Botany of some native bush reserves in southern Auckland

Helen Preston Jones, Chris Ashton, Christine Major, Nicky Reynolds, Elaine Marshall, Mike Wilcox

Very threatening weather overnight miraculously cleared for this field trip, held on 18 June 2011. Those attending were: *Bev Davidson*, *Chris Ashton*, *Christine Major*, *Elaine Marshall*, *Frances Duff*, *Geoff Davidson*, *Helen Preston Jones*, *James Luty*, *Jan Butcher*, *John Lambert*, *Josh Salter*, *Juliet Richmond*, *Leslie Haines*, *Margi Keys*, *Mike Wilcox* (leader), *Nicky Reynolds*, *Peter Hutton*, *Philip Moll*, *Sharon Osman*, *Tony Williams*. The idea of this trip was to investigate the composition, structure and condition of five of the small native bush reserves in the suburbs of The Gardens, Manurewa, and Goodwood Heights (Fig. 1).

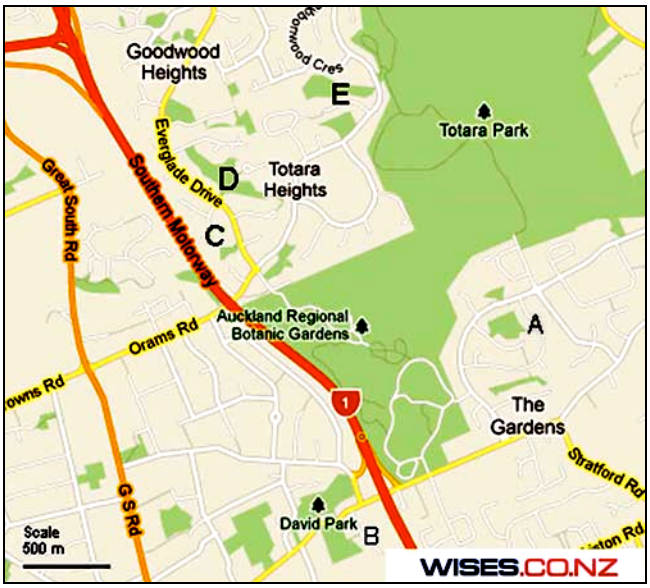

Fig. 1. Map showing location of the reserves visited. A: Peretao Rise, B: Hillcrest Grove, C: Everglade Drive, D: Banyan Drive, E: Eugenia Rise (based on www.wises.co.nz).

Peretao Rise Reserve, Charles Prevost Drive, The Gardens (1.7 ha)

Helen Preston Jones

This was the first of the five reserves we visited – an area partly in grass and partly remnant totara-dominant bush, centred around the residual gully form of the old farmland. The area was very wet underfoot, due to recent rains, and the stream was piped underground on either side of the reserve. This was a typical pattern of the bush patches in the area, when land was provided as reserve contribution on subdivision, donating the least desirable building plot! Thus local stands of bush have remained, surrounded by house sections, with short sections of frontage to the local street, or approached by narrow pathways between houses.

The tree stock was primarily totara (*Podocarpus totara*), of even age, set close together and narrow in form, except on the open edge of the grassland, with an understorey or subcanopy of mamangi (*Coprosma arborea*), kawakawa (*Macropiper excelsum*), karaka (*Corynocarpus laevigatus*), mapou (*Myrsine australis*), and rarely, pigeonwood (*Hedycarya arborea*). Amongst the totara were occasional kahikatea (*Dacrycarpus dacrydioides*), rimu (*Dacrydium cupressinum*), matai (*Prumnopitys taxifolia*), miro (*P. ferruginea*), tanekaha (*Phyllocladus trichomanoides*) and kanuka (*Kunzea ericoides*). The presence of a few well-established seedlings of taraire (*Beilschmiedia taraire*), tawa (*B. tawa*) and titoki (*Alectryon excelsa*) may indicate that the bush has potential to develop a more complex composition, perhaps to a karaka/tawa/taraire broadleaf forest.

