

## Snorkel the Web: ReefBase brings a sea change in access to information about coral reefs

### KEY FACTS

- Coral reefs are biodiversity hotspots, whose 100,000 known species may represent only 10% of all reef-dwelling organisms.
- Two-thirds of the world's coral reefs are in developing countries.
- Coral reefs are crucial to the food security and livelihoods of 500 million people in the tropics.
- More than half of all coral reefs are endangered, including 88% of reefs in Southeast Asia.
- Climate change weakens coral reefs even as it makes coastal communities more dependent on them for protection from storms.
- ReefBase is an award-winning online global information system designed to facilitate research on, and the management of, coral reefs to enhance their protection.
- The ReefBase experience begins at [www.reefbase.org](http://www.reefbase.org).

### INTRODUCTION

ReefBase is a sophisticated online information system that facilitates the global monitoring and management of coral reefs and thereby supports efforts to protect them. After the Indian Ocean tsunami of December 2004, for example, scientists and organizations around the world relied on ReefBase for assessments of damage to coral reefs in Southeast Asia and of how coastal communities were affected. Teams organized by ReefBase partner institutions conducted post-tsunami field observations, and their findings formed the basis for a comprehensive status report prepared by the Global Coral Reef Monitoring Network.

### CORAL REEFS THREATENED

A reliable source of timely and succinct information about coral reefs is essential to ensure their survival in the face of mounting threats. A status report by the IUCN World Conservation Congress indicated in 2004 that 58% of all coral

reefs are endangered. Of the 30% of world's coral reefs found in Southeast Asia, 88% are at serious risk from disease, natural disaster, pollution, overharvesting and bleaching caused by global warming. While scientists have recorded 100,000 species living in and around corals, studies suggest that as much as 90% of reef-dwelling organisms have not yet been identified.

Damage to reefs not only threatens some of the planet's richest biodiversity hotspots, it also undermines the economic and nutritional health of poor coastal communities. Two-thirds of all coral reefs are in developing countries. Some 500 million people in the tropics depend on reefs for food, livelihoods and other basic needs, as well as to protect the coastline and their homes from storm damage. In some developing countries, coral-based fish and other marine organisms provide up to 90% of all animal protein consumed. For many coastal communities in reef areas, fishing is the sole source of cash income. Globally, the value

of all the goods and services provided by coral reefs is estimated at US\$375 billion.

## REEFBASE TO THE RESCUE

Launched in 2002, ReefBase was developed by the Malaysia-based WorldFish Center in collaboration with the International Coral Reef Action Network. Following the success of its collaborative and comprehensive online resource FishBase, WorldFish envisioned ReefBase as a similar global information system but focused on coral reefs and the communities that depend on them. ReefBase thus strongly supports the WorldFish mission to reduce poverty and hunger by improving fisheries and aquaculture.

While a wealth of information exists on the deterioration of coral reefs and how better to conserve them, most of it is not readily available to the people tasked with managing reefs. These individuals normally have neither access to primary scientific literature or technical reports written for limited distribution, nor the formal training to fully understand them. ReefBase was created to improve the sharing of this information and knowledge by making it available online in a form accessible to general readers. By gathering available knowledge about coral reefs in one information repository, it facilitates analyses and monitoring of coral reef health and of the quality of life of reef-dependent people. This helps ensure that decisions about coral reef use and management are based on sound science and clear priorities.

The site's many user-friendly features make ReefBase often the first information source consulted by the scientists, resource managers, conservationists, policymakers, educators, students and others who comprise its community of more than 10,000 discrete users. ReefBase provides centralized access to maps and databases covering nearly 100 countries and territories with coral reefs. This global information system is structured in four categories focusing on reef resources, threats, status and management.

Team members regularly provide technical assistance and scientific support to Pacific and Southeast Asian countries' efforts to build coral reef databases and information

management systems. Fiji, Indonesia, Micronesia, Palau, Papua New Guinea, Philippines and Solomon Islands are among the beneficiaries.

Following a major revamp in 2003, ReefBase was recognized in 2004 for its interactive geographic information system (GIS) mapping tool, which was judged the "best online mapping application" in a competition organized by Microsoft and Directions Magazine.

## REEFBASE TODAY

ReefBase content and supporting features are constantly being updated. The literature database has swelled to more than 25,000 references and 5,000 downloadable publications. Papers from the first eight monumental volumes of proceedings from the quadrennial International Coral Reef Symposia, for example, now offer online a complete picture of the state of coral reef science and research in recent decades.

Content support from major research institutions, including the US National Aeronautics and Space Administration and the US National Oceanic and Atmospheric Administration, allows ReefBase users to draw on such resources as full-resolution maps of all the world's coral reefs derived from Landsat satellite images, as well as the most authoritative data available on coral bleaching.

Also available on ReefBase are 4,000 photographs and the contact details of nearly 3,500 coral reef experts. The French government and United Nations Environment Programme recently provided funding to support the expansion of ReefBase resources on coral reefs in the Pacific.

ReefBase is the top-ranking website in all major search engines for key words related to coral reefs. Reflecting its steadily growing influence, ReefBase has hosted since 2004 the websites of the Global Coral Reef Monitoring Network and Reef Check. ReefBase is housed at the WorldFish Center in Penang, Malaysia, and receives funding through the International Coral Reef Action Network and the United Nations Foundation.

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