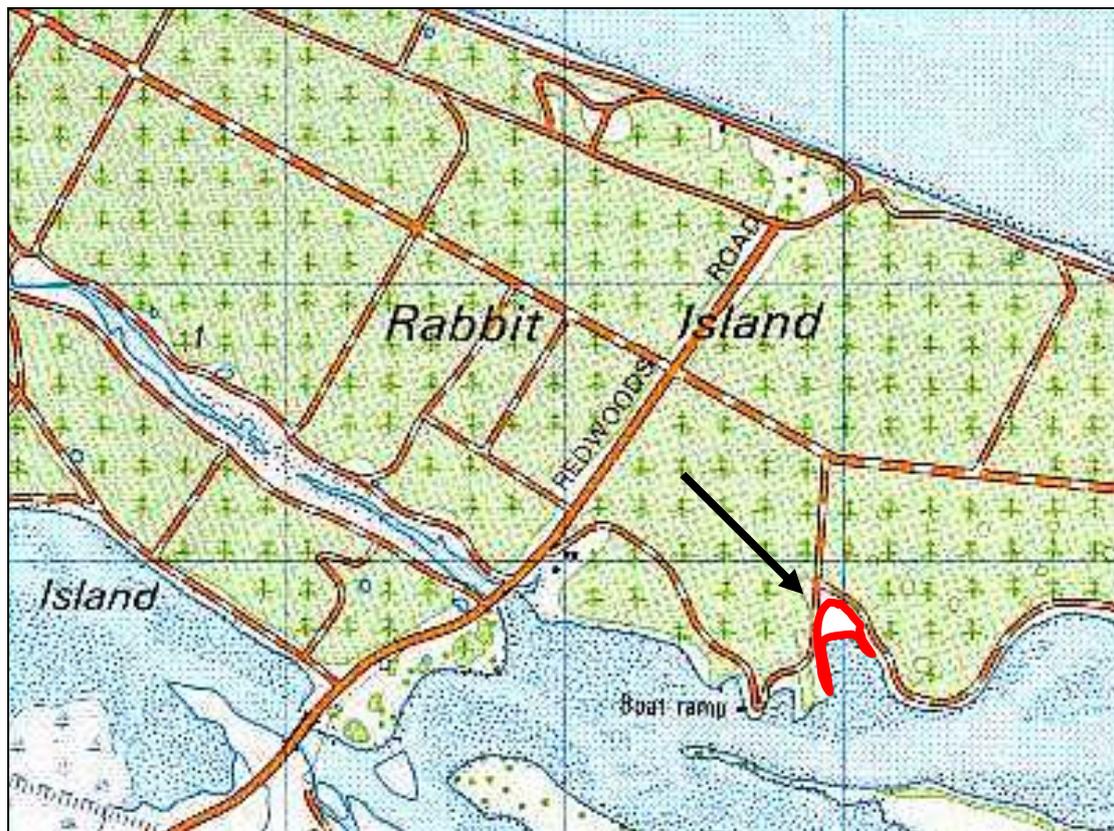


**Tasman District Council  
Significant Natural Area (SNA) Survey Programme  
Site Assessment Report**

**Site No** MO 10  
**Grid Ref** N27  
**Landowners/Occupiers** Tasman District Council  
**Ecological District** Motueka  
**Surveyed By** Michael North  
**Date** 15 October 2008  
**Time on site** 1.5 hrs



## **The Setting - Motueka Ecological District**

*(Information copied from the TDC report 'Tasman District Biodiversity Overview' 2004)*

### **Location and physical description**

This small ecological district is in two parts, the western one where the Motueka River flows into Tasman Bay and the eastern where the Wairoa and Wai-iti Rivers come together to form the Waimea River before entering the bay. It comprises lowland and coastal alluvial plains and remnants of the Moutere Gravels. It has a coast of fertile deltas, large estuaries, sand islands and bluffs. Soils from the Moutere Gravels are clayey and not very fertile, those on stony terraces and sand are shallow and prone to drought, and alluvial soils are generally well drained and fertile. The climate is sunny and sheltered, with very warm summers and mild winters. The land is mostly in private ownership and is used for pastoral farming, forestry, horticulture and residential and commercial settlement. Tasman District Council has considerable land holdings in this district.

### **Ecosystem types originally present**

Formerly the ecological district apart from the waterways would have been almost entirely covered in forest. The alluvial plains and terraces supported towering podocarp forests of totara, matai and kahikatea. On the low hills was mixed forest of black beech, hard beech, rimu, totara, kamahi, titoki and tawa. Along the coastal bluffs and fringing the estuaries, ngaio, cabbage tree, kowhai and totara would have been common. The estuaries were alive with wetland birds, fish and invertebrates. They had vegetation sequences grading from eelgrass and saline turf into rushes, sedges, harakeke (lowland flax) and shrubs (mainly saltmarsh ribbonwood, mingimingi and manuka), and finally into forest. Freshwater wetlands would have included fertile lowland swamps with kahikatea, harakeke, cabbage tree, tussock sedge (*Carex secta*) and raupo. Rivers and streams, including riparian ecosystems (trees, shrubs, flaxes, toetoe, etc.) and some braided river beds, would have made up a significant portion of the district. The tabulation gives estimates of the extent of these original ecosystems.

