

coastal karamū, and one poroporo. Karaka is regenerating in dense thickets on the southern edge. A large exotic tree there is green ash (*Fraxinus pennsylvanica*). Jerusalem cherry (*Solanum pseudocapsicum*) is an exotic which favours such shady habitats (being brought by birds). Native ferns we found here were *Asplenium oblongifolium*, *A. flaccidum*, *A. flabellifolium*, *Blechnum parriseae*, *Pellaea rotundifolia*, *Pteris tremula* and *Zealandia pustulata* – all previously recorded by Anthony Wright (Wright 2018). The large rocks in the shade of the forest had a conspicuous green bryophyte coating, the main species being the mosses *Thuidiopsis sparsa* and *Camptochaete pulvinata*.

Rock outcrop on southern side of One Tree Hill

The purpose of visiting this outcrop was to see if we could locate the colony of the fern *Arthropteris tenella*, first discovered there by H.B. Matthews in 1919 and re-discovered by Anthony Wright (Wright 2016). We were glad to see it still thriving in this rocky habitat, protected by a cover of the native grass *Microlaena stipoides*. Paul Bell-Butler pointed out two species of fruticose lichens on the rocks, *Cladia gorgonea* and *C. blanchonii*, and there were further plants here of the hornwort *Anthoceros laminiferus*.

Western horseshoe crater

Next on our excursion was a wander up the southern edge of the prominent horseshoe crater on the western side of One Tree Hill. Along the southern

rim of this crater runs an exposure of volcanic tuff originating 28,500 years ago (Haywood 2015) from Te Tātua-a-Riukiuta (Three Kings volcano). At one time the reddish scoria was quarried here. This ash caps much of the gentler slopes of Maungakiekie cone and its lava fields. Pohuehue (*Muehlenbeckia complexa*) and small ponga (*Cyathea dealbata*) grow along this tuff exposure, and the grass *Microlaena stipoides* is common below it, on lightly shaded sloping ground. One small tree of akepiro (*Olearia furfuracea*) grows along a vertical scoria cutting of an old quarry pit. Two grasses in flower beside the path on the steeper slopes were ratstail (*Sporobolus africanus*) and red-leg grass (*Bothriochloa macra*).

One Tree Hill Summit

Our visit ended at the summit of One Tree Hill. We noted the plantings there of pōhutukawa and tōtara ceremonially established on 11 June 2016 to replace the lone Monterey pine cut down on 26 October 2000 (Tan 2016; Barton 2018). Pōhutukawa is the clear winner with all six trees planted developing into well-grown trees, but there is only one tōtara left out of the three planted. The protective ground cover of kiekie (*Freycinetia banksii*) has thrived. In mid-2020, the encircling shelter of *Olearia lineata* 'Dartonii' was removed. Paul Bell-Butler showed us an interesting urban calcicole crustose lichen growing on stonework mortar – *Protoblastenia rupestris* – mentioned by Galloway (2009) as being found on calcareous paving stones in many parts of Auckland.

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Field Trip to Hamilton's Landing, Hamilton Road, Mahurangi Harbour, 21 November 2020

Maureen Young & Ewen K. Cameron

Introduction: After retiring to his family property from his leadership role at the Department of Scientific and Industrial Research (Director General

of the DSIR, 1953–1971), Dr W.M. Hamilton gifted a 2.72 ha narrow bank of forest on the terrace edge facing the Mahurangi Harbour, to the Lands & Survey



Fig. 1. 1A. Location of Hamilton's Landing, north side of Mahurangi Harbour, SE of Warkworth. Topo50 map modified by Joshua Salter. Scale = 1 km grid. **1B.** Hamilton's Landing Scenic Reserve – a narrow strip between farmland and mangroves. **Key:** **1:** Young forest of totara, puriri and kanuka, with patches of kauri (at **1c**) and kahikatea (concentrated at **1b**) approx. 100 years old. **1a** is the same vegetation but shorter. **2:** Pasture with Norfolk Island Pine (asterisk) (see Figs. 10, 11) **3:** Macrocarpa shelter belt (felled in c. 2012) (see Fig. 12). Google Earth map modified by Joshua Salter; base map with noted vegetation supplied by Lyn Wade (undated – 1980s?).

