

## **Coral reefs are very fragile ecosystems**



Please help protect them by following these simple rules:

### **No Contact**

- Try to use the "magic meter" and stay one meter off the reef
- When you touch coral, you remove its protective layer of mucous -making it more susceptible to disease and other threats.

### **Buoyancy**

- Keep neutrally buoyant at all times
- If you have too many or too few weights or would like tips on how to maintain neutral buoyancy, please let us know.

### **Good Finning**

- Be aware of your fins and make sure they do not come in contact with the reef

### **Streamline Your Gear**

- Make sure all hoses and equipment are secured so that they do not drag or snag on anything

### **Let the Animals Come to You**

- Never chase or harass marine life
- Don 't feed marine life unless under expert guidance
- Remember, the best encounters are when the animals come to you!

### **Special Note to Photographers**

- Remember to take special care not to touch the reef when taking photographs - please be sure to watch your cameras and gear

### **Take Only Pictures, Leave Only Bubbles!**

- Take nothing living or dead out of the water, except recent garbage

**Enjoy your dive!**



# Environmental Dive Brief

## Interesting facts about corals:

If you have time, select one or two interesting facts to help educate your clients.

### EASY – Coral basics for the beginner

#### What are corals?

- Although many people mistake corals for plants or rock, they are actually **spineless animals**. If you look closely, you will see that one coral mound or branch (known as a **coral colony**) is made of hundreds of tiny animals called "coral polyps."
- Each soft **coral polyp** lives inside its own hard, cup-shaped skeleton. The soft polyp is shaped like a sac or bag with an opening surrounded by long, stinging tentacles. During the day the tentacles hide inside the skeleton, but at night they come out to feed, capturing tiny microscopic animals (zooplankton) that float by.

#### What are coral reefs?

- Coral reefs are huge limestone structures that provide food and shelter for millions of sea creatures. Coral reefs are so big that some can be seen from outer space!
- The actual limestone structure is made by hard corals, and in and around the structure are millions of other plants and animals carrying on with their business -similar to a busy city or apartment building.

### INTERMEDIATE – Light facts for the more experienced diver

#### How do corals grow?

- When corals die, they leave their limestone skeletons behind, and new polyps settle on the hard surface. A coral colony is actually layer upon layer of dead skeletons covered by a thin layer of living polyps!
- Corals grow very slowly. Most existing coral reefs are between 5000 and 10,000 years old.
- The **shape of coral** colonies can vary depending on the location of the coral. For example, where there are strong waves corals tend to grow into robust mounds or flattened shapes. In more sheltered areas the same species may grow in more intricate shapes such as delicate branching patterns.

### ADVANCED – Impress your advanced divers!!

#### Coral reefs and biodiversity

- Nearly 1/4 of all marine life is found in coral reefs.
- Scientists have identified more than 4,000 different species of fish and 700 species of coral.
- Coral reefs contain 32 of the 34 known animal phyla – four times the number found in tropical rainforests!! (Phyla are the next highest ranking in taxonomy next to the Kingdom).

#### What are zooxanthellae?

- "Zooxanthellae " (pronounced zo-zan-THEL-ee) are tiny algae that live within the tissues of hard corals. The algae give coral its brownish-green color.
- The algae and coral have a **symbiotic relationship** – meaning that they are dependent on each other. The algae supplies the coral with food, and the coral provides the algae with a safe and protected home.
- Like all plants, algae get their food from **photosynthesis** – a process that takes energy from sunlight to convert water, carbon dioxide and minerals into organic material. This can supply corals with up to 98 percent of their nutritional needs. This explains why coral reefs are found in warm, sunny tropical waters.
- When water temperatures increase, or when corals are stressed, they expel their symbiotic algae, and become white or "bleached." This is known as "coral bleaching."