Northern Belize Coastal Complex

Management Action Planning Outputs

Summary

2015 - 2020

Belize Fisheries Department

Belize Forest Department

Wildtracks
Conservation, Education and Research

SACD
Sarteneja Alliance for Conservation and Development

Funded by the
Protected Areas Conservation Trust

PACT
Protected Areas Conservation Trust

Collaborative Vision for the Northern Belize Coastal Complex

The Northern Belize Coastal Complex is a model of functional, river to reef ecosystems supported by dynamic, coordinated, transboundary, multi-stakeholder partnerships, for the effective stewardship of the environment, all biodiversity, and the socio-economic benefits for present and future generations.

NBCC CAP Workshop, February 2014

A Plan for Collaborative Action

Planning for the Northern Belize Coastal Complex

The Northern Belize Coastal Complex (NBCC) is a river-to-reef seascape of connected protected areas in northern Belize. Water flows from the Rio Hondo, New River and coastal lagoons of the mainland into the Corozal Bay Wildlife Sanctuary, and on to the reefs of Bacalar Chico, Hol Chan and Caye Caulker Marine Reserves. The area is important for its reef formations, seagrass beds and extensive inundated mangroves, and critical in the maintenance of Belize's populations of threatened species - including Goliath grouper, sharks and West Indian manatee. The terrestrial components of Bacalar Chico National Park and Caye Caulker Forest Reserve are nationally and regionally important for their large extents of unimpacted mangroves, littoral forest and hawksbill turtle nesting beaches.

The National Protected Areas System Policy calls for strengthening management at system level, with greater planning, communication and collaboration between protected area managers, for more effective system-level management of marine protected areas within the same seascape. This initiative was conducted to build connectivity at the system level - through improved integrated monitoring, surveillance and enforcement, and building of stakeholder awareness, to ensure that each protected area is managed for its system-level roles as well as site level priorities, with increased cost effectiveness and reduced duplication of effort.

A series of planning workshops conducted in 2014 brought together key stakeholders of the NBCC to identify mechanisms for strengthened management at the system level, with the goal of increasing viability of the marine life of the area, improving livelihood options for those dependent on these resources, and building management effectiveness of the individual MPAs.

Transboundary Collaboration

The Northern Belize Coastal Complex is, itself, part of a larger, transboundary seascape - it is contiguous with the Sanctuario del Manati and Parque Nacional Arrecifes de Xcalak, in Mexico. Whilst the scope of the Northern Belize Coastal Complex Plan is confined to the northern protected areas of Belize, the NBCC Task Force is working closely with its Mexican counterparts, with their participation as key stakeholders in the MAP workshops. This provides important transboundary input into the planning process, and a forum for establishing transboundary coordination and collaboration to extend beyond the lifetime of the planning process.

Project Partners

The NBCC Task Force

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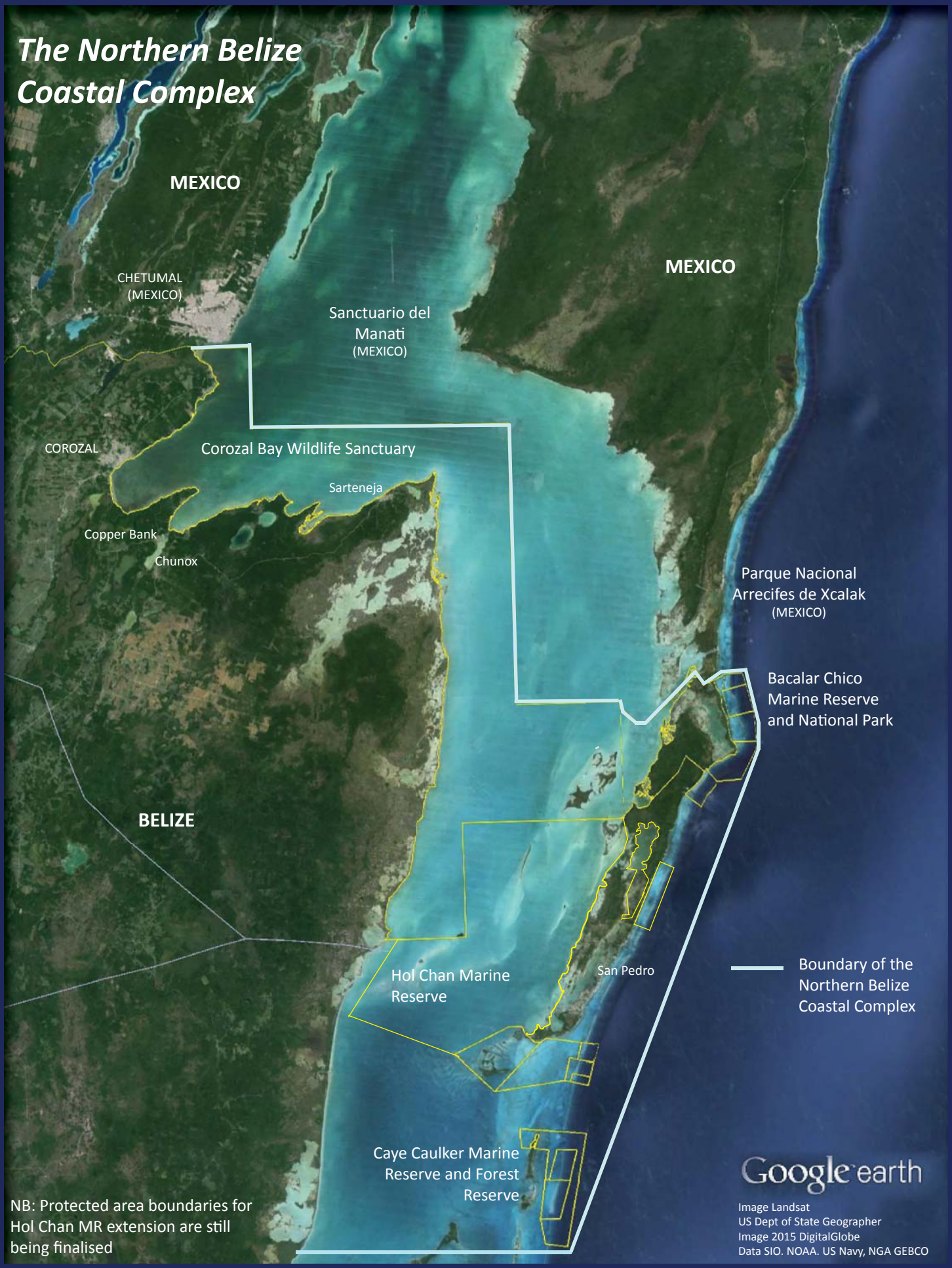

