



Embargo:
2 p.m. EST
Thursday June 22, 2006

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World's Coral Reefs Left Vulnerable by Paper Parks

Highly Protected Coral Reefs Just 2% of World Total: Scientists
First-ever Analysis Reveals Reef Protected Areas Too Small, Far Apart

Of the 18.7% of tropical coral reefs that lie within “Marine Protected Areas,” less than 2% are extended protection complete with regulations on extraction, poaching and other major threats, according to an analysis published in *Science Magazine* on June 23.

The research represents the first global assessment of the extent, effectiveness and gaps in coverage of coral reefs by MPAs. The team built a database of MPAs for 102 countries, including satellite imagery of reefs worldwide, and surveyed more than 1,000 MPA managers and scientists to determine the conservation performance of MPAs.

The analysis assesses protection afforded to coral reefs from such threats as resource extraction, poaching, pollution, coastal development and overfishing. It also took account of such factors as MPA size and distances to neighboring protected areas.

“Although coral reefs are declining worldwide, actions to reverse such a crisis are woefully inadequate in most countries,” says Dr. Camilo Mora, a scientist at Dalhousie University and lead author of the study. “Clearly, lines on the map are not enough to protect the world’s coral reefs.”

The authors recommend that protected areas need to be enforced to prevent poaching and should be expanded to include the management of external threats. Furthermore, the authors suggest MPAs should be bigger and linked to other protected areas to be more effective. “The future of coral reefs worldwide relies on countries and conservation agencies seriously embracing these objectives,” adds Dr. Mora.

"Marine protected areas are the prime strategy for the conservation of coral reefs and other marine habitats worldwide," says Dr Mark Costello of the University of Auckland. "For instance, we know that when Marine Protected Areas are managed as no-take reserves, the result is more natural species abundances and food webs - evident as larger population and body sizes of fish and crayfish, and higher production of their young."

"What we found, in essence, is that we are creating paper parks," explains co-author and fellow researcher Ransom Myers of Dalhousie University. "The establishment of Marine Protected Areas is rarely followed by good management and enforcement. And while management of MPAs varies worldwide, it was particularly low in areas of high coral diversity such as the Indo-Pacific and the Caribbean."

"This new study combines a simple approach with detailed large-scale databases to provide the first such global assessment of biodiversity protection," says co-author Dr. Serge Andréfouët, a scientist with the Institut de Recherche pour le Développement in New Caledonia. "We lack similar global assessment for other marine habitats, including kelp forests, seagrass beds, and deep-sea corals; but we have no reason to believe these may be better protected than tropical coral reefs."

"This paper is a wake-up call," says Dr. Peter Sale, Assistant Director of the United Nations University's International Network on Water in Canada and a University of Windsor professor. "It reminds us that despite recent successes in protecting coral reefs, our actions to date fall far short of what is required to save these most diverse of all marine habitats."

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Leigh Marine Laboratory at the University of Auckland, where the study was conducted, has been studying marine reserves for more than 30 years. New Zealand leads the world in that 30 of its 50 MPAs are “no-take” marine reserves.

