

VASCULAR PLANTS OF THE LAKE OKATAINA AND WAIONE BLOCK SCENIC RESERVES

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Lake Okataina Scenic Reserve stretches from Lake Rotoiti in the north, to Lake Tarawera in the south, a distance of some 12.3 kilometres and is about 8.5 kilometres wide. The highest point is Whakapoungakau (758m). Within the reserve is the Waione Block Scenic Reserve which includes Lakes Rotoatua and Rotongata and areas on both sides of the Lake Okataina Road (see map). Lake Okataina is surrounded by forest except for the access road, carpark and the Okataina Lodge at its northern end, and a small area at the head of Haumingi Bay at the southern end of the lake. The lake has several small streams flowing into it but it has no surface outlet. Lake level tends to be influenced by rainfall or lack of it, although there has been speculation that the sudden drop from a recorded high of 313.5m asl in 1972 to 310.0 in 1974 was due to seismic activity. Since 1974 the level has been as low as 306.9m (1994) and is currently about 309.3m. Historically the lake has had a very much lower level than at present, as there is a flooded Pa site palisade visible in some 15 metres of water around Motuwhetero Island in the south-west arm of the lake. At several gently sloping sites around the lake there are elevated beaches each with its own row of kanuka (*Kunzea ericoides*).

This botanical project was started after three years of semi-regular cruising around the shores of Lake Okataina trying to catch "the big trout". To date the biggest has been 3.75 kg (8lbs). After I commented to DoC botanist Paul Cashmore, that I had noticed several species of plants growing around the lake that were "alien" to the area - e.g. karaka (*Corynocarpus laevigatus*), rengarenga (*Arthropodium cirratum*)

MAP

and arching club moss (*Lycopodium cernuum*), he offered to provide me with a species list (King 1985a) suggesting that I should update it.

After finding another thirty or so new species Chris Ecroyd kindly checked for "Okataina" in the NZFRI herbarium database - shock, horror - several collectors had beaten me to most of the new plants, but not the afore-mentioned. Late in the project it was suggested that because the Waione Block Scenic Reserve was surrounded by and contiguous with the Lake Okataina Scenic Reserve, that the flora of the two reserves be treated as one. To King's (1985a, b) lists of 353 species (268 native, 85 adventive), the herbarium database added twenty-two species (12, 10); seven (5, 2) more were gleaned from Ecroyd *et al.* (1990), and six (5, 1) from Clayton *et al.* (1989). Information on the dwarf mistletoe (*Korthalsella salicornioides*) population was provided by Chris Ecroyd (pers. comm.) and initial information on native cress (*Rorippa divaricata*) by Paul Cashmore (pers. comm.). To date 113 species have been added to King's (1985a, b) lists (57 native and 56 adventive), including two species new to the Rotorua Lakes Ecological District (*Corybas acuminatus* and *Adiantum viridescens*). *Corybas acuminatus* was suspected of being in the District (Ecroyd *et al.* 1990) and although *A. viridescens* occurs in the Bay of Plenty (Brownsey and Smith-Dodsworth, 1989) it was not known close to the Rotorua Lakes E.D. (Ecroyd *et al.* 1990). Like Lake Okataina, neither of the Waione Block lakes have a known outlet, but their levels appears to be much more stable. There are some sixteen species (see Appendix 1) found in the Waione Block Scenic Reserve that have not been recorded in the Lake Okataina Scenic Reserve. The seven additional wetland species are probably present because of the more stable water level.

I have not been able to find two species that were recorded more than sixty years ago. The mistletoe *Tupeia antarctica* was collected by E. Phillips Turner (AK103399 - undated) prior to 1937 (when he died), and James Cowan (1910) records seeing whau (*Entelia arborescens*) flowering in profusion near Tikitiki Point.

There is a coastal influence to the flora of the reserves with the presence of karaka, kawakawa (*Macropiper excelsum*), knobby clubrush (*Isolepis nodosa*), kohekohe (*Dysoxylum spectabile*), marsh clubrush (*Bolboschoenus fluviatilis*), native cress (*Rorippa divaricata*), oioi (*Apodasmia [Leptocarpus] similis*), peperomia (*Peperomia urvilleana*), pohutukawa (*Metrosideros excelsa*), and rengarenga.