Department (later Department of Conservation) in 1976 (Fig. 1). (The name, "Hamilton's Landing" was given when roads were almost non-existent and most traffic in the area was by boat, including a school launch). Hamilton and his wife, Alice, built a new house on the boundary of the reserve, and with his life-long interest in Hauturu (Little Barrier Island) and other off-shore islands, he planted a number of island plants among the fine exotics already in place. His daughter, Lyn Wade, has carried on with his interest in Hauturu and was previously the chair of the Hauturu Supporters' Trust. Lyn was our leader for the day.

Participants: Jenny Andrew, Ewen Cameron, Steve Cook, Frances Duff, Ben Goodwin, Leslie Haines, Sandy Huang, Jetta Laurenson, John Millett, Louise Nicholson, Vivienne Paterson, Helen Preston Jones, Juliet Richmond, Olivia Rooke-Devoy, Joshua Salter, Ian & Lydia Smith, Lyndsey Smith, Nancy Tayles, Cheryl Taylor, Lyn Wade (leader), Carol West, Ian Whitehouse, David Wilson, Maureen Young.

Before we set off on our walk Lyn related to us the history of the property. It was settled in the mid-nineteenth century by a pair of Scottish brothers, both sea captains, Captains Grange. When Lyn's grandfather purchased the farm near the end of that century Mrs Grange requested that when the already half-built house was completed it should be called *The Grange*, and so it remains today. Lyn and her husband have beautifully restored, and live in, the 127-year-old house (Fig. 2).

The walk started through the bush behind this house, and our first surprise was the naturalisation of a couple of planted Hauturu tree species, a fine specimen of *Pittosporum umbellatum* and many trees of the bird-catcher tree, *Ceodes* (*Pisonia*) *brunoniana*. As the reserve fringes the river edge the usual succession of plants is present, from mangroves (*Avicennia marina*) through a narrow band of saltmarsh species to coastal trees. The coastal element of the forest includes pohutukawa (*Metrosideros excelsa*), *Coprosma macrocarpa*, coastal five finger (*Pseudopanax lessonii*) and its many hybrid forms with lancewood (*P. crassifolius*). *Sophora chathamica* is common, with both old trees and seedlings. The forest is generally of puriri (*Vitex lucens*), straight-trunked totara (both *Podocarpus totara* and *P. laetus*), and kohekohe (*Dysoxylum spectabile*); with patches of kauri (*Agathis australis* to 30 m tall and dbh to c.80 cm; Fig. 3) and kahikatea (*Dacrycarpus dacrydioides*) and some rimu (*Dacrydium cupressinum*), miro (*Pectinopitys ferruginea*) and matai (*Prumnopitys taxifolia* to nearly 30 m tall and 30 cm dbh). We were surprised to see sizeable podocarps and kauri so close to the edge of the tidal estuary (Fig. 4). Sedges were plentiful, and it was a good time of the year to



Fig. 2. Lyn Wade and her beautifully restored 1893 cottage, Mahurangi. Photo: E Cameron. Unless stated otherwise, all photos taken during the ABS field trip.

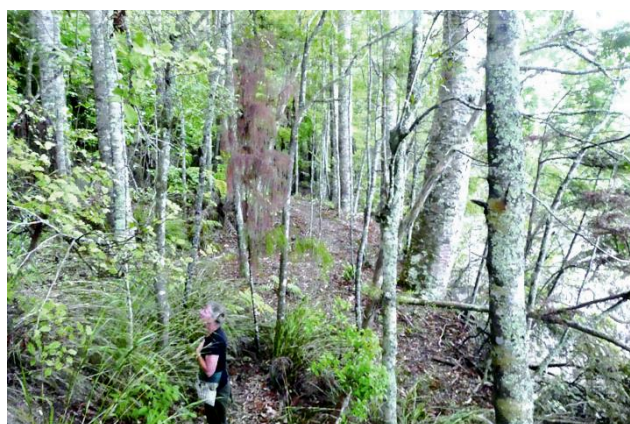


Fig. 3. A patch of regenerating riverine kauri-podocarp forest and a young dead rimu. Photo: E. Cameron.



