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# **Tourism and Coastal Resources Degradation in the Wider Caribbean**

A Study for the  
United Nations Environment Programme  
Caribbean Environment Programme  
Regional Coordinating Unit  
Kingston, Jamaica

by  
Island Resources Foundation  
St. Thomas, Virgin Islands  
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# Acronyms

<b>BDD</b>	<b>British Development Division</b>
<b>BMP</b>	<b>best management practices</b>
<b>BVI</b>	<b>British Virgin Islands</b>
<b>CANARI</b>	<b>Caribbean Natural Resources Institute (St. Lucia and St. Croix)</b>
<b>CARICOM</b>	<b>Caribbean Community</b>
<b>CARICOMP</b>	<b>Caribbean Coastal Marine Productivity</b>
<b>CBO</b>	<b>community based organization</b>
<b>CCA</b>	<b>Caribbean Conservation Association</b>
<b>CDB</b>	<b>Caribbean Development Bank</b>
<b>CED</b>	<b>Centre for Environment and Development (UWI)</b>
<b>CEP</b>	<b>Caribbean Environment Programme (UNEP)</b>
<b>CHA</b>	<b>Caribbean Hotel Association</b>
<b>CIDA</b>	<b>Canadian International Development Agency</b>
<b>COSALC</b>	<b>Coastal and Beach Stability in the Lesser Antilles</b>
<b>CTO</b>	<b>Caribbean Tourism Organisation</b>
<b>ECLAC</b>	<b>Economic Commission for Latin America and the Caribbean (UNESCO)</b>
<b>ECODEF</b>	<b>Eastern Caribbean Organisation of Development Foundations</b>
<b>ECDPM</b>	<b>European Centre for Development Policy Management</b>
<b>ENCORE</b>	<b>Environmental and Coastal Resources Project (of the OECS/NRMU)</b>
<b>GDP</b>	<b>gross domestic product</b>
<b>GEF</b>	<b>Global Environmental Facility</b>
<b>GTZ</b>	<b>German Agency for Technical Cooperation</b>
<b>IAF</b>	<b>Inter-American Foundation</b>
<b>I&amp;E</b>	<b>Industry and Environment Unit (UNEP)</b>
<b>IDB</b>	<b>Inter-American Development Bank</b>
<b>IDRC</b>	<b>International Development Resources Center (Canada)</b>
<b>IITF</b>	<b>International Institute of Tropical Forestry (US Dept. of Agriculture)</b>
<b>IISD</b>	<b>International Institute for Sustainable Development</b>
<b>IRF</b>	<b>Island Resources Foundation</b>
<b>IUCN</b>	<b>World Conservation Union</b>
<b>MAREMP</b>	<b>Marine Resource and Environmental Management Programme (UWI)</b>
<b>NGO</b>	<b>Non Governmental Organization</b>
<b>NRMU</b>	<b>Natural Resources Management Unit (of the OECS)</b>
<b>OAS</b>	<b>Organization of American States</b>
<b>OECS</b>	<b>Organization of Eastern Caribbean States</b>
<b>RCU</b>	<b>Regional Coordinating Unit</b>
<b>SIDA</b>	<b>Swedish International Development Agency</b>
<b>SIDS</b>	<b>Small Island Developing States</b>
<b>UNCED</b>	<b>United Nations Conference on Environment and Development</b>
<b>UNDP</b>	<b>United Nations Development Programme</b>
<b>UNEP</b>	<b>United Nations Environment Programme</b>
<b>UNESCO</b>	<b>United Nations Educational, Social and Cultural Organisation</b>
<b>USAID</b>	<b>United States Agency for International Development</b>
<b>USVI</b>	<b>United States Virgin Islands</b>
<b>UWI</b>	<b>University of the West Indies</b>
<b>WHOI</b>	<b>Woods Hole Oceanographic Institution</b>
<b>WTO</b>	<b>World Tourism Organization</b>
<b>WTTC</b>	<b>World Travel and Tourism Council</b>
<b>WWF-US</b>	<b>World Wildlife Fund/United States</b>
<b>WWF-UK</b>	<b>World Wide Fund for Nature (UK)</b>

# 1. --- Introduction

*“The main problem in understanding environmental impacts of tourism is that few scientific tools exist to determine the more subtle changes. The methodology to monitor changes and to establish biological carrying capacity is still unsophisticated. Therefore, we know little about the long-term environmental impacts of tourism on natural resources.”*

*Elizabeth Boo, 1992*

The Caribbean Environment Programme of UNEP (UNEP/RCU/CEP) is implementing a regional project in cooperation with the United States Agency for International Development (USAID) in support of the International Coral Reef Initiative. The objective of the project is to promote corrective actions on land-based sources of pollution caused by the tourism industry which negatively impact coastal and marine resources.

