Daily Rainfall Data (FIFE)

Summary:

The FIFE Daily Rainfall Data Set contains daily precipitation values for 42 rain gauge stations within the Konza LTER portion of the FIFE site (i.e., Northwest quadrant). The data set is a composite of data collected by the LTER staff and the Princeton University group.

The LTER staff collected daily precipitation data from 12 of the 42 rain gauge stations within this area with the Princeton University group collecting 30 minute precipitation data from the remaining 30 stations. LTER data was collected from April 1982 through December 1989. Data collected by the LTER staff was year round for some stations and from April 1 to October 31 for others. The Princeton University group collected data from May 1987 to October 1987. The Princeton University 30 minute precipitation data was converted to daily precipitation data by the FIS staff. At any particular time, data from approximately 20 of the 30 Princeton University stations were recovered. High temperatures and humidity, plus software problems in the rainfall data loggers, resulted in these data losses. The collected data were of high quality and enough gauges were working at all times so that rain cells could be observed using these data.

Table of Contents:

1. Data Set Overview:

Data Set Identification:

Daily Rainfall Data (FIFE).
(Daily Rainfall Amounts in the Konza Research Area).

Data Set Introduction:

The FIFE Daily Rainfall Data Set contains daily precipitation values for 42 rain gauge stations within the Konza LTER portion of the FIFE site (i.e., Northwest quadrant). The data set is a composite of data collected by the LTER staff and the Princeton University group.

Objective/Purpose:

The FIFE Staff Science efforts to collect precipitation data focused on quantifying the spatial variation of rainfall across the Long-Term Ecological Research site (LTER) portion of the FIFE site. The data collected by Princeton University in the Kings Creek catchment and subcatchments were focused on determining the major elements of the water balance of these catchments using catchment, water-budget models with a temporal resolution of 20 days.

Summary of Parameters:

Total daily rainfall.

Discussion:

This data set contains daily precipitation values for 42 rain gauge stations within the Konza LTER portion of the FIFE site (i.e., Northwest quadrant).

The LTER staff collected daily precipitation data from 12 of the 42 rain gauge stations within this area. LTER data was collected from April 1982 through December 1989. The number of LTER stations collecting data over this period varied from 1 in April 1982 to 11 in December 1989. Data collected by the LTER staff was year round for some stations and from April 1 to October 31 for others.

The Princeton University group collected 30 minute precipitation data from 30 of the 42 rain gauge stations within this area from May 1987 to October 1987. The Princeton University 30 minute precipitation data was converted to daily precipitation data by the FIS staff. At any particular time, data from approximately 20 of the 30 Princeton University stations were recovered. High temperatures and humidity, plus software problems in the rainfall data loggers, resulted in these data losses. The collected data were of high quality and enough gauges were working at all times so that rain cells could be observed using these data.

Related Data Sets:

- [Kings Creek Watershed 30 Minute Precipitation.](#)
- [Automated Meteorological Stations (AMS).](#)

- [NOAA Regional Surface Data.](#)
- [NOAA Regional Surface Data - 1989 (NCDC).](#)
- [Historical Daily Rainfall and Temperature Data for Manhattan, Kansas.](#)
- [Historic Monthly Rainfall Data for Manhattan, Kansas.](#)
- [Stream Flow Daily Amounts.](#)
- [Storm Event Stream Flow.](#)
- [Fifteen-minute Stream Flow Rates from USGS.](#)

FIS Data Base Table Name:

RAIN_DAILY_DATA.

2. Investigator(s):

Investigator(s) Name and Title:

Staff Science.

Title of Investigation:

These data were compiled from two different FIFE research activities:

1. the Staff Science Soil Moisture and Hydrology Data Acquisition Program, lead by the staff at Kansas State University, and
2. A Terrestrial Water Balance for FIFE, administered by Eric Wood at Princeton University.

Contact Information:

All Data:

K. Fred Huemmrich
NASA/GSFC
Greenbelt, MD
Tel. (301) 286-4862
Email: fred@ltpsun.gsfc.nasa.gov

LTER data

Dr. John Briggs
Kansas State University
Manhattan, KS
Tel. (913) 532-6629
Email: jmb@andro.konza.ksu.edu

Requested Form of Acknowledgment.

