Field Trip: Hubbards Bush, Tawharanui Peninsula. 20/11/04

Tony Keen

Hubbards Bush is one of the largest tracts of native forest on private land in the Rodney District. Covering an area of approximately 130 ha it is the largest piece of indigenous vegetation left on Tawharanui Peninsula (Myers & Jamieson 2003). The peninsula is situated on the eastern coastline of the Upper Hauraki Gulf, approximately 90 km north of Auckland City (Map reference R09/700350-781355). The peninsula is encompassed by a temperate maritime climate, and is in close proximity to Kawau Island, which lies 1.6 km directly south of the peninsula. Little Barrier Island is situated approximately 22.5 km north east of the peninsula. Pastoral land covers much of the peninsula to the west of Hubbards Bush, and Tawharanui Regional Park (Auckland Regional Council) adjoins the remnant on the eastern side and encompasses the rest of the peninsula.

Staff from the adjacent Tawharanui Regional Park had opened a farmgate on the road leading down to the park, so people could park their cars in a paddock close to where we would enter Hubbards Bush. After a week of campylobacter I was a little worse for wear to lead my first trip, so I began cautiously. Maureen Young, who provided great support for the organizing of this trip, took the group ahead to an area on the SW edge of the park. From here Auckland Botanical Society members could view the Hubbards Bush catchment from a distance and admire the sequence of vegetation types from kauri forest on the ridges down to the wetland communities present on the flats. Thirty-two people were present on this warm November day (20 / 11 / 2004).

Tawharanui Regional Park has undergone an intensive ecosystem restoration regime in recent years as part of the Tawharanui Open Sanctuary project. A predator proof fence has recently been installed across the base of the peninsula and predator control has reduced the populations of mammal pests on the peninsula to date. Already significant self-reintroductions are populations of bellbird and kaka. Between 1999 and 2003 this area had been the focus of interest for me as I worked on my Masters of Science research characterising and monitoring vegetation, hydrology and water chemistry within the freshwater wetlands of Tawharanui peninsula. A palaeo-ecological study based on two cores taken from the wetland in Mangatawhiri Stream valley allowed me to interpret a history from 6500yrs before present (BP) (Keen 2003).

The indigenous plant communities in Hubbards Bush are diverse and greatly reflect the surrounding coastal environment. Shona Myers of ARC (on an earlier trip) recognized the appearance of island gigantism in nikau (*Rhopalostylis sapida*), which seemed to have much thicker trunks in comparison to most mainland specimens (Myers & Jamieson 2003). Kauri forest is the dominant cover on most of the ridges and hillsides, giving way to broadleaf forest (taraire, puriri, karaka, and kohekohe) midway down the slope. Some trees of karaka (*Corynocarpus laevigatus*) were also found at the entry point near a significant pa site, possibly planted there by early tangata whenua (Ngati Raupo). Hubbards Bush contains some of the best examples of kauri (ricker) and taraire forest on a peninsula in the Rodney District (Mitchell *et al.* 1992).

The gully forest grades from drier to wetter sites, as taraire (*Beilschmiedia tarairi*), karaka, kohekohe (*Dysoxylum spectabile*), supplejack (*Ripogonum scandens*) and nikau, are replaced by kahikatea (*Dacrycarpus dacrydioides*), pukatea (*Laurelia novae-zelandiae*), maire tawake (*Syzygium maire*) and kiekie (*Freycinetia banksii*). *Griselinia lucida* grew epiphytically on pukatea in the main valley. Within some of the other gullies in the more inland reaches of the remnant exist some much larger specimens of maire tawake and pukatea, which is one of the reasons Hubbards Bush is so ecologically valuable. These small but significant patches of pukatea and maire tawake managed to escape the past onslaught of human clearance including fire and kauri extraction. Much of the kauri was cut out of the peninsula to be transported for milling in nearby Matakana. Timber supplies were largely exhausted by 1896 and pastoral farming became the dominant land use thereafter (Murdoch 1991).

Further out into the main gully (where our group did not reach), a wetland shrub community occurs, dominated by manuka (*Leptospermum scoparium*), ti kouka (*Cordyline australis*), harakeke (*Phormium tenax*) and karamu (*Coprosma robusta*). Putaputaweta (*Carpodetus serratus*), hangehange (*Geniostoma ligustrifolium*), and much larger *Gahnia xanthocarpa* appear within these areas as well. Many of these species begin life on small, raised perches in this water dominated environment.

