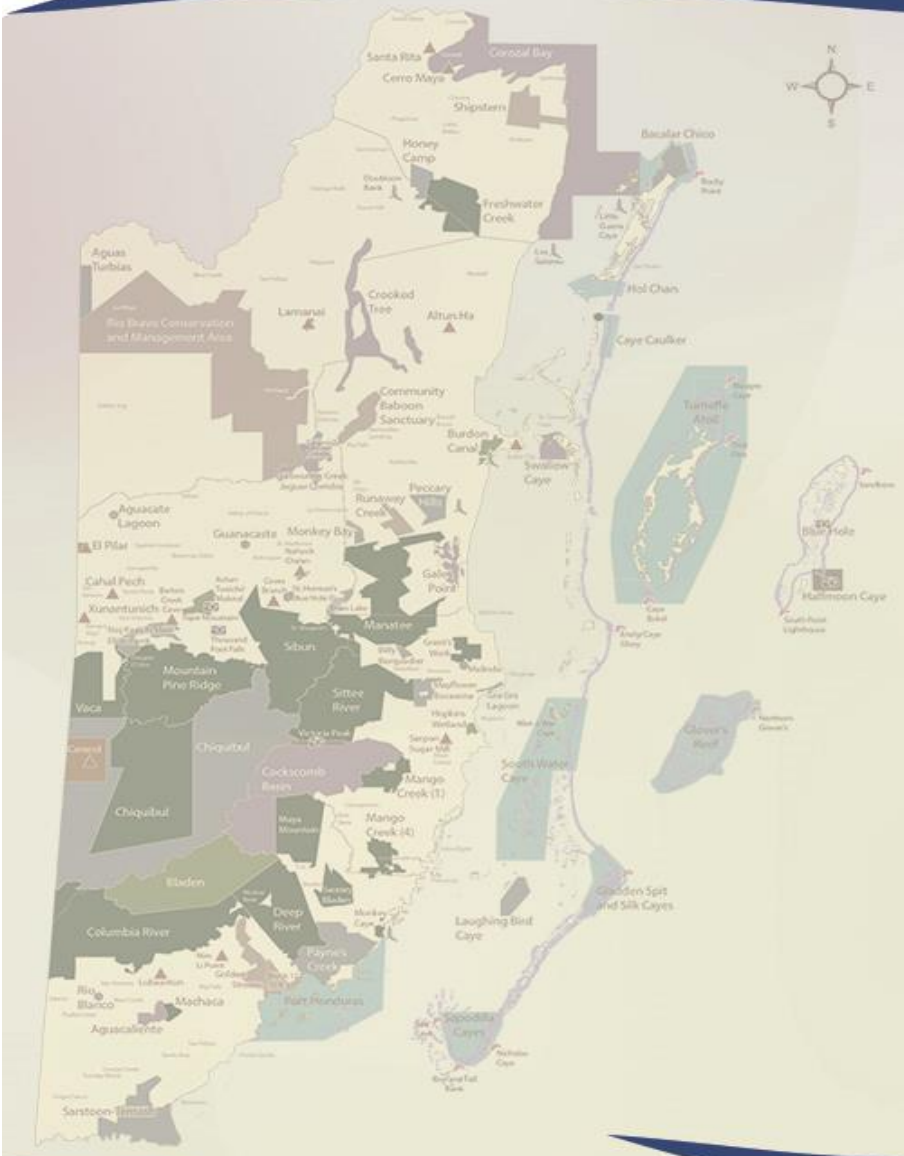
NATIONAL PROTECTED AREAS SYSTEM PLAN

Ministry of Forestry, Fisheries and Sustainable Development
Government of Belize

Revised Edition
March, 2015



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NPAS
Nature. Culture. Life.

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National Protected Areas System Plan Revised Edition 2015

The Belize National Protected Area System Plan (2015) has been updated based on the following major consultancy reports commissioned by the Ministry of Forestry, Fisheries and Sustainable Development. Other references are listed in the Bibliography.

- ***Sustainable Finance Strategy and Plan for the Belize Protected Area System***: Andy Drumm, Jaime Echeverría and Melissa Almendarez
- ***Strategies and Guidelines for Investing in Protected Areas in Belize: Consultancy To Undertake Socio-Economic And Environmental Assessments Of Priority Protected Areas And Develop Strategies And Guidelines For Investing In Protected Areas And Their Buffer Areas***: Allan Herrera, M.Sc.
- ***Rationalization Exercise of the Belize National Protected Areas System***: Wildtracks.
- ***SNC.PAS Mid-Term Evaluation Report***: Ismael Fabro and Juan Rancharan
- ***National Protected Areas System Bill (Version 1)***: Ismael Fabro and Mark Usher.
- ***National Protected Areas System Bill Draft (Version 2)***: Dr. Winston McCalla

The original National Protected Areas System Plan (2005) was drawn up from the following consultancy reports commissioned by the Task Force on Belize's Protected Areas Policy and System Plan.

- ***Work Plan for the formulation of Belize's Protected Areas Policy and Systems Plan:*** Jan Meerman, J. Roger Wilson, John McGill, Jerod Clabaugh, Marydelene Vasquez, Tineke Boomsma and Eden Garcia.
- ***Belize's Policy on Protected Areas***: Eugenia Wo Ching, Angel Chun (Editor), Lisel Alamilla, Roger Morales and Ana Maria Camacho.
- ***National Protected Area Systems Analysis (plus subsidiary reports)***: Jan Meerman
- ***Improving Governance of Protected Areas in Belize: institutional, management and legislative requirements***: Floyd Homer.
- ***Management Capacity in Belize's Protected Area System***: Launchpad Consulting
- ***National Management Plan Framework (plus sub-reports)***: Paul and Zoe Walker (Wildtracks).
- ***Monitoring Effectiveness in Belize's Protected Areas (plus subsidiary reports):*** Roy Young, Larry Woolfe and Victoria Macfarlane.
- ***Sustainable Financing Mechanisms: Belize's Protected Area System:*** Launchpad Consulting.

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ACKNOWLEDGEMENTS

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And last but certainly not least, we extend our gratitude to the GIZ Selva Maya Programme. It goes without saying that this project to update the NPASP would not have been possible without their financial support.

ACRONYMS

APAMO	Association of Protected Areas Management Organizations
BAPPA	Belize Association of Private Protected Areas
BAS	Belize Audubon Society
BERDS	Biodiversity and Environmental Resource Data System of Belize
BTB	Belize Tourism Board
CAP	Conservation action plan
CBD	Convention on Biological Diversity
CBO	Community-based organization
CFO	Chief Forest Officer
CHM	Clearing House Mechanism
COP	Conference of the Parties
CPA	Community protected area
CSO	Civil society organization
CZMAI	Coastal Zone Management Authority and Institute
FID	Fisheries Department
FD	Forest Department
FR	Forest Reserve
GHG	Greenhouse gas
GOB	Government of Belize
HOD	Head(s) of Department
IOA	Institute of Archaeology
IUCN	World Conservation Union
LCDs	Low-carbon development strategies
MFFSD	Ministry of Forestry, Fisheries and Sustainable Development
MMM	Maya Mountains Massif
MNRE	Ministry of Natural Resources and the Environment
MOU	Memorandum of Understanding
MPA	Marine protected area
MR	Marine Reserve
NAFP	National Agriculture and Food Policy
NCHM	National Clearing House Mechanism
NGO	Non-governmental organization
NLUP	National Land Use Policy and Integrated Planning Framework
NMPF	National Management Plan Framework
NP	National Park
NPAC	National Protected Areas Commission
NPAMPF	National Protected Area Management Plan Framework
NPASA	National Protected Areas System Act

NPAS	National Protected Areas System
NPATC	National Protected Areas Technical Committee
NPASP	National Protected Areas System Plan
NPSA	National Parks System Act
NSTMP	National Sustainable Tourism Master Plan
PA	Protected area(s)
PACT	Protected Areas Conservation Trust
PfB	Programme for Belize
PPA	Private protected area
RBCMA	Rio Bravo Conservation and Management Area
REA	Rapid Ecological Assessment
SBRC	Southern Barrier Reef Complex
SCMA	Shipstern Conservation and Management Area
SPAG	Spawning Aggregation
TEV	Total economic valuation
TIDE	Toledo Institute for Development and Environment
TNC	The Nature Conservancy
UB	University of Belize
UB-ERI	University of Belize Environmental Research Institute
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
WCS	Wildlife Conservation Society
WPC	World Park Congress
WS	Wildlife Sanctuary
WSSD	World Summit on Sustainable Development

FOREWORD

The National Protected Areas System of Belize is a network of sites designed to protect and preserve Belize's biological diversity and to contribute towards Belize's sustainable development by providing economic opportunities and for the wellbeing of Belizeans. Belize continues to be committed to the maintenance of its protected areas system; this commitment was clearly demonstrated through the endorsement of the National Protected Areas Policy and Svstem Plan in 2006 and the re-affirmation in 2010.

In 2012, the Ministry of Forestry, Fisheries and Sustainable Development was constituted, the Ministry fostered the enabling environment to fast-track the implementation of the National Protected Areas System Plan and the fulfillment of the four objectives of the Plan. Since that time, much has been achieved, including:

- In 2013, the Rationalization Exercise of the National Protected Areas System providing a solid basis for improvement of the NPAS – including the socio-economic benefits of Protected Areas – and highlighting the need to adapt to climate change.
- The National Training Program for Protected Areas Management (NTPPAM) was designed in 2012 and piloted in 2013 and 2014 with the aim to strengthen management of Protected Areas. It is expected that the NTPPAM will become a permanent programme and institutionalized to serve as a cornerstone of capacity development for the National Protected Areas System.
- Development of the draft Protected Areas Fee Policy and Framework in 2014 to maximize the efficiency and effectiveness of fees collection, administration and re-investment. The Policy and Framework provides an important opportunity to modernize the existing fee system.
- A draft NPAS Bill and proposed amendments to the PACT Act which will improve the legal and institutional framework for protected areas. I am delighted to say that this has now been completed in 2015 and when these become law it will be my Ministry’s biggest achievement.

My Ministry recognized that the National Protected Areas System Plan required review and possibly updating, especially given our achievements over the past nine years. We also felt that we needed to strengthen how we monitored our actions, and to identify the nexus between the sustainable use of natural resources and our economic growth and sustainable development. In addition, the revised Plan should identify the

linkages between our Protected Areas and water and food security, climate change resilience and poverty reduction.

After months of consultation we have a revised plan which has been validated and presented to my Ministry for endorsement.

As the Minister of Forestry, Fisheries and Sustainable Development it is my pleasure to endorse this revised Plan, which represents a renewal of all our efforts and commitments to ensure that our Protected Areas System is recognized as a priority by all Belizeans.

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Hon. Senator Lisel Alamilla
Minister of Forestry, Fisheries and Sustainable Development

EXECUTIVE SUMMARY

Belize's network of protected areas continue to play a critical role in biodiversity and ecosystems conservation. There is also now an increasing recognition of the role of these natural capitals as assets on which several major sectors of the economy depend. The management of Belize's network of protected areas is now at a critical point of a paradigm shift. The shift is from preservation to adaptive management, from a sectoral to an integrated approach, from being restrictive to one engaging all stakeholders and from nature protection to social and environmental well-being. This updated National Protected Areas System Plan (NPASP) seeks to actively link protected areas more effectively to the surrounding landscape. The objective of improving the conservation of biological diversity remains, however, there is greater incorporation of wider societal aspirations including economic well-being. The Vision of this Plan is to have an effectively managed National Protected Areas System Plan that maintains healthy ecosystems and maximizes its social, cultural and economic contribution to local and national development. This updated Plan is hinged directly on the Vision of Belize's Horizon 2030 where "the natural environment is valued and protected as the basis for all economic activity."

The original plan was endorsed by the Government of Belize in 2006. Since then the Ministry of Natural Resources and Environment (MNRE) and now the Ministry of Forestry, Fisheries and Sustainable Development (MFSSD), has implemented key activities outlined in the plan. The plan is still very relevant however, protected areas are now required to do much more in terms of their ecological, social and economic contributions. Key limitations pertaining to performance measurement, inadequate integration with other national development policies, and a lack of a monitoring and evaluation framework were identified. Consequently, the National Protected Areas Technical Committee (NPATC) recommended that the NPASP be updated to address these gaps.

The overall purpose of this updated NPASP is to have an effective protected areas system for Belize established. The plan now seeks to underscore the fundamental role of the protected areas network as a pillar in national economic development. Critical aspects of this process is having a strong governance structure, institutional and operational capacity of regulatory bodies, the accounting of economic benefits of protected areas and better harnessing of effective partnerships in natural resources management.

The plan also underscores the urgent and critical need for increased public and private sector understanding, appreciation and support for protected areas. It also highlights the

need for widespread public participation and engagement in ensuring the long-term management of the protected areas network. The establishment of an integrated inter-sectoral communications strategy is essential to achieve this.

Direct engagement with the private sector in supporting the management and ensuring the integrity of protected areas is also now a central initiative. The plan recognizes that the linking of effective functioning of ecological and environmental systems with improved social and economic circumstance depends on dialogue and engagement with local communities and the private sector. The Plan calls not only for having clear strategy, rules and guidelines for private sector investment in protected areas but also in collaborating and supporting private sector stakeholders to enhance the sustainability of productive activities thereby guaranteeing the long term viability and integrity of the protected areas network.

Furthermore, protected areas must now be integrated with a holistic approach to the management of natural resources. Fundamental to the understanding and application of holistic management is the recognition that human society is an integral component of many ecosystems. The Plan recognizes the importance of linking protected areas to the rest of the landscape and seascape through ecological process and also to society both adjacent to and further off from the physical boundaries of protected areas. A critical step to achieve this is to simplify and streamline the protected areas network and strengthen management effectiveness.

The measure of performance both in terms of implementation and impact of the system plan will be based on clear outcome indicators defined in the results framework. The process of ensuring accountability and performance measurement will however require some investment in organizational capacity.

1. INTRODUCTION

1.1 Rationale for a Protected Areas System Plan

A high proportion of the land and sea resources of Belize are subject to special measures to conserve their intrinsic qualities and their value to society –in other words, they are within protected areas. This network of sites and the various agencies responsible for their administration, has evolved organically over many decades and continues to do so, reflecting changing attitudes and approaches to addressing environmental issues. The level of success, however, varies and there are still calls for improving the PA network, its management and biological representation. Belize now finds itself at a crossroads: the network represents a wealth of valuable resources but how should it be conserved to best effect? And how should it be integrated more effectively with the national economy and its conflicting demands?

The National Protected Areas System Plan reflects the Constitution of Belize and is founded on the need to ensure that biodiversity conservation becomes an important and integral part of national social and economic development. The guiding principle is to ensure that the potential contribution of the protected areas system to national development and poverty alleviation is maximized, thereby putting it on a sound and rational footing.

A critical element of the vision articulated in Belize's Horizon 2030 National Development Framework is that "the natural environment is valued and protected as the basis for all economic activity and therefore development planning is based on the principles of environmental sustainability." Consequently, one of the four main thematic areas of Horizon 2030 is focused on ensuring a healthy environment for all Belizeans. The main strategy to achieving the articulated environment and sustainable development goals is to incorporate environmental sustainability into development planning and strengthen protected areas management. To achieve this, the framework specifies the adoption and implementation of the National Protected Areas System Plan and strengthening of the legal and administrative framework for protected areas.

1.2 System Plan Development and Challenges

In October 2003, the Deputy Prime Minister and Minister of Natural Resources and the Environment, in collaboration with the Minister of Agriculture and Fisheries and the Minister of Tourism, established a Task Force – with high level representation from the relevant administrative agencies – charged with ensuring that a comprehensive National Protected Areas Policy (see Annex 1) and System Plan (NPASP) was prepared. The 2005 NPASP was the end product of that process.

Since its endorsement in 2006, the Government of Belize, primarily through the Ministry of Natural Resources and Environment (MNRE) and now the Ministry of Forestry, Fisheries and Sustainable Development (MFFSD), has implemented key activities outlined in the plan. The plan is still under implementation and very relevant; however, protected areas are now required to do much more in terms of their ecological, social and economic contributions than ever before. For example, in addition to contributing ecologically by ensuring healthy habitats for biodiversity, they must also serve to assist in adaptation by humans and wildlife to climate change and mitigating climate change through the storage and sequestration of carbon. They are also expected to contribute more economically, not just by ensuring the economic and financial sustainability of their own operations, but by augmenting national development through tourism and provision of forest products and other services for society.

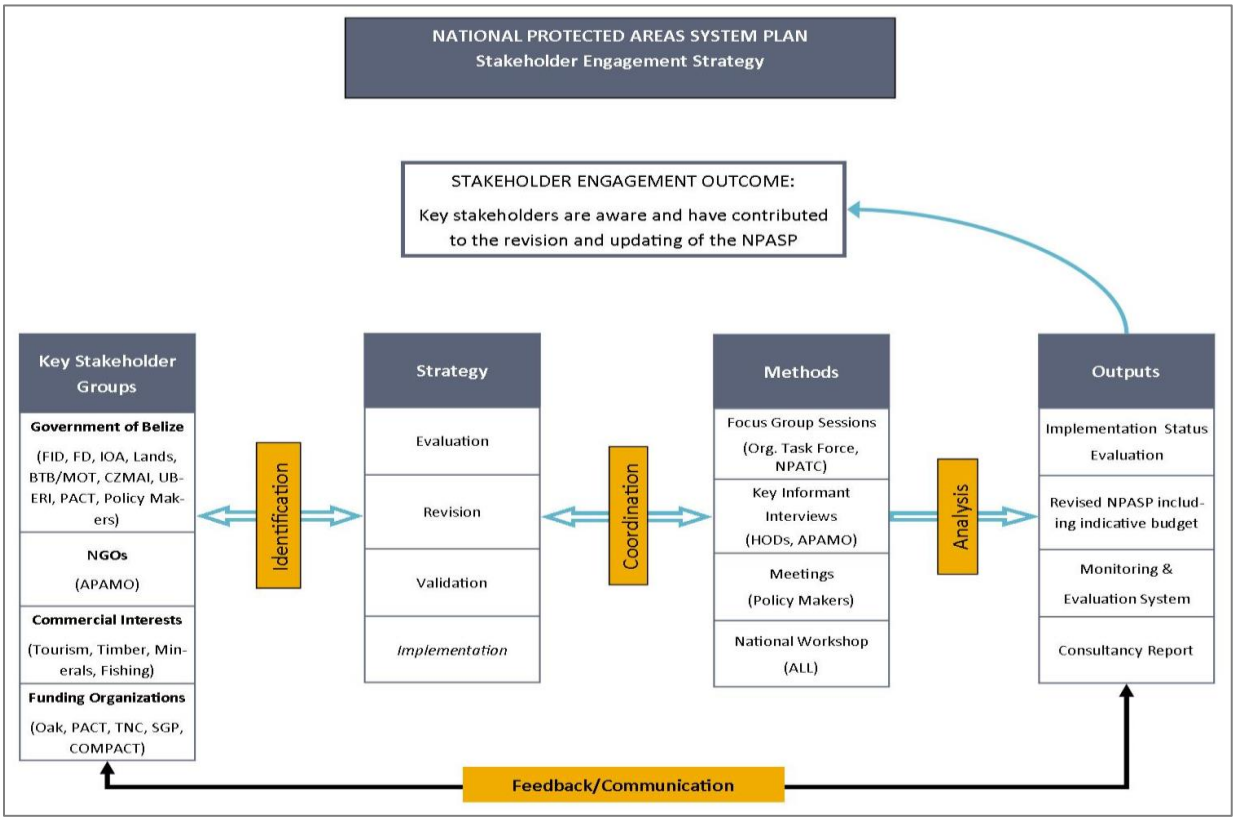
However, challenges in reporting on progress, measuring the impact of investments to date and continued implementation of the plan remain due to: a) limited human and financial resources, b) lack of a robust implementation plan with relevant targets, and c) absence of a monitoring and evaluation framework. Additionally, it has been observed that the National Protected Areas System has not been adequately integrated into other national development policies with the results being that similar development initiatives in related sectors are implemented in isolation rather than being mutually supportive. The above shortcomings are further compounded by the fact that certain deficiencies in the structure of the system plan have been identified; for example, there were no clearly defined milestone and/or terminal targets in the plan. The 2005 NPASP was also deficient because a corresponding monitoring and evaluation framework was never prepared.

To this end, the National Protected Areas Technical Committee (NPATC) recommended that the NPASP be updated to address the gaps to ensure successful implementation and adequate monitoring and evaluation. The MFFSD, with support from the GIZ-Selva Maya Programme, undertook the updating initiative.

1.3 The Revision and Updating Process

The NPASP revision and updating process followed the stakeholder engagement strategy as depicted in Figure 1.

FIGURE 1: STAKEHOLDER ENGAGEMENT IN REVISION PROCESS



The first step was to establish the stakeholder engagement strategy in order to determine the expected outcome. For this assignment, it was determined that the expected outcome is that key stakeholders are aware of the revision exercise and have contributed to the revision process and overall updating of the NPASP.

The second step was the identification of key stakeholders to the process. The following were identified as the key stakeholder groups for the revision and updating exercise: 1) agencies of the Government of Belize (such as the FD, FID, MFFSD, IOA, BTB, MOT, PACT, CZMAI, and UB-ERI and Faculty of Science and Technology); 2) Non-Government Organizations (such as APAMO and its member agencies); 3) commercial interests and the private sector; and 4) Funding Organizations (which provide significant financial resources for the conservation and management of Belize's natural resources especially its protected areas).

The third step in the process was the engagement of these key stakeholders in the various stages of the updating process itself. Relevant stakeholders were involved in the evaluation of the current status of the NPASP implementation, revision of the Plan's results framework including actions, and in the validation of the same revised framework.

A national workshop was held with representatives of key stakeholder groups identified. The feedback received from this session led to further revisions to the revised strategic framework of the NPASP. A final meeting was held with the NPATC to review the final document. Feedback and continuous communication with key stakeholders was through the NPATC.

