

Serious ecological consequences of coral reef dredging

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Scientists have used satellite imaging of coral reefs in the South China Sea to highlight the dire ecological consequences of reef dredging to increase land area. While much has been made of the political significance of reef dredging and land creation activities in this area, the scientists conclude that the impact on these precious environments must also be considered and the international community must cooperate to prevent the destruction of these critical ecosystems.

Due to their isolation, the [coral reefs](#) of offshore distant atolls have historically been "protected" from direct human stressors. However, in an article publishing on 31st March in the Open Access journal *PLOS Biology*, researchers from the University of Hawaii document reef damage in isolated reefs due to dredging and [land reclamation](#) in the South China Sea (Note: reclamation is here defined as the creation of new land by filling submerged areas, with no connotation of ownership). The authors used remote sensing data from the Landsat 8 Operational Land Imager to quantify reef destruction and land creation in seven atolls in the Spratly Islands. Their results show that these seven atolls have effectively lost ~11.6 km² (26.9%) of their reef area for a gain of ~10.7 km² of land from February 2014 to May 2015. The study also shows that dredging has been a common practice among countries in the region, and calls for urgent international partnerships for the conservation of this disputed territory before further reclamation and destruction of atolls in the region.

"We see an urgent need to bring the issue to the attention of the

scientific community and the general public before more unique atolls are irreversibly damaged," says study leader, Camilo Mora. The protection of coral reefs is extremely important, as not only are they home to an incredible number of species, but they provide food and protection to many coastal populations. Coral reef dredging is a disturbingly common practice across the globe. Previous studies of the impact of reef dredging have found that it can lead to near-permanent damage to the reef and its surrounding ecosystems, and result in local species extinctions. In the South China Sea, where the ownership of many atolls is disputed, the authors call for the international community to come together to create a mechanism for conservation. One possibility would be the establishment of a multinational marine protected area. Mora says, "We suggest the need for multinational cooperation in this disputed territory as a win-win situation, before the race for further development damages more unique environments."

"Countries bordering the South China Sea need to realize that the value of the Spratly Islands as a spawning ground for the same fish that support the lives and livelihoods of their citizens—a source of larvae to replenish harvested fish populations throughout the region", says co-author John MacManus. The authors recommend looking to the formation of the Antarctica Protected Areas as a positive example of an ecologically important region saddled with multiple territorial claims.

More information: Mora C, Caldwell IR, Birkeland C, McManus JW (2016) Dredging in the Spratly Islands: Gaining Land but Losing Reefs. *PLoS Biol* 14(3): e1002422. [DOI: 10.1371/journal.pbio.1002422](https://doi.org/10.1371/journal.pbio.1002422)

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