The adjoining regional park block was purchased in 1974 by the then Auckland Regional Authority (ARA), and their first appointed farm manager was Fred Marshall (Murdoch 1991, A.R.C. 1992). In 1976, following attempts to farm poorly drained areas in the lower Mangatawhiri valley, Marshall brought in diggers to construct an earth dam, which crosses the valley, several hundred metres up from the present workshop. A network of drains were dug out down the valley to the lagoon and the area drained, being more suitable for farming, notably good hay paddocks (Marshall 2002).

Subsequent flooding and raising of the water-table by the earth dam was potentially beneficial to the prevalence of the prime wetland communities that

exist in Hubbards Bush today. It is probable that after the dam was constructed a shallow lake would have been formed above the dam, which eventually in-filled, becoming colonised by marginal and emergent wetland species like raupo (*Typha orientalis*), *Eleocharis acuta* and *Isolepis prolifer*. Amongst this aquatic community exists a swamp buttercup, *Ranunculus urvilleanus,* looking quite etiolated among the taller raupo. In the slightly drier margins of the aquatic rushland is a sedgeland dominated by *Baumea rubiginosa*, *Carex virgata* and patches of *Cyperus ustulatus*. *Calystegia sepium* entwines itself throughout the rushland / sedgeland gradient, and the swamp millet, *Isachne globosa,* also grows here.

The last resident tangata whenua of this area were called Ngati Raupo, their name suggests that raupo may have covered larger areas of the lower Mangatawhiri stream valley (Tokatu flats) below where the earth dam is today.

Our botanical trip began just on the edge of an old pa site where we jumped a farm fence from the regional park to enter the remnant. Pushing through a shrubby edge of kawakawa (*Macropiper excelsum*), hangehange and mapou (*Myrsine australis*), a broad leafy canopy consisting of puriri (*Vitex lucens*) drooped overhead. We were soon in the shade of a broadleaf community, where a large amount of leaf litter produced by taraire contributed to the sparse under-storey as we moved further away from the edge. These gully areas were an ideal place to find the spleenwort fern (*Asplenium gracillimum*) common on these shaded and leaf littered slopes.

All three common brake ferns; *Pteris macilenta, P. tremula* and *P. saxatilis* were found in certain zones around these gullies and sometimes found in close proximity to each other so we were able to distinguish between the three. *P. saxatilis* is perhaps less common than the other two species and is observably more delicate.

Ascending from the gully floor we headed for our first ridge, through more supplejack and wheki (*Dicksonia squarrosa*) and sprawling, resprouting puriri limbs still attached to their horizontal and decaying parents; *Tmesipteris sigmatifolia* was found growing on a ponga mid-slope and as we climbed higher the canopy changed from broadleaf to kauri (*Agathis australis*). Much more light was reaching the forest floor here and there was an increasing greenness in the under-story. Short shrubs of *Alseuosmia* x*quercifolia* were common on this slope along with *Nestegis lanceolata* seedlings, young *Corokia buddleioides* and mingimingi (*Leucopogon fasciculatus*). Ewen Cameron collected specimens from different plants of the *Alseuosmia* and noted the variable leaf shape between different plants. Patches of the tangle fern mangemange (*Lygodium articulatum*) were found on this slope also. Up onto another kauri clad ridge we clambered finding the ground fern *Lindsaea trichomanoides, L. linearis* and the clubmoss puakarimu (*Lycopodium deuterodensum*). Tanekaha (*Phyllocladus trichomanoides*) was common amongst the kauri on this ridge as well as several young rimu (*Dacrydium cupressinum*) trees.

Walking along the ridge in a direction towards the valley interior we scraped through the manuka scrub interlaced with patches of gorse (*Ulex europaeus*), prickly mingimingi (*Leptecophylla juniperina*), koromiko (*Hebe stricta* and *H. macrocarpa*), mingimingi and the beautifully fragrant mairehau (*Leionema nudum*). Amongst short pole kauri, manuka and mingimingi, Ewen Cameron discovered a less common member of the Poaceae, *Dichelachne rara* a naturalised grass from eastern Australia. Just on the edge of the ridge where moist conditions prevailed we encountered a common carnivorous sundew, *Drosera auriculata*. During an earlier visit to Hubbards Bush, Cameron Kilgour had found *Drosera binata*.
Colin Ward, the park ranger who had joined us earlier at this point bid us farewell as we descended brazenly down a slope from the ridge to the valley floor.

