Surface Meteorology Data: (NCDC) (FIFE)

Summary:

The NOAA Regional Surface Data - 1989 (NCDC) Data Set contains hourly surface meteorological data for the FIFE area. Though the measurements presented in this data set were not taken precisely at the FIFE study area, it is hypothesized that they present a representative horizontal cross-section of meteorological variables and sky conditions in and around the site. It is also realized that many of the variables presented in this data set are somewhat subjective and dependent on the skill (and biases) of the observer, such as estimates of cloud amount and height. This data may be used as input data and/or verification data for numerical simulation models.

Table of Contents:

1. Data Set Overview:

Data Set Identification:

Surface Meteorology Data: NCDC (FIFE)
(NOAA Regional Surface Data - 1989 (NCDC)).

Data Set Introduction:

The NOAA Regional Surface Data - 1989 (NCDC) Data Set documented within this report are hourly surface meteorological data from selected stations centered around the FIFE study area. This data set contains hourly surface meteorological data for the FIFE area.

Objective/Purpose:

The FIFE Staff Science effort covered those activities which were FIFE community level activities, or required uniform data collection procedures across sites and time. These activities included the acquisition, processing and archiving of meteorological parameters of the atmosphere. This data set contains hourly surface meteorological data for the FIFE area. This data may be used as input data and/or verification data for numerical simulation models.

Summary of Parameters:

1. Meteorological parameters : sea level pressure, dew point temperature, wind direction, wind speed, surface pressure, dry bulb temperature, wet bulb temperature, relative humidity;
2. Weather parameters : visibility, and present weather (contains precipitation variables)
3. Cloud and sky parameters : sky conditions for four layers, total sky cover; and cloud type, height, and amount for four layers.

Discussion:

The NOAA regional surface data were extracted from the NOAA operational analysis system, and were archived at the National Climatic Data Center. The data set documented within this report are hourly surface meteorological data from selected stations centered around the FIFE study area.

Related Data Sets:

- NOAA Regional Surface Data.
- NOAA Radiosonde Observations.
- NOAA Radiosonde Observations - 1989(NCDC).
- Upper Air Derivative Data from NMC.
- Automatic Micrometeorological Observations.
- FIFE Radiosonde Data.

FIS Data Base Table Name:

NCDC_SURFACE_DATA.

2. Investigator(s):

Investigator(s) Name and Title:

Staff Science.

Title of Investigation:

Staff Science Meteorological Data Acquisition Program.

Contact Information:

Contact 1:
Dr. Robert J .Lutz
NASA/GSFC
Greenbelt, MD
301-286-1272
lutz@pldsg3.gsfc.nasa.gov

Contact 2:
US Dept. of Commerce
NOAA/NESDIS
Asheville,N.C.
704-259-0682

Requested Form of Acknowledgment.

The NOAA Regional Surface Data - 1989 (NCDC) were produced by the National Oceanic and Atmospheric Administration (NOAA) and archived by the National Climatic Data Center (NCDC).

3. Theory of Measurements:

Though the measurements presented in this data set were not taken precisely at the FIFE study area, it is hypothesized that they present a representative horizontal cross-section of meteorological variables and sky conditions in and around the site. It is also realized that many of the variables presented in this data set are somewhat subjective and dependent on the skill (and biases) of the observer, such as estimates of cloud amount and height.

4. Equipment:

Sensor/Instrument Description:

A variety of instruments are used in gathering the NOAA surface weather data. Standard instruments include anemometers, tipping bucket rain gauges, psychrometers, and aneroid pressure sensors, and wet and dry bulb thermometers. Description of specific instruments at each regional site are not available to FIS staff at this time. Questions pertaining to instrumentation may be addressed to the National Climatic Data Center.

Collection Environment:

Ground-based.

Source/Platform:

Instruments were mounted within and in the proximity of standard NOAA surface meteorological stations.

Source/Platform Mission Objectives:

To provide surface meteorology data from meteorological stations for the area surrounding the Konza Prairie.