1.4 Underlying Principles and Intended Results

The approach to the development of the 2005 NPASP was established immediately after the Vth World Park Congress (WPC), the VIIth Conference of the Parties (COP) of the Convention on Biological Diversity (CBD), and the World Summit on Sustainable Development (WSSD) (Rio + 10). The NPASP was updated on the heels of the VIth World Parks Congress. All these conferences dealt with protected areas and the plan therefore incorporates the most recent thinking both in Belize and in the international community. The plan has a set of underlying principles:

Ecosystem Approach

It provides for integrated management of terrestrial, coastal and marine resources at the scale of functioning ecosystems, which include the human population and its cultural diversity. The plan must therefore promote conservation, sustainable use and equitable sharing of costs and benefits.

Precautionary Principle

The principle states that if the consequences of an action are unknown but that there are reasonable grounds to believe they will be negative, then it is better not to carry it out. This approach also implies that the burden of proof of the suitability and effectiveness of unproven actions lies with the proponent and that democracy and transparency must be brought into the decision-making process at all levels so that concerns can be voiced.

Importance of Science

Good conservation must be based on sound knowledge provided by scientific work on key processes and influences on terrestrial, coastal and marine ecosystems and on their structure, functioning and productivity. Evidently, understanding develops over time and approaches must evolve accordingly.

Importance of Local and Indigenous Community Knowledge

The plan and its implementation must use and draw upon the scientific, technical and traditional knowledge of local and indigenous communities. Participatory approaches involving all parts of society must be used.

Monitoring and Evaluation

The plan must provide for monitoring and evaluation procedures, in order to assess effectiveness in implementing actions. This allows for adaptive management and clear measurement of performance, enabling accountability to all stakeholders in the process.

Cost-effectiveness and Efficiency

Activities that implement the plan must be cost-effective and efficient. Duplication of effort must be avoided and activities must be harmonized through effective coordination at national and regional scales.

2. SITUATION OVERVIEW OF THE CURRENT PROTECTED AREA SYSTEM

2.1 Characteristics of the current protected area system

2.1.1 Belize's portfolio of protected areas

There are currently 103 protected areas within the NPAS (National Protected Areas System). 52 protected areas lie under the administration of the Forest Department, with a further 9 Marine Reserves and 12 spawning aggregation sites (many of which overlap existing Marine Reserves), being administered by the Fisheries Department. These protected areas encompass nine different management categories, dependent on the legislative framework under which they were designated. There is also a single Mangrove Reserve. In addition, there are 7 bird colonies (few of which are actively monitored or managed) and four Public Reserves, both categories established under the Lands Act (Lands Department, Ministry of Natural Resources).

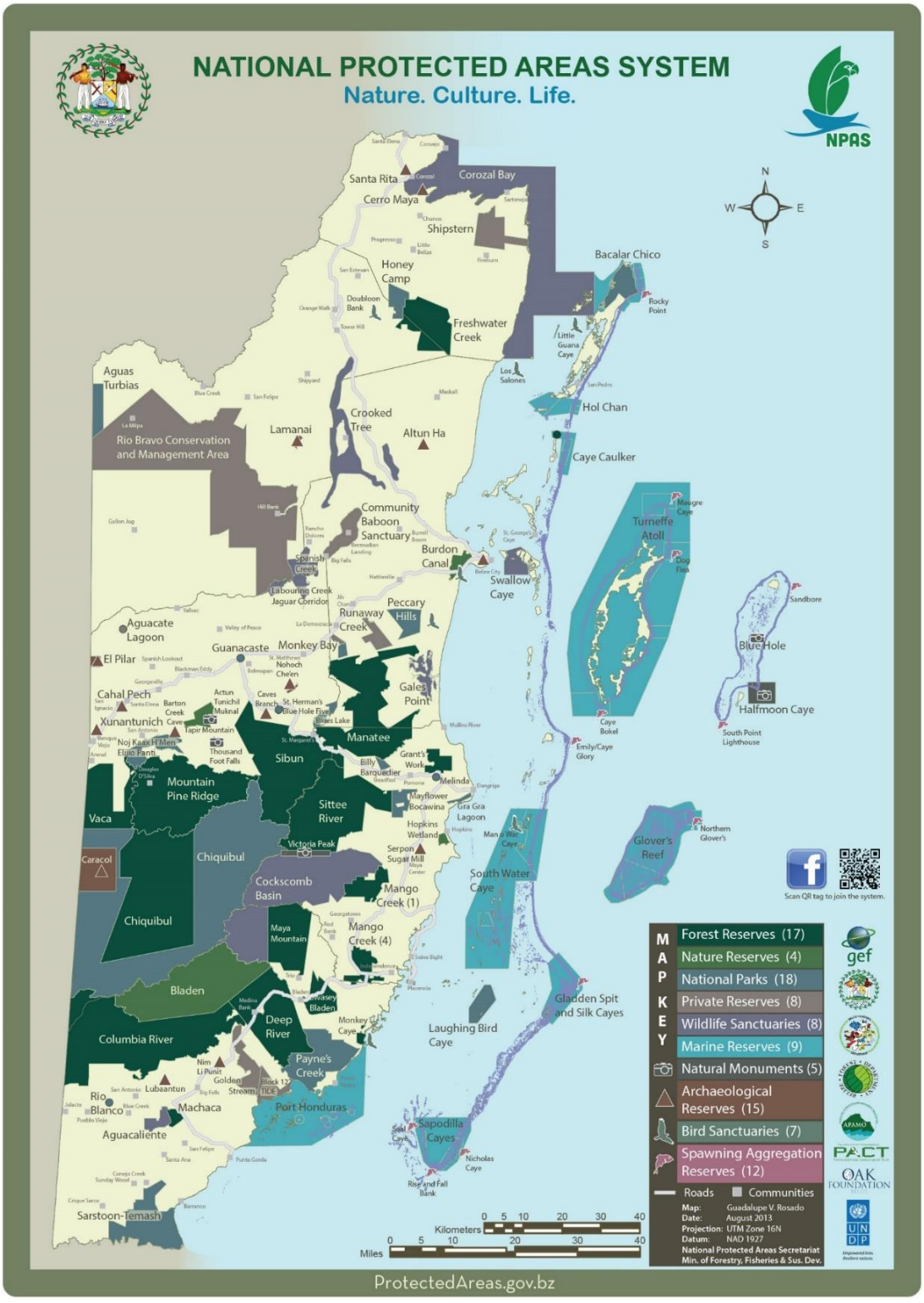
16 archaeological sites are also considered part of the NPAS, and administered under the Institute of Archaeology (under the National Institute of Culture and History). 8 private protected areas are also recognized by Forest Department as being part of the NPAS, though are not yet legally embedded within the national framework. Additional private lands in the Maya Mountains Marine Corridor are legally committed to conservation and are part of the NPAS.

These protected areas include:

- Two large forest nodes, regionally important for biodiversity conservation:
  - Maya Mountains Massif, and
  - Part of the Selva Maya
- Two RAMSAR sites, declared for their global importance in protection of wetlands:
  - Crooked Tree Wildlife Sanctuary, and
  - Sarstoon-Temash National Park
- The Belize Barrier Reef, a biodiversity hotspot that includes:
  - A globally important network of marine protected areas
  - Seven marine protected areas forming Belize's World Heritage Site
  - Twelve protected spawning aggregation sites, critical for regional fisheries viability
- A management regime that includes strong partnerships between the Government of Belize and co-management NGO / CBO organizations

Belize's NPAS provides the critical ecosystem service of water catchment to supply the national need for clean water, provides protection against storm impacts, is representative of the majority of the ecosystems present in the country, actively supports livelihoods in both the marine and terrestrial environments, and makes Belize a leader in the region in biodiversity conservation.

FIGURE 2: MAP OF BELIZE'S PROTECTED AREAS SYSTEM



SOURCE: NPAS SECRETARIAT, 2015

2.1.2 Ecosystem representation

In terms of ecosystem representation, Belize's NPAS presents the following features:

- Over 90% of Belize's 70 recognized ecosystems have greater than 10% representation within the NPAS (National Protected Areas System) – as per IUCN targets.
- 60% of ecosystems have greater than 30% representation within the NPAS. The creation of new national terrestrial protected areas to strengthen ecosystem coverage is not considered critical, though realignments to improve the representation of rivers and riparian vegetation are recommended.
- The greatest gaps are in the coastal and marine environments.
- Both the marine and terrestrial protected areas of the system integrate features that provide some resilience to climate change.
- Whilst not an ecosystem in their own right, sea-mounts such as those between Turneffe and Lighthouse Atolls are also important features that are currently not represented within the NPAS.

2.1.3 The protected area rationalization exercise

Over the last thirty years, Belize has established a strong portfolio of both terrestrial and marine protected areas, ensuring continued critical ecosystem services of water catchment, and protection from storm flooding and life threatening mudslides. The protected areas still maintain viable populations of the majority of Belize's wildlife, and have the potential to continue to actively support livelihoods in both the marine and terrestrial environments.

In 2006, the Government of Belize ratified the NPASP, providing the framework for the strengthening of the NPAS (National Protected Areas System). In 2011, Belize embarked on a rationalization process towards effective implementation of the NPAS, including the identification of areas requiring further investment.

The assessment that was conducted towards the rationalization of the NPAS resulted in key findings, and recommendations developed from them. These findings and recommendations provide the foundation for building on the current network of protected areas, improving functionality, connectivity and socio-economic benefit as Belize moves into a future with increasing anthropogenic pressures, overshadowed by the need to adapt to current and predicted climate change impacts.

Included in the assessment report are recommendations for building a workable administrative framework for the short, medium and long term, integrating the current

and proposed system level management units, and strengthening the communication and collaboration needed between all protected area management partners.

2.1.4 Protected area prioritization

Belize, as a country, is heavily dependent on the environmental services provided by the NPAS. A prioritization exercise assessing all protected areas within the NPAS demonstrated that:

- Resilience to climate change requires replication in protection of ecosystems. As such, no protected area can be considered redundant within the system.
- Sites protected for very specific reasons – such as archaeological reserves, spawning aggregation sites, bird nesting colonies – are critical to maintenance of cultural heritage and biodiversity in Belize and need to be afforded effective protection.
- The six highest priority terrestrial protected areas all fall within the Maya Mountains Massif
- The protected areas rating as lowest on the scale of priorities are those not linked directly to the main forest nodes of the NPAS. Some of these, however, are important for their educational values – for example, Guanacaste National Park and St. Herman's Blue Hole National Park.

2.1.5 Implications for protected areas system design

Gaps in the system

The NPASP (2005) identified seven key geographic areas where the designation of some form of protected area status would help complete the National Protected Areas System. These areas are:

- Northern Belize to the south and west of Shipstern,
- The central northern coastal plain,
- The east-central Belize Valley,
- The karst hills of western Toledo,
- The Moho River, and
- Parts of the Rio Hondo and New, Belize and Temash Rivers.

The Turneffe Atoll was previously identified as a gap in the NPAS but this has been addressed with the declaration and establishment of the Turneffe Atoll Marine Reserve.The open and deep sea ecosystems are also unrepresented but their characteristics are very poorly known. This is a priority area for research as a basis for future action.

The highways carry a heavy human footprint on the landscape, breaking biological connectivity. Special measures need to be devised to reduce this impact in key areas.

Private protected areas already perform a crucial role in the national network and will play an even bigger role in filling gaps in coverage and in creating functional biological corridors.

There is room for adjustments and modifications to the existing protected area network and to site management approaches without jeopardy (and sometimes with enhancement) to core values. Proposals must be judged on a case-by-case basis to assess the impacts upon the functionality of the system on a national scale. At this time the following general points can be made:

- Many protected areas are grouped and are in reality components of one functional unit. Administration and management would be greatly simplified, and the system as a whole both rationalized and made more efficient, if they were treated as such. Wherever possible, clusters of adjacent protected areas should be treated as single multi-zoned conservation management units. The Maya Mountains, Laughing Bird Caye/Gladden Spit, and the protected fish spawning aggregations associated with Marine Reserves are examples but there are others. These units are substantially more important than any of their parts, which should therefore never be judged in isolation. Consolidating the protected areas in the Maya Mountain-Mountain Pine Ridge massif, the Belize Barrier Reef and in the north-western forests would in fact create some of the most important conservation units in Central America.
- Valuable contributions in protected area coverage can be made by extensions to existing protected areas or proposals for the creation of new ones. In principle, however, extensions to the NPAS should only be made where technical assessment shows a significant improvement to system functionality.
- There are nonetheless instances where protected areas could be de-reserved in whole or in part without compromising functionality at system level, particularly where it is made up again in more strategic areas. In even more cases, a change in management category within a zoned management regime would serve the purpose.

Applying these measures requires reformed administrative and legal measures and improved management capacity and procedures.

Connectivity

Belize's forest nodes are recognized for their regional importance in the maintenance of biodiversity in Mesoamerica. However, they are too small in isolation to conserve all biodiversity and retain full ecosystem service functionality without establishing connecting biological corridors. In the terrestrial context, ecosystem connectivity is critical for the maintenance of full species diversity and ecosystem services, preventing genetic isolation of populations and allowing migration of species and ecosystems over time, particularly for climate change adaptation.

Belize has identified three primary biological corridors as critical for inclusion in Belize's portfolio of tools for the maintenance of biodiversity and, and for the long-term viability of the NPAS. These three priority biological corridors are the Northern, Central and Southern corridors.

These three corridors are critical for both national and regional connectivity, and need to incorporate principles of integrated landscape management and socio-economic benefit, with approved governance structures and policies.These biological corridors need to be legislated and demarcated on the ground, with the development of tools such as conservation covenants and financial incentives to facilitate inclusion of private lands within the corridor routes.

Of the three, the Central Belize Corridor is considered the most critical for regional connectivity. The second priority is the Northern Corridor, with climate change predictions indicating that the drier forests of northern Belize will migrate south, gradually replacing the more humid forests. Connectivity is essential if this to be facilitated without great loss of diversity.

Broad stakeholder participation needs to be ensured at all levels in corridor design, formation and management, and facilitation of access to socio-economic opportunities for sustainable development. Connectivity is also important for maintenance of riparian and transboundary ecosystem connectivity, and in the marine environment between coral reef, seagrass and mangrove ecosystems.

2.2 System Administration and Regulation

2.2.1 Categories of protected areas

The World Conservation Union (IUCN), of which Belize is a member, recognizes seven international categories for protected areas. These give a complete spread of options from total protection (Category 1) to maintaining a harmonious interaction of mutual

benefit to man and nature at a landscape level (Category V) and a sustainable flow of products and services to meet the needs of all levels of society (Category VI).

All the Belizean protected areas fall into one of these international categories although the category indicated by the designation and that indicated by actual management may differ. Under the present network, the various protected areas can be categorized as sites designated for:

- Biodiversity protection and research (Nature Reserves);
- Biodiversity protection, research, recreation, education and visitation (National Parks);
- All of the above but protecting particular species or communities requiring special interventions. In practice these areas meld human activity and conservation management (Wildlife Sanctuaries, Bird Sanctuaries, Spawning Aggregations);
- Protection of significant landscape features alongside research, recreation, education and visitation (Natural Monuments);
- Protection of cultural heritage alongside research, education and visitation (Archaeological Reserves);
- Multiple use, zoned to allow controlled extraction of natural resources as well as biodiversity protection, research, education, recreation and visitation (Marine Reserves, Forest Reserves).

There is considerable overlap between these various protected area types, largely due to designations made under three different enabling laws each giving responsibility to a different government department – Forest Department, Fisheries Department, and the Institute of Archaeology. Management precepts in the private reserves may also correspond to one or more of these categories. Finally it has been observed that the designations do not always correspond to the most effective management regime.

Despite a persistent belief that protected areas take territory out of the productive sector, the multiple use areas allowing for good management of natural resources are in fact the most extensive category on land and sea. This coverage is even larger when multiple use zones in the private protected areas (e.g., Rio Bravo Conservation and Management Area and Shipstern Conservation and Management Area) and Wildlife Sanctuaries and National Parks that are *de facto* multiple use areas (e.g., Crooked Tree, Sarstoon-Temash) are taken into account. The reality is that management regimes are a form of land use and usage tends towards the most practical and appropriate form for a given area, whatever its formal designation.

The Rationalization Process recommends that all national protected area categories be retained with their regulations, and that two further categories be added, with the recognition of Private Protected Areas and the division of Wildlife Sanctuaries into two, to better regulate traditional use:

FIGURE 3: PROPOSED CATEGORIES FOR THE SYSTEM

Category	Purpose	Activities Permitted
Nature Reserve	To protect biological communities or species, and maintain natural processes in an undisturbed state.	Research, education
National Park	To protect and preserve natural and scenic values of national significance for the benefit and enjoyment of the general public.	Research, education, tourism
Natural Monument	To protect and preserve natural features of national significance.	Research, education, tourism
Wildlife Sanctuary (1)	To protect nationally significant species, biotic communities or physical features.	Research, education, tourism
Wildlife Sanctuary (2)	To protect nationally significant species, biotic communities or physical features, and allow for traditional sustainable extraction of natural resource	Research, education, tourism, traditional sustainable natural resource extraction
Forest Reserve	To protect forests for management of timber extraction and/or the conservation of soils, watersheds and wildlife resources.	Research, education, tourism, commercial natural resource management and extraction (timber and NTFP)
Marine Reserve	To ensure, increase and sustain the productive service and integrity of the marine resources for the benefit of all Belizeans of present and future generations.	Research, education, tourism, commercial fishing
Private Protected Area	To complement the national lands through provision of connectivity, priority species protection, and improved ecosystem representation.	Research, education, tourism, sustainable extraction
Archaeological Reserve	To protect cultural heritage	Research, education, tourism,
Other Designations		
Spawning Aggregation Site	To protect spawning aggregation sites	Research, education, tourism, commercial fishing
Special Management Area	To protect biological corridors, critical nesting, roosting or congregation areas requiring active management	Research, education, tourism

"Special Management Area" is recommended as an additional designation to cover areas in the landscape or seascape requiring management interventions. These would include (but not necessarily be limited to):

- Biological Corridors

- Bird Nesting Colonies
- Turtle Nesting Beaches
- River mouths in areas of high boat / manatee conflict (Belize River, Sittee River)

Where feasible, cayes, inundated mangrove ranges and critical coastal fringing mangrove should be integrated within marine protected areas under the relevant site legislation, for the following reasons:

- Strengthening the critical role played by mangroves as nursery areas for commercial fish species – particularly in South Water Caye MR, Turneffe Atoll MR, Hol Chan MR, Corozal Bay WS, and proposed Placencia Lagoon, reducing the potential for mangrove removal through caye development
- The Pelican Cayes - the highest value mangroves in terms of unique and endemic species, with their adjacent deep water – are considered of particular importance in maintenance of endemic species, and merit serious investigation into the feasibility of incorporation into the World Heritage Site.
- The important role played by fringing mangroves in breaking the force of storm waves during storm events – particularly those in front of coastal communities and agricultural areas
- Protection of marine turtle nesting sites to ensure increasingly viable populations of these species
- Protection of littoral forest, the most threatened of Belize's ecosystems. In some locations this will also provide habitat for Belize's endemic gecko species
- Protection of key colony bird nesting sites – e.g. Cayo Falso and Shipstern Caye in Corozal Bay Wildlife Sanctuary, Bulkhead Lagoon wood stork nesting caye.

Private protected areas already perform a crucial role in the national network and will play an even bigger one in filling gaps in coverage and in creating functional biological corridors. At the same time safeguards are needed to ensure that these sites make a significant and permanent contribution to the national system and only three (Rio Bravo Conservation and Management Area, Shipstern Conservation and Management Area, and Block 127) currently have effective legal instruments ensuring permanence of conservation management. Private protected areas can therefore qualify for formal recognition within the NPAS if:

- They have been deemed through the PA Rationalization process as making a significant contribution to the coherence and comprehensiveness of the system in terms of ecosystem coverage, biological connectivity and meeting other 'conservation targets' used to assess the relative importance of lands within the system;

- Management (as practiced and as expressed in a management plan) conforms to standards required for sites within the NPAS.
- Adequate provision is made by the land-holder to assure the permanence of conservation management, backed by a legally binding agreement with the GOB. Under these circumstances the private protected area becomes part of the national protected area system, furthering implementation of national policy with regard to the protection and sustainable management of natural and cultural resources. In return, the managing body becomes eligible for the incentives offered as part of that policy.

2.2.2 Declaration, alteration and de-reservation of protected areas

The procedure for protected area establishment differs between the Forest, National Parks System and Fisheries Acts. The forest reserves are established on national lands by the Minister responsible for forests on the advice of the Forest Department. Most of these reserves were created 60-70 years past; many have since been re-designated under the National Parks System Act (NPSA) and the amalgamations proposed here would continue this trend. Proposals for designation under the NPSA have generally been made by interests external to the Forest Department. The department then investigates them, records the boundaries and submits a report for ministerial decision in establishment. The marine reserves belong to a later generation of protected area creation, requiring extensive consultations and an acceptable management plan before the Minister responsible for fisheries is advised to declare the area.

All three laws also contain provisions allowing the Minister to alter, vary or revoke the declaration order. Circumstances do change and may warrant adjustments in the size or status of particular protected areas.

Nonetheless, doing so in the absence of any provision for review, consultation and transparent justification based on set criteria is widely regarded as the most serious weakness in the national protected area network, deeply impacting upon its permanence.