Swamp forest in our face, kiekie waiting for its chance to lacerate us, the leaves of nikau covering the valley floor, more supplejack to trip over, and weird roots of the swamp forest trees we were about to discover. This valley had a nice collection of swamp forest dominants including kahikatea, pukatea and maire tawake. The kahikatea was more associated with the nikau palms, on more consolidated sediments. Further down into the swamp a jungle of pukatea and swamp maire took over. The kiekie was particularly thick through here, and the sediment beneath our feet became aqueous. Compared to other sites of pukatea and maire tawake in Hubbards Bush, these specimens were quite young. However, the swamp maire still exhibited their unusual misshapen trunks and of course the aerial roots must be mentioned.

The aerial roots of pukatea tend to be plank like (Fig. A), whereas maire tawake (Fig. B) can have two different types of aerial roots; the plank like form; and a branching form. These special roots are packed full of a special cork-like tissue called aerenchyma.

The sedges *Carex dissita and C. lessoniana* were common in this swamp forest understory together with an *Uncinia* sp. and patches of *Baumea tenax*. The culms on this *Baumea* were sometimes over 2m long. The gully fern *Pneumatopteris pennigera* grew here with *Blechnum novae-zelandiae* and the epiphytic ferns *Asplenium flaccidum* and *Blechnum filiforme*, which clambered up anything that was upright.

We were also on the look out for *Pterostylis banksii*, which I had found here on other occasions and which seemed to flourish on the moist and semi shaded conditions in this habitat. In more open sites the

buttercup, *Ranunculus amphitrichus*, and the sedge *Carex maorica* were present.

Figure A. Pukatea plank roots growing around base of nikau, Hubbards Bush.

Figure B. Two types of maire tawake aerial roots, Hubbards Bush.

Finding a dry spot for lunch we quickly consumed and then headed on, climbing up onto yet another kauri clad ridge. Some larger kauri were found on the side of this next ridge, and one old specimen was almost hollow, with a huge bulge out one side. Its funny appearance was probably the reason why it was still standing, as only the best kauri were most likely cut down. I had previously measured the dbh (diameter at breast height) of this kauri at 1.8m. At this point we had views down onto a lush canopy of pukatea and maire tawake. Some established mapou, *Nestegis montana*, *Mida salicifolia*, and a couple of striking neinei (*Dracophyllum latifolium*) grew here. The neinei I had observed before tended to grow on the northeast facing slopes. A small and isolated patch of *Gleichenia microphylla* grew on the slope and was the only known place where this tangle fern occurred in the remnant.

Of worthy mention are the array of different orchids found in Hubbards Bush. Close to the area where neinei and *G. microphylla* were someone's sharp eye picked up the orchid *Petalochilus chlorostylus* (in flower) emerging from thick mats of the moss *Ptychomnion aciculare*. Other orchids associated with these ridge top kauri communities included *Corybas trilobus* and *Corybas oblongus*. Larger kauri, tanekaha, and rimu covered this next ridge. In past visits mature *Pseudopanax crassifolius* had also been found close by.

Finally, ample patches of fan fern (*Schizaea dichotoma*) were found growing, and amongst it the less obvious, sparser comb fern (*S. fistulosa*). Both species are typically found in kauri forest (or near thermal sites) (Brownsey & Smith-Dodsworth 2000). Common on the kauri forest floor were *Dianella nigra*, clubmosses and seedlings of tanekaha interspersed with thickets of reduced *G. xanthocarpa*. *Cordyline pumilio*, with leaves to 1.1m tall could be found amongst the thickets of *Schoenus tendo*, more ground ferns and clubmosses.