### **Existing ecosystems**

Most of the natural terrestrial ecosystems have been lost. What remains is mostly in small fragments of forest and freshwater wetland. The estuaries are still surprisingly intact, although their fringing vegetation sequences have largely gone. The tabulation gives estimates of the proportions of the original ecosystems that remain.

### **Degree of protection**

There is little protected land within the ecological district. However, there are significant remnants protected in reserves and covenants. These include important tall forest remnants at Motueka, Brightwater and Wakefield, kanuka forest on alluvial flats at Brightwater, estuarine shores and sand islands. It also includes some small freshwater wetlands and hillslope forest patches. The tabulation gives estimates of how much of the original and remaining ecosystems have formal protection.

INDIGENOUS ECOSYSTEMS - MOTUEKA ECOLOGICAL DISTRICT				
Ecosystem type	Original extent (% of ED)	Proportion of original extent remaining (%)	Proportion of original extent/remaining area <b>protected</b> (%)	
			Original	Remain
Coastal sand dune and flat	10	<5	<5	100
Estuarine wetland	10	30	?12	?40
Fertile lowland swamp and pond	3	<1	<1	?40
Infertile peat bog	-	-	-	-
Upland tarn	-	-	-	-
Lake	-	-	-	-
River, stream and riparian	3	50	?5	?10
Lowland podocarp forest	50	<1	<1	90
Lowland broadleaved forest	5	<1	<1	90
Lowland mixed forest	12	<1	<1	90
Lowland beech forest	5	<1	<1	90
Upland beech forest	-	-	-	-
Subalpine forest	-	-	-	-
Lowland shrubland	2	<1	<1	50
Upland/subalpine shrubland	-	-	-	-
Frost flat communities	-	-	-	-
Tussock grassland	-	-	-	-
Alpine herbfield and fellfield	-	-	-	-

### Site description

This c2ha site lies on low-lying sandy marine deposits just above mean high water on the southern margin of Rabbit Island in the Waimea Inlet. The topography is flat. As the survey is confined to areas above MHW, the margin of the low saltmarsh herbfield is taken to demarcate the boundary.

### Vegetation

The site supports a vegetation sequence from the edge of the saltmarsh herbfield through to tall manuka scrub, and includes a narrow to broad band of saltmarsh ribbonwood, areas of estuary tussock, and mixed vegetation of sea rush, tall fescue and knobby clubrush. Small areas of herbfield turf also occur. The following communities are present:

1 **Manuka tall scrub** occurs locally, with its boundaries opening into shrublands of saltmarsh ribbonwood and running out into sedge/rush/grassland towards the estuary. Areas of dieback within the manuka thickets are severe in places (possibly drought induced) so that some parts are reverting to open low rush/grass/sedgeland. Under dense manuka, vegetation is sparse with areas of open litter, but more generally there is a sward of tall fescue, with knobby clubrush locally common, and scattered pohuehue and mingimingi/*Leucopogon fascicularis*.

2 **Saltmarsh ribbonwood** occurs as dense scrub with few associates, or as dense to open shrubland, in association with tall sea rush, tall fescue and knobby clubrush.

3 **Mixed associations** of sea rush, tall fescue, knobby clubrush with scattered low manuka, gorse and saltmarsh ribbonwood occur in variable combinations in various parts of the site.

4 **Estuary tussock** forms an intermittent ribbon around parts of the saltmarsh margin, as well as a larger deeper area of dense tussock. Sea rush is occasional, with scattered glasswort and sea primrose.

5 **Low herbfield** pockets are scattered through open saltmarsh ribbonwood, dominated by *Selliera radicans*, with associates being sea celery, buckshorn plantain and sea primrose.

## **Botanical Values**

### **Communities**

Intact coastal margin vegetation sequences from saltmarsh herbfield to low forest/tall scrub are extremely rare in Motueka ED. Coastal margin manuka forest/scrub is particularly rare in this ED, and this may be the only remaining example. Saltmarsh ribbonwood scrub has been depleted substantially in the ED.

### **Species**

14 indigenous species were noted.

No species recorded are rare in Motueka ED.

## **Fauna**

One fantail was seen.

## **Weed and animal pests**

Weed impacts are moderately low, with a few small stands of radiata pine, pockets of gorse, one area of iceplant, and patches of tall fescue locally. Spanish heath and broom are rare. No pests were noted.

## **Other threats**

Vehicle access has resulted in heavy tracking across the most seaward margin of the site. The low vegetation is potentially vulnerable to vehicle intrusion. With easy public access to the island, fire is always a possible threat. Drought induced dieback of manuka is severe in places and it is likely that dry periods will continue to adversely effect the site.

## **General condition**

Overall the site is in reasonably good condition, with weed impacts fairly confined, and large areas where natural processes unfold unhindered by human activity.

