CEOP Reference Site Data Set Metadata Information

LBA Manaus Site

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Contacts

CEOP Reference Site Manager

Antonio Ocimar Manzi
LBA Implementation Manager / Central Office Coordinator
INPA
Av. André Araújo, 2936 - Alojamento nº 09 - Petrópolis
Cx. Postal 478
69011-970 Petrópolis
Manaus, Brazil

Tel.: +55(92)643-3255 / 236-5205
Fax: +55(92)643-3238/ 236-5131
E-mail: manzi@inpa.gov.br

CEOP LBA Coordinator:

José Marengo
CPTEC/INPE
Rodovia Presidente Dutra, km 39
12630-000 Cachoeira Paulista
São Paulo, Brazil
Telephone: +55 12 3186 8464
Facsimile: +55 12 3186 8542
E-mail: marengo@cptec.inpe.br

CEOP LBA Data Manager:

Luiz M. Horta
LBA-DIS Manager
CPTEC/INPE
Rodovia Presidente Dutra, km 39
12630-000 Cachoeira Paulista
São Paulo, Brazil
Telephone: +55 12 3186 8536 / 9786-3864
Facsimile: +55 12 3186 8582
E-mail: horta@cptec.inpe.br

LBA Site contact:

Alexandre Barbosa Santos
INPA – LBA Experiment
Av. André Araújo, 2936, Geociências
Manaus – AM 69060-001 Brazil
Telephone: +55 92 3643-3172
Cellular: +55 92 9117-1181
E-mail: axsantos@inpa.gov.br

Julio Tota da Silva
INPA – LBA Experiment
Av. André Araújo, 2936 - Alojamento nº 09 - Petrópolis Cx. Postal 478
69011-970 Petrópolis
Manaus, Brazil
Telephone: +55 92 643 3255
E-mail: tota@inpa.gov.br

Celso Von Randow
INPA
Av. André Araújo, 2936 - Alojamento nº 09 - Petrópolis Cx. Postal 478
69011-970 Petrópolis
Manaus, Brazil
Telephone: +55 92 643 3255
E-mail-Celso.vonrandow@wur.nl

Luis Marcelo Zeri
Max-Planck Institute for Biogeochemistry
Hans-Knöll-Straße 10
D-07745 Jena, Germany
Phone: +49 (0)3641/576163, Fax: +49 (0)3641/577863
E-mail mzeri@bgc-jena.mpg.de

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). 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 Manaus site.

1.2 Site Coordinates

1.2 All meteorological ~, radiation ~, soil ~, tower ~ and flux measurements have been performed at Manaus km34 Site. The coordinates for the ZF2 km 34 sites are:

DMS:	2° 36' 36" S	60° 12' 35" W	
DD:	-2.61 S	-60.21 W	
UTM:	9711170.0	810260.3	20M
Elevation:	130 meters		

1.3 Site Operator

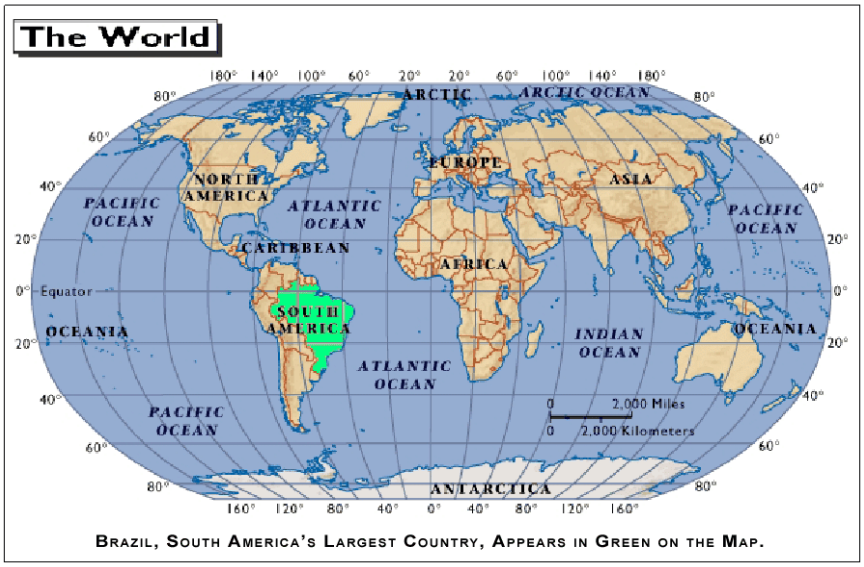
The LBA Manaus km 34 site is part of the LBA Project, managed by the Brazilian Institute for Amazon Research (INPA) which is subordinated to Brazilian Ministry of Science and Technology (MCT).

