

WAIMEA INLET COASTAL FLATS ECOSYSTEM NATIVE PLANT RESTORATION LIST

Locality:	Coastal flats extending around the southern coast of Waimea Inlet from the western end of Queen Street to Monaco and up to 1½ km inland.
Topography:	Low-lying flat to gently-sloping terrace.
Soils and Geology:	Slow-draining, alluvial clay loam of low to moderate fertility, with heavy, leached subsoil. Derived from sedimentary and ultramafic rocks. Around ½ -1 metre deep and overlying deep gravels. Areas of peat and silt west of Richmond. Not drought-prone except where intensively drained.
Climate:	High sunshine hours; frosts mild to moderate; mild annual temperatures; rainfall 900mm.
Coastal influence:	Semi-coastal influence up to 1½ km inland.
Original Vegetation:	Extensively covered in a range of wetlands, especially swamp forest and flaxland.
Human Modification	No indigenous vegetation remains. Hydrology has been profoundly altered by drainage. Base water table has been lowered.

NOTE: Extensive drainage and lowering of the water table has made difficult the possibility of restoring the original vegetation of this ecosystem. Therefore, two sub-lists have been constructed. One listing the species suitable for planting if the water table remains lowered and the other listing species suitable for ecosystem restoration should the water table be re-instated.

[Refer to the Ecosystem Restoration map showing the colour-coded area covered by this list.]

KEY

PLANTING RATIO	PLANT PREFERENCES	TYPE OF FOOD PROVIDED FOR BIRDS AND LIZARDS
<p>Early Stage plants are able to establish in open sites and can act as a nursery for later stage plants by providing initial cover.</p> <p>Later Stage plants need cover to establish.</p> <p>2 = plant commonly 1 = plant less commonly 0 = not suitable to plant at this stage</p>	<p>Wet, Moist, Dry, Sun, Shade, Frost, Saline</p> <p>1 = prefers or tolerates ½ = prefers or tolerates some 0 = intolerant of</p>	<p>F = Fruit/seeds</p> <p>N = Nectar</p> <p>B = Buds/foilage</p> <p>I = Insects</p>

PLANT SPECIES FOR WAIMEA INLET COASTAL FLATS ECOSYSTEM		IF WATER TABLE REMAINS LOWERED		IF WATER TABLE IS RE-INSTATED		PLANT PREFERENCES						Maximum Height (metres)	Food Type	
Botanical Names	Māori & Common Names	PLANTING RATIO - EARLY STAGE	PLANTING RATIO - LATER STAGE	PLANTING RATIO - EARLY STAGE	PLANTING RATIO - LATER STAGE	Wet	Moist	Dry	Sun	Shade	Frost			Saline
TREES														
Alectryon excelsus	tītoki	0	2			0	1	1	0	1	0	0	15	FI
Beilschmiedia tawa	tawa	0	2			0	1	0	0	1	0	0	20	FI
Aristotelia serrata	makomako, wineberry	1	2	1	2	½	1	0	0	1	½	0	10	FBI
Carpodetus serratus	putaputāwētā, marbleleaf	1	1	2	2	1	1	0	1	½	1	0	10	FBI
Coprosma areolata	thin-leaved coprosma	1	2			0	1	½	½	½	½	0	5	FBI
Coprosma grandifolia	raurekau	0	2	0	2	½	1	0	½	1	½	0	6	FB
Coprosma rotundifolia	hairy coprosma			0	1	½	1	0	½	1	1	0	5	FB
Cordyline australis	tī kouka, cabbage tree	2	0	2	0	1	1	1	1	0	1	0	12	FNI
Coriaria arborea	tree tutu	2	0			½	1	1	1	0	½	0	6	F
Cyathea dealbata	ponga, silver fern	0	2			0	1	½	0	1	½	0	7	I
Cyathea medullaris	mamaku, black treefern	0	1	0	2	½	1	0	0	1	0	0	10	I