Epiphytes were absent, but lianes present were native passion vine (*Passiflora tetrandra*), akakiore (*Parsonsia heterophylla*) and pohuehue (*Muehlenbeckia australis*). Few ferns, other than *Pyrrosia eleagnifolia*, *Doodia australis* and the ubiquitous silver fern (*Cyathea dealbata*), were growing here. Small-leaved mahoe (*Melicytus micranthus*), was an interesting find, with its variable leaf shape, as well as mahoe (*M. ramiflorus*) being present. Forest native monocots noted were *Uncinia distans*, *U. uncinata*, *Oplismenus hirtellus* and *Carex lambertiana*, and a wet area had a good patch of *Isolepis inundata*.

Fig. 2. *Meryta sinclairii*, Peretao Rise Reserve, The Gardens, 1 April 2011. Photo: Mike Wilcox.

Viability of these small areas as good quality forest is in doubt, as they are exposed to weed invasion, wind effects and openness on the perimeter, uncoordinated pest management, and neighbours activities. In this small reserve, we saw evidence of weed spread from

garden rubbish, but also unexpected evidence of native species, naturalising where one would not expect them. Several coastal species were identified, self-sown, presumably indicative of bird movement through the city. These included puka (*Meryta sinclairii*) – see Fig. 2*,* karo (*Pittosporum crassifolium*), taupata (*Coprosma repens*)*,* and houpara (*Pseudopanax lessonii*).

Garden escapes and discards also provided sub-tropical notes, including a bank of spider plant (*Chlorophytum comosum*), stinking iris (*Iris foetidissima*), Swiss cheese plant (*Monstera deliciosa*), bear's britches (*Acanthus mollis*), palm grass (*Setaria palmifolia*), veld grass (*Ehrharta erecta*), wandering jew (*Tradescantia fluminensis*), climbing asparagus (*Asparagus scandens*), agapanthus (*Agapanthus orientalis*), hedge woundwort (*Stachys sylvatica*) and forest forget-me-not (*Myosotis sylvatica*). Creeping buttercup (*Ranunculus repens*) was abundant in open damp places.

Woody weeds also had a significant presence, ones we noted on the bush edge or open understorey being loquat (*Eriobotrya japonica*), Chinese privet (*Ligustrum sinense*), Japanese hill cherry (*Prunus serrulata*), monkey apple (*Syzygium smithii*), Brazilian pepper tree (*Schinus terebinthifolius*), blackberry (*Rubus fruticosus*), Cape honeysuckle (*Tecoma capensis*), leadwort (*Plumbago auriculata*), and macadamia nut (*Macadamia tetraphylla*). And there were naturalised palms, too – phoenix palm (*Phoenix canariensis*) and Chinese windmill palm (*Trachycarpus fortunei*).

The reserve would benefit from weed control, around its margins, and positive community action to deter the dumping of garden refuse. The natural introduction of "out of zone" species is of interest.

Hillcrest Grove Reserve, Hill Road, Hillpark, Manurewa (2.1 ha)

Chris Ashton and Christine Major

This reserve is one of the most attractive in the Hillpark group of bush remnants, and has a well-constructed pathway through it. The forest is tall and very dense, reaching 25 m in height, with totara dominant, together with kanuka, kahikatea, kohekohe (*Dysoxylum spectabile*), mamangi, pukatea (*Laurelia novae-zelandiae*), puriri (*Vitex lucens*), rewarewa (*Knightia excelsa*), rimu and tawa, and rarely, tanekaha, matai, white maire (*Nestegis lanceolata*) and milk tree (*Streblus heterophyllus*) (see Appendix). By the size and diversity of the trees, density of the understorey, and presence of epiphytes and ground ferns, this bush is a good deal older than the other blocks we visited.

