

World Heritage Sites

Protected
Areas and
World
Heritage



NOEL KEMPPF MERCADO NATIONAL PARK BOLIVIA

This park is one of the largest and most intact parks in the Amazon Basin and has an altitudinal range of 200m to 980m. It is a rich dramatically scenic mosaic of habitat types from upland evergreen Amazonian forest through gallery forest, palm forest, flood savannah, swamp and semi-deciduous dry forest to Cerrado forest and savannah which constitute probably the largest area of undisturbed Cerrado habitats left on Earth. They are found on the PreCambrian sandstones of the Caparus Plateau in the Serrania de Huanchaca, an island above a sea of lowland forest which has been isolated for millions of years and provides an living laboratory for the study of the evolution of its ecosystems. An estimated 4,000 species of plants, over 600 birds and viable populations of many globally endangered or threatened large vertebrate species inhabit the Park.

COUNTRY

Bolivia

NAME

Noel Kempff Mercado National Park

NATURAL WORLD HERITAGE SITE

2000: Inscribed on the World Heritage List under Natural Criteria ix and x.

STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]

The UNESCO World Heritage Committee issued the following statement at the time of inscription:

Justification for Inscription

Criteria (ix) and (x): The site contains an array of habitat types including evergreen rainforests, palm forests, cerrado, swamps, savannahs, gallery forests, and semi-deciduous dry forests. The cerrado habitats found on the Huanchaca Meseta have been isolated for millions of years providing an ideal living laboratory for the study of the evolution of these ecosystems. The site also contains a high diversity of plant and animal species, including viable populations of many globally threatened large vertebrates.

IUCN MANAGEMENT CATEGORY

II National Park

BIOGEOGRAPHICAL PROVINCES

Madeiran (8.6.1) / Campos Cerrado (8.30.10)

GEOGRAPHICAL LOCATION

The Park is in eastern Bolivia parallel to the Brazilian border in north-central Santa Cruz Department 430 km northeast of Santa Cruz city between 13°31'48" to 15°05'52" S and 16°14' 39" to 61°19'12" W.

DATES AND HISTORY OF ESTABLISHMENT

1979: The Park first established as Huanchaca National Park by Supreme Decree 16.646;

1988: The name changed by Law 978 to commemorate an eminent scientist murdered in the Park; The boundaries were corrected and enlarged under Supreme Decree 21.997;

1996: The area extended by Supreme Decree 24.457.

LAND TENURE

Almost all publicly owned except for one 25,000 ha ranch in the core zone. There are several other land claims which should be resolved in the Park's favour. The Park is managed by an NGO, the *Fundación Amigos de la Naturaleza* (FAN) on behalf of the National Protected Areas System of the Ministry of Sustainable Development and Environment.

AREA

1,523,446 ha. The National Park area now covers 3,800,000 ha. The Alto Paraguá Forest Reserve flanks the site along its western border.

ALTITUDE

From 200m to ±980m (top of the Meseta de Caparú)

PHYSICAL FEATURES

The Park consists of a mountain range, the Serranía de Huanchaca, some 150 km long by 45 km wide lying parallel north-south along the Brazilian border, and its surrounding river valleys and plains. Its centre is the plateau of Caparú with a lower northward continuation in the Serranía Negra, covering about three-quarters of the range (530,000 ha), the remainder being in Brazil. This is composed of Pre-Cambrian sandstone and quartzite deposited more than 1,000 million years ago which is bounded by rugged cliffs on its northern, western and southern sides, with valleys and steep slopes on the eastern side. Pristine ancient *Cerrado* (closed or inaccessible land) covers much of the top where the soils are well-drained and nutrient-poor. Rivers form 90% of the Park's nearly 1,000 km border: on the east the Rio Iténez (Guaporé) and its tributary Rio Verde which also form the boundary with Brazil to near the southeast corner of the site: on the west, the Rio Paraguá and its tributary Rio Tarvo. These rivers combine to flow eventually into the Rio Madeira, one of the main tributaries of the Amazon. The tributary Verde and Paucerna rivers on the east side and the Rio San Ramon on the west start on the plateau and in flowing over the escarpment form the spectacular Fawcett, Federico Ahlfeld and Arcoiris waterfalls.

