



Coral draw in Maharashtra

On World Reef Day, take a deep-dive into the universe of coral species along the state coast and the city, and learn how you can protect them

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FOR marine biologist Harshal Karve, who works with the Mangrove Foundation of Maharashtra, coral is a charismatic creature that led him to pursue his PhD degree on the diversity of intertidal coral of Mumbai. "I often wonder how a small, soft-bodied animal living in the sea secretes calcium carbonate and forms a massive reef structure which protects the coastline and forms a complex ecosystem that supports an astonishing biodiversity, and which is eventually beneficial for humans," says Karve, pointing out the need to conserve this marine ecosystem. It is for this reason that marine experts across the globe observe World Reef Day on June 1, to create change through education and engagement.

Along the Maharashtra coast

In Maharashtra, Karve shares that the Malvan Marine Sanctuary is a small coral reef pocket located along the state coast. The Angria Bank is also a diverse coral reef off Sindhudurg. A few coral species



Verrill's cup coral. PIC/
PRADIP PATADE

ENVIRONMENT

have adapted and can be found in various intertidal areas along the shoreline, he adds. Here are some:

● Flowerpot coral (*Goniopora sp*)

This beautiful coral is found in intertidal as well as subtidal regions along the coast.

● Burnt cup coral (*Cladangia exusta*)

This is a non-reef building coral that lacks zooxanthellae (a symbiotic algae). It is commonly found in intertidal areas.

● Scroll coral (*Turbinaria sp*)

This is a hard coral forming a massive disc, mostly found in Malvan Marine Sanctuary.

Along the Mumbai coast

Abhishek Jamalabad, marine biologist at Marine

Life of Mumbai (MLOM) and Coastal Conservation Foundation, shares that Mumbai has a number of hard and soft coral species. "The MLOM citizen project has documented at least eight species of hard coral along city seashores, and at least three soft coral along with an unresolved number of unidentified ones. I say 'at least' because this is the minimum number that we know to be unique species; there may turn out to be more once identified," he says. Mumbai, he adds, also has a variety of sea anemones and zoantharians, which are technically part of the hexacoral group.

● Verrill's cup coral (*Polycyathus verrilli*)

This is fairly widespread along the western shores. The polyps have an orangish brown colour, at times, with a tinge of green.

● Indian sea plume (*Pseudopterogorgia fredericki*)

Sea plumes, along with sea fans, sea pens, and their relatives, are soft coral. Polyps are arranged on a flexible structure and they're found in various shapes, sizes and colours.

● False pillow coral (*Pseudosiderastrea tayamai*)

Found at only a few sites, growing in some of the harshest conditions. Classified as 'Near Threatened' by the IUCN.



Burnt cup coral.
PIC/HARSHAL KARVE

Science behind coral
Karve explains coral is a marine invertebrate that forms a colony of genetically and morphologically identical polyps. "Some are solitary. There are different types of coral like hard and soft; reef building and non-reef building," he shares. Coral reefs, he adds, are formed by coral polyps as they secrete layers of calcium carbonate beneath their body. "This ecosystem encompasses a variety of marine species like fish, molluscs, polychaetes, etc."



(Left) Abhishek Jamalabad and Harshal Karve

Protection priority

● Karve elaborates that increased population, pollution, unsustainable coastal development and climate change have become major threats. Rise in sea water temperature associated with the El Nino affects the symbiotic association of zooxanthellae which lives inside the coral, causing bleaching.

● Prachi Hatkar, a marine biologist and a project assistant with Wildlife Institute of India, says the easiest way to help protect coral in our daily lives is by controlling the use of single-use plastic. "This includes the scrubs and face washes that we use which contain microbeads that aren't biodegradable," the PhD scholar adds.

● Jamalabad notes that coral in Mumbai remains understudied. So, one can explore the shores, document the species and share the data. "It can be used for research, education and conservation," he points out.



The other milky way

With PETA asking India's largest dairy brand to switch to plant-based dairy, experts share the lowdown on relevant alternatives

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infections due to milk production manipulation.

Plant-based alternatives

THE battle between dairy lovers and vegan advocates has been heating up. Last week, animal rights organisation PETA filed a plea with the Advertising Standards Council of India disputing Amul India's claim that plant-based products cannot be called milk. They also requested Amul to consider switching to plant-based dairy. While the dairy producer has pushed back, now's a good time to investigate plant-based milk or mylk (as it is often known).

The case against dairy

Ethical considerations aside, nutritionist and lifestyle educator Karishma Chawla points to certain medical reasons why plant-based dairy alternatives are gaining popularity. "Lactose intolerance causes symptoms such as gastrointestinal cramping, flatulence and diarrhoea. Research indicates that men who consume high levels of dairy have a significantly increased risk for

Soy milk is a popular, albeit controversial, dairy alternative, says Chawla. While a good protein source that is rich in calcium, iron, magnesium, fibre and potassium, soybeans contain phytoestrogens, which mimic oestrogen. For men, this can lead to a testosterone imbalance, infertility, low sperm count and increased risk of cancer.

In women, it can cause oestrogen dominance, that's been linked to infertility, menstrual irregularities and cancer, she warns. Almond milk, meanwhile, promotes heart health, lowers LDL cholesterol, supports strong bones and teeth, and aids weight loss. It is a rich source of magnesium, riboflavin and vitamin E. "Nut milks are often used in desserts, ice-creams and smoothies. They're healthier for your gut," says Manpreet Dhody, head of Foodhall Cookery.

Coconut milk, too, has a nutty taste, and is ideal for soups and curry, says Sarvesh N Karandikar, executive head chef, Cococafe, Fort. It is a great source of medium-chain fatty acids and nutrients that help to reduce inflammation and build immunity.

Oat milk contains beta-glucans, a soluble fibre that may help reduce cholesterol, says Chawla. It's often used in cereals and coffee, adds Karandikar.



Angria Bank: A unique ecosystem

Karve says the name is derived from Kanhoji Angre, an admiral of Maratha king Chhatrapati Shivaji. The submerged plateau is located 105 km offshore from the Konkan coast. "It is suggested to have developed

after the Holocene sea-level rise a few 1,000 years ago. It supports a large extent of coral reefs and flora-fauna. It's identified by WII as one of India's 106 Important Coastal and Marine Biodiversity Areas, he adds.