Fig. 4. Two podocarps (tanekaha (left), totara (centre)) and a kauri at the water's edge. Photo: J. Salter.



Fig. 5. *Earina autumnalis* on a reclining oak growing just above highwater line. Photo: J. Salter.



Fig. 6. Many dead ponga – a consequence of the massive drought earlier in the year. Photo: E. Cameron.

practise our skills in identifying them. A very healthy patch of *Earina autumnalis* perched on a horizontal oak tree (*Quercus robur*) that was leaning out over the estuary (Fig. 5). The pygmy orchid (*Bulbophyllum pygmaeum*) had been recorded in the past, but it took a good bit of searching before a few minute plants were found on flaking kauri bark. The massive drought in the first part of the year had left its mark with many dead-standing ponga (*Cyathea dealbata*, Fig. 6) and an occasional dead taraire (*Beilschmiedia tarairi*). See Appendix 1 for a full list of vascular plants recorded in the Scenic Reserve.

After a morning's leisurely stroll, we lunched under the bush canopy (Fig. 7) and wondered if the whau (*Entelea arborescens*) trees were natural or had



Fig. 7. Lunch stop in the shade. Photo: J. Salter.

seeded from planted trees in the nearby garden. Some good views of a sleepy ruru (Fig. 8) were appreciated. The weeds were few and far between; only the scattered young-green shoots of climbing asparagus (*Asparagus scandens*) indicated the problem that this species used to be before it was subjected to some intense management. With hunger satisfied we wandered around the garden of Dr. Hamilton's modern home admiring both the trees he had planted there, and the giants planted previously by members of his green-fingered family (see Appendix 2 for interesting plants in the garden). A short walk took us back to *The Grange*, and Lyn kindly allowed us to wander through her lovely historic home: of special interest was the amazing furniture carved by her grandfather (Fig. 9).



Fig. 8. A sleepy ruru/morepork kept a watchful eye on our group in the reserve. Photo: C. Taylor.



Fig. 9. Beautifully carved panels adorned all four sides of this charming cabinet. Photo: J. Salter.

Acknowledgements

We thank Lyn Wade for welcoming ABS to her property and house, leading us for the day, sharing her local knowledge and the use of her Norfolk pine image; Mike Wilcox for sharing his earlier plant list of

the garden; Emma Bodley of the Auckland Botanical Gardens for assistance identifying the tree-like cactus; Joshua Salter for adapting the map and Cheryl Taylor and Joshua for the use of their photographs taken during the trip.

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Appendix 1. Wild vascular plants of Hamilton's Landing Reserve, Mahurangi Harbour.

Compiled by WM Hamilton & AE Esler, 1987 (unpublished); with additions by ML Wade & ME Young, 8 November 2020. ABS = species added during Auckland Botanical Society field trip 21 November 2020; pl= planted or established from a planted source; *= naturalised.

Ferns (22)

Adiantum cunninghamii
Adiantum hispidulum
Asplenium flaccidum
Asplenium × lucrosum? (pl?) (ABS)
Asplenium oblongifolium
Asplenium polyodon
Blechnum filiforme
Blechnum novae zelandiae
Cardiomanes reniforme
Cyathea dealbata
Cyathea medullaris
Doodia australis
Hymenophyllum demissum
Hymenophyllum sanguinolentum
Lastreopsis microsora
Lindsaea trichomanoides
Lygodium articulatum
Microsorium pustulatum
Microsorium scandens
Pteridium esculentum
Pteris tremula
Pyrrosia elaeagnifolia

Gymnosperms (8)

Agathis australis
Dacrycarpus dacrydioides
Dacrydium cupressinum
Pectinopitys ferruginea
Phyllocladus trichomanoides
Podocarpus laetus
Podocarpus totara
Prumnopitys taxifolia

Dicotyledons (64)