The low land to the west is dominated by the Paraguá river, which in the rainy season overflows large areas of forest and savannah. There are also three great lowland plains that become flooded at varying levels during the rainy season, and several lakes, the largest being La Bahía (12,500ha) and Bella Vista (2,000 ha) (Torres *et al.*, 1999). With its rainforests, clear-water rivers, striking waterfalls, vast forested plateau and rugged escarpments, the Park has the most dramatic scenery in northeastern Bolivia.

CLIMATE

The Park has a seasonal tropical climate. The annual mean temperature is between 25°C and 26°C. November is the warmest month and June the coolest. The extreme temperature ranges from an average monthly maximum of 30°C and an average monthly minimum of 18°C. During June and July, temperatures fall from south to north, due to the penetration of cold fronts, with a minimum of 3°C for several days in a row. The annual average rainfall ranges from 1,400 to 1,500mm with a drier climate in winter (Torres *et al.*, 1999).

VEGETATION

The site lies in a transition zone where the Madeiran-Amazon forest intergrades with Chiquitano dry forest and Cerrado savannas in a unique and complex mosaic. The region has five distinct ecosystems: upland evergreen forest; deciduous forest; upland Cerrado savanna on the plateau; savanna wetlands; and forested wetlands. Three of the major ecosystems found in the Park - Cerrado savannas, semideciduous forest and savanna wetlands - are globally threatened (Dinerstein *et al.*, 1995). Two other habitats, riverine forest and humid evergreen forest, are considered regionally threatened (Killeen & Schulenberg, 1998). An estimated 4,000 species of vascular plants grow in the Park, with 1,500 species in humid forests, 800 species in Cerrado habitats, 700 species in dry forests, 500 species in savanna wetland communities and another 500 species in aquatic habitats, disturbed ground and rock outcrops. 110 species of orchids are recorded from the Park.

The humid forests of the site are floristically distinct from the moist forests of western Amazon and the Andean piedmont. They are the most species-rich formation in the region, but species diversity and endemism here are well below that for humid forests in other parts of the Neotropics; however,

these forests contain several habitat types still scarcely studied. An evergreen forest with 45m-tall trees is found on deep and well-drained soils, and a dwarf forest grows in the transition zone between it and the Cerrado. Another peculiar formation is a forest of lianas, characterised by a low and very thick canopy. Some emergent trees are present, but proliferating lianas dominate the canopy. A mixed forest of lianas forms a transition zone between the semi-deciduous forests and the liana forests (Torres *et al.*, 1999).

The Caparú plateau has a rich Cerrado flora that contains many species that were thought to be restricted to central Brazil. Huanchaca is physically separated from similar ranges to the north and east by the wide valley of the Iténez River, so the Cerrado savannas on the plateau may have been isolated for several million years (Killeen & Schulenberg, 1998). The plateau covers around 272,000 ha (18%) of the Park. Dry forests exist as scattered pockets and cover only 11,650 ha of the Park (Torres *et al.*, 1999). This formation, known in Bolivia as the Chiquitano semideciduous forest, is similar in composition and structure to the dry forests of the Misiones region of eastern Paraguay and northeastern Argentina, the Caatinga region of Brazil and the Andean piedmont in north-west Argentina. This is one of the most endangered ecosystems in the world because of agricultural development in the densely settled regions where it was once the dominant vegetation. Bolivia currently contains the largest part of this dry forest formation and possibly the largest existing dry forest formation in the world (Parker *et al.*, 1993).

