

## World Heritage Sites

Protected  
Areas and  
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## RÍO PLÁTANO BIOSPHERE RESERVE HONDURAS

*This Reserve behind the Mosquitia coast of Honduras is part of the largest surviving area of undisturbed tropical rainforest in Honduras and is one of the few remaining in Central America. The forested valley and its coastal plain contain a wide range of habitats with abundant and varied plant and wildlife. In the valleys and along the Caribbean coast, Miskito and Pech Amerindian tribes continue to live in their traditional ways.*

*Threats to the Site: Agricultural expansion into the south and west sides of the Reserve by small farmers and cattle ranchers is reducing the forests. These have also been massively logged for precious woods which threatens the World Heritage values for which the Reserve was inscribed and the livelihoods of the indigenous peoples. Uncontrolled hunting of wild animals also occurs. The introduction of exotic species threatens to undermine its complex ecosystem. The absence for years of a management plan and of sufficient park staff to manage so large a site compounded the problem. Government development of a hydroelectric dam near the Reserve may also affect it.*

### COUNTRY

Honduras

### NAME

Río Plátano Biosphere Reserve

### NATURAL WORLD HERITAGE SITE IN DANGER

1982: Inscribed on the World Heritage List under Natural Criteria vii, viii, ix and x;

1996-2006 & 2011: Listed as a World Heritage site in Danger because of heavy encroachment.

### STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]

### INTERNATIONAL DESIGNATION

1980: Designated a Biosphere Reserve under the UNESCO Man & Biosphere Programme (800,000ha).

### IUCN MANAGEMENT CATEGORY

II Proposed National Park

### BIOGEOGRAPHICAL PROVINCE

Central American (8.16.04)

### GEOGRAPHICAL LOCATION

In north-eastern Honduras, in the hinterland of the Mosquitia coast extending inland south-west approximately 150 km by 25 km wide from Laguna de Ibans and Laguna de Brus on the Caribbean. The coastal towns of Palacios and Brus Laguna lie approximately 5 km from the Park boundaries on either side of the Reserve: 15°05' to 15°50'N, 84°36' to 85°20'W.

### DATES AND HISTORY OF ESTABLISHMENT

1960: Ciudad Blanca Archaeological Reserve created (525,000 ha);

1969: Gazetted an Archaeological National Park;

1980: Recognised as a UNESCO Biosphere Reserve by Decree 79;

1996-2006: Listed as endangered by uncontrolled encroachment, farming, logging and poaching.

1997: Cultural zone boundary extended to the Patuca river by Decree 170-97.

2011: Relisted as a World Heritage site in Danger because of continued encroachment, illegal logging, poaching and inadequate management.

## LAND TENURE

State, in the departments of Gracias A Dios, Colón and Olancho. Managed and owned since 1997 by the national Honduran Corporation for Forestry Development (Corporación Hondureña de Desarrollo Forestal, COHDEFOR). There are municipal and private plots within both core and buffer areas.

## AREA

500,000 ha (UNESCO WH List, 2007). Original core zone, 325,000 ha and buffer zone, 175,000 ha. (WDPA, 2008 gives a total of 438,989.7 ha). Adjoins the Patuca National Park (220,000 ha) on the south-east.

## ALTITUDE

Sea level to 1,326m (Punta Piedra).

## PHYSICAL FEATURES

The Reserve comprises two main geomorphological areas: steep mountains which form threequarters of the site, and a flat to undulating coastal plain. It also contains two large lagoons and a 5 km x 30 km strip of ocean. The Biosphere Reserve covers virtually the entire 350,000 ha watershed of the 115 km-long Platano River which bisects the Reserve. The core zone occupies the upper half of the watershed. The buffer zone includes half the Paulaya valley on the west, and the Wampu valley in the south. Since enlargement in 1997, the Cultural zone of the Reserve (not in the World Heritage site) extends from the coastal plain to the Patuca River in the east.

