WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

COCOS ISLAND NATIONAL PARK (COSTA RICA)

1. DOCUMENTATION

(i) IUCN/WCMC Data Sheet (16 references)

(ii) Additional Literature Consulted: Cortes, J. 1997. Biology and Geology of Eastern Pacific Coral Reefs. **Coral Reefs** 16; Camhi, M. 1996. Costa Rica's Shark Fishery and Cartilage Industry. **Shark News** 8; IUCN et. al. 1995. **A Global Representative System of Marine Protected Areas. Vol. IV**; Roessler, C. 1993. **Great Reefs of the World.** Pisces Books; Thorsell, J. 1993. Which Islands Merit World Heritage Status? **Insula** No 2; Allen, G.R. and D.R. Roberts. 1994. **Fishes of the Tropical Eastern Pacific.** University of Hawaii Press; WWF. 1996. Marine Fishes in the Wild. **Species Status Report**; Rose, D. A. 1996. **An Overview of World Trade in Sharks.** TRAFFIC; Weber, M.C. and S.V. Fordham. 1997. **Managing Shark Fisheries: Opportunities for International Conservation.** TRAFFIC.

(iii) Consultations: 8 external reviewers, Costa Rican Ministry of Environment officials, Friends of Cocos Island Foundation, University scientists, private dive boat operators.

(iv) Field Visit: J. Thorsell, Enrique Lahmann, March, 1997

2. SUMMARY OF NATURAL VALUES

Cocos Island National Park (CINP) is located 550km off the Pacific Coast of Costa Rica. It extends over 24km^2 of land and includes a 977km^2 surrounding marine zone (15km radius). The island is of volcanic origin associated with an oceanic ridge that runs toward the Galapagos, 600km to the south-west. The climate is humid equatorial with some 7000mm of rainfall per year. The island has a dense vegetation with a small area of cloud forest on its 634m summit. About 70 of its 235 plant species are endemic and there are two endemic freshwater fish. Migratory birds nest on nearby islets and there are three species of endemic land birds. Introduced species, (especially feral pigs) have substantially altered the island. Marine fauna is the primary feature of natural interest in CINP. 300 species of fish have been recorded with major numbers of large pelagic migratory species such as sharks, rays, tuna, billfish and dolphins. The area is known for the particular abundance of hammerhead sharks and white-tip sharks and the rocks and islets surrounding the main island are reported to serve as "cleaning stations" where certain pelagics come to have parasites removed. Three species of turtle are also present. A total of 32 coral species are found but most have not recovered after the major collapse caused by the 1992-93 El Niño event. CINP, due to its location at the contact point of the northern equatorial counter current is thought to play a major role as a distribution centre for larvae of many marine species. The human historical record includes pirates, attempts at settlement, and the use of the island (1872-74) as a prison.

The Government of Costa Rica has nominated CINP under natural criteria (ii) and (iv).

3. COMPARISON WITH OTHER AREAS

CINP is the only protected area in the Cocos Island Biogeographic Province. It is one of five discrete island groups in the tropical eastern Pacific which also include the Galapagos, Malepo, Clipperton and the

Revillagigeo Group. All of these except Clipperton (which is an atoll) are of volcanic origin and all except Cocos are barren and dry. All of these island groups, except Cocos, are being intensely commercially fished, in the case of the Galapagos, illegally. Galapagos is also inhabited while Cocos is not. For its marine resources then, CINP is the only fully protected area in these five groups and thus the site with the best opportunity to preserve the array of large oceanic species that are found there.

In terms of diversity, the fish and marine life throughout the tropical eastern Pacific is relatively uniform with Galapagos having the highest on all counts due to its blend of Indo-west Pacific and temperate South American influences. Indeed, few islands anywhere in the world have the faunal complexity of the Galapagos group due to the diversity of its habitats and interaction of two major oceanic currents. CINP rates 30th on the list of the world's oceanic islands in terms of endemic plant species. It is relatively poor in species of flora with 235 compared to 801 species in the Galapagos and 362 on Juan Fernandez in Chile. The degree of endemism in CINP is 30% while in the Galapagos 60% of plants are endemic. Again with birds, Galapagos has 13 species of finch compared to one on Cocos.

The phenomenon of the trans-Pacific dispersal of larvae and marine life is shared with Galapagos but in a reverse way. Galapagos receives the warm surface waters during El Niño events first while Cocos receives the west to east surface flows first. The behavioural aspects regarding "cleaning stations" for Hammerheads and other large sharks has also been observed at Wolf and Darwin Islands in the Galapagos.

Scenically , Cocos Island itself with its forest-covered precipitous slopes and waterfalls is indeed dramatic. There are a number of other islands in the Pacific, however, that present a similar appearance and Cocos does not particularly stand out in this regard.

