

## WOODHILL STATE FOREST — NOTES ON SEVERAL NATURAL AREAS

E.K. Cameron & P.J. Bellingham

Woodhill State Forest comprises 14,700 ha of mainly Pinus radiata plantations, covering a 50 km strip of stabilised dunes, 2-5 km wide. Patches of kanuka remain, mostly on steep sites (Deuss 1983). The marram planted foredunes are in contrast to the eastern farmland boundary, with its chain of dune lakes, including Lake Otatoa (a Water Conservation Reserve) which was visited by Auckland Botanical Society (see Mackinder 1984). Woodhill's north-west corner of wetlands and consolidated dunes is used by the Air Force as a bombing range.

Within Woodhill there are a total of four gazetted Ecological Areas, totalling 116 ha. On 8 January 1986 we looked at two of these Ecological Areas, and a small part of the wetland by the Waionui Inlet. Some other Woodhill plant records are commented on.

### Area 1 (see map for location)

Lookout Ecological Area, 57 ha. NZMS 260 Q10 358-370/934-941; 40-156 m. We spent about 1 hour in the area and did not venture far from the well formed track, running north-south, through the reserve.

The area is predominantly a kanuka forest, covering a low knoll, with pockets of broadleaf forest (including mahoe and kohekohe) in some of the gullies. Understorey shrubs of Coprosma crassifolia, Corokia cotoneaster and Cyathodes juniperina are locally abundant. One forested gully was dominated by the climbing fern Arthropteris tenella, covering much of the ground as well as tree trunks. Many of the plant species were seen in small numbers or present only locally, e.g. pohutukawa.

On the local high point there were the remains of the fire lookout, felled in 1962 because it was unsafe. The lookout was on top of a tower, above a toolroom and bach which used to be permanently manned (pers. comm. A.S. Everitt, 1986). Some garden plants still persist, e.g. Gladiolus sp., cultivated Fuchsia sp. and a grape vine.

