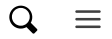


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[1/3] A healthy brain coral rests under Port of Miami regardless of extreme heat in Miami, Florida, U.S., July 14, 2023. REUTERS/Maria Alejandra Cardona/File Photo [Purchase Licensing Rights](#)



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summary

Southern Hemisphere reefs set to bleach in coming months
Follows heat records fuelled by climate change and El Nino
Scientists conduct fly-overs at Australia's Great Barrier Reef
Previous mass bleaching events in 1998, 2010 and 2014-2017

LONDON, March 5 (Reuters) - The world is on the verge of a fourth mass coral bleaching event which could see wide swathes of tropical reefs die, including parts of Australia's Great Barrier Reef, the U.S. National Oceanic and Atmospheric Administration (NOAA) said.

Marine biologists are on high alert following months of record-breaking ocean heat fuelled by climate change and the El Nino climate pattern.

"It's looking like the entirety of the Southern Hemisphere is probably going to bleach this year," said ecologist Derek Manzello, the coordinator of NOAA's Coral Reef Watch which serves as the global monitoring authority on coral bleaching risk.

"We are literally sitting on the cusp of the worst bleaching event in the history of the planet," he said.

These details have not previously been reported.

Triggered by heat stress, coral bleaching occurs when corals expel the colourful algae living in their tissues. Without these helpful algae, the corals become pale and are vulnerable to starvation and disease.

Coral bleaching can be devastating for the ocean ecosystem, as well as fisheries and tourism-based economies that depend on healthy, colourful reefs to attract scuba divers and snorkellers.

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OMINOUS SIGNS

The last global mass coral bleaching event ran from 2014 to 2017, during which time the Great Barrier Reef lost nearly a third of its corals. Preliminary results suggest that about 15% of the world's reefs saw large coral die-offs in this event.

This year is shaping up to be even worse as observations trickle in.

Following the Northern Hemisphere summer last year, the Caribbean registered its worst coral bleaching on record.

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Now at the end of its summer, "the Southern Hemisphere is basically bleaching all over the place," Manzello said. "The entirety of the Great Barrier Reef is bleaching. We just had reports that American Samoa is bleaching."

Previous global bleaching events occurred in 2010 and 1998.

Coral bleaching is often tied to the naturally occurring El Nino climate phenomenon which leads to warmer ocean waters.

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But the world also just registered its first 12-month period with an average temperature over 1.5 degrees Celsius (2.7 degrees Fahrenheit) above preindustrial levels.

Over a longer period of time, a rise of 1.5C is believed to be the tipping point for mass coral die-offs, with scientists estimating that 90% of the world's corals could be lost.

FIELD INSPECTIONS

For an event to be deemed global, widespread bleaching must occur in three ocean basins - the Atlantic, Pacific and Indian.

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Scientists assess sea surface temperature data and satellite imagery to determine whether reef pixels are passing key thresholds of bleaching.

To merit a global mass bleaching event, a certain percentage of reef pixels need to reveal a level of heat stress in each ocean basin. Based on that definition alone, "technically we're already there" in 2024, Manzello said.

However, he said NOAA was still waiting for final confirmation from Indian Ocean scientists or photographs of Indian Ocean reefs to raise the flag for the fourth mass bleaching event.

At Australia's Great Barrier Reef - which has seen six localized bleaching events since 1998 - scientists are conducting fly-overs of the reef to determine the extent of bleaching.

So far, aerial surveys have revealed extensive coral bleaching across the Keppels region and Capricorn-Bunker groups, said Joanne Manning, a spokesperson with the Australian Institute of Marine Science.

"The aerial surveys are continuing as coral bleaching has been reported in all areas of the marine park, ranging in severity," she said, adding they aim to wrap up fly-overs in the coming weeks and expand to in-water coral surveys.

Reporting by Gloria Dickie; editing by Christina Fincher

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