The coastal plain is under 10-40 km wide and rises gradually from the lagoons and winter-flooded grasslands to 100m where the foothills begin abruptly. The rugged granite mountains which rise to Punta Piedra at 1,326m have many steep ridges, remarkable rock formations such as Pico Dama, a 150m pinnacle, and many waterfalls, one, 150m high. Two thirds of the Platano river runs through the mountains with stretches of white water, and in one cataract in a forested gorge disappears under massive boulders. The plain is partly underlain by a belt of infertile deeply weathered Pleistocene quartz sandy gravels. The river meanders for 45 km through the lowlands forming ox-bow lakes, backwater swamps and natural levees which are used for small agricultural plots. Two lagoons, one of fresh water (L. Ibans, 6,300ha) and one brackish (L. Brus, 12,000ha) and sandy beaches line the coast (Herrera-MacBryde, 1995).

## CLIMATE

The climate is hot and humid all year especially from May to November. The mean annual temperature is 26.6°C. Annual precipitation varies locally from less than 2,850mm to 4,000mm during the rainiest months of November to January. The dry season from February to May is said to be more pronounced since the deforestation of the last twenty years (Richards, 1998). In an average decade the region is hit by four tropical storms and two hurricanes. The 1998 devastation by Hurricane Mitch was intensified by floods from recently deforested mountains.

## VEGETATION

This is part of the largest surviving area of undisturbed tropical rain forest in Honduras and in Central America. Parts are said to have more species per square hectare than the Amazon rainforest, and its topographic variety results in a range of 25 ecosystems (DGIS-WWF, 2001). The Park has more than 2,000 species of vascular plants and may still hold species new to science or to the region. Its main ecotypes are estuarine and marine, mangrove swamps, coastal pine savanna, broadleaf gallery forest, humid subtropical forest (10-15% of the area), very humid tropical forest (~80% of the area) and on the ridge tops, elfin forest. This summary is based on the description by Herrera-MacBryde (1995).

In the mangroves fringing the coastal lagoons *Rhizophora mangle* is characteristic. Other lacustrine species include *Coccoloba uvifera*, *Languncularia recemosa* and *Cocos nucifera*. Inland is a barren

coastal savannah with, in wetter areas, sedge prairie *Rhynchospora* spp., *Paspalum pulchellum*, *Tonina fluviatilis* and *Utricularia subulata* and in drier areas the grasses *Fimbristylis paradoxa* and *Declieuxia fruticosa* with palm thickets of yagua palm *Attalea butyracea*, Everglades palm *Acoelorrhaphe wrightii* and *Pinus caribaea* var. *hondurensis*, 20-25m tall. Locally, these pines and several palms are used for construction; some species are also made into dugout canoes. This pine savanna is burned frequently to maintain pasturage for grazing and to keep the land open for hunting. Farther inland is open woodland with an oak understory of *Quercus oleoides* and *Byrsonima crassifolia*, with *Calliandra houstoniana*, *Melastomataceae* and the tree fern *Alsophila myosuroides*.

Broadleaf gallery forest along the Platano river and its alluvial tributaries can grow to 30-40m. It includes *Albizia carbonaria*, *Calophyllum brasiliense* var. *rekoi*, *Inga*, *Cecropia*, *Ficus* and *Lonchocarpus* spp., balsa *Ochroma lagopus*, *Luehea seemannii*, *Pachira aquatica* and *Heliconia* spp. Swamp forests in colluvial creeks are dominated by Guttiferae. On land disturbed by agriculture dominants of the secondary forest include *Salix humboltiana*, *Ceiba pentandra* and species of *Bambusa* and *Pithecellobium*. Most of the watershed is blanketed by mature wet forests whose composition is poorly known. Characteristic or common trees at lower elevations are, amongst others: mahogany *Swietenia macrophylla* (VU) which is illegally logged, red cedar *Cedrela odorata* (VU), *Apeiba membranacea*, *Bursera simaruba*, *Carapa guianensis*, *Casearia arborea*, *Eugenia* sp., *Ficus insipida*, *Pourouma aspera*, *Pseudolmedia oxyphyllaria*, *Vochysia hondurensis*, *Virola koschnyi*, and species of *Pterocarpus*, *Quararibea*, *Sloanea*, *Chusquea*, *Geonoma* and *Chamaedorea*. Sites sampled in the past included the following plentiful or notable species: at 250m, *Garcinia intermedia*, *Pouteria* sp. and *Schizolobium parahybum*; at 450m, *Ardisia tigrina*, *Smilax subpubescens* and *Ternstroemia tepezapote*; at 600m, *Lobelia* and *Welfia* sp. and *Satyria warscewiczii*. One striking characteristic of the tropical rainforest is its vertical organisation of species. As many as five layers may exist and much of its life occurs in the high canopy unseen from below.