- Karaka has been found growing at two areas - at Mokoroa Point where there are six trees, and at an unnamed bay near Motuwhetero Island where there is a single tree not far from the shore. Karaka was probably brought to the area by the Maori as a food source and as a component in the production of beverages (Bob Neale and John Nicholls, pers. comms.).
- Kawakawa may be found throughout the reserves but is less common in southern areas.
- Knobby clubrush and marsh clubrush are sedges found growing in shallow water in western and south-eastern bays of Lake Okataina.
- Kohekohe is more or less restricted to the northern part of the reserve and most frequently seen from the western Okataina Walkway north of Patotara.
- Native cress has been found at several sites in both reserves and the area currently has the largest known mainland population in New Zealand (Hobbs and Cashmore, in prep.)
- Oioi which was found recently in the mire surrounding Lake Rotongata was first recorded in the Rotorua area by Thomas Kirk in 1872 near hot springs at Ohinemutu (Kirk 1873). In Ecroyd *et al.* 1990 oioi is listed as being collected from wet cliffs above the Green Lake (CHR 18275). However, study of the voucher label sites the location as "Rapanui, wet cliffs above Green Lake area". I have searched Don Stafford's "Te Arawa Notes" for a Rapanui near a Green Lake but have failed to find one. A more likely site in the Rotorua area is the thermal Lake Rotowhero or Green Lake to the south west of Rainbow Mountain some 25km south of Rotorua.

However further discussion between Chris Ecroyd and Colin Ogle suggest Rapanui may in fact be some 10km north-west of Wanganui. Watch this space!

- Peperomia is restricted to a small area at a rocky scarp at the northern end of the Eastern Okataina Walkway.
- Pohutukawa grow mainly on the rocky outcrops around the lake and appears to hybridise with northern rata (*Metrosideros robusta*) quite freely.
- Rengarenga, also thought to have been brought to the area by the Maori, is growing at two sites on the western side of Lake Okataina. On the northern side of Tikitiki Point there is a population over-shadowed by pohutukawa and on a small unnamed point on the south west arm of the lake the population grows under tutu (*Coriaria arborea*) and kohuhu (*Pittosporum tenuifolium*). Both groups are growing on and over the lip of vertical rhyolite cliffs. Inland from these edges there is much pig rooting and what are growing today are out of reach of the feral pig population in the area.

Other species of note not recorded in the reserve by King (1985a) are mangemange (*Lygodium articulatum*) very close to its southern limit, dwarf mistletoe (*Korthalsella salicornioides*) the only non-thermal area population known in the Rotorua district, the orchids *Caladenia nothofagei* and *Corybas cheesemanii* both found by Chris Ecroyd.

Two species previously recorded that deserve comment are *Lilaeopsis novae-zelandiae* and *L. ruthiana*. Both these species have been recorded from Lake Okataina but only individually by different authors! No reference is made here to these authors for fear of libel - I just find it strange. I have seen many patches of *Lilaeopsis* with plants of a wide range of size, but no fruit, which seem to be so important for identification (Stevenson 1947) have been seen. I keep an open mind - I have seen one species, but I don't know which one. I may have seen both but I don't know!

Swamp lilly (*Ottelia ovalifolia*) has been growing for some years along the shore line near the Dogger Bank (a well known fishing area) as what appears to be a static population. A

voucher specimen in bud was collected for NZFRI herbarium but no flowers have been found probably because of browsing by swans - bio-control in action! Very recently several large plants in fruit have been found growing in Lake Rotoatua. This lake and Lake Rotongata are small explosion crater lakes which, because of their restricted flight paths, are probably not frequented by swans.

Recent aquatic invasions are water buttercup (*Ranunculus trichophyllus*) first noted in December 2000 when a plant some two metres in diameter was discovered in two metres of water close to the Dogger Bank shoreline. Since then several smaller plants half a metre in diameter have been discovered suggesting that the species has been here only one or two years. The species is known in Lakes Okareka or Tarawera and has probably been introduced to Okataina by water birds.

The Department of Conservation has recently carried out a program to remove known specimens of cherry, paulownia, pines, poplar, prickly hakea, silktree, silver birch and willows from around the shores of these lakes.

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New Zealand Forest Research Institute Limited Herbarium Database.

**CHECKLIST OF VASCULAR PLANTS OF LAKE OKATAINA
AND WAIONE BLOCK SCENIC RESERVES**

(Based on King 1985a,b; Clayton *et al.* 1989, Ecroyd *et al.* 1990 and current work)

Fern allies

<i>Lycopodium cernuum</i>	arching clubmoss
<i>Lycopodium deuterodensum</i>	puakarimu
<i>Lycopodium varium</i>	iwituna
<i>Lycopodium volubile</i>	waewaekoukou
* <i>Selaginella kraussiana</i>	selaginella
<i>Tmesipteris elongata</i>	fork fern

