GOVERNMENT OF BELIZE

IV NATIONAL REPORT
TO
THE UNITED NATIONS
CONVENTION ON BIOLOGICAL DIVERSITY

Ministry of Natural Resources and the Environment

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Ministry of Natural Resources and the Environment

Forest Department of Belize

The present document is the product of the project entitled "Support to GEF Eligible CBD Parties for carrying out 2010 Biodiversity Targets National Assessments – Phase 1 (4NR)" (PIMS 3918) executed by the Forest Department of Belize financed by the Global Environment Facility (GEF) and implemented by the United Nations Development Programme-Belize.

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Project:

"Support to GEF Eligible CBD Parties for carrying out 2010 Biodiversity Targets National Assessments – Phase 1 (4NR)" (PIMS 3918)

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ACRONYMS

ACP	African, Caribbean and Pacific Group of States
ALIDES	Central American Alliance for Sustainable Development
BAHA	Belize Agriculture and Health Authority
BAS	Belize Audubon Society
BBIS	Belize Biodiversity Information System
BBRRS-WHS	Belize Barrier Reef Reserve System –World Heritage Site
BEMAMCCOR Resources	Belize-Mexico Alliance for the Management of Common Coastal
BFD	Belize Forest Department
BITI	Belize Indigenous Training Institute
CBO	Community-Based Organizations
CCAB	Central American Biodiversity Convention
CCAD	Central American Commission for the Environment and Development
CCCCC	Caribbean Community Climate Change Centre
CEDS	Centre for Environmental Data Systems
CEP	Country Environmental Profile
CFR	Columbia Forest Reserve
CHM	Belize Clearing House Mechanism (Forestry Department)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNP	Chiquibul National Park
COMPACT	Community Management of Protected Areas Conservation Program
CRFM	Caribbean Regional Fisheries Mechanism
CWS	Cockscomb Wildlife Sanctuary
ECP	Environmental Compliance Plan
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ERI	Environmental Research Institute
EU	European Union
FAO	Food and Agriculture Organization
FD	Fisheries Department
FON	Friends of Nature
GEF	Global Environment Facility
GMOs	Genetically Modified Organisms
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
KCC	Ke'chi' Council of Belize
LIC	Land Information Centre

LMOs	Living Modified Organisms
LMP	Land Management Program
MARFUND	The Mesoamerican Reef Fund
MARPOL	International Convention for the Prevention of Pollution from Ships and the 1978 Protocol
MBC	Mesoamerican Biological Corridor Project
MBRS	Mesoamerican Barrier Reef System
MSY	Maximum Sustainable Yield
NBF	National Bio-safety Framework
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environmental Assessment Policy
NGO	Non- Government Organization
NPAPSP	National Protected Areas Policy and System Plan
NPOA	National Plans of Action
OIE	World Organization for Animal Health
OIRSA	Inter-Regional Organization for Plant and Animal Health
OPESCA	Organization for the Fishing and Aquaculture Sector of the Central American Isthmus
PA	Protected Areas
PAHO	Pan American Health Organization
PCU	Project Coordinating Unit
POPS	Persistent Organic Pollutants
PPA	Programme on Protected Areas
PREPAC	Regional Plan for the Inland Fisheries and Aquaculture Project
SATIIM	Sarstoon Temash Institute for Indigenous Management
SGP	Small Grant Program
SICA	Central American Integration System
SLM	Sustainable Land Management
THFI	Toledo Healthy Forest Initiative
TIDE	Toledo Institute for Development and Environment
TMWC	Toledo Maya Women's Council
TNC	The Nature Conservancy
TNMCC	Toledo Maya Culture Council
TRIGOH	Tri-National Alliance for the Conservation of the Gulf of Honduras
UB	University of Belize
UNCBD	United Nations Convention for Biodiversity
UNCCD	United Nations Convention to Combat Desertification and Drought
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USDA APHIS	U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service
WB	World Bank
WCS	Wildlife Conservation Society
WFI	World Resources Institute
WWF	World Wildlife Fund for Nature

EXECUTIVE SUMMARY

Belize is relatively small country with a land area of 22,963 km^2 (8,866 mi^2), including the approximately 1,000 cayes. Belize is the only Anglophone country in Central America and was formerly known as 'British Honduras'. It has a population of approximately 350,000 people and lies roughly between 15° 52' and 18° 30' North Latitude and 87° 28' and 89° 13' West Longitude and is bordered by Mexico in the north, Guatemala in the west and south, and the Caribbean Sea in the east.

Belize in endowed with a very high level of terrestrial and aquatic biodiversity and the largest unbroken barrier reef in the Western Hemisphere. The Mesoamerican Barrier Reef System (MBRS) which is the second in length only to the Great Barrier Reef of Australia stretches the full length of Belize's coastline. Seven sites along Belize's Barrier Reef System have been declared a World Heritage Site, in recognition of its extremely rich biodiversity and consequent global importance.

"The country is unique, not only in the total number of species present, but also in the vast array of ecotypes and their species richness. This wealth of biological diversity, coupled with a rich cultural heritage has made Belize a very popular tourist destination, providing significant economic benefits for the nation" (BERDS, 2010).

Overall Status and Trends in Biodiversity

Terrestrial Resources

Belize has 22.6% of its total national territory under some form of protection (GEO, 2009). There are 102 protected areas with the majority of these designated for sustainable use and management.

Belize has approximately 232,750 hectares of Broadleaf Forest; 7,460 hectares of Pine Forest and 3,090 hectares of Savannah land (Boles, 2005) spanning its entire territory. There are 30 perennial river basins from small coastal creeks to larger trans-national watersheds.

There are 3,408 species of plants (including 613 medicinal plants) found in Belize: 1,219 genus and 209 families. There are 2,500 species of dicotyledons and 1,500 monocotyledons (including 317 species of bromeliads). Faunal species confirmed in the country include 46 amphibians, 43 fresh water fish, 158 molluscs, 288 Lepidoptera, 176 Odonata, 141 reptiles, 577 birds and 163 mammals. An estimate of 634 genera, representing 1,302 species of algae, invertebrates and fish are documented from the marine ecosystems of Belize. Presently, 58 plants, 2 species of fish, 2 species of amphibians and 1 species of reptile have been determined to be endemic to Belize and 43 mammal species in Belize are endangered. There are 137 species of plants and animals listed in the IUCN Red List 2009 of Threatened Species, ranging from extinct to least concern.

The terrestrial ecosystems and the biodiversity have been observed to be negatively impacted in the last few years. There have been land cover changes due mainly to development in agriculture and tourism infrastructure. However, there has been limited quantitative data on this trend and stakeholders have identified the need for more research in this area.

Coastal and Marine Resources

The Belize Barrier Reef System was designated a World Heritage Site in 1996 and it makes up almost 80% of the Mesoamerican Barrier Reef System. There are approximately 634 known genera of marine organisms.

Extensive taxonomic work is being conducted at the Smithsonian field station on Carrie Bow Caye, which may reveal even more species (Boles, 2005).

The Fisheries Department has passed legislation which focus on the protection of key species and the application of restrictions as they relate to size, close seasons, production quota to ensure the conservation and sustainable exploitation of Belize's aquatic resources.. Furthermore, draft National Plans of Action (NPOA) have been drafted and are currently in the process of consultations to address Fishing Capacity. These NPOAs are consistent with the international and regional initiative to formulate and implement these plans.

Recently, Fisheries Regulations were enacted to totally protect herbivores such *Scaridae* and *Acanthuridae* families. These species were deemed as being extremely vulnerable to fishing and are very important to the general health of the barrier reef and species associated with it. In

addition to these measures, the Government of Belize, through the Fisheries Department, has declared 21 marine reserves of which 13 are designated to specifically protect spawning and aggregation sites. These protected areas and marine reserves are declared as a function of the ecosystems approach to the management of fisheries resources in Belize and are seen as tools to conserve critical ecosystems and replenish and restock over exploited fisheries populations.

Threats to Biodiversity

Belize has recently conducted Climate Change Related vulnerability studies at the community level, coastal and marine level and in the agriculture sector. These reports indicate that Belize's coral reef ecosystems and certain terrestrial ecosystems are at a higher risk from the impacts of climate change. Corals and tree frogs, for example, are highly vulnerable due to their low temperature tolerance ranges. These findings are consistent with the perceived threats indicated by those that participated in the consultation workshops linked with the preparation of this report.

Other major threats to the indigenous biodiversity included those associated with the spread and introduction of invasive species as well as the loss and fragmentation of habitat primarily associated with the expansion of the agricultural and the tourism sector. It was felt that these threats were somewhat more elevated in the marine ecosystem and linked to the rapid development being experienced on some of the cayes.

Another threat identified, was the failure to fully and effectively manage protected areas. These threats were linked to constraints such as staff availability and essential training, adequate transportation and equipment. The Belize Forest Department, who has the greatest responsibility to oversee the overall management of these areas, invariably has limited financial and technical resources therefore making the implementation of the National Protected Areas Policy and Systems Plan a major challenge. Furthermore, protected area managers are frequently faced with the delicate task of balancing development and environmental conservation while ensuring sustainable development.

Marine and coastal pollution from land base sources and those linked to ship generated waste was also identified as a major issue of concern. The Department of the Environment has identified the threats associated with the improper disposal of solid waste as one of the primary national environmental issue of concern needing urgent attention. The Government has very

recently strengthened the National Solid Waste Authority and is in the process of implementing a national Solid Waste Management Plan, through an IDB loan, which will guide the management of solid wastes for twenty years into the future.

Key Actions in Support of the UNCBD and 2010 Targets

Belize's National Biodiversity Strategy and Action Plan (NBSAP) highlighted the need for a comprehensive and integrated approach to the management of protected areas and the creation of greater efficiencies in the management and conservation of Belize's national biodiversity by facilitating greater coordination and capacities in regulatory agencies through legislative reform and targeted management mechanisms. Community participation was emphasized as being critical to the implementation and success of the NBSAP.

Significant progress has been made in the implementation of the National Biodiversity Strategy and Action Plan for Belize. However, there is an immediate need to review the NBSAP in an effort to update its strategies and timelines to ensure its effective implementation.

The Government of Belize is embarking on an initiative to 'Strengthening Institutional Capacities for Coordination of Multi-sectoral Environmental Policies and Programmes'. The overall objective is to ensure better coordination of Belize's natural resource and environmental policies in such a way that they create synergies for the national implementation of the United Nations Convention for Biodiversity (UNCBD); United Nations Convention to Combat Desertification and Drought (UNCCD); United Nations Framework Convention on Climate Change (UNFCCC).

In accordance with the Programme of Work for Protected Areas, Belize undertook to develop a National Protected Areas Policy and System Plan (NPAPSP). The Policy is Belize's Agenda on protected areas. The Plan grounds itself on a set of underlying principles, **the *Ecosystem Approach*, the *Precautionary Principle*, the *Importance of Science*, the *Importance of Local and Indigenous Community Knowledge*, *Monitoring and Evaluation* and *Cost-effectiveness and Efficiency*.**

Conclusion

The assessment conducted in the preparation of this report would indicate that the Government of Belize is likely to meet targets sets and in a few instances, it is presently exceeding the 2010 Targets. Nevertheless, much more support is required in supporting present efforts and in building the country's capacity to effectively deal with issues related with the fair and equitable benefits arising from the use of its genetic resources and in inventorying its present biodiversity.

Challenged by growing economic constraints and excess national debt, Belize is having trouble in supporting the additional staff, training, equipment, and transportation requirements demanded for effective implementation of its commitments made. There is the need for additional well-targeted funding from donor countries and organizations to be placed within established and transparent management systems with specifically defined goals and objectives to continue moving forward.

CHAPTER I: OVERVIEW OF STATUS, TRENDS, THREATS

1.0 Background

1.1.1 Belize and the Convention

Belize signed the Convention on Biological Diversity on June 13, 1992 in Rio de Janeiro, Brazil and ratified it in December 1993. Since then the country has been progressively working to honour its commitments under the convention. The first national report to the Conference of Parties was submitted in 1999. It provided a baseline for the status of Belize's environment and natural resources and highlighted the shortcomings of the country's environmental management efforts. This first report was important in establishing the necessary steps needed to affect change in the country's approach to environmental management and development. The second report was submitted in 2002 and it built on the previous report by discussing the progress of the country in executing its Biodiversity Strategy and Action Plan along with other critical biodiversity-related projects. The third report was submitted in 2006. Similarly, this national report highlighted the progress made by Belize in achieving the goals and objectives under its Biodiversity Strategy and Action Plan.

1.2 Biodiversity Status

1.2.1 Terrestrial Resources

Belize has 22.6% of its total national territory under some form of protection. There is 34.9% terrestrial land protection and 10.6% marine area protection (GEO, 2009).The majority of Belize's protected areas are for the sustainable use and management of its resources.

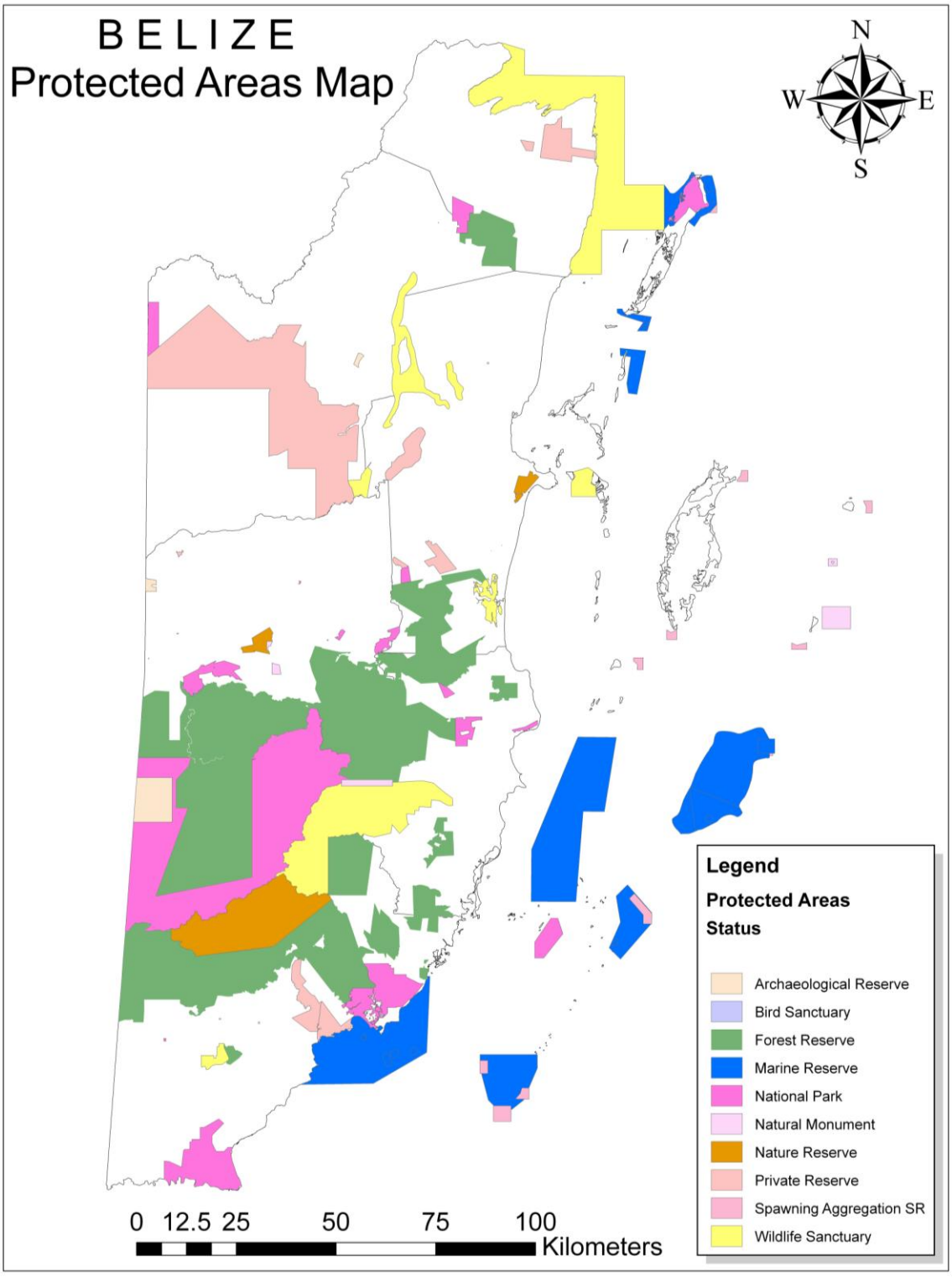


Figure 1: Belize's Protected Areas

Source: Belize Forestry Department

Belize has 102 protected areas contained within 11 categories as listed on Table 1.

Table 1: Belize's Protected Areas

Types of Protected Area	Quantity	Types of Protected Area	Quantity
Forest Reserves	**19**	**Marine Reserves**	**8**
National Parks	**17**	**Spawning Sites**	**13**
Nature Reserves	**3**	**Public Reserve**	**6**
Wildlife Sanctuaries	**7**	**Bird Sanctuaries**	**7**
Natural Monuments	**5**	**Private Reserves**	**8**
Archaeological Reserves	**9**		

Source: Belize Forestry Department

Thirty six (36) different types of forests were identified by Brokaw and Iremonger in 1994 (Programme for Belize, 1995). However in 2001, Meerman and Sabido identified 87 distinct types of terrestrial and marine ecosystems. The findings included a total forest cover of approximately 67.4% over Belize's land mass.

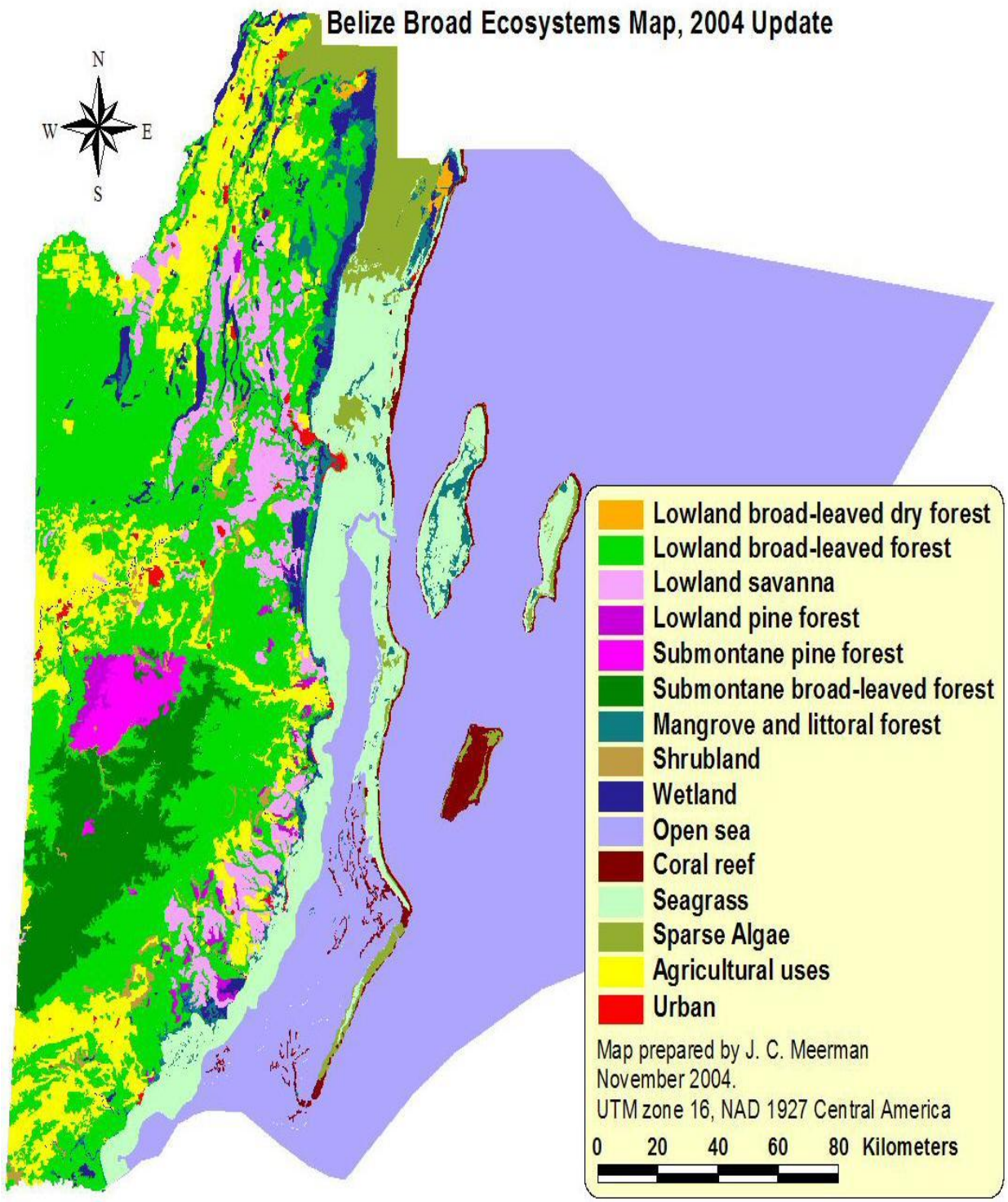


Figure 2: Belize's Ecosystems

Source: Jan Meerman, BERDS

There is approximately 232,750 hectares of Broadleaf Forest; 7,460 hectares of Pine Forest and 3,090 hectares of Savannah land (Boles, 2005). There are 30 perennial river basins from small coastal creeks to larger trans-national watersheds.

