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Fourth Meeting of the Scientific and Technical
Advisory Committee (STAC) to the Protocol
Concerning Specially Protected Areas and Wildlife
(SPA) in the Wider Caribbean Region

Gosier, Guadeloupe, France, 2-5 July 2008

REVISED DRAFT

**ANNOTATED FORMAT FOR PRESENTATION REPORTS FOR THE
AREAS PROPOSED FOR INCLUSION IN THE SPAW LIST**

OBJECTIVE

The objective of this Annotated Format is to guide the Contracting Parties in producing reports of comparable contents as requested in Article 19 (2) of the Protocol, including the information necessary for the adequate evaluation of the conformity of the proposed site with the criteria set out in the Protocol and in the Guidelines (Guidelines and Criteria for the Evaluation of Protected Areas to be Listed under SPAW).

CONTENTS

The presentation report shall include the following main information on: (i) identification of the proposed protected area (ii) site description (iii) its Caribbean importance (iv) the activities in and around the areas and their impacts (v) legal framework (vi) management measures (vii) human and financial resources available for the management and the protection of the site.

SUBMISSION OF REPORTS

The reports should be submitted to the SPAW/RAC two months before the meeting of STAC for SPAW in English, Spanish or in French.

Dossier should be compiled on A4 paper, with maps and plans annexed on paper with maximum size of an A3 paper. Contracting parties are also encouraged to submit the full text of the proposal in electronic form.

The requested annexes should be submitted on paper and, if possible, also in electronic form. They are following:

- Copies of legal texts
- Copies of planning and management documents
- Maps: administrative boundaries, zoning, land tenure, land use, and distribution of habitats and species, as appropriate
- Existing inventories of plants and fauna species
- Photographs, slides, films/videos, CD-ROM's
- List of publications and copies of the main ones concerning the site
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1. AREA IDENTIFICATION

COUNTRY: Belize, Central America

ADMINISTRATIVE PROVINCE OR REGION: Belize District

NAME OF THE AREA: Hol Chan Marine Reserve

DATE OF ESTABLISHMENT: July of 1987

GEOGRAPHIC LOCATION

Describe its geographical boundaries, e.g. rivers, roads, geographical or administrative boundaries (do not describe the co-ordinates here; please make a separate Annex with a map and a description of geographical co-ordinates as stated in the legal declaration of the area.). The Hol Chan Marine Reserve is located in to northern portion of the Belize Barrier, four miles south of San Pedro Town, Ambergris Caye, Belize

SURFACE OF THE AREA (total)

(in national unit) 55.3 square Kilometers	(in ha) 5007 Ha
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LENGTH OF THE MAIN COAST (km):

2. EXECUTIVE SUMMARY (maximum 3 pages)

Supply a summary of the information contained in sections 3 to 9

The need to establish protected areas along the Belize Barrier Reef complex is an important management initiative to preserve this valuable national heritage. The need to protect the reef is particularly urgent in Ambergris Caye where further tourism development seems to be imminent.

Marine Reserves can guarantee the protection of genetic diversity by maintaining critical ecosystems and species in a healthy and viable form. They provide breeding and nursery areas for juveniles of many species. They also serve as seeding ground for area that have been depleted from overfishing. Additionally, they are a major attraction for tourism activities since they are perceived as having a higher quality of marine life and overall experience.

The Hol Chan Marine Reserve (HCMR) was established in 1987 to conserve a small but representative portion of Belize's coastal ecosystem. The process of establishing the marine protected area involved a complex set of consultations and compromises between tour guides, fishermen, conservationists and government. Ultimately the Marine Reserve was created through a collective initiative.

The HCMR was created under the Fisheries Act as a multi-use protected area. A zoning scheme was developed in order to ensure sustainable use and guarantee its conservation. Hol Chan is divided into four zones. Zone A includes the coral reef and is the no-take zone where only recreational activities are allowed. Zone B protects the sea grass beds. Fishing is allowed but only to traditional users. Spear fishing and netting are prohibited. Zone C provides protection to the mangrove wetlands. Sport fishing is a common practice in this area. Zone D is a special management area that was annexed to Hol Chan in 1999. Traditional users are allowed to continue their fishing practice except in the "Exclusive Recreational Area" of Shark Ray Alley.

The marine reserve has become an important snorkel and dive site due to its diversity, size and number of fish found in the area. Management has capitalized on tourism by levying a fee on foreign tourists. Revenues from the visitor's fee are reinvested into management activities of the protected area. This has allowed the marine reserve to finance most of its operations. Currently, there is a permanent staff of 16 individuals working in enforcement, environmental education and monitoring and research. The marine reserve operates offices and visitors' center from San Pedro town and Caye Caulker.

The HCMR falls under the Fisheries Department and management is conducted through the Hol Chan Marine Reserve Board of Trustees. This is a legal entity created by the Government of Belize to manage the affairs of the marine protected area. The Board of Trustees is made up of private and public sector entities and meet quarterly to deal with issues of the marine reserve.

Due to the dynamic nature of coastal management issues in Ambergris Caye, the marine reserve has been in constant evolution to adapt to current management needs. One major change was the size of the protected area. Originally the marine reserve was only 18 square kilometers. In 2008 it was expanded and now it is almost 54 square kilometers or almost three times its original size.

3. SITE DESCRIPTION

TYPOLOGY OF THE SITE:

Terrestrial surface, excluding wetlands (ha):
Zero Terrestrial surface

Wetland surface (ha): 9 square Kilometers of
Mangrove wetlands

Marine surface (sq. km) under sovereignty, sovereign rights and
jurisdiction: 41.07 square Kilometers

MAIN PHYSICAL FEATURES

Geology /Geomorphology

Give a brief description of: (i) geological aspects (lithologic and tectonics); (ii) processes of sedimentation and erosion observable in the area; (iii) coastal geomorphology, and (iv) island system. Indicate bibliographical sources.

