

## Coral Reef junior

The coral reef is one of the ecosystems with the most species on our planet. It is a wide imposing calcareous structure, secreted by corals, with thousands of colours and varying shapes. Corals, or madrepores, are made up of small polyps of varying dimensions (ranging from a few millimetres to a few centimetres) surrounded by a calcareous calyx called "corallite" that has a different shape depending on the species. Unicellular algae called "zooxanthellae" live within each polyp and give the coral its brown/greenish colouration.

Coral reefs are made up of calcium carbonate used by the coral polyps to build their supporting structure; polyps absorb this substance from the sea and attach it to their external skeleton.

Coral reef formations develop mainly in shallow waters up to a depth of thirty metres and their distribution is limited to tropical seas. They cover an area of about 600,000 km<sup>2</sup>.

The coral structure offers a surprising variety of habitats for plants and animals. The plants include numerous red algae and some green algae: a production of 1-5 kilograms of algae per square metre per year has been calculated. In lagoons and in sandy sheltered areas aquatic plants such as the *Thalassodendron* grow and form submerged meadows similar to those of the *Posidonia* in the Mediterranean.

There are many herbivorous animals that feed on the plants present on the reef: sea urchins, crustaceans, molluscs and various species of fish. Parrotfish (whose name derives from the strong beak-like mouth) and surgeonfish (that have a scalpel-like spine in the tail) are the main herbivores. Even butterfly fish feed largely on coral polyps and other small animals that they capture in the cracks and the natural hiding places that the reef offers. These fish have small protruding mouths similar to forceps that can reach even the narrowest hiding places. Many other fish have similar mouths, such as angelfish, some filefish and others, all predators of small invertebrates.

Triggerfish, balloonfish and porcupinefish, instead, break off pieces of coral using their strong mouth. There are also coral reef fish that feed on plankton or debris, but the majority are predators.

In front of the coral reefs, in the open sea, there are animal species of great dimensions such as the big green sea turtle, many species of sharks and manta rays.