Table 2: Breakdown of General Land Cover in Belize

GENERAL LAND COVER CATEGORY	Km^2 ±	% ±
Broadleaf Forest and Scrubland	11,803	51.4
Agriculture	3,835	16.7
Montane and Sub-montane Broadleaf Forest	2,296	10.0
Lowland Savannah and Pine Savannah	2,021	8.8
Mangrove and Littoral Forest	964	4.2
Dense Sub-montane Pine Forest	482	2.1
Water (not including streams and rivers)	482	2.1
Wetlands	436	1.9
Dense Lowland Pine Forests	321	1.4
Coastal Savannah and Salt Marsh	253	1.1
Urban	115	0.5

Source: Meerman and Sabido, 2001

There are 3,408 species of plants (including 613 medicinal plants) in Belize: 1,219 genus and 209 families. There are 2,500 species of dicotyledons and 1,500 monocotyledons (including 317 species of bromeliads). Faunal species confirmed in the country include 46 amphibians, 43 fresh water fish, 158 Molluscs, 288 Lepidoptera, 176 Odonata, 141 reptiles, 577 birds and 163 mammals. An estimate of 634 genera, representing 1,302 species of algae, invertebrates and fish are documented from the marine ecosystems of Belize. Presently, 58 plants, 2 species of fish, 2 species of amphibians and 1 species of reptile have been determined to be endemic to Belize and 43 mammal species in Belize are endangered. There are 137 species of plants and animals listed in the IUCN Red List 2009 of Threatened Species, ranging from extinct to least concern. A total

of 13 mammal species are listed in the CITES as being of international concern (Programme for Belize, 1995).

Table 3: List of Endangered Fauna based on CITES

Appendix 1	Appendix II	Appendix III
Saltwater Crocodile *Crocodylus acutus*	Anteater *Myrmecophaga tridactyla centralis*	Anteater *Tamandua m. mexicana*
Morelett's Crocodile *Crocpdylus moreletii*	Cacomistle *Bassariscus sumichrasti*	Agouti *Dasyprocta punctata*
Turtle *Dermochelys coriacea*	River Turtle (Hicatee) *Dermatemys mawii*	Armadillo *Cabassous centralis*
Manatee *Trichechus m. manatus*	Common Green Iguana *Iguana iguana*	Coati *Nasua narica*
Tapir *Tapirus bairdii*		Kinkajou *Potos flavus chiriquensis*
Peccary *Tayussu pecari ringens*		White Tailed Deer *Odocoileus virginianus truei*
Ocelot *Leopardus p. pardalis*		Yucatan Brown Brocket *Mazama pandora*
Margay *Leopardus wiedii yucatanica*		Red Brocket *Mazama Americana*
Puma *Puma concolor mayensis*		Grison *Galictis vittata canaster*
Jaguar *Panthera onca*		Variable Coral Snake *Micrurus diastema*
Otter *Lontra longicaudis annectens*		Central American Coral Snake *Micrurus nigrocinctus*
Howler Monkey *Alouatta pigra*		
Spider Monkey *Ateles geoffroyi*		

Courtesy Belize Forestry Department

1.2.2 Agriculture and Aquaculture

Over the last several decades agriculture has been important to the economic development of Belize. The sugar cane industry has taken a down turn due to the erosion of preferential markets and prices afforded to the ACP countries by the European Union However, a cogeneration plant for bagasse is aimed at contributing electricity to the national grid as well as the savings from the new technology should help to finance research and development of sugarcane species. Agriculture has helped to shape the society of the country by diversifying the job market with work in citrus and banana crops technologies as opposed to the traditional timber industry technologies. Other cash crops include corn, mangos, rice, beans and papayas. There have been instances of unsustainable agricultural practices which have been primarily responsible for riparian and steep slope deforestation and degradation (Boles 2005). Environmental contaminations due to the use of pesticides and other chemicals have also been experienced.

Aquaculture was a rapid growing industry in Belize until recent years when global depressed market prices for shrimp caused the closure of several shrimp farms in the country. A number of shrimp farms are still in operation, culturing mainly the Pacific White shrimp (*Penaeus vannamei*. despite the economic challenges. Tilapia farming (*Oriochromis niloticus*, *O. mosambiques* and *O. aureus* hybrids) has been on-going since 2003. In addition, commercial cage farming of fish species, primarily Cobia (*Rachycentron canadum*) is being carried out since 2006. The establishment of aquaculture facilities require the preparation of an Environmental Impact Assessment (EIA) and the adherence to an Environmental Compliance Plan (ECP).

1.2.3 Coastal and Marine Resources

Belize's territorial water is calculated to be a total of 1,865,300 hectares which is approximately 32.82% of the total national territory. A further 28.25% of national territory is designated as Belize's Exclusive Economic Zone (EEZ). The Belize Barrier Reef System was designated a World Heritage Site in 1996 and it makes up almost 80% of the Mesoamerican Barrier Reef System (MBRS). There are approximately 594 known genera of marine organisms. Extensive taxonomic work is being conducted at the Smithsonian field station on Carrie Bow Caye, which may reveal even more species (Boles, 2005).

Species such as the spiny lobster, shrimp, and queen conch are in demand both on the local and foreign markets. The harvest of these delicacies species is the main targeted species for local fishermen and is the main source of income. These species, although sold locally, are primarily harvested for the export markets.

Fishing activities in Belize are organized primarily through the local Fishing Cooperatives. These organizations include the National Fishermen Co-operative Society Ltd., Placencia Fishermen Co-operative Society Ltd., and the Northern Fishermen Co-operative Society Ltd. The great majority of the fishing industry in Belize is based on artisanal fishing with very little exploitation of its deep sea resources in Belize's Exclusive Economic Zone. There have been efforts supported by government and local NGOs to encourage diversification and support fishermen to target the under and unutilized species in order to provide alternative economic options for livelihoods and to also alleviate pressure on the heavily targeted species.

1.3 Trends

1.3.1 Terrestrial Resources

The trends of the terrestrial ecosystems and the biodiversity that play an active role in the synergistic relationships therein have been observed to be negatively impacted in the last few years. The status of indicator terrestrial species of international and national concern is contained in Tables 4a and 4b as reported by Wildtracks in a recent report prepared on behalf of APAMO in 2009.

Table 4a: Status of Indicator Terrestrial Species of International Concern

Indicator Species of International Concern		Number Pas with data	Overall Status Score	Level of Risk
Critically Endangered				
Central American River Turtle (Hicatee)	*Dermatemys mawii*	21	1.52	Very High (0.52)
Endangered				
Geoffroy's Spider Monkey	*Ateles geoffroyi*	13	2.31	High (1.74)
Yucatan Black Howler Monkey	*Alouatta pigra*	24	2.75	Medium (2.45)
Baird's Tapir	*Tapirus bairdii*	24	2.92	Medium (2.57)
Yellow-headed Parrot	*Amazona oratrix*	14	1.71	Very High (1.00)
Vulnerable				
West Indian Manatee	*Trichechus monatus*	13	2.62	Medium (2.33)
Great Curassow	*Crax rubra*	22	2.50	High (1.79)
Average			2.33	High (1.77)

Status Score: Poor ≤1.00; Fair >1.00-200; Good >2.00-3.00; Very Good >3
Risk Score: Very High ≤1.00; High >1.00-200; Medium >2.00-3.00; Low >3
Level of Risk is calculated from the Status and Trend Scores

Table 4b: Status of Indicator Terrestrial Species of National Concern

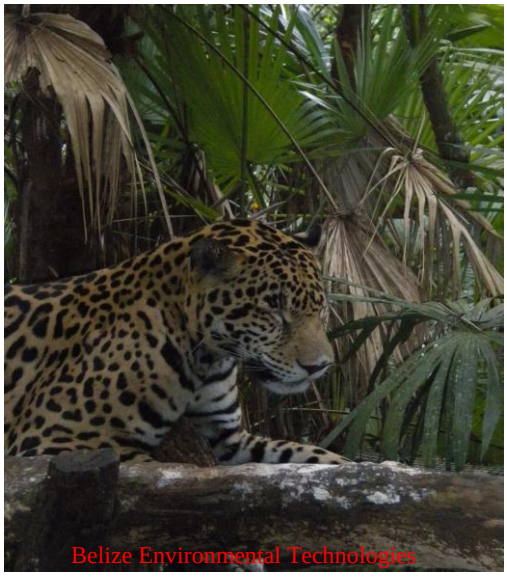
Indicator Species of National Concern		Overall Status Score	Overall Rating (%)	Level of Risk
Scarlet Macaw	*Ara macao*	1.40	35.0%	Very High (0.54)
White-lipped Pecary	*Tayassu pecari*	1.73	43.3%	Very High (0.83)
Oscillated Turkey	*Meleagris ocellata*	1.80	45.0%	Very High (0.91)
Crested Guan	*Penelope purpuroscens*	2.26	56.5%	High (1.54)
Xate Palm	*Chamaedorea ernestii-augustii*	2.53	63.3%	High (1.95)
White-tailed Deer	*Odocoileus virginianus*	2.47	61.8%	High (1.72)
Mountain Mullet	*Agonostomus monticola*	2.80	70.0%	High (2.00)
Jaguar	*Panthera onca*	2.87	71.8%	Medium (2.48)
Bayleaf Palm	*Sabal mouritiiformis*	3.05	76.3%	Medium (2.65)
Pimenta/Popta Palm	*Acoelorrhaphe wrightii*	3.13	78.4%	Medium (2.93)
Average		2.45	61.3%	High (1.76)

Status Score: Poor ≤1.00; Fair >1.00-200; Good >2.00-3.00; Very Good >3
Risk Score: Very High ≤1.00; High >1.00-200; Medium >2.00-3.00; Low >3
Level of Risk is calculated from the Status and Trend Scores

There have been land cover changes due mainly to development in agriculture and tourism infrastructure. However there have been limited quantitative data on this trend and more research is needed. There has been a general decline trend for some species, e.g. the white-lipped peccary, which has seemingly disappeared from the Las Cuevas area of the country (Columbia Forest Reserve (CFR) and Chiquibul National Park (CNP)). Similarly the Jaguar population has seemingly declined in Chiquibul area. Nonetheless, there would seem to be a stable Jaguar population in the Cockscomb Wildlife Sanctuary (CWS).

The Jaguar (*Pantera onca)* is considered an important indicator species in Belize. The presence or lack thereof of this top predator can reveal the health of Belize's forest ecosystems.

Figure 3: Jaguar (*Pantera onca*)



While the jaguar population in Belize remains healthy; human/jaguar conflicts are on the rise. The causes for conflict were identified as deriving from habitat fragmentation, poor cattle husbandry, overflows or animals displaced due to intrinsic competition, and hunter competition for the prey base. Displaced animals are recurrent problem to the livestock industry. The Panthera organization is conducting jaguar research in Belize and assisting the Government with problem and

nuisance animals (Belize Forest Department, 2009). Panthera's main purpose is to establish a biological corridor for jaguars in the Central American region. They have set up cat-cams and observation stations so as to assess jaguar density in certain areas. This information will then be used to inform governments on priority habitat areas.

The Morelet's crocodile *(Crocodylus moreletii)* numbers have been noted to be increasing. There are plans for a national assessment of crocodilian populations throughout Belize. Presently there is reliance on anecdotal information based on community reports and continued reports of crocodile-human conflicts.

Figure 4: Tapir (*Tapirus bairdii*)

Belize's National Animal, the tapir (*Tapirus bairdii*) is considered a species of concern in the country. There have been several accounts of dead Tapirs, due to road kills, along the highway that links the Western Highway to the Northern Highway. Individuals within this local population have contracted an eye disease that has caused their blindness. It is urgent to identify the causes of this eye disease and methods for treatment, if any. In addition, studies need to be undertaken to determine the health of the population of this species which happens to be the largest terrestrial mammal in the Central American Region.

Flora in Belize has been an important component in the everyday lives of the people. Recently the cohune heart was thought to be in peril but seems to have rebounded in the CFR and CNP (Belize Forest Department (BFD), Las Cuevas, and Friends for Conservation and Development (FCD)). . There has been deterioration of water quality in watersheds - most notably in the Belize River watershed that is caused by sediment transfer from the Chalillo dam. Presently there is a study being carried out to quantify the impact of this sediment transfer on the Reef. The Belize Audubon Society has noted that there are significant declines in water birds in Crooked Tree Wildlife Sanctuary.

To measure trends in biodiversity, the biodiversity indicators that have been used are: changes in forest cover (including riparian); water flow and water quality; population trends for endangered species, game species, top predators; maintenance of watershed/riverine connectivity; and forest connectivity.

The indicators for progress towards sustainability and resource conservation have been determined to be: Rate of implementation of the NPAPSP (slow); land allocations within PAs / de-reservations; creation of PAs, including PPAs; level of enforcement; level of illegal incursions (hunting, farming, looting, etc); increased (human) capacity to manage and monitor; financial resources available for conservation; Monitoring tool for long-term forest concessions.

1.3.2 Coastal and Marine Resources

The Fisheries Department (FD) has passed legislation that prohibits the harvesting of certain species. Open and closed seasons are regulatory measures that effectively sustain low fish populations with high local demand. Similarly, lobster and conch have seasons during which these species can be harvested with size limits. A moratorium has been placed on the Nassau grouper and any person who contravenes this regulation is faced with heavy penalties. Nassau Grouper studies are still on-going. There are two species of sawfish that are now ecologically extinct and there is an observed trend of shark species decline. There is a proposed Shark Action Plan to remedy the situation. The status of indicator marine species of international and national concern is contained in Tables 4a and 4b as reported by Wildtracks in a recent report prepared on behalf of APAMO in 2009.

Table 5a: Status of Indicator Marine Species of International Concern

Indicator Species of International Concern		Overall Status Score	Overall Rating (%)	Level of Risk
Critically Endangered				
Goliath Grouper	*Epinephelius itajara*	1.50	41.8%	Very High (0.87)
Hawksbill Turtle	*Eretmochelys imbricata*	2.33	57.5%	Medium (2.19)
Endangered				
Loggerhead Turtle	*Caretta caretta*	2.43	60.7%	Medium (2.23)
Green Turtle	*Chelonia mydos*	2.80	70.0%	Medium (2.47)
Nassau Grouper	*Epinephelus striatus*	2.11	52.8%	High (1.82)
Vulnerable				
Queen Triggerfish	*Balistes vetulo*	2.50	62.5%	High (2.00)
West Indian Manatee	*Trichechus monatus*	2.80	75.0%	Medium (2.80)
Hogfish	*Lachnolaimus maximus*	2.22	55.5%	High (1.34)
Mutton Snapper	*Lutjanus analis*	2.78	69.4%	Medium (2.28)
Cubera Snapper	*Lutjanus cyanoterus*	3.00	75.0%	Medium (2.17)
Whale Shark	*Rhinocodon typus*	3.00	75.0%	Medium (3.00)
Average		2.50	63.2%	Medium (2.10)

Status Score: Poor ≤1.00; Fair >1.00-200; Good >2.00-3.00; Very Good >3
Risk Score: Very High ≤1.00; High >1.00-200; Medium >2.00-3.00; Low >3
Level of Risk is calculated from the Status and Trend Scores

Table 5b: Status of Indicator Marine Species of National Concern

Indicator Species of National Concern		Overall Rating	Overall Rating (%)	Level of Risk
Yellow Tail Snapper	*Ocyurus chrysurus*	2.88	71.9%	Medium (2.63)
Spiny Lobster	*Panulirus argus*	2.00	50.0%	Very High (1.00)
Queen Conch	*Strombus gigos*	2.25	56.3%	High (1.39)
Permit	*Trachinotus falcatus*	2.71	67.9%	Medium (2.54)
Bonefish	*Albula vulpes*	3.14	78.6%	Medium (2.97)
Snook	*Centopomus undecimalis*	2.00	50.0%	High (2.00)
Tarpon	*Megalops atlanticus*	3.00	75.0%	Medium (3.00)
Average		2.57	64.2%	Medium (2.22)

Status Score: Poor ≤1.00; Fair >1.00-200; Good >2.00-3.00; Very Good >3
Risk Score: Very High ≤1.00; High >1.00-200; Medium >2.00-3.00; Low >3
Level of Risk is calculated from the Status and Trend Scores

Recently, Fisheries Regulations were enacted to totally protect herbivores such *Scaridae* and *Acanthuridae* families. These species were heavily exploited due to the scarcity of other more desirable species. In addition to these measures, the Government of Belize, through the Fisheries Department, designated certain protected areas and marine reserves to include spawning and aggregation sites. These protected areas and marine reserves are ***"No Take"*** and serve to replenish and restock over exploited fisheries populations.

The Caribbean Community Climate Change Centre and the World Bank are conducting coral reef resilience research in order to assess the effects of climate change impacts on the reef ecosystem.

The Fisheries Department recently adopted The National Policy for Aquaculture Development in Belize which is aimed at implementing best practices in aquaculture in order to ensure the sustainability of the industry. According to Boles (2005), cultivation of select local species has been considered and these species include:

Table 6: Species being considered for Aquaculture

Common Name	Scientific Name	Common Name	Scientific Name
River Shrimp	*Macro brachium* spp.	Queen Conch	*Strombus gigas*
Mountain Mullet	*Agnostes monticola*	Spiny Lobster	*Panulirus argus*
Tuba	*Cichlasoma synspilum*	White Shrimp	*Penaeus schmitti*
Crana	*Cichlasoma uropthalmus*	Common Snook	*Centropomus undecimalis*
Bay Snook	*Petenia splendida*	Nassau Grouper	*Epinephelus striatus*
Blue Catfish	*Ictalurus furcatus*	Green Turtle	*Chelonia midas*
Hicatee (River Turtle)	*Dermatemys mawii*)		

More recently an Aquaculture Development Act was passed for the sustainable management of the aquaculture industry.

In 1990, Zisman reported 3.4% of land cover was mangrove (78,133 ha) and 25.5% of this occurred in the offshore areas. In 2006, Cherrington reported that 3.3% remained accounting for 67,194ha. The areas offshore had the larger decrease in population (3.79%) while on the mainland it was 1.07%. In total it came up to approximately 11,939 ha loss - 50% human, 50% storm damage. There is an average of 344 acres of mangrove per year that is lost due to human activity.

