

BELIZE'S INTERIM FIRST NATIONAL REPORT

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THE CONVENTION ON BIOLOGICAL DIVERSITY

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Submitted by:

THE GOVERNMENT OF BELIZE

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MINISTRY OF NATURAL RESOURCES

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ACRONYMS

ALIDES	Alliance for Sustainable Development
LIC	Land Information Center
BSAP	Belize Strategy and Action Plan
UNDP	United Nations Development Programme
GDP	Gross Domestic Product
CBD	Convention on Biodiversity
BCES	Belize Center for Environmental Studies
PfB	Programme for Belize
WCS	Wildlife conservation Society
GATT	General Agreement on Tariffs and Trade
EPA	Environmental Protection Act
SIF	Social Investment Fund
NGOs	Non Governmental Organizations
GOB	Government of Belize
GEF	Global Environment Facility
IMF	International Monetary Fund
IBCs	International Business Company
ODA	Overseas Development Administration
PACT	Protected Areas Conservation Trust
NEAP	National Environmental Action Plan
GIS	Global Information Center
CEDS	Conservation and Environment Data System
LIS	Land Information System
UNESCO	United Nations Scientific and Cultural Organization

Executive Summary

Belize signed the Convention on Biological Diversity in June 13, 1992 in Rio de Janeiro, Brazil and ratified it in December 1993. Even before 1992, Belize has signed and ratified many international agreements and conventions that cover issues dealing with natural resources conservation and use and those affecting the environment. Since then, Belize has also become party to the Central American Agreement on Biodiversity and the Central Alliance for Sustainable Development (ALIDES).

Traditionally Belize has developed since the days of the colony with a long tradition of sustainable forest management; this tradition has during the years converted to a conservation ethics of which we are proud today when over 40% of the national territory is under some type of protection.

The documented biodiversity of Belize today is as follows: 571 species of birds, 162 species of mammals, 121 species of reptiles, 43 species of fresh water fish, 117 species of total inland fish, 157 mollusks, crustacean, 43 species of amphibians, 288 species of Lepidoptera, 176 species of Odonata and 2 other terrestrial invertebrate. There are also 2 amphibians and 1 reptile species documented as endemics. Within the regional perspective, Belize is situated in the northern region of Mesoamerica, which is considered as the center of origin of important plant species currently in use by the population, namely, corn, cacao and pine, papaya and pepper.

The Protected Areas System Plan is currently made of 55 state and private area with an additional 29 being proposed. There is only one zoo in Belize and the herbarium collection is managed by the Forest Department, the School of Agriculture and Ixchel Farms. A 1000 acres (400 Ha) plot of land in Belmopan, the nation's capital, has been set aside as a national botanical garden.

The Government of Belize has enacted many laws for the protection and sustainable use of the country's environment and natural resources. These include the National Park System Act, the Environmental Protection Act, the Forest Act, the Fisheries Act, Wildlife Protection Act, National Lands Act, the Land Utilization Authority, among many others.

Macroeconomic Review:

The Macroeconomic Review has highlighted the key elements which the design of a Biodiversity Strategy needs to consider as important parts of the context in which the Strategy is to be developed. A Review of the period 1990 - 1997 has indicated the following factors:

- a. Belize's economy continues to be characterized by a heavy dependence on exports of three basic agricultural commodities (sugar, citrus and bananas) governed by preferential market arrangements which may not have long-term stability. This means that the socio-economic impact may soon be felt through an increase in poverty.
- b. The Government of Belize is promoting tourism (particularly eco-tourism) and the development of exports as a response to the need to diversify the economic base. Belize's economic policy, however, has been and will probably continue to be geared towards export promotion in the medium term. The encouragement of aquaculture and the increased production of citrus in this context may appreciably impact on such sensitive areas as the Coastal Zone.
- c. Economic Growth as measured by GDP Growth has fluctuated over the period under review and no appreciable trend can be established but it has not risen significantly since 1993. This

might indicate that the level of poverty presently in the country may not be alleviated in the short term;

- d. Belize has acceded to certain key International Conventions such as the General Agreement on Tariffs and Trade (GATT) which will oblige the country to implement certain changes in its economic policies i.e. with respect to further trade liberalization. This may have implications for the implementation of some of the legal obligations incurred under the Convention of Biodiversity. Article 16 of the Convention on Biodiversity establishes the obligation of all parties to facilitate the transfer of, or Provide access to, technologies relevant to the Convention 's objectives, and elaborates the terms for transfers, including the treatment of patents and other Intellectual Property Rights (IPRs) . Under the GATT, Trade-Related Intellectual Property Rights (TRIPS) imposes legal obligations on signatories to provide minimum standards of IPR protection.

Cross-Sectoral Issues:

The environmental problems or issues outlined in the **National Environmental Action Plan** as well as other studies, which are of key importance to the Environment in General, are:

1. Inadequate Liquid and solid waste management systems
2. Natural resource Degradation resulting in the pollution of the marine environment and the Coastal Zone as well as the Deforestation of large areas through unsuitable agricultural practices.
3. The rising incidence of poverty in environmentally fragile areas;
4. Inadequate and inefficient Land Use Management Systems
5. Inadequate and ineffective legal and institutional framework

The above are problems which are being addressed within the context of the **National Development Plan** and are spread across various sectors. They also coincide with the threats to Biodiversity as perceived to date. The **specific threats to Biodiversity** which have been identified by the existing Reports are the following:

1. The harvesting of plant Species for commercial purposes
2. The Introduction of Exotic Species
3. Hunting and fishing activities that affect the natural process of seed distribution as well as the growth of the population of certain bird and animal species.
4. Coastal Zone Developments which affect the marine ecosystems through loss of habitat.

These can be considered as the basis of the gaps identified in the cross-sectoral issues. **Human Population increases in the rural areas**, is a cross-sectoral issue linked to natural resource degradation which is being addressed within the National Development Plan. However because of the significance given to it in recent Reports such as the Belize National Report to the Mesoamerican Biological Corridors Project as a major threat to Biodiversity it may require additional plans and programmes within the Biodiversity Strategy and Action Plan.

Policy and Regulatory Framework:

Identification of gaps with respect to Policy and Regulatory Framework:

a. Where there are no laws: There is, at present, no legal or regulatory framework specifically for the regulation of the Conservation and Sustainable Use of Biodiversity or in particular, no guidelines for the incorporation of the Convention on Biodiversity into national legislation..

b. Where there are gaps in existing laws directly or indirectly impacting on Biodiversity: These gaps exist in three main areas namely, Environmental Protection, Land Use Planning and Management, and Natural Resource Use and Management. There also exist areas of potential conflict related to Belize's obligations under the various International Conventions signed in relation to the Environment.

Preliminary Assessment of existing needs with respect to Legal/Regulatory Framework:

Overall there is a problem of lack of enforcement and monitoring of Environmental Legislation which impacts on Biodiversity. New legislation needs to be designed which specifically addresses the requirements of the Convention on Biodiversity. Legislation that provides incentives to private sector and community groups participating actively in biodiversity conservation is also necessary.

Preliminary Assessment of needs in the Policy Framework with respect to Biodiversity:

The major gap in the area of Policy was defined as the absence of written policies on critical environmental issues. Specifically, there is no stated policy as yet on Biodiversity, although one may emerge in the course of developing the BSAP. Given the broad range of issues affecting Biodiversity it will be important to define the Biodiversity Strategy in the context of as much information as can be made available on the policies relating to such areas as Protected Areas Management, Land Use and Coastal Zone Development. In addition, other policies related to socio-economic and socio-cultural issues will also be important. The major environmental document remains the National Environmental Action Plan and that does not specifically define policies as such.

Notwithstanding, individual Ministries have been drafting some policy documents which have not received the official approval of the Cabinet but which remain as useful guidelines for the conducting of the BSAP exercise. These include policies on Cayes Development, Coastal Zone Development, and Population. There is need to continue during the BSAP process to identify what management and administrative policies exist within the various Departments that impact on Biodiversity.

Finally, there is a need for some policy to guide the inclusion of natural resource data into national accounting. Currently the Central Statistics Office has submitted a project for funding and which is entitled "Environmental Statistics and Accounts Unit"; the objectives of this project are:

- a. to generate on a regular basis key environmental statistics which would be used to monitor changes in the Belize environment and
- b. facilitate the generation of Natural Resource Accounts

Identification of gaps in the Institutional Framework and Human Capacity:

The Institutional Framework which presently exists to address environmental issues is functioning across Ministerial and Departmental lines with different Government Ministries and institutions managing various mandates which are undoubtedly impacting on Biodiversity. Private Sector Agencies and Non-governmental organizations also play an important role in this institutional framework. To date there appears to be a positive informal collaboration amongst these players and this has resulted in Belize making major achievements in defining mechanisms for environmental planning and management. This collaboration has covered such areas as co-management of protected areas between public and private sector and data-collection and analysis and monitoring of natural resource degradation.

The major gap identified in the institutional framework and building of human capacity was that of the lack of formalized coordination amongst those agencies charged with the management of natural resources or whose activities impact on the Environment. This coordination is recommended with respect to a range of issues including information sharing, joint decision-making and others.

Another critical area was the absence of technical capacity related to the specific area of genetic resource management, a key component of the Convention on Biodiversity. An important aspect of this is specialized training and infrastructure for data collection and analysis in such areas defined by the Convention. Finally, there is a lack of adequate mechanisms for institutionalizing the involvement of the private sector and of communities in decision making with respect to the management and sustainable use of Biodiversity.

Preliminary Assessment of needs in the area of Institutional and Human Capacity:

The Literature reviewed and the discussions held with key environmental personnel has identified the needs for strengthening the mechanisms for coordinated action between the government Departments working in the different sectors which impact on Biodiversity. Also identified was the need for some formal mechanisms for regulating the role of the private sector, communities and NGOs in natural resource conservation as well as for incentives and mechanisms for the private sector to become involved in Biodiversity conservation.

Another critical aspect was the need for capacity-building and institutional strengthening in the area of monitoring the requirements of International Conventions that Belize has signed relating to the Environment. It is necessary to provide legal and financial resources to train Belizeans in negotiation skills at the international level as well as to provide resources locally to train local personnel in the requirements of International Conventions that govern natural resources which they are managing.

Existing Measures and Programmes in Place for the Conservation of Biodiversity.

These include the substantial work done to date to provide a comprehensive legislative framework for the establishment of Protected areas. Through this, various categories of protected areas have been declared and work is ongoing on the development of management plans. Non-Governmental organizations such as the Programme for Belize (PFB) and the Belize Audubon Society (BAS) are involved in the management of significant areas of land for conservation purposes. Other community organizations are emerging to provide support to the Government in the development of specific protected areas. As a corollary to this, the Protected Areas Conservation Trust (PACT) has already begun to carry out the task of financing community projects geared towards the development and consolidation of Protected areas.

Substantial legislation has been developed by the Department of the Environment to monitor and control the discharge of pollutants. Belize has also become a party to important international conventions such as CITES , the Climate Change Convention and the Convention on Biodiversity, all of which have an impact on Biodiversity. Noteworthy, the Belize Reef has been designated as a World Heritage Site under the UNESCO Convention.

Belize has developed a **National Protected Areas Systems Plan** that delineates a comprehensive network of protected areas based on substantial biological data, land use and other data. A **National Environmental Action Plan** was completed in 1996.

The Government of Belize as a participant in the Regional Alliance for Sustainable Development (ALIDES) is pursuing vigorously the development of National and Regional Biological Corridors as a strategy for Biodiversity conservation.

Important Data collection mechanisms have been put in place through the establishment of a National Herbarium to house samples of Plant species found in Belize. A Land Information Center (LIC) has also been established to provide information on land resources, land use/cover and environment as an aid to planning, management and monitoring activities.

In the area of coastal zone development a Coastal Zone Management Unit has been developed as a UNDP Project under the Fisheries Department. This may result in the establishment of a Coastal Zone Authority for more comprehensive planning and management of the Coastal Zone of Belize. The Fisheries Department also conducts ongoing reef monitoring and data collection programmes for certain species of marine life; this is a critical factor in conserving marine biodiversity.

The initiation of the NBSAP process began in October 1997 and will be concluded in September 1998 with the technical and financial assistance of the UNDP-GEF.

1. INTRODUCTION

1.1 General

The country of Belize, lying between 15° 53'- 18° 30'N and 87° 15'- 89° 15'W, is bounded to the north by Mexico (Quintana Roo and, in the extreme north-west, Campeche provinces) and elsewhere by Guatemala (Peten and, in the extreme south, Izabal provinces). In form, the country is roughly rectangular, measuring 280 km coastline from north to south and 109 km from east to west, extending to 180 km through inclusion of territorial sea and. Total land area, including the cayes, is 8,860 mi² (22,960 km²) in a total national territory including territorial sea of c. 18,000 mi² (46,620 km²). The country is divided into six districts, 9 municipalities and over 240 villages.

For its size, Belize is a very varied country and biologically diverse. Inland, the Maya Mountain/Mountain Pine Ridge Massif is the dominant landscape feature and rises to 1124 m (3688 ft) at its highest point. It is surrounded by rugged karst limestone hills. Beyond that, most of the north of the country and the entire coastal area, including Toledo in the south, consists of low-lying plains. Nine land systems, each comprising a particular combination of topography, soils and vegetation, and thus a distinctive landscape, have been distinguished. Rainfall varies from less than 1300mm p.a. with a four-month dry season in the north to over 4500 mm and a shorter dry season in the south. The natural vegetation is similarly varied and 49 distinct types are recognized even after simplification under a revised classification system. Other measures also give relatively high levels of biological diversity within the country.

