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INFORMATION SHEET ON REFUGIO DE VIDA SILVESTRE (Wildlife Refuge)

BARRAS DE CUERO Y SALADO.

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1. Country: Honduras

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5. Name of wetland: Refugio Nacional de Vida Silvestre **Barras de los ríos Cuero y Salado**

6. Date of Ramsar designation: 23/06/93

7. Geographical coordinates: The refuge territory is bounded to the north by the Caribbean sea, and to the south by the coastal plain and immediately behind that, by the Nombre de Dios mountain range.

8. General location: La Atlántida *departamento* [admin 1], 33 km from the city of La Ceiba, on the La Ceiba-Tela road. The refuge crosses four municipalities: El Porvenir, San Francisco, La Masica and Esparta.

9. Area: The refuge has an area of 13,225 hectares of which approx. 8,100 ha correspond to the coastal marshland zone, with the remainder corresponding to a maritime strip 2 km wide (from the beach out into the sea) right along the length of the refuge.

10. Type of wetland: M, R, T, X, O, 9.

Four categories of wetland systems can be identified in the refuge area, these being Marine, Estuarine, Riverine and Palustrine.

11. Altitude: The site is totally flat, with gradients of less than 1% and not rising above 10 masl.

12. Overview:

Tropical Wet Forest life zone (following Holdridge). Characterized by areas of flooded lowland forest and the terminal branches of the rivers Cuero, Salado and San Juan, which through their slow velocity, form systems of channels which generally run parallel to the sea.

13. Physical features:

The Refuge comprises the catchment plain of 15 hydrographic basins whose sources rise in the Pico Bonito National Park in the Nombre de Dios mountain range, comprising 125,205.6 Ha through which the average discharge is 61.05 m³/s. The soils are clayey or silty, poorly drained and generally saturated (where the gradient is low - less than 1%). This promotes the formation of channels around the bars of the main rivers Cuero and Salado. The mouth of these rivers closes during the summer, resulting in a 2-6 m increase in the average depth of the channels.

14. Ecological features:

Comprises floodable forests, crossed by various rivers and channels which form numerous lakes of variable size. These water courses come up against the sand bar of the Cuero and Salado rivers, where they form channels parallel to the coast, most of these, together with the latter part of the rivers are edged with riparian mangrove communities. In the coastal area there are 12 km of homogeneous sandy beaches, on which coconut plantations have been established since 1902, with harvesting of copra (dried coconut kernels) continuing to this day.

15. Land tenure/ownership of:

(a) site: The land tenancy is complex. Legally the land belongs to the Honduran state, declared as a protected area by decree of law in 1987. However, previously this same area had been franchised to the Standard Fruit Company since the beginning of this century for the cultivation of coconuts. Subsequently as of 1989 it was handed over to the Fundación (foundation) Cuero y Salado (FUCSA) for management. Both franchises are still in effect.

There is now a situation of human "invasion", where 46% of the southern part of the refuge are occupied by approximately 115 proprietors, largely farmers involved in agriculture or livestock, of which some claim to have ownership of the land, whilst another group are tenants and the rest use it on loan.

(b) surrounding area: The refuge adjoins four municipalities of the *departamento* [admin 1] of Atlántida, these being El Porvenir, San Francisco, La Masica and Esparta, which together constitute the area of direct influence on the refuge. Part of this area is franchised to the Standard Fruit Company or belongs to livestock farmers or agriculturalists.

16. Conservation measures taken:

The refuge has been legally declared since 1987 by decree of law 99-87. In 1989, this decree was modified (by decree 38-89), increasing the area from 8,700 ha to 13,225 ha. In the new decree, it was established that the foundation FUSCA would become responsible for the technical management of the refuge, with the Ministry of Natural Resources as legal administrator, supervising the activities of FUSCA.

The physical delimitation of the Refuge boundaries has been carried out. The preliminary management plan has been drawn up. Programmes of wardening, environmental education, research, as well as ecotourism activities have been operating, although their impact has been limited by lack of personnel and financial resources.

Recently the accord for the delimitation of owned plots of land and common use of the land, was signed between FUSCA, the national agrarian institute (INA), and the association of agriculturalists and livestock farmers whose lands adjoin the refuge.