1.4 Threats

1.4.1 Climate Change

Climate Change is one of the leading concerns on the global scene. Many under-developed countries that do not have diverse economies are more vulnerable to global economic fluctuations and to the impacts of climate change. Belize has recently conducted vulnerability studies at the community level, coastal and marine level and in the agriculture sector. These reports are assisting the government and local

NGOs are to plan better and develop adaptive and mitigation strategies. The coral reef ecosystems and certain terrestrial ecosystems are at a higher risk due to the impacts of climate change. Corals and tree frogs, for example, are highly vulnerable due to their low temperature tolerance ranges.

1.4.2 Improper Solid Waste Disposal

The Department of the Environment has identified the improper disposal of solid waste as the number one environmental issue in Belize (Alegria, 2008). For years the country has been trying to control this issue but it has been difficult.

1.4.3 Invasive Species

The introduction of invasive species, whether accidental or deliberate, threatens Belize's biodiversity and is having an environmental, economic and social impact. The African Nile Tilapia was accidentally introduced into Belize's watersheds through the Mopan River which trans-borders with Guatemala. Hurricane Mitch, during 2002, destroyed some Tilapia farms in the Mopan River watershed in Guatemala causing the species to enter this river system. The African Nile Tilapia has spread to several of Belize's river

systems. The species now threatens local fish populations due to its aggressive nature and relatively fast reproductive cycle. *Penaeus* vannamei are also found in local waters while *Crassostrea virginica* has been discovered in Belize's coastal waters (Boles, 2005).

The Fisheries Department is studying the Lionfish which was released off the coast of Florida in the 1990s and has since negatively affected reefs across the Caribbean. The fish was first sighted in Belize in early 2008 and since then the Fisheries Department has worked to assess the population of the fish with the help of local fishermen and other stakeholders. The lionfish preys on juvenile spiny lobster and coral reef fishes. This may have an impact or reef fish populations and on corals as many of these coral reef fishes keep seaweeds and microalgae from overgrowing corals (Morris *et al.*)

Tokay Geckos *(Gekko gecko)* was first observed on South Water Caye, Belize in 1994. An investigation into the origins of the Tokay revealed that they were introduced by a tour operator and released on the island. Preliminary studies indicate that the Tokay is proliferating and due to its aggressive predation nature, it is displacing other native fauna on the island (Meerman and Garel, 1996).

1.4.4 Protected Areas Management

Although 22.6% of Belize's total national territory is under some form of protection, the management of these areas has been fragmented. A recent report prepared by Wildtracks in 2009 on behalf of APAMO indicated that the overall management effectiveness of Belize's protected areas was rated as moderate using World Commission on Protected Areas self assessment checklist. The results of this assessment are provided in Figure 5.

The failure to fully and effectively manage protected areas is related to constraints such as staff availability, adequate transportation, equipment and essential training. Efforts are underway by the Forestry Department to instil a strong sense of professionalism and ownership among park wardens, with the idea that this helps to inspire dedication to and pride in the job.

The Forest Department, who has the greatest responsibility to oversee the overall management of these areas, invariably has limited financial and technical resources therefore making the implementation of the National Protected Areas Policy and Systems Plan a major challenge. Furthermore, protected area managers are frequently faced with the delicate task of balancing development and environmental conservation while ensuring sustainable development.

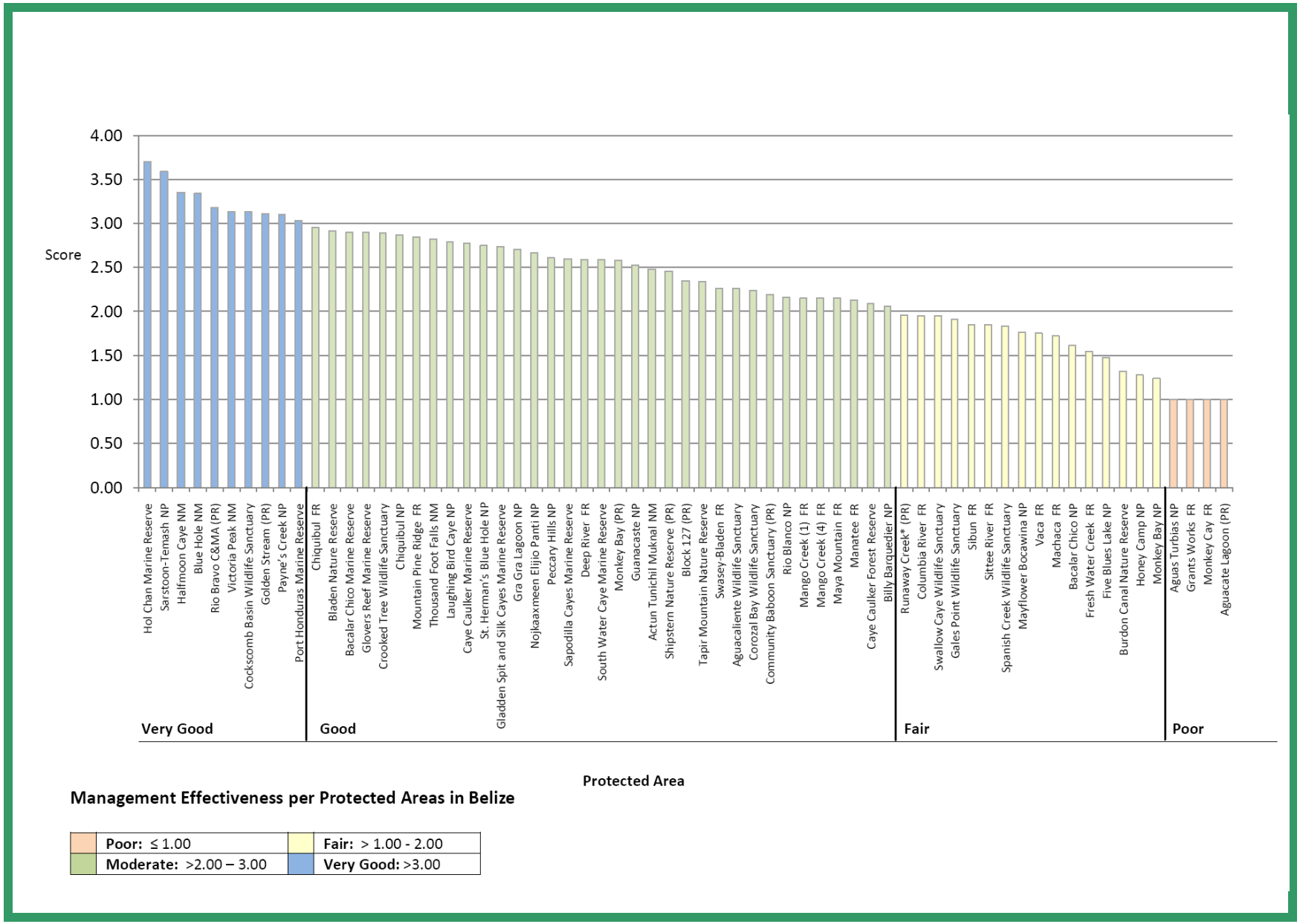


Figure 5: Ranking of Management Effectiveness per Protected Areas in Belize (Wildtracks-APAMO 2009)

CHAPTER II: CURRENT STATUS OF NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS

2.0 The National Biodiversity Strategy Action Plan– An Overview

In 1996 Belize established the National Biodiversity Committee which was charged with the formulation of the National Biodiversity Strategy and Action Plan (NBSAP). This Strategy and Action Plan was developed in 1998 and sought to address the main threats to biodiversity in Belize and the establishment of an overall coordinating body to direct biodiversity conservation. The NBSAP highlighted the need for a comprehensive and integrated approach to the management of protected areas and the creation of greater efficiencies in the management and conservation of Belize's national biodiversity by facilitating greater coordination and capacities in regulatory agencies through legislative reform and targeted management mechanisms. Community participation was emphasized as being critical to the implementation and success of the NBSAP.

2.1 Incorporation of Global and National Targets and Indicators.

The Biodiversity Strategy and Action Plan for Belize is consistent with the targets and indicators of the UNCBD. It is centered primarily on the principle of the UNCBD which stresses the importance of conservation in all programmes and actions in order to achieve sustainable use and development. The strategy and action plan provides long term objectives and provides for periodic review as may deem necessary.

This National Biodiversity Strategy and Action Plan was designed in a manner to identify priorities for actions based on their achievability and on the assumption and principle of conservation success through greater community participation and the equitable distribution of benefits to the people.

The action plan addresses the direct conservation and essential measures that support conservation. The direct conservation action include in-situ conservation (establishment of parks, biological corridors, conservation areas, promoting conservation of wild crop relatives and wild plants for food production, conservation of forest management units etc.) and ex-situ conservation (expansion of botanical garden and arboretum and establishment of branch botanical gardens, capacity building etc.).

The essential measures supporting the conservation action includes building the scientific knowledge base, biodiversity surveys and monitoring, incorporation of biodiversity in related strategies and plans, strengthening of biodiversity in education and awareness and the encouragement and increase of international and regional cooperation in biodiversity management and conservation.

2.2 Implementation and Overview of Progress of NBSAP

The implementation of the National Biodiversity Strategy and Action plan and its contribution to fulfilling Belize's obligations under the various articles and thematic and cross cutting areas of the UNCBD are discussed in each of the following articles of the convention.

Article 9 - Ex-situ conservation

Progress made in Ex-situ conservation has been primarily through initiatives led by the private sector and conservation groups supported by the Government of Belize. This includes the establishments of several breeding programmes for species of concern such as the Iguana (*Iguana iguana*), Morelet's Crocodile *(Crocodylus moreletii),* and the Hicattee (Dermatemys *mawii).* Several herpetariums, aquariums and animal rehabilitation and repopulation programmes focusing on the release of animals back into the wild (Large Cat Rehabilitation Programme, Harpy Eagle Reintroduction Programme, Rescue Centre (Monkey Bay Wildlife Sanctuary) have also been realized. The Belize Zoo continues to play a major role in Ex-situ conservation as it maintains a reasonable representation of the flora and fauna of Belize and conducts education and awareness programmes.

A number of small initiatives have been established to maintain botanical gardens and seed banks such as those being implemented by the Tea Kettle Enterprises, the Belize Botanical Garden and the University of Belize. A silviculture project is also being established for the commercialization of Xaté palms (*Chamaedorea sp*.). The Government of Belize has designated 50 acres of land for the establishment of the National Botanical Garden and the revision of plans for its establishment is currently ongoing.

Article 10 - Sustainable use of components of biological diversity

Upon its Adoption of the Barbados Programme of Action, as well as other plans and programmes geared towards achieving sustainable development, Belize has initiated a set of comprehensive national plans and strategies, as well as participated in various regional and international initiatives with sustainable development as the focus.

The Southern Development Project funded by the Inter-American Development Bank (IDB), was designed to support economic, social, and physical planning activities. Investments were also be made in rural enterprise and sustainable farming techniques aimed at enhancing economic opportunity and social development in the region. The phasing out of those traditional farming methods which causes increased pressure on the land was also none of the priorities of this project.

In 2006 the Belize National Biodiversity Policy was articulated to provide a frame work for specific actions and measures to be taken at the national, regional and international levels in support of the various issues connected with the sustainable use and conservation of biodiversity. This initiative was aimed primarily at enabling the Nation to Belize to deal effectively with the problem of managing its biological diversity and recognizing that to do so emphasis must be placed on developing policies and legislation which meet the challenges of satisfying local demands for development while at the same time satisfying our commitments to international obligations such as the Convention on Biological Diversity. This policy comes in the wake of the 1998 National Biodiversity Strategy and Action Plan which articulated a number of 'Objectives' in regards to the issues connected with the sustainable use and conservation of biodiversity.

The recently approved Land Management Program (LMP), funded by an IDB loan and counterpart funding from the Government of Belize intends to improve land management in Belize by completing four components – national cadastre and property rights registration, the expansion of land administration, land use planning and development review and land policy reform and ministry-wide strengthening.

The UNDP/GEF and EU funded project "Sustainable Use and Conservation of the Belize Barrier Reef Complex" (1996) supported the Government of Belize in implementing an integrated coastal zone management program by undertaking targeted interventions for biodiversity protection in a sustainable manner.

In 2006 the National Protected Areas Policy and Systems Plan was formulated. The National Protected Areas Policy includes 23 Policy Statements that focused on the National protected areas network, the administration and management of this network and the socio-economic considerations involved with protected areas management. The main goal of the plan is to support the consolidation and sustainable management of a representative and functional national protected areas systems of Belize. The Implementation of the Policy and Systems Plan is ongoing and is being spearheaded by the National Protected Areas Commission.

The Integrated Water Resource Management Policy has been accepted by Cabinet and a new draft bill is up for review by government. In terms of genetic resources, a Bio-safety Commission has been established to assist Belize Agriculture and Health Authority (BAHA) whose functions and objectives are many and includes the prevention and control, the introduction of plant and animal diseases and pests into Belize and regulates and controls the use, quality and suitability of bio-engineered products. Under the BAHA Act, Section 27.-(1) Subject to section 28, no person shall import or offer to bring into Belize any plant, planting material, plant products, bio-engineered products or any restricted article except under a permit issued by the Authority.

Regional projects include the Meso-American Barrier Reef System Project involving Belize, Mexico, Guatemala and Honduras supported by the WB/GEF, with the main objective of enhancing the protection of the ecologically unique and vulnerable marine ecosystems comprising the MBRS, through the strengthening and coordinating of national policies, regulations and institutional arrangements for the conservation and sustainable use of the MBRS.

Another regional initiative is the Mesoamerican Biological Corridor Project (MBC). This regional project is in partial fulfilment of the commitments made by Central American Countries, under the Central American Biodiversity Convention (CCAB), which Belize has signed and ratified. Belize is a signatory to the Tulum Declaration as well. This convention established the Mesoamerican Barrier Reef Project (MBRS) regional project, which calls for sustainable use and protection of the Barrier Reef System and its biodiversity.

Article 11 - Incentive measures

Various programmes with communities adjacent to protected areas have been developed to provide incentives for cooperation and collaboration in conservation. Communities have been employed and incorporated into monitoring, research and other programmes in these areas. Also, there is an ongoing initiative under the implementation of the NPAPSP to formalize and legislate an incentive scheme and programme for the private sector to encourage the designation of private lands for conservation purposes.

Article 12 - Research and training

Research and Training is carried out by both Government and the private sector. Government institutions with dedicated research mandates and programmes in biodiversity management and conservation are The Belize Forest Department, Belize Fisheries Department, Coastal Zone Management Authority and Institute and the University of Belize. Private education institutions and NGOs also are actively involved in biodiversity research.

Government provides support by International and local NGOs and academic institutions to carry out research in Belize. There are presently more than 20 institutions offering research and training opportunities, and many offer educational opportunities for both teachers and students.

The University of Belize (UB) has recently added a B.Sc. Programme in Natural Resource Management and is beginning to take a more active role in addressing conservation issues within the country, assisting NGOs, community-based organizations (CBO) and Government agencies in field activities. This includes the establishment of two marine research stations.

The University of Belize has also established an Environmental Research Institute (ERI) with the financial assistance of the Oak Foundation. The ERI is aimed at advancing the research capacity at the university and its primary goal is to provide sound scientific research with supporting data that may be used in resource management and policy development and implementation.

Galen University is introducing a series of projects such as a summer field course in research and data analysis. A Mopan/Macal/Belize River Watershed Atlas has been developed (Boles, 2009). It is geared at education and public awareness.

Article13 - Public education and awareness

Public education and awareness is carried out jointly by both Government and NGOs. The Ministries of Agriculture and Fisheries and Natural Resources and the Environment has dedicated programmes focused on public education and awareness. Also, The Protected Areas Conservation Trust and the National Protected Areas Commission have programmes geared towards the education of the public on biodiversity and protected areas management. The NGOs both local and international has yearlong initiatives also targeting the sensitization of the general public on biodiversity issues and conservation.

The Ministry of Agriculture has developed an Integrated Farming System which is based on the principle of a closed system. This strategy should promote best practices and resource conservation and reuse.

Finally through the MBRS project and other local initiatives done jointly with the Ministry of Education, syllabi and curricula were developed to include sections on biodiversity and conservation.

Article 14 - Impact assessment and minimizing adverse impacts

The Government of Belize has implemented several major programs, plans strategies and legislation focused on the minimization of adverse impact on biodiversity.

In 1999, the National Environmental Assessment Policy (NEAP) was articulated. This document was aimed at providing an overview of the major environmental issues facing Belize and guiding the Government in the wise use and management of its natural resources. It focused on issues, policies and programs which were considered most critical to Belize. The document provided a blueprint for the Government of Belize to address the environmental problems in Belize and to identify possible areas of assistance that could be provided by donor agencies. The NEAP is currently being revised and updated.

In 1984 the first Country Environmental Profile (CEP) published. The main purpose of this document was to aggregate in one definitive document, the information, data and analyses on national resource and environmental problems as well as to identify possible environmental improvement programs that could be undertaken by the government of Belize and/or the private sector with financial and technical assistance from local and international agencies. This document was revised in 2005 and is currently in use.

In 2005, Belize carried out its National Capacity Self Assessment process whose main goal was to identify and prioritize Belize's Capacity needs to effectively implement three global environmental agreements; namely the United Nations Convention on Biological Diversity (UNCBD), the UN Convention to Combat Desertification (otherwise known as the Un Convention on Land Degradation and Drought – UNCCD), and the UN Framework Convention on Climate Change (UNFCCC). The main product of the NCSA exercise was an Action Plan that serves as a framework for programmes and projects intended to develop and build additional

capacity for the implementation of the three named Conventions. Additional benefits of the process include stakeholder empowerment through increased awareness and education and through their sustained participation during the self-assessment exercise.

In 2006, Belize completed its National Implementation Plan on Persistent Organic Pollutants (POPS). The main objectives of this study were the identification, characterization and quantification of POPs in use, stored, and unintentionally produced or released to the environment. The study aimed to identify and characterize the storage sites, location of sites where products were found, and to identify any contaminated sites. It also established a preliminary basic information system for the management and maintenance of the inventoried amount of POPs in Belize.

A National Bio-safety Committee was formed in November 2002, chaired by the Ministry of Agriculture. Members were given the tasks to review the use of Genetically Modified Organisms (GMOs), draft a policy and legislation for bio-safety and GMO use and make recommendations to address present and future bio-safety issues in Belize. A National Bio-safety Framework (NBF) was drafted with its principal objectives to assess eexisting national capacity in the area of bio-safety involving conducting a systematic survey and analysis of science and technology capacity, biotechnology capacity, genetic resources, national and international legislation in bio-safety, national food safety, animal and plant quarantine (including marine and marine products) and regional capacities for harmonization in bio-safety; establish a baseline on the current status of bio-safety in Belize that will be used to promote public awareness and participation in the development of a National Bio-safety Framework and develop and provide recommendations to the National Bio-safety Committee based on the assessment conducted to create a comprehensive National Bio-safety Framework.

Twenty-seven Parent Acts and regulations exist which has direct relevance to biodiversity issues. Laws directly governing sustainable use and protection of biodiversity include the Wildlife Protection Act, National Parks Systems Act, Fisheries Act, Ancient Monuments and Antiquities Act, Private Forest (Conservation) Act, Forest Fire Protection Act, the National Institute of Culture and History Act, and the Environmental Protection Act.

Article 15 - Access to genetic resources

In 2005 Belize began the preparation of the Biosafety Framework to address the importation of Genetically Modified Organisms (GMOs) or Living Modified Organisms (LMOs). A biosafety protocol is now being developed to encompass LMO's in order to promote biosafety, as well as the shared benefits of LMO's. However, there is no policy to guide the utilization of local genetic resources to ensure optimum benefits to the country or to protect the natural populations and sources of genetic material.

Article 16 - Access to and transfer of technology

The spirit of this article is captured in most programs geared at the sustainable utilization, management and conservation of biodiversity in Belize.

