

Climate change may cause rethink for Ningaloo protection

August 17 2016, by Pepita Smyth

A new study of the World Heritage-listed Ningaloo Marine Park has found that further protection may be needed to shield the reef against the impacts of climate change.

Murdoch University led a collaborative study to map the most resilient sections of Ningaloo Reef.

It showed that, while most of the important areas were already sufficiently protected within no-take sanctuary zones, some critical habitats were still missing out on protection.

"Ningaloo Reef is the jewel in Western Australia's natural crown but one of the biggest threats it is facing is [climate change](#)," lead author Ms Harriet Davies said.

"By ensuring the no-take sanctuary zones are protecting the most resilient areas of the reef, we would be doing the best we can to ensure Ningaloo's survival."

The main finding of the study was that some existing sanctuary zones should be expanded to cover the deeper areas, mostly in the south of the [marine park](#) said Ms Davies, who undertook the research for her BSc Honours project at Murdoch University.

The researchers used data from hyperspectral imagery, a technique that allows mapping of the depth, structural complexity and diversity of the

reef. The researchers also analysed spatial habitat models and aerial survey data of human use of the reef.

The research builds on previous work by Murdoch University and the Australian Institute of Marine Science, which mapped the biodiversity and human use of the marine park.

"We assessed how exposed different sections of the reef would be to warming temperatures and increasing human activity," said co-author Professor Lynnath Beckley.

"For example, some the least exposed areas (and thus more resilient areas) would be areas with high structural complexity, in deeper water or with more water movement, such as in [reef](#) passes".

"The results should provide valuable decision support for the next review of the Ningaloo Marine Park management plan," said Professor Beckley.

"One of the most pleasing aspects of this study was the collaboration between researchers at Murdoch University, the Australian Institute of Marine Science and Nelson Mandela Metropolitan University in South Africa."

More information: Harriet N. Davies et al. Integrating Climate Change Resilience Features into the Incremental Refinement of an Existing Marine Park, *PLOS ONE* (2016). [DOI: 10.1371/journal.pone.0161094](https://doi.org/10.1371/journal.pone.0161094)

Provided by Murdoch University

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