



Translocation of Corals in Mumbai

Why in News

The [National Institute of Oceanography](#) will carry out the translocation of 18 coral colonies from the coast of Mumbai for the Mumbai Coastal Road Project.

Key Points

▪ Corals:

- [Corals](#) exhibit characteristics of plants, but are marine animals that are related to jellyfish and anemones.
- They are made up of **genetically identical organisms called polyps**, which are tiny, soft-bodied organisms.
 - At their base is a hard, protective limestone skeleton called a **calicle, which forms the structure of coral reefs.**
- These **polyps have microscopic algae called zooxanthellae** living within their tissues. The **corals and algae have a mutualistic (symbiotic) relationship.** i.e.
 - The coral provides the zooxanthellae with the compounds necessary for photosynthesis.
 - In return, the zooxanthellae supply the coral with organic products of photosynthesis, like carbohydrates, which are utilized by the coral polyps for synthesis of their calcium carbonate skeletons.
 - Zooxanthellae are also responsible for the unique and **beautiful colors of corals.**
- There are 2 types of corals:
 - **Stony**, shallow-water corals—the kind that build reefs.
 - **Soft corals** and deep water corals that live in dark cold waters.

▪ Coral Reefs:

- **Reefs begin** when a **polyp attaches** itself to a **rock on the seafloor, then divides, or buds, into thousands of clones.** The polyp calicles connect to one another, **creating a colony** that acts as a single organism.
- As colonies grow over hundreds and thousands of years, they join with other **colonies, and become reefs.**
- 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.
- **Benefits:** Coral reefs are like underwater cities that **support marine life.**
 - According to the [United Nations Environment Programme \(UNEP\)](#), they provide at least half a billion people around the world with food security and livelihoods.
 - Coral reefs also act as **'wave breaks'** between the sea and the coastline and minimise the impact of sea erosion.
 - According to a [recent study of University of Queensland \(UQ\), Australia,](#)

more life can be supported by dead coral remains than live corals.

- **Protection:** In India, they are under **Schedule I of the Wildlife Protection Act (WPA), 1972.**
- **Threats:** Climate change remains one of the biggest threats to corals.

- Around the world, this threat has been visible in the **“bleaching” of corals.**

- **Coral Bleaching:** It is a process during which corals, under stress from warm weather, expel the algae that give corals their brilliant colours and live in their tissues and produce their food.
 - The **Great Barrier Reef off the coast of Australia** has suffered six mass bleaching events due to warmer than normal ocean temperatures in 1998, 2002, 2006, 2016, 2017, and now 2020.
 - The Great Barrier Reef is a [UNESCO World Heritage site](#) and **home to one of the largest collections of coral reefs** on the planet.
- **Biorock Technology:** It is a method [to restore coral reefs](#) using biorock or mineral accretion.
 - Under this low voltage electrical currents through seawater is applied, causing **dissolved minerals to crystallize on structures**, growing into a white limestone (CaCO₃) similar to that which naturally makes up coral reefs and tropical white sand beaches.
 - **Biorock**, also known as Seacrete or Seament, refers to the substance formed by electro-accumulation of minerals dissolved in seawater.
- **Coral Translocation:**
 - The translocation of corals is at a **nascent stage along the Indian coastline.** It is difficult and has **not been very successful in India.**
 - Pilot projects at various sites including, Lakshadweep islands and Andaman islands have been undertaken to study the survival rate, method and site of translocation, and creation of high heat-resistant coral colonies, etc.
 - Transplanted corals are **more susceptible to storm surges and bleaching from warming ocean waters.**
 - Experts are of the view that **for a high survival rate, it is important to translocate corals in a place with similar environmental characteristics** such as depth, current flow, amount of light, and pressure.

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11 SPECIES OF CORALS IN MUMBAI

> Corals are invertebrate animals belonging to a group called Cnidaria, that can be found in rocky intertidal regions or on the ocean floor



> Corals are usually classified

as 'hard' and 'soft' corals. Hard corals are reef-building ones. Soft corals, which include seas fans, don't have the rock-like calcareous skeleton; instead they grow wood-like cores for support and fleshy rinds for protection. Soft corals live in colonies that often resemble brightly coloured plants or trees



> The city has 11 species of corals, according to a survey by Marine Life of Mumbai, nine of which

are hard corals. The National Institute of Oceanography identified 18 colonies at Haji Ali and Worli, comprising six species

> Coral restoration and translocation has been tried in many parts of the world with varied success. In India, there have been projects in Lakshwadeep, Gujarat, Andaman & Nicobar Islands and Sindhudurg



[Source: IE](#)

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