

## **Coral**

### **Coral in the Keramas**

#### **Why Does Coral Matter?**

In the Keramas, there are just over 66 hectares of coral reef—an area equivalent to over 90 soccer fields—containing almost 250 species of reef-building, or stony, corals. Nicknamed the rainforests of the ocean, coral reefs are rich and diverse ecosystems. Despite occupying just 0.1 percent of the ocean floor area, they support 25 percent of all marine species. But what exactly is coral?

#### **Animal, Vegetable, or Mineral?**

Coral looks like a plant when it is living in the water and a stone when it dries up and dies. In fact, though, coral is an animal. Coral reefs are made up of thousands of tiny organisms called coral polyps that belong to the same classification as the sea anemone or jellyfish. They have sac-like bodies with a 1-millimeter-wide mouth surrounded by poisonous barbed tentacles known as nematocysts. They extend these at night, using them to stun plankton and ingest them.

#### **A Win-Win Relationship**

Plankton, however, are not the only source of energy for coral polyps. Corals also get energy via the indirect use of photosynthesis. Corals' bodies are host to literally millions of colored microscopic algae known as zooxanthellae. Each side benefits from this arrangement: the coral provides the zooxanthellae with a safe home and in return the coral receives nutrients from the zooxanthellae's photosynthesis process. Reef-building corals are found in shallow and clear water because the zooxanthellae need exposure to sunlight. They also need warm water year round.

#### **Coral's Heart of Stone**

The coral polyps build themselves a hard skeleton made of calcium carbonate. These skeletons then provide a new base layer or substrate to which other coral polyps can attach themselves, eventually combining to form a reef. Growing one's own skeleton is a very energy-intensive process. Much of that energy is provided by the zooxanthellae.

#### **Coral Spawning: Mating Without Moving**

Unlike most other sea animals, corals cannot move. How then, do they find mates and reproduce? That is where the phenomenon of coral spawning comes into play. Once a year on a summer night, whole colonies of coral reefs synchronously release billions of colorful eggs

and sperm (gametes) into the water. These float upward, creating the effect of an underwater snowstorm. On the sea surface, the gametes of one coral meet the gametes of another coral of the same species and fertilization takes place. Once conjoined, the egg and sperm develop into a coral larva, or planula. The ocean currents then carry the planulae for considerable distances. After several days in motion, the planulae sink down to the sea floor to hunt for a hard surface to attach themselves to. Once settled, the body starts dividing, producing exact copies of itself, eventually creating a new coral colony despite its inability to move.

#### **SUGGESTED PHOTO(S)**

1. General reef picture (Hero image)
2. Close-up/illustration of an individual coral polyp
3. Zooxanthellae
4. Coral skeleton on substrate
5. Coral spawning