

# OUR ENVIRONMENT OUR HERITAGE

## CORAL REEFS



### WHAT ARE CORAL REEFS?

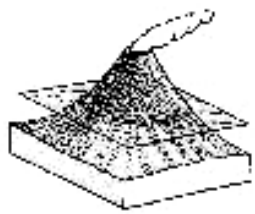
Coral reefs are amazing and unique ecosystems that are made from calcium carbonate (limestone) which are deposited by *coral polyps*.

Polyps have a cup-like structure made up of calcium carbonate. Each polyp has stinging tentacles surrounding its mouth. Corals use tentacles to defend themselves & catch its prey.

### TYPES OF CORAL REEFS

There are basically 3 types of coral reefs that occurs through-out the world.

#### FRINGING REEFS:



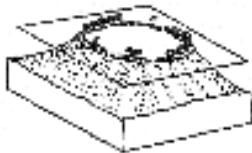
These are the most common reefs that grow in shallow water near shorelines of Continents & islands.

#### BARRIER REEFS:



Barrier reefs are different from fringing reefs since they occur further offshore & are separated by a relatively deep lagoon.

#### ATOLL:



Atolls are circular reefs that are made up of sand cays & islands which surround a relatively shallow lagoon. Found far from land in the open ocean, rising up from depths of 1,000 meters or more.

### DISTRIBUTION OF CORAL REEFS

Coral reefs are distributed in all oceans of the world, generally between latitudes of 30° C north & south.

### CORALS & CORAL REEFS OF SAMOA

Samoa is not so fortunate with coral reefs, partly because of the recent volcanic flows that covered previous reef areas & partly because of the deep-sided volcanic cones in deep waters.

Samoa has both narrow fringing & barrier reefs. Barrier reefs are separated by shallow lagoons that are up to 2km wide in some places.

Little information is known on the diversity & number of coral species found in Samoa, however a recent survey recorded 123 hard coral species.

### VALUE OF CORAL REEFS

Apart from the sheer beauty of coral reefs, they are the amongst the most productive, diverse & complex but fragile ecosystems in the world.

#### GENERALLY CORALS & CORAL REEFS:

##### Provide Food:

Provide most of the protein for many tropical coastal people. Fisheries survey in 2000 indicated that local seafood makes up 34% of the total meat consumption.

##### Provide Income & Export Earnings:

These resources have also become a major source of income such as the export of tuna

##### Provide an Effective Protective Barrier:

Coral reefs serve as an effective protective barrier for beaches & the coastlines by reducing the constant thrashing of strong waves & currents.

##### Provide Sources of Medicines:

Many marine plants are being discovered & used for medicines, eg, sponges have been used as an anti-leukaemia drug.

##### Provide Raw Materials for Handicrafts:

Shells of some shellfish & black coral can be used for necklaces & other handicrafts.

##### Provide Attraction Sites for Tourists:

Coral reefs diverse colours & interesting reef animals & plants attracts tourist who come to enjoy this unique habitat. This in return provides income & employment for coastal communities.

### HUMAN THREATS ON CORAL REEFS

#### Destructive fishing methods:

The use of dynamites, derris roots (ava niukini) & other poisons not only kills marine animals but also their habitats, eg, coral reefs.

#### Over-fishing of certain species:

Certain marine species, eg, triton, are over-harvested & can lead to the loss of other marine species.

#### Pollution and siltation:

Pollution & silt can smother corals & destroy coral reefs

#### Freshwater runoff:

Increase in freshwater runoff from land destroys corals & coral reefs. This is caused by poor land use & management near water catchments areas.

#### Destruction of other marine habitats:

Mangroves & seagrass are important ecosystems because they filter sediments. These ecosystems are being destroyed rapidly therefore the coral reefs are rapidly being destroyed.

### NATURAL THREATS ON CORAL REEFS

#### Cyclones:

During cyclones the strong waves breaks & up-roots corals.

#### Sea temperate rise:

This is associated with climate change due to green house effect & ozone depletion. An increase in sea temperate causes corals to release zooxanthallae before they die off.

### MINIMIZING THREATS

■ *Stop the use of effective & destructive fishing methods*

■ *Stop over-harvesting of undersize fish & invertebrates*

■ *Stop pollution & dumping of rubbish into the marine environment*

■ *Stop the removal of corals*

■ *Prevent the destruction of mangrove & sea-grass habitats*

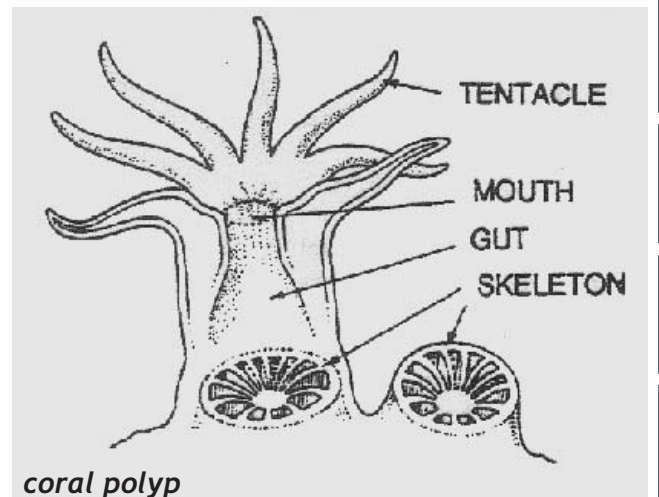
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For more information contact our Environment & Conservation Division at the DBS building - Level 5

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