NWS Daily Climatology Data: 1975 (SNF)

Summary:

Weather data were collected by the National Weather Service in International Falls, Minnesota. International Falls is about 80 miles from the SNF, but the weather data are representative of the area. Total solar insolation measurements were made at Fall Lake Dam in Winton, Minnesota, by Prof. Donald Baker of the Department of Soil Science at the University of Minnesota, St. Paul. Insolation values were measured using a Yellow Springs solar cell calibrated against an Eppley Pyranometer.

Table of Contents:

1. Data Set Overview:

Data Set Identification:

NWS Daily Climatology Data: 1975 (SNF).

Data Set Introduction:

Weather data were collected by the National Weather Service in International Falls, Minnesota. International Falls is about 80 miles from the SNF, but the weather data are representative of the

area. Total solar insolation measurements were made at Fall Lake Dam in Winton, Minnesota, by Prof. Donald Baker of the Department of Soil Science at the University of Minnesota, St. Paul. Insolation values were measured using a Yellow Springs solar cell calibrated against an Eppley Pyranometer.

Objective/Purpose:

Not available.

Summary of Parameters:

Daily temperature (minimum, maximum, average), precipitation, insolation.

Discussion:

Daily weather data for the years 1972 through 1990 are stored in a collection of data sets with each data set containing one year's data, plus a data set including the entire data collection. The data set names are in the form:

NWS Daily Climatology Data: 1972 (SNF)
NWS Daily Climatology Data: 1973 (SNF)
NWS Daily Climatology Data: 1974 (SNF)
NWS Daily Climatology Data: 1975 (SNF)
NWS Daily Climatology Data: 1976 (SNF)
NWS Daily Climatology Data: 1977 (SNF)
NWS Daily Climatology Data: 1978 (SNF)
NWS Daily Climatology Data: 1979 (SNF)
NWS Daily Climatology Data: 1980 (SNF)
NWS Daily Climatology Data: 1981 (SNF)
NWS Daily Climatology Data: 1982 (SNF)
NWS Daily Climatology Data: 1983 (SNF)
NWS Daily Climatology Data: 1984 (SNF)
NWS Daily Climatology Data: 1985 (SNF)
NWS Daily Climatology Data: 1986 (SNF)
NWS Daily Climatology Data: 1987 (SNF)
NWS Daily Climatology Data: 1988 (SNF)
NWS Daily Climatology Data: 1989 (SNF)
NWS Daily Climatology Data: 1990 (SNF)
and
NWS Daily Climatology Data: 1972-1990 (the entire data collection).

Related Data Sets:

Not available.

2. Investigator(s):

Investigator(s) Name and Title:

Dr. Forrest G. Hall
NASA Goddard Space Flight Center

Dr. K. Fred Huemmrich
NASA Goddard Space Flight Center

Dr. Donald E. Strebel
Versar, Inc.

Dr. Scott J. Goetz
University of Maryland

Ms. Jamie E. Nickeson
NASA Goddard Space Flight Center

Ms. K. D. Woods
NASA Goddard Space Flight Center

Dr. Celeste Jarvis
NASA Headquarters

Title of Investigation:

Biophysical, Morphological, Canopy Optical Property, and Productivity Data on the Superior National Forest.

Contact Information:

Dr. Forrest G. Hall
NASA Goddard Space Flight Center
Fax: +1 (301) 614-6659
Telephone: +1 (301) 614-6695
E-mail: fghall@ltpmail.gsfc.nasa.gov

3. Theory of Measurements:

Not available.

4. Equipment:

Sensor/Instrument Description:

Collection Environment:

Ground-based.

Source/Platform:

Meteorological Station.

Source/Platform Mission Objectives:

Not available.

Key Variables:

Daily temperature (minimum, maximum, average), precipitation, insolation.

Principles of Operation:

Not available.

Sensor/Instrument Measurement Geometry:

Not available.

Manufacturer of Sensor/Instrument:

Not available.

Calibration:

Not available.

5. Data Acquisition Methods:

Not available.

6. Observations:

Data/Field Notes:

Not available.

7. Data Description:

Spatial Characteristics:

Weather data were collected by the National Weather Service in International Falls, Minnesota. International Falls is about 80 miles from the SNF, but the weather data are representative of the area.

Temporal Characteristics:

This data set contains meteorological data collected during 1975.

Data Characteristics:

Variable Name/ Long Name	SAS Type	Generic Type	Description
1 location LOCATION	$ 24	CHAR(20)	"Location of Recording Station"
2 obs_datc OBS_DATE	$ 12	DATE	"The date of the observations, in the format (DD-MMM-YY) (ex 01-jan-90)"
3 temp_min MIN_TEMP	8	NUMBER(6,1)	"Daily minimum temperature (F)"
4 temp_max MAX_TEMP	8	NUMBER(6,1)	"Daily maximum temperature (F)"
5 temp_avg AVG_TEMP	8	NUMBER(6,1)	"Daily average temperature (F)"
6 precip PRECIP	8	NUMBER(7,2)	"Precipitation: total daily water equivalent (inches)"
7 gdd GDD	8	NUMBER(5,0)	"Growing (heating) degree days

```
accumulated for that day calculated
from the sine wave method. A base
value of 40 degrees (F) was used."
```

```
8  t_solar     TOTAL_SOLAR              8          NUMBER(5,1)
"Total daily solar irradiance
(Langleys) recorded by a Yellow-
Springs solar cell at Winton,
Minnesota"
```

```
9  rel_hum     REL_HUM                  8          NUMBER(6,1)
"Relative humidity (%) as measured
daily at 1400 local time"
```

