World Heritage Sites

Protected Areas and World Heritage

PANTANAL CONSERVATION AREA
BRAZIL

The Pantanal Conservation Area is a cluster of four protected areas in southwest Brazil. The site covers 1.3% of Brazil's Pantanal, one of the world's largest freshwater wetlands, fed by the region's two major rivers, the Cuiabá and the Paraguai. It is the only area of the Pantanal that remains partially flooded during the dry season when it becomes a natural wildlife refuge. The abundance and diversity of its vegetation and animal life are spectacular and through the dispersal of nutrients the site is the region's most important reserve for maintaining its fish stocks. It demonstrates on a small scale the ongoing ecological and biological processes of the Pantanal, and the inclusion of the Amolar Mountains gives the site a unique ecological gradient as well as a dramatic landscape.

COUNTRY
Brazil

NAME
Pantanal Conservation Area

NATURAL WORLD HERITAGE SERIAL SITE
2000: Inscribed on the World Heritage List under Natural Criteria vii, 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 (vii), (ix) and **(x)**: The site is representative of the Greater Pantanal region. It demonstrates the on-going ecological and biological processes that occur in the Pantanal. The association of the Amolar Mountains with the dominant freshwater wetland ecosystems confers to the site a uniquely important ecological gradient as well as a dramatic landscape.
The site plays a key role in the dispersion of nutrients to the entire basin and is the most important reserve for maintaining fish stocks in the Pantanal. The area preserves habitats representative of the Pantanal that contain a number of globally threatened species. The area is a refuge for fauna as it is the only area of the Pantanal that remains partially inundated during the dry season.

INTERNATIONAL DESIGNATION
1993: Pantanal Matogrossense National Park designated a Wetland of International Importance under the Ramsar Convention (135,000 ha).
2000: The Pantanal designated a Biosphere Reserve under the UNESCO Man and Biosphere Programme (core area: 664,245 ha).
2002: The nearby SESC Pantanal Private Natural Heritage Reserve designated a Wetland of International Importance under the Ramsar Convention (87,870 ha).]

IUCN MANAGEMENT CATEGORY

Pantanal Matogrossense National Park	II National Park
Dorochê Private Natural Heritage Reserves	Ia Private Reserve
Acuziral Private Natural Heritage Reserves	Ia Private Reserve
Penha Private Natural Heritage Reserves	Ia Private Reserve

BIOGEOGRAPHICAL PROVINCE
Campos Cerrados (8.30.10)

GEOGRAPHICAL LOCATION

The composite site is in southwestern Brazil in southern Mato Grosso State and northwestern Mato Grosso do Sul, on the international border with Bolivia. It lies at the confluence of the São Lourenço and Paraguai rivers 120 km north of the city of Corumba between 17°26' to 17°52'S and 57°10' to 57°41'W.

DATES AND HISTORY OF ESTABLISHMENT

1981: Pantanal Matogrossense National Park designated by Federal Decree No.86.392;

1993: The National Park declared a Ramsar Wetland;

1996: The three private reserves designated Private Natural Heritage Reserves by Federal Decree.1.922;

2000: The Pantanal designated a UNESCO Biosphere Reserve.

LAND TENURE

Pantanal Matogrossense National Park is owned by the Federal government. The Private Natural Heritage Reserves are privately owned by the Ecotrópica Foundation which manages all four sites for the Ministry of the Environment (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis - IBAMA).

AREA

The Complex totals 187,818 ha, 1.3% of the Brazilian Pantanal, 98% of which is privately owned:

Pantanal Matogrossense National Park	135,000 ha;
Dorochê Private Natural Heritage Reserve	26,518 ha;
Acuziral Private Natural Heritage Reserve	13,200 ha.
Penha Private Natural Heritage Reserve	13,100 ha;

Adjacent Bolivian protected areas are the San Matías Area of Integrated Management (2,918,000 ha), the Otuquis Pantanal National Park and Area of Integrated Management (totalling 1,005,596 ha), and 4,600,000 ha of Ramsar Wetlands (Ramsar, 2001; Swarts, 2000b).

ALTITUDE

From 80m to ±900m (Amolar Mountains. IUCN, 2000).