The Northern Belize Coastal Complex
MEXICO
MEXICO
CHETUMAL (MEXICO)
Sanctuario del Manati (MEXICO)
COROZAL
Corozal Bay Wildlife Sanctuary
Sarteneja
Copper Bank
Chunox
Parque Nacional Arrecifes de Xcalak (MEXICO)
Bacalar Chico Marine Reserve and National Park
BELIZE
Hol Chan Marine Reserve
San Pedro
Boundary of the Northern Belize Coastal Complex
Caye Caulker Marine Reserve and Forest Reserve
NB: Protected area boundaries for Hol Chan MR extension are still being finalised
Google earth
Image Landsat
US Dept of State Geographer
Image 2015 DigitalGlobe
Data SIO. NOAA. US Navy, NGA GEBCO

Corozal Bay Wildlife Sanctuary

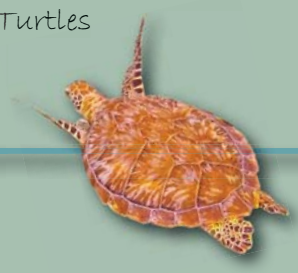
Home of the West Indian Manatee

Key Points

- A trans-boundary estuarine system shared with Mexico
- Critical for reef health in northern Belize, filtering sediment and contaminants from the rivers before they reach the reef
- Supports traditional local fishermen and their families
- Provides sheltered waters, important for Belize's manatees
- Protects stromatolite formations unique in Belize
- Includes the shallow waters behind Ambergris Caye, important for San Pedro's sport fishing industry
- Managed by the community-based organization - Sarteneja Alliance for Conservation and Development (SACD), in partnership with the Forest Department and in close collaboration with the Fisheries Department

Bacalar Chico Marine Reserve and National Park

Protecting Nesting Sea Turtles



Key Points

- A trans-boundary reef system shared with Mexico
- One of seven Marine Protected Areas that form Belize's World Heritage Site - the Belize Barrier Reef Reserve System
- A major component of the Mesoamerican reef, contributing to the viability of marine resources, including commercially important fish, lobster, and conch stocks
- Beaches provide important nesting sites for all three species of turtle - loggerhead, green and hawksbill
- Provides important protection for critically endangered species including the Goliath grouper, and spawning aggregation sites
- Large expanse of littoral forest, mangroves and shallow lagoon
- The only place in Belize where the Mesoamerican Barrier Reef meets the mainland, exposing the unique formation of fossilized Pleistocene coral bedrock

River .....

to ....

Photo: Blue Ventures

Hol Chan Marine Reserve

Supporting the economy - Reef-based Tourism, Sport fishing, and Nurse Sharks.

