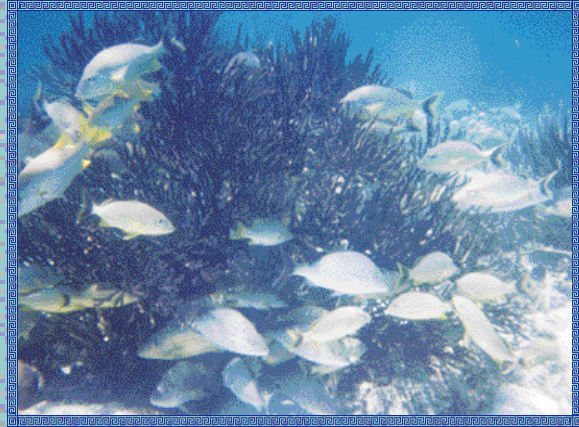


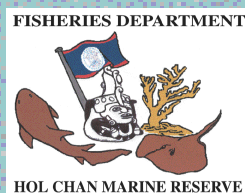
Protected Areas in Belize and Hol Chan Marine Reserve



Conservation Module
By: Green Reef



Belize, 2002



Conservation modules

- 1. Protected areas in Belize and Hol Chan Marine Reserve.**
2. Know the general principles of Marine Ecosystems and Environmental Conservation in Belize.
3. The negatives Impacts of habitat Destruction.
4. Why local Conservation issues in Belize?

Conservation Modules:

- **Module 1:** Protected Areas in Belize and Hol Chan Marine Reserve
- **Module 2:** Know the general principles of Marine Ecosystems and Environmental Conservation in Belize
- **Module 3:** The Negatives Impacts of Habitat Destruction
- **Module 4:** Why Local Conservation Issues in Belize?

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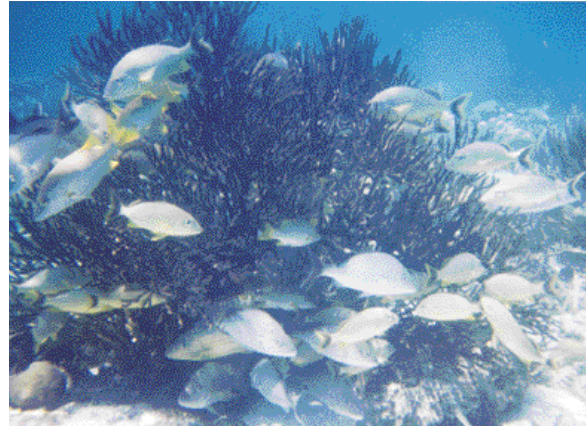
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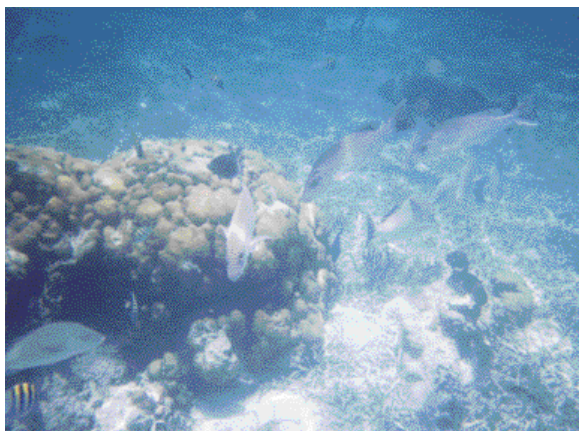
Belize is blessed with an abundance of diverse natural resources. It is sometimes hard to believe that the second largest barrier reef system in the world, as well as many other rich ecosystems, such as coastal wetlands, mangroves, unspoiled rainforests, pine forests, and savanna can all be found within its relatively small borders.



History of Protected Areas in Belize

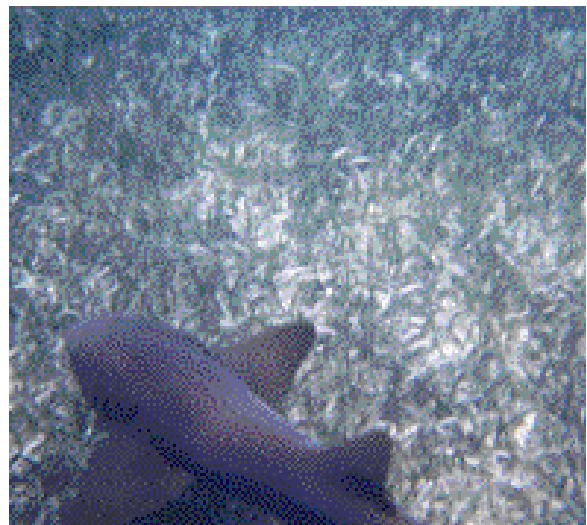
One method by which Belize has chosen to take on the responsibility of preserving its natural resources has been to establish **National Parks** and **Protected Areas**.

After the destruction caused by Hurricane Hattie in 1961, Belize, still a British possession, realized the fragility of and need to protect their natural resources.



Belize has a fairly young history when it comes to establishment of protected areas. Since then, over 30% of the land in Belize has been protected. The

conservation of land and water resources in Belize has become increasingly important, not only because of the current trend of habitat degradation and loss of biodiversity, but also because of the growing eco-tourism industry. This is particularly true for the Hol Chan Marine Reserve. Located southeast of San Pedro Town, the establishment of this reserve (1986) has played a significant role in the increased eco-tourism on the island.



Parks and Reserves of Belize.