The PA Rationalization Report considered biological and socio-economic criteria to rationalise the declaration, de-reservation or alteration of protected areas, and presents recommendations relating to changes to protected areas, as follows:

- Merging of protected areas
- Re-designation within the national protected area categories
- Boundary realignments
- De-reservations

- Designation of community green areas, and
- New protected area designations/extensions

This updated NPASP actions incorporates these recommendations, which have taken the following considerations into account:

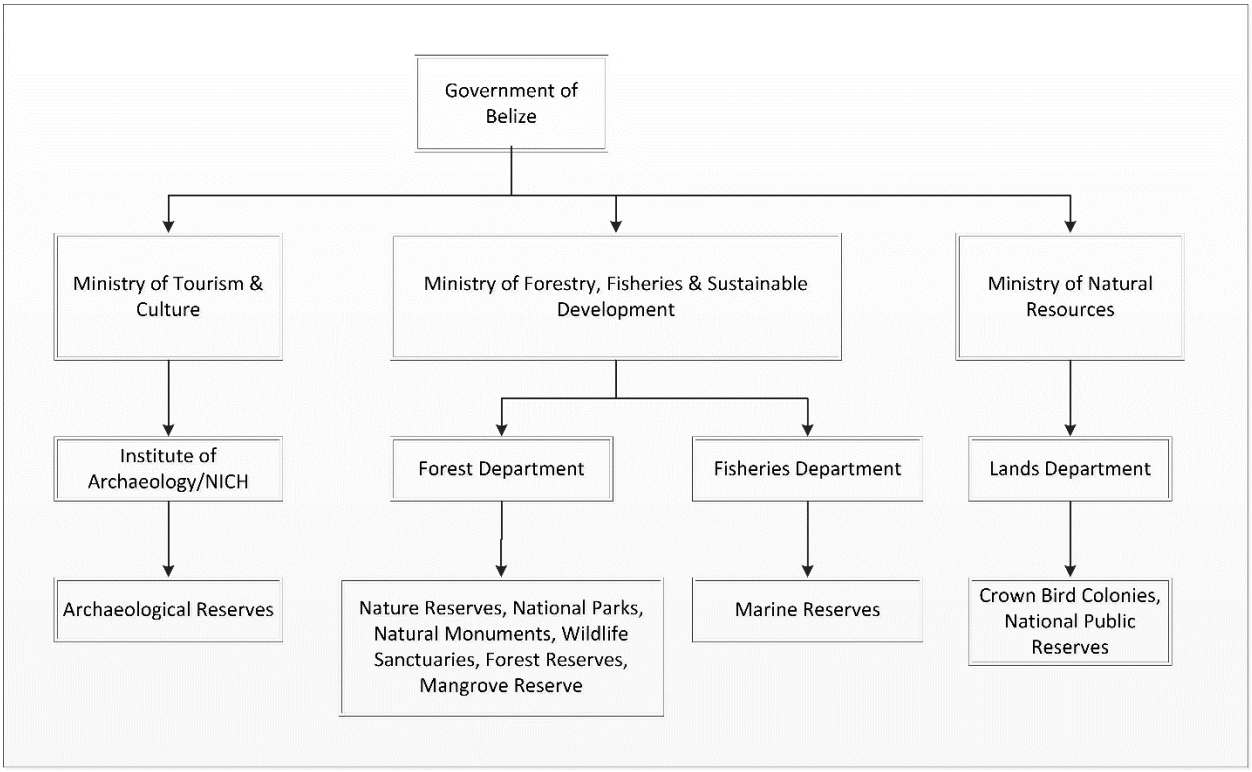
- Significant contribution to overall representation of ecosystems within the NPAS.
- Provision of a critical landscape function (e.g. biological connectivity or restocking capacity).
- Contain exemplary and intact ecosystems.
- Sufficiently large to support minimum viable populations of key species or be relatively large for the region.
- Globally or regionally threatened ecosystems.
- Unusual features of aesthetic or cultural importance (e.g. important archaeological or historic/cultural sites, caves, scenic vistas …)

An additional important consideration is the role that the protected areas play in the maintenance of primary biological corridor functionality.The decision-making process to declare, alter or de-reserve protected areas must be transparent, offer sound justification and take full account of technical and social concerns.

2.2.3 Regulatory agencies and system administration

Three different Government Ministries have mandates for the creation and management of national protected areas within Belize – the Ministry of Forestry, Fisheries and Sustainable Development (through the Forest and Fisheries Departments), the Ministry of Tourism and Culture (Archaeological Sites, through the National Institute of Culture and History / Institute of Archaeology, and the Ministry of Natural Resources and Agriculture (under the Lands Department).Management priorities and management effectiveness differ across these bodies.

FIGURE 4: MANAGEMENT STRUCTURE OF PROTECTED AREAS



The 2005 NPASP recognized that there is an urgent need for close coordination between the departments responsible for protected areas as part of natural resource management. This has been recognised for a long time (at least twenty years) but *ad hoc* solutions have proved inadequate. The 2005 NPASP indicated that a formal arrangement reinforced by statute is needed, with the favoured approach being the establishment of a statutory National Protected Areas Authority. This is also the most radical arrangement, amalgamating the Fisheries Department and Forest Department and assuming their full range of natural resource and protected area management functions.

Such a profound re-organization has to date not been achieved. Recently, however, the MFFSD has decided to undertake a process to legally and administratively modify the current structure of the Protected Areas Conservation Trust (PACT) to undertake the governance functions of the NPAS. The PA system plan section presents an approach to address the governance of the NPAS.

2.2.4 Co-management regime

Four types of governance can be distinguished for Belize's protected areas:

- ***By government***: Authority, responsibility and accountability is founded on legislation and rests with a government agency. Although management may be exercised directly or be delegated, and consultation or communication with concerned parties may be required, government retains full ownership and control. This is the mode of governance implicit under present legislation but that has proved largely ineffective through chronic deficiencies in financial, human and material resources.

- ***Joint governance (co-management)***: Authority, responsibility and accountability are shared among a variety of concerned parties, which include government agencies, and local communities, private landowners or other stakeholders. The parties recognize the legitimacy of their respective entitlements and choose or are required to collaborate. Examples include co-managed protected areas and conservation easements. This approach has been encouraged over the past two decades, has proved effective, and has been the preferred option for the development of the NPAS. By 2012, 32 co-management agreements existed between government agencies and some 21 civil society groups (Wildtracks, 2013). There are still a number of groups that have not signed on to the new agreements. The legal basis of the agreements are still in doubt since they are currently not recognized by any piece of legislation. However, the Aquatic Living Resources Bill and the National PA System Bill, when enacted, would make provisions for co-management, thereby creating legal underpinning for such agreements.

- ***Private governance***: Authority and responsibility rest with the landowners, which may exercise it for profit (e.g., tourism businesses, resource extraction) or not for profit (e.g., foundations, universities, conservation NGOs). Usually, the landowners are fully responsible for decision-making and their accountability to the society at large is quite limited. Private governance does have its role where land-owners elect to use their holdings under a conservation management regime, as an individual decision made in their own interests.

- ***Community governance***: Authority and responsibility for managing the natural resources rest with the indigenous peoples and/or local communities with customary and/or legal claims over the land and natural resources. It is therefore analogous to private governance and accountability to society at large usually remains limited, although it is at times achieved in exchange for recognized rights or economic incentives. This form of governance is usually associated with areas

(including those under partial private ownership) that are collectively controlled or managed under traditional or locally agreed rules. There are good examples in Belize (e.g., Community Baboon Sanctuary, Aguacate Lagoon). This form of governance, under similar guidelines to those applied to private protected areas, should be accommodated in the NPAS. In most cases, however, individual, institutional and managerial capacity must be strengthened within local communities and CBOs before the approach can be effectively used more widely.

Co-management is a type of governance involving a range of different interest groups with varying capacities, sharing responsibility for and benefits of managing a protected area. It has been defined as "a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources". Co-management should be a negotiated process, so that every co-management agreement should differ, although the underlying aim – to render management more effective for a given site – remains the same. Those already applied in Belize range from an agreement to manage in a way that furthers the public interest (in the case of the RBCMA and SCMA Memoranda of Understanding) through lead roles for NGOs and CBOs (where these are strong), to a lead role for the government agency (where CBOs have limited management capacity).

The co-management agreements should all include:

- The purpose of the agreement, the parties in the agreement and the relevant territory, area or natural resources;
- Benefits and responsibilities assigned to the parties;
- Means of protecting the investment of each party;
- Means of resolving disputes;
- A specified duration;
- Schedules and procedures for review, reporting, monitoring and evaluation; and
- Confidentiality and other special clauses as may be appropriate.

Most agreements have been between NGOs, CBOs and government agencies. These agreements have served as the institutionalized framework for shared governance for many of Belize's protected areas. In 2006, however, the Supreme Court of Belize ruled that the co-management agreement had no basis in law. In 2008, APAMO undertook efforts to reconstitute the co-management agreements in a manner that would make them more legal binding. APAMO presented a proposed National PA Co-Management Framework to the GOB, along with a proposed template of a comprehensive co-

management agreement that would replace the original format that had been in use for the past ten years.

In late 2012 the government released a revised version of the co-management agreements and required their civil society partners to sign them. This revised version has been contested by APAMO and some of its member agencies for reasons pertaining to, for example, altered entrance fee cost-sharing arrangements, little protection for co-managers' investment in protected area infrastructure, and government reserving the right to issue third-party agreements within protected areas in consultation with (but not with the approval of) co-managers. Up to date, most co-managers have signed on to the revised co-management agreement.

While the existing co-management agreements provide good models, subject to the provisions of the NPAS Bill, all should in future include:

- A requirement that key stakeholders, with local communities specified among them, participate in both management planning and, wherever practicable, in operations. Consultation is the minimum requirement and the intent goes beyond that – agreements that fail to prescribe community stakeholders participation in the planning and management of protected areas are really missing the point of co-management. This approach broadens ownership, minimises conflict and sets or strengthens the foundation for meaningful co-management of common resources. It also facilitates the integration of protected area management with local and national socio-economic concerns, given that the key stakeholders are best placed to identify what form these take and how then can best be addressed.
- Clear responsibility for enforcing regulations. The regulations will always place ultimate responsibility for the protection of national resources on the statutory body. This is true even for private protected areas, though they also have additional recourse for trespass, damages and theft. Strong co-managers with dedicated protection staff are in a position to take an active enforcement role but they do so in the name of the statutory body and with its support and backing. In the case of many CBOs, assumption of such responsibility would be unjust and unrealistic. The relative roles will vary from site to site but they must be spelt out. It should be noted that if there has been proper participation in setting up an appropriate management regime then many (but never all) problems become self-regulated.
- More definition covering dispute resolution. Procedures recommended for best industrial relations practice should be adopted.

- Clear procedures protecting investments made by each party in the event that the agreement is terminated. This involves recognition and a means of assessing fair market value of the investments made by each party in infrastructure, site improvements, revenue-generating activities etc. An equitable mechanism for settling up these issues must also be established.
- Unambiguous statement that the agreement is legally binding on all parties.
- Certain co-management agreements have proved weak because one or both parties are overlooking or unable to meet their obligations and this aspect needs hardening. The agreements must be signed by individuals with the requisite authority in the institutions they represent, which must themselves be legal entities.
- Should any party require the court to settle a dispute, the agreement provides the basis of determining agreed roles, responsibilities and entitlements.

2.3 Management Capacities and Effectiveness

Management effectiveness assessments by the NPAS Secretariat indicate that there is substantial in-country capacity for the administration and management of the National Protected Areas System. The recommendations made at system level add to that capacity and make for more efficient deployment by:

- Coordination between the Forest and Fisheries Departments, essentially a form of pooling of resources that can be developed incrementally as an ongoing process. Coordination between these two departments has improved considerably now that they are under one ministry (MFFSD);
- Creating structures (i.e., the National Protected Areas Technical Committee) that sources expertise from other bodies – government departments, NGOs, other sources of technical input – as needed to implement policy.
- Strengthening co-management and participatory management, thus increasing human resources and mobilizing new reserves of special, traditional or local knowledge.
- Amalgamating sites into larger units, so achieving efficiencies in scale.

2.3.1 Capacity building and support services

There are significant gaps and most protected area management agencies do not have adequate:

- *Site administration/management support services.* Protected area co-managers include a wide variety of NGOs and CBOs of varying degrees of institutional capacity. Many have weak capacities in accountancy, preparation of proposals,

financial planning, strategic planning, management planning and reporting requirements, among other areas.

- *Financial management capacity.* Financial management capability has been identified as a key issue, but it is best seen as a special case in a spread of administrative demands. These extend to ability to meet donor requirements and the proposals made here – monitoring and meeting management planning standards, for example – add to the burden of small institutions already operating beyond their capacities;
- *Access to legal advice*. There is no resident legal counsel and no established mechanism for management bodies to obtain legal support.
- *Biodiversity evaluation and monitoring capability*. For particular sites biodiversity evaluation and monitoring is partly an issue of human capacity and partly lack of sufficient finance to bring the necessary expertise as needed.
- *Enforcement capability*. Enforcement of regulations protecting natural resources is the responsibility of the statutory authorities and some of the more established NGOs have developed some capability to supplement enforcement work. In general, however, the level and effectiveness of enforcement is low and slow to react in urgent cases. The problem can be compounded when managers attempt to address the problem with personnel lacking the necessary training and authority.
- *Skills training*. Skills training has tended to be included in project activity. Plenty of training takes place but it usually supports project aims and/or funding agency objectives, and thus suffers the usual short-comings of project-driven activity – i.e., usually sporadic, patchy in coverage, given to duplication, short-term and unconsolidated.

The real weakness, however, is a lack of guidance at a system level, leaving each management body to do the best it can with the resources it can marshal. Essentially, system-wide services that assist are needed to strengthen site management.

Inadequate human resource development capacity, demonstrated through a lack of structured training and staff development plans, was identified as a significant gap by the 2005 NPASP. A National Training Program for Protected Areas Management (NTPPAM) was developed by the University of Belize's Environmental Research Institute (UB-ERI) in late 2012 in collaboration with several key partners with funding support from PACT, UNDP and GEF. The training program consists of 14 modules representing the following key priority areas: Institutional Strengthening, PAs Management Planning, PA Management Effectiveness, Conservation Finance, and Ranger Training.The NTPPAM, which is in process of being certified, has been

addressing the need for PA staff training. An MOU between the MFFSD and the University of Belize (UB), when signed, will provide for the joint adoption and implementation of the NTPPAM.

2.3.2 Biodiversity evaluation and monitoring

For particular sites biodiversity evaluation and monitoring is partly an issue of human capacity and partly lack of sufficient finance to bring the necessary expertise as needed. Either way, the result is that the biodiversity characteristics are often poorly known, impacting effective planning at site and system level.

There has been significant improvement in this area. In 2010, the UB-ERI, with the support of key stakeholders, developed a 5-year National Environmental and Natural Resources Management Research Agenda that will guide research, geared at contributing towards the effective management of protected areas and natural resources within Belize. The research priority lines of the agenda were updated in 2014. The MFFSD-UB MOU will provide for the joint adoption and promotion of the research agenda to further research on terrestrial and aquatic resource management priorities.

Although some marine protected areas conduct monitoring, there is not enough coordination in terms of protocols used, data collected and most importantly analysis and summary of the data to inform management. The UB-ERI has been developing the necessary mechanisms and capacity building for national biodiversity monitoring and research which has been lacking especially within the country's protected areas network.

Assistance at system level in evaluating and monitoring biodiversity information is a form of support service but operates at a large scale and thus treated separately. There are two essential needs:

- *Management and access to the growing body of information on the biodiversity and ecological dynamics of Belizean ecosystems.* UB-ERI has been actively developing and managing biodiversity databases that can form part of the National Clearing House Mechanism (NCHM) including a publications repository and national databases such as the Spawning Aggregations (SPAG) database, the Coral Bleaching database, the Sea Turtle database, the Herbarium Plant Specimen database and a Wildlife database for jaguar and prey species populations. UB-ERI has initiated discussions with BERDS (Biodiversity and Environmental Resource Data System of Belize) to transfer that private biodiversity database to the Institute and also with the Forest Department to implement CHM activities under the Biodiversity Enabling Activities project.

- *Capability to gather site-specific information*. Biodiversity information on specific sites is needed to comply with and refine the management planning process and the procedures for declaration, adjustment and de-reservation. Whenever a management plan is developed or revised, deficiencies in available information must be filled. Furthermore, monitoring of biodiversity indicators is also necessary. Some information may be available (e.g., through the clearing house) or obtainable by site managers but other kinds require specialist expertise or techniques. There is substantial in-country expertise in a variety of domains, through institutions and individuals. External support is also available. The need is to develop a procedure to mobilize these resources and direct them as a support unit to specific sites as the planning cycle requires, essentially conducting a series of rapid ecological assessments.

In 2012, the UB-ERI initiated stakeholder consultations for the development of a National Biodiversity Monitoring Program that will allow the Institute to assess the effectiveness of management in maintaining the country's wealth of biodiversity, as well as meet Belize's commitments and reporting requirements to the Convention on Biological Diversity (CBD). To date, a goal and objectives for the monitoring program, prioritization of indicators and the drafting of an implementation plan for the program have been articulated. UB-ERI is now defining the sampling scheme and standardized protocols for data collection on the priority indicators selected for the program.

2.3.3 Site management planning

Good management planning is an essential precursor to good management. Management plans are an essential aspect of a protected areas policy and system, providing the direction and background information for each protected area, identifying the objectives, the factors that affect or may affect the protected area, the contribution of the protected area to the overall protected areas system and to ensure compliance with local, national and international policies. The production of a management plan is mandatory for marine protected areas, and is a recommended requirement by the management authority for any organization wishing to take on a management or co-management role within the protected areas system.

The 2005 NPASP included a National Protected Area Management Plan Framework (NPAMPF) that has served as the official guide for the development, review and evaluation of PA management plans, and their monitoring over time. It does this through a 5-step application, assessment and evaluation process, namely: 1) Identification and Evaluation of Potential Management/Co-management Organizations, 2) Development and Submission of draft Management Plan to relevant authorities, 3) Review and

Acceptance of Management Plan, 4) Annual Evaluation of Management Plan Implementation, and 5) Review and Evaluation of Management Plan success at end of management period.

2.3.4 Measurement of performance

The protected area plans set objectives and a necessary part of the management plan and its implementation is to measure to what degree those objectives are actually achieved. A number of analytical tools have therefore been developed to assess management practices and their effectiveness. Management itself is about using people and resources to achieve desired results, and effectiveness can be assessed in two complementary ways: 1) by management functions, or 2) by outcome.

Some approaches emphasize management functions and some give weight to outcomes. They may have strong and weak points and be complex or easy to implement but all involve monitoring of performance against set, measurable, indicators. A broad spread of methods in use in Belize and elsewhere were reviewed and assessed in 2005 to develop a model adapted for general use in the National Protected Areas System. The model is still in use today.

The model also includes analysis by management function and by outcome, and allows for self-evaluation, external evaluation, and broad participation. The approach is built into the management planning process referred in Section 2.3.3.The Management Effectiveness Tracking Tool developed for use in WWF and World Bank projects is a particularly simple, straight-forward approach, easily followed and ideal for regular self-evaluation. It has been adopted without modification.

2.4 Sustainable Financing Mechanisms

The national policy is that the protected areas system shall seek to maintain itself financially. It must be noted that the ability to gain support for national financing mechanisms and supplementary external funding is closely linked to the performance of the system in delivering socio-economic gains and to the level of public recognition of that performance.

Adequate financing is, of course, an absolute necessity and shortfalls have hindered effective protected area management on a national scale. This has led to a shift away from total reliance on government funding and towards self-generated income, greatly assisted by the growth of the tourism industry. Tourism user fees, augmented by other tourism-related activities (tourism services, sales), have been the most widespread mechanism for self-generated income. Furthermore, the symbiotic relationship is widely recognized between protected areas (and the environment in general) and the tourism

sector though the two are not seen as formal partners. Funding difficulties have also led to a willingness to experiment in other areas. The impetus behind the move to co-management approaches and the openness towards private sector initiatives comes from an accepted need to open all avenues to funds and mobilize all available resources.

Government allocations for operational budgets have been low but have generally remained constant in the last ten years for the Forest Department and the Fisheries Department. Capital investment budgets have generally been reduced, resulting in a limiting of programme activities at the site level. While overall operating budgets and expenditures have remained consistent over the last five years for both the Fisheries and Forest Department, of these expenditures a 4 year average shows that 72% of the Fisheries Department expenditures are for personnel costs, while a 3 year average shows that 82% of the Forest Department expenditures represent personnel costs (Drumm et al, 2011).

Co-managers have had varying degrees of success in mobilizing additional funding from multiple sources to complement government allocations. However, there is a widespread perception that the resources currently allocated to the NPAS are insufficient to maintain the country's natural capital or to achieve the objectives of particular areas.

Currently, a disadvantage is the complication caused by the lack of standardization of accounting systems among co-managers and managers which makes system wide financial planning very difficult (Drumm et al, 2011).The NPAS has nevertheless made enormous strides during the last few years to consolidate its financial position. It has several positive characteristics including:

- The Conservation Fee and the Commission on the Cruise Passenger tax, flowing to a trust fund (PACT) dedicated to direct the funds to the system.
- The system has developed organically, is diversified, relying on multiple sources of revenue.
- There are many stakeholders that have a direct interest in the success of the system.
- Co-managers have allowed the government to save millions of dollars and at the same time to protect Belize's natural capital.

In 2010, the Belize protected area system received funding equivalent to about 2.6% of the Government of Belize's annual budget or about US$3.35 per acre. In exchange for that investment, the NPAS has contributed the lion's share of attractions that generate

around 20% of the country's GDP through tourism alone, plus provided much of the country's fresh water supply, sustained the timber industry and protected the resources on which the fishing industry depends. It has also provided recreational and educational experiences for large numbers of Belizeans and been part of Belize's international image in the world.

However, Drumm et al (2011) determined that the current level of funding is insufficient to sustain these services to the national economy and to society at the current levels into the future. Despite important efforts by managers, co-managers, international collaboration and others, the capacity to manage the protected areas is increasingly overstretched, leaving them vulnerable to processes that are eroding the natural capital they contain.

Ensuring the adequate capacity and financial sustainability to protect and manage the finest examples of the nation's natural and cultural heritage, the environmental services, export income and employment they generate is of strategic importance for Belize and its financial sustainability should be a national priority.

The Drumm et al study (2011) provides important analysis of the current financial situation of Belize's protected area system, and identifies and quantifies what investment is needed. It also presents policy recommendations, tools and a strategy for achieving financial sustainability.