- (i) Geological Aspects: The Belize Shelf is divided into distinct northern and southern halves. Its edge is characterized by a series of five discontinuous ridges that trend northeast and which are thought to be fault controlled. The least defined ridge lies along the northern edge of the barrier reef and Ambergris Caye, encompassing the Hol Chan area. (James and Ginsburg 1979). The Belize Shelf is the drowned expression of a low-relief karst surface, on which sinkholes have locally developed (Mazullo and Reid 1985). Examples of these can be seen in the channels of the Boca Chica area, which probably represent drowned river channels or solution beds, and the Boca Ciega 'Blue hole' which is a collapsed sink hole. This sinkhole opens into a large cavern, the extent of which has not been fully explored.
- (ii) Processes of sedimentation and erosion: Average depth at the reef lagoon is three meters and is not greater than 5.5 meters. The reef edge occupies a narrow strip on the seaward edge of the shelf. On the leeward side of the reef crest, debris accumulates in the reef lagoon as slightly muddy skeletal sand which is stabilized by beds of sea grass.(Miller and Macintyre 1997).
- (iii) Coastal Geomorphology: Coastal geomorphology is dominated by the Boca Chica and the Cangrejo shoals mudbanks and is located in the southern tip of Ambergris Caye. The shoals cover an area of 12 square kilometers and is composed of 6.7 meters thick of unconsolidated carbonate sediments deposited in a large depression of karsted Pleistocene limestone (Teal 1998). The shoal is dominated by Red Mangrove (*Rizophora mangle*) thickets but they have not trapped enough sediments to form land for Cayo Rombo and Cayo Cangrejo where supratidal flats are present.

Other interesting physical features: Such as hydrodynamics, volcanic formations, caves, underwater formations, etc The Barrier reef is the main feature of interest in the marine Reserve. There are approximately 5 kilometers square of coral reef including the main barrier reef and deep fore reef area. The Boca Ciega 'Blue Hole' is a collapsed sinkhole that lead into a large underwater cavern which has not been fully explored.

Length of beaches (in km), including islands:

- a) Length of sandy beaches: None
- b) Length of pebble or stony beaches: None
- c) Length, height and depth of active sand-dunes: None

FRESHWATER INPUTS

Mean annual precipitation (in mm): _____ Main water courses (permanent and seasonal): Freshwater drains from the mainland into northern Chetumal Bay and drains southwards along the leeward side of Ambergris Caye.

Estuarine areas: Existence and brief description:

Freshwater springs: Existence and brief description, including marine offsprings

BIOLOGICAL FEATURES (Point B of the Guidelines; ecological criteria)

Habitats: a brief description of dominant marine and terrestrial habitats: The Hol Chan Marine Reserve protects a small but representative portion of the Belize ecosystem, which include coral reef, seagrass beds and mangrove wetlands. The HCMR has been divided into four Zones in order to promote coastal protection and sustainable use of its natural resource

The HCMR has 5square Km of coral reef including the back reef, reef crest and deep forereef; over 23 square Km of sea grass beds and 18 square km of mangrove wetlands.

List of regionally important species (flora and fauna)

List here **ONLY** those species protected by international agreements, particularly those species included in Annexes I, II and III of the Protocol, which are present in the area. Any other species may be listed if it is clearly considered of regional importance given its high representation in the area. Display the species under the headings Marine Plants, Terrestrial Plants, Invertebrates, Fish, Amphibians and Reptiles, Birds, and Mammals. For each species state:

- a) Its relative abundance as Common (C), Uncommon (U) or Occasional (O),
- b) Its global status as rare (r), endemic (e), and/or threatened (t), and
- c) Its status as an important resident population (R), or important for its breeding (B), feeding (F) or migratory passage (M).

SPECIES	Rel. Abundance (C) (U) (O)	Global STATUS (r) (e) (t)	Local STATUS (R) (B) (F) (M)
Reptiles:	(O)	(r)	(R) (B)
Crocodulus acutus	(O)	(r)	(R) (B)
Caretta caretta	(U)	(r)	(M)
Chelonia mydas	(U)	(r)	(M/R)
Eretamochelys imbricata	(U)	(r)	(M)

Class Hydrozoa Order Milleporina Family Milleporidea All Species			
Class Anthozoa Order Antipatharia Order Gorgoniacea Order Sclerantinia			

Flora: Description in a few sentences of the main plant assemblages significant in the area: Rizophora mangle is the dominant species found in the area along with Avicenia germinans and Laguncularia racemosa. The marine fauna is dominated by large expanses of the sea grass Thalassia testudinum.

Fauna: Description in a few sentences, which are the main fauna populations present in the area: The main fauna population in the marine reserve marine including fish, Cnidarians and other invertebrates. Commercially valuable species include various species of fin fish, spiny lobster and queen conch. Also found at the marine reserve are the endangered manatee and marine turtle including the hawksbill, logger head and green turtles.

HUMAN POPULATION AND USE OF NATURAL RESOURCES (Point B of the Guidelines; Cultural and Socio-economic criteria).

