

# Reefs at Risk in the Caribbean

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# Foreword

The Caribbean region is endowed with a wealth of coastal and marine resources, including a wonderful multitude of unique plants and animals. Most Caribbean countries depend on the sea for the goods and services it provides. Reef fisheries are a vital source of protein for millions of people in the region and a source of employment for hundreds of thousands of full- and part-time fishers. Over 116 million people live within 100 km of the Caribbean coast and over 25 million tourists a year visit the Caribbean, almost all of whom spend the majority of their time in coastal areas. Tourism revenue alone brings in over US\$25 billion a year to the region.

There is growing concern, however, that the accelerating degradation and loss of these resources would result in significant hardship for coastal populations, nations, and economies. This report identifies nearly two-thirds of the region's reefs to be directly threatened by human activities, and estimates future economic losses from diminished coral reef fisheries, dive tourism and shoreline protection services at between US\$350 – US\$870 million per year. Coral reefs are extremely important to the economies of Caribbean countries today, and they are the capital stock for future economic and political security.

Ensuring the vitality of coral reefs and their ability to continue providing benefits to society and economies is critically important, but there is much we do not know about these resources. Until now, a comprehensive assessment of Caribbean coral reefs, including their location and threats, has never been undertaken. *Reefs at Risk in the Caribbean* seeks to analyze the full range of threats to these unique ecosystems as well as to orient the region's policy-makers toward potential opportunities for capturing greater benefit from their sustainable use.

Because coral reefs do not conform to national boundaries, protecting and restoring them can only be achieved through collaboration among nations and organizations. In fact, this report would not have been possible without the many partners, organizations, and individuals in the region who came together with the sole purpose of making sure that this analysis was accurate and represented the needs and priorities of the region. We deeply appreciate their support and that of those agencies that kindly provided funds for this analysis.

*Reefs at Risk in the Caribbean* is an integral part of the work of the World Resources Institute, the International Coral Reef Action Network (ICRAN), and the UNEP Caribbean Environment Programme (CEP) in the Wider Caribbean. We hope that the report will serve as a valuable tool for governments and environmental organizations in the region to better understand the growing threats affecting the marine environment of the Caribbean and to identify priorities and sites for immediate action.



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# Preface

Since the age of seven, when my father threw me overboard, I have been observing coral reefs through a dive mask. I have marveled at the beauty, biological diversity, and productivity of coral reefs and have seen how important they are to the local people who depend on them for food, income, recreation, and spiritual enrichment. I have also seen how human activity has undermined the health and vitality of reefs. The coral reefs I observed in the 1940s are totally different today. Sadly, none has changed for the better.

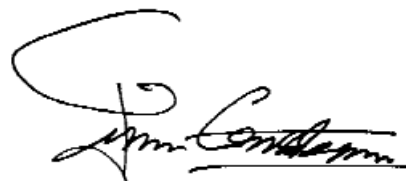
When I think of coral reef ecology, the concepts of *connection and interdependence* come to mind. Corals have their symbiotic algal partners, while “cleaner fish” have their clients. Landscape management relates directly to sediment and nutrient delivery and to reef health, while energy use and carbon dioxide emissions link to global warming and coral bleaching. The historical over-harvesting of large animals has impaired reef vitality. Public awareness is essential for sustainable reef management. These are just some of the examples that underscore the vital connections in time and space that affect coral reefs. The tragic decline in reef health is due to human insult, and their restoration likewise depends on human action.



I am pleased to see that *Reefs at Risk in the Caribbean* addresses these connections and calls attention to the importance of people in the equation of reef health and restoration. The involvement of multiple partner organizations ensures that this report reflects the many facets of reef assessment and management, and will be widely used. Predictably, I totally concur with the need for greater public awareness. It is my view that without public support, rational and sustainable management will not occur. I am often told that our television shows were instrumental in inspiring many of our present ocean experts to pursue a career in ocean sciences. Of course, awareness is not action. *Reefs at Risk in the Caribbean* clearly outlines the critical steps required for building capacity and improving management. The focus on socioeconomic issues is crucial to ensuring that future generations will continue to benefit from coral reefs.

Ultimately, our challenge is not to manage reefs: it is to manage ourselves. I applaud the World Resources Institute for its admirable work to protect coral reefs, a priceless natural treasure.

JEAN-MICHEL COUSTEAU | Ocean Futures Society



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LB / JM



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