

LEVELED BOOK • Q

Coral Reefs



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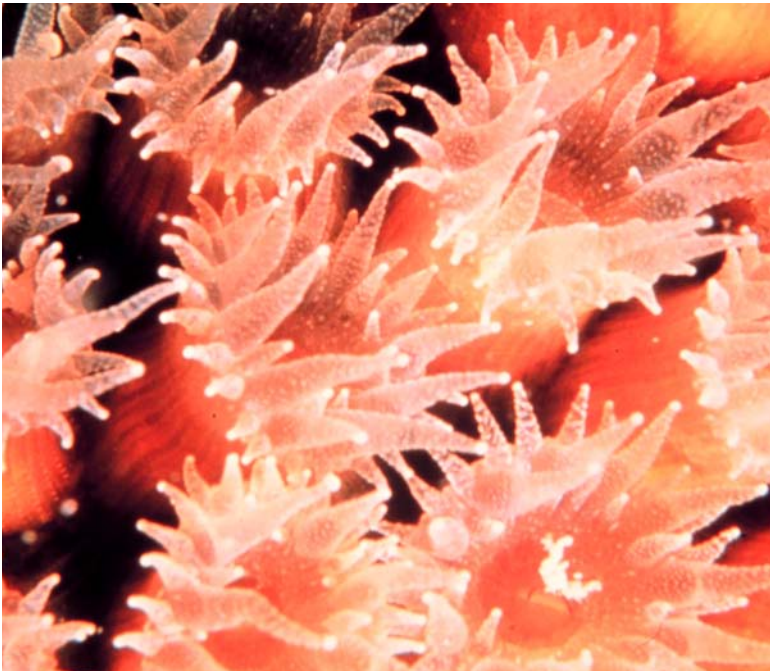
Many kinds of coral, fish, and sea creatures live in a reef.

Introduction

Coral reefs are home to thousands of living organisms. A massive reef community is made up of many types and shapes of corals. A reef can be hundreds of miles long with thousands of sea animals inhabiting it. All types of creatures are bustling about, day and night. Almost 25 percent of all the plants and animals in the ocean live around coral reefs.

What Is Coral?

The corals that form the reefs often look like rocks or plants. Corals are actually groups of tiny animals called **polyps** (PAH-lips). Most polyps are smaller in size than a pea. There may be thousands of polyps living on a mound or branch of coral. Each polyp is an eating machine. It has a sac-like body and a mouth that is surrounded by tiny tentacles. At night, its tentacles stretch out like hands to catch food.



Polyps open their tentacles only at night.



These feathery polyps form branches.

One of the two main types of coral is hard, or “stony,” coral. Most stony corals live with nutritious plants called algae (AL-jee), which provide food for the corals. Stony coral polyps have a hard skeleton. After the polyps die, the skeletons are left behind. Over time, millions of these skeletons help build a reef.

The second main type of coral is soft coral. Soft corals are flexible and able to bend with the tides. Some kinds of soft coral are also poisonous and will sting if touched.



(Left) A sea fan (a soft coral); (right) a brain coral (a stony coral)

Many corals are named for what they look like. Stony brain corals look like brains. Elkhorn corals look like the broad horns of an elk. Soft sea whip and sea pen corals look like long whips and pens. Sea fan corals branch out wide to trap bits of **plankton** to eat as they drift by.



Elkhorn coral branches out as an elk's horns do.



Schools of brightly colored fish are common on reefs.

A Busy Underwater Community

When people think of coral reefs, they also think of brightly colored fish—and with good reason. Thousands of fish of all sizes, shapes, and colors live around reefs. They depend on the reefs for both food and protection.



Reefs offer many good hiding places.

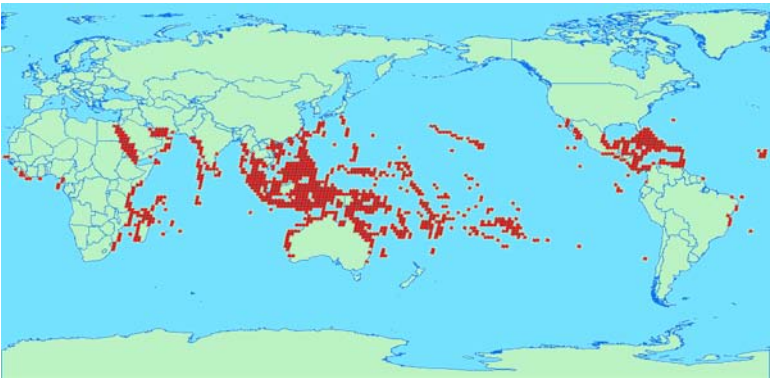
Reefs provide food for **crustaceans** such as shrimp, lobsters, and crabs. Sea urchins and starfish catch clams and other small shellfish hidden among the coral. Flowerlike sea anemones settle into **crevices** to live. Deep holes in the reef are the perfect homes for long moray eels.



