Queensland's coastal sand dunes

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Leaflet No.
I–01

A brief introduction

This is the first in a series of advisory leaflets prepared by the Beach Protection Authority under the general heading 'Coastal sand dunes - their vegetation and management'.

These advisory leaflets are designed to give the public a wider appreciation of the important role that stable and naturally vegetated dune systems play in protecting our coastline, and to provide guidelines for the management and protection of coastal sand dunes and the vegetation they support.

This introduction describes the topics covered by the leaflets.

Coastal sand dunes in the Cape Bedford-Cape Flattery area, north of Cooktown.

Beach Protection Authority Queensland

Department of Environment
QUEENSLAND GOVERNMENT

ISSN
0312–7796

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I Queensland's coastal sand dunes

Much of Queensland's coastline is protected by a system of naturally vegetated sand dunes. The type and extent of these dunes vary with location. The seaward edges of the coastal plains have parallel sand ridges often so regular in direction, width and height and so packed that from the air they appear to have been spread with a gigantic rake. Massive sand dune systems, consisting of packed rows of large parabolic dunes all trending to the north-west, have formed on Fraser Island, the Teewah dunes, Moreton Island and Stradbroke Island. A far northern development also exists beyond Cooktown, about Cape Bedford and Cape Flattery.

II The formation and function of coastal dunes

These leaflets describe the processes involved in the formation of the dune systems of coastal Queensland, with the emphasis on the formation and function of the frontal dunes. Onshore winds blow sand from the beach. This sand is trapped by debris and vegetation above high water mark. Once ridges or mounds of sand rise above high water mark, frontal dunes quickly form. The frontal dunes act as a barrier against wave attack, protecting the beach in front and the land behind.

III Importance of dune vegetation

Vegetation increases in richness from the unstable foreshore of shifting sand to the more stable rear dune and interdune areas. Climate is the major factor influencing the distribution of vegetation on coastal sand dunes. Vegetation helps to maintain dune stability, anchoring the sand already in the dune and acting as a buffer against wind erosion.

IV Descriptions of major dune plants

These leaflets describe important plants occurring naturally on Queensland's coastal sand dunes. Each leaflet includes information on the distribution, function and propagation of a dune plant.

V Management guidelines for dune use

It is essential to keep frontal dunes intact and well covered with vegetation to maintain beach stability and minimise coastal erosion. These leaflets describe dune management procedures and set out guidelines for dune use. The leaflets contain information on planting programs for coastal dunes, methods of establishing and protecting dune vegetation, and techniques for the effective stabilisation of damaged dune areas.

Coastal sand dunes on Curtis Island.