Field Trip: Waipoua Forest, Mataraua Forest and Maunganui Bluff 27- 30-01/06 (Auckland Anniversary Weekend)

Jenny Lux (editor)

Having recently completed an MSc thesis with assistance from the Lucy Cranwell fund (Lux 2005), and now tasked with the secretariat of the Society as well as a responsibility to organise worthwhile botanical expeditions for its members, I decided to lead a group of Bot Soccers into the depths of Waipoua Forest, which had been my home and study area for the previous two years. I had cultivated friendly relations with the local Department of Conservation (DoC) staff, so we were able to avail ourselves of a fine old kauri villa for Auckland Anniversary Weekend, located at the site of the DoC Waipoua Forest HQ on the southern side of the Waipoua River (Fig. 1.). We used this as our base to explore forest dominated by kauri (*Agathis australis*) in the mid-altitudes of Waipoua (around 200-300 m asl), towai (*Weinmannia silvicola*) forest at 600 m asl on the Mataraua Forest plateau, and mixed coastal forest and shrublands rising from sea level to 400 m asl on Maunganui Bluff.

In attendance at the camp, for all or part of the weekend were: (back row from left to right) Doug Shaw, Brian Cumber, Helen Cogle, Maureen Young, Gael Donaghy, Sandra Jones, John Millett, Shelley Heiss-Dunlop, Kieran Whelan, Leslie Haines, Christian Fritz, Alistair MacArthur, Graeme Jane, Josh Salter; (front row from left to right) Lisa Clapperton, Colleen Crampton, Jenny Lux and Elaine Marshall. We were also accompanied by Stephen King, Awhi Nathan, Rose Birch and Richard Gillies (not pictured).

Fig. 1: Attendees at the camp, DoC Waipoua Forest HQ.

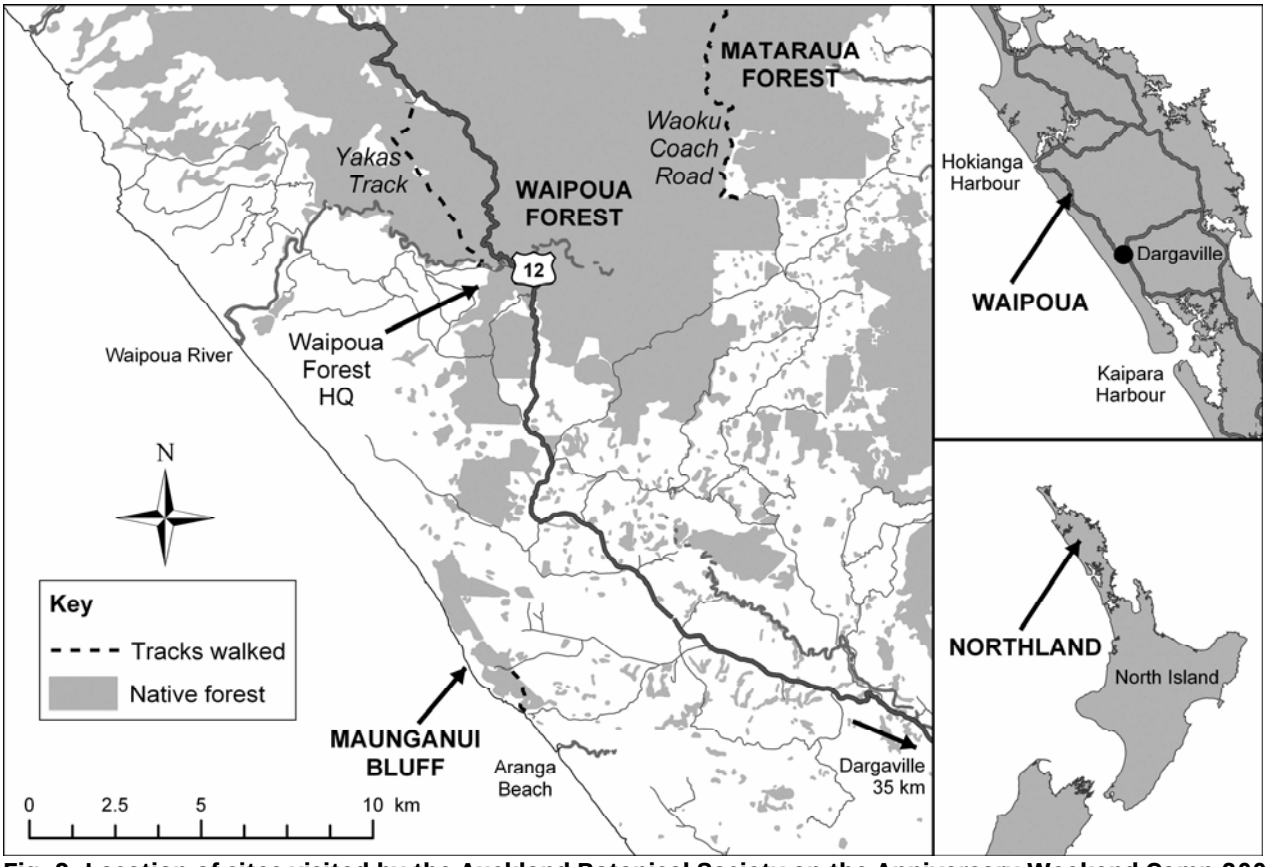

Fig. 2: Location of sites visited by the Auckland Botanical Society on the Anniversary Weekend Camp 2006.

