

In Gulf of Mannar, corals take a rebirth

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CHENNAI: After a third mass bleaching event affected corals across the world in 2016, warmer oceans triggered another event in 2017. And coral reefs in many locations including Gulf of Mannar off the Tamil Nadu coast suffered severe loss. While corals have shown signs of recovery, studies show nearly 16% have died in the mass event.

Now, a team from city-based National Centre for Coastal Research (NCCR) are diving deep into the oceans to restore species in 21 islands between Pamban and Tuticorin in Gulf of Mannar that have degraded over the years. As a start the team has planted polyps, tiny carnivorous animals that make up the structure of a coral, at a depth 3m in the Indian Ocean near Hare and Manali islands.

COMING BACK TO LIFE

After 16 years, an NCCR team has begun the restoration of coral reefs in Gulf of Mannar

- > Around 128 species of corals belong here
- > Restoration is underway in Hare and Manali islands

How is restoration carried out? Polyps are tied to small concrete slabs on an

iron frame and placed at 3m depth in the sea

- > After six months, when the corals grow about 4 to 5cm, they are transplanted in the surrounding area



The species include,
Pocillopora, Acropora, Montipora, Favia, Favites, Goniopora, Goniastrea, Platygyra, Echinopora, Galaxea, Porites, Turbinaria, Leptoria, Pavona & Pachyseris

“In another six months, they’ll grow about 4cm-5cm. We will then transplant them in the surrounding areas wherever degradation is seen,” said T Shunmugaraj, NCCR scientists specialising in Marine ecology and mariculture, who leads a team along with NCCR director M V Ramanamurthy.

Prior to the restoration, the team monitored the region to study the condition of corals in this region. They found that 50% to 70% of them have recovered from the mass bleaching events that occurred between March and October 2016 while the rest degraded; the scientists said.

Corals are some of the most biologically diverse ecosystems in the planet that provide shelter to several species. According to NOAA, coral reefs support around 4,000 species of fishes, 800 species of hard corals and hundreds of other species. These reefs also act as a protective barrier for coasts from strong currents and waves.

Several factors like change in chemical composition, temperatures and carbon dioxide can affect corals. When the sea surface temperature rises, corals expel zooxanthellae, an algae that gives corals its colour, and turn white (bleaching). While corals survive such bleaching events, they die when they are exposed to extreme stress for a long time.

Gulf of Mannar is home to 128 species that were mapped through remote sensing by NCCR scientists between 2002 and 2005. Coral species in other locations in the Indian region including Gulf of Kutch, Lakshadweep and Andaman and Nicobar Islands were also mapped. The results showed that nearly 60% of the corals were dead.

For restoration, Shunmugaraj explained that coral polyps are tied to an iron frame on a concrete slab to protect them from

sediment before they are taken underwater. "Species like favia, goniastrea and porites grow 3cm to 4cm a year, while acropora grows 10cm to 12cm. We have identified locations of degradation and studied how sediment affects the coral reefs and begin restoration. We will let it grow for at least six months underwater before they are transplanted to surrounding affected areas," the scientist said.

In 2005, the team successfully transplanted and monitored the growth of corals in the Lakshadweep region.

Scientists are also setting up a 25-acre aquatech park near Rameswaram, which will have hatcheries to breed important indigenous species, ornamental fishes to improve livelihood of local fishers. It will also help develop hatchery techniques to propagate marine species like sea cucumber and sea horse.