Key Variables:

Standard meteorological variables (temperature, wind, pressure, and humidity), weather variables (weather and visibility) and cloud parameters (type, height, amount).

Principles of Operation:

Not available at this revision.

Sensor/Instrument Measurement Geometry:

Not available at this revision.

Manufacturer of Sensor/Instrument:

Not available at this revision.

Calibration:

NOAA has established specific operational procedures for the instruments used in surface meteorological stations. It is beyond the scope of this documentation to describe this, but details may be found in Federal Meteorological Handbook No. 1 and Federal Meteorological Handbook No. 2 (see the *Satellite/Instrument/Data Processing Documentation Section*). In addition, NOAA uses the calibration factors supplied by the manufacturer for each instrument.

Specifications:

Not available at this revision

Tolerance:

Not available at this revision

Frequency of Calibration:

Not available at this revision

Other Calibration Information:

Not available at this revision

5. Data Acquisition Methods:

FIS staff acquired the data fro the National Climatic Data Center (NCDC) in the form of 6250 bpi magnetic computer tapes. The data was read from the tapes with documentation provided by NCDC. The data was then loaded into tables by FIS staff.

6. Observations:

Data Notes:

Not available.

Field Notes:

None.

7. Data Description:

Spatial Characteristics:

Spatial Coverage:

Data collection included all available reporting NOAA stations within a 256 km by 256 km area centered on the FIFE site. It should be noted that two stations that reported in the 1987 - 1988 data set (Falls City/Brenner Airport and Wichita/Jabarra Airport) were not available for this data set.

NOAA STATION LOCATION	NORTHING	EASTING
BEATRICE/MUNICIPAL AIRPORT	4465124	691182
CONCORDIA/BLOSSER MUNICIPAL AIRPORT	4378475	615994
CHANUTE/MARTIN JOHNSON AIRPORT	4171529	280964
EMPORIA/MUNICIPAL AIRPORT	4246304	744744
HUTCHINSON/MUNICIPAL AIRPORT	4213612	599418
SALINA/MUNICIPAL AIRPORT	4295241	617233
FORT RILEY/MARSHALL AIR FORCE BASE	4324491	693267
TOPEKA/BILLARD MUNICIPAL AIRPORT	4327268	272167
LINCOLN/MUNICIPAL AIRPORT	4524331	689669
TOPEKA/FORBES AIR FORCE BASE	4314402	268903

WICHITA/MCCONNELL AIR FORCE BASE	4164493	652981
WICHITA/MID-CONTINENT MUNICIPAL AIRPORT	4167957	639679
MANHATTAN/MUNICIPAL AIRPORT	4335807	701637

	LATITUDE	**LONGITUDE**
40 19 00	96 45 00	
39 33 00	97 39 00	
37 40 00	95 29 00	
38 20 00	96 12 00	
38 04 00	97 52 00	
38 48 00	97 39 00	
39 03 00	96 46 00	
39 04 00	95 38 00	
40 51 00	96 45 00	
38 57 00	95 40 00	
37 37 00	97 16 00	
37 39 00	97 25 00	
39 09 00	96 40 00	

Spatial Coverage Map:

Not available.

Spatial Resolution:

These are point data.

Projection:

Not available.

Grid Description:

Not available.

Temporal Characteristics:

Temporal Coverage:

The overall time period of data acquisition was from October 1, 1988 through October 31, 1989.

Temporal Coverage Map:

Not available.

Temporal Resolution:

Observations are made at hourly intervals.

Data Characteristics:

The SQL definition for this table is found in the NCDC_SUR.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. Site grid codes (SSEE-III) give the south (SS) and the 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_CALL_SIGN The station call sign of the reporting station.			
OBS_DATE The date of the observations, in the format (DD-mmm-YY).			
OBS_TIME The time that the observation was taken in GMT. The format is (HHMM).			
CEILING_HT The height of the ceiling in hundreds of feet.		[hundreds of feet]	$
FIRST_SKY_CONDITION A general description of the first sky cloud cover (coded).			#
SECOND_SKY_CONDITION A general description of the second sky cloud cover (coded).			#