While there is no silver bullet that can resolve the financial dilemma of Belize's protected area system, there are a number of opportunities for action and new policy that, assuming the political will, can narrow the gap significantly over the next five years. However, there is an urgent need to draft new legislation to facilitate improved structure of the system and to address current limitations, and fine-tune proven mechanisms. In order to fund the system at minimum levels to ensure its continued integrity, urgent action needs to be taken. Business as usual is not an option. A combination of rationalization of the system, improved efficiencies adjustments to fee structures and increases in prices plus the addition of new funding mechanisms are necessary. Important investments need to be made in developing capacities and this will take time, which also means that political decisions need to be made very quickly.

Some PA financing mechanisms (e.g., Debt-for-Nature Swaps, the Tourism Conservation Fee, Conservation Trust Funds, the RBCMA Carbon Sequestration Project) have been truly innovative when first introduced, while protected area managers have also developed other forms of resource use compatible with

conservation aims and based on business lines (e.g., sustainable timber extraction at the RBCMA).

Generally speaking, good management attracts and creates financing opportunity at both system and site levels. Actions at system level create an enabling environment in which individual protected area managers can seek financing on an "à lacarte" basis, according to the opportunities presented by the characteristics of their site and by local circumstance. Some sites will have greater finance-generating opportunities than others that are equally worthy of support on biodiversity grounds – this is covered by the policy of cross-subsidization.

The existing mix of funding sources should be maintained, but within a revised conceptual framework. These sources can be summarized as:

- *Government allocation* – but as an underpinning for other revenue-generating actions only;
- *Donor grants/multi- and bi-lateral project funding* – but as a supplement, built on an active programme to optimize self-generated revenues;
- *Self-generated income* – based on user fees (in the widest sense) and the main development area for site financing, including
- *Tourism entrance fees* – which continue having the potential to cover a substantial portion of recurrent protected area operational costs. Approximately US$2.8 million was generated from tourism entrance fees in 2010. However, significant proportions of these revenues are not reinvested at sites. The Institute of Archaeology reports 25% are reinvested and Fisheries 33%[1];
- *Forest concessions and licenses* – as an integral part of user/license fees.Long term and short term logging concessions generated US$270,141 in 2010, after a sharp drop in revenues was experienced in 2006 and 2007. The revenue from these payments is currently paid into General Revenue;
- *Protected Area Conservation Trust (PACT) support* – as the main system-level mechanism capturing funding justified by the general role of the protected area system in the national economy and redistributing/reinvesting that income in actions promoting improved management at site and system level;

[1]Fees at many protected areas tend to be lower or considerably lower than might be expected given the quality of the attraction and the experience and when compared to entrance fees in other countries. It is anticipated that the market would be prepared to pay significantly higher fees in some protected areas than they are currently asked to, such that entrance fee revenue could probably increase by 100% with little impact on demand. It is estimated that up to 30% of PA visitation is not reported in order to avoid payment or declaration of entrance fees (Haas, G. and Aukerman, R., 2011). This is potentially a value of US$1 million per year being lost to the system. (Drumm et al, 2011)

- *Debt swaps* – as a major supplement and interesting option for the NPAS. In 2001 an agreement was signed to cancel part of the debt owed by Belize to the Government of the United States with the participation of The Nature Conservancy. The total amount was approximately US$8.5 million. The beneficiaries included the Belize Audubon Society (BAS), Programme for Belize (PfB), the Toledo Institute for Development and the Environment (TIDE), and the PACT Foundation. This debt swap funding, which support protected area management, is very important because it is much more flexible than other sources.

The general strategy places a premium on increased capacity at site level for management and financial planning, on business planning (for which models have been developed), and on institutional capacity. Special attention must also be given to streamlining costs – i.e., making most effective use of available financing – as well as attracting new revenue sources.

Three types of system-level action are designed to facilitate financing of sites:

- *Support services.* There is great need for assistance to managers indentifying funding opportunities, in financial and business planning. This is fundamental if the site-specific approach is to work across the system as a whole, as against only in certain sites managed by organizations with greater institutional capacity. Training in financial planning and management, as part of the NTPPAM will reduce but not remove the need for support.
- *Total Economic Evaluation and Public Awareness Programme.* The Total Economic Evaluation (TEV) provides the justification for financial support and development of incentives and other financial mechanisms to help develop and maintain the system. The Public Awareness Programme helps create a climate of opinion conducive to effective implementation of protected area policy. TEV studies have been carried out for the Maya Mountain Massif area and the Barrier Reef System. However, the results of the studies have not been adequately promulgated among the policy-makers and government decision-makers.
- *Introduction of financial incentives.* These require negotiation with the Ministry of Finance but two potential incentives present themselves:
    - Tax deduction/alleviation for private lands that contribute to the NPAS. This must be highly targeted mechanism, dependant on technical assessment that the area does or could contribute to the system, agreement by the landowner to follow practices that maintain that contribution, and clear compliance with any agreement made.

  - Re-investment of revenues from resource use within the NPAS in the system, rather than to general government revenues. This approach goes hand in hand with the creation of an autonomous PA administrative and management authority.
- Recognition of formal and mutually supportive partnerships between the tourism sector and the NPAS, as a basis for collaborative actions at site level.

3.STRATEGIC FRAMEWORK OF THE PROTECTED AREAS SYSTEM PLAN

3.1 Policy and Vision of the System Plan

Belize's Protected Areas System Policy (see Annex 1) recognizes that protected areas are valuable because of the goods and services provided by the ecosystems protected, the flora and fauna comprised in those areas, and the current and potential economic activities related to biodiversity management and conservation. The Policy attempts to capture the essence of the role of protected areas and their importance to Belize's national development. Additionally, it seeks to promote conservation of the rich biodiversity of Belize in perpetuity for present and future generations of Belizeans, to use the nation's biological resources in a sustainable manner that ensures that the resource base is not compromised, and to ensure the fair and equitable sharing of benefits arising from the utilization of the nation's biologically diverse resources among all Belizeans. The GOB in the Policy, commits itself to promoting the sustainable use of Belize's protected areas by educating and encouraging resource users and the general public to properly conserve the biological diversity contained in these areas in order to maintain and enhance the quality of life for all. Finally, the Policy stipulates that all of Belize's protected areas be integrated under a national management strategy and consolidated protected areas system.

The National Protected Areas System of Belize is therefore guided by the following Vision:

> **"An effectively managed National Protected Areas System that maintains healthy ecosystems and maximizes its social, cultural and economic contribution to local and national development."**

3.2 Strategic Goals and Objectives

3.2.1 Overall Purpose

The primary **purpose** of the protected areas system plan is **to have an effective protected areas system for Belize established**. While this overarching strategic outcome was set out from 2005 under the original system plan, its achievement has been a gradual process. There is still the need to realize an effectively managed and sustainably financed protected areas system. The current gaps in overall management need to be addressed as such gaps will affect system effectiveness in achieving biodiversity and national development goals if not addressed. A system approach to protected areas management needs to be institutionalized. This updated Plan is

expected to highlight broad steps and guide the achievement of an enabling environment, management effectiveness and a fully comprehensive protected areas system. The achievement of the strategic purpose of the plan is supported by four inter-related overarching goals. These are described below in further detail.

3.2.2 Goals and Strategic Actions

Goal #1: Formal recognition and integration of the fundamental role of protected areas and natural resources as a pillar in national economic development.

Intermediate Outcome 1.1: The MFFSD as the champion has the institutional capacity to carry out its oversight mandate pertaining to the NPAS

GOB realigned its ministries in 2012 and created the Ministry of Forestry, Fisheries and Sustainable Development (MFFSD). This resulted in two of the three Departments (Forest and Fisheries) responsible for protected areas management being embedded in the same ministry. The decision to bring the Forestry and Fisheries portfolios under one ministry was aimed at streamlining of protected area policies and initiatives; improving communication and coordination between these key departments; and reducing confusion, conflicts, and delays emanating from poor communication and separate lines of command.

The activities described below are geared at strengthening the MFFSD's institutional capacity to improve its effectiveness in carrying out its oversight mandate, and to champion the formal recognition and integration of the fundamental role of natural capital in Belize's economic development. Belize's biodiversity and ecosystems are not simply a matter of environmental conservation but must be fully considered natural assets on which the economy directly depends.

Activity 1.1.1 Build the case of ensuring that the two key PA management agencies remain under one Ministerial portfolio

The Fisheries Department and Forest Department are the main PA management agencies that have responsibility to manage and regulate Belize's marine and terrestrial protected areas. The decision to place these Departments under the MFFSD heralded a move toward ensuring greater inter-departmental coordination in protected areas and natural resources management. This decision was not unprecedented, because decades earlier the portfolios of fisheries, forestry and agriculture were under one ministry. However, in the past decade it had essentially been taken for granted that the fisheries and forestry portfolio ended up under separate ministries. It remains the Prime Minister's constitutional prerogative to shape the ministerial portfolios. This means that there is no guarantee that the fisheries and forestry portfolios would indefinitely remain

under the same ministry. This activity, therefore, aims to ensure that the fisheries and forestry portfolios, together with responsibilities for protected areas, remain under one ministry. This may be possible only through legislative reform that would merge the Forest Act and the Fisheries Act into an amalgamated Act.[2] For this to happen, a communications strategy targeting Cabinet will be developed and implemented to demonstrate the importance of ensuring that the regulatory and resource management functions of the Fisheries Department and the Forest Department remain under the same Ministry.[3]

Activity 1.1.2 Strengthen the operational capacity of the PA regulatory agencies

The establishment of an institutional and operational structure for improved governance of the NPAS is a critical goal (see Activity 1.3.1). However, the establishment of such a structure must be accompanied by the strengthening of the operational capacity of the Fisheries Department (FID) and the Forest Department (FD). The level of capacity varies between these two key agencies. The strengthening of their institutional capacity is recognized as a present and urgent need. These key regulatory agencies will continue to provide crucial functions related to site-based management of protected areas and as such have a critical role in the overall administrative structure of protected areas at the system level. In 2010, only 28% of FID expenditures and 18% of FD expenditures were for operational (non-personnel) costs (Drumm et al, 2011). For these agencies to be effective with their regulatory duties and functions, their operational budget will need to be gradually expanded over the next five years along with the requisite funding allocations from Central Government. In addition to strengthening FID's and FD's operational capacity to fulfill their expected functions, their capacity will be also be strengthened in the following areas: human resources, equipment, and other material resources necessary for them to fulfill their function. As part of the capacity strengthening process, departmental strategies and programs will be revised to align with the new PA administrative structure and an assessment in capacity gaps to achieve established roles and functions as well are revised strategies will be carried out.

Intermediate Outcome 1.2: A pilot system of environmental accounting reflects the contribution and value of the MMM's hydrological resources to Belize's GDP

Green accounting (also known as environmental accounting) seeks to better measure sustainability by expanding gross measures of national welfare (product, investment,

[2] This may be partly achieved through a comprehensive NPASA (see Activity 1.3.1), which would integrate the management of the marine and terrestrial protected areas. The NPASA, however, would not integrate the forestry and fisheries regulatory functions (outside of protected areas).

[3] Precedence has been set with the Ministry of Tourism and Culture, where it is now taken for granted that the tourism and culture portfolios belong under the same Ministry.

etc.) to include non-market values, in particular ones associated with environmental goods and services. In addition, green accounting seeks to incorporate costs and benefits of environmental protection and depletion of natural capital – two measurements not typically included in national accounting systems such as gross domestic product.

By integrating social and ecological costs and benefits resulting from the natural environment into traditional economic accounting systems, green accounting aims to capture the interdependency and dynamic interactions between the three pillars of sustainability (economy, society, and environment). More accurately valuing natural resources costs and benefits may contribute to the development of more appropriate and sustainable economic, trade, and development policies. Incorporating green accounting into national economic accounts could provide a measure of sustainability; however, considerable advances in methods of measurement and valuation are needed.

The NPASP does not intend to "green" Belize's national accounting system (i.e., the Gross Domestic Product) within five years. Rather, the intention is to pilot a system of environmental accounting for water resources with the aim of demonstrating the economic, social and environmental benefits of such accounting to the nation. National accounts largely focus on a narrow view of economic performance and growth which relegates the environment, including water resources, to the status of an externality. This focus can entrench a misperception that water resources are infinite and that business as usual (which disregards the adverse impacts of water degradation and scarcity) is a viable option. The piloting will be done by using the system of environmental accounting to assess the contribution of the hydrological resources of the Maya Mountains Massif to the gross domestic product of Belize.

Activity 1.2.1 Use the system of green accounting to assess the contribution of watershed values of the Maya Mountains Massif to the gross domestic product of Belize

The various users of forest resources may very well be aware of the multiple uses of the forest but not the use values of forests; this may be one of the main reasons that lead to forest degradation. Building on a TEV that has been conducted for the Maya Mountains Massif, an economic valuation study of watershed values will attempt to estimate various use values of the MMM using the market price, substitution approach, productivity method, welfare method, avoidance cost and household production function approaches as applicable to various values. The study will aim to consider possible overlapping values such as eco-tourism with biodiversity, watershed and carbon sink

values, etc. The study will assume total growing stock in forest as stock value and all other values as flow values and will calculate them on annual basis. The study will not claim any precision nor will it attempt to provide accurate monetary values of various benefits especially the intangible ones. Rather, it will be an attempt to reflect an approximate total contribution of the MMM's hydrological resources into the economic development of Belize such that the environmental functions of the forests and forest resources can find an appropriate place in the nation's economic planning. Since responsibility for the water sector falls under the Ministry of Natural Resources, there will need to be collaboration with that Ministry to undertake this study.

Intermediate Outcome 1.3: Proper enabling institutional structures for integration established and functional

The need for an entity to oversee the coordination, administration and management of protected has long since been established. This updated NPASP contemplates full administrative reform consolidating natural resource management including protected areas management under a single statutory authority that has representation from key sectors (such as agriculture, tourism, energy and petroleum, lands, private sector, etc.) within its governance structure. Such an integrated institutional structure will provide the enabling environment for protected areas to be managed comprehensively according to a landscape and seascape approach. It will also support the integration of PAs into development and relevant sector planning.

Activity 1.3.1 Establish and operationalize an effective and functional administrative structure for the NPAS

Belize's protected areas continue to be managed using a variety of approaches that are dependent on the lead agency responsible for the site and its preferred operational procedures (that is, the FID and the FD). The MFFSD has now decided that it will establish an administrative structure for the NPAS by reforming the current Protected Areas Conservation Trust (PACT) and harmonizing PA legislation and regulations with a new parent National Protected Areas System Act (NPASA) legislation. Through amendments of the PACT Act, the reformed PACT is expected to have a full set of programmes that will provide funding for PAs and be better equipped to monitor the impact of this funding through coordinating and monitoring of the NPAS. In other words, PACT would move from funding projects to investing in programmes that will aim to achieve the goals of the NPASP. The reformed PACT will then be responsible for overseeing the planning and coordinating the management of protected areas as well as ensuring the implementation of the NPASP.

The FID and FD (see Activities 1.1.1 and 1.1.2) will continue to provide crucial functions related to site-based management of protected areas and as such have a critical role in the overall administrative structure of protected areas at the system level.

In addition to amending the PACT Act, the revision of protected area legislation remains a very important activity. It is vital that all existing PA legislation and enabling regulations are harmonized with a new parent NPASA legislation. Such legislative revision is intended not only to establish a system-level administrative body, but also to harmonize the legislative underpinning for marine and terrestrial protected areas and inter-departmental coordination. The strengthening of the legal framework includes reforming existing protected areas legislation and providing legal instruments/frameworks addressing royalty payments, concessions, cost-sharing arrangements with long-term productive sectors (e.g., tourism, forestry, fishing, and mineral extraction) and environmental safeguards within the NPA network. Full administrative reform should result in consolidating natural resource management, including protected area management, under a single statutory authority.

Activity 1.3.2 Reform the NPATC as an advisory body to ensure inter-sectoral dialogue and coordination in protected areas management

In addition to the necessary revisions to relevant pieces of legislation that will be carried out, coordination between the goals of the system plan and the plans and policies of other relevant public sectors is required. The policies guiding important productive sectors such as agriculture, petroleum and tourism, must be congruent with the goals and objectives of the NPASP. A mechanism that will facilitate the dialogue and coordination with all relevant public sectors including the ministry responsible for economic planning, and poverty reduction, will therefore be established.

This dialogue and coordination mechanism will be established through a reformed and expanded National Protected Areas Technical Committee (NPATC) [4] that has representation from key government departments such as agriculture, tourism, energy and petroleum, lands, as well as the private sector. One of the major functions of this expanded NPATC will be to provide technical advice to the Minister responsible for protected areas to ensure better harnessing of effective partnerships in natural resources management through a landscape and seascape management approach. The section that follows discusses how such effective partnerships may be harnessed.

Intermediate Outcome 1.4: Better harnessing of effective partnerships in natural resources management

[4] This is similar to the National Protected Areas Advisory Council, which is proposed in the draft NPASA.

For protected areas management to be effective over the long run, partnerships will need to be established through collaborative resources management, private land conservation management, and the development and implementation of wider resource management strategies. Protected areas cannot continue to be managed in silos, ignoring the wider landscape and seascape context within which they are located. Effective partnerships in natural resources management will therefore be harnessed through the establishment of multi-stakeholder co-management agreements, private land conservation for biological connectivity, and the implementation of multi-stakeholder landscape and seascape management plans.

Activity 1.4.1 Develop and enact co-management agreements to ensure multi-stakeholder participation in PA management

Belize has practiced two-party (CSO-GOB) protected areas co-management over the past two decades, with mixed results. With the wider resource management approach (see Activities 1.4.3 and 4.1.1), multi-stakeholder collaborative agreements will be put in place for all protected areas and landscape and seascapes that have management plans in place. The NPASA, once enacted, will provide the legal basis for such collaborative agreements. The primary stakeholders will continue to be PA co-managers, that is, the government regulatory agencies, as well as the NGOs and CBOs involved in on-the-ground PA management.[5] Other stakeholders will include local communities, resource user groups, academia and research institutes, and private sector entities that are located or work within the broader landscapes and seascapes containing the protected areas. While not involved in on-the-ground PA management, these secondary stakeholders will provide a supportive role to the PA co-managers. Organizations will be required to meet the following minimum institutional criteria in order to qualify as a PA co-manager: 1) Well defined governance and administrative structure in place, 2) Diversified financial portfolio and/or secure financial structure, 3) Adequate cadre of trained staff, 4) Information management capacities, and 5) Access to basic equipment and facilities.

Activity 1.4.2 Define and integrate unrepresented areas within private lands required to complete the NPAS

Private and community-owned protected areas make a crucial contribution to the overall network of protected areas and need to be integrated where they fit the criteria of

[5] According to Homer (2005), the term “co-manager” refers to the civil society organizations involved in the management of protected areas, as well as to the relevant government agency that has legal jurisdiction over the protected areas (namely, the FD and FID). This implies that all co-managers should have shared and distinct roles and responsibilities geared at ensuring the proper management of the protected areas.

adding viability to the system. Their inclusion will be made through formal and legally binding agreements between the GOB and the landowners. The NPASA, once enacted, will make provisions for declaring private lands (once these are qualified) to be a private reserve, and thereby making such lands part and parcel of the NPAS. To qualify, private lands would need to meet any one or more of the following criteria: 1) regulating the area as a buffer zone for the protection of a protected area; 2) enabling owners of land to take collective action to conserve biodiversity on their land and to seek legal recognition of their collective action; 3) protecting the area if the area is sensitive to development due to its biological diversity; natural characteristics; scientific, cultural, historical, archaeological or geological value; scenic and landscape value; biological connectivity; or for provision of environmental goods and services; 4) protecting a specific ecosystem outside of a protected area; 5) ensuring that the use of natural resources in the area is sustainable; or 6) controlling change in land use in the area if the area is earmarked for declaration as or inclusion in a protected area. Provisions for fiscal incentives, notably under the tax regime applied to land holdings, will need to be explored to encourage conservation easements for key sites to secure their contribution to the national system. Of the present private areas generally acknowledged to be within the national network, only three have formal agreements (i.e., the RBCMA, SCMA, and Block 127). The status of the remainder will be regularized based on the new legislation in order to account for them in the implementation of the system plan.

Activity 1.4.3 Develop and implement pilot landscape and seascape management plans

The following main barriers affecting Belize's NPAS have been identified: 1) The NPA network is fragmented, not cost-effective and not financially sustainable; 2) Biodiversity within PAs is increasingly isolated as historically connecting landscapes are transformed while surrounding communities remain indifferent, or even opposed, to the PAs and their conservation goals; and 3) Private Protected Areas (PPAs) are isolated from the broader NPA network, with few incentives or mechanisms for their establishment or effective management for conservation. This latter barrier is addressed through Activity 1.4.2. The first two barriers can be addressed through the development and implementation of landscape and seascape (eco-regional) management plans.

Integrated protected areas and landscape/seascape management plans are an approach for multiple protected areas to work within an ecologically interconnected and interdependent biodiversity corridor area to achieve both conservation and sustainable development objectives, thereby catalyzing the sustainability of Belize's NPAS. Such integrated plans would aim to deliver the following outcomes: 1) Protected area management authorities are implementing a complementary set of management plans

for the protected areas within the landscape/seascape; 2) Protected area management authorities, local government bodies, private sector landholders and local communities are cooperating in the implementation of sustainable development strategies over the long-term; and 3) Fiscal and legislative environments affecting private protected areas are enhanced by specific changes in the policy environment.

Two pilot management plans will be developed and implemented during the next five years for the following areas – the Maya Mountains Massif (MMM) and the Southern Belize Reef Complex (SBRC). Conservation action plans (CAPs) have already been developed for these areas. The eco-regional management plans will build on these CAPs. It is expected that protected area management authorities and other stakeholders throughout Belize will benefit from, and will begin to apply, lessons learned from the MMM and SBRC experiences before the end of the five year period.

Goal #2: Inter-sectoral buy-in, participation and support for PAs exist in both public and private sectors

Intermediate Outcome 2.1: An integrated inter-sectoral communications strategy involving all agencies involved in natural resources management, use and development is developed and implemented

It is important for the general public not only to be aware but also to understand and appreciate the critical role of protected areas in maintaining the economy and society through the vast ecological goods and services they provide. This level of understanding and awareness is key in creating the climate of informed public opinion within which the NPAS can be realized. The need for increasing public and political support for protected areas remains and extends from policy makers, to commercial interests, and to the general public. The integration of the protected areas system, with sustainable land use management outside of protected areas and sustainable financing strategies especially demand that the economic value and social benefits generated by protected areas are fully appreciated by all sectors of the public.

