

- Cameron, E.K. 1998: Bot Soc trips to The Noises (Hauraki Gulf) and an updated species list. *Auckland Botanical Society Journal* 53: 25–35.
- Cameron, E.K. 2000: Field trip to southern Ponui Island, Hauraki Gulf, Auckland. *Auckland Botanical Society Journal* 55: 34–38.
- Cameron, E.K. 2002: Additions to the Poor Knights Islands vascular flora. *New Zealand Botanical Society Newsletter* 70: 6–7.
- Cameron, E.K. 2006: Vascular flora and fauna of twelve small northern New Zealand islands. *Auckland Botanical Society Journal* 61: 99–108.
- Cameron, E.K. (ed.) 2007: Rotoroa Island, inner Hauraki Gulf, trip report. *Auckland Botanical Society Journal* 62: 124–135.
- Cameron, E.K. 2009: Updated Vascular Flora of Pakihi Island, with notes on fauna, geology and some history, Hauraki Gulf, Auckland. *Auckland Botanical Society Journal* 64: 154–169.
- Cameron, E.K. 2010a: Vascular Flora of Pakatoa Island – the missing link, inner Hauraki Gulf. *Auckland Botanical Society Journal* 65: 22–37.
- Cameron, E.K. 2010b: Updated vascular flora for seven-island chain east and southeast of Waiheke Island. *Auckland Botanical Society Journal* 65: 37–38.
- Cameron, E.K. 2012a: Mangawhai Cliffs Walkway – Bream Tail, eastern Northland. *Auckland Botanical Society Journal* 67: 8–16.
- Cameron, E.K. 2012b: Mathesons Bay islet near Leigh, Auckland. *Auckland Botanical Society Journal* 67: 175–177.
- Cameron, E.K.; de Lange, P.J. 2006: Vegetation and vascular flora of southern Ponui Island, Hauraki Gulf – a return visit. *Auckland Botanical Society Journal* 61: 3–14.
- Cameron, E.K.; Davies; N.C. *In press*: Changes in the wild vascular flora of Tiritiri Matangi Island, 1978–2010. *New Zealand Journal of Ecology* 37.
- Cameron, E.K.; de Lange, P.J.; McCallum, J.; Taylor, G.A.; Bellingham, P.J. 2007: Vascular flora and some fauna for a chain of six Hauraki Gulf islands east and southeast of Waiheke Island. *Auckland Botanical Society Journal* 62: 136–156.
- Dale, E.E. 2013: The ecology of Cook's scurvy grass (*Lepidium oleraceum* s.s.) and its relationship with seabirds. Unpublished MSc thesis, University of Auckland. 152p.
- de Lange, P.J.; Cameron, E.K. 1999: The vascular flora of Aorangi Island, Poor Knights Islands, northern New Zealand. *New Zealand Journal of Botany* 37: 433–468.
- de Lange, P.J.; Cameron, E.K.; Taylor, G.A. 1995: Flora and fauna of Tatapihi (Groper Island), Mokohinau Islands. *Tane* 35: 69–94.
- de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. *In press*: Conservation status of New Zealand vascular plants, 2012. New Zealand threat classification series. Department of Conservation, Wellington.
- Delmiglio, C.; Pearson, M.N. 2006: Effects and incidence of Cucumber mosaic virus, Watermelon virus and Zucchini yellow virus in New Zealand's only native cucurbit, *Sicyos australis*. *Australian Plant Pathology* 35: 1–7.
- Landcare 2006: Wedding present for bridal creeper. *What's new in biological control of weeds* 35: 1–2.
- Landcare 2012: Pampas – the search begins! *What's new in biological control of weeds* 35: 4.
- Lee, M. 1999: Biota of seven islets off Waiheke Island, inner Hauraki Gulf. *Tane* 37: 99–136.
- Stanley, R.; de Lange, P.J. 2005: Misunderstood – our native parapara (*Pisonia brunoniana*). *Auckland Botanical Society Journal* 60: 150–151.
- Stanley, R.; de Lange, P.J.; Cameron, E.K. 2005: Auckland Regional Threatened & Uncommon vascular plant list. *Auckland Botanical Society Journal* 60: 152–157.
- Taylor, G.A. 1989: A register of northern offshore islands and a management strategy for island resources. Department of Conservation, Auckland. Northern Region Technical Report Series 13.
- Telford, I.R.H.; Sebastian, P.; de Lange, P.J.; Bruhl, J.J.; Renner, S.S. 2012: Morphological and molecular data reveal three rather than one species of *Sicyos* (Cucurbitaceae) in Australia, New Zealand and Islands of the South West Pacific. *Australian Systematic Botany* 25: 188–201.
- Van Vianen, J.C.C.M.; Houliston, G.J.; Fletcher, J.D.; Heenan, P.B.; Chapman, H.M. 2013: New threats to endangered Cook's scurvy grass (*Lepidium oleraceum*; Brassicaceae): introduced crop viruses and the extent of their spread. *Australian Journal of Botany* 61: 161–166.
- Wilcox, M.D. (ed.) 2007: Natural History of Rangitoto Island. *Auckland Botanical Society Bulletin* 27. 192p.
- Young, M.E. 2006: *Streblus banksii* in northern Rodney. *Auckland Botanical Society Journal* 61: 65.

