

## TASMAN ESTUARIES AND RIVER MOUTHS ECOSYSTEM NATIVE PLANT RESTORATION LIST

<b>Locality:</b>	The high tide fringes of extensive intertidal areas between Richmond and Riwaka, all of which are associated with river mouths and inlets. These include Waimea and Moutere Inlets and their river mouth deltas, and the major Motueka-Riwaka Rivers delta system.
<b>Topography:</b>	Tidal flats, low relief islets, deltas and margins of coastal terraces around mean high tide. Usually part of an inlet enclosed by a coastal spit or barrier island and fed by a river.
<b>Soils and Geology:</b>	Sandy mud and organic matter from river deposits and estuarine vegetation. Pebbles and cobbles either sub-surface or scattered over substrate. Highly saline, infertile and anaerobic with iron and sulphur staining. High-shore flats have greater amounts of cobbles, pebbles and rafted organic matter and are also drought-prone in summer.
<b>Climate:</b>	High sunshine hours; frosts mild; mild annual temperatures; rainfall 920mm.
<b>Coastal influence:</b>	Entirely coastal. Tidal and saline influences of seawater are profound and are the most dominant influences on the ecosystem. Lower estuarine zone inundated by seawater on all but neap tides. High shore flats of the upper estuarine zone inundated only on spring tides. Salt water may wedge up rivers for many metres creating a brackish wetland environment around river mouths.
<b>Original Vegetation:</b>	Salt marsh shrublands, rushlands, sedgeland and succulent herbfields. Brackish sedge and reed wetlands. These would have typically graded inland and upslope into tall coastal forest.
<b>Human Modification</b>	Extensive reclamation, especially around the Motueka and Waimea River deltas, has destroyed habitat, truncated estuarine zonation patterns, and profoundly altered the freshwater and saltwater hydrologies, and coastal processes.

[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><b>Early Stage</b> plants are able to establish in open sites and can act as a nursery for later stage plants by providing initial cover.</p> <p><b>Later Stage</b> plants need cover to establish.</p> <p>2 = plant commonly 1 = plant less commonly 0 = not suitable to plant at this stage</p>	<p><b>Wet, Moist, Dry, Sun, Shade, Frost, Saline</b></p> <p>1 = prefers or tolerates ½ = prefers or tolerates some 0 = intolerant of</p> <p>Plant in habitat type:</p> <p>U = best suited to upper estuarine zone L = best suited to lower estuarine zone B = best suited to brackish wetland</p>	<p>F = Fruit/seeds</p> <p>N = Nectar</p> <p>B = Buds/foilage</p> <p>I = Insects</p>

PLANT SPECIES FOR TASMAN ESTUARIES AND RIVER MOUTHS ECOSYSTEM		PLANTING RATIO - EARLY STAGE	PLANTING RATIO - LATER STAGE	PLANT PREFERENCES									Maximum Height (metres)	Food Type	
Botanical Names	Māori & Common Names			Wet	Moist	Dry	Sun	Shade	Frost	Saline	Upper Estuarine Zone	Lower Estuarine Zone			Brackish Wetland
<b>SHRUBS &amp; CLIMBERS</b>															
Coprosma propinqua	mikimiki	2	1	1	1	1	1	0	1	½	U			3	F
Leptospermum scoparium	mānuka	2	0	1	1	1	1	0	1	½	U			4	NI
Plagianthus divaricatus	mākaka, coastal ribbonwood	2	0	½	1	1	1	0	1	½	U			1.5	I
Muehlenbeckia complexa	scrambling pōhuehue	2	0	0	½	1	1	0	1	½	U			2	FBI

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Botanical Names	Māori & Common Names			Wet	Moist	Dry	Sun	Shade	Frost	Saline	Upper Estuarine Zone	Lower Estuarine Zone	Brackish Wetland			
<b>GRASSES, SEDGES &amp; GROUND COVERS</b>																
<i>Apium prostratum</i> ssp. <i>prostratum</i>	sea celery	0	1	0	1	½	1	½	½	½	U				0.1	
<i>Apodasmia similis</i> (=Leptocarpus)	oioi, jointed rush	2	0	½	1	0	1	0	½	½	U		B	1.5	I	
<i>Atriplex cinerea</i>	grey salt bush	2	0	0	1	0	1	0	1	½	U			1		
<i>Austrostipa stipoides</i>	estuary needle tussock	2	0	½	1	1	1	0	½	½	U	L		1	I	
<i>Bolboschoenus caldwellii</i>	pūrua grass	2	0	1	½	0	1	0	½	½			B	1	I	
<i>Carex flagellifera</i>	whip sedge	2	0	½	1	½	1	0	½	½	U			0.5		
<i>Carex litorosa</i>	delta sedge	2	0	1	1	0	1	0	½	½	U	L		0.7		
<i>Centella uniflora</i>	centella	0	1	1	1	½	1	½	½	½	U		B	0.1		
<i>Chenopodium glaucum</i> var. <i>ambiguum</i>	hua inanga	0	1	½	1	1	1	0	½	½	U	L		0.1	B	
<i>Cotula coronopifolia</i>	bachelors button	0	2	½	½	0	1	0	½	½			B	0.1		
<i>Cyperus ustulatus</i>	upoko tangata	2	0	½	1	½	1	0	½	½			B	1	F	
<i>Ficinia nodosa</i> (= <i>Isolepis nodosa</i> )	knot sedge	2	0	0	½	1	1	0	½	½	U	L		1		
<i>Juncus kraussii</i> ssp. <i>australiensis</i>	sea rush	2	0	1	1	0	1	0	½	1	U	L		1	I	
<i>Lachnagrostis billardierei</i>	wind grass	1	0	0	½	1	1	0	½	½	U			0.5		
<i>Leptinella dioica</i>	coastal button	0	2	½	1	½	1	½	½	½	U			0.1	I	
<i>Lobelia anceps</i>	shore lobelia	0	1	½	1	1	1	½	0	½	U			2		
<i>Mimulus repens</i>	native musk	0	2	1	1	0	1	0	½	½			B	0.1		
<i>Samolus repens</i>	sea primrose	0	2	½	1	½	1	0	½	1	U	L		0.1		
<i>Sarcocornia quinqueflora</i>	glasswort	2	0	1	½	0	1	0	½	1		L		0.1		
<i>Schoenoplectus pungens</i>	three square	2	0	1	½	0	1	0	1	1	U	L		0.8		
<i>Schoenoplectus tabernaemontani</i>	kāpungawhā, lake clubrush	2	0	1	½	0	1	0	½	½			B	2	I	
<i>Selliera radicans</i>	remuremu	2	0	½	1	1	1	0	½	1	U			0.1	I	
<i>Suaeda novae-zelandiae</i>	sea blite	2	0	1	½	0	1	0	½	1		L		0.1		
<i>Tetragonia tetragonioides</i>	New Zealand spinach	2	0	0	½	1	1	½	0	½	U			0.3	B	
<i>Typha orientalis</i>	raupō	2	0	1	½	0	1	0	1	½			B	3		