17. Conservation measures proposed but not yet implemented:

The preparation is planned of a management plan and projects which would expand activity in: ecotourism, sustainable management of natural resources by the community, infrastructure development.

18. Current land use/ principal human activities in:

(a) site: A total of 84 families live in the area. It was found in a sample of 69 of these that 10% work as day labourers in the coconut plantations, 1% are livestock farmers, 7% practice traditional fishing and 28% are subsistence agriculturalists.

(b) surrounding area: The main human activities which are carried out in the area of direct influence on the refuge are: extensive [free ranging] livestock farming, which is strongly encouraged by the top dairy product processing plant in the country - "Leche y Derivados LEYDE" in the city of La Ceiba; citrus cultivation for exportation; agroindustrial cultivation of African oil palm; pineapple cultivation by the Standard Fruit Company, and small-scale citrus, manioc, cocoa and coffee plantations.

19. Disturbances/threats, including changes in land use & major development projects.

(a) site: within the refuge the major alterations have been caused by: the burning of forest to increase the area of pastures; subsistence agriculture, which through its low yields, forces the peasants to deforest new areas year after year; fishing, which through using equipment for large-scale capture, reduces fish populations.

(b) surrounding area: the direct effect of non-sustainable use of the lands of the upper watershed is that sediments and agrochemical products, etc. reach the refuge via the rivers, causing severe damage in the area. A notorious example is the Caicesa African palm oil processing plant, which pours waste directly into one of the refuge's river branches.

20. Hydrological and physical values:

The Refuge's wetlands constitute the main source of water for the inhabitants of this part of the coast. The pastures in the southern part of the refuge where deforestation has taken place, are the best places in the area for fattening cattle during summer. There are two small settlements and several families living dispersed around the refuge, for whom the channels [formed parallel to the coast] are the only form of transport available along the coast, with greater safety than navigation on the open sea.

By virtue of the bars' opening and closing of communication with the sea, these systems accumulate freshwater during the dry season and release water in the rainy season, serving to hold water in drier times, and avoid floods in rainy times.

21. Social and cultural values:

The inhabitants of the coast represent a small group of the Garífuna ethnic group, which is of African origin and retains cultural characteristics very distinct from the rest of the country, including use of an truly anglophone language.

Three mounds with indigenous ruins have been identified in the refuge. Although these have not yet been well studied, the Honduran Institute for Anthropology and History (IHAH), collected (in a preliminary study) 15 pieces of ceramic which feature anthropomorphic and zoomorphic stamps from approx. 1000 years A.D. and distinct types of vessels. The study has now begun which will lead to the excavation of all the relicts.

22. Noteworthy fauna:

The refuge shelters important numbers of fauna of special interest for various reasons:

(1) Commercially important fish: includes a great quantity of edible freshwater fish, estuarine fish, and *mojarra* [sea bream], as well as sea fish which spend time in estuaries during their life cycle such as the *pargos* (red snapper/sea bream) of the genus *Lutjanus*. The grey mullet and the "lebranche" *Mugil* sp. are also found.

(2) Avifauna: the refuge has a great quantity of bird life, with 196 species reported, which include migratory species, such as shorebirds of the families Scolopacidae and Charadriidae, as well as other species such as the blue-winged duck *Anas discor*. Other species include the herons and storks: *Egretta alba*, *Egretta thula*, *Ardea herodias*, *Ajaia ajaja*, *Jaribu mictoria*, *Mycteria americana*.

There are also great numbers of resident species, noteworthy amongst which are: *Pandion halieatus*, *Buteogallus anthracinus*, *Crax rubra*, *Jacana espinosa*, *Amazona autumnalis*, *Amazona albifrons*, *Tigrisoma lineatum*, *Phalacrocorax olivaceus*, *Chloroceryle americana*, and others which are difficult to observe, such as the "fishing eagle" *Pandion halieatus*, the king "zope" [poss. a vulture] *Scorampus papa* and the soldier "garzón" *Javiru mycteria*.

(3) Species in danger of extinction: the refuge is home to a verified population of 30 manatees *Trichechus manatus*. It has been confirmed that they breed and have had a number of births, which indicates the good quality of the habitat.

There are also cayman *Crocodylus acutus* and *Caiman sclerops fuscus*, both of which are in danger of extinction, having suffered from intense hunting pressure. It has however been established that with adequate protection, their populations could recover in the refuge.

