

Limited fishing zones support reef conservation

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New research on how fisheries and conservation goals are impacted by yellow zones (limited fishing zones) is crucial for future marine park management. Credit: Kynan Hartog-Burnett / ARC Centre of Excellence for Coral Reef Studies.

A world first study within the Great Barrier Reef Marine Park has found limited fishing zones (yellow zones) are still important conservation and fisheries management tools when paired with no-fishing zones.

Lead author Dr. April Hall, from the ARC Centre of Excellence for Coral Reef Studies at James Cook University (Coral CoE at JCU), said partially protected yellow zones still contain healthy numbers of [reef fish](#) targeted for recreational and [commercial fishing](#). These include coral trout, tropical snappers, emperors and tuskfish.

Yellow zones limit, rather than prohibit, fishing through fishing gear restrictions. For example, limited line fishing is allowed with one rod or line and one hook per person.

"We found the numbers of popular fishing targets in these yellow zones are up to 69 percent of what they are in the adjacent no-take green zones," Dr. Hall said.

Green zones, where all fishing is prohibited, are more frequently studied areas. Their benefits to conservation and flow-on fisheries are already well-established.

Though there were fewer fishing targets in the yellow zones, both yellow and green zones had similar abundances of non-target fishes and richness of fish species overall.

"Both green and yellow zones supported a great diversity of fish species," Dr. Hall said.

Yellow zones were set aside as partially protected areas in the Great Barrier Reef Marine Park Authority's (GBRMPA) 2004 zoning plan. Co-author Darren Cameron, from GBRMPA, said the Great Barrier Reef is one of the world's largest and most comprehensively studied marine parks. However, this research is the first to specifically address yellow zones.

"We found yellow zones, in conjunction with green zones, are an effective management tool. They contribute to marine park conservation goals whilst positively supporting fishing opportunities," Mr Cameron said.

The study took place within the Hinchinbrook and Dunk Island region. The area has outstanding biodiversity and cultural heritage. It is an important area for recreational, commercial and indigenous fishing. The study also considers zoning on inshore reefs, an area which has previously received little attention.

The project is a collaboration between Coral CoE at JCU and GBRMPA, as part of Dr. Hall's Advance Queensland Post-Doctoral Fellowship. The analyses form part of her broader project evaluating yellow zones across the Great Barrier Reef.

"Data from our project will be critical for conservation and fisheries alike," Dr. Hall said.

More information: April E. Hall et al, Partially protected areas as a management tool on inshore reefs, *Reviews in Fish Biology and Fisheries* (2021). [DOI: 10.1007/s11160-021-09654-y](https://doi.org/10.1007/s11160-021-09654-y)

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