

# LBA-ECO LC-02 Groundwater Levels, Catuaba Experimental Farm, Acre, Brazil: 1999-2004

## Summary

This data set reports bi-weekly or monthly depth-to-water measurements for three wells located in a ~1,500 ha forest fragment on the Catuaba Experimental Farm, which is the property of the Federal University of Acre, Brazil. Data were collected between February 1999 and December 2004. There is one comma-delimited ASCII data file with this data set.

**DATA QUALITY STATEMENT:** The Data Center has determined that there are questions about the quality of the data reported in this data set. The data set has missing or incomplete data, metadata, or other documentation that diminishes the usability of the products.

**KNOWN PROBLEMS:** The depth-to-water measurements for the three wells lack ground surface elevation reference points, therefore, the groundwater table elevation for the site cannot be determined. The depth-to-water measurements are of limited use unless paired with other site data for precipitation, tree growth, etc.

## Data Citation:

**Cite this data set as follows:**

Selhorst, D. and I.F. Brown. 2012. LBA-ECO LC-02 Groundwater Levels, Catuaba Experimental Farm, Acre, Brazil: 1999-2004. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.  
<http://dx.doi.org/10.3334/ORNLDAAAC/1062>

## Implementation of the LBA Data and Publication Policy by Data Users:

The LBA Data and Publication Policy [[http://daac.ornl.gov/LBA/lba\\_data\\_policy.html](http://daac.ornl.gov/LBA/lba_data_policy.html)] is in effect for a period of five (5) years from the date of archiving and should be followed by data users who have obtained LBA data sets from the ORNL DAAC. Users who download LBA data in the five years after data have been archived must contact the investigators who collected the data, per provisions 6 and 7 in the Policy.

This data set was archived in February of 2012. Users who download the data between February 2012 and January 2017 must comply with the LBA Data and Publication Policy.

Data users should use the Investigator contact information in this document to communicate with the data provider. Alternatively, the LBA Web Site [<http://lba.inpa.gov.br/lba/>] in Brazil will have current contact information.

Data users should use the Data Set Citation and other applicable references provided in this document to acknowledge use of the data.

# Table of Contents:

- [1 Data Set Overview](#)
- [2 Data Characteristics](#)
- [3 Applications and Derivation](#)
- [4 Quality Assessment](#)
- [5 Acquisition Materials and Methods](#)
- [6 Data Access](#)
- [7 References](#)

## 1. Data Set Overview:

**Project:** LBA (Large-Scale Biosphere-Atmosphere Experiment in the Amazon)

**Activity:** LBA-ECO

**LBA Science Component:** Land Use and Land Cover

**Team ID:** LC-02 (Brown / Silveira / Esteves)

The investigators were Selhorst, Diogo and Brown, Irving Foster . You may contact Selhorst, Diogo (dselhorst@pop.com.br)

**LBA Data Set Inventory ID:** LC02\_Water\_Table\_Acre

Predicted climate scenarios for the Amazon region suggest an increase in the proportion of the area deforested and a shift in temperature regime due to the greenhouse effect. We know that Amazonian forests play a critical role in regulating the amount of rainfall in this and other regions. Deforestation in the area could result in diminished rainfall or an alteration in the pattern of rainfall distribution. To understand the effects of these potential changes it is important to have a clear understanding of seasonal patterns in various components of the the water cycle in Amazonian forests. We report bi-weekly/monthly depth-to-water measurements for three wells located in a ~1500 ha forest fragment on the Catuaba Experimental Farm which is the property of the Federal University of Acre. Data were collected between February 1999 and December 2004.

## 2. Data Characteristics:

Data are presented in one comma-separated ASCII file: **LC-02\_Water\_table\_depth\_Catauba.csv**

Column	Heading	Units/format	Description
1	Date	YYYYMMDD	Sampling date
2	Year	YYYY	Year of sampling
3	Month	MM	Month of sampling
4	Day	DD	Sampling day of the month
5	North_depth	cm	Depth to water table in centimeters at the north well (67.629167 W, 10.064167 S)
6	South_depth	cm	Depth to water table in centimeters at the south well

			(67.623611 W, 10.083056 S)
7	Center_depth	cm	Depth to water table in centimeters at the center well (67.626944 W, 10.07333 S)
missing data are represented by -9999			

**Example data records:**

Date,Year,Month,Day,North_depth,South_depth,Center_depth
19990212,1999,2,12,1020,659,823
19990225,1999,2,25,1017,373,491
...
20020207,2002,02,07,1034,807,961
20020306,2002,03,06,594,287,368
...
20041119,2004,11,19,-9999,-9999,1008
20041222,2004,12,22,-9999,-9999,1008

**Site boundaries:** (All latitude and longitude given in decimal degrees)

Site (Region)	Westernmost Longitude	Easternmost Longitude	Northernmost Latitude	Southernmost Latitude	Geodetic Datum
Acre - Catuaba Experimental Farm (Acre)	-67.62900	- 67.62900	-10.07300	- 10.07300	World Geodetic System, 1984 (WGS-84)

**Time period:**

- The data set covers the period 1999/02/12 to 2004/12/22
- Temporal Resolution: Monthly

**Platform/Sensor/Parameters measured include:**

- FIELD INVESTIGATION / WATER LEVEL GAUGE / WATER DEPTH

### 3. Data Application and Derivation:

Seasonal patterns in water table depths provide insight into water availability in Amazonian forests and its potential role in limiting productivity. Forests play a key role in cycling water and regulating rainfall over the Amazon Basin and future scenarios for the region include reduced rainfall as a direct effect of deforestation as well as potentially increased evapotranspiration due to elevated temperatures. Our understanding of the role of soil water in regulating productivity and the relationship between soil water pools, productivity and rainfall patterns is hampered by limited data on water table fluctuations at the seasonal scale.

### 4. Quality Assessment:

The data have been reviewed and there are no known problems at this time.

**KNOWN PROBLEMS:** The depth-to-water measurements for the three wells lack ground surface elevation reference points, therefore, the groundwater table elevation for the site cannot be determined. The depth-to-water measurements are of limited use unless paired with other site data for precipitation, tree growth, etc.

## 5. Data Acquisition Materials and Methods:

### Study area:

The sampling wells were installed at the Catuaba Experimental Farm, a Federal University of Acre property in the east of Acre State. The farm is part of a forest fragment which covers approximately 1,500 ha with open forest mixed with bamboo the dominant forest type. Soils are Oxisols (latossolo vermelho amarelo distrofico in the Brazilian classification system).

### Field methods:

Three wells were installed in a 10 hectare permanent plot: a north well (-67.629167, -10.064167), south well (-67.623611, -10.083056), and center well (-67.626944, -10.07333) Each well was drilled until reaching the water table (approximately 10 meters depth) and then fitted with a perforated PVC tube which permitted infiltration of water from the soil.

Water level was measured bi-weekly between February 1999 and August 2000 and on a monthly basis between September 2000 and December 2004. After September 2003 only the center well was measured, and the well was not measured during October and December of 2003.

## 6. Data Access:

This data is available through the Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC).

### Data Archive Center:

Contact for Data Center Access Information:  
E-mail: [uso@daac.ornl.gov](mailto:uso@daac.ornl.gov)  
Telephone: +1 (865) 241-3952

## 7. References:

no references cited