Human population

a) Inhabitants inside the area:

Permanent	Number	Date of data
Seasonal number (additional to permanent)	None	
	None	

Description of the population:

Main human settlements and their populations: There are no human settlement within the protected area but there are two neighboring communities. HCMR is in the southern tip of Ambergris Caye and San Pedro Town is the only settlement on the island. San Pedro Town has an estimated population of approximately 20,000 permanent residents, but this fluctuates with tourism seasons. Tourism is the principal economic activity on the island. In 2007 there were a total of 99 registered hotels. Fishing is still an important activity but to a smaller scale. Most fishermen are permanent tour guides. Others work as fishermen part time only and mainly during the opening of the lobster and conch fishing season. Fulltime fishers are a minority.

Caye Caulker is a neighboring island with a small village community of about 2500 inhabitants. Tourism is an important economic activity but is not as developed as in Ambergris Caye. The village had 73 hotels in 2007, but are smaller than the hotels in San Pedro. Fishing is still a common economic activity in this community however many fishers are also part time tour guides.

b) Inhabitants within the zone of potential direct impact on the protected area

	Number	Date of data
Permanent Seasonal number (additional to permanent)		

Description of the population: Human presence in the MPA is by daily recreational users who access the Marine Reserve to snorkel and dive. In 2009 a total of 58206 visitors went to the Marine Reserve. Of this total 86% were snorkelers and 14% were diver. Tourist generally are from overnight visitors at San Pedro Town and Caye Caulker. Visitors from San Pedro represent 77% and Caye Caulker 23%.

Main human settlements and their populations

Current human use and development

- a) Briefly describe the current use of the area by subsistence, artisan, commercial and recreational fishing, hunting, tourism, agriculture and other economic sectors.

Recreational Snorkeling and Diving: Snorkeling and diving are the main activities practiced at the marine reserve. There are two recreational areas in the barrier reef of the HCMR. These are the Hol Chan Cut and Shark Ray Alley. In 2009 over 58000 visitors went to the HCMR to snorkel or dive.

Recreational Fishing: to a lesser extent recreational fishing is practice in HCMR mainly catch and release of permit and bonefish that are found amongst the mangrove islands and flats.

Commercial fishing is allowed in Zone B and D of the HCMR. Only traditional users are allowed to continue their fishing practices. They mainly fish for lobster and queen conch. Spear fishing and the use of nets are prohibited.

b) Enter how many of the users depend on these resources, seasonality.:

ACTIVITY AND CATEGORY	Estimated No. of users	Seasonality
<p>FISHING Subsistence Commercial, local Commercial, non local Controlled recreational Un-controlled recreational Other</p>	<p>Not more than 30 fishermen Local commercial</p>	<p>Lobster closed season : February 15th to June 14th Conch closed season: July 1st to September 30th</p>
<p>TOURISM Regulated Unregulated Indicate the type of tourism Tourism facilities</p>	<p>58,206 in 2009</p>	<p>Snorkeling and diving There are two recreational areas in the back reef and seven dive sites in the deeper fore reef. Mooring buoys are provided for recreational vessels. Anchoring is not allowed</p>
<p>FOREST PRODUCTS Subsistence Non-timber commercial, local Non-timber commercial, non-local Timber commercial, local Timber commercial, non-local</p>	<p>None</p>	<p>None</p>
<p>Agriculture Stockbreeding Aquaculture</p>	<p>None</p>	<p>None</p>
<p>EXTENSIVE STOCK GRAZING Subsistence Commercial, local Commercial, non-local</p>	<p>None</p>	<p>None</p>
<p>OTHER ACTIVITIES</p>		

Traditional economic or subsistence uses

Name any environmentally sound traditional activities integrated with nature, which support the well being of the local population. E.g. land, water use, target species, if closed seasons or closed zones are used as management techniques.

Tourism is the principal economic activity in the marine reserve. Tour operators and tour guides are dependent of the protected area to conduct their snorkeling and diving tours. There are almost 400 tour guide in San Pedro and 80 in Caye Caulker Village.

At a smaller scale commercial fishing is another traditional use in the protected area. Fishermen who have been using the area for many years are allowed to continue their fishing practices. They mainly fish for lobster and queen conch.

4. BIOLOGICAL AND SOCIOECONOMIC IMPORTANCE OF THE SITE

This section aims at stressing the importance of the site in sustaining the natural resources of the nation and the region, as set in Art.4 of the Protocol.

PRESENCE OF REPRESENTATIVE TYPES OF COASTAL AND MARINE ECOSYSTEMS/HABITATS (Art. 4 para. 2(a))

Name the type of habitats considered of Caribbean representativeness and their estimated cover (ha).

The HCMR was established to conserve a representative sample of the Belize coastal and marine ecosystem. Initially 1813 ha. in 2008 it was expanded to over 5400 Ha. to include a more representative sample of seagrass and mangrove wetlands.

Coral Reef: The HCMR has two zones located on the Barrier Reef. Zone A is completely no-take and only recreational activities are allowed. This area is comprised of 273 Ha. of coral reef including back reef, reef crest and fore reef area. Zone D is also on the barrier reef and has approximately 200 Ha. of coral reef. This a multiuse area and only within the exclusive recreational area of Shark and Ray Alley is no-take.

Sea grass beds: The sea grass beds are found in zone B of the marine reserve and cover an area of approximately 2160 Ha. This is a general use zone and fishing is allow to traditional users only. Spear fishing and the use of nets are prohibited.

Mangrove Wetlands: Mangroves are included in zone C of the HCMR and consist of about 2370 Ha. with several mangrove island.

PRESENCE OF HABITATS THAT ARE CRITICAL TO ENDANGERED, THREATENED OR ENDEMIC SPECIES (Art. 4 para. 2(b))

Coral reef: Coral reefs are important habitat for many species of fish and invertebrates. Three species of marine turtles are commonly sighted in the marine reserve. This include the logger head, Hawksbill and the Green Turtle. However there is no turtle nesting beach within the HCMR.