### Area 2

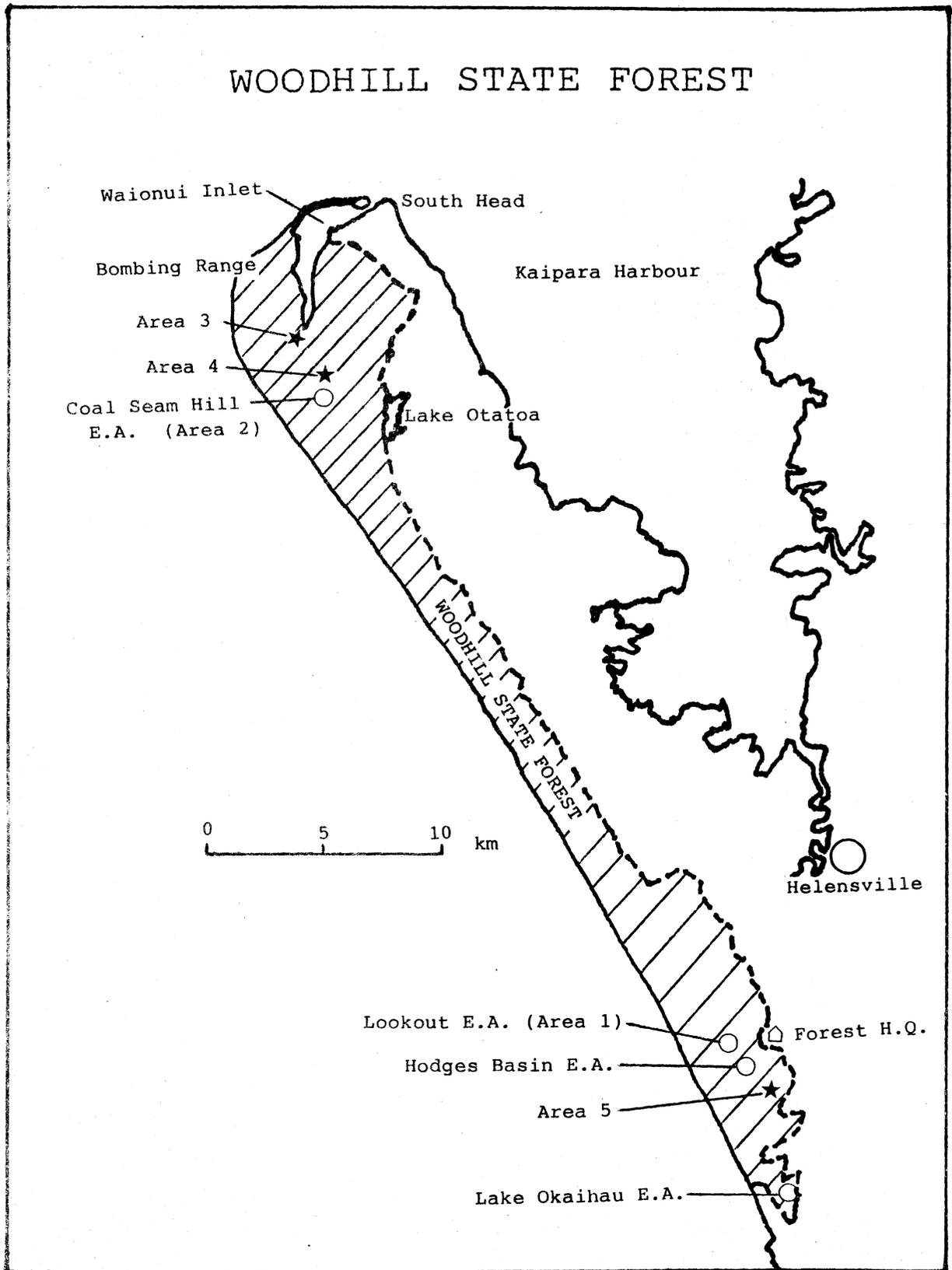
Coal Seam Hill Ecological Area; 22 ha. NZMS 260 Q09 183-188/208-214; 40-140 m. We spent about 1 hour in the area. There were no tracks and we looped around to cover as much of the area as we could.

The main canopy is kanuka, 6-8 m tall, with the very occasional large manuka covering a knoll which is surrounded by pampas, lupin and pine plantations. In a small gully there was a Lophomyrtus obcordata grove, about 8 m tall with mahoe, a single puriri about 12 m tall and masses of the vine, Parsonsia heterophylla. Like most of the knoll, this gully was very heavily browsed, with the ground cover reduced to an induced grassland with palatable shrubs virtually absent. The fine native grass Poa pumila, was locally abundant.

Interesting shrubs included a single Pimelea tomentosa, locally frequent specimens of Olearia albida and two juvenile plants of Pseudopanax ferox. A small clump of the saprophytic orchid, Gastrodia sesamoides was an interesting find.

Pratia angulata was frequent under the kanuka on ridges and mid-faces which seemed out of place with its more usual wetter habitats.

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Area 3

Sandy-swampy area, upper margin, Waionui Inlet. We looked briefly at an area along a 4-wheel drive track for about 150 m. The discovery in this area, by B.R. Burns in December 1983 amidst young pines of two unusual ferns: Cyclosorus interruptus (AKU 15135) and Thelypteris confluens (AKU 15136), drew us to this locality.

The vegetation is low with abundant Baumea juncea, Phormium tenax, low manuka and frequent emergent cabbage trees (Cordyline australis). Cyclosorus interruptus was locally common amongst the swards of B. juncea with occasional swamp millet (Isachne globosa).

On the margin of the track for some 8 m was the creeping herb Mazus pumilio (AKU 19093) with its small, white flowers. Growing amongst it was Juncus spp. (J. articulatus, J. caespiticius, J. planifolius), Centella unifolia and B. juncea. Close by Lobelia anceps was in flower, oioi (Leptocarpus similis) clumps were common and Zoysia pauciflora (AKU 19094) covered some bare sandy areas. A young pine plantation was less than 50 m away.