Much of the extensive alluvial plains of the Paraguá and Iténez are seasonally flooded and varying types of flooded savanna and swamp dominate these landscapes where the hydrological cycle is the main abiotic factor affecting their development. Even slight topographic changes may cause marked changes in the structure and composition of the vegetation. Parts of the plains, known as termite plains, are covered by thousands of termite mounds, while there are similar flooded savannas where the mounds are absent. There are also scattered islands of forest which create a very different landscape. The savanna swamps are found mostly around perennial lakes and in places where the main watercourses disappear. A palm swamp with a sparse arboreal layer often develops with groups of *Mauritiella aculeata* and *Mauritia flexuosa* palms, source of a valuable fruit oil, *buriti*. This important ecosystem is most extensive around the Tarvo and Paraguá rivers (Torres *et al.*, 1999).

FAUNA

The great diversity of habitat in the Park results in an outstandingly diverse fauna, including 139 species of mammals, 620 birds (some 21% of all South American species), 74 reptiles, 62 amphibians and 254 fish (Torres *et al.*, 1999). The large mammal fauna is relatively well known; much less is known about its small mammal fauna, particularly the bats. The Park is an important repository for many rare Bolivian mammals, and is the only large area of protected habitat for some of them. Over 80% of the mammals were recorded from humid forests. Good populations of lowland tapir *Tapirus terrestris* (VU), brocket deer *Mazama* sp. and black jaguar *Panthera onca* inhabit the upland humid forests. White-bellied spider monkey *Ateles belzebuth* (EN) has large populations throughout the tall evergreen forests, and Columbian red howler monkey *Alouatta seniculus*, golden-white bare-ear marmoset *Mica leucippe* (VU) and Geoffroy's monk saki *Pithecia monachus* are also present (Killeen & Schulenberg, 1998; Torres *et al.*, 1999). Three species of *Pteronotus* bats are found in the Park.

Dry forests and woodlands, Cerrado and savanna habitats harbour less than half as many mammals as the evergreen forests. Several rare or poorly known marsupials such as the bushy-tailed *Glironia venusta* and pygmy short-tailed *Monodelphis kunsii* opossums have been found in dry woodlands. The open grasslands on the southern part of the plateau have what may be one of the largest remaining populations of pampas deer *Ozotoceros bezoarticus*. Bush dog *Speothos venaticus* is found on the savannas. Two other large mammals, the near threatened maned wolf *Chrysocyon brachyurus* and marsh deer *Blastocerus dichotomus* (VU) are found in the seasonally flooded termite savannas below the plateau. Other species, such as giant anteater *Myrmecophaga tridactyla* (VU) and giant armadillo *Priodontes maximus* (VU), are found in both humid forests and drier habitats, but appear to be densest in the termite plains (Killeen & Schulenberg, 1998). Along the Verde and Paucerna rivers, giant otter *Pteronura brasiliensis* (EN) and long-tailed otter *Lontra longicaudis* are present, and in the Iténez River, the Amazon River dolphin or *boto*, *Inia geoffrensis* is frequently seen (Torres *et al.*, 1999).

The Park's avifauna is relatively well known, having been surveyed at 14 different locations. Species diversity is highest in the humid forests. The Park is very important for near threatened Amazon species of conservation concern restricted to the region south of the Amazon and east of the Madeira Rivers, such as red-throated piping-guan *Pipile cufubi*, Gould's toucanet *Selenidera gouldii*, snow-capped manakin *Lepidothrix nattereri* and tooth-billed wren *Odontorchilus cinereus*. The Park is also the only protected area where the extremely range-restricted rusty-necked piculet *Picumnus fuscus* is found, being known only from seasonally flooded forests along the Iténez River. There are 9 species of macaw which include the hyacinth macaw *Anodorhynchus hyacinthinus* (EN), found in the river valleys and 20 species of parrot. Despite its location on the periphery of the Cerrado region, the area is extremely important for the conservation of birds of Cerrado habitats. It has populations of 20 open habitat bird species considered endangered including rufous-sided pygmy tyrant *Euscarthmus rufomarginatus*, rufous-rumped seedeater *Sporophila hypochroma* and black-and-tawny seedeater *S. nigrorufa* (VU) (Killeen & Schulenberg, 1998).