In the higher mountain forest, the dominant trees are *Tabebuia* spp., cedar *Cedrela odorata*, *Bursera simaruba* and *Clusia salviniie*. Other common species include *Lonchocarpus*, *Albizia carbonaria*, *Chamaedorea* spp. and bamboos. Trunks and branches at higher elevations are covered with epiphytes. Some locales have very dense successional stages resulting from storm damage. There are elfin forests on the ridge tops exposed to trade winds from the Caribbean, for example at 700m, of *Clusia salvinii*, *Magnolia sororum*, *Lacistema aggregatum* and *Psychotria elata*. Important timber trees growing in the reserve include mahogany (VU), *Callophyllum brasiliense*, *Carapa guianensis*, *Cedrela odorata*, *Tabebuia rosea* and *Virola koschnyi*.

## FAUNA

The Reserve is said to have 70% of the fish, 57% of the birds and 57% of the reptiles of Honduras. 39 species of mammals, 377 species of birds and 200 species of reptiles and amphibians have been recorded. Rare or endangered species include giant anteater *Myrmecophaga tridactyla* (VU), jaguar *Panthera onca*, West Indian manatee *Trichechus manatus* (VU) and Central American tapir *Tapirus bairdii* (EN). Other representative species are: white-faced capuchin monkey *Cebus capucinus*, mantled howler and Mexican spider monkeys *Alouatta palliata* and *Ateles geoffroyi vellerosus* (CR), three-toed sloth *Bradypus infuscatus*, two-toed sloth *Choloepus hoffmanni*, paca *Cuniculus paca*, kinkajou *Potus flavus*, coatimundi *Nasua narica*, tayra *Eira barbara*, neotropical otter *Lontra longicaudis*, puma *Puma concolor*, jaguarondi *P. yagouaroundi*, ocelot *Leopardus pardalis* and margay *L. wiedii*, collared and white-lipped peccaries *Tayassu tajaca*, *T. albirostris*, and red brocket deer *Mazama americana*. However, by 2001 the jaguar, tapir, American crocodile and scarlet macaw were reported as no longer found in the Reserve (IUCN, 1995).

The Park is within one of the world's Endemic Bird Areas (Stattersfield *et al.*, 1998). Among the 377 species of birds, notable species are jabiru *Jabiru mycteria*, king vulture *Sarcoramphus papa*, harpy eagle *Harpia harpyia*, Guyana crested eagle *Morphnus guianensis*, black and white hawk eagle *Spizaetus melanoleucus*, Aplomado falcon *Falco femoralis*, great curassow *Crax rubra* (VU), crested guan *Penelope purpurescens*, scarlet macaw *Ara macao*, great green macaw *A. ambiguus* (EN), military macaw *A. militaris* (VU), green-and-rufous kingfisher *Chloroceryle inda*, keel-billed motmot *Electron carinatum* (VU) and yellow-eared toucanet *Selenidera spectabilis*. The almost 200 species of reptiles and amphibians include at least 7 poisonous snakes, American crocodile *Crocodylus acutus* (VU), brown caiman *Caiman crocodilus*, green iguana *Iguana iguana*, hawksbill turtle *Eretmochelys imbricata* (CR), green turtle *Chelonia mydas* (EN), loggerhead turtle *Caretta caretta* (EN), and leatherback turtle *Dermochelys coriacea* (CR). Freshwater fish include the cuyamel *Joturus pichardi* (Glick & Betancourt, 1980). Among the hundreds of butterflies, the blue morpho *Morpho menelaus* and

cream owl's eye *Caligo memnon* are conspicuous.