3. Theory of Measurements:

The LTER used weighing-type gauges in which a weighing mechanism converted the weight of the rainfall caught by a circular, horizontal opening at the top of the gauge into the curvilinear movement of a recording pen which made an inked trace on a rectangular paper chart. The height of the pen marks on the chart were calibrated to rainfall amount.

The University of Princeton used tipping bucket rain gauges in which a 0.2 mm tip connected to a data logger (that recorded the date and time to within 1 min of the tip) was used to record rainfall. The one minute rainfall readings were aggregated into 30 minute intervals, by the Princeton University group. The FIS staff calculated daily rainfall by aggregating the 30 minute rainfall values into daily total rainfall values based on Central Daylight Saving Time.

4. Equipment:

Sensor/Instrument Description:

The LTER rain gauge is describe in the sections below. For information on the instrumentation used by Princeton University see the [Kings Creek Watershed 30 Minute Precipitation](#) document. It describes the primary data set from which these daily data were computed.

Collection Environment:

Ground-based.

Source/Platform:

The LTER rain gauges were mounted on poles (that were centered on concrete pads) 3 feet above the ground.

Source/Platform Mission Objectives:

The objectives were three fold, 1) to provide baseline long-term monitoring data for the Konza Research area, 2) to quantify the spatial variation of rainfall across the FIFE site and, 3) to determine the major elements of the water balance of the Kings Creek catchment using catchment, water-budget models with a temporal resolution of 20 days.

Key Variables:

Daily rainfall depth at rain gauge locations.

Principles of Operation:

LTER

> The charts, for the LTER rain gauges, (graduated in inches, or millimeters, of rainfall) were wrapped around a vertical cylinder which was rotated either by an 8-day spring-powered, or a long-term battery-powered, chart drive. In some gauges of this series the record capacity of the gauge was reached in a single traverse of the pen across the chart; in others it was reached after a double traverse of the pen. Charts were manually replaced each week, the buckets emptied and the timing mechanism for the drum rewound.

> **Weighing Mechanism.** The rainfall falling through the 8"-diameter collector was caught in a bucket resting on a platform mounted to the vertical link of a 4-bar linkage. The vertical link, or movement bracket, was supported from the mechanism frame by a precision extension-spring assembly. The upper horizontal link, or top lever, of the linkage was provided with an adjustable extension by which the deflection of the spring was multiplied and modified to fit the requirements of the recording mechanism. A second horizontal link, or lower lever (ns), provided the additional constraint needed to keep the movement bracket vertical throughout its deflection. The top and lower levers turned in the mechanism frame; the movement bracket turned in the top and lower levers. A limit screw at the top rear of the mechanism prevented the recording pen from striking the chart cylinder flange when the catch bucket was removed from the gauge by limiting the upward movement of the top lever. A second limit screw, attached to the movement bracket, prevented the pen from falling off the top of the chart cylinder in single-traverse gauges and from striking the chart cylinder flange in dual-traverse gauges. The bottom of the movement bracket was linked to the piston of a damping device, a dashpot, to reduce pen arm vibrations due to wind gusts.

PRINCETON

> For a description of the principles of operation for the instrumentation at the rain gauges operated by Princeton University, see the document describing the 30 minute rainfall data set ([Kings Creek Watershed 30 Minute Precipitation](#)) from Princeton University.

Sensor/Instrument Measurement Geometry:

The LTER rain gauges were permanently mounted on poles 3 feet above the ground. The poles were centered on concrete pads and the vegetation around the pads was kept low.

Manufacturer of Sensor/Instrument:

LTER Rain Gauge Manufacturer :

Belfort Instrument Company
1600 South Clinton Street
Baltimore, Maryland 21224

Calibration:

The instruments used by the LTER staff were purchased in a calibrated form and were re-calibrated each spring using weights of known mass.

See the Kings Creek Watershed 30 Minute Precipitation document for calibration information on the Princeton University data.

