

coastal planting guide 5

No. 5



Auckland
Regional Council
TE RAUHITANGA TAIĀO

Coastal Wetlands, Saltmarshes & Estuaries

This factsheet provides a basic planting guide for **coastal wetlands, estuaries and saltmarshes** which are found in the dynamic saline zone between the land and the sea. It provides a coastal planting supplement to the Auckland Regional Council's (ARC) Riparian Zone Management Guidelines (2001), which focuses on freshwater and inland environments, and to the Wetland Planting Guide factsheet.

In the Auckland Region, wetlands typically form on the edges of streams and lakes and in estuaries or damp, boggy places where water collects. Estuaries form where rivers and streams flow into the sea. They are partly enclosed by land and contain a mixture of fresh and salt water. Salt water moves in and out of estuaries with each tide.

Special places

The Region's coastal wetlands, saltmarshes and estuaries are important and special places. These areas contain a diverse range of flora and fauna and offer significant habitat for many rare and threatened species. Wetlands and estuaries form a buffer zone between land and sea, protecting the land from erosion and also acting as a filter, by trapping sediment and pollutants from land run off, that would otherwise be suspended in coastal waters.

Coastal wetlands & estuaries in the Auckland Region

Coastal wetland types in the Auckland Region include:

Mangrove swamps – Mangroves are found in the shallow areas of many of the Region's estuaries and in coastal wetland areas.

Saltmarsh – dominated by sea rush, oioi and saltmarsh ribbon wood. Saltmarshes form on the edge of our estuaries and in areas where there is little wave action and sediment is deposited. These areas are regularly covered by seawater and are often nurseries for juvenile fish and provide important breeding and feeding areas for birds.

Salt meadows – areas of flat mat-forming plants such as glasswort, māakoako, remuremu and bachelors button.

Since many coastal environments are shifting and changing (due to erosion, sea level rise, subsidence, or human alteration) coastal wetlands, estuaries and salt marshes are very dynamic places with no two being exactly alike. Estuaries and coastal wetlands are highly productive ecosystems, with a range of habitat types found within and around them. The mix of plants and animals living in coastal communities varies with local conditions (e.g. climate, water flow, salinity, nutrient levels and substrate).



Manukau Harbour Shoreline

Going, going....

Coastal wetlands and estuarine areas are affected by land use practices in the surrounding catchments and activities in the coastal zone. Many of our coastal wetlands and estuaries have been modified by human impacts including roading causeways, rubbish dumping, pollution, reclamation, trampling by stock, urban and industrial development and recreational pressures. Reclamation has destroyed thousands of hectares of mangroves, saltmarshes and saltmeadows, which supported many species. Road causeways adversely affect these areas by cutting them off from the natural flushing action of the tides, particularly when inadequate culverts are provided.

Restoring coastal wetlands and estuaries

Given the right conditions, coastal wetland and estuarine areas will often regenerate naturally. To assist this natural process, ensure the area is fenced from stock to prevent trampling and browsing of vegetation and pugging of the ground. Fencing will encourage plants to regenerate from natural seed sources. In addition, ensure that plant and animal pests are controlled. For more information on pest control, contact the ARC's Biosecurity Team on 366 2000.

If your aim is to restore natural wetland/estuarine systems, you will need to consider restoring natural water levels and flows. This may involve opening an area to tidal inundation by either removing or partially removing bunds, or opening floodgates on culvert drains. It is important that any major work, such as removing drains or artificial obstructions is done before any restoration planting is undertaken, so that new plants can establish and adapt to the changes in water levels and salinity. Please note that Resource Consent may be required for such activities and fish passage should be considered. Talk to your local District Council or the ARC before undertaking any works in a wetland, stream or coastal area. Invasive plant species and animal pests are also found in, and adversely affect, wetlands and estuaries.

