

## **The Bacalar Chico Reserve A Case Study in Government and NGO Collaboration in Conservation Projects**

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### **Introduction**

Belize, a small country bordering Guatemala and Mexico, boasts sovereignty over the world's second largest barrier reef system. With approximately 200,000 visitors a year, a large proportion of whom utilise the coastal zone in some way, effective coastal zone management is a major priority of the Government of Belize. The Belize Coastal Zone Management Unit (CZMU), established in 1990 as part of the Department of Fisheries, aims to develop a country-wide management strategy for the entire coastal zone. A key component of this programme is the provision of marine protected areas, of which there are two already in existence; Glovers Atoll and the Hol Chan Marine Reserve at San Pedro.

The town of San Pedro is the largest tourism development associated with the barrier reef. San Pedro lies at the southern most end of Ambergris Cay, which is connected to Mexico's Yucatan Peninsula to the north (Figure1). The vast majority of Ambergris Cay is undeveloped. However, several comprehensive development proposals have been submitted which, if authorised, could lead to a proliferation of tourist amenities such as golf courses and hotels.

### **Bacalar Chico**

The Bacalar Chico region encompasses barrier reef, seagrass beds, mangrove wetlands, lagoons and higher cay forest. It also contains a narrow, partly man-made channel that forms a natural border between Belize and Mexico. The area is home to many of Central America's rarest fauna and flora. At Rocky Point, the barrier reef merges with continental mainland, thus forming an unusual raised reef of exposed Pleistocene coral. Rocky Point is also an important spawning area for the nassau grouper (*Epinephelus striatus*) and yellowfin grouper (*Mycteroperca interstitialis*) (Perkins, 1983).

The reef itself has luxuriant coral growth, and the back reef lagoon possesses extensive seagrass beds and patch reefs. The entire stretch of beach is one of the most important nesting sites in the country for loggerhead and green turtles (*Caretta caretta* and *Chelonia mydas*).

Mangrove wetlands and lagoons provide nursery areas for many marine organisms, including commercially significant species. Wetlands also provide vital habitats for many species of wading birds and for manatees (*Trichechus manatus*) and crocodiles (*Crocodylus* spp).

Mayan archaeological sites are located in the higher forested areas. The site of San Juan has been excavated, but many others have not been studied. The higher forest exhibits a rich fauna and flora that includes the jaguar (*Panthera onca*), ocelot (*Felis pardalis*) and unique plant communities. Indeed, Bacalar Chico is thought to be an important corridor allowing jaguars to move between Mexico and Belize.

Bacalar Chico is clearly an ecologically sensitive region and therefore, given the current development pressures, the Government of Belize considers it to warrant urgent protection.

## **Collaborative Efforts Towards the Bacalar Chico Reserve: A Model of Co-operation**

### **NON-GOVERNMENTAL ORGANISATION COLLABORATION**

In order to protect Bacalar Chico, the European Community (EC) is currently funding a collaborative endeavour between three non-governmental organisations (NGOs): Coral Cay Conservation (CCC), the International Tropical Conservation Foundation (ITCF) and the World Conservation Union (WCU).

CCC has recruited volunteers that will be trained to undertake the marine element of the baseline survey work. CCC will also extend its existing programme of training in SCUBA diving, resource assessment and tropical marine ecology for Belizeans associated with the programme and produce educational and training material. Consultants hired by the ITCF through the CZMU will carry out terrestrial surveys and the ITCF will provide the materials to construct a field station and assist the Government of Belize in the implementation of the reserve. Belizean staff will be recruited and will be attached to the San Pedro headquarters of the Hol Chan Marine Reserve at the southern tip of Ambergris Cay, whose remit will be extended to cover management of Bacalar Chico. IUCN will supply policy and management advice to the CZMU.

The collaborative nature of the project will require data to be integrated from a variety of sources. For example, marine data (CCC) and terrestrial data (ITCF) can be used to classify remotely sensed imagery, the results of which are then manipulated within geographic information system (GIS). GIS plays a central role in the resource management planning process in Belize (Mumby *et al* forthcoming).