Article 17 - Exchange of information

The Belize Clearing House Mechanism (CHM) was established in late 2005 with assistance of the GEF/UNDP and it is now an additional tool that is available to assist in Biodiversity management. Further development of the CHM site is ongoing. The Local NGO organizations in conjunction with the Government of Belize, established the Belize Biodiversity Information System (BBIS) database was put in place. This system is maintained by the NGOs. The Government of Belize established the Land Information Centre (LIC), which is also the central node of the Centre for Environmental Data Systems (CEDS). The LIC is functional and available to the general public.

A product of the MBRS Project was the development and implementation of a standardized data management system for ecosystem monitoring and facilitates the dissemination of its outputs throughout the region. As part of this objective, the MBRS project has launched a Regional Environmental and Information System in 2003.

Article 18 - Technical and scientific cooperation

Belize has played an active role in global environmental management by its ascension to several international agreements. Some of the main agreements are the Cartagena protocol on Biosafety under UNCBD; Kyoto Protocol under UNFCC; Basel Convention on Trans-boundary

Movements of Hazardous Wastes and Disposal; and Convention on International Trade in Endangered Species of Fauna and Flora.

Article 19 - Handling of biotechnology and distribution of its benefits

Very limited work has been done in this area since there is no formal bio-prospecting program in Belize. In through funding from GEF, a draft bio- prospecting policy was developed for the marine environment. This policy elaborated on the handling and distribution of benefits derived from biotechnology. The Ministry of Natural Resources has been engaged in some agreements for the extraction of medicinal plants and material.

2.3 Domestic and International Funding

Article 20-Financial Resources: The Government of Belize via its Departments and Institutions supports the implementation of programs and activities related to the UNCBD through its annual budget. This support is primarily in the form of employees' salaries, infrastructure and equipment purchases and the logistic support necessary for the execution of extension and field activities. Most project and capital programs are supported by various donors namely, UNDP/GEF, EU, FAO, JICA/JOCV, World Bank, WWF Belize, WCS, TNC, MARFUND, Oak Foundation, Summit Foundation, Government of Netherland , etc. Significant funding is also secured by the local NGOs and are directly applied to conservation programs and activities in their various areas of focus.

The Protected Areas Conservation Trust provides funding to various conservation programs in protected areas management, research, capacity building in institutions and organizations with mandates in natural resource management and conservation and education and advocacy programs.

Belize has also forged strong partnership arrangements with institutions such as the Smithsonian Institute, WCS, Oceanic Society and Earth Watch who have maintained permanent research stations and programs in Belize with focus on biodiversity and conservation.

2.4 Effectiveness of National Biodiversity Strategy and Action Plan

Significant progress has been made in the implementation of the National Biodiversity Strategy and Action Plan for Belize. This document has been used as a reference and has influenced the policy and direction of the various programs implemented by the government and both the International and local NGOs working in Belize. The Government of Belize's direct achievements and implementations of the NBSAP are accentuated in the following examples:

- The development of legislation to monitor and control the discharge of pollutants (Environmental Protection Act 1992);
- The Development of the National Protected Areas Policy and Systems Plan which is geared towards species conservation as well as maintaining the integrity of certain critical habitats;
- The establishment of a Coastal Zone Management Authority for more comprehensive planning and management of the Coastal Zone of Belize;
- The declaration of the Belize Barrier Reef System in 1996 as a World Heritage Site under the UNESCO World Heritage Site Convention.

However, there is a need to review the NBSAP in an effort to update its strategies and timelines to ensure its effective implementation. More focus should be given to the priority areas in the document and government should formally ensure its integration into the various conservation and biodiversity management programs.

CHAPTER III: SECTORAL AND CROSS-SECTORAL INTEGRATION OR MAINSTREAMING OF BIODIVERSITY CONSIDERATIONS

3.0 Government Approach to Biodiversity

The Government of Belize's approach to sectoral integration of biodiversity issues is based on the strategic interventions of the governmental entities responsible for biodiversity, environmental or natural resource management. This multifaceted approach enables the government sector that administers and guides the various thematic areas to focus on developing cross-sectoral plans and policies which integrate biodiversity ecosystem-level approach with planning and implementation.

3.1 Legal and Regulatory Framework

Existing measures and programmes currently in place at the national level are based on legislation enacted by the Government of Belize. The legal framework provides the basis on which biodiversity may be integrated into regulations and policies. Presently, Belize has a number of significant pieces of legislation, some of which are in the process of being amended, and others, which require amending to meet tomorrow's needs.

There are two main Government entities which are responsible for protected area management, the Fisheries Department and the Forest Department. In addition to these two entities, a statutory body, the Institute of Archaeology is responsible for protected cultural sites and natural formations. There are approximately twenty-seven (27) pieces of legislation, reinforced by their supporting regulations, which have direct incidence on the administration, management, and use of Belize's biological resources. Of note, is that presently there is no single piece of legislation that independently and directly addresses specific biodiversity considerations. However there are multiple government institutions that assist in the integration and implementation of biodiversity considerations in existing policies, strategies and plans. The present approach taken therefore, may sometimes fail to address the specific biodiversity issues related to use and overuse, exploitation or the impacts of sustainable development on biodiversity.

The main pieces of legislation directly related to the sustainable management of Belize's natural and cultural resources include ***the Forest Act, the National Parks System Act, the Fisheries Act, the National Lands Act, Wildlife Protection Act and the National Institute for Culture and History Act.*** However, other pieces of legislation may be seen as supporting elements which envelope the principles of rational and regulative use, these ***are the Environmental Protection Act, the Land Utilization Act and their regulations.***

3.1.1 The Forest Act

The original legislation dates back to 1927 and deals with the protection of forests and mangroves. This Act, administered by the Belize Forest Department, seeks to regulate the exploitation of forest produce in nationally held lands. It also regulates the collection of medicinal plants for local use or for research purposes (i.e. identification and cataloguing). However, a scientific collection/research permit for medicinal plants can also be issued under the Wildlife Protection Act.

Established in the 1920s, the Belize Forest Department is one of the oldest Government of Belize institutions. It is one of five (5) departments within the Ministry of Natural Resources and the Environment. Its Forest Policy seeks "to create, maintain permanently, and develop a national forest estate taking into consideration the need for agricultural development and the protection of the environment." Up to the 1990s, the primary focus of the Forest Department had traditionally been timber resource exploitation; however, its scope of work of the Department has broadened to include protected areas, wildlife, and biodiversity management, and other non-traditional themes such as law enforcement and institutional development and collaboration. Along with the Fisheries Department and the Institute of Archaeology it administers the one hundred and two (102) protected areas throughout Belize.

3.1.2 Forests (Mangrove Protection) Regulations

The Forests (Protection of Mangrove) Regulations prohibits any alteration of mangroves (this includes cutting and defoliating of mangroves) on any land without a permit. In most cases, a multi-agency assessment is conducted prior to determining whether a permit is issued or denied. A permit may be denied if the proposed cutting is in proximity to areas known to be of high ecological value or where the cutting may undermine current efforts to protect critical habitats

species. Alterations that involve dredging or filling can be authorized only in "exceptional circumstances".

3.1.3 The National Parks System Act

The National Parks Systems Act provides for the creation of Protected Areas to be kept mainly in their natural state, with use being limited to scientific study, education, tourism, and recreation. Fishing is permitted under special license. This Act enables the Government of Belize to create, administer, and manage National Parks, Wildlife Sanctuaries, Natural Monuments, and Nature Reserves in accordance with IUCN guidelines.

3.1.4 Wildlife Protection Act

This Act provides mainly for the regulation of hunting and the commercial dealing in wildlife. It prohibits hunting of specific species, in closed areas and of immature wildlife or females accompanied by their young. It does not give a purpose or objective and does not apply to fish. Neither does it address the introduction of wild animals not normally resident in Belize which can cause disruption and ecological havoc. It is administered by the Forest Department of the Ministry of Natural Resources and the Environment (MNRE).

3.1.5 The Fisheries Act

The Act, administered by the Fisheries Department, seeks to control all aspects of commercial fishing by establishing regulations controlling minimum sizes and types of fishing equipment used. The territory of enforcement is marine, but extendable to the inland waters and rivers by order of the Minister. There exist overlaps in legislation between this Act and the Wildlife Protection Act in that the Fisheries Act is responsible for the commercial aspects of all or any of the varieties of marine or fresh water animal or plant life, which is also addressed as part of the responsibility of the Forest Department in the Wildlife Protection Act.

The Fisheries Department is a department within the Ministry of Agriculture and Fisheries. Its major policy objective for the fisheries sector is to maintain a sustainable yield of the fisheries resources while continuing to contribute to food production, foreign exchange earnings and to improved nutritional status in the longer term. It seeks to encourage and promote sustainable fish production systems in both sea areas and inland fisheries, diversify production of the

underutilized fish species in traditional waters so as to reduce pressure on high valued fish, encourage deep sea fishing to take advantage of the exclusive economic zone, increase value added activities in the production system, fish processing and prepared fish food, improve management of the ecological systems and marine environment of fish habitats, expand production of non-traditional fish species, retain product quality and remain competitive in export markets, improve the economic and social well-being of fishers and their communities.

3.1.6 The Environmental Protection Act

The Environmental Protection Act provides the Government and the Department of the Environment with comprehensive environmental protection authority it needs in order to address modern environmental problems. The Act also grants the Department of Environment broad regulatory and enforcement authority for the prevention and control of environmental pollution, conservation, and management of natural resources, and environmental impact assessment (EIA).

The Department of the Environment (DoE) in the Ministry of Natural Resources and the Environment is the entity that regulates anthropogenic interventions that have an impact on the natural environment and ecosystems in Belize. The DoE regulates development through a planning instrument required for anthropogenic interventions beyond an established threshold that would deleteriously affect the natural environment if mitigating measures are not introduced, maintained, and monitored for effectiveness. The Environmental Impact Assessment (EIA) is an important planning tool that seeks to address potential anthropogenic impacts by introducing measures that are conducive to maintaining a healthy and functional natural environment. The National Environmental Appraisal Committee (NEAC), a multi-disciplinary cross-sectoral legally instituted body, reviews the EIA and advises the Department of the Environment on the most rational approach to the proposed development.

3.1.7 Ancient Monuments and Antiquities Act

The National Institute of Culture and History (NICH) was created by the Government of Belize in 2003 to bring together diverse government departments, which had historically worked to preserve and promote Belizean culture; and, to allow for the management of newer endeavours. The Institute of Archaeology under NICH is directly responsible for the administration of the

Ancient Monuments and Antiquities Act. Section four of this act states that ”all ancient monuments and antiquities however situate, whether upon any land or in any river, stream or watercourse, or under territorial waters of the country, and whether or not before the date of the commencement of this Act in private ownership, possession, custody or control, shall absolutely vest in the Government”.

3.1.8 Cayes Development Policy

The Cayes Development Policy has served to consolidate existing legislations, and to promulgate regulations and guidelines applicable to the development and sustainable management of all the cayes within the coastal zone of Belize. The Policy calls for a detailed planning system to control the use of land, and water development to cover the entire coastal zone. The policy also demarcates/recommends zones and a system of assigning development codes for the cayes.

3.1.9 Belize Tourism Policy

The National Tourism Strategy Plan developed for Belize was prepared with the goal of developing a strategy and action plan to stimulate economic growth while protecting the country’s environmental and natural resources and ensuring benefits to locals. The Belize Tourism Policy guides the development of all types of tourism. The new tourism policy is predicated on policies to also look at significant changes in the external environment.

3.1.10 National Lands Act

The Act is designed to establish a framework for the management of national lands. The Act applies to all lands (other than Reserved Forest) not already "located" or granted, including any lands acquired by or ceded to the Crown. They are classified as town, suburban, rural, mineral lands and beach lands.

3.1.11 Protected Areas Conservation Trust

A national trust was established in June 1996 by the Government of Belize through the application of a tax levied on non-Belizeans departing from Belize through any of the border points throughout the country. The Protected Areas Conservation Trust (PACT) is an environmental trust fund of US$2,500,000.00 and an endowment fund of US$1,000,000.00 designed to enable and empower conservation, preservation, enhancement, and management of

Belize's natural resources and protected areas while supporting national development goals. PACT efforts are supportive and essential to meeting the requirements of the UNCBD, by providing financial support for direct conservation projects or indirectly, through funding for alternative livelihoods projects for stakeholders involved in the management and use of Belize's protected areas.

3.1.12 The Donor Community

The existing legal and regulatory framework facilitates the rational utilization of biological diversity for alternative livelihoods and poverty alleviation. Enabling local communities, adjacent to protected areas, to be managers of the natural (biological) resources provides them with alternative livelihood, therefore acting as incentives for the conservation and sustainable use of biological diversity

Opportunities are provided under capacity building programmes such as UNDP/GEF and the PACT Grant Programme. Most UNDP/GEF projects which incorporate capacity building have been carried out by groups that are co-managers of protected areas or by buffer communities around these areas. The training activities have resulted in co-management organizations being able to better carry out their responsibilities of protection and enforcement, environmental education, data collection and reporting. The GEF Small Grant Program (GEF-SGP) has taken the lead in funding several new co-management groups and has witnessed their growth, the increased visibility of the group and the work being done, and the respect and recognition the groups have attained.

The capacity building activities with communities have increased the number of stakeholders with special skills who are able to secure alternative livelihoods. For the most part, the capacity building training has focused on ecotourism and sustainable agriculture which coincides with national priorities. This has resulted in decreased reliance on fishing, hunting, unsustainable farming practices, and illegal extraction of forest products. The improved capacity, the realization of dwindling natural resources, and monetary gains from alternative livelihood activities, has resulted in grantee organizations and communities exhibiting a sense of ownership for the projects and true appreciation for the environment (UNDP SGP, 2006).

The Community Management of Protected Areas Conservation Programme (COMPACT) is a worldwide programme funded by the GEF Small Grants Programme and the United Nations Foundation. The programme has as its primary objective to 'demonstrate how community-based initiatives can significantly increase the effectiveness of biodiversity conservation at World Heritage Sites, by complementing and adding significant value to existing conservation programmes'. In Belize, COMPACT is seeking to preserve the integrity and character of the Belize Barrier Reef Reserve System –World Heritage Site (BBRRS-WHS) by developing and supporting a range of conservation and sustainable livelihood activities through transparent and democratic partnerships with coastal communities and other stakeholders (UNDP Belize Website).

3.1.13 National Capacity Self-Assessment

In 2005, Belize conducted its National Capacity Self Assessment (NCSA) to identify its capacities to effectively address the requirements of the UNCBD. The NCSA process included a Biodiversity Stock-Take Report, a Thematic Assessment and a Legal and Cross-cutting Issues Assessment that were compiled in order to describe previous activities that addressed those UNCBD requirements, current conditions within the country, stakeholders involved and systemic, institutional and individual capacities that exist.

The Government of Belize is undertaking a follow-up project focused on 'Strengthening Institutional Capacities for Coordination Multi-sectoral Environmental Policies and Programmes'. The overall objective of this project is to coordinate Belize's natural resource and environmental policies in such a way that they create synergies for the national implementation of the United Nations Convention for Biodiversity (UNCBD); United Nations Convention to Combat Desertification and Drought (UNCCD); United Nations Framework Convention on Climate Change (UNFCCC).

3.1.14 Sustainable Land Management

The Government of Belize is cognizant of the impending developments in the productive, urban and commercial sectors and the increase in demand for land resource. Enhancement in sustainable land management capacities and the strengthening of the policy and legislative frameworks are critical at this point. Through the Forest Department, the Government of Belize

is executing the 'Mainstreaming and Capacity Building for Sustainable Land Management (SLM)' project to establish 'an enabling environment for sustainable land management enhanced through mainstreaming, capacity building and improvement in policy, legislative and institutional framework'. This project was developed through a consultative process and in line with the findings of Belize's completed NCSA initiative and the recommendations of the National Awareness Seminar of the UNCCD.

The project builds on the existing baselines and ongoing projects supporting enhanced policy and planning frameworks such as the Land Management Project, FAO-Forest Policy Project and Belize Rural Development Project. It also provides an opportunity to incorporate SLM into programs designed to support coordination and capacity building among local governments.

This GEF-funded project is being executed by the Ministry of Natural Resources and the Environment through the Forest Department for three (3) years at a cost of USD$1,150,000 .

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

3.2.1 The National Protected Areas System

Belize's main approach to biodiversity conservation has been through the creation of the Protected Areas System of Belize. Presently, 102 protected areas of different categories, sizes and designations in the marine and terrestrial realm comprise the protected areas system of Belize. Consequently, Belize has made significant advances in its development of 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 habitats. According to a national study, protected areas with legal underpinnings cover 22.6% of the country.

In accordance with the Programme of Work for Protected Areas, Belize undertook to develop a National Protected Areas Policy and System Plan (NPAPSP). The Policy is Belize's Agenda on protected areas. The Plan has as its foundation a set of underlying principles, **the *Ecosystem Approach*, the *Precautionary Principle*, the *Importance of Science*, the *Importance of Local***

and Indigenous Community Knowledge, Monitoring and Evaluation **and** ***Cost-effectiveness and Efficiency.***

Consequently, the Plan for the protected areas of Belize has been developed to achieve four goals:

1) A ***comprehensive protective area policy that*** sets the general policy framework in which the National Protected Area Systems Plan is to be implemented;

2) **An assessment and analysis of the Protected Area System** which set out to assess the present protected area network and its characteristics in terms of comprehensiveness, representativeness, adequacy, balance and coherency. Recommendations were made to optimise these qualities in a consolidated system;

3) ***Procedures for Management and Sustainable Use*** that assessed the current administrative and management procedures at system and site level and recommendations for improvements. This included all governance issues ensuring that the protected area system and its supporting legal instruments accommodate the full range of interests and rights in natural resource management, and;

4) ***Strengthening Management and Monitoring*** which covers the need to achieve effective protected area management through sound procedures, capacity building, adequate financing, obtaining and making good use of information, and through monitoring and self-assessment.

The management of protected areas is carried out through partnerships between the public sector and civil society partners. The co-management agreements are signed between the Government of Belize and NGOs or CBOs, and outline the roles and responsibilities of the parties to the agreement and specify the duration of the partnership. Generally, the civil society partner is the on-ground manager with the Government of Belize providing administrative, legal, and technical support on matter related to the management of the protected area.

Management Plans have been designed for several protected areas. These plans are based on a formally endorsed management plan template developed along with protected areas co-managers. The management plans integrate the principles of sustainable development and wise

use of the natural resource for the benefit of the local communities and indigenous groups dependent on the resource, and with a central focus on biodiversity conservation.

3.2.2 Regional Partnerships

The Government of Belize is an active member of the Central American Integration System (SICA) and its environmental arm, the Central American Commission for the Environment and Development (CCAD). Through SICA, Belize is a member of the *Organization for the Fishing and Aquaculture Sector of the Central American Isthmus* (OSPESCA) and is part of the project "Regional Plan for the Inland Fisheries and Aquaculture Project" (PREPAC).

The CCAD pursues regional cooperation on aspects pertaining to conservation and natural resource use among its member states. The regional strategies developed and agreed by the member states chart, from a regional perspective, Belize's direction on protected areas, forest, climate change, fire management, environment, and biodiversity issues. Regional projects such as the Mesoamerican Biological Corridors Project and the Mesoamerican Barrier Reef System Project were executed under the CCAD as part of their regional conservation strategies and plans.

The Mesoamerican Barrier Reef System (MBRS) Project assisted in concretizing the Tulum Declaration, which calls for the sustainable use and protection of the Barrier Reef System and its biodiversity. The MBRS Project was funded by the Global Environment Facility (GEF) and the Governments of Belize, Guatemala, Honduras, and Mexico. It was implemented by the World Bank and executed by the four countries through CCAD. The MBRS project was executed by the Project Coordinating Unit (PCU) on behalf of CCAD, with headquarters in Belize City, Belize. However, it should be noted that funds available for the implementation of the project activities were shared among the four countries, on an annual basis, according to its operational plan. More than $11.6 million US dollars were disbursed to the four countries of the MBRS region during the life of the project.

