

# **CEOP Reference Site Data Set Metadata Information**

**LBA Site (October 01, 2002 to March 31, 2003 - EOP3, part A)**

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## **Abstract**

This document includes the Metadata and information the user should be aware of when using any of the LBA reference site data from the CEOP Central Data Archive (CDA) submitted for the measurement period October 01, 2002 to March 31, 2003. It includes a description of the measurement site, the instrumentation, the data collection and quality control procedures and some remarks pointing at peculiarities of specific data.

## **1. Data Set Overview**

### **1.1 Site and Time Period**

This description refers to the data from the LBA Pantanal site for the period October 01, 2002 – 0000 UTC to March 31, 2003 – 2330 UTC.

### **1.2 Site Coordinates**

1.2 All meteorological ~, radiation ~, soil ~, tower ~ and flux measurements have been performed at Pantanal Site. The coordinates for the Pantanal site are:

DMS:	19° 33' 35" S	57° 35' 0" W	
DD:	-19.56 S	-57.01 W	
UTM:	7837208.0	498951.25	21K

### **1.3 Site Operator**

The LBA Pantanal site is part of the LBA Project, managed by the Brazilian Institute for Amazon Research (INPA) which is subordinated to Brazilian Ministry of Science and Technology (MCT).

## 1.4 General Site Description

### Landscape

The Pantanal Mato Grossense National Park is part of the largest permanent freshwater wetland in the western hemisphere. It includes some of the largest and most spectacular concentrations of Wildlife in the Neotropics, made possible by the different types of environment and their transition areas. In this rich environment, there are several endangered species, among them the wild cat, the agouara, the swamp deer, the otter and the giant river otter of Brazil. One also finds the tiger heron (*Tigrisoma fasciatum*) and the giant armadillo (*Priodontes giganteus*). The number of such species makes this a region of great importance for the perpetuation of many of these species.

Located in the upper Paraguay River basin, the Pantanal straddles Brazil's border with Bolivia and Paraguay. Brazilian designation for "dry tree and shrub savanna". Enormous stretches of open grassy country with a more or less dense growth of bushes and low, often crookedly formed trees, are found in Central Brazil. Cerrado is usually found on well-drained, leached, acid soil which is poor in nutrients and has a high content of aluminum (Eiten, 1972). The woody plants of the cerrado are for a great part endemics; they show a high degree of fire resistance as an adaptation to the frequent camp fires occurring in the Brazilian savanna regions. In the Pantanal plain, cerrado occurs in many places with sandy topsoil not reached by groundwater

