

LBA-ECO LC-02 Daily Meteorological Data, Rio Branco, Acre, Brazil: 1970-2001

Summary:

This data set provides meteorological measurements collected from 3 different meteorological stations within a radius of 8 km in Rio Branco, Acre Brazil, for the periods of June of 1970 to 1974, December of 1974 to 1980, and May of 1980 thru May 31, 2001. Daily average values for rainfall, relative humidity, evapotranspiration, maximum and minimum temperature, pressure, wind direction and speed, solar radiation, and cloud cover are reported. There is one comma-delimited data file with this data set.

Data Citation:

Cite this data set as follows:

Duarte, A.F., W.A.F. de Melo, I.F. Brown. 2012. LBA-ECO LC-02 Daily Meteorological Data, Rio Branco, Acre, Brazil: 1970-2001. 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/ORNLDAAC/1091>

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] 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 Users who download LBA data in the five years after data have been archived must contact the investigators who collected the data, per provisions 6 and 7 in the Policy.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 May of 2012. Users who download the data between May 2012 and April 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 website [<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: Regional Data

LBA Science Component: Land Use and Land Cover

Team ID: LC-02 (Brown / Setzer)

The investigators were Brown, Irving Foster; Melo, Antonio Willian Flores de; Mendoza, Elsa Renee Huaman and Vasconcelos, Sumais. You may contact Duarte, Alejandro Fonseca (alejandro@ufac.br).

LBA Data Set Inventory ID: LC02_Meteorology_Acre

This data set provides meteorological measurements collected from 3 different meteorological stations within a radius of 8 km in Rio Branco, Acre Brazil, the periods of June of 1970 to 1974, December of 1974 to 1980, and May of 1980 thru May 31, 2001. Daily average values for rainfall, relative humidity, evapotranspiration, maximum and minimum temperature, pressure, wind direction and speed, solar radiation, and cloud cover are reported.

2. Data Characteristics:

This data file consists of mean daily meteorological data collected from 3 different meteorological stations for the periods of June of 1970 to 1974, December of 1974 to 1980, and May of 1980 thru May 31, 2001. All stations were from the region of Rio Branco, Acre.

Data are presented in one comma-delimited ASCII file: LC02_Acre_Daily_Meteorology_1970-2001.csv

| Column | Heading | Units/format | Description |
|--------|------------|--------------|--|
| 1 | Seq_num | | Record sequence in original data file |
| 2 | Date | YYYYMMDD | Measurement date |
| 3 | Rainfall | mm | Total measured rainfall in millimeters over 24 hour sampling period |
| 4 | Air_T_max | degrees C | Maximum recorded air temperature in degrees C over 24 hour sampling period |
| 5 | Air_T_min | degrees C | Minimum recorded air temperature in degrees C over 24 hour sampling period |
| 6 | Air_T_mean | degrees C | Weighted mean temperature in degrees C over a 24 hour period |
| 7 | RH | % | Mean relative humidity during 24 hour sampling period in percent |
| 8 | ET | mm day-1 | Evapotranspiration rate in millimeters per day calculated using the Penmen-Monteith equation |
| 9 | Wind_dir | | Wind direction during 24 hour sampling period using cardinal directions: N = North, S= South, E- East, W= West, C = Calm |
| 10 | Wind_vel | m/sec | Mean wind speed over 24 hour sampling period in meters per second sampled at 10 m above the ground surface |
| 11 | Atm_press | mbar | Atmospheric pressure in millibars |

| | | | |
|---|-------------|--------------------|---|
| 12 | Insolation | kJ m ⁻² | Solar radiation received at the ground surface in kilojoules per meter squared |
| 13 | Cloud_cover | | Tenths of the sky with cloud cover (0= clear sky; 10 = completely clouded over) |
| Missing values are represented as -9999 | | | |

Example data records:

```
Seq_num,Date,Rainfall,Air_T_max,Air_T_min,Air_T_mean,RH,ET,Wind_dir,Wind_vel,Atm_press,Insolation,Cloud_cover
1,1970/01/01,0.4,34.4,23.4,28.9,94,1.8,C,0,991.5,7.4,8
2,1970/01/02,7.8,25.7,22.4,24.5,94,0.7,E,1,992.8,0,8.3
...
5116, 19840101, 34.2, 29.4, 21.6, 25.3, 88, 1.2, N, 3, 993.4, 0, 9
5117, 19840102, 0, 30, 21.6, 25.6, 86, 0.8, SW, 1, 996.2, 0, 8
...
11475, 20010530, 0, 32.9, 21.1, 26, 88, 2.6, NW, 0.2, 995, 9.5, 6
11476, 20010531, 0, 31.2, 21.2, 25.3, 92, 1.8, SW, 1, 994.7, 5.8, 6
```

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

| Site (Region) | Westernmost Longitude | Easternmost Longitude | Northernmost Latitude | Southernmost Latitude | Geodetic Datum |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------------------|
| Acre - Parque Zoobotanico (Acre) | -67.87 | -67.87 | -9.95 | -9.95 | South-American Datum, 1969 (SAD-69) |

Time period:

- The data set covers the period 1970/01/01 to 2001/05/31
- Temporal Resolution: Daily

Platform/Sensor/Parameters measured include:

- LABORATORY / ALGORITHM / RAIN
- METEOROLOGICAL STATION / THERMOMETER / MAXIMUM/MINIMUM TEMPERATURE
- LABORATORY / ANALYSIS / EVAPOTRANSPIRATION
- METEOROLOGICAL STATION / PRESSURE SENSOR / ATMOSPHERIC PRESSURE
- METEOROLOGICAL STATION / HUMIDITY SENSOR / HUMIDITY

3. Data Application and Derivation:

Not provided.

4. Quality Assessment:

Please refer to the Brazilian National Institute of Meteorology (INMET): <http://www.inmet.gov.br>.

5. Data Acquisition Materials and Methods:

Site description

The state of Acre, Brazil, is located in the western Amazon, bordering Bolivia and Peru. Rio Branco, the capital, is located about 85 km from the Bolivian border with Brazil. Acre receives 1,950 mm of annual precipitation. Meteorological measurements were collected from 3 different meteorological stations all within a radius of 8 km in Rio Branco from 1970 to May of 2001; measurements from June of 1970 to 1974 were from a station located in the neighborhood Experimental Station; measurements from December of 1974 to 1980 were from a station operated in a region called The Second District; and the measurements from May of 1980 to 2001 came from a meteorological station operating at the Federal University of Acre.

Methods

Data were acquired from the Brazilian National Institute of Meteorology (INMET, 2008). Daily average values for rainfall, relative humidity, evapotranspiration, maximum and minimum temperature, pressure, wind direction and speed, solar radiation and cloud cover are reported.

Values were recorded by minute and integrated for each hour. Data here is summarized by day.

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

Telephone: +1 (865) 241-3952

7. References:

INMET, 2008. Rede de observacoes. Available online at http://www.inmet.gov.br/html/rede_obs.php