Wetlands: West Indian Manatees live amongst the channels of the mangrove islands and feed on the seagrasses growing in that area. Due to its protection, manatees are more frequently sighted within the marine reserve. Manatee sighting have been reported even in the barrier reef.

Coral Reef: Various endangered species can be found here including marine turtles. Three species are common inhabitants in this area and include the Hawksbill, Logger Head and Green Turtles.

Name the habitat types and the species linked to it.

PRESENCE OF PRODUCTIVE ECOSYSTEMS OR NATURAL RESOURCES that provide economic or social benefits and upon which the welfare of local inhabitants is dependent. (Art. 4 para. 2(c) of the Protocol and B. *Cultural and Socio-Economic Criteria* (a and b) of the Guidelines)

Name the habitat types and the economic or social benefit to local inhabitants linked to it.

Fishing and tourism are the primary Socio-Economic activities in Ambergris Caye and Caye Cualker. These activities are dependent on the coastal and marine resources of the island. Most tourists that visit the area come to dive, snorkel or to engage in sport fishing.

Diving and snorkeling are dependent and take place on the coral reef. Most visitors to the marine reserve are attracted by the coral reef and its associated marine life. The value of the protected area can be appreciated through the benefits obtained by local stakeholders. Hundreds of tour guides and tour operators are dependent on the protected area for their livelihood. Tourists perceive protected areas as having a higher quality of marine life and overall experience.

Catch and release sport fishing is an important tourism economic activity dependent on a healthy mangrove wetlands. Sport fishermen target bonefish, permit and tarpon that are commonly found in shallow semi-enclosed lagoons, shallow flats and deeper channels found amongst the mangrove islands of the marine reserve.

Zone B of the marine reserve provides an area for fishermen to continue their traditional fishing practices. Fishermen who have used this areas before it was protected are allowed to continue commercial fishing for lobster and conch mainly but spear fishing and the use of net are prohibited.

OTHER RELEVANT FEATURES (Art. 4 para 2(d) of the Protocol and B. *Cultural and Socio-Economic Criteria* (b and c) of the Guidelines)

Educational Interest

E.g. particular values for activities of environment education or awareness

The marine protected area is an important asset for environmental education awareness. Community members are engaged in environmental education through activities center in conservation of coastal and marine ecosystem and management of the marine reserve.

Environmental education is a key component of our management activities. The HCMR has an active environmental education program with stakeholders and the community of San Pedro and Caye Caulker. Two permanent staff members work on the education program which target schools, tour guide and the community as a whole. First hand learning activities such as school trips to the protected area is an important educational activity that is appreciated by those who participate.

The education program components include school activities, seminars with tour guides, environmental and volunteer groups.

Scientific Interest

Explain if the site represents a particular value for the research in the field of natural sciences.

The HCMR conducts a yearly environmental monitoring program to determine health and condition of the area over time. Two permanent biologists are responsible for the environmental monitoring program. The program focuses coral reef, seagrass and mangrove. Commercially valuable species such as lobster and conch are also monitored yearly.

Historical and archaeological features

Name and briefly describe any outstanding historical features, monuments or sites.

There are no major archeological features within the protected area but there is a Mayan site approximately half a kilometer from the northern boundary of the marine reserve. This small Mayan archeological site was a small trading post and inhabitants used to harvest conch and other marine products many years ago in water that are now part of the marine reserve. Hol Chan is a Mayan word meaning narrow channel.

Aesthetic Interest

Name and briefly describe any outstanding natural features, landscapes or seascapes (example: the presence of pristine sites for their use as reference sites)

The principal area of aesthetic interest is the barrier reef which is also the no-take zone. The HCMR also include a large expanse of pristine mangrove islands with seagrass flats where tarpon, permit and bonefish are commonly found. Amongst the mangrove islands are deep water channel that are inhabited by the endangered West Indian Manatee.

Main cultural features

Indicate if the area has high representative value with respect to the cultural heritage, due to the existence of environmentally sound traditional activities integrated with nature, which support the well-being of local populations such as indigenous communities.

Traditional commercial fishing is was part of the daily life and culture of the inhabitants of the northern islands in Belize. Some older fishermen still maintain their traditional was of fishing and are allowed to continue their fishing practices in Zone C of the marine reserve which is the general use zone.

5. IMPACTS AND ACTIVITIES AFFECTING THE AREA (Article 19 (2)(h) of the Protocol)

IMPACTS AND ACTIVITIES WITHIN THE SITE

Exploitation of natural resources

Assess if the current rates of exploitation of natural resources within the area (sand, water and mineral exploitation, wood gathering, fishing, grazing...) are deemed unsustainable in quality or quantity, and try to quantify these threats, e.g. the percentage of the area under threat, or any known increase in extraction rates.

The HCMR is mainly used for recreational activities such as snorkeling and diving. This activities and non-extractive but have the potential of causing damage to the coral reef if over used and not managed adequately.

Fishing is allowed in the seagrass beds (Zone C) but only traditional users are allowed in this area. Outside the marine reserve and around Ambergris Caye fishing is still practiced but cannot be considered an intensive form of commercial fishing. Intensive fishing techniques such as long lines are not used. Fishing is mainly done by free diving and lobster traps.

Tourism has now become an economic alternative to fishing and many fishermen are now tour guides. However, the current fishing pressure does not allow fish stocks to recover to its natural state.

Threats to habitats and species

Mention any serious threats to terrestrial, marine or coastal habitats (e.g. fragmentation, desiccation, disturbance, pollution) or to species (e.g. disturbance, poaching, fishing and hunting, introduced alien species...) within the area.

