



# The Hyacinth Macaw Conservation Project – Biology, Management and Conservation

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**Sponsors:** WWF-BRASIL, Toyota do Brasil, R. E. Caiman, Vanzin, Brasil Telecom.





Young Hyacinth Macaw in the Pantanal Brazil. Photo: Michael Sutor

## THE PANTANAL ECOREGION

An ecoregion is defined as “a set of natural communities, geographically distinct, which share most of their species and ecological dynamics, and that present similar environmental conditions in which ecological interactions are critical for their long-term survival” (Dimerstein et al., 1995).

The Pantanal Ecoregion, with approximately 170.000 square kilometres, is the largest continental wetland in the planet. Located in the States of Mato Grosso and Mato Grosso do Sul, in Brazil, and stretching over Bolivia and Paraguay, the Pantanal is a singular territory, unique on the planet.

The landscape in the Pantanal is the result of a unique hydrological cycle. During the rainy season, up to 80% of the region is flooded, thus creating a perfect environment for aquatic birds and alligators. It is a complex system of flooded areas, areas susceptible of being flooded and forest formations, such as prairies, savannas, semi-deciduous and evergreen forests.

### **Ecological importance of the Pantanal:**

The Pantanal:



- Contains elements of the fauna and flora of the Amazon region, of the Cerrado savanna and of the Chaco;
- Is home to a large diversity of species of flowering plants (1,647 species);
- Contains a high diversity of species of the fauna, including 263 species of fish, 122 species of mammals, 93 species of reptilians, 1132 species of butterflies and 656 species of birds;
- Contains a large diversity of environments, such as flooded areas, forests, cerrado savanna and plains susceptible to flooding;
- Has a low demographic density and extensive productive activities;
- Has experienced few man-induced alterations, thus maintaining its natural characteristics;
- But these exist in a fragile balance, totally dependent upon the water cycle.

### **THE THREATS to the Pantanal**

If compared to other Brazilian ecoregions, Mato Grosso Pantanal is fairly well preserved.

However, it is a highly fragile environment, where any negative impact on the sources and upstream sections of rivers or attempts to modify the natural course of waters may drastically alter the whole flood plain.

This is made worse by the fact that only 0.55% of the Pantanal territory is protected by strict-use federal conservation areas.

During the last few decades, the national and regional development processes have been gradually changing the natural characteristics of the Pantanal, thus representing threats to the natural equilibrium of the ecoregion.



These threats are both external and internal.

### External Threats

External threats are those which have their origin in the areas surrounding the Pantanal plain and derive from actions external to the natural environment. These are actions that change the distribution of the Pantanal's various environments. These include:

- expansion of agriculture around the plain to unfit areas, bringing about the silting-up of water courses and their chemical contamination;
- disorderly urban growth around the plain and ensuing contamination of water courses;
- large regional development projects (such as the road system and infra-structure works) that alter the natural landscape and bring about negative impacts over natural conditions.

### Internal Threats

Internal threats are those that emerge as a result of productive activities carried out in the region. These include:

- adoption of agricultural and animal-husbandry practices that produce major environmental impacts, such as uncontrolled burning and the inappropriate use of intensive animal husbandry; and
- disorderly tourism.

**Due to its characteristics and the threats to which it is exposed, the Pantanal is considered vulnerable, of world-wide importance and a priority for the conservation of biodiversity.**

### **THE HYACINTH MACAW PROJECT**



The Hyacinth Macaw (*Anodorhynchus hyacinthinus*) is the largest macaw in the world. Measuring one metre from the tip of the beak to the tail and weighting 1.5 kilo it is impressive due to its cobalt blue colour. Easy to sight and quite noisy, the blue macaw is fairly well known by the public at large. A charismatic species, it is one of the main attractions of the Pantanal.

Its distribution originally encompassed Mato Grosso and Mato Grosso do Sul (Pantanal) and part of the States of Goias, Minas Gerais, Bahia, Piaui, Maranhao and Para.

However, due to its capture for national and international trade, for the gathering of feathers for Indian adornments and to the degradation of its habitat, the blue macaw became a species threatened with extinction.

The status of the hyacinth macaw in nature began to change in 1990, when the first studies of the species commenced, in the Pantanal of the Mato Grosso do Sul (Guedes, 1993). There are now realistic possibilities for their conservation, thanks to intensive field work that is helping to preserve, in its natural habitat, one of the most important assets of the State of Mato Grosso do Sul.

### **Goals of the Project**

- To promote the conservation of the Hyacinth Macaw in nature;
- To publicise, among the public at large, the importance of the conservation of the biodiversity of the Pantanal;
- To mobilise the community at large in favour of the conservation of the biodiversity of the Pantanal.



