the point for plants mapped in 1971, but all that could be located was the lower trunk of the largest toii with one small (pathetic) leaf tuft at the base. All the smaller plants have died..." (Dakin

1977). Interestingly in the same article he notes "Information from J. W. St Paul (a long time resident in the area) indicated that toii was more abundant on higher ground in the early 1900's (1910-14), being present in well lit openings in the tawa forest. Mr. St Paul remembered several large specimens, one in particular having multiple branching with several heads". It is likely that the occurrence of mountain cabbage tree in the Hunua Ranges is influenced largely by climate and the species may be a victim of the much touted global warming. Conversely there must certainly be a viable seed bank of *C. indivisa* lying just beneath the surface waiting on a germination trigger. Dakin also notes during his initial survey of the area "The condition of these plants is generally poor, they have been much browsed by goats...". In recent years the ARC has undertaken a major goat eradication programme throughout the Hunua Ranges that can only be beneficial to the emergence of young plants. Based on this information it would be very surprising that this, the largest (and highest) area of continuous bush on the Auckland isthmus, is not home to still more examples of these magnificent plants. The most likely areas must be on the cooler, montane slopes west of Kohukohunui Trig in the Mangatawhiri Valley and south of the high point in the network of valleys feeding the Mangatangi Stream; areas that see little traffic due to the absence of tracks. It is also possible that there are still more toii plants hidden amongst the thick summit scrub that still supports other montane species such as mountain horopito (*Pseudowintera colorata*) and quintinia (*Quintinia serrata*).

Note: Other species of *Cordyline* in the surrounding area vary in abundance. *C. banksii* is very common especially on the Waharau side of Kohukohunui and seems to do well in the open. *C. australis* is less common than *C. banksii* and where it does occur is generally in more sheltered areas below ridgelines. *C. pumilio* also occurs very occasionally in the area.

References:

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Sand tussock *(Austrofestuca littoralis)* – an update on the Auckland Populations

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In Auckland sand tussock was once widespread on both the mainland and also the Inner Gulf Islands. It has suffered a catastrophic decline in Auckland, and for the last 100 years, we have only known of populations on Great Barrier Island. The last known record for the Auckland mainland was in 1902, when Thomas collected sand tussock in 'damp sandy flats' at Te Henga, on the Waitakere Coast. Petrie may have found it after this time but his specimen from Waiuku has no exact date.

Two new sites of the sand tussock or hinerepe (*Austrofestuca littoralis*) have been located in Auckland recently, one further population on Great Barrier, and one on the mainland at Pakiri Beach.

The Pakiri Beach population of c. 20 plants, many of which are seedlings, grow on the high rear dunes under pohutukawa and amongst *Calystegia soldanella* and *Spinifex sericeus*. The local landowners have fenced the dunes to protect them from erosion and stock damage, and intend to control the weeds; this will greatly enhance the chances for the plant to survive and prosper. Marram grass (*Ammophila arenaria)* is present on these dunes and has been observed at other sites as a threat to sand tussock (Bergin 2000).

Further survey of Pakiri Beach could prove rewarding as only a small portion of the beach at the southern end was surveyed. In 1973 sand tussock was found at Ruakaka in Northland and this is the closest recorded population to Pakiri. It will be interesting to see if the sand tussock still grows there or indeed on any of the beaches south of Whangarei. There are more populations in Northland - at Te Paki and near Kaitaia (Karen Riddell *pers. comm.,* 2001).

At Palmers Beach, on the eastern Great Barrier Coast, two new patches of sand tussock were located in October 2000. The sand dunes at Palmers Beach rise up to meet the fringe of pohutukawa forest at the base of the hills. The mobile fore-dunes support large populations of the native sand binders *Spinifex sericeus* and *Desmoschoenus spiralis*. The more stable rear dunes meet large pohutukawa under which the sand tussock grows. Small patches of both pampas and marram were recorded on Palmers Beach.

There are at least six major sandy beaches on Great Barrier's eastern coast, four of which (including