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Botanical Names	Māori & Common Names	PLANTING RATIO - EARLY STAGE	PLANTING RATIO - LATER STAGE	PLANTING RATIO - EARLY STAGE	PLANTING RATIO - LATER STAGE	Wet	Moist	Dry	Sun	Shade	Frost	Saline		
Dacrycarpus dacrydioides	kāhikatea	1	1	2	2	1	1	0	½	½	1	0	60	FI
Dacrydium cupressinum	rimu			0	1	1	1	½	½	½	1	0	35	FI
Dicksonia fibrosa	whekī ponga			0	2	½	1	0	½	1	1	0	6	I
Dicksonia squarrosa	whekī			0	2	½	1	0	0	1	1	0	6	I
Dodonaea viscosa	akeake	2	0			0	1	1	1	0	½	0	7	I
Elaeocarpus dentatus	hīnau	0	2			½	1	0	½	1	½	0	18	FNBI
Elaeocarpus hookerianus	pōkākā	1	1	2	2	1	1	0	½	½	1	0	12	FI
Fuchsia excorticata	kōtukutuku, tree fuchsia	0	1	1	2	½	1	0	½	1	½	0	10	FNBI
Griselinia littoralis	papauma, broadleaf			1	2	0	1	1	1	1	1	0	12	FBI
Griselinia lucida	puka	1	2			0	1	1	1	½	0	0	8	FBI
Hedycarya arborea	porokaiwhiri, pigeonwood	0	2	0	2	0	1	1	1	½	½	0	8	FBI
Hoheria angustifolia	narrow-leaved lacebark	2	2			½	1	1	1	0	1	0	10	FI
Kunzea ericoides	kānuka	2	0			0	½	1	1	0	1	0	15	NI
Laurelia novae-zelandiae	pukatea			0	2	1	½	0	0	1	0	0	35	BI
Leptospermum scoparium	mānuka	1	0	2	0	1	1	1	1	0	1	½	8	NI
Lophomyrtus obcordata	rōhutu	1	1			½	1	1	1	1	½	0	8	FI
Macropiper excelsum	kawakawa, pepperwood	0	2			½	1	1	1	1	0	0	6	FI
Melicope simplex	poataniwha	1	2	0	1	0	1	1	1	1	½	0	5	
Melicytus ramiflorus	māhoe, whiteywood	0	2	0	1	½	1	1	½	1	½	0	10	FBI
Myoporum laetum	ngaio	2	0			0	1	1	1	0	0	½	10	FN
Myrsine australis	māpou	2	1	2	2	0	1	1	1	½	1	0	8	FI
Myrsine divaricata	weeping māpou			1	2	1	1	1	½	1	1	0	4	F
Neomyrtus pedunculata	rōhutu			1	2	1	1	0	½	1	1	0	6	F
Olearia paniculata	akiraho	1	0			0	½	1	1	0	½	0	6	I
Pennantia corymbosa	kaikōmako	2	2	2	1	1	1	1	1	1	1	0	12	FNBI
Pittosporum eugenioides	tarata, lemonwood	2	1	1	1	½	1	1	1	½	1	0	12	FI
Pittosporum tenuifolium	kōhūhū	2	1	1	0	0	1	1	1	½	1	0	9	FBI
Plagianthus regius	manatū, lowland ribbonwood	2	1			½	1	1	1	0	1	0	15	FBI
Podocarpus totara	tōtara	2	2			0	1	1	1	½	1	0	30	FBI
Prumnopitys taxifolia	mataī	1	2			0	1	1	1	½	1	0	25	FI
Pseudopanax crassifolius	horoeka, lancewood	1	1	2	2	½	1	1	1	1	1	0	10	FNI
Rhopalostylis sapida	nīkau	0	2	0	1	½	1	0	0	1	0	0	10	FNI
Schefflera digitata	patē, seven-finger			0	2	½	1	0	½	1	½	0	8	FBI
Sophora microphylla	kōwhai	2	1			0	½	1	1	½	1	0	10	NBI
Prumnopitys ferruginea	miro	0	2	0	1	½	1	0	½	½	1	0	25	FI
Streblus heterophyllus	milkwood	1	1	1	1	0	1	1	½	½	½	0	10	FB
Syzygium maire	maire tawake, swamp maire			0	2	1	0	0	½	1	0	0	12	FNBI
Weinmannia racemosa	kāmahi			0	1	½	1	½	½	½	1	0	10	NI
SHRUBS														
Carmichaelia australis var. "flagelliformis"	whip broom	2	1	2	1	½	1	1	1	½	1	½	2	NB
Coprosma foetidissima	hūpiro, stinkwood			0	2	1	1	0	½	1	1	0	3	FB
Coprosma propinqua	mikimiki	2	1	2	1	1	1	1	1	0	1	½	5	F
Coprosma rigida	streamside coprosma	1	0	2	1	½	1	½	1	½	1	0	3	F
Coprosma robusta	karamū	2	1	2	1	½	1	1	1	½	½	0	6	F
Coprosma tayloriae	tier coprosma	1		2	1	1	1	1	1	½	1	0	2	F
Coprosma tenuicaulis	swamp coprosma			2	1	1	1	0	1	½	1	0	3	F
Hebe stricta var. atkinsonii	koromiko	2	0	2	0	½	1	½	1	½	½	0	2	NBI