Website References (last accessed in April 2013):

- <http://www.doc.govt.nz/conservation/threats-and-impacts/animal-pests/restoration-projects/rangitoto-and-motutapu-islands-restoration-project/>
- <http://www.landcareresearch.co.nz/publications/newsletters/biological-control-of-weeds>
- http://www.tossi.org.nz/species_reintroduction.php
- <http://www.virtualherbarium.org.nz>

Adventures on Hauturu (Little Barrier Island)

Maureen Young

William Maxwell Hamilton (1909-1992), Director General of the Department of Scientific and Industrial Research (DSIR) from 1953-1971, explored Hauturu extensively as a young man working on the family farm on the Mahurangi River. He continued these explorations as a student at Massey Agricultural College and as an employee of the DSIR. He authored two DSIR Bulletins on the island, one in 1937 (Hamilton 1937) and one, with seven other authors, in 1961 (Hamilton 1961). Dr. Hamilton's

daughter, Lyn Wade, has continued with the family interest in the island, and is a trustee for the Friends of Hauturu. When Lyn asked for help to identify some herbarium specimens found in the ranger's office, I expressed a long-held dream of making a herbarium of the plants growing on the island for the use of staff and scientists. Lyn then organised permits and transport to allow this to happen. When Landcare Research scientist, Dr. Ross Beever, heard of this scheme, he suggested that I also update the

unpublished *Checklist of vascular plants recorded from Little Barrier Island* that he and fellow scientist, Alan Esler, had produced in 1988 (Beever & Esler 1988). Sadly, Ross died before the resulting Auckland Botanical Society Bulletin No. 30 was published (Beever et al. 2012).

Visitors to Hauturu, unless their scientific studies or conservation work demand otherwise, are restricted to two loop tracks; the Lower Thumb/Waipawa Tracks and the Valley/Hamilton Tracks, along with the lower reaches of the Tirikakawa Stream. With permission, I was able to explore a much wider area, though still restricted to the triangle defined by the Haowhenua Stream, the Hauturu Summit (722 m) and the Awaroa Stream. Over three years, between 2009 and 2012, I visited five times. Two of these were solely for the purpose of collecting and observing; the other three combined these activities with assisting teams involved in vegetation monitoring, kiwi monitoring and leaf litter collecting.