The Waipoua area has always been a popular spot with Auckland Botanical Society. There have been field trips run there around once a decade since the Society's inception, i.e. in 1949 (Anon 1949), 1955 (Hynes 1955), 1963 (Davis 1964), 1970 (Wormald 1971), 1989 (Beever and Beever 1989) and 1997 (Young *et al.* 1997). There may have been more of which I am not aware. The Auckland Botanical Society (ABS) committee advocated strongly for the protection of kauri forest at Waipoua in the late 1940s and early 1950s, before the establishment of a 22,000 acre (9,000 ha) Forest Sanctuary in 1952. It is interesting to note that, with a choice of two possible options, they recommended the smaller area of only 10,000 acres for protection, because of the 'necessity for fire prevention' and because they had observed that other reserves nationwide were faring extremely badly under the 'depredations of introduced animals'. Therefore they asked 'how then should we expect Waipoua to receive better treatment?' (extracts from a letter to the Commissioner of State Forests in 1949).

Yakas Track to Omaia Clearing

Jenny Lux

On Saturday morning we departed from the 'Kauri Walks' carpark on State Highway 12 and followed the Yakas Track southwards towards Omaia clearing, an old Maori burn which was the subject of my thesis. First burnt by Maori and later by gumdiggers, it is now one of the finest, weed-free pieces of regenerating forest (albeit with a strong 'gumland' influence) in northern New Zealand; home to such threatened species as the fern *Todea barbara* and the North Island fernbird (*Bowdleria punctata vealeae*).

The car park where we began also originated through Maori burning around 500 years ago (Ogden *et al.* 2003). It is named Tarahoka by tangata whenua, who are Te Iwi o Te Roroa. Awhi Nathan of Te Roroa and Stephen King of the Waipoua Forest Trust accompanied us on our trip.

Robert Collins, Forest Service Officer in Charge at Waipoua in the 1950s, recorded and mapped the oral history relating to these forest clearings, told to him by a Te Roroa kaumatua, Arthur Paniora, which described sites such as Tarahoka and Omaia as 'bird landings', i.e. areas where birds would be hunted. In the case of these particular two sites, North Island brown kiwi (*Apteryx mantelli*) were the target. They would be hunted using dogs and fire, the by-product often being a small burn-off of the bush.

At Tarahoka we walked on a path through dense bracken with *Baumea teretifolia* poking through to eye height, dotted with occasional pole rimu, towai and kauri. At the encouragement of Stephen, several (brave or foolhardy) people tried the flesh of tutu (*Coriaria arborea*) berries, which were juicy pink and purple at the time, though pains were taken to avoid the toxic seeds. Meanwhile, some tui (*Prosthemadera novaeseelandiae*) around us were feasting on the less risky *Coprosma grandifolia* berries. On the trunks of some of the silver tree ferns (*Cyathea dealbata*) in the clearing we noted the tiny filmy fern *Hymenophyllum armstrongii* with its characteristic black teeth, as well as several associates including *H. demissum, H. revolutum* and *H. multifidum*. This was a useful moment for some to get a grip on some of the distinguishing features of our smallest ferns.

After less than 100m. (and already an hour had passed!), the track out of Tarahoka meets an old logging road (put in during the 1940s to take out kauri for the 'war effort'), and heads westwards toward the 'Four Sisters', 'Te Matua Ngahere', the 'Yakas Tree' and other famous large kauri trees. Here we delved further into the recent groves of young kauri and towai trees sporting the winika orchid (*Winika cunninghamii*) in flower. Kirk's tree daisy (*Brachyglottis kirkii* var. *kirkii*) is quite abundant in this community and was just starting to flower.

There were some *Mida salicifolia* present in this area, which afforded us a lesson on the differences between this species, the 'shiny-leaved' maire, and the other species it could potentially be confused with, i.e. white maire (*Nestegis lanceolata*). Apart from the obvious trait of comparatively shiny leaves with sinuous margins, *Mida salicifolia* has both opposite and alternate pairs of leaves on the stem, whereas white maire is always opposite. We also found a black maire (*Nestegis cunninghamii*) seedling. Sandra Jones contends that if you look at a black maire leaf against the light of day it will have marked veins, unlike white maire, which is less see-though.

On the other side of the logging track, near the Four Sisters, we got into some mature kauri forest and were delighted to find *Pterostylis brumalis* rosettes on a large kauri humus mound. We also found a few tufts of the ancient fern ally *Tmesipteris tannensis*, which has three similar species all also known from Waipoua (*T. elongata, T. lanceolata* and *T. sigmatifolia*). Maureen Young offered one of her useful phrases for remembering which one is *T. tannensis* – "It's got boats, not bums" - in reference to the shape of the spore capsules (synangia).

Before starting on the Yakas Track proper, we took some time to view several kauri which had been killed or weakened by *Phytophthora cinnamomi*, an introduced plant-killing, soil-borne fungus of Southeast Asian origin. According to Stephen King, who had been observing the site for over a decade, gravelling and compaction of the root area around the trees had

created the conditions necessary for *Phytophthora* to thrive. One particular individual had improved since the start of the track had been rerouted to divert people's footsteps and pooling water away from the feeder roots.

The Yakas Track passes through glades of taraire (*Beilschmiedia tarairi*) and towai, punctuated by tall columnar stands of kauri, and threaded together with kiekie (*Freycinetia banksii*), the moisture-loving vine and relative of the pandanus. We stopped to have lunch at one of the most glorious spots, called 'Cathedral Grove', now protected by a board-walk platform. It is a stand of millennial kauri emergent over tawheowheo (*Quintinia serrata*), tawari (*Ixerba brexioides*), oro-oro (*Nestegis montana*), mingimingi (*Leucopogon fasciculatus*), Hall's totara (*Podocarpus hallii*), horopito (*Pseudowintera axillaris*) and white rata vine (*Metrosideros albiflora*). There are too many species to describe fully in this account, however those occurring along the Yakas Track have been fully listed in Appendix 1, compiled by Graeme Jane and Gael Donaghy on this trip and a previous visit.

