

B.A. PART - 1 (PHYSICAL GEOGRAPHY : PAPER - 1)

TOPIC : CORAL REEF

(**प्रवालभित्तियाँ**)

- Prof. KUMARI NISHA RANI

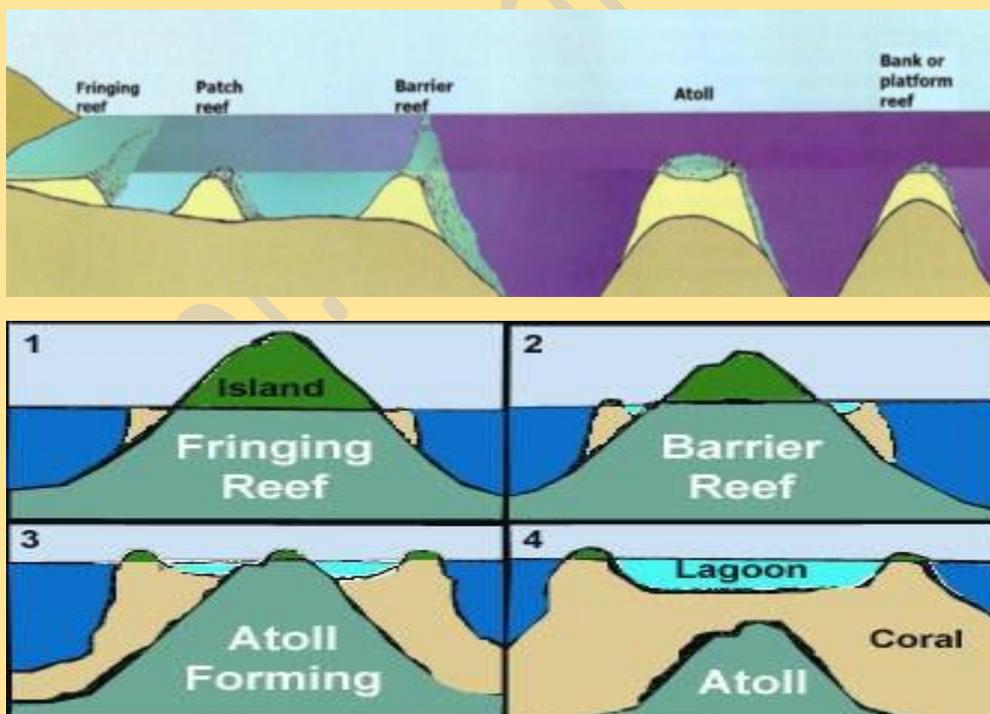
Coral Reef

- Coral reefs are built by and made up of thousands of tiny animals—**coral “polyps”**—that are related to **anemones and jellyfish**.
- Polyps are **shallow water organisms** which have a soft body covered by a **calcareous skeleton**. The polyps extract calcium salts from sea water to form these hard skeletons.
- The polyps live in colonies fastened to the rocky sea floor.
- The tubular skeletons grow upwards and outwards as a cemented calcareous rocky mass, collectively called **corals**.
- When the coral polyps die, they shed their skeleton [coral] on which new polyps grow.
- The cycle is repeated for over millions of years leading to accumulation of layers of corals [shallow rock created by these depositions is called **reef**].

- These layers at different stages give rise to various marine landforms. One such important landform is called **coral reef**.
- Coral reefs over a period of time transform or evolve into **coral islands (Lakshadweep)**.
- The corals occur in different forms and colours, depending upon the **nature of salts** or constituents they are made of.
- Small marine plants (**algae**) also deposit calcium carbonate contributing to coral growth.

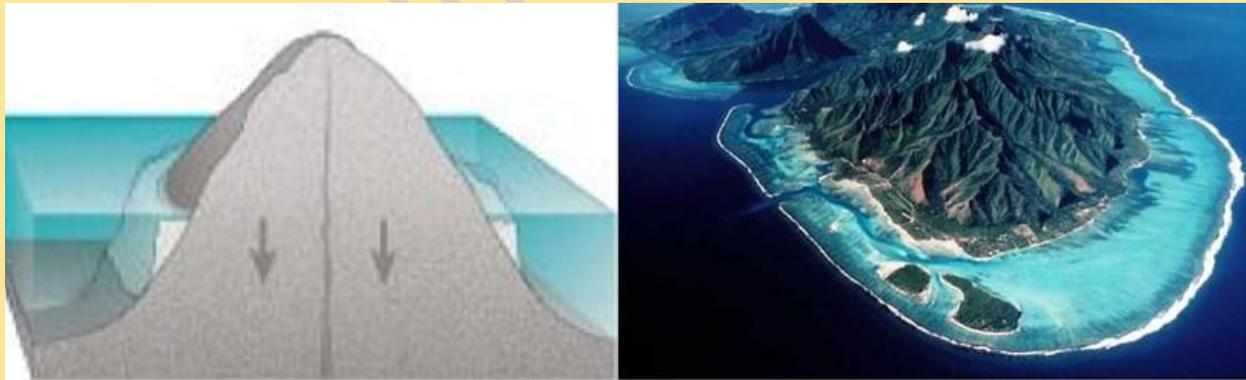
Coral Reef Relief Features

- **Fringing reef, barrier reef and atoll (coral islands are formed on atolls)** are the most important relief features.



