

Appendix
Template for Submission of Scientific Information
to Describe Ecologically or Biologically Significant Marine Areas

Title/Name of the area: Pedro Bank and Cays

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Abstract

The Pedro Bank and Cays consist of a group of small coralline islands situated approximately 158 kilometres from Kingston on the south coast of Jamaica and falls under the jurisdiction of the Government of Jamaica. Pedro Bank is a regionally and nationally important biological and historical area. It is one of the country's last remaining healthy reef system; represents Jamaica's main commercial and artisanal fishing grounds and serves as the primary harvesting area for the largest export of Queen Conch from the Caribbean region.

The Cays have been inhabited since at the 1950s, thus making Jamaica an Archipelagic State and allowing it to claim a much larger territorial sea and economic exclusive zone than would be the case if the coast of the island itself were considered the beginning of the state's national limits.

Introduction

Pedro Bank is a submarine plateau located 158 kilometres south west of Kingston. It hosts a variety of marine habitats including large plains of sand; patches of hard and soft coral; seagrass in the shallower areas; and coral reefs around the edges. The depth ranges from 0 to 40metres and averages 25 metres with the deeper sections to the north-west and the shallower sections to the south-west where the Pedro Cays are located. The Pedro Cays comprise three main cays with a combined land area of 270,000 m². The cays are known commonly to the fishermen as North East Cay, Middle Cay and South West Cay; South West Cay was designated a bird sanctuary in the 1970s, while the other two continue to be used by the fishermen. The Jamaica Defence Force operates a security post on Middle Cay and The Nature Conservancy (Jamaica) recently built a Research Station on the same cay.

Natural resource monitoring on the banks has been sporadic and mainly project based; these have been AGRRA surveys, conch surveys and research by the University of the West Indies. Information has indicated that the biological diversity on the Bank is rich; particularly in endangered species. The status of most of the populations of animals is much better than in most other marine ecosystems in Jamaica. From AGRRA surveys conducted in 2005 it was determined that the average coral cover was 16%; this is lower than the regional Caribbean average (20%), but higher than cover reported for Jamaica's north coast (11%) (Kramer, 2006). The reefs around the Pedro Cays were also found to contain populations of the regionally important Elkhorn coral (*Acropora palmata*) and Staghorn coral (*Acropora cervicornis*) which are critically endangered (IUCN, 2011). The reefs also had the lowest levels of fleshy macro-algae cover than all other sites in the Caribbean (Kramer, 2006).

The total biomass of fish was reported to be higher than many sites in the Caribbean, however the biomass of AGRRA defined "commercially significant" fish was much lower than sites in the Caribbean. Spiny lobster stocks are believed to be over-exploited in Jamaica generally (Morris, 2010) and there is the possibility that this is the case on Pedro Bank. Despite the management of the queen conch industrial fishery, Aiken et. al. (2006) suggest that it may be at risk of collapse. It was also noted that high human activities on the Cays including unregulated sewage and waste disposal, have caused localized impacts to

the coral reefs surrounding the Cays (e.g. cyanobacterial algal blooms and macroalgal overgrowth on nearshore corals). Heavy fishing pressure that targets herbivorous species further threatens reefs.

Currents

Pedro Bank lies in the middle of the zone of north-easterly trade winds and average wind speeds are in the region of 15 to 20 knots (8 – 10 m sec-1) although wind speeds of over 30 knots (15m sec-1) are commonly experienced (Edwards, 2001).

According to Bustamante and Vanzella-Khouri (2011), the Caribbean Current moves up off the coast of Central America funneling first through the passage between the NW end of the Honduras shelf and Pedro Bank (SW Jamaica), and then through the Yucatan Channel. These waters pass through the deep-sea channels on either side of Pedro Bank. Over the east of the Bank, the general set of the current is northwest, attaining its greatest rate when the trade wind is strongest, but seldom exceeding the rate of 1knot. Over the western part of the Bank, the general set of the current is 261° with a northward tendency, on the northern edge and vice versa. The rate varies from 1 knot to 1½ knots and is affected by the wind (Zans, 1958).

Location

The Pedro Bank is an expansive submerged bank located about 97 km southwest of Jamaica (latitude 16° 43' N and 17 35 N and longitude 77° 20' and 79° 02' W). It is approximately three-quarters the size of mainland Jamaica, covering a total area of 8,040 km². Although Pedro Bank is separated from mainland Jamaica by deep channels that reach over 900m deep it falls under the jurisdiction of the Government of Jamaica. This unique geologic structure is one of the biggest offshore banks in the Caribbean Basin and has high biological, cultural and economic significance (Kramer, 2006). The Cays have been inhabited since at the 1950s, thus making Jamaica an Archipelagic State and allowing it to claim a much larger territorial sea and economic exclusive zone than would be the case if the coast of the island itself were considered the beginning of the state's national limits.

Feature description of the proposed area

The Bank is composed of a variety of marine habitats such as sand, coral reefs, deep reefs, sea grass beds, and coral cays. Because of its size and distance from mainland Jamaica and its relatively intact biological systems, it is one of the country's last remaining healthy marine ecosystems. Southwest Cay is the largest cay, with a topography that is generally flat with a slight depression in the central to south central sections.