Alseuosmia macrophylla
Avicennia marina

Beilschmiedia tarairi
Beilschmiedia tawa
(a form of *B. tawaroa*)
Brachyglottis repanda (ABS)
Carmichaelia australis
Centella uniflora
Ceodes (Pisonia) brunoniana (pl)
Clematis paniculata
Coprosma areolata (ASB)
Coprosma arborea
Coprosma lucida
Coprosma macrocarpa
Coprosma propinqua × *C. robusta*
Coprosma rhamnoides
Coprosma robusta (ABS)
Corokia buddleioides
Corynocarpus laevigatus
Dichondra repens
Dysoxylum spectabile
Entelea arborescens (ABS)
Geniostoma ligustrifolium
Haloragis erecta
Hebe macrocarpa
Hedycarya arborea
Helichrysum lanceolatum
Hoheria populnea
Knightia excelsa
Kunzea robusta
Leionema nudum
Leptecophylla juniperina
Leptospermum scoparium
Leucopogon fasciculatus
Leucopogon fraseri
Lobelia anceps
Melicope ternata
Melicytus ramiflorus

Metrosideros excelsa
Metrosideros perforata
Mida salicifolia
Myrsine australis
Nestegis lanceolata
Ochna serrulata *
(Lyn Wade pers. comm.)
Olearia furfuracea
Olearia rani
Parsonsia heterophylla
Passiflora ? coccinea * (a few wild seedlings – this sp. used to be cultivated close by)
Piper excelsum
Pittosporum crassifolium (ABS)
Pittosporum eugenoides
Pittosporum tenuifolium
Pittosporum umbellatum (pl)
Plagianthus divaricatus
Pseudopanax crassifolius
Pseudopanax crassifolius × *P. lessonii*
Pseudopanax lessonii
Quercus robur * (pl ?)
Rubus australis
Rubus cissoides
Samolus repens
Sophora chathamica
Toronia toru
Vitex lucens
Weinmannia sylvicola

Monocotyledons (35)

Asparagus scandens *
Astelia hastata
Bulbophyllum pygmaeum
Carex banksiana
Carex dissita (ABS)
Carex flagellifera

<i>Carex lambertiana</i>	<i>Earina mucronata</i>	<i>Machaerina tenax</i> (ABS)
<i>Carex ochrosaccus</i>	<i>Freycinetia banksii</i>	<i>Microlaena ?polynoda</i> (ABS)
<i>Carex solandri</i>	<i>Gahnia lacera</i>	<i>Microlaena stipoides</i>
<i>Carex uncinata</i>	<i>Gahnia pauciflora</i>	<i>Oplismenus hirtellus</i>
<i>Carex virgata</i>	<i>Isolepis inundata</i>	<i>Phormium tenax</i>
<i>Cordyline australis</i>	<i>Juncus holoschoenus</i> (1987)	<i>Poa anceps</i>
<i>Cordyline pumilio</i>	<i>Juncus kraussii</i>	<i>Rhopalostylis sapida</i>
<i>Dianella nigra</i>	<i>Lepidosperma australe</i> (ABS)	<i>Ripogonum scandens</i>
<i>Dracaena draco</i> * (a few seedlings)	<i>Machaerina juncea</i>	<i>Schoenus tendo</i>
<i>Earina autumnalis</i>	<i>Machaerina rubiginosa</i> (ABS)	

Appendix 2. Interesting plants in the garden of the late Dr W.M. Hamilton (1909-1992).

The garden was full of botanical treasures but we didn't have time enough to see them all. However, Mike Wilcox visited the garden on 8 Oct 2000 and shared with us what he recorded at that time; marked "MW" in the list below. Note that some of these may no longer be present. Fruit trees were generally ignored, but we did see avocado (*Persea americana*), walnut (*Juglans regia*) and a kiwifruit vine (*Actinidia chinensis* var. *deliciosa*) in The Grange garden by the cottage.

Ferns

Christella dentata (Thelypteridaceae)
Todea barbara (Osmundaceae)

Gymnosperms

Araucaria heterophylla (Norfolk Island pine), within the NE boundary of the reserve is one that Lyn told us was planted by Captain Hugh Grange in c.1855 and is listed on The NZ Tree Register as a Notable tree (<https://register.notabletrees.org.nz/tree/view/753>). In 2009 it measured 34.6 m tall, and 9.98 m girth at 1.37 m – the largest girth of any known Norfolk Island pine in the world. Lyn told us why the tree's head was missing: "the story goes that it was during WWII when one of the farm workers took his girl for a walk on the farm and bet her, she couldn't climb to the top. She did and to prove it she broke the growing tip off. Dad's notes say that it died back about 8 m before shooting again. It developed a double head and Dad had one of those removed in the 1970s" (Figs. 10, 11).