National Parks	Acres	Established in
Aguas Turbias	8,950	1994
Blue Hole	575	1986
Chiquibul	265,894	1991
Five Blues Lake	4,250	1994
Guanacaste	52	1990
Laughingbird	1	1991
Monkey Bay	2,250	1994
Paynes Creeks	28,000	1994
Río Blanco Falls	100	1994
Sarstoon/Temash	41,000	1994
National Monuments		
Half Moon Caye	9,700	1982
Santa Familia Sink Holes	965	1993
Bladen Branch	97,100	1990
Nature Reserves		
Burdon Canal	5,970	1992
Tapir Mountain	6,741	1986
Wildlife Sanctuaries		
Cockscomb Basin	102,398	1990
Crooked Tree	2,900	1984
Marine Reserves		
Glovers Reef Atol	4 zones	1993
Hol Chan	2,868	1987
Private Reserves		
Community Baboon Sanctuary	1,943	1985
Monkey Bay Wildlife Sanctuary	1,070	1990
Río Bravo Conservation Area	229,000	1987
Shipstern Nature Reserve	22,000	1987

How The Hol Chan Marine Reserve Is Set-Up

1. Directives
 - a. Rules set by the government (Department of Fisheries)
2. Law enforcement
 - a. Comprised of Rangers
3. Monitoring Program
 - a. Is the reserve accomplishing its goals?
 - b. Must be continuous and on-going program

Goals of the Reserve

1. To protect the reef ecosystem: the "rainforest of the sea"

This is monitored by observing the following:

 - a. Coral and benthic species
 - b. Coral cover, diseases, bleaching
 - c. Algae cover of the coral
 - d. Coral line Vs. Macro
2. To increase fish and seafood catch
 - a. The reserve acts as a buffer against over-fishing.
 - b. The area outside of the reserve benefits from the "spill-over effect," in which species that matured in the reserve leave the reserve and are caught by fishermen.

Increase in fish and seafood catch is monitored by: Fish, lobster, and conch populations

3. To provide recreational services

This is monitored by:

 - a. Visitor impact
 - b. Economic impact
4. To provide further research opportunities
 - a. Ensuring that those allowed to use the reserve do so in a sustainable manner.

Check

1. What are three goals of the Hol Chan Marine Reserve?

Useful Definitions for Reference:

- **National Park:** Protected area managed mainly for ecosystem protection and recreation.
- **Natural Monument:** Protected area managed mainly for conservation of specific natural features.
- **Protected Area:** An area of land and/or seascape especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
- **Wilderness Area:** Protected area managed mainly for wilderness protection.

Issues in Creating and Maintaining a Reserve

The history of the reserves in Belize.

Creating a Reserve	
The majority of reserves in Belize were not established until the 1980's with the support of international conservation organizations.	
Between 1990 and 1992	Some 535,235 acres were put under permanent protection by Belize, including more than 200,000 acres of tropical forest; 6,000 acres of mangroves and wetlands; and 97,000 acres of critical watershed.
By early 1995	There were thirty-four national parks, protected reserves, and special development areas resulting in the protection of a large portion of land (over 30%) in Belize.
Within the past fifteen years,	Many reserves or sanctuaries have been designated on Ambergris Caye, such as Bacalar Chico Marine Reserve, Los Salones and Little Guana Bird Sanctuary, and Hol Chan Marine Reserve.

Criteria for consideration when selecting protected areas (adapted from Ratcliffe 1977):

Criteria for consideration	
Size	The conservation value of an area is a function of its size. In principle, the area must be of a size and form sufficient to support entire ecological units or viable populations of flora and fauna. As a general rule, the area's conservation importance increases with size.
Richness and diversity	Richness and diversity of species is usually linked with diversity of habitat.
Naturalness	There are few places on earth that have not been modified through the influence of man. Areas where this influence is minimal or which have potential for restoration are particularly valuable.
Rarity	One of the most important purposes of many national parks and conservation areas is to protect rare or endangered species and communities.
Typicalness	In addition to unusual features, it is important to represent

	typical areas of common habitats and communities of the biogeographic unit.
Fragility	Fragile habitats, species and communities have a high sensitivity to environmental changes.
Genetic conservation	Richness and diversity usually reflect genetic diversity but there may be other genetic considerations that justify protection, e.g. the occurrence of wild forms of domesticated plants and animals. The area should provide opportunities for recreation. However, some features have more appeal to humans than others do.
Intrinsic appeal	Birds and larger mammals are more interesting to most of the public. Similarly, orchids arouse more enthusiasm than sedges and grasses.
Modified landscapes augmenting biological values	National and cultural sites or particular forms of land use which have a significant influence on the region's biogeography may require protection.
Opportunities for conservation	The socio-economic climate is highly relevant in determining conservation priorities.

Check

1. What's the estimated percentage of land and protected in Belize?
2. List five different criteria used in selecting a site to become a protected area?

The Management Plan

After the site has been selected, a management plan must be developed to insure maintenance of the reserve.

The management plan guides and controls the management of protected area resources, the uses of the area, and the development facilities needed to support the management and use.



The management plan is always subject to modification as new information is obtained; particularly regarding feedback on the effectiveness of the action's taken.

By identifying the management steps necessary for the protected area, and the resources needed to take them, the management plan helps the manager to allocate, and make best use of, limited staff, funding, equipment and materials.

Implementing the Management Plan/ Managing the Reserve

Management is the actual execution of the activities carried out to meet the objectives of the protected area. It does not occur spontaneously-- it needs to be consciously designed and then implemented to provide the benefits for which the area was established. Implementation is often the weakest phase in the whole process of planning; establishing and operating protected areas. Implementation should include the following activities:

- Allocation of duties and staff selection
- Management of staff Reporting
- Inspection and supervision
- Maintenance of physical structures
- Patrolling
- In-service training
- Controlling resource utilization
- Law Enforcement

Check

1. Why is a management plan necessary for a protected area?
2. What activities are involved in carrying out a management plan?

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