Area 4

A kanuka covered, local high point just north of Area 2. NZMS 260 Q09 187225 ± 140 m. B.R. Burns vouchered a flowering specimen of Hebe diosmifolia (AKU 15192) from the summit of this hill, 'common, 1-3 m tall', February 1984. This appears to be the southern limit for the species.

Area 5

Kanuka remnant in a gully surrounded by pine plantations. NZMS 260 Q10 377914 ± 140 m. EKC and J.E. Braggins collected Hymenophyllum cupressiforme (AKU 6653) and H. rarum (AKU 6652) growing on a shaded sandy bank, May 1982.

Selected vouchered Woodhill specimens collected by M. Ball

<u>Species</u>	<u>Date</u>	<u>AKU NO.</u>
<i>Adiantum aethiopicum</i>	1887	1008
<i>Clematis foetida</i>	1888	2862
<i>Coprosma areolata</i>	1885	4917
<i>Galium trilobum</i>	1887	4934
<i>Lagenifera pinnatifida</i>	1885	5365
<i>Melicope simplex</i> × <i>M. ternata</i>	1887	4205
<i>Flagianthus regius</i> ( <i>P. betulinus</i> )	1885	3828
<i>Stellaria parviflora</i>	1885	3160
<i>Viola lyallii</i>	1884	3092

Although limited to remnant stands many interesting native plants are present at Woodhill. Several have a very localised N.Z. distribution and are absent from the Waitakere Ranges (refer Gardner 1982) e.g. Cyclosorus interruptus, Hymenophyllum cupressiforme, Mazus pumilio, Pseudopanax ferox and Thelypteris confluens. None of these species are known to be in the present reserves except P. ferox, which appears to be mainly outside the reserves.

We have covered only a very small part of Woodhill and other areas will surely prove botanically interesting when examined closely. The present reserve system covering less than 1% of the State Forest needs

examining to consider reserving the unusual native plants outside the present reserves and more of the native sand vegetation which occupies over 8% of Woodhill.

The N.Z. Forest Service is currently surveying the fallow deer in Woodhill (Deuss 1983, Broome 1985). This survey includes 3 enclosure plots established in 1983 to evaluate the impact of deer and rabbits (1 plot only) on the native vegetation remnants. These are due to be remeasured this year.

#### ACKNOWLEDGEMENT

We thank the N.Z. Forest Service for allowing us access to the restricted areas within Woodhill and for making available several unpublished reports.

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#### VASCULAR PLANT LIST FOR AREAS 1 AND 2

- 1 = Lookout Ecological Area (Adventive plants not recorded)  
 2 = Coal Seam Hill Ecological Area (Includes adventive plants)  
 x = recorded by E.K.C. and P.J.B.

#### Additional records

- p = recorded by Palmer (1968)  
 w = recorded by Warren (1972)  
 + = recorded by Hayward (1973a)  
 t = recorded by Hayward (1973b)  
 o = others (collector and date given)

#### Ferns

	1	2
<i>Adiantum cunninghamii</i> maidenhair	x	
<i>A. hispidulum</i> rosy maidenhair	x	
<i>Arthropteris tenella</i> AKU 19082	x	
<i>Asplenium flaccidum</i> ssp. <i>flaccidum</i>	x	x
<i>A. gracilimum</i>	x	
<i>A. oblongifolium</i> shining spleenwort	x	x
<i>A. polyodon</i>	+	x

<i>Blechnum</i> sp. (B. 'capense') kiokio	x	
<i>Cyathea dealbata</i> ponga	+	x
<i>C. medullaris</i> mamaku	x	
<i>Deparia petersenii</i>	x	
<i>Doodia media</i> ssp. <i>australis</i>	x	
<i>Histiopteris incisa</i> water-fern	p	
<i>Hymenophyllum dilatatum</i>	p	
<i>H. flexuosum</i>	+	
<i>H. sanguinolentum</i>	p	
<i>Hypolepis ambigua</i>	x	
<i>Paesia scaberula</i> hard-fern		x
<i>Pellaea rotundifolia</i>	x	
<i>Phymatosorus diversifolius</i> hound's tongue	x	x
<i>P. scandens</i>	x	
<i>Polystichum richardii</i>	x	x
<i>Pteridium esculentum</i> bracken	x	x
<i>Pteris tremula</i> turawera	x	x
<i>Pyrrosia serpens</i>	x	x
<i>Rumohra adiantiformis</i>	+	
<i>Trichomanes reniforme</i> kidney fern	x	