## **Landscape/Historic values**

None were noted.

## **Assessment of ecological value**

The following criteria are assessed:

**Representativeness:** *How representative is the site of the original vegetation?*

**Rarity:** *Are there rare species or communities?*

**Diversity and pattern:** *Is there a notable range of species and habitats?*

**Distinctiveness/special features:** Are there any features that make the site stand out locally, regionally or nationally for reasons not addressed by the above criteria?

**Size/shape:** How large and compact is the site?

**Ecological Context:** How well connected is the site to other natural areas, to what extent does the site buffer and is buffered by adjoining areas, and what hydrological services to the catchment and critical resources to mobile species does it provide?

**Sustainability:** How well is the site able to sustain itself without intervention?

These are tabulated below.

<b>SITE EVALUATION UNDER THE SIGNIFICANCE CRITERIA</b>		
	<b>Score</b>	<b>Example/explanation</b>
<b>PRIMARY CRITERIA</b>		
<b>Representativeness</b>		
The site includes primary vegetation that moderately resembles its original condition.	MH	Vegetation characterised by original canopy species or climax plant species, which has been only moderately impacted by herbivores or direct human intervention eg. forest with past low to moderate impact selective logging or with no more than moderate apparent herbivore impacts on vegetation structure and diversity
<b>Rarity</b>		
The site includes a primary community depleted 5% or less of original pre-human cover in the Ecological District, unless in poor condition	H	Estuarine scrub is heavily depleted in Motueka ED
<b>Diversity and Pattern</b>		
Indigenous plant communities species or habitats are present with typical diversity for such sites in the Ecological District	ML	
<b>SECONDARY CRITERIA</b>		
<b>Size</b>		
The site is of large size for its vegetation community and Ecological District	H	As this site may be the only sequence from saltmarsh to manuka scrub in the ED its size is by definition 'large'
<b>Ecological Context</b>		
<b>Connectivity/Buffered by</b>		
The site adjoins indigenous vegetation and is well connected to, and therefore well buffers such vegetation	MH	>1/3 of the site boundary is connected to indigenous vegetation on adjoining title(s) or adjoining but separately assessed parts of the same title: in this instance the site is connected to un-assessed saltmarsh below MHW
<b>Buffering</b>		
The site is surrounded by a deep buffering margin of vegetation	H	A wide margin of forest surrounds the outer margins of the site whilst the inner margins are surrounded by saltmarsh below MHW
<b>Provision of critical resources to mobile fauna</b>		
The site provides seasonally important resources for indigenous mobile animal	L	None noted

species and these species are present in the locality even though they may not have been observed at the site		
<b>Hydrological services to the catchment</b>		
The site provides hydrological services to the catchment for reasons other than a direct function of its size	L	
<b>OTHER CRITERION</b>		
<b>Sustainability</b>	<b>M</b>	
<b>Physical and proximal characteristics</b>		
Size shape buffering and connectivity provide for a moderate overall degree of ecological resilience	M	Size ML Shape L Buffering H Connectivity MH
<b>Inherent fragility/robustness</b>		
Indigenous communities are neither inherently resilient nor fragile	M	
<b>Threats (lowest score taken; low score = high threats)</b>		
Ecological impacts of grazing, surrounding land management, weeds or pests*	M	Grazing H Surroundings H Weeds M Pests H

\*observed pest impacts only

<b>SUMMARY OF SCORES</b>	<b>Criterion</b>	<b>Ecological District Ranking</b>
<b>Primary Criteria</b>	Representativeness Rarity Diversity and pattern	MH H ML
<b>Secondary Criteria</b>	Size/shape Ecological context	H MH
<b>Additional Criterion</b>	Sustainability	M

H=high MH=medium-high M=medium ML=medium-low L=low

<b>Is the site 'significant' under the TDC SNA criteria? YES</b>
--

If a site scores at least as highly as the combinations of primary and secondary scores set out below, it is deemed significant for the purposes of this assessment.

Red indicates the site pathway to significance:

	<b>Primary Criteria</b>		<b>Secondary Criteria</b>
	Any of the 3 primary criteria with score(s) at least as high as listed	&	Any of the 2 secondary criteria with score(s) at least as high as listed
1	H		-
2	2x MH		-
3	MH + M		-
4	MH	&	MH
5	2x M	&	H
6	2x M	&	2x MH
7	M	&	H + MH

### **Management issues and suggestions**

A number of weeds are impacting on the site, with most amenable to management. Pines should be felled and removed, gorse cut and stump treated and iceplant grubbed out. The few broom and Spanish heath could be readily dealt with. Tall fescue is a more intractable problem where it occurs, as it is embedded with indigenous species. Its distribution could be monitored to determine whether it is still invading.

It is not clear whether free public vehicle access is permitted, but it should be stopped if it is occurring by gating the track into the area.

When pines come to be logged it is important that the operators are aware of the value of this site and avoid felling trees into it. Whilst logging is underway it would be advantageous to have the pines removed from the site at the same time if this can be done with the minimum of damage.



