Importance of dune vegetation

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Leaflet No.
III–06

Vegetation of the Mulgrave Shire northern beaches

Introduction

Vegetation associated with the Mulgrave Shire northern beaches (Figure 1) was studied as part of the Beach Protection Authority's comprehensive investigation of local beach behaviour.

The establishment, maintenance and protection of vegetation, particularly on frontal beach ridges, are important aspects of beach protection and coastal management. The ridges which are formed by wave action rather than wind action are generally less than 3m above mean high water spring tide level.

A dense cover of vegetation is important in stabilising and retaining beach ridge systems. Because of constant exposure and changing shorelines in most coastal areas, herbaceous pioneer plants are more common on recently accreted frontal beach ridges where they progressively establish along and landward of the debris line. As exposure decreases and soil conditions improve, coastal woodland and forest communities tend to develop on the beach ridge system.

On sandy coastlines being eroded by the sea the presence of vegetation can help to reduce coastline recession. Vegetation traps and retains windblown sand in the frontal beach ridge where it assists in slowing erosion. Without vegetation, sand is removed by wind action to sites well inland from the beach. However, vegetation itself is not capable of decreasing erosion resulting from wave and current action on the frontal ridge.

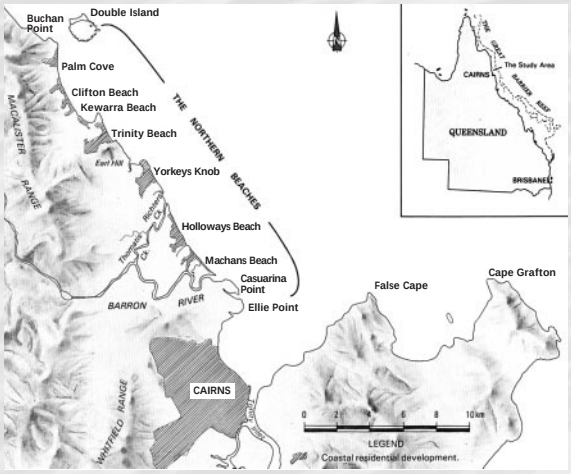

Figure 1. Locality.

A view of Clifton Beach where the low woodland zone grows right up to the foredune with no distinct zone of herbaceous pioneer plants.

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Vegetation types

The plant communities of the beach ridge system are grouped according to their location on sandy ridges inland from the beaches of the study area. The beach ridge system essentially has two components: a narrow frontal ridge, backed by a wide zone of secondary ridges extending up to 1 kilometre inland.

Frontal ridge vegetation

At Machans Beach and Yorkeys Knob the vegetation consists mainly of planted trees and shrubs. Species present include coconut palm *Cocos nucifera*, sea almond *Terminalia* spp., weeping tea-tree *Melaleuca leucadendron*, carbeen *Corymbia tessellaris*, beach hibiscus *Hibiscus tiliaceus*, brown salwood *Acacia crassicarpa* and beach calophyllum *Calophyllum inophyllum*. Ground cover is mainly couch grass *Cynodon dactylon* and Rhodes grass *Chloris gayana*.

The herbland includes the pioneer plants that initially colonise bare sand and usually forms a narrow band on the seaward slope and crest of undisturbed frontal beach ridges. Goat's foot convolvulus *Ipomoea pes-caprae* is the predominant plant. Other common herbland plants are pineapple sedge *Cyperus pedunculatus*, tropical beach grass *Thuarea involuta*, beach bean *Canavalia rosea*, beach vigna *Vigna marina* and beach sunflower *Wedelia biflora*. In protected situations the herbland has small trees and shrubs such as sea almonds, sea lettuce tree *Scaevola sericea*, beach hibiscus, brown salwood and horsetail she-oak *Casuarina equisetifolia*. Coconut palms have been planted in the herbland community at most beaches.

Further information on this topic is provided in leaflet no.III-07.

A broad, protected foreshore at Wonga Beach where the herbland includes the sea lettuce tree *Scaevola sericea*. Directly behind this is the woodland zone dominated by horsetail she-oak *Casuarina equisetifolia* with coconut palm *Cocos nucifera* also present.