Coral Reefs

AMBER WINGROVE



What is a Coral Reef?

 At first glance, you may think that coral reefs are made up of rocks, but they are actually living organisms. These organisms are tiny little animals called polyps. Polyps live on the outside of the reef. As polyps die, they become hard and new polyps grow on top of them causing the reef to grow.

Where are coral reefs located?

Coral reefs are found in more than 100 countries around the world. Most reefs are located between the Tropics of Cancer and Capricorn, in the Pacific Ocean, the Indian Ocean, the Caribbean Sea, the Red Sea, and the Persian Gulf. Corals are also found farther from the equator in places where warm currents flow out of the tropics, such as in Florida and southern Japan. Worldwide, coral reefs cover an estimated 110,000 square miles (284,300 square kilometres). Coral reefs are found between 30° north and 30° south of the equator.





The Great Barrier Reef?

The **Great Barrier Reef** is the world's largest Coral reef. It is close to the coast of Queensland, Australia. It is made up of nearly 3000 coral reefs and over 600 islands. It is 327,800 km² big and 2600 km long. It has been listed an important world heritage by UNESCO. The Great Barrier Reef is the largest structure made by living things. It can be seen from outer space. The biggest threat to the Great Barrier Reef today is coral bleaching caused by high sea water temperatures as a result of global warming. During 2016, the worst die-off ever recorded occurred, due to seas warming around the Great Barrier Reef. Two-thirds of a 700-km (435 miles) stretch of coral in nine months were killed.





Species that live in the Great Barrier Reef!

• The Great Barrier Reef supports a vast array of life forms. Thirty species of whales, dolphins and porpoises have been recorded in the Great Barrier Reef, including the dwarf minke whale, Indo-Pacific humpback dolphin, and the humpback whale.



Belize Coral Reef!

• The Belize Barrier Reef is the second largest after the Great Barrier Reef of Australia and is the largest of its kind in the Northern and Western hemispheres. Nearly 450 mangrove cays and sandy islands of varying sizes are contained within the reef and its atolls, which include the Western Hemisphere's only coral atolls.





Species that live in Belize!

 Approximately 70 different hard coral species and 36 soft coral species have been discovered and identified at the barrier reef and over 500 species of fish and invertebrates live in the area. However, it is believed that only about 10 percent of the species have been discovered, and there may be hundreds or even thousands of additional species that still need to be researched.



Different types of coral reefs; the fringing reef and atoll

- The most common type of reef is the fringing reef. This type of reef grows seaward directly from the shore. They form borders along the shoreline and surrounding islands.
- When a fringing reef continues to grow upward from a volcanic island that has sunk entirely below sea level, an atoll is formed. Atolls are usually circular or oval with an open lagoon in the centre.

Different types of coral reefs; barrier reefs

 Barrier reefs are similar too fringing reefs in that they also border a shoreline; however, instead of growing directly out from the shore, they are separated from land by an expanse of water. This creates a lagoon of open, often deep water between the reef and the shore.

Why are coral reefs important?

 Coral reefs are important because they bring in billions of pounds to our economy through tourism, protect coastal homes from storms, support promising medical treatments, and provide a home for millions of aquatic species.





Why are coral reefs important?





What are global threats to the coral reef?

One of the biggest threats is climate change. Corals live in a symbiotic relationship with algae and both benefit from each other. Algae lend colour to the coral and are essential to the longterm survival of the coral. However. when water temperatures increase, corals expel the symbiotic algae. The phenomenon is referred to as coral bleaching. It is a response of the corals to stressful environments. Bleached corals eventually die. Coral bleaching is now more common than ever. Global warming induced climate change has increased the temperature of the waters of the oceans. This spike in temperatures has triggered massive coral bleaching events.







What are global threats to the coral reef?

