

INDIGENOUS HIGHER PLANTS OF THE NATIVE FOREST

AT OTARI OPEN AIR NATIVE PLANT MUSEUM

(List compiled from records of J.S. Reid 1984)

Trees and Shrubs

SCIENTIFIC NAME	MAORI/COMMON NAME
<i>Alectryon excelsus</i>	titoki
<i>Aristotelia serrata</i>	wineberry
<i>Beilschmiedia tawa</i>	tawa
<i>Brachyglottis repanda</i>	rangiora
<i>Cassinia leptophylla</i>	tauhinu
<i>Carpodetus serratus</i>	putaputaweta
<i>Coprosma areolata</i>	
<i>C. crassifolia</i>	
<i>C. grandifolia</i>	raurekau
<i>C. linariifolia</i>	
<i>C. lucida</i>	karamu
<i>C. propinqua</i>	
<i>C. rhamnoides</i>	
<i>C. rigida</i>	
<i>C. robusta</i>	karamu
<i>Corynocarpus laevigatus</i>	karaka
<i>Dacrycarpus dacrydioides</i>	kahikatea
<i>Dacrydium cupressinum</i>	rimu
<i>Dodonaea viscosa</i>	akeake
<i>Dysoxylum spectabile</i>	kohekohe
<i>Elaeocarpus dentatus</i>	hinau
<i>E. hookerianus</i>	pokaka
<i>Eugenia mairi</i>	mairi tawake
<i>Fuchsia excorticata</i>	kotukutuku
<i>Gaultheria antipoda</i>	
<i>Geniostoma ligustrifolium</i>	hangehange
<i>Griselinia lucida</i>	puka
<i>Hebe stricta</i>	
<i>Hedycarya arborea</i>	pigeonwood
<i>Hoheria populnea</i>	houhere, lacebark
<i>Knightea excelsa</i>	rewarewa
<i>Kunzea ericoides</i>	kanuka
<i>Laurelia novae-zelandiae</i>	pukatea
<i>Leptospermum scorparium</i>	manuka
<i>Leucopogon fasciculatus</i>	mingimingi
<i>Lophomyrtus bullata</i>	ramarama
<i>L. obcordata</i>	
<i>Macropiper excelsum</i>	kawakawa
<i>Melicope simplex</i>	
<i>M. ternata</i>	wharangi
<i>Melicytus ramiflorus</i>	mahoe
<i>Metrosideros robusta</i>	northern rata
<i>Myoporum laetum</i>	ngaio
<i>Myrsine australis</i>	mapou
<i>M. salicina</i>	toro

Neomyrtus pedunculata
Nestegis cunninghamii
N. lanceolata
N. montana
Olearia albida
O. paniculata
O. rani
O. solandri
Paratrophis microphylla
Permantia corymbosa
Pittosporum cornifolium
P. eugenioides
P. tenuifolium
Podocarpus hallii
~~*P. totara*~~
Prumnopitys ferrugineus
P. taxifolius
Pseudopanax arboreus
P. crassifolius
P. edgerleyi
P. simplex
Pseudowintera axillaris
Rhopalostylis sapida
Schefflera digitata
Solanum laciniatum
Urtica ferox
U. incisa

rohutu
 black maire
 white maire
 orooro

 akiraho, golden akeake
 heketara

 turepo, milktree
 kaikomako

 tarata, lemonwood
 kohuhu
 Hall's totara
 totara
 miro
 matai
 five-finger
 lancewood
 raukawa
 haumakaroa
 horopito
 nikau
 pate

 ongaonga

Climbers and Lianes

Clematis hookeriana
C. paniculata
~~*Freycinetia baueriana*~~ ssp. *banksii*
Metrosideros diffusa
M. fulgens
M. perforata
~~*Muehlenbeckia australis*~~
M. complexa
Parsonsia heterophylla
Passiflora tetrandra
Ripogonum scandens
Rubus cissoides