There is already considerable work being undertaken in this area by various stakeholders. A communication strategy has been developed by the NPAS Secretariat through consultation, and several communication tools have been deployed including the development of an NPAS website. Direct support for this initiative, however, was from a time-bound project. For a broad communication strategy to be successful, it needs to be comprehensive and inclusive of all relevant stakeholders, and institutionalized. The communication strategy for the promotion of protected areas over the longer term needs to be inter-sectoral and based on a common framework. The

development of this communication approach is based on the activities and related tasks described below.

Activity 2.1.1 Carry out a diagnostic of communication strategies and build a framework for cooperation and collaboration in communication regarding natural resources management, use and development

The overall goal of the NPAS communication strategy is to raise the profile of and support for Belize's protected areas through a consolidated and strategic effort. The NPASP aims to ensure that biodiversity conservation becomes an integral part of social and economic development processes, and that the contribution of protected areas to national development and poverty alleviation is both recognized and maximized. For the communication strategy to be successful, it has to be long-term and sustained. There must be the linking of protected areas to critical goods and services that are value to ordinary Belizeans.

Before such an inter-sectoral communication strategy can be prepared, however, a diagnostic of strategies will be carried out to determine what is in place within the conservation sector and other sectoral partners. The results of the diagnostic will provide the basis to build a framework for cooperation and collaboration in communication regarding natural resources management, use and development. The development of a comprehensive communication framework and strategy will take into consideration the following areas: a) identify the communication strategies and plans of key stakeholder groups and partners, b) consolidate communication and awareness raising strategies currently in place, c) ensure that broad-based communication framework is designed for longevity, d) branding of the protected areas system must also include messaging on the overall value of natural resources, and e) ensure that new communication strategies for the PA system includes both messaging and active stakeholder engagement mechanisms.

The main stakeholder groups of the NPAS include:

- The Government of Belize: decision makers, policy makers, technical staff and policy implementers;
- Protected Area Managers: community co-managers and NGO co-managers;
- The Productive Sector: fisheries, forestry, agriculture, tourism, and private sector industries;
- Community at large: including protected area buffer communities and wider civil society.

- Priority action groups and strategic partners that are not involved in the direct management of protected areas but play a key role in achieving the communication objectives include: researchers; community groups; advocacy groups and educators; media; NGOs; regional partners; and established steering committees and working groups. [6]

Goal #3: The enabling environment for private sector involvement in protected areas management is in place.

Intermediate Outcome 3.1: Clear strategy, rules and guidelines for investing in protected areas established.

The private sector in Belize benefits greatly from the natural capital available both within and outside the boundaries of protected areas. Some of the key challenges to the protected areas network also come from the private sector through extractive activities and various forms of land use necessary for economic production. In some instance though, the private sector is of the opinion that protected areas represent areas that are simply locked away reducing natural resources available for production. At other times the private sector is viewed as being insensitive to the important functions of natural ecosystems and the role of conservation in sustainable economic development. Sectors such as tourism and agriculture, among others, can provide much-needed financial resources for biodiversity conservation. However, if not developed within a coordinated strategic framework, such private sector interventions can result in increased pressures to the PA system. It is important to move the dialogue and debate away from antagonism to cooperation. The productive sector undoubtedly depends on the natural resources for economic growth and profitability but it also has a key role in the use and management of natural resources including protected areas. The management of protected areas can also benefit from engaging with the private sector in business investments that can be beneficial to investors as well as to the sustainable financing needs of protected areas. The main sources of revenue for the protected areas system currently is largely tourism-based. The diversification and sustainability of financing for protected areas management has been a persistent challenge faced by both government and non-government co-managers. The establishment of sustainable financing for protected areas is necessary both to effectively institute the structural changes contemplated as well as the long-term effectiveness of protected areas site management.

[6] Source: NPAS Communications Strategy and Implementation Plan Progress Report 2014

To address these critical challenges there needs to be a clear and robust framework for the engagement of the private sector in sustainable natural resources management and production in order to inspire and secure investor confidence.

Activity 3.1.1 Develop and promulgate national prospectus of opportunities available for development and investment in protected areas

In order to attract private sector investment into the protected areas system, it is very important for the investors to be clear as to what the interests of the responsible Ministry, protected area regulators, and co-managers are and what opportunities exist and can be developed. It must also be clear to the investors under what conditions they will be making their investments and the incentives schemes they can benefit from. The issue of leakage from current financial management systems across the protected areas system must also be addressed to maximize benefits of new investment arrangements.

As a first step in developing a national prospectus of opportunities available for development, it is necessary to map out areas of synergies with key sectors that impact protected areas such as agriculture, tourism, energy, among others. All these sectors at one point or another will need to address the issue of sustainability in order to manage the natural capital asset on which they are based. The common sustainability issues faced by these sectors will be used as an entry point to address their impact on the protected areas network so that common objectives can be collectively developed and pursued.

It is also necessary to clearly outline and develop mechanisms to support investments made by the private sector. These strategic management considerations include developing and instituting positive incentives that can be put in place so that commercial operations can be structured in such a way as to generate revenues both as returns for the investor and sustainable financing for protected areas management. These incentives may include fiscal, branding, certification and other market-driven measures. These and the security of investments must of course be directly addressed through an appropriate legal framework and the provision of the parent NPASA legislation that is currently in the process of being developed. To begin direct engagement with the private sector in terms of investments, specific opportunities and areas open for development will need to be clearly identified and communicated. This means clarifying what type of use and extraction is permissible and under what conditions within the entire protected areas network.

Intermediate Outcome 3.2: Support private sector efforts to enhance sustainability of productive activities

Given the benefits gained by the private sector from natural capital either through extraction, use or as a sink, the private sector is a critical stakeholder in the management of the protected areas system. Yet there is a prevailing assumption that private sector stakeholders are only interested in growth and profitability and ignore the impact of their activities on the natural environment. This is a false premise that can be overcome by direct engagement on clear terms between private sector stakeholders and natural resources managers. The end goal is to secure the conservation goals on which the protected areas network is premised.

The engagement of private sector stakeholders must directly address their economic activities and collaborate with them to develop sustainable measures that result in both profitability and conservation outcomes. To do this effectively, however, there needs to be greater dialogue and understanding of the needs of the private sector stakeholders in transitioning to sustainable productive activities and the greening of economic production. This will need a comprehensive approach and meaningful measures that will sufficiently incentivize participants into making the necessary changes and eventually reduce their impact on the protected areas network.

Activity 3.2.1 Secure multilateral and international financing for protected areas with a comprehensive plan and clear objectives.

Multilateral and international sources remain an important avenue in obtaining funding for the effective management of protected areas. The available funding however needs to be leveraged to achieve multiple but inter-related objectives for a multiplicity of stakeholders especially the engagement of the private sector. Instead of looking at the financing of the management of protected areas in isolation to other activities that impact protected areas a comprehensive plan to integrate the management of protected areas with the interest of local communities, private sector, climate change and sustainable land use regimes will be developed. The integration of the management of protected areas in this way is intended to address multiple issues such as increasing pressures on protected areas, the need to ensure that biological corridors remain intact, sector and community based adaptation to climate change and the greening of economic activities that impact on the national protected areas network. Developing a comprehensive plan will be done by establishing collaborative mechanisms, identifying broad but common shared strategic objectives among relevant stakeholders and by implementing various measures that have significant impact on the main causes of stresses to protected areas.

The development of comprehensive plans that address the needs of the protected areas system and relevant stakeholders will demonstrate to international donors a

strong and broad-based commitment to ensuring the continued integrity of the network as well as responsible natural resource use and management in the wider landscape.

Activity 3.2.2 Explore low carbon development and climate change financing to approach private sector involvement

The work to engage the private sector in transforming their sector (whether tourism or agriculture, etc.) into sustainable productive activities is costly and the investment will need to be substantial. However low carbon development and climate change financing holds the potential to provide such a source for a strong push towards sustainability in a way that benefits protected areas while bringing on board the private sector. The comprehensive plan described above will be the basis on which multilateral and bilateral sources of funding will be approached.

The concept of low carbon development has its roots in the UNFCCC adopted in Rio in 1992. In the context of this convention, low carbon development is now generally expressed using the term low-emission development strategies (LEDS - also known as low-carbon development strategies, or low-carbon growth plans). LEDS have attracted interest in the climate negotiations as a soft alternative to voluntary or obligatory GHG emission reduction targets in developing countries. International finance pledged by developed countries to give access to low carbon finance to develop low carbon and resource efficient growth for developing countries is significant. Climate finance similarly involves the flow of funds from developed to developing nations to help poorer countries to cut their emissions and adapt to climate change. Since the 2009 climate change summit in Copenhagen, industrialized countries committed to giving $100 billion a year in additional climate finance from 2020 onwards. A “fast start” was set up to the end of 2012 which has been fully funded. Currently institutional mechanisms at the international level to channel funds to developing countries include new bodies such as the Green Climate Fund while others are done through bilateral arrangements. Others include the World Bank-led Climate Investment Funds and the Adaptation Fund. International climate finance is increasingly being regarded as a lever to incentivize climate-resilient and low-carbon investments, complementing domestic resources in developing countries.

In order to take advantage of low carbon development opportunities that climate financing provides, several steps or measures will need to be carried out. These include developing national capacity to effectively receive and utilize the resources made available, develop mechanisms to ensure full transparency in the way the resources are used for mitigation and adaptation activities, and effective measurement, reporting and

verification of the benefits and impact of climate finance. These steps are key to building trust between the country and donors and unlocking funding opportunities.

Goal #4: Integration of protected areas as a tool in the holistic management approach of landscapes and seascapes

Intermediate Outcome 4.1: The work within PAs aligned with broader sustainable NRM

The protected areas network plays a critical role in overall natural resource management. The importance of linking protected areas to the rest of the landscape and seascape through ecological and other environmental processes and also to society both adjacent to and further off from the physical boundaries of protected areas is recognized. Consequently, it is important to manage the network as a part of greater landscapes and seascapes.

Fundamental to understanding and application of holistic management is the recognition that human society is an integral component of many ecosystems. The historical development of protected areas has created the perception among the general public that protected areas are managed against people and locked way for conservation ignoring the needs of business, local people and the wider community. It is therefore important to breakdown the geographical isolation of protected areas by maintaining or re-establishing linkages to ecological and other environmental systems and process. Concomitant to this is taking into account the social aspirations of communities and sustainable economic development opportunities in or near protected areas. The management of the protected areas system must therefore be mainstreamed into wider society both in recognition of the benefits they bring and the dependency of society on them.

Activity 4.1.1: Consolidate subunits and streamline protected areas to enhance coordinated management and increase system functionality

Many protected areas are artificial sub-units of single natural units and will be consolidated to reinforce the need to manage the protected area network at a regional scale. Managing the current national protected areas network as individual conservation management units is inefficient, leading to repetition and overlap, and does not maximize on the efficiencies of scale. The protected area network will therefore be simplified by consolidating adjacent protected areas into larger management units firmly integrated into the landscape context, while incorporating biological corridors.

The most appropriate approach to consolidation is the development of national Management Units as defined in the Protected Areas Rationalization Report (2013). There have been initial initiatives starting with the Maya Mountains Massif (MMM) and the Southern Belize Reef Complex (SBRC) initiatives. Six national Management Units have been defined for establishment. These include three terrestrial and three marine, each reflecting physiographic zones, broad ecosystem assemblages, and common management priorities and challenges. The three Terrestrial Management Units proposed are: a) Northern Lowlands; b) Maya Mountains Massif (MMM); and c) Southern Coastal Plan. The three Marine Management Units proposed are: a) Northern Coastal Complex; b) Central Coastal Waters and Atolls; and c) Southern Belize Reef Complex (SBRC). As described in Activity 1.4.3, landscape/seascape management plans will be piloted for the MMM and SBRC management units.

Each unit proposed will be managed under the reformed protected areas system administrative structure, with the responsibility for unit coordination and communication resting with site-level co-management partners and the regulatory agencies. Efforts to work towards achieving this up to now have not been successful particularly on the terrestrial side. To advance this approach further, the new NPASA is expected to provide the legal framework for this type of consolidation. Equally important is the establishment of a formal mechanism for the co-managers and other partners to engage in planning and implementing land and seascape management plans at Management Unit level. This will include developing work plans for each Management Unit, developed through a participatory process facilitated by the administrative body. Planning at this level will be guided by integrated land and seascape management principles, and principles of collaboration to ensure effective monitoring and evaluation.

Beyond establishing regional management units, a number of protected areas will be merged to further simplify the system. This will require concomitant amendments to the relevant legal instruments. The following areas are proposed for merging: a) Victoria Peak Natural Monument and Cockscomb Basin Wildlife Sanctuary, to become Cockscomb Basin Wildlife Sanctuary; b) Sibun and Sittee River Forest Reserves to become the Sibun-Sittee National Park, c) Bacalar Chico National Park and Marine Reserve, and d) Caye Caulker Forest Reserve and Marine Reserve (NB: It is recommended that Caye Caulker be re-designated as a Wildlife Sanctuary); e) Integration of those spawning aggregation sites within marine protected areas is recommended through amended statutory instruments, reducing protected area overlap (NB: Where not associated with marine protected areas, they require protection in their own right); and f) Integration of those bird nesting colonies within marine protected

areas (NB: Where not associated with marine protected areas, they require protection in their own right).

Further simplification of the system requires that a number of areas have their boundaries realigned to deal with de-reservation of areas, active agricultural incursions, and to strengthen protection of ecosystems. These areas include:

a) Bladen NR / Columbia River FR
b) Mango Creek 1 FR
c) Vaca FR
d) Manatee FR / Billy Barquedier NP
e) Manatee FR / Peccary Hills NP
f) Crooked Tree WS
g) Corozal Bay WS
h) Hol Chan MR
i) Payne's Creek NP
j) Hopkins Wetland NR
k) Gales Point WS

Finally a number of protected areas will be re-designated at the national level especially Wildlife Sanctuaries. It is recognized under the rationalization process carried out that, whilst the Wildlife Sanctuary designation is non-extractive, the reality is that a number of Wildlife Sanctuaries have on-going traditional fishing activities important for local communities. The areas in particular to be addressed include: a) Corozal Bay; b) Gales Point, c) Aguacaliente and d) Crooked Tree. Traditional fishing has been on-going in all these areas prior to their establishment as protected areas, and all four draft management plans provide for continued local community extraction of fish through regulated traditional, sustainable methods. There is no current designation for protected areas managed under the Forest Department that permits this type of extraction, whilst still providing wider environmental protection. With the drafting of the NPASA, provision will be made for the inclusion of these realities with accompanying provisions for the zoning of these extraction activities.

Activity 4.1.2 Strengthen the management effectiveness of protected areas

The effective management of protected areas at the site level is critical to securing the functionality objective across the system and ensuring proper integration within the wider landscapes and seascapes. The duplication of efforts due to the multitude of PAs that share borders, ecological traits, and management objectives, being managed autonomously is further compounded by limitations in human and organizational capacities for planning, management, and monitoring of the status of biodiversity. Improving PA management capacity and adherence to established management guidelines and standards is necessary. A range of effective managerial standards and tools including the Management Effectiveness Tracking Tool (METT) have been developed. The general aim here is to ensure systematic and coherent application of

guidelines and standards across the entire protected area system by the managers and co-managers of protected areas.

Furthermore, environmental NGOs and CBOs play a crucial role in the management of the protected areas network through co-management agreements with the Government of Belize. Therefore, their input into strengthening the process is necessary and will be sought. As described in Activity 1.4.1, this will done through the strengthening of the collaborative management structure for protected areas. Co-management and participatory management harnesses human resources and mobilizes new reserves of special, traditional or local knowledge. It is important, therefore, to secure a legal basis for these agreements. The Aquatic Living Resources Bill and the National PA System Bill, when enacted, will make provisions for co-management agreements, thereby creating legal underpinning for such agreements. Inclusion within the NPASA of clauses relating to management planning and co-management reinforces the importance of developing clear management objectives and feasible management approaches for all protected areas included within the national system. The underlying aim is good management, however this is best achieved under site-specific circumstances. All protected areas under co-management will be governed by a co-management agreement. These are key policy aims and are thus to be embedded in legislation.

An emerging but critical aspect to site planning and management now is the integration of climate change adaptation and mitigation measures. As with other site related guidelines, a standard guideline to support climate change integration has already been developed. The systematic application of the guide is required and will be pursued. This however will require that technical support to meet required procedural standards is made available. Implementation of the guidelines creates a cycle of management planning implementation, monitoring of performance and regular evaluation of delivery of results, all of which require technical expertise. Support is needed at every level and in every institution to meet these functions and is particularly acute, though not confined to, the smaller NGOs and CBOs. To help address ongoing organizational capacity challenges, a national training programme that meets the needs of the protected area system as a whole has been developed by University of Belize's Environmental Research Institute. Six priority areas of training have been identified based on an assessment of protected area NGOs and CBOs. It is expected that the training programme will not only address capacity development in terms of staff mobility at protected areas management organizations but also contribute to the professionalization of protected areas management within the system. This programme will continue to be rolled out and adjustments will be made to ensure that it meets the needs of all its intended audiences.

Activity 4.1.3 Define and integrate unrepresented areas within national land required to complete the NPAS

There are several marine and terrestrial areas representing important ecological systems that are not yet represented within the protected areas network but will be defined and integrated as they are important for overall system functionality. The areas targeted for establishment or expansion include: a) Manatee Beach, b) Placencia Lagoon, c) Kakantulix, d) Whitewater Lagoon, e) Haulover Creek, d) Salt Creek, and e) Mata Rocks[7].

Biological connectivity is also critical for the maintenance of full species diversity and ecosystem services by preventing genetic isolation of populations and allowing migration of species and ecosystems over time which is particularly important in the mitigation of impacts of climate change. Also, considering that it is more cost effective to maintain current connectivity, than to re-create connectivity in the future, three primary biological corridors have been identified as critical for inclusion in Belize's portfolio of tools for the maintenance of biodiversity and climate change adaptation. The three primary terrestrial corridors that have been identified and will be formalized and maintained. The areas identified given their maintenance of forest connectivity are: a) North East Corridor; b) Central Corridor; and c) Southern Corridor.

To formalize these corridors the legal mandate and mechanisms for sustainable land use regimes within the corridor routes will be developed. The corridors will then be integrated within the landscape as part of general land use management planning processes. Consequently, there will need to be significant stakeholder engagement to formalize and maintain these biological corridors. Support for the establishment of corridors will be sought from various levels of government and will be based on a clearly established framework.

[7] As identified in the Rationalization Exercise, 2013.

3.3 Implementation Plan & Budget

Activities	Responsible	Estimated Cost	Timeline																			
			2015				2016				2017				2018				2019			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Goal #1: Formal recognition and integration of the fundamental role of protected areas and natural resources as a pillar in national economic development.																						
Intermediate Outcome 1.1: The MFFSD as the champion has the institutional capacity to carry out its oversight mandate pertaining to the NPAS.																						
1.1.1 Build the case of ensuring that the two key PA management agencies remain under one Ministerial portfolio	NPAS Secretariat/ National PA Authority	$100,000																				
1.1.2 Strengthen the operational capacity of the PA regulatory agencies	MFFSD	$1,500,000																				
Intermediate Outcome 1.2: A pilot system of environmental accounting reflects the contribution and value of the MMM's hydrological resources to Belize's GDP.																						
1.2.1 Use the system of green accounting to assess the contribution of watershed values of the Maya Mountains Massif to the gross domestic product of Belize.	NPAS Secretariat/ National PA Authority	$200,000																				
Intermediate Outcome 1.3: Proper enabling institutional structures for integration established and functional.																						
1.3.1 Establish and operationalize an effective and functional administrative structure for the NPAS	MFFSD; NPAS Secretariat/ National PA Authority	$1,250,000																				
1.3.2 Reform the NPATC as an advisory body to ensure inter-sectoral dialogue and coordination	MFFSD; NPAS Secretariat/																					

in protected areas management	National PA Authority																						
Intermediate Outcome 1.4: Better harnessing of effective partnerships in natural resources management.																							
1.4.1 Develop and enact co-management agreements to ensure multi-stakeholder participation in PA management	NPAS Secretariat/ National PA Authority; Fisheries Department and Forest Department																						
1.4.2 Define and integrate unrepresented areas within private lands required to complete the NPAS	MFFSD; NPAS Secretariat/ National PA Authority	$600,000																					
1.4.3 Develop and implement pilot landscape and seascape management plans	MFFSD; NPAS Secretariat/ National PA Authority; Co-managers including FID and FD	$600,000																					
Goal #2: Inter-sectoral buy-in, participation and support for PAs exist in both public and private sectors.																							
Intermediate Outcome 2.1: An integrated inter-sectoral communications strategy involving all agencies involved in natural resources management, use and development is developed and implemented.																							
Activities	Responsible	Estimated Cost	Timeline																				
			2015				2016				2017				2018				2019				
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
2.1.1 Carry out a diagnostic of communication strategies and build a framework for cooperation and collaboration in	MFFSD; NPAS Secretariat/ National PA	$250,000																					

communication regarding natural resources management, use and development	Authority																						

Goal #3: The enabling environment for private sector involvement in protected areas management is in place.

Intermediate Outcome 3.1: Clear strategy, rules and guidelines for investing in protected areas established.

Activities	Responsible	Estimated Cost	Timeline																			
			2015				2016				2017				2018				2019			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
3.1.1 Develop and promulgate national prospectus of opportunities available for development and investment in protected areas	MFFSD; NPAS Secretariat/ National PA Authority	$90,000																				

Intermediate Outcome 3.2: Support private sector efforts to enhance sustainability of productive activities.

3.2.1 Secure multilateral and international financing for protected areas with a clear comprehensive plan and clear objectives.	MFFSD; NPAS Secretariat/ National PA Authority	$500,000																				
3.2.2 Explore low carbon development and climate change financing to approach private sector involvement	MFFSD; NPAS Secretariat/ National PA Authority	$300,000																				

Goal #4: Integration of protected areas as tool in holistic management approach of landscapes and seascapes.