PHYSICAL FEATURES

The immense alluvial plain of the Pantanal in the upper Paraguai River basin of southwestern Brazil is the largest virtually unmodified freshwater wetland in the world. Its size is variously estimated between 139,000 sq.km in Brazil itself to 210,00 sq.km for the entire area. About 85% is in Brazil, some 10% in southeastern Bolivia and the rest in northeastern Paraguay. The basin is distantly surrounded on the north and east by the low uplands of the Planalto, the northern slopes of which drain to the Amazon basin and the eastern slopes to the Rio Paraná. These uplands are part of the crystalline PreCambrian Central Brazilian Shield. The subsidence that created the basin probably occurred about 2.5 mya and was subject to severe climatic changes during the Quaternary period: it was a sandy desert during the last glacial period 13,000 years ago (Male, 2001). These resulted in the many different geomorphologic formations covered today by a wide variety of vegetation types (Junk & de Cunha, 2005).

The Paraguai is part of the second longest river system in South America, the Paraguai – Paraná - Rio Plata, and flows 2,550 km to its junction on the Argentine border with the Paraná. The Pantanal region is largely a flat landscape mosaic of rivers, perennial wetlands, lakes, lagoons, seasonally flooded savannas, palms, gallery forests and terrestrial forests sloping imperceptibly from northeast to southwest. In the lowest areas, it is covered by thousands of permanent and semi-permanent lakes, oxbows and ponds: *Pântano* translates as 'swampy floodplain'. Between October and April, heavy rains cause the Paraguay River and its main tributaries, the Cuiabá, São Lourenço, Itiquiera, Taquari, Negro and Miranda-Aquidauana to overflow, flooding an area almost ten times the size of the Florida Everglades. During this season the upper basin floods extensively and changeably, the flood level deepening from north to south where the floodplain narrows. The area can be broadly divided into three sub-regions by the degree and duration of this flooding: the higher Alto Pantanal, where about 20 percent of the area floods to 30-40cm for two to three months every year; the Medio Pantanal, where more extensive flooding lasts from three to four months; and the Baixo Pantanal,

where low topographic relief allows almost complete inundation to depths of 3-4m or more during the wet season (Henebry & Kux, 1999). The soils are poorly drained and acidic except where alluvial.

The World Heritage complex of sites lies in the centre of the Pantanal between the Paraguai and Cuiaba-São Lourenço rivers just below the junction of the latter (there called the Rio Alegre) with the Paraguai. The Dorochê Reserve is at the northeastern end of the Park and the Acurizal and Penha Reserves, partly in the Amolar Mountains, are at the southwestern end. It was designated as representative of the Pantanal as a whole though that is an approximation since some botanists divide the area into as many as 19 sub-regions and the Complex is only 1.3% of the area of the Brazilian Pantanal (IUCN, 2000). Acurizal and Penha Reserves are located on a strip of land alongside the Paraguay River that includes the Amolar Hills on the Bolivian border which are outliers of the Serrania de Tapia. These have several very steep cliffs and present an abrupt transition between the seasonally flooded floodplain and the dry uplands in a regionally unique altitudinal and ecological gradient (Eberhard, 1999).

The most important waterways of the complex and its main sources of water are the Paraguai and the 1,000 km Cuiabá River, its principal tributary, which drains an area of approximately 10,000,000 ha, and reaches the confluence with the Paraguai River with an average discharge of 480 cubic metres per second. The site is often largely under water because of the damming of the Rio Alegre by the greater flow of the Paraguai. The complexity of the Cuiaba's hydrological regime reflects that of the greater Pantanal. Hydrological studies documenting the dynamics of the water basin also indicate the presence of a network of underground streams and subsurface water movement which spreads in the wet season over much of the region. Every May this flood pulse begins to ebb and the water level slowly falls. When the ground is dry again, a fine layer of humus loam covers the surface with a mixture of sand, organic matter and seeds which greatly enriches the soil (WWF, 1999).

CLIMATE

The Pantanal has a tropical semi-humid climate with a mean annual temperature of 25°C, with average temperatures in winter of 21°C and in summer of up to 32°C when there are swarms of mosquitoes. Its annual rainfall is between 800 and 1,600mm, concentrated into a wet summer between October and April which precipitates the floods which can flood up to 78% of the area (Male, 2001), and a dry winter season from May to September (Rizzini *et al.*, 1988).

