

So returning to the original question, “whence came the seed?” Simply put - I don't know.

Maire tawake at Browns Bay, Auckland

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Site Description

On the 25 of May and 17 June 1995 in the company of Vic Lange, we inspected the vegetation on part of the Newbegin Block, an area proposed for subdivision in Browns Bay on Auckland's North Shore. Each inspection was for about 1.5 hours. On the first trip we entered the regenerating bush from Helvetia Drive and proceeded down to the gully in the south west corner of the block where there are at least 35 maire tawake (see Appendix for scientific plant names) up to 10 m tall in the wetland at the bottom of the narrow gully (map reference R10 653 955 c. 40 m asl.). On the second trip we proceeded from the back of 9 Helvetia Drive, north-eastwards down the valley, above the proposed road route, to the raupo swamp on the Robinson Block (a second proposed subdivision area) and returned, more or less, up the stream to the main maire tawake site.

Locally, maire tawake is the main emergent tree standing between 8-10 m tall (with 13 maire tawake in this upper size range; the largest diameter was 49.5 cm taken at 40 cm from the ground, the trunk divided above this height). Their air-breathing roots (pneumatophores) appear as pale, branched stems protruding up to 40 cm above the ground. Seedlings are locally common. The main associated trees in the canopy are cabbage trees, putaputaweta, tree fuchsia and pate. There is a mature nikau and several seedlings. Shrubs of kanono and hangehange are common. The large sedge, *Gahnia xanthocarpa* dominates the ground; a large lily, *Astelia grandis* and flax are present as well as ferns (kiokio, gully fern) and tree ferns (wheki, mamaku). Two climbers are common, kiekie and supplejack. There are two main weeds present: pampas grass and wild ginger. Pampas grass should die out with shading, the ginger requires careful weeding and probably herbicide treatment to eradicate.