This algae field is home to pink rope sponges.

Where Do Corals Live?

Coral reefs need certain living conditions to stay healthy. They need the right depth of water. They need healthy algae plants to feed them. And both coral and algae need the right temperature. Coral grows best, and stays healthy, in warm tropical water that remains between 21 and 29 degrees Celsius (70–85° F).



The dark areas of the map show the location of coral reefs.



Large brain corals can be thousands of years old.

Coral reefs are sensitive and cannot survive in many areas because of environmental conditions. Freshwater runoff from rivers can kill coral. Dirt and debris can smother it. The heavy wave surges from large storms can break reefs apart in just a few hours. Because coral grows very slowly, a reef takes a long time to expand its size or recover from damage.

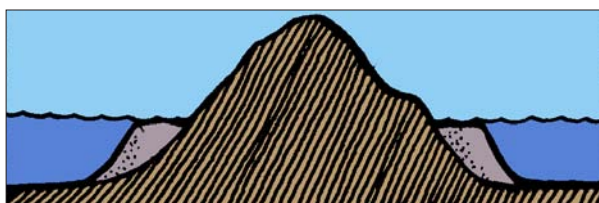
There are three types of coral reefs: **fringing reefs**, **barrier reefs**, and **atolls**.

Fringing reefs sit close to the shoreline at the “fringe” of



An aerial view of the Great Barrier Reef

the land. Barrier reefs have a larger **lagoon**, or area of water, between the reef and the shore. The largest barrier reef in the world is the Great Barrier Reef in Australia. It is 2,000 kilometers (over 1,242 mi) long.



Cross section of a fringing reef



Cross section of a barrier reef

An atoll is the third type of reef. An atoll forms in a circular pattern around an old sinking island. As the island ages and sinks, the atoll forms a lagoon in the middle of the circle. The largest atoll, in the western Pacific, has a lagoon measuring over 97 kilometers (60 mi) across.

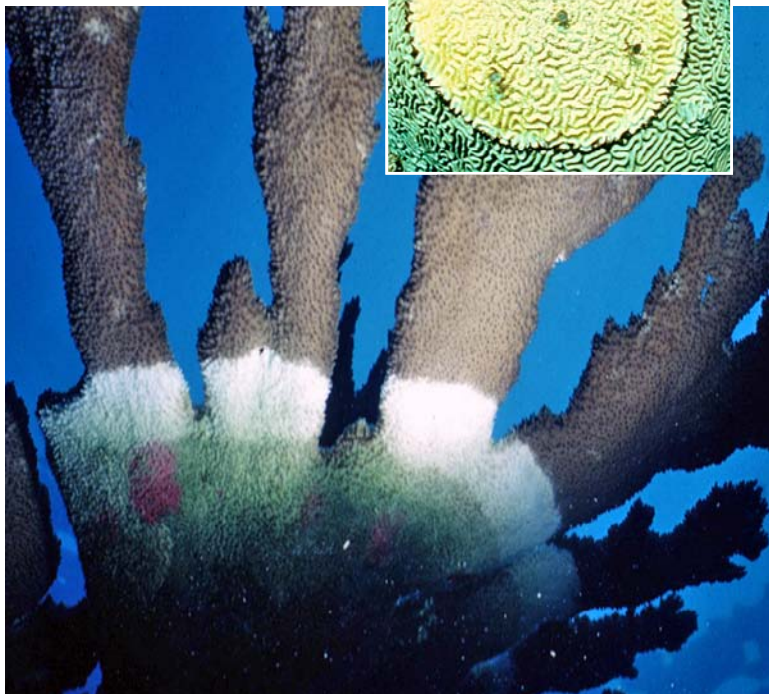


Cross section of an atoll



Aerial view of an atoll

A dark ring
resulting from
black band disease



White band disease can destroy coral quickly.