• Another threat is irresponsible tourism. Tourism thrives around coral reefs as tourists love to explore the colourful ecosystem of the reef Snorkelling, diving, boating, and fishing are some of the popular recreational activities enjoyed at such locations. However, when tourism becomes careless and the tourists and tour operators do not pay attention to the health of the coral reefs, the situation turns ugly. Touching the reefs, stirring up the sediment in the seabed, or collecting corals are some of the activities that damage the coral reefs or disturb the species inhabiting such reefs. Many tourist resorts are built directly on coral reefs and sewage from such resorts are emptied into the surrounding water which again damages the coral reefs in the long run. Therefore, if tourism is not handled with responsibility, it can destroy the coral reefs.

How global effects can be minimised?

 Our world is becoming warmer due to climate change, and corals have narrow temperature tolerance which means that they can bleach easily. So if we wanted to help minimize global effects we would need to try and slow down the process of climate change, we can do this by using a more sustainable choice of transport (choosing an eco friendly solar powered boat over an airplane).

What are the local threats to the coral reef?

• Irresponsible fishing When fishing is unregulated and unsustainable, it can inflict great damages to marine ecosystems including the coral reefs. Fishing practices like blast fishing, cyanide fishing, bottom trawling, etc., can physically damage coral reefs or eliminate the species inhabiting such reefs. Another highly destructive practice is merogamy which is banging on the reef with sticks to catch the fish as it comes out of hiding. Overfishing can also harm the ecological balance of the coral reef. Any disturbances in the food chain established in the reef by overfishing of one or more of its species can lead to ecological misbalance.

How local effects can be minimised.

 I believe that local effects can be minimised by having more coast guards on the watch for suspicious activity for fishing. Even though coral reefs have a large population that could all change due to climate change, and people wanting money. I also believe that people like the government should not just issue fines but should also give anyone who does try to fish in these prohibited areas a jail sentence, as they are disrupting the eco systems, And being ignorant to the suffering life around them.



Green house effects on the coral reef?

 Climate change dramatically affects coral reef ecosystems.
Contributing factors that increase greenhouse gases in the atmosphere include burning fossil fuels for heat and energy, producing some industrial products, raising livestock, fertilizing crops, and deforestation.

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Bleaching at the coral reef?

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Coral reefs are very sensitive to light and temperature. If the water they live in gets too hot, they might not survive. They also don't like it when the ocean has too much pollution. Sometimes, storms can even upset coral depending on how often they happen and how severe they are. If coral reefs are under too much stress, like in these conditions, they can eject the algae living on them and turn completely white. This is known as coral bleaching. This does not necessarily mean the coral is dead - corals can survive bleaching! They do become more vulnerable to death however, especially if the stress continues for a long period of time.

Companies that support the coral reefs

- One company that supports the coral reef is called coral reef alliance. The coral reef alliance is a non-profit environment NGO aiming to save the worlds coral reefs!
- They work collaboratively with communities to reduce direct threats to reefs in ways that provide lasting benefits to people and wildlife. In parallel, CORAL is actively expanding the scientific understanding of how corals adapt to climate change and applying this information to give reefs the best chance to thrive for generations to come. This combined expertise uniquely positions them to achieve our mission by rallying the conservation community around scalable and effective solutions for coral reefs.



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Saving the World's Coral Reefs

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Human values.

 Coral reefs provide many economic benefits. Skeletons of coral provide sand for beaches, and these spectacular landscapes attract tourists who provide valuable income for local people. Coral reefs protect coastlines from strong currents, waves and tropical storms, and reef fish feed local populations with a valuable source of protein.



Extinction of coral reefs.

 Current worst case predictions suggest that tropical coral reefs, which have evolved over millions of years, will be functionally extinct within the next 30 to 50 years. Saving these species could hold the key to the future adaptation of coral reefs to climate change.



Conclusion

A coral reef is a type of biotic reef developing in tropical waters. I believe that the main threats to coral reefs are humans, as we have caused pollution and climate change, and are causing damage to the eco system causing species that use to thrive to become extinct. I believe that coral reefs are important as they provide a natural habitat and massive protection for different species of fish. They are not plants; they are living organisms that provide an environment for fishes to breed. Without them, fishes in the ocean are homeless and will die. I believe that people who make their income from the coral reef such as fishermen and more would in some ways disagree with me because they believe that humans need to use the coral reef for survival (food, and economic reasons such as wealth).