Ferns

<i>Adiantum cunninghamii</i>	common maidenhair
<i>Adiantum viridescens</i>	
<i>Anarthropteris lanceolata</i>	lance fern
<i>Arthropteris tenella</i>	jointed fern
<i>Asplenium bulbiferum</i> ssp. <i>bulbiferum</i>	hen & chicken fern
<i>Asplenium bulbiferum</i> ssp. <i>bulbiferum</i> x <i>A. flaccidum</i> ssp. <i>flaccidum</i>	
<i>Asplenium bulbiferum</i> ssp. <i>gracillimum</i>	
<i>Asplenium flaccidum</i> ssp. <i>flaccidum</i>	hanging spleenwort
<i>Asplenium hookerianum</i>	Hookers spleenwort
<i>Asplenium oblongifolium</i>	shining spleenwort
<i>Asplenium polyodon</i>	sickle spleenwort
<i>Azolla filiculoides</i>	Pacific azolla
* <i>Azolla pinnata</i>	ferny azolla
<i>Blechnum chambersii</i>	nini
<i>Blechnum colensoi</i>	peretao
<i>Blechnum discolor</i>	crown fern

<i>Blechnum filiforme</i>	thread fern
<i>Blechnum fluviatile</i>	kiwakiwa
<i>Blechnum membranaceum</i>	
<i>Blechnum nigrum</i>	black hard fern
<i>Blechnum novae-zelandiae</i>	kiokio
<i>Blechnum penna-marina</i>	little hard fern
<i>Blechnum vulcanicum</i>	korokio
<i>Botrychium bifforme</i>	parsley fern
<i>Ctenopteris heterophylla</i>	
<i>Cyathea cunninghamii</i>	gully tree fern
<i>Cyathea dealbata</i>	silver fern
<i>Cyathea medullaris</i>	mamaku
<i>Cyathea smithii</i>	soft tree fern
<i>Dicksonia fibrosa</i>	wheki-ponga
<i>Dicksonia squarrosa</i>	wheki
<i>Diplazium australe</i>	southern ladyfern
<i>Doodia media</i>	rasp fern
<i>Gleichenia microphylla</i>	waewaekaka
<i>Grammitis billardierei</i>	common finger fern
<i>Grammitis ciliata</i>	finger fern
<i>Histiopteris incisa</i>	water fern
<i>Hymenophyllum demissum</i>	irirangi
<i>Hymenophyllum dilatatum</i>	filmy fern
<i>Hymenophyllum ferrugineum</i>	rusty filmy fern
<i>Hymenophyllum flabellatum</i>	filmy fern
<i>Hymenophyllum flexuosum</i>	filmy fern
<i>Hymenophyllum multifidum</i>	filmy fern
<i>Hymenophyllum pulcherrimum</i>	filmy fern
<i>Hymenophyllum rarum</i>	filmy fern
<i>Hymenophyllum revolutum</i>	filmy fern

<i>Hymenophyllum sanguinolentum</i>	piripiri
<i>Hymenophyllum scabrum</i>	filmy fern
<i>Hypolepis ambigua</i>	
<i>Hypolepis lactea</i>	
<i>Hypolepis rufobarbata</i>	
<i>Lastreopsis glabella</i>	
<i>Lastreopsis hispida</i>	hairy fern
<i>Leptolepia novae-zelandiae</i>	
<i>Leptopteris hymenophylloides</i>	heruheru
<i>Lindsaea trichomanoides</i>	
<i>Lygodium articulatum</i>	mangemange
<i>Ophioglossum coriaceum</i>	adder's tongue
<i>Paesia scaberula</i>	matata
<i>Pellaea rotundifolia</i>	tarawera
<i>Phymatosorus diversifolius</i>	hound's tongue
<i>Phymatosorus scandens</i>	fragrant fern
<i>Pneumatopteris pennigera</i>	gully fern
<i>Polystichum richardii</i>	common shield fern
<i>Polystichum silvaticum</i>	shield fern
<i>Polystichum vestitum</i>	prickly shield fern
<i>Pteridium esculentum</i>	bracken
<i>Pteris macilenta</i>	sweet fern
<i>Pteris tremula</i>	shaking brake
<i>Pyrrhosia eleagnifolia</i>	leather fern
<i>Rumohra adiantiformis</i>	
<i>Trichomanes endlicherianum</i>	
<i>Trichomanes reniforme</i>	kidney fern
<i>Trichomanes venosum</i>	veined filmy fern