Close collaboration between the NGOs and the Government Belize will result in the following:

- 1 A designated reserve at Bacalar Chico, together with a management plan, preliminary reserve infrastructure, equipment, and scientific monitoring and survey programmes. A GIS database will be created to form the basis of the management plan.
- 2 Technical support for the establishment of an overall policy framework and supporting documents for a national coastal zone management programme for Belize, in co-operation with the GEF/UNDP coastal zone management programme.
- 3 Education and interpretative materials, aimed at both tourists and local community.
- 4 Expansion of SCUBA training programmes for marine reserve personnel.

### **INTER-DEPARTMENT COLLABORATION WITHIN THE GOVERNMENT OF BELIZE**

In addition to NGO/Government of Belize collaboration, the Bacalar Chico project will serve to enhance inter-departmental co-operation within the Government of Belize. Bacalar Chico is likely to become the first joint marine/terrestrial reserve in Belize and, as such, falls under the auspices of both the Fisheries and Forestry Department. To ensure the reserve's success, these departments are working closely together and thus establishing mechanisms for joint conservation efforts in future.

## INTER-GOVERNMENT COLLABORATION

The Bacalar Chico Reserve offers an excellent opportunity for collaboration between the Belize and Mexican governments. At this stage, plans for the reserve are restricted to the Belize side of the border and thus represent a 'Type 9' park in McNeil's classification (McNeil, 1990). It is possible that the Bacalar Chico Reserve could be extended into a true transboundary park given appropriate inter-governmental mechanisms and co-operation. IUCN has produced guidelines for the management of transboundary parks, which include the following important points (IUCN, 1990):

*Formulate Co-operative Agreements for Integrated Management of Border Protected Areas.* Detailed measures for co-operative management allow harmonious and effective management of the reserve. It is anticipated that the management plan for the Belizean area will be completed within two years and it would be prudent to adopt similar principles on the Mexican side, for example with regard to zoning criteria. Similarly, enforcement of management initiatives should be co-ordinated in a consistent manner between the two countries. The guidelines suggest that this may necessitate a working-level consultative committee which may initially consist of NGOs in order to pave the way for government links.

*Identify Practical Management Activities in Border Parks to Facilitate More Effective Conservation.*

This guideline particularly concerns consistent warden and reserve personnel activity, which can be attained through standardised training. This may be achieved by running training courses at the Marine Research Centre on the Turneffe Atoll, a new facility established jointly by the Government of Belize, University College of Belize and Coral Cay Conservation.

*Design Joint Visitor Use Facilities and Programmes.*

The Bacalar Chico reserve will naturally attract a large number of tourists. However, to make optimum use of the reserve, it would be important to establish joint marketing programmes and complementary facilities and access.

*Formulate Co-operative Research Programmes and Share Results.*

It is hoped that both Mexican and Belizean scientists, plus visiting researchers, will work together in this unique area. These collaborations will be able to draw on a wide range of disciplines, expertise and equipment.

*Prepare Joint Nominations of Border Parks Meriting Inclusion on the World Heritage List.*

Currently only two of the sixteen natural World Heritage properties found on international boundaries were jointly inscribed. The Belize barrier reef is already under consideration for inclusion on the World Heritage list and the possibility of including a transborder component to this application could be considered.

## Conclusion

The concept of transboundary co-operation is not new to Belize. The 'Mundo Maya' (or 'La Ruta Maya') concept unites Belize, Mexico, Guatemala, Honduras and El Salvador in a joint effort to facilitate tourism relating to Mayan archaeology. Belize, Guatemala an

Mexico are also working towards a 'Tri-National Park' system then would lead to a biosphere reserve encompassing the three adjacent protected areas of Blakmul (New Mexico), Maya Biosphere (Guatemala) and the Rio Bravo Conservation Area (Belize). Elsewhere, transboundary parks are often used to foster relationship between countries. In this case, the Bacalar Chico project is serving to unite the NGO community, NGOs with the Government of Belize and departments within the Government of Belize. As the importance of managing resources by natural units is well understood (McNeil, 1990), it is ecologically desirable to encourage co-operation at the inter-Government level and establish Bacalar Chico as the first transboundary reserve, with a marine component, in Belize.

