U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ANGOLA, IN **COOP ID: 120200**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 1,010 Feet** **Lat: 41˚38N** **Lon: 84˚59W**

Temperature (˚F)

	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	28.8	13.7	21.3	67	1950	25	31.8	1990	-27	1981	4	8.8	1977	1355	0	.0	.0	1.2	18.9	29.6	5.2
Feb	32.8	15.6	24.2	71	2000	26	34.0	1998	-18+	1933	9	9.8	1978	1142	0	.0	.0	2.1	13.7	26.4	4.9
Mar	43.7	25.0	34.4	81+	1938	22	41.5	2000	-13	1978	2	25.7	1984	950	0	.0	.0	9.9	5.1	24.7	.5
Apr	56.6	35.4	46.0	88	1942	30	51.9	1985	4+	1982	7	40.3	1975	570	0	.0	.0	21.8	.3	12.6	.0
May	69.0	47.0	58.0	93+	1942	29	65.2	1991	18	1947	17	52.0	1997	263	46	.0	@	30.0	.0	1.7	.0
Jun	78.2	56.5	67.4	102+	1934	1	71.7	1971	32	1980	11	63.2	1992	47	117	@	1.5	30.0	.0	@	.0
Jul	82.0	60.4	71.2	106+	1936	13	75.3	1999	40	1978	12	68.4	1979	7	199	.0	3.4	31.0	.0	.0	.0
Aug	79.7	58.2	69.0	102	1947	6	75.2	1995	37+	1977	19	64.7	1992	34	156	.0	1.8	31.0	.0	.0	.0
Sep	72.6	50.2	61.4	101	1939	15	65.1	1971	27	1991	28	56.4	1975	142	34	.0	.3	30.0	.0	.4	.0
Oct	60.4	38.9	49.7	90+	1939	8	58.8	1971	16+	1925	29	43.9	1976	481	4	.0	.0	26.8	.0	8.4	.0
Nov	46.4	30.0	38.2	83	1950	1	43.2	1999	-4	1950	24	30.8	1976	804	0	.0	.0	12.0	3.0	19.5	.0
Dec	34.0	20.0	27.0	69	1982	3	36.2	1982	-19+	1983	24	15.5	2000	1178	0	.0	.0	2.9	12.9	28.4	2.3
Ann	57.0	37.6	47.3	106+	Jul 1936	13	75.3	Jul 1999	-27	Jan 1981	4	8.8	Jan 1977	6973	556	@	7.0	228.7	53.9	151.7	12.9

\+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1901-2001

(3) Derived from 1971-2000 serially complete daily data

Issue Date: February 2004

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ANGOLA, IN **COOP ID: 120200**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 1,010 Feet** **Lat: 41˚38N** **Lon: 84˚59W**

Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.96	1.83	1.72	1947	30	4.39	1999	.55	1981
Feb	1.83	1.59	2.50	1904	29	4.99	1990	.02	1987
Mar	2.87	2.53	2.47	1954	25	5.34	1985	.64	1981
Apr	3.38	3.38	3.22	1956	29	7.58	1981	.98	1971
May	3.88	3.44	4.10	1996	17	8.29	1996	1.38	1994
Jun	3.92	3.64	3.55	1996	18	8.37	1996	.84	1988
Jul	3.66	3.36	5.00	1951	9	9.96	1992	.80	1974
Aug	4.08	4.03	4.68	1953	5	8.40	1998	.95	1971
Sep	3.28	2.83	3.11	1932	4	7.16	1972	.03	1979
Oct	2.61	2.29	4.80	1901	12	5.30	1988	.73	1982
Nov	3.05	2.90	2.67	1936	2	6.50	1985	.90	1971
Dec	2.75	2.88	3.31	1965	25	5.34	1990	.78	1995
Ann	37.27	37.03	5.00	Jul 1951	9	9.96	Jul 1992	.02	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.0	5.3	.8	.2
Feb	9.1	4.8	.7	.3
Mar	10.4	6.3	1.5	.4
Apr	11.5	7.5	2.0	.5
May	11.5	7.3	2.3	.8
Jun	9.4	6.6	2.5	.9
Jul	9.8	6.4	2.4	1.0
Aug	9.2	6.6	2.4	.9
Sep	8.8	5.8	2.1	.7
Oct	9.3	6.0	1.4	.5
Nov	10.4	6.3	1.9	.4
Dec	12.4	6.8	1.3	.2
Ann	122.8	75.7	21.3	6.8