Pest control has been carried out intensively and has no doubt contributed to the most remarkable feature of this forest – its dense understorey of regenerating kohekohe (Fig. 3), and also karaka, mamangi and puriri. Other small trees or shrubs noted in the understorey or subcanopy were *Coprosma spathulata*, kaikomako (*Pennantia corymbosa*), hangehange (*Geniostoma ligustrifolium*), lemonwood (*Pittosporum eugenioides*), milk tree, mapou, lancewood (*Pseudopanax crassifolius*), kawakawa, mahoe, small-leaved mahoe, karamu (*Coprosma robusta*) and lacebark (*Hoheria populnea*). Tawapou (*Planchonella costata*) was found not far inside the bush from the narrow Hillcrest Grove entrance - we suspect it was either planted or was bird-dispersed from a nearby seed source. Silver tree fern, mamaku (*Cyathea medullaris*) and nikau palm (*Rhopalostylis sapida*) were also common.

Fig. 3. Totara forest with understorey of kohekohe, Hillcrest Grove Reserve, 18 June 2011. Photo: Mike Wilcox.

Climbers present were kiekie (*Freycinetia banksii*), white rata vine (*Metrosideros perforata*), akakiore, native passion vine and the ferns *Blechnum filiforme*, *Microsorum scandens* and *Pyrrosia eleagnifolia*. Tank lily (*Collospermum hastatum*) was a frequent high epiphyte on totara.

As with each of these reserves visited, the ground fern flora was rather limited, comprising here only *Asplenium bulbiferum*, *A. oblongifolium*, *A. polyodon*, *Doodia australis*, *Lastreopsis glabella*, and *L. microsora*. Forest floor monocots were in evidence beside the tracks, and ones we recorded were dwarf cabbage tree (*Cordyline pumilio*), bush rice grass (*Microlaena avenacea*), bush panic grass (*Oplismenus hirtellus*), cutty grass (*Carex dissita*, *C. lambertiana*), and hook grass (*Uncinia distans*, *U. uncinata*). The only native herb we saw was *Haloragis erecta*.

Whilst the bush is in remarkably good condition considering its urban location, there were several exotic weeds present, some marginal and sparse, others more pervasive. By far the worst woody weed

in this reserve is elaeagnus (*Elaeagnus ×reflexa*), present along the tracks and well established in the understorey. The seed of this scrambling shrub is spread by birds. Other woody exotics recorded were Japanese spindle tree (*Euonymus japonicus*), tree privet (*Ligustrum lucidum*), Chinese privet, ivy (*Hedera helix*), Japanese hill cherry, Mickey mouse bush (*Ochna serrulata*) and bay laurel (*Laurus nobilis*). In bush on private property near the Hillcrest Grove entrance to the reserve we saw Brazilian flame vine (*Pyrostegia venusta*) in flower in the top of a tall totara tree. Chinese windmill palm and bangalow palm (*Archontophoenix cunninghamiana*), Swiss cheese plant, climbing asparagus, spider plant, taro (*Colocasia esculenta*), *Cyperus eragrostis*, wild ginger (*Hedychium gardnerianum*) were the monocot exotics we recorded. Selaginella (*Selaginella kraussiana*) was common in places, and there were patches of inkweed (*Phytolacca octandra*), plectranthus (*Plectranthus ciliatus*, *P. ecklonii*) to complete our tally of introduced plants.

Everglade Drive Reserve Block A, Everglade Drive, Goodwood Heights (0.7 ha)

Nicola Reynolds

Everglade Drive, Goodwood Heights, represents a typical New Zealand urban development on farmland of the late 1970s to early 80s. The remaining bush remnants, like this one, albeit somewhat more weed-ridden, offer a timely reminder of how this landscape would once have looked. The bush runs from Everglade Drive down to the very edge of the Southern Motorway. The understorey is quite poor in places, making this a somewhat open remnant due in part to prior farming practices and possibly more, latterly, due to the reserve being used as a pedestrian thoroughfare between Everglade and Orams Road. The west-facing area of this reserve acts as the run off for part of the subdivision. The modern day addition of the high tensile power pylon made a good lunch spot during our urban exploration!

The dominant trees were kahikatea, together with totara, and a few mamangi, milk tree and kanuka. Damper places near a stream had taraire, kohekohe, puriri, pukatea and lemonwood. Prevalent in the understorey or gaps were silver tree fern, nikau, karaka, mahoe, mapou, small-leaved mahoe, hangehange, kawakawa and lacebark. We also recorded coastal karamu (*Coprosma macrocarpa*) and *Haloragis erecta*.