In the year 2002, the Hyacinth Macaw Project celebrated 13 years of continuous activity dedicated to the conservation of the great Hyacinth Macaw, and the Red and Green Macaw in the Pantanal of the Mato Grosso do Sul. The field work undertaken has catalogued 315 natural nests sites on 42 farms in five districts of the Pantanal, mainly in Nhecolândia, Miranda and Abobral. A total of 154 artificial nest boxes have been installed on 19 farms.

### **Principal activities of the Project:**

The main field and educational activities of the project include:

- Monitoring the behaviour and reproductive success of hyacinth and red and green macaws.
- The renovation of natural nests in hollow trees to extend their useful lives.
- The management of natural nests to reduce chick mortality due to predation, flooding of nest cavities and falling from the nest.
- Installation of artificial nests made from local wood to augment the numbers of natural nests, which are in short supply.
- The location and collection of detailed data on newly discovered natural nests.
- Veterinary studies, including general health, ectoparasites, and diseases.
- Analysis of genetic variability within the population.
- Locating roost trees and feeding areas of hyacinth macaws.
- Preparation of a fully integrated geographical information system recording nest location, status and habitat.
- Environmental education for tourists and school groups visiting the Ararauna Lodge (IPPAN/UNIDERP) and Caiman Ecological Refuge.
- Educational activities and permanent contact with the local population of the Pantanal. One can already notice that people recognise the importance of maintaining individuals of the species in nature and are proud to see them fly free.



## **Summary of The Hyacinth Macaw Project activities in 2002**

During this breeding season (2001/2002) the Hyacinth Macaw Project field team monitored 284 nests. These nests were located in 5 regions of Mato Grosso do Sul pantanal: Abobral, Aquidauana, Miranda, Nhecolândia and Rio Negro. We also found 19 new nests in these regions.

Of the nests that we monitored 71 were active, Abobral (8), Miranda (41), Nhecolândia (10) and Rio Negro (11). In all 81 chicks were born, and 71 chicks that fled at the end of the reproductive period, Abobral (4,4), Miranda (53,31), Nhecolândia (12,12) and Rio Negro (12,10).

The activities of environmental education were performed through lectures with guests of the Ararauna Logde (IPPAN/UNIDERP) and Caiman Ecological Refuge, college students, professionals in related areas attending over 500 people. Several Brazilian and international filming and reporting teams also visited the base of the project. Two teams in particular documented the work that has been done with the species to elaborate documentaries that will be seen by over a million people all over the world.

We received the visit of several representatives of the institutions that sponsor the project, like Toyota and WWF, and important people of the country's administration like the President of the Republic Fernando Henrique Cardoso.



During this breeding season we continued the experience with the active management of eggs and chicks. This was achieved by the replacement of the macaw's eggs with chicken eggs in some nests where the eggs and chicks were predated. The macaw's eggs were incubated artificially and the chicks were reintroduced to the nests within 5 days. Doing this we were able to save eight chicks from predation!

This year we carried out the first filmings of the hyacinth macaw inside the nest. Through a micro-camera donated by WWF-Brazil we monitored the females encubating the eggs, macaw with newborns and chicks rehearsing the flight. Some images can be found on the following site: [www.wwf.org.br](http://www.wwf.org.br)

### **Activities forecast for year 2003**

In addition to the continuation of population and nest monitoring activities, we plan to continue the monitoring with the micro-camera inside the nest, to record the its use, occupation, predation and the development of the chicks. This strategy will facilitate a significant increase in our knowledge of the reproduction of the species, which may provide grounds for further protection and management measures. The status of the hyacinth macaw as a flagship species will be emphasized, since this spectacular bird is both a symbol of the conservation of the Pantanal, and an element of environmental education among tourists and the public at large

### **Acknowledgments**

I thank the invitation of this IAS Convention organizers for the opportunity





offered. I thank UNIDERP and FMB for the execution and permanent support of all activities of the Project, the valuable partnership of WWF-Brazil that has been extremely important, the logistic support of Toyota do Brazil Ltda without what this project would not be possible. I am grateful for the cooperation and support of Refúgio Ecológico Caiman, Brasil Telecom S.A., Vanzin Escapamentos, Hyacinth Macaw Fund – Smart Family Foundation, Zoo de Doué-la-Fontaine, IBAMA and RENCTAS. I also appreciated the enormous assistance and cooperation of the Pantanal ranchers, farmers and local inns owners. I also thank all the assistants and volunteers who took part in the project cooperating and collecting dates and especially to my co-workers Carlos Cezar Correia and Douglas Kajiwara, biologist assistant and biologist respectively. Finally, all my gratefulness to my entire family, especially to my beloved husband, Joacilei Lemos Cardoso a very talented artist who has cooperated enormously with the project and nature conservation, through his marvellous paintings, admirable portraits of the local species.