The Fisheries Department is involved in other trans-boundary and regional projects (e.g. TRIGOH, BEMAMCCOR, CRFM, and PREPAC).

The Belize Agriculture and Health Authority conducts activities that are oriented towards agricultural health monitoring at the national, trans-boundary and regional level, as well as carry

out capacity building activities (e.g. international training and short-term external training), and also has established technical partnership with PAHO and IICA. BAHA is also the implementing agency for international initiatives (e.g. UNCBD-Biosafety and FAO projects), and has formal MOUs with various international agencies including PAHO, OIE and USDA APHIS.

Belize has signed the United Nations Framework Convention on Climate Change (UNFCC) and the United Nations Convention to Combat Desertification, Land Degradation and Drought (UNCCD). This has lead to the establishment of a National Climate Change Adaptation Programme. The Caribbean Community Climate Change Centre (CCCCC) was officially established in August, 2005 with its headquarters in Belmopan, Belize. The Centre is implementing projects designed to prepare for and to reduce the harmful effects of climate change and sea level rise and seek ways in which CARICOM can benefit from any opportunities that may result from climate change. Additionally, the CCCCC positions the Region to prepare itself for work arising from the United Nations Framework Convention on Climate Change (UNFCC). The Centre is also serving CARICOM as a key node for information and initiatives regarding climate change by coordinating the CARICOM's response to managing and adapting to climate change.

Belize has also signed several important agreements on Biodiversity at the regional level. Belize is signatory to the Convention for the conservation of Biodiversity and the Protection of Priority Areas of Central America (1992), and joined the Central American Alliance for Sustainable Development (ALIDES) in 1994. Belize has also signed the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC). Other regional conventions signed include the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (The Cartagena Convention) and the Protocol Concerning the Cooperation in Combating Oil Spills in the Wider Caribbean Region (ratified Dec. 11, 1997), the Convention on Nature Protection and Wildlife Preservation in Western Hemisphere (The Western Hemisphere Convention), and signed the Belize/ Mexico Bilateral Agreement (signed September 1991).

3.2.3 International Agreements

Belize is party to several international and regional conventions that make specific mention of environmental protection and/or biodiversity conservation (see Table 4).

Belize signed the Convention on Biological Diversity on June 13 1992 in Rio de Janeiro, Brazil and ratified it in December 1993. Belize is also party to the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) since 1981; the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) in 1989; The International Convention for the Regulation of Whaling (1982); the Convention on the Conservation of Migratory Species of Wild Animals, Bonn (The Migratory Species Convention); and the Convention Concerning the Protection of the World Cultural and Natural Heritage (The World Heritage Convention) ratified November 6, 1990.

Other important conventions that Belize has signed or ratified related to biodiversity protection and conservation are: the Convention on the Inter-Regional Organization for Plant and Animal Health (OIRSA); the International Plant Protection Convention acceded May 14, 1987; the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Ozone Depleting Substances acceded Sept. 7, 1997; the International Convention for the Prevention of Pollution from Ships and the 1978 Protocol (MARPOL) ratified Aug. 26, 1995; the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (BASEL) acceded Apr. 21, 1997; the UN Convention of the Laws of the Sea ratified Aug. 13, 1983; the 1992 Protocol to the International Convention on Civil Liability for Oil Pollution Damage (1972) and 1992 Protocol to the Convention Establishing the Fund for Compensation for Oil Pollution acceded July 1, 1991; and the Convention on Persistent Organic Pollutants (POPs) signed 2002.

Table 7: International Conventions relating to Biodiversity Management

International Convention/ Agreement	Date Ratified
United Nations Convention on Biological Diversity	December 30, 1993
Convention for the Conservation of Biodiversity and Protection of Priority Areas in Central America	June 5, 1992
The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (The Cartagena Convention) and the Protocol Concerning the Cooperation in Combating Oil Spills in the Wider Caribbean Region	December 11, 1997
Convention on the Conservation of Migratory Species of Wild Animals, Bonn (The Migratory Species Convention)	

Convention on Nature Protection and Wildlife Preservation in Western Hemisphere (The Western Hemisphere Convention)	
Convention Concerning the Protection of the World Cultural and Natural Heritage (The World Heritage Convention)	November 26, 1990
The Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR Convention)	Acceded February 26, 1998
The United Nations Educational Scientific and Cultural Organization's UNESCO's Man and the Biosphere (MAB) Programme 1971 Biosphere Reserves	
The Convention International Trade of Endangered Species of Wild Flora and Fauna (CITES)	August 19, 1986
Inter American Convention for the Protection and Conservation of Sea Turtles	
United Nations Convention to Combat Desertification	July 14, 1998
Convention on the Inter-Regional Organization for Plant and Animal Health (OIRSA)	
International Plant Protection Convention	Acceded May, 1987
United Nations Framework Convention of Climate Change	October 31, 1994
Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Ozone Depleting Substances	Acceded September 7, 1997
Central American Commission on Environment and Development (CCAD) and the Central American Alliance for Sustainable Development (ALIDES) of 1994	December 12, 2000
Belize/ Mexico Bilateral Agreement (signed September 1991)	
UN Convention of the Laws of the Sea	August 13, 1983
1992 Protocol to the International Convention on Civil Liability for Oil Pollution Damage (1972) and 1992 Protocol to the Convention Establishing the Fund for Compensation for Oil Pollution	Acceded July1, 1991
International Convention for the Prevention of Pollution from Ships and the 1978 Protocol MARPOL	August 26, 1995
Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (BASEL)	Acceded April 21, 1997
Convention on Persistent Organic Pollutants (POPs) (signed 2002)	
Convention on the Prohibition of Development and Stockpiling of Biological and Toxic Weapons, and on their Destruction	Acceded December 11, 1997
Convention Concerning the Protection of Workers from Ionizing Radiations	December 15, 1983

Source: Gillett et al. 2006; Belize National Biodiversity Policy.

3.3 Mainstreaming biological diversity through the education system and capacity building

The education institutions at the primary, secondary and tertiary levels have included formal training in biodiversity conservation in their curricula. Nationally, conservation and natural resources-related topics have been integrated into formal curricula and are dedicated subjects especially in the Primary School System. All tertiary institutions have formal courses, with two having an associate degree course in natural resources management and environmental science.

Most schools at the primary secondary and tertiary levels include formal or informal training in biodiversity use and conservation. Most secondary schools include courses, lectures, and field biology courses in their program. All tertiary institutions have formal natural resources management courses in their curricula, while some have associate degree levels in either Environmental Sciences, or Natural Resources Management.

The civil society partners engaged in biodiversity conservation and management prioritise public education and awareness as part of their programs and have been involved in training on delivery of educational information to schools. At the same time, most NGOs and CBOs undertake a certain level of informal and occasionally formal educational programs. Research and training is of high priority to these institutions. The Fisheries Department, the Forest Department and the Protected Areas Conservation Trust (PACT) have also been active in outreach and education efforts.

PACT offers a yearly scholarship programme and is funding the four-year Natural Resources Management Programme (NRMP). The Smithsonian Institute is conducting research as well as providing scholarships for technical training for University of Belize Natural Resource Management students.

Public education and training opportunities at the primary and secondary school levels as well as for teachers and for the greater Belizean public have been facilitated through many different agencies. Institutions actively involved in education, training and awareness programmes include the Tropical Education Centre (TEC) of the Belize Zoo, the Belize Audubon Society (BAS), the Sibun Watershed Association (SWA) via an outreach programme targeting schools via the Watershed Mobile Classroom, Programme for Belize (PfB) through educational opportunities at Hill Bank and La Milpa field stations, Las Cuevas Field Station in the Chiquibul Forest, the

Mesoamerican Barrier Reef System Project, The Nature Conservancy (Freshwater Initiative and spawning aggregate studies) and other regional and international organizations working in Belize also provide educational materials, workshops and experiences. Belize Tourism Industry Association (BTIA) and the Belize Tourism Board (BTB) provide tour guide training programmes.

CHAPTER IV - CONCLUSIONS: PROGRESS TOWARDS THE 2010 TARGET AND IMPLEMENTATION OF THE STRATEGIC PLAN

4.0 General Introduction

Belize places great emphasis in the protection of its environment and natural resources which is essential in sustaining the tourism and agricultural sectors that are the backbone of the country's economy. The implementation activities related to conservation of biological diversity in the country is relevant to the goals of the UNCBD. Many of the national goals given in the NBAP 2007 that is basically consistent with the strategic goals of the UNCBD.

While it is difficult to measure how well the 2010 targets are being met since the set of accepted indicators are too broad and general, the assessment of accomplishments made so far would indicate that substantial effort and progress has been made and in certain instances some of the targets may be very well exceeded. There exist much qualitative information supported by some quantitative data reported in the national environmental statistics report of 2006 and other national reports but there exists the need to update some of the existing data and to develop meaningful, relevant and practical indicators at the national level.

Hence data, information, and statistics that are related to some of the goals and targets exist for some but may be more qualitative for others.

4.1 Progress towards the 2010 Target

Provisional framework of goals, targets and indicators to assess progress towards the 2010 Biodiversity Target

GLOBAL GOALS AND TARGETS
Protect the Components of Biodiversity
Goal 1. Promote the conservation of the biological diversity of ecosystems, habitats and biomes
Target 1.1: At least 10% of each of the world's ecological regions effectively conserved. Target 1.2: Areas of particular importance to biodiversity protected
Belize has 22.6% of its total national territory under some form of protection. There is 34.9%

terrestrial land protection and 10.6% marine area protection (BEO, 2009).The majority of Belize's protected areas are for the sustainable use and management of its resources. Belize has 102 protected areas. In 2001, Meerman and Sabido identified 87 distinct types of terrestrial and marine ecosystems. The findings included a total forest cover of about 67.4% over Belize's land mass.

These are in line with the country's commitment to biodiversity conservation and would indicate that Belize has exceeded the 2010 target set to promote the conservation of the biological diversity of ecosystems, habitats and biomes.

Goal 2. Promote the conservation of species diversity

Target 2.1: Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups.

Target 2.2: Status of threatened species improved.

In order to document the status of biological species diversity, Belize has taken significant measures to protect and reduce the decline of the present inventory of its flora and fauna. The Wild Life Protection Act (Rev. Edition 2003) has been effective in protecting many of the threatened and endangered species identified in the IUCN Red List to the extent that many of these species have relatively healthy and stable populations in Belize. Species such as the Morelet's crocodile have become so abundant that other wildlife management measures may need to be implemented to address this issue. Other legislation such as the Forest Act and Fisheries Act has also played a significant role in ensuring in preventing the decline of commercial species such as conch and Nassau grouper.

The Fisheries department has enacted laws that prohibit the harvesting of certain species, and have declared "open and close" season for various fish species including lobster and conch. Recently Fisheries Regulations were enacted to totally protect herbivores such *Scaridae* and *Acanthuridae* families. Certain spawning and aggregation sites have been declared as protected areas and marine reserves have been zoned to include ***"No Take"*** zones for areas that have been heavily exploited to allow for replenishment and restocking in these and adjacent areas.

Studies by the Panthera organization are currently being conducted to determine the health of the Jaguar (*Pantera onca)* populations which is being used as important indicator species for Belize as the presence or lack thereof of this top predator can reveal the health of Belize's forest ecosystems.

Government of Belize's co-management agreements with NGO's and CBO's continues to serve as an effective tool to promote the conservation of species diversity in Belize. The country has partnered with approximately fifty different organizations in Belize and the co-management approach has been relatively effective however, the approach may be improved to increase efficiency.

One of the major challenges confronting Belize is that limited information exists on most of the species diversity, both terrestrial and marine. In addition these studies may be deposited and dispersed among various local institutions with limited sharing occurring. Much of the knowledge gained of Belize's marine diversity has been from studies conducted by the Smithsonian Institute. While the Environmental Impact Assessment process has assisted to a small extent in obtaining additional baseline data for some of these species, there exists the need to train more professional in the field of taxonomy to assist in inventorying Belize's species diversity.

Goal 3. Promote the Conservation of Genetic Diversity

Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.

The conservation of Belize's genetic diversity is being addressed primarily through the implementation of Belize's Biodiversity Strategy and Action Plan, The National Environmental Action Plan, and conservation efforts by several organizations that are presently conducting on-going programmes targeting specific species under threat of over-exploitation. The following are activities either recently implemented, or on-going, that have as its broad goals the restoration of or the maintenance of populations of certain species experiencing a relatively high level of decline:

1. Harpy Eagle reintroduction Programme being conducted by the Belize Zoo and Tropical Education Centre.
2. Private Programme for the re-introduction into the wild captured species (Forest Department and Wildlife Care Centre)
3. Cat Rehabilitation – (Lefeline 2000, and FD).
4. Nassau Grouper – aggregation site monitoring (Belize Fisheries Department, BAS, FON, TIDE, and Green Reef).
5. Conch Surveys (FD) as well as a population status report prepared as per CITES requirements (Fisheries Department, 2006). The population status report indicates that the conch is being harvested below the Maximum Sustainable Yield (MSY).
6. A lobster status and shrimp stock survey will be conducted by the Fisheries Department to address declining yearly catches. New legislation is being considered to address issues associated with unprocessed, partially processed and fully processed meat.
7. Darwin initiative for Xate Survey.

8. Rescue Centre (Monkey Bay Wildlife Sanctuary).

The exportation of several forest species have been restricted to preserve the over harvesting of these species. In addition, the Forest Department has since 2005 transitioned from the granting of short term small logging licenses to long term sustainable forest licenses that places the onus on the license holder to utilize the resources in accordance with sustainable forest plan approved by Forest Department.

The Forest Department began the implementation of the Toledo Healthy Forest Initiative (THFI) in 2004 to assist in the alleviation of poverty in the poorest part of the country targeting primarily the indigenous population to become involved in the sustainable management of the forest resources surrounding their communities. Through this effort the THFI hopes to achieve the perpetuity of forests and forest resources that are the traditional mainstay for these communities and to use this project as a model for sustainable forest management and a community forest approach that could probably be replicated in other parts of the country.

The genetic diversity of crops, livestock, harvested species of trees, fish and wildlife are conserved primarily in-situ conservation programs supported by a few ex-situ programs, such as the Belize Zoo, small arboretums and a herbariums in the Forest Department.

A number of small initiatives have been established to maintain botanical gardens and seed banks such as the Tea Kettle Enterprises, the Belize Botanical Garden and the University of Belize. A silviculture project is also being established for the commercialization of Xaté palms (*Chamaedorea sp*.).

The Government of Belize has designated 50 acres of land for the establishment of the National Botanical Garden and the revision of plans for its establishment is currently ongoing.

Promote Sustainable Use

Goal 4. Promote sustainable use and consumption.

Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.

Target 4.2. Unsustainable consumption, of biological resources, or that impact upon biodiversity, reduced

Target 4.3: No species of wild flora or fauna endangered by international trade.

Belize's economy depends on the health of it natural resources and as such the utilization of these resources are for the most part supported by national policies, legislation and action plans targeting the sustainable use of these resources.

The Fisheries Department has established an Ecosystems Management Unit whose goal is *"to promote the conservation and sustainable use of fisheries resources for the benefit of the Belizean people."* (Fisheries Department, 2006). This goal will be achieved by environmental monitoring, educating and providing protection for coastal resources so and to ensure that fisheries legislation is adhered to.

The Forest Department has enacted legislation to restrict the exportation of several forest species in order to prevent the over harvesting of these species and has since 2005 transitioned from the granting of short term small logging licenses to long term sustainable forest licenses that places the onus on the license holder to utilize the resources in accordance with an approved sustainable forest plan.

Several of the logging companies in Belize have already put into action programs for the certification of timber they harvest. Certification is done by independent third party certifiers that have been accredit by the Forest Stewardship Council. This program allows the consumer to make environmentally responsible choices for forest product they purchase.

Belize has been effective in controlling the harvesting, use and trade of all threatened and endangered species and as such does not have the commercialization of wildlife as pets. Exportation of all its natural resources products are done in fulfilment with CITIES requirements.

Address Threats to Biodiversity

Goal 5. Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.

Target 5.1. Rate of loss and degradation of natural habitats decreased

This target is attained to a great extent by Belize's effort in achieving Goals 1 and 4. The efforts placed in the establishment and maintenance of Belize's 102 protected areas have significantly contributed to the reduction and degradation of natural habitats. Despite the pressures that accompany development, new areas have been declared to prevent the loss and degradation of important natural habitats. In terms of marine conservation several spawning and aggregation sites were declared as protected area. In addition, several marine protected

areas have been zoned as "No Take" zone and there has been a general trust to protect Belize's mangrove ecosystem and riparian forest.

Goal 6. Control threats from invasive alien species

Target 6.1. Pathways for major potential alien invasive species controlled

Target 6. 2. Management plans in place for major alien species that threaten ecosystems, habitats or species.

The threat of invasive species is a growing concern in Belize, especially as aquaculture and wildlife husbandry efforts increase. Tokayed geckos are now established on Southwater Caye and can potentially spread to other islands in the area and eventually reach the mainland. Tilapia has invaded many of the lagoons, rivers, and streams. An investigation of the impacts that tilapia and other invasive species impose on native fauna and flora of Belize is necessary if appropriate management responses are to be taken.

Many invasive organisms are introduced through the agriculture and aquaculture industries with GOB support. This includes shrimp, fishes, grasses, and tree species that have been established in ponds and test plots around the country. There is a growing institutional capacity and more complete awareness of introduction pathways with the national quarantine program and the organization of the BAHA

The Ministry of Agriculture with the support of OIRSA and the Belize Agriculture and Health Authority have the main institutional and legal responsibility for the control and prevention of threats associated with alien invasive species. All entry border points in Belize are closely monitored by BAHA and Customs Department in the prevention of importation of alien species. Despite this, instances have occurred where alien invasive species have had to be controlled to prevent their spread such as the Pink Mealy bug which was controlled through the use a biological predator wasp. The Fisheries Department has also embarked in a program to monitor and control the spread of the lion fish in Belize coastal water.

Goal 7. Address challenges to biodiversity from climate change, and pollution

Target 7.1. Maintain and enhance resilience of the components of biodiversity to adapt to climate change.

Target 7.2. Reduce pollution and its impacts on biodiversity

Belize hosts the Caribbean Community Climate Change Center which has assisted greatly in addressing challenges posed by climate change. Belize has recently conducted vulnerability studies at the community level, coastal and marine level and in the agriculture sector. These reports are helping the government and local NGOs to better plan adaptive and mitigation strategies. Studies indicate that Belize's reef's fauna, e.g. corals, as well as several terrestrial flora and fauna like tree frogs are at risk due to predicted impacts associated with climate change.

Belize's National Emergency Management Organization with the support of the Department of Environment and other institutions has prepared a National Hazard Management Plan where sensitive ecosystems have been identified as vulnerable areas to the impacts of hurricanes and other natural disasters and man made disasters such as oil spills.

The EPA has been recently been amended to address pollution issues associated with the development of the new petroleum industry. In addition, the pollution and effluent limitation regulations were amended and a new hazardous waste regulation legislated in 2009 to prevent and control the impacts pollution on Belize's environment.

Maintain goods and services from biodiversity to support human well-being

Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods

Target 8.1. Capacity of ecosystems to deliver goods and services maintained

Target 8.2. Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained.

The targets above mentioned are achieved by the efforts of Goals 1, 4, 5, 6 and 7 since these efforts are all aimed at ensuring that the capacity of ecosystems are maintained thereby sustaining its capacity to provide the goods and services required by local communities. It is important to note that all those involved in the tourism industry, the fishing industry and agricultural activities are dependent on the use of these resources for their daily livelihood and sustenance.

Apart from legislation there are a variety of other responses that have important implications for the sustainable use and development of Belize's resources. One such response is a current project being undertaken by the World Resources Institute (WRI), with funding from the Oak Foundation, and in collaboration with various stakeholder agencies and institutions in Belize, to do an economic

valuation of the coastal ecosystems of Belize. The project objectives are the developing of a methodology for economic valuation in Belize, focusing on the role and importance of marine protected areas. It also aims at developing in-country capacity for economic valuation, to conduct spatial threat analysis, and assessing the economic value of coral reefs in Belize and using this information to enhance MPA management.