Gymnosperm Trees

* <i>Chamaecyparis lawsoniana</i>	Lawson cypress
<i>Dacrycarpus dacrydioides</i>	kahikatea
<i>Dacrydium cupressinum</i>	rimu
<i>Phyllocladus trichomanoides</i>	tanekaha
* <i>Pinus contorta</i>	contorta pine
* <i>Pinus nigra</i> ssp. <i>laricio</i>	Corsican pine
* <i>Pinus ponderosa</i>	ponderosa pine
* <i>Pinus radiata</i>	radiata pine
<i>Podocarpus hallii</i>	hall's totara
<i>Podocarpus totara</i>	totara
<i>Prumnopitys ferruginea</i>	miro
<i>Prumnopitys taxifolia</i>	matai
* <i>Pseudotsuga menziesii</i>	Douglas fir

Dicotyledonous trees and shrubs

* <i>Acacia dealbata</i>	silver wattle
* <i>Acacia mearnsii</i>	black wattle
<i>Alectryon excelsus</i>	titoki
<i>Alseuosmia macrophylla</i>	karapapa
<i>Aristotelia serrata</i>	wineberry
<i>Beilschmiedia tawa</i>	tawa
* <i>Betula pendula</i>	silver birch
<i>Brachyglottis kirkii</i> var. <i>kirkii</i>	kohurangi
<i>Brachyglottis repanda</i> var. <i>repanda</i>	rangiora
* <i>Buddleia davidii</i>	buddleia
* <i>Calluna vulgaris</i>	heather
<i>Carpodetus serratus</i>	putaputaweta
<i>Coprosma grandifolia</i>	kanono
<i>Coprosma lucida</i>	karamu
<i>Coprosma propinqua</i> x <i>C. robusta</i>	

<i>Coprosma rhamnoides</i>	
<i>Coprosma robusta</i>	karamu
<i>Coprosma rotundifolia</i>	
<i>Coprosma tenuicaulis</i>	
<i>Coriaria arborea</i> var. <i>arborea</i>	tutu
<i>Corynocarpus laevigatus</i>	karaka
* <i>Cotoneaster simonsii</i>	Khasia berry
<i>Cyathodes juniperina</i>	prickly mingimingi
* <i>Cytisus scoparius</i>	broom
* <i>Dendrobenthamia capitata</i>	strawberry dogwood
<i>Dodonaea viscosa</i>	akeake
<i>Dracophyllum strictum</i>	totorowhiti
<i>Dracophyllum subulatum</i>	monoao
<i>Dysoxylum spectabile</i>	kohekohe
<i>Elaeocarpus dentatus</i>	hinau
<i>Elaeocarpus hookerianus</i>	pokaka
* <i>Erica lusitanica</i>	Spanish heath
* <i>Escallonia rubra</i>	
<i>Fuchsia excorticata</i>	kotukutuku
<i>Gaultheria antipoda</i>	snowberry
<i>Gaultheria antipoda</i> x <i>G. oppositifolia</i>	
<i>Gaultheria oppositifolia</i>	niniwa
<i>Geniostoma rupestre</i> var. <i>ligustrifolium</i>	hangehange
<i>Griselinia littoralis</i>	broadleaf
<i>Griselinia lucida</i>	puka
* <i>Hakea salicifolia</i>	willow-leaved hakea
* <i>Hakea sericea</i>	prickly hakea
<i>Hebe stricta</i> var. <i>stricta</i>	koromiko
<i>Hedycarya arborea</i>	pigeonwood
<i>Ixerba brexioides</i>	tawari

<i>*Jasminum polyanthum</i>	jasmine
<i>Knightia excelsa</i>	rewarewa
<i>Korthalsella salicornioides</i>	dwarf mistletoe
<i>Kunzea ericoides</i> var. <i>ericoides</i>	kanuka
<i>Laurelia novae-zelandiae</i>	pukatea
<i>Leptospermum scoparium</i>	manuka
<i>Leucopogon fasciculatus</i>	mingimingi
<i>Leucopogon fraseri</i>	patotara
<i>Leycesteria formosa</i>	Himalayan honeysuckle
<i>Litsea calicaris</i>	mangeao
<i>Lophomyrtus bullata</i>	ramarama
<i>*Lupinus arboreus</i>	tree lupin
<i>Macropiper excelsum</i>	kawakawa
<i>Melicytus ramiflorus</i>	mahoe
<i>Metrosideros excelsa</i>	pohutukawa
<i>Metrosideros excelsa</i> x <i>M. robusta</i>	
<i>Metrosideros robusta</i>	northern rata
<i>Mida salicifolia</i>	taiko
<i>Myrsine australis</i>	mapou
<i>Myrsine salicina</i>	toro
<i>Nestegis lanceolata</i>	white maire
<i>Nestegis montana</i>	orooro
<i>Olearia furfuracea</i>	akepiro
<i>Olearia rani</i>	heketara
<i>*Paraserianthes lophantha</i>	silktree
<i>*Paulownia tomentosa</i>	paulownia
<i>Pennantia corymbosa</i>	kaikomako
<i>Pimelia prostrata</i>	pinatoro
<i>Pittosporum cornifolium</i>	tawhirikaro
<i>Pittosporum eugenioides</i>	tarata