Intermediate Outcome 4.1: The work within PAs aligned with the broader sustainable NRM.

Activities	Responsible	Estimated Cost	Timeline																			
			2015				2016				2017				2018				2019			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
4.1.1 Consolidate subunits and streamline protected areas to enhance coordinated management and increase	MFFSD; NPAS Secretariat/ National PA	$300,000																				

system functionality	Authority																						
4.1.2 Strengthen the management effectiveness of protected areas	MFFSD; NPAS Secretariat/ National PA Authority; Co-managers including FID and FD	$500,000																					
4.1.3 Define and integrate unrepresented areas within national land required to complete the NPAS	MFFSD; NPAS Secretariat/ National PA Authority	$400,000																					
Total Estimated Cost		$6,590,000																					

3.4 Alignment with National Plans and Strategies

The National Protected Areas System Plan is firstly consistent with Belize's National Protected Areas Policy. As a matter of fact, the system plan emanates directly from the guidance of the policy and is intended to realize the vision and mandate of the policy. While the new strategic framework of the NPASP incorporates an integration approach, it is still important to identify the alignment of the plan to national development plans and strategies. Such alignment though is not unidirectional. The intent is to eventually have all public sector strategies recognized and integrate the goals and objectives of the system plan to contribute to a coherent approach to promoting and achieving sustainable development. As it is, these important national plans and strategies fully recognize the importance of sustainable development and are congruent with the integration approach of the revised NPASP.

The system plan is not only aligned with major national plans and strategies[8] that are likely to have significant impacts on the protected areas network but there are clear intersecting interests which present concrete opportunities for integration and collaboration. These plans and strategies are set out in the following documents:

Belize Horizon 2010-2030 National Development Framework

A critical element of the vision articulated in Belize's Horizon 2030 is that "the natural environment is valued and protected as the basis for all economic activity and therefore development planning is based on the principles of environmental sustainability." Consequently, one of the four main thematic areas of Horizon 2030 is focused on ensuring a healthy environment for all Belizeans. The main strategy to achieving the articulated environment and sustainable development goals is to *incorporate environmental sustainability into development planning and strengthen protected areas management*. To achieve this, the framework specifies the *adoption and implementation of the National Protected Areas System Plan and strengthening of the legal and administrative framework for protected areas*.

Belize National Sustainable Tourism Master Plan (NSTMP)

The centrality of environmental sustainability to Belize's tourism industry is recognized. The plan categorizes protected areas as an asset in the tourism value chain. The Tourism Master Plan *calls for the declaration of new protected areas and the financial sustainability of protected areas* under its Product Development – Sustainability

[8] The Medium Term Economic Strategy and National Poverty Elimination Strategy have expired and so were not considered at this time.

Program. It also seeks to increase the amount of *community awareness campaigns* to raise the importance of conservation of natural and cultural resources. The NPAS has an important role to play in ensuring this is done in an appropriate manner as the Tourism Master Plan itself has identified potential damages that may already be occurring in marine protected areas from cruise tourism. Not only can the NPAS benefit from sustainable tourism development but the minimization of the environmental footprint of the tourism sector is an important consideration. The sustainability and competiveness of the tourism product requires an integrated destination development approach for prioritized destinations that take protected areas into full consideration.

National Agriculture and Food Policy (NAFP)

The National Agriculture and Food Policy is a 15 year plan (2015 – 2030) developed by the Ministry of Natural Resources and Agriculture (MNRA). The issue of sustainability is a critical aspect of both the Vision and the Guiding Principles of the new policy. One of the strategic objectives under Pillar 4 (Sustainable Agriculture and Risk Management) is to *create and/or strengthen pro-environment policies and institutions and promote integrated management of the environment*. To achieve this objective, the policy outlines several actions that are relevant to the goals and actions of the NPASP. These include: developing and implementing *soil and water conservation measures for agricultural production systems*, developing and implementing measures to *reduce watershed and land degradation*; and *reviewing/updating the legislative and regulatory frameworks* for the sustainable management of the forestry, fisheries and genetic resources of Belize. In regards to climate change the policy seeks to identify and disseminate models/best practices for *farm-based climate change adaptation*. It also seeks to promote the development and implementation of an *Agro-ecological services Business Program* in the sector. This program will be comprised of a portfolio of incentives for implementing environmental protection technologies and optimal use of natural resources to boost projects for conservation, organic production, or controlled and protected environments, and diversify linkages and alliances with other areas, for example, environment and tourism.

Another strategic objective of the Policy that coincides with the goals of the NPASP is the *strengthening of institutional capacity, mechanisms and integration processes for better planning, budgeting and program delivery*. Through this process the Policy seeks to ensure interfaces and linkages among national and sectoral policies (macroeconomic, agriculture/ fisheries, forestry and industrial policies) to ensure congruence, complementarities and sustainable impact in their design, execution and evaluation.

National Land Use Policy and Integrated Planning Framework

The Vision of the National Land Use Policy (NLUP) explicitly states that it is intended to guide Belize towards an environmentally and socially responsible use of land resources that enables national development. It recognizes that Belize's principal natural resources are land, forestry, the natural terrestrial ecosystems with their fauna and flora, marine ecosystems, and that these resources form the base for a number of important industries in the economy. The Policy under its Natural Resource and Conservation Strategy states that *the integrity of protected areas that fall under the National Protected Areas System*, (including marine reserves under the Fisheries Act and forest reserves that fall under the Forests Act) must be guaranteed by ensuring a high level of administration, with comprehensive management plans being developed for each of them. The policy further recognizes the need to ascertain the status of current protected areas given land use changes over time and help to create a process that ensures that any *de-reservation areas will be based on identified national need, particularly as expressed in the National Level Zoning Strategy*. The policy also proposes the *establishment of biological corridors as a set of ecosystems* intended to ensure the connectivity of protected areas across the country.

TABLE 1: ALIGNMENT OF NPASP GOALS WITH MAJOR NATIONAL PLANS

NPASP	Horizon 2030	NSTMP	NAFP	NLUP
Goal 1: Formal recognition and integration of the fundamental role of protected areas and natural resources (natural capital) as a pillar in national economic development.	▪ Incorporate environmental sustainability into development planning ▪ Adoption and implementation of the National Protected Areas System Plan ▪ Strengthening of the legal and administrative framework for protected areas		▪ Strengthening of institutional capacity, mechanisms and integration processes for better planning, and program delivery ▪ Updating the legislative and regulatory frameworks for the sustainable management of the forestry, fisheries and genetic resources ▪ Reduce watershed and	▪ Guarantee the integrity of protected areas that fall under the NPAS

			land degradation	
Goal 2: Inter-sectoral buy-in and public participation exists in both public and private sectors.		▪ Undertake community awareness campaigns		
Goal 3: The enabling environment for private sector involvement is in place.	▪ Strengthen protected areas management	▪ Calls for the financial sustainability of protected areas	▪ Soil and water conservation measures for agricultural production systems ▪ Farm-based climate change adaptation ▪ Agro-ecological services Business Program	
Goal 4: Integration of protected areas as tool in holistic management approach of landscapes and seascapes.		▪ Calls for the declaration of new protected areas		▪ De-reservation of areas will be based on National Level Zoning Strategy

3.5 Implementation Arrangements

3.5.1 The National Protected Areas Technical Committee

A National Protected Areas Technical Committee (NPATC) has been established. The NPATC is a pro-tem committee that will serve until the legislative amendments to the National Park Systems Act establishes the formal administrative structure for the NPA system. The purpose of the NPATC is to provide technical advice to the MFFSD and other stakeholders where appropriate in matters pertaining to the implementation of the NPASP via the NPAS Secretariat. The NPATC also serves as a body for national coordination and consultation on matters related to protected areas. When the NPASA is enacted, the NPATC will be replaced by the National Protected Areas Advisory

Council (NPAAC), which would play the same role. The primary difference is that the NPAAC will have a legislated advisory function.

The membership of the NPATC is appointed by the Minister of Forestry, Fisheries and Sustainable Development. The membership of the Committee includes:

- Belize Forest Department (Chair);
- Belize Fisheries Department (Vice Chair);
- Association of Protected Areas Management Organization;
- Ministry of Tourism & Culture, Institute of Archaeology;
- University of Belize-ERI;
- Coastal Zone Management Authority and Institute;
- Belize Association of Private Protected Areas;
- National Federation of Community Based Organization;
- Lands and Survey Department, Agriculture Department;
- Protected Areas Conservation Trust; and
- National Protected Areas Secretariat.

3.5.2 The NPAS Secretariat

The NPAS Secretariat is housed at the MFFSD and is headed by a Program Director assisted by a Communications Officer and an Administrative/Finance Assistant. The NPAS Secretariat was instituted in 2010 to coordinate the day-to-day implementation of the PASP, including implementation supervision, monitoring and evaluation (M&E). The Secretariat serves as the primary liaison between GOB and protected areas stakeholders for implementation of the system plan. The Secretariat prepares proposals and coordinates projects designed to achieve the targets outlined in the Operational Framework for the NPAS. Assistance is also provided to various Ministries and protected areas stakeholders for the advancement of strategic objectives identified in the Operational Framework. Project Management Units are established within the Secretariat to support the implementation of the NPASP. The NPATC provides oversight and technical guidance to the Secretariat.

3.5.3 Partner Organizations

The Ministry of Fisheries, Forestry, and Sustainable Development (MFFSD)has the responsibility for sustainable development and the administration of the forestry and fisheries resources of Belize through its various departments that include the Forest Department, Fisheries Department, Department of the Environment, the NPAS Secretariat and the National Climate Change Office. The MFFSD is also the focal point for several international conventions, namely the CBD, UNCCD and the Ramsar

Convention. Two of its departments – the Forest Department and the Fisheries Department, play a fundamental role in providing regulatory oversight for protected area management.

Forest Department – The Forest Department is mandated by legislation to provide management and regulatory oversight for all PAs designated under the Forest Act and the NPSA, as well as regulatory oversight for the nation's forest resources. The FD serves as the Chair of the NPATC), which currently serves to advise the GOB on all issues related to the NPAS and the advancement of the NPAPSP objectives. The FD is the co-executing agency of the NPASP.

Fisheries Department – The Fisheries Department is mandated by legislation to provide for the establishment and management of marine reserves, as well as regulatory oversight for the nation's marine and fisheries resources. FiD serves as Vice Chair of the NPATC. It also serves to facilitate the advancement of NPAPSP objectives. The FiD is the co-executing agency of the NPASP.

PACT – The Protected Areas Conservation Trust is a National Trust Fund established to provide financial support to the NPAS. PACT plays a significant role in protected area financing, and as such, in the financial sustainability of the PA system. A reformed PACT may include the function of serving as the formal administrative entity for the NPAS.

APAMO – The Association of Protected Areas Management Organizationsis an umbrella organization representing the non-governmental organizations involved in protected areas management. APAMO's has 13 members who co-manage as much as 30% of the NPAS. APAMO member agencies will continue to function as co-management partners in the implementation of the NPASP.

UB-ERI – The Environmental Research Institute was inaugurated in 2010, as a natural resources and environmental research based facility within the University of Belize. Critical roles that the UB-ERI will perform in NPASP implementation include: 1) Development and maintenance of the Biodiversity Clearing House Mechanism, 2) Development and management of the National Biodiversity Monitoring database and other agreed national monitoring databases, 3) Implementation of the NTPPAM, and 4) Collaboration in the implementation of the Conservation Action Plan for the Central Corridor, among other key areas.

A number of ***multi-lateral organizations, international NGOs, and foundations*** will continue to play the critical role of providing financing and technical support to NPASP implementation. These include: the Global Environmental Facility, UNDP-Belize, the

Oak Foundation, Fauna and Flora International, The Nature Conservancy, Wildlife Conservation Society, World Wildlife Fund, among others.

3.6 Monitoring and Evaluation Framework

3.6.1 Purpose and Scope

The purpose of the M&E System is to support the implementation of the system plan by ensuring that the achievement of its strategic goals and objectives can be effectively tracked. It is also meant to provide constant and reliable information so that decisions can be made in regards to the efficiency of implementation activities. Having an M&E system will help the NPAS and NPATC keep track of progress of overall implementation.

The M&E System seeks to establish:

- The parameters which allow for measuring the performance, impact and sustainability of the NPASP as a whole;
- Quantitative and qualitative information on the performance of plan implementation as a whole and progress towards achieving its goals and objectives;
- The extent to which work plans and outputs are proceeding and take informed decisions in initiating corrective action when deviations/variations are evident;
- Levels and effectiveness of stakeholder participation in the implementation process; and
- The lessons learnt.

The key performance questions that the M&E system will seek to answer are:

- Is the achievement of the Plan's purpose of establishing a protected areas system on track?
- What are the challenges and obstacle to progress in executing strategic action and achieving stated objectives?
- Has the enabling environment for the protected areas been improved?
- Is the structure of the protected areas network more comprehensive and consolidated?
- Has the management effectiveness of protected areas been improved?
- What is the level of engagement of key stakeholders and partners in the implementation of the system plan?

3.6.2 Results Framework

The Plan's Results Framework presents a summary results indicators. The Framework further identifies the necessary data sources, and data collection methods. It establishes how the project will measure its achievements in order to provide for accountability to stakeholders and the Government of Belize.

The Results Framework subscribes to the principle of monitoring being an ongoing process of gathering data throughout implementation and provides an opportunity for evaluation and corrective action when necessary. Evaluation is understood to be periodic data gathering to assess the achievement of the project objectives and overall goal. While both are conceptually distinct these activities actually overlap in practice. Indicators are used in both monitoring and evaluation to measure and describe the degree of achievement of the project goals and objectives.

TABLE 2: NPASP RESULTS FRAMEWORK

Overall Purpose: To have an effective protected areas system for Belize established									
Results Indicators	**Baseline**	**Cumulative Target Values**					**Frequency**	**Data sources/ methodology**	**Responsibility for data collection**
		YR 1	**YR 2**	**YR 3**	**YR 4**	**YR 5**			
By 2019, 50% of Belize's ecosystems are adequately represented (at least 30% representation) within the NPAS	Of the 68 natural ecosystems identified under the revised ecosystem mapping (Meerman, 2011), 28 ecosystems are considered under-represented, when using 30% as the minimum threshold for ecosystem representation (PAR 2013)	Status quo	20% of unrepresented ecological systems integrated into the NPAS	30% of unrepresented ecological systems integrated into the NPAS	40% of unrepresented ecological systems integrated into the NPAS	50% of unrepresented ecological systems integrated into the NPAS	Annual	Statutory Instruments; Government Gazette	Fisheries Department; Forest Department; NPAS Secretariat/ National PA Authority
By 2019, the annual financing gap for the NPAS System is reduced by 50%	The financing gap (basic management scenario) for the NPAS is US$11.1 M (Financial Scorecard 2014)	Status quo	US$9 M gap	US$8 M gap	US$7 M gap	US$5.75 M gap	Annual	PA Financial Scorecard Reports	NPAS Secretariat/ National PA Authority
NPASP actively integrated into the implementation of the Lands, Tourism and Agricultural sector policies and plans by December 2017	The enabling legislation for PAs are the NPSA, Forest Act (FOA), & Fisheries Act (FIA).	NPSA, FOA in place; Aquatic Living Resources Act enacted	NPAS Act enacted	NPAS Act enacted	NPAS Act enacted	NPAS Act enacted	Quarterly	Government Gazette	NPAS Secretariat
	NPA Policy not effectively coordinated with other national policies, plans & strategies	Status quo	Sectoral policies & strategies in PAs, Lands, Agriculture and Tourism integrated	Sectoral policies & strategies in PAs, Lands, Agriculture and Tourism integrated	Sectoral policies & strategies in PAs, Lands, Agriculture and	Sectoral policies & strategies in PAs, Lands, Agriculture and Tourism integrated	Quarterly	Cabinet Briefings	NPAS Secretariat/ National PA Authority

			into the National Growth and Sustainable Development Strategy (GSDS)	into the GSDS	Tourism integrated into the GSDS	into the GSDS			
Goal 1: Formal recognition and integration of the fundamental role of protected areas and natural resources (natural capital) as a pillar in national economic development.									
Intermediate Outcome: The MFFSD as the champion has the institutional capacity to carry out its oversight mandate pertaining to the NPAS.									
1.1. By 2017, the Forest Department (FD) and the Fisheries Department (FID) are formally linked through legislative framework	FD and FID linked only on an ad-hoc basis	Status quo	Status quo	Integrated FD & FID legislative framework enacted	Integrated FD & FID legislative framework enacted	Integrated FD & FID legislative framework enacted	Annual	Government Gazette	NPAS Secretariat/ National PA Authority
1.2. By December 2019, 50% of the budget of the PA regulatory agencies are assigned for field operations (excluding salaries)	72% of the FID expenditures are for personnel costs (2010);	Status quo	Status quo	65%	60%	50%	Annual	Departmental Annual Recurrent Budget; NPAS Progress Reports	Fisheries Department; NPAS Secretariat/ National PA Authority
	82% of the FD expenditures are for personnel costs (2010)	Status quo	Status quo	75%	60%	50%	Annual	Departmental Annual Recurrent Budget; NPAS Progress Reports	Forest Department; NPAS Secretariat/ National PA Authority
Intermediate Outcome: A pilot system of environmental accounting reflects the contribution and value of the MMM's hydrological resources to Belize's GDP.									
1.3. A pilot framework for green accounting is established for water resources by 2018	Status quo: There is nothing in place to address externalities of economic production	Status quo	Status quo	Status quo	Framework for green accounting established for MMM water resources	Framework for green accounting established for MMM water resources	Annual	NPAS Progress Reports	Ministry of Finance; NPAS Secretariat/ National PA Authority
Intermediate Outcome: Proper enabling institutional structures for integration established and functional.									
1.4. The administration of	An NPAS administrative	Status quo	NPAS Statutory	NPAS Statutory	NPAS Statutory	NPAS Statutory	Annual	Government Gazette; Cabinet	MFFSD + NPAS Secretariat

marine and terrestrial PAs are under the responsibility of a single statutory authority by January 2017	structure is not in place. Process underway to reform PACT to take over this function.		Authority created	Authority operational	Authority operational	Authority operational		Briefings; NPAS Secretariat Progress Reports	
1.5. Key sectors (agriculture, energy, private sector, etc.) form part of a reformed NPATC as an advisory body to ensure landscape and seascape approach by 2016 (should be part of the revised legislation)	The NPATC does not have comprehensive representation of key sectors	Status quo	NPATC reformed	NPATC reformed	NPATC reformed	NPATC reformed	Annual	NPAS Progress Reports	MFFSD + NPAS Secretariat
Intermediate Outcome: Better harnessing of effective partnerships in natural resources management.									
1.6. By 2016, multi-stakeholder PA co-management agreements are legal and are in place for all co-managed PAs	Co-management agreements do not have legal underpinning	Status quo	PA co-mgt agreements have basis in law and agreements signed for 50% of co-managed PAs	PA co-mgt agreements have basis in law and agreements signed for all co-managed PAs	PA co-mgt agreements have basis in law and agreements signed for all co-managed PAs	PA co-mgt agreements have basis in law and agreements signed for all co-managed PAs	Annual	Government Gazette; NPAS Secretariat Progress Reports; Co-management agreements	Fisheries Department; Forest Department; NPAS Secretariat/ National PA Authority
	Only GOB-NGO/CBO co-management agreements exist	Status quo	Multi-stakeholder co-management agreements	Multi-stakeholder co-management agreements	Multi-stakeholder co-management agreements	Multi-stakeholder co-management agreements	Annual	NPAS Secretariat Progress Reports; Co-manager reports	Fisheries Department; Forest Department; NPAS Secretariat/ National PA Authority
1.7. Biological connectivity between protected areas in 3 regions of Belize retained	Biological connectivity critical for the maintenance of full species diversity and ecosystems in the	North East Corridor	North East Corridor	North East Corridor; Central Corridor	North East Corridor; Central Corridor	North East Corridor; Central Corridor; Southern	Quarterly	Statutory Instruments; Government Gazette	Fisheries Department; Forest Department; Lands

through private lands by 2019	PAS is incomplete					Corridor			Department; NPAS Secretariat/ National PA Authority
1.8. Two formalized multi-stakeholder partnerships for wider resource management are being implemented by 2018	Land and seascape (ecoregional) management plans are not being implemented; multi-stakeholder partnerships not in place	Status quo	Southern Belize Reef Complex management plan and multi-stakeholder partnership	Southern Belize Reef Complex management plan and multi-stakeholder partnership	Management plans and multi-stakeholder partnerships for: Maya Mountains Massif and Southern Belize Reef Complex	Management plans and multi-stakeholder partnerships for: Maya Mountains Massif and Southern Belize Reef Complex	Annual	Statutory Instruments; Government Gazette; Co-manager Reports; Grant Reports	Fisheries Department; Forest Department; NPAS Secretariat/ National PA Authority
Goal 2: Inter-sectoral buy-in and public participation exists in both public and private sectors.									
Intermediate Outcome: An integrated inter-sectoral communications strategy involving all agencies involved in NRM, use and development is developed and implemented.									
1.9. 50% reduction in the issuance of land leases within Forest Reserves by 2018	TBD	Status quo	20% reduction	35% reduction	50% reduction	50% reduction	Quarterly	Land lease records; Satellite imagery	Lands Department; NPAS Secretariat/ National PA Authority
1.10. 25% increase in adoption of agroecological practices in PA buffer zones by 2019	TBD	Status quo	Status quo	10% increase	15% increase	25% increase	Annual	Agriculture Department reports; Co-manager reports	Agriculture Department; NPAS Secretariat/ National PA Authority
1.11. 50% reduction in infractions in MPAs by 2018	TBD	Status quo	20% reduction	35% reduction	50% reduction	50% reduction	Quarterly	Fisheries Department reports; Co-manager reports	Fisheries Department; NPAS Secretariat/ National PA Authority
1.12. By 2019, KAP survey results indicate that at least 50% of survey respondents of targeted communities	A NPAS Communication Strategy is in place and its implementation has commenced; no	Status quo -- baseline KAP survey conducted	25% of respondents are aware and understand	25% of respondents are aware and understand	50% of respondents are aware and understand	50% of respondents are aware and understand	Annual	KAP (Knowledge, Attitude and Practice) Study Reports; NPAS Secretariat/	NPAS Secretariat/ National PA Authority

