

Great Barrier Reef in danger, scientists say

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Scientists at a coral reef symposium in Canberra this week are examining degraded reefs off the Northwest Australian coast in an effort to determine what lies ahead for the Great Barrier Reef.

"Reefs north of Exmouth have experienced large-scale bleaching in the past five years," says Professor Malcolm McCulloch from the ARC Centre of Excellence for Coral Reef Studies (Coral CoE) at the University of Western Australia.

McCulloch is in the midst of an autopsy of this Pilbara bleaching event, collecting and analysing both living and dead stony coral. He says the bleaching was widespread, occurring both inshore and offshore. Interestingly, this was across the dredging grounds of Barrow and Onslow as well as the now near-pristine Montebellos – an area pretty much abandoned by humans since atomic bomb testing took place at the site mid-last century.

"The Pilbara reefs experienced bleaching due to higher temperatures that extended way beyond the dredging areas," he says, pointing to the La Nina of the past five years as one of the main contributors to an intense and prolonged warming along the west coast.

McCulloch warns of the upcoming El Nino, the opposite phase of La Nina. While El Nino will relieve conditions in the west, intense warming will swoop down the east coast of Australia, including the Great Barrier Reef. The World Meteorological Organization have just released a report indicating that El Nino is likely to occur as early as spring this

year.

McCulloch expresses worry for the Great Barrier Reef as it faces the combined effects of the natural El Nino phase, [anthropogenic climate change](#) and a possible increase in coastal development.

"Climate change pays no attention to whether an area is pristine or polluted," he explains. "And when dredging and [climate change](#) interact, there are quite serious effects that don't happen separately, they happen together."

McCulloch says the dredging undertaken at Barrow, part of the massive \$54 billion Gorgon project, was one of the biggest dredging projects of its kind in the world. "With the scale of project similar to what's proposed for the Great Barrier Reef and Abbot Point, what we can take away from this experience in Western Australia is a likely indication of the effects that lie ahead for the Great Barrier Reef."

"The El Nino years of 1998 and 2002 were the warmest and most devastating years on record for the Great Barrier Reef," continues McCulloch. "The chances of bleaching are already much greater during these natural warming phases, but when superimposed with anthropogenic warming and other coastal effects, the results can be devastating."

"With the Great Barrier Reef now about to get warmer, what we do hope is that at the very least, dredging in this area be delayed until the cooler phase of La Nina returns to the east coast."

"Coral resilience – their ability to bounce back – will be affected by degraded conditions from factors such as dredging activity and river runoff," concludes McCulloch.

More information: Professor Malcolm McCulloch is chairing the 'Climate Change' sessions of the 'Future of Coral Reefs' symposium at 3:40pm on Thursday 3rd July and 2pm on Friday 4th July. He is also presenting his latest research at the public forum, 5:30pm on the Thursday evening.

Provided by ARC Centre of Excellence in Coral Reef Studies

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