Biomass Burning 5 Degree by 5 Degree Data Collected by Dr. Wei Min Hao and Mei-Huey Liu Langley DAAC Data Set Document

Summary:

This data set document provides information for the data set archived at the Langley DAAC. This data set consists of data collected by Dr. Wei Min Hao and Mei-Huey Liu in Asia, Africa, and tropical America.

Table of Contents:

1. Data Set Overview:

Data Set Identification:

BIO_BURN_5X5_HAO_NAT:	Biomass Burning 5 degree by 5 degree data collected by Dr. Wei Min Hao and Mei-Huey Liu in Native Format (BIO_BURN_5X5_HAO_NAT)

Data Set Introduction:

This data set represents the geographical and temporal distribution of total amount of biomass burned.

Objective/Purpose:

Use in general circulation models (GCMs) and in photochemical models of the atmosphere.

Summary of Parameters:

Data are in form of amount of biomass matter burned in units of teragrams of dry biomass matter per month for the peak burning month. For each 5 degree by 5 degree latitude by longitude box, the following data are given:

- Total amount of biomass burned (T),
- Amount of biomass burned in forest (F) fires,

- Amount of biomass burned in Savanna (S) fires, and the month maximum burning.

Discussion:

Related Data Sets:

Vegetation, land-use and seasonal albedo data sets, E. Matthews.

2. Investigator(s):

Investigator(s) Name and Title:

Wei Min Hao and Mei-Huey Liu

Title of Investigation:

Spatial and temporal distribution of tropical biomass burning.

Contact Information:

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3. Theory of Measurements:

4. Equipment:

Sensor/Instrument Description:

Collection Environment:

Source/Platform:

United Nations Food and Agricultural Organization (FAO)

Source/Platform Mission Objectives:

Key Variables:

The values in this data set represent the amount of biomass burned in a specific area.

Principles of Operation:

Sensor/Instrument Measurement Geometry:

Manufacturer of Sensor/Instrument:

Calibration:

Specifications:

Tolerance:

Frequency of Calibration:

Other Calibration Information:

5. Data Acquisition Methods:

6. Observations:

Data Notes:

Please see:
Wei Min Hao and Mei-Huey Liu, "Spatial and Temporal Distribution of Tropical Biomass in Global Biogeochemical Cycles," Volume 8, No. 4, pages 495-503, December 1994.

Field Notes:

7. Data Description:

Spatial Characteristics:

Spatial Coverage:

1. Central and South America (40 deg. West - 110 deg. West; 25 deg. North - 55 deg. South)
2. Africa (20 deg. West - 50 deg. East; 35 deg. North - 35 deg. South)
3. Tropical Asia (60 deg. East - 160 deg. East; 35 deg. North - 10 deg. South)

Spatial Coverage Map:

5 deg. latitude by 5 deg. longitude

Spatial Resolution:

Projection:

Grid Description:

5 deg. latitude by 5 deg. longitude

Temporal Characteristics:

Temporal Coverage:

Month

Temporal Coverage Map:

Monthly

Temporal Resolution:

Data Characteristics:

Parameter/Variable:

1. Amount of biomass burned in forest fires
2. Amount of biomass burned in savanna fires
3. Amount of fuelwood and agricultural residues burned
4. Total amount of biomass burned

Variable Description/Definition:

Each file contains monthly and annual total biomass burned form each source. All the data are in 5 degree by 5 degree resolution. The coordinate represents the left corner of the grid cell. Please notice that the data are the amount of biomass burned, not the amount of CO2 produced.

```
File    AFTOTAL.TXT, AMTOTAL.TXT, ASTOTAL.TXT

VARIABLE                          FORMAT

COORDINATE                          A11
JANUARY                           (F10.2)
FEBRUARY                          (F10.2)
MARCH                             (F10.2)
```

```
APRIL                          (F10.2)
MAY                            (F10.2)
JUNE                           (F10.2)
JULY                           (F10.2)
AUGUST                         (F10.2)
SEPTEMBER                      (F10.2)
OCTOBER                        (F10.2)
NOVEMBER                       (F10.2)
DECEMBER                       (F10.2)
COORDINATE                       A11
TOTAL                          (F11.2)
FOREST                         (F11.2)
SAVANNA                        (F11.2)
FUELWOOD                       (F11.2)
RESIDUES                       (F11.2)

FILE    AFFOREST.TXT, AMFOREST.TXT, ASFOREST.TXT
AFSAVAN.TXT,  AMSAVAN.TXT, ASSAVAN.TXT

VARIABLE                       FORMAT

COORDINATE                       A11
LAT                              I5
LON                              I5
ANNUAL                         (F11.2)
JANUARY                        (F10.2)
FEBRUARY                       (F10.2)
MARCH                          (F10.2)
APRIL                          (F10.2)
MAY                            (F10.2)
JUNE                           (F10.2)
JULY                           (F10.2)
AUGUST                         (F10.2)
SEPTEMBER                      (F10.2)
OCTOBER                        (F10.2)
NOVEMBER                       (F10.2)
DECEMBER                       (F10.2)

FILE    AFFUEL.TXT, AMFUEL.TXT, ASFUEL.TXT
AFRESI.TXT, AMRESI.TXT, ASRESI.TXT

VARIABLE                       FORMAT

COORDINATE                       A11
ANNUAL                         (F10.2)
MONTHLY                        (F10.2)
```