Gymnosperms

<i>Podocarpus totara</i>	x	
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Dicotyledons

<i>Brachyglottis repanda</i> rangiora	x	x
<i>Calystegia sepium</i>	x	
<i>Carmichaelia aligera</i> NZ broom	x	x
<i>Cassinia retorta</i> dune tauhinu		x
<i>Cirsium vulgare</i> Scotch thistle		x
<i>Conyza floribunda</i> broad-leaved fleabane		x
<i>Coprosma acerosa</i>		x
<i>C. crassifolia</i>	x	x
<i>C. lucida</i> shining karamu	x	
<i>C. macrocarpa</i> coastal karamu	x	x
<i>C. macrocarpa</i> x <i>C. robusta</i>	x	
<i>C. rhamnoides</i>	x	x
<i>C. robusta</i> karamu	x	t
<i>Corokia cotoneaster</i> korokio	x	x
<i>Cyathodes juniperina</i> prickly heath	x	x
<i>Dodonaea viscosa</i> akeake	x	
<i>Drosera peltata</i> ssp. <i>auriculata</i> sundew	p	
<i>Dysoxylum spectabile</i> kohekohe	x	
<i>Elaeocarpus dentatus</i> hinau	p	
<i>Galium propinquum</i>		x
<i>Geniostoma rupestre</i> var. <i>crassum</i> hangehange	x	
<i>Gnaphalium gymnocephalum</i>	x	
<i>Hebe stricta</i> var. <i>stricta</i> koromiko	x	t
<i>Hypochaeris radicata</i> catsear		x
<i>Knightia excelsa</i> rewarewa	x	
<i>Kunzea ericoides</i> var. <i>ericoides</i> kanuka	x	x
<i>Lagenifera pumila</i>		x
<i>Leontodon taraxacoides</i> hawkbit		x
<i>Leptospermum scoparium</i> manuka		x

<i>Leucopogon fasciculatus</i> mingimingi	x	x
<i>Litsea calicularis</i> mangeao	+	
<i>Lophomyrtus obcordata</i> AKU 19087	x	x
<i>Lotus suaveolens</i> hairy birdsfoot trefoil		x
<i>Lupinus arboreus</i> tree lupin		x
<i>Macropiper excelsum</i> var. <i>excelsum</i> kawakawa	x	x
<i>Meliocope ternata</i> wharangi	x	
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i> mahoe	x	x
<i>Metrosideros excelsa</i> pohutukawa	x	
<i>Muehlenbeckia australis</i>	x	
<i>M. complexa</i> wire vine	x	x
<i>Myrsine australis</i> mapou	x	x
<i>M. divaricata</i>	+	x
<i>Olearia albida</i> AKU 19086		x
<i>O. furfuracea</i> akepiro	+	x
<i>Ornithopus pinnatus</i> yellow serradella		x
<i>Parsonsia heterophylla</i> NZ jasmine	x	x
<i>Peperomia urvilleana</i>	x	
<i>Phebalium nudum</i> mairehau	p	
<i>Pimelea tomentosa</i> AKU 19084		x
<i>Pittosporum tenuifolia</i> kohuhu	x	
<i>Pratia angulata</i>		x
<i>Pseudopanax arboreus</i> whauwhaupaku	x	
<i>P. crassifolius</i> horoeka	x	t
<i>P. crassifolius</i> x <i>P. lessonii</i>	x	x
<i>P. ferox</i> AKU 19089		x
<i>P. lessonii</i> houpara	x	x
<i>Senecio bipinnatisectus</i> Australian fireweed		x
<i>S. biserratus</i> fireweed AKU 19091		x
<i>S. hispidulus</i> fireweed	x	
<i>S. quadridentatus</i> cotton fireweed AKU 19088		x
<i>Solanum americanum</i> small-flowered nightshade	x	
<i>Sophora microphylla</i> kowhai	x	
<i>Streblus</i> sp. ( <i>Paratophis microphylla</i> ) turepo	x	
<i>Vitex lucens</i> puriri	x	x
<i>Wahlenbergia marginata</i> harebell	x	x