VEGETATION

Its wide variety of ecosystems, seasonal cycles, and successional changes, with abundant water and high productivity, make the Pantanal one of the most biologically diverse systems in the world. Owing to its location in the centre of South America, the Greater Pantanal has fauna and flora typical of the Amazon, the dry *cerrado* savanna of the surrounding hills, the Bolivian Chaco and *Chiquitana* dry forest and Atlantic Forest ecosystems, which accounts for its remarkable if poorly known biodiversity. The region is a wetland between the dry savanna of central Brazil and the semi-deciduous forest to its south, but the site has examples of both ecological regions adjoining the floodplain, in the Amolar Mountains (Eberhard, 1999). Cerrado occurs on seasonally flooded lowlands, and in relatively open fields or *campos* dominated by grasses of *Paspalum* sp., *Hemathia* sp., *Digitaria* sp. and *Axonopus* sp., with small palm trees and shrubs. In areas to the west, higher trees of *jatobá* or Brazilian cherry *Hymeneae courbaril*, *ipê amarelo* and *ipê roxo* or yellow and purple trumpet trees *Tabebuia chrysantha* and *T. impetiginosa* and *taperabá* or yellow mombin *Spondias lutea*, grow, and near water the acurí and caranda palms *Attalea phalerata* and *Copernicia alba*. In the 10-15m high semi-deciduous alluvial forest the dominant species are *amarelao Apuleia molaris*, *capirepana Licania parvifolia*, *Inga* species and *ucuuba*, *Virola glaziovii.* A semi-deciduous forest of taller trees 15-18m high of *bacupari* or Cuban mangosteen *Rheedia macrophylla* and *louro-preto* or black cinnamon *Nectandra mollis*, among many others, grows on lowlands.

1,700 vascular plants were recorded for the Brazilian Pantanal (Pott & Pott, 1995) excluding aquatic species 100 species of which (40% of the total for the Pantanal) are found in the site (IUCN, 2000). Vegetation communities are divided by small changes in topography that determine the frequency and duration of the flooding they experience (Alho & Vieira, 1997). These waters are often covered with a vegetation of the most diverse floating plant community in the world (Por, 1995). In permanent *baías,* floating island masses of riverine vegetation or *camalotes* collect. These floating plants are the most important primary producers in the ecoregion. Common species include *Eichhornia crassipes*, *Salvinia auriculata*, and *Pistia stratiotes*. The *Victoria amazonica* lily is the most

spectacular of the aquatic plants. Rooted species growing on lake edges and in shallower waters include *Cyperus giganteus*, *Scirpus validus* and *Typha dominguensis*. *Campos* or seasonally flooded grasslands are dominated by herbaceous plants that can tolerate extremes of flood and fire (Pinder & Rosso 1998). Typical of swamps, near the rivers and on water-logged patches of earth are clumps of acurí palm trees, forming the palm-tree groves and woodlands for which the region is famous. On slightly higher ground cerrado vegetation ranges from a woodland savanna with scattered shrubs to savanna forest (Male, 2001). The slopes of the Amolar Hills are covered by several vegetation types. They have the only pristine semi-deciduous alluvial forest in the whole Pantanal and some of the very endangered Bolivian lowland dry forests (Eberhard, 1999; The Nature Conservancy, 1999).

FAUNA

The sheer abundance of large birds, reptiles and mammals resulting from its great physical variety make the Pantanal a huge reservoir of biodiversity, though its levels of endemism are low owing to its recent origin and the constant flood-related migrations of its fauna. While the Pantanal is a single biome, it is composed of at least 10 biogeographic units with varying soils, vegetation and hydrology, and therefore contains several different animal communities (Eberhard, 1999).The World Heritage site itself is only partially flooded in the dry season and thus attracts animals at that time, including fish, which might have migrated hundreds of kilometres, drawn to the more oxygenated waters flowing off the Amolar Mountains. It is also one of the first areas flooded and therefore disperses nutrients and larvae to the rest of the Pantanal. The extremely diverse fauna of the site includes 80 species of mammals, 50 reptiles and over 300 fishes (IUCN, 2000). Figures given for the neighboring Bolivian Pantanal are 120 mammals, 90 reptiles, 40 amphibians and 1,065 butterflies (WWF, 2007). There are abundant southern spectacled caiman *Caiman crocodilus yacare* and capybara *Hydrochoerus hydrochaeris,* its main prey*,* with dense populations of species of conservation concern such as jaguar *Panthera onca*, maned wolf *Chrysocyon brachyurus*, giant armadillo *Priodontes giganteus* (VU)*,* giant anteater *Myrmecophaga tridactyla* (VU) and marsh deer *Blastocerus dichotomus* (VU). Other common Pantanal species include black howler monkey *Alouatta caraya*, black-capped capuchin monkey *Cebus apella*, red-bellied titi monkey *Callicebus moloch*, South American coati *Nasua nasua,* longtailed river otter *Lontra longicaudis*, tayra *Eira barbara*, ocelot *Leopardus pardalis,* jaguarundi *Puma yagouaroundi* and several other small canids and felids, lowland tapir *Tapirus terrestris* (VU), pampas deer *Ozotoceros bezoarticus* and anaconda *Eunectes murinus*.