## CONSERVATION VALUE

The Reserve is one of the few remaining areas of undisturbed humid tropical forest in Central America, being hitherto almost inaccessible and little populated. It contains an abundant and varied plant and wildlife, including several internationally threatened species and is valuable for the preservation of the germplasm of timber and medicinal species. Some 1,000 indigenous people continue to live in the Reserve following traditional lifestyles. The area also has important archaeological remains. It lies within a Conservation International-designated Hotspot, in one of WWF's Global 200 Ecoregions, in a WWF/IUCN Centre of Plant Diversity and one of the world's Endemic Bird Areas. It also forms part of a UNESCO Biosphere Reserve.

## CULTURAL HERITAGE

The as yet little excavated site within the protected area of *Ciudad Blanca* (white city) is one of the most important archaeological sites of Mayan civilisation. Other major remains include the *Piedras Pintadas* petroglyphs on the banks of the Platano River, probably from an unknown pre-Columbian culture, and the site under the southeast village of Las Cracitas del Rio Aner. There are more than 200 archaeological sites, none of them protected in practice in 1995. The Reserve also contains the site where Christopher Columbus discovered the Americas in 1492.

## LOCAL HUMAN POPULATION

In 1979 the population of the proposed reserve was estimated at 2,500-3,500 (Houseal, 1979). By about 1990, the Reserve contained over 12,000 people, roughly 5,000 indigenous and 7,000 ladinos, with most of the latter settling there since 1965 (Herlihy, 1998). Ten years later, there were some 40,000 inhabitants in an economy based mainly on grazing, agriculture and fishing, supplemented by illegal logging, though tourism had begun to become more important. In 2001 the five ethnic groups living in the Reserve were: the *Mestizos* or *Ladinos*, descendants of mixed Spanish-Amerindian campesinos from the poor south of the country (20,800 people, 52%): almost all recent incomers to the more accessible south and west of the Reserve, mainly as cattle-breeders. *Miskitos* (17,200, 43%): Amerindians of Garifuna-Carib origin living in the central and coastal zone and two towns on the Tinto river, living, apart from tourism, mainly as cultivators with some fishing, hunting and gathering. *Garifunas* (3%) of Afro-Caribbean descent living on a small coastal strip in the north-west as lobster fishermen and cultivators. *Pech* or *Paya*, an indigenous group of 400 people (1%) living in the central part of the reserve on tourism, agriculture, cattle-breeding, hunting and gathering and *Tawahka*, a very small ethnic group of 400 (1%) living in the southeast of the Reserve on agriculture, fishery, forestry and tourism (DGIS-WWF, 2001).

The farming methods of the native groups are sustainable compared with the commercial exploitation practised by the invading Ladinos. However, their customary rights to the land are held to be illegal compared with the documented de facto occupation of plots fenced by the Ladino peasants who are backed by large landowners who profit from the land thus opened for subsequent large scale cultivation; and compared with the logging rights granted to large timber companies. The indigenous peoples have therefore formed non-governmental organisations with foreign help to protect their land from colonisation. 152 families living in the core zone have been relocated by CODEFOR (WRM, 2003; IUCN, 2007).

## VISITORS AND VISITOR FACILITIES

No roads yet reach the Reserve. The lack of easy access, especially to the core area, and the lack of facilities, the short season and dense mosquitoes do not help tourism but there are hundreds of uncontrolled visitors and some simple services are provided. Community-based ecotourism and businesses such as turtle-egg protection and tourism are thriving with foreign help (Greenquist, 1997). Local people offer accommodation in the mountains - there is a guest house at Las Marias - and a conservation-linked sustainable tourism plan is being funded by the United Nations Fund as part of a global initiative. Rafting and canoeing into the rainforest are possible.