#### Monocotyledons

<i>Ammophila arenaria</i> marram grass		x
<i>Astelia</i> sp.	+	
<i>Carex testacea</i>	x	x
<i>Collosporum hastatum</i> kahakaha	x	
<i>Cordyline australis</i> cabbage tree	x	x
<i>Cortaderia jubata</i> purple pampas grass		x
<i>C. selloana</i> pampas grass		x
<i>C. splendens</i> toetoe		x
<i>Corybas aconitiflorus</i> AKU 15936 - S. Clegg June 1984		o
<i>C. trilobus</i>		x
<i>Cynodon dactylon</i> Indian doab		x
<i>Deyeuxia billardieri</i> sand wind grass		x
<i>Dianella nigra</i> turutu	x	x
<i>Dichelachne crinita</i> long-hair plume grass		x
<i>Drymoanthus adversus</i>	p	
<i>Earina autumnalis</i>	p	
<i>E. mucronata</i>	x	

<i>Echinopogon ovatus</i> hedgehog grass		x
<i>Gastrodia sesamoides</i> AKU 19090		x
<i>Holcus lanatus</i> Yorkshire fog		x
<i>Lachnagrostis filiformis</i> var. <i>filiformis</i> NZ wind grass		x
<i>Lepidosperma laterale</i> sword sedge	x	
<i>Luzula picta</i> var. <i>picta</i> AKU 19085		x
<i>Microtis unifolia</i>	p	
<i>Microlaena stipoides</i> meadow rice grass		x
<i>Oplismenus imbecillis</i>	x	x
<i>Poa pumila</i> AKU 19083		x
<i>Pterostylis trullifolia</i>	w	
<i>Rhopalostylis sapida</i> nikau	x	
<i>Rytidosperma gracile</i> danthonia		x
<i>Scirpus nodosus</i>	x	x
<i>Thelymitra</i> sp.	p	
<i>Uncinia laxiflora</i> hooked sedge AKU 19081	x	
<i>U. uncinata</i> hooked sedge	x	
<i>U.</i> sp.		t
<i>Vulpia myuros</i> vulpia hair grass		x

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## KAURI LOCALITIES AROUND KAWHIA

P.J. deLange

Whilst reading the Auckland Botanical Society News-sheet for February and March 1986 I was intrigued to read the following about Te Karaka S.R. ... "and it is the southern limit of regenerating kauri on the west coast."

This interested me as kauri occurs as far south as Pukenui Bluff (NZMS 260 R15 832417) as a single tree but just across the valley from Pukenui are patches of true kauri forest (confirmed by Dr B.D. Clarkson, DSIR, B.D., Rotorua) which are regenerating quite happily.

Te Kauri S.R. currently protects scattered areas of kauri but most of these type as kauri/tanekaha forest or tanekaha/kamaha with kauri. In one area, aptly named 'Te Kauri Ridge' a small pocket of true kauri forest occurs. This ridge contains between 30 and 45 trees, rickers and despite browsing pressure, many seedlings.

Outside the reserve near Kawhia Harbour Road on Jack Kiorie's land is a small, but healthy patch of kauri forest, easily seen from the water-tank on the nearby Anderson farmland but not from the road.

Kauri also once was present in good numbers opposite Berntsen Road and the Hauturu turnoff during 1971 but this forest has since gone and only gum, manuka, blackened stumps and whau marks the old forest.