Specifications:

The LTER uses weights of known mass to perform the calibration.

Tolerance:

LTER rain gauges: 0.001 grams i.e., 1 mm

Frequency of Calibration:

LTER rain gauges are calibrated once per year.

Other Calibration Information:

LTER rain gauges are covered for the winter and taken out of service until spring (October 31 to April 1).

5. Data Acquisition Methods:

The LTER strip charts are removed from the rain gauges on a weekly basis and the highest daily rain value is manually read from these charts. These data are then manually entered into the data base on the LTER computer.

The University of Princeton rain data were acquired from Dr. Eric Wood and was derived from the thirty minute rainfall amounts for Kings Creek described in the Kings Creek Watershed 30 Minute Precipitation document.

6. Observations:

Data Notes:

Not available.

Field Notes:

None.

7. Data Description:

Spatial Characteristics:

The FIFE study area, with areal extent of 15 km by 15 km, is located south of the Tuttle Reservoir and Kansas River, about 10 km from Manhattan, Kansas, USA. The northwest corner of the area has UTM coordinates of 4,334,000 Northing and 705,000 Easting in UTM zone 14.

Spatial Coverage:

These original data were collected in the Konza LTER and the Kings Creek area of the FIFE study area. Rain gauges were positioned as follows:

SITEGRID	STN_ID	NORTHING	EASTING	LATITUDE	LONGITUDE
1609-RGL	100	4330786	706889	39 06 13	-96 36 27
K4BF-RGL	211				
K1BF-RGL	217				
KUBF-RGL	223				
3623-RGL	225	4326820	709650	39 04 02	-96 34 36
3018-RGL	226	4327950	708530	39 04 39	-96 35 22
2520-RGL	227	4329040	709000	39 05 14	-96 35 01
2529-RGL	228	4328970	710780	39 05 11	-96 33 47
3509-RGL	229	4327010	706830	39 04 10	-96 36 33
2515-RGL	230	4328950	708080	39 05 12	-96 35 39
1709-RGL	231	4330650	706780	39 06 09	-96 36 32
1809-RGL	235	4330388	706824	39 06 00	-96 36 30
1318-RGP	301	4331360	708524	39 06 30	-96 35 18
1718-RGP	302	4330561	708640	39 06 04	-96 35 14
1621-RGP	303	4330732	709244	39 06 09	-96 34 49
1626-RGP	304	4330841	710152	39 06 12	-96 34 11
1917-RGP	305	4330256	708498	39 05 54	-96 35 21
1824-RGP	306	4330366	709866	39 05 57	-96 34 24
1829-RGP	307	4330427	710750	39 05 58	-96 33 47
2316-RGP	308	4329376	708140	39 05 26	-96 35 36
2020-RGP	309	4329924	709063	39 05 43	-96 34 57
2123-RGP	310	4329811	709640	39 05 39	-96 34 34
2026-RGP	311	4329933	710158	39 05 42	-96 34 12
2132-RGP	312	4329723	711329	39 05 35	-96 33 23
2418-RGP	313	4329146	708577	39 05 18	-96 35 18
2321-RGP	314	4329309	709212	39 05 23	-96 34 52
2424-RGP	315	4329256	709754	39 05 21	-96 34 29
2326-RGP	316	4329457	710188	39 05 27	-96 34 11
2329-RGP	317	4329500	710876	39 05 28	-96 33 42
2433-RGP	318	4329113	711634	39 05 15	-96 33 11
2616-RGP	319	4328884	708195	39 05 10	-96 35 35
2521-RGP	320	4328921	709272	39 05 10	-96 34 50
2723-RGP	321	4328671	709549	39 05 02	-96 34 39

```
2525-RGP    322    4328909    709961    39 05 09    -96 34 21
2629-RGP    323    4328823    710821    39 05 06    -96 33 46
2814-RGP    324    4328488    707878    39 04 57    -96 35 48
2819-RGP    325    4328335    708701    39 04 52    -96 35 14
3121-RGP    326    4327854    709293    39 04 36    -96 34 50
2929-RGP    327    4328244    710726    39 04 47    -96 33 50
2930-RGP    328    4328128    711091    39 04 43    -96 33 35
3120-RGP    329    4327746    708927    39 04 33    -96 35 05
3121-RGP    330    4327805    709276    39 04 34    -96 34 51
2316-RGP    332    4329354    708156    39 05 25    -96 35 36
2822-RGP    334    4328327    709498    39 04 51    -96 34 41
```

Spatial Coverage Map:

Not available.

