



Healthy Reefs  
for healthy people

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Cancun, Mexico \* Belize City, Belize \* Guatemala City, Guatemala \* Tegucigalpa, Honduras

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## More Fish are Making the Mesoamerican Reef a Healthier Coral Reef Ecosystem

**(Mesoamerican Reef – May 12th, 2015)** – The Healthy Reefs for Healthy People Initiative (HRI) today released its 2015 Report Card for the Mesoamerican Reef, recording an improvement in reef health from ‘Poor’ in 2012 to ‘Fair’ this year, primarily due to increased fish biomass. The report is based on a new study of 248 coral reef sites along 1000 km of the Caribbean coasts of Mexico, Belize, Guatemala, and Honduras, which were monitored for living coral cover, fleshy macroalgal cover, herbivorous fish biomass (parrots and surgeonfish) and commercially important fish biomass (snappers and groupers). New this year to the Report Card is a collection of detailed indicator maps of coral reef condition on a variety of spatial scales. These new maps provide guidance on where to focus conservation actions at the most appropriate management scale.

**Overall Health:** The overall 2015 MAR Reef Health Index score was ‘fair’ (2.8), on a scale of ‘critical’ (1) to ‘very good’ (5), with encouraging improvements at both the regional level and of individual indicators. Corals – the architects of the reef – have improved since 2006, increasing from 10%-16% cover; although fleshy macroalgae, the main competitors with corals for open reef space, have also increased. Key herbivorous fish continue to increase in numbers and are needed to reduce this macroalgae. Commercial fish have also increased in biomass, which is an encouraging sign, although large groupers are rare and mainly found in fully protected zones of marine protected areas (MPA).

**Bringing Back Big Fish:** Like many areas of the Caribbean, the Mesoamerican Reef (MAR) has a long history of fishing that has resulted in declining fish populations, especially commercially significant fish like groupers and snappers. However, growing efforts in the MAR region to bring back fish through replenishment areas (=fully protected areas) seem to be working. Based on HRI data of 43 long-term survey sites, fully protected areas had 10 times more snapper and grouper biomass than those within general areas of designated MPAs or reefs with no protection. More large-sized groupers were found in long-established MPAs and areas with additional protection measures. Protecting large fish is important as bigger fish produce more eggs and more eggs produce more fish for the future. *“Given the growing scientific concern about coral reefs and the general decline in fish stocks globally – our measureable improvement in the condition of the Mesoamerican Reef, particularly fish populations, is encouraging”*, says Dr. Melanie McField, Director of the Healthy Reefs Initiative / Smithsonian Institution.

**Grazers Give a Helping Hand:** The recovery of coral reefs in the MAR region will also depend on the herbivorous fish and urchins who help keep reefs healthy by eating the fleshy macroalgae that can overgrow and kill corals or restrict new coral larvae from settling. This study found parrotfish were abundant throughout the MAR region, although larger-sized parrotfish, the ones that are more effective at removing algae, were found mostly in marine protected areas. Efforts to protect herbivorous fish, such as the recently announced fishing ban of parrotfish in Guatemala this past April, are especially important as more herbivores may be able to increase grazing intensity to

levels that can shift the balance back towards more coral-dominated reefs. Dr. Jeremy Jackson of Scripps Institution of Oceanography and Smithsonian Institution remarked *"The exciting news that Guatemala has recently joined Belize and the Bay Islands of Honduras in banning the fishing of parrotfish is another critical step for the long-term conservation and recovery of corals on Mesoamerican reefs. Protecting herbivores of all kinds is critical to this endeavor. Congratulations to the Healthy Reefs Initiative for helping to promote this impressive effort, which I encourage other countries in the Caribbean to follow."*

**Protecting Hope Spots:** The loss of certain coral species, like elkhorn (*Acropora palmata*) and staghorn (*A. cervicornis*) corals throughout the Caribbean is a concern as they are the main builders of shallow coral reefs that protect our coastlines from waves and serve as a refuge for other animals. The MAR is home to many large healthy stands of these endangered corals, and several of these reefs are now receiving extra protection to ensure their survival such as Limones Reef in Puerto Morelos, Mexico; Tela Bay and Roatán in Honduras. Dr. Sylvia Earle, founder of Mission Blue, previously joined the Healthy Reefs Initiative on a diving research expedition to Honduras and got to see some of these reefs up close. During that trip she expressed optimism with regard to the conservation efforts in the Mesoamerican Reef: *"You must be doing something right, because here, there are plenty of reasons for hope. Cordelia Banks, off Roatán, Honduras, is one of the best places I have seen, even counting 50 years ago, an amazing stand with acres of staghorn coral."* Dr. Earle explained she really likes the term "Hope Spot" as a concept that suggests that places like these that are protected are really a cause for hope.