Unit of Measurement:

Teragrams of dry biomass matter per month (1 Teragram = 10^12 grams)

Data Source:

United Nations Food and Agricultural Organization (FAO)

Data Range:

Sample Data Record:

There are a total of three granules in this data set. Each granule consists of five files. Below is the first seven lines in the file, afforest.txt. All of the other files in each granule follow this format in a similar manner.

```
*FORESTAF.WR1
*BIOMASS BURNED ANNUALLY (x 10^3 TONS/YEAR) OR MONTHLY (x 10^3 TONS/MONTH) FROM DEFORESTATION AND SHIFTI
NG CULTIVATION IN TROPICAL AFRICA
```

COORDINATE	LAT	LON	ANNUAL	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY
AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER						
(25N,0W)	25	0	493.05	0.00	0.00	14.79	54.24	83.82	138.05	138.05
64.10	0.00	0.00	0.00	0.00						
(25N,15E)	25	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00						
(25N,30E)	25	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00						

8. Data Organization:

Data Granularity:

A general description of data granularity as it applies to the IMS appears in the EOSDIS Glossary.

The data granules are arranged by location, Africa, Tropical America, and Asia.

Data Format:

All data are in ASCII format.

9. Data Manipulations:

Formulae:

Derivation Techniques and Algorithms:

Data Processing Sequence:

Processing Steps:

Processing Changes:

Calculations:

Special Corrections/Adjustments:

Calculated Variables:

Graphs and Plots:

There are no images available at this time.

10. Errors:

Sources of Error:

Quality Assessment:

Data Validation by Source:

Confidence Level/Accuracy Judgement:

Measurement Error for Parameters:

Additional Quality Assessments:

Data Verification by Data Center:

11. Notes:

Limitations of the Data:

Best estimate data tabulated by the United Nations Food and Agricultural Organization (FAO).

Known Problems with the Data:

UN/FAO data not validated or verified. Represents only such data set available.

Usage Guidance:

This is the only data set available.

Any Other Relevant Information about the Study:

12. Application of the Data Set:

Use in general circulation models (GCMs) and photochemical models. Use in country-by-country emission studies.

13. Future Modifications and Plans:

Satellite measurements of biomass burning currently being planned by NASA Mission To Planet Earth (MTPE).

14. Software:

Software Description:

Sample read software are available to read this data set. The read software are written in ANSI C and can run on different platforms. There is also a makefile that allows the user to compile the programs easily.

Software Access:

The software can be ordered at the same time users are ordering these data sets through the Langley DAAC. The users can also contact the Langley DAAC User and Data Services Office. Please see Section 15 (the next section) for contact information.

15. Data Access:

Contact Information:

Langley DAAC User and Data Services Office
NASA Langley Research Center
Mail Stop 157D
Hampton, Virginia 23681-2199
USA
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov

Data Center Identification:

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USA
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov

Procedures for Obtaining Data:

The Langley DAAC Information Management System (IMS) is an on-line system that features a graphical user interface (GUI) that allows to query the Langley DAAC data set holdings, to view pre-generated browse products, and to order specific data products.

The Langley DAAC User and Data Services staff provides technical and operational support for users ordering data.

Data Center Status/Plans:

The Langley DAAC will continue to archive this data. There are no plans to reprocess.

16. Output Products and Availability:

There are no output products available at this time.

17. References:

Wei Min Hao and Mei-Huey Liu, "Spatial and Temporal Distribution of Tropical Biomass in Global Biogeochemical Cycles," Volume 8, No. 4, pages 495-503, December 1994.

18. Glossary of Terms:

EOSDIS Glossary.

19. List of Acronyms:

EOSDIS Acronyms.

DAAC - Distributed Active Archive Center
MTPE - Mission To Planet Earth
NASA - National Aeronautic Space Administration
URL - Uniform Resource Locator

20. Document Information:

Document Revision Date:
September 16, 1996; May 29, 1997; November 24, 1997
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