Almost 50% of the herpetofauna is Amazon species, with 23% from the south and east. Several species enter Bolivia only in this area of the country. The most abundant larger reptiles are yellow-spotted sideneck turtle *Podocnemis unifilis* (VU), broad-snouted caiman *Caiman latirostris* and Argentine black-and-white tegu lizard *Tupinambis merianae*. Black caiman *Melanosuchus niger* and South American river turtle *Podocnemis expansa* are also present. The most common amphibians include leaf-litter toad *Bufo tiphonius margaritifer*, the tiny tree frog *Hyla nana* and *Physalaemus albonotatus* (Torres *et al.*, 1999).

The Park's rich ichthyofauna comprises 60% of the Amazon species known from Bolivia. It is also an important area for the protection of geographically restricted fish species. The high overall diversity reflects the variety of aquatic systems in the Park, ranging from small clear-water streams to large blackwater lakes and rivers. The extensive floodplains covered with both savanna and forest offer many specialised habitats and abundant sources of food. The Iténez River Basin is the only major river system in Bolivia that originates on the Brazilian Shield, which makes the physical and chemical characteristics of its waters very different from those of other rivers of eastern Bolivia. As a result some 65 species of the Iténez basin (26% of the total) are either endemic or have relatively restricted distributions. Several species are found only in blackwater systems and have a peripheral distribution in the northern and eastern edges of Bolivia. Notable among these are *Helogenes marmoratus*, *Carnegiella strigata*, *Hypopygus lepturus*, several species of the genus *Hyphessobrycon*, *Bryconops melanurus*, *Jobertina lateralis*, *Poecilobrycon harrisoni* and *Acanthodoras spinosissimus* (Killeen & Schulenberg, 1998).

The Park contains a large diversity of insects. The dung scarab beetle fauna in the area and surrounding regions totals 97 species and is the most diverse yet recorded in the Neotropics for an area of this size. This species richness seems to be largely the result of the high habitat heterogeneity of the Park and a high rate of species turnover between habitats. The habitat with the greatest species richness is the humid forest at Los Fierros, with 64 species of a scarab beetle community that is typical for a moist lowland Amazonian site.

CONSERVATION VALUE

This Park is part of one of the largest intact forest and Cerrado wildernesses in the Neotropics and now that most of central Brazil has been turned into soybean plantations it has possibly the largest area of virgin Cerrado left on Earth. The rainforest, dry forests, pampas, swamps and Cerrado furnish a uniquely wide range of habitats, dramatic scenery, and vast floral and faunal diversity with many rare and endangered animals. The Park lies within a WWF/IUCN Centre of Plant Diversity.

CULTURAL HERITAGE

Among the first records of the area and its surroundings is the description of the Huanchaca Plateau made by Colonel Percy Fawcett in 1910. Fawcett's writing about his expedition was so compelling that Sir Arthur Conan Doyle based his novel *The Lost World* on the region. The name given to the former Huanchaca National Park was given in posthumous homage to the scientific activities of Professor Noel Kempff Mercado who with three other companions, was murdered by drug dealers in the Huanchaca cliffs in September 1986 during an expedition to the plateau (Torres *et al.*, 1999). In 1920, the town of Perseverancia 200 km to the west sprang up in the heart of the wilderness during the rubber boom as a production centre, lasting several years before the market collapsed. The last

tappers left in 1972; an airstrip was then built which became a centre for the illegal trade in animal skins. Professional hunters collected hundreds of otters, jaguar and other skins until 1986 when the area was abandoned.