<i>Pittosporum tenuifolium</i> var. <i>tenuifolium</i>	kohuhu
<i>Plagianthus regius</i>	ribbonwood
<i>Pomaderris ericifolia</i>	tauhinu
* <i>Populus</i> sp.	poplar
* <i>Prunus serrulata</i>	Japanese hill cherry
* <i>Prunus</i> sp.	
<i>Pseudopanax arboreus</i>	five-finger
<i>Pseudopanax crassifolius</i>	lancewood
<i>Pseudowintera axillaris</i>	horopito
<i>Pseudowintera colorata</i>	pepper tree
* <i>Pyracantha angustifolia</i>	firethorn
* <i>Pyrus communis</i>	pear
<i>Quintinia serrata</i>	tawheowheo
* <i>Rosa rubiginosa</i>	sweet briar
* <i>Rosa</i> sp.	
* <i>Salix cinerea</i>	grey willow
* <i>Salix fragilis</i>	crack willow
<i>Schefflera digitata</i>	pate
<i>Solanum aviculare</i>	poroporo
<i>Streblus heterophyllus</i>	turepo
* <i>Teline monspessulana</i>	Montpellier broom
* <i>Ulex europaeus</i>	gorse
<i>Urtica ferox</i>	ongaonga
<i>Weinmannia racemosa</i>	kamahi

Dicotyledonous lianes

<i>Clematis cunninghamii</i>	clematis
<i>Clematis foetida</i>	clematis
<i>Clematis forsteri</i>	clematis
<i>Clematis paniculata</i>	puawhananga

* <i>Clematis vitalba</i>	old man's beard
* <i>Lonicera japonica</i>	Japanese honeysuckle
<i>Metrosideros carminea</i>	carmine rata
<i>Metrosideros diffusa</i>	white rata vine
<i>Metrosideros fulgens</i>	rata vine
<i>Metrosideros perforata</i>	aka
<i>Muehlenbeckia australis</i>	pohuehue
<i>Parsonsia capsularis</i>	New Zealand jasmine
<i>Parsonsia heterophylla</i>	New Zealand jasmine
<i>Passiflora tetrandra</i>	passion vine
<i>Rubus australis</i>	swamp lawyer
<i>Rubus cissoides</i> var. <i>cissoides</i>	bush lawyer
* <i>Rubus fruticosus</i>	blackberry
<i>Rubus schmidelioides</i>	lawyer
<u>Dicotyledonous herbs</u>	
* <i>Acaena agnipila</i>	Australian sheep's bur
<i>Acaena anserinifolia</i>	piripiri
<i>Acaena novae-zelandiae</i>	piripiri
* <i>Achilla millefolium</i>	yarrow
* <i>Aconitum napellus</i>	monkshood
* <i>Anagallis arvensis</i>	scarlet pimpernel
* <i>Aquilegia vulgaris</i>	columbine
* <i>Arctium minus</i>	burdock
* <i>Barbarea intermedia</i>	winter cress
* <i>Bellis perennis</i>	daisy
* <i>Bidens frondosa</i>	beggars' ticks
<i>Callitriche muellerii</i>	starwort
* <i>Callitriche stagnalis</i>	starwort
<i>Calystegia sepium</i> agg.	pink bindweed
* <i>Calystegia silvatica</i>	great bindweed

<i>Cardamine</i> sp. (<i>C. debilis</i> agg.)	
* <i>Carduus nutans</i>	nodding thistle
* <i>Carduus tenuiflorus</i>	winged thistle
* <i>Centaureum erythraea</i>	centaury
<i>Centella uniflora</i>	centella
* <i>Cerastium glomeratum</i>	mouse-ear chickweed
* <i>Cerastium fontanum</i>	
* <i>Cirsium arvense</i>	Californian thistle
* <i>Cirsium vulgare</i>	Scotch thistle
* <i>Conyza albida</i>	fleabane
* <i>Digitalis purpurea</i>	foxglove
<i>Drosera binata</i>	sundew
<i>Elatine gratioloides</i>	
<i>Epilobium alsinoides</i>	willow-herb
<i>Epilobium cinereum</i>	willow-herb
<i>Epilobium</i> sp. (<i>brunnescens</i> ssp. <i>minutiflorum</i>)	
<i>Epilobium nummularifolium</i>	creeping willow-herb
<i>Epilobium pallidifolium</i>	willow-herb
<i>Epilobium pedunculare</i>	creeping willow-herb
<i>Epilobium pubens</i>	willow-herb
<i>Epilobium rotundifolium</i>	round-leaved willow-herb
* <i>Erigeron karvinskianus</i>	Mexican daisy
<i>Euchiton audax</i>	creeping cudweed
* <i>Euchiton coarctatum</i>	purple cudweed
<i>Euchiton delicatus</i>	creeping cudweed
<i>Euchiton gymnocephalus</i>	
<i>Euchiton sphaericum</i>	Japanese cudweed
* <i>Galium aparine</i>	cleavers
<i>Galium propinquum</i>	marsh bedstraw
* <i>Geranium molle</i>	dove's foot cranesbill

