



WWF International Corals Initiative

Southern Caribbean marine ecoregion

Geographic location: Panama, Colombia, Venezuela, Netherlands Antilles (NL), Trinidad and Tobago

Background

The Southern Caribbean is composed of continental and insular systems, which together harbor some of the most diverse marine habitats of the Caribbean. Mangroves, sea grass beds, coastal lagoons and estuarine systems dominate the continental system, with fringing coral reefs and patch reefs (many of which have come under heavy pressure in recent decades) scattered throughout. The insular system is dominated by largely intact barrier coral reefs.

The ecoregion's variety of oceanographic conditions is an important factor. Upwellings in the east limit, to some extent, the occurrence and development of wide extensions of true coral reefs. However, coral communities can be found around the area and toward the central-west. As the effects of the upwelling disappear, conditions improve for reefs.

The continental coast of Colombia and Venezuela supports one of the highest numbers of seabirds and marine mammals in the world, and also contains the second highest number of fish and molluscs. This is probably due to the complex habitats of the Southern Caribbean, which includes large estuaries, extensive mud flats and sea grass beds in addition to reefs.

The human element

Coastal populations are densest on the islands and on the Venezuelan coastline, as a consequence of the infrastructure development of the oil and gas industries, harbors, tourism and fishery activities, offering important sources of employment.

Parts of the Southern Caribbean have been hot tourist destinations for years. As usual, a burgeoning tourist trade brings with it a host of related costs and benefits to the local socioeconomic and ecological foundations.

Governments in the most heavily traveled areas such as the ABC islands in the Netherlands Antilles, Trinidad and Tobago, and Venezuela's island paradises have evolved a range of responses to try to encourage the revenue flow in a way that is sustainable for the longer term. Other areas where tourism is less viable rely largely on oil and gas, agriculture (notably in Trinidad and Tobago), and fisheries. The latter are well developed, particularly for shrimp, lobster, queen conch, groupers and snappers.

Main threats and issues

There are two main types of threat to the ecoregion's biological integrity- those that affect water quality, and thus impact species and habitats indirectly, and those that affect species and habitats directly. The threats tend to manifest themselves differently on the mainland versus the islands. Many of the continental reefs are seriously degraded due to eutrophication, over fishing, and possibly toxic contamination. The insular system, in contrast, is dominated by barrier coral reefs that remain in relatively good condition. However, for both the continental and island reefs, coral diseases have caused extensive damage to *Acropora* corals throughout the ecoregion.

Uncontrolled tourism is a common threat throughout the region, in terms of direct impacts from insensitive diving and snorkeling practices, sheer volume of visitors, pollution, and sedimentation from coastal development. Other sources of existing and potential pollution and sedimentation include upland deforestation, poor agricultural practices, sewage disposal, industrial waste and oil and shipping. Over fishing at various scales is another issue affecting coral reefs and related marine habitats throughout the Southern Caribbean.

Marine conservation

Venezuela, with the ecoregion's largest coastline, has a large system of marine-coastal protected areas of different categories that protect distinct biological features. As the majority of the Venezuelan population lives in the coastal zone, most of these protected areas face severe threats and management problems affecting the protection status of the marine and coastal resources. Panama, Colombia and Trinidad all have some legal framework and facilities in place for coastal / marine protected areas, be they indigenous reserves, parks, wildlife sanctuaries etc. Many of these suffer from lack of capacity to monitor or manage, however. The Netherlands Antilles also contains a handful of protected areas, from which Bonaire Marine Park stands out. (See box below).

WWF and partners in the region

WWF is primarily represented in the Southern Caribbean by the Venezuelan Foundation for the Defense of Nature (FUDENA), an associate organization. In 1998 FUDENA carried out a general assessment of the ecoregion, focusing on coral reefs and mangroves, their current status and threats, and the national policies of the countries within the ecoregion with respect to these communities. Based on these and later assessments, FUDENA has a better understanding of the importance and current situation of the ecoregion, and has established the Southern Caribbean as a priority for their conservation program. FUDENA has also worked closely with the WWF-Colombia Program Office, a conservation leader in Colombia, with excellent relations with the government and non-government sectors.



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Case study - Bonaire Marine Park

Bonaire Marine Park is a model of careful management based on an effective partnership between the island's diving industry and park managers. In 1979, the park was established by Bonaire's government to ensure that the island's marine resources are used in a sustainable way in order to prevent degradation.

The Park hosts over 70,000 visitors annually, with five full time staff actively involved in communication and education. To reach visitors, brochures and leaflets are provided at hotels, dive operations, customs, and harbor offices. A Code of Conduct thus distributed includes guidelines on anchoring, mooring, fishing, diving, snorkeling, contact (or lack thereof!) with marine life, and garbage disposal. In addition to keeping visitors well-informed, park staff are also very much engaged with the local population. Talks are held at schools, community centers and even police stations. One program teaches school children about the basic marine environment and snorkeling skills, while another, offered to the island's teachers, focuses on the basic ecology of coral reefs, sea grasses and mangroves.

On top of this heavy focus on outreach, the Park also supports various research activities and lobbying work to ensure an even more sustainable future. Balancing all of these priorities is a challenge, but the Bonaire Marine Park is an example where the combination of will and strategy seem on track to succeed for the marine resources and the people that depend upon them.