



# Significance of Dead Coral Reef

## Why in News

According to a recent study by researchers from University of Queensland (UQ), Australia, **more life can be supported by dead coral remains than live corals.**

- Dead coral reefs support cryptic organisms like hidden sea creatures, including fishes, snails, tiny crabs and worms, who hide under its rubble **to save themselves from predation.**

## Cryptic organisms

- These are organisms that are **morphologically indistinguishable** (identical in appearance) but are **genetically distinct**. Many species that are classified as single species but are found to be genetically different are called **cryptic species**.
- Examples of cryptic species include the **African elephant**. A 2001 study found the elephants were actually two genetically distinct, non-interbreeding species, the African bush elephant and the African elephant.

## Key Points



- **Method:** The researchers designed three-dimensional-printed coral stacks called **Rubble Biodiversity Samplers (RUBS)** to survey cryptic organisms.
  - The **3D-printed coral** mimicked surrounding reef rubble and invited unwitting reef organisms to be monitored.
  - By sampling the RUBS' structures over time, the team were able to **identify changes in the cryptic population.**
- **Findings:** The researchers found the **missing link in the coral reef food webs.** This data fills important knowledge gaps, such as how small cryptic animals support coral reefs from the bottom of the food chain, all the way up to bigger predators.
  - This also helped to know the importance **of dead coral reef rubble** to the ocean ecosystem.
  - The RUBS technology provides a new opportunity for **reef management**, particularly for **reef education and awareness.**
- **Coral Reefs:**
  - Coral reefs are **large underwater structures composed of the skeletons of colonial marine invertebrates called coral.**
  - Corals extract **calcium carbonate** from seawater to create a hard, durable exoskeleton that protects their soft, sac-like bodies. These exoskeleton remains of millions of corals pile up with time to form coral reefs.
  - The corals have a **symbiotic relationship with an algae** called the **zooxanthellae.**
    - These algae live inside the coral polyp's body and provide the coral with **food.** The polyps, in turn, provide a **home and carbon dioxide** for the algae.
    - These algae are responsible for the variety of **colours** of corals.
  - Coral reefs cover less than 1% of the ocean floor but they are among the most productive and diverse ecosystems on Earth.

- They are referred to as "**the rainforests of the sea**" for their biodiversity,
- **Death of Coral Reefs:** When corals become stressed due to any changes, including pollution or global warming, they can expel algae and get **bleached**, meaning the 'death' of the coral reef.
  - There has been increasing **concerns of fast paced coral bleaching** due to **emission of greenhouse gases** and **climate change**.
  - A number of global initiatives are being taken to address the issues, like the **International Coral Reef Initiative**, the US Coral Reef Task Force etc.
  - In india, the **Zoological Survey of India (ZSI)**, with help from Gujarat's forest department, is attempting a process to restore coral reefs using **"biorock" or mineral accretion technology**.

## Way Forward

- There has been little information on the role of dead coral reefs so far. The study can help **in studying the oceanic ecosystem** in a more holistic way.
- The research is certainly a lesson that even **dead coral reefs need to be preserved** in order to protect the biodiversity that remains. The understanding of foundational structure of coral reefs might inform efforts to **create artificial reefs**, which may be a short-term solution to the dying coral reef problem.

**Source: Down to Earth**

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