Belize has an abundance of fresh water resources; however water quality is becoming a major environmental concern. To ensure the sustainable use and management of these resources the Government of Belize has adopted an Integrated Water Resource Management Policy and a new draft bill is up for consideration by parliament.

Protect traditional knowledge, innovations and practices

Goal 9. Maintain socio-cultural diversity of indigenous and local communities

Target 9.1. Protect traditional knowledge, innovations and practices

Target 9.2. Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit-sharing.

Belize is rich in traditional knowledge and many initiatives are in place to acknowledge record and maintain this very important knowledge base. The GOB National Institute of Culture and History (NICH) is the public institution charged with overseeing traditional and indigenous history, practices, and knowledge. IxChel has been very instrumental in recording and preserving traditional sustainable use practices and identification of species, preparation of formulations and application of different medicinal plants within Belize. Several important CBOs have been formed to promote indigenous rights and traditions and strive to maintain cultural identity, including the Sarstoon Temash Institute for Indigenous Management (SATIIM), the Toledo Maya Culture Council (TMCC), the Toledo Maya Women's Council (TMWC), the Ke'Kechi' Council of Belize (KCC) and the Belize Indigenous Training Institute (BITI).

There continues to be efforts to properly document traditional local knowledge in the medicinal value of our natural resources and the need to protect these to derive a fair and equitable benefit from its sharing. In 2001 the Government of Belize declared 5,235 hectares of land as the Nojkaaxmeen Eligio Panti National Park in honour of one of Belize's most influential Mayan healer.

In addition, the Government of Belize has actively promoted the need to conserve its Biodiversity and natural resource base for the continued usufructuary rights of indigenous communities. The Ministry of Agriculture continues to support many members of indigenous communities in the sustainable production of cacao. The involvement of indigenous communities in decision-making related to the use of traditional knowledge is achieved through activities such as the community-based natural resources management projects. The Toledo Healthy Forest Initiative (THFI) is based on a community based approach for the sustainable management of adjacent forest as a means of poverty alleviation targeting primarily the indigenous populations in the south of Belize.
Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources
Target 10.1. All access to genetic resources is in line with the Convention on Biological Diversity and its relevant provisions. Target 10.2. Benefits arising from the commercial and other utilization of genetic resources shared in a fair and equitable way with the countries providing such resources in line with the Convention on Biological Diversity and its relevant provisions
In 2005 Belize began the preparation of the Biosafety Framework to address the importation of Genetically Modified Organisms (GMOs) or Living Modified Organisms (LMOs). A biosafety protocol is now being developed to encompass LMO's in order to promote biosafety, as well as the shared benefits of LMO's. However, there is no policy to guide the utilization of local genetic resources to ensure optimum benefits to the country or to protect the natural populations and sources of genetic material.
Ensure provision of adequate resources
Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention

Target 11.1. New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20. Target 11.2. Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph.
The Government of Belize via its Departments and Institutions supports the implementation of programs and activities related to the UNCBD through its annual budget. This support is primarily in the form of employees' salaries, infrastructure and equipment purchases and the logistic support necessary execution of extension and field activities. Most project and capital programs are supported by various donors namely, WWF Belize, WCS, TNC, MARFUND, Oak Foundation, Summit Foundation, Government of Netherland, UNDP/GEF, EU, FAO, JICA/JOCV, World Bank etc. Significant funding is also secured by the local NGOs and is directly applied to conservation programs and activities in their various areas of focus. The Protected Areas Conservation Trust provides funding to various conservation programs in protected areas management, research, capacity building in institutions and organizations with mandates in natural resource management and conservation and education and advocacy programs. Belize has also forged strong partnership arrangements with institutions such as the Smithsonian, WCS, Oceanic Society and Earth Watch who have maintained permanent research stations and programs in Belize with focus on biodiversity and conservation. Despite all this there is the need for much more additional support to effectively manage its bountiful terrestrial and marine resources.

4.2 Progress towards the Goals and Objectives of the Strategic Plan of the Convention

Belize's contribution to achieving the goals and objectives of the Strategic Plan is being addressed through Belize's participation in the UNCBD and through the implementation of

Activities consistent with the National the Biodiversity Strategy and Action and other important national plans such as NPAPSP and the NEAP. As discussed in Chapter 3, most of these plans and strategies are developed and implemented through a cross-sectoral, partnership approach. Belize's Goals and objectives are set throughout the process and are reported in a coordinated manner. National biodiversity goals, objectives and targets have not been explicitly linked to the goals and objectives of the UNCBD strategic plan but it is relatively easy to make the links implicitly, which is the approach taken to complete section B of this Chapter IV.

The major obstacles in implementation of these programs are universal and apply to all the goals. These were well documented in the recent National Capacity Self Assessment Reports and include the lack of financial resources, research and development facilities, and technical expertise.

<table>
<tr><th>Strategic Goals and Objectives</th><th>National input in Implementation of Goals and Objectives</th></tr>
<tr><td colspan="2">Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues</td></tr>
<tr><td>1.1 The Convention is setting the global biodiversity agenda</td><td rowspan="3">The implementation of CBD while setting the global biodiversity agenda and providing the most important global forum dealing with all relevant and cotemporary biodiversity related issues has also contributed significantly to the implementation of related international treaty or convention such as Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) and several regional conventions.

There exists the need for continued and increased international support in terms of financial and technical resources required to carry through the various activities of the Strategic Plan of UNCBD in order to reach substantial reduction of rate of</td></tr>
<tr><td>1.2 The Convention is promoting cooperation between all relevant international instruments and processes to enhance policy coherence</td></tr>
<tr><td>1.3 Other international processes are actively supporting implementation of the Convention, in a</td></tr>
</table>

manner consistent with their respective frameworks	biodiversity loss to 2010.
1.4 The Cartagena Protocol on Biosafety is widely implemented	Belize has participated in the Central American and Caribbean Sub-regions initiatives pertaining to the implementation of the Cartagena Protocol. In 2005 Belize began the preparation of the Biosafety Framework to address the importation of Genetically Modified Organisms (GMOs) or Living Modified Organisms (LMOs) and a draft policy has been prepared to encompass LMO's in order to promote biosafety, as well as the shared benefits of LMO's. However, there is no policy to guide the utilization of local genetic resources to ensure optimum benefits to the country or to protect the natural populations and sources of genetic material.
1.5 Biodiversity concerns are being integrated into relevant sectoral or cross-sectoral plans, programmes and policies at the regional and global levels	In Belize, biodiversity concerns have been integrated in most national and sectoral plans and strategies. These issue have been adequately reflected in the recent Tourism Strategy and Plan, and the National Poverty Elimination Strategy and Action Plan (2007-2001), the National Biological Corridors Program Strategy, the National Protected Areas Policy and System Plan and associated consultancy reports, and Belize's National Environmental Action Plan. Issues of biodiversity conservation were incorporated in the following sectoral and inter-sectoral plans and programmes.
1.6 Parties are collaborating at the regional and subregional levels to implement the Convention	Belize is a signatory to the Central American Convention on Biodiversity, and a member of the Central American Commission on Development and the Environment (CCAD), an agency of the Central American Integration System (SICA). This is a regional initiative between countries of Central America. Belize is presently participating in the Central American initiative to assess the status of the regions

	effort to sustainable manage its Forest Resources using a set of harmonized indicators (PROFOR). Belize is also committed to the Council for Sustainable Development with the countries of the Caribbean region. Belize is also the Focal Point for the Caribbean Initiative on Sustainable Development. Belize is also a signatory to the Tulum Declaration, which established a regional project, The Mesoamerican Barrier Reef Project (MBRS), which calls for sustainable use and protection of the Barrier Reef System and its biodiversity.
Goal 2: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention	
2.1 All Parties have adequate capacity for implementation of priority actions in national biodiversity strategies and action plans	Capacities of Belize to effectively address those requirements set forth in the Articles of the UNCBD the systemic, institutional, and individual levels identified are considerable. Growing capacities at the individual and institutional levels to conceptualize and formulate policies, enact legislation, develop strategies, implement effective programs, engage communities, monitor conditions, analyze results and report findings are in place. While progress has been made in building institutional capacity for biodiversity conservation, there still remains much more to be done if Belize is to be able to effectively manage and protect its biological resources. Access to adequate financial resources remains a major challenge despite the support received Belize's Protected Areas Conservation Trust, GEF and other funding agencies. The NCSA identified the need for additional strengthening at the individual and institutional levels, of the technical, financial and human capacity to draft project proposals to

	access available resources. There exists the need to be innovative in identifying new sources of funding and in maximizing existing financing sources. At the technical level greater effort needs to be placed in building local capacity in specialized fields such as wildlife management, environmental legislation and natural resources accounting. Protected areas remain in need of trained personnel, information on key aspects of conservation such as distribution of species and demographic patterns in protected areas and biological corridors. Several of these protected areas remain with no management plan and limited management presence and much of their conservation infrastructure remains rudimentary.
2.2 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have sufficient resources available to implement the three objectives of the Convention	Belize is a member of Small Island States (SIDs) and is actively involved in the implementation of The Barbados Programme of Action. The situation is the same as above.
2.3 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other	Belize has acceded to the Cartagena Protocol on Biosafety. As a first obligation under the Cartagena Protocol on Biosafety, the National Biosafety Framework (NBF) has been drafted and a new legislation is being drafted. A National Bio-safety Commission was established in

Parties with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosafety	November of 2009 to assist BAHA with its legal obligation and to move forward the national biosafety program. There however, need to be additional support to train and hire staff. There is the need for greater international support to assist countries in the implementation of their programmes.
2.4 All Parties have adequate capacity to implement the Cartagena Protocol on Biosafety	Currently, Belize does not have adequate capacity to implement the protocol. There is the need trained technicians and support tool to carry out their required functions. Greater awareness among field inspectors on GMOs, LMOs, and GURTs is required at almost all levels of the Belizean Society.
2.5 Technical and scientific cooperation is making a significant contribution to building capacity	There had many technical support initiatives in the several projects but with emphasis placed in long term capacity building. There is need to develop capacity for enforcement, inspection, and monitoring. These can range from awareness on Biosafety to practical training for inspectors.
Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention	

3.1 Every Party has effective national strategies, plans and programmes in place to provide a national framework for implementing the three objectives of the Convention and to set clear national priorities	There are several sectoral strategies, plans and programmes that are implementing activities consistent with the objectives of the Convention. These include among others the following: The recent Tourism Strategy and Plan, the National Poverty Elimination Strategy and Action Plan (2007-2001), the National Biological Corridors Program Strategy, the National Protected Areas Policy and System Plan, Belize's National Environmental Action Plan and the National Biodiversity Strategy and Action Plan.
3.2 Every Party to the Cartagena Protocol on Biosafety has a regulatory framework in place and functioning to implement the Protocol	A Biosafety Commission has been established to assist Belize Agriculture and Health Authority (BAHA) whose functions and objectives are many and includes the prevention and control the introduction of plant and animal diseases and pests into Belize and regulates and controls the use, quality and suitability of bio-engineered products. Under the BAHA Act, Section 27.-(1) Subject to section 28, no person shall import or offer to bring into Belize any plant, planting material, plant products, bio-engineered products or any restricted article except under a permit issued by the Authority.
3.3 Biodiversity concerns are being integrated into relevant national sectoral and cross-sectoral plans, programmes and policies	Integration is done at various levels but it is complex in terms of implementation.
3.4 The priorities in national biodiversity strategies and action plans are being actively implemented, as a	Significant progress has been made in the implementation of the National Biodiversity Strategy and Action Plan for Belize. This document has been used as a reference and has influenced the policy and direction of the various programs implemented

means to achieve national implementation of the Convention, and as a significant contribution towards the global biodiversity agenda	by the government and both the International and local NGOs working in Belize.
Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation	
4.1 All Parties are implementing a communication, education, and public awareness strategy and promoting public participation in support of the Convention	Although, there is no formalized strategy to promote awareness of the convention, there exists various awareness programs are being undertaken by both government and non-governmental organizations emphasizing specific topics related to the convention. Information systems are being developed as internet sites. A bibliography of published and unpublished information on the biodiversity and ecology of Belize has been compiled in draft. Lands Information Centre (LIC) maintains a geographically referenced database and maps of Belize, along with satellite imagery. Much of this information is now available for the general public. There is no central information and data repository/distribution system in place but efforts are underway to set up the biodiversity CHM within the Forest Department. A few important internet sites have been established by individual researchers where information is posted for downloading.
4.2 Every Party to the Cartagena Protocol on Biosafety is promoting and facilitating public awareness,	As of now public awareness, education, and participation with Biosafety related issues is practically non-existent. However, public awareness programs in other sectors with regards to health and diseases awareness, agricultural extension, and so

education and participation in support of the Protocol	on do exist.
4.3 Indigenous and local communities are effectively involved in implementation and in the processes of the Convention, at national, regional and international levels	There is policy encouraging community to participate. Most of the conservation programs include community in the implementation through participatory approaches. The participation in recent years had been encouraging and many partnership programs have been developed.
4.4 Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes and policies	Belize has traditionally had the active participation of all sectors (NGOs, CBOs, Academia, and the Private Sector) in the management of its Natural Resources. All relevant National Plans and Strategies have been developed through an active participatory approach involving all sectors of society. The management of most of Belize's Protected Areas is being executed though partnership arrangements formalized through Co-management Agreements signed with NGOs and CBOs. Co-management agreements with either NGOs or CBOs exist for twenty-two protected areas over which the Forest Department has jurisdiction. There is also, presently draft legislation in place for the legal incorporation of private protected areas into the National Protected Areas System. The tourism and fisheries sectors have been some of the greatest advocates and supporters for the need to protect Belize's Biodiversity and natural resource base.

4.3 Conclusions

The UNCBD has been instrumental in providing much needed support in the internalization of Biodiversity related issues in the preparation of all relevant national and general programs of

work in the various thematic areas. The convention has been helpful in the harmonization of terminologies, and the development of regional, national, and local approaches. Flexibility in terms of implementation of the Convention at the national level allows countries to better integrate the thematic issues into their national initiatives and to build locally driven support for the national programs developed and being implemented. As a result, countries are able to enhance and increase the priority of conservation of biological diversity.

While the 2010 Goals and Target provide an indicative direction for governments to focus their implementation its set of indicators still remain too broad and general to be able to effectively measure the degree of success or level of accomplishments being made. The assessment conducted in the preparation of this report would indicate that the Government of Belize is likely to meet targets sets and in a few instances it is presently exceeding the 2010 Targets. Nevertheless, much more support is required in supporting present efforts and in building the e country's capacity to effectively deal with issues related with the fair and equitable benefits arising from the use of its genetic resources and in inventorying its present biodiversity.

Belize remains committed to the sustainable use and management of its natural resources which is the backbone of its economic and social wellbeing. Challenged by growing economic constraints, excess national debt and a monetary system in danger of being devalued, Belize is experiencing difficulties in supporting the additional staff, training, equipment, and transportation requirements demanded for effective implementation of its commitments made. There is the need for addition well-targeted funding from donor countries and organizations to be placed within established and transparent management systems with specifically defined goals and objectives to continue moving forward.

APPENDICES

Appendix I - Information concerning the reporting Party and preparation of the national report

Information on Reporting Party

Belize Environmental Technologies (BET) has as its managing director Mr. Ismael Fabro who has twenty-five (25) years of public service experience with the last seventeen years (17) as Chief Environmental Officer. During this period, Mr. Fabro had the opportunity to become very familiar with the Multilateral Environment Agreements to which Belize is a party and their reporting requirements, including the UNCBD and its Biosafety Protocol.

In addition, Mr. Fabro is also very much familiar with many of the National Biodiversity conservation initiatives and has had the opportunity to participate and spearhead the preparation of similar type national reports.

During his term as Chief Environmental officer, Mr. Fabro also had the opportunity to collaborate with numerous donor and funding institutions and became familiar with their policies and procedures for project management and implementation, as well as their Reporting Requirements. He was directly responsible for the execution of several GEF and other internationally funded projects. As BET's principal consultant, his area of expertise includes the following:

- Project Evaluation and Monitoring
- Project Management
- Natural Resources Assessment
- Environmental Strategic Planning
- Ecology
- Environmental Auditing
- Environmental Impact Assessment
- Pollution Control
- Ecological Effects of Pollution
- Training in Environment and Conservation

To undertake this exercise of the Fourth National Report to UNCBD, Mr. Fabro served as the lead consultant. BET drew from a pool of professionals with expertise in various disciplines required by this consultancy. BET also counted on the assistance of Mr. Richard Ayuso, Mr. Dominique Fabro and Ms. Leilah Pandy who played important roles in report preparation and organization. Mr. Dominique Fabro holds a bachelors degree in information technology and Ms. Pandy holds a Master's Degree in Natural Resources Management.

In addition to Mr. D. Fabro, Mr. Ayuso and Ms. Pandy, BET drew on the support of others with expertise in the area for editorial support and to assist in vetting.

Preparation of the Report

Belize Environmental Technologies carried out the preparation of this Fourth National Report in accordance with the recommended guidelines contained in the Convention on Biodiversity Guidelines for the Fourth National Report. The team also referred to the Reference Manual to the Preparation of the Fourth National Report and the methodology proposed in the Terms of Reference for guidance in preparing this report. It was also done to ensure full compliance with Forestry Department and UNDP's requirements. BET's approach included working very closely with the Project Steering Committee in the implementation of the proposed methodology and all other recommended measures.

The methodology included the following:

(i) Documentation and Literature Review

BET reviewed all pertinent documents related to the implementation of Biodiversity Conservation in Belize and Belize's commitment to the three main objectives of the UNCBD, including those listed in Annex 1 of the complete ToR. These included *inter alia*:

a. Handbook of the Convention on Biological Diversity;

b. Belize First, Second and Third National Report to the UNCBD;

c. Belize National Biodiversity Strategy and Action Plan; Draft Biological Diversity Bill;

d. Belize Country Environmental Analysis: Towards Competitiveness and Sustainable Development (working document);

e. Belize National Assessment Report for the Ten-Year Review of Implementation of the Barbados Programme of Action;

f. Final Consultancy Report on Proposed Legislative Framework and Institutional Arrangements for Marine Bio-prospecting in Belize;

g. Project Report for the National Capacity Self-Assessment project and associated consultancy reports;

h. Project Document for the Development of a National Biosafety Framework project;

i. Project Evaluation Report for the Mesoamerican Barrier Reef System Project;

j. Project Document for the GEF/UNDP Conservation and Sustainable Use of the Belize Barrier Reef Complex project;

k. National Biological Corridors Program Strategy;

l. Report on Baseline Diagnosis on the State of Research on Biodiversity in Belize;

m. National Protected Areas Policy and System Plan and associated consultancy reports;

n. The NCSA sectoral assessment reports on the UNCBD, UNCCCC and UNCCD and The NCSA National Report;

o. Documents related to Belize's obligation to the RAMSAR Convention and other regional and national biodiversity related initiatives;

p. The National Millennium Development Goals Needs Assessments and Cost Prognosis Phase II;

q. National Poverty Assessment Report;

r. Belize National Development Plan;

s. National Legislation relevant to the management and conservation of Biodiversity;

t. Any other relevant documents or reports.

In addition, the team undertook a review of all other pertinent reports, documents, and national legislation relevant to the preparation of the national report and all current national experiences.

(ii) Pre-Evaluation meetings

The consultancy team held a pre-evaluation meeting with the Forestry Department to review and finalize the proposed methodology and work-plan in order to ensure synchronization with the Forestry Department's schedule of activities.

At the meeting the project focal point and the consultancy team discussed report preparation and, thus, the proposed methodology was finalized. It aimed at ensuring the full participation of all sectors and key individuals in the exercise. Follow-up meetings were held as necessary with UNDP, the Forestry Department, and National Report Coordination Team (NRC) to provide updates on progress.