As we wended our way through this fantastically diverse and fascinating forest, the following features caught our collective attention. *Microlaena carsei* grew patchily on track edges, in muddy spots. We found a 'vegetable caterpillar' between taraire roots. This is formed by a fungus (*Cordiceps robertsii*) which parasitises unsuspecting moth larvae and causes them to die head-up in a soil burrow, fully replicating the body shape of the insect in fungal hyphae and finally sending its fruiting body (i.e. the mushroom) out of the insect's head and above ground. At one particular spot, under the up-turned root mass of a taraire we found an abundance of exotic weedy species, the only appearance so far in the forest interior. We attributed this to the site being used as a quad-bike park. The most abundant weed was *Lotus pedunculatus*.

We knew we had arrived at Omaia clearing when we moved into a lofty stand of kauri and kawaka (*Libocedrus plumosa*) of approximately 50 cm diameter, past a band of tall kanuka (*Kunzea ericoides*), and then into thickets of ricker kauri flanked by tall kauri grass (*Astelia trinervia*). At this point you could hear the ocean some 8 km to the west. The group sat down on carpets of *Dicranoloma* mosses at the track edge to listen to the story of Omaia and some of the theories of its origin and development (more to follow in a future in-depth paper on this topic). Then we were off down the track and into the undergrowth to rediscover the population of *Todea barbara* which I had stumbled across while mapping the vegetation in 2005 (Fig. 3). We re-found the 20+ individuals, which appear to be associated with the base of a burnt kauri tree in the centre of the clearing. Gael Donaghy may have found some seedlings of *Pseudopanax gilliesii* at this spot, however this could not be confirmed. On a subsequent visit in October 2006 Maureen Young could not locate any *P. gilliesii*, so it is likely that these were the more common five-finger (*P. arboreus*).

Fig. 3: *Todea barbara* at Omaia clearing, nestled amongst *Astelia trinervia* and sapling kauri.

We returned to the vehicles the same way we had come, though in about quarter the time. Graeme Jane took a direct route back to the HQ via the continuation of the Yakas Track, and found more vegetable caterpillars under taraire. We had hoped he might find *Danhatchia australis*, formerly known as *Yoania australis*, an orchid which is parasitic on taraire and was last recorded at Waipoua in 1955.

In the evening we tucked into lemon chicken and I showed some slides from my thesis.

Maunganui Bluff – southern side to summit

Leslie Haines

Maunganui Bluff is a very special site botanically, having forest down to the sea, and along with Waitakere Ranges and parts of the Taranaki coast, this is all that's left on the west coast of the North Island.

Immediately after we began on the track from the carpark near the beach we came across *Fuchsia procumbens* growing amongst the long grass beside the track. And then it wasn't long before we saw the threatened *Hebe speciosa* (titirangi) coming into flower - all the rich purple colour popular with home gardeners and plant breeders. This is the stronghold for titirangi and was more common than expected. It grows in the open, partially sheltered behind flax plants, rather than on exposed ridges.

Halfway up we moved across the major stream gully with *Machaerina sinclairii* and *Arthropodium cirratum*

and seemed to leave the *Hebe speciosa* behind. Above this gully the *Rhabdothamnus solandri* displayed particularly dark red flowers and large leaves. Exposed rocky sites well above the coastline had *Tetragonia implexicoma, Apium prostratum, Lobelia anceps, Peperomia urvilleana* and *Mentha cunninghamii*.

Fig. 4: Our group at the base of Maunganui Bluff, facing south towards Aranga Beach. Flax (*Phormium tenax*) and coastal toetoe (*Cortaderia splendens*) are very common here.

The track winds its way up the Bluff and passes through patches of forest mostly in the gullies that were dominated by taraire and towai with some kauri and miro. The plastic form of hangehange (*Geniostoma ligustrifolium*) was demonstrated here with sheltered plants displaying large lush leaves while nearby exposed plants had considerably reduced leaf size. *Hebe flavida* was in flower and easily distinguished from *H. stricta* and *H. macrocarpa* by the yellow midrib. The forest near the summit has the last local remnant of *Pennantia corymbosa* that was probably more common before clearance and grazing.

One of the features of the Bluff was the high number of *Coprosma* species: *C. robusta, C. macrocarpa, C. grandifolia, C. lucida, C. rhamnoides, C. areolata, C. repens, C. arborea, C. neglecta, C. parviflora, C.* hybrid. *Coprosma neglecta* was gorgeous in scrambling and cushion-bush habits. In contrast *C. parviflora* displayed its typical angled form.

The day was hot and very humid which was very taxing for most, despite the botanising pace. The track meanders before climbing fairly steeply to the fence line. We reached the fence line by 1.30pm for a late (for us) lunch and met Stephen King who, along with locals Awhi Nathan and Rose Birch who walked up the hill with us. They took us to the summit of the Bluff at 461 m asl, pointing out tapu sites. This site is culturally significant for Te Iwi o Te Roroa and was one of three high points in the region, important strategically and spiritually for Maori. Botanising here was fairly brief, with a coastal kowhai species *Sophora fulvida* and a local population of *Olearia albida* of particular interest, before we made our way down in order to catch the low tide for cliff scrambling. We weren't able to scramble around the steeper slopes but with binoculars had *Chionochloa bromoides* pointed out hugging rocks near the summit.