Naturalised woody exotics recorded were fatsia (*Fatsia japonica*), mountain pawpaw (*Vasconcellea pubescens*, syn. *Carica pubescens*), woolly nightshade (*Solanum mauritianum*), monkey apple, Japanese hill cherry, Chinese privet and ivy. There were also several naturalised native shrubs, seeded in from surrounding gardens: taupata, karo and houpara (including the form known as *Pseudopanax lessonii* 'Cyril Watson').

A highlight of this reserve was a spectacular, massive vine of native passion flower – perhaps the biggest any of us had ever seen (Fig. 4). Akakiore was also present, and notable was a gully full of supplejack (*Ripogonum scandens*).

Fig. 4. *Passiflora tetrandra*, Everglade Drive Reserve, Goodwood Heights, 18 June 2011. Photo: Mike Wilcox.

The fern flora was rather meagre, with, apart from silver fern, only *Asplenium flaccidum*, *A. oblongifolium*, *Blechnum chambersii*, *Diplazium australe*, *Microsorum pustulatum*, *Pneumatopteris pennigera* and *Pyrrosia eleagnifolia* being recorded.

Naturalised monocots recorded were elephants ear (*Alocasia brisbanensis*), onion weed (*Allium triquetrum*), spider plant, ginger, wandering jew, and paspalum (*Paspalum dilatatum*), while other naturalised dicots seen were inkweed, black nightshade (*Solanum nigrum*), and lilac oxalis (*Oxalis incarnata*).

Banyan Drive Reserve, Everglade Drive, Goodwood Heights (3.9 ha)

Elaine Marshall

The geology of the area has a sedimentary bedrock of Waitemata mudstone and siltstone, forming a clay soil of good fertility. This reserve is long and narrow, running E, NE to W, SW along a low ridge which gently slopes to the south to a small stream that runs near the southern edge. The stream is culverted at the western boundary of the bush, and receives piped stormwater from the nearby streets. It is a tributary of the Puhinui Stream. Housing backs on to the reserve along the northern boundary and part of the eastern boundary. Mown grassy areas bound the

western end and along the western southern boundary. The bush was reserved as part of the conditions for subdivision of the land by Broadland Properties Ltd from 1979 to 1985.

It was originally farm land and the canopy is almost exclusively clean-boled pole totara 18 to 20 m high, forming a closed canopy, with just a few other tree species present in small numbers, namely tanekaha and kanuka. Some older much-branched totara with diameters of around 1 m occur in places – this low branching habit indicating the previous open nature of the bush in grazed pasture. Two large kahikatea trees of c. 1 m diameter occur near the stream. A large puriri, which has fallen over and resprouted, was seen in the eastern end of the reserve.

Fig. 5. Totara forest with *Coprosma* understorey, Banyan Drive Reserve, Goodwood Heights, 18 June 2011. Photo: Mike Wilcox.

There is virtually no subcanopy except near the stream where tree ferns (predominantly *Cyathea dealbata* and a few *C. medullaris*) and some nikau (*Rhopalostylis sapida*) form a scattered, intermittent low subcanopy 6-7 m high. The dominance of totara in the canopy and lack of subcanopy species indicates past pastoral heavy browsing of cattle (Fig. 5). There is much regeneration in the understorey shrub layer, 2-4 m high, at times very dense. *Coprosma spathulata* is the dominant shrub on the ridge top along with hangehange, mapou, mahoe, mamangi, houpara, kohuhu (*Pittosporum tenuifolium*), karaka, and some pigeonwood, seedling nikau, and kawakawa. Occasional seedlings of taraire, tawa, titoki, lancewood (*Pseudopanax crassifolius*), putaputaweta (*Carpodetus serratus*) and mingimingi (*Leucopogon fasciculatus*) are also present. We also found a sapling of tawapou. Lianes recorded were bush lawyer (*Rubus cissoides*), *Parsonsia heterophylla*, *Muehlenbeckia australis*, passion vine and clematis (*Clematis paniculata*), and there were some vigorous areas of kiekie towards the stream. *Parsonsia heterophylla* was particularly common in openings or gaps.