1.4 General Site Description

Landscape

The capital city of the state of Amazonas is Manaus, located near the confluence of the Negro and Solimões Rivers. This area of the central Amazon is relatively undisturbed compared to the eastern Amazon or the Andean Piedmont, but it is currently the focus of increasing deforestation pressure for pasture establishment and selective logging. The recent (1996) completion of the asphalt road (BR 174) linking Manaus with Boa Vista and Venezuela is already significantly increasing deforestation along the highway. The majority of the study sites in Amazonas are near Manaus. These sites are located within 100 km of the city in evergreen secondary and primary forest, pastures derived from primary forest conversion, logged forest, agrosilvo pastoral areas, and inundated areas. Many of these sites are located in preexisting research areas. The Manaus area has an annual precipitation that averages 2186 mm and a mean annual temperature of 27°C. The wettest months are March and April (c. 300 mm rainfall per month), and July, August, and September are the driest (<100 mm rainfall per month).

Figure 1 Map of Brazil in the world



Brazil, South America's Largest Country, Appears in Green on the Map.

Figure 2 Map of Brazil in the South America

Figure3 Map of Amazonas (Manaus)

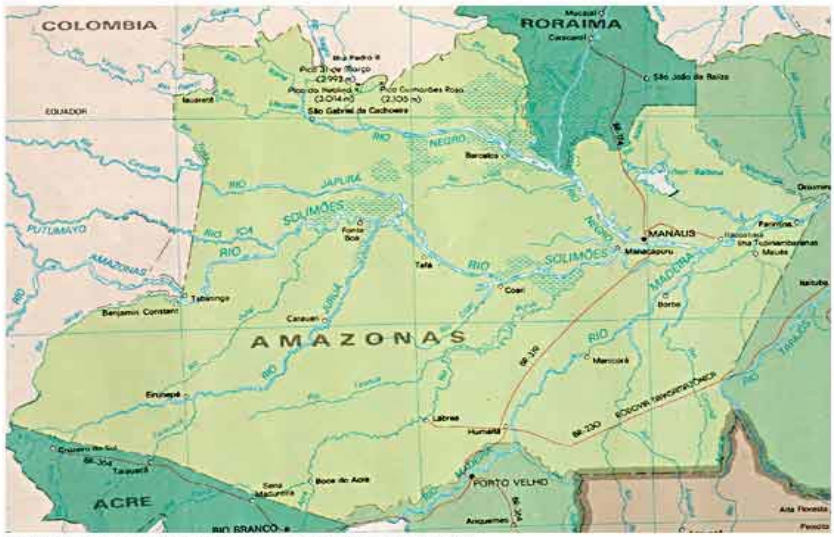


Figure 4 Map of Western Amazon Basin

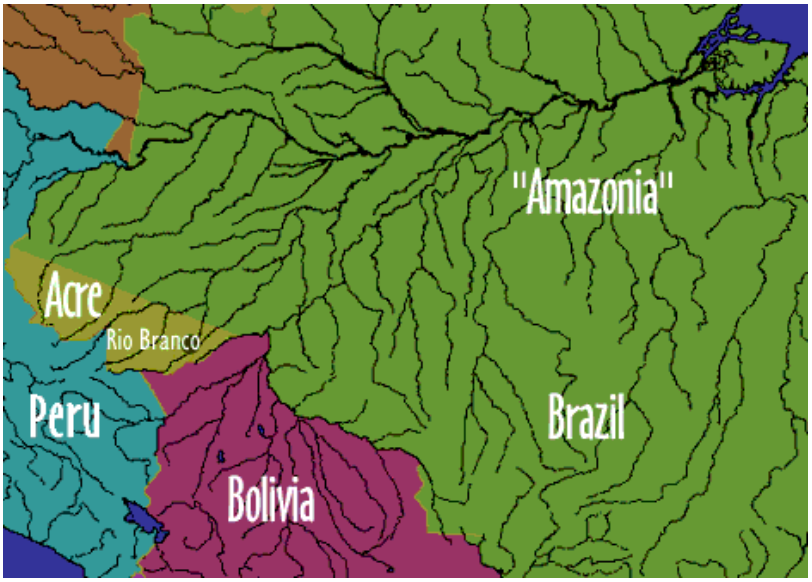


Figure 5 Map of ZF2 km 34

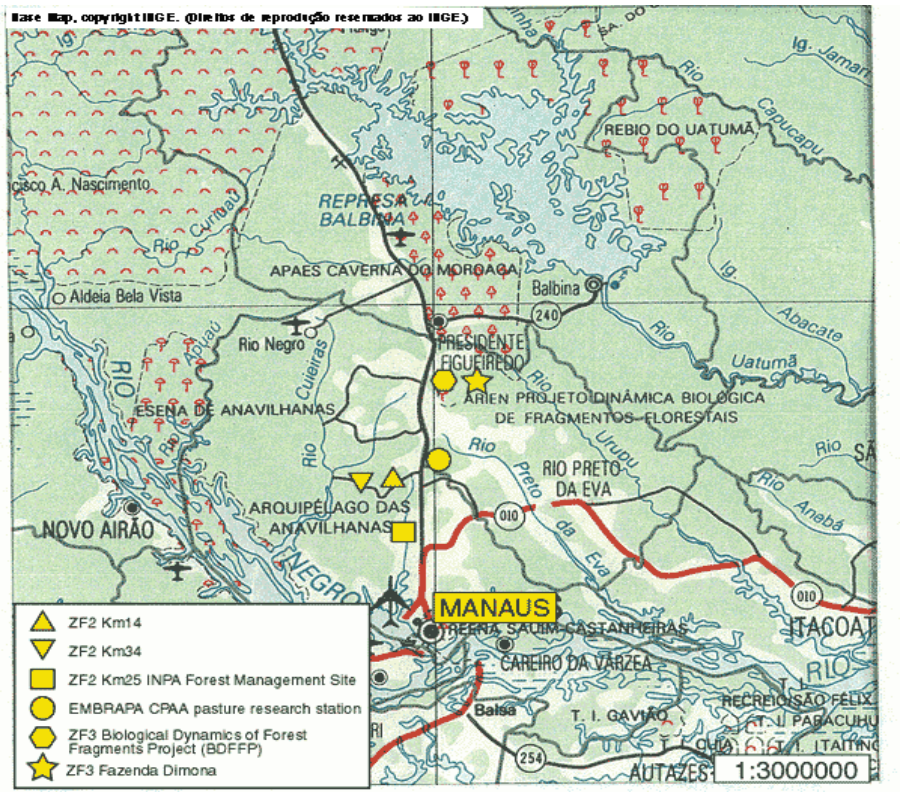
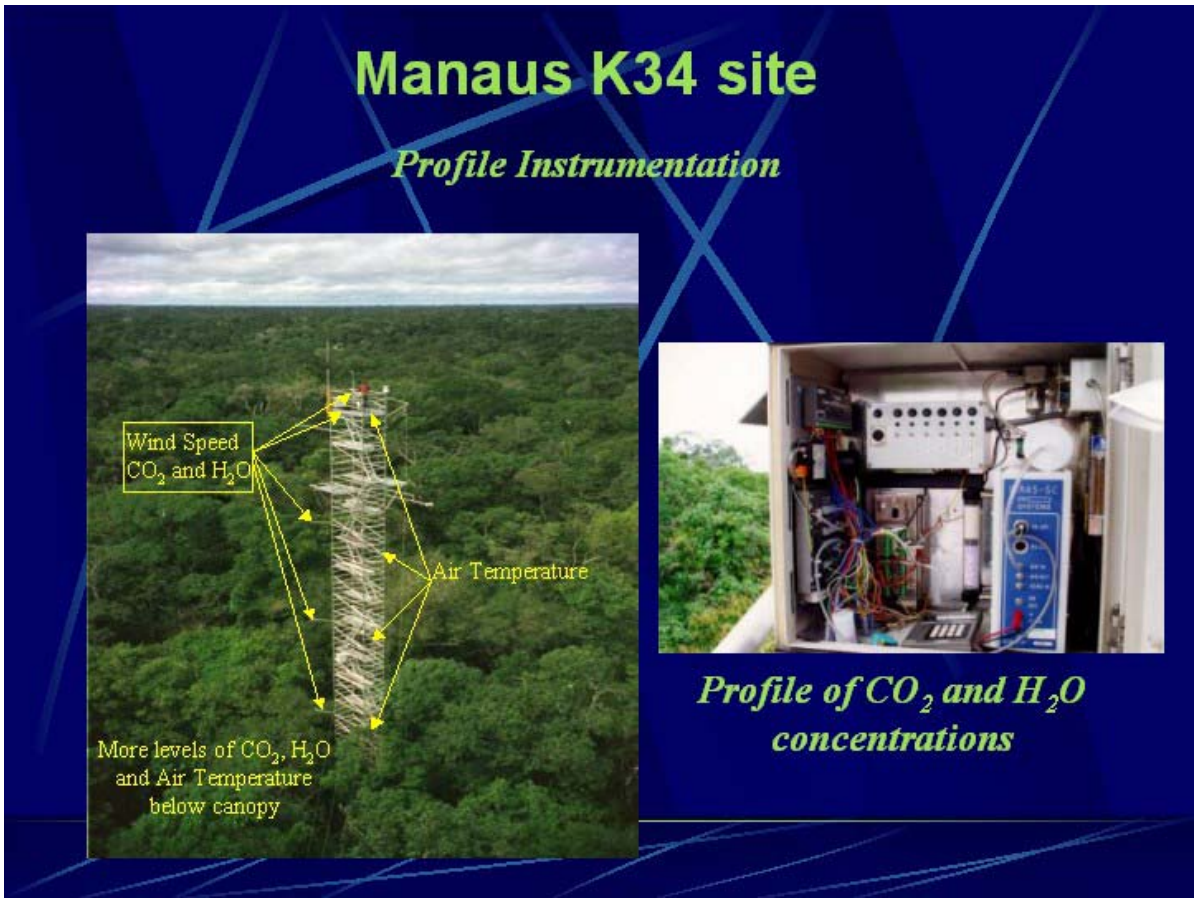


