

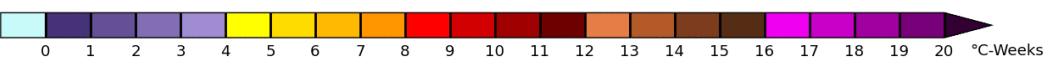
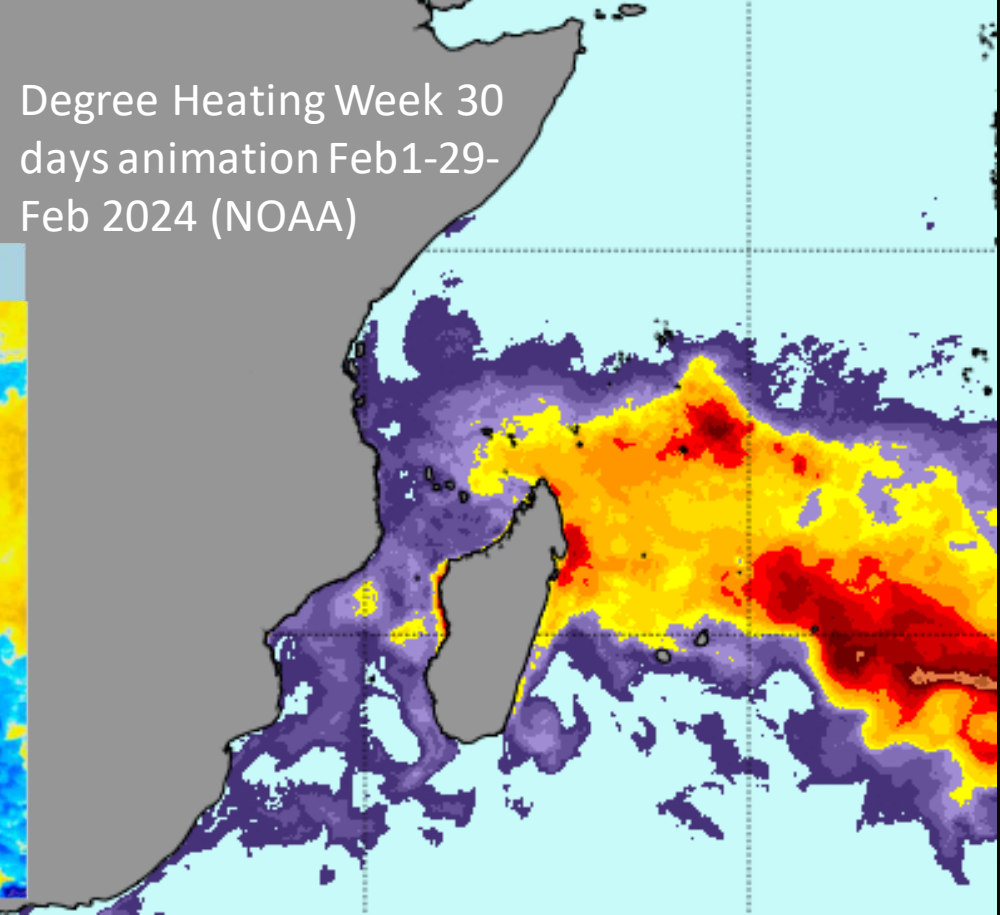
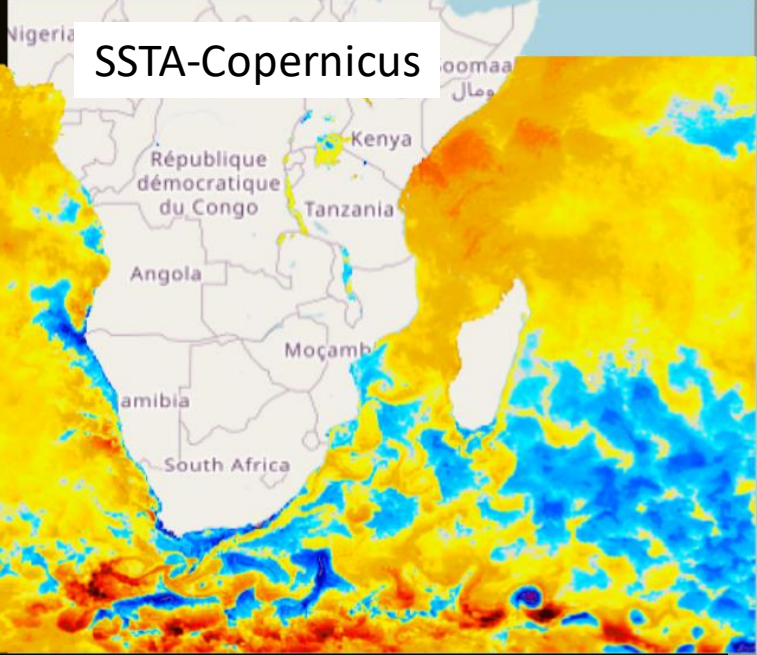
Indian Ocean coral bleaching

