

low-tide a visible sandbank on the reef. Such sandbanks appear on many reefs, shifting, growing larger or washing away at the whim of sea, tide and wind. If the sandbank enlarges with the accumulation of more coral debris, it may become a resting spot for sea birds. When the bank is built up to the point that it remains exposed above the sea at all times, seeds and insects will appear. Plants begin to grow, fertilised by bird droppings.

As more seeds germinate and established plants multiply, their searching roots stabilise the growing sandbank. The process continues until a coral cay or island—a new land—gradually emerges.

Various stages of coral cay development can be seen on reefs along the Great Barrier Reef. From shifting, partially submerged sandbanks to well-established coral cays with lush vegetation, all are the products of the sea, the wind, and the relentless growth of countless coral colonies.

### The reef and man

A coral reef, whether fringing a continental island, surrounding a coral cay, singly or in groups, is both beautiful and intricate—an interdependent web of plants and animals. Man is a newcomer and often a manipulator in this marine environment.

Over the years the Great Barrier Reef Region's fragile ecosystem has been under increasing recreational and commercial pressures. The Great Barrier Reef Marine Park Authority was set up for the establishment, development, care and control of a marine park within the Great Barrier Reef Region. In collaboration with the Queensland State Government, the Authority is working to provide a marine park to be used and enjoyed without harm to the natural qualities of the Great Barrier Reef.



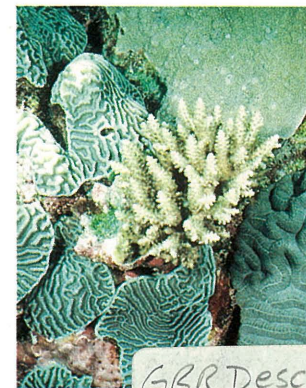
Further information:  
Information Officer  
Great Barrier Reef Marine Park Authority  
P.O. Box 1379  
Townsville, Qld. 4810



(This leaflet is one of a series produced by the Great Barrier Reef Marine Park Authority in the interests of promoting understanding and awareness of the Great Barrier Reef Region.)

# THE GREAT BARRIER REEF REGION

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GREAT BARRIER REEF  
MARINE PARK AUTHORITY

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THERE IS NO PLACE on earth that equals the size and living diversity of Australia's Great Barrier Reef.

This huge maze of coral banks, reefs and islands, teeming with animal and plant life, is almost 2000 kilometres long, stretching along the Queensland continental shelf from Cape York in the north to near Bundaberg in the south.

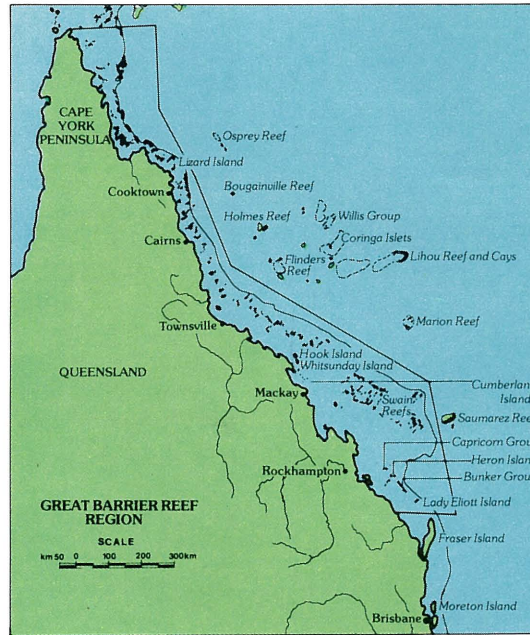
It is not a single reef or a barrier, although early navigators regarded it as such. There are more than 2000 individual coral reefs differing considerably in shape, size and proximity to the mainland.



In 1975, Commonwealth legislation was passed to establish a marine park in the Great Barrier Reef Region. This Region, which equals the size of the State of Victoria, covers the entire area from the low-water mark on the Queensland coast to east of the outer-line of reefs at the furthest edge of the continental shelf. It includes all reefs and shoals but does not cover islands which are part of Queensland.



Within the Great Barrier Reef Region the continental shelf varies considerably in width. At its narrowest, near Cape Melville, it extends only 24 km before dropping away to the ocean floor. In the south, it is more than 250 km wide. In the north it stretches nearly 200 km east of Thursday Island.



### The reef structure

Some reefs in the north are almost continuously submerged 'walls' on the shelf edge forming a barrier-like appearance with only narrow passages between them. The majority are scattered in groups or individually along the continental shelf wherever conditions have been favourable for coral reef formation.

In the central region are groups of high continental or 'mainland' islands with fringing reefs. These islands are the exposed areas of partially submerged mountains.

In the south most of the reef groups are a considerable distance off the coast and there are few continental islands.

Reefs are built up as a result of coral 'larvae' (or planulae) settling in an area where the sea depth, water temperature and quality and wave and tidal action are conducive to continuing growth.

Once corals have settled and become established on a shallow platform they begin the slow process of upward growth, secreting a limestone base upon which they build.

Should environmental conditions permit them to reach the water surface, further upward growth becomes impossible because of exposure to the drying air and sun. The expansion of the reef then occurs by lateral growth.

The direction of outward growth and the shape of the reef are dependent on the physical conditions that mould the reef such as wave action, currents, tides and the shape of the underlying seafloor. Fringing reefs may develop within the shallow areas of the sloping mountain sides of continental islands. The living, growing portion of a coral reef is only a thin veneer on the surface of the accumulated stony skeletons of millions of tiny coral animals.



### Evolution of the region

The geological stage was set for the development of the Great Barrier Reef about 50 million years ago with the sculpturing of the continental shelf along the Queensland coast. Reefs in the Region have changed dramatically since the first era of coral growth. The Great Barrier Reef of today in all its diversity and immensity is the result of about 10 000 years of coral growth—a very short time in geological terms.

As a reef develops, wave action and storms may smash corals along its edge, throwing fragments up on to the reef. Further water movement, tumbling, and the action of boring organisms reduces the pieces to coral sand. The sand is often swept away but sometimes it may stabilise, forming at