My first attempt to reach the summit was a very slow affair, what with collecting along the way and being captivated by the flora which varied from coastal second-growth forest to the damp moss forest of the heights. Unusual in New Zealand bush were flashes of bright purple in kauri (*Agathis australis*)/hard beech (*Nothofagus truncata*) forest, indicating the presence of *Hebe macrocarpa* var. *latisepala*. On reaching the damper forest, trees of *Archeria racemosa* became common. The pretty pink bell-shaped flowers and the leaves with parallel veins verified its membership in the Ericaceae. As we climbed higher these trees were huge and ancient giants. The springtime orchid, *Nematoceras acuminatum*, was flowering commonly on the trackside. The vegetation changed with altitude, until at the Thumb (Mt Herekohu, 678 m) we were amongst *Pittosporum kirkii*, southern rata (*Metrosideros umbellata*), *M. albiflora*, *Dracophyllum traversii*, mistletoe (*Peraxilla tetrapetala*), and broadleaf (*Griselinia littoralis*). Here, alas, the team had to retreat, as time was running out.

A few months later, showing strict self-control, I succeeded on my second summit attempt, and was rewarded with a clear day and fabulous views over radiating ridges and gullies to the surrounding islands and mainland (Fig. 1). The summit was reached on a third occasion during the vegetation monitoring trip, but the steepness, dampness and fragility of the soils there led to the planned summit plot being abandoned in favour of one at a lower site.

There were many botanical highlights over the years; here are just a few. I was pleased to be able



Fig. 1 The Thumb viewed from the summit. Photo: M.L. Wade, Mar 2012.

to verify the presence of two plants of the dainty fern, *Lindsaea viridis*, on the mossy banks of the Awaroa Stream, where I had seen it twenty years previously. This is probably the most northerly population of this fern nowadays. Another fern, *Hypolepis distans*, had not been seen on the island for a hundred years (collected by Shakespear and Smith, 1897-1910), until sharp-eyed Lyn looked back as we were ascending the Haowhenua Stream and spotted a plant growing on the fallen trunk of a northern rata (*Metrosideros robusta*) tree. The tree daisy, *Olearia albida*, another Shakespear and Smith record that had not been seen in the intervening years, was rediscovered at Lamb Bay, with about a dozen old trees present there.

The eradication of kiore, carried out in 2004, has resulted in an increase in seedling numbers. The most obvious would be the enormous number of seedlings of the bird-catcher tree (*Pisonia brunoniana*) growing near adults, and seedlings of *Coprosma arborea* that are abundant wherever there is sufficient light in the regenerating forest. Four plants of *Ascarina lucida* had long been noted at the junction of the Thumb and Hamilton Tracks, and it was pleasing to see c. six seedlings growing nearby in March 2010.

The Hauturu Herbarium, currently consisting of 361 specimens, is now lodged in the ranger's office on the island. These are largely native vascular species, though some of the introduced species, particularly troublesome weeds, have also been collected.

Hamilton (1961) recorded 368 indigenous and 92 naturalised species. Beever and Esler recorded 399 indigenous and 156 naturalised. The current total is 428 indigenous and 167 naturalised.

References

Beever, R.E.; Esler, A.E. 1988: Checklist of vascular plants recorded from Little Barrier Island. Unpublished manuscript (copy in Auckland Museum library). 130p.

Beever, R.E., Esler, A.E., Young, M.E. and Cameron, E.K. 2012: Checklist of vascular plants recorded from Hauturu-o-Toi (Little Barrier Island), Auckland, New Zealand. *Auckland Botanical Society Bulletin* No. 30. 110 p.
 Hamilton, W.M. 1937: The Little Barrier Island. Hauturu. *DSIR Bulletin* 54 (extracted from *New Zealand Journal of Science and Technology* 17: 465-495; 17: 717-749; 18: 557-578).
 Hamilton, W.M. (Compiler) 1961: Little Barrier Island (Hauturu) (2nd edition). *DSIR Bulletin* 137. 198p.

Auckland's Remarkable Urban Forest

Mike Wilcox

Auckland is a sprawling New Zealand city, approaching 1.5 million people and covering 514,000 ha, embracing both rural countryside and urban environments. The urban tree cover includes numerous small remnants of public native bush totalling 1800 ha, and private bush-clad residential properties; patches of man-made native forest established mostly by community groups in re-greening projects; areas of exotic woodland; amenity and fruit trees in home gardens; trees planted in streets; and public parks and gardens, campuses, golf courses and cemeteries with a diversity of old and historic trees (Fig. 1). Each of these six forest types is described, and analyses made of species composition to determine the dominant trees to be found in Auckland.