## SCIENTIFIC RESEARCH AND FACILITIES

Basic inventories of many of the natural and cultural resources and more detailed anthropological and archaeological surveys have been completed, many by the Honduran Institute of Anthropology and History, and indigenous use of natural resources has been studied (Houseal, 1979). The existence of an ancient white city, *Ciudad Blanca*, has been neither confirmed nor refuted. There is an information centre at Las Marais with an information and educational program, and a small research station where

accommodation is available for visiting scientists. The University of Queensland is directing a monitoring project financed by the United Nations Fund.

## MANAGEMENT

A management and development plan was developed in 1980 under the auspices of the Department of Natural Renewable Resources (RENARE) which provided for a strict natural zone, with conservation of the farmed coastal lowlands in a cultural zone extending 45 km up-valley the farmed coastal lowlands in a cultural zone extending 45 km up-valley (Glick & Betancourt, 1983). This was not implemented and in 1987 another plan was written for the southern zone, which was the most threatened by encroachment. By late 1988, the Honduran Ecological Association with the Honduran Corporation for Forestry Development (COHDEFOR) and RENARE, funded by WWF-US and the World Heritage Foundation, undertook several missions. Among these were the relocation of refugees displaced by industrial logging operations outside the Reserve and by the war in Nicaragua, to identify the boundary, to control sawmills, to stop road building in the buffer zone, and to start environmental education and a public relations campaign in buffer zone communities (Rigoberto, 1989). But these projects, not first being agreed with the local people and having been enforced by the military, were rejected (Richards, 1998). The Honduran Public Safety Force (police) protects some of the nearby villages but cannot prevent land invasion or the extraction of resources (IUCN, 1996). There remained the need to complete the relocation and compensation of the families and landowners in the core zone and to cancel all Honduras Forestry Development Commission resolutions permitting dead wood harvesting in the local departments. In 1997, the German NGO GTZ/GFA-Agrar with the German Development Bank (KfW) and Honduran government departments, implemented a decree to expand the Reserve to the Patuco river (Parent, 1998) and eventually to the Bosawas Biosphere Reserve on the border in Nicaragua 20 km away.

A local NGO, MOPAWI, the Miskito-Pawisa Agency for the Development of the Honduran Miskito, founded in 1985, funded several projects to promote biodiversity and sustainable incomes for indigenous tribesmen. Local peoples have been charged with the stewardship of rare animals in their areas and of 68,000 ha of forest. Among the programs it initiated are marine turtle conservation, green iguana conservation, a butterfly farm, sustainable cropping, diver training for lobster fishermen, micro-credit facilities and environmental education. In 1996 WWF-US ran a project in north-eastern Honduras to strengthen effective co-ordination between the local NGOs, government authorities and local communities. It aimed to improve resource protection, infrastructure and management and stop the advance of agriculture by promoting sustainable land-uses (WWF, 1996). The Garifuna Emergency Committee was set up in 1998 to help the coastal people recover from the devastation of hurricane Mitch, and is now an active agency for the improvement of the tribe's living conditions. In 2002 MOPAWI was awarded the UNDP Equator Prize for best management practice in Honduras; and in 2004 the prize was awarded to the Garifuna Committee.

Since 1997 COHDEFOR has been responsible for managing the Reserve but without sufficient staff to protect it, without linking with other organisations for assistance, and still without sufficient support at higher levels of government in 2010 (UNESCO, 2010). In 1997 the Rio Platano Biosphere Project was initiated: a US12 million dollar, 6-year long collaboration between COHDEFOR, the German Society for Technical Cooperation with the German Bank for Reconstruction & Development (GTZ/KfW) to improve the management and conservation of the site by providing technical and financial support under the Participatory Zoning and Management component of the Social Forestry Program. It was also to bring resident populations and government authorities together in the management of the Reserve (Herlihy, 1998). In 2000 a Management Plan was drawn up by the National Council on Protected Areas (Consejo Nacional de Áreas Protegidas de Honduras, CONAPH) to administer operational plans and coordinate work with COHDEFOR, local communities and NGOs. In 2001 COHDEFOR started on several projects: compensation to 52 (of 152) families moved out of the Reserve, establishment of a field office, increased staffing of the Reserve, demarcation of the core and southwest buffer zone boundaries, studies of vegetation and of threats to the Reserve. It set up a Commission to determine land use rights, and made plans for forest management, community development, agro-forestry cooperatives and sustainable tourism (UNESCO, 2002). A Danish project was funded from 2001 to 2003 to increase knowledge of sustainable agricultural practices amongst incoming villagers.