In the western end the dominant shrub is kawakawa, forming an almost pure dense shrub layer (Fig. 6), and there are here near the stream some larger broadleaved trees, notably puriri, taraire and titoki. At the eastern end of the reserve silver fern is abundant in the understorey. There the broadleaf shrubs are less common due to the dense frond litter and dense subcanopy layer. Small open areas are densely covered with the grass *Oplismenus hirtellus*, and the sedges *Carex lambertiana* and *Uncinia distans* occur in patches. Ferns are common especially rasp fern (*Doodia australis*) which in areas near the stream become locally dense. Other common ferns near the stream include *Lastreopteris glabella*, *L. hispida*, *Adiantum raddianum*, *Deparia petersenii*, and also *Blechnum membranaceum* and rarely, *Adiantum cunninghamii*. Further from the stream on the slopes,

Fig. 6. Totara forest with kawakawa understorey, Banyan Drive Reserve, 21 July 2011. Photo: Mike Wilcox.

Asplenium oblongifolium and rasp fern are common, with some *Adiantum hispidulum*.

Weeds are minimal within the reserve which indicates it is being well managed as most of the weeds are just seedlings or small saplings, the main woody ones being loquat (*Eriobotrya japonica*), Jerusalem cherry (*Solanum pseudocapsicum*) and monkey apple (*Syzygium smithii*), though we did come across a large *Acacia longifolia* in the canopy. There were marginal patches of ladder fern (*Nephrolepis cordifolia*), and shrub balsam (*Impatiens sodenii*), while Queen of the night (*Cestrum nocturnum*) and arum lily (*Zantedeschia aethiopica*) occurred in the easternmost stream gully. There are some small local patches of wandering jew in the reserve. Most of the weeds and dumped rubbish occur at the northern and eastern edges near dwellings. Some dumping of garden refuse has resulted in the establishment of these weeds.

Several of the native shrubs in the understorey can be regarded as naturalised plants in this reserve, notably the coastal species karo, taupata, houpara, and tawapou.

All in all a very nice piece of well-maintained remnant pastoral totara forest, with a moderately good representation of native species (66) (see Appendix). Over time more native species will eventually re-establish in the reserve due to its close proximity to the large bush area of Totara Park just to the south. The presence of seedling kohekohe, taraire and tawa is testament to this. With ongoing vigilance and maintenance it should be possible to keep this reserve free of exotic weeds.

Eugenia Rise Reserve, Eugenia Rise, Goodwood Heights (5.8 ha)

Mike Wilcox

Our last port of call for the day was Eugenia Rise Reserve, the largest of the Goodwood Heights bush remnants. This is an extensive totara forest with a minor admixture of tanekaha, kanuka, miro, rewarewa, and mamangi on the upper slopes, with broadleaved forest of tawa, taraire, kohekohe, karaka, and puriri, together with kahikatea, in the gullies and on the lower slopes. The understorey in the totara forest was dominated by mapou, mahoe, and hangehange, and with several puka naturalised, while nikau, kiekie, milk tree, kawakawa and pigeonwood were common on the damper sites. Native passion vine was common in places as a sprawling terrestrial creeper in the totara forest, while panic grass was common in patches.

The fern flora was reasonably diverse, and we recorded *Asplenium bulbiferum*, *A. oblongifolium*, *Blechnum chambersii*, *B. filiforme*, *B. membranaceum*, *Cyathea dealbata*, *C. medullaris*, *Lastreopsis glabella*, *Microsorum pustulatum*, *M. scandens*, *Pneumatopteris pennigera*, *Pteridium esculentum* and *Pteris comans*. Woody weeds recorded were barberry (*Berberis glaucocarpa*) and fatsia.

Conclusions

The main ecological features of these reserves were the abundance of totara, consistent presence of *Passiflora tetrandra* and *Melicytus micranthus*, variable composition of the understories, absence of filmy ferns, absence of native herbs, and scarcity of epiphytes.