Grasses and like plants

Gahnia pauciflora
Microlaena avenacea
Unicinia banksii
U. uncinata

Herbs

Acaena anserinifolia
Astelia solandri
Australina pusilla
Bulbophyllum pygmaeum
Caladenia carnea
Centella uniflora
Collospermum hastatum
Corybas sp.
Dendrobium cunninghamii
Dianella nigra
Earina autumnalis
E. mucronata

Epilobium sp.
Helichrysum aggregatum
Hydrocotyle americana
H. moschata
Libertia grandifolia
Luzuriaga parviflora
Microtis unifolia
Pterostylus banksii
P. graminea

Ferns

Adiantum cunninghamii
A. diaphanum
~~*A. diaphanum*~~
Anarthropteris lanceolata
Arthropteris tenella
Asplenium bulbiferum
A. flabellifolium
A. flaccidum
A. hookerianum
A. oblongifolium
A. polyodon
Blechnum capense
B. chambersii
B. discolor
B. filiforme
B. fluviatile
B. membranaceum
Cardiomanes reniforme
Cyathea cunninghamii
C. dealbata
C. smithii
Dicksonia fibrosa
D. squarrosa
Histiopteris incisa
Hymenophyllum demissum
H. dilatatum
H. flabellatum
H. flexuosum
H. rarum
H. sanguinolentum
H. scabrum

Lastreopsis glabella
L. hispida
L. velutina
Leptopteris hymenophylloides
Lindsaea trichomanoides
Lycopodium billardieri
L. volubile
Paesia scaberula
Pellaea rotundifolia
Phymatosorus diversifolius
P. scandens
Pneumatopteris pennigera
Polystichum richardii
P. sylvaticum
P. vestitum
Pteridium esculentum
Pteris macilentia
Pyrrhosia serpens
Rumohra adiantiformis
Trichomanes endlicherianum
T. venosum
Cyathea medullaris