Key Points

- One of Belize's oldest marine reserves, and an important tourism destination, originally focused on protection of the deep reef in front of San Pedro
- A major feature of the tourism industry in San Pedro, the primary income generation industry of the caye,
- Maintains representative populations of marine species and an inter-linked system of mangrove, seagrass, and coral reef in the combined Marine Reserve - National Park
- Provides tourists with the opportunity to snorkel with large congregations of stingrays and nurse sharks at Shark-Ray Alley
- Protects important sport fishing flats
- Includes representation of mangrove cayes off the southern tip of Ambergris Caye
- Traditional fishing supported by special permits
- An important, accessible educational resource for students and schools


G. Kirkwood

Caye Caulker Marine Reserve and Forest Reserve

Mangroves and Littoral Forest

Key Points

- Important as a tourism destination, providing support for the tourism industry of Caye Caulker
- Key in maintaining the health of the reef and local commercial species in the Caye Caulker area, supporting local fishermen
- Fringing mangroves provide Caye Caulker with protection from storm surges and coastal erosion
- The littoral forest and mangrove component in the Forest Reserve contributes towards representation of these ecosystems in the National Protected Areas System, and provide an important staging point for migratory birds
- An important, accessible educational resource for students and schools

Reef

Protected Areas of the Northern Belize Coastal Complex

PROTECTED AREAS	ACRES
MARINE RESERVES	
Bacalar Chico Marine Reserve	15,766
Caye Caulker Marine Reserve	9,670
Hol Chan Marine Reserve	102,400
WILDLIFE SANCTUARIES	
Corozal Bay Wildlife Sanctuary	180,508
NATIONAL PARKS	
Bacalar Chico National Park	11,145
FOREST RESERVES	
Caye Caulker Forest Reserve	94
TOTAL AREA UNDER PROTECTION	**397,691**

Threatened Species

CRITICALLY ENDANGERED	
Staghorn Coral	*Acropora cervicornis*
Elkhorn Coral	*Acropora palmata*
Goliath grouper	*Epinephelus itajara*
Hawksbill turtle	*Eretmochelys imbricata*
ENDANGERED	
Loggerhead turtle	*Caretta caretta*
Green turtle	*Chelonia mydas*
Nassau grouper	*Epinephelus striatus*
Red Porgy	*Pagrus pagrus*
Great hammerhead	*Sphyrna mokarran*
Lamarck's Sheet Coral	*Agaricia lamarcki*
Pillar Coral	*Dendrogyra cylindrus*
Elliptical Star Coral	*Dichocoenia stokesii*
Fire Coral	*Millepora striata*
Lobed Star Coral	*Orbicella annularis*
Mountainous Star Coral	*Orbicella faveolata*
Boulder Star Coral	*Orbicella franksi*
Rough Cactus Coral	*Mycetophyllia ferox*

IUCN Redlist, 2015

What is at Risk?

The Mesoamerican Reef stretches for more than 600 miles along the coast of Mexico, Belize, Guatemala, and Honduras, and encompasses the largest coral reef system in the Western Hemisphere. The Northern Belize Coastal Complex (NBCC) encompasses the northern-most portion of the Belize reef from the international border with Mexico to the southern point of Caye Caulker, as well as the estuarine waters that flow from the Rio Hondo and New River onto the coastal shelf and the coastal ecosystems of the cayes and coast.

The NBCC is a rich mosaic of inter-connected mangroves, littoral forest, sand beaches, seagrass beds and reef, supporting at least twenty four species of international concern, including the critically endangered Goliath grouper, hawksbill turtle and *Acropora* corals, and the Antillean manatee, an endangered, regional sub-species of the West Indian manatee. The diverse and eye-catching beauty of the colourful life of the patch reefs, reef crest and spur and groove draw visitors to Belize, supporting not only the important tourism-based economy of the cayes, but also a significant percentage of the national economy.

The mangrove-lined lagoons and creeks and extensive seagrass beds provide important nursery habitats for both commercial and non-commercial marine species, important in supporting the traditional fishing industry.

Much of this river-to-reef seascape is under management, encompassing six national protected areas in key locations. Corozal Bay Wildlife Sanctuary provides conservation management for the Belize portion of the largest estuary in the Mesoamerican Reef, with direct connectivity to Bacalar Chico Marine Reserve and National Park to the east, and Hol Chan Marine Reserve to the south. Caye Caulker Marine and Forest Reserve, in the southern portion of the NBCC, completes the protected area network within this important seascape.

Photo: R. Graham

Management Targets

A series of management targets were selected to represent and encompass the biodiversity values of the Northern Belize Coastal Complex, to provide a basis for setting goals, developing strategies and actions, and for monitoring success.