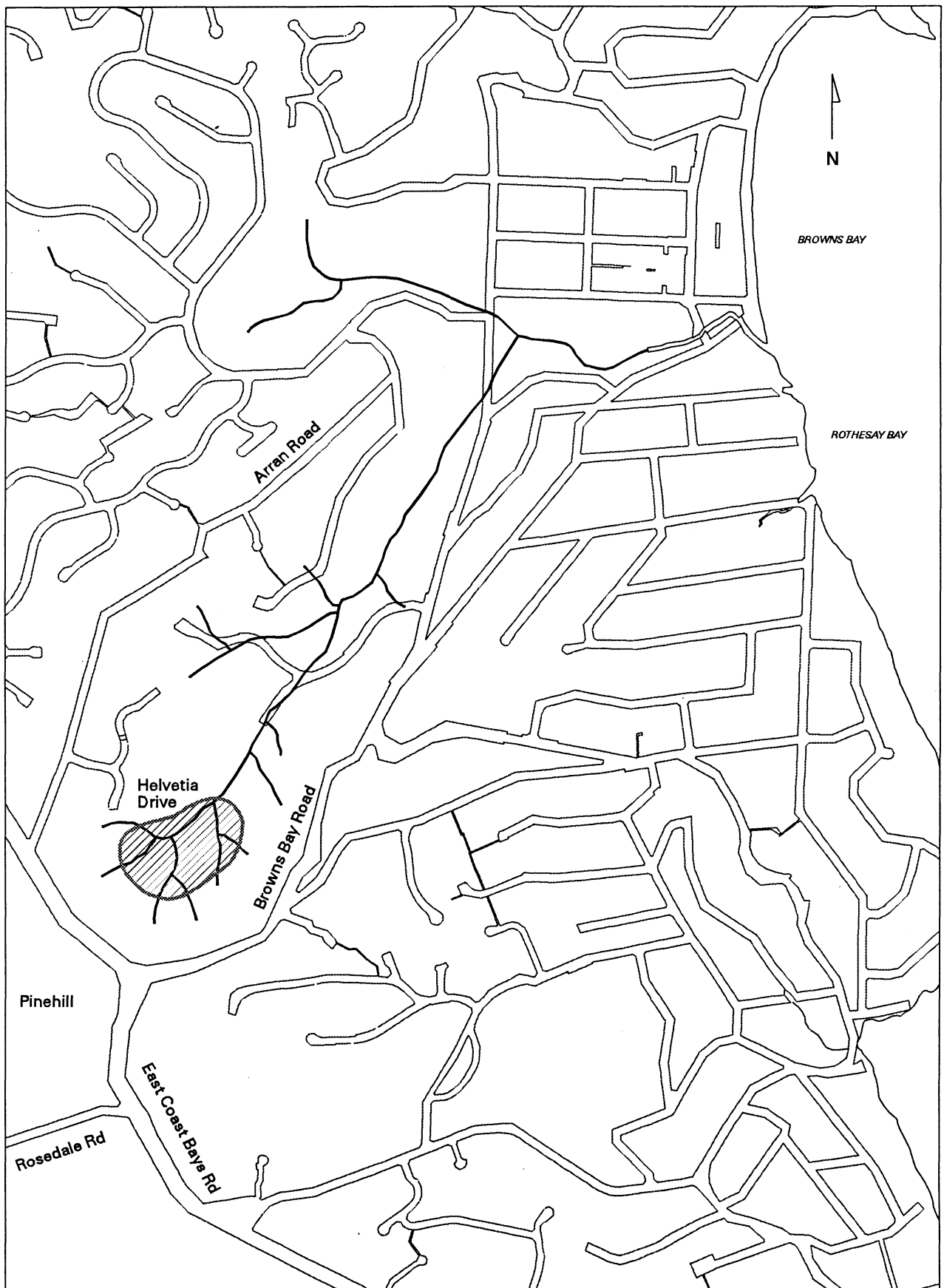
The gully is surrounded by manuka and to a lesser extent kanuka, 2-7 m tall, in a mainly “gumland” association on the clay soils. Typical gumland species seen included: shrubs - kumarahou, tainui, *Dracophyllum sinclairii*; ferns - *Gleichenia microphylla*, *Lindsaea linearis*, *Paesia scaberula*; monocots - *Lepidosperma australe*, *Schoenus tendo*; *Gahnia setifolia*, *Dianella nigra*, *Morelotia affinis*; herbs - *Centella uniflora*.

Weeds such as wattle species, gorse, needlebush, pampas grass and pine trees (2 species) are common and conspicuous in this seral association, but with time they would die out as they cannot regenerate in the shade. Because of their longevity the pines should be ring-barked. The relatively short-lived gorse and wattle will actually assist the regenerating natives they are amongst by their nitrogen fixing roots and canopy which will open with age, encouraging the natives to replace them. The area is quite diverse in native species, 65 were encountered during our brief visits (see Appendix).

Stream Below the Maire tawake

The vegetation of the stream area from the lowest maire tawake down to the upper margin of the raupo swamp on the Robinson Block (some 100 m) is rather shrubby and open in places. There is a mixture of native and introduced species. Some of the native species present further up the valley are scattered along the stream margin, e.g. hangehange, mahoe, mamaku, wheki, cabbage trees, kiokio and gully ferns with tall trunks. An area of raupo was also present (c. 20 m x 10 m). Maire tawake and *Astelia grandis* appeared to be absent. Wild ginger, pampas grass and black wattle were locally common. The vegetation along this stream section is much younger than the maire tawake sites higher up the valley.