Common Adventive Plants Found in the Native Forest Communities

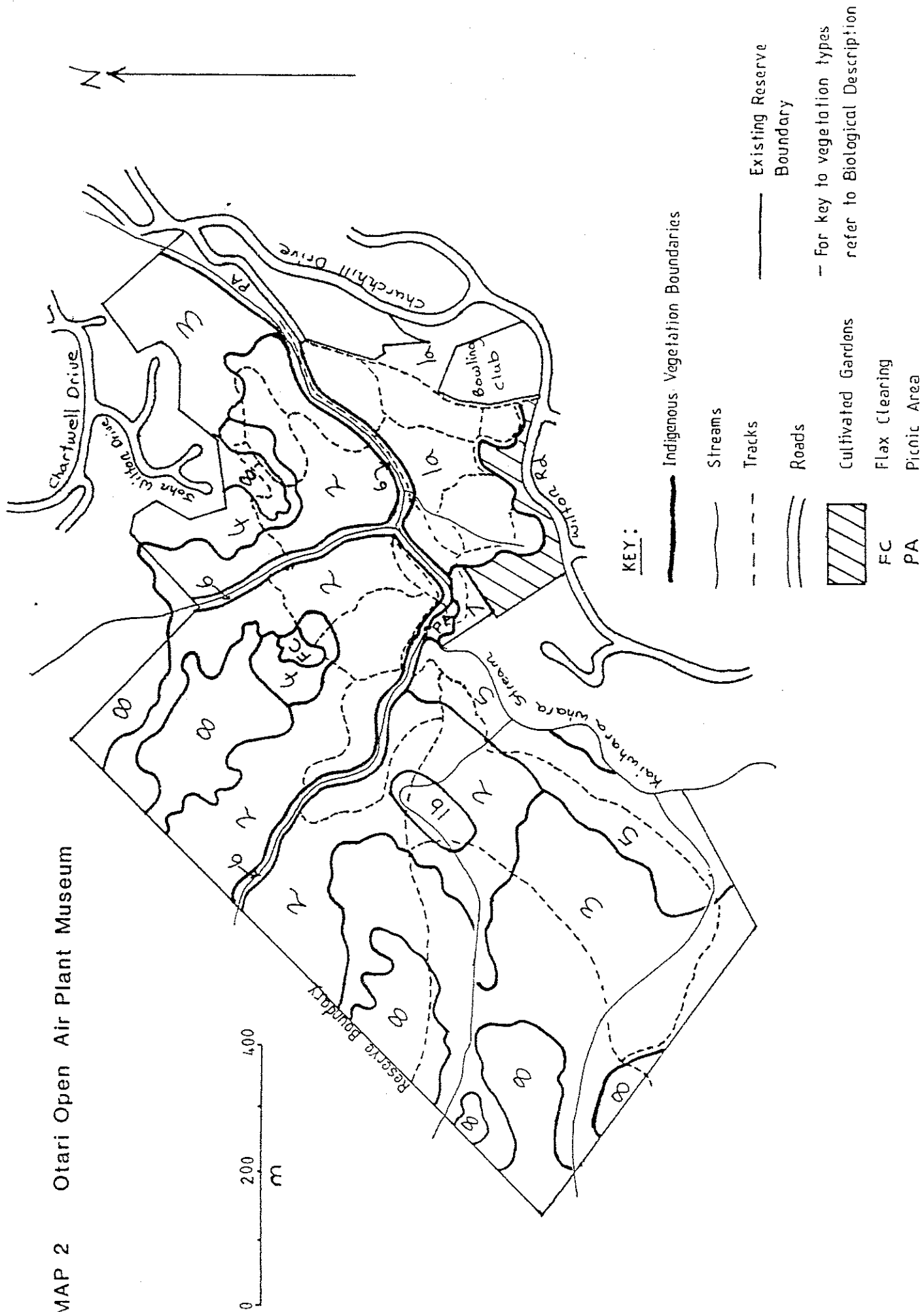
SCIENTIFIC NAME

Allium triquetrum
Berberis darwini
Selaginella sp.
Tradescantia fluminensis
Ulex europaeus

COMMON NAME

onion weed
barberry
wandering jew
gorse

MAP 2 Otari Open Air Plant Museum



OTARI OPEN AIR NATIVE PLANT MUSEUM (Otari Bush)	GRID REF NZMS 260 R27 570 918
<p>LOCATION</p> <p>Between the suburbs of Wilton and Chartwell, with the southern boundary at Wilton Road.</p> <p>AREA DESCRIPTION</p> <p>The Otari Open Air Native Plant Museum is a sanctuary devoted to the cultivation and preservation of indigenous New Zealand plants. The museum consists of 80 ha of native forest and 2 ha of cultivated garden, containing an extensive collection of species from all over New Zealand¹. Leonard Cockayne as co-producer of the Museum's first Management Plan in 1926 did much to initiate and develop the property.</p> <p>The Museum is one of the largest areas of forest west of the main ranges in Wellington. It occupies a large valley with rolling to steep hillsides and is notable in containing a stand of near virgin rimu-tawa forest on the southern slopes. On the northern slopes a large area of secondary podocarp-broadleaved and broadleaved forest merges, on the higher areas, into a shrub cover of gorse and tauhinu.</p> <p>ACCESS</p> <p>Main entrance at junction of Wilton Road and Gloucester Street. Other entrances from Wilton Bush Road and John Wilton Drive.</p>	<p>AIR PHOTO</p> <p>5497 C/8 (1980)</p> <p>AREA</p> <p>Over 80 ha</p> <p>CONTROL</p> <p>W.C.C.</p> <p>STATUS/CURRENT PROTECTION</p> <p>Scenic Reserve (gazetted 1982)</p>