The management plan was approved in 2003 and implementation started. It finalised zoning of the Reserve into core, buffer and cultural zones (for developed land) and was to be translated into the native dialects. There was progress in promoting economic alternatives to reduce the pressure from

local communities on the Park's resources (IUCN, 2003). By 2006 CONAPH had begun to coordinate the registration of native land titles to forestall further settlement by Ladino colonisers, completed signposting, begun to curtail agricultural encroachment, and co-opted the Army and Forestry departments to man checkpoint controls on the export of illegal timber and poached animals. It established annual inter-organisational operating plans with the local communities and a funding mechanism through the Fundacion Vida (IUCN, 2007). Surveys to establish land ownership, and the subsequent provision of legal title to land within the buffer zone has permitted the granting of 70% of usufruct contracts to eligible residents. In the buffer zone an agro-forestry scheme involving twelve local cooperatives permits the harvesting of defined quantities of timber. A monitoring system *Proyecto Monitoreo Forestal Independiente* (MFI) is also being introduced to increase local participation and transparency in illegal logging and traffic. With the help of the Army and Navy, law enforcement against illegal settlements and logging is now effective and although the situation is still fragile, cleared forest is recovering (IUCN, 2008). Involvement of local resource-users in management has also been encouraged by the transboundary WB and GEF-supported Heart of the Corridor project (UNESCO, 2010).

## MANAGEMENT CONSTRAINTS

The Reserve was placed on the List of World Heritage in Danger in 1996 because of encroachment by cattle ranchers, agricultural intrusions especially by Ladino slash & burn colonists, illegal loggers, illegal hunters, wildlife traders and invasion by exotic species. It also qualified because of the inadequate management of its natural and cultural resources by COHDEFOR and the lack of an effective management plan, all of which threatened and continue to threaten the integrity of the Reserve. Large areas of the buffer zone, particularly in the Rio Seco watershed to the north and east of the core zone, were totally degraded by cattle ranching. Invasions spread up tributary valleys from the Paulaya River on the west. A road from the Río Wampú in the south was built 35 km into the core National Park area, expanding the agricultural frontier: By 1995 a hundred families had settled in this zone, though by 2003 this had dropped to 10 families. Livestock farms, logging of lowland hardwoods and forest destruction were a severe problem on the southern and western boundaries and along riverbanks. Families resettled out of the area and compensated, returned and resettled on their old land. Small Ladino farmers were, and are, often financed by commercial cattle-ranchers taking advantage of the lack of property records to colonise the forest. After two years, the farmers sell the land rights to cattle-ranchers, and move further into the forest. A 1989 estimate indicated an annual deforestation of 64,500 ha (Herrera-MacBryde, 1995). It was estimated in 1997 to affect 25% of the southern end of the Reserve, 10% of all of which was said to have been deforested (Greenquist, 1997). This is a major cause of erosion and the sedimentation of streams. Despite the removal of the site from the list of endangered sites in 2006, illegal encroachments, logging and fishing are still on the increase and may not be curbed without political support at the highest levels (UNESCO, 2010).

The southern and western zones are also subject to the uncontrolled extraction of precious woods such as mahogany, *Liquidambar styraciflua* and the Caribbean royal palm *Roystonea dunlapiana* (EN) by rich well-connected companies. Elsewhere, continued massive illegal extraction of precious woods followed by poaching diminishes the rich wildlife. The illegal logging of the surrounding area has eliminated nearly all the mahogany outside the Park, especially in northeast Olancho province, and has been accompanied by the deaths of those opposing the practice (Lobe, 2005). The commercial hunting, mainly by outsiders, is sometimes masked as ecotourism. COHDEFOR aims to prevent unauthorized activities in the buffer zone, including agricultural expansion, illegal logging and poaching, by the use of checkpoints. It has also defined the responsibilities of the various public and private entities involved in the Reserve's management; and disseminated the environmental management plans related to the Ministry of Agriculture's development strategy within the Sico'Paulaya Valley zone (IUCN, 2007). By 2006 the threats to the core zone had decreased, but agricultural encroachment and illegal woodcutting persisted outside it. However, COHDEFOR itself lost credibility when locals were imprisoned for cutting trees but powerful logging interests were permitted a sawmill within the reserve (Richards, 1998). COHDEFOR officials in charge of the Reserve, often defied by influential outsiders, are seen by the indigenous people as complicit in its deforestation and in the illegal disposal of confiscated timber (UNESCO, 2010).

