



## **FIFTY FACTS ABOUT WIDER CARIBBEAN CORAL REEFS**

### **DID YOU KNOW?**

-  The Caribbean region has an estimated 26,000 km<sup>2</sup> of coral reef surface, possessing an estimated 7% of the world's shallow coral reefs.
-  In the Greater Antilles, coral reefs cover over 8,600 km<sup>2</sup>.
-  The Eastern Caribbean has a coral reef area of 2,600 km<sup>2</sup>.
-  The Wider Caribbean region has over 285 Marine Protected Areas (MPAs), containing 20% of the region's coral reefs.
-  Time series data show declines in live coral cover from 1993 to 2001 in almost 2/3 of the sites investigated.
-  Human activities threaten 2/3 of the Caribbean's coral reefs, placing 1/3 at high risk.
-  About 9,000 km<sup>2</sup> of coral reef is threatened by increasing sedimentation and pollution related to land use activities.
-  Coastal development including construction, urban run-off, tourist development and sewage discharge threatens 1/3 of the reefs of the Caribbean.
-  A sewage pollution problem exists in almost 1/4 of the coral reefs surveyed since 1998.
-  Treated sewage accounts for less than 20% of total sewage generated in the Caribbean.
-  Only 1/4 of hotel and resort wastewater treatment plants are in good operating condition.
-  In 1996, 3/4 of treatment plants operated by hotels and resorts did not comply with effluent discharge criteria.
-  In the Caribbean, daily water consumption per tourist is an estimated 300 liters/day, which is about 3 times the per capita demand for domestic consumers.
-  Coastal development resulting from population growth and intensive tourism, along with overfishing threatens over 80% of Caribbean reefs.
-  Thirty six percent of coral reefs in the region lie within 2 km of inhabited land.
-  The population living within 10 km of the Caribbean coast grew from 36 to 41 million during 1990-2000.
-  Increases in coastal zone population density leave reef resources susceptible to exploitation to provide livelihoods and sustenance to coastal inhabitants.
-  Overfishing is the most pervasive direct human threat to reefs and threatens 60% of them.
-  Overfishing poses greatest threat to the Eastern Caribbean reefs followed by coastal development, sedimentation and pollution.
-  The ecological balance of reefs is altered by overfishing due to increased algal growth and decreased coral cover.
-  Caribbean coral reefs have evolved from a coral dominated to an algal dominated state over the past decades.
-  Marine based sources of pollution such as wastewater discharge from cruise ships and other vessels, and leaks and spills from oil infrastructure threaten 15% of the region's reefs.
-  In the last 20 years, cruise ship tourism has quadrupled worldwide, with 58% of the world's cruise ship passengers occupying the Caribbean cruise industry.

- Generally, cruise ships and cargo ships contribute 77% and 20% of all ship type waste respectively.
- Typical cruise ships generate daily averages of 2,228 gallons and 278.5 gallons of oily bilge water and garbage respectively.
- A cruise liner's anchor can ruin up to 200 km<sup>2</sup> of ocean floor by direct physical damage.
- In the next 5-10 yrs. further coral degradation will occur in many threatened areas.
- The Earth's average temperature has risen by .6-.8° Celcius in the last 100 yrs., leaving corals more susceptible to bleaching.
- Over 500 significant coral bleaching incidents have been reported in the Wider Caribbean Region since 1980.
- It is predicted that by 2020, bleaching of reefs will be an annual event.
- Atmospheric temperature in the Caribbean would have risen by 2-4 ° Celsius by 2070.
- Sea surface temperature levels are currently close to the upper thresholds for coral survival, placing stress on long-term coral survival.
- Currently, threats from predicted sea level rise of 3-10 cm/decade are unknown for damaged reefs and those under anthropogenic stress.
- Coral diseases have caused widespread changes in the Caribbean's coral reefs over the past 30 years.
- Coral diseases coupled with bleaching, pose a serious threat to the Caribbean's reefs.
- Tourism and recreation contribute the largest shares of the total economic value of Caribbean coral reefs, which is estimated between US\$100,000 to \$600,000.
- Annually, tourism contributes an estimated US\$105 billion to the Caribbean economy.
- In at least 8 Caribbean countries, tourism accounts for over 30% of the GDP.
- International tourist revenues in the Caribbean totaled US\$25.5 billion in 2000.
- In 2000, approximately 1.2 million divers visited the Caribbean, accounting for an estimated US\$4.1 billion in gross expenditures.
- In 2000, net annual benefits of Caribbean dive tourism were an estimated US\$2.1 billion.
- Close to half of all diving tourism in the Caribbean occurs in MPAs.
- Coral reef ecosystems provide shoreline protection, as reefs dissipate wave and storm energy.
- An estimated 21% of the Caribbean's coastlines are protected by coral reefs.
- Annual benefits of shoreline protection by healthy reefs are an estimated US\$740 million to \$2.2 billion per year.
- In the Eastern Caribbean, 70% of monitored beaches were eroded from 1985-1995.
- By 2050, 10-20% of current protection services could be lost on over 15,000 km of shoreline.
- The net value of lost benefits from reef shoreline protection could range from US\$140-\$420 million/yr. over the next 50 years.
- Continued reef degradation could reduce net annual revenues derived from coral reef fisheries by US\$95million-\$140 million/yr. by 2015.
- Net benefits derived from tourism, fisheries and shoreline protection could be reduced due to coral degradation by an estimated US\$350-\$870 million/yr.

Main References:

- (i) Burke, L. and Maidens, J. (2004). *Reefs at Risk*. Washington, D.C. (USA): World Resources Institute.  
[http://www.wri.org/biodiv/pubs\\_description.cfm?pid=3944](http://www.wri.org/biodiv/pubs_description.cfm?pid=3944)
- (ii) *Tourism Expansion: increasing threats, or conservation opportunities?* at  
[http://www.grid.unep.ch/product/publication/download/ew\\_tourism.en.pdf](http://www.grid.unep.ch/product/publication/download/ew_tourism.en.pdf)