THIRD_SKY_CONDITION A general description of the third sky cloud cover (coded).		#
FOURTH_SKY_CONDITION A general description of the fourth sky cloud cover (coded).		#
VISIBILITY The current visibility (coded).		!
PRESENT_WEATHER The present weather conditions as reported by the station (coded).		**
SEA_LVL_PRESS The sea level air pressure.	[millibars]	
DEWPT_TEMP The dewpoint temperature.	[degrees Fahrenheit]	
WIND_DIR The wind direction.	[degrees from North]	+
WIND_SPEED The wind speed.	[knots]	
SURF_PRESS The surface pressure.	[inches of Mercury]	
DRY_BULB_TEMP The dry bulb temperature, or the ambient air temperature.	[degrees Fahrenheit]	
WET_BULB_TEMP The wet bulb temperature.	[degrees Fahrenheit]	
REL_HUM The relative humidity.	[percent]	

TOTAL_SKY_COVER The amount of total sky coverage by clouds.	[tenths]	
LOWEST_CLOUD_AMOUNT The amount of clouds in the lowest layer.	[tenths]	
LOWEST_CLOUD_TYPE The type of clouds in the lowest layer (coded).		-
LOWEST_CLOUD_HT The height of the lowest cloud layer.	[hundreds of feet]	$+
SECOND_CLOUD_AMOUNT The amount of clouds in the second layer.	[tenths]	
SECOND_CLOUD_TYPE The type of clouds in the second layer (coded).		-
SECOND_CLOUD_HT The height of the second cloud layer.	[hundreds of feet]	
THIRD_CLOUD_AMOUNT The amount of clouds in the third layer.	[tenths]	
THIRD_CLOUD_TYPE The type of clouds in the third layer (coded).		-
THIRD_CLOUD_HT The height of the third cloud layer.	[hundreds of feet]	
FOURTH_CLOUD_AMOUNT The amount of clouds in the fourth layer.	[tenths]	
FOURTH_CLOUD_TYPE The type of clouds in the fourth		-

layer (coded).		
FOURTH_CLOUD_HT The height of the fourth cloud layer.		[hundreds of feet]
TOTAL_SKY_COVER_2 The total amount of opaque sky coverage.		[tenths]
SECOND_CLOUD_AMOUNT_SUM The sum of the cloud amount at the lowest and second layer.		[tenths]
THIRD_CLOUD_AMOUNT_SUM The sum of the cloud amount at the lowest, second, and third layer.		[tenths]
FIFE_DATA_CRTFCN_CODE The FIFE Certification Code for the data, in the following format: CPI (Certified by PI), CPI-??? (CPI - questionable data).	*	
LAST_REVISION_DATE data, in the format (DD-mmm-YY).		

Footnotes:

= Translate the SITEGRID_ID field to station IDs, NOAA Weather Band IDs and station locations as follows:

SITEGRID	STN_ID	Band ID	NOAA Weather Station Location
XICT-MET	450	03928	Wichita, KS
XIAB-MET	465	03923	McConnell, KS
XHUT-MET	453	13986	Hutchinson, KS
XCNU-MET	462	13981	Chanute, KS
XMHK-MET	460	03936	Manhatten, KS
XEMP-MET	452	13989	Emporia, KS
XTOP-MET	457	93964	Billard Top, KS
XCNK-MET	458	13984	Concordia, KS
XSLN-MET	454	3922	Salina, KS
XFRI-MET	455	13947	Ft. Riley, KS
XFOE-MET	464	13920	Forbes Field, KS

```
XLNK-MET     459       14904         Lincoln, NE
XBIE-MET     461       94947         Beatrice, NE
```

$ Decode the CEILING_HT field as follows:

000-990 hundred of feet (0-99,000 feet)
999 - unlimited
888 cirroform ceiling, height unknown

Decode the SKY_CONDITION fields (first, second, third, and fourth) as follows:

0 - clear
1 - thin scattered
2 - scattered (cloud cover .1 through .5)
4 - thin broken
5 - broken (cloud cover .6 through .9)
7 - thin overcast (cloud cover 1.0)
8 - overcast (cloud cover 1.0)
9 - partial obscuration (0.1 or more but not all sky hidden by surface based layer)
10 - obscuration (all of sky hidden by a surface based layer)

! Decode the VISIBILITY field as follows:

000-006 - 0 to 3/8 miles (1/16 mile increments)
006-020 - 3/8 to 2 miles (1/8 mile increments)
020-027 - 2 to 2 ½ miles (1/4 mile increments)
027-030 - 2 ½ miles to 3 miles (1/2 mile increments)
030-150 - 3 to 15 miles (1 mile increments)
150-159 - 15 to 95 miles (5 mile increments)
990 - 100 miles or more

** The PRESENT_WEATHER field is an 8 digit encoded field where each digit represents a different parameter. The following list defines the parameter associated with each digit and the interpretation of the codes for that parameter.

Digit	Parameter	Code Interpretation
1	Extremely intensive weather conditions	0 = none 1 = thunderstorm 2 = heavy thunderstorm/severe thunderstorm 3 = tornado (land); waterspout (water) 5 = squall
2	Liquid precipitation	0 = none 1 = light rain 2 = moderate rain 3 = heavy rain 4 = light rain showers 5 = moderate rain showers 6 = heavy rain showers

```
7 = light freezing rain
8 = moderate freezing rain
9 = heavy freezing rain
3      Liquid          0 = none
precipitation   4 = light drizzle
5 = moderate drizzle
6 = heavy drizzle
7 = light freezing drizzle
8 = moderate freezing drizzle
9 = heavy freezing drizzle
4      Frozen          0 = none
precipitation   1 = light snow
2 = moderate snow
3 = heavy snow
4 = light snow pellets
5 = moderate snow pellets
6 = heavy snow pellets
8 = ice crystals
5      Frozen          0 = none
precipitation   1 = light snow showers
2 = moderate snow showers
3 = heavy snow showers
7 = light snow grains
8 = moderate snow grains
9 = heavy snow grains
6      Frozen          0 = none
precipitation   1 = light ice pellets
2 = moderate ice pellets
3 = heavy ice pellets
5 = hail
8 = small hail
7      Obstructions    0 = none
to vision       1 = fog
2 = ice fog
3 = ground fog
4 = blowing dust
5 = blowing sand
8      Obstructions    0 = none
to vision       1 = smoke
2 = haze
3 = smoke and haze
4 = dust
5 = blowing snow
6 = blowing spray
```

+ WIND_DIR:
True direction, in tens of degrees, from which wind is blowing.

Decode the CLOUD_TYPE fields (lowest, second, third, and fourth) as follows:

	Code	**Interpretation**
0	none/clear	
1	fog	
2	stratus	

```
3          stratocumulus
4          cumulus
5          cumulonimbus
6          altostratus
7          alto cumulus
8          cirrus
9          cirrostratus
10          stratus fractus
11          cumulus fractus
12          cumulonimbus fractus
13          nimbostratus
14          altocumulus castellanus
15          cirrocumulus
16          obscuring phenomena other than fog
```

$+ Decode the CLOUD_HT fields (lowest, second, third, and fourth) as follows:

000-990 - hundreds of feet (0 to 99,000 feet)
888 - unknown height of cirroform layer
999 - unlimited vertical visibility

Decode the FIFE_DATA_CRTFCN_CODE as follows:

The primary certification codes are: EXM Example or Test data (not for release) PRE Preliminary (unchecked, use at your own risk) CPI Checked by Principal Investigator (reviewed for quality) CGR Checked by a group and reconciled (data comparisons and cross checks)