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Melicytus micranthus	manakura, swamp māhoe			0	2	1	1	0	½	1	½	0	2	F
Ozothamnus leptophyllus	tauhinu, cottonwood	2	0			0	½	1	1	0	1	0	2	I
Raukaua anomalus	stout netting bush			1	2	½	1	½	½	1	1	0	2	FN
CLIMBERS														
Calystegia sepium ssp. sepium	native convolvulus			0	1	½	1	0	1	½	½	0	3	
Freycinetia banksii	kiekie	0	2	0	2	½	1	½	0	1	½	0	10	FNI
Hydrocotyle novae-zeelandiae	swamp pennywort			0	2	1	1	0	½	½	1	0	0.1	
Metrosideros diffusa	rātā vine			0	2	½	1	0	½	1	½	0	10	N
Metrosideros perforata	lowland rātā vine	0	2			0	1	½	½	1	½	0	15	N
Muehlenbeckia complexa	scrambling pōhuehue	2	0			0	½	1	1	0	1	½	2	FBI
Passiflora tetrandra	kōhia, native passionvine	0	1	0	1	0	1	0	½	½	0	0	15	FN
Rhipogonum scandens	kareao, supplejack	0	1	0	2	1	1	0	½	1	½	0	15	F
Rubus australis	swamp lawyer			0	1	1	1	0	1	½	1	0	5	F
Rubus schmidelioides	shrub lawyer	0	1			0	1	1	1	½	1	0	5	F
GRASSES, SEDGES & GROUND COVERS														
Anemanthele lessoniana	gossamer grass	2	1			0	1	1	½	½	½	0	1	
Apodasmia similis (=Leptocarpus)	oioi, jointed rush			2	0	1	s1	0	1	0	½	½	1.5	I
Asplenium bulbiferum	mauku, hen and chicken fern	0	1	0	2	½	1	0	0	1	½	0	0.5	B
Astelia fragrans	ground lily	0	2	0	2	0	1	0	½	1	½	0	1.5	F
Astelia grandis	swamp lily			2	1	1	1	0	1	½	1	0	2	F
Baumea articulata	stout jointed sedge			2	0	1	½	0	1	0	½	0	3	
Baumea rubiginosa	stout pākihi sedge			1	0	1	1	0	1	0	1	0	1.5	I
Blechnum filiforme	climbing hardfern	0	2			0	1	1	0	1	0	0	5	
Blechnum fluviatile	kiwakiwa, creek fern	0	2			½	1	0	0	1	1	0	0.5	
Blechnum minus	swamp kiokio			2	2	1	1	0	1	½	1	0	0.5	
Blechnum novae-zelandiae	kiokio			2	2	1	1	1	½	1	1	0	2	I
Bolboschoenus caldwellii	pūrua grass			2	0	1	½	0	1	0	½	½	2	
Carex comans	maurea	2	0			0	1	1	1	0	1	0	0.3	
Carex flagellifera	whip sedge	2	0			½	1	½	1	0	½	½	0.5	
Carex forsteri	forest sedge	1	1			0	1	1	½	½	½	0	1	
Carex geminata	toetoe rautahi			2	0	1	1	0	1	½	1	0	1.5	I
Carex "geminata wide leaf"	swamp rautahi			2	0	1	½	0	1	½	½	0	1.5	I
Carex lambertiana	coastal forest sedge	0	1	1	1	½	1	½	½	½	½	0	1	
Carex lessoniana	peat rautahi			2	0	1	½	0	1	½	½	0	1	I
Carex maorica	Māori sedge			1	0	1	½	0	1	0	1	0	1	
Carex raoulii	coast sedge	1	0			0	1	1	1	½	½	½	0.5	
Carex secta	pūrei			2	1	1	½	0	1	½	1	0	2	I
Carex solandri	droop sedge	0	1	1	1	0	1	½	½	½	1	0	1	
Carex virgata	pukio			2	1	1	½	0	1	½	1	0	1.5	I
Cortaderia richardii	South Island toetoe	2	0	2	0	1	1	1	1	0	1	0	3	I
Cyperus ustulatus	upoko tangata	1	0	2	0	½	1	½	1	0	½	½	1	F
Diplazium australe	herringbone fern	0	2	0	1	0	1	0	½	½	½	0	0.5	
Eleocharis acuta	spike rush			2	0	1	½	0	1	½	1	0	1	
Gahnia xanthocarpa	giant cutty sedge			2	1	1	1	0	1	1	1	0	2	F
Hypolepis ambigua	hypolepis			1	0	½	1	0	1	½	1	0	1	