Ambergris Caye is an important tourist destination in northern Belize. San Pedro Town has become a major tourism hub for the country and is rapidly developing into one of the largest towns in the country. Even though there is no development in the marine reserve, San Pedro Town is only seven kilometer away. Tourism's development and town expansion pose a threat to habitat alteration to areas adjacent to the protected area. Coupled to this are issues of solid and liquid waste treatment and disposal and sustainable use of coastal resources.

In 2009 the Lion fish appeared in the Belize barrier reef. Hundreds have been captured and many more sightings have been reported. Tour guides report that the lion fish are now commonly sighted in the barrier reef.

Demand by an increased population and infrastructures

Assess whether the current human presence or an expected increase in visitation (tourism, passage of vehicles and boats) and any human immigration into the area, or plans to build infrastructures, are considered a threat. San Pedro Town and Ambergris Caye is one of the fastest growing communities in the country. Expansion in the tourism sector will certainly result in the increase in visitors to the marine reserve. Visitation to the protected area has remained fairly stable over the years and minimal fluctuations have been recorded. If projected tourism development trends continue it will obviously lead to an increase in visitation the marine reserve.

Human migration is a reality on the island. Belizeans from the mainland come to the island in search of work and a better way of life. Laborers from other Central American countries are also attracted to the island.

Historic and current conflicts

Make a brief statement of any historic or current conflicts between users or user groups:

Before the establishment of the protected area in 1987, fishermen and tour operators were in conflict with the proposed size of the reserve. The proposed size had to be reduced in order to take into account the views of the fishermen.

Currently the main issue of conflict is with tourism development. In 2007 the Government was about to issue several mangrove islands to private interest to develop tourism ventures. However, there was great opposition from tour guides, fishermen and the community that Government had to reverse their original plan. In 2008 those mangrove wetlands were incorporated into the Hol Chan Marine Reserve tripling the size of the protected area. Conflicts with tourism developments still continue since there is a proposed mega tourism development immediately adjacent to the Marine Reserve. The community is in disagreement with this current trend and do not support this type of development. This has led to the formation of a community based organization called the Ambergris Caye Citizens for Sustainable Development (ACCSD).

IMPACTS AND ACTIVITIES AROUND THE SITE

Pollution

Name any point and non-point sources of external pollution in the nearby areas, including solid waste, and especially those affecting water up-current.

There is a sewer treatment plant in Ambergris Caye, however it only services the core area of town. New subdivisions and resorts along the coast of Ambergris caye are not hooked up to the sewer system and use septic tanks to treat sewage.

There is no sanitary landfill on the island. Solid waste is collected daily deposited at a dump site and burnt. There are plans to transport solid waste to the mainland where there will be a sanitary landfill.

Fishing

Name any type of fisheries that is not regulated or the regulations that are not efficiently enforced, in the nearby areas, including finfish, lobster, shrimp and sea turtle. Lobster, conch and finfish are the main target species in the area. Lobster and conch have a no-fishing season and a size limit. Finfish only the nassua grouper has a no-fishing season and a size limit. Permit, tarpon and bone fish can only be caught for the purpose of catch and release. It is illegal to capture or have in possession any marine turtles. Enforcement cannot be considered efficient since there is not sufficient resources to patrol the entire area.

Other external threats, natural and/or anthropogenic

Briefly describe any other external threats to the ecological, biological, aesthetic or cultural value of the area, such as regulated exploitation of natural resources, serious threats on habitats or species, increase of human presence, significant impacts on landscapes and cultural values, pollution problems, any sectoral development plans and proposed projects that are likely to influence the area in question, etc.

There are several development plans in wetlands adjacent to the marine reserve. These developments are for marinas, hotels, casino and recreational areas. They require extensive dredging operations to fill the wetlands. Destruction of these critical habit can produce negative impacts to the marine Reserve. Additionally, tourism expansion will create additional strains to inadequate infrastructure in the island. There is no coastal management plan for Ambergris Caye and developers have learned to take advantage of this. Environmental Impact Assessments are flawed or sometime just ignored due to corruption at higher levels of management. Some of the fines are too low such are those for mangrove clearance. Some developer prefer to cut mangrove and pay the fine rather than going through the permitting process.

Sustainable development measure

Comment whether the area is covered by an integrated coastal management plan, or bordering upon a zone under such a plan. Are there other opportunities for sustainable development provided for in the neighbouring areas?

6. EXPECTED DEVELOPMENT AND TRENDS*

The foreseeable development and trends of the site do not appear in the list of common criteria for the choice of protected marine and coastal areas that could be included in the SPAW List, as established in the Protocol and "the Guidelines and Criteria for the Evaluation of Protected Areas to be listed under SPAW". Moreover, this is not always easy to assess and it is necessary to have knowledge about the site, which is not always available to all managers of protected areas; thus, it is not obligatory to fill in the boxes in this section 6.

However, the assessment of this foreseeable evolution and trends constitutes a dynamic supplement to the static knowledge of the site, as it appears in Sections 3,4 and 5 above. Moreover, it is of significant importance for the definition of the objectives and the management plan of the site.

It thus appears desirable to bringing out the main outlines at least in respect to the following points:

EXPECTED DEVELOPMENT AND TRENDS OF THREATS TO AND PRESSURES UPON THE AREA

Deal briefly in succession with:

- The demographic development in and around the site
- The development of economic activities (other than tourism and recreation) within the area
- The development of local demand on tourism and recreation
- The development of tourism pressure on the area

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POTENTIAL CONFLICTS IN THE AREA

Make a brief statement of potential use conflicts between the users or group of users of the site.