Sample Data Record:

```
location              obs_datc      temp_min   temp_max   temp_avg    precip     gdd
t_solar       rel_hum
```

```
"Fall Lake Dam, MN"     "01-JAN-75"      .          .          .          .          .
126.8           .
"Fall Lake Dam, MN"     "02-JAN-75"      .          .          .          .          .
59.6          .
"Fall Lake Dam, MN"     "03-JAN-75"      .          .          .          .          .
58.2          .
"Fall Lake Dam, MN"     "04-JAN-75"      .          .          .          .          .
132.1           .
"Fall Lake Dam, MN"     "05-JAN-75"      .          .          .          .          .
84.7          .
"Fall Lake Dam, MN"     "06-JAN-75"      .          .          .          .          .
39.3          .
"Fall Lake Dam, MN"     "07-JAN-75"      .          .          .          .          .
45.1          .
"Fall Lake Dam, MN"     "08-JAN-75"      .          .          .          .          .
68.2          .
"Fall Lake Dam, MN"     "09-JAN-75"      .          .          .          .          .
53            .
"Fall Lake Dam, MN"     "10-JAN-75"      .          .          .          .          .
14.1          .
```

Footnote:

> For presentation in this document, some padding blanks may have been eliminated between columns in the Sample Data Record. Due to the many fields in this data file, these columns will wrap while viewing. The actual data files, however, are column delimited with an adequate record length to prevent wrapping. See the *Data Format Section* for conventions used for missing data values in the data file.

8. Data Organization:

Data are sorted by observation date (obs_datc) and location (location). Key fields in each record are location and obs_datc.

Data Granularity:

Each data set consists of a single ASCII file containing climatology data for each location for an entire year, except in the case of "NWS Daily Climatology Data: 1972-1990" which contains the climatology data for the entire period 1972-1990.

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

Data Format:

The data files associated with this data set consist of numeric and character fields of varying lengths aligned in columns.

The first row of each data file contains the 8 character SAS variable name that links to the data format definition file.

Character fields are enclosed in double quotes and numeric fields are listed without quotes.

Missing data values can be of two varieties:

1. Values that were identified as missing in the original data files. Missing numeric values of this type are identified in these data as -999.
2. Those holes that were created as a result of combining files that contained a slightly different variable set. Missing values of this type are identified in these data files as empty double quotes for character fields and a single period, '.' for numeric fields.

9. Data Manipulations:

Not available.

10. Errors:

Sources of Error:

Not available.

Quality Assessment:

Data Validation by Source:

Not available.

Confidence Level/Accuracy Judgment:

Not available.

Measurement Error for Parameters:

Not available.

Additional Quality Assessments:

Not available.

Data Verification by Data Center:

The Superior National Forest data were received from the Goddard Space Flight Center in three media:

- As data dumps from the original Oracle SNF database maintained by GSFC, transferred electronically from the GSFC system to the ORNL system;
- As ASCII files that mirrored the tables published in the Tech Memo; and
- As hard copy (Tech Memo).

Data from both electronic sources were input into SAS by ORNL DAAC data management staff and compared using computer code developed to process the SNF data. In many cases, the data values from both sources were found to be identical. In some cases, however, differences were identified and the providers of the data were consulted to resolve inconsistencies.

Additionally, some variable columns were available in one source, but not the other for various reasons. For example, some calculated variables/columns were provided in the ASCII files (reflecting the Tech Memo tables) that were not stored in the Oracle database for purposes of space conservation.

For similar reasons, coded values were used for many of the site and species identifier variables. A separate reference table was provided to link the coded variable with its definition (e.g., the SPECIES_REF file and the SITE_REF file).

The database produced by the ORNL DAAC is a hybrid product that is a composite of data and information extracted from all three source media. In data sets where coded variables were included, the code definition variables have been added to improve usability of the data set as a stand-alone product.

Therefore the ASCII files that are available through the ORNL DAAC on-line search and order systems are output from a data set that is a product of the essential core of numeric data provided by the data source (GSFC), augmented with additional descriptive information provided by GSFC and reorganized by the ORNL DAAC into a data structure consistent with other similar data sets maintained by the ORNL DAAC.

11. Notes:

Limitations of the Data:

Not available.

Known Problems with the Data:

None known at this revision.

Usage Guidance:

Not available.

Any Other Relevant Information about the Study:

None.

12. Application of the Data Set:

Not available.

13. Future Modifications and Plans:

None available at this revision.

14. Software:

Not available.

15. Data Access:

Contact Information:

ORNL DAAC User Services
Oak Ridge National Laboratory
Telephone: (865) 241-3952
Fax: (865) 574-4665
E-mail: ornldaac@ornl.gov

Data Center Identification:

ORNL Distributed Active Archive Center
Oak Ridge National Laboratory
Telephone: (865) 241-3952
Fax: (865) 574-4665
E-mail: ornldaac@ornl.gov

Procedures for Obtaining Data:

Users may order data by telephone, electronic mail, or fax. Data are available via FTP or on CD-ROM. Data are also available via the World Wide Web at http://daac.ornl.gov.

Data Center Status/Plans:

The Superior National Forest 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:

Available via FTP or on CD-ROM.

17. References:

Not available.

Archive/DBMS Usage Documentation.

Contact the ORNL DAAC, Oak Ridge, Tennessee (see the *Data Center Identification Section*).

18. Glossary of Terms:

A general glossary is located at EOSDIS Glossary.

19. List of Acronyms:

NWS National Weather Service URL Uniform Resource Locator

A general list of acronyms is available at http://cdiac.ornl.gov/pns/acronyms.html.

20. Document Information:

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Document Curator:

webmaster@daac.ornl.gov

Document Author:

DAAC Staff

Document URL

http://daac.ornl.gov