Figure 5 Manaus Tower Profile



Soil

Soils are relatively nutrient-poor, sandy or yellow latosols (xanthic ferralsols).
The forest in the area is typical terra firme forest (not subject to periodic flooding) with a canopy height of 30-37 m. Species richness of trees is high, averaging about 280 species per hectare. The understory is relatively open and dominated by palms. The site is located on pleistocenic terraces of interglacial origin and the topography is ondulated with mean altitudinal differences between plateaus and stream valleys of 40-50 m.

Climate

Owing to efficient rainwater recycling in the Amazonian Hydrocell, rainwater in Western Amazonia has exceptionally negative $\delta\ ^{18}O$ values, which are reflected in the low oxygen isotope ratios ($\delta\ ^{18}O$) of living freshwater bivalves. Our first comparisons of modern and fossil bivalve $\delta^{18}O$ data show many similarities, both in absolute values as well as in the seasonal variation recorded in growth increments This suggests that the Amazonian Hydrocell, transporting humid air from the Atlantic to Amazonia, was already present more than 10 million years ago, including the wet and dry seasons as we know them today. Of importance for this climate system is the shielding presence of the Andes mountain range. By geochemically analyzing fossils up to 25 Ma old, we expect to reconstruct the initiation of the Amazonian Hydrocell in connection to the Early Miocene uplift phases of the Andes.

1.5 Site References

http://www.lbaeco.org/cgi-bin/web/sites/site_desc.pl?region_id=15&site_id=52

2.0 Instrumentation Description:

3.0 Data collection and Processing

4.0 Quality control Procedures

5.0 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

Starting on 23 October 2004 and continuing to the end of 2004 the incoming longwave changes character. The problem might have happened due to flaws in the longwave sensor, which could've been corrected during the periodic maintenance of the system. A possible culprit could be excess humidity in the housing of the sensor. Data for this period has been flagged as bad.

Disclaimer

The data from the Manaus LBA Site have undergone the QA/AC procedure described in section 4before 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 Manaus data are kindly invited to contact the Manaus site and/or data managers.

7. Reference Requirements

Use of the Manaus reference site data should be made according to the CEOP policy rules outlined in the CEOP Reference Site Data Release Guidelines. The Manaus 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 acknowledgments 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 preprints and updates on publication status.

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