<i>Geranium potentilloides</i> var. <i>potentilloides</i>	cranesbill
* <i>Geranium robertianum</i>	herb Robert
* <i>Glechoma hederacea</i>	ground ivy
<i>Glossostigma diandrum</i>	
<i>Glossostigma elatinoides</i>	
<i>Gratiola sexdentata</i>	
<i>Gunnera monoica</i>	solitary gunnera
<i>Haloragis erecta</i> ssp. <i>erecta</i>	shrubby haloragis
<i>Hydrocotyle dissecta</i>	pennywort
<i>Hydrocotyle elongata</i>	long-stemmed pennywort
<i>Hydrocotyle heteromeria</i>	waxweed
<i>Hydrocotyle microphylla</i>	hydrocotyle
<i>Hydrocotyle moschata</i>	hydrocotyle
<i>Hydrocotyle novae-zeelandiae</i>	hydrocotyle
<i>Hydrocotyle pterocarpa</i>	hydrocotyle
<i>Hypericum japonicum</i>	swamp hypericum
* <i>Hypochoeris radicata</i>	catsear
<i>Lagenifera pumila</i>	papataniwhaniwha
* <i>Leontodon taraxacoides</i>	hawkbit
* <i>Leucanthemum vulgare</i>	oxeye daisy
<i>Lilaeopsis novae-zeelandiae</i>	
<i>Lilaeopsis ruthiana</i>	
<i>Limosella lineata</i>	mudwort
* <i>Linum bienne</i>	pale flax
* <i>Lotus pedunculatus</i>	lotus
* <i>Ludwigia palustris</i>	water parslane
* <i>Lycopersicon esculentum</i>	tomato
* <i>Lythrum hyssopifolia</i>	hyssop loosestrife
* <i>Mentha aquatica</i>	mint
* <i>Mentha piperita</i>	peppermint

* <i>Mentha piperita</i> var. <i>citrata</i>	eau-de-cologne mint
* <i>Mentha suaveolens</i>	round-leaved mint
* <i>Mycelis muralis</i>	
* <i>Myosotis arvensis</i>	forget-me-not
* <i>Myosotis laxa</i> ssp. <i>caespitosa</i>	water forget-me-not
<i>Myriophyllum pedunculatum</i>	water milfoil
<i>Myriophyllum propinquum</i>	water milfoil
<i>Myriophyllum triphyllum</i>	water milfoil
* <i>Rorippa nasturtium-aquaticum</i>	watercress
* <i>Nepeta cataria</i>	catnip
<i>Nertera depressa</i>	
<i>Nertera villosa</i>	
* <i>Oenothera stricta</i>	sand primrose
* <i>Orobancha minor</i>	broomrape
<i>Oxalis exilis</i>	creeping oxalis
* <i>Parentucellia viscosa</i>	tarweed
* <i>Pastinaca sativa</i>	wild parsnip
* <i>Pelargonium indorum</i>	
<i>Peperomia urvilleana</i>	
* <i>Physalis peruviana</i>	cape gooseberry
* <i>Phytolacca octandra</i>	inkweed
* <i>Plantago australis</i>	swamp plantain
* <i>Plantago lanceolata</i>	ribwort
* <i>Plantago major</i>	broad-leaved plantain
<i>Plantago raoulii</i>	native plantain
* <i>Polygonum prostratum</i>	willow weed
<i>Polygonum salicifolium</i>	swamp willow weed
*? <i>Potentilla</i> sp.	
<i>Pratia angulata</i>	pratia
* <i>Prunella vulgaris</i>	selfheal