Maunganui Bluff – coastal cliffs

Maureen Young

At the beach at the base of the Bluff, a low spring tide had brought out the kai moana collectors in full force. The cliff vegetation consisted of a low sward of coastal herbs on the lower slopes, including *Disphyma australe, Senecio lautus, Selliera radicans, Calystegia soldanella, Apium prostratum,* and *Sarcocornia quinqueflora.* Also present were the sand wind grass, *Lachnagrostis billardierei,* and prostrate bushes of *Coprosma repens.* Among these plants grew the nationally vulnerable button daisy, *Leptinella rotundata,* with its rounded, sparsely hairy leaves with toothed margins. This little plant is found only at three sites on the west coast of the Northland peninsula, and at this site two small patches were seen, covering three or four square metres in total.

On a steep vertical face, growing in a wet seepage, was a single plant of the native sow thistle, *Sonchus kirkii.* On the clifftops grew karo, flax, *Hebe speciosa* and flags of toetoe, *Cortaderia splendens*, with a fringe of the coastal tussock, *Chionochloa bromoides*.

Mataraua Forest graced by kokako and *Gratiola sexdentata*

Lisa Clapperton

We set out at 5 am from camp to reach the Waoku Coach Rd, which runs through the Mataraua Forest, just before dawn. The morning was fine and humid, though the temperature cooled as we got up into the hills. At an average altitude of 600 m asl, Mataraua Forest gets a much higher rainfall than Waipoua, receiving approximately 2500 mm per annum.

We drove along the rutted farm track to the start of the old road, where we set off on foot with the night insects still singing in the bush. Botanising was minimal, with only the white undersides of the *Fuchsia excorticata* clearly visible in the gloom. A large kauri snail (*Paryphanta busbyi busbyi*) was crawling across the track, its shiny brown shell about 100 mm in length and the blue-black body about the same again.

The twittering of the small birds slowly took over from the insects with a single call of a tui being the first bird call I was aware of. The plaintive notes of the kokako could be heard off in the distance to the west of the track as we walked along through the low cloud. We paused at a bend in the track next to a cut away bank to listen, and distant calls were heard.

"Forget the birds, here's *Gratiola sexdentata*!" was Maureen Young's cry, after several minutes of calm during which she had gainfully employed her botanical eye. *Gratiola sexdentata* was well established in the damp edges of the track, as was *Viola filicaulis*. *Earina autumnalis* was in full flower on an old log.

As it grew lighter, and the trees more discernable, it could be seen that the bush was dominated by towai with a few emergent rimu (*Dacrydium cupressinum*) and pukatea (*Laurelia novae-zelandiae*). The forest had been cleared, obviously during the construction of the road in the mid-1800s, but also burnt c. 1880 in a settler-initiated fire. Other frequent species in the forest mixture were tawari, *Raukaua edgerleyi*, *Coprosma grandifolia*, kapuka (*Griselinia littoralis*) and makamaka (*Ackama rosifolia*). *Sticherus cunninghamii* was covering some of the cuttings alongside the track.

We got as far as the 'Hippie shed' before turning and wandering back, getting strung out in our usual manner. Just before 8.30 am a pair of kokako was sighted in the canopy above the track, dueting to each other as they moved along the branches. After a few minutes, a fledgling was heard and possibly sighted by some... I saw the leaves move but not the whites of its eyes. It was a wonderful experience to hear the haunting calls in the misty cloud, looking up into that damp canopy and seeing the birds moving from tree to tree. The current kokako count in that area is 17 pairs, the largest remaining population in Northland after Puketi Forest's great decline.

We bumped our way back to reality in our well licked cars (that had been parked in the cow paddock) to arrive back at camp after a full day at 10 am. Thanks Jenny and Richard.

References

Anon 1949: Waipoua Kauri Forest. *Auckland Botanical Society Newsletter 6*: 5-6.

Beever J.E. and Beever R.E. 1989: Report on Waima-Waipoua-Mataraua Forests field trip January 1989. *Auckland Botanical Society Journal 44*: 29-30

Davis E.M. 1964: A Visit to Waipoua. *Auckland Botanical Society Newsletter, March 1964*, 1-3.

Eagle, A.L. 2006: Eagle's Complete Trees and Shrubs of New Zealand: Vol. 1. Te Papa Press, Wellington.

Hynes P. 1955: Waipoua Forest Trip. *Auckland Botanical Society Newsletter 12*: 1-2.

Lux J.K. 2005: Vegetation-environment relationships after burning of kauri (*Agathis australis*) forest, Waipoua Forest, Northland, New Zealand. Unpublished Master of Science thesis, University of Auckland.

Ogden J., Deng Y., Boswijk G. and Sandiford A. 2003: Vegetation changes since early Maori fires in Waipoua Forest, Northern New Zealand. *Journal of Archaeological Science 30*: 753-767.

Wormald B. 1971: Labour Weekend – Omapere. *Auckland Botanical Society Newsletter 28*: 4-5.

Young M., Benham S. and Wesley A. 1997: Field Trip to Waipoua Forest and Tutamoe, Easter 1997. *Auckland Botanical Society Journal 52*: 19

Appendix 1: Vascular Plants on the Yakas Track, Waipoua Forest (Maureen Young and Graeme Jane, based on several previous visits).