This pattern of diversity and high environmental quality also applies to the coastal zones and marine systems. The Belize Barrier Reef is the second largest in the world and the largest in the western hemisphere. It is, however, only part of a complex and largely intact coastal ecosystem of exceptional value in global terms. In the preliminary classification scheme developed under the Protected Areas System Plan, four regions are distinguished that reflect differences in sediments, bathymetry, topology and hydrology and represent marine equivalents of the terrestrial land systems. They are in turn separated into seventeen divisions, each representing a distinct marine environment.

1.2 Significance of Biodiversity to Belize and Its People

Belize has a variety of reef formations within its territorial limits and is unparalleled in Mesoamerica. With varied mangrove forests(3.4% of national territory) and viable populations of crocodiles, manatees and many commercial species, the coastal zone of Belize can also be the source for valuable bio-prospecting. The documented biodiversity of Belize today is as follows: 571 species of birds, 162 species of mammals, 121 species of reptiles, 43 species of fresh water fish, 117 species of total inland fish, 157 mollusks, 1 crustacean, 43 species of amphibians, 288 species of Lepidoptera, 176 species of Odonata and 2 other terrestrial invertebrate. There are also 2 amphibians and 1 reptile species documented as endemic. Within the regional perspective, Belize is situated in the northern region of Mesoamerica which is considered as the center of origin of important plant species currently in use by the population, namely, corn, cacao and pine, papaya and pepper.

Belize is estimated to have roughly 4,000 species of native flowering plants (Angiosperms) of which 2,500 are dicots (Dwyer and Spellman 1981) and 1,500 are monocots (Spellman et al. 1975). The latter include approximately 317 species of bromeliads/orchids (B. Adams, pers. comm.). Approximately 740 species of native trees are reported for Belize, representing 331 genera in 87 plant families. The richness of

Belize's bio-diversity may be attributed to the fact that approximately 70% of its territory (about 23,000 kms) is still under closed cover forest. In addition, most water resources and mangrove forests remain in relatively pristine conditions.

The National Protected Areas System of Belize is made up of 55 declared state and private reserves in both the terrestrial and coastal/marine environment. There is only one private zoo and the National Botanic Garden of 1000 acres(400 Ha) is currently being designed on the southeastern border of Belmopan, the nation's capital.

1.3 Belize's Commitment to the Convention on Biological Diversity

Belize signed the Convention on Biological Diversity in June 13, 1992 in Rio de Janeiro, Brazil and ratified it in December 1993. The first interim National Biodiversity Committee was formed in late 1995.

At the regional level Belize has also made serious steps when it signed the Central American Agreement on Biodiversity in 1992 and the Alliance for Sustainable Development in 1994.

In early 1996, Belize initiated the development of its national component of the Mesoamerican Biological Corridors Project. In late 1997 another initiative by the Programme for Belize began the consolidation of the Northern Biological Corridors Project. In early 1998, the Coastal Zone Management Authority Act was introduced in Parliament.

In late 1997 Belize began the preparation of its National Biodiversity Strategy and Action Plan with the assistance of the UNDP and the GEF. At the same time the Ministry of Natural Resources has officially nominated the members of the National Biodiversity committee and the Technical Advisory Biodiversity Sub-committee.

Belize has also signed and ratified many of the international conventions that deal with sustainable management of the environment and biodiversity; some of these were signed before and others after the CBD came on stream in 1992.

1.4 Aim of the National Biodiversity Strategy and Action Plan (NBSAP)

The aim of the NBSAP Project is to provide support to the Government of Belize in the formulation of a National Biodiversity Strategy and Action Plan in order to ensure the most effective use of the country's natural resources. Priority actions necessary to implement the strategy will be identified. The public knowledge on the CBD will also be enhanced. In addition, the project will assist in the preparation of the First National Report to Conference of the Parties on the CBD.

The preparation of the NBSAP will be truly participatory in nature, involving all stakeholders throughout the geographic areas of the country. Public consultation, training, and in depth analysis of issues effecting the biodiversity of Belize will be implemented.

A draft Mission Statement for the BSAP has been prepared and reads as follow:

**TO PROMOTE THE SUSTAINABLE USE OF BELIZE'S BIOLOGICAL AND
CULTURAL RESOURCES BY EDUCATING SOCIETY TO PROPERLY
CONSERVE BIOLOGICAL DIVERSITY, ENSURING LOCAL
PARTICIPATION
AND EQUITABLE ACCESS TO BENEFITS THROUGH ADEQUATE
INSTITUTIONAL AND HUMAN CAPACITY BUILDING AND
COLLABORATIVE
RESEARCH AND DEVELOPMENT: IN ORDER TO MAINTAIN AND
ENHANCE
THE QUALITY OF LIFE FOR ALL BELIZEANS.**

II. BACKGROUND

2.1 Historical Perspective of the Use of Nature in Belize

2.1.1 Ecological Value

The most striking features of Belize are the extent (over 70%) that is still dominated by natural vegetation of which and the relatively low population density over large tracts of the country. The northern half and eastern fringe of the southern half of the country comprise a plain of low relief. The Maya Mountains, 300-1000 m in altitude, occupy the south center and dominate much of the remainder of the country. They rise steeply to a maximum of 1120 m at Victoria Peak in the Cockscomb Range, and they slope down to the Vaca Plateau in the west. The third major physiographic feature of the country comprises karst landscapes, sometimes hilly and sometimes rolling, on the north and west of the Maya mountains. Prominent discontinuous foothill ranges exist in the southern interior and comprise much of the hinterland of the Southern Toledo district.

The Belizean Barrier Reef is considered one of the "Seven Underwater Wonders of the World" and is currently designated as a World Heritage Site.

As of December 1997, Belize has a total of 55 declared protected areas (marine and terrestrial) covering over 40 % (2,295,189 Ha) of the national territory; there are an additional 29 areas being proposed for protection under the draft National Protected Areas System Plan (Prefer to Annex One). These figures place Belize as number one in protected area coverage in Mesoamerica. The environmental services supplied by these protected areas include watersheds, erosion control, hydro-power generation, recreation and aesthetic values, medicinal plants, etc.

2.1.2 Socioeconomic Context

The population stands at 230,000, of which 50% is urban (1997 mid-year estimates) and where much of the country is currently inhospitable to human habitation. Population densities in the countryside averages at 10/sq.km but is concentrated in certain areas including the northern plain, southern coastal plain, Belize Valley, Stann Creek Valley. (1993). This is partly as a result of a large influx of Central American refugees, primarily Salvadoreans and Guatemalans. Belize is experiencing significant net out-migration due to a reduction of immigration from Central America and continuous migration of Belizeans to the United States. This explains a relatively high rate of population growth, estimated at 2.6% per annum. This has contributed to Belize's exceptionally low population density of 10 persons per sq km, one of the lowest in the world, although its ratio of 197 persons per sq km of cultivated land is higher than nearby Honduras and Nicaragua. This feature is explained by the tendency of immigrants to settle in rural areas, by the higher fertility rates in the rural areas, and by the fact that most out-migration occurs from the urban areas. Both population growth and its high concentration in rural areas have important consequences for the environmental resources. Pressures on tropical forest areas are greater than what could be expected given the low population level. Similarly, the potential for unsustainable agricultural practices is increased by the growing rural population. Also, the provision of adequate services including potable water and sanitation is much more expensive due to the scattered population.

Belize is considered as a developing country which ranks 63 with a Human Development Index (medium HDI) of .806 in 1995; the population growth rate of 2.6% (duplicating

every 27 years); in 1996 the birth rate is 23.3 per 1000 inhabitants and the mortality rate is 4.3 per 1000, while the fertility rate is 4.2 children/woman; life expectancy is 73.7 years. In 1991, the literacy rate was 70% for males and females. In 1991, 64.15 % of the population were below 24 years. In 1995, 25.3 % of the households were considered as poor and 9.6 % as extremely poor; the southern districts reporting the higher percentages. Available preliminary data for 1996 indicate that the per capita GDP was \$2,307 US and the real GDP growth was 3.8%.

2.1.3 Development Context

Provisional figures in 1996 show that agricultural, forestry and fishing activity, which transforms and uses the natural resource base of the country, contributes 20.4% of the GDP. Nonetheless, this pattern also conforms to the distribution of good agricultural land which is distinctly limited in extent. Some 66% of Belize consists of land that is marginal, and over large areas manifestly inappropriate, for agricultural endeavor. The recent deforestation study by the LIC showed that there were 78,076 ha cleared during the period 1989 and 1994 and that there were 6,682 ha or 9% of this total cleared inside protected areas.

The importance of the protection of this natural base has made it possible for the tourism sector to become second contributor to the GDP at 18.0% in 1995. Other sectors contribute to the GDP as follows: mining 0.71%, manufacturing 16.8%, and construction and utilities (power and water only) 7.9% (1996).

The labor force is 35.4 % of the population in 1997 while the unemployment rate is estimated at 12.7%. The Agricultural, fisheries and forestry sector uses the highest percentage of the labor force; this is followed by the tourism sector.

The main sources of foreign exchange are from the export of traditional agricultural commodities, namely, sugarcane, citrus, bananas, timber, marine products and from tourism, especially eco-tourism. This sector is offering a strong competition for first place to the traditional foreign exchange earners.

2.2. **State of the Belize Environment—General Overview**

The environmental problems or issues outlined in the **National Environmental Action Plan** (1996) as well as other studies which are of key importance to the Environment in General are:

1. **Inadequate Liquid and Solid Waste Management Systems**

There are no effective systems in place for reducing liquid waste generated by the rural and urban populations in Belize; The industrial waste from the citrus, sugar, banana and other processing centers eventually results in pollution of the inland water supply and the coastal zone and eventually into the marine zone thus affecting the Barrier Reef System.

2. **Natural Resource Degradation**

Concerns are that the Fisheries Stock is being affected by overfishing of lobster, conch and some other commercial marine products.

There is the need for Coastal Zone Management to ensure the control or reduction of the disposal of pollutants from agricultural and industrial activities into rivers and streams

which eventually empty out into the sea. More damage may also result from development-related activities e.g. fishing and tourism. The result may be a permanent damage to the mangroves and reef system upon which marine species rely.

There is a need to reduce Deforestation through conversion to agriculture of unsuitable lands and there is also the need to control Unsustainable Agricultural Practices such as slash and burn milpa farming, clearcutting of hilly terrain and other such practices which cause loss of forest cover.

National Parks and Protected Areas management needs to be improved through the more effective enforcement of legislation, the accessing of more financial and human resources, more research and data collection and promotion of public awareness.

3. **Inadequate and Inefficient Land Use Management Systems**

Land Use Management needs to take into account the increasing trend for privatization of national lands which, if carried out without proper land zoning may result in the alienation of land which should be conserved. Where secure land titles do not provide for any incentives to invest in land development then that may not result in the increased sustainable use of the land.

4. **Insufficient and Inadequate Water, Sanitation and Health Services**

Water and Sanitation Coverage should improve in order to reduce the incidence of water-borne and sanitation related diseases. These diseases cause economic losses to the country through direct health costs and days of work lost.

5. **The high incidence of poverty in environmentally fragile areas**

Recent studies have identified high incidence of poverty in certain geographic areas of Belize and among certain groups. Such causes of poverty are linked to such causes of environmental degradation as the poorer groups farm on more marginal land and may not have secure land rights. This results in the inability or unwillingness to utilize proper conservation practices which may be more costly.

6. **An Ineffective Institutional and Legal Framework**

The Legal Regulatory Framework is hampered mainly by the lack of resources to enforce existing laws and the need to develop comprehensive regulations for some legislation. As it stands there are proposals in place for the revision of some key aspects of the legislation.

Quasi- government Agencies, NGO's and Ministries charged with the responsibility of overseeing environmental planning and management need to develop better mechanisms for coordination and collaboration. There needs to be adequate revision of existing roles and responsibilities to ensure the reduction in duplication of efforts.

The above are problems which are being addressed within the context of the **National Development Plan** and are spread across various sectors. They also coincide with the threats to Biodiversity as perceived to date.

It is important to note that the issue of **Human Population increase in the rural areas**, whilst identified in the National Environmental Action Plan as being generally linked to

natural resource degradation is given greater significance in the Belize National Report to the Mesoamerican Biological Corridors Project as a major threat to Biodiversity.

“ Human Population growth is probably the most important threat to Belizean biodiversity. Virtually all other threats are a result of population increase. Birthrate in Belize is one of the highest in the world and will lead to an ever increasing pressure on biodiversity and other natural resources. Bleak economic perspectives, lack of opportunities and poor education are leading to an increasing number of people with no other options than to gain access to, and invariably destroy, Belize’s natural resources. Lack of planning and virtually complete absence of implementation of existing legislation aggravate the impact of this”

- pg. 18 , Belize National Report on the Mesoamerican Biological Corridors Project. 1997.

Given that there is limited research to date on the possible causes of loss of Biodiversity in Belize the broad issue of Human Population growth and its link to Poverty may continue to remain the general cross-sectoral issue to be addressed in the BSAP; similarly, the impacts of high density of poor communities adjacent in Mexico, Guatemala and Honduras.

2.3 Relationship between Sectors and Environmental Issues

The following table presents the existing relationships between the various sectors which impact on the Biodiversity of Belize:

Issues	Social Sector	Productive Sector	Physical Infrastructure	Public Administration
Improving Liquid, industrial and Solid Waste Management	•	•	•	•
Reducing Natural Resource Degradation	•	•	•	•
Strengthening Land Management	•	•		•
Improving Water, Sanitation Coverage	•		•	•
Reducing Poverty linked to environmental degradation	•	•	•	
Improving the Legal/Regulatory Framework	•			•

2.4 Existing Measures and Programmes in Place for the Conservation of Biodiversity.

These can be summarized as follows :

a. There is already in place substantial Legislation which establishes Protected Areas:

- The National Parks Systems Act
- The Forest Act
- The Fisheries Act
- The Crown Lands Ordinance
- The Ancient Monuments and Antiquities Act

Various categories of Protected Areas have been declared under these Acts. There are other Private Reserves which are managed as protected areas by the Owners or by non-governmental organizations. Some of these have been acknowledged as important sites by the National Parks Systems Plan.