**Figure 1** Map of Brazil in the World



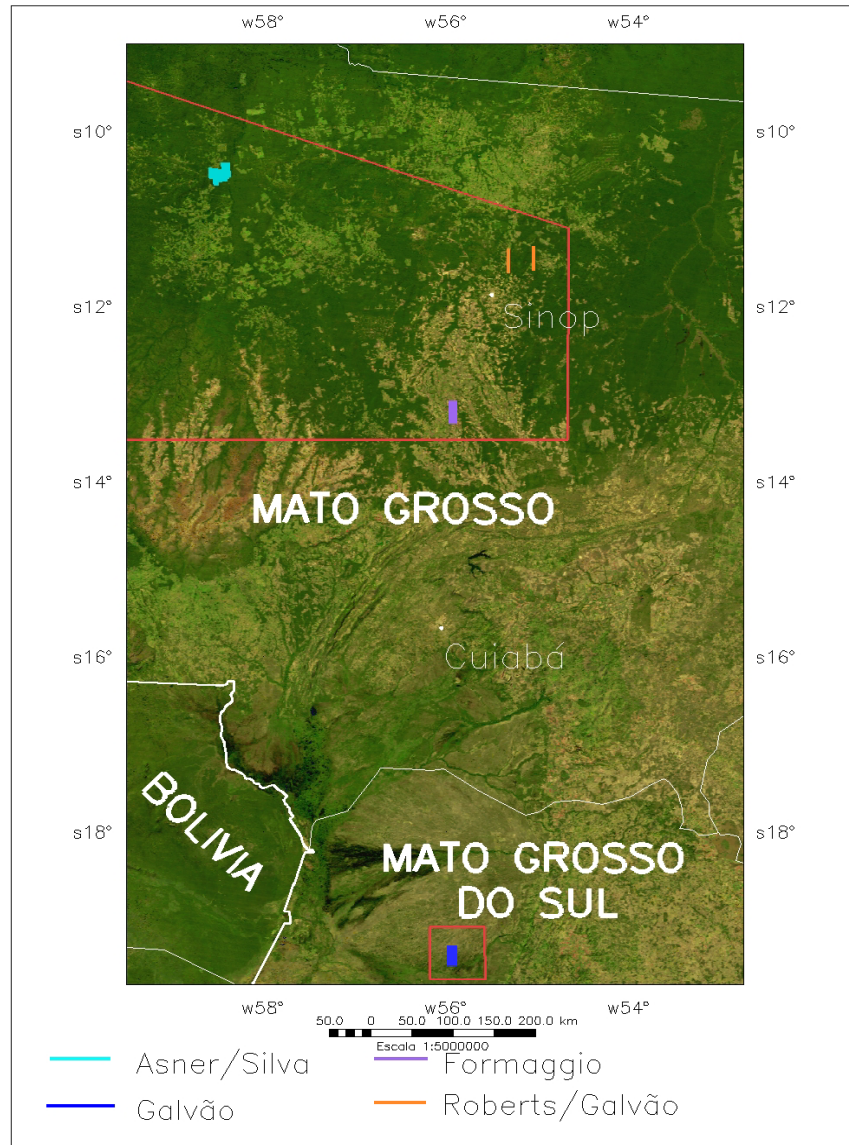
**Figure 2** Map of Brazil in South America