Several other factors threaten the integrity of the property. The introduction of exotic species is a threat to native wildlife: the commercial species tilapia *Tilapia nilotica* introduced to the coastal lakes competes with the native fish. This threat is aggravated by illegal large-scale commercial dragging for shrimp and fishing: 45 fishing camps were reported within the property in 2010. Marine turtle populations are still under threat from the stealing of eggs, and the sale of hawksbill turtleshell. Tourism is increasing, although there is no tourism management strategy to control visitors or to

benefit from them. The cultural value of the site is also being undermined by inhabitants from both inside and outside the Reserve who extract archaeological artefacts to sell to tourists and collectors. The increase in tourism, combined with the immigration of Ladinos has accelerated the intercultural mixing of native ethnic groups within the Park and the conflicts between Ladinos and Amerindian indigenes over the colonisation and the use of natural resources. Indigenous land users have been faced with enforcement of de facto claims, sometimes at gunpoint (IUCN, 1996; Richards, 1998). In 1995 the Government pressed ahead with the development of a U.S.-owned hydroelectric project, Patuca II, near the Reserve which would require new roads to access the dams and reduce river flow. The roads would destroy natural resources, attracting logging, clearing for farms, erosion, pollution, and commercial hunters. Local people complained that it was forced through without consulting their views (UNESCO, 1999). Flooding caused by Hurricane Mitch in October 1998 was considerable and for some months communications with authorities in Honduras were difficult because of the devastation caused to the country's infrastructure by the hurricane.

## STAFF

The Reserve headquarters is at Kuri near the river mouth with a sub-station upstream. By 1995 there were one fishing inspector, two inspectors from the Ministry of Natural Resources, and a forest technician from the Honduran Corporation for Forest Development, responsible for all protected areas of La Mosquitia, based at Puerto Lempira, some 100 km from the reserve (IUCN, 1996). In 2001 three guards were hired, but the staffing is inadequate to protect the Reserve from encroachment. Capacity building remains very necessary.

## BUDGET

In 1980-81 US\$97,000 was donated, 50% by WWF, to launch the Reserve; in 1983-84 the WWF Tropical Forest Campaign granted US\$84,000 towards essential equipment and an airstrip. By 1989 WWF had paid out US\$169,309. Organisations including the National Directorate of Mines, Ministry of Natural Resources, the National Autonomous University and the Costa Rican Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) pledged US\$173,500. In 1996-7, the UNF granted US\$30,000 towards improved monitoring. In 1998 WWF-US contributed US\$30,000 towards a DM12 million (US\$675,800) 6-year project funded by the German Society for Technical Cooperation and the German government (GTZ/KfW) to improve the management and conservation of the site. Funds for the Danish project in 2001 project were equivalent to US\$462,300. US\$190,025 was provided by WWF in 2005-6 for technical cooperation and training and within the framework of the IUCN/UNF/UNESCO pilot project 'Enhancing our Heritage' it provided US\$68,000 for monitoring and reporting mechanisms (IUCN, 2007). UNF also provided US\$100,000 in technical assistance and US\$80,000 for management effectiveness assessment (UNESCO, 2010) A Fund for Protected Areas is being established.

## LOCAL ADDRESS

The Director of Protected Areas, State Forest Administration, Honduran Corporation for Forest Development, Tegucigalpa DC, Honduras.

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The principal source for the above information was the original nomination for World Heritage status.

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