Management Plans have been designed for some of these Protected Areas and there are others being developed.

b. There already exists co-management agreements between Government and NGO to allow for the management of some legally established Protected areas.

c. The conservation of Biodiversity has been approached to date by the development of Protected Areas. Belize has advanced to the stage of developing a **National Protected Areas Systems Plan** which delineates a comprehensive network of protected areas based on substantial biological, land use and other data. The Plan is geared towards species conservation as well as maintaining the integrity of certain critical habitat. According to the Study protected areas with legal underpinnings cover 37% of the country. Since then, the coverage has increased to a little over 40%

d. The Government has now adopted a **National Environmental Action Plan** which has as its immediate objective “the development and implementation of environmentally sustainable development policies by the Government and the improvement of inter-sectoral coordination of the various environmental players “(NEAP. pg. 3) . As its ultimate objective it seeks to “ put in place a program of policy reforms, institution building, studies and investments that will improve the state of the environment of Belize and put the country on a path to sustainable development.” (ibid. pg. 3).

e. The Government of Belize as Part of the participation in the Regional Alliance for Sustainable Development (ALIDES) is pursuing vigorously the development of National and Regional Biological Corridors as a strategy for Biodiversity conservation.

f. Data Collection is being carried out on Plant and Animal Species by Government and NGOs.

g. A National Herbarium has been developed by the Government to house samples of Plant species found in Belize.

- h. A Protected Areas Conservation Trust (PACT) has been established and is already functioning to provide financial support to activities which improve the management of Protected Areas.
- i. A Land Information Center (LIC) has been developed by the Government of Belize within the Ministry of Natural Resources. The Centre consists of three components : the Geographical Information Systems (GIS), the Conservation and Environment Data Systems (CEDS) and the Land Information Systems (LIS). Using these the LIC is able to generate land use capability maps to aid in planning. The GIS primarily handles information on land resources, land use/cover and environment as an aid to planning, management and monitoring activities. The Land Information System is currently under development and has not been put into function. The CEDS coordinates environmental data gathering in Belize by forming a network of data gathering groups and ensuring data exchange. It is functional but its coverage is being expanded.
- k. A Coastal Zone Management Unit has been developed as a UNDP Project under the Fisheries Department and may result in more comprehensive planning and management of the Coastal Zone of Belize.
- l. Belize was successful in its application to have the Belize Barrier Reef System declared a World Heritage Site under the UNESCO World Heritage Site Convention. This is an important contribution in the preservation of Biodiversity as it relates to marine plant and animal species. In addition, Belize has become a party to several important International Conventions on the Environment such as the CITES Convention, RAMSAR, and the Global Climate Change Convention.
- m. Belize is presently participating in a Regional Central American Project to coordinate and strengthen the management and collection of environment related data. This will complement existing national efforts to provide accurate data in all aspects of environmental management.

2.4.1 Ongoing and Past Conservation Programs: The Conservation Sub-sector:

The conservation ethic in Belize dates back to the early 1920's .The establishment of the Forest Reserves, as part of the drive towards modernization of the forest industry in the 1920s, marks the beginning of the protected area network in Belize. Five of the existing reserves (Freshwater Creek, Sibun, Silk Grass, Vaca and Columbia River) were created by 1930 (ODA 1989). Forest Reserve establishment continued thereafter, the most recent addition being the Terra Nova Forest Reserve in 1994. Although initial emphasis was upon timber production, the Forest Policy clearly indicates other functions including nature reserves and for the protection of steep slopes and watersheds. Indeed, some 50% of the forest estate is estimated to be protection forest. This protective aspect is now further enhanced by emphasis upon overall forest, rather than timber, management and the distinctions between forest reserves and other forms of protected area are becoming increasingly blurred. Nonetheless, at present only the forest reserves allow for extractive use of any form. With a combined area of c.452,600 ha, the forest reserves clearly play a central role in any national protected area system.

The first designation of a nature reserve was that of a portion of Half Moon Caye in 1928, made under the Crown Lands Ordinance to protect seabird colonies. No other reserves were established for another 40 years. In the 1960s, however, the creation of the Belize Audubon Society, first as a member of the Florida Chapter and then as an

autonomous body, represents the start both of organized local concern for nature conservation and of the interest and influence of the international environmental NGO community. Belize Audubon played an active role in promoting use of the Crown Lands Ordinance to establish Crown Reserves at Rio Grande (originally part of the Columbia Forest Reserve and since abandoned) in 1968, Guanacaste in 1973 and on seven small cayes carrying breeding bird colonies in 1977.

At the same time, the tourism industry began to expand and had become the second largest producer of foreign currency in the economy by 1984. The complementarity of interest between tourism and nature conservation reinforced the move towards protected area establishment. The National Parks Systems Act came into law in 1981 and provided a framework for a range of types of protected area including National Parks, Wildlife Sanctuaries, Nature Reserves and National Monuments. Sixteen areas have been designated under this legislation, partly by re-designation of Crown and Forest Reserves and partly by designation of new areas of national land. Establishment has been an ongoing process, the most recent being in 1994 with the gazetting of Sarstoon-Temash, Payne's Creek, Monkey Bay, Rio Blanco, Aguas Turbias and Five Blues Lake.

Use of the Fisheries Act to create Marine Reserves was initiated in 1987 with the establishment of Hol Chan Marine Reserve. The creation of the Coastal Zone Management Unit, with the support of the Global Environmental Facility and the international environmental community, has led to a surge of activity in marine conservation. Glover's Reef was declared in 1993 and the potential of a number of other sites (e.g. Southwater Caye, Bacalar Chico, Mexican Rocks, Laughing Bird Caye, Port Honduras) is now being studied.

Meanwhile the Archaeological Reserves were also established to cover a number of key sites, primarily Maya but also examples of 19th century agricultural endeavor. A total of ten sites were designated under the Ancient Monuments and Antiquities Act in the mid-1980s. One of these, Caracol, forms an enclave within the Chiquibul National Park. Indeed, it is older than the National Park, having been established before the division of the original Forest Reserve.

Whilst the statutory reserves could only be established on national land, private initiatives were also occurring elsewhere. These have fallen into two forms, of initiatives undertaken by single entities and those by communities. The two major examples of the former approach are represented by the Rio Bravo Conservation and Management Area and Shipstern Nature Reserve. The origins of the Rio Bravo, established in 1989, lay in the concern that Central American deforestation was affecting the populations of North American migrant birds and in the opportunity, and threat of further deforestation, presented by the break-up of the former Belize Estate and Produce Company lands in Orange Walk District. The Rio Bravo is owned and managed by the Programme for Belize, which began as an external initiative (literally the Belize programme within Massachusetts Audubon Society) and quickly evolved into an entirely Belizean organization. The Rio Bravo was, from the outset, conceived as a mixed-management area. Shipstern is owned by a non-Belizean NGO, the Tropical Forest Conservation Foundation, but is managed by Belize Audubon Society. There are numerous smaller areas that are called reserves and arise from private initiatives (e.g. Slate Creek Preserve, Monkey Bay Wildlife Sanctuary. The community reserves stem from another line of thought, stressing community participation and derivation of benefit from conservation activity. The first example in Belize, and indeed a model of creative action on a much broader scale, was the Community Baboon Sanctuary. Similar community approaches are now being developed for the Manatee Lagoons, Dangriga and Toledo District.

2.4.1.1 Protected Area Policy

The closest approach to a specific national environmental policy is stated in the last National Five Year Plan, which aims to improve the standard of living of the population of Belize whilst minimizing the impact on the environment. The National Environmental Action Plan, currently under development, may give greater definition to this policy. Otherwise, policy is expressed by individual ministries or departments, as specific statements and/or explicit in legislation, to address statutory duties. Three government departments, the Forest Department, Fisheries Department and Department of Archaeology, each within a different Ministry, have direct responsibility for protected area designation and management. These sectoral policies were consolidated under the Crown Lands Act and later the National Lands Act, 1992. Ownership of land has been transferred under grant, deed or lease fiat. All matters relating to land transfer, sale or ownership lies within the portfolio of the Minister of Natural Resources, unless authority has been passed on under other legislation.

Forest Act, 1960

The Forest Policy, approved and published in October 1958 as the Forest Policy of British Honduras, was confirmed in 1994 following updating of terminology and other minor modifications. The policy is implemented through the Forest Act, 1990, and allows for the establishment of Forest Reserves on national lands. The purpose of the reserves is to ensure an adequate and increasing supply of timber and other forest produce at a reasonable price to the people, industries and timber trade of Belize. Nature conservation, tourism and environmental protection are also of recognized concern. De-reservation should only occur "as a result of over-riding public necessity" and is executed by Order published in the gazette. The Forest Reserves are the only terrestrial reserves allowing controlled extractive use.

National Park Systems Act, 1981

The National Park Systems Act, 1981, provides for the creation of orthodox protected areas. Four categories are strictly defined in law:

- **Nature Reserve:** These areas provide for protection of biological communities or species and maintenance of natural processes in an undisturbed state. Permissible activities include scientific study, education and maintenance of genetic resources. A management plan is required before development of visitor facilities.
- **National Park:** The objectives of a National Park is protection and preservation of natural and scenic values of national significance. Permissible activities are as for a nature reserve, with the addition of, and emphasis upon, tourism and recreation. Fishing is permissible under special permit.
- **Wildlife Sanctuary:** Management objectives are similar to those of a National Park, but this designation is applicable to areas where protection of its special qualities requires specific human manipulation.
- **National Monument:** The purpose of a National Monument is to protect and preserve nationally significant natural features of special interest or unique characteristics, to provide opportunities for interpretation, education, research and public appreciation. This

designation is designed to cover physical features as against biological values but is otherwise equivalent (and subject to the same management emphasis) as a national park.

Areas designated under this Act may only lie on National Land. No specific provision is made for marine areas but the definition of National Land does cover the seabed and the designation has been applied to marine areas in Half Moon Caye National Monument, as it would to the extension of Laughing Bird Caye National Park. Management may be devolved upon third parties.

Fisheries Act, 1977

The Fisheries Act applies to coastal waters within the Exclusive Economic Zone and can be extended by Ministerial Order to any inland water. The Marine Reserves, permitted under the Act through an amendment made in 1983, are established for the specific purposes of conservation of marine fauna and flora, preservation of fish breeding grounds and habitat, promotion of scientific study, natural regeneration of aquatic life in areas where it has been depleted, and enhancement of beauty. The marine reserves may also incorporate, as appropriate, adjacent areas of land. The Marine Reserves allow for multiple use. There is an interesting difference in the establishment procedure between the National Park group and the Marine Reserves. In the former case, the area is designated and then a management plan must be drawn up prior to installation of infrastructure or visitor facilities. In the latter, the planning and public consultation procedure is completed prior to reserve establishment. There is no specific provision for devolution of management to third parties.

Ancient Monuments and Antiquities Act, 1981

The main thrust of management within the Archaeological Reserves is towards protection of, and research into, their cultural values. They therefore differ fundamentally from the other protected areas although they can be accommodated within them, as with Caracol in the Chiquibul National Park.

National Lands Act, 1992

The National Lands Act supersedes the older Crown Lands Ordinance but continues to provide for the Bird Sanctuaries that were created under it. The terms of designation of the areas does not provide detail on management provisions. Some of these sites are now contained within larger designated or prospective conservation areas.

Lands Utilization Act, 1981

This legislation gives authority to the Minister responsible for Lands, the Minister of Natural Resources, to declare Special Development Areas. Within an SDA, which is subject to Development Plans, use may be restricted to specific purposes. An SDA can therefore be construed as an instrument for landscape protection and may include protected areas or zones.

Other legislation also impinges upon protected areas and environmental issues. The Maritime Areas Act provides for environmental protection in the Exclusive Economic Zone and is under the Minister of Foreign Affairs. Statutory responsibility for mineral exploration and extraction lies with the Minister responsible for mines and minerals (Minister of Science and Transport) and there are specific regulations with regard to environmental protection. The Environmental Protection Act is implemented by the

Minister responsible for the Environment (Minister of Tourism and the Environment), to ensure the protection and rational use of natural resources. Yet more legislation (e.g. Wildlife Protection Act) contain elements of authority or control over matters relating to protected areas.

Man and Biosphere status has been proposed for the reserves of the Maya Mountain massif and suggested also for the RBCMA, which is contiguous with the block formed by the Maya and Calakmul Biosphere Reserves. This latter combination would form a tri-national park spanning Belizean, Guatemalan and Mexican territory. The Barrier Reef is also a **World Heritage Site**. Belize is also giving consideration to ratification of the **Ramsar Convention**. At least one site must be put forward as a **Ramsar Site** on joining the convention and Crooked Tree Wildlife Sanctuary has been nominated.

2.4.1..2 List of Protected Areas/ Management Categories/ Size

Given the range of statutory instruments and administrative and management bodies, it is important to define exactly which sites qualify as protected areas within the current network.

Clearly, all protected areas designated under the National Park Systems Act, Wildlife Protection Act, Forest Act (unless devoted to plantations), Fisheries Act, National Lands Ordinance and Ancient Monument and Antiquities Act are clearly within the scope of the national system. The archaeological concerns must be fully taken into account in all protected areas and sites of outstanding importance may form special management zones with different status to the rest of the protected area within which it lies (e.g. Caracol). The designations and management approaches for specific sites is, however, the specialist domain of the Department of Archaeology and is not considered here.

