

GOLDEN BAY ESTUARIES ECOSYSTEM NATIVE PLANT RESTORATION LIST

Locality:	The high tide fringes of a series of intertidal areas regularly spaced between Pohara and Collingwood most of which are associated with river mouths and inlets. From east to west these include, Motupipi Inlet, Waitapu-Takaka River mouth and delta system, Onahau, Pariwhakaoho and Otere River mouths, Aorere River mouth and delta system, and Parapara, Ruataniwha, Waikato, Pakawau and Puponga Inlets.
Topography:	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 beach and fed by a river.
Soils and Geology:	Sandy or peaty 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.
Climate:	High to moderately high sunshine hours; frosts mild; mild annual temperatures. Rainfall 1600mm in the east to 2200mm in the west.
Coastal influence:	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 watercourses for many metres creating a brackish wetland environment around river mouths.
Original Vegetation:	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.
Human Modification	Lower intertidal vegetation still largely intact. Significant reclamation around inlet and delta margins which has destroyed estuarine shrubland habitat, truncated estuarine zonation patterns and altered hydrologies and coastal processes. Very few natural areas remain where estuary vegetation grades into native freshwater and terrestrial vegetation.

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

PLANT SPECIES FOR GOLDEN BAY ESTUARIES 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
SHRUBS & CLIMBERS															
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	
Muehlenbeckia complexa	scrambling pōhuehue	2	0	0	½	1	1	0	1	½	U			2	FBI

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GRASSES, SEDGES & GROUND COVERS															
<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)	oiioi, jointed rush	2	0	½	1	0	1	0	½	½	U		B	1.5	I
<i>Austrostipa stipoides</i>	estuary needle tussock	2	0	½	1	1	1	0	½	½	U	L		1	I
<i>Baumea arthropphylla</i>	claw sedge	2	0	½	1	0	1	0	½	½	U			1.5	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>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 billardiarei</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	