MANAGEMENT TARGETS	
	**COASTAL ECOSYSTEMS** **Mangroves, Littoral Forest and Sandy Beaches** The shallow mangrove-filled lagoons of the Northern Belize Coastal Complex provide critical nursery habitat for commercial and sport fishing species while fringing mangroves protect the coastlines from erosion. The sand beaches of northern Ambergris Caye are nesting sites for the critically endangered hawksbill turtle and vulnerable American crocodile.
	**SEAGRASS** Seagrass in the estuary plays an important role in filtering sediments and contaminants before they reach the reef. It is also important in maintaining the population of manatees that use the Wildlife Sanctuary. The *Thalassia* beds of the reef lagoon support many marine species, including sea turtles and the economically important Queen conch and juvenile lobster.
	**CORAL REEFS** The patch reefs, reef crest and spur and groove reefs provide structure for the rich, vibrant world of the coral reefs. Critically endangered *Acropora* species, colourful reef fish, reef invertebrates and key herbivores such as the parrotfish all play their roles in maintaining the high productivity of the reef ecosystem. The reef supports a vibrant tourism economy, as well as the important lobster fishing industry.
	**COMMERCIAL AND RECREATIONAL SPECIES** Queen conch and spiny lobster form the foundation of Belize's traditional fishing industry, supplemented by crabs and finfish such as grouper and snapper. The spawning aggregation site at Rocky Point is critical in maintaining finfish populations throughout the reef. The shallow flats behind Ambergris Caye support an economically important sport fishing industry based on permit, snook, tarpon and bonefish.
	**CHARISMATIC MARINE MEGAFAUNA** The sheltered, brackish waters of the estuarine system of the Northern Belize Coastal Complex play an important role in maintaining a viable population of the Antillean manatee in Belize. Wide ranging bottlenose dolphins use the entire NBCC, as do bull sharks and nurse sharks, along with hawksbill, green and loggerhead turtles
	**ANCIENT FORMATIONS** The Northern Belize Coastal Complex encompasses a number of important Ancient Formations. Stromatolite reefs, important at a global scale. Impressive underwater caves and sink holes - Giant Cave is considered to be one of the largest underwater cave systems in the region, if not the world. The remains of an ancient reef is visible at Rocky Point - the only place where today's barrier reef touches the land. Coastal settlements developed by the ancient Maya - such as Cerros and San Juan, provide information on historical use of the area.

Manatee: Annelise Hagan

Photo: R. Graham

MANAGEMENT TARGET: PHYSIO-CHEMICAL ENVIRONMENT

Good water quality is the foundation for a healthy Northern Belize Coastal Complex. With land based agro-chemical pollution and sediments entering the rivers and coastal waters of the estuary, and transboundary sewage flowing into the bay from Chetumal, the shallow estuarine waters act as a huge settling pond, removing these contaminants before the water reaches the reef. The mud bank, Bulkhead Shoals, acts as the final barrier, ensuring sediments are deposited as water flows southwards.

As a result, water entering the reef at the southern point of Ambergris Caye has high water clarity, ensuring seagrass and corals have access to sufficient sunlight. Water contamination on the reef itself comes primarily from the caye settlements - San Pedro and Caye Caulker. Both these are expanding, with overstretched solid waste and sewage management.

Climate change is also altering the marine environment, with increasing water temperatures, ocean acidification and rapid fluctuations in salinity.

Management Targets

Assessment of Target Viability

The Viability assessment provides an objective, consistent means for determining changes in the status of each management target over time, providing baseline for measuring success. Assessment was based on the Landscape Context, Condition and Size of each Target, with the majority of the targets being rated as **FAIR.** Seagrass was the one exception, with a rating of **GOOD**. Overall, the Northern Belize Coastal Complex rates as **FAIR.**

Management Targets for the Northern Belize Coastal Complex

Management Target	Landscape Context	Condition	Size	Viability Rank
Coastal Ecosystems	GOOD	GOOD	FAIR	**FAIR**
Seagrass	FAIR	GOOD	GOOD	**GOOD**
Coral Reefs	FAIR	POOR	FAIR	**FAIR**
Commercial and Recreational Species	GOOD	POOR	POOR	**FAIR**
Charismatic Marine Megafauna	POOR	FAIR	GOOD	**FAIR**
Physio-chemical Environment	FAIR	FAIR	-	**FAIR**
Ancient Formations	FAIR	FAIR	GOOD	**FAIR**
Overall Viability of the Northern Belize Coastal Complex				***FAIR***

POOR
May result in local extinction. Restoration difficult / impossible

FAIR
Outside acceptable range of variation. Requires human intervention

GOOD
Within acceptable range of variation. Some human intervention required for maintenance

VERY GOOD
Ecologically desirable status. Requires little or no intervention for maintenance

Tom Burd Photography

Critical Threats

Critical Threats

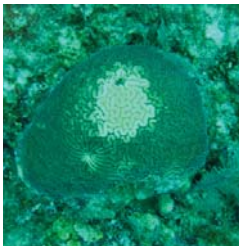
Very High
- Climate Change
- Coastal / Caye Development

High
- Land-based Pollution
- Unsustainable / Illegal Fishing Practices
- Oil drilling, exploration and spills

