

# In the Red Sea, coral reefs can take the heat of climate change

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Global warming has in recent years caused colourful coral reefs to bleach and die around the world—but not in the Gulf of Eilat, or Aqaba, part of the northern Red Sea.

In the azure waters of the Red Sea, Maoz Fine and his team dive to study what may be the planet's most unique coral: one that can survive global warming, at least for now.

The corals, striking in their red, orange and green colours, grow on tables some eight metres (26 feet) underwater, put there by the Israeli scientists to unlock their secrets to survival.

They are of the same species that grows elsewhere in the northern Red Sea and are resistant to high temperatures.

Fine's team dives in scuba gear to monitor the corals, taking notes on water-resistant pads.

"We're looking here at a population of corals on a reef that is very resilient to high [temperature](#) changes, and is most likely going to be the last to survive in a world undergoing very significant warming and acidification of sea water," Fine said at his nearby office ahead of the dive.

Global warming has in recent years caused colourful [coral reefs](#) to bleach and die around the world—but not in the Gulf of Eilat, or Aqaba, part of the northern Red Sea.

That is what has prompted Fine's work, both in the Red Sea and on its shores.

At the Interuniversity Institute for Marine Sciences in the southern Israeli resort city of Eilat, dozens of aquariums have been lined up in rows just off the Red Sea shore containing samples of local corals.



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A robot slowly dips its arms into each glass container, taking measurements and uploading them to a database.

"We exposed corals to high temperatures over long periods of time, beyond the current peak summer temperatures and even beyond the model-based temperatures we predict for the end of the century," said Fine, a marine biology professor from Bar Ilan

University in central Israel.

He explained: "They didn't undergo bleaching."

### Heat is on

According to Fine, the Gulf of Eilat corals fare well in heat thanks to their slow journey from the Indian Ocean through the Bab al-Mandab strait, between Djibouti and Yemen, where water temperatures are much higher.



At Israel's Interuniversity Institute for Marine Sciences dozens of aquariums have been lined up in rows just off the Red Sea shore containing samples of local corals that are seemingly able to withstand warmer temperatures.

"Over the past 6,000 years they underwent a form of selection through a very, very hot body of water, and only those that could pass through that hot water body reached here, the northern Red Sea and Gulf of Eilat," he said.

The world just marked its three hottest years in modern times, with scientists pointing to increases in heat-trapping emissions such as [carbon dioxide](#) as a driving factor.

Oceans also absorb about one-third of the carbon dioxide released by human activities, resulting in increasing acidification that is harmful to corals.

Coral reefs, most famously Australia's Great Barrier

Reef, are experiencing in recent years unabated mass bleaching and die-offs.

Often mistaken for a form of vegetation, corals "are in fact an animal that lives in symbiosis with an algae, a plant," said Jessica Bellworthy, a PhD student under Fine's supervision taking part in the Eilat research.



Researchers believe Gulf of Eilat corals fare well in heat thanks to their slow journey from the Indian Ocean through the Bab al-Mandab strait, between Djibouti and Yemen, where water temperatures are much higher.

Corals and algae "provide services for each other," with the algae providing "up to 90 percent of the [coral](#) animal's food" through photosynthesis, said Bellworthy, originally from Britain.

"When ocean temperatures get too hot, this symbiosis, this relationship, breaks down," she said.

"The algae is lost from the coral and causes the coral to look white," effectively "starving" it.

### 'Reefs have no borders'

Losing coral reefs is not only bad news for tourists diving to see their beauty and marine life swimming among them.



Corals in the Gulf of Eilat are "very resilient to high temperature changes and most likely going to be the last to survive in a world undergoing very significant warming and acidification of sea water," Professor Maoz Fine tells AFP.

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