The Bank's rich waters support a variety of fishes, mammals, and invertebrates, while the Cays are regionally important seabird and sea turtle nesting areas. It may also be a potential refuge and source of larvae for the threatened Acropora coral species. The Bank was declared an underwater cultural heritage site by the Jamaica National Heritage Trust in 2004 due to its historic importance as a shipping passage and the presence of over 300 shipwrecks dating back to the colonial period. Today, Pedro Bank is the most important fishing grounds for conch, lobster, and fish in Jamaica and is one of the largest Queen Conch producers in the Caribbean and the world.

Feature condition and future outlook of the proposed area

Current condition

Unknown however based on 2005 assessments the status is inline with Caribbean averages and better than the north coast.

Vulnerabilities

- Harvesting of fish, lobster and conch by illegal foreign fishers
- Unregulated fishing by local unlicensed fishermen
- Poor fishing practices
- Designated for oil and gas explorations
- Limited and erratic natural resource monitoring
- Habitat degradation

- In adequate governance - No enforcement of environmental policies and regulations which ensure biodiversity protection
- Potential oil pollution
- No protection/zoning of critical habitats, ecosystem & ecosystem functions

Management considerations

Intensive fishing and high human densities on the Pedro Cays are endangering the survival of the bank as a viable and functioning ecosystem. The Pedro Bank Management Project which is being implemented by The Nature Conservancy in Jamaica is currently in the final stages of drafting a management plan for the Pedro Cays and surrounding waters including the South-west (Bird) Cay Fish Sanctuary. The management plan aims to reduce coral reef degradation by providing solutions to two main threats - over-fishing and degradation of coral reefs and coral cays, due to unsustainable development with the proposed Pedro Bank Fishery Management Area (or Pedro Bank Protected Area).

Planned Programmes

The Khaled bin Sultan Living Oceans Foundation Global Reef Expedition being led by chief scientist Dr. Andrew Bruckner will be visiting the Pedro Banks in March 2012 to conduct a series of AGRRA surveys which includes fish abundance and diversity; coral cover, diversity and disease; and benthic assessments.

References

BirdLife International (2012) Important Bird Areas factsheet: Pedro Cays and Bank. Downloaded from <http://www.birdlife.org> on 15/02/2012

Bustamante, G., and A. Vanzella-Khoury. 2011. "Building Capacity and Networking Among Managers: Essential Elements for Large-Scale, Transboundary EBM Through Effective MPA Networks". Towards Marine Ecosystem-Based Management in the Wider Caribbean. 85-97.

Kramer, P.R. 2006. Pedro Bank Coral Reefs: Status of coral reef and reef fishes. Report for the Nature Conservancy, submitted by The Ocean Research and Education Foundation. Miami, FL.

Pedro Bank Management Project Brief <http://conserveonline.org/workspaces/pedro.bank.workspace>

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Assessment of the area against CBD EBSA Criteria

(Discuss the area in relation to each of the CBD criteria and relate the best available science. Note that a candidate EBSA may qualify on the basis of one or more of the criteria, and that the boundaries of the EBSA need not be defined with exact precision. And modeling may be used to estimate the presence of EBSA attributes. Please note where there are significant information gaps)

CBD EBSA Criteria (Annex I to decision IX/20)	Description (Annex I to decision IX/20)	Ranking of criterion relevance (please mark one column with an X)			
		Don't Know	Low	Some	High
Uniqueness or rarity	Area contains either (i) unique (“the only one of its kind”), rare (occurs only in few locations) or endemic species, populations or communities, and/or (ii) unique, rare or distinct, habitats or ecosystems; and/or (iii) unique or unusual geomorphological or oceanographic features.			X	
<i>Explanation for ranking - The Pedro Bank reefs are unique because of their geographic isolation and association with one of the largest submerged banks in the central Caribbean.</i>					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.			X	
<i>Explanation for ranking - It is thought that larval circulation for the region occurs in and around the Pedro Cays; ie transboundary larval dispersal of lobster, conch and reef organisms. With over 90% of reefs in danger the coral reefs on Pedro Bank are vital to long-term reef conservation in the country.</i>					
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.			X	
<i>Explanation for ranking - Masked Booby bird regarded as being regionally endangered and the colony on the Cays is believed to be the largest in the Caribbean; Presence of Acroporids and Strombus gigas</i>					
Vulnerability, fragility, sensitivity, or slow recovery	Areas that contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.			X	

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<i>Explanation for ranking - Jamaica's most important fishing ground, both for artisanal and commercial purposes; supplies over 95% of the country's conch export and the majority of its domestic fish products. Estimated annual value US\$24 million.</i>					
Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.				
<i>Explanation for ranking - important historical, commercial, and biological area, both regionally and nationally</i>					
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.				x
<i>Explanation for ranking - High marine biodiversity; Pedro Cays are regionally important seabird and sea turtle nesting habitat; regionally important metapopulations of elkhorn coral (Acropora palmata) and staghorn coral (Acropora cervicornis)</i>					
Naturalness	Area with a comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation.				<i>x</i>
<i>Explanation for ranking - Pedro Bank harbours some of Jamaica's better-preserved coral reefs and is relatively intact due to distance from mainland.</i>					

Sharing experiences and information applying other criteria (Optional)

Other Criteria	Description	Ranking of criterion relevance (please mark one column with an X)			
		Don't Know	Low	Some	High
<i>Add relevant criteria</i>					
<i>Explanation for ranking</i>					

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References

(e.g. relevant documents and publications, including URL where available; relevant data sets, including where these are located; information pertaining to relevant audio/visual material, video, models, etc.)

<http://conserveonline.org/workspaces/pedro.bank.workspace/Technical%20reports>

Maps and Figures

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