Acknowledgements

Michael Ngatai, Auckland Council, South Auckland, informed us that weed and pest control is undertaken in these reserves. Pest animal control (for rodents and possums) occurs at Hillcrest Grove Reserve and across the road at Nathan Homestead Reserve (there are a handful of bait stations that are topped up monthly). A local resident looks after the possum control at Banyan Drive Reserve (MCC Parks donated a few Timms traps last year to one of the locals who wanted to control possums in there). Weeds are managed in most of these reserves. Jeremy Froger, Principal Policy Analyst Parks and Open Spaces, Community & Cultural Policy South, Auckland Council, kindly provided historical information about Banyan Drive Reserve.

Appendix: Species lists for two of the South Auckland reserves.

Hillcrest Grove Reserve

Ferns & lycopods: 8 native, 1 exotic*

Asplenium oblongifolium
A. polyodon
Blechnum filiforme
Cyathea dealbata
Doodia australis
Lastreopsis glabella
L. microsora
Microsorum scandens
*Selaginella kraussiana**

Conifers: 5 native

Dacrycarpus dacrydioides
Dacrydium cupressinum
Podocarpus totara
Phyllocladus trichomanoides
Prumnopitys taxifolia

Dicots: 30 native, 11 exotic*

Beilschmiedia tarairi
B. tawa
Coprosma arborea
C. spathulata
C. robusta
Corynocarpus laevigatus
Dysoxylum spectabile

*Elaeagnus × reflexa**
*Euonymus japonica**
Geniostoma ligustrifolium
Haloragis erecta
*Hedera helix**
Hedycarya arborea
Hoheria populnea
H. sexstylosa
Knightia excelsa
Kunzea ericoides
Laurelia novae-zelandiae
*Laurus nobilis**
*Ligustrum lucidum**
*L. sinense**
Macropiper excelsum
Melicytus micranthus
M. ramiflorus
Metrosideros perforata
Myrsine australis
Nestegis lanceolata
*Ochna serrulata**
Parsonsia heterophylla
Passiflora tetrandra
Pennantia corymbosa
*Phytolacca octandra**
Pittosporum eugenioides
Planchonella costata
*Plectranthus ciliatus**
*P. ecklonii**
*Prunus serrulata**
Pseudopanax crassifolius
P. lessonii
Streblus heterophyllus
Vitex lucens

Monocots: 8 native, 7 exotic*
*Archontophoenix cunninghamiana**
*Asparagus scandens**
Carex dissita
C. lambertiana
*Chlorophytum comosum**
Collospermum hastatum
*Colocasia esculenta**
Cordyline pumilio
*Cyperus eragrostis**
Freycinetia banksii
*Hedychium gardnerianum**
Microlaena avenacea
*Monstera deliciosa**
Oplismenus hirtellus
Rhopalostylis sapida
*Trachycarpus fortunei**
Uncinia distans
U. uncinata

Banyan Drive Reserve

Ferns: 18 native, 2 exotic*
Adiantum cunninghamii
A. hispidulum
*A. raddianum**
Asplenium flaccidum
A. oblongifolium
A. polyodon
Blechnum filiforme
B. membranaceum
B. novae-zelandiae
Cyathea dealbata
C. medullaris
Dicksonia squarrosa
Deparia petersenii
Lastreopsis glabella
L. hispida
Microsorum scandens
*Nephrolepis cordifolia**
Pellaea rotundifolia
Pteris tremula
Pyrrosia eleagnifolia

Conifers: 3 native
Dacrycarpus dacrydioides
Phyllocladus trichomanoides
Podocarpus totara

Dicots: 36 native, 12 exotic*
*Acacia longifolia**
Alectryon excelsus
Beilschmiedia tarairi
B. tawa
Carpodetus serratus
*Cestrum nocturnum**
Clematis paniculata
Coprosma arborea
C. repens
C. robusta
C. spathulata
Corynocarpus laevigatus
*Crassula multicava**
Dysoxylum spectabile
*Eriobotrya japonica**
*Fatsia japonica**
Geniostoma ligustrifolium
Haloragis erecta
*Hedera helix**
Hedycarya arborea
Hoheria populnea
*Homalanthus populifolius**
*Impatiens sodenii**
*Jasminum polyanthum**
Kunzea ericoides
Leucopogon fasciculatus

