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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 eugenoides*), 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

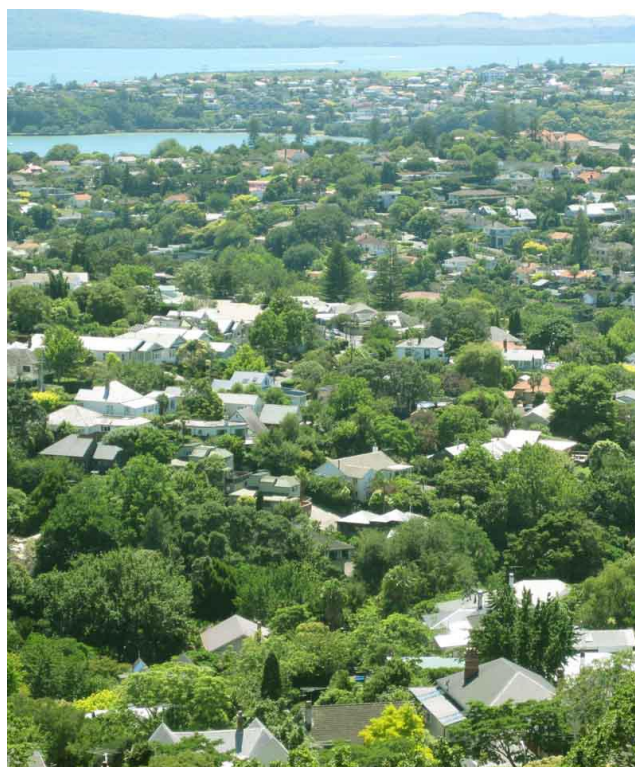


Fig. 1. Urban forest in Remuera, looking east from Mt Hobson. Photo: Mike Wilcox, 27 Jan 2011.



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

among the most popular. Cape honeysuckle (*Tecoma capensis*) is by far the commonest urban hedge species. A survey of 546 **streets** indicated that titoki (*Alectryon excelsus*), willow myrtle (*Agonis flexuosa*), Persian lilac (*Melia azedarach*), flowering cherries (*Prunus*), Australian kanooka (*Tristaniopsis laurina*), pohutukawa and silver birch were the most commonly used. A sample survey of tree cover over 22.5 ha in a mature suburb gave a combined street and garden density of 27.5 trees per hectare.

A survey of the tree composition in 660 **urban parks**, industrial estates, cemeteries, school grounds, campuses, and large historic gardens, covering 3000 ha, showed that the commonest big trees (15 m or more tall) in the city are pohutukawa, eucalypts, puriri, totara, pin oak (*Quercus palustris*), sweet gum, pedunculate oak, London plane (*Platanus ×acerifolia*), monkey apple, Monterey cypress (*Cupressus macrocarpa*), Norfolk Island pine (*Araucaria heterophylla*), Monterey pine, Canary Island date palm (*Phoenix canariensis*), brush box (*Lophostemon confertus*), river sheoak (*Casuarina cunninghamiana*), claret ash (*Fraxinus angustifolia* subsp. *oxycarpa* 'Raywood'), silky oak (*Grevillea robusta*) and poplars (*Populus yunnanensis*, *P. nigra* 'Italica', *P. ×canadensis*). These are the species that give the primary structure to Auckland's urban forest.

The predominant eucalypts are *Eucalyptus botryoides*, *E. cinerea*, *E. nicholii* and *E. saligna*. The most abundant smaller trees (<10 m) are cabbage tree, karaka, lemonwood, titoki, evergreen magnolia (*Magnolia grandiflora*), karo, kohuhu and broadleaf (*Griselinia littoralis*).

Auckland's oldest parks dating back 150 years have an assemblage of trees from various parts of the world, with Norfolk Island pine, Queensland kauri (*Agathis robusta*), Moreton Bay fig (*Ficus macrophylla*), pohutukawa (*Metrosideros excelsa*), puriri, holm oak (*Quercus ilex*), camphor laurel (*Cinnamomum camphora*), oaks (*Quercus*) and elms (*Ulmus*) being particularly prominent.

The urban forest is ecologically, socially, commercially and politically complex. A mechanism such as an "Urban Forest Collective" is needed to record and share information about the city's urban trees and to promote research, effective management and future improvement of the urban forest for the benefit of all citizens.

The above summary is from Auckland Botanical Society Bulletin 29, *Auckland's remarkable urban forest*, Auckland Botanical Society, Auckland. 348p (2012).

Is that it? Auckland's Threatened and Uncommon Plants

Bec Stanley

Most of Auckland's threatened plants are not attractive to anyone but people like us. Imagine, for example, my disappointment as I led 20 people to see dactylanthus (*Dactylanthus taylorii*), surely one of the most fascinating plants in our flora, only to hear someone ask "Is that it?" I've often wondered if botanists need marketing degrees too. I admit that before I started working on these plants I may well have pulled them out of my own garden (not dactylanthus! But maybe *Senecio scaberulus*). Many of our threatened plants are annual or short-lived early successional plants finding homes in gaps, edges and after disturbances. Without the exotic herbs and grasses that now outnumber them, I bet many would still be common in urban Auckland. We might have found *Rorippa divaricata* near Takapuna beach where the gulls wait to steal your sandwich, or *Daucus glochidiatus* in a crack in the footpath on Karangahape Road. Indeed at the Auckland Botanic Gardens the *Picris burbridgeae* boldly self-seeds in front of every other plant's name tag but its own, indicating how freely it would have regenerated before exotics came on the scene.

The closest we get to seeing Auckland's pre-naturalised plants flora is from Cheeseman's and Kirk's specimens, lists and papers. But even Kirk noticed that the scoria cones of the isthmus were dominated by exotic plants in 1871. Alan Esler (in a series of papers on the naturalisation of plants in urban Auckland) used these old records to compare the changes in the flora as urbanisation and the impacts of exotic plants and animals increased (Esler 1988). Alan warned us to study kikuyu (*Cenchrus clandestinus*) and record the details of the vegetation in its path for the archives (Esler 2004), as he saw this loss from a hundred years back using these old lists. Bot Soc continues this tradition (I call it "time travel") because we understand the relevance of this data for future bot soccers who we hope won't be trying to nut out from our species lists where *Haloragis erecta* once grew.

So where can we see these threatened plants? Most people expect that threatened plants will be found in something like pristine nature. Some are, but many Auckland plants persist in what seems at