BIOLOGICAL DESCRIPTION	%	Res	native ex			regen	NAT	trend	exotics
Community Types	area	Wgtn	1*	2°	ind				
1a. Near virgin rimu-tawa forest on southern slopes. Main canopy of of tawa and hinau with emergent rimu, kahikatea and northern rata. Scattered miro, matai, totara and rewarewa.	10.1	NO	✓			M	H	S	L
1b. Rimu-tawa forest on northern slopes. A small remnant of original forest with emergent rimu, and kahikatea over a tawa canopy.	1.7	NO	✓			M	H	S	L
2. Tawa, hinau rewarewa forest usually with tawa dominant. Scattered remnant podocarps (kahikatea, miro, matai, totara, rimu) in canopy or emergent.	30.7	YES		✓		M	H	S	L
3. Kohekohe forest. A mosaic of: a) A kohekohe dominant canopy with mahoe and karaka and a kawakawa understorey; and b) A kohekohe subcanopy with tawa, hinau and rewarewa canopy, occurring predominantly on the lower slopes.	27.9	YES		✓		M	H	S	L
4. Regenerating forest with a low canopy of broadleaved species. Mapou, fivefinger, rangiora, mahoe, ponga and manuka are common species.	4.3	YES		✓		H	H	I	L
5. Broadleaved forest on southern slopes above Kaiwharawhara stream. A mosaic of: a) kohekohe forest in the valleys; and b) tawa, hinau, rewarewa on the spurs. Fivefinger, mahoe, mapou and karaka are common. Frosts can be severe during winter in the valleys and have a significant effect on the species which dominate ³ .	8.3	YES		✓		M	H	I	L
6. Streamside vegetation. Pukatea, kohekohe, pigeonwood in the canopy. Mahoe, titoki, karaka, lemonwood, kotukutuku and supplejack are common.	5.2	YES		✓		M	H	S	L
7. Manuka canopy with a mapou, ponga, totara, kanuka, lancewood, fivefinger, rewarewa and hinau.	0.3	YES	✓	✓		H	H	I	L
8. Gorse, tauhinu and barberry scrub with bracken, and <i>Metrosideros perforata</i> . Mapou is often common on the forest edge.	11.5	YES		✓		M	M	I	M

Comments on species

Adiantum diaphanum and *Cyathea cunninghamii*, rare in the Wellington region, occur within the native forest. Banded kokopu, kearo and brown trout have been found in the Kaiwharawhara Stream and the mollusc *Pectola merleneae* occurs in the area⁴. A large rimu estimated to be between 700-800 years old grows on the northern slopes.

VALUES

Scientific

Contains near virgin rimu forest and relatively old secondary forest with a high diversity of communities and species. Listed as a forested site of moderate-high value for wildlife².

Scenic

Important visual backdrop to residential area.

Recreation

One of largest areas of forest west of the main ranges in Wellington. A good range of tracks throughout the bush and picnic areas set aside.

MODIFICATIONS AND TRENDS

The natural vegetation at Otari consists of scrub and forest of varying age and development, including a more or less virgin stand of forest. The large area of secondary forest on the northern slopes is estimated to be between 200 and 250 years old¹. On the upper northern slopes the vegetation has regenerated from previous fire damage and also from grazing by sheep and cattle.

Several native species from other geographical areas in New Zealand were established in selected areas of the native forest by Leonard Cockayne between 1926 and his death in 1934. These included makamaka, kawaka, toatoka and kauri.

The bush is moderately exposed to north-west winds which induce coastal conditions and have caused the low stature and close windswept roof of much of the kohekohe forest on the north-western slopes. Frosts are common in the valleys and have limited the range of some species within the forest³. For example, kawakawa has established only in relatively dark and frost-free environments under the canopy. Possum damage has occurred in the forest, affecting particularly fivefinger and kohekohe. Kohekohe seedlings appear to be low in density within the kohekohe forest and this may be due to possum browsing. Barberry is spreading into most areas of scrub at Otari, smothering native species and preventing regeneration.

THREATS

1. Fire is a threat amongst scrub on boundaries.
2. Spread of adventive species, particularly barberry, which may prevent native regeneration on the forest margins.
3. Housing subdivision on the northern boundary causing silting of the streams and soil slumping.
4. Browsing by possums which damages the foliage and may affect the regeneration of some species e.g. kohekohe, fivefinger, northern rata.

IMPROVEMENTS NEEDED

1. Regular control of possum numbers particularly within the broadleaved forest.
2. Control of adventive species, particularly barberry.