We headed along this last ridge to exit Hubbards Bush, the ridge seemingly never-ending. Previously on this ridge C. Kilgour and I had found a huge multi-trunked northern rata (*Metrosideros robusta*), which had not been located since. *Pittosporum cornifolium* had also been found as an epiphyte on these upper ridges previously. A couple of good-sized pohutukawa (*Metrosideros excelsa*) were found close to the top of the ridge as we were heading out, a reminder of the proximity of the coast again. Exhausted, we finally found an exit point onto farmland and headed back along the paddocks to the regional park entry point. A few elderly ngaio (*Myoporum laetum*) with a ground cover of *Microlaena stipoides* were found along this forest edge. It had been a successful trip and everybody seemed very enthused about the quality and intactness of this very special remnant.

Field trip participants:
Chris Ashton, Enid Asquith, Paul Asquith, Jan Butcher, Ewen Cameron, Lisa Clapperton, Sherry Crosby, Brian Cumber, Bev Davidson, Geoff Davidson, Frances Duff, Sarah Gibbs, Leslie Haines, Fran Hintz, Cornelia Hoogendoorn, Tony Keen (leader), Joan Kember, Alistair MacArthur, Elaine Marshall, John Millett, Ian Paterson, Mark Paterson, Nicola Paterson, Vivienne Paterson, Helen Preston-Jones, Juliet Richmond, Josh Salter, Alison Stanes, Colin Ward (ARC Ranger), Petra White, Mike Wilcox, Maureen Young.

Hubbard's Bush, adjacent to Tawharanui Regional Park

Map Ref. NZMS 260 R09/728355

A checklist of vascular indigenous plants. Compiled by Maureen Young, Alastair Jamieson, Shona Myers and Ngaire Sullivan, 9-10 May 2002, with additions by Anthony Keen and Cameron Kilgour and ABS members.

Ferns & Fern Allies

Adiantum cunninghamii
Adiantum diaphanum
Adiantum fulvum
Adiantum hispidulum
Adiantum viridescens
Anarthropteris lanceolata
Arthropteris tenella
Asplenium bulbiferum
Asplenium flaccidum
Asplenium gracillimum
Asplenium oblongifolium
Asplenium polyodon
Blechnum chambersii
Blechnum filiforme
Blechnum fraseri
Blechnum minus
Blechnum membranaceum
Blechnum novae-zelandiae
Ctenopteris heterophylla
Cyathea dealbata
Cyathea medullaris
Deparia petersenii
Dicksonia squarrosa
Doodia australis
Gleichenia microphylla
Grammitis ciliata
Histiopteris incisa
Huperzia varia
Hymenophyllum demissum
Hymenophyllum flabellatum
Hymenophyllum flexuosum
Hymenophyllum multifidum
Hymenophyllum rarum
Hymenophyllum sanguinolentum
Lastreopsis glabella
Lastreopsis hispida
Lastreopsis microsora
Lindsaea linearis
Lindsaea trichomanoides
Lycopodium deuterodensum
Lycopodium volubile
Lygodium articulatum
Microsorum pustulatum
Microsorum scandens
Paesia scaberula
Pellaea rotundifolia
Pneumatopteris pennigera
Polystichum sp.
Pteridium esculentum
Pteris macilenta
Pteris saxatilis
Pteris saxatilis x *P. comans*
Pteris tremula
Pyrrosia eleagnifolia
Schizaea dichotoma
Schizaea fistulosa
Tmesipteris elongata
Tmesipteris lanceolata
Trichomanes elongatum
Trichomanes endlicherianum
Trichomanes reniforme