* = Exotic

Psilopsids, Lycopods & Quillworts	
Huperzia varia	hanging clubmoss; iwituna
Lycopodiella cernua	
Lycopodiella lateralis	carpet clubmoss
Lycopodium deuterodensum	puakarimu
Lycopodium volubile	waewae-koukou; climbing clubmoss
Tmesipteris elongata	
Tmesipteris lanceolata	
Tmesipteris sigmatifolia	
Tmesipteris tannensis	

Ferns	
Adiantum cunninghamii	maiden hair fern
Anarthropteris lanceolata	
Asplenium bulbiferum	hen and chickens fern; moku
Asplenium flaccidum s. str.	hanging spleenwort; makawe
Asplenium oblongifolium	shining spleenwort
Asplenium polyodon	sickle spleenwort; petako
Blechnum discolor	crown fern; piupiu; petipeti
Blechnum filiforme	climbing hard fern; thread fern
Blechnum fraseri	
Blechnum nigrum	black fern
Blechnum novae-zelandiae	kiokio
Cardiomanes reniforme	kidney fern; raurenga
Ctenopteris heterophylla	
Cyathea cunninghamii	slender tree fern
Cyathea dealbata	ponga; silver fern
Cyathea medullaris	mamaku; korau; black tree fern
Cyathea smithii	soft-leaved tree fern
Dicksonia lanata	tuokura; stumpy tree fern
Dicksonia squarrosa	wheki; harsh tree fern
Gleichenia dicarpa	waewaekaka; tangle fern

Grammitis billardierei	common strap fern
Grammitis pseudociliata	
Histiopteris incisa	water fern
Hymenophyllum armstrongii	
Hymenophyllum atrovirens agg.	
Hymenophyllum demissum	piripiri; irirangi
Hymenophyllum dilatatum	lop-sided filmy fern
Hymenophyllum ferrugineum	
Hymenophyllum flabellatum	fan fern
Hymenophyllum flexuosum	
Hymenophyllum multifidum	
Hymenophyllum rarum	wire-stemmed filmy fern
Hymenophyllum revolutum	
Hymenophyllum sanguinolentum	blood-scented filmy fern
Hymenophyllum scabrum	coarse-haired filmy fern
Hypolepis distans	
Lastreopsis hispida	hairy fern
Leptopteris hymenophylloides	single crepe fern; heruheru
Lindsaea trichomanoides	
Lygodium articulatum	mangemange; bushmans mattress
Microsorum pustulatum	hounds tongue; kowaowao
Microsorum scandens	mokimoki; fragrant fern
Paesia scaberula	scented fern; matata; ring fern
Pneumatopteris pennigera	gully fern; pakau; pakauroharoha
Pteridium esculentum	bracken; rauaruhe
Pteris tremula	turawera
Rumohra adiantiformis	butcher's fern
Schizaea dichotoma	fan fern
Schizaea fistulosa	comb fern
Todea barbara	
Trichomanes elongatum	bristle fern
Trichomanes strictum	
Trichomanes venosum	veined bristle fern
Todea barbara	

Gymnosperm trees and shrubs	
Agathis australis	kauri
Dacrycarpus dacrydioides	kahikatea, white pine
Dacrydium cupressinum	rimu, red pine
Halocarpus kirkii	monoao
Manoao colensoi	silver pine, manoao
Libocedrus plumosa	kawaka
Phyllocladus trichomanoides	tanekaha; celery pine
Podocarpus hallii	Hall's totara
Podocarpus totara	totara
Prumnopitys taxifolia	matai; black pine
Prumnopitys ferruginea	miro; brown pine

Dicotyledonous trees and shrubs	
Ackama rosifolia	makamaka
Alseuosmia banksii agg.	
Alseuosmia macrophylla	toropapa
Alseuosmia quercifolia	
Aristotelia serrata	wineberry; makomako
Ascarina lucida	hutu
Beilschmiedia tarairi	taraire
Beilschmiedia tawa	tawa
Brachyglottis kirkii var. *kirkii*	Kirk's daisy
Brachyglottis repanda	rangiora; bushmans friend
Carmichaelia arborea	
Carpodetus serratus	putaputaweta; marbleleaf
Coprosma arborea	mamangi; tree coprosma
Coprosma grandifolia	raurekau; kanono; mamono
Coprosma lucida	karamu; shining karamu
Coprosma robusta	karamu
Coriaria arborea	tree tutu
Corynocarpus laevigatus	karaka; kopi
Dracophyllum latifolium	needle-leaved neinei
Dracophyllum lessonianum	
Dysoxylum spectabile	kohekohe
Elaeocarpus dentatus	hinau
Epacris pauciflora	tamingi; bog epacris
Fuchsia excorticata	fuchsia; kotukutuku
Gaultheria antipoda	snowberry; tawiniwini
Griselinia lucida	puka
Hedycarya arborea	pigeonwood; porokaiwhiri
Hoheria populnea	houhere; lacebark
Ixerba brexioides	tawari
Knightia excelsa	rewarewa; NZ honeysuckle
Kunzea ericoides	kanuka; white teatree
Laurelia novae-zelandiae	pukatea
Leionema nudum	mairehau
Leptospermum scoparium	manuka; red teatree
Leucopogon fasciculatus	mingimingi; kaikaitau
Litsea calicaris	mangeo
Lophomyrtus bullata	ramarama
Macropiper excelsum	kawakawa; pepper tree
Melicope simplex	poataniwha
Melicytus macrophyllus	large-leaved mahoe
Melicytus micranthus	manakura; swamp mahoe
Melicytus ramiflorus	mahoe
Metrosideros robusta	northern rata
Mida salicifolia	willow-leaved maire
Myrsine australis	red matipo; mapou
Myrsine salicina	toro
Nestegis cunninghamii	black maire
Nestegis lanceolata	white maire
Nestegis montana	orooro; narrow-leaved maire
Olearia rani	heketara
Pittosporum cornifolium	tawhirikaro; perching kohukohu
Pittosporum eugenioides	lemonwood; tarata
Pittosporum tenuifolium agg.	black matipo; kohuhu
Pseudopanax arboreus	five finger; puhou
Pseudopanax crassifolius	lancewood; horoeka
Pseudowintera axillaris	horopito
Quintinia serrata agg.	westland quintinia
Raukaua anomalus	whauwhaupaku