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<i>Isolepis polifer</i>	multiplying sedge			2	0	1	½	0	1	0	1	0	0.2	
<i>Juncus australis</i>	wiwi	1	0	2	0	½	1	0	1	0	1	0	1	
<i>Juncus edgariae</i>	wiwi	1	0	2	0	½	1	0	1	0	1	0	1	
<i>Juncus pallidus</i>	tall swamp rush			2	0	1	1	0	1	0	½	0	2	
<i>Juncus pauciflorus</i>	slender rush	1	0	2	0	½	1	0	1	0	1	0	0.7	
<i>Juncus sarophorus</i>	blue wiwi	1	0	2	0	½	1	0	1	0	1	0	1	
<i>Libertia ixioides</i>	native iris	1	1			0	1	½	½	½	½	0	0.3	
<i>Libertia mooreae</i>	native iris			0	1	0	1	½	½	½	½	0	0.3	
<i>Microlaena avenacea</i>	bush ricegrass	0	1	0	2	½	1	½	½	1	1	0	0.5	
<i>Microlaena polynoda</i>	bamboo grass	0	2			0	1	1	½	½	½	0	2	
<i>Microsorium pustulatum</i>	hounds tongue fern	0	1			0	1	1	½	1	½	0	0.2	B
<i>Paesia scaberula</i>	mātātā, scented fern			2	0	0	1	1	1	0	1	0	0.3	
<i>Phormium cookianum</i>	wharariki, coastal flax	2	0	1	0	0	1	1	1	0	1	0	1.5	N
<i>Phormium tenax</i>	harakeke, swamp flax			2	0	1	1	½	1	0	1	0	2	N
<i>Pneumatopteris pennigera</i>	pākau, gully fern			0	1	0	1	0	0	1	½	0	1	I
<i>Polygonum salicifolium</i>	tūtunāwai, swamp willow-weed			0	2	1	1	0	1	½	1	0	0.5	
<i>Polystichum neozelandicum</i> (= <i>P. richardii</i>)	lowland shield fern	0	1			0	1	½	0	1	½	0	0.5	
<i>Pteris tremula</i>	brake fern	0	1			½	1	½	½	1	½	0	1	
<i>Ranunculus macropus</i>	waoriki			0	1	1	½	0	½	½	½	0	0.5	
<i>Schoenoplectus tabernaemontani</i>	kāpungawhā, lake clubrush			2	0	1	½	0	1	0	½	½	2	I
<i>Typha orientalis</i>	raupō			2	0	1	½	0	1	0	1	½	3	
<i>Uncinia laxiflora</i>	tussock hookgrass	0	2			0	1	½	½	½	½	0	0.7	
<i>Uncinia uncinata</i>	hookgrass	1	2			½	1	½	½	1	1	0	0.5	