(iii) Interview

Interviews were conducted utilizing a set of structured questions similar to those used in the preparation of the third national report. They were aimed at obtaining objective feedback that may be weighed, compared and analyzed by the team. Information sought was focused on the following: *the national status and trends of biodiversity and present main threats to biodiversity; the implementation of national biodiversity strategies and action plans (NBSAPs); and progress towards the 2010 target and the goals and objectives of the Strategic Plan.*

(i) These interviews were held with the following organizations and persons, including but not limited to: Forestry Department, Department of Lands and Surveys, Fisheries Department, Geology and Petroleum Department, Department of the Environment, Meteorology Department, Agriculture Department, Belize Audubon Society, University of Belize, Galen University, Coastal Zone Management Authority and Institute, Sarstoon-Temash Institute for Indigenous Management, Belize Association of Private Protected Areas, Association of Protected Areas Management Organizations, Program for Belize, National Garifuna Council of Belize, Ministry of Tourism, Ministry of National

Development, United Nations Development Programme, Protected Areas Conservation Trust, Belize Tourism Board, Cruise Ship Industry Association, Belize Association of Conservation NGOs (BACONGO), Belize Agricultural Health Authority, Toledo Institute of Development and the Environment, Itzamna Society, Belize Tourism Industry Association, Ixchel Society, City/Village Council reps of respective regional consultation areas and other stakeholders involved in the conservation and management of Belize's Biodiversity.

(v) Consultations / Workshop

A consultation and review workshop was held to obtain feedback on the draft report. Comments and recommendations from this workshop were properly documented and taken into consideration in the completion of the draft final report. This workshop had the participation of most stakeholders invited to the workshop in addition to all those who participated in the interviews.

(vi) Vetting Workshop

A third workshop, structured as a validation workshop, was held with members of the Project Steering Committee, UNDP and other selected participants to present the final Fourth National Report to be submitted to the National Focal point for onward submission to the Cabinet for endorsement.

Consultation Workshop Group Work

Mountain and Watershed Plenary Group

Item	Forest (flora/fauna)	Source
Trends of biodiversity	Negative: Land cover changes (causes), limited quantitative data on trends. General decline trend for some species, eg white-lipped peccary disappeared from the Las Cuevas / CFR (CFR& CNP?). Loss of Sabal from harvesting heart in EPNP - local communities. Jaguar population declines in Chiquibul (Marcela Kelly's work). Jaguars considered stable in Cockscomb. Also cohune heart in CFR / CNP. (BFD, Las Cuevas, FCD) Deterioration of water quality in watersheds - most notably Belize River (caused by sediment load from Chalillo dumped into the Macal) impacting all the way to the Reef (Candy) - concerns re. Pollution from BNE's flaring - DOE studying impacts (in theory) on biodiversity as per the ECPs for Chalillo / Vaca, etc; reputedly not safe even for livestock. BAS noted significant declines in water birds in CTWS (Derric). Continued purchase of alluvial areas for short-term corn production - impacting water quality. positive: Morelet's crocodile numbers increasing (FD) - Thomas Rainwater coming back to re-do a national assessment, currently community reports indicate continued recovery. Xate gone from Chiquibul.	BFD, Las Cuevas, FCD, Candy Gonzalez. Marcela Kelly research. Panthera /ERI. FD
Main threats to biodiversity & the underlying causes	Weak governance - affecting many other impacts. Hunting increased (bi-national and national) - empty forest in Chiquibul. Increased accessibility for hunting, increased travel for commercial hunting? Expanding cattle industry impacting much biodiversity. Current policy to increase cattle & Tilapia. Increasing agriculture - including runoff & pollution. (PACT). Increase in allocation of lands within PAs - mostly close to water bodies. Illegal logging & poorly monitored 'legal' logging. Fire - tiger fern on eastern slopes - fire source from coastal plain. Mining - dredging for gold (Boiton) - in Ceibo Chico - causing heavy sedimentation. Bi-national incursions: xatero, logging, looting, (also cutting izote - Yucca for soap) from Chiquibul.	
Extent and processes by which biodiversity has been integrate into sectoral/cross-sectoral strategies & plans	NPAPSP development & adoption (Dec '05 / Jan '06). ERI research prioritization to inform biodiversity conservation & national development. 3 system-level conservation action plans developed: MMM, MMMC & SBRC. Golden Stream Watershed Initiative outputs. National Forest Fire Policy & Strategy developed. Panthera / BLPA integrated jaguar / cattle conflict resolution into nationwide training. Environmental Compliance Plans. Draft amendments to National Parks System Act re. PPAs, co-management agreement; draft CITES; draft Wildlife Order; draft amendments to the Wildlife Protection Act.	Get info from agriculture, physical planning, etc.

Achievements of integration/mainstreaming biodiversity	GOB remains committed to NPAPSP - but NPAC has been dormant for a while, some work progressing, e.g. economic assessments of MMM & MMMC now has a consultant. PACT has funded 4-5 grants (>$400,000 Bz) in last 5 years, contributing to NPAPSP implementation. NPAC being re-vitalized. Establishment of MNREI Policy & Strategy Unit to oversee. Fire Policy adopted 24th Feb '10 - functional working groups implementing prescribed activities. Panthera / BLPA integrated jaguar / cattle conflict resolution into nationwide training. Environmental Compliance Plans. Accessing external financial & technical support to develop & implement plans. Negative: limited financial resources limiting implementation, limited political prioritization of biodiversity conservation. Many plans developed, but implementation is often weak / lacking.	TNC, PACT, Panthera / ERI
Examples of ecosystem approach being adopted and employed	3 Conservation Action Plans developed. Continued emphasis on protected areas for biodiversity conservation - but weak legal status (e.g. ease of de-reservation). Lack of due diligence / lack of adherence to policy re. PAs - e.g. Hydro Maya / GOB Bladen Nature Reserve - reports from community groups, NGOs, FD, re. impacts. Golden Stream watershed Initiative - integrated landscape management approach to sustainable development. Peter Esselman's riverine assessment. Belize still has extensive, largely intact ecosystems.	
Indicators used for measuring progress	Biodiversity indicators: Change in forest cover (including riparian); water flow & water quality; population trends for endangered species, game species, top predators; maintenance of watershed / riverine connectivity; forest connectivity; Processes indicators: Rate of implementation of the NPAPSP (slow); land allocations within PAs / de-reservations; creation of PAs, including PPAs; level of enforcement; level of illegal incursions (hunting, farming, looting, etc); increased (human)capacity to manage and monitor; financial resources available for conservation; Monitoring tool for long-term forestry concessions; Patrol protocol; GSW monitoring protocol;	
In-situ/ex-situ conservation efforts	GOB / NGO / Private Sector collaboration re. Management of PAs, etc. Donor agency support for natural resources planning and PA management. Increasing number of PPAs. Capacity building for PA managers (including ERI, & other actors). Tony Garrel's Vivarium programme.; Establishment of National Federation for Community Based Co-managers (Julian Lewis); Ex-situ: Belize Bird Rescue (parrot rehab); captive breeding of iguanas (San Ignacio Hotel; ACES: CASA Avian Support Alliance; Belize Botanic Gardens, Robin Brockett (monkeys); Establishment of Belize Wildlife Conservation Network;	

Current Research A5/ Projects	ERI / Darwin / Panthera Corridor project; Marcella Kelly (Virginia Tech) re. large cats; WCS / University of Southampton big cat / prey ecological studies; TIDE's freshwater monitoring programme; Peter Esselman's fish work; Assessment of Endangered Amphibians (Wildtracks); Mark McReynold's Scarlet macaw work; ACES crocodile monitoring in Rio Grande; FCD monitoring of VACA ECP; Howler monkey & Spider monkey (Calgary Uni) research; Dan Dourson's work on snails; Steven Brewer (plants); Migratory bird work (including MOSI) at BFREE/ Runaway Creek/ Wildtracks; Orange-breasted falcon studies - Peregrine Fund; GSW monitoring; harpy eagle research (BFREE); Rob Klinger's work on rodents (BFREE); Bats - Bruce Miller; SICA - traditional knowledge integration;
Coordination and cooperation between national actors responsible for inland water ecosystem.	Authorities: FD, DOE, Fisheries Dept - planning workshops, vetting process for research permits. TIDE's freshwater monitoring programme. Ditto Ya'axche. FCD watershed / scarlet macaw awareness (binational). Ed Boles / Peter Esselman's / TNC Assessment of Freshwater Initiative. Maya Mountain Marine Corridor. Ya'axche / Wildtracks / TIDE hicatee assessment collaboration. Ditto agro-chemical pollution project development (Ya'axche / Wildtracks). FD / ERI capacity building.

Agriculture Plenary Group

Item	Alien Invasive Species
Main threats to biodiversity & the underlying causes	Vine (legume) originally intended for nitrogen fixation, but vine = uncontrollable growth. We have not taken invasive species as a major threat. Problem with invasives threatening agricultural land and not agricultural caused invasives.
Examples of ecosystem approach being adopted and employed	None
Indicators used for measuring progress	Only real record of invasion occurs in protected areas where the particular managers keep records; no national database.
Information on activities that contribute to the implementation of the articles of the Convention	BAHA - GMO's and invasive species. Activities in regards to invasive species are limited to the work in specific protected areas that have an invasive species threat currently.
Current Research / Projects	Belize botanic Gardens - "Go Native" project with agriculture.
Coordination and cooperation between national actors responsible for inland water ecosystem	Fisheries - OSPESCA project mapped inland waterways. Fisheries Department responsible for inland waterways.

Item	Genetic Resources
Observed changes in the status of diversity	Hybrids are more common than those species that were thought to be endemic. Micro-propagation projects introduce good quality root stocks
Main threats to biodiversity & the underlying causes	Over exploitation of resources. Land degradation. Extensive agriculture vs. intensive. Land degradation, deforestation (has stabilized). Historically- lack of proper planning, in regards to effective land use. Natural disasters. Wildfires cause by agricultural practices. Increased demand for agricultural land. Alien species - introduction of disease. Economic situation causing possible exploitation. Biggest threat is efforts toward conservation not being linked with national development plans. Poor agricultural and development planning. Jaguar-Livestock conflict, keystone predatory species being killed indiscriminately.
Achievements of integration/mainstreaming biodiversity conservation	Domestication for wild species (i.e. Xate). Sustainable land management project. Sustainable land use policy. To move towards more sustainable agriculture(less pesticides, etc.). Integrated agriculture, BAHA- on farm certification program - tracking crop from farm to consumption. The purpose of certification is to support less intensive environmental footprints; policy was presented to cabinet. No GMO's in country, there is a policy to prevent GMO importation (BAHA), however hybrids exist. Appointment of National Biosafety Commission. Proposed establishment of central corridor linking the Northern & Southern biological corridors.
Examples of ecosystem approach being adopted and employed	Landscape management within Golden Stream watershed.
Indicators used for measuring progress in maintaining genetic biodiversity	Productivity indicators (de facto indicators exist). We are developing biodiversity indicators (refer to situation with MDG #7 - everyone has own interpretation of the indicators). Not doing well with setting up baseline and monitoring progress.

Information on activities that contribute to the implementation of the articles of the Convention	National Biosafety policy passed.
Current Research /Projects	(*See CARDI*) - UNDP- Current project (greenhouse) piloting use of protective structures. - UNDP- Root crop/micro propagation (pineapple, plantains). IICA - Livestock. CARDI - Researches grain (30 varieties of grains).Plant hybridizations. Belize Botanic Garden - Savanna demonstration area. Belize Rural Development- Projects (small farmers). FAO - Disaster risk, reductions to agriculture sectors. OAS - Organic agriculture with small farmers in the South. Chocolate Co. - organic cocoa in the South. EU-Banana and sugar diversification intensification.
Coordination and cooperation between national actors responsible for inland water ecosystem	National Biodiversity Advisory committee; has not met since probably 2002. National Biosafety Commission exists.

Coastal and Marine Plenary Group

Item	Mangroves	Seagrass	Coral Reef	Cayes
Observed changes in the state of biodiversity	Report from Forest Department on Mangrove... Will provide assessment. Established priority areas that could be legislated as non-clearance areas. Gave coverage data. Marcelo Windsor. Would also need to include integrity. Needs to be compared to Emil Cherrington's data	Seagrass Net, but within the protected areas.	Healthy Reefs data - 3% of coral reefs considered in 'Good' condition...but may be amended. This 3% may be questions.	Loss of mangroves and littoral forest (most under represented ecosystem). Often not included within protected areas
	Qualitative data for pa mangroves (perceptions) - Status: Very good - however this does not generally include cayes.	Data for southern area is that seagrass is Very good (SBRC / MMMC). Both in and outside protected areas. Thought to be not as good further north. Records from Geology and Petroleum on dredging activity	Status of Protected Areas: Protected areas status came out as Good, decreasing	Invasive species - Tokay Gecko, crab from South Water Caye Marine Reserve (see SWCMR management plan)
Trends	Status of Pas: Trend is considered stable to decreasing.	One of the most stable ecosystems across - except Placencia Lagoon and around heavy-use cayes. Placencia Lagoon seagrass reduced by about 70%		
	1990: Zisman - 3.4% was mangrove 78,133 ha. 25.5% of this occurs in the offshore areas. 3/4 on mainland	Trawling impacts on seagrass beds		

	Emil Cherrington,2006: 3.3% 67,194ha. Offshore - 3.79% decline, mainland - 1.07% decline. Doesn't reflect any damage by storms. 11,939 ha decline - approx. 50% human, 50% storm damage Average of 344 acres is lost per year from human activities			
Threats	Climate change (increased storms, increased acidification, warming), invasive species (lionfish). Over fishing / illegal fishing, coastal and caye development	Climate change (increased storms, increased acidification, warming), invasive species (lionfish). Over fishing / illegal fishing, coastal and caye development	Climate change (increased storms, increased acidification, warming), invasive species (lionfish). Over fishing / illegal fishing, coastal and caye development	Climate change (increased storms, increased acidification, warming), invasive species (lionfish). Over fishing / illegal fishing, coastal and caye development
	Underlying causes: Governance - lack of commitment, absence of national development plan, lack of resource allocation for management and enforcement, poorly regulated development.	Underlying causes: Governance - lack of commitment, absence of national development plan, lack of resource allocation for management and enforcement, poorly regulated development.	Underlying causes: Governance - lack of commitment, absence of national development plan, lack of resource allocation for management and enforcement, poorly regulated development.	Underlying causes: Governance - lack of commitment, absence of national development plan, lack of resource allocation for management and enforcement, poorly regulated development.
	Education: Lack of awareness, attitudes and cultural behaviour, unplanned population expansion and distribution	Education: Lack of awareness, attitudes and cultural behaviour, unplanned population expansion and distribution	Education: Lack of awareness, attitudes and cultural behaviour, unplanned population expansion and distribution	Education: Lack of awareness, attitudes and cultural behaviour, unplanned population expansion and distribution

	Economic factors: Poverty, external debt	Economic factors: Poverty, external debt	Economic factors: Poverty, external debt	Economic factors: Poverty, external debt
	Unplanned population expansion and distribution	Unplanned population expansion and distribution	Unplanned population expansion and distribution	Unplanned population expansion and distribution
	Reduced management of marine resources with decline of CZMAI and MBRS	Reduced management of marine resources with decline of CZMAI and MBRS	Reduced management of marine resources with decline of CZMAI and MBRS	Reduced management of marine resources with decline of CZMAI and MBRS
Social, Ecological and Economic Implications	Economic impacts of loss of mangrove - The WRI economic assessment looked at value for fishing, tourism and shoreline protection		Loss of traditional livelihood - viability of fishing as a livelihood is decreasing. Affects traditional values	
	Increasing vulnerability of coastal communities following mangrove clearance		High levels of chemical / mercury contamination in fish	
Extent and processes by which biodiversity has been integrated into sectoral / cross sectoral strategies and plans	Coastal Zone Management Plan - planning on updating / revised	Coastal Zone Management Plan - planning on updating / revised	Coastal Zone Management Plan - planning on updating / revised	Coastal Zone Management Plan - planning on updating / revised
	A number of process and plans in place for coastal and marine areas, but not adequately implemented nor enforced.	A number of process and plans in place for coastal and marine areas, but not adequately implemented nor enforced.	A number of process and plans in place for coastal and marine areas, but not adequately implemented nor enforced.	A number of process and plans in place for coastal and marine areas, but not adequately implemented nor enforced.

The 2030 plan initially did not address environmental issues - now being updated to include this. Still needs to be implemented	The 2030 plan initially did not address environmental issues - now being updated to include this. Still needs to be implemented	The 2030 plan initially did not address environmental issues - now being updated to include this. Still needs to be implemented	The 2030 plan initially did not address environmental issues - now being updated to include this. Still needs to be implemented
Tourism Policy document - APAMO	Tourism Policy document - APAMO	Tourism Policy document - APAMO	Tourism Policy document - APAMO
NPAC should be ensuring due process, but commitment from GoB is unclear.	NPAC should be ensuring due process, but commitment from GoB is unclear	NPAC should be ensuring due process, but commitment from GoB is unclear	NPAC should be ensuring due process, but commitment from GoB is unclear
NPAPSP - lacks serious support from Government	NPAPSP - lacks serious support from Government	NPAPSP - lacks serious support from Government	NPAPSP - lacks serious support from Government
Active Policy Unit trying to ensure cross sectoral integration and processes	Active Policy Unit trying to ensure cross sectoral integration and processes	Active Policy Unit trying to ensure cross sectoral integration and processes	Active Policy Unit trying to ensure cross sectoral integration and processes
Mangrove Legislation drafted, which attempts to increase cross-sectoral action for conservation of mangroves		Fisheries Act being revised and strengthened	

Achievements of integration/ mainstreaming biodiversity	Locally based on the efforts of conservation organizations, but not at the national level. Little (very little) mainstreaming in national policy, national development plans, education. NPAPSP not adopted or supported, sustainable development policy	Locally based on the efforts of conservation organizations, but not at the national level. Little (very little) mainstreaming in national policy, national development plans, education. NPAPSP not adopted or supported, sustainable development policy	Locally based on the efforts of conservation organizations, but not at the national level. Little (very little) mainstreaming in national policy, national development plans, education. NPAPSP not adopted or supported, sustainable development policy	Locally based on the efforts of conservation organizations, but not at the national level. Little (very little) mainstreaming in national policy, national development plans, education. NPAPSP not adopted or supported, sustainable development policy
	Aquaculture - WWF project to reduce impacts on marine environment	Aquaculture - WWF project to reduce impacts on marine environment	Agriculture - WWF project to reduce impacts on marine environment	
	Outreach by GoB and NGOs contributes towards reaching many sectors...local.	Outreach by GoB and NGOs contributes towards reaching many sectors...local	Outreach by GoB and NGOs contributes towards reaching many sectors	Outreach by GoB and NGOs contributes towards reaching many sectors
	Environmental tips on weather forecast	Environmental tips on weather forecast	Environmental tips on weather forecast	Environmental tips on weather forecast
Examples of ecosystem approach being adopted and employed	Management plans for protected areas use the ecosystem approach	Management plans for protected areas use the ecosystem approach	Management plans for protected areas use the ecosystem approach	Management plans for protected areas use the ecosystem approach

	Integrated Landscape approach - also brings in socio-economic issues	Integrated Landscape approach - also brings in socio-economic issues	Integrated Landscape approach - also brings in socio-economic issues	Integrated Landscape approach - also brings in socio-economic issues
	System level conservation action planning - SBRC, MMMC	System level conservation action planning - SBRC, MMMC	System level conservation action planning - SBRC, MMMC	System level conservation action planning - SBRC, MMMC
Indicators used for measuring progress	Extent of mangrove - mainland / offshore (every 4 years)	Extent of seagrass - mainland / offshore (every 4 years)	Healthy Reef Coral index: Live coral cover; % recent coral mortality; coral recruitment	Extent of littoral forest
	Rate of anthropogenic removal (annual)	Rate of anthropogenic removal (annual)	Additional State of the Protected Areas indicators: Coral species richness; % macro-algal cover; parrotfish biomass; diadema abundance; commercial fish biomass ;	Extent of offshore caye ecosystem clearance
	Area of mangroves approved for removal by Forest Department (annual)	Area of seagrass approved for removal by Geology and Petroleum (annual)	Highest % coral bleaching (annual)	% of cayes undeveloped
	Presence and implementation of Mangrove legislation	Number and distribution of manatees	Density of lionfish	% cayes with invasive species