LOCAL HUMAN POPULATION

In 2000 less than 30 people lived within the Park whose inhabitants were restricted to communities settled in the area since the end of the 19th Century. The main peripheral settlements on the west are: Florida in the southwest, Hacienda Chirapas, El Porvenir, Piso Firme and Remanso. There are also small riverside populations along the Iténez River such as Bella Vista, San Francisco and Esperancita de la Frontera, on the southern edge. However, the population of several thousands along the boundaries and small towns on the Brazilian bank have so far exerted little pressure on the site. The Park's natural resources allow ample subsistence to these people who hunt wildlife, extract fibres, medicinal plants and building materials. There exists potential for commercialisation of some of the resources, particularly caimans, turtle eggs, fish, snails, bush meat, skins, wood and ornamental plants (Torres *et al*, 1999).

VISITORS AND VISITOR FACILITIES

Approximately 800 tourists visited the Park between 1995 and 1999, individually or through the Friends of Nature Foundation (FAN) but by 2000 the Park had become an annual stop for several tour companies that specialise in bird watching groups and visitor numbers are slowly increasing. They stay mainly at the visitors' centre at Flor de Oro in the far northeast which has cabins lodging up to 35 people, an observation tower and a large interpretation centre. There is another comfortable rustic lodge at Campamento Los Fierros in the far southeast for up to 25 people with over 40 kilometres of well developed trails including a self-guided interpretive trail. Only one nearby community has visitor facilities: Piso Firme on the Paraguá in the northwest which has one basic hotel with rooms for 16-20 people and a small restaurant. In 1989, a tourist facility was built at Perseverancia for people wishing to experience real wilderness: it is only accessible by private aircraft and its isolation is extreme.

Access to the Park from Bolivia is by two main routes: one from Piso Firme in the north via the Paraguá and Iténez rivers to the camps of Bella Vista, El Milagro, Tacuaral, Boca del Paucerna, Flor de Oro, Las Torres, Mangabalito and Boca del Verde. A second access route runs from Florida and the Moira sawmill in the south-west to Los Fierros. From there, the main timber road north connects to Bella Vista Lagoon. The Park can also be reached from south of the border with Brazil, through the Marco Falso area. Many communities near the Park, such as Florida, Porvenir, Piso Firme and Remanso, Los Fierros, Flor de Oro, Mangabalito, Las Gamas and Huanchaca have landing strips. The average travel time from Santa Cruz city to Flor de Oro is 2.5 hours.

SCIENTIFIC RESEARCH AND FACILITIES

Except for some geological surveys at the beginning of the 20th century, the Park was little studied until about 1985. Since then the site has been the focus of research into the dynamics of the forest-savanna boundary and its relationship to climate change. Its forest islands may be remnants of a previously more widespread forest, or may be true islands of forest established by seed dispersal. Their floristic composition is therefore being compared with the nearby continuous forest. Species are classified by dispersal strategies and the number of different dispersal strategies is related to island size, distance between islands, and their relationship to the landscape. A multidisciplinary approach by scientists from several institutions has coordinated their investigations with ongoing botanical research in the Park. The plots and study grids established by the Missouri Botanical Garden botanists with Bolivian colleagues provide a framework in which scientists can study forest fragmentation, climate change, fire, and landscape ecology (Killeen & Schulenberg, 1998). One very notable area is the Cerrado of the plateau which has been isolated for millennia and provides an ideal laboratory for the study of the evolution of its ecosystems. With the Park's size, altitudinal gradient, complex lithologies, and diversity of landforms this has resulted in a range of protected ecosystems and species unmatched in the Cerrado biome. The Chiquitano dry forests are probably the node from which other biomes diverged and are therefore also a good subject for research into adaptive radiation (Landivar, 2001). The wetlands of the alluvial plains of the Iténez and Paragua Rivers are studied for their constant change due to the seasonal variations in water flow.

The participating research organisations include the Nature Conservancy, Conservation International, the Wildlife Conservation Society, the Smithsonian Institution, the Natural History Museum of Santa Cruz and the Bolivian Friends of Nature Foundation. These have carried out both rapid ecological inventories and detailed studies of some species, though many plants have yet to be identified or receive a name. The studies have contributed to the improvement of zoning and management of the Park. A well financed pilot carbon offset project has investigated carbon sequestration and developed remote sensing information. Participatory assessments with local villages have helped the understanding of their social and economic dynamics. For such a remote location the infrastructure available to scientists at the Flor de Oro and Los Fierros stations is excellent (Barborak, 2000).

