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## Close Reading: Coral Bleaching

### Great Barrier Reef Devastated by ‘Severe’ Coral Bleaching: Study

Web: [nbcnews.com/news/world/great-barrier-reef-devastated-severe-coral-bleaching-study-n744521](http://nbcnews.com/news/world/great-barrier-reef-devastated-severe-coral-bleaching-study-n744521)

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By: Eoghan MacGuire

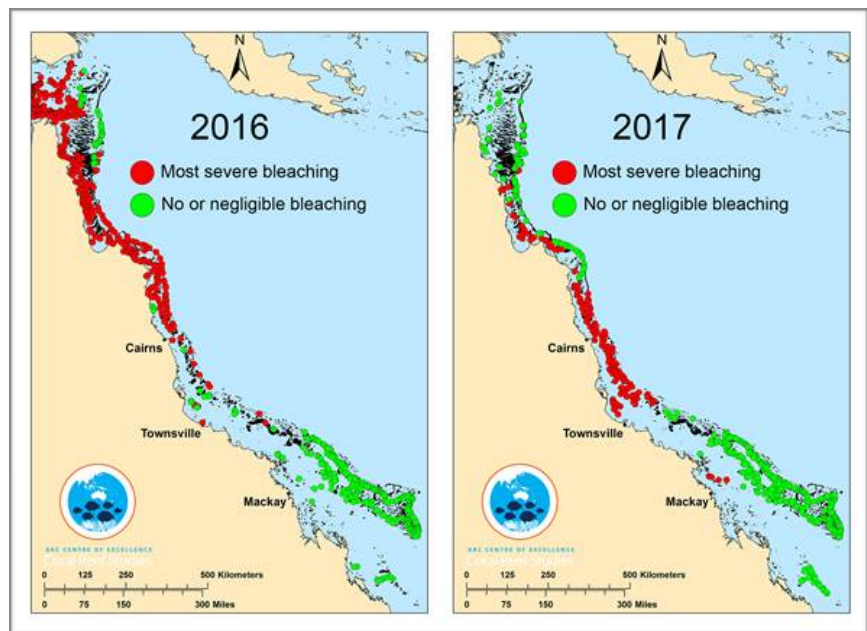
Two-thirds of Australia’s Great Barrier reef has been devastated by back-to-back years of “severe” coral bleaching, aerial surveys have found, raising fears that the natural wonder may not fully recover.

While mass bleaching has been recorded on the Great Barrier Reef before, researchers say two events have never occurred in such close proximity.

Coral bleaching occurs when abnormal environmental conditions — such as heightened sea temperatures — push corals to expel tiny photosynthetic algae causing them to turn white.

The damage was recorded by the Australian Research Council’s Centre of Excellence for Coral Reef Studies, which carried out separate studies over the past two years.

Its 2016 survey found the top third of the reef had experienced the most intense bleaching. But research completed last week recorded more damage along the 1,400 mile long reef’s middle third.



“The combined impact of this back-to-back bleaching stretches for [900 miles], leaving only the southern third unscathed,” ARC director Terry Hughes said Monday.

He said bleaching can be caused by weather patterns such as El Nino as well as higher temperatures driven by global warming.

While the 2016 bleaching was part of a “global event associated with the 2015-2016 El Nino,” this year has more to do with a “very mild winter and [summer] heatwaves” on the east coast of Australia, Hughes said.

Situated on Australia’s north east coast, the Great Barrier Reef was given World Heritage status in 1981.

It is described by the Australian government as one of the world’s natural wonders.

Severe bleaching events have been recorded previously on the Great Barrier Reef in 1998 and 2002.

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Bleached corals can recover if the temperature drops and algae can recolonize. But experts warn this process can take up to 10 years.

James Kerry, who was part of the aerial survey team, said: “It takes at least a decade for a full recovery of even the fastest growing corals, so mass bleaching events 12 months apart offers zero prospect of recovery for reefs that were damaged in 2016.”



The researchers also said a section of the reef untouched by the bleaching was damaged by Tropical Cyclone Debbie last month.

But while Hughes said the reef was likely struggling with multiple problems, the most pressing was global warming.

“As temperatures continue to rise the corals will experience more and more of these events. One degree Celsius of warming so far has already caused four events in the past 19 years,” Hughes said. “Ultimately, we need to cut carbon emissions, and the window to do so is rapidly closing.”

Jon Brodie, a water quality expert who was not involved in the research, told the Guardian he believes the reef is now in a “terminal stage.”

“Last year was bad enough, this year is a disaster year,” he told the newspaper.

## Questions:

1. What is coral bleaching and one environmental factor that can cause it to occur?
2. How much of Australia’s Great Barrier Reef have undergone coral bleaching recently?
3. Can the Great Barrier Reef recover from the last event? If so, how long is it expected to fully recover?