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_CALL_SIGN   OBS_DATE    OBS_TIME   CEILING_HT
-----------   -----------------   ---------   --------   ----------
XICT-MET            ICT           10-NOV-88     1500        999
XICT-MET            ICT           10-NOV-88     1600        999
XICT-MET            ICT           10-NOV-88     1700        120
XICT-MET            ICT           10-NOV-88     1800        120
     FIRST_SKY_CONDITION   SECOND_SKY_CONDITION   THIRD_SKY_CONDITION
-------------------   --------------------   -------------------
9                      9                     9
9                      9                     9
9                      9                     9
9                      9                     9
     FOURTH_SKY_CONDITION   VISIBILITY   PRESENT_WEATHER   SEA_LVL_PRESS   DEWPT_TEMP
--------------------   ----------   ---------------   -------------   ----------
9                    150                             1024.00          29
9                    150                             1023.70          29
9                    150                             1023.10          29
9                    150                             1022.80          29
       WIND_DIR   WIND_SPEED   SURF_PRESS   DRY_BULB_TEMP   WET_BULB_TEMP   REL_HUM
--------   ----------   ----------   -------------   -------------   -------
36          5          28.80            57              44             34
36          4          28.79            58              45             33
28.77            54             43             38
6           4          28.76            53              42             40
```

TOTAL_SKY_COVER	LOWEST_CLOUD_AMOUNT	LOWEST_CLOUD_TYPE	LOWEST_CLOUD_HT
888			
3	3	-999	120
9	6	-999	120
10	6	-999	120

SECOND_CLOUD_AMOUNT	SECOND_CLOUD_TYPE	SECOND_CLOUD_HT	THIRD_CLOUD_AMOUNT
-999		-999	-999
3	-999	250	-999
6	-999	250	-999
10	-999	250	-999

THIRD_CLOUD_TYPE	THIRD_CLOUD_HT	FOURTH_CLOUD_AMOUNT	FOURTH_CLOUD_TYPE
8	-999	-999	-999
-999	-999	-999	-999
-999	-999	-999	-999
-999	-999	-999	-999

FOURTH_CLOUD_HT	TOTAL_SKY_COVER_2	SECOND_CLOUD_AMOUNT_SUM
-999	-999	-999
-999	-999	-999
-999	-999	-999
-999	-999	-999

THIRD_CLOUD_AMOUNT_SUM	FIFE_DATA_CRTFCN_CODE	LAST_REVISION_DATE
-999	pre	01-APR-93
-999	pre	01-APR-93
-999	pre	01-APR-93
-999	pre	01-APR-93

8. Data Organization:

Data Granularity:

This data set contains point data acquired from October 1, 1988 through October 31, 1989. The data was collected in hourly time intervals.

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 begins 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_ID)). 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:

Not available at this revision.

Data Processing Sequence:

Processing Steps:

FIS staff obtained the initial data from the National Climatic Data Center in the form of 6250 bpi magnetic computer tapes. Data was read from the tapes and inserted into appropriate data columns. Much of the data in encoded, and users of this data set will have to use the *Other Relevant Information Section* to interpret these values. In addition, FIS staff filled missing values with the value of 9999.

Processing Changes:

NOAA identifies surface stations with WBAN surface station identification numbers. This number is different than the identification numbers that were used in the 1987-1988 data set (FIS identification numbers). FIS staff converted the WBAN numbers to corresponding FIS identification numbers. the *Other Relevant Information Section* contains documentation for both numbers. FIS staff inserted the value of 9999 where missing values were noted.

Calculations:

None performed by FIS staff.

Special Corrections/Adjustments:

None.

Calculated Variables:

None.

Graphs and Plots:

None.

10. Errors:

Sources of Error:

Most remote station problems are detected at the base by direct observation of data being received and displayed. Determining the nature of most problems is generally straightforward. Typical problems experienced in the field, which introduce errors in the data are :

- Psychrometer water bottles dry out or fail to wick properly, or their fans may freeze-up.
- Rain gauges can become clogged.
- Batteries can lose one or more cells.
- Water may invade components or cabling, causing failure or sporadic operation.
- Wind sensors may become also become clogged with dust.
- Electronic boxes may experience component failures.
- Communication quality or timing may degrade.

Quality Assessment:

Data Validation by Source:

It is assumed that NOAA/NESDIS does a quality check of the data, before archiving and delivery to researchers. In addition, FIS staff performed preliminary data quality control, checking maximums and minimums in all data fields.

Confidence Level/Accuracy Judgment:

FIS staff believes this data to be of high quality.

Measurement Error for Parameters:

Not available at this revision.

Additional Quality Assessments:

Not available at this revision.

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:

Not available at this revision.

Usage Guidance:

Users of the data set will need to use the documentation contained in the *Other Relevant Information Section* to interpret the information contained in the data columns.

Any Other Relevant Information about the Study:

Not available at this revision.

12. Application of the Data Set:

This data may be used as input data and/or verification data for numerical simulation models.

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:

NOAA Regional Surface Data - 1989 (NCDC) are available on FIFE CD-ROM Volume 1. The CD-ROM filename is as follows:

\DATA\SUR_MET\NCDC_SUR\GRIDxxxx\YyyMmm\ydddgrid.NCS

Where *xxxx* is the four digit code for the location within the FIFE site grid, *yy* is the last two digits of the year (e.g., Y87 = 1987) and *mm* is the month of the year (e.g., M12 = December). 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 (e.g., 061 = sixty-first 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 .NCS for this data set.

17. References:

Satellite/Instrument/Data Processing Documentation.

Documentation supplied by the National Climatic Data Center is :

Reference Manual
WBAN Hourly Surface Observations -1440
Data Processing Division, ETAC, USAF
National Climatic Center, NOAA

Additional information :
Federal Meteorological Handbook No. 1
Surface Observations
Third Edition - 1982
U.S. Department of Commerce, National Oceanic and Atmospheric Administration.
Washington, D. C.

Federal Meteorological Handbook No. 2
Surface Synoptic Codes
FCM-H2-1988
U.S. Department of Commerce, National Oceanic and Atmospheric Administration.
Washington, D. C.

Journal Articles and Study Reports.

Hall, F.G., P.J. Sellers, I. MacPherson, R.D. Kelly, S. Verma, B. Markham, B. Blad, J. Wang, and D.E. Strebel. 1989. FIFE: Analysis and Results - A Review. Adv. Space Res. 9(7):275-293.

Pike, J.M. 1985. Field calibration of humidity instruments in the natural atmosphere. Proceedings of International Symposium on moisture and humidity. Washington, DC. 15-18 April. Instrument Society of America. Research Triangle Park, NC. p111-119.

Wade, C.G. 1987. A quality control program for surface mesometeorological data. J. Atmos. Oceanic Tech. 4:435-453.

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:

bpi Byte per inch CD-ROM Compact Disk (optical), Read-Only Memory DAAC Distributed Active Archive Center EOSDIS Earth Observing System Data and Information System FIFE First ISLSCP Field Experiment FIS FIFE Information System ISLSCP International Satellite Land Surface Climatology Project Mbps Megabyte per second NESDIS National Environmental Satellite Data and Information Service NMC National Meteorological Center NOAA National Oceanic and Atmospheric Administration ORNL Oak Ridge National Laboratory URL Uniform Resource Locator UTM Universal Transverse Mercator WBAN Weather Band

A general list of acronyms for the DAAC is available at Acronyms.

20. Document Information:

April 24, 1994 (citation revised on October 16, 2002).

Warning: This document has not been checked for technical or editorial accuracy by the FIFE Information Scientist. There may be inconsistencies with other documents, technical or editorial errors that were inadvertently introduced when the document was compiled or references to preliminary data that were not included on the final CD-ROM.

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 the data.

Document Review Date:

September 4, 1996.

Document ID:

ORNL-FIFE_NCDC_SUR.

Citation:

Cite this data set as follows:

Lutz, R. J. 1994. Surface Meteorology Data: NCDC (FIFE). Data set. Available on -line [http://www.daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/122. Also published in D. E. Strebel, D. R. Landis, K. F. Huemmrich, and B. W. Meeson (eds.), Collected Data of the First ISLSCP Field Experiment, Vol. 1: Surface Observations and Non-Image Data Sets. CD-ROM. National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, Maryland, U.S.A. (available from http://www.daac.ornl.gov).

Document Curator:

DAAC Staff

Document URL:

http://daac.ornl.gov