Raukaua edgerleyi	raukawa
Rhabdothamnus solandri	taurepo; waiutua; kaikai aruhe
Schefflera digitata	pate; patae; kotete
Streblus heterophyllus	turepo; milk tree
Syzygium maire	swamp maire
Toronia toru	toru
Vitex lucens	pururi; kauere
Weinmannia silvicola	towai; tawhero

Dicotyledonous lianes and related trailing plants	
Clematis cunninghamii	scented clematis; pokopoko
Clematis paniculata	clematis; puawhananga
Metrosideros albiflora	white rata; akatea
Metrosideros diffusa	white climbing rata; akatea
Metrosideros fulgens	scarlet rata; winter rata
Metrosideros perforata	aka; small white rata;
Muehlenbeckia australis	poheuheu
Parsonsia heterophylla	maori jasmine; kaihu;
Rubus australis	bush lawyer
Rubus cissoides	bush lawyer; tataramoa

Daisy-like herbs	
* *Cirsium arvense*	Californian thistle
* *Gamochaeta spicata*	purple cudweed
Senecio esleri	fireweed

Dicotyledonous herbs other than Composits	
* *Acaena novae-zelandiae*	red bidibid; piripiri
* *Anagallis arvensis*	scarlet pimpernel
Callitriche muelleri	starwort
Centella uniflora	
* *Conyza sumatrensis*	broad-leaved fleabane
Drosera binata	scented sundew
Gunnera monoica agg.	solitary gunnera
Hydrocotyle novaezeelandiae var. *robusta*	common pennywort
Lobelia anceps	wild lobelia
Nertera depressa	common nertera
Nertera dichondrifolia	hairy nertera
* *Plantago australis*	swamp plantain
Ranunculus reflexus	maruru; hairy buttercup
* *Trifolium repens*	white clover

Monocotyledonous trees and shrubs	
Cordyline australis	cabbage tree; ti-kouka
Cordyline banksii	forest cabbage tree; ti ngahere
Cordyline pumilio	ti rauriki; dwarf cabbage tree
Rhopalostylis sapida	nikau

Monocotyledonous lianes	
Freycinetia banksii	kiekie
Ripogonum scandens	supplejack; kareao

Sedges	
Baumea teretifolia	
Carex dissita	
Carex solandri	
Gahnia setifolia	
Gahnia xanthocarpa	giant sedge
Isolepis reticularis	
Schoenus maschalinus	
Uncinia banksii	
Uncinia uncinata	watu
Uncinia zotovii	

Rushes and allied plants	
* *Juncus effusus*	soft rush
Juncus planifolius	
Juncus prismatocarpus	

Grasses	
Microlaena avenacea	bush rice grass
Microlaena carsei	
Microlaena stipoides	forest rice grass
Oplismenus hirtellus ssp. *imbecillis*	oat grass
Rytidosperma gracile	forest fairy grass

Remaining Monocotyledonous herbs	
* *Aristea ecklonii*	
Astelia solandri	kowharawhara
Astelia trinervia	
Collospermum hastatum	kahakaha
Collospermum microspermum	
Dianella nigra	blueberry; turutu
Libertia micrantha	star herb
Phormium tenax	flax

Orchids	
Bulbophyllum pygmaeum	bulb-leaf orchid
Caladenia chlorostyla	
Corybas acuminatus	spider orchid
Corybas oblongus	
Corybas rivularis	
Corybas rotundifolius	
Drymoanthus adversus	
Earina autumnalis	Easter orchid; raupeka
Earina mucronata	Spring orchid; peka-a-waka
Microtis unifolia	onion orchid
Pterostylis agathicola	
Pterostylis banksii	tutukiwi
Pterostylis brumalis	
Thelymitra pauciflora	
Thelymitra pulchella	
Winika cunninghamii	bamboo orchid

Appendix 2: Vascular Plants of Maunganui Bluff (Graeme Jane and Gael Donaghy, based on several previous visits)

* = Exotic

Psilopsids, Lycopods & Quillworts	
Huperzia varia	hanging clubmoss; iwituna

Ferns	
Adiantum cunninghamii	maiden hair fern
Adiantum fulvum	
Anarthropteris lanceolata	
Arthropteris tenella	jointed fern
Asplenium bulbiferum	hen and chickens fern; moku
Asplenium flaccidum s. str.	hanging spleenwort; makawe
Asplenium lamprophyllum	
Asplenium oblongifolium	shining spleenwort
Asplenium polyodon	sickle spleenwort; petako
Blechnum chambersii	nini; lance fern
Blechnum discolor	crown fern; piupiu; petipeti
Blechnum filiforme	climbing hard fern
Blechnum membranaceum	
Blechnum novae-zelandiae	kiokio
Cardiomanes reniforme	kidney fern; raurenga
Ctenopteris heterophylla	
Cyathea dealbata	ponga; silver fern
Cyathea medullaris	mamaku; korau; black tree fern
Dicksonia squarrosa	wheki; harsh tree fern
Doodia australis	pukupuku; rasp fern
Hymenophyllum demissum	piripiri; ririrangi
Hymenophyllum dilatatum	lop-sided filmy fern
Hymenophyllum flexuosum	
Hymenophyllum rarum	wire-stemmed filmy fern
Hymenophyllum sanguinolentum	blood-scented filmy fern
Lastreopsis glabella	felted fern
Lastreopsis hispida	hairy fern
Leptopteris hymenophylloides	single crepe fern; heruheru
Microsorum pustulatum	hounds tongue; kowaowao
Microsorum scandens	mokimoki; fragrant fern
Paesia scaberula	scented fern; matata; ring fern
Pneumatopteris pennigera	gully fern; pakau; pakauroharoha
Polystichum wawranum	common shield fern; pikopiko
Pteridium esculentum	bracken; rauaruhe
Pteris comans	
Pteris macilenta	sweet fern
Pteris saxatilis s. str.	
Pteris tremula	turawera
Pyrrosia eleagnifolia	leather-leaf fern
Trichomanes endlicherianum	rock mat fern