Identification of Critical Threats

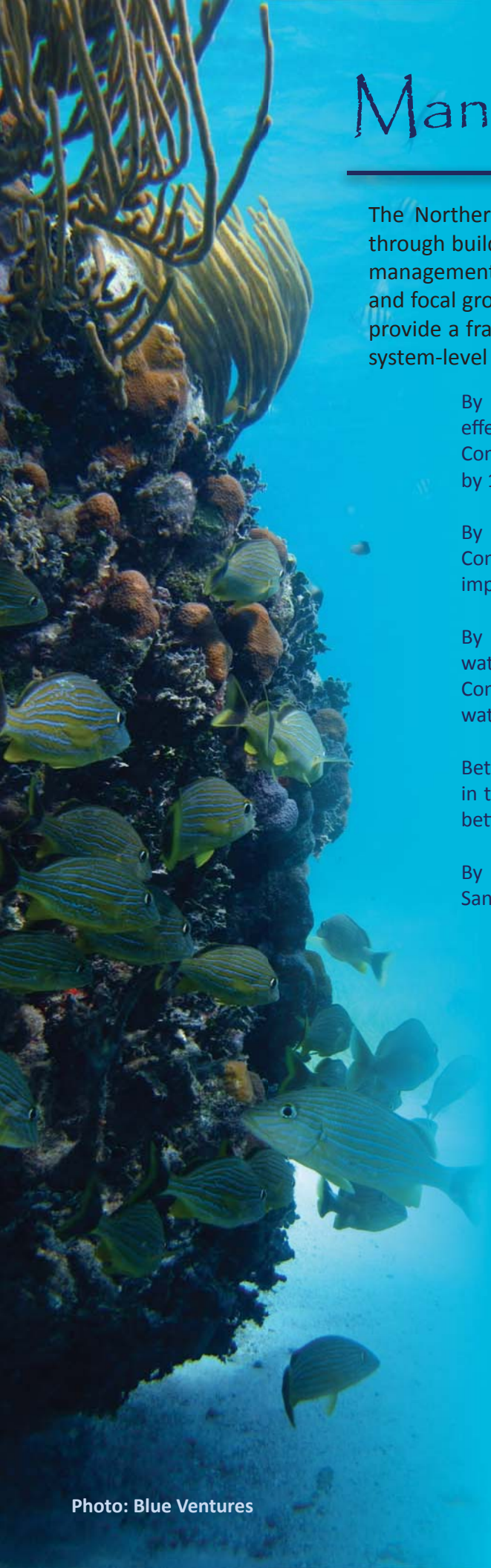
Threats were identified and rated for each management target based on four criteria - scope, severity, contribution and irreversibility. The outputs take into account the river to reef connectivity of the Northern Belize Coastal Complex, and facilitate the prioritization of funding needs.

Two threats rate as **VERY HIGH** (climate change and coastal / caye development), reflecting the global issues of changing environments, and the more immediate pressures put on the marine resources from coastal developments, particularly in the Corozal area, Ambergris Caye, and transboundary impacts from Chetumal. Three threats rank as **HIGH,** highlighting the issues of land based pollution and unsustainable fishing, and also the potential threat of oil exploration.



Three management targets were identified as at **VERY HIGH** risk - Coastal Ecosystems, Coral Reefs and Ancient Formations.

Threats	Coastal Ecosystems	Coral Reefs	Seagrass	Commercial Marine Species	Marine Mammals	Physio-chemical Environment	Ancient Formations	Overall Threat Rank
Climate Change	Very High	High	Low	High	Low	Medium	Very High	**VERY HIGH**
Coastal / Caye Development	Very High	High	Medium	Medium	Low	Medium	Very High	**VERY HIGH**
Land-based Pollution	-	High	Low	Medium	Low	High	High	**HIGH**
Unsustainable / Illegal Fishing Practices	-	High	Medium	High	Low	-	-	**HIGH**
Oil drilling, exploration and spills	Low	High	Low	-	Low	Fair	Low	**HIGH**
Lionfish	-	High	-	Medium	-	-	-	**MEDIUM**
Improper disposal of boat waste	-	Medium	-	-	-	Low	Medium	**MEDIUM**
Poor Tourism Practices	-	Low	-	-	Low	-	Medium	**LOW**
Poor Boating Practices	-	Low	Low	-	Low	-	-	**LOW**
Illegal Activities in Littoral Forest	Low	-	-	-	-	-	-	**LOW**
Threat Status for Targets and Project	**VERY HIGH**	**VERY HIGH**	**MEDIUM**	**HIGH**	**LOW**	**HIGH**	**VERY HIGH**	**VERY HIGH**



Management Objectives

The Northern Belize Coastal Complex Plan seeks to strengthen management through building partnerships and collaborative implementation. A series of ten management objectives have been developed during the participatory workshops and focal group meetings, each supported by a series of strategic actions. These provide a framework for stakeholders working together to achieve the vision of system-level management of the NBCC:

By 2020, rights-based fishing regimes will be in place and implemented effectively in 100% of marine protected areas in the Northern Belize Coastal Complex, with populations of commercial and recreational species increased by 10% or more above the 2015 stock assessment baselines

By 2020, 100% of marine protected areas of the Northern Belize Coastal Complex will have improved resilience to climate change through implementation of collaborative adaptation strategies

By 2020, protected area managers will have increased their knowledge of water quality and contamination levels within the Northern Belize Coastal Complex, and will have implemented at least one strategy targeted at reducing water contamination in the Northern Belize Coastal Complex

Between 2015 and 2020, the average condition of coral reef communities in the Northern Belize Coastal Complex will be maintained at 2015 levels or better, as measured by the Simplified Integrated Reef Health Index (SIRHI)

By 2020, the extent and condition of seagrass within Corozal Bay Wildlife Sanctuary will have improved above the 2015 baseline

Between 2015 and 2020, marine mammal populations in the Northern Belize Coastal Complex will be maintained at, or above, 2015 levels

By 2020, impacts to coastal ecosystems (littoral forests, sandy beaches and mangroves) within the protected areas of the Northern Belize Coastal Complex will have been reduced to 10% of 2015 impact levels

By 2020, stromatolites, underwater caves and archaeological sites within the Northern Belize Coastal Complex will be managed effectively, with targeted management strategies identified through technical input and integrated into site level management plans

Through improved communication and collaboration towards achieving the above, the partners of the NBCC will be able to achieve the final objective:

By 2020, the management effectiveness of each of the marine protected areas of the Northern Belize Coastal Complex will have increased by at least 15% beyond the 2015 baseline levels

Photo: Blue Ventures

Management Priorities

Management Action Planning for the Northern Belize Coastal Complex has identified the critical targets and threats that need to be addressed in the next five years for increased viability of the marine resources. The planning process facilitates the prioritization of management objectives and strategic actions to ensure that where implementation may be limited by funding availability, priority is given to those considered most critical.

By 2020, rights-based fishing regimes will be in place and implemented effectively in 100% of marine protected areas in the Northern Belize Coastal Complex, with populations of commercial and recreational species increased by 10% or more above the 2015 stock assessment baselines

The Northern Belize Coastal Complex encompasses important resources for local, traditional fishermen from coastal communities in the north - particularly Sarteneja, San Pedro, Caye Caulker, and Corozal. Fishing methods vary - fishtraps target snapper and mojarra for the local market, whilst free diving fishers catch lobster, conch and finfish for the restaurant and export markets. Both types of fishing support traditional livelihoods. Unsustainable fishing practices, however, have reduced marine resources well below previous levels, whilst pressure on the resources from land based pollution and climate change impacts are increasing.

To address this situation, the Belize Fisheries Department is introducing a rights based fishing regime with recognition of traditional fishing rights. Two Managed Areas are located within the NBCC - the coastal waters (including the Marine Reserves) and the Corozal Bay Wildlife Sanctuary.

> **Strategic action:** Roll out the "Managed Areas" regime in the Marine Reserves of the NBCC, with engagement of traditional fishermen
>
> **Strategic Action:** Develop and implement a rights-based sustainable fishery plan in Corozal Bay Wildlife Sanctuary, with the participation of traditional fishers of the area
>
> **Strategic action:** Increase effective surveillance and enforcement to reduce illegal, unreported, unregulated "illegal" fishing across the NBCC by 10% in the next 5 years

By 2020, 100% of marine protected areas of the Northern Belize Coastal Complex will have improved resilience to climate change through implementation of collaborative adaptation strategies

Climate change has been impacting northern Belize - the NBCC has been identified as at the highest national risk of climate change impacts, with:

- less predictable, more intense rainfall leading to increased fluctuations in salinity, in the estuarine environment
- increasing sea temperatures, with increasing frequency and length of coral bleaching events, with increased risk of coral bleaching and coral mortality
- rising sea levels with associated saline intrusion of aquifers
- ocean acidification
- higher risk of tropical storm impacts

Tourism is the primary income generation activity in both San Pedro and Caye Caulker. As the aesthetic beauty of the reefs suffer from higher impacts, tourism may well be affected. Reef fishermen will find it challenging to support their families from the lobster and conch fishery as the reef struggles to support viable populations of the marine resources on which they depend.

> **Strategic action:** Conduct climate change adaptation planning for the NBCC and implement the identified strategies
>
> **Strategic action:** Increase the technical capacity of MPA managers to facilitate protected area adaptation to climate change
>
> **Strategic action:** Socialise the value of coastal ecosystems in climate change adaptation and coastline protection, targeting all stakeholders

Cross Cutting Strategies

Strategy: *Implement / enforce policies and regulations*

Strategy: *Develop and implement a system-level public awareness and communication programme*

Strategy: *Implement standardized monitoring and data management*

Strategy: *Ensure all strategies are resilient to climate change*

Measuring Success

It is important to measure success - whether strategies have been successful in achieving the desired outcomes, whether threats have been reduced, and whether targets have been met in maintaining and improving biodiversity within the Northern Belize Coastal Complex.