The Greater Pantanal is a natural bird sanctuary with over 650 recorded species in 66 families.The endemic chestnut-bellied guan *Penelope ochrogaster* (VU) is known from the region. It is one of the most important breeding grounds for wetland birds such as Jabiru stork *Jabiru mycteria*, wood stork *Mycteria americana*, anhinga *Anhinga anhinga*, great egret *Casmerodius albus*, roseate spoonbill *Platalea ajaja*, and many species of herons, ibis and ducks which congregate in enormous flocks. Parrots are also very diverse, with 26 species recorded in the Pantanal including the blue-fronted amazon *Amazona aestiva*, blue-and-yellow macaw *Ara ararauna*, red-and-green macaw *A.chloropterus*, red-shouldered macaw *Diopsittaca nobilis*, and the endangered hyacinth macaw *Anodorhynchus hyacinthinus* (EN), the world's largest parrot. It was abundant in the 19th century but habitat destruction for agriculture, ranching and the national and international pet trades have brought it to near extinction: much of the tree's remaining population of about 3,000 birds lives in the Pantanal where 95% of its nests are in a single type of tree where the macaws live high up, making their observation difficult.

CONSERVATION VALUE

The site includes a small but impressive example of the wide variety of ecosystems and species of Brazil's Pantanal, and of the region's complex seasonal hydrologic cycles. The biological corridor formed by the cluster of protected areas includes the dry forests and savannas of the Amolar Range which are one of the most endangered ecosystems in Latin America (Dinerstein *et al.*, 1995). The complex lies within a WWF Global 200 Eco-region and is both a Ramsar Wetland and within a UNESCO Man & Biosphere Reserve.

CULTURAL HERITAGE

Human occupation of the Pantanal dates back to about 5,000 BP, when the climate became moister. The arrival of Europeans quickly reduced the native population until today, only about 50 Guató Nation and 270 Bororo live in the Brazilian Pantanal (Da Silva & Silva, 1995). The Cuiabá River basin was one of the first areas colonised in western Brazil, by the *bandeirantes,* marauding hunters

of slaves and gold, who from the 16th Century on, opened the country up. The first settlers came from São Paulo state via the Tietê, Paraná and Paraguay rivers to the Cuiabana Plain in the northern highlands where they found gold. Cuiabá was founded in 1719. After the Paraguayan war and with the decline of gold mining, extensive creation of large livestock farms began, beginning from the north: 56% of the region still has farms larger than 10,000 ha. In the 20th century, peopling of the region's larger towns was mostly by railroad which reached Mato Grosso in 1914, and via Asunción, Buenos Aires and Montevideo. This resulted in local absorption of countless cultural and folkloric practices in music, dressing, language and food.

LOCAL HUMAN POPULATION

About three million people live in the Greater Pantanal and its neighbouring highlands though the swamps are sparsely populated for lack of dry land. Cuiabá, the capital of Mato Grosso state, is the region's major city with a population of almost a million. To the north of the region, farming, especially for soybeans is important, but most of the landowners in the southern Pantanal lowlands are cattle ranchers. The annual floods drive some of the rural population to urban centres until the waters subside. In many areas, roads disappear under the floodwaters, which then become the common means of transport and communication. But during the dry season much of the land emerges from the floods and becomes pasture. The Conservation Area itself is often largely under water. The two nearest local settlements are Porto Jofre just to its north, a small place with a landing stage, and Amolar, just to its south. No local people live within the site but it is roamed by the local gauchos.