Spatial Resolution:

This is point data.

Projection:

Not available.

Grid Description:

Not available.

Temporal Characteristics:

Temporal Coverage:

The LTER gauges collected data from April 27, 1982 through December 30, 1989.

The Princeton University data was collected from May 29, 1987 to October 26, 1987.

Temporal Coverage Map:

Not available.

Temporal Resolution:

Daily rainfall amounts based on local time.

Data Characteristics:

The SQL definition for this table is found in the RAIN_DAY.TDF file located on FIFE CD-ROM Volume 1.

Parameter/Variable Name

Parameter/Variable Description	Range	Units
Source		

SITEGRID_ID
This is a FIS grid location code.   FIS
Site grid codes (SSEE-III) give
the south (SS) and east (EE) cell
number in a 100 x 100 array of
200 m square cells. The last 3
characters (III) are an instrument
identifier.

STATION_ID
The station ID where the data was   min = 100,   FIS
observed.   max = 334

OBS_DATE
The date when the data was observed,   min = 27-APR-87,
LTER
in the format DD-mmm-YY.   max = 30-DEC-89
PRINCETON
UNIVERSITY

OBS_TYPE
The observation type: LTER DAILY   min = LTER DAILY,   FIS
or PRINCETON (computed from the   max = PRINCETON
Princeton University 30 minute
rain data).

TOTAL_RAINFALL
The total rainfall for the station   min = 0,   [mm]
LTER
and day.   max = 116.5,
PRINCETON
missing = -9.9   UNIVERSITY

COMMENTS
Any comments that pertain to the   FIS
data set as a whole (i.e., missing
data, incorrect data.)

FIFE_DATA_CRTFCN_CODE
The FIFE Certification Code for the   * min = CPI,   FIS

```
data, in the following format:  CPI     max = CPI
(Certified by PI), CPI-??? (CPI -
questionable data).
```

```
LAST_REVISION_DATE
in the format (DD-MMM-YY).              max = 30-AUG-90
```

Footnote:

* Valid levels

The primary certification codes are:

EXM Example or Test data (not for release) PRE Preliminary (unchecked, use at your own risk) CPI

The certification code modifiers are:

PRE-NFP Preliminary - Not for publication, at the request of investigator. CPI-MRG PAMS data that is "merged" from two separate receiving stations to eliminate transmission errors. CPI-??? Investigator thinks data item may be questionable.

Sample Data Record:

SITEGRID_ID	STATION_ID	OBS_DATE	OBS_TYPE	TOTAL_RAINFALL
K4BF-RGL	211	12-AUG-87	LTER DAILY	70
K1BF-RGL	217	12-AUG-87	LTER DAILY	101.5
KUBF-RGL	223	12-AUG-87	LTER DAILY	93.5
3623-RGL	225	12-AUG-87	LTER DAILY	102
3018-RGL	226	12-AUG-87	LTER DAILY	82
2520-RGL	227	12-AUG-87	LTER DAILY	81
2529-RGL	228	12-AUG-87	LTER DAILY	72
3509-RGL	229	12-AUG-87	LTER DAILY	79
2515-RGL	230	12-AUG-87	LTER DAILY	73.5
1709-RGL	231	12-AUG-87	LTER DAILY	81
1809-RGL	235	12-AUG-87	LTER DAILY	80.5
1318-RGP	301	12-AUG-87	PRINCETON	-9.9
1718-RGP	302	12-AUG-87	PRINCETON	-9.9
1621-RGP	303	12-AUG-87	PRINCETON	84.042
1626-RGP	304	12-AUG-87	PRINCETON	90.132