*Moderately extensive areas of estuary tussock and saltmarsh ribbonwood occur at this site*



*Estuary tussock with saltmarsh ribbonwood and manuka shrubland behind*



*Pohuhue and sea rush merging into saltmarsh ribbonwood and then into manuka behind – such vegetation sequences, running from saltmarsh herbfield to tall scrub are very rare in Motueka ED*



*Knobby clubrush under a dense manuka canopy; elsewhere tall fescue may dominate the ground cover, or the manuka canopy has opened up due to dieback*



*The saltmarsh herbfield has an abrupt margin with the estuary tussock, sea rush and saltmarsh ribbonwood*



*Dieback of manuka is severe in places; radiata pine and exotic iceplant are two of the more serious weeds at this site*

# APPENDIX

## 1 Species List

r=rare o=occasional m=moderate numbers ml= moderate numbers locally c=common  
lc= locally common f=frequent lf=locally frequent x=present but abundance not noted

Species Name	Common Name	Status
<b>Trees Shrubs</b>		
Alectryon excelsus	titoki	
Aristotelia fruticosa		
Aristotelia serrata	wineberry	
Androstoma empetrifolia	a heath species	
Beilschmiedia tawa	tawa	
Brachyglottis repanda	rangiora	
Carmichaelia australis	common broom	
Carpodetus serratus	putaputaweta, marbleleaf	
Coprosma "tayloriae"		
Coprosma areolata		
Coprosma colensoi		
Coprosma crassifolia		
Coprosma foetidissima	stinkwood	
Coprosma grandifolia	large leaved coprosma	
Coprosma linariifolia	yellow wood	
Coprosma lucida	shining coprosma	
Coprosma microcarpa		
Coprosma propinqua		
Coprosma pxr		
Coprosma repens	taupata	
Coprosma rhamnoides		
Coprosma rigida		
Coprosma robusta	karamu	
Coprosma rotundifolia		
Coprosma 'tayloriae'		
Coprosma tenuifolia	swamp coprosma	
Cordyline australis	ti kouka, cabbage tree	
Cordyline banksii	forest cabbage tree	
Coriaria arborea	tutu	
Corokia cotoneaster		
Corynocarpus laevigatus	karaka	
Dacrycarpus dacrydioides	kahikatea	
Dacrydium cupressinum	rimu	
Discaria toumatou var prostrata		
Dodonaea viscosa	akeaeke	
Dracophyllum filifolium		
Elaeocarpus dentatus	hinau	

<i>Elaeocarpus hookerianus</i>	pokaka	
<i>Epacris pauciflora</i>		
<i>Fuchsia excorticata</i>	tree fuchsia	
<i>Fuchsia perscandens</i>		
<i>Gaultheria antipoda</i>		
<i>Gaultheria macrostigma</i>		
<i>Geniostoma ligustrifolium</i>	hangehange	
<i>Griselinia littoralis</i>	broadleaf	
<i>Griselinia lucida</i>	puka	
<i>Halocarpus bidwillii</i>	bog pine	
<i>Haloragis erecta</i>		
<i>Hebe divaricata</i>		
<i>Hebe gracillima</i>		
<i>Hebe stenophylla</i>		
<i>Hebe salicifolia</i>		
<i>Hebe stricta</i>		
<i>Hebe urvilleana</i>		
<i>Hebe vernicosa</i>		
<i>Hedycarya arborea</i>	pigeonwood	
<i>Helichrysum lanceolatum</i>		
<i>Hoheria angustifolia</i>	small-leaved lacebark	
<i>Hoheria ovata</i>		
<i>Ileostylus micranthus</i>		
<i>Kunzea ericoides</i>	kanuka	
<i>Laurelia novae-zelandiae</i>	pukatea	
<i>Leptecophylla juniperina</i>		
<i>Leptospermum scoparium</i>	manuka	lc
<i>Leucopogon fasciculatus</i>	mingimingi	ml
<i>Leucopogon fraseri</i>		
<i>Libocedrus bidwillii</i>		
<i>Lophomyrtus b x o</i>		
<i>Lophomyrtus bullata</i>	ramarama	
<i>Lophomyrtus obcordata</i>	rohutu	
<i>Macropiper excelsum</i>	kawakawa	
<i>Melicope simplex</i>		
<i>Melicope ternata</i>	wharangi	
<i>Melicytus "Waipapa"</i>		
<i>Melicytus aff. obovatus</i>		
<i>Melicytus crassifolius</i>		
<i>Melicytus lanceolatus</i>	mahoe wao	
<i>Melicytus micranthus</i>	swamp mahoe	
<i>Melicytus ramiflorus</i>	mahoe, whiteywood	
<i>Metrosideros robusta</i>		
<i>Metrosideros umbellata</i>	southern rata	
<i>Meuhlenbeckia axillaris</i>		
<i>Muehlenbeckia complexa</i>	pohuehue	ml
<i>Muehlenbeckia ephedroides</i>		
<i>Myoporum laetum</i>	ngaio	