MANAGEMENT

The Park's remoteness has preserved its intact ecosystems even beyond its boundaries in Bolivia. It is under the co-management of the National Protected Areas System (SERNAP) and the NGO Friends of Nature Foundation (FAN). This system is permitted by the General Law of the Environment 1.331 of 1991, and was agreed in a ten-year contract between the Ministry of Sustainable Development & Environment, SERNAP and FAN. By this, obligations and rights were transferred from the state to FAN along with funds from the International Bank of Reconstruction and Development through a donation agreement. FAN is responsible for managing, patrolling and administering the site, following guidelines prepared by SERNAP (Torres *et al.*, 1999).

The Park's long-term 1996 management plan prepared by The Nature Conservancy (TNC) and FAN, updated in 2002, recommended an increase in the number of rangers, the demarcation of Park boundaries, the eradication of livestock from the Estancia Flor de Oro, a monitoring program and the development of a training program for eco-tourism staff. Annual operational plans and more detailed monthly protection and resource monitoring plans are prepared regularly. There is no decreed buffer zone but much of the west flank is included in the Alto Paraguá Forest Reserve, almost all of which has been legally titled to three communities west of the Park. On the Brazilian side of the border there are several smaller state protected areas in Mato Grosso and Rondonia, and the Brazilian and Bolivian authorities have met on a proposal for a 10-million hectare biological corridor extending north from the Park along the Iténez River.

SERNAP required an administrative structure of the Park consisting of three committees, for administration, scientific advice and eco-tourism. The Administration Committee is formed by the director, a representative of each neighbouring community, a representative of the Municipality of San Ignacio, a member of SERNAP, a representative of the Prefecture of the Department of Santa Cruz and a member of FAN. The Scientific Advisory Committee, is formed of no more than five well known scientists. The Local Eco-tourism Council has representatives of SERNAP, FAN, the Tourism Directorate of Santa Cruz Department, the Prefecture of Santa Cruz, the Municipality of San Ignacio and the combined territorial organisations of five local communities.

In 1996, the Bolivian government entered into an ongoing partnership with TNC, FAN and three major U.S. corporations (American Electric Power, PacifiCorp and BP Amoco) to initiate a 30-year forest conservation project: the Noel Kempff Mercado Climate Action Project, to help reduce global greenhouse gas emissions using scientific methods to quantify, monitor and certify carbon sequestration. The main source of carbon offsets was the termination of existing logging concessions on over 500,000 hectares of government-owned land which are then allowed to regenerate naturally, storing carbon as the forest recovers. The carbon offset credits generated are divided between the government (46.5%) and the industry sponsors (53.5%), with 5% to AEP, the lead investor. For this the Bolivian government added almost 345,000 ha of forest to the Park. In 2000, supported by USAID, KFW (Germany) and TNC, the project was granted an endowment fund which has enabled FAN to recruit staff and build a network of 10 ranger stations, providing substantial support for Park and buffer zone management (Barborak, 2000). The project also sponsors activities that will ensure future protection of the Park's biodiversity by supplementing the endowment fund, fostering sustainable micro-enterprises for the local Indigenous Communities Association and providing training in agribusiness and ecotourism. The lack of high tourism potential, and the fact that the Park is not a source of water for urban or industrial uses or hydropower, means that innovative funding sources and mechanisms such as carbon projects will be extremely important to guarantee financial viability of the protected area in the long run.