Macropiper excelsum
Melicytus micranthus
M. ramiflorus
Muehlenbeckia australis
Myrsine australis
Nestegis lanceolata
Parsonsia heterophylla
Passiflora tetrandra
Pittosporum crassifolium
P. eugenioides
P. tenuifolium
Planchonella costata
*Prunus campanulata**
Pseudopanax crassifolius
P. crassifolius x *P. lessonii*
P. lessonii
Rubus cissoides
Schefflera digitata
*Solanum pseudocapsicum**
Streblus heterophyllus
*Syzygium smithii**
Vitex lucens

Monocots: 9 native, 11 exotic*

*Agapanthus orientalis**
*Asparagus asparagoides**
Carex lambertiana
*Chlorophytum comosum**
*Clivia miniata**
*Ehrharta erecta**
Cordyline australis
Gahnia lacera
*Hedychium gardnerianum**
Isolepis inundata
Microlaena stipoides
*Monstera deliciosa**
Oplismenus hirtellus
*Pennisetum clandestinum**
*Phoenix canariensis**
Rhopalostylis sapida
Schoenus maschalinus
*Tradescantia fluminensis**
Uncinia distans
*Zantedeschia aethiopica**

Trip report: Titirangi - Atkinson Reserve and the Titirangi Primary School bush, 20 August 2011

Sandra Jones and Mike Wilcox

Attendance (34): *Chris Ashton, Jan Butcher, Ewen Cameron, Liz Collison (graduate student visitor from UK), Brian Cumber, Pam Dale, Melanie Dixon, Gael Donaghy, Frances Duff, Rhys Gardner, Anne Gaskett, Leslie Haines, Richard Hursthouse, Peter Hutton, Graeme Jane, Sandra Jones (leader), John Lambert, Mei Nee Lee, Christine Major, Elaine Marshall, Phillip Moll, Sharon Osman, Joanne Peace, Margaret Peart, Juliet Richmond, Lance Salt, Josh Salter, Matthew Swinburne, Shirley Tomlinson, Val Tomlinson, Alison Wesley, Mike Wilcox, Tony Williams, Maureen Young.*

At the Titirangi School: *Teachers: Don Morrison, Carol Yates. Neighbourhood care person: Karen Mann. Bot Soc: our group plus Melissa Marler. Year 5 children: Carlos Brown, Brook Harper, Summerose Kennedy, Joe Smith, Isobel Turenhout, Tyrone Wood.*

The original plan, as it was announced in the News-sheet, had to be modified on the day because time, and the logistics of ferrying 35 people between locations, got the better of us. Unfortunately our planned visit to Rahui Kahika Reserve had to be abandoned. We began the day at the top of the Zig Zag Track in Atkinson Reserve (Fig. 1) and botanized our way down to the end of the formed track where it meets Titirangi Beach Road. From here we walked 5 minutes along the road to the beach picnic area for lunch (Fig. 2), before heading back up the hill to meet some pupils and their teachers at the Titirangi Primary School in Atkinson Road at 1pm. By 2.30pm we were back down on Titirangi Beach Road at the bottom end of Zig Zag Track to continue our walk through the eastern section of the reserve down to the beach. This track is not marked on maps and although it is easy to follow it is very muddy in parts.

Atkinson Reserve

The Titirangi Botanic Reserve (later to become known as the Atkinson Reserve) was gifted by Henry Atkinson to the city of Auckland as a public park in 1901, although it was not formally opened until 1914. The reserve runs down a valley from Park Road to Paturoa Bay/Titirangi Beach.

This bush reserve is one of twenty-one areas recommended for protection as a Priority Vegetation Site in the Waitakere Ecological District Survey Report for the Protected Natural Areas Programme (ARC 1993). The lowland kauri-kanuka (*Agathis australis-Kunzea ericoides*) forest on the lower slopes, where kauri is emerging through kanuka, is classified as the "Best and only" example of this ecology unit