Gymnosperm trees and shrubs	
Agathis australis	kauri
Dacrycarpus dacrydioides	kahikatea, white pine
Dacrydium cupressinum	rimu, red pine
Podocarpus totara	totara
Prumnopitys taxifolia	matai; black pine

Dicotyledonous trees and shrubs	
Ackama rosifolia	makamaka
Aristotelia serrata	wineberry; makomako
Beilschmiedia tarairi	taraire
Brachyglottis kirkii var. kirkii	Kirk's daisy
Brachyglottis repanda	rangiora; bushmans friend
Carmichaelia australis agg.	whip broom; maukoro
Carpodetus serratus	putaputaweta; marbleleaf
* *Chrysanthemoides monilifera*	bone-seed
Coprosma aff. *neglecta* "Maunganui Bluff variant of Eagle 2006"	
Coprosma arborea	mamangi; tree coprosma
Coprosma areolata	thin leaved coprosma
Coprosma x *cunninghamii* (*C. propinqua* x *C. robusta*)	
Coprosma grandifolia	raurekau; kanono; mamono
Coprosma lucida	karamu; shining karamu
Coprosma macrocarpa	large seeded coprosma
Coprosma repens	taupata
Coprosma rhamnoides agg.	thorny coprosma
Coprosma robusta	karamu
Coriaria arborea	tree tutu
Corynocarpus laevigatus	karaka; kopi
Dodonaea viscosa	akeake
Elaeocarpus dentatus	hinau
Entelea arborescens	whau
Geniostoma ligustrifolium	hangehange
Griselinia lucida	puka
Hebe flavida	
Hebe speciosa	napuka
Hedycarya arborea	pigeonwood; porokaiwhiri
Hoheria sexstylosa	houhere
Knightia excelsa	rewarewa; nz honeysuckle
Kunzea ericoides	kanuka; white teatree
Leptospermum scoparium	manuka; red teatree
Leucopogon fasciculatus	mingimingi; kaikaitau

Macropiper excelsum	kawakawa; pepper tree
Melicope ternata	wharangi
Melicytus macrophyllus	large-leaved mahoe
Melicytus ramiflorus	mahoe
Metrosideros excelsa	pohutukawa
Metrosideros robusta	northern rata
Myrsine australis	red matipo; mapou
Myrsine salicina	toro
Olearia albida	
Pennantia corymbosa	kaikomako
Pittosporum cornifolium	tawhirikaro; perching kohukohu
Pittosporum crassifolium	karo
Pittosporum eugenioides	lemonwood; tarata
Pittosporum tenuifolium agg.	black matipo; kohuhu
Pseudopanax arboreus	five finger; puhou; whaupaku
Pseudopanax crassifolius	lancewood; horoeka
Rhabdothamnus solandri	taurepo; waiutua; kaikai aruhe
Schefflera digitata	pate; patae; kotete
Vitex lucens	pururi; kauere

Dicotyledonous lianes and related trailing plants	
Calystegia sepium	pohue; pink bindweed
Calystegia tuguriorum	nz bidweed; powhiwhi
Clematis paniculata	clematis; puawhananga
Fuchsia procumbens	creeping fuchsia
Metrosideros diffusa	white climbing rata; akatea
Metrosideros fulgens	scarlet rata; winter rata
Metrosideros perforata	aka; small white rata; torotoro
Muehlenbeckia complexa	pohuehue; wire vine
Parsonsia heterophylla	maori jasmine; kaiwhiria
Rubus australis	bush lawyer
Rubus cissoides	bush lawyer; tataramoa
* *Rubus fruticosus* agg.	blackberry

Daisy-like herbs	
* *Ageratina adenophora*	Mexican devil weed
* *Bellis perennis*	lawn daisy
* *Cirsium vulgare*	scotch thistle
Cotula australis	soldier's button
* *Crepis capillaris*	hawkesbeard
Euchiton audax	
Euchiton collinus	creeping cudweed
Euchiton involucratus	creeping cudweed
* *Galinsoga parviflora*	galinsoga
* *Gamochaeta purpurea*	
* *Gamochaeta spicata*	purple cudweed
* *Helminthotheca echioides*	oxtongue
* *Hypochoeris radicata*	catsear
* *Leontodon saxatilis*	hawkbit
* *Leucanthemum vulgare*	oxeye daisy
* *Senecio jacobaea*	ragwort
* *Sonchus arvensis*	perennial sow thistle
* *Sonchus oleraceus*	sow thistle; puha; puka
* *Taraxacum officinale*	dandelion

