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TODAY'S IMPORTANT CURRENT AFFAIRS

UPSC PRELIMS

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TODAY'S DROPS OF NEWS:

<u>SUBJECT</u>	<u>IN NEWS</u>
POLITY	---
ECONOMY	---
GEOGRAPHY	---
HISTORY AND ART & CULTURE	---
ENVIRONMENT	Great Barrier Reef records largest annual coral loss in four decades.
SCIENCE & TECH	---
MISCELLANEOUS	---

ENVIRONMENT

In news: Great Barrier Reef records largest annual coral loss in four decades.

Coral reefs are underwater ecosystems formed by colonies of coral polyps held together by calcium carbonate. It thrives in warm, shallow, and clear tropical waters. Reefs provide food, coastal protection, and economic benefits through

tourism and fisheries.

These corals are marine invertebrates that share a symbiotic relationship with algae known as zooxanthellae. These corals secrete calcium carbonate (limestone) exoskeletons, which over time accumulate to form the massive, colorful, and biologically rich reefs. Coral reefs are often called the “rainforests of the sea”. They are most typically seen at shallow depths in tropical oceans, however, deep-water and cold-water coral reefs can also be found on smaller scales elsewhere.

Types of coral reefs in India:

India has three major prevailing types of coral reefs:

1. Fringing reefs

Fringing reefs evolve and develop near the continent and remain close to the coastline. These reefs are separated from the coastline by small, shallow lagoons. They are the most commonly found reefs in the world.

2. Barrier reefs

Barrier reefs are found offshore on the continental shelf. They usually run parallel to the coastline at some distance. A deep and wide lagoon is located between the coastline and the barrier reef.

3. Atolls

Atolls are formed on mid-oceanic ridges. They are shaped circularly or elliptically and are surrounded by seas on all four sides and have shallow waters in the center called a lagoon.



The ideal environmental conditions for corals to grow:

Coral reefs have certain conditions that must be met for them to grow in full bloom.

Coral reefs require precise environmental conditions to flourish, including warm water temperatures between 23°C and 29°C, shallow depths for sunlight penetration, and stable salinity levels. Clear water and hard substrates are crucial for coral attachment and growth, ensuring a thriving ecosystem.

Temperature: Optimal water temperatures vary from 23°C to 29°C because they have a restricted temperature tolerance.

Depth: They normally thrive at depths of less than 50 meters, where sunlight penetration is enough for photosynthesis in algae.

Salinity: Coral reefs thrive in salty water with stable salinity.

Water Clarity: Clear waterways allow sunlight to reach the symbiotic algae for photosynthesis.

Substrate: Hard substrates, such as volcanic rocks, provide the base for coral larvae to attach and grow.

The importance of the survival of corals and coral reefs to human and marine life:

Corals are important to marine life because of the following reasons:

- The health of the marine ecosystem is dependent on corals.
- They support a wide range of ecosystems and hence, are called the rainforests of the ocean.
- Corals provide a place to live for a huge variety of fish.
- Corals are a primary source of food in the marine ecosystem.

Coral reefs have a somewhat similar significance.

1. Coastal protection
2. Food source
3. Medicinal properties
4. Meteorology
5. Tourism

Threats:

1. Global warming
2. Coral Bleaching
3. Marine pollution
4. Stronger storms and ocean acidification

5. Ozone depletion

MENTOR

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