The Indian mangrove cover is dispersed with a total area of 4627.63 sq. km among 12 States and Union Territories. Mangroves are under pressure in the country due to increasing population, development of seaports, salt pan and aquaculture, disposal of harmful industrial leftovers and sewage, development of fertilizer flora and exploitation for refineries. Transformation of mangal forests for aquaculture and residential purposes is also leading to loss of mangrove resources. To prevent further destruction of mangrove forests, an integrated approach is required. The conservation of the existing mangrove resources is the first step towards achieving this goal. The mangrove species diversity varies from one place to another due to climate, tidal factors and anthropogenic pressure. In Tamil Nadu, Pichavaram region has a maximum of 12 true mangrove species, whereas only 9 species are represented in the Gulf of Mannar (GoM) region. In the Muthupet region, only eight species were recorded. In all three places, 14 taxa of mangrove species were recorded. In GoM, a total of 11 true mangrove species, 17 mangrove associates, and 201 flowering plants were identified. The mangrove species were Avicennia marina, Bruguiera cylindrica, Bruguiera gymnorrhiza, Ceriops tagal, Exocardia agallocha, Lumnitzeria racemosa, Pemphis acidula, Rhizophora apiculata and Rhizophora mucronata belonging to five families with a predominance of Rhizophoraceae. A. marina was the most abundant species, followed by P. acidula. This was followed in descending order by C. tagal, R. mucronata, B. cylindrica, L. racemosa, E. agallocha and R. apiculata.

Mangroves in GoM with considerable diversity support a variety of biological organisms. It is believed that the region was once flourishing with mangrove forests. There are indications that there was over-exploitation which led to the disappearance of mangrove species. As a result, species such as B. gymnorrhiza and Acanthus ilicifolius recorded earlier in Rameshwaram have not been seen in recent years. Similar are the cases of Pemphis acidula recorded in Pamban and A. ilicifolius on Kurasadai Island. The increase in the extent of salt pans is yet another factor leading to the shrinkage of mangroves, particularly around Tuticorin. In the islands of GoM small patches of mangroves are present, of which C. tagal and P. acidula are endemic to these islands. They are not present in any other mangrove forest of Tamil Nadu. With broad conventional methods we can restore this treasure of nature and protect our coastline from hazardous threats of global warming.

4. District-wide climate change information for the state of Tamil Nadu – Rainfall projection for Ramanathapuram, 2015, www.tncce.in

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Mass occurrence of blue button hydrozoan fauna in the Lakshadweep Archipelago, India

Porpita porpita (Linnaeus, 1758), the blue button jelly-like predatory plankton belonging to Phylum Cnidaria has been reported as east ashore by strong winds1, climate change-mediated sea surface temperature (SST) increase2 and a northward shift of plankton species3. Mass occurrence of P. porpita (National Zoological Collections ID ZSHQ/GNC/P/4482/1) was noticed on 20 December 2021 (Figure 1 a-c) and also drifted towards the north-eastern tip of Kavaratti Island (N10°34.633° and E72°38.4418°), Lakshadweep Archipelago. Recently, the reason behind the bloom of Pyrostrema spinosum (Herdman, 1888) has been reported from the nearest Bangaram Island4. It was interpreted with the occurrence of phytoplankton bloom by estimating the concentration of chlorophyll-a from the downloaded satellite image. Similarly, the cloud-free image of
Kavaratti Island of the respective period was downloaded from the Sentinel-3 Ocean and Land Colour Instrument (OLCI) with spatial resolution of 300 m. Sentinel-3 Tool kit\(^5\) (Sentinel-3 OLCI) followed by Case-2 Regional Coast Colour\(^6\) (C2RCC) modules were used for the extraction of chlorophyll-a data. It was observed that chlorophyll level of the reef flat was 4.02 ± 0.79 mg m\(^{-3}\), whereas on the eastern coast it was 1.66 ± 0.69 mg m\(^{-3}\), which is in the accepted level. However, the maximum SST of the northeastern part of Kavaratti Island was observed to be 30.255°C (ref. 7). Moreover, the wind rose diagram of 19 December 2021 (Figure 1 \(d\)) showed higher occurrence of winds from the north and north-northeast\(^8\). Hence, these populations drifted towards the northeastern tip of the Island. Higher SST and wind data indicate that \(P.\) porpita was cast ashore based on wind direction and climate change-mediated unusual increase in temperature (Figure 1 \(g\)).


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