The **remnant native forests** have a diverse tree flora, with good examples of kauri (*Agathis australis*), totara (*Podocarpus totara*), kahikatea (*Dacrydium dacrydioides*), tanekaha (*Phyllocladus trichomanoides*) and kanuka (*Kunzea ericoides*), and broadleaved canopy trees such as taraire (*Beilschmiedia tarairi*), puriri (*Vitex lucens*), karaka (*Corynocarpus laevigatus*) and kohekohe (*Dysoxylum spectabile*). Tree ferns, especially the silver fern (*Cyathea dealbata*), and nikau palm (*Rhopalostylis sapida*) are prominent in the sub-canopy or understorey. **Man-made native forests** have generally been established and seed-sourced with fast-growing local trees, the commonest species planted being ngaio (*Myoporum laetum*), lemonwood (*Pittosporum eugenioides*), kohuhu (*P. tenuifolium*), karo (*P. crassifolium*), cabbage tree (*Cordyline australis*), and kanuka. **Exotic woodlands** are mainly of Monterey pine (*Pinus radiata*), maritime pine (*Pinus pinaster*), black wattle (*Acacia mearnsii*) and pedunculate oak (*Quercus robur*), but there are also "weed" forests where tree privet (*Ligustrum lucidum*), crack willow (*Salix fragilis*), Japanese hill cherry (*Prunus serrulata*), monkey apple (*Syzygium smithii*) and woolly nightshade (*Solanum mauritianum*) are commonly present.

Ornamental, fruit and shade trees in home gardens are very diverse and from all parts of the temperate world (Fig. 2), but surveys showed that pohutukawa (*Metrosideros excelsa*), silver birch

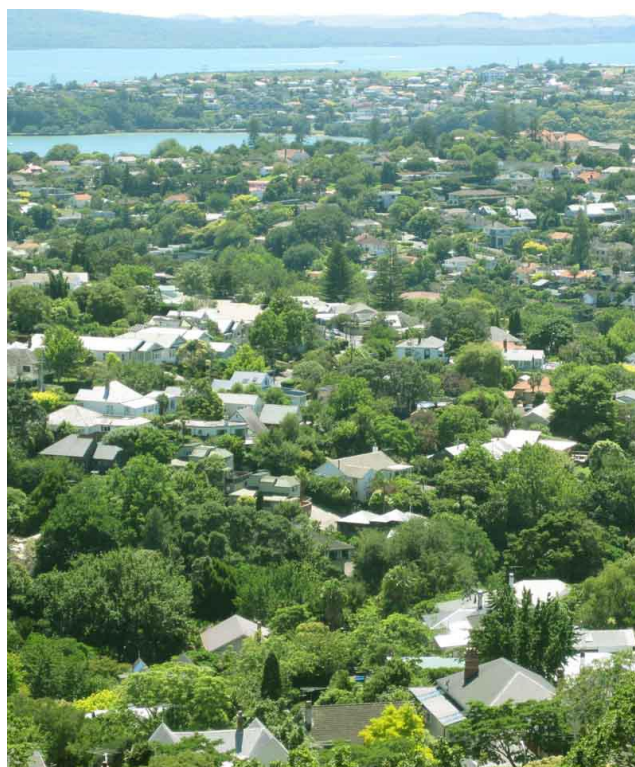


Fig. 1. Urban forest in Remuera, looking east from Mt Hobson. Photo: Mike Wilcox, 27 Jan 2011.



Fig. 2. Mike Wilcox speaking about fruits of the urban forest. Photo: Philip Moll, 27 Oct 2013.

(*Betula pendula*), flowering cherries (*Prunus*), sweet gum (*Liquidambar styraciflua*), and palms (*Archontophoenix*, *Phoenix*, *Syagrus*) are widely