Measuring success facilitates adaptive management - with strengthening of strategies to meet changes in the seascape and identification of new strategies to address new challenges.


Future Livelihoods

Measuring Success: Management Effectiveness

By 2020, the management effectiveness of each of the marine protected areas of the Northern Belize Coastal Complex will have increased by at least 15% beyond the 2015 baseline levels

Management effectiveness assessments reflect how well protected areas are being managed - how effective their surveillance and enforcement programmes are, how well they engage stakeholder participation, as well as areas such as their level of governance and financial sustainability. The outputs highlight individual strengths and weaknesses of the management organizations. They also identify key recommendations for improving effectiveness at both site and system level which, if implemented successfully, will increase the overall site and system-level management effectiveness.

Measuring Success: Monitoring Viability

Each management target has been rated during the viability assessment, and indicators identified to measure whether ratings have been achieved.

Examples of Viability Indicators

VIABILITY INDICATOR	2014 RATING
Population size of manatees	GOOD
Elasmobranch species diversity	POOR
Parrotfish species richness	FAIR
% cover of seagrass	GOOD
Extent of mangrove in NBCC	GOOD
Extent of littoral forest in NBCC	POOR
Availability of turtle nesting beaches	POOR

Measuring Success: Objectives and Strategies

Each Objective and strategy is also linked to indicators, to provide a mechanism to measure success of outcomes of strategy implementation

Objective	Indicators
Objective: By 2020, rights-based fishing regimes will be in place and implemented effectively in 100% of marine protected areas in the Northern Belize Coastal Complex, with commercial and recreational species populations increased by 10% or more above the 2015 stock assessment baselines	▪ List of permitted traditional fishers ▪ Established fishers committees ▪ Stock assessment ▪ Catch per Unit Effort ▪ Average annual income per fisher


R. Graham Healthy Reefs


Future Harvest

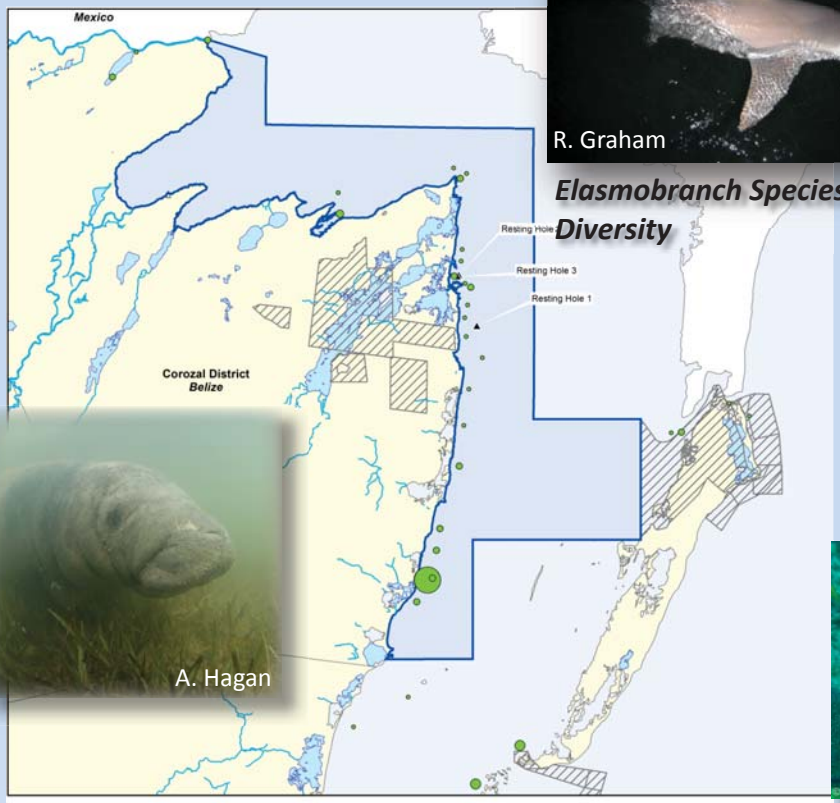

Rachel Graham/MarAlliance Future Generations

R. Graham

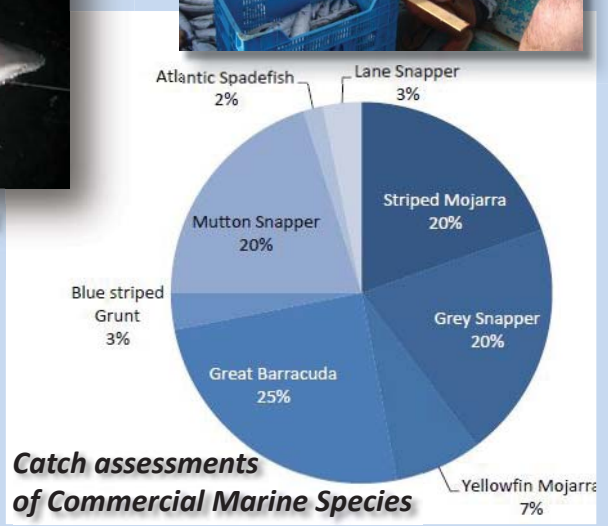
Monitoring Targets

Indicators have been identified for each target to measure success of objectives and strategies