Figure 1 Location of maire tawake at Browns Bay, Auckland



 maire tawake area

Map Produced By GIS Unit
Regional Development Section
ARC Environment

Regional Importance of Such An Association

Maire tawake as a forest class in the Auckland Region is considered to be uncommon, with about 16 hectares recorded in the region thus far. Four ecological districts have been surveyed under the Protected Natural Areas Programme. Three of these districts have maire tawake swamp recorded as a forest class. In the Waitakere Ecological District five sites in total have been recorded, with the total area of all sites equalling 5 hectares (Denyer *et al.*, 1993). The largest site in Waitakere is 3.5 hectares in size. In Hunua Ecological District four sites are recorded, totalling 10 hectares, with the largest site being 4 hectares (Tyrrell *et al.*, in prep.).

The Newbegin Block in Browns Bay is in the Tamaki Ecological District. To date only the western part of this ecological district has been surveyed. This survey has been carried out by Waitakere City Council. Their records indicate only one site of maire tawake around Swanson which is a small (0.12 ha), unprotected remnant and is the best example found in the survey. The only other known areas with this forest species found in the Tamaki Ecological District are at Upper Hellyers Creek (R10 622 906) and west of Cuthill near Blakes Rd where a few trees are present (R. O. Gardner *pers. comm.*, 1995).

Astelia grandis is also relatively uncommon in the region. It has been recorded from the Waitakere Ranges from a number of locations (Jones, 1995) as well as from Rodney Ecological District (A. Esler *pers. comm.*). The type locality for *Astelia grandis* is in Ponsonby Road in the Tamaki Ecological District and this species has been found in four reserves in the district (Andrea Julian *pers. comm.*). It has also been found in one location in the Hunua Ecological District (Cameron, 1991).

This Browns Bay site is considered to be of regional significance. Maire tawake forest is an uncommon vegetation class both within the region and within each of the ecological districts where it has been found. While maire tawake forest is now very uncommon in the district, it is possible that it was more common and an important original component of the low-lying and alluvial parts of the district (Andrea Julian *pers. comm.*). Such fertile alluvial sites are usually the first to be cleared for agriculture.

While this maire tawake area is small (0.2 ha) and surrounded by regenerating native forest with varying degrees of exotic composition, it can be considered one of the best examples of its forest class in the district. The long term prospects of the area can be considered high if the surrounding vegetation is left intact, the water table unaltered and some weed control is undertaken in the area.

In the context of the indigenous vegetation cover remaining in the Tamaki Ecological District, 6.3 % of the land area has an indigenous cover, of which 1.1 % is forest, 5.2 % is "scrub" (vegetation under 6 m in height) and 0.03 % is freshwater wetland. Only 1.8 % of the district is in protected natural areas (ARC, 1994).

Proposed Site Development

The subdivision proposal of this area was appealed to the Planning Tribunal. While the Tribunal has allowed the subdivision to proceed, the maire tawake swamp is to be protected, although a new road will come right to the lower swamp boundary. The stream gully below the maire tawake swamp will be cleared of vegetation, channelled and a road built over it. Part of the teatree-gumland association will also be protected, due to its value as lizard habitat.

References

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Jones, S. 1995: "Astelia grandis (swamp astelia) in the Waitakere Ranges." *Auckland Botanical Society Journal* 50(1): 37.

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Appendix: Flora of the south-west part of the Newbegin Block, Browns Bay

Ferns and fern allies (16)

<i>Asplenium flaccidum</i>	
<i>Blechnum</i> sp.	kiokio
<i>Cyathea dealbata</i>	ponga
<i>C. medullaris</i>	mamaku
<i>Deparia petersenii</i>	
<i>Dicksonia squarrosa</i>	wheki
<i>Doodia media</i>	
<i>Gleichenia microphylla</i>	tangle fern
<i>Lindsaea linearis</i>	
<i>Paesia scaberula</i>	scented fern
<i>Phymatosorus pustulatus</i>	hounds tongue
<i>Pneumatopteris pennigera</i>	gully fern
<i>Pteridium esculentum</i>	bracken
<i>Pteris tremula</i>	
<i>Selaginella kraussiana</i> *	selaginella
<i>Tmestipteris lanceolata</i>	