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.57	.75	1.03	1.28	1.51	1.76	2.03	2.35	2.77	3.42	4.03
Feb	.28	.43	.70	.95	1.21	1.50	1.83	2.24	2.78	3.66	4.51
Mar	1.03	1.30	1.69	2.02	2.33	2.65	3.00	3.40	3.92	4.72	5.46
Apr	1.38	1.69	2.13	2.48	2.82	3.17	3.54	3.96	4.51	5.33	6.08
May	1.42	1.78	2.31	2.75	3.17	3.59	4.06	4.60	5.29	6.36	7.33
Jun	1.44	1.80	2.33	2.78	3.20	3.63	4.10	4.64	5.33	6.40	7.38
Jul	1.23	1.58	2.09	2.52	2.93	3.36	3.82	4.36	5.06	6.14	7.13
Aug	1.51	1.89	2.44	2.90	3.33	3.78	4.27	4.83	5.55	6.65	7.67
Sep	.58	.86	1.34	1.79	2.25	2.75	3.32	4.00	4.92	6.40	7.81
Oct	.97	1.22	1.56	1.86	2.13	2.42	2.72	3.08	3.54	4.24	4.88
Nov	.94	1.23	1.66	2.03	2.39	2.76	3.17	3.65	4.27	5.24	6.14
Dec	1.09	1.34	1.70	2.00	2.28	2.57	2.88	3.24	3.69	4.39	5.02
Ann	29.30	30.90	32.92	34.43	35.76	37.03	38.33	39.75	41.46	43.91	46.01

\+ Also occurred on an earlier date(s)
\# Denotes amounts of a trace
@ Denotes mean number of days greater than 0 but less than .05
****** Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals
(2) Derived from station's available digital record: 1901-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ANGOLA, IN **COOP ID: 120200**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 1,010 Feet** **Lat: 41°38N** **Lon: 84°59W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	9.6	8.1	4	3
Feb	8.1	6.1	4	3
Mar	4.1	2.1	1	#
Apr	.8	#	#	#
May	#	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.3	.0	#	0
Nov	2.3	1.5	#	#
Dec	9.4	8.2	2	1
Ann	34.6	26.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	14.3	1999	3	29.0	1978	23+	1999	12	13	1999
Feb	12.8	1982	1	27.7	1982	22	1982	9	19	1978
Mar	8.7	1983	21	13.9	1993	19	1978	4	13	1978
Apr	6.5	1982	6	8.1	1982	6	1982	6	1	1982
May	#	1996	1	#+	1996	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	2.7	1989	20	4.4	1989	3	1989	20	#+	1992
Nov	4.1	1996	26	7.8	1986	5	1986	20	1	1996
Dec	10.3	1973	20	28.7	2000	20	2000	31	11	2000
Ann	14.3	Jan 1999	3	29.0	Jan 1978	23+	Jan 1999	12	19	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	6.6	3.2	1.0	.3	.1
Feb	4.6	2.8	.7	.2	@
Mar	2.7	1.2	.4	.2	.0
Apr	.6	.2	.1	@	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.2	.2	.0	.0	.0
Nov	1.9	.8	.3	.0	.0
Dec	5.9	2.6	1.0	.3	@
Ann	22.5	11.0	3.5	1.0	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	17.9	13.5	8.6	1.8
Feb	15.0	11.0	7.2	1.8
Mar	6.0	3.5	2.0	.5
Apr	.5	.4	.2	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.2	@	.0	.0
Nov	2.2	.6	.2	.0
Dec	9.5	5.6	3.5	1.3
Ann	51.3	34.6	21.7	5.4

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values
Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ANGOLA, IN **COOP ID: 120200**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 1,010 Feet** **Lat: 41˚38N** **Lon: 84˚59W**