Elasmobranch Species Diversity



Population Size of Antillean manatees (LightHawk)



Catch assessments of Commercial Marine Species

Parrotfish Species Richness

Assessments of Reef Health (SIRHI)

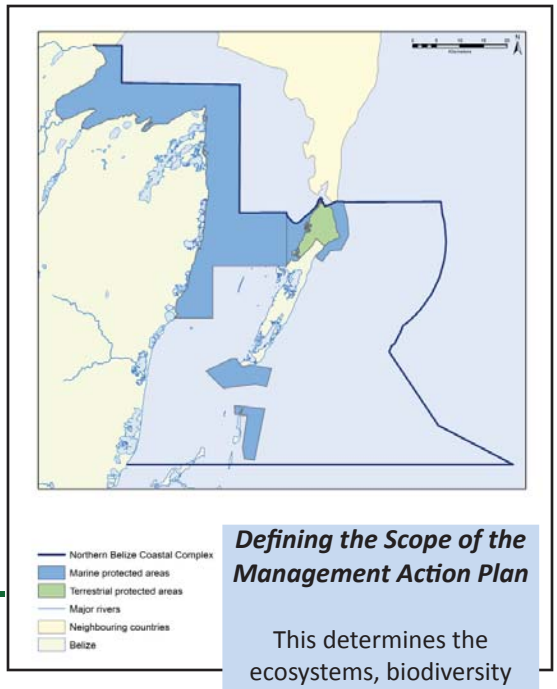
Number of turtle nests per species
% Success of Turtle Nest Hatch

Mangroves: Assessments of Nursery Functionality

The Process

Management Action Planning is a structured approach to planning, implementing and measuring success for system-level conservation projects such as the Northern Belize Coastal Complex. It provides a mechanism for broad-scale participation in the planning process by a wide range of stakeholders - community, NGO, government agencies, site-level staff, private sector business and academic.

The opportunities for developing open communication between stakeholders towards more effective collaboration are as important an output as the Management Action Plan itself, with broad stakeholder ownership of the objectives and strategies that result from the series of Management Action Plan workshops.



Defining the Scope of the Management Action Plan

This determines the ecosystems, biodiversity and stakeholders to be included in the planning.

WORKSHOP ONE

- Developing a Vision
- Defining Management Targets
- Assessing Target Viability

WORKSHOP TWO

- Identifying and Assessing Critical Threats
- Situation Analysis

WORKSHOP THREE

- Identifying Objectives and Strategies

The Participants

The Management Action Planning workshops and focal group meetings were strengthened by the active participation of all key stakeholder sectors, as well as transboundary partners from Mexico.

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	Ines Garcia
Forest Department	Rasheda Garcia
	Hannah St. Luce Martinez
Sarteneja Alliance for Conservation and Development (SACD)	Joel Verde
Wildtracks	Zoe Walker

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	Ines Garcia
	Ramon Carcamo
	Roberto Carballo
	Shakera Arnold
Forest Department	Alberto Garcia
	Daniel Chi
	Jasmine Tzul
	Rosemary Lopez
	Victoria Chi
	Zully Tzul
Ambergris Caye Citizens for Sustainable Development	Elilo Ancio
American Crocodile Education Sanctuary	Chris Summers
	Vince Rose
Belize Diving Services	James “Chip” Peterson
Belize Fishermen Association	Roberto Blanco
Blue Ventures	Jennifer Chapman
	Winnie Courtene-Jones
Caribbean Community Climate Change Centre	Nellie Catzim
	Ahnivar Peralta
Caye Caulker Tour Guide Association	Robert Bleeze
	Elias Castillo
Chunox Fishermen Association	Bernaldo Santoya
	Micael Mendez
Coastal Zone Management Authority and Institute	Chantalle Clarke-Samuels
	Jamal Galves
	Samir Rosado

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Department of the Environment	Edgar Ek
FAMRACC	Ellen McCrae
Friends of Corozal United for Sustainability (FOCUS)	Silverio Marin
	Mae Klein
	Craig Timmons
	Christina Leuteman
Hol Chan Marine Reserve	Miguel Alamilla
	Kirah Forman
	Edgar Badillo
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MarAlliance	Rachel Graham
	Hilmar Salazar
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