Early Warning System for the Western Indian Ocean

Geo WORKSHOP
BLUE PLANET 4 - 7 March 2024, Nairobi, Kenya
Ocean Observation and Prediction for Coastal Sustainability in Africa



CORDIO | **GMES AND AFRICA** | **MarCOSIO**



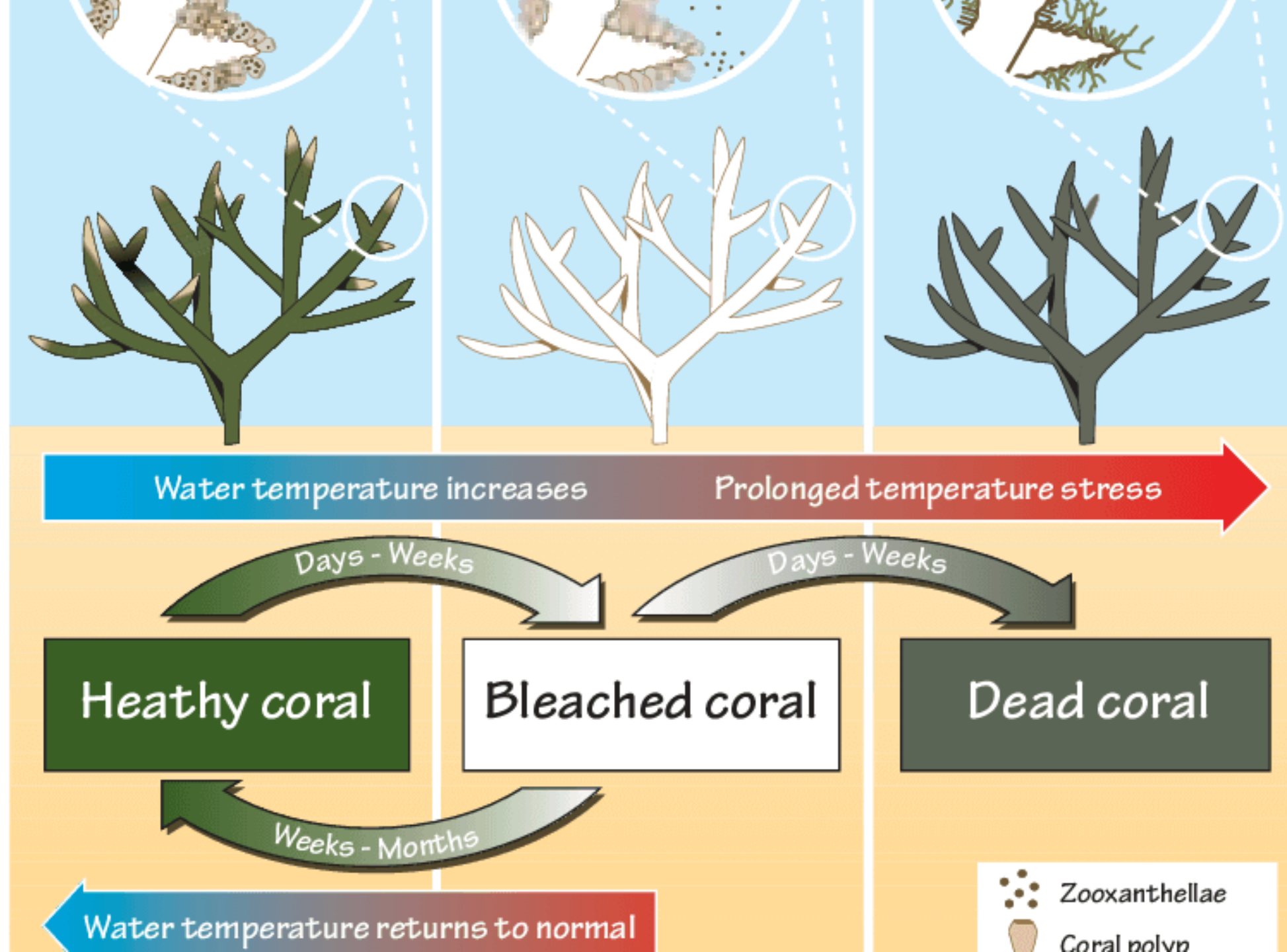
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Healthy coral



Bleached coral





A before and after photo of coral bleaching on Lizard Island, Great Barrier Reef, Queensland. Photo credit: The Ocean Agency.