Gvmnosperms

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

Dicotyledons

Alectryon excelsus
Alseuosmia macrophylla
Alseuosmia x *quercifolia*
Beilschmiedia tarairi
Beilschmiedia tawa
Beilschmiedia tawaroa
Brachyglottis repanda
Callitriche muelleri
Calystegia sepium
Carmichaelia australis
Carpodetus serratus
Centella uniflora
Clematis paniculata
Coprosma arborea
Coprosma areolata
Coprosma grandifolia
Coprosma lucida
Coprosma macrocarpa
Coprosma rhamnoides
Coprosma robusta
Coprosma spathulata
Coprosma tenuicaulis
Corokia buddleioides
Corynocarpus laevigatus
Dichondra repens
Dracophyllum latifolium
Drosera auriculata
Drosera binata
Dysoxylum spectabile
Elaeocarpus dentatus
Euchiton gymnocephalus
Fuchsia excorticata
Geniostoma ligustrifolium
Griselinia lucida
Haloragis erecta
Hebe macrocarpa
Hebe stricta
Hedycarya arborea
Hoheria populnea
Knightia excelsa
Kunzea ericoides
Laurelia novae-zelandiae
Leionema nudum
Leptecophylla juniperina
Leptospermum scoparium
Leucopogon fasciculatus
Macropiper excelsa
Melicytus micranthus
Melicytus ramiflorus
Metrosideros diffusa
Metrosideros excelsa
Metrosideros fulgens
Metrosideros perforata
Metrosideros robusta
Mida salicifolia
Muehlenbeckia australis
Muehlenbeckia complexa
Myoporum laetum
Myrsine australis
Myrsine salicina
Nertera dichondrifolia
Nestegis lanceolata
Nestegis montana
Olearia furfuracea
Olearia rani
Parsonsia heterophylla
Passiflora tetrandra
Pennantia corymbosa
Peperomia urvilleana
Pittosporum cornifolium
Pittosporum eugenioides
Pittosporum tenuifolium
Polygonum salicifolium
Pseudopanax arboreus
Pseudopanax crassifolius

Pseudopanax lessonii
Pseudopanax crassifolius x *P. lessonii*
Ranunculus amphitrichus
Ranunculus reflexus
Ranunculus urvilleanus
Rhabdothamnus solandri
Rubus australis
Rubus cissoides
Schefflera digitata
Solanum americanum
Sophora chathamica
Streblus heterophyllus
Syzygium maire
Vitex lucens
Wahlenbergia violacea
Weinmannia silvicola

Monocotyledons

Acianthus sinclairii
Astelia grandis
Astelia solandri
Astelia trinervia
Baumea rubiginosa
Baumea tenax
Bulbophyllum pygmaeum
Carex dissita
Carex flagellifera
Carex inversa
Carex lambertiana
Carex lessoniana
Carex maorica
Carex solandri
Carex virgata
Collospermum hastatum
Cordyline australis
Cordyline pumilio
Corybas trilobus
Corybas oblongus
Cyperus ustulatus
Cyrtostylis oblonga
Dianella nigra
Drymoanthus adversus
Earina mucronata
Eleocharis acuta
Epilobium pallidiflorum
Freycinetia banksii
Gahnia lacera
Gahnia pauciflora
Gahnia setifolia
Gahnia xanthocarpa
Isachne globosa
Isolepis cernua
Isolepis prolifer
Isolepis reticularis
Juncus edgariae
Lepidosperma australe
Lepidosperma laterale
Microlaena avenacea
Microlaena stipoides
Oplismenus hirtellus
Petalochilus chlorostylus
Phormium tenax
Poa anceps
Pterostylis agathicola
Pterostylis banksii
Pterostylis brumalis
Pterostylis graminea
Pterostylis trullifolia
Rhopalostylis sapida
Ripogonum scandens
Schoenoplectus tabernaemontani
Schoenus tendo
Schoenus maschalinus
Thelymitra aemula
Thelymitra longifolia
Typha orientalis
Uncinia banksii
Uncinia uncinata
Uncinia zotovii
Winika cunninghamii

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Field Trip: Bartlett's Forest, Bankside Road, Silverdale*. 16/07/05

Mike Wilcox

The Bot Soc had a well-attended trip to this property on 16 July 2005. Those who came were: Enid Asquith, Paul Asquith, Vera Bartlett, Ross Beever, Daphne Blackshaw, Quentin Blackshaw, Jim Budd, Ewen Cameron, Lisa Clapperton, Bruce Clunie, Leonie Clunie, Nigel Clunie, Brian Cumber, Alan Esler, Sarah Gibbs, Leslie Haines, Ken Haydock, Chris Inglis, Alistair MacArthur, John Millett, Cara Nicholson, Douglas Nicholson, Ros Nicholson, Isis Oliver, Colleen Pilcher, Helen Preston-Jones, Juliet Richmond, Caren Shrubshall, Collin Smith, Jean Smith, Alison Wesley, Mike Wilcox, Maureen Young.

* This paper is dedicated to the memory of Frank W. Bartlett (1896-1979).