**A Regional Effort:** Maintaining a healthy and diverse coral reef ecosystem is especially important to the four countries of Mexico, Belize, Guatemala, and Honduras as the reefs support the local economies and culturally rich livelihoods of nearly two million people. The MAR region is a global leader in MPA declaration - all four countries have achieved the target of protecting 20% of their territorial seas. The 45 MPAs in the MAR protect 23,492 km<sup>2</sup> of marine area and five new MPAs have been designated since 2011, including a new community supported MPA in Tela, Honduras and an expansion of Hol Chan Marine Reserve from 55 km<sup>2</sup> to 441 km<sup>2</sup>. However, only 3% of the regional territorial sea is under full protection from fishing, including large areas in Banco Chinchorro (Mexico) and Swan Islands (Honduras). The leaders of the four countries, as well as the Healthy Reefs Initiative and more than 60 conservation partners, continue to work to address national and transboundary issues impacting the coral reefs.

**Next Steps:** While there are encouraging signs of improving coral reef health in the MAR, there is still much to do to help coral reefs recover. Dr. Melanie McField, Director of the Healthy Reefs Initiative / Smithsonian Institution said *"We have already taken some important steps in the MAR region – like the protection of herbivorous fish in Belize, the Bay Islands of Honduras and just this year in Guatemala."* Professor Peter Mumby of the University of Queensland stated: *"The science is clear that protecting parrotfish can help corals grow and maintain the high-quality reef habitat needed to support productive fisheries for the future. The Mesoamerican Reef has the potential to become the world's first international ecoregion to protect parrotfish in all of its reef area."*

There are other issues that still need to be addressed to ensure the Mesoamerican Reef's long-term recovery including: better management of agricultural run-off, adopting more sustainable coastal development practices, properly and adequately treating wastewater and pollution, and encouraging environmentally sustainable and socially responsible business practices in the region. The management recommendations included in this report have been proposed by HRI partners as the key actions needed over the next two years to improve the reef's health. The Healthy Reef's Initiative, through a precedent-setting conservation partnership of more than 60 partners continues to collaborate to improve the health and management of this diverse coral reef ecosystem.

**ABOUT HEALTHY REEFS FOR HEALTHY PEOPLE:** HRI is a regional initiative that began in 2004 and now has 65 local, regional and international partner organizations, many of which contributed data for this report. The growing collaboration has not only enriched the quality of information, it has also increased the number of sites being monitored from 130 in 2010, 193 in 2012, to 248 sites in 2015, allowing a better understanding of the overall state of health.

**ABOUT THE HEALTHY REEFS FOR HEALTHY PEOPLE REPORT CARDS:** The 2015 Report Card for the Mesoamerican Reef is a user-friendly tool, published so that decision makers can have access to the most comprehensive scientific data available. The data guide decision makers in resource management policies, aimed at protecting both the reef and the livelihoods of communities depending on healthy coral ecosystems. The report also enables the evaluation of management actions at a regional scale and puts the concept of 'adaptive reef management' into practice. The Healthy Reefs Initiative publishes report cards every two years and previous reports published in 2008, 2010 and 2012 are available online at [www.healthyreefs.org](http://www.healthyreefs.org).

**ABOUT THE MESOAMERICAN REEF:** The Mesoamerican Reef extends over 1000 km from the northern tip of the Yucatán Peninsula in Mexico south to the Bay Islands off the north coast of Honduras, including Guatemala's Caribbean coast and all Belize, which has the largest barrier reef in the Western Hemisphere.

**Extra on Reef Health:**

The condition of reefs varied throughout the region. About 9% of the reefs were in 'good' or 'very good' condition with key structural and functional components meeting target values. These coral reefs will be important sources of larvae for other reefs and are likely to be more resilient to future disturbances associated with global climate change like warming sea surface temperatures and ocean acidification. While the majority of reefs (~74%) were in "poor" to "fair" condition, they have the potential to shift either towards a trajectory of recovery or decline depending on future disturbances, and most importantly, our ability to minimize human impacts. About 17% of the reefs were in 'critical' condition and will require management intervention or restoration to prevent irreversible decline.

Find out more at: <http://www.healthyreefs.org>.

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