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WESTERN INDIAN OCEAN – Regional coral bleaching alert

DATE OF THIS ALERT: 01 January 2023

<http://www.cordioa.net/bleachingalert/>
Contact: bleaching@cordioa.net

Bleaching Alert Level

- "warning" – indicators of warmer conditions that may result in some bleaching
- "level 1" – moderate bleaching possible
- "level 2" – severe bleaching likely

Letters in the brackets under the "region" column refer to the WIO climatology regions, depicted in the map in the top right corner.

1 January 2023 – Coral bleaching forecast – Western Indian Ocean

Area	Region	Alert	Bleaching observations
S Moz/S Africa	Cool, south (D1)	none	none
SWIOE Madag	Cool, south (D2)	none	none
SW Madagascar	Hot, south (A1)	none	none
South Equat Curr	Moderate, central (C)	none	none
East Moz Chai/Comoro	Hot, central (A2)	none	none
NW Moz Chai/IC Tanz	Warm, central (B)	none	none
NW Seychelles	Hot, north (A3)	none	none
Kenya-Somalia	Variable, north (E)	none	none

Given low levels of bleaching in recent years and neutral/negative ENSO and IOD, the overall bleaching risk is likely to be low. However, the early buildup of heat, particularly in the Mozambique channel, warrants a "warning" level across the region.

Global & Regional Indicators

The long protracted La Niña event that began in 2020 is gradually ending. Decadal prediction anticipates 2023 to be hotter than 2022 (UK Met office).

ENSO and Indian Ocean Dipole forecasts

At the beginning of 2023, the long protracted La Niña event is gradually transitioning to neutral condition. Left during the first quarter of 2023 before transitioning to El Niño towards the beginning of April. Right, the Indian Ocean Dipole (IOD) has returned to neutral, and this is expected to last through the bleaching season. This will influence SST to be cooler in many parts of the tropical Indian Ocean over the coming months.

NOAA Products – 1st January 2023

SST Anomaly **Virtual stations** **Season outlook (Jan-Apr 2023)**

Left At the beginning of January, temperatures across most of the WIO basin are already 1-2°C warmer than baseline and Center most of the stations (17/21) are on bleach watch though there is no significant buildup of heat stress. Right The seasonal outlook predicts moderate to high bleaching in the southern WIO with greater than 60% probability.

Globally, 2022 was relatively cool (though slightly warmer than 2021) which is consistent with a La Niña state that began in September 2020 and persisted throughout 2022. The cooler conditions provided a haven for WIO reefs, and no significant bleaching was reported in the region in 2022.

Cyclones

In 2022, a total of 12 tropical storms were formed but only 5 developed into cyclones in the WIO region.

At the beginning of 2023, the WIO basin is relatively calm, and no cyclone or storm has formed so far.

No bleaching observations to date

REPORT ALL BLEACHING (AND NON-BLEACHING) OBSERVATIONS HERE <https://goo.gl/forms/P3Ke9uct3vVM9403>

Incoming observations will be updated on this dashboard. <https://www.in14aeC3>

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Indian Ocean Coral bleaching Observations 2016-Present

(this resource is still under development) location data is upto date

Total Observation from 2016 to present

854

Last update: a few seconds ago

Reporting Countries

Last update: a few seconds ago

GIS dashboard-

Indian Ocean coral bleaching

Corals bleach when stressed – the symbiotic algae living inside coral tissues are expelled, so the white skeleton becomes visible, and in this weakened condition, they may succumb to other threats, and/or to the high temperatures.

% Bleached

Last update: a few seconds ago

% Mortality

Last update: a few seconds ago

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Marcosio

SST

SST Anomaly

SST Hotspots

Bleaching Alert Areas

Degree Heating Weeks

Seek to specific date: -1 Day +1 Day

Legend

- 27.0 = x
- 28.0 = x
- 29.0 = x
- 30.0 = x
- 31.0 = x
- 35.0 <= x

Value

No Data

Bleaching alert web tool



**THANKS FOR YOUR
ATTENTION**

For details on WIO 2024 bleaching activities and to join our mailing list, please contact us at bleaching@cordioea.net , or jmbugua@cordioea.net.

Your engagement is pivotal in our shared commitment to coral conservation.