Dicotyledonous herbs other than Composits	
* *Acaena anserinifolia* agg.	bidibid
Acaena novae-zelandiae	red bidibid; piripiri
* *Anagallis arvensis*	scarlet pimpernel
Apium prostratum	native celery
* *Blackstonia perfoliata*	yellow wort
Callitriche muelleri	starwort
Calystegia soldanella	nihinihi; shore bindweed
* *Centaurium erythraea*	centuary
Centella uniflora	
* *Conyza sumatrensis*	broad-leaved fleabane
* *Daucus carota*	carrot
Dichondra repens	mercury bay weed
* *Digitalis purpurea*	foxglove
* *Duchesnea indica*	indian strawberry
Epilobium chionanthum	
* *Galium mollugo*	hedge bedstraw
Galium propinquum	
Haloragis erecta	toatoa
Hydrocotyle elongata	
Leptostigma setulosum	
* *Linum bienne*	pale flax
* *Linum trigynum*	yellow flax
Lobelia anceps	wild lobelia
* *Lotus pedunculatus*	lotus major
* *Lotus suaveolens*	hairy birdsfoot-trefoil
* *Lythrum hyssopifolia*	hyssop loosestrife
* *Modiola caroliniana*	creeping mallow
* *Orobanche minor*	broomrape
Parietaria debilis	
Peperomia urvilleana	wharanui
* *Plantago australis*	swamp plantain
* *Plantago lanceolata*	ribwort; narrow-leaved plantain
* *Polygonum prostratum*	mother shield fern
* *Prunella vulgaris*	selfheal
Ranunculus reflexus	maruru; hairy buttercup
* *Ranunculus repens*	creeping buttercup
* *Rumex acetosella*	sheep' sorrel
* *Rumex obtusifolius*	broad-leaved dock
* *Sagina procumbens*	procumbent pearlwort
Solanum americanum	small-flowered nightshade
* *Stellaria media*	chickweed
Tetragonia implexicoma	new zealand spinach; kokihi
* *Torilis japonica*	upright hedge-parsley
* *Trifolium dubium*	suckling clover
* *Trifolium repens*	white clover
* *Verbena bonariensis*	purple-top
* *Veronica plebeia*	Australian speedwell

Monocotyledonous trees and shrubs	
Cordyline australis	cabbage tree; ti-kouka
Rhopalostylis sapida	nikau

Monocotyledonous lianes	
Freycinetia banksii	kiekie
Ripogonum scandens	supplejack; kareao

Sedges	
Baumea juncea	
Carex breviculmis	
Carex dissita	
**Carex divulsa*	
Carex flagellifera	
Carex lambertiana	
Carex ochrosaccus	
Carex solandri	
**Cyperus eragrostis*	
Cyperus ustulatus	coastal cutty grass
Ficinia nodosa	wiwi; leafless sedge
Gahnia lacera	
Gahnia setifolia	
Isolepis cernua	
Lepidosperma filiforme	
Machaerina sinclairii	broad-leaved sedge
Schoenus maschalinus	
Uncinia uncinata	watu

Rushes and allied plants	
**Juncus articulatus*	jointed rush
**Juncus effusus*	soft rush
Juncus pallidus	wi
**Juncus tenuis*	

Grasses	
**Agrostis capillaris*	browntop
**Aira caryophyllea*	silvery hair grass
**Aira praecox*	early hair grass
**Anthoxanthum odoratum*	sweet vernal
**Briza maxima*	quaking grass
**Bromus willdenowii*	prairie grass
**Cortaderia selloana*	pampas
Cortaderia splendens	coastal toetoe
**Dactylis glomerata*	cocksfoot
Dichelachne crinita	long-hair plume grass
**Holcus lanatus*	Yorkshire fog
Lachnagrostis billardierei	sand wind grass
**Lolium perene*	perennial ryegrass
Microlaena avenacea	bush rice grass; oat grass
Microlaena stipoides	forest rice grass
Oplismenus hirtellus ssp. *imbecillis*	oat grass
**Paspalum dilatatum*	paspalum
**Pennisetum clandestinum*	kikuyu
**Poa annua*	annual poa
**Polypogon fugax*	
Rytidosperma biannulare	
Rytidosperma gracile	forest fairy grass
**Rytidosperma penicillatum*	
**Sieglingia decumbens*	heath grass
**Schedonorus arundinaceus*	tall fescue
**Sporobolus africanus*	needle grass; rats tail
Zoysia pauciflora	

Remaining Monocotyledonous herbs	
**Allium vineale*	wild onion
Arthropodium cirratum	rengarenga lily
Astelia banksii	wharawhara; shore astelia
Astelia fragrans	bushflax; kakaha
Astelia solandri	kowharawhara
Astelia trinervia	
Collospermum hastatum	kahakaha
**Lilium formosanum*	
Phormium tenax	flax

Orchids	
Acianthus sinclairii	heart-leaf orchid
Corybas macranthus	
Drymoanthus adversus	
Earina mucronata	spring orchid; peka-a-waka
Microtis parviflora	
Microtis unifolia	onion orchid
Thelymitra longifolia	white sun orchid
Winika cunninghamii	bamboo orchid

Labour Weekend Camp 2006: Puketotara and Oneriri Peninsulas, Otamatea Ecological District, Kaipara

Jenny Lux, Maureen Young, Jan Butcher and Helen Cogle

Introduction

Jenny Lux

As well as enjoying the customary Auckland Botanical Society (ABS) conviviality, the goal for this long weekend's field trip was to explore, collect and document some forest remnants on an under-botanised part of the Kaipara Harbour coastline. During the summer of 2005/2006 I participated in reconnaissance survey (using binoculars only) of the Northland part of the Otamatea Ecological District (Brook 1996) which identified 209 significant natural areas (Lux & Beadel 2006), however there were very few botanical records for any of them. Botanists appear to have largely overlooked this area, with an average of only three indigenous plant specimens per decade lodged at the Auckland Museum Herbarium.