Nonetheless, many of the points concerning education and research, visitation, need for enhanced management capability and financing of management apply equally to natural and archaeological sites.

* Special Development Areas (SDA's)

The SDA's allow for controlled land use over a specified area, under the terms of a development plan. Environmental issues are addressed under the plan and an SDA may provide the creation of protected areas, or incorporate existing ones, as part of the land use regime. It is therefore definitely a valuable instrument for integrating appropriate conservation measures in delicate areas at a landscape level. The question, however, is whether an SDA is in itself a Protected Area. Under the IUCN guidelines, an SDA could be a protected area if it were used to safeguard the integrity of a traditional interaction between people and the natural environment. In fact, none of the existing SDA's are intended to serve the purpose of fixing a desirable *status quo* but instead address the need to protect environmental values while allowing for economic and social development. They are not, therefore, considered protected areas here although zones within them may be. Nonetheless, an SDA could be designed to create a protected landscape within the framework of the existing enabling law.

* Privately-owned protected areas.

There are many areas under private ownership or leasehold that are managed on protected area principles. The major sites include the Rio Bravo Conservation and Management Area, Shipstern Nature Reserve, Tapir Mountain Nature Reserve, and the

Community Baboon Sanctuary. During 1996, the **Golden Stream Private Nature Reserve** (13,614 ha) was declared as the newest privately-protected area, and is in the Toledo District. These sites include some of the most important in the country, and indeed the Rio Bravo is the second largest single protected area in Belize. There are also many smaller sites that are also valuable, particularly as assets for tourism, recreation, for community involvement, education or as corridors of natural habitat connecting other protected areas. Examples here include the Bull Run property, Slate Creek Preserve and Monkey Bay Wildlife Sanctuary but there are many others. Clearly these sites play a crucial role and must be taken into account. The question is, without in any way questioning their value, to what degree such sites are eligible for integration in a national protected area system. The key criteria identified here are:

- set conservation management objectives that place the site within the definition of a protected area;
- management under a formal, legally-binding agreement, applying to owner and manager, that underpin and ensure compliance with those objectives and;
- provision for long-term continuity of these management precepts on the site.

The underlying principle is that the private owner/manager be constitutionally or legally bound to ensure the primacy of conservation management of the site and that this should apply to the land, not solely the body or individual. i.e. these arrangements would be continue to be applied to the site regardless of change of ownership or manager.

Of the private conservation areas, only Tapir Mountain Nature Reserve (held by BAS on a 99-year lease and designated under the National Park Systems Act) and the Rio Bravo Conservation and Management Area meet these criteria. Some very well-known, and important, sites are therefore excluded. This does not reflect upon their value, nor the need to encourage their good management, but a distinction must be made between those sites where measures have been taken to secure long-term continuity as a protected area and those where it has not. It should also be noted that current management measures are in many cases more effective on private sites than in the statutory reserves. The community reserves also deserve special mention. Although based on voluntary agreements, such areas are the most direct examples of community participation in protected area management. They also represent a transition between legally-binding underpinning of management and a simple decision on the part of a land-owner in that a formal agreement has been entered into.

2.4.1.3 Belize's Proposed Comprehensive National Protected Areas System

In summary, the Provisional Site List of the proposed Comprehensive National Protected Area System is as follows:

A. Areas Essential for a Comprehensive National Protected Area System.

1. National Park Management Precepts: Protection and Visitation.

Bladen Branch Nature Reserve

Cockscomb Basin Wildlife Sanctuary
Five Blues National Park
Sarstoon-Temash National Park

Chiquibul National Park

Burdon Canal Nature Reserve
Payne's Creek National Park

2. Managed Resource Area Management Precepts: Protection, Visitation, Controlled Extractive Use.

Chiquibul FR	Columbia River FR
Manatee FR	Mango Creek FR
Mountain Pine Ridge FR	Sibun FR
Crooked Tree WS	Freshwater Creek FR
Deep River FR	Half Moon Cay NM
Glover's Reef MR	Hol Chan MR
Maya Mountains FR	Sittee River FR
Vaca Plateau FR	Rio Bravo Conservation and Management Area*

*private protected area, governed by binding Memorandum of Understanding with GoB.

3. **Recognized Gaps in the System: Feasibility Studies for Protected Area Establishment On-going or Proposed.**

Shipstern Nature Reserve*	Shipstern Lagoon
Mussel Creek/Cox's Lagoon/Mucklehany Swamp	Golden Stream Private Nature Reserve
Beaver Dam Creek/ Castile/More Tomorrow	
Northern River/Midwinter's Lagoon	
Port Honduras	Bacalar Chico
Northern Lagoon (Turneffe)	Laughing Bird Cay extension
Sapodilla Cays	Southwater Cay
New River Lagoon/New River	Sennis River and neighbouring drainage
Rio Hondo Riparian Forest	Mexico Rocks
Siwa-Ban (Cay Caulker)	Aguacaliente Swamp

* Immediate upgrade to Private Reserve under National Park management principles possible if an appropriate Memorandum of Understanding is negotiated between the owner and GOB.

4. **Conservation Management Areas: appropriate management** ranges from strict protection for small sites to application of controls to favor specific environmental interests in more extensive zones. All are **exceptional natural features or possess outstanding qualities that are not duplicated in sites named above.**

Placencia Lagoon and Peninsula	Whitewater Lagoon (on Freshwater Creek)
Bull Run Property	The Dump
Belize River to Moho Cay	Four Mile Lagoon
The "Bird Reserves"	The Blue Hole (Lighthouse Reef)
Rio Blanco National Park	Indian Creek and Caves Branch Caves
Manatee Lagoons	Blue Hole National Park
Community Baboon Sanctuary*	
* = Private Protected Areas	

B. **Areas Complementary to a Comprehensive National Protected Area System**

A miscellaneous group of areas, with qualities that complement the System but that are not essential to its integrity. Nonetheless, each has useful attributes (and in some cases very important functions as habitat linkages if identified gaps are filled), and their good management should be encouraged.

Tapir Mountain Nature Reserve*	Agua Turbias National Park
Guanacaste National Park	Baldy Beacon/Baldy Sibun
Slate Creek Preserve	Monkey Bay National Park

Monkey Bay Wildlife Sanctuary
 Grant's Work Forest Reserve
 Swasey-Bladen Forest Reserve

Commerce Bight Forest Reserve
 Machaca Forest Reserve
 Terra Nova Forest Reserve

2.1.4.4 Blocs, Corridors and Barriers

The protected area network is dominated by the bloc of statutory reserves occupying the Maya Mountain/Mountain Pine Ridge massif. This one area comprises 16 statutory reserves (including all management categories), with a further five as outliers. It is connected to the coastal plain and coastal zone at two points, via the Manatee FR to Manatee Lagoons and the Manatee SDA and via Deep River FR to the Payne's Creek NP and proposed Port Honduras conservation area. At present, the area is managed on a site-by-site basis but should be envisioned as a single conservation management unit incorporating the most important single inland area in Belize for the protection and wise use of biodiversity, scenic values, renewable natural resources, water resources and cultural heritage. The area across the international frontier in Guatemala is also formally protected but constitutes a narrow strip and satellite imagery indicates that the hinterland, and indeed the protected area itself, is extensively cultivated. This effectively closes off the bloc to the west. The Maya Mountain bloc constitutes the second largest in northern Central America and probably the most diverse in the Maya Lowlands.

The Rio Bravo Conservation Management Area and the Aguas Turbias National Park form a single conservation management unit. This is separated from Crooked Tree Wildlife Sanctuary to the east, but joins directly on to the Maya Biosphere Reserve via the Rio Azul National Park, itself linking to the Calakmul Biosphere Reserve in Mexico. The Rio Bravo therefore constitutes the Belizean portion of the largest conservation area, and the largest remaining tract of forest, in Central America, and one of the most important in the American tropics.

The value of these two sites on a regional and international level must not be underestimated. Their current quality is further enhanced by being embedded in an area dominated by natural vegetation; at present it is still possible literally to walk through natural habitats the length of the country from the Columbia River Forest Reserve to Shipstern Nature Reserve. Indeed, via the Rio Bravo one can continue over 200 km to the west into the Lacandon and 150 km to the north into the heart of the Yucatan Peninsula. These connections are, however, now being broken.

Within the Maya Mountain bloc, clearance along the Hummingbird Highway is starting to form a barrier, even within the Sibun and Manatee Forest Reserves. Development along the new Southern Highway, and potentially also on the new Belize Coastal Highway, also carries the risk of severing the connections between the uplands and the coastal zone. The linkage from the Maya Mountain area to the north passes through the coastal plain between the Burdon Canal and La Democracia. This too is being severed by development along the road, further widened by agricultural expansion in the central Belize River valley. A similar situation pertains on the Northern Highway. The breakup of the habitat linkages contributing to the health of the Belizean environment is imminent unless specific measures are taken to preserve them as part of the economic development process.

As part of the consultative process under the Mesoamerican Biological Corridors Project, essential links were recommended as essential for the conservation of biodiversity of Belize and as an integral part of the National Protected Areas System Plan. This project

is a long term project (20-40 years) to conserve the country's biodiversity and to promote its use in a sustainable manner by the peoples for their own benefit and survival. These corridors are areas where people voluntarily plan the type of activities which they can do in order to achieve a balance between economic and environmental benefits in a sustained manner. These links can be between Protected Areas or between and among private properties. These corridors are also established for the sake of connectivity and representativity of the resident species of plants and animals. Since people depend on the use of the natural resources, it is important that they become involved from the beginning of the project design and prior to implementation.

The statutory protected areas occupy over 7000 ha of better agricultural land across the country. In national terms, this is a low percentage (c.1.0%) but nonetheless represents a significant area for local communities. Furthermore, classification as Grade 3 land or recommendation as protection area under the land use plans does not necessarily signify that the land in question could not be put to agricultural use. Practically all the protected area contain pockets of good land (e.g. in the Chiquibul NP). Grade 3 land can be put to productive use and is being utilized particularly where land pressures are high. The entire Maya Mountain/Mountain Pine Ridge periphery is a case in point. Recommendations on land use are also dependent upon the agricultural techniques used and the Mennonite communities are rapidly expanding in the north on Class 3 and even, for rice, class 4 land. Meanwhile, shrimp farming brings economic activity to areas that have been virtually unused to date. Land is already a pressing local issue and, given the demographic trends, may be expected to remain a potential source of contention.

2.5 State of Biological Diversity in Belize

The current available information on Belize Biodiversity is over 2586 species in the following categories:

Freshwater Fish	117
Amphibians	42
Reptiles	121
Birds	571
Mammals	163
Mollusks	157
Crustaceans	1
Insects	10
Butterflies	288
Odonata	176
Other Terrestrial	
Invertebrates	2
Orchids/Bromeliads	317
Flowering plants	26
Trees, Angiosperm	740
Gymnosperms	3

2.6 Principal Threats to Biodiversity in Belize

There are conflicting views from the various reports as to the level of pressure facing Biodiversity in Belize. In general, the consensus appears to be that, relative to its Central American neighbours, Belize has for various reasons managed to preserve its biodiversity in a healthy state and may even be considered the final repository of some

species now extinct in other parts of the region. The growing regional collaboration through the Central American Commission on Environment and Development (CCAD) between the countries occupying the Central American isthmus with respect to environmental issues has now resulted in a regional approach to the conservation and preservation of Biodiversity. The present Mesoamerican Biological Corridors Project is one concrete initiative to emerge and through this there is the continuing of a specific focus on Biodiversity in Belize.

Information on specific sites and review of protected area needs was conducted by the **Critical Habitat Survey of Belize**, (BCES, 1990) and this data collection component was also a major part of the designing Protected Area Systems Plan (PFB, 1995). The Protected Areas Systems Plan benefited by the data provided by the Gallon Jug Biological Survey Center funded by the Wildlife Conservation Society (WCS). Now known as the Belize Biodiversity Information System, the system has an estimated 100,000 records of 2,586 species of various categories of animals and birds. The system was used to provide gap analysis information during the designing of the Belize National Protected Areas System Plan. A review of the literature suggests, however, that there is still a gap of information on most amphibians, fishes, insects and other microscopic species in Belize.

It has also been stated that **there is very little data available on plant species which are endemic to Belize and therefore much less information on the threats to Plant Diversity**. This is an area in which important research is presently being conducted by the Conservation Department of the Ministry of Natural Resources to carry out a general assessment of the biodiversity present at the level of vegetation type. This information would feed into an understanding of such issues as how much of each vegetation type is protected at the national level and what proportion of each will be affected by current development plans. This and other information would assist in decisions relating to zoning, establishment of protected areas, biological corridors and other critical decisions. At present the Forest Department manages a Herbarium containing a database with a listing of some 16,000 plant species. The information to date has identified some threatened species, however more research is necessary. In light of data constraints, conservation requirements are met by the isolation of large tracts of natural habitat as Protected Areas.

With respect to the Marine Systems, it appears that the unofficial strategy in place to preserve the Biodiversity of the Marine Area is that of the development of Marine Protected Areas either as Marine Reserves under the Fisheries Act or as other types of Protected Areas under the National Parks Systems Act. The Fisheries Department and the Coastal Zone Management Unit play a major role in the determination of the direction of the Marine Protected Areas System. However the Forestry Department also has an important role to play with respect to wildlife. There are, for example important species of sea turtle occurring in Belize which are globally as well as locally threatened or endangered through hunting and fishing activities.

