PRESS TRUST OF INDIA

06 May 2024

Marine heatwaves cause intense coral bleaching in Lakshadweep: Researchers

Marine heatwaves are triggering widespread bleaching of coral reefs in the Lakshadweep Sea, wherein corals lose their vibrant colours due to stress-a concerning phenomenon, according to a new study. Survey results from various Lakshadweep Islands revealed that a considerable percentage of the hard coral species have undergone severe bleaching, researchers of the ICAR-Central Marine Fisheries Research Institute (CMFRI) here said.

The bleaching was primarily due to a prolonged period of marine heat waves affecting the region since late October 2023, they said.Marine heatwaves are rare extreme weather events that involve prolonged periods of abnormally high ocean temperatures, the CMFRI said in a statement here.

These temperatures often exceed the 90th percentile of typical regional ocean temperatures based on historical data, it said. According to the National Oceanic and Atmospheric Administration (NOAA), this level of DHW poses a substantial risk of coral bleaching, threatening the region's diverse marine ecosystems. "Such heat stress levels signify a severe threat to coral health, leading to extensive bleaching where corals lose the symbiotic algae (zooxanthellae), compromising their survival by depriving them of essential nutrients," said Dr K R Sreenath, Senior Scientist of CMFRI.If the DHW continues to rise, it could precipitate an unprecedented biodiversity crisis due to multispecies mortality, he said.

Dr Shelton Padua, senior scientist at CMFRI, identified the primary causes of these marine heatwaves as excessive heat atmospheric transfer coupled with shifts in ocean currents, leading to unusually high water temperatures.Since October 27, 2023, the Lakshadweep Sea, spanning from 80.0 to 12.0 N latitude and 71.0 to 75.0 E longitude, has been experiencing these conditions, with temperatures consistently registering rises greater than one degree Celsius above the norm, it said.Noting that the health of marine ecosystems is integral to the livelihoods of coastal communities, influencing tourism and fisheries sectors, Sreenath said that the ongoing marine heatwaves are likely to cause significant economic losses by disrupting their vital ecosystem services.Further, the death and disintegration of coral reefs can threaten coastal communities, leaving them vulnerable to the impacts of sea level aggressions, he said.

The ongoing heat waves also threaten other critical marine habitats, including seagrass meadows, the expert said, adding that similar to corals, seagrass meadows are experiencing detrimental impacts due to the heatwaves, such as impaired photosynthesis, reduced growth, and hindered reproductive functions."The degradation of these ecosystems can lead to the collapse of local marine food webs, affecting a wide range of marine species, from fish communities to marine mammals like dugongs and dolphins," Sreenath added.

The CMFRI has been actively undertaking studies to better understand ecological changes affecting coral reefs, the statement said.The agency has initiated a comprehensive national project aimed at investigating the resilience potential of various coral reefs in India.By integrating advanced climatic modelling, deep-learning, and ecological research, CMFRI aims to enhance survey efficiency and develop resilience-based management actions ensuring the long-term sustainability of coral reef ecosystems, the statement added.