*By expected development and trends are meant the development, which is thought most likely to occur in the absence of any deliberate intervention to protect and manage the site.

EXPECTED DEVELOPMENT AND TRENDS OF THE NATURAL LAND ENVIRONMENT AND LANDSCAPES OF THE AREA: as expected arising from the evolution of the pressures.

EXPECTED DEVELOPMENT AND TRENDS OF THE MARINE ENVIRONMENT AND SEASCAPES OF THE AREA: as expected arising from the evolution of the pressures.

7. LEGAL FRAMEWORK (Articles 3, 4, 5 et 6 of the Protocol and Para. C of the Guidelines)

LEGAL STATUS

Historical background of the protection of the site

The site that is currently the Hol Chan Marine Reserve was a traditional fishing site for residents of San Pedro Town. Fishing had been the main source of income for residents however it was unregulated and unsustainable. With the introduction of the fishermen cooperative in the 1960's fishing was more commercialized and fishing in the nearby reefs intensified. The 1970's saw the emergence of a small tourism industry. Tourist came to fish and snorkel the barrier reef. Gradually tourism grew and there was a demand for tour guides. This gap was filled by fishermen.

The area that is now Hol Chan was identified as a site for a protected area since the early 70's but it was not until the 1980's when fishing started to have conflicts with tour guides. The tourism sector requested that a portion of reef be set aside and protected for the benefit of tourism. In May of 1987 the area was officially established as the Hol Chan Marine Reserve under the fisheries act. That same year the Hol Chan received a \$150,000.00 USD grant for the first three years of operation.

Legal texts currently ruling the protection on the site

Enter the national conservation category, the dates and the present enforcement status of the legal instrument declaring the protection of the area. Consider both the land and the marine areas of the site. Include the full text(s) as an annex.

The HCMR was declared a Marine Reserve under the Fisheries Act, Chapter 210 of the laws of Belize. Statutory Instrument Number 57 of 1987 designates the area to be the Hol Chan Marine Reserve and Statutory Instrument Number 107 of 1988 sets the regulation that are to be applied to the Hol Chan Marine Reserve. Legislation was amended in 1999 with Statutory Instrument Number 100 of 1999 to expand the protected area and include a section called Shark Ray Alley. The legislation was amended again in 2008 to expand the protected area to more than three times its original size.

Statutory Instrument Number 170 of 1994 established the HCMR Board of Trustees which is responsible for the efficient administration of the affairs of the Reserve.

Objectives

Name in order of importance the objectives of the area as stated in its legal declaration

Goal I:

To maintain a sample coral reef ecosystem in its natural state.

Specific Objectives:

- a) To restore the ecological balance of the Hol Chan area by restricting fishing.
- b) To preserve areas of critical habitat for several endangered species such as the reef and sea grass bed for turtles and the mangrove for manatees.

c) To regulate the use of the area by tourist and fishermen to prevent overexploitation.

Goal II:

To provide recreation and tourism services and preserve the value of the area for fisheries.

Specific Objectives:

a) To provide an undisturbed area for tourism and recreation, but in a controlled and well-informed manner.

b) To promote uses compatible with conservation and sustainable development objectives, primarily through zoning.

c) To provide protected habitats for commercially important species.

d) To enhance the social and economic benefits of the area.

Goal III

To provide an area for education and research.

Specific Objective:

a) To foster general interest in and knowledge of the coastal environment through education and interpretative programs.

b) To encourage scientific research in all sections of the reserve.

Goal IV:

To conserve genetic resources.

a) To provide an undisturbed area which will result in increased recruitment of the fisheries of the adjacent areas.

b) To conserve an ecosystem that is representative of the reef complex and which functions as an ecological entity.

Indicate whether the national protection regime arises from international treaties enforced or from implementation measures of treaties (Art. 5 of the Protocol).

INTERNATIONAL STATUS

International category

Mention if an area, or part of it, has been designated and on what date, with an international conservation category (e.g. Biosphere Reserve, Ramsar site, World heritage site, etc.)

The Hol Chan Marine Reserve can be classified under IUCN category II and is not designated under any international conservation category.

PREVIOUS LEGAL BACKGROUND AND LAND TENURE ISSUES

Briefly mention if the area or part of it is subject to any legal claim, or to any file open in that connection within the framework of an international body. Describe the land tenure regimes within the area, and append a map if existing. Only a small section of Mangrove (approx. 4 acres) is in dispute with a foreign developer.

LEGAL PROVISIONS FOR MANAGEMENT (Article 5 of the Protocol)

Basic regulations

Mention the provisions, which apply to the area concerning the implementation of Article 5 of the Protocol.

The HCMR is a multi-use marine protected areas. Zone A and the Exclusive Recreational Area of Shark Ray Alley are completely no-take zones in the coral reef portion of the protected area. Zone B which consist of sea grass beds is the general use zone where fishing is allowed only to traditional fishermen. Spear fishing and netting is prohibited. Zone C is for the protection of the mangrove islands.

The HCMR has active management to guarantee that protected area's goals and objective are met in a satisfactory manner.

Legal competencies

Mention in which way do the legal provisions clearly establish the institutional competencies and responsibilities for the administration and conservation of the area, and if being the case, their co-ordination means, including those between land and sea authorities.

The administration and management of the HCMR is the responsibility of the HCMR Board of Trustees which is a legal entity established by the government to manage efficiently the affairs of the Reserve. The Board of Trustees is semi-government body composed of public and private sector representatives and meet quarterly to discuss the affairs of the Marine Reserve.