Despite the positive outlook, the following threats to Biodiversity in Belize have been identified by the Mesoamerican Biological Corridors Project as:

- **Human Population increase linked to increased poverty.**
- **Economic Development resulting in the deterioration of the marine environment and coastal zone .**
- **The unregulated growth of industries resulting in inadequate solid and liquid and Industrial Waste Management**

- **Small Scale slash and burn Agricultural practices results in large areas being stripped of natural vegetation;**
- **Wildfires caused through small farm activities or through other effects;**
- **Hunting and Fishing Activities which affect the natural process of seed distribution as well as the growth of the population of certain birds and animal species;**
- **Collecting of species for commercial purposes;**
- **Land Distribution Policies which result in the reduction in the stock of arable land available for agricultural purposes ;**
- **Inadequate enforcement of Environmental Laws and Regulations;**
- **Introduction of Exotic Species.**
- **Coastal Development for Residential , tourism and Industrial Purposes**

Within existing sectoral plans of the **National Development Plan** and the **National Environmental Action Plan** there are already in place some strategies proposed for responding to these problems. An analysis of these is important in order that the BSAP focus its work on those issues specific to Biodiversity where no strategies are in place. The **specific threats to Biodiversity** which are not directly addressed in the National Environmental Action Plan are the following:

- **Management of Bioprospecting:** Lack of Legislation to regulate Bioprospecting , transfer of technologies and other aspects of access to genetic resources.
- **Coastal Zone Developments which affect Marine Ecosystems:** These can be considered as the basis of the Gaps identified in the cross-sectoral issues for which there are no existing sectoral plans .

2.7 Existing Environmental, Legal and Policy Framework.

There is no explicit policy or legal / regulatory framework specifically addressing the conservation or sustainable use of Biodiversity. However there are policies or laws/regulations which impact on Biodiversity on existence since 1928 (first Forest Policy) Such policies that exist are linked to a broad range of activities conducted by the Public Sector Institutions responsible for the management of a particular natural resource.

2.7.1 Legal or Regulatory Framework:

The existing legislation divides the environmental issues into three broad categories:

Environmental Protection
Natural Resource Management
Land Use Planning and Management

These three categories involve activities which directly and indirectly impact on Biodiversity. The legal framework also exists empowering distinctive agencies, Ministries and quasi Government Institutions to design policies and carry out a broad range of activities related to the three management categories. The Environmental Legislation related to the categories is outlined in the studies included in the Appendix to this document so they will not be reviewed here. Sufficeth to say that the key pieces of Legislation are the following:

Environmental Protection

1. Environmental Protection Act - This Act requires that Environmental Impact Assessments be conducted before certain development projects are carried out. It is administered by the Department of the Environment. Subsidiary legislation passed under this Act are:
 - Environmental Impact Assessment Regulations, 1995
 - Effluent Limitation Regulations, 1996,
 - Pollution Regulations, 1996
2. Public Health Act - This Act provides general regulatory power for pollution control. It establishes certain regulations for the disposal of liquid and solid waste and other issues related to public health including the prevention of contamination of water for human consumption. Specifically, it gives the Public Health Department wide powers in the control of pollution in the air, water and on land as it affects the quality of human habitation. This wide powers are not, however, supported by Subsidiary legislation which would set standards for monitoring and procedures for maintaining control.
3. Pesticides Control Act - This Act deals with the regulation and control of the sale and use of Pesticides. It establishes a Pesticides Control Board which sets standards for the monitoring of such substances. The Pesticides Control Board falls under the responsibility of the Ministry of Agriculture.
4. Water and Sewerage Act - This Act governs the control and regulation of all matters pertaining to the monitoring and use of drinking water and sewerage disposal in Belize. It establishes a Water and Sewerage Authority (WASA) which falls under the control of the Ministry of Natural Resources.

5. Solid Waste Management Authority Act -This Act establishes an Authority which to date has not become functional .. It is intended to govern the collection and disposal of solid waste in Belize.

Natural Resource Management:

1. Forest Act -The protection of the forest and the mangroves is regulated by this Act which is in the process of being revised. This Law also regulates the creation and management of Forest Reserves and is administered by the Ministry of Natural Resources.
2. National Parks Systems Act - This Act is administered by the Ministry of Natural Resources. It establishes four categories of protected areas, which are - Natural Monuments, National Parks, Nature Reserves and Wildlife Sanctuaries.
3. Wildlife Protection Act - This Act controls the activities in relation to Wildlife in Belize. It is administered by the Conservation Division of the Ministry of Natural Resources and it seeks to regulate hunting, research, and trade of wildlife species including marine wildlife . The CITES Convention is also administered by this Department.
4. Fisheries Act - This Act is administered by the Ministry of Agriculture and Fisheries. It seeks to control all aspects of the fisheries resources in Belize by establishing regulations controlling minimum size, types of fishing equipment to be used open and closed seasons and registration of fishing boats and fishermen. Marine Protected Areas are also established under this Act. Some of the Marine Reserves are managed collaboratively with the Ministry of Natural Resources.
5. Mines and Minerals Act - This governs the extraction of all non-renewable resources in Belize. Of particular importance are its control of dredging and quarrying activities. It is administered by the Ministry of Science, Technology and Transport.
6. Petroleum Act - This Act governs the exploration and extraction of petroleum and related products in Belize. This would also affect those areas of the Coastal Zone and exclusive Economic Zone, under which petroleum may be discovered. The Act is also regulated by the Ministry of Science, Technology and Transport.

Land Use Planning and Management:

1. National Lands Act - This Act regulates the distribution of national land and the overall delineation of national reserves. It seeks to provide some management and control of land by requiring environmental impact assessments to be conducted for land over 500 acres. It also establishes a 66ft width river frontage as public lands. This Act is administered by the Ministry of Natural Resources.
2. Land Utilization Act - This Act, administered by the Ministry of Natural Resources, seeks to control the subdivision of any land in Belize, whether private or public. It establishes a Lands Utilization Authority which makes recommendations on subdivision applications. It also establishes Special Development Areas which limit the types of development permissible within these zones. There are special sections of the Act regulating to land use which need to be further developed.

Cultural Resources:

1. **Ancient Monuments and Antiquities Act** -This Act regulates the establishment and management of archaeological reserves as well as other cultural artifacts falling under the control of the legislation. It is administered by the Ministry of Tourism and the Environment.

2.7.2 International Conventions and Agreements relating to the Environment to which Belize has become a Party:

LIST OF AGREEMENTS, PROTOCOLS, INTERNATIONAL CONVENTIONS SIGNED BY BELIZE WITH RESPECT TO THE ENVIRONMENT	YEAR
1. Convention on Wetlands of International Importance especially as Waterfowl Habitat	1971
2. International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL)	1973
3. Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) Toxins and their destruction	1980
4. Convention on International Trade in Endangered Species of Wild Fauna and Fauna (CITES)	1981
5. United Nations Law of the Sea Convention	1982
6. International Convention for the Regulation of Whaling,	1982
7. Convention concerning the Protection of Workers against Ionizing Radiation	1984
8. Vienna Convention for the Protection of the Ozone Layer - Final Act of the Plenipotentiaries on the Protection of the Ozone Layer	1985
9. International Plant Protection Convention	1987
10. Montreal Protocol on Substances that Deplete the Ozone Layer - Final Act and Amendments	1987
11. The UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage.	1990
12. Bilateral Agreement between Belize and Mexico on Cooperation for the protection and improvement of the Environment and conservation of Natural Resources in the Border Zone	1991
13. Convention concerning Indigenous and Tribal Peoples in Independent Countries	1991
14. Convention on Biological Diversity	1992
15. Climate Change Convention	1992
16. Agreement establishing the Inter-American Institute for Global Change Research	1992
17. Agreement establishing the Fund for the Development of Indigenous Peoples of Latin America and the Caribbean	1992
18. Alliance for the Sustainable Development of Central America	1994
19. Statement of Intent for Sustainable Development Cooperation and Joint Implementation of Measures to Reduce Emissions of Greenhouse Gases by the Government of the USA, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama	1995
20. Marrakesh Declaration of 1994 - Final Act embodying the Results of the Uruguay Round of Multilateral Trade Negotiations re GATT.	1994
21. Agreement for the implementation of the Provision of the United Nations Convention on the Law of the Sea of 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks	1995

Source: Ministry of Foreign Affairs.

2.7..3 Identification of Gaps with respect to Policy and Regulatory Framework

a. Where there are no laws:

A review of the existing legislation and the documentation reveals the following areas where there is no legal or regulatory framework necessary for the regulation of the Conservation and Sustainable Use of Biodiversity.

1. No laws exist that specifically focuses on the issue of Biodiversity and provides mechanisms or guidelines for incorporating the Convention as a whole or in part into the Body of National Legislation.
2. Lack of Legislation to regulate Bioprospecting , transfer of technologies and other aspects of access to genetic resources

b. Where there are gaps in existing Laws directly or indirectly impacting on Biodiversity:

As has been indicated earlier, many of the existing Laws impact on Biodiversity through a multiplicity of institutional arrangements. However, although some of these Laws have existed for some time their implementation is flawed for various reasons and therefore the impact which they would be expected to have is not there.

Gaps in Laws relating to Environmental Protection:

- Lack of implementation of the Solid Waste Management Authority Act by issuing waste management regulations specifying standards for collection and disposal facilities.
- Lack of Legislation governing the discharge of agricultural wastes into watersheds.
- Legislation governing spills in the event of an ocean accident.
- Legislation governing the transportation of materials potentially dangerous to the Environment by air, land or sea.
- Lack of adequate legislation related to the Protection of the Barrier Reef from deterioration by Anchors, disposal of Waste by ships, and over-fishing.

Gaps in Laws relating to Land Use Planning and Management:

- Lack of subsidiary regulations to guide the Land Utilization Act
- Lack of Urban Planning Schemes for some of the District Towns in Belize under the Housing and Town Planning Act.

Gaps in the Legislation relating to Natural Resource Use and Management:

- Lack of adequate legislation to protect species such as Manatees, Crocodiles and Sea Turtles
- The lack of requirement of mandatory Management Plans for some Protected Areas prior to designation under the National Parks Systems Act.
- Lack of Regulations made under the National Parks Systems Act.
- Lack of adequate legislation to control the importation of exotic species.
- Lack of adequate Legislation to control the harvesting and exportation of Medicinal Plants or other plant species for research or commercial purposes.
- Lack of adequate legislation to control water resources.
- There is no legal protection for the rights of communities within or around protected areas.

Where there are potential Conflicts:

- There is a need to analyze some of the major International Conventions signed by Belize relating to the Environment to identify where potential conflicts with national legislation on biodiversity may occur.

2.7.4 Preliminary Assessment of existing Needs with respect to Legal/Regulatory Framework

Overall there is a problem of lack of enforcement and monitoring of Environmental Legislation which impact on Biodiversity and this is the key note which emerges from a consideration of the above. These needs arise in relation to the Legislation:

1. The Need to design new legislation which specifically defines Biodiversity and seeks to comprehensively address the requirements of the Convention on Biodiversity.
2. The need for designing mechanisms to improve enforcement of existing legislation.
3. The need to address the gaps in existing legislation with respect to the areas specific to the conservation and sustainable use of Biodiversity.
4. The need to review or reform Laws that govern protected areas in order to incorporate communities' needs and interests.
5. The need to examine how the obligations of both the Convention on Biodiversity and the fulfillment of conditions imposed by other international will be met.
6. The need to examine the obligations incurred under all Regional Agreements, Protocols and International Conventions with respect to the Environment to assess where they can be harmonized.

2.7.5 Preliminary Assessment of Needs in the Policy Framework with respect to Biodiversity

These include the following:

- The need for an official Population Policy
- The need for a Policy relating to Biodiversity which states the national position on the key issues emerging from the Convention on Biodiversity.
- The need to have the Cayes Development Policy implemented.
- The need for a comprehensive Coastal Zone Development Policy.
- The need for the introduction of Natural Resource Accounting mechanisms into the calculation of GDP.
- The need for Policies defining the use arrangements of Protected Areas under the Control of the Government in order to facilitate community or private sector participation in Conservation.
- The need for Policies regulating Private Sector management of Protected Areas.
- The need for Policy on Marine Dredging to be formalized in order to protect Seagrass Beds which serve as a critical habitat for threatened and commercial species and which have an important ecological function.

The need to identify what management and administrative policies exist within the various Departments that impact on Biodiversity.

2.8 Institutional and Human Capacity (human, institutional, facilities, funding) vis-a-vis biodiversity conservation.

2.8.1 Main Decision Makers/ Institutional Stakeholders

The institutional framework supporting the protected areas network is diffuse, spanning three different departments within three different ministries. This reflects the evolution of the protected area network, the inter-relationships between the various government departments, and the different legal instruments used to establish particular sites. The NGO involvement is also important. Other departments and quasi-governmental bodies, both within or associated with the three "primary" ministries or with others, have functions that touch to a greater or lesser degree upon protected area management.

Ministry of Natural Resources: The Forest Department is responsible for administering the Forest, National Parks Systems and Wildlife Protection Acts and thus for all protected areas designated under them. It also has a Mangrove Unit with special responsibilities for conservation in the coastal fringe and participates within the Coastal Zone Management Unit. The Ministry of Natural Resources also contains the Land Information Center and the Lands and Surveys Department. The first body is a data collection and collation body. The second is responsible for land use planning and allocation through implementation of the National Lands Act and Lands Utilization Act. It therefore plays an important role in all issues relating to allocation of lands in Belize.

Ministry of Agriculture and Fisheries: The Fisheries Department has responsibility for the Fisheries Act and for thus for any Marine Reserves created under it. Unlike the National Parks System Act, the Fisheries Act makes no specific provision for delegation of managerial responsibility. The development of the Marine Reserves is undertaken through the Coastal Zone Management Unit.

