

Reef Beat

Our Great Barrier Reef

Reef Habitats

When people think about the Great Barrier Reef they usually associate it with colourful fish and coral gardens. However, the Reef contains many different habitats, which are all interlinked and vital to the myriad of animals and plants that live there.

The word 'habitat' means 'a place where an organism lives.'

Some of the different habitats on the Great Barrier Reef include coral cays, ribbon, fringing and platform reefs, reef flats, seagrass beds, continental islands, mangroves, rock pools, muddy bottoms, sandy substrates, lagoons and continental shelf.

In this article, we look at some of these habitats to help you understand how they are formed, and the critical role they play in the life of the Great Barrier Reef.

First, it's important to understand why different habitats matter. If you look at it from your personal point of view, the idea is easy to understand. For the first few years of our life, we usually live at home with our parents or caregivers. When we get a bit older, we go to school, a new habitat where we learn basic skills like reading and writing, and how to get along with other people at work and play. A few years after school, we move on to yet another habitat to start our own families, and the whole process begins anew.

The same is true for fish and other sea life. For example, a fish that hatches on the outer Great Barrier Reef may float in its larval form to the deep ocean, as part of the vast floating mass of microscopic plants and animals known as 'plankton.' As it develops into a juvenile fish, it may swim back to shore to live in sea grass or mangrove areas. Those that survive to become adults may move back to the coral reef to breed and, as with humans, the whole process of new life starts all over again. As you can see, each of the deep ocean, mangrove, and seagrass bed habitats are just as vital to the fish as the coral.

Coral cays are among the most beautiful habitats on the Reef. Cays are small islands of sand that form on top of coral reefs. The sand on coral cays is made up of reef animal skeletons, shells, and other debris. As waves wash around reefs, they deposit sediment on the calm, or leeward, side of the reef that is protected from the wind. Initially coral cays are little more than exposed sand banks, but as they grow, their position changes constantly in response to weather conditions.

Cays grow larger and become more stable as they accumulate sediment. Water flowing through the sediments reacts chemically with the skeletons of dead coral to form beach rock. Like concrete, the beach rock further stabilises the cay. The seeds of plants also reach the cay, drifting on the ocean, or arriving attached to birds' feathers or in their dung. This gradually increases the cay's soil cover and fertility, which in turn encourages the growth of more plants and further strengthens the cay.

Fringing reefs, which grow around continental islands, and occasionally along the mainland, are another important habitat. Their closeness to land means that they are affected by run-off and sedimentation from urban centres and rural land use practices. Compared to outer reefs, fringing reefs generally host fewer hard corals and more soft corals and algae because they are better able to withstand inshore conditions.

Platform reefs are another important habitat normally found on the continental shelf away from the influences of run-off from the mainland. Their shape results from a combination of wind and rain erosion that occurred during ice ages, and the endless process of growth and erosion of the Reef under water.

During the last ice age, sea levels were much lower than they are today, and much of the area currently occupied by the Reef was coastal lowland, with dry limestone hills eroded by wind and rain. As the ice retreated to the poles and mountains, the sea reclaimed the land and coral grew again on the hilltops, adding between 5m and 20m of new growth during the past 10,000 years.

Ribbon Reefs grow along the edge of the continental shelf with the longest continuous stretch extending nearly 670km between Cooktown and the Torres Strait. Ribbon reefs are essentially elongated platform reefs. Why they occur only in the northern Great Barrier Reef is unknown. It's essential that all the diverse habitats of the Great Barrier Reef are preserved for the future. Just protecting the colourful corals and pretty fish is not enough. All Reef habitats are interdependent and essential for the overall health and long-term survival of the Great Barrier Reef.