are aware of and understand the benefits of the NPAS system	KAP surveys conducted therefore no data available							National PA Authority Reports	
Goal 3: The enabling environment for private sector involvement is in place									
Intermediate Outcome: Clear strategy, rules and guidelines for investing in protected areas established.									
1.13. 20% increase in investments in actively managed protected areas by the private sector by 2018	National prospectus (including incentives schemes -- fiscal, branding/imaging, certification, security of investments, etc.) of opportunities available for development and investment in protected areas is not in place	Status quo	Status quo	5% increase	10% increase	20% increase	Annual	Co-manager reports	NPAS Secretariat/ National PA Authority
1.14. 50% of forestry (LTFLs) and tourism concessions within actively managed PAs are certified operations (FSC & Green Globe) by 2019	Only three forest concessions (Yalbac, Laguna Seca*, PfB) are certified	Status quo	Status quo	?	?	50% certified	Annual	Co-manager reports	NPAS Secretariat/ National PA Authority
1.15. By 2019, employment through PA management and private sector investments in PAs increased by 25%	TBD	Status quo	Status quo	10% increase	20% increase	25% increase	Annual	Co-manager reports	NPAS Secretariat/ National PA Authority
Intermediate Outcome: Support private sector efforts to enhance sustainability of productive activities									
1.16. Financing for the NPAS doubled by December 2019	An estimated US$7.5 million was spent in total on the PAS in 2013 (Financial Scorecard 2014)	US$8 M	US$9 M	US$11 M	US$13 M	US$15 M (basic management scenario)	Annual	Statistical Institute of Belize reports; GOB Annual Recurrent Budget; NPAS Financial Audit	Ministry of Finance; NPAS Secretariat/ National PA Authority
	Approximately US$2	US$2.5 M	US$3 M	US$3.5 M	US$4 M	US$4 M	Annual	Statistical Institute	NPAS Secretariat/

	million was generated from tourism entrance and concession fees in 2013 (Financial Scorecard 2014)							of Belize reports; Co-managers' Reports	National PA Authority
1.17. By 2019, low carbon development and climate change financing to Belize increased by 25%	TBD	Status quo	Status quo	10% increase	20% increase	25% increase	Annual	PA Financial Scorecard Reports	NPAS Secretariat/ National PA Authority
Goal 4: Integration of protected areas as tool in holistic management approach of landscapes and seascapes.									
Intermediate Outcome: The work within PAs aligned with the broader sustainable NRM									
1.18. Two pilot land/seascape management plans developed and being implemented by 2018	Land and seascape (ecoregional) management plans are not being implemented	Status quo	Southern Belize Reef Complex management plan	Southern Belize Reef Complex management plan	Management plans for: Maya Mountains Massif and Southern Belize Reef Complex	Management plans for: Maya Mountains Massif and Southern Belize Reef Complex	Annual	Statutory Instruments; Government Gazette; Co-manager Reports; Grant Reports	Fisheries Department; Forest Department; NPAS Secretariat/ National PA Authority
1.19. Climate change mitigation measures integrated into all PA management plans by 2019	Guideline to support climate change integration into PA management planning developed but not systematically applied	Status quo	Climate change integration guidelines applied in 25% of mgt plans	Climate change integration guidelines applied in 50% of mgt plans	Climate change integration guidelines applied in 75% of mgt plans	Climate change integration guidelines applied in all mgt plans	Annual	NPAS Secretariat/ National PA Authority Reports; Co-managers' Reports; Grant Reports	NPAS Secretariat/ National PA Authority
1.20. By December 2019, 50% of PPAs outside of the NPAS are integrated into the system	PPAs are not integrated into the NPAS where they fit the criteria of adding viability to the system – only the RBCMA, SCMA, Block 127, and other TIDE private lands have formal binding agreements	Status quo	Status quo	Legally binding agreements signed for 25% of PPAs	Legally binding agreements signed for 35% of PPAs	Legally binding agreements signed for 50% of PPAs	Annual	Statutory Instruments; Government Gazette	Fisheries Department; Forest Department; Lands Department; Ministry of Finance; NPAS Secretariat/ National PA Authority
1.21. By December	Important ecological	Status quo	20% of	30% of	40% of	50% of	Annual	Statutory	Fisheries

2019, 50% of unrepresented ecological systems required to complete the NPAS integrated into the NPAS (as identified by the PAR Report)	systems that are important for overall system functionality not yet represented within the protected areas network		unrepresented ecological systems integrated into the NPAS	unrepresented ecological systems integrated into the NPAS	unrepresented ecological systems integrated into the NPAS	unrepresented ecological systems integrated into the NPAS		Instruments; Government Gazette	Department; Forest Department; NPAS Secretariat/ National PA Authority

3.6.3 Data Collection and Analysis

Several routine and non-routine data sources will be used to obtain information for the metrics of the M&E system. The information will be compiled, collated, analyzed and stored by the NPAS Secretariat. The analysis of data will be driven the performance and outcome indicators established in the results framework. The following are some of the main data sources to be used:

Cabinet Briefings –NPASP coordination with other national policies, plans and strategies will be carried out at the highest levels of government. It is expected that Cabinet will call for the setting up of a National Development Policy Coordination Committee (NDPCC) that will be charged with overseeing such coordination. Regular Cabinet Briefings will report on the progress of the work of this committee.

Consultancy Studies – Independent studies will be commissioned by the NPAS Secretariat on an annual basis to undertake ecological gap assessments, financial analysis studies, and KAP (knowledge, attitudes and practice) studies. These reports will be submitted to members of the NPATC.

GOB Annual Recurrent Budget – The GoB's annual recurrent budget will be analyzed on an annual basis by the NPAS Secretariat and the NPATC to determine the levels of PA expenditures, the annual recurrent budgets of the Forest Department and the Fisheries Department, and the estimated GoB budgetary allocations to the NPAS.

Government Gazette – Official announcements of amended legislation, statutory instruments, and official GoB pronouncements are published regularly in the Government of Belize Gazette. The NPAS Secretariat will monitor reports on this official publication to confirm GoB decisions.

Management Plans – Managements submitted by the co-managers will be analyzed for various aspects of site management.

Progress Reports (including individual organizational reports) – All organizations involved in NPASP implementation and support publish regular or annual reports, including the UB-ERI, APAMO member agencies (co-managers), financing partners, as well as the NPAS Secretariat. These reports will provide evidence of approved PA management plans, approved co-management agreements, compliance with PA planning and management regulations, updates on PA staff training, status of public awareness initiatives, and status of the biodiversity CHM and biodiversity research and monitoring, among other areas. NPATC meetings will be held quarterly and provide a forum to discuss implementation of the implementation plan and monitor progress

towards achievement of the strategic goals and objectives. The NPATC will review implementation actions and approaches, and address challenges encountered.

Co-managers' Reports – NGO co-managers are required to submit annual technical and financial reports to the Ministry of Human Development that provides information on the progress of their work. These reports will be essential means of verification.

Grant Reports – Much of the PA management initiatives are supported through grant funding. Donors require regular reports on the use of the grant funding and the results of grant project implementation.

Departmental Reports – The regulatory agencies (FD and FID) are required to report periodically to their parent Ministry (MFFSD). These reports will provide further evidence of the status of NPASP implementation.

SIB reports – Data from the Statistical Institute of Belize will be critical to determine the annual level of financing for the NPAS, and the economic contribution of the NPAS to the nation's GDP.

Mid-term Evaluation– An evaluation will be carried out at mid-point of the Plan's implementation. The NPAS (relevant authority) will coordinate with an external consultant to execute such an evaluation. The MTE will determine progress being made towards the achievement of plan results and allow the NPATC to adjust inputs and activities and improve the implementation process as necessary. Findings of this evaluation will inform the implementation during the final half of the implementation term.

Full Implementation Status Evaluation – A similar evaluation will take place in year 5. The Implementation Status Evaluation will focus on the same issues as the mid-term evaluation as well as examine impact and sustainability of results and provide recommendations for follow-up activities.

3.6.4 Communication and Reporting

Communication is an integral part of monitoring and evaluation. The reports generated by the M&E system will be provided in a systematic and timely fashion at periodic intervals. Sharing of information from plan implementation will be done using various communication channels including the sharing of formal progress reports, commissioned studies, workshops, informal discussions, posters, pamphlets, meetings among others.

The primary stakeholders and partners of the protected areas system will be the main recipients of information generated. Policy and decision-makers within the MFFSD will also receive regular reports from the NPAS. These results will be shared with the NPATC at its regular meetings. NGOs who are co-managers of protected areas will also receive regular updates on progress of implementation. Where external funders provide support to the implementation of the plan, they too will receive reports based on agreed reporting requirements. Last, but equally important, the information generated by the M&E system will be incorporated into the NPAS' Communications Strategy and will be incorporated into their public awareness activities.

TABLE 3: REPORTING SCHEDULE OF M&E INFORMATION

Information Type	Recipient	Frequency	Responsible
NPASP Progress Reports	Minister & Chief Executive Officer NPATC	Quarterly	NPAS – M&E Officer
Projects Progress Reports	NPATC Funders	As agreed	NPAS – M&E Officer
Financial/Budgetary Allocations to PA System	NPATC FID FD Co-Managers	Annually	NPAS – M&E Officer
Ecological Assessments	NPATC FID FD Co-Managers	As available	NPAS – M&E Officer
Management Effectiveness Reports	NPATC FID FD Co-Managers	As available	NPAS – M&E Officer
Legislative Updates	NPATC FID FD Co-Managers	As available	NPAS – M&E Officer

3.6.5 Capacity and Human Resources

The NPAS will in the interim be responsible for implementing the M&E system until a new protected areas authority is established. Given the limited staff at the secretariat, an M&E officer with responsibility for M&E implementation will need to be retained. The M&E officer will be responsible for: 1) maintaining the overall M&E framework including implementation procedures, tools, and data flow; 2) strengthening the monitoring system to ensure sound process and outcome monitoring; 3) validating data; and 4) promoting and encouraging the demand for and use of M&E data.A management

information system along with the requisite equipment will need to be established at the NPATC.

3.6.6 M&E Budget

M&E activity	Timeframe	Annual Indicative Budget BZ$
Staff Salaries		
M&E Coordinator		60,000
M&E Officer		42,000
Administrative Assistant		25,000
Travel	As needed	10,000
Stakeholder consultation meetings & workshops	Inception, Bi-Annual, Annual	15,000
NPATC Meetings (steering committee meetings)	Quarterly	4,000
PA financial analysis studies	Annual	20,000
KAP (knowledge, attitudes and practice) studies	Annual	20,000
Management Effectiveness assessments	Annual	No specific cost
Quarterly Project Implementation Reports	Quarterly	No specific cost
Bi-Annual Project Progress Reports	June and December	No specific cost
	SUB-TOTAL	*196,000*
Administrative Costs (Office supplies, Communication costs, Incidentals) (15%)		*29,400*
	TOTAL ANNUAL M&E COST	**225,400**
OTHER COSTS		
Independent Mid-term Review	At mid-point of NPASP period (2.5 years)	30,000
Independent Terminal Evaluation	At least one month before the end of the NPASP period	50,000
Comprehensive PA Management Effectiveness Study	At end of the NPASP period	100,000

BIBLIOGRAPHY

Following is the combined literature of the major consultancy reports for the 2015 Updated NPASP:

- ***Sustainable Finance Strategy and Plan for the Belize Protected Area System***:

APAMO, 2008 Action Plan for the Inclusion of Biodiversity in Tourism Policies; Critical Ecosystem Partnership Fund.

Barr, Rhona. July 2011. Coastal Capital Case Study: Reefs, mangroves and tourism

Belize Audubon Society 2009. Annual Report

Belize Audubon Society 2010. Annual Report

Belize Tourism Board 2008. Belize Travel and Tourism Statistics

Belize Tourism Board 2011. Visitor Survey 2011

Belize Tourism Board 2011. 1999-2010 Tourism Summary Indicators

Belize Tourism Board 2011. Tourism Expenditure Calculations 2010

Bovarnick, Andrew 2010 Edition. Financial Sustainability Scorecard for PAs

Bovarnick, A., J. Fernandez-Baca, J.Galindo and H. Negret, 2010. Financial Sustainability of Protected Areas in Latin America and the Caribbean: Investment Policy Guidance, United Nations Development Programme (UNDP) and the Nature Conservancy

Bovarnick, A., Alpizar, F., and Schnell, C. (eds.) 2010. The Importance of Biodiversity and Ecosystems in Economic Growth and Equity in Latin America and the Caribbean: An Economic Valuation of Ecosystems. United Nations Development Programme

Bushell,R. and Eagles, P.2007. Tourism and Protected Areas: Benefits Beyond Boundaries; The Vth World Parks Congress. CABI

CESD, PACT, BTB, INCAE, 2006. Terrestrial Impacts of Cruise Tourism in Belize, An Economic, Social and Environmental Assessment.

Ching, Eugenia Wo February 2005. Final Report - Belize's Policy on Protected Areas

Cho, Percival; February 2011. Progress Report

Cooper, L. Burke and N. Bood; 2008; Coastal Capital: Economic Contribution of Coral reefs and Mangroves to Belize. Washington DC: World Resources Institute

Department of Fisheries of the Government of Belize. 2011. Fisheries statistics (personal communications)

De Vries et. Al. 2003 WRI

Drumm, A., A. Moore, A Soles, C. Patterson and J. Terborgh, 2004. Ecotourism Development, A Manual for Conservation Planners and Managers Volume II The Business of Ecotourism Development and Management. The Nature Conservancy, Arlington, VA

Drumm, A. and Lindberg, K., 2004. Evaluation of the Pilot Fee System at Eduardo Avaroa Reserve and Recommendations for the Bolivian Protected Area System; The Nature Conservancy, Arlington, Virginia

Drumm, A. 2007. Tourism-Based Revenue Generation for Conservation in Bushell and Eagles, 2007

Drumm, A., McCool, S. and J. Rieger, 2011 Making Tourism Work: How the Threshold of Sustainability enables a Rapid Response to Reduce Protected Area Threats, Increase Revenue, and Improve Visitor Experience; TNC, USFS, GSTA/USAID

Drumm, A. and Terborgh, J. (eds.), 2007. Tourism, Protected Areas and Communities: Case Studies ands Lessons learned from the Parks in Peril Program, 2002-2007, The Nature Conservancy, Arlington, Virginia

Duffy, Clifton October 2004. Shark News 16 (Newsletter of the IUCN Shark Specialist Group)

Eagles, P., McCool, S. And Haynes, D. 2002. Sustainable Tourism in Protected Areas, Guidelines for Planning and Management. World Commission on Protected Areas, Best Practice Protected Area Guidelines Series No.8 IUCN

Eagles, P. 2007. Global Trends Affecting Tourism in Protected Areas in Bushell and Eagles, 2007

Echeverria Jaime. 2009. Recomendaciones Prácticas y Lineamientos para la Elaboración de Propuestas de Esquemas de PSA en las Cuencas Hidrográficas. PREVDA.

Echeverria J., Cordoba C. 1999. Assessment of Tourism's Sustainability at the Hol Chan Marine Reserve and Rapid Economic Valuation of Environmental Services

Ecosystems Economics LLC, April 2011. Economic Valuation of the Economic Goods and Services of the Maya Mountain Massif and the Maya Mountain Marine Corridor, (Hammond et.al. 2011)

Elbers, J. 2011. Las áreas protegidas de America Latina - Situación actual y perspectivas para el futuro

Emerton, L., Bishop, J. and Thomas, L. (2006). Sustainable Financing of Protected Areas: A global review of challenges and options. IUCN, Gland, Switzerland and Cambridge, UK. x + 97pp.

Environmental Conservation 32 (1) November 2005. Island-specific preferences of tourists for environmental features: implications of climate change for tourism-dependent states

Environmental Research Institute 2011. Belize National Environmental and Natural Resources Management, (NRM) Research Agenda, University of Belize, Belmopan

Ervin, Jamison October 2010. Protected Areas for the 21st Century

Eugenia Wo-Chin et Al..2005

Friends for Conservation and Development May 2011. Combating Illegal Logging in the Chiquibul Forest

Garces D. M., Naranjo L. G., 2011. The Meso - American Reef - Adaptation Case Studies for Responding to Climate Change Impacts

Government of Belize, Belize Finance and Audit Act Chapter 15 - Revised Edition 2000

Government of Belize, Belize National Park Acts Chapter 215 - Revised Edition 2000

Government of Belize, Belize National Parks System Act Chapter 215 - Revised 2003

Government of Belize, Fisheries Act Chapter 210 – Revised Edition2000

Government of Belize, Fisheries Act Chapter 210S - Revised Edition 2003

Government of Belize, Fisheries Act Revised Draft September 2011

Government of Belize, Forest Act Chapter 213 - Revised 2000

Government of Belize, Lands Act Chapter 191 - Revised 2000

Government of Belize, National Institute of Culture and History Act Chapter 331 – Revised Edition 2000

Government of Belize, Private Forest (Conservation) Act Chapter 217 - Revised Edition 2003

Government of Belize, Protected Areas Conservation Trust Act Chapter 218 - Revised Edition 2000

Government of Belize, Report of the Auditor General April 2009 to March 2010

Government of Belize, Wildlife Protection Act Chapter 220 – Revised Edition 2000

Graham R., Roberts C. M., March 2007. Assessing the size, growth rate and structure of a seasonal population of whale sharks (Rhincodon typus Smith 1828) using conventional tagging and photo identification. Fisheries Research 84 (2007) 71-80

Graham R., Roberts C. M., Smith J. C. R., 2005. Diving behaviour of Whale Sharks in relations to a predictable food supply. Journal of the Royal Society

Graham, Rachel May 2007. Whale Sharks of the Western Caribbean: An overview of current research and conservation efforts and future needs for effective management of the species. Gulf and Caribbean Research Vo. 19(2), 149-159, 2007

Haas, G and R. Aukerman, 2011. Increasing the Efficiency in the Collection, Administration and Investment of Protected Areas Fees in Belize. Progress Report September 30th, 2011

Hargreaves-Allen, V, 2010 The Economic Value of the Gladden Spit and Silk Cayes Marine Reserve, a Coral Reef Marine Protected Area in Belize. Conservation Strategy Fund.

Healthy Reefs for Healthy People 2010. Report Card for the Mesoamerican Reef

Heyman , William D. Carr, L., M. Lobel P. 2010. Diver ecotourism and disturbance to reef fish spawning aggregations: It is better to be disturbed than to be dead. Marine Ecology Progress Series Vol. 419: 201–210, 2010

Higgs, J. Kevin, March 2008. A Sustainable Finance Plan for Effective Management of The Bahamas' National System of Protected Areas; The Nature Conservancy

Hockings, M, S Stolton, F Leverington, N Dudley and J Courrau (2006); Assessing Effectiveness – A Framework for Assessing Management Effectiveness of Protected Areas; 2nd Ed. IUCN, Switzerland, www.iucn.org/themes/wcpa/pubs/guidelines.htm#effect2

Homer, Floyd June 2005. Improving Governance of Protected Areas in Belize: institutional, management and legislative requirements

International Monetary Fund (IMF). 2011. Nominal GDP list of countries for the year 2010. World Economic Outlook Database-September 2011.

Kay, Dr.Elma, 2011. (personal communication), Environmental Research Institute, University of Belize

Lands and Survey Department August 2010. Belize Environmental Outlook GEO BELIZE 2010, Ministry of Natural Resources and the Environment

Launchpad Consulting, August 2005. Sustainable Financing Mechanisms Belize Protected Areas System (Result 5)

Launchpad Consulting February 2008. APAMO Financial Sustainability Strategy 2008-2012

León, F., A. Rodríguez, A. Drumm, F. Murrugarra, K. Lindberg y C. Gonzales. 2009. Valoración Económica del Turismo en el Sistema Nacional de Áreas Naturales Protegidas por el Estado: un estudio de caso en cuatro áreas naturales protegidas del Perú. Ministerio del Ambiente. The Nature Conservancy. Lima, 84 p.

Lindberg, K. 2007. Management Information Tools for Setting Visitor Fees in Bushell and Eagles, 2007

Martin, R.B , April 2008. A Review of Organizational Performance and Development of Strategic Options to Improve the Performance of the Botswana Department of Wildlife and National Parks

Meerman J., Wilson R. November 2005. The Belize National Protected Areas System Plan

Ministerio del Ambiente 2005. An Analysis of the Financial Needs of the Ecuadorian National System of Protected Areas, Executive Summary. Quito, Ecuador

Ministry of Agriculture and Fisheries 2007. Annual Report

Ministry of Agriculture and Fisheries 2008. Annual Report

Protected Areas Conservation Trust (PACT) 2010. Annual Report

Ramos, Adele, November 2011. Revamping Belize's fisheries laws and ending open access to marine fisheries

Rodriguez, A., Corral, Lindberg, K. Drumm, A and Falconi; 2007;Valoración Económica del Turismo en el Sistema Nacional de Áreas Protegidas del Ecuador Continental; The Nature Conservancy, Conservación Internacional, Green Consulting, EcoCiencia, Centro Ecuatoriano de Derecho Ambiental. Ministerio del Ambiente del Ecuador. Quito

Salas O., Catzim N., January 2009, Financial Plan Chiquibul National Park

Salas, Osmany, December 2008. National Protected Areas Co-Management Framework, APAMO Belize

Samonte G, Karrer L, Orbach M. 2010. People and Oceans. Science and Knowledge Division, Conservation International, Arlington, Virginia, USA.