MANAGEMENT CONSTRAINTS

As roads are opened in the surrounding jungle illegal logging and gold mining may begin to impact the area. At present, the extraction of river turtle eggs from the beaches of the Iténez River is a cause of major concern. The turtles are also hunted. Populations of maned wolf, pampas deer and marsh deer are potentially vulnerable to diseases caught from domestic animals, a threat being minimised by the removal of all domestic and feral dogs and cattle. An exception is made for the use of horses or mules as expedition pack animals, but this is carefully evaluated to weigh the risk of disease transmission to native mammals. During the dry season, there is risk of fires, aggravated by the difficulties of early detection and of the logistical constraints to fighting them. There is also commercial fishing by Brazilians along the Iténez River and occasionally, illegally, in smaller tributaries and bays on the Bolivian side of the border. Bank erosion along the Iténez River is another hazard for new infrastructure at the Flor de Oro camp built very near the river's edge.

Drug trafficking is a threat which threatens the security and authority of Park staff, especially in the area bordering Brazil and on the road to Piso Firme. To mitigate this problem, efforts have been made to coordinate the activities of the Military Police, the Bolivian Army, SERNAP and FAN (Torres *et al.*, 1999).

STAFF

In 2000 the Park had 45 employees, including 25 rangers, deployed in 10 ranger stations and administrative posts ringing the Park. Expert administrative support is provided by FAN from its headquarters in Santa Cruz, and FAN and SERNAP personnel provide training courses. The provision of equipment and infrastructure is effective and staff morale and stability were high.

BUDGET

The Park's large size, remoteness and logistical difficulties result in very high fixed costs. From 1991 to 1998, the Parks in Peril Program mounted by TNC and USAID invested through FAN a total of US\$913,139 for park management. In 1993, the Swiss government gave FAN US\$800,000 to develop an eco-tourism program. In 1995, a FAN-TNC joint venture was granted US\$105,872 from the Bolivian government to prepare the management plan. In 1995, a ten-year agreement for management of the Park was signed with funds provided by the Debt for Nature Swap Programme /JP Morgan and two U.S. banks, GTEF and PCBB (Torres *et al.*, 1999).

In 2000 the pioneering carbon offset project supported by USAID, KFW and TNC, was granted an endowment fund of US\$1.5 million that covered 20% of the \$600,000 operational budget. The government committed US\$250,000 a year to cover recurrent costs during the life of the project and to use the proceeds from the sale of carbon offsets generated on conservation projects elsewhere in Bolivia. This includes contributions for basic operating costs of over \$100,000, plus earnings on the endowment, user fees, and contributions as part of the \$9.5 million Climate Action Project.

LOCAL ADDRESS

The Director, Friends of Nature Foundation, Calle Agreda No.1100 Esquina Bumberque, Santa Cruz de la Sierra, Bolivia.

REFERENCES

The principal source for the above information was the original nomination for World Heritage status which includes a detailed list of published and unpublished material on the Park.

Barborak, J. (2000). *World Heritage Nomination - IUCN Technical Evaluation Noel Kempff Mercado National Park (Bolivia)*. Report for IUCN, Gland, Switzerland.

da Silva, J. (2001). *Cerrado (NT0704)*. WWF WildWorld Report, Gland, Switzerland.

IUCN (2009). *The IUCN Red List of Threatened Species*. Gland, Switzerland & Cambridge, U.K.

Killen, T. & Schulenberg, T. (1998). *A Biological Assessment of Parque Nacional Noel Kempff Mercado, Bolivia*. Conservation International Rapid Assessment Working Paper 10, Washington.

Landivar,R. (2001). *Chiquitano Dry Forests (NT0212)*. WWF WildWorld Report, Gland, Switzerland.

Parker, T., Gentry, A., Foster, R., Emmons, L. & Remsen J. (1993). *The Lowland Dry Forests of Santa Cruz, Bolivia: A Global Conservation Priority*. Conservation International Rapid Assessment Program Working Paper 4, Washington, U.S.A.

Torres, H., Moreno, A. & Justiniano, H. (1999). *Nomination of Noel Kempff Mercado National Park by the Republic of Bolivia for Inclusion in the World Heritage List of Natural Sites*. National Protected Areas System of Bolivia. 30 pp. + Annexes.

DATE

May 2000. Updated 11-2000, 5-2009, May 2011.