<i>Myrsine australis</i>	mapou, red matipo	o
<i>Myrsine divaricata</i>	weeping matipo	
<i>Myrsine s x a</i>		
<i>Myrsine salicina</i>	toro	
<i>Neomyrtus pedunculata</i>	rohutu	
<i>Nestegis cunninghamii</i>	black maire	
<i>Nestegis lanceolata</i>	white maire	
<i>Nestegis montana</i>	narrow leaved maire	
<i>Nothofagus fusca</i>	red beech	
<i>Nothofagus menziesii</i>	silver beech	
<i>Nothofagus solandri</i>	black beech	
<i>Nothofagus truncata</i>	hard beech	
<i>Olearia arborescens</i>		
<i>Olearia avicenniifolia</i>		
<i>Olearia paniculata</i>	akiraho	
<i>Olearia rani</i>	heketara	
<i>Olearia solandri</i>		
<i>Olearia virgata</i>		
<i>Ozothamnus leptophyllus</i>	tauhinu	
<i>Pennantia corymbosa</i>	kaikomako	
<i>Pentachondra pumila</i>	a heath species	
<i>Peraxilla colensoi</i>		
<i>Peraxilla tetrapetala</i>		
<i>Phyllocladus "alpinus lowland"</i>		
<i>Phyllocladus trichomanoides</i>	tanekaha	
<i>Pimelea prostrata</i>		
<i>Pimelea suteri</i>		
<i>Pittosporum divaricatum</i>		
<i>Pittosporum eugenioides</i>	lemonwood	
<i>Pittosporum tenuifolium</i>	kohuhu	
<i>Plagianthus divaricatus</i>	saltmarsh ribbonwood	f
<i>Plagianthus regius</i>	lowland ribbonwood	
<i>Podocarpus hallii</i>	Hall's totara	
<i>Podocarpus t x h</i>	hybrid totara	
<i>Podocarpus totara</i>	lowland totara	
<i>Prumnopitys ferruginea</i>	miro	
<i>Prumnopitys taxifolia</i>	matai	
<i>Pseudopanax arboreus</i>	fivefinger	
<i>Pseudopanax crassifolius</i>	lancewood	
<i>Pseudopanax ferox</i>	fierce lancewood	
<i>Pseudowintera axillaris</i>	pepper wood	
<i>Pseudowintera colorata</i>	pepper wood	
<i>Quintinia serrata</i>	quintinia	
<i>Raukava anomalus</i>		
<i>Raukava simplex</i>		
<i>Raukava a x s</i>		
<i>Rhopalostylis sapida</i>	nikau	
<i>Schefflera digitata</i>	pate	

Solanum avi/lac		
Solanum aviculare		
Solanum laciniatum		
Sophora microphylla	kowhai	
Streblus heterophyllus	small leaved milkwood/turepo	
Teucrium parvifolium		
Urtica ferox	ongaonga, tree nettle	
Weinmannia racemosa	kamahi	
<b>Lianes</b>		
Clematis foetidissima		
Clematis forsteri		
Clematis paniculata	native clematis	
Clematis quadribacteolata		
Freycinetia banksii	kieke	
Metrosideros colensoi		
Metrosideros diffusa	white rata vine	
Metrosideros fulgens	red rata vine	
Metrosideros perforata	white rata vine	
Muehlenbeckia australis		
Muehlenbeckia aus x com		
Parsonsia capsularis		
Parsonsia heterophylla	native jasmine	
Passiflora tetrandra	native passionvine	
Ripogonum scandens	supplejack	
Rubus australis	bush lawyer	
Rubus cissoides	bush lawyer	
Rubus schmedelioides		
Rubus squarrosus		
<b>Dicot Herbs</b>		
Acaena anserinifolia	bidibid	
Acaena juvenca		
Anaphalioides trinervis		
Apium prostratum		
Australina pusilla		
Calystegia soldanella		
Cardamine debilis agg		
Celmisia alpina		
Celmisia 'graminifolia'		
Celmisia 'Pupu'		

Centella uniflora		
Chenopodium glaucum		
Colobanthus apetalus		
Cotula coronopifolia		r
Crassula sieberiana		
Dichondra sp (hairless)		
Dichondra repens		
Disphyma australe		
Drosera arcturi	a sundew	
Drosera spathulata		
Einadia triandra		
Epilobium pallidiflorum		
Epilobium nerteroides	a willowherb	
Epilobium nummulariifolium		
Epilobium rotundifolium		
Epilobium pallidiflorum		
Euchiton sp to id		
Euchiton audax		
Euphrasia cuneata		
Galium propinquum		
Galium trilobum		
Geranium retrorsum		
Gonocarpus micranthus		
Gratiola sexdentata		
Hydrocotyle elongata		
Hydrocotyle heteromeria		
Hydrocotyle microphylla		
Hydrocotyle moschata		
Hydrocotyle novae-zeelandiae		
Hydrocotyle sulcata		
Lagenifera pinnatifida		
Lagenifera pumila		
Lagenifera strangulata		
Lemna "minor NZ"		
Leptinella		
Lilaeopsis r/nz		
Linum monogynum		
Lobelia anceps		
Mazus radicans		
Mimulus repens	native musk	
Nertera villosa		
Nertera depressa		
Oreomyrrhis colensoi		
Oreostylidium subulatum		
Oxalis sp		
Oxalis magellanica		
Parietaria debilis		
Peperomia urvilleana		