VISITORS AND VISITOR FACILITIES

The level of visitation is not measured though the area is popular with sport fishers and wildlife tourists and 46 large boats, some carrying more than 100 people, bring in hundreds of tourists each year (Eberhard, 1999). A new Park visitors' centre can accommodate groups of up to 15 people with meeting rooms and bedrooms, as can the Ecotrópica centre at Acurizal. A number of ranches *(fazendas)* ranging from comfortable to basic, provide accommodation and food. The Brazilian Pantanal is reached from the north via Cuiabá, and from the south via Campo Grande, capital of Mato Grosso do Sul. Cuiaba is served by air and small planes can be hired for the trip to Acurizal airstrip. There is vehicle rental at the airport and in the city but it is not possible to hire a four-wheel drive car. During the dry season the *Transpantaneira* can be negotiated with a normal vehicle. This is a raised dirt causeway that runs for 145 km from Poconé 100 km south-west of Cuiabá, to Porto Jofre 120 km further south, where boats leave for the Park. There are no other roads in the northern Pantanal. The road from Campo Grande to Corumba is paved for most of its 400 km, although parts are in poor condition. Corumba has an international airport and is well served by air as well as by overnight bus from Sao Paulo.

SCIENTIFIC RESEARCH AND FACILITIES

The Complex has good infrastructure for researchers, constructed from materials from the Cuiabá River, and the visitors' centre has accommodation and a laboratory for scientists. The Ecotrópica Foundation headquarters in the Acurizal Reserve was renovated in 1995-96, with funds from the National Environment Program, and has excellent facilities for visitors and scientists. A Research Plan for the Park was drawn up in 1997 with the assistance of the Nature Conservancy (TNC) after discussion with the various stakeholders. The current numbers of fauna and fauna are bound to increase following a systematic research program. This is particularly important for the Amolar Hills, where most of the forests have been insufficiently studied. Recent use of collar radio transmitters on the endangered hyacinth macaw permits detailed study of the species' movements and behaviour, especially useful because the birds can travel more than 25km a day.

MANAGEMENT

According to a conservation assessment by the WWF and the Biodiversity Support Programme the Pantanal is considered globally outstanding for biological distinctiveness, is very vulnerable for conservation, and has the highest of regional priorities for conservation action (Olson *et al.*, 1998). The local people, scientists, governmental and non-governmental agencies and politicians now increasingly favour its preservation. In 2000 the Ecotrópica Foundation based the management of the site on integrating the three private reserves with the Park. The decree allowing their establishment requires that they be managed for conservation in perpetuity (IUCN, 2000). The Integrated Management Plan for the National Park and the Private Reserves was prepared with IBAMA, the Ministry of the Environment, with the Ecotrópica Foundation coordinating. This also involved participation by TNC, the Universities of Mato Grosso and Mato Grosso do Sul, experts

from Everglades National Park and from the Ministries of the Environment of Bolivia and Paraguay. The Foundation also raised funds to develop the long-term management plan for the Complex (Eberhard, 1999) the boundaries of which are marked by buoys where under water. In 2001 Brazil established The Pantanal Programme to foster sustainable development in the Upper Paraguay River Basin, the long-term goal being to employ the area's natural resources in sustainable economic development, human, economic and ecological.

The site is a no-take zone for fishing and has been the most important reserve for maintaining the Pantanal's fish stocks. It preserves habitats representative of the region that contain a number of globally threatened species and is a dry period refuge for fauna as the only area that remains partially unflooded during the dry season. It is also a key site in the floodwater dispersal of nutrients and larvae to the entire basin and shares in the cleansing and flood moderation functions of the region's waters. A similar protected area, the San Matías Sustainable Development Area, is contiguous in Bolivia. Preparation of the Integrated Management Plan with experts from Bolivia and Paraguay included discussion of transboundary cooperation. The Foundation runs a sister park project with Everglades National Park to improve staff training and park management. Periodic monitoring is done by IBAMA and the Forest Police, by photographic survey, satellite image analysis and by water quality specialists.

