

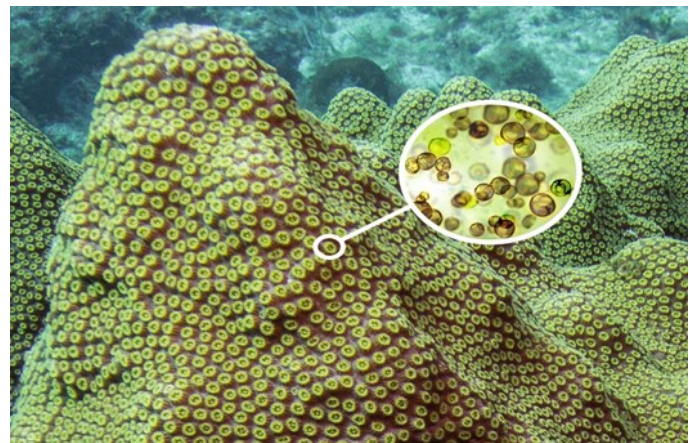
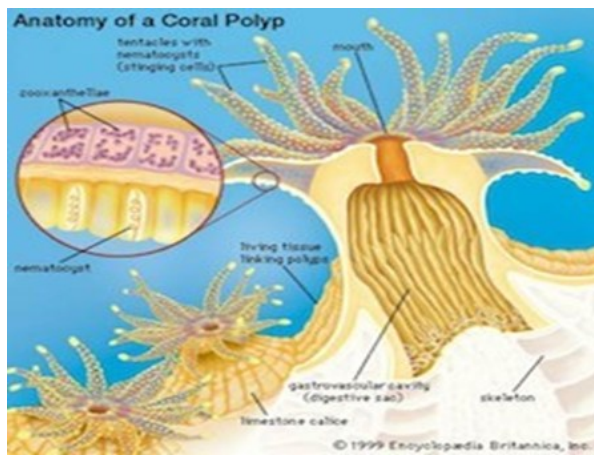
Symbiotic Relationships in Coral

Key Terms:

- **Polyp:** the stationary (non-moving) form of a coral, jelly or sea anemone.
- **Zooxanthellae:** a microscopic symbiotic single-celled algae.
- **Symbiotic Relationship:** a close biological relationship between two organisms. For coral and algae it is a mutually beneficial relationship.
- **Photosynthesis:** a chemical process by which plants are able to convert energy from the sun into food and energy.
- **Coral Bleaching:** when environmental stressors cause coral polyps to expel the zooxanthellae living in their tissues. Without zooxanthellae, the coral appears starkly white and may not be able to recover without the return of its symbiotic partner.

What is Coral ?

- Coral is an invertebrate, or an animal without a backbone.
- It is composed of an individual animal, called a polyp that is housed inside of a protective skeleton made of a material called calcium carbonate.
- Coral is a colonial animal, meaning that a "coral" is built of hundreds or even thousands of individual polyps that work together in harmony to support a living, cohesive colony.
- The ancestors of modern-day coral appeared around 500 million years.
- Coral reefs cover less than 1% of the ocean floor, however, they support about 25% of all ocean life.
- Coral reefs can be found throughout the different depths and temperatures of the world's oceans and assume a wide variety of shapes and sizes.



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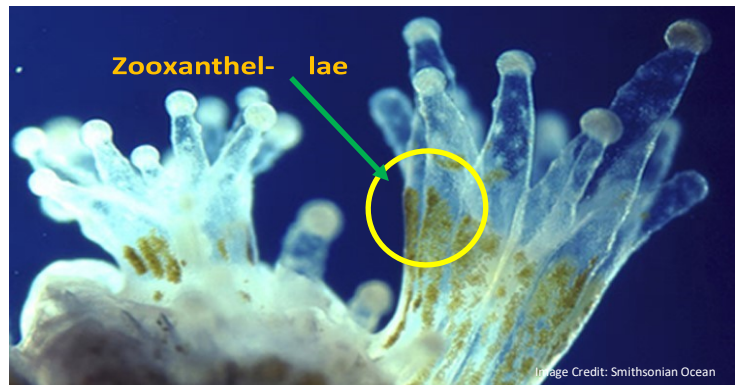
What are some conservation threats to corals?

- Coral skeletons are delicate and easily damaged by fishing equipment, boat anchors, careless tourists and even sunscreen chemicals.
- Corals are sensitive animals that react to changes in their ecosystem. These changes can include a fluctuation in light, temperature, turbidity, water levels and nutrient concentration.
- Reef-building corals that have been stressed will expel their zooxanthellae. This will make them appear white (or bleached).



How do corals eat?

- Inside the tissue of a coral polyp, hundreds of mutualistic algae, called zooxanthellae, make their home.
- The algae convert nutrients into oxygen, carbohydrates and lipids through photosynthesis.
- Water clarity allows light to pass through the single celled zooxanthellae and photosynthesize, giving the coral polyp nutrient-rich sugars.
- Polyps are also able to filter food from water with their tentacles. They use a type of stinging cells called nematocysts to capture tiny zooplankton that drifts by in the current. This occurs predominantly at night.
- The presence of zooxanthellae also give corals their bright colors.



Georgia Aquarium's partnership with the Coral Restoration Foundation (CRF) in the Upper Florida Keys aims to help restore staghorn and elkhorn corals using ocean-based aquaculture nurseries and transplantation methodologies.

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