Pratia angulata		
Pseudognaphalium luteo-album		
Potamogeton cheesemanii		
Ranunculus amph/glab		
Ranunculus reflexus		
Raoulia glabra		
Samolus repens	sea primrose	c
Sarcocornia quinquefolia	glasswort	c
Scleranthus biflorus		
Selliera radicans		c
Senecio glomeratus		
Senecio lautus		
Senecio minimus		
Senecio quadridentatus		
Stellaria decipiens		
Suaeda novae-zelandiae		
Tetragonia trigyna		
Urtica incisa	nettle	
Viola cunninghamii		
Viola filicaulis		
Wahlenbergia gracilis		
<b>Monocot Herbs</b>		
Arthropodium candidum		
Arthropodium cirratum		
Astelia fragrans		
Astelia solandri		
Astelia "nervosa broad"		
Bulbophyllum pygmaeum		
Caladenia chlorostyla		
Collospermum hastatum		
Corybas macranthus		
Corybas 'Whiskers'		
Corybas trilobus agg		
Dianella nigra	inkberry	r
Drymoanthus adversus		
Earina autumnalis	a perching orchid	
Earina mucronata	a perching orchid	
Gastrodia sp - no flower	a potato orchid	
Gastrodia "aff. sesamoides"		
Gastrodia cunninghamii		
Libertia mooreae		
Libertia ixioides	native iris	
Microtis unifolia		
Phormium cookianum	wharariki, coastal flax	
Phormium tenax	harakeke, swamp flax	
Pterostylis alobula		
Pterostylis australis	a greenhood orchid	
Pterostylis banksii	a greenhood orchid	

Pterostylis graminea	a greenhood orchid	
Pterostylus a or b	a greenhood orchid	
Thelymitra sp		
Winika cunninghamii	a perching orchid	
<b>Grasses Sedges Rushes</b>		
Anemanthele lessoniana	gossamer grass	
Apodasmia similis	ioi	
Baumea articulata		
Baumea rubiginosa		
Baumea tenax		
Baumea teretifolia		
Carex breviculmis		
Carex coriacea		
Carex devia		
Carex dissita		
Carex flagellifera		
Carex forsteri		
Carex geminata		
Carex lambertiana		
Carex lessoniana		
Carex maorica		
Carex pumila		
Carex secta		
Carex sinclarii		
Carex solandri		
Carex raoulii		
Carex virgata		
Carex fascicularis		
Chionochloa cheesemanii		
Cortaderia richardii		
Cyperus ustulatus		
Desmoschoenus spiralis		
Deyeuxia avenoides		
Dichelachne crinita		
Echinopogon ovatus		
Eleocharis acuta		
Eleocharis gracilis		
Elymus sp (native & exotic)		
Gahnia rigida		
Gahnia pauciflora	a cutty grass	
Gahnia procera		
Gahnia setifolia	a cutty grass	
Gahnia xanthocarpa	swamp cutty grass	
Isolepis cernua		
Isolepis nodosa		lc
Isolepis prolifer		
Isolepis sp		
Juncus australis		

Juncus gregiflorus		
Juncus kraussii		c
Juncus pallidus		
Juncus planifolius		
Juncus sarophorus		
Lachnagrostis sp		
Lachnagrostis billardierei		
Lachnagrostis littoralis		
Lepidosperma australe		
Lepidosperma filiforme		
Luzula picta		
Microlaena avenacea	bush rice grass	
Microlaena polynoda		
Microlaena stipoides		
Oplismenus imbecilis		
Oreobolus strictus		
Poa anceps		
Poa cita		
Poa colensoi		
Poa imbecilla		
Rytidosperma sp		
Schoenoplectus pungens		
Spinifex sericeus		
Stipa stipoides	estuary tussock	lc
Trisetum antarcticum		
Trisetum to id		
Typha australis	raupo	
Uncinia banksii	a hook grass	
Uncinia caespitosa		
Uncinia clavata	a hook grass	
Uncinia distans		
Uncinia ferruginea		
Uncinia filiformis		
Uncinia laxiflora		
Uncinia leptostachya		
Uncinia rupestris	a hook grass	
Uncinia scabra	a hook grass	
Uncinia uncinata	a hook grass	
Uncinia zotovii		
<b>Ferns</b>		
Adiantum cunninghamii	common maidenhair fern	
Adiantum viridescens	a maidenhair fern	
Anarthropteris lanceolata	lance fern	
Arthropteris tenella	jointed fern	
Asplenium "trichomanes hexaploid"		
Asplenium appendiculatum		
Asplenium bulbiferum	hen & chickens fern	
Asplenium flabellifolium	necklace fern	