Ministry for Tourism and the Environment: The Department of Archaeology is responsible for Archaeological Reserves established under the Ancient Monuments and Antiquities Act. Although not otherwise a management body, the Ministry does have a strong interest in and influence upon protected areas. The Department of the Environment is specifically charged with fostering inter-ministerial cooperation to promote prudent use and proper management of the natural resources of the country, control of pollution of the natural environment and the "re-establishment of ecological equilibrium". It thus has great influence over the general environment in which the protected areas are embedded. The Department of Tourism is responsible for promoting the tourism industry and is particularly active in the "eco-tourism" field. This is the principle interface between protected area management and the national economy.

The NGO community plays a major role in protected area planning and management in Belize. There are four principal environmental NGO's in Belize, which can work individually or in concert through the Belize Association of Conservation NGOs (BACONGO). Two of these organizations have a direct role as protected area managers and administrators.

* **Belize Audubon Society:** The Belize Audubon Society is a membership organization and has as its objective "the promotion of sustainable use and preservation of natural

resources in order to maintain a balance between people and the environment. Belize Audubon acts as the manager/administrator, under an agreement with GOB, for eight protected areas established under the National Parks Systems Act and the seven small sites originally designated under the Crown Lands Ordinance. It also assists in the administration of the Community Baboon Sanctuary and is the manager, under agreement with the ITCF, of Shipstern Nature Reserve. The remit of the organization does not preclude land acquisition and ownership, and Belize Audubon holds Tapir Mountain (Society Hall) under a 99-year lease. Apart from its land management function, Belize Audubon is active in education and lobbying.

* **Programme for Belize:** This organization is dedicated to the conservation of the natural heritage of Belize and to promoting wise use of its natural resources. The articles of Association under the Companies Act and the Memorandum of Understanding with GOB determine its non-profit nature but offers wide scope of action to achieve its aims. All profit from revenue-earning activity must, however, be reinvested in conservation management. Pursuit of financial sustainability within the constraints of good conservation practice is indeed the major activity of the Pfb. The Pfb was designed as a land owning and managing entity. It is also engaged in education, public outreach, research and professional training, as part of long-term strategy to improve conservation management both on the RBCMA, its flag-ship project, and in the nation as a whole.

***Others:** A number of other NGO's have interests in particular sites or possess land that is, or could be, managed on protected area principles. The Association of Friends of Five Blues acts as management body for Five Blues National Park. The Association of Traditional Healers is closely involved in the development of management approaches on the Terra Nova Forest Reserve, where a primary aim is to protect and promote plants of traditional medicinal uses. The Belize Zoo and Tropical Education Center, whilst primarily an education and research body in addition to being a zoological garden, owns some 900 ha of land in the Belize Valley. There are a number of bodies with an education/research/ educational/eco-tourism role that also protect the land upon which they situated. Examples include Monkey Bay Wildlife Sanctuary and Possum Point. The Belize Center for Environmental Studies concentrates upon data collection and synthesis and is a major contributor in national planning on environmental issues. Organizations such as the Toledo Eco-tourism Association represent the interplay between conservation and tourism, particularly at the community level. This list is by no means definitive and it should also be borne in mind that both the number and the activities of the various NGO's alter constantly. As a group, however, they play an influential role and indeed possess the greater part of the in-country protected area management expertise.

2.8.2 NGO's, CBOs and Civil Society Participation

There is no special legal provision for protected areas on private land. The basis for management lies in the rights of ownership, modified in certain cases by the terms of special agreements made with the Government of Belize. The following three sites illustrate different options that have been employed.

* **Rio Bravo Conservation and Management Area (RBCMA):** The RBCMA is owned and managed by a Belizean non-profit company, Programme for Belize (Pfb). Under the terms of a formal Memorandum of Understanding with the Government of Belize, originally devised when the Pfb was not a Belizean organization and amended when it became so, the land is held in perpetuity and in trust for the people of Belize for the purposes of protection of natural and cultural heritage and the conservation of natural resources through the development of sustainable approaches to utilization. The land

cannot be alienated from this purpose; if the PFB must for any reason relinquish control, it must pass the area on to an organization of similar aims and intent.

* **Shipstern Nature Reserve:** Shipstern is owned by the Swiss-based International Tropical Conservation Foundation (ITCF), which receives at least part of its funding from the Dutch Government. ITCF has, until recently, also run the site but has now entered into a management agreement with Belize Audubon Society. Evidently the intent is that Shipstern should be a formal protected area and the Dutch support is given on the basis that conservation management of the area is undertaken with the agreement and support of the Government of Belize. Nonetheless, being non-national land, there is no provision for its designation under the National Parks System Act. Furthermore, although the intent is clear, there is no legal recourse to prevent the area being sold and put to other use.

* **Community Baboon Sanctuary:** The basis of Community Baboon Sanctuary management lies in voluntary agreements with individual land-owners in a group of villages on the Belize River, by which the individuals agree to manage their lands under principles that favor conservation purposes, and particularly conserve the riparian forest habitat of the black howler monkey. The chief expectation is that benefits will be gained from community involvement in tourism. Belize Audubon assists the Sanctuary Management Committee by acting as a channel for funding but all management is undertaken within the community itself. Being voluntary, the agreements could be rescinded if expectations were not met but the scheme has in fact proved remarkably durable. The Slate Creek Preserve has been established on similar lines, with voluntary agreements between land owners.

In addition, other land owners manage their land, in whole or part, as reserves and some describe it as such. This is most commonly the case where the land-owner is involved in educational or tourism activity. Examples include the Bull Run property (including Hidden Valley and Thousand Foot Falls), Monkey Bay Wildlife Sanctuary, Belize Zoo and Tropical Education Center, and Possum Point. Some of these areas have considerable conservation and amenity value. Nonetheless, there is no other formal basis to management other than the choice of the land owner.

2.8.3 Effectivity and Capacity to Manage

Capability of the various institutions involved in protected area management may be described in terms of staff levels, training levels, equipment and capital requirements secured, and finance. These are, of course, not fixed attributes and institutional strengthening has been a constant theme in international support. Furthermore, intangibles such as staff morale or quality of leadership may play the most critical roles of all. Comparative analysis is made more complicated by different organization and accounting systems, and figures given here are illustrative only. Here, therefore, only general descriptions for the main organizations are attempted, based on information available in mid-1994.

The **Forestry Department** has a staff level in the region of 100, with personnel up to Bachelor's degree level and an on-going staff training program. The system is not, however, organized in a way that attaches particular staff to given protected areas amongst the forest reserves and national parks/nature reserves for which the Forestry Department retains total managerial responsibility. The organizational chart of the Conservation Division does include wardens and park guards, which does imply site-specific postings, but these positions remain unfilled. The total estimated expenditure for

93/94 was BZ\$ 6.2 million, of which approximately half is capital, itself equally divided between local and external funding. Estimated revenues, predominantly from royalties, was BZ\$ 2.6 million. The conservation division recurrent budget estimate was BZ\$ 181,000 but this does not reflect expenditure on site management in the protected areas, which may also lie within other recurrent budget headings.

The **Fisheries Department** has a staff complement of approximately. The highest level of education amongst protected area field staff is Master's Degree. Estimated costs for reserve management is BZ\$ 140,000 per site, divided equally between capital and recurrent costs. Receipts from Hol Chan stand at c. BZ\$ 80,000, indicating that the site is self-sufficient on running costs. Significant external support is also provided from a range of sources for protected area development.

Belize Audubon Society, involved in management for 9 sites, has a total personnel complement of 22 of which 16 are field staff. BAS accounts are run on a fund system, treating each site as a unit. The budgeted expenditure for six sites plus the protected areas administrative arms (Protected Area Management Program) for 1994 was BZ\$ 457,500. The remaining areas with BAS involvement (Laughing Bird Caye, Half Moon Caye and Community Baboon Sanctuary) were not budgeted for. The only revenue figures available were for 1993, amounting to BZ\$ 14,600 from voluntary donations. This information predates introduction of entry fees on a pilot basis, but estimated income for Guanacaste National Park for 1994 was BZ\$ 55,000. Remaining expenditure, 85% of the whole, is dependent upon external support.

The Rio Bravo Conservation and Management Area, although large, is the only area managed by **Programme for Belize**. The PfB carried 26 staff in 1994, of which 18 were based on the RBCMA. Basic running costs for the RBCMA in the audited accounts for the 93/94 financial year were BZ\$ 474,000, offset by an operating income (derived primarily from accommodation, research fees and sales to visitors) of BZ\$ 232,000. The remainder is made up from external sources. A significant proportion of essential activities are, however, subsumed within projects with their own funding.

By contrast, **Friends of Five Blues** has a staff of 3 and a total estimated budget of BZ\$ 50,000, equally divided between capital and recurrent expenditure, for Five Blues Lake National Park. At present, self-generated income is restricted to membership fees.

Most recently during 1996 the Golden Stream Private Nature Reserve was established. As a totally private initiative, it was not possible to get the information on the investment for this endeavor.

As a common condition all the administrative and management bodies, and particularly the protected areas themselves are, to some degree and in many cases to a gross degree, under-resourced in terms of finance, equipment, infrastructure and qualified staff. Although international funding agencies are willing to support initial planning and protected area establishment costs, the greater part of running costs are normally expected to come from national sources and it is here that the problem is most acute. In general it can be said that the creation of protected areas has far outstripped the in-country capability for their good management. Management presence in most protected areas is at best intermittent. The four national parks created in 1994 - Aguas Turbias, Monkey Bay, Payne's Creek, Sarstoon-Temash - are paper parks in the truest sense, with no on-ground management presence whatsoever, except for the occasional patrol by Forestry officials. However, efforts are now underway to develop management capability.

2.8.4 Summary of Institutional and Human Capacity

The Traditional sectors responsible for environmental resource management in Belize are Health, Natural Resources and Agriculture and Fisheries. However the Department of the Environment was recently created in 1992 under the Environmental Protection Act to carry out a broad range of activities related to Natural Resource Conservation and Management. There are Laws which regulate the activities of the Ministries and quasi-Governmental bodies within the sectors and these laws existed prior to the 1992 EPA.

The analysis of the institutions show that there are cases where the responsibilities overlap or where different aspects of the same natural resource are managed by different Government Ministries or other Agencies. There are also cases where the impact of the policies of one particular Ministry are felt by the users or managers of another natural resource. In addition, it is not uncommon for the stimuli for policymaking in any particular area to come from the non-governmental community, a community which has historically been very active in environmental issues in Belize.

The Key Government Ministries and or Quasi-Government Institutions responsible for policymaking with respect to Environmental Protection and Natural Resource Management are the following:

INSTITUTION	Primary	Secondary Responsibility
Ministry of Science, Technology and Transport	Regulates Policies relating to Ports and Mining and Petroleum Activities	
<ul style="list-style-type: none"> Office of Geology And Petroleum 	Implements regulations regarding Mining and Petroleum activities	Has important role in controlling commercial Dredging Activities .
<ul style="list-style-type: none"> National Meteorological Service 	Directly involved in collecting climactic data and maintain hurricane watch	
<ul style="list-style-type: none"> National Hydrological Service 	Implements policies relating to collection and analysis of data re water resources	Responsible for overseeing the implementation of the Climate Change Convention.
<ul style="list-style-type: none"> Belize Port Authority 	Regulates activities related to all ports	Regulates some pollution Control of Ports and Wharves.
The Ministry of Agriculture and Fisheries	Regulates Policies for Agriculture and shares responsibility for Marine Environment	Responsible for promoting sound Agricultural policies which assist in soil conservation; Also responsible for overseeing plant and animal Quarantine regulations re introduction of new stock
<ul style="list-style-type: none"> Agriculture Department 	Implements policies promoting efficient use of land for agriculture	Responsible for training farmers in proper use of pesticides and soil conservation techniques
<ul style="list-style-type: none"> Fisheries Department 	Implements Policies relating to the promotion and conservation of Fisheries Resources, design and management of Marine Reserves and coastal zone management	Collects data on fish stocks, coral reef and other marine life. Promotes alternative fishing methods .
<ul style="list-style-type: none"> Pesticides Control Board 	This Quasi-Statutory Body is responsible for monitoring the registration and use of	Provides Training in the Proper use of Pesticides

INSTITUTION	Primary	Secondary Responsibility
	Pesticides in Belize	
Ministry of labour, Public Service and Local Government		
<ul style="list-style-type: none"> Town Boards , Reconstruction and Development (Belmopan) and Belize City Council 	The Town Boards have an implementing role in pollution control for urban areas	
Ministry of Health	Responsible for Policymaking in the area of Environmental Health	
<ul style="list-style-type: none"> Public Health Bureau 	Implements policies relating to environmental health	Responsible for controlling diseases caused through unsuitable environmental conditions
Ministry of Tourism and Environment	This Ministry is responsible for the overall control of Pollution in Belize	Oversees the general implementation of all International Conventions related to the Environment.
<ul style="list-style-type: none"> Department of the Environment 	The implementation of the Environmental Protection Act is the main objective of this Department , the focus of which is pollution control.	The requirement of Environmental Impact Assessments for various development projects is implemented by this Department
<ul style="list-style-type: none"> Department of Archaeology 	Implements policies relating to ancient monuments and antiquities, designs and manages archaeological sites and conserves cultural artifacts of archaeological value	
<ul style="list-style-type: none"> Solid Waste Management Authority 	This Authority would be responsible for solid and liquid waste management but is has not yet become functional.	
Ministry of Natural Resources	This Ministry is responsible for Conservation and management of Natural Resources and the policies relating to land use planning and Management, Management of Protected Areas and Management of Forest Resources and Wildlife	This is the lead Ministry for the Implementation of the Convention on Biodiversity and CITES Convention
<ul style="list-style-type: none"> Forest Department 	Implements policies relating to Protected Areas, Forest Resources Management and Wildlife Conservation	Shares responsibility with the Ministry of Agriculture and Fisheries for conservation of certain species of marine wildlife as well as management of some categories of protected areas.
<ul style="list-style-type: none"> Lands and Survey Department 	Implements land use management and planning policies and collects data on land use and distribution	Key responsibilities include the issuing of subdivision approvals under the Lands Utilization Act and the Leasing of National Lands.
<ul style="list-style-type: none"> Water and Sewerage Department 	A quasi-governmental body which conserves, manages and distributes water resources mainly in the urban areas.	