In sum, CINP, like most oceanic islands has many distinctive features and endemic species. Geographic proximity and shared faunal elements encourage comparison with the Galapagos which is clearly the pre-eminent island group in the Pacific in terms of its importance to science and conservation. CINP is, however, distinctive not so much in terms of its terrestrial values but for its marine ecosystem. The underwater world of CINP has become famous in the past decade due to the attraction it has for divers who rate it as one of the best places in the world to view large pelagic species. Sharks can, of course, be commonly seen in other locations in the Bahamas, Seychelles and Australia but nowhere are they so abundant and approachable as in CINP. The conservation values of the ocean surrounding the island are globally significant especially for sharks and perhaps for other fish populations. The role of CINP as a dispersal centre, nursery, and safe haven for marine life in a region that is intensely commercially harvested is clearly its most significant feature.

4. INTEGRITY

Though the CINP is uninhabited except for park staff, tourists and fishermen using the harbour, the influence of humans over the years has resulted in considerable modification to the natural habitat of the island. Coffee and guava trees planted by early settlers have replaced much of the understory. Introduced deer, pigs, cats, rats and goats have also had a significant impact as well. The range of management issues in the CINP have been identified in the 1995 management plan for the site and are summarised in the attached table.

Apart from the problems of ecological restoration (particularly the eradication of feral pigs) and visitor management (an average of 30 scuba divers per week visit CINP), the key issue in regard to integrity is surveillance and control of illegal fishing. Park staff do not have adequate patrol boats to police the surrounding ocean and there is undoubtedly illegal fishing taking place though the extent is not known. Fishing within the park boundary is prohibited and this is soon to extend from its current 8km limit to 15km. This will be sufficient to protect resident populations but not migratory species. As has been experienced in many other areas, especially in nearby Galapagos, commercial fishing can seriously deplete stocks and can

Summary of the Main Problems Detected on the Island:

Administrative Problems
- Lack of adequate administrative infrastructure
- Lack of personnel
- Lack of well trained staff

Land environments
-Community alteration due to the action of pigs
-Increase in erosion due to pigs
-Poorly designed paths
-Poorly kept paths
-Environmental impact studies are not carried out prior to construction of facilities

Marine environments
Specially sensitive areas:
-Bahia Chatham: fragile reef colonies
-Punta Presidio: richest area in coral species
-Bahia Iglesias: source of ramified coral for the rest of the Island

Fishing
-Semi-industrial and artesanal fishermen trespass the limits of the park
-Fish concentrate in a relatively small area which makes it sensitive to damage causes to habitat from activities like diving and commercial fishing

Public Use
-Lack of general information about the Island (in site) such as maps, brochures and signs
-Scarce visitation control as well as destination points
-A better delimitation of anchoring sites is necessary
-Ocean waste dumping from crafts is not controlled.
-There are not guidelines for public use

Archeological Inscriptions
-Anthropogenic alterations damage historic inscriptions
-Natural elements (ocean, wind, etc) threaten to destroy these inscriptions

From Cocos Island General Management Plan, 1995.

quickly get out of hand. Sharks are particular targets and fishing pressure on them has grown rapidly, largely in response to demand for fins and cartilage from Asia. As CINP is the main marine protected area in the entire region (at least until the new Galapagos Marine Resource Reserve becomes functional), it is critically important that the regulations that have been promulgated are applied.

The Government of Costa Rica has taken strong conservation measures to protect CINP since 1991 when the marine ecosystem was added to the island. Before then, the waters adjacent to the island were open for fishing and many thousands of sharks were taken in the area now in the park. Most populations have recovered from this harvest except for silky sharks. Billfish are also reduced due to sport fishing outside the park boundaries (even though tag and release methods are used, high mortality is experienced).

CINP has a recently completed comprehensive management plan and a complement of 16 trained staff. Its integrity is further strengthened by the existence of a private NGO Foundation - "The Friends of Cocos Island" which assists in fund raising for the park. The park authorities and dive boat operators also have close relationships but cooperation with local fishermen needs to be strengthened.

5. ADDITIONAL COMMENTS

The name of the site originally submitted was "Cocos Island Marine and Terrestrial Conservation Area". During discussions with the Costa Rica authorities this was shortened to "Cocos Island National Park".

The nomination of CINP is one of the first cases where a nomination previously not accepted by the Committee (1985) has been reformulated and submitted. The new document provided substantial new information which has come to light on the marine resources of the site and the extension of the park boundary now includes the ocean area 15km radius from the island (currently the regulations are enforced out to 8km but this is soon to be extended to 15km).

6. APPLICABILITY OF WORLD HERITAGE NATURAL CRITERIA

CINP is the only island in the tropical eastern Pacific that supports a humid tropical forest. Its position as the first point of contact with the northern equatorial counter current and the myriad of interactions between the island and the surrounding marine ecosystem make the area an ideal laboratory for the study of biological processes. These studies have only just begun and there is much research to do on the life cycles of marine species and the complex interaction of climate/currents/birds/nutrients/etc. that make up the CINP. The site thus meets criterion (ii) and the related Conditions of Integrity.