Asplenium flaccidum	hanging spleenwort	
Asplenium gracillimum		
Asplenium hookerianum		
Asplenium oblongifolium	shining spleenwort	
Asplenium polyodon		
Blechnum chambersii		
Blechnum colensoi		
Blechnum discolor	crown fern	
Blechnum filiforme		
Blechnum fluviatile		
Blechnum fraseri		
Blechnum membranaceum		
Blechnum minus		
Blechnum novae-zelandiae		
Blechnum penna-marina		
Blechnum procerum		
Blechnum vulcanicum		
Botrychium bifforme		
Cheilanthes distans		
Cheilanthes sieberi		
Ctenopteris heterophylla		
Cyathea colensoi		
Cyathea cunninghamii		
Cyathea dealbata	ponga, silver fern	
Cyathea medullaris	mamaku	
Cyathea smithii	katote, soft tree fern	
Deparia petersonii		
Dicksonia fibrosa	wheki ponga	
Dicksonia squarrosa	wheki, rough tree fern	
Diplazium australe(*)		
Doodia media		
Gleichenia dicarpa		
Grammitis billardierei	a strap fern	
Grammitis ciliata	a strap fern	
Grammitis magellanica		
Histiopteris incisa	water fern	
Huperzia varia	iwituna	
Hymenophyllum bivalve	a filmy fern	
Hymenophyllum b/m	a filmy fern	
Hymenophyllum cupressiforme	a filmy fern	
Hymenophyllum demissum	a filmy fern	
Hymenophyllum dilatatum	a filmy fern	
Hymenophyllum flabellatum	a filmy fern	
Hymenophyllum flexuosum	a filmy fern	
Hymenophyllum multifidum	a filmy fern	
Hymenophyllum rarum	a filmy fern	
Hymenophyllum revolutum	a filmy fern	
Hymenophyllum sanguinolentum	a filmy fern	

Hymenophyllum scabrum	a filmy fern	
Hymenophyllum villosum	a filmy fern	
Hypolepis ambigua		
Hypolepis dicksonioides	giant dicksonia	
Hypolepis rufobarbata		
Lastreopsis glabella		
Lastreopsis hispida		
Lastreopsis velutina	velvet fern	
Leptolepia novae-zelandiae		
Leptopteris hymenophylloides		
Leptopteris superba		
Lindsaea trichomanoides		
Lycopodium scariosum		
Lycopodium volubile	waewaekoukou	
Lycopodium vol/sca		
Microsorium scandens		
Microsorium pustulatum	houndstongue fern	
Paesia scaberula		
Pellaea rotundifolia		
Pneumatopteris pennigera		
Polystichum neozelandicum	a shield fern	
Polystichum silvaticum		
Polystichum vestitum	a shield fern	
Pteridium esculentum	bracken	r
Pteris macilenta		
Pteris tremula		
Pyrrosia eleagnifolia		
Rumora adiantiformis		
Schizaea sp		
Sticherus cunninghamii		
Tmesipteris e/t		
Tmesipteris elongata	a fork fern	
Tmesipteris tannensis		
Trichomanes reniforme		
Trichomanes endlicherianum		
Trichomanes venosum	kidney fern	
<b>Weeds</b>		
Acacia dealbata	black wattle	
Acacia mearnsii	silver wattle	
Acaena novae-zelandiae		
Acer pseudoplatanus	sycamore	
Achillea millefolium	yarrow	
Acmena smithii	lilly pilly	
Actinidia deliciosa	kiwifruit	
Agrostis capillaris	browntop	
Agrostis stolonifera	creeping bent	
Ammophila arenaria	marram grass	
Anagallis arvensis	scarlet pimpernel	

Anthoxanthum odoratum	sweet vernal grass	
Arbutus unedo	strawberry tree	
Arctium lappa	greater burdock	
Arum maculatum	arum lily	
Asparagus scandens	climbing asparagus	
Atriplex prostrata		
Berberis vulgaris	barberry	
Brachypodium silvaticum?		
Bromus willdenowii	rip-gut brome	
Buddleja davidii	buddleia	
Callitriche stagnalis		
Calystegia silvatica	bindweed	
Carex divulsa		
Carex ovalis	oval sedge	
Carpobrotus edulis	iceplant	ml
Cerastium arvensis	mouse-ear chickweed	
Chenopodium album		
Cirsium vulgare	Scotch thistle	
Clematis vitalba	old man's beard	
Conium maculatum	hemlock	
Conyza albida		
Cortaderia jubata		
Cortaderia selloana		
Cotoneaster simonsii	cotoneaster	
Crataegus monogyna	hawthorn	
Crepis capillaris	smooth hawk's beard	
Crisetium murinum	barley grass	
Crocsmia x to add	montbretia	
Cyperus congestus		
Cyperus eragrostis	umbrella sedge	
Cynosurus cristatus	crested dogstail	
Cytisus scoparius	broom	r
Dactylis glomerata	cocksfoot grass	
Daucus carota	wild carrot	
Dianthus armeria	Deptford pink	
Digitalis purpurea	foxglove	
Echium vulgare	viper's bugloss	
Erica lusitanica	Spanish heath	o
Erigeron karvinskianus	Mexican daisy	
Erodium cicutarium	storksbill	
Euphorbia peplus	milkweed	
Epilobium ciliatum	a willowherb	
Festuca rubra	Chewings fescue	
Foeniculum vulgare	fennel	
Fragaria vesca	wild strawberry	
Fraxinus excelsior	ash	
Galeobdolon luteum	aluminium plant	
Galium aparine	cleavers	