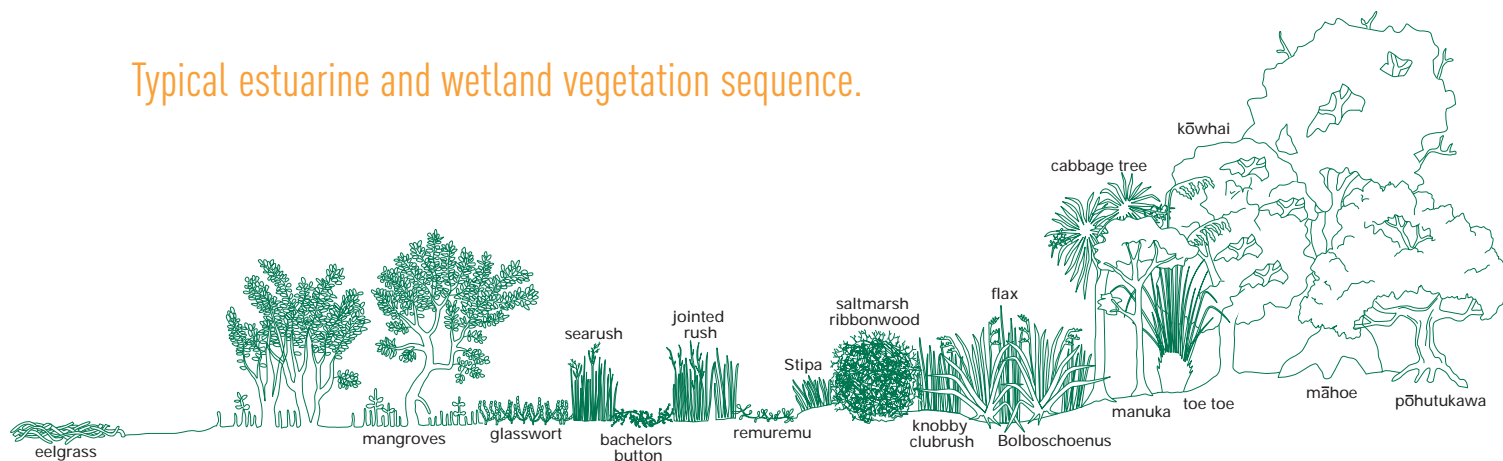
Planting list

This species list provides details for some of the plants that naturally occur in coastal wetland and estuarine areas. Once an area is fenced, water levels are right, and weeds and pests controlled, native wetland and estuarine plants should come back themselves. However some supplementary planting may be beneficial. Those species marked (*) are useful colonisers or are useful for inter-planting to enhance further the restoration process. It is important to remember that plants are adapted to living with different water levels and saline tolerances and should be planted accordingly.

Māori name/ Common name	Botanical Name	Life Form	Height	Comments
	<i>Baumea juncea</i>	sedge	Standing water	1m Found in lowland coastal swamps and saltmarsh areas.
bachelor's button	<i>Cotula coronopifolia</i>	herb	Boggy with temporary flooding	0.2m Creeping herb. Grows well in wet hollows, banks, estuaries, ditches and swamp margins. Establishes naturally.
coastal tree daisy*	<i>Olearia solandri</i>	shrub	Moist soils	3-4m Erect shrub with tiny leaves. Abundant fragrant flowers in autumn. Quick growing. Does well in estuarine swamps.
giant umbrella sedge	<i>Cyperus ustulatus</i>	sedge	Boggy with temporary flooding	0.8m Forms large dense clumps. Good in open spaces. Lowland and coastal swamps, backdune wetlands.
harakeke/flax*	<i>Phormium tenax</i>	herb	Boggy with temporary flooding	2-3m Upright in habit with tall red flowerheads which attract birds. Grows in a range of conditions. tolerant of salt exposure. Excellent shelter.
kāpūngāwhā/ lake clubrush	<i>Schoenoplectus tabernaemontani</i>	tall rush	Standing water	1-2m Grows at the interface between salt marsh and fresh water.
kukaraho, purua/ marsh clubrush	<i>Bolboschoenus fluviatilis</i>	sedge	Standing water	1-2m Margins of streams, swamps. Fast growing. Stems die back over winter.
māakoako/ sea primrose	<i>Samolus repens</i>	ground -cover	Boggy with temporary flooding	0.1m Found mainly in salt marshes. Also grows on banks and cliffs.