Cupressus macrocarpa (Cupressaceae) – no living trees, but bases of large trees cut down c.8 years ago were evident on the reserve boundary (Fig. 12).

Cycas revoluta (Japanese sago palm; Cycadaceae)

Metasequoia glyptostroboides (dawn redwood, from China; Cupressaceae) – in The Grange garden by the cottage

Sequoia sempervirens (a fine stand of coast redwoods planted in 1929; Cupressaceae) MW

Dicotyledons

Anthocleista grandiflora (forest fever-tree; Loganiaceae; from E Africa) MW

Brachychiton acerifolius (Illawarra flame tree, E Australia) with old capsules (Fig. 13)

Brugmansia suaveolens (night bells; Solanaceae) MW (now gone)

Castanospermum australe (black bean; Fabaceae; from E Australia)

Cereus ?jamacaru (mandacaru, from NE Brazil; Cactaceae) c. 4 m tall, night flowering and c.110-120 years old; in The Grange garden by the cottage (Fig. 14).

Chiranthodendron pentadactylon (monkey claw; Sterculiaceae) MW

Corymbia citriodora (lemon-scented gum; Myrtaceae) MW

Dais cotonifolia (pompom bush; Thymeleaceae) MW

Davidsonia jerseyana (Mullumbimby plum or Davidson's plum; Cunoniaceae)

Erythrina caffra (Cape Kaffirboom; Fabaceae) MW

Kennedia rubicunda (dusky coral-pea; Fabaceae) MW

Kohleria eriantha (red velvet-flower; Gesneriaceae) MW

Leucothoe fontanesiana (pearl flower; Ericaceae) MW

Meryta denhamii (New Caledonian puka; Araliaceae), c.16 m tall

Montanoa bipinnatifida (Mexican daisy tree; Asteraceae) MW

Nyssa sylvatica (tupelo; Nyssaceae; from E North America) (Fig. 15); evidently the autumn leaves turn a brilliant scarlet

Passiflora coccinea (red-flowering passionfruit; Passifloraceae) MW (now gone)

Petrea volubilis (sandpaper vine or purple wreath; Verbenaceae) MW

Pittosporum fairchildii (Three Kings Is. endemic; Pittosporaceae) MW

Stenocarpus sinuatus (firewheel tree, Proteaceae)

Streblus smithii (Three Kings Is. endemic; Moraceae)

Toona sinensis cv. Flamingo (pink toon tree; Meliaceae) MW

Monocotyledons

Archontophoenix sp. (Arecaceae), a very tall palm

Bambusa multiplex cv. Alphonse Karr (hedge bamboo; Poaceae) MW

Ceroxylon alpinum (Andean wax palm; Arecaceae; Fig. 16), fronds >4 m long, trunkless. For species of this genus in Auckland see Cameron (2020)

Cordyline obtecta (from the Three Kings Is., Asparagaceae) MW

Howea forsteriana (Lord Howe I.; Arecaceae), planted in 1973

Jubaea chilensis (Chilean wine palm; Arecaceae) c.4 m tall trunk

Livistona australis (Arecaceae), in The Grange garden by the cottage



Figs. 10–16: **10.** The Norfolk Island pine that in 2009 was recorded as having the largest girth known for the species. Photo: E. Cameron. **11.** Base of the Listed Norfolk Island pine in 31 Aug 2010, with a world record girth of 9.98 m. Photo: L. Wade. **12.** Several large macrocarpa logs and stumps (felled c. 8 years ago) had plants colonising them. Photo: J. Salter. **13.** Capsules full of seed in an Illawara flame tree of eastern Australia. Photo: J. Salter. **14.** Mandacaru or Queen of the night (*Cereus ?jamacaru*), a tree-like Brazilian cactus c. 110–120 years old, by the cottage. Photo: J. Salter. **15.** Tupelo tree with female flowers. Photo: J. Salter. **16.** Andean wax palm with fronds over 4 m long; being in partial shade has probably delayed the development of the massive trunk of this high-altitude South American species. Photo: J. Salter.