Geranium dissectum	cut-leaved cranesbill	
Geranium mollis	dovesfoot cranesbill	
Geranium robertanum	herb robert	
Glaucium flavum	horned poppy	
Glyceria declinata	floating sweet grass	
Hakea salicifolia	willow leaved hakea	
Hakea sericea	prickly hakea	
Hedera helix	ivy	
Hieracium lepidulum	hawkweed	
Hoheria populnea	common lacebark	
Holcus lanatus	Yorkshire fog	
Hypericum androsaenum	tutsan	
Hypericum sp	St Johns wort species	
Hypochaeris radicata	common catsear	
Ilex aquifolium	holly	
Iris foetidissima	stinking iris	
Juncus articulatus	jointed rush	
Juncus bulbosus		
Juncus effusus	soft rush	
Juncus squarrosus	heath rush	
Lagurus ovatus	haretail	
Lamium album	white deadnettle	
Larix sp	a larch	
Leontodon taraxacoides		
Leucanthemum vulgare	oxeye daisy	
Leycesteria formosa	Himalayan honeysuckle	
Ligustrum sp	privet sp	
Lolium perenne		
Lonicera japonica	japanese honeysuckle	
Lotus pedunculatus	birdsfoot trefoil	
Lupinus arboreus	tree lupin	
Malva sylvestris	large-flowered mallow	
Marrubium vulgare		
Medicago lupulina	black medick	
Melilotus indicus	melilot	
Melissa officianalis	lemon balm	
Mentha x piperata	peppermint	
Mentha pulegium	pennyroyal	
Metrosideros excelsa	pohutukawa	
Mimulus guttata	monkey musk	
Mimulus moschata		
Modiola caroliniana	creeping mallow	
Myosotis laxa	water forgetmenot	
Myosotis discolor		
Mycelus muralis	wall lettuce	
Nepeta cataria	catnip	
Oenanthe stricta	sand primrose	
Orobanche minor		

Parietaria debilis	pellitory	
Passiflora mixta/mollissima	banana passionfruit	
Pinus pinasta	??	
Pinus radiata	radiata pine	ml
Plantago coronopus	buckshorn plantain	ml
Plantago lanceolata	narrow leaved plantain	
Plantago major	common plantain	
Physalis peruviana	cape gooseberry	
Polycarpon tetraphylla	allseed	
Populus nigra		
Portulaca oleracea	purslane	
Prunella vulgaris	self heal	
Prunus sp	wild plum	
Prunus cherry sp		
Pseudotsuga menziesii	Douglas fir	
Pteris cretica		
Ranunculus flammula		
Ranunculus repens	creeping buttercup	
Ranunculus sceleratus	celery-leaved buttercup	
Rhododendron ponticum	rhododendron	
Rorippa nasturtium-aquaticum	water cress	
Rosa rubiginosa	briar	
Rubus fruticosus agg	blackberry	
Rubus phoenicolasius	Japanese wineberry	
Rumex acetosella	sheep sorrel	
Rumex brownii		
Rumex crispus	narrow leaved dock	
Rumex obtusifolius	broad leaved dock	
Sagina procumbens		
Salix sp		
Salix cinerea	pussy willow	
Salix 'contorta'		
Salix fragilis	crack willow	
Sambucus nigra	elderberry	
Schedonorus phoenix	tall fescue	lc
Sellaginella kraussiana	sellaginella	
Sedum acre	stonecrop	
Senecio jacobea	ragwort	
Senecio mikanioides	German ivy	
Solanum diflorum	Jerusalem cherry	
Solanum nigrum	black nightshade	
Solanum chenopodioides		
Sonchus arvensis	perennial sowthistle	
Sonchus oleraceus	soft sowthistle	
Sporobulus africanus	needle grass	
Stellaria gracilentia		
Stellaria media	chickweed	
Taraxacum officinale	dandelion	

Tradescantia fluminensis	wandering jew	
Trifolium dubium	lesser trefoil	
Trifolium repens	clover	
Ulex europaeus	gorse	ml
Verbascum nigrum	black mullein	
Verbascum thapsus	wooly mullein	
Vicia sp		
Vicia sativa	common vetch	
Vinca major	periwinkle	
Vittadinia gracilis	purple fuzzweed	
Taxus buccata	yew	
Hedychium gardnerianum/flavescens	wild ginger sp	
	stinking compositae	
FAN PALM		
<b>Birds</b>		
	tui	
	bellbird/korimako	
	fantail/piwakawaka	x