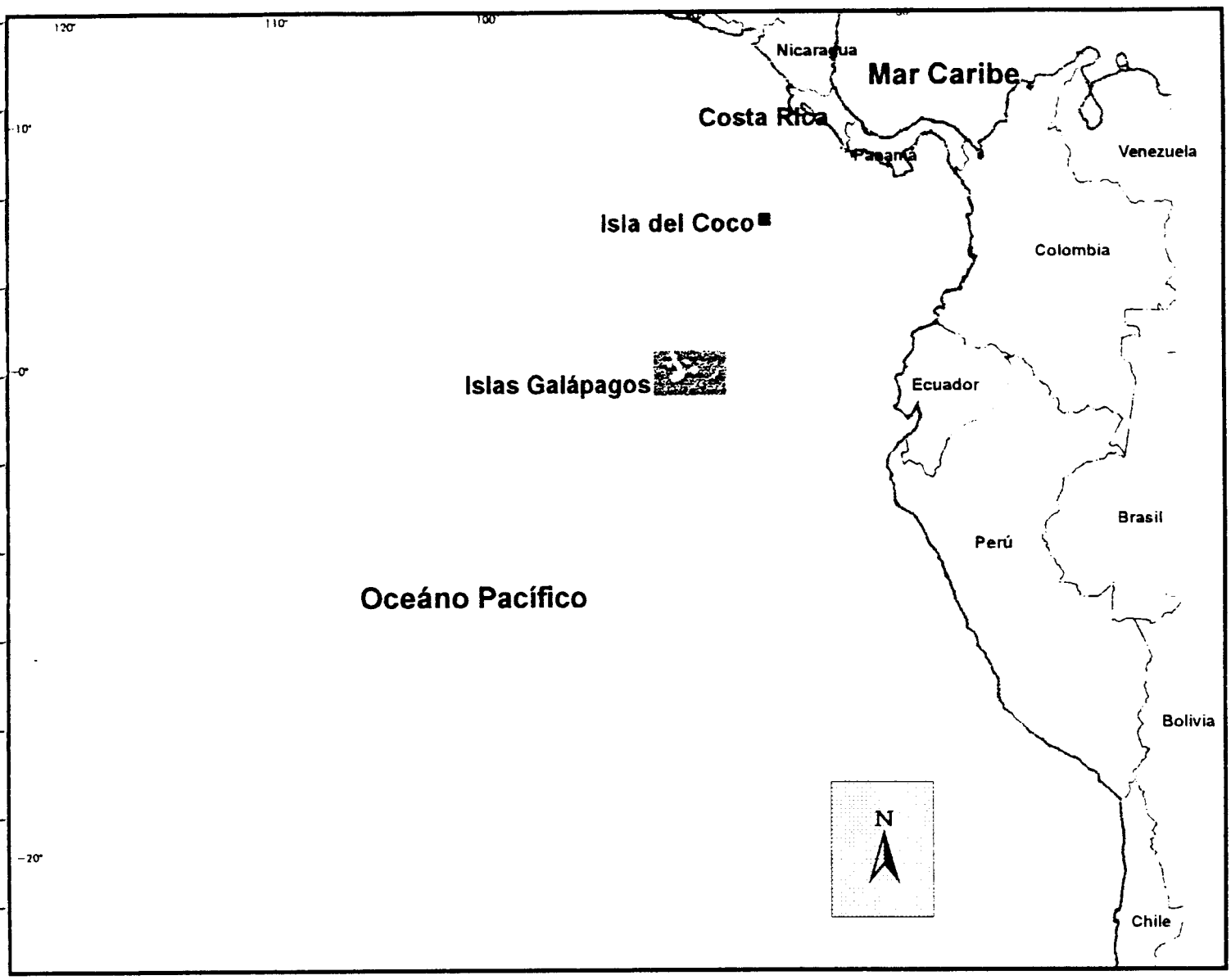
CINP also meets criterion (iv) for the critical habitat it provides for marine species and for the role it plays as the major site in the region in protection of large pelagic species especially sharks. The condition of integrity that requires protection of migratory species outside of CINP, however, is impossible to achieve as these species are heavily exploited outside the park.

IUCN also considered applying criterion (iii) to the CINP nomination but had difficulty interpreting the "natural beauty and aesthetic importance" in an underwater setting.

7. RECOMMENDATIONS

That CINP be added to the World Heritage List under criteria (ii) and (iv). The Government of Costa Rica should be commended for its initiative to incorporate the marine environment into the park and be encouraged to continue this effort to extend the limit of management from the current 8km to 15km around the island.

Mapa de Ubicación Isla del Coco



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Unidad de Apoyo Electrónico y Gráfico
Programa de Estudios Ambientales
Junio,1996

Fuente:" A global representative system of marine protected areas"
Volumen IV
The World Conservation Union
Mayo 1995