COMMENTS, RECOMMENDATIONS

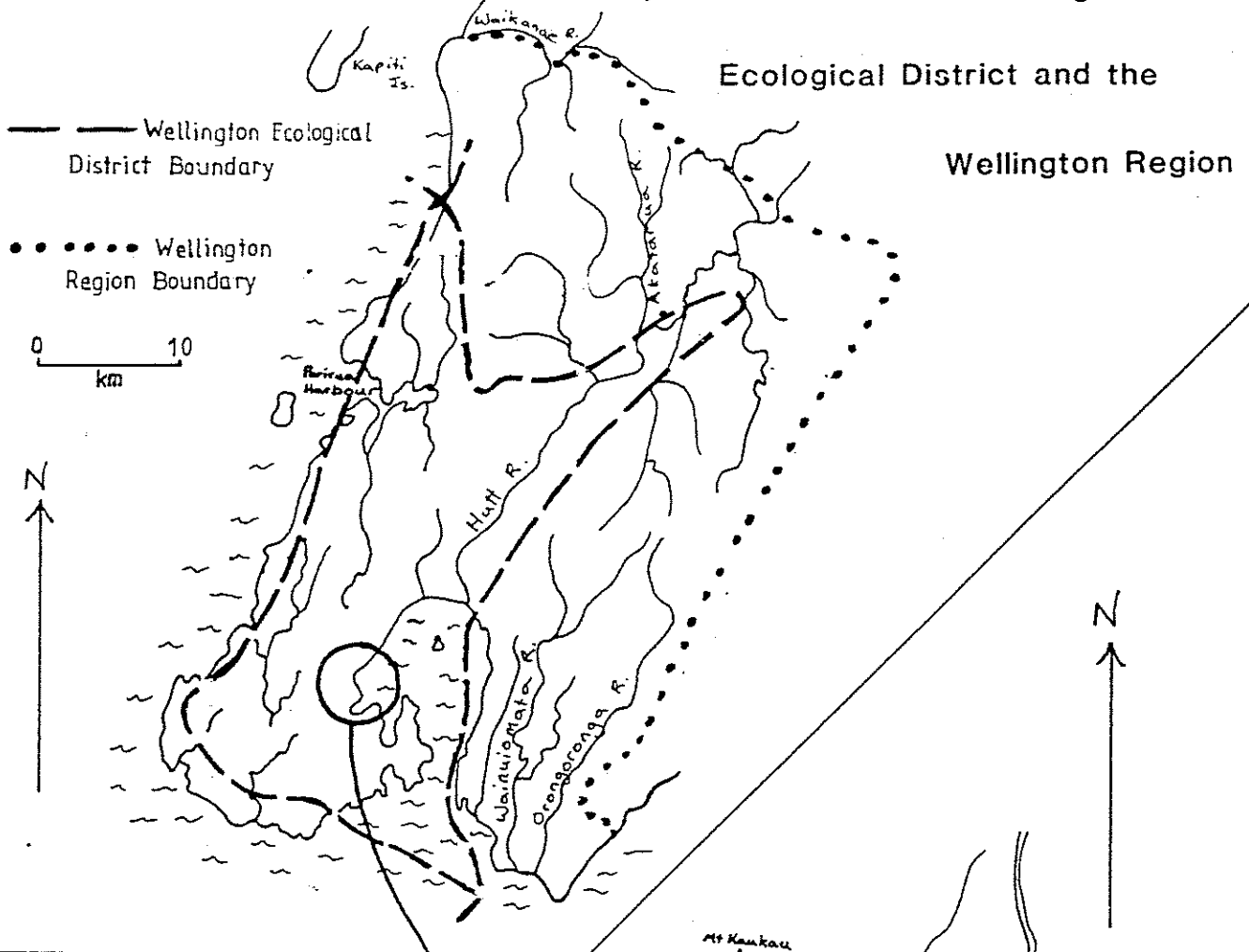
The native forest at Otari is a significantly large area, close to the city centre, which provides an important scenic, recreational and educational resource for Wellington. It is valuable in containing a high density of natural communities including virgin podocarp forest and secondary coastal broadleaved-podocarp forest. The management objectives and policies of the area must provide for the forest's continued preservation in its natural state and encourage regeneration of the native vegetation.