There are other players in the panorama of management of natural resources and Biodiversity conservation in Belize particularly in relation to the management of protected areas. The main Non -Governmental Agencies involved are:

The **Belize Audubon Society (BAS)** which is mainly involved in environmental education and protected areas management. The BAS has signed several Agreements with the Government of Belize for the Management of some Protected Areas. The **Programme for Belize (PFB)** is another key non-Governmental Player. PFB manages the largest single area under a special arrangement with the Government of Belize, the Rio Bravo Conservation and Management Area. There are other private reserves managed by smaller agencies such as the Shipstern Reserve or even community groups which manage National Reserves such as the **Siwa-Ban Foundation, Association of Five Blues Lake and the Friends of Laughing Bird Caye.**

Given the increased importance of community participation in the management of natural resources both within and outside protected areas there will be a greater need to provide institutional strengthening mechanisms for community groups specifically related to Biodiversity. This will call for greater public awareness programmes and consensus building with respect to the management of these resources.

Two key aspects in the area of Institutional and Human Capacity analysis are **Management, Training and Finance.** In the area of Management, the literature reviewed and the discussions held indicates that the critical issues include: the development and maintenance of effective information systems for planning and monitoring purposes and the development of adequate mechanisms for managing public and private sector collaboration. Training needs have been identified in some areas .

2.8.5 Information Systems:

The aspect of data-collection and information sharing with respect to Biodiversity addresses both management and training issues in the area of institutional strengthening. There are several documentation centres which are collecting data which will be important for the analysis and monitoring of various aspects of Biodiversity. Some of these documentation centres such as the Land Information Centre, established within the Ministry of Natural Resources.

The Caricom Fisheries Resource and Assessment Management Programme (CFRAMP) is located within the Fisheries Department, and collects data on fisheries stock. The Fisheries Department itself maintains a data collection unit and generates reports on coral reef monitoring.

The Coastal Zone Management Unit collects information on different aspects of the coastal zone in Belize . This information was incorporated into the GIS system and a series of maps were produced which have been updated. As part of its work the Coastal Zone Management Unit conducted a Manatee census in connection with the Quintana Roo Center for Investigations. It has also carried out land inventories for the Bacalar Chico Marine Reserve in conjunction with the International Tropical Conservation Foundation.

In addition, some private organizations carry important collections of reports or have database that contains vital information. These include the World Conservation Society's Database on Belizean fauna; the Smithsonian Research Institute conducts

investigations on coral reefs at Caribou Caye; the Glovers Reef Marine Research Centre has been established by the Wildlife Conservation Society at Middle Caye.

The University College of Belize (UCB) has established and is presently operating a Marine Research Centre on Calabash Caye.

The Forest Planning and Management Project (FPMP), funded by the Overseas Development Agency (ODA) has been carrying out important research activities in the forestry sector to provide data for management and conservation purposes.

There also exists a Central American initiative to strengthen the environmental information management systems. Belize is participating in this initiative and therefore should see some benefit from it in terms of improved data collection and monitoring .

2.8.6 Mechanisms for strengthening Public and Private Sector Collaboration:

The Management aspect of Institutional and Human Capacity is also dependent on policies put in place or affected by the absence thereof. It is in this area of policies that the greater work remains to be done. With respect to the Environment, the section above on Policy and Regulatory Framework gave some indication of the gaps and needs in the area of policy.

One critical problem related to Institution building is that of insufficient inter-ministerial or inter-institutional coordination. This often results in conflicting policies and leads to decisions that have a negative environmental impact. The area of Institutional strengthening therefore should attempt to assess how there could be more rational decision-making amongst the various institutions relating to the Environment.

A second area of institution building identified is the need to address how incentives will be provided to the private sector, community groups and NGOs to actively participate in Biodiversity conservation. The present financial and human resource constraints of Government has led to the realization that there is an urgent need to tap into the private sector as well as to secure the commitment of communities towards the conservation of natural resources. This involves important considerations of seeking common ground on sustainable use as well as conservation.

2.8.7 Training

With respect to Training, **the Convention on Biodiversity targets the issue of sustainable use and calls for the development of institutions which specifically address such new areas as conservation of and access to the benefits of genetic resources.** This includes the training of personnel required for monitoring and conserving genetic resources as well as identifying and recording such indigenous knowledge which exists.

2.8.8 Finance

Belize is queuing up along with other countries for scarce development dollars for all the governmental and non-governmental programmes that remain to be carried out. This will be an on-going process and the existence of such agencies as the **Protected Areas Conservation Trust (PACT)** is an important element of the financial thrust.

The PACT was established by the Government of Belize as a Statutory Body through the PACT Act (No. 15 of 1995.) and became effective on January 2nd, 1996. It is geared towards providing accessing revenue from local and international sources to finance activities that establish, operate, maintain and enhance all protected areas. **PACT has developed its Strategic Plan for 1997 - 2000 which will initially focus on four priority areas in its grant-awarding which are Protected Areas, Eco-cultural and tourism developments, Improvements of archaeological sites and Provisions for community participation.** PACT is basing its awards on the submission of Proposals by interested groups and individuals.

2.8.9 Identification of Gaps in the area of Institutional and Human Capacity

1. The various institutions whose activities impact on the Environment do not have information on an ongoing basis on similar activities carried out by other Departments within the same Ministry or in other Ministries.
2. The specific skills required for the fulfillment of the requirement of the Convention on Biodiversity with respect to conservation and access to the benefits of genetic resources will call for new institutional and human capacity building.
3. There are no adequate mechanisms for institutionalizing the involvement of the private sector and of communities in decision making with respect to the management and sustainable use of Biodiversity.
4. There are no adequate mechanisms for inter-ministerial coordination in the area of the Environment.

2.8.10 Preliminary Assessment of Needs in Institutional and Human Capacity:

The Literature reviewed and the discussions held with key environmental personnel has identified the following weaknesses in the institutional framework.:

1. There needs to be some strengthening of the mechanisms for coordinated action between the governments Departments working in the different sectors which impact on the Environment. In addition to the Departments listed above one must include the Human Resource Department of the Ministry of Human Development whose main function is the alleviation of Poverty. Such an integrated approach will enhance the proper inclusion of the human dimensions in the management of Belize's Natural Resources.
2. There needs to be developed some formal mechanisms for regulating the role of the private sector , communities and NGO's in natural resource conservation. At present non-governmental organizations play a pivotal role in protected areas management there is the potential for greater community participation, however some institutional framework needs to be established to enable this to be effectively established and monitored.
3. There needs to be developed some incentives and mechanisms for the private sector to become involved in Biodiversity conservation. This is especially in light of the fact that much of the biodiversity conservation may require the incursion into private

land or the requirement that private landowners refrain from certain types of development and maintain certain optimum conditions in place for the conservation of Biodiversity.

4. There is a need for finances to be accessed for community groups, NGO's and personnel working in conservation in the public sector to be trained in order to monitor the sustainable use of genetic resources.
5. There may be the need to put in place some institutional infrastructure for the various institutions and Government Ministries to collaborate in the management of the conservation and sustainable use of Biodiversity .
6. There needs to be an information clearing house whereby the members of the respective government departments can be constantly informed on the actions of other government departments with respect to International Conventions impacting on Biodiversity. For example , different Departments are involved in monitoring various major Conventions and Agreements related to the environment - e.g. CITES - the Ministry of Natural Resources; Climate Change Convention - The Department of the Meteorology.
7. There needs to be more capacity -building and institutional strengthening in the area of monitoring the requirements of International Conventions that Belize has signed relating to the Environment. It is necessary to provide legal and financial resources to train Belizeans in negotiation skills at the international level as well as to provide resources locally to train local personnel in the requirements of International Conventions that govern natural resources that they are managing.
8. There need to be training provided to communities and NGO's in the management of genetic resources within their control .
9. There needs to be continued training for persons involved in data collection for baseline studies and inventory of genetic resources to improve mechanisms for monitoring threats to Biodiversity and to be able to develop adequate policies for controlling access to genetic resources.
10. There needs to be mechanisms put in place within those Institutions involved in Macroeconomic planning and management for the inclusion of natural capital into national accounting systems.

2.9 Description of Scientific Research and Expertise (including institutions.)

Scientific research in most sectors of the Belizean economy is limited; in the conservation sector, even when the main responsibility for research lays in the hands of the GOB, most of the research has been done by the following:

- a. GOB departments (Agriculture, Fisheries, Forestry, Archaeology): staff involved directly or granting research permits or monitoring the investigation
- b. In the Marine and Coastal Areas: The Smithsonian Institute, WCS, Coral Caye Conservation, CFRAMP, the University College of Belize(UCB) and students from foreign universities from North America and Europe, the British and USA Army
- c. In the main land: students from foreign universities from North America and Europe, Ixchel Farms, private researchers, the Belize Zoo, Gallon Jug Biological Survey/WCS, Sibun Watershed Association, the British and USA Army, etc.

- d. Commodity Associations of products for the export market: Belize Sugar Industries, Citrus Growers Association, CARDI, etc.

The information developed from this research has traditionally been in libraries outside of Belize but it has been recently that their repatriation has now began.

2.10 Funding Mechanisms and Financial Aspects of Present Conservation Efforts.

Funding of conservation in Belize has been carried out mainly by the following agencies:

- a. The Government of Belize through its three Departments
- b. Grants from International Agencies: EEC, IDB, UASID, UNDP, GEF, Smithsonian Institute
- c. International NGO's: The Nature Conservancy, Conservation International, IUCN, WWF, etc.
- d. International and Regional Agreements
- e. US and UK Foundations: CCC
- f. Entrance Fees to Protected Area
- g. Protected Areas Conservation Trust since 1997
- h. Private Trust funds: BAS and PfB, Hol Chan

Over the last six years, the government of Belize has shown its commitment to comprehensive environmental management, beginning with the creation of the Department of the Environment (DOE) in 1989 and the enactment of the Environmental Protection Act in 1992. The Government has also supported the integrated management of the coastal zone and has preserved areas of high biodiversity by the declaration of a number of protected areas on land and in the marine environment, and has enacted the Protected Areas Conservation Trust Act in 1996 that establishes financial mechanisms to fund the management of reserves. In addition, it has strengthened environmental management through a wide range of regulations, such as the requirement for environmental impact assessments for new projects, and effluent and pollution controls. The Government has also strengthened the enforcement capacity of the DOE, has enforced fees for fishing licenses and imposed fees on visitors to some protected areas and is currently examining the further use of fiscal and economic incentives for preservation of the country's natural assets.

Government is currently reviewing a number of initiatives to improve environmental management in Belize. In the area of regulatory reform, serious consideration is being given to enacting new forestry and fisheries legislation which will provide for more sustainable use of these critical resources.

A major revision of the Environmental Protection Act is also contemplated. This revision will expand the enforcement capabilities of the Department of the Environment. In addition, a new Land Utilization Act is under consideration and the Coastal Zone Management Authority Act has been submitted for its first reading in Parliament

It is noteworthy that the GOB has practiced the consultative and participatory approach to get the inputs from civil society prior to enacting any one of those laws.

III. STATUS OF THE IMPLEMENTATION OF THE CBD

3.1 Protected Areas Management

In 1995 the NARMAP Project assisted the GOB in the formulation and preparation of the National System Plan of Protected Areas. This plan has been the basis for the implementation of some of the activities required under Article Six of the CBD. The National Park System Act was enacted in 1981 while the Forest Act was enacted in 1960 and the Fisheries Act was in 1977.

Since the signing of the CBD in 1992, Belize has declared more than 25 protected areas (PA's) out of a total of 55; the others were declared prior to this date. As of December 1997, there are an additional 29 proposed areas slated for protection on some type of management category under the IUCN Classification.

Management of these PA's is shared under the following management styles:

a. By the Government of Belize

Department of Forestry
Department of Fisheries
Department of Archaeology

b. By NGO's

Belize Audubon Society by Management Contract
Programme for Belize by Memorandum of Understanding

c. By Community-based Organizations

Community Baboon Sanctuary
Association of friends of five Blues Lake

d. By Private Sector

Shipstern Nature Reserve
Golden Stream Private Nature Reserve

3.2 Ex-situ Conservation

The Belize Zoo is the only *ex-situ conservation strategy in place in Belize*. There are no seed or genetic banks in country. Small butterfly exhibits are kept by private resorts.

The commercial export industries do have nurseries of varieties of the crops which they are concerned. Ixchel Farms has a collection of medicinal plants.

The collections of the National Herbarium are currently managed by the Forest Department while some duplicates of the collection are also housed and managed by the Belize School of Agriculture, Ixchel Farms and St. John's College.