COMMENTS	FIFE_DATA_CRTFCN_CODE	LAST_REVISION_DATE
CPI	03-NOV-87	
CPI	03-NOV-87	
CPI	03-NOV-87	
CPI	03-NOV-87	
CPI	03-NOV-87	
CPI	03-NOV-87	

```
CPI                     03-NOV-87
CPI                     03-NOV-87
CPI                     03-NOV-87
CPI                     03-NOV-87
CPI                     03-NOV-87
CPI                     06-NOV-87
CPI                     06-NOV-87
CPI                     11-MAY-88
CPI                     11-MAY-88
```

8. Data Organization:

Data Granularity:

This is point data containing daily rainfall amounts based on local time.

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

Data Format:

The CD-ROM file format consists of numerical and character fields of varying length separated by commas. The character fields are enclosed with a single apostrophe. There are no spaces between the fields. Each file begin with five header records. Header records contain the following information:

Record 1 Name of this file, its table name, number of records in this file, path and name of the document that describes the data in this file, and name of principal investigator for these data. Record 2 Path and filename of the previous data set, and path and filename of the next data set. (Path and filenames for files that contain another set of data taken at the same site on the same day.) Record 3 Path and filename of the previous site, and path and filename of the next site. (Path and filenames for files of the same data set taken on the same day for the previous and next sites, sequentially numbered by SITEGRID.) Record 4 Path and filename of the previous date, and path and filename of the next date. (Path and filenames for files of the same data set taken at the same site for the previous and next date.) Record 5 Column names for the data within the file, delimited by commas. Record 6 Data records begin.

Each field represents one of the attributes listed in the chart in the *Data Characteristics Section* and described in detail in the TDF file. These fields are in the same order as in the chart.

9. Data Manipulations:

Formulae:

Derivation Techniques and Algorithms:

The LTER data uses a simple conversion based on the weight to height of the pin markings on the drum strip chart to determine the amount of rainfall.

Data Processing Sequence:

Processing Steps:

The LTER rainfall data is read directly from the strip chart in millimeters of rainfall (conversions are made at the time of extraction from the chart). Only maximum daily values are read from the chart.

The Princeton University data was converted to daily total rainfall by the FIS staff. The daily totals were made using Central Daylight Saving time, not Greenwich Mean Time.

Processing Changes:

None.

Calculations:

None required for the LTER data.

Princeton University 30 minute rainfall values were converted to daily total rainfall values by aggregating all 30 minute rainfall values recorded during a day. This was done for each of the Princeton University sites. The daily total rainfall calculations were done using Central Daylight Saving Time, not Greenwich Mean Time.

Special Corrections/Adjustments:

None.

Calculated Variables:

Daily total rainfall values.

Graphs and Plots:

None.

10. Errors:

Sources of Error:

Occasionally the LTER mechanical chart recorders would fail to chart an entire week, usually because the clock was not wound sufficiently.

See the [Kings Creek Watershed 30 Minute Precipitation](#) document for sources of error for the Princeton University data.

Quality Assessment:

See the [Kings Creek Watershed 30 Minute Precipitation](#) document for quality assessment of the Princeton University data.

Data Validation by Source:

The LTER data points are routinely compared with that recorded by the rain gauge located on the Kansas State University campus.

Confidence Level/Accuracy Judgment:

The data from the LTER staff is good quality. The staff has a high level of confidence in its accuracy.

See the [Kings Creek Watershed 30 Minute Precipitation](#) document for details on the University of Princeton data.

Measurement Error for Parameters:

The LTER data has a measurement error of + or - 1 mm, which is equivalent to the width of the pen/ink on the strip chart.

Additional Quality Assessments:

FIS staff applied a general QA procedure to the data to identify inconsistencies and problems for potential users. As a general procedure, the FIS QA consisted of examining the maximum, minimum, average, and standard deviation for each numerical field in the data table. Inconsistencies and problems found in the QA check are described is the *[Known Problems with the Data Section](#)*.

Data Verification by Data Center:

The data verification performed by the ORNL DAAC deals with the quality of the data format, media, and readability. The ORNL DAAC does not make an assessment of the quality of the data itself except during the course of performing other QA procedures as described below.