Other legal provisions

Describe any other relevant legal provisions, such as those requiring a management plan, the establishment of a local participation body, binding measures for other institutions or economic sectors present in the area, allocation of financial resources and tools, or any other significant measures concerning the protection and management of the area or its surrounding zones. The HCMR has a management plan that is currently under revision.

8. MANAGEMENT

Article 6 of the Protocol state that each Party shall adopt and implement planning, management and enforcement measures for Protected areas. Through paragraph D of the Guidelines, the Parties also agree that the sites included in the SPAW List must have a management framework and a research and monitoring programme that allows for assessing the effectiveness of the management scheme.

INSTITUTIONAL LEVEL

Authority/Authorities responsible for the area (management body) Guidelines Paragraph D.I.(b) The HCMR was establish under the Fisheries act and management is through a statutory body legally create by the government of Belize to manage the affairs of the Marine Reserve

Other participants in the management body

Such as other relevant stakeholders and local communities, as stated in section D.III. of the Guidelines.

Stakeholders are included as members of the HCMR Board of Trustees. Local community representatives include a representative of the local tourism sector, a representative of a local NGO, a representative of the local business community, a representative of the fishermen's cooperative and the Mayor of San Pedro Town.

Participants in other committees or bodies

Such as a scientific committee, advisory board or a body of representatives from the local stakeholders, the public, the professional and non-governmental sectors.

MANAGEMENT FRAMEWORK

Management framework (D.I in the Guidelines)

State if there is a management framework or management plan and include the documents as an annex. The HCMR has a management plan that is currently under revision

Formulation and approval of the management framework

Mention how the management framework was formulated, e.g. by an expert team and /or

under consultation and/or participation with other institutions or stakeholders. State the

legal status of the management framework, whether it is officialized, and how, and if it is binding for other institutions and sectors involved in the area.

Zoning and objectives. (Para. D(I)(c) of the Guidelines.)

Briefly state if the management framework provides for different zones to allocate different management objectives of the area (e.g. core and scientific zones in both land and sea, fishing zones, visitation, anchoring, gathering, restoration zones, etc.) and in this case the surface area in ha of these zones. Include a map as an annex. The HCMR has four Zones:

Zone A: Includes the barrier reef and the fore reef. This is a no-take zone and only non-extractive recreational activities are allowed within this zone.

Zone B: The sea grass beds. This is the general use zone where fishing is allowed by traditional users only. Spear fishing and the use of nets is prohibited.

Zone C: The Mangrove wetlands. This area was set aside for the protection of the Mangroves. Sport fishing is allowed amongst the channels and flats.

Zone D: A special conservation area where fishing is allowed to traditional fishermen only except on the Exclusive Recreational Area of Shark Ray Alley.

Information and knowledge available. (Para D(I)(d) of the Guidelines)

a) Briefly describe the extend of knowledge of the area, considering at least specific maps, main ecological processes, habitat distribution, inventories of species and socio-economic factors, such as artisan fishing. Assess the state of knowledge in each field (low, medium, satisfactory).

b) Quote the main publications, information on traditional, scientific, technical and management knowledge that have been used to set up planning, management and enforcement measures.

Contents of the management framework

State the degree of detail in the framework by entering YES or NO in the following list of potential contents: _____

Detailed management objectives

Existin	ginM
YES	
YES	
YES	
YES	

Zoning

Regulations for each zone

Governing body(s)

Management programmes as:

Administration

Protection

Natural resources management

YES	

Tourism and visitation Education and training Research and monitoring

Services and concessions Fund raising activities Periodic revisions of the MF

CONSERVATION AND MANAGEMENT MEASURES

By Article 6 of the Protocol the parties agree to adopt and implement planning, management and enforcement measures for protected areas to ensure the effective implementation of the measures set out in Article 5.

Boundaries and signing

Briefly state if the boundaries of the area and its zones are adequately marked in the field, both on land, in the sea, and at the principal points of access. Zones are clearly demarcated with marker buoys

Institutional collaboration

Name the different national and local institutions or organizations with legal responsibilities or involved in the protection and surveillance of land and sea zones, and any measures or mechanism through which their co-ordination is pursued. Institutions that share the responsibility for protection and surveillance include the Police Department, The National Coast Guard, the Fisheries Department, the Department of the Environment and the Forest Department.

Surveillance

Consider the adequacy of the existing protection means (human and material), and your

present ability to survey land and sea uses and accesses.

Currently, the HCMR has a staff of six Park Rangers who are responsible for surveillance and enforcement of the Reserve regulations. These Rangers work on a shift basis and patrol the protected area daily from six in the morning to eight at night..

Random patrols are also conducted outside of the normal shifts assigned.

Enforcement

Briefly consider the adequacy of existing penalties and powers for effective enforcement

of regulations, whether the existing sanctions can be considered sufficient to dissuade infractions, and in the field staff is empowered to impose sanctions.

Generally, users of the Reserve abide by the rules and regulations and Rangers just ensure that they are followed. Park Rangers are fisheries Officer and can enforce the regulations. Offenders are dealt with through the court system. The Fisheries Department has a prosecution unit that deals with all court cases.

IMPLEMENTATION MECHANISM. (Paragraph D.IV of the guidelines).

Public awareness and education programme

Mention if the management framework has public awareness and education programmes

for users, decision-makers and the public (Guidelines paragraph D.IV(b)) and in this case

briefly describe the main thrust of the programmes.

The HCMR has an active Education program. Two permanent staff members are responsible for this program. Activities include:

1.

School Visits: Presentations are given to all schools in San Pedro and Caye Caulker and are base on the protected area and the ecosystems.

2.