Māori name/ Common name	Botanical Name	Life Form	Height	Comments
māakaka/salt marsh ribbonwood	<i>Plagianthus divaricatus</i>	shrub	Moist soils	3m Can be grown in salt marshes and along estuaries. Also grows in dune hollows and coastal gravels.
manawa/ mangrove	<i>Avicennia australis var. resinifera</i>	small tree	Boggy with temporary flooding	8m Desirable in terms of local ecology as they provide bird and fish habitat, reduce sedimentation in the wider estuary and are an important source of organic material to the estuarine food chain. Will establish naturally in estuaries and tidal creeks.
mānuka/ tea tree*	<i>Leptospermum scoparium</i>	small tree	Boggy with temporary flooding	8m A widespread shrub, dry to wet, often fringing lakes, in swamps and bogs. An important pioneer in many plant successions.
needle grass	<i>Austrostipa stipoides</i>	grass	Boggy with temporary flooding	1m Sharp-tipped tussock. Found on rocks, mudflats and sandspits.
oioi/jointed wire rush	<i>Apodasmia similis</i>	rush	Boggy with temporary flooding	1m Distinctive grey-green, orange, purple or rainbow colouring. Plant in areas bordering salt marshes and estuaries, or in dune hollows.
raupo	<i>Typha orientalis</i>	rush	Boggy with temporary flooding	2m Tall, dark green foliage. Large brown seed head.
remuremu	<i>Selliera radicans</i>	ground -cover	Boggy with temporary flooding	<0.1m Very dense groundcover with pale green, fleshy leaves and small white flowers. Grows naturally in salt marsh or coastal rocks. Very salt/drought tolerant, although does better if watered in summer.
sea rush	<i>Juncus maritimus var. australiensis</i>	rush	Boggy with temporary flooding	0.5m Fine dark green leaves. Grows in damp sand, saltmarsh and estuary margins.
taupata	<i>Coprosma repens</i>	shrub or small tree	Moist soils	2-4m Large shrub or small tree with dark green, glossy, rounded leaves. Very hardy, excellent wind and seaspray shelter. Orange berries attract birds.
tī kōuka/ cabbage tree*	<i>Cordyline australis</i>	tree	Boggy with temporary flooding	17m Erect tree with crown of narrow leaves tufted at the end of branches, white flowers in spring. Attracts birds. Plant back from the estuarine edge. Requires some protection when young, moderate tolerance to salt and wind.
toetoe*	<i>Cortaderia splendens</i>	large grass	Boggy with temporary flooding	3m Tall, dense creamy-gold flowering plumes. Can grow on dry disturbed sites. Tolerates drought and salt wind. Dry edges only. Not to be confused with the invasive pampas grass from South America which is late flowering.
ureure/glasswort	<i>Sarcocornia quinqueflora</i>	succulent	Boggy with temporary flooding	0.1m Short red-tipped succulent with minute flowers in summer. Forms a low, dense mat. Grows in salt marsh and salt meadows. Establishes naturally.
wīwī/ knobby clubrush	<i>Isolepis nodosa</i>	rush	Boggy with temporary flooding	0.7m Fine rush with creeping root mass. Needs full sun. Plant at rear of high tide beach at base of clay bank.

Typical estuarine and wetland vegetation sequence.



References

Cranwell, L.M., 1981. *The Botany of Auckland*. Auckland War Memorial Museum

Johnson, P. & Brooke, P., 1989. *Wetland Plants in New Zealand*. Wellington, DSIR Publishing.

Auckland Regional Council, 2001. *Riparian Zone Management Guidelines*, Technical Publication 148.

ARC Wetland Factsheets, No. 2 – *Wonderful Wetlands: Wetland Restoration and Planting Guide for the Auckland Region*.

Need More Information?

Many of the native plants listed in the coastal planting guidelines are on display at the Auckland Regional Botanic Gardens in Manurewa. Please feel free to visit the Gardens to familiarise yourself with these plants. For further information on coastal planting, local nurseries, pest control, funding opportunities, coastal management and ecological restoration please contact Enviroline on (09)366 2000 or check out our website – www.arc.govt.nz

Other factsheets in this series:

- 1 Coastal Planting Guide
- 2 Dunes
- 3 Coastal Cliff Tops
- 4 Coastal Clay Banks
- 6 Coastal Forests



Coastal saltmarsh,
Awhitu Regional Park

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