Queensland's coastal sand dunes

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Type and distribution of coastal sand masses

Coastal sand masses (dunes and beach ridges) occur along the Queensland coastline in three major regions:

- southern Queensland;
- central Queensland; and
- northern Queensland.

The southern region covers the coastline from Coolangatta north to Burrum Shire; the central region is situated between Burrum Shire and Proserpine Shire; and the northern region covers the coastline north of Proserpine Shire.

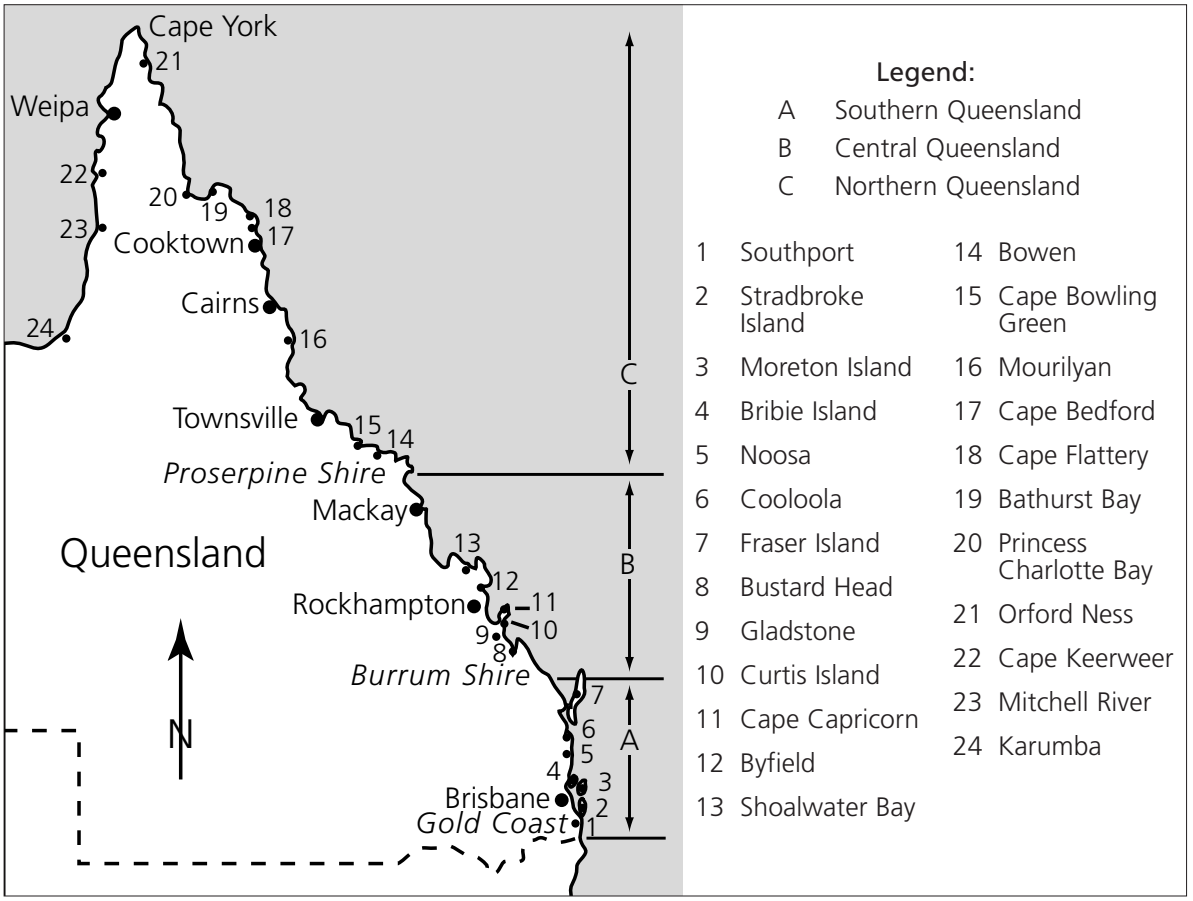

Figure 1. The location of some of the better-known sand masses on the Queensland coast.

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Figure 1 shows the location of some of the main sand masses within the three regions. The various types of sand masses occurring along the coastline are described below.

Beach ridges

Beach ridges are deposits of sediment (sand, shingle, shell fragments) built up by wave (or swash) action and often capped by windblown sand. Series of parallel beach ridges fringe the seaward edge of many coastal plains and indicate a history of coastal advance. Sandy beach ridges, generally less than 10m above sea level, also occur along sheltered bays and protected parts of the coastline and sand islands. Isolated beach ridges overlying finer sediments such as mud are called 'cheniers'. Beach ridges occur on Bribie Island, on the coast south of Mourilyan, and around the Gulf of Carpentaria, particularly north and south of Cape Keerweer.

Foredunes

Foredunes are deposits of windblown sand situated directly behind sandy beaches. Successive foredunes can develop, forming a series of parallel dunes separated by low interdune (or swale) areas.

Quite commonly foredunes overtop the seaward members of a beach ridge system. They occur behind the beaches along the east coasts of Moreton and Stradbroke Islands, and a narrow foredune strip extends along the mainland coast from Bribie Island to Noosa.

Low dune and mobile sandsheet complexes

Low dune and mobile sandsheet complexes, less than 30m above sea level and partially aligned to the south-east winds, are features of South Stradbroke Island, parts of the east coasts of North Stradbroke, Moreton and Fraser Islands, and the dune area west of Double Island Point and south of Inskip Point. They result from wind reworking foredunes and/or narrow beach ridges and often have active blowouts grading into low parabolic dunes.

Parabolic (or transgressive) dunes

Blowout dunes aligned SE-NW before the dominant south-east winds are formed when strong winds blow a gap in a foredune or make a great scoop in a massed set of dunes. Alignments of blowouts grade into packed parabolic dunes. A blowout can migrate landward through existing dune systems under the influence of the prevailing south-east winds. The moving sand mass has an advancing head of loose sand and trailing arms of partly vegetated sand ridges. In this manner, the dune assumes a characteristic parabolic form or U-shape. Parabolic dunes occur along the east coasts of North Stradbroke, Moreton and Fraser Islands and on the mainland at Cooloola. They also occur just south of Cape Capricorn and about Cape Bedford, Cape Flattery and Orford Ness.

Foredune and low dune mobile sandsheet complex south of Cape Moreton.

Parabolic dune blowouts south of Point Lookout on North Stradbroke Island.