Reef Week; A week long of activities which include a trivia and skit competition amongst school; HCMR open house; essay and slogan competitions and educational trips for teacher to protected areas.

3.

Responsible Tour Guiding Seminars: Every years we visit dive shops of Ambergris Caye and Caye Caulker to give them refresher courses on the regulations of the marine reserve and do's and don'ts when snorkeling and diving.

4.

Environmental Club; This is a hands on learning activities for volunteers.

5.

Visitor's Center: The HCMR has a visitor's center in San Pedro Town and Caye Caulker Village

Monitoring programme

Mention if the management framework has a research and monitoring programme that

allows for the effectiveness of the management scheme to achieve the conservation goals.

(Guidelines paragraph D.IV(c)).

a) Is there a monitoring programme?

YES

b) If NO, are there plans to start one, and when?

c) If YES, briefly describe the main thrust of the monitoring programme with regard to the conservation goals. Assess as low, medium, satisfactory, its adequacy and present level of development: The HCMR has a monitoring program that assesses the condition of the protected area over time in a satisfactory manner.

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d) If YES, who is/are carrying out the monitoring programme? HCMR staff is responsible for conducting the monitoring program on a yearly basis. Two permanent staff biologist are responsible for conducting this program

e) If YES, briefly describe how the monitoring programme will be used in reviewing the management framework. A report is produced yearly to assess the condition of the protected area over time. This report is used to make informed decision on management actions.

EVALUATION

Briefly describe the indicators set up to measure the management success (Guidelines paragraph. D.II). (Indicators may, for instance, supply information about species status, condition of the ecosystem, land-use changes, extraction of natural resources; sand, water, game, fish, visiting, adherence to the provisions of the management plan, etc.)

Management effectiveness

As stated in section D.V. of the Guidelines, assess as very low, low, moderate, satisfactory very satisfactory, and comment as needed on the following aspects:

- a) Effectiveness of the conservation and management measures on biophysical features with regard to this objectives: Satisfactory since fish, conch and lobster population within the protected area are very health. Also sea grass beds and mangroves are protected from development. Coral cover is considered as low but it is attributed to bleaching events. The 1998 bleaching event along resulted in over 50% reduction of coral cover.
-

- b) Quality of involvement by the public, local communities, economic sectors, scientific community: Satisfactory. Stakeholder participate and are involved in activities of the protected area such as mooring buoy program with the local tour guide association; Responsible tour guiding Seminar and our volunteer program.

9. AVAILABLE RESOURCES

HUMAN RESOURCES (Article 6.2(i) of the Protocol)

Available staff

Assess the adequacy of the human resources available to the management body, in number of employees and training level, both in central headquarters and in the field. Indicate if there is staff training programmes. Currently the HCMR has a total of 16 staff members including seven Park Rangers, a biologist, an environmental educator, three technical assistants, two office assistants, an administrative assistant and a manager. Staff are adequately trained. The manager has a Master's Degree, the biologist is about to complete her Masters Degree program. In addition staff members are training as dive instructors, outboard engine mechanics and graphic design.

If

Permanent field staff

Answer YES or NO on the current existence of the following FIELD staff categories. YES, enter the number of staff either permanent or part-time in that category.

	YES/NO	NUMBER
		Permanent/Part-time
Field Administrator	YES	1
Field Experts (scientific monitoring)	YES	2
Field Technicians (maintenance, etc)	YES	3
Wardens	YES	7
Of which marine wardens	YES	7
Guides	NO	
Others(Administrative and office assistant ²)	YES	3

Additional support

Briefly describe if the area currently has the advantage of other external human resources in support of its objectives, either from other national or local institutions, volunteer programmes, non-governmental organisations, academic or international organisations. Mention if there are any significant changes in prospect for the near future. We have from time to time volunteer and student that assist the staff of the marine Reserve.

FINANCIAL RESOURCES AND EQUIPMENT

By Article 6 of the Protocol the Parties agree to adopt measures or mechanisms to ensure the financing of the Specially protected areas (Art. 6.2(f)), and the development of an appropriate infrastructure (Art.6.2(i)). Paragraph D of the Guidelines call upon the Parties to provide the areas with adequate management means.

Present financial means

Note if the basic financing is ensured: a core funding for basic staff, protection and information measures. Who provides the core funding? Briefly assess the degree of adequacy of the present financial means for the area, either low, moderate, satisfactory; e.g. the implementation of the management plan, including protection, information, education, training and research. Most of the funding for its operations is generated from a user fee levied to foreign visitors to the marine reserve. Each foreign tourist to the reserve pays a fee of \$10.00 USD per person per day. Special projects, especially for the education program, are funded through grants.

Expected or additional financial sources

Briefly describe any alternative sources of funding in use or planned, and the perspectives for long-term funding from national or other sources.

Basic infrastructure and equipment

Answer YES or NO to the following questions.

	YES/NO	
Office and/or laboratory in the field	YES	
Signs on the main accesses	Does not	
Guard post on the main accesses	YES	
Visitors information centre	YES	
Self guided trails with signs	Does not	
Terrestrial vehicles	YES	
Marines vehicles	YES	
Radio and communications	YES	
Environment awareness materials	YES	
Capacity to respond to emergencies	YES	
Comment on basic infrastructure and equipment		

10. CONTACT ADDRESSES (name(s), position(s) and contact address(es) of the person(s) in charge with the proposal and that compiled the report)

Miguel Alamilla
Manager
Caribena Street
San Pedro Town
Belize

Tel: 501-226-2247
email: mikeobze@yahoo.com

11. SIGNATURE (S) ON BEHALF OF THE STATE (S) PARTY/PARTIES MAKING THE PROPOSAL

12. DATE