

RESERVE DE LA BIOSPHERE DE SIAN KA'AN (410) MEXIQUE

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410: SIAN KA'AN BIOSPHERE RESERVE (MEXICO)

Summary prepared by IUCN (May 1987) based on the original nomination submitted by Mexico. This original and all documents presented in support of this nomination will be available for consultation at the meetings of the Bureau and the Committee.

1. LOCATION:

On the eastern coast of the Yucatan Peninsula in the State of Quintana Roo within the Municipalities of Cozumel and Felipe Carrillo Puerto, 19°05'-20°06'N, 87°30'-88°00'W.

2. JURIDICAL DATA:

Sian Ka'an was declared a biosphere reserve by the Federal Government on 20 January 1986, and 99% of the reserve is the property of the Federal Government. Total size of the reserve is 528,000ha.

3. IDENTIFICATION:

The reserve lies on a partially emerged coastal limestone plain and includes 120,000ha of open water, particularly in the Bahias de la Ascension and del Espiritu Santo, and approximately 110 kms of barrier reef. The climate is subhumid, with a mean annual rainfall of 1,128 mm (76% of which falls between May and October), and mean annual temperature of 26.5°C (with a mean of 27.6°C during the warmest months and 22.7°C during the coolest months). The area can be affected by cyclones. Altitudinal variation is minimal, and during the wet season over 70% of the terrestrial part of the reserve can be under water. This falls to 20% during the dry season.

Tropical forests cover about 150,000ha, with the principal types being semi-evergreen forest, semi-deciduous forest, deciduous forest, and swamp forest. A greater area (175,000ha) is covered by mangrove communities and marshland, while some 20,000ha is covered by secondary vegetation, disturbed sites, and dune vegetation. Tree islands (or hammocks) of varying sizes are found spread over the reserve's extensive wetlands.

Although inventories for the area are incomplete, it is thought that all terrestrial vertebrates characteristic of the Yucatan are to be found within the reserve. These include five species of cat; jaguar, puma, ocelot, margay and jaguarundi; the Caribbean manatee; and Geoffroy's spider monkey.

4. STATE OF PRESERVATION/CONSERVATION:

Much of the reserve consists of land which is frequently inundated. This and the lack of roads has kept the area relatively free from human activity. Those activities that do take place include grazing and agriculture. However, this would appear to affect only 3,000ha currently, while a further 14,000ha has been burnt in the past.

Research on the natural resources of the area is co-ordinated by the Centro de Investigaciones de Quintana Roo, and surveys have been carried out on different aspects of its wildlife, ecology, geology and hydrology. The management programme for the reserve identifies short, medium and long-term activities relating to research, use of resources, administration, and education.

5. JUSTIFICATION FOR INCLUSION ON THE WORLD HERITAGE LIST

The Sian Ka'an Biosphere Reserve nomination as presented by the Government of Mexico provides the following justification for designation as a World Heritage property.

a) Natural property

- (iii) Superlative natural phenomena and ecosystems. The reserve includes 17 different vegetation types, and a wide range of lowland coastal features including part of the Caribbean Barrier Reef, lagoons, and mangroves, and a range of other wetland types. The reserve lies in a zone transitional between the meso-American and Antillean provinces, and its large size will ensure that the natural ecosystems are adequately protected.
- (iv) Habitat of threatened species. Five species of cat are found within the reserve, as well as tapir, manatee, and white-lipped peccary, and a wide range of bird species. There are an estimated 1,200 plant species.

b) Cultural property

Criteria for cultural property are being assessed by ICOMOS.

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1. DOCUMENTATION:

- (i) IUCN Data Sheet
- (ii) Consultations: Mexican Government and State Officials, Subsecretary, Director of Conservation and Natural Resources; Juan Consejo (Director of Reserve); Ronald B. Nigh, Conservation International; Friends of Sian Ka'an - Sra Barbara Montes, Wilfredo Manquez, Ingrid Olmstead, C.C. Lockwood, G. Halffter, A. Gomez-Pompa, D. Glick, Arturo Lopez Ornat.
- (iii) Literature consulted: I. Olmstead, Vegetation de Sian Ka'an; CIQRO - Report on National Resources of Sian Ka'an; Draft Management Plan Sian Ka'an (SEDUE).
- (iv) Site visit: February 1987 (Harold K. Eidsvik).

2. COMPARISON WITH OTHER AREAS

Sian Ka'an is the largest effective nature reserve in Mexico and protects one of the most pristine expanses of wetland in Mesoamerica. It is a series of complex ecosystems commencing with the barrier reefs and including coastal littoral zones, bays, lagoons, islands, marshes, swamps, fringing mangroves and mixed dry tropical forests. The "cenotes" and "hammocks" are unique in size and number; thus the biological diversity of the area is exceptional.