3.3 Synthesis of Key Issues being discussed in relation to the Convention on Biodiversity

The Convention on Biodiversity identifies three important aspects of diversity. These are- species diversity which describes the variety of species within a geographical area; genetic diversity - which is the genetic variation within living organisms and ecosystem diversity ((IUCN, 20-21). The Convention's preamble notes that:

- * Certain human Activities are reducing biodiversity;
 - * The scientific, Technological, and institutional capacity to conserve biodiversity needs to be strengthened, and lack of scientific certainty about the issues should not be used as a reason for postponing action;
 - * “ Economic and social Development and poverty eradication are the first and overriding priorities of developing countries;”
 - * Substantial new investment will be required to conserve biodiversity, thus developing countries will need to be provided, “new and additional financial resources and appropriate access to relevant technologies;” and
 - * Intergovernmental cooperation is necessary for effective biodiversity conservation.
- The preamble also notes the importance of the role of women, “ indigenous and local communities embodying traditional life styles,” and NGO's, as well as the “special conditions of the least -developed countries and small island states.” Two controversial issues remain: the amount of money that industrialized nations will provide and the mechanism that will be used to control and account for those funds.

3.3.1 Access to Genetic Resources

Article 15 clearly establishes that the authority to determine access to genetic resources rests with national governments and is subject to national legislation. Any collection of genetic resources can only be made with prior informed consent from the country or origin. It goes on to say, however, that countries must not unduly hinder access. These access provisions do not apply to genetic resources removed from a country before the Convention took effect. Simply put, those genetic resources stored in gene banks and collections fall outside of the Convention's provisions, no matter how they were acquired. Perhaps most important on the legal front, countries need to develop or review legislation regulating international access to genetic resources within their borders. This is particularly important for gene-rich developing countries. The Convention grants broad discretion to national governments in setting up such legislation. Developing workable legislation and building the capacity of institutions to enforce and monitor it is important. The sooner a Country develops its system of access control, the better positioned it will be within the Convention regime.

3.3.2 Transfer of Technology

Article 16 establishes the obligation of all parties to facilitate the transfer of, or Provide access to, technologies relevant to the Convention 's objectives, and elaborates the terms for transfers, including the treatment of patents and other Intellectual Property Rights (IPRs) . Because transfers are subject to “mutually agreed terms,” it seems clear that this provision does not envision compulsory transfers of proprietary technology. The controversy over article 16 must be seen in the context of the larger debate over IPRs. The General Agreement on tariffs and trade (GATT) also deals with IPR issues. Trade-Related intellectual property rights (TRIPS) imposes legal obligations on signatories to provide minimum standards of IPR protection. The convention also raises issues concerning rights relating to indigenous peoples and genetic resources. Indigenous Knowledge does not, however, receive much protection under the

Biodiversity Convention. Article 8 mandates that parties “respect, preserve and maintain knowledge, innovations and practices and encourage the equitable sharing of benefits arising [from them].” Several other articles include similar references.

3.3.3 Managing the Risks of Biotechnology

Article 19 calls on parties to consider a protocol (a legally binding agreement under the authority of the Convention) “setting out appropriate procedures ... in the field of safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biodiversity.”

3.3.4 Relationship with other International Conventions

Belize has become a Party to four major Conventions related to the conservation of Biological Diversity. These are:

The UN Convention on the Law of the Sea

Belize became Party to this Convention in 1982. This important Convention was specifically under Article 22 (2) of the Convention on Biodiversity. This Article states that the Parties to the CBD should implement its provisions with respect to the marine environment consistently with the rights and obligations incurred under the Law of the Sea. The Law of the Sea establishes a comprehensive framework for issues related to the Sea and therefore directly interacts with the CBD in relation to the Marine Environment.

The Convention on Wetlands of International Importance Especially as Waterfowl habitat (Ramsar)

Belize became a signatory to the Ramsar Convention in 1971. The Ramsar Convention requires each party to promote the conservation of internationally important wetlands and the wise use of all wetlands within its territory. Conservation measures are to be established in wetland areas to promote wetland and waterfowl conservation. Each party designates at least one wetland area of international significance to be included on the world list maintained under the Convention.

The Convention concerning the Protection of the World Cultural and Natural Heritage

Belize became a Party to the World Heritage Convention in 1972. The World Heritage Convention requires parties to take steps to identify, protect and conserve the cultural and natural heritage within their territories. The Belize Barrier Reef and surrounding systems was recently accepted as a world heritage site under the Convention.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Belize became a party to the CITES Convention in 1981. International Trade of all endangered species listed in it's Appendices are regulated by CITES. Appendix I lists species threatened with extinction which are or may be affected by trade. Trade in these species is banned except in exceptional circumstances. Appendix II lists species not yet threatened with extinction, but which may become so unless their trade is subject to

controls. Appendix III lists species, which any party identifies as subject to regulation within its jurisdiction to prevent or restrict exploitation.

3.5 Other Examples

Belize is also one of the four Mesoamerican countries who has signed the implementation of the Mesoamerican Reef Initiative together with Mexico, Guatemala and Honduras. The main objective of this initiative is for the rational and effective management and sustainable use of the second largest barrier reef of planet earth.

IV. GOALS AND OBJECTIVES FOR THE NBSAP

The Government of Belize (GoB) is aware of the valuable natural resources of the country and has taken steps towards their protection, conservation and rational use within the context of sustainable human development. The country has a relatively comprehensive although fragmented, set of laws pertaining to forest, fisheries and wildlife use and protection. Recently an Environmental Protection Act was adopted as well as a number of subsidiary regulations to address overall environmental quality and protection of biodiversity. These include a National Protected Areas System Plan, a National Environmental Action Plan and a Coastal Zone Management Plan. Furthermore a series of internationally funded projects aimed at biodiversity conservation and management are presently on-going or under

A National Environmental Action Plan has also been formulated and a Coastal Zone Management Plan to address coastal and marine resources is being formulated. In an effort to continue the Government's policy on the rational use of its natural resources, the Ministries of Economic Development, Natural Resources, and the Environment, along with NGO's and members of the society, are leading the formulation of a National Biodiversity Strategy and Action Plan.

The project will build on information available from several related past and on-going initiatives. The results of the recently completed USAID/NARMAP project will be considered in the process especially the National Protected Areas System Plan that was developed under this initiative. Relevant information from the capacity building components of the GEF funded Coastal Zone Management Project and the UK-ODA Forest Planning and Management Project will be used during the stocktaking exercises and activities programmed to maximize complementarity between these initiatives. In addition, the process of the strategy formulation and the final Strategy and Action Plan will provide an important framework for these projects as well as for others that are to start in the near future including the Regional Mesoamerican Biological Corridor Project, and the Environmental, Social and Technical Assistance Programme of the Southern Highway Project, funded by IDB (1997-2000)

Whilst this progress is important, there is still a need to integrate biodiversity concerns into sectoral planning especially in those sectors that impact on, or depend directly on, biological resources, such as agriculture, fisheries, forestry, tourism, energy and transport. The Government of Belize proposes to develop a Biodiversity Strategy and Action Plan (BSAP) to enhance the incorporation of biodiversity issues into national development and sector planning and to provide a comprehensive framework for biodiversity conservation and management that will orient and co-ordinate related on-going and future initiatives and facilitate the implementation of the CBD in the country. For the development of the BSAP to fully incorporate the concerns of different sectors and stakeholders of this ethnically and culturally diverse country, much internal consultation will be needed as well as a wide dissemination of information.

The draft Mission Statement gives a clear vision for biodiversity conservation with the participation of all Belizeans while it focuses on the scientific understanding, sustainable use and the equitable sharing of benefits and costs

V. NEXT STEPS

5.1 The following timeline represents the planned activities required for the development of NBSAP.

BELIZE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN TIMELINE

VII. Activity	<i>Month</i>	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1.1.1. Introductory meeting held for National Biodiversity Committee and invited stakeholders with Project Team to introduce Project (<i>National Biodiversity Committee (NBC), Project Coordinator (PC), Project Team (PT), Biodiversity Planning Consultant (BPC), Invited Stakeholders (IS)</i>).			X									
1.1.2. Pre-Assessment (National Consultant)		X										
1.1.3. Stocktaking and assessment (PC, PT)		X	X	X	X							
1.1.4. Conduct Public Awareness campaign (PC)		X	X	X	X	X	X	X	X	X	X	X
1.2.1. Development of draft outline of strategy/discussion paper (PC, PT)				X	X							
1.2.2. Biodiversity planning workshop held; NBC meets to review draft strategy (NBC, PC, PT, IS)					X							
1.2.3. Dissemination of draft strategy in preparation for local consultations (PC)					X							
1.2.4. Eight (8) Local consultations (Stakeholders, PT, PC, Interested NBC Members)					X	X	X					
1.2.5. Draft strategy revised per input from consultations (PC, PT)							X					
1.3.1. Draft action plan developed per input from consultations Full draft NBSAP produced. (PC, PT, BPC, NBC consulted)							X	X				
								X				
1.3.2. National Biodiversity Committee meets to discuss new draft of NBSAP (NBC, BPC, PC)									X			
1.3.3. Draft NBSAP distributed to stakeholder representatives in preparation for three regional workshops (PC)									X			
1.3.4. Final revision at three regional workshops (PC, PT, IS)									X	X		
1.4.1. Revision of NBSAP based upon consultation. Complete final version of NBSAP (PT, BPC, PC)										X		

Annex One: PROTECTED AREAS OF BELIZE

- Declared = 55 State and 8 private
 - Proposed = 29
- Size in acres, and year gazetted as a legal instrument

Bladen Branch Nature Reserve	66 of 1990	99,678
Burdon Canal Nature Reserve	88 of 1992	5,255
Tapir Mountain Nature Reserve	58 of 1994	6,744
Bird Cayes (7)	1977	13
Aguas Turbias National Park	44 of 1994	8,760
Blue Hole National Park	109 of 1986	665
Chiquibul National Park	55 of 1995	286,289
5 Blues Lake National Park	52 of 1994	4,061
Guanacaste national Park	46 of 1990	58
Laughing Bird Caye N. P	94 of 1996	10,119
Monkey Bay National Park	45 of 1994	1,799
Paynes Creek National Park	45 of 1994	31,676
Rio Blanco National Park	41 of 1994	100
Sarstoon/Temash N.P	42 of 1994	41,898
Bacalar Chico N.P. & M.R.	88 & 89 of 1996	28,148
Halfmoon Caye N.M	30 of 1982	9,771
Blue Hole Natural Monument	96 of 1996	1,023
Cockscomb Basin W.S	127 of 1990	86,929
Crooked Tree W.S	95 of 1984	41,297
Chiquibul Forest Reserve	54 of 1995	147,889
Columbia River F,R	40 of 1977	102,940
Commerce Bight F.R	41 of 1989	5,452
Deep River F.R.	66 of 1990	78,574
Freshwater Creek F.R.	12 of 1960	60,177
Grants Work F.R.	95 of 1989	7,906
Machaca F. R.	23 of 1987	3,756
Manatee F.R.	21 of 1959	103,878
Mango Creek F.R.(1,2,3,4)	62 of 1989	35,549
Maya Mountains F.R.	66 of 1980	128,111
Mountain Pine Ridge F.R.	49 of 1977	126,825
Sibun F.R.	48 of 1977	106,392
Silk Grass F.R.	60 of 1982	4,806
Sittee River F.R.	47 of 1977	94,156
Swasey Bladen F.R.	90 of 1989	14,779
Terra Nova Forest Reserve	133 of 1993	6,781
Vaca Forest Reserve	165 of 1991	52,352
Monkey Caye Forest Reserve	74 of 1996	1,460
Sapodilla Caye Marine Reserve	117 of 1996	33,401
Southwater Caye Marine Reserve	118 of 1996	78,374
Glovers Reef Marine Reserve	170 of 1994	81,237
Hol Chan Marine Reserve	38 of 1993	2,759
Caracol Archaeological	19 of 1995	25,000
Santa Rita A. R.	23 of 1995	3.73
Cahal Pech A. R.	22 of 1995	22.39
Nimli Punit A. R.	20 of 1995	121.32
Xunantunich A.R.	21 of 1995	51.6
Cerro Maya A. R.		43.78
Lamanai A. R.		
Community Baboon Sanctuary		12,980
Bull Run		16,355
Monkey Bay Wildlife Sanctuary		1,474
Rio Bravo Management and Conservation		245,822

Shipstern Nature Reserve	18,841
Slate Creek Preserve	4,300
Golden Stream Private Nature	27,228
BFREE	
GRAND TOTAL	2,295,189

PROPOSED RESERVES

Mexican Rocks
 Siwa Ban
 Shipstern Caye & Lagoon
 Four Mile Lagoon
 Belize River Mouth
 Northern & Southern Lagoon
 Placencia Peninsula
 Port Honduras
 Mussel Creek
 Beaver Dam
 Northern River
 New River Lagoon
 Rio Hondo
 Sennis
 Aguacaliente Swamp
 Whitewater
 The Dump
 Indian Creek
 Baldy Beacon
 Upper Macal River / Privassion Creek
 Raspaculo Branch Watershed
 Silk Cayes
 Toledo Ridge SDA
 Honey Camp
 Mayflower National Park/
 Mayflower Archaeological Reserve
 Turneffe Island
 Manatee Sanctuary
 El Pilar

Annex Two: THE FOLLOWING SECTIONS OF THE INTERIM FIRST COP REPORT ARE NOT YET RELEVANT FOR THE BELIZE SITUATION

- VI. Strategy
 - This section is a summary of the strategy, which we have yet to develop
- VII. Partners
 - This section is supposed to be for the partners in the implementation phase of the NBSAP. Perhaps list the participants in the development of the NBSAP.
- VIII. Action
 - This section is the action plan summary.
- IX. Schedule
 - Timeline for NBSAP implementation.
- X. Budget
 - Budget for the action plan.
- XI. Monitoring and Evaluation
 - M & E for the NBSAP.
- XII. Sharing of National Experience
 - Lessons learned to share with other countries.

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