REFERENCES

1. Otari Open Air Native Plant Museum Management Plan. Parks & Recreation Dept, WCC. June 1977.
2. Parrish, G.R. (1984). Wildlife and Wildlife Sites of the Wellington Region. NZWS Fauna Survey Unit Rpt No 38.
3. Reid, J.S. (1933). A preliminary study of the vegetation of Otari Plant Museum. M.Sc. Thesis VUW.
4. Stephenson, G. (1977). Wildlife and Wildlife Areas of the Wellington Region. Wgn Reg. Planning Auth. Rpt 77.3.

FIG 1 LOCALITY MAP

a) Boundaries of the Wellington Ecological District and the Wellington Region

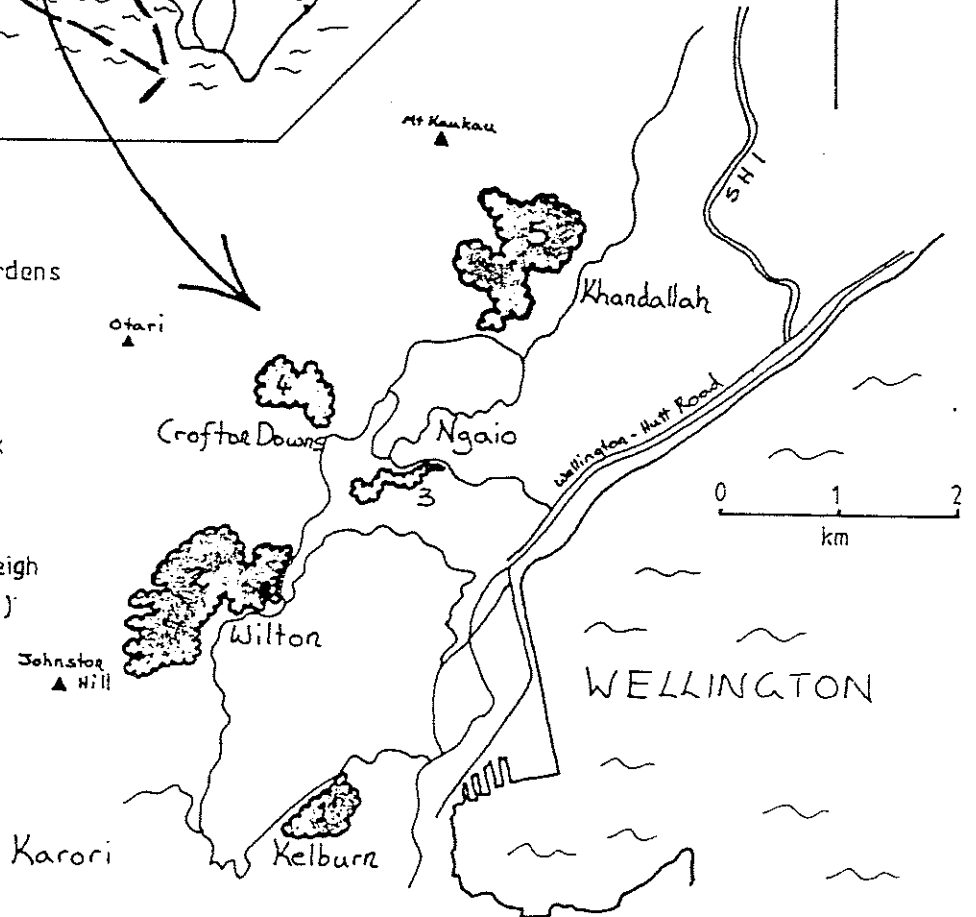


KEY :

1. Wellington Botanic Gardens
2. Otari Open Air Native Plant Museum
3. Ngaio Gorge (Trelissick Park)
4. Crofton Downs (Huntleigh Park)
5. Khandallah Park

Major Roads

▲ Trig Station



b) Location of the Surveyed Sites within Wellington City