Threats to Coral Reefs

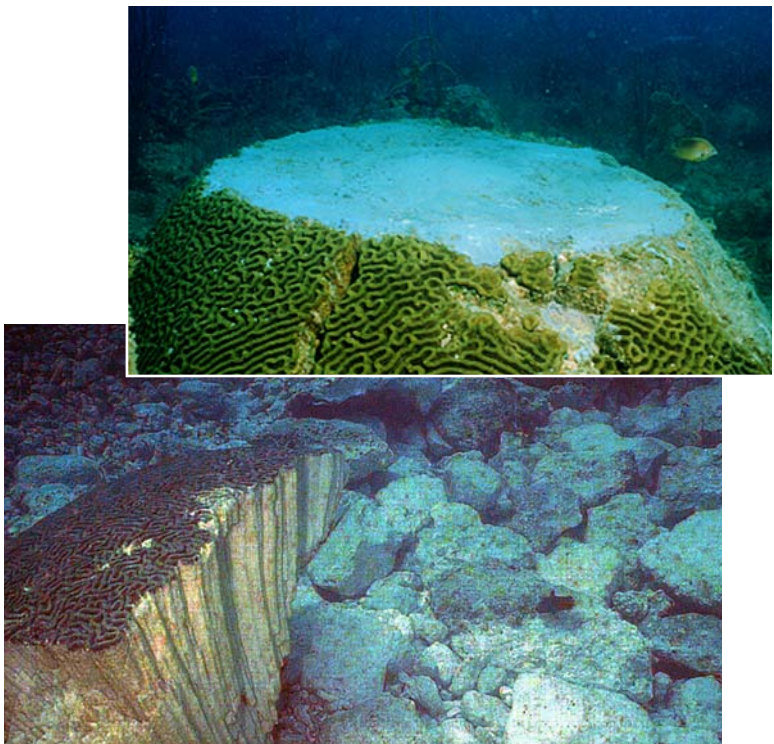
Coral reefs are very fragile and easily damaged—by both disease and humans. White band and black band diseases are caused by destructive bacteria. The band of bacteria travels up the branch of coral. These fast-moving band diseases can wipe out an ancient coral reef in weeks.

Another serious condition is called **bleaching**. It occurs when bacteria attack algae, coral's main food source. The coral can't eat the algae, so it begins to starve. If the bacterial invasion is stopped, the coral might recover. If it isn't stopped the coral—and the reef—will die.



The white areas of these corals have been bleached.

Humans cause most coral reef damage. Fishing with poisons and explosives destroys reefs and most of the animals that live around them. Construction creates soil **erosion** and polluted freshwater runoff. Boats and ships break off large chunks of reefs. Gas and oil from boat engines poison coral, plant, and fish life. Divers often drop boat anchors onto reefs. Others break off pieces of live coral to take as souvenirs.



Boats sometimes break off large chunks of coral.



Each year, volunteer divers help clean the reef of debris.



This officer's job is to watch and protect coral reefs.

Protecting the Reefs

In addition to being beautiful, coral reefs are an important natural resource. Reefs help protect coasts from storms and floods. Much of the world's supply of fish lives and feeds around reefs. Many reef plants and animals are used in the production of medicines.

Many countries, like Australia, have written laws and rules to protect their reefs. But creating these laws and rules is only a start. In some other countries, the laws are not well enforced.

Almost 25 percent of the world's reefs have already been destroyed. Nearly 60 percent are damaged. All of us can help to protect them, even if we don't live near an ocean. Never throw anything in the water. Learn what human actions cause ocean temperatures to rise and bacteria to grow. If everyone thinks about their actions, coral reefs will remain a beautiful, natural wonder for many years to come.



Divers still enjoy visiting fragile reefs.



Glossary

atolls (<i>n.</i>)	circular reefs formed when coral grows around islands that later sink beneath the surface of the sea (p. 13)
barrier reefs (<i>n.</i>)	reefs that sit farther from the shoreline; they form barriers between the open ocean and calm lagoons (p. 13)
bleaching (<i>n.</i>)	when coral turns white after its algae die (p. 16)
crevices (<i>n.</i>)	cracks and holes (p. 10)
crustaceans (<i>n.</i>)	hard-shelled, many-legged sea creatures such as lobsters, shrimp, and crabs (p. 10)
erosion (<i>n.</i>)	wearing or washing away of the soil (p. 17)
fringing reefs (<i>n.</i>)	reefs that are very close to shorelines (p. 13)
lagoon (<i>n.</i>)	shallow, calm water between a reef and the shoreline or in the center of an atoll (p. 13)
plankton (<i>n.</i>)	tiny animal or plant life in the ocean (p. 8)
polyps (<i>n.</i>)	tiny individual coral animals (p. 5)

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