



## Cryo-Born Baby Corals

[Source: OM](#)

The world's first **cryo-born baby corals** have been successfully introduced into the [Great Barrier Reef](#), marking a groundbreaking achievement in [coral restoration and conservation](#).

- Australian scientists used cutting-edge **cryopreservation** to fertilize **coral eggs** with **cryopreserved sperm** collected from the **Great Barrier Reef**.
  - Scientists grew the corals in the **National Sea Simulator** before transferring them to specially designed '**coral cradles**' on the Reef.
- It aims to introduce [heat-tolerant corals](#) to protect reefs from climate change and rising **ocean temperatures**.
- The **CryoDiversity Bank** in **Australia** holds the world's **largest collection of frozen coral sperm** from 32 species, collected annually since 2011.
- **Coral Reefs:** Corals are **invertebrates** from the **class Anthozoa, phylum Cnidaria**.
  - Reefs are formed by **colonies of polyps** that secrete **limestone skeletons** and rely on **symbiotic algae (zooxanthellae)** for nutrition.
- **Soft corals** are species that **do not produce** the massive **calcium carbonate skeletons** needed to form coral reefs. Only **hard corals** make reefs.

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# Coral Reefs

(Rainforests of the seas)



## About

- ✦ **Large underwater structures** – made of skeletons of **colonial marine invertebrates 'coral'** – individually called **polyp**
- ✦ **Symbiotic Relationship with algae 'zooxanthellae'** (responsible for beautiful colours of corals)
- ✦ Support over 25% of marine biodiversity

## Hard Corals vs Soft Corals

- ✦ **Hard Corals** - Rigid skeleton **made of  $\text{CaCO}_3$**  - reef-building corals
- ✦ **Soft Corals** - Non reef-building

## Great Barrier Reef (Australia)

- ✦ Largest Coral Reef in the World
- ✦ World Heritage Site (1981)
- ✦ Endures Mass Coral Bleaching



## Corals in India

- ✦ Present in the areas of Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan



## Significance

- ✦ Coral reefs **protect coastlines from storms/erosion**, provide jobs, offer opportunities for recreation
- ✦ Source of **food/medicines**

## Threats

- ✦ **Natural:** Temperature, Sediment Deposition, Salinity, pH, etc.
- ✦ **Anthropogenic:** Mining, Bottom Fishing, Tourism, pollution, etc.

## Coral Bleaching

- ✦ Corals under stress - expel algae – thus turning white (bleached)
- ✦ Bleached corals - not dead – but, more risk of starvation/disease



## Initiatives to Protect Corals

### Technology

- ✦ **Cyromesh:** Storage of the coral larvae at (-196°C) - Can be later reintroduced to the wild
- ✦ **Biorock:** Creating artificial reefs on which coral can grow rapidly



### Global

- ✦ International Coral Reef Initiative
- ✦ The Global Coral Reef R&D Accelerator Platform

### Indian

National Coastal Mission Programme



Read More: [World's Largest Deep Sea Coral Reef](#)

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