



Australian Government

Great Barrier Reef  
Marine Park Authority

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**REEF**

## Coral bleaching on the Great Barrier Reef

25/03/2022

The Great Barrier Reef Marine Park Authority (Reef Authority) and the Australian Institute of Marine Science (AIMS) have completed aerial surveys across a representative sample of more than 750 reefs across the Great Barrier Reef.

Aerial surveys are a standard method which provide the best picture of the full spatial extent of bleaching severity at many reefs across a large, representative area of the Great Barrier Reef Marine Park.

Consistent with the geographical distribution of heat stress experienced across the Reef over the past months, the bleaching is variable:

- **Far North (Cape York Tip to Cape Melville):** ranged from minor to severe
- **North (Cape Melville to Dunk Island):** mostly severe with some mortality observed
- **Central (Dunk Island to Cape Conway):** mostly severe with some mortality observed
- **South (Cape Conway to just south of Lady Elliott Island):** mostly minor with some high coral cover reefs displaying no visible bleaching.

This assessment of bleaching at multiple reefs in all four management areas confirms a mass bleaching event on the Reef, the fourth since 2016 and despite La Niña conditions.

Mass bleaching events do not affect every reef, and not all reefs are equally affected. The intensity of bleaching varies between reefs and the locations on each reef and can be influenced by what type of coral is growing, the depth, ocean currents, and the amount of heat stress experienced.

Record breaking temperatures in December, to milder temperatures throughout January and into February, followed by heatwave conditions late February and into March, has led to the bleaching now being observed through aerial surveys.

The Reef Authority continues to assess all available data on the impact of the summer conditions on the Reef for a clearer picture of the extent and severity of bleaching throughout the Marine Park. People using the 'Eye on the Reef' monitoring app also contribute by reporting what they are seeing.

### KEY POINTS

- Accumulated thermal stress across the Marine Park has led to widespread coral bleaching.
- The majority of the Reef has accumulated significant heat stress this summer. Areas between Innisfail and Rockhampton have had the highest heat stress accumulation.
- The final extent and severity of coral bleaching and any subsequent mortality will depend upon local and regional weather, which can either reduce or intensify bleaching. For example, increased cloud cover, cyclonic activity, rain and wind can all reduce water temperature.
- The Reef Authority acknowledges this news comes at a time when Reef-dependent industries are working hard to re-establish themselves following the impacts of COVID-19.
- While bleaching brings additional pressure on the Reef, the resulting impacts will vary between different places, and much of the Great Barrier Reef remains an amazing place to visit.
- It is important to remember bleached corals are still alive – on mild to moderately bleached reefs there is a good chance most bleached corals will recover and survive this event.
- Equally, on severely bleached reefs, there will be higher mortality of corals. It is important to remember that following the Reef's mass bleaching event in 2020, there was very low coral mortality.





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### Coral bleaching

When we assess coral bleaching we consider two things:

- 1) How widespread the coral bleaching is i.e. the area that is affected
- 2) The severity of the coral bleaching is dependent on how stressed the individual corals are i.e. are they a little bit stressed (pale), very stressed (fluorescent / bleached white) or are they dead.

Aerial surveys provide a good assessment of the extent of coral bleaching across the entire Great Barrier Reef. In water surveys enable us to assess the severity of impact on coral health at a site or reef scale.

#### Aerial surveys

- These are used to estimate the spatial extent of coral bleaching at the scale of the whole Great Barrier Reef.
- The categories used describe how much of the coral area on each reef shows signs of coral bleaching.
- The categories recorded by the aerial surveys describe how much of the area is showing visible signs of coral bleaching as pale, white or fluorescent corals in shallow water as seen from the air.
- In water surveys are needed to determine actual coral health i.e. how stressed the corals are.

#### In-water surveys

- These are conducted using a variety of detailed methods
- These surveys assess the severity of coral bleaching including no bleaching, pale, fluorescent, bleached white and mortality.
- They also record the area of the survey that is affected by coral bleaching.

- In water surveys are critical to validate the aerial surveys and to help determine the severity of the coral bleaching event.
- The AIMS Long-term Monitoring Program is key to continuing to understand the longer-term health of the Great Barrier Reef.
- The Eye on the Reef Program includes a range of coral health and impact survey methods that can be used by Marine Park visitors, rangers and scientists to assess impacts including coral bleaching.

### Reef health monitoring

Ongoing monitoring of Reef health by the Australian Institute of Marine Science will be key in continuing to understand the longer-term health of the Great Barrier Reef and the consequences of successive coral bleaching events.

The Great Barrier Reef Marine Park Authority continues to provide up-to-date information for the public through the Reef Authority's Reef Health Updates.

Actions to support the resilience of the Reef are now more important than ever.

The Reef remains a vibrant and beautiful ecosystem. Impacts from climate change and extreme weather are a reminder of the importance of global greenhouse gas emissions reduction and strong marine management actions that support the resilience of this magnificent living ecosystem. Climate change remains the single greatest challenge to the Reef.

The Great Barrier Reef Marine Park Authority recognises this news comes at a time when Reef-dependent industries are working hard to re-establish themselves following the impacts of COVID-19.





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### Australian Government investment

The Australian Government is investing an additional \$1 billion over nine years (2021-22 to 2029-30) to help ensure that one of Australia's natural treasures, the Great Barrier Reef is protected for future generations.

- \$579.9 million allocated to remediate erosion, improve land condition and reduce nutrient and pesticide runoff.
- \$252.9 million for Reef management and conservation (including reducing the threat of crown-of-thorns starfish).
- \$92.7 million for Reef resilience science and adaptation strategies.
- \$74.4 million to Traditional owners and community-led projects.

This is on top of the \$2 billion the Australian Government has committed since 2014 for Reef protection, which has helped to improve water quality, control outbreaks of coral-eating crown-of-thorns starfish, address plastic pollution and rehabilitate island, coastal and reef habitats.

**We encourage people to come  
and see the Reef, love the Reef  
and help us to protect the Reef.**

Great Barrier Reef Marine Park Authority

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