Southern Environmental Association 2010. Annual Report

Southern Environmental Association 2010. Annual Report

The National Integrated Coastal Zone Management Strategy for Belize

United Nations Development Program 2010. Financial Scorecard Belize

Venetia, Hargreaves-Allen, The Economic Value of the Gladden Spit and Silk Cayes Marine Reserve, A Coral Reef Marine Protected Area in Belize

Wildtracks May 2005. Guidelines for Developing a Management Plan

Wildtracks 2009. The Status of Protected Areas in Belize

Wildtracks 2011. Directory of Belize's Protected Areas

Wildtracks June 2011., Rationalization Exercise of the Belize National Protected Areas System Inception Report

Wildtracks, September, 2011 Rationalization Exercise of the Belize National Protected Areas System Interim Report

World Wild Life Fund 2009. WWF MAR Climate Change Brochure

Ya'axche Conservation Trust 2010. Annual Report

Young R., Wolfe L., MacFarlane V. July 2005. Monitoring Management Effectiveness in Belize's Protected Areas System

Young, M.M. 2008. Co-Management Agreement Review of APAMO members

- ***Strategies and Guidelines for Investing in Protected Areas in Belize: Consultancy To Undertake Socio-Economic And Environmental Assessments Of Priority Protected Areas And Develop Strategies And Guidelines For Investing In Protected Areas And Their Buffer Areas***:

Arevallo, B., 2011. Ceibo Chico Drainage System Gold Mine Field Visit Report. A report produced for the FCD.

Bonilla, Jaime Echeverria, Cynthia Cordoba Serrano. 2000. Assessment of Tourism's Sustainability at the Hol Chan Marine Reserve and Rapid Economic Valuation of Environmental Services.

Brandon, K., and Margoluis R. (1996). Structuring ecotourism success: Framework for analysis. Plenary paper presented at “The Ecotourism Equation: Measuring the Impacts” International Society of Tropical Foresters, Yale University, New Haven, Connecticut, April 12-14, 1996.

Briassoulis, H. (1995). The environmental internalities of tourism: Theoretical analysis and policy implications. In H. Coccossis, and P. Nijkamp, Sustainable Tourism Development (pp.25-39). Brookfield, U.S.A.: Avebury.

Buhalis, D., and Fletcher J. (1995). Environmental impacts on tourist destinations: An economic analysis. In H. Coccossis, and P. Nijkamp, Sustainable Tourism Development (pp.3-24). Brookfield, U.S.A.: Avebury.

Cho-Ricketts, L.; C. Santos, 2006. Revised Baseline Assessment of the Belize Barrier Reef Reserve System, World Heritage Site.

Ching, E., 2005. Final Report, Belize’s Policy on Protected Areas. A report commissioned under the NPAS project.

Cooper, E., L. Burke and N. Bood. 2008. Coastal Capital: Economic Contribution of Coral Reefs and Mangroves to Belize. Washington DC: World Resources Institute.

Drumm, A., Echeverría, L. and M. Almendarez, 2011. Sustainable Finance Strategy and Plan for the Belize Protected Area System.

Hammond et. al. 2011. Economic Valuation of the Economic Goods and Services of the Maya Mountain Massif and the Maya Mountain Marine Corridor.

Emerton, L., Bishop, J. and Thomas, L. (2006). Sustainable Financing of Protected Areas: A global review of challenges and options. IUCN, Gland, Switzerland and Cambridge, UK. x + 97pp.

Gebhard, Katrin Michael Meyer, Stephanie Roth, 2008. Criteria for Sustainable Tourism. Produced for UNEP/GEF and UNESCO MaB

Haas, G., R. Aukerman, 2011. Increasing the Efficiency in the Collection, Administration and Investment of Protected Areas Fees in Belize.

Hargreaves-Allen, V, 2010 The Economic Value of the Gladden Spit and Silk Cayes Marine Reserve, a Coral Reef Marine Protected Area in Belize. Conservation Strategy Fund.

ITTO, 2005. Revised ITTO criteria and indicators for the sustainable management of tropical forests including reporting format.

Launchpad Consulting, 2005: Sustainable Financing Mechanisms Belize's Protected Areas System (Result 5): Prepared For National Protected Areas System Plan Project.

Launchpad Consulting, 2008: APAMO Financial Sustainability Strategy 2008-2012.

Nextera, 2012: Environmental Statement of US Capital Energy Belize Ltd. Exploratory Drilling, Testing and Completion Phase_Block 19.

Nextera, 20122: Progress Report Component B_Assessment and Analysis Plus Stakeholder Consultation.

Ramsar Convention Secretariat, 2010. Impact assessment: Guidelines on biodiversity-inclusive environmental impact assessment and strategic environmental assessment. Ramsar handbooks for the wise use of wetlands, 4th edition, vol. 16. Ramsar Convention Secretariat, Gland, Switzerland.

UNEP/WTO (Ed.)(2005): Making Tourism More Sustainable: a guide for policy makers. http://www.uneptie.org/pc/tourism/library/A Guide for Policy Makers.htm

Venetia Hargreaves-Allen, 2009. Is marine conservation a good deal? The value of a protected reef in Belize. Published in Conservation Strategy Fund, Issue 7.

World Tourism Organization (Ed.)(2004): Indicators of sustainable development for tourism destinations. A guidebook. - Madrid. http://www.world-tourism.org /frameset/frame_sustainable.html

- ***Rationalization Exercise of the Belize National Protected Areas System***:

Aldous A., P. Gonzalez, and K. Popper (2007). A Method for Incorporating Climate Change into Conservation Action Plans. The Nature Conservancy.

Anderson, E.R., Cherrington, E.A., Flores, A.I., Perez, J.B., Carrillo R., and E. Sempris (2008). Potential Impacts of Climate Change on Biodiversity in Central America, Mexico, and the Dominican Republic." CATHALAC / USAID.

Andrefouet S., P.J. Mumby, M. McField, C. Hu, F.E. Muller-Karger (2002). Revisiting coral reef connectivity. Coral Reefs (2002) 21:43–48

Callum M. Roberts, S. Andelman, G. Branch, R. H. Bustamante, J. C. Castilla, J. Du., B. S. Halpern, K. D. Lafferty, H. Leslie, J. Lubchenco, D. Mcardle, H. P. Possingham, M. Ruckelshaus, and R. R. Warner (2003). Ecological Criteria For Evaluating Candidate Sites For Marine Reserves. Ecological Applications, 13(1) Supplement, 2003, Pp. S199–S214

CATIE-TNC, 2012. Propuesta de estrategias para adaptación al cambio climático en el caribe de Belice, Guatemala y Honduras. Prime Contract No.EPP – 1-05 -04 – 00020 – 00 TNC Deliverable Number 6.3 United States Agency for International Development.

Cherrington E., E. R. Anderson, A. I. Flores, B. E. Hernandez, A. H. Clemente, E. Sempris, F. Picado and D. Erwin (2011). Implications of Climate Change for Forest Structure and Carbon Storage in the Tropical Zones of Latin America and the Caribbean. Servir

Dudley, N. (Editor) (2008). *Guidelines for Applying Protected Area Management Categories.* Gland, Switzerland. IUCN

Dudley, N., S. Stolton, A. Belokurov, L. Krueger, N. Lopoukhine, K. MacKinnon, T. Sandwith and N. Sekhran [editors] (2010). *Natural Solutions: Protected areas helping people cope with climate change*, IUCNWCPA, TNC, UNDP, WCS, The World Bank and WWF, Gland, Switzerland, Washington DC and New York, USA

Green A., A. White and J. Tanzer (2012). Integrating Fisheries, Biodiversity, and Climate Change Objectives into Marine Protected Area Design in the Coral Triangle (USAID)

Grober-Dunsmore, R., and B.D. Keller, eds. (2008). Caribbean connectivity: Implications for marine protected area management. Proceedings of a Special Symposium, 9-11 November 2006, 59th Annual Meeting of the Gulf and Caribbean Fisheries Institute, Belize City, Belize. Marine Sanctuaries Conservation Series ONMS-08-07. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Silver Spring, MD.

Harmsen B. J., R. J. Foster, S.t Silver, L. Ostro, and C. P. Doncaster (2010). Differential Use of Trails by Forest Mammals and the Implications for Camera-Trap Studies: A Case Study from Belize. Biotropica 42: 126-133

Homer, F. (2005). Improving Governance of Protected Areas in Belize: institutional, management and legislative requirements.

IUCN Red List (Downloaded 2012)

IUCN World Commission on Protected Areas (IUCN-WCPA) (2010). Supplementary Guidelines for applying the IUCN Protected Areas Management Categories to Marine Protected Areas. Draft for comments.

IUCN World Commission on Protected Areas (IUCN-WCPA) (2008). Establishing Marine Protected Area Networks—Making It Happen. Washington, D.C.: IUCN-WCPA, National Oceanic and Atmospheric Administration and The Nature Conservancy.

IUCN/WCMC (1996). World Heritage Nomination – IUCN Summary: Belize Barrier Reef System (Belize).

Jacobs, N. and A. Castenada (1998). The Belize National Biodiversity and Action Plan. Ministry of Natural Resources and the Environment, Belize

Lubchenco, J. S. R. Palumbi, S. D. Gaines, and S. Andelman (2003). Plugging a Hole in the Ocean: The Emerging Science of Marine Reserves. Ecological Applications, 13(1) Supplement, 2003, Pp. S3–S7

Kramer P.A. and P.R. Kramer, (2002). Ecoregional Conservation Planning for the Mesoamerican Caribbean Reef, WWF, Edited by McField M.

Majil, I. (2005). Belize First Annual Report to the Inter-American Convention for the Protection and Conservation of Sea Turtles: Second Conference of the Parties, Nov 16-18, 2004 - Isla de Margarita, Venezuela

Marshall N.A., Marshall P.A., Tamelander J., Obura D., Malleret-King D. and Cinner J.E. (2009). A Framework for Social Adaptation to Climate Change; Sustaining Tropical Coastal Communities and Industries. Gland, Switzerland, IUCN.

McCook L. J., G. R. Almany, M. L. Berumen, J. C. Day, A. L. Green, G. P. Jones, J. M. Leis, S. Planes, G. R. Russ, P. F. Sale, S. R. (2009). Management under uncertainty: guide-lines for incorporating connectivity into the protection of coral reefs. Coral Reefs 28:353–366

McField M. et. al. (2010). Healthy Reef initiative Eco-health Report Card for the Mesoamerican Reef: An Evaluation of Ecosystem Health, 2010

McField M. et. al. (2008). Healthy Reef initiative Eco-health Report Card for the Mesoamerican Reef: An Evaluation of Ecosystem Health, 2008

McField et. al. (2007). Healthy Reefs for Healthy People

McLeod, E. and Salm, R. V. (2006). *Managing Mangroves for Resilience to Climate Change.* IUCN, Gland, Switzerland.

McSweeney, C., M. New and G. Lizcano. UNDP Climate Change Country Profiles Belize. UNDP Climate Change Country Profiles. http://country-profiles.geog.ox.ac.uk

Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver and Z.-C. Zhao. (2007).Global Climate Projections. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Meerman J. (2011). National Land Use Policy and Integrated Planning Framework

Meerman, J. (2005). Ecosystems Map of Belize – 2004 edition: http://biological-diversity.info

Meerman, J.C. (2005). Protected Area System Assessment and Analysis: Marxan Analysis. Report to the Protected Areas System Plan Office.

Meerman, J. (2005). National Protected Areas Policy and System Plan. Forest Department

Meerman J. (2000). Feasibility Study of the Proposed Northern Belize Biological Corridors Project. Report for Programme for Belize

Ministry of Natural Resources (2010). IV National Report to the United Nations Convention on Biological Diversity

Mumby, Peter (2006). Connectivity of reef fish between mangroves and coral reefs: Algorithms for the design of marine reserves at seascape scales. Biological Conservation 128, 2006

Mumby, Peter and A. Hastings (2008). The impact of ecosystem connectivity on coral reef resilience. Journal of Applied Ecology 2008, 45.

Ogden, J.C., Gladfelter, E.H. (1983). Coral reefs, seagrass beds and mangroves: their interactions in the coastal zones of the Caribbean. UNESCO Rep. Mar. Sci. 23, 133.

Perfect Green Belize (2008). Action Plan for the inclusion of Biodiversity Conservation in Tourism Policies. Report to Association of Protected Areas Management Organization

Ravndal (2002) Community Co-managed Park System for Belize - Final Project Evaluation. UNDP/GEF BZE/98/G32/A/1G/99

Richardson, R. (2009). Belize and Climate Change: The Cost of Inaction. UNDP

Sarteneja Alliance for Conservation and Development (2010). Sarteneja Tourism Development Plan

Simpson, M.C., Scott, D., New, M., Sim, R., Smith, D., Harrison, M., Eakin, C.M., Warrick, R., Strong, A.E., Kouwenhoven, P., Harrison, S., Wilson, M., Nelson, G.C., Donner, S., Kay, R., Geldhill, D.K., Liu, G., Morgan, J.A., Kleypas, J.A., Mumby, P.J., Palazzo, A., Christensen, T.R.L., Baskett, M.L., Skirving, W.J., Elrick, C., Taylor, M., Magalhaes, M., Bell, J., Burnett, J.B., Rutty, M.K., and Overmas, M., Robertson, R. (2009) An Overview of Modelling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies

Stafford, P.J. & Meyer, J.R. (2000). A Guide to the Reptiles of Belize. San Diego, California: Academic Press.

TEEB (2009). The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature

Thompson, I., Mackey, B., McNulty, S., Mosseler, A. (2009). Forest Resilience, Biodiversity, and Climate Change. A synthesis of the biodiversity/resilience/stability relationship in forest ecosystems. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 43.

U.S. Indian Ocean Tsunami Warning System Program (2007). How Resilient is Your Coastal Community? A Guide for Evaluating Coastal Community Resilience to Tsunamis and Other Coastal Hazards. U.S. Indian Ocean Tsunami Warning System Program supported by the United States Agency for International Development and partners, Bangkok, Thailand.

Walker Z. and P. Walker (2010). Status of Protected Areas in Belize. Report for APAMO

Walker Z. and P. Walker (2008). Conservation Action Plan for the Southern Belize Reef Complex. Report for Friends of Nature, TNC and Fisheries Department

Walker Z. (2010). The Southern Belize Reef Complex – Managing for Climate Change. Report for Southern Environmental Association

Walker Z. and P. Walker (2009). Columbia River Forest Reserve – Strategic Management Plan 2011 – 2015. For Belize Forest Department and Ya'axché Conservation Trust.

Walker Z. and P. Walker (2007). Technical Assessment of the Maya Mountains Massif, with four outputs: Technical Assessment of Biodiversity and Culture (in collaboration with Jaime Awe);Technical Assessment of Threats and Opportunities; Socio-Economic Assessment (in collaboration with Nellie Catzim). Reports for Forest Department and The Nature Conservancy

Walker Z. and P. Walker (2005). National Framework for Management Planning under the National Protected Areas Policy and System Plan. Contracted by Forest Department/NPAPSP

World Resources Institute (2005). Belize Coastal Threat Atlas

ANNEXES

Annex 1: National Policy on Protected Areas in Belize (2005)

Preamble

Protected areas represent approximately 36% of Belize's terrestrial areas and 13% of its marine area. Marine and terrestrial protected areas are key repositories for sustainable development. The protected areas system comprises national parks, nature reserves, wildlife sanctuaries, natural monuments, forest reserves, marine reserves, archaeological sites and archaeological reserves, as well as private reserves, strategic biological corridors and scenic landscapes of geomorphic significance.

Protected areas are valuable because of the environmental, social, economic and cultural goods and services provided by the ecosystems protected, the flora and fauna comprised in those areas, and the current and potential economic activities related to biodiversity management and conservation.

Belize is committed to the conservation and sustainable use of its natural resources through the designation of the many marine and terrestrial protected areas. Several pieces of legislation have to date provided the legal foundation for the declaration and establishment of protected areas: the National Parks System Act CAP 215 Revised Edition 2000, the Forest Act CAP 213 Revised Edition 2000, the Fisheries Act CAP 210 Revised Edition 2000, and the National Institute of Culture and History Act CAP 331 of the Substantive Laws of Belize. The country has further demonstrated its commitment through the ratification of a number of legally binding multilateral environmental agreements, including the Convention on Biological Diversity, the Convention on World Heritage Sites, Convention on the International Trade in Endangered Species of Wild Fauna and Flora, the Convention on Wetlands of International Importance Especially As Waterfowl Habitat (Ramsar Convention), the United Nations Convention to Combat Desertification (Land Degradation), the United Nations Framework Convention on Climate Change, among others.

This policy document attempts to capture the essence of the role of protected areas and their importance to Belize's economic development by providing a set of policy statements that should be considered in decision making involving these areas.

Objectives and scope

The general objective of this policy document is to provide a set of guiding principles for the declaration, modification and re-designation where necessary; management and administration; socio-economic assessment and analysis; ecological assessment and

analysis, and monitoring and evaluation of marine and terrestrial protected areas in Belize.

Additionally the policy document seeks to promote conservation of the rich biodiversity of Belize in perpetuity for present and future generations of Belizeans, to use the nation's biological resources in a sustainable manner that ensures that the resource base is not compromised, and to ensure the fair and equitable sharing of benefits arising from the utilization of the nation's biologically diverse resources among all Belizeans.

The main agencies responsible for the implementation of this policy document are the Ministries/Departments responsible for terrestrial and marine protected areas, archaeological sites and reserves, and tourism as defined by the Laws of Belize.

Implementation should occur in consultation with the various stakeholders in conservation, including but not limited to, non-government organizations, community based organizations, indigenous peoples, private/business sector, and educational institutions.

Policy Declaration:

The policy declaration for the protected areas is summed up as follows:

Recognising that:

Protected areas in Belize provide irreplaceable public benefits from ecosystem services such as clean water, clean air, carbon sinks, gene pools, baseline data for research and development, all of which contribute to the local, national and regional economies,

And that:

Protected areas are an important resource base for the development and strengthening of economic activities and contribute to poverty elimination by supporting industries such as agriculture, tourism, fisheries, timber and non-timber products, research, bio-prospecting, mining, water and energy services among others:

The Government of Belize shall promote the sustainable use of Belize's protected areas by educating and encouraging resource users and the general public to properly conserve the biological diversity contained in these areas in order to maintain and enhance the quality of life for all. This shall be achieved by facilitating the participation of local communities and other stakeholders in decision-making and the equitable distribution of benefits derived from them, through adequate institutional and human capacity building and collaborative research and development.

General Principles:

The Government of Belize shall:

1. *Assure, for all Belizeans, safe, healthy, productive, aesthetically and culturally pleasing surroundings by preserving important historic, cultural, aesthetic and natural aspects of Belize's natural heritage;*
2. *Promote the widest range of beneficial uses of biodiversity without degradation, risk to health or safety, or other undesirable and unintended consequences in order to provide for sustainable economic development;*
3. *Achieve a balance between population and biodiversity resource use which will permit a higher standard of living and the conservation of natural resources for future generations;*
4. *Enhance the quality of renewable resources and strive for the optimum use of non-renewable resources.*

For decisions regarding the declaration, modification and re-designation; administration and management; economic and ecological assessment and analysis, and monitoring and evaluation of marine and terrestrial protected areas in Belize, the following policy statements shall be applied:

Policy Statements:

The Protected Areas System

1. Protected areas shall be established based on, *inter alia*, ecosystem functions, environmental services, representativeness, critical habitats, natural genetic resources, and scenic values.
2. Belize's biological and cultural resources are national patrimony that shall be conserved for generations of Belizeans to come.
3. Belize's biological resources shall be conserved in collaboration with regional and global initiatives.
4. Trans-boundary protected areas shall be recognized as important for addressing confidence-building measures, as well as regional, social, economic and environmental issues.
5. Biological corridors shall be established and recognised as part of the system provided they contribute to the effectiveness and interconnectivity among the different protected areas.
6. Private protected areas shall be officially recognised provided the following: that the areas are essential for a comprehensive national protected areas system; or essential for maintaining primary biological corridors; that the management goalsand

objectives of the private protected areas are compatible with and complementary to the national system, and that their establishment and use is permanent regardless of changes of land ownership that may occur.

Administration and Management

7. All protected areas of Belize shall be integrated under a national management strategy and consolidated protected areas system;
8. Belize's biodiversity is best conserved *in-situ*, within the protected areas;
9. Management of protected areas shall respect, preserve and maintain the traditional knowledge, innovations and practices of indigenous peoples and local communities provided that these do not conflict with the ecological integrity of the protected area and the various conventions and multi-lateral environmental agreements signed by the Government of Belize
10. Management of Belize's protected areas shall be accountable and transparent.
11. The management of Belize's protected areas shall be geared to maximise socioeconomic benefits and protected area cost recovery and revenue generations schemes without undermining their cultural and ecological integrity.
12. The management of Belize's protected areas shall make provisions for carrying capacity and/or limits of acceptable change based on sound technical and scientific criteria in order to ensure the cultural and ecological integrity of the areas.
13. Monitoring and evaluation mechanisms shall be established for the on-going assessment of protected areas and shall be based on compatible methods, indicators and site-specific standards to ensure management effectiveness and biological and cultural integrity.
14. Declaration, designation, modification, category designation, management and de-reservation of private and public marine and terrestrial protected areas shall involve a process of consultation with the relevant stakeholders before final determination is made.

Socio-economic considerations

15. The appreciation of protected areas and their biodiversity at all levels shall be improved and enhanced through communication, education and public awareness.
16. The protected areas of Belize shall facilitate environmental education, research, monitoring, recreation and ecotourism for the general public.
17. Participatory mechanisms which are vital to optimising socio-economic benefits, such as collaborative management agreements and landscape-level management plans, shall be encouraged to maintain the cultural and ecological integrity of the protected areas.

18. Equal opportunity for access to the benefits derived from protected areas shall been encouraged for all stakeholders, particularly local communities and indigenous peoples living near protected areas.
19. Environmental, economic and social sustainability of protected areas shall be considered paramount to the national development of Belize.
20. The protected areas of Belize shall support the sustainable economic development of the local communities that buffer these areas.
21. Funding of protected areas shall be encouraged through collaboration with relevant stakeholders.
22. The concept of cross-subsidization shall be recognised as a means of funding since some protected areas have more revenue generation potential than others.
23. The protected areas system shall seek to maintain itself financially and to contribute to Belize's national development.

This policy shall be reviewed as often as is required to determine the status of its implementation and make necessary amendments.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