There is no directly comparable area. The Everglades World Heritage site in Florida has some similar characteristics but is lacking in the barrier reefs and species such as jaguar as well as Mayan cultural values. Unlike the Everglades most of the waterflow in Sian Ka'an is underground as there are no rivers. The cenotes and hammocks of Sian Ka'an are larger and more numerous. The coasts of Belize and Guatemala have some similar characteristics but nothing on the scale of Sian Ka'an.

Venezuela and Colombia have similar characteristics in the coral reef - terrestrial transition. There are no precisely comparable protected areas. Australia and Indonesia have some similar landscapes but none are comparable in endemic species or cultural attributes.

3. INTEGRITY

Sian Ka'an has the support of the municipal, state and federal governments. The reserve (520,000ha) is exceptionally large for Mexico and 99% of the land is owned by the Federal Government. As a biosphere reserve, it has been the focus of three years of research by the "Centro de Investigaciones de Quintana Roo (CIQRO)". A team from the University of Mexico is currently evaluating the marine resources. A private foundation, "Amigos de Sian Ka'an", consists of dedicated local people. Many are ecologists who are carrying out studies funded by WWF (\$80,000 to date).

The overall management of the resource is under the direction of a Federal Department "The Secretary of State for Urban Development and Ecology" (SEDUE). The Director of the reserve is a biologist who has a staff of 30 of which about half are professionals. A management plan has been completed in draft form, and provides for the zoning of the reserve for different management purposes. A conservation strategy for the State is also being considered which will provide additional protection guidelines.

The Presidential Decree of January 1987 makes provision for a council involving local people, a government coordinating committee (Intersectorial Commission) and a Technical Research Committee.

The natural characteristics of the area -- dense forest, marshland and coastal fringes -- make access difficult and thus provide a natural barrier to disturbance. There are three road access points and information and control posts are now established at two of them. Two "ranches" exist within the westerly part of the reserve. One has been acquired and the other is in the process of being phased out.

Two fishing villages with a total of 800 inhabitants are located at Point Allen and Point Herrero. There are no other people living in the reserve but it is used for hunting and gathering by transient Maya people. The human population is not seen to be a significant management issue. The northern coastal barrier dune is privately owned and could be a source of future tourism pressure (1% of the total area). Zoning controls are in place and no development is contemplated at this time. One threat is pollution from Cancun which needs to be monitored.

4. ADDITIONAL COMMENTS

Sian Ka'an was accepted as a Biosphere Reserve in 1981. The potential exists for a joint cultural and natural nomination. Twenty-three Mayan sites have been registered in the reserve. "Tulum", one of the most visited of Mexico's archaeological parks, lies just to the north of Sian Ka'an. The possibility of adding to the reserve exists and should be explored further by the appropriate authorities. The Mayan sites in the nominated area would unlikely, on their own, qualify as cultural sites under the Convention.

5. EVALUATION

Sian Ka'an meets two criteria under the World Heritage Convention: (iii) -- the nominated area contains a broad range of both formations and features. It contains significant components of the Caribbean Barrier Reef, recognized as second to Australia's Great Barrier Reef; it includes lagoons, mangrove reefs, wetlands and arid forests, a full range of ecosystems: oceans, lagoons, marshes, drylands. To all of this is added the Mayan culture which permeates the area; iv) Sian Ka'an provides habitat for a broad range of plant and animal species, some of which are endemic -- the sabanna tree is unique to this area. There are 1200 plant species and five species of felines including the jaguar and the ocelot. There are three species threatened with extinction: the tapir, the manatee and the peccary. The rare jabiru stork nests in the area. There are also large nesting colonies of frigate birds, brown pelicans and roseate spoonbills.

6. RECOMMENDATIONS

Sian Ka'an should be inscribed on the World Heritage List as "The Sian Ka'an World Heritage Site". The Committee may wish to make the following suggestions:

- the owner of the private lands in the north-east coastal littoral zone should be approached by the highest level of government to explore the deeding of these lands to the site.
- The research arm of the reserve is in the process of transition from a Federal to a State institution. This could have financial consequences which could lead to a reduction in the applied research budget for the reserve. SEDUE should be asked to carefully monitor this situation and to ensure an interdisciplinary approach is maintained in the research and management programme.
- The Government of Mexico should be requested to examine the possibility of including Tulum within the site. Its cultural values are high but may not equate with, for example, Tikal. Nevertheless, the pre-Hispanic hydraulic structures in the swamps should be recognized in the designation of the site.