	Presence of a marine biodiversity monitoring programme (Article 7; ERI)	Presence of a marine biodiversity monitoring programme (Article 7; ERI)	Presence of a marine biodiversity monitoring programme (Article 7; ERI)	Presence of a marine biodiversity monitoring programme (Article 7; ERI)
	Number of prosecutions/convictions - National Patrol Information System		Total catch of commercial species (lobster, conch, finfish); Number of licensed fishermen	
	Would be hard to measure degradation at national level	% cover by protected areas	% cover by protected areas	% cover by protected areas
	% cover by protected areas	Some policy indicators should be inserted, e.g. Presence of integrated coastal zone policies	Some policy indicators should be inserted, e.g. Presence of integrated coastal zone policies	Some policy indicators should be inserted, e.g. Presence of integrated coastal zone policies
	Some policy indicators should be inserted, e.g. Presence and implementation of integrated coastal zone policy			
Information on activities that contribute to the implementation of the articles of the Convention	Article 6 (a) National strategies, plans and programmes			

Existing National Biodiversity Strategy and Action Plan (1998) - needs to be reviewed and updated	Existing National Biodiversity Strategy and Action Plan (1998) - needs to be reviewed and updated	Existing National Biodiversity Strategy and Action Plan (1998) - needs to be reviewed and updated	Existing National Biodiversity Strategy and Action Plan (1998) - needs to be reviewed and updated
National Protected Areas Policy and System Plan - adopted in 2006. But implementation not yet started at national governance level. Integration into site level management activities	National Protected Areas Policy and System Plan - adopted in 2006. But implementation not yet started at national governance level. Integration into site level management activities	National Protected Areas Policy and System Plan - adopted in 2006. But implementation not yet started at national governance level. Integration into site level management activities	National Protected Areas Policy and System Plan - adopted in 2006. But implementation not yet started at national governance level. Integration into site level management activities
Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring
Establishment of national marine biodiversity monitoring programme (Article 7; ERI)	Establishment of national marine biodiversity monitoring programme (Article 7; ERI)	Establishment of national marine biodiversity monitoring programme (Article 7; ERI)	Establishment of national marine biodiversity monitoring programme (Article 7; ERI)
Revitalization of Coastal Zone Management Authority and Institute	Revitalization of Coastal Zone Management Authority and Institute	Revitalization of Coastal Zone Management Authority and Institute	Revitalization of Coastal Zone Management Authority and Institute
Existence of Integrated Coastal Zone Management Plan - but not currently being implemented	Existence of Integrated Coastal Zone Management Plan - but not currently being implemented	Existence of Integrated Coastal Zone Management Plan - but not currently being implemented	Existence of Integrated Coastal Zone Management Plan - but not currently being implemented

Need input from Fisheries Department for other national strategies	Need input from Fisheries Department for other national strategies	Need input from Fisheries Department for other national strategies	Need input from Fisheries Department for other national strategies
Article 7 (a): Identification			
Ongoing development of a national biodiversity monitoring programme with standardized protocols and training	Ongoing development of a national biodiversity monitoring programme with standardized protocols and training	Ongoing development of a national biodiversity monitoring programme with standardized protocols and training	Ongoing development of a national biodiversity monitoring programme with standardized protocols and training
Identified at site level in protected area management plans	Identified at site level in protected area management plans	Identified at site level in protected area management plans	Identified at site level in protected area management plans
Identified at system level in conservation plans - SBRC, MMMC	Identified at system level in conservation plans - SBRC, MMMC	Identified at system level in conservation plans - SBRC, MMMC	Identified at system level in conservation plans - SBRC, MMMC
Article 7 (b): Monitoring			
Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring	Establishment of Environmental Research Institute at national University of Belize, focusing on building national capacity for research and monitoring

SeagrassNet, MBRS, AGGRA used in collaboration with all protected area managers - Fisheries Dept. BAS, SEA, TIDE, SACD, WCS	SeagrassNet, MBRS, AGGRA used in collaboration with all protected area managers - Fisheries Dept. BAS, SEA, TIDE, SACD, WCS	SeagrassNet, MBRS, AGGRA used in collaboration with all protected area managers - Fisheries Dept. BAS, SEA, TIDE, SACD, WCS	SeagrassNet, MBRS, AGGRA used in collaboration with all protected area managers - Fisheries Dept. BAS, SEA, TIDE, SACD, WCS
Article (c): Management processes, categories of activities			
Management plans, conservation plans,	Management plans, conservation plans,	Management plans, conservation plans,	Management plans, conservation plans,
EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC
Article (d): Data management			
Clearing House Mechanism - not active	Clearing House Mechanism - not active	Clearing House Mechanism - not active	Clearing House Mechanism - not active
BERDS - active	BERDS - active	BERDS - active	BERDS - active
Development of national biodiversity monitoring database ongoing	Development of national biodiversity monitoring database ongoing	Development of national biodiversity monitoring database ongoing	Development of national biodiversity monitoring database ongoing

Ongoing site level	Ongoing site level	Ongoing site level	Ongoing site level
Article 8 (a) In-situ conservation			
Consolidation through system level planning	Consolidation through system level planning	Consolidation through system level planning	Consolidation through system level planning
Sapodilla and Hol Chan zones re-designated	Sapodilla and Hol Chan zones re-designated	Sapodilla and Hol Chan zones re-designated	Sapodilla and Hol Chan zones re-designated
Article 8 (c) Regulate biodiversity			
Shark Action Plan in draft	Shark Action Plan in draft	Shark Action Plan in draft	Shark Action Plan in draft
Nassau Grouper regulations	Nassau Grouper regulations	Nassau Grouper regulations	Nassau Grouper regulations
Sea turtles, parrotfish etc. Protection	Sea turtles, parrotfish etc. Protection	Sea turtles, parrotfish etc. Protection	Sea turtles, parrotfish etc. Protection
Draft Shark feeding legislation	Draft Shark feeding legislation	Draft Shark feeding legislation	Draft Shark feeding legislation
Article (e):			
WWF and partners working on best practices for agriculture and aquaculture	WWF and partners working on best practices for agriculture and aquaculture	WWF and partners working on best practices for agriculture and aquaculture	WWF and partners working on best practices for agriculture and aquaculture

Advocacy efforts by NGOs and civil society	Advocacy efforts by NGOs and civil society	Advocacy efforts by NGOs and civil society	Advocacy efforts by NGOs and civil society
Article (f)			
Reef restoration (Lisa Carne)	Reef restoration (Lisa Carne)	Reef restoration (Lisa Carne)	Reef restoration (Lisa Carne)
Trial mangrove restoration projects - Caye Caulker, Placencia Lagoon	Trial mangrove restoration projects - Caye Caulker, Placencia Lagoon	Trial mangrove restoration projects - Caye Caulker, Placencia Lagoon	Trial mangrove restoration projects - Caye Caulker, Placencia Lagoon
Article (h)			
Limited lionfish control efforts	Limited lionfish control efforts	Limited lionfish control efforts	Limited lionfish control efforts
Article (i)			
Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD
Article (j)			
Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD, marine reserves	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD, marine reserves	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD, marine reserves	Efforts by co-managers to incorporate traditional sustainable use within management planning - GPWSCMC, SACD, marine reserves
Article (k) - see previous comments on legislation			
Article (l) -Threat abatement			
Management planning / conservation planning by Fisheries Dept and co-managers	Management planning / conservation planning by Fisheries Dept and co-managers	Management planning / conservation planning by Fisheries Dept and co-managers	Management planning / conservation planning by Fisheries Dept and co-managers

	EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC	EIA process in place - needs strengthening, need more effective composition of NEAC
	Article (m) PACT, COMPACT, GEF			
	Wildlife Order being finalized	Wildlife Order being finalized	Wildlife Order being finalized	Wildlife Order being finalized
	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)
	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)	Belize Manatee Rehab Centre (Wildtracks)
	Not relevant	Not relevant	Not relevant	Not relevant
	Not relevant	Not relevant	Not relevant	Not relevant

Appendix II - Further sources of information

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Appendix III - Progress towards Targets of the Global Strategy for Plant Conservation and Programme of Work on Protected Areas

As with other targets and plans under other conventions to which Belize is a party, the targets of the Global Strategy for Plant Conservation under the UNCBD have been adopted by Belize.

Table 1: Progress towards Global Strategy for Plant Conservation

Progress towards Targets of the Global Strategy for Plant Conservation	
Target	**Progress**
Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora.	The Forestry Department has been actively updating its list of local flora and it has developed a clearing house mechanism (CHM) to provide easily accessible plant data to researchers and scientists. Even though the funding for the CHM has not been as forthcoming, the Department still works to maintain the database. However, despite their efforts, note that it is crucial that further funding is sourced as soon as possible to run the clearing house.
Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.	The Department works closely with other government departments within the Ministry of Natural Resources along with local NGOs so that the status of efforts to conserve the nation's plant species is updated. In 2005, Meerman produced a gap analysis of Belize's established protected areas and found the system of areas to be fragmented. Fragmentation can threaten and undermine conservation efforts of flora and fauna. This issue has been addressed in the NPAPSP 2005 and a plan to consolidate the system is being developed.
Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience. **Target 4:** At least 10 percent of each of the world's ecological regions effectively conserved. **Target 5:** Protection of 50 percent of the most important areas for plant diversity assured. **Target 6:** At least 30 percent of production lands managed consistent with the conservation of plant diversity **Target 7:** 60 percent of the world's threatened species conserved *in-situ*. **Target 8:** 60 percent of threatened plant species in accessible *ex-situ* collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes	Belize has 22.6% of its total national territory under some form of protection. There is 34.9% terrestrial land protection and 10.6% marine area protection. The total percentage with biodiversity conservation as the main focus is 9.3% and Private Protected Areas account for 3.2% of land (BEO, 2009).The majority of Belize's protected areas are for the sustainable use and management of its resources. Belize has 102 protected areas. In 2001, Merman and Sabido identified 87 distinct types of terrestrial and marine ecosystems. The findings included a total forest cover of about 67.4% over Belize's land mass Belize has approximately 102 protected areas that aim to protect vast elaborate marine and terrestrial ecosystems. Cockscomb Wildlife Sanctuary provides a home for jaguars and other fauna while it helps to maintain flora diversity. Also, a number of small initiatives have been established to maintain botanical gardens and seed banks such as Tea Kettle Enterprises, the Belize Botanical Garden and the University of Belize. A silviculture project is also being established for the commercialization of Xaté palms (Chamaedorea sp.). The government of Belize has designated 50 acres of land for the establishment of the National Botanical Garden and the revision of plans for its establishment is currently ongoing.

Target 9: 70 percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.	The genetic diversity of crops, livestock, harvested species of trees, fish and wildlife are conserved primarily *in-situ* conservation programs supported by a few *ex-situ* programs, such as the Belize Zoo, small arboretums and a herbariums in the Forest Department. The conservation of Belize's genetic diversity is being addressed primarily through the implementation of Belize's Biodiversity Strategy and Action Plan, The National Environmental Action Plan, and conservation efforts by several organizations that are presently conducting on-going programmes targeting specific species under threat of over-exploitation.
Target 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.	
Target 11: No species of wild flora endangered by international trade.	Belize's Chiquibul Forest Reserve and National Park is invaded constantly by Guatemalan xateros hunting for the exotic and expensive Xaté palm. The Forestry Department is actively working along with the Belize Defense Force and the British Army to put an end to the illegal exploitation.
Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.	The Forestry Department, as well as NGOs like the Audubon Society and Programme for Belize, has invested in education outreach to raise awareness as to the importance of plant diversity and conservation. Primary, secondary and tertiary education institutions have incorporated environmental science and conservation into their curriculum.
Target 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.	PACT, the Oak Foundation, University of Belize, Galen University, and government departments within the Ministry of Natural Resources have provided venues for civil servants, citizens, and other stakeholders to be trained in conservation, research, and analysis. These institutions work together to increase the local technical capacity of the country.
Target 16: Networks for plant conservation activities established or strengthened at national, regional and international levels	With the development of the National Protected Areas Policy and System Plan, Belize has stepped closer to consolidating its system of protected lands. Via this plan, the country will be able to coordinate efforts of conservation to yield the best possible outcome for local, regional and international targets.

Table 2: Progress towards Programme of Work on Protected Areas

Progress towards Targets of the Programme of Work on Protected Areas		
Goals	**Target**	**Progress**
1.1. To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals. **1.2.** To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function. **1.3.** To establish and strengthen regional networks, trans-boundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries. **1.4.** To substantially improve site-based protected area planning and management. **1.5.** To prevent and mitigate the negative impacts of key threats to protected areas. **2.1.** To promote equity and benefit-sharing. **2.2.** To enhance and secure involvement of indigenous and local communities and relevant stakeholders. **3.1.** To provide an enabling policy, institutional and socio-economic environment for protected areas. **3.2.** To build capacity for the planning, establishment and management of protected areas. **3.3.** To develop, apply and transfer	**By 2010**, terrestrially 2/ and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals – particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation. **By 2015**, all protected areas and protected area systems are integrated into the wider land- and seascape, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity 5/ and the concept, where appropriate, of ecological networks. **Establish** and strengthen by 2010/2012 6/ trans-boundary protected areas, other forms of collaboration between neighbouring protected areas across national boundaries and regional networks, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation. **All** protected areas to have effective management in existence by 2012, using participatory and science-based site planning processes that incorporate clear biodiversity objectives, targets, management strategies and monitoring programmes, drawing upon existing methodologies and a long-term management plan with active stakeholder involvement. **By 2008**, effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas are in place. **Establish** by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and	In accordance with the Programme of Work for Protected Areas, Belize undertook to develop the National Protected Areas Policy and System Plan (NPAPSP). It was formally adopted in December 2005. The NPAPSP is a comprehensive policy and plan for Belize's one hundred and two (102) protected areas and it aims at making the management of all protected areas comprehensive and coherent. If executed properly, the protected areas system plan will consolidate the various fragmented management systems so that it may function as a whole. This supports the interconnectivity and synergy of tropical ecosystems, particularly those aspects that are important for migratory species. The system plan would assist Belize in upholding its obligations to the UNCBD and its commitments to regional efforts such as the Mesoamerican Biological Corridor and the Mesoamerican Barrier Reef System. The Plan grounds itself on a set of underlying principles, **the *Ecosystem Approach*, the *Precautionary Principle*, the *Importance of Science*, the *Importance of Local and Indigenous Community Knowledge*, *Monitoring and Evaluation* and *Cost-effectiveness and Efficiency*.** Consequently, the Plan for the protected areas of Belize has been developed to achieve four goals: 1) A ***comprehensive protective area policy which*** sets the general policy framework in which the National Protected Area Systems Plan is to be implemented; 2) An **assessment and analysis of the Protected Area System** which set out to assess the present protected area network and its characteristics in terms of comprehensiveness, representativeness, adequacy, balance and coherency. Recommendations were made to optimise these qualities in a consolidated system; 3) ***Procedures for***

appropriate technologies for protected areas. **3.4.** To ensure financial sustainability of protected areas and national and regional systems of protected areas. **3.5.** To strengthen communication, education and public awareness. **4.1.** To develop and adopt minimum standards and best practices for national and regional protected area systems. **4.2.** To evaluate and improve the effectiveness of protected areas management. **4.3.** To assess and monitor protected area status and trends. **4.4** To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems.	management of protected areas. **Full** and effective participation by 2008, of indigenous and local communities, in full respect of their rights and recognition of their responsibilities, consistent with national law and applicable international obligations, and the participation of relevant stakeholders, in the management of existing, and the establishment and management of new, protected areas. **By 2008** review and revise policies as appropriate, including use of social and economic valuation and incentives, to provide a supportive enabling environment for more effective establishment and management of protected areas and protected areas systems. **By 2010**, comprehensive capacity-building programmes and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards. **By 2010** the development, validation, and transfer of appropriate technologies and innovative approaches for the effective management of protected areas is substantially improved, taking into account decisions of the Conference of the Parties on technology transfer and cooperation. **By 2008**, sufficient financial, technical and other resources to meet the costs to effectively implement and manage national and regional systems of protected areas are secured, including both from national and international sources, particularly to support the needs of developing countries and countries with economies in transition and small island developing States. **By 2008** public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased. **By 2008**, standards, criteria, and best practices for planning, selecting, establishing, managing and governance of national and regional systems of protected areas are developed and adopted. **By 2010**, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and trans-boundary protected area levels adopted and implemented by Parties.	***Management and Sustainable Use*** which assessed the current administrative and management procedures at system and site level and recommendations for improvements. This included all governance issues ensuring that the protected area system and its supporting legal instruments accommodate the full range of interests and rights in natural resource management; and 4) ***Strengthening Management and Monitoring*** which covers the need to achieve effective protected area management through sound procedures, capacity building, adequate financing, obtaining and making good use of information, and through monitoring and self-assessment. The management of protected areas is carried out through partnerships between the public sector and civil society partners. The co-management agreements are signed between the Government of Belize and NGOs or Community-Based Organizations. The agreements outline the roles and responsibilities of the parties and specify the duration of the partnership. Generally, the civil society partner is the on-ground manager with the Government of Belize providing administrative, legal and technical support on matter related to the management of the protected area. Management Plans have been designed for several protected areas. These plans are based on a formally endorsed management plan template developed along with protected areas co-managers. The management plans integrate the principles of sustainable development and wise use of the natural resource for the benefit of the local communities and indigenous groups dependent on the resource, and with a central focus on biodiversity conservation. There is an ongoing initiative under the implementation of the NPAPSP to formalize and produce legislation for an incentive scheme and programme for the private sector to encourage the designation of private lands for

	By 2010, national and regional systems are established to enable effective monitoring of protected-area coverage, status and trends at national, regional and global scales, and to assist in evaluating progress in meeting global biodiversity targets. **Scientific** knowledge relevant to protected areas is further developed as a contribution to their establishment, effectiveness, and management.	conservation purposes. The initiative has been relatively successful but more private protected areas are needed to defragment the corridor system and reinforce the interconnectivity of the various terrestrial ecosystems.

Appendix IV - National indicators used in the report (Optional)

While the 2010 Goals and Target provide an indicative direction for governments to focus their implementation efforts, its set of indicators still remain too broad and general to be able to effectively measure the degree of success or level of accomplishments being made. This is especially the case since Belize has not necessarily sought to customize and further development these broad indicators. However, the assessment conducted in the preparation of this report would indicate that the Government of Belize is likely to meet targets set and in a few instances it is presently exceeding the 2010 Targets. In order to clarify Belize's actual progress, the country would need to narrow these indicators and it would need to receive much more support in present efforts and in building the country's capacity. These steps are necessary to effectively deal with issues related with the fair and equitable benefits arising from the use of its genetic resources and in inventorying its present biodiversity.

Even though the international indicators are broad the following were used as indicators to help us assess the status of biodiversity: changes in forest cover (including riparian); water flow & water quality; population trends for endangered species, game species, top predators; maintenance of watershed/riverine connectivity; and forest connectivity.

The planning, policy and implementation process in Belize has been sometimes responsible for the lack of management of natural resources in the country. There indicators for progress towards sustainability and resource conservation have been determined to be: Rate of implementation of the NPAPSP (slow); land allocations within PAs / de-reservations; creation of PAs, including PPAs; level of enforcement; level of illegal incursions (hunting, farming, looting, etc); increased (human) capacity to manage and monitor; financial resources available for conservation; Monitoring tool for long-term forestry concessions; Patrol protocol; and GSW monitoring protocol.