Title: Konza Climate Metadata
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Date: 1/23/07

The Konza climate was created from a variety of resources. The primary source was the Konza daily climate data set found on the Konza website as originally collected and prepared by John Briggs (http://www.konza.ksu.edu ; Dataset: AWE012). Gaps in this data set were filled using both daily Manhattan (Airport) data from 1996 to present, and hourly Manhattan (Airport) data from 1982-1996. Hourly data was carefully averaged to translate to an accurate reflecting of daily trends. Gaps that could not be filled using other data sources were filled by averaging surrounding values where available. Relative humidity values were not available in any of the Manhattan data sets; therefore this information was presented instead as Dew Point.

This data contains a brief description of the Konza climate dataset, and is then followed by snippets of the original metadata for each of the datasets used.

The records in the collected Konza climate dataset are as follows

Type	Description	Units
RecYear	Year	
RecMonth	Month	
RecDay	Day	
Watershed	Watershed Sampled	
DayofYear	Day of the Year	
Tmax (°C)	Maximum Air Temperature	°C
Tmin (°C)	Minimum Air Temperature	°C
ave (°C)	Average Air Temperature	°C
DP	Dew Point	°C
Dhumid	Average Relative Humidity	%
Dsrad*	Total Daily Solar Radiation	joules/cm2
Dppt1	Total Daily Precipitation	mm
Smax	Maximum Soil Temp	°C
Smin	Minimum Soil Temp	°C
S_ave	Average Soil Temp	°C
Wave	Average Wind Speed	m/s
Date	Date	
Julian_Date	Julian Date	
*Solar radiation collected prior to 7/19/00 are recorded in Langleys.		

The dataset was created for easy reference. To do this data is stored in the excel spreadsheet two ways, first by color, then by code. Color codes are shown below and identify where, or how data was derived. White cells indicate original Konza climate data, where purple cells indicate the data were taken from the hourly Manhattan Airport dataset. Additionally, codes were used for each and a second worksheet is included in the dataset which uses the codes to identify where data came from.

data type	formula	code
Normal, original Konza data, daily, 1982-2005		1
Data from Manhattan (Airport) data set		2
Derived from Manhattan (Airport) hourly data set		3
Originally more than one record/day… averaged		4
Average of nearest 2 rows, used for 1 day gaps	$((x-1)+(x+1))/2$	5
Average of nearest 2 rows, used for 2 day gaps	$((x-1)+(x+2))/2$ $((x-2)+(x+1))/2$	6
Average of nearest 2 rows, used for 3 day gaps	$((x-1)+(x+3))/2$ $((x-2)+(x+2))/2$ $((x-3)+(x+1))/2$	7
Indicates missing data, gaps larger than 3 days		9999

Konza Metadata
From: Document DSCATALG.PDF (http://www.konza.ksu.edu/doc/DSCATALG.pdf)
  Page 24, Data Set Code – AWE01
  Record Type 2 – Daily Values

Abstract:
The following weather data are included in this data set: daily -- mean, maximum and
minimum air temperature, relative humidity, total precipitation, total solar radiation;
mean, maximum and minimum soil temperature, average wind speed (sampled at
midnight; record type 2). These data are collected by a micrologger at headquarters on
Konza Prairie. Keywords that describe data set: air temperature, soil temperature, relative
humidity, windspeed, wind direction, solar radiation, precipitation, temperature, humidity

Date data commenced: 04/22/82
Date data terminated: / /
Principle Investigator: John M. Briggs

RECORD TYPE 2 (Daily values)

	Data		Format Specification		
1.	Datacode		1-5	A5	
2.	Rectype		6	I1	
3.	Year		7-8	I2	
4.	Month		9-10	I2	
5.	Day		11-12	I2	
6.	Watershed		13-16	A4	
7.	Day of Year		18-20		
8.	Tmax	Maximum Air Temperature	22-27	F6.2	deg C
9.	Tmin	Minimum Air Temperature	29-34	F6.2	deg C
10.	Tave	Average Air Temperature	36-42	F6.2	deg C
11.	Dhumid	Average Relative Humidity	44-49	F4.1	%
12.	Dsrad**	Total daily solar radiation	51-56	F6.1	Joules/cm2
13.	Dppt	Total Daily Precipitation	58-61	F6.1	mm
14.	Smax	Maximum soil temp	63-67		deg C
15.	Smin	Minimum soil temp	69-73		deg C
16.	Save	Average soil temp	75-80		deg C
17.	Wave†	Average Wind Speed	82-86		m/s

*Program execution interval was changed from 60 seconds to 10 on 7/17/00. This change could
significantly influence values reported for max wind speed. Caution should be used when
comparing max wind speeds across this date.
**Solar radiation collected prior to 7/19/00 are recorded in Langleys.
†Prior to 7/14/00 this parameter was maximum daily wind speed.

Notes: Datacode and Rectype were not included in final joined dataset.

Manhattan Airport 1996-2006 Metadata
From: Document mhksum.xls (from Mary Knapp)
       Codes Worksheet

Code Explanation

NUMERICAL COLUMN	TERMINOLOGY
1	DATE
TEMPERATURE:	(DEGREES FAHRENHEIT)
2	MAXIMUM
3	MINIMUM
4	AVERAGE
5	DEPARTURE FROM NORMAL
6	AVERAGE DEW POINT
7	AVERAGE WET BULB
PRECIPITATION:	INCHES (24-HR PERIOD ENDING AT INDICATED LOCAL STANDARD TIME, SNOW DEPTHS OF 2 OR MORE INCHES)
13	SNOWFALL (INCHES AND TENTHS)(2400 LST)
14	WATER EQUIVALENT(INCHES & HUNDREDTHS(2400 LST)
PRESSURE:	INCHES OF HG
15	AVERAGE STATION PRESSURE
16	AVERAGE SEA LEVEL PRESSURE
WIND:	SPEED IN MILES PER HOUR DIRECTION TO TENS OF DEGREES
19	AVERAGE SPEED

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* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.

T TRACE AMOUNT.

+ ALSO ON EARLIER DATES.

BLANK ENTRIES OR ZEROS MAY DENOTE MISSING OR UNREPORTED DATA.

Notes: Degrees were converted to Celsius to correspond with Konza climate gaps. Wind speed not used to fill in gaps of Konza set as it was not identified as a critical component (may be done later if necessary). Un-necessary (unused) original metadata left out of this replication.

Manhattan Airport 1973-2000 Metadata
From: Document hourlydoc.txt (from Mary Knapp)

TEMP: AIR-TEMPERATURE-OBSERVATION air temperature

  The temperature of the air.
  Length:5
  Scale:10
  Unit:Degrees Celsius
  Default Value:+9999

Notes: Dew point and precipitation were not included in the metadata document provided. Dew point was left in its standard format, which appears to be Celsius, and precipitation was checked against other datasets and thought to be in inches, which were then converted to mm to match the Konza set.   This hourly data was modified to reflect daily totals or averages where necessary.