This report is one of a series of studies to determine the level of coastal degradation, the best approaches and practices available to address these issues, and effective public awareness and training activities. The information contained in these studies will be used *inter alia* to further develop the activities of this project which include pilot projects, training workshops and courses, public awareness activities and networking.

This report of *Tourism and Coastal Resources Degradation* includes Island Resources Foundation’s assessment of the extent of coastal resource degradation due to tourism and recommends approaches to address this degradation in the Wider Caribbean. The assessment and recommendations have been written with special attention to promoting the use of the information by regional and national planners and policy managers.

The companion study by the Foundation on *Best Management Practices for Coastal Tourism* has been written for use *by national planners and industrial participants themselves*, as partners in sustainable tourism development and maintenance and conservation of the industry’s primary resource.

Other Sections of this report include:

- Review of coastal degradation
- Economic and social benefits and costs from tourism and allied sources
- Mitigation and amelioration strategies for addressing coastal degradation.

## 2. \_\_\_\_\_ Review of Coastal Degradation

This Section provides an overview of coastal degradation, a three-dimensional framework for analyzing the environmental effects of coastal tourism, and a summary of the topical focus of references used in this report in terms of the analytical framework for coastal tourism.

The principal conclusions of this section are:

- tourism impacts in the Wider Caribbean are extremely diverse, depending on differences among state economies, the relative and absolute size of the tourism sector, the rate of growth of tourism, and the nature of the tourism facilities involved;
- environmental degradation effects from tourism facilities in the coastal area are generally small, often dispersed, critically placed, and multi-faceted. Resolution of these effects are addressed by marshaling information and expertise from a wide range of technical resources in both the private and public sector.

### Overview of Condition of Coastal and Marine Resources

Coastal and marine resources throughout the Wider Caribbean Region have suffered major impacts by human actions since early colonial days. A synthesis of major impacts conveys a picture in which virtually every state of the Wider Caribbean suffers from sewage pollution of coastal waters, most suffer some contamination from oil spills and production leakages, a majority of states report coastal pollution from mining and industrial activity, and most of the low income states of the region report solid waste contamination of coastal areas. In addition, many states report inadequate monitoring and assessment systems to understand the causes, dimensions, and impacts of coastal pollution. Table 1 illustrates observed and reported marine and coastal conditions in the region in the period from the late eighties to the present.

Of these impairments of coastal and marine environments, tourism is a major direct contributor to sewage and solid waste pollution in virtually every country. In tourism-dependent states it is the prime contributor to coastal erosion and sedimentation from construction activities.

Tourism is also a major indirect contributor to much of the oil and fertilizer/pesticide pollution of coastal waters. For example, in the US Virgin Islands most reportable oil spills stem from yacht, ferry and cruiseship fueling activities. In both the Sarasota Bay and the Corpus Christy National Estuary Program assessments, lawn care practices on golf courses and second-homes and condominium resorts were found to be major sources of nitrate and phosphate contamination of the bay from storm water runoff (Sarasota, 1993, and personal communication).

For countries in the top quintile (20%) of those dependent on tourism (*i.e.*, those states with more than 50 rooms per 1000 inhabitants: Cayman Islands, Northern Netherlands Antilles, Anguilla, Turks & Caicos, Aruba, Montserrat, British Virgin Islands, Antigua and Barbuda, US Virgin Islands), the environmental costs of tourism are even more evident when examining the named sources of “damage to reefs, mangroves and associated coastal ecosystems:” anchor

damage (3 countries), litter (4 countries), spearfishing (4), mangrove clearing (4), diver damage (2), dredging, dynamiting (2), sand removal (2), trampling, and boat groundings (Hoagland, *et al.*, Table 11).

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