The FIFE data were transferred to the ORNL DAAC via CD-ROM. These CD-ROMs are distributed by the ORNL DAAC unmodified as a set or in individual volumes, as requested. In addition, the DAAC has incorporated each of the 98 FIFE tabular datasets from the CD-ROMs into its online data holdings. Incorporation of these data involved the following steps:

- Copying the entire FIFE Volume 1, maintaining the directory structure on the CD-ROM;

- Using data files, documentation, and SQL code provided on the CD-ROM to create a database in Statistical Analysis System (SAS); and
- Creating transfer files to transfer the SAS metadata database to Sybase tables.

Each distinct type of data (i.e. "data set" on the CD-ROM), is accompanied by a documentation file (i.e., .doc file) and a data format/structure definition file (i.e., .tdf file). The data format files on the CD-ROM are Oracle SQL commands (e.g., "create table") that can be used to set up a relational database table structure. This file provides column/variable names, character/numeric type, length, and format, and labels/comments. These SQL commands were converted to SAS code and were used to create SAS data sets and subsequently to input data files directly from the CD-ROM into a SAS dataset. During this process, file names and directory paths were captured and metadata was extracted to the extent possible electronically. No files were found to be corrupted or unreadable during the conversion process.

Additional Quality Assurance procedures were performed as follows:

- Statistical operations were performed to calculate minimum and maximum values for all numeric fields and to create a listing of all values of the character fields. During this process, it was determined that various conventions were used to represent missing values. (Note: no modifications were made to any data by the DAAC). In most cases, missing value identification conventions were discussed in the accompanying .doc file. Based on a visual check of the minimum and maximum values, no glaring errors or holes were identified that might indicate errors introduced during CD-ROM mastering by the FIFE project or data ingest by the DAAC.
- Some minor inconsistencies and typographical errors were identified in some of the character fields and column labels, however, no modifications were made to the data by the DAAC.
- Some conversions of ASCII data were necessary to move the data from a DOS platform to a UNIX platform. Standard operating system conversion utilities were used (e.g., dos2unix).
- Much of the metadata required for archival is imbedded in the narrative documentation accompanying the data sets and extracted manually by DAAC staff who have read the .doc files provided on the CD-ROM and have hand entered this information into the metadata database maintained by the DAAC. QA procedures have been performed on these metadata to identify and eliminate typographical errors and inconsistencies in naming conventions, to ensure that all required metadata is present, and to ensure the accuracy of file names and paths for retrieval.
- Data requested for distribution to users are checked to verify that files copied from disk to other media remain uncorrupted.

As errors are discovered in the online tabular data by investigators, users, or DAAC staff, corrections are made in cooperation with the principal investigators. These corrections are then distributed to users. CD-ROM data are corrected when re-mastering occurs for replenishment of CD-ROM stock.

11. Notes:

Limitations of the Data:

Not available.

Known Problems with the Data:

The LTER sites may having periods in which no data was recorded due to insufficient winding of clocks.

See the [Kings Creek Watershed 30 Minute Precipitation](#) document for known problems with the Princeton University data.

Usage Guidance:

The LTER data only contains values of total rainfall for days in which rainfall was recorded.

The Princeton University data contains values of Total Rainfall on days in which no rainfall was recorded.

Any Other Relevant Information about the Study:

An analysis determined that 20 - 30 rain gauges should be able to estimate storm rainfall volume to within 10% with a reliability of 15%.

12. Application of the Data Set:

This data set can be used to quantify the spatial variation of rainfall across the FIFE site and to determine the major elements of the water balance of the Kings Creek catchment using catchment, water-budget models with a temporal resolution of 20 days.

13. Future Modifications and Plans:

The FIFE field campaigns were held in 1987 and 1989 and there are no plans for new data collection. Field work continues near the FIFE site at the Long-Term Ecological Research (LTER) Network Konza research site (i.e., LTER continues to monitor the site). The FIFE investigators are continuing to analyze and model the data from the field campaigns to produce new data products.