MANAGEMENT CONSTRAINTS

Pressures for modernisation in the region were of relatively low impact until the last two decades of the 20th century. Unplanned settlements and developments for the area's growing population now threaten to compromise the whole dynamic but fragile series of ecosystems. Agricultural development of the upland Cuiabá River Basin has increased dramatically since the 1970s. Large areas of cerrado have been logged and cleared for massive agribusinesses, mostly of soya bean production for export. A warning in 2006 from Conservation International stated that deforestation in the Brazilian Pantanal had quadrupled in recent years and could disappear by 2050: already, 17 percent of the region's original vegetation had been lost. Dikes and canals built on upstream farms for new pastures alter water flow patterns and intensify floods downstream, affecting the natural balance between wet and dry seasons and the area's capacity as a hydrological buffer. The deforestation has resulted in extensive soil erosion and sedimentation of the lowland waterways. Regions which used to be completely flooded during the rains and totally dry during the dry season now remain covered by water throughout the year. And, as the cerrado soils are poor, farmers use vast amounts of fertilisers and pesticides which have greatly increased the pH level of several important waterways. Cattle ranching is an old tradition in the Pantanal and is generally compatible with the ecological functions of the region. But it also has adverse effects on the native vegetation from fires set for new grass, increased river sedimentation, soil erosion, infiltration and in reduction of wildlife habitat.

Although the Complex has not yet been affected, pollution by mineral extraction is also a serious threat. The illegal use of mercury to extract gold releases huge amounts of the poison via rivers flowing into the Pantanal: recent studies indicate high levels of mercury in kingfishers, raptors and native fish. Millions of gallons of untreated wastewater, sewage, organic wastes and storm run-off, enter the waterways each day from the upstream populations, contributing a heavy sediment load. Even greater potential threats to the stability of the complex hydrologic regime and its flood-absorption capacity are the construction of hydroelectric plants such as the large Manso reservoir in the upper Cuiaba catchment, and the *Hidrovia* project. This proposed a 3,400 km regional navigable waterway down the Paraguay and Paraná rivers linking Cáceres near Cuiaba and Nueva Palmira in Uruguay involving rock-blasting, straightening, dredging and damming the rivers for large ships to transport soybeans overseas and would be very disruptive to the present ecosystem (Gottgens *et al.*, 1998; Silveira, 1997). It has since been judged unviable but could still be built piecemeal.

Habitat destruction, hunting, wildlife poaching, over-fishing and destruction of rare species by the live animal trade are widespread although hard to quantify. Unemployed farm labourers make up gangs hunting for caimans and other animal skins. During six months in 1985 an estimated 18,800kg of skins (representing more than 500,000 animals such as jaguars, maned wolves, caimans and snakes) were exported to European, Asian and North-American markets. Only a fraction of this trade is confiscated and most offenders are never captured. However, enforcement has improved since the 1990s, and the trade in caiman skins has been curtailed. Pet collectors not only focus on parrots and macaws but also capture monkeys. A pair of hyacinth macaws had a market value in 1990 of between US$8,000 and US$10,000 in the USA and Europe (Mittermaier *et al.*, 1990). Regulations are inadequate and the Pantanal's remote location and a general lack of

enforcement has made poaching difficult to stop. Again, the site is not affected and has, since protection, seen a clear recovery in numbers of species.

Programs to attract tourists to the Pantanal have been developed without proper planning, particularly in the north. They tend to centre on fishing in a kind of pseudo-ecotourism, which has caused an increase in illegal sport fishing, disturbed bird nesting areas and created a demand for pollution-causing luxuries (The Nature Conservancy & Ecotrópica Foundation, 1999).

STAFF

The National Park has a staff of eight, including a General Director, one permanent and six reserve rangers who live in Cuiaba. The Ecotrópica Foundation has one person in Cuiabá who is responsible for the three Natural Reserves, and three field-workers based on the reserves.

BUDGET

In 2000 IBAMA dedicated of USD$80,000 from the Federal Budget for managing the National Park. In addition, nearly USD$45,000 was assigned to the National Park from the State budget. An agreement between the Ministry of the Environment and the Interamerican Development Bank has granted US$400 million for conservation projects in the whole Pantanal region, which included more than US$1 million to facilitate public use of the Park. The Ecotrópica Foundation has a budget of US$120,000 for managing the private reserves. The Ministry of the Environment, through the GEF funded project Watershed Management of Alto Paraguay, allocated close to USD$140,000 for the preparation and first phase of implementation of the integrated management plan. The Ecotrópica Foundation also raised funds through TNC and a number of U.S.Foundations to support the preparation.

LOCAL ADDRESSES

The Director, Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis (IBAMA-Brasilia),

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The Director, IBAMA-Cuiabá, Rua 03 Number 391, Bairro Boa Esperança, Cuiaba – 78068-370, Mato Grosso.

The Director, Ecotrópica Foundation, Acuziral Reserve, Amolar, Mato Grosso do Sul, Brazil.

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