<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed
<i>Ranunculus amphitrichus</i>	buttercup
<i>Ranunculus flammula</i>	spearwort
<i>Ranunculus reflexus</i>	buttercup
* <i>Ranunculus repens</i>	creeping buttercup
* <i>Ranunculus trichophyllus</i>	water buttercup
<i>Raoulia albosericea</i>	mat daisy
<i>Raoulia glabra</i>	mat daisy
<i>Rorippa divaricata</i>	native cress
* <i>Rumex acetosella</i>	sheep's sorrel
* <i>Sagina procumbens</i>	mossy pearlwort
* <i>Scrophularia auriculata</i>	water figwort
* <i>Senecio bipinnatisectus</i>	Australian fire weed
* <i>Senecio jacobaea</i>	ragwort
<i>Senecio minimus</i>	fireweed
* <i>Sigesbeckia orientalis</i>	
* <i>Silene gallica</i>	catchfly
* <i>Solanum nigrum</i>	black nightshade
* <i>Sonchus asper</i>	prickly sow thistle
* <i>Sonchus oleraceus</i>	sowthistle
<i>Stellaria parviflora</i>	native chickweed
* <i>Taraxicum officinale</i>	dandelion
* <i>Trifolium micranthum</i>	lesser suckling clover
* <i>Trifolium pratense</i>	red clover
* <i>Trifolium repens</i>	white clover
<i>Urtica incisa</i>	stinging nettle
* <i>Verbascum virgatum</i>	moth mullein
* <i>Verbena bonariensis</i>	purple-top
* <i>Verbena braziliensis</i>	purple-top
* <i>Verbena officinalis</i>	vervain

<i>Viola filicaulis</i>	native bush violet
<i>Wahlenbergia violacea</i>	harebell

Monocotyledonous trees, shrubs and lianes

<i>Cordyline australis</i>	cabbage tree
<i>Cordyline banksii</i>	ti ngahere
<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	kiekie
<i>Rhopalostylis sapida</i>	nikau
<i>Ripogonum scandens</i>	supplejack

Orchids

<i>Bulbophyllum pygmaeum</i>	bulb-leaf orchid
<i>Caladenia nothofagei</i>	
<i>Chiloglottis cornuta</i>	green bird orchid
<i>Corybas acuminatus</i>	spider orchid
<i>Corybas cheesemanii</i>	
<i>Corybas macranthus</i>	spider orchid
<i>Corybas trilobus</i>	common spider orchid
<i>Drymoanthus adversus</i>	green fleshy orchid
<i>Earina autumnalis</i>	raupeka
<i>Earina mucronata</i>	peka-a-waka
<i>Gastrodia cunninghamii</i>	potato orchid
<i>Microtis unifolia</i>	common onion orchid
<i>Orthoceras strictum</i>	mamaika
<i>Pterostylis alobula</i>	greenhood
<i>Pterostylis banksii</i>	common greenhood
<i>Pterostylis trullifolia</i>	greenhood
<i>Thelymitra longifolia</i>	common sun orchid
<i>Winika cunninghamii</i>	winika

Grasses

* <i>Agrostis capillaris</i>	browntop
* <i>Aira caryophylla</i>	silvery hair grass
* <i>Anthoxanthum odoratum</i>	sweet vernal
* <i>Briza minor</i>	shivery grass
* <i>Bromus willdenowii</i>	prairie grass
<i>Cortaderia fulvida</i>	toetoe
<i>Cortaderia toetoe</i>	toetoe
* <i>Cynodon dactylon</i>	Indian doab
* <i>Dactylis glomerata</i>	cocksfoot
<i>Deyeuxia avenoides</i>	mountain oat grass
<i>Dichelachne crinita</i>	plume grass
<i>Echinopogon ovatus</i>	hedgehog grass
* <i>Eragrostis brownii</i>	bay grass
* <i>Festuca arundinacea</i>	tall fescue
* <i>Holcus lanatus</i>	Yorkshire fog
<i>Lachnagrostis billardierei</i>	wind grass
<i>Lachnagrostis lyallii</i>	wind grass
* <i>Lolium perenne</i>	perennial ryegrass
<i>Microlaena avenacea</i>	bush rice grass
<i>Microlaena stipoides</i>	meadow rice grass
* <i>Miscanthus nepalensis</i>	Himalayan fairy grass
<i>Poa anceps</i>	broad-leaved poa
<i>Poa pusilla</i>	
* <i>Poa trivialis</i>	rough meadow grass
<i>Rytidosperma gracile</i>	danthonia
<i>Rytidosperma unarede</i>	danthonia
* <i>Sporobolus africanus</i>	ratstail