23. Noteworthy flora:

The refuge includes areas of flooded forest where species such as the "zapatón" *Pachira acuatica*, "Santa María" *Calophyllum brasiliense*, "sangre" [=blood] *Virola koschyi* as well as the palm *Roystonea dunlapiana*, a species in danger of extinction which is only present in the protected areas of the region. This species is also of local importance since it is used for the construction of rooves in the region. Other species present are: *Brosimum alicastrum*, *Vohisia hondurensis*, *Symphonia globulifera*, *Loncocarpus hondurensis* and *Bursera simarouba*.

The area of channels and the mouths of the rivers is bordered with mangrove areas dominated by the red mangrove *Rhizophora mangle* with patches of *Avicennia germinans* and dispersed specimens of *Launcularia racemosa*, associated with which are other species normally typical of the freshwater flooded forest, such as the "zapatón".

The rivers, channels and lakes harbour a great quantity of hydrophytic plants, such as *Nymphaea* sp., *Ceratophyllum* sp., *Salvinia* sp., *Eichornia* sp., *Ceratopteris* sp. and *Pistia* sp. Along the beach there are plantations of coconuts *Coccus nucifera*, belonging to the Standard Fruit Company, and still producing fruit.

There are other human-affected areas with secondary forests which support a great quantity of fruits that are important for wild fauna, as well as pastures used for extensive [free-ranging] livestock ranching, in the southern part of the refuge.

24. Current scientific research and facilities:

The following research work has been carried out:

- Evaluation of the populations of manatee in the Cuero y Salado wild animal refuge.
- Evaluation of the population of "piche" ducks *Dendrocygma autumnalis*, and the establishment of artificial nests for increasing their population and this potential for sustainable harvesting of this species.

In terms of infrastructure, FUCSA (a foundation) has a small office (40 m²) in the refuge, which is currently used for storing the existing equipment, as a base for the activities of the foundation in the area and as accommodation for the technical staff who work there.

25. Current conservation education:

There have been workshops with the local community. Environmental education documents have been prepared and distributed to the community in the refuge and to the inhabitants of the refuge's area of influence. A series of talks have also been given to the visitors on the tourist boat M.S. Polaris. Courses in English have been given to receptive personnel of the refuge, such as the resource wardens.

A course has been developed for the women who live in the refuge, aimed at training in production and commercialization of handicrafts made from resources available in the refuge.

An environmental education and training programme has been developed, but it has not been possible to implement it due to lack of funds.

26. Current recreation and tourism:

- 8 visitors from the ship M.S. Polaris between the months of January and March each year, since 1991.
- Leaflets are produced to give tourists information about the reserve. Usually the tourists arrive through local travel agencies who contact the Foundation, but there is no budget for carrying out the plans set out in the operational plan.

27. Management authority:

Fundación Cuero y Salado (FUCSA), by government decree P_t 38-89

Edificio Reyes P_t 5 , Ave. San Isidro, Apartado Postal 122, Ciudad de La Ceiba, Departamento de Atlántida, Honduras

28. Jurisdiction:

Atlántida department [admin 1]. The refuge is under the jurisdiction of four mayors, of the municipalities: Esparta, Masica, San Francisco and El Porvenir. The refuge administration has been the responsibility of the Fundación Cuero y Salado (FUCSA), by government decree P_t 38-89 since April 1989, under the supervision of the Ministry of Natural Resources.

29. References:

Marin et al., 1991. Informa General, Proecto piloto de ecoturismo en el Refugio de Vida Sylvestre de Cuero y Salado. La Ceiba, Honduras.

Mejía, L., 1991. Evaluación del Uso de los Recursos Naturales en el Refugio de Vida Sylvestre Cuero y Salado y área de influencia. La Ceiba, Honduras. Tesis (Magister Scientiae). CATIE, Turrialba, CR.

Feran, F., 1991. Los Restos de la Opulencia: Estudio Socio-Ambiental del Refugio de Vida Sylvestre, Barras de Cuero y Salado. CATIE, Turrialba, CR. 73 p.

There are 10 technical documents on environmental education, environmental impact assessment and evaluations of flora and fauna, as well as documents for teaching environmental education, which have not been published.

30. Reasons for inclusion:

1a, 2a, 2d, 3b.