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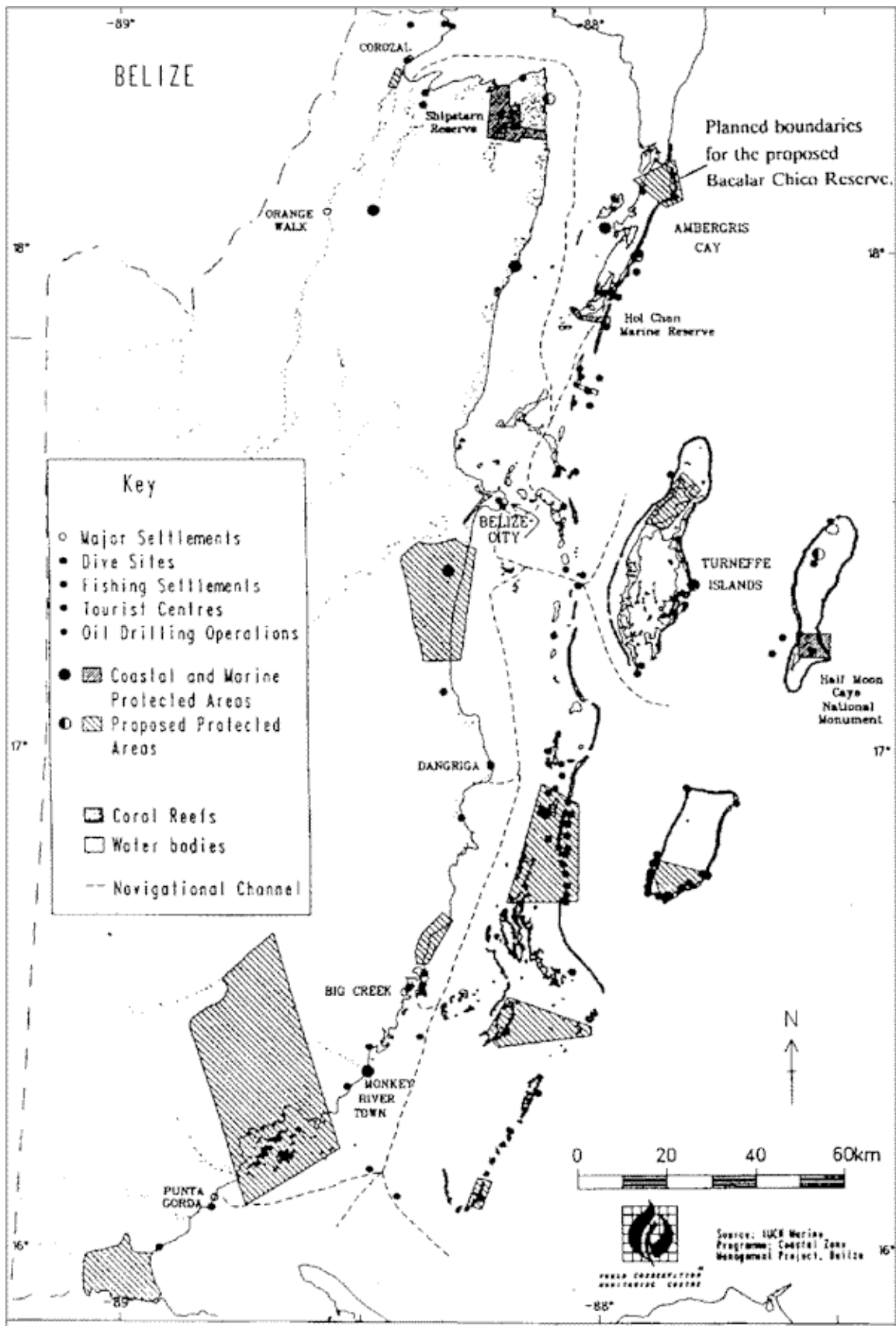


*Figure 1*  
Map of Belize showing the position of Ambergis Cay and the Planned Boundaries for the proposed Bacalar Chico Reserve.  
*Source : World Conservation Monitoring Centre*