Sedges

Baumea huttonii

<i>Baumea rubiginosa</i>	
<i>Bolboschoenus fluviatilis</i>	marsh clubrush
<i>Carex dissita</i>	flat-leaved sedge
<i>Carex forsteri</i>	sedge
<i>Carex geminata</i>	(broad-leaved form)
<i>Carex lambertiana</i>	
<i>Carex lessoniana</i>	rautahi
* <i>Carex lurida</i>	sallow sedge
<i>Carex maorica</i>	
* <i>Carex ovalis</i>	oval sedge
<i>Carex secta</i>	niggerhead
<i>Carex solandri</i>	Solander's sedge
<i>Carex testacea</i>	speckled sedge
<i>Carex virgata</i>	swamp sedge
* <i>Carex vulpinoidea</i>	fox sedge
* <i>Cyperus congestus</i>	purple umbrella sedge
* <i>Cyperus eragrostis</i>	umbrella sedge
<i>Cyperus ustulatus</i>	giant umbrella sedge
<i>Eleocharis acuta</i>	sharp spike-sedge
<i>Eleocharis gracilis</i>	slender spike-sedge
<i>Eleocharis sphacelata</i>	tall spike-sedge
<i>Gahnia pauciflora</i>	gahnia
<i>Gahnia setifolia</i>	gahnia
<i>Isolepis nodosa</i>	knobby clubrush
<i>Isolepis prolifer</i>	
<i>Lepidosperma australe</i>	square-stemmed sedge
<i>Morelotia affinis</i>	
<i>Schoenoplectus validus</i>	lake clubrush
<i>Schoenus maschalinus</i>	dwarf bog-rush
<i>Schoenus tendo</i>	

<i>Uncinia ferruginea</i>	hooked sedge
<i>Uncinia gracilentia</i>	hooked sedge
<i>Uncinia scabra</i>	hooked sedge
<i>Uncinia uncinata</i>	kamu

Rushes

* <i>Juncus articulatus</i>	jointed rush
* <i>Juncus bulbosus</i>	bulbous rush
<i>Juncus caespiticus</i>	grass-leaved rush
<i>Juncus distegus</i>	leafless rush
* <i>Juncus effusus</i>	
<i>Juncus gregiflorus</i>	leafless rush
<i>Juncus planifolius</i>	flat-leaved rush
<i>Juncus prismatocarpus</i>	angled-fruit rush
* <i>Juncus tenuis</i>	track rush
<i>Apodasmia similis</i>	oioi
<i>Luzula picta</i> var. <i>pallida</i>	woodrush
<i>Luzula picta</i> var. <i>picta</i>	woodrush
<i>Luzula subclavata</i>	woodrush

Other monocotyledonous herbs

<i>Arthropodium cirratum</i>	rengarenga lily
<i>Astelia fragrans</i>	bush flax
<i>Astelia solandri</i>	tree-flax
<i>Astelia trinervia</i>	kauri grass
<i>Collospermum microspermum</i>	
* <i>Crocasmia</i> x <i>crocosmiiflora</i>	montbretia
<i>Dianella nigra</i>	blue-berry
* <i>Elodea canadensis</i>	Canadian pondweed
* <i>Freesia refracta</i>	freesia

* <i>Lagarosiphon major</i>	oxygen weed
<i>Lemna minor</i>	duckweed
<i>Libertia grandiflora</i>	turutu
<i>Libertia ixioides</i>	mikoikoi
* <i>Ottelia ovalifolia</i>	swamp lily
<i>Phormium tenax</i>	harakeke
<i>Potamogeton cheesemani</i>	red pondweed
<i>Potamogeton ochreatus</i>	blunt pondweed
<i>Potamogeton suboblongus</i>	mud pondweed
<i>Sparganium subglobosum</i>	burr-reed
* <i>Spirodela punctata</i>	purple-backed duckweed
* <i>Tradescantia fluminensis</i>	wandering jew
<i>Typha orientalis</i>	raupo

* Adventive species.

Appendix 1 - Species found in the Waione Block Scenic Reserve but not recorded from the Okataina Scenic Reserve.

<i>Arthropteris tenella</i>	<i>Gratiola sexdentata</i>
<i>Astelia trinerva</i>	<i>Apodasmia similis</i>
* <i>Calluna vulgaris</i>	<i>Ranunculus flamula</i>
* <i>Carduus tenuiflorus</i>	* <i>Salix fragilis</i>
* <i>Carex vulpinoidea</i>	<i>Sparganium subglobosum</i>
<i>Coprosma tenuicaulis</i>	* <i>Tradescantia fluminensis</i>
<i>Drosera binata</i>	* <i>Verbena braziliensis</i>
<i>Dracophyllum subulatum</i>	