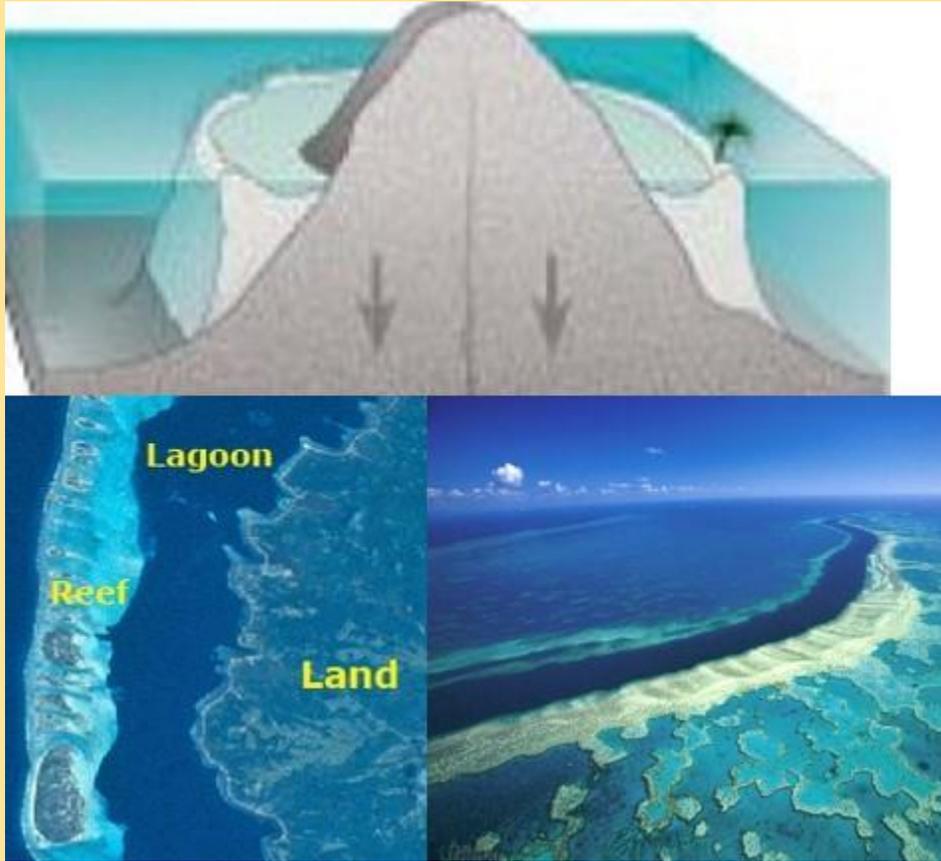
Fringing Reefs (Shore Reefs)

- Fringing reefs are reefs that **grow directly from a shore**. They are located very **close** to land, and often form a **shallow lagoon** between the beach and the main body of the reef.
- A fringing reef runs as a narrow belt [1-2 km wide]. This type of reef grows from the deep sea bottom with the seaward side sloping steeply into the deep sea. Coral polyps do not extend outwards because of **sudden and large increase in depth**.
- The fringing reef is by far the *most common* of the three major types of coral reefs, with numerous examples in all major regions of coral reef development.
- Fringing reefs can be seen at the New Hebrides Society islands off Australia and off the southern coast of Florida.



Barrier Reefs

- Barrier reefs are **extensive linear reef complexes** that **parallel a shore**, and are separated from it by **lagoon**.



- This is the **largest (in size, not distribution)** of the three reefs, runs for hundreds of kilometres and is several kilometres wide. It extends as a broken, irregular ring around the coast or an island, running almost parallel to it.
- Barrier reefs are **far less common** than fringing reefs or atolls, although examples can be found in the tropical Atlantic as well as the Pacific.

- The **1200-mile long Great Barrier Reef** off the NE coast of Australia is the world's largest example of this reef type.
- The GBR is not actually a single reef as the name implies, but rather a very large complex consisting of **many reefs**.

Atolls

- An atoll is a roughly circular (annular) oceanic reef system surrounding a large (and **often deep**) **central lagoon**.
- The lagoon has a depth 80-150 metres and may be joined with sea water through a number of channels cutting across the reef.
- Atolls are located at **great distances** from deep sea platforms, where the submarine features may help in formation of atolls, such as a **submerged island or a volcanic cone** which may reach a level suitable for coral growth.
- An atoll may have any one of the following three forms-
 1. **true atoll—a circular reef enclosing a lagoon with no island;**
 2. **an atoll surrounding a lagoon with an island;**
 3. **a coral island or an atoll island which is, in fact, an atoll reef, built by the process of erosion and deposition of waves with island crowns formed on them.**

- Atolls are **far more common in the Pacific** than any other ocean. The **Fiji atoll** and the Funafuti atoll in the Ellice/Island are well known examples of atolls. A large 'number of atolls also occur in the **Lakshadweep Islands**.
- In the South Pacific, most atolls occur in mid-ocean. Examples of this reef type are common in **French Polynesia**, the **Caroline and Marshall Islands**, **Micronesia**, and the **Cook Islands**.
- The Indian Ocean also contains numerous atoll formations. Examples are found in the **Maldives** and **Chagos island groups**, the **Seychelles**, and in the **Cocos Island group**.



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