A DECADE OF MAKING A DIFFERENCE CONSERVING OUR MESOAMERICAN REEF

The Healthy Reefs for Healthy People Initiative (HRI) based in the Smithsonian Institution, released its 2018 Mesoamerican Reef Report Card last week, providing a decadal glimpse of the condition and changes in this ancient living coral reef ecosystem. The 69 partner organizations in HRI are working together to successfully improve management and reef health. The 2018 Report Card records an improvement in reef health from ‘Poor’ in 2006 to ‘Fair’ this year, with increases in three of the four indicators over the decade.

HRI’s Director, Dr Melanie McField of the Smithsonian Institution, says “maintaining the consistent monitoring and collaborative management efforts of so many organizations for so many years is a notable achievement in itself, but the measured improvement in reef health demonstrates our capacity to stem the trajectory of decline. Reefs face ever increasing stress which is outpacing that of our management actions. We need bolder swifter actions.”

The report is based on a new study of 319 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 (parrot and surgeonfish) and commercially important fish biomass (snappers and groupers).

Major findings include:

- The overall 2018 Mesoamerican Reef Health Index score was ‘fair’ (2.8), on a scale of ‘critical’ (1) to ‘very good’ (5), showing a slow improvement over a decade since 2006: (2.3) from a ‘poor’ to a ‘fair’ condition (2.8) this year.
- Among the 319 reef sites surveyed, 1% was in ‘very good’ condition, 13% in ‘good’, 32% in ‘fair’, 37% in ‘poor’, and 17% in ‘critical’.
- Honduras had the highest reef health index (3.0), followed by Belize and Mexico (2.8), and Guatemala (2.0).
- Three of the four indicators in the MAR improved over the past decade of data, including coral cover (18%), herbivorous fish (2,731 g/100m$^2$) and commercial fish (909g/100m$^2$).
- The only indicator with no improvement and a ‘poor’ ranking was fleshy macroalgae, now 23% - up from 12% in 2006.
- The increase in coral cover included species that are important for reef building and coastal protection.
- In 2015/16, 21% of corals bleached, with no mortality noted, although continued coral bleaching in 2017 is a concern.
- We now have 47 marine protected areas in the whole region, covering 57% of the territorial seas, but only 3% of the sea is fully protected from fishing in Replenishment Zones (RZs).
- Fully-protected RZs have proved that they work, with a doubling of commercial fish over the past decade. Big reproductive fish are primarily found within the RZs and these are critical to replenishment.
- New management interventions are being piloted in collaboration with HRI partners to restore herbivory. Stronger efforts are needed to reduce nutrient pollution to combat macroalgal proliferation.

COUNTRY SPECIFIC FINDINGS AND CALLS TO ACTION

Mexico coral reefs shows a slow but steady increase in coral cover since 2005. Commercial fish biomass, highest in the region, has fluctuated but overall increased 140% over the past decade. Sustained enforcement and more replenishment zones are needed for healthier reefs and fisheries. Fleshy macroalgae remain an intensifying problem, with accelerated growth in the past two years. **Call to action:** Protect herbivorous fish and improve sewage treatment.

In Belize, parrotfish biomass continues to increase (post-protection) with the first indication of a slight decline in fleshy macroalgae noted this year. Coral cover has varied year to year, but has increased overall since 2006. Commercial fish biomass has fluctuated over the past decade, but generally increased. **Call to Action:** Increase replenishment zones to 10% by 2018; ban gill nets and fish traps.

In Guatemala, coral cover is higher and macroalgae is lower, mainly due to the inclusion of newly discovered reefs influencing trends. With time and enforcement, the 2015 regulation protecting parrotfish should help reverse the decline in herbivorous fish. Commercial fish biomass is the lowest in the region, with a 95% decrease since 2006. **Call to Action:** Create replenishment zones on reefs, restrict gillnets and trawling and reduce pollution specially in the watersheds.

In Honduras, relatively high coral cover has been stable or increasing over the past decade. Commercial fish biomass has remained constant, although the grade is poor and populations could increase by establishing more replenishment zones. Despite having the highest herbivorous fish biomass, fleshy macroalgae is still the highest in the region, indicating high nutrient levels are fueling algal growth. **Call to Action:** Reduce contaminants from land run-off, improve sewage treatment and create more replenishment zones.

QUOTES

“The mostly traditional small-scale fisheries within the Mesoamerican Reef have the potential to be one of the world's model fisheries management systems, including wide social and environmental benefits. We see some evidence of rebounding fish populations, particularly in Mexico where a number of new 'replenishment zones' have been enacted and in Southern Belize with the managed access program. These are the kind of initiatives that we need to turn things around everywhere there are reefs, and reef fisheries.” Daniel Pauly, University of British Columbia.

“Communities in Mexico, Belize, Guatemala, and Honduras depend on the abundance and biodiversity of Mesoamerican Reef fisheries for jobs, food security, and economic development. Healthy Reefs for Health People is providing an absolutely essential service to these communities by assessing and reporting on the health of the reef and its fisheries. We are excited to see the collaborations of fishermen, government, communities, and NGOs are showing success for fisheries in several areas throughout Belize. Leaders and communities can build on the partnerships and success stories from throughout the Mesoamerican Reef to meet the Report Card’s important calls to action and crucial work that remains to be done.” Larry Epstein, Environmental Defense Fund
“HRI has been doing a fantastic job, not just monitoring reefs across the MAR, but also turning their results into concrete management recommendations. Over the ten years they have been preparing these Report Cards, increasing action by a suite of local partners has resulted in real and measurable improvements in water quality and fish biomass – which is encouraging to see when so much news about coral reefs around the world is bad.”
- Dr. Madhavi Colton, Coral Reef Alliance


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Contacts:

Melanie McField -- Director, Healthy Reefs Initiative / Smithsonian Institution  Cell: (754) 610-9311  Skype: melaniemcfield mcfield@healthyreefs.org,

Ian Drysdale – HRI Coordinator for Honduras
drysdale@healthyreefs.org, cel: (504) 33 36 04 06

Ana Giró Petersen – HRI Coordinator for Guatemala
giro@healthyreefs.org, cel: (502) 53 14 88 06

Mélina Soto – HRI Coordinator for Mexico
soto@healthyreefs.org, cel: (521) 99 82 36 45 37

Marisol Rueda Flores – HRI Communications Consultant
rueda@healthyreefs.org, cel: (521) 98 48 77 08 15