14. Software:

Software to access the data set is available on the all volumes of the FIFE CD-ROM set. For a detailed description of the available software see the *Software Description Document*.

15. Data Access:

Contact Information:

ORNL DAAC User Services
Oak Ridge National Laboratory

Telephone: (865) 241-3952
FAX: (865) 574-4665

Email: ornldaac@ornl.gov

Data Center Identification:

ORNL Distributed Active Archive Center
Oak Ridge National Laboratory
USA

Telephone: (865) 241-3952
FAX: (865) 574-4665

Email: ornldaac@ornl.gov

Procedures for Obtaining Data:

Users may place requests by telephone, electronic mail, or FAX. Data is also available via the World Wide Web at http://daac.ornl.gov.

Data Center Status/Plans:

FIFE data are available from the ORNL DAAC. Please contact the ORNL DAAC User Services Office for the most current information about these data.

16. Output Products and Availability:

Daily Rainfall Amounts in the Konza Research Area are available on FIFE CD-ROM Volume 1. The CD-ROM filename is as follows:

\DATA\SUR_MET\RAIN_DAY\Yyyyy\ydddgrid.RDY

Where *xxxx* is the four digit code for the location within the FIFE site grid, *yyyy* is the four digits of the century and year (e.g., Y1987 = 1987), and *ddd* is the day of the year, (e.g., 061 = sixty-first day in the year). Note: capital letters indicate fixed values that appear on the CD-ROM exactly as shown here, lower case indicates characters (values) that change for each path and file.

The format used for the filenames is: *ydddgrid.sfx*, where *grid* is the four-number code for the location within the FIFE site grid, *y* is the last digit of the year (e.g., 7 = 1987, and 9 = 1989),

and *ddd* is the day of the year. The filename extension (*.sfx*), identifies the data set content for the file (see the *Data Characteristics Section*) and is equal to .RDY for this data set.

17. References:

Satellite/Instrument/Data Processing Documentation.

Anonymous. 1993. Methods Manual for Konza Prairie Research Natural Area.

Konza LTER publication.

Journal Articles and Study Reports.

Wood, E.F., M. Sivapalan, and K. Beven. 1990. Similarity and scale in catchment storm response. Rev. in Geophy. 28(1).

Wood, E.F. 1990. Water balance model for Kings Creek. Proc. of Symposium on FIFE. Am. Meteorol. Soc. February 7-9. Anaheim, CA. p163-167.

Wood, E.F., and V. Lakshmi. 1992. A comparison of latent heat fluxes and their time-space variability from a water balance model and surface measurements in FIFE 1987. J. of Geophys. Res. (submitted).

Archive/DBMS Usage Documentation.

Contact the EOS Distributed Active Archive Center (DAAC) at Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee (see the *Data Center Identification Section*). Documentation about using the archive and/or online access to the data at the ORNL DAAC is not available at this revision.

18. Glossary of Terms:

A general glossary for the DAAC is located at Glossary.

19. List of Acronyms:

CD-ROM Compact Disk, Read-Only Memory DAAC Distributed Active Archive Center EOS Earth Observing System EOSDIS EOS Data and Information System FIS FIFE Information System FIFE First ISLSCP Field Experiment IFC Intensive Field Campaign ISLSCP International Satellite Land Surface Climatology Project LTER Long-Term Ecological Research ORNL Oak Ridge National Laboratory RGL Rain Gauge LTER RGP Rain Gauge Princeton SQL Structured Query Language TDF Table Definition File URL Uniform Resource Locator UTM Universal Transverse Mercator

A general list of acronyms for the DAAC is available at [Acronyms.](#)

20. Document Information:

April 28, 1994 (citation revised on October 16, 2002).

This document has been reviewed by the FIFE Information Scientist to eliminate technical and editorial inaccuracies. Previous versions of this document have been reviewed by the Principal Investigator, the person who transmitted the data to FIS, a FIS staff member, or a FIFE scientist generally familiar with this data. It is believed that the document accurately describes the data as collected and as archived by the FIFE CD-ROM series.

Document Review Date:

January 14, 1997.

Document ID:

ORNL-FIFE_RAIN_DAY.

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