**Figure 1** Map of Mato Grosso

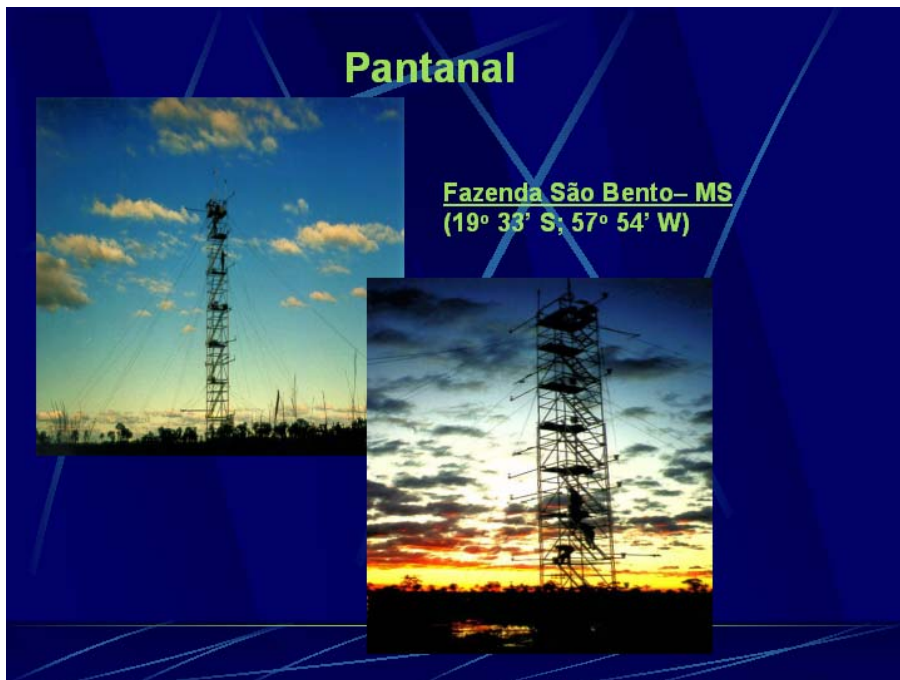


**Figure 2** Mato Grosso LBA-Air-Eco Planning





**Figure 3** Map of Pantanal- CEOP\_LBA Site



**Figure 4** Map of tower at Pantanal- CEOP\_LBA Site



## **Soil**

The soil is very permeable, even the larger rivers diminish in volume if the dry season is prolonged. During the flood season, from December to May, the land is fertilized by the suspended sediments (clay, silt, organic matter) in the waters. Which are deposit on the plains, making one think of the Nile in Egypt. The waters begin to lower in April, but only in the month of July does the soil become enough dry to support a car. From the beginning of July to the end of December, one can drive over the Pantanal without great difficulty. The dry season begins between May and October, and then, gradually, the rain begins again. This rhythm is essential for the life in the area.

## **Climate**

The annual temperature media fluctuate around 25°C. The highest temperatures occur usually early in the summer and may reach 40°C. According to Valverde (1972), the wet summer regime is due to the penetration of the equatorial continental air mass of Amazonian origin. The climate in the winter is dominated by the tropical-atlantic air mass coming from the Brazilian highland. Since the amphitheater of the Pantanal is open to the south, sometimes polar-antarctic atmospheric fronts advance into the area and winter temperature extremes of around 0°C may occur. These are the so called "*friagens*" which can provoke frost-bite etiolation of the plants over large swamp areas.

Humidity is usually around the mark of 70%. Reaching maxim of over 80% in the late summer (Tarifa,1986). Concerning the ecological conditions of this immense area, the rainy season is concentrated between October and March, there is a rainfall of 1000-1400 mm (Dubs,1992). Rainfall is slightly less than in the *cerrado* of central Brazil, but the Paraguay River and its tributaries swell to such an extent that the waters flood the low plain, covering it with a sheet of water 2-3m (sometimes even 4m) deep. The Pantanal therefore, is a large climatic enclave in which the run-off from the surrounding relatively wet highlands, carried by a series of large rivers, succeeds to maintain an allochthonous wetland environment under the conditions of a basically semi-arid climate.

## **1.5 Site References**

<http://www.lbaeco.org>

## **2. Instrumentation Description**

## **3. Data Collection and Processing**

### **3.1 Data Collection**

## **4. Quality Control Procedures**



## **5. Gap filling Procedures**

Data processing/gap filling:

Flag for dew point temperature and relative humidity set to I (when not M) to indicate that these variables were derived using a constant value for the air pressure (1000 mb).

## **6. Data Remarks**

This section gives specific additional information on different parameters the user should be aware of when using the data.

### **Disclaimer**

The data from the Pantanal LBA Site have undergone the QA/AC procedure described in section 4 before being transferred to the CEOP Central Data Archive (CDA). The data supplier, however, cannot guarantee the absence of any errors and can not take over any responsibility for the results coming out of the use of the data. Data users who should discover problems, inconsistencies or any questionable effects when using the Pantanal data are kindly invited to contact the Pantanal site and/or data managers.

## **7. Reference Requirements**

Use of the Pantanal reference site data should be made according to the CEOP policy rules outlined in the CEOP Reference Site Data Release Guidelines. The Pantanal data is freely available and we encourage others to use it. Kindly keep inform the originators of the data of how you are using their data and of any publication plans. Please acknowledge the data source as a citation or in the acknowledgements if the data have not yet been published. If the data originators feel that they should be offered participation as authors, they will let you know and we assume that an agreement on such matters will be reached prior to publishing the data. If your work directly competes with analyses under-way by the data originators, we may ask that they have the opportunity to submit a manuscript before you submit one that uses unpublished data. In order to maintain our measurement program we periodically need to demonstrate progress to our sponsoring agencies. In addition to informing us of your plans, we kindly request that you help us by providing pre-prints and updates on publication status.

The data source should be referred to as: The Large Scale Biosphere-Atmosphere Experiment in Amazon (LBA).