



NOAA's Coral Health and Monitoring Program

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Frequently Asked Questions

What Are Coral Reefs?

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What is a coral?

Coral is a general term used to describe a group of cnidarians, which indicates the presence of skeletal material that is embedded in the living tissue or encloses the animal altogether.

-National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce. "Glossary of Coral Reef Terminology."
 URL: http://www.nodc.noaa.gov/col/projects/coral/coraldata/Coral_glossary.html

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What is a coral reef?

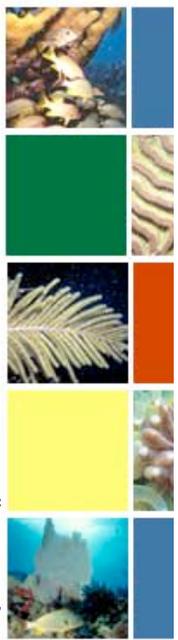
Coral reefs are wave-resistant structures resulting from cementation processes and the skeletal construction of hermatypic corals, calcareous algae, and other calcium carbonate-secreting organisms.

-National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce. "Glossary of Coral Reef Terminology."
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Where are corals and coral reefs found?

Corals can be found throughout the world's oceans, but reef-building corals are limited to oligotrophic (low nutrient) subtropical and tropical seas. Temperature and light are the primary factors which limit the growth of coral reefs. Coral reefs are restricted to a seawater temperature range of 18-36 degrees Celsius and optimal reef growth occurs between 26-28 degrees Celsius. Light intensity decreases exponentially with depth in seawater, and, likewise, so does coral symbiont photosynthesis and coral calcification. Coral reefs are thus limited to depths of less than 20 meters assuming water clarity is satisfactory. At depths greater than 20 meters light intensity is not sufficient to promote the necessary growth rates for reef development. Salinity, wave energy, water column nutrient levels, and sedimentation are also important factors which limit reef development. Optimal reef-building coral calcification occurs at normal oceanic salinities of 33-36 parts per thousand, in low nutrient level water, and in areas where sedimentation is low. Coral reefs do best in areas with moderate and continuous wave activity that is necessary to wash vital nutrients across



the reef and remove unnecessary waste products. The crucial role of these factors can be seen surrounding large river deltas in the tropics, such as the Amazon and Orinoco River. Latitudinal position is conducive to reef development, but the vast amount of highly turbid, freshwater that exit these watersheds hinder any reef development. Coral reefs do not develop because of low salinity, as well as the high levels of nutrient and sediment inputs from land, which work to decrease the necessary light intensity needed for reef-building corals to grow and calcify.

-Hubbard, D. K. 1990. "Reefs as Dynamic Systems." Life and Death of Coral Reefs, Ch. 3. Edited by Charles Birkeland. Kluwer Academic Publishers. Boston, MS.

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How fast do coral reefs grow?

Coral reefs grow at a rate of roughly 4 meters every 1000 years. Under pristine conditions with little physical disturbance it is possible for reefs to grow at a rate of roughly 20 meters every 1000 years.

-Hallock, P. 1997. "Reefs and Reef Limestones in Earth History." Life and Death of Coral Reefs, Ch. 2. Edited by Charles Birkeland. Kluwer Academic Publishers. Boston, MS.

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