Gymnosperms (3)

<i>Phyllocladus trichomanoides</i>	tanekaha
<i>Pinus pinaster</i> *	maritime pine
<i>P. radiata</i> *	radiata pine

Dicotyledons (44)

<i>Acacia longifolia</i> *	Sydney golden wattle
<i>A. mearnsii</i> *	black wattle
<i>Ageratina adenophora</i> *	Mexican devil
<i>Cardamine debilis</i>	
<i>Carpodetus serratus</i>	putaputaweta
<i>Centella uniflora</i>	
<i>Cestrum nocturnum</i> *	Queen of the night, (AK 222675)
<i>Coprosma grandifolia</i>	kanono
<i>C. lucida</i>	shining karamu
<i>C. robusta</i>	karamu
<i>Coriaria arborea</i>	tutu
<i>Cyphomandra betacea</i> *	tamarillo
<i>Dracophyllum sinclairii</i>	
<i>Fuchsia excorticata</i>	tree fuchsia
<i>Geniostoma rupestre</i>	hangehange
<i>Hakea sericea</i> *	needlebrush
<i>Hebe stricta</i>	koromiko
<i>Hedycarya arborea</i>	pigeonwood
<i>Homalanthus populifolius</i> *	Queensland poplar

<i>Kunzea ericoides</i>	kanuka
<i>Leptospermum scoparium</i>	manuka
<i>Leucopogon fasciculatus</i>	mingimingi
<i>Ligustrum lucidum</i> *	tree privet
<i>L. sinense</i> *	Chinese privet
<i>Lobelia anceps</i>	
<i>Lonicera japonica</i> *	Japanese honeysuckle
<i>Meliccytus ramiflorus</i>	mahoe
<i>Myrsine australis</i>	mapou
<i>Olearia furfuracea</i>	akepiro
<i>O. rani</i>	heketara
<i>Paraserianthes lophantha</i> *	brush wattle
<i>Passiflora edulis</i> *	passionfruit
<i>P. mixta</i> *	banana passionfruit
<i>Pittosporum tenuifolium</i>	kohuhu
<i>Pomaderris kumeraho</i>	kumarahou
<i>P. phyllicifolia</i> var. <i>ericifolia</i>	tainui
<i>Pseudopanax arboreus</i>	five-finger
<i>P. lessonii</i>	houpara
<i>Rubus cissoides</i>	bush lawyer
<i>Rumex sagittatus</i> *	climbing dock
<i>Schefflera digitata</i>	pate
<i>Solanum americana</i>	small-flowered nightshade
<i>S. mauritianum</i> *	woolley nightshade
<i>Syzygium maire</i>	maire tawake, (AK 222673)

Monocotyledons (24)

<i>Astelia grandis</i>	(AK 222674)
<i>Baumea rubiginosa</i>	
<i>B. teretifolia</i>	
<i>Carex</i> spp.	
<i>Cordyline australis</i>	cabbage tree
<i>C. pumilio</i>	
<i>Cortaderia selloana</i> *	pampas grass
<i>Dianella nigra</i>	blue berry
<i>Freycinetia banksii</i>	kiekie
<i>Gahnia setifolia</i>	
<i>G. xanthocarpa</i>	
<i>Hedychium flavescens</i> *	yellow ginger
<i>H. gardnerianum</i> *	Kahili ginger
<i>Isachne globosa</i>	swamp millet
<i>Lepidosperma australe</i>	
<i>Morelotia affinis</i>	
<i>Oplismenus imbecillis</i>	
<i>Pennisetum clandestinum</i> *	Kikuyu grass
<i>Phormium tenax</i>	flax
<i>Rhopalostylis scandens</i>	nikau
<i>Ripogonum scandens</i>	supplejack
<i>Schoenus tendo</i>	
<i>Typha orientalis</i>	raupo
<i>Uncinia uncinata</i>	hook sedge

* = adventive species