Freeze Data

Spring Freeze Dates (Month/Day)

Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	6/07	5/31	5/27	5/22	5/19	5/15	5/11	5/06	4/29
32	5/22	5/16	5/12	5/09	5/06	5/03	4/30	4/26	4/20
28	5/04	4/30	4/28	4/25	4/23	4/21	4/18	4/16	4/12
24	4/21	4/17	4/15	4/12	4/10	4/08	4/06	4/03	3/31
20	4/14	4/09	4/06	4/03	4/01	3/29	3/27	3/23	3/19
16	4/06	4/01	3/28	3/25	3/22	3/19	3/16	3/12	3/07

Fall Freeze Dates (Month/Day)

Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	9/10	9/16	9/19	9/23	9/26	9/29	10/02	10/06	10/11
32	9/24	9/28	10/01	10/04	10/07	10/09	10/12	10/15	10/20
28	10/04	10/10	10/14	10/17	10/20	10/23	10/27	10/31	11/05
24	10/14	10/21	10/25	10/29	11/02	11/05	11/09	11/14	11/20
20	10/24	10/31	11/04	11/08	11/12	11/16	11/20	11/25	12/02
16	11/03	11/10	11/15	11/19	11/23	11/27	12/02	12/07	12/14

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	154	146	139	134	129	125	119	113	105
32	174	167	161	157	153	149	144	139	132
28	203	195	189	184	180	175	170	164	156
24	227	220	214	209	205	200	196	190	182
20	252	243	236	230	225	219	213	207	197
16	271	263	256	251	246	241	235	229	220

***** Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

0/00 Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ANGOLA, IN **COOP ID: 120200**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 1,010 Feet** **Lat: 41˚38N** **Lon: 84˚59W**

Degree Days to Selected Base Temperatures (˚F)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1355	1142	950	570	263	47	7	34	142	481	804	1178	6973
60	1200	1002	795	423	162	13	0	7	59	339	654	1023	5677
57	1107	918	702	339	114	5	0	2	30	262	564	930	4973
55	1045	862	640	286	87	3	0	0	17	217	505	868	4530
50	890	722	496	169	38	0	0	0	3	123	365	719	3525
32	380	284	111	3	0	0	0	0	0	2	43	262	1085

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	47	66	183	423	806	1060	1215	1145	882	549	229	107	6712
55	0	0	0	16	180	372	502	432	209	50	1	0	1762
57	0	0	0	9	145	315	440	372	162	34	0	0	1477
60	0	0	0	4	100	233	347	284	101	17	0	0	1086
65	0	0	0	0	46	117	199	156	34	4	0	0	556
70	0	0	0	0	17	40	82	68	6	0	0	0	213

Growing Degree Units (2)

Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	3	11	73	236	566	829	975	912	657	330	97	18	3	14	87	323	889	1718	2693	3605	4262	4592	4689	4707
45	0	3	40	140	416	679	820	757	508	206	51	6	0	3	43	183	599	1278	2098	2855	3363	3569	3620	3626
50	0	0	18	73	283	529	665	602	364	116	17	2	0	0	18	91	374	903	1568	2170	2534	2650	2667	2669
55	0	0	4	36	166	383	510	448	234	54	4	0	0	0	4	40	206	589	1099	1547	1781	1835	1839	1839
60	0	0	0	13	87	248	356	297	132	18	0	0	0	0	0	13	100	348	704	1001	1133	1151	1151	1151
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	8	48	148	339	538	658	605	409	198	55	7	0	8	56	204	543	1081	1739	2344	2753	2951	3006	3013

(1) Derived from the 1971-2000 Monthly Normals
(2) Derived from 1971-2000 serially complete daily data
Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Notes

a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.

b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.

c. Only observed validated values were used to select the extreme daily values.

d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.

e. Degree Days were derived using the same techniques as the 1971-2000 normals.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set .
Documentation of the serially complete data set is available from the link below:

g. Snowfall and snow depth statistics were derived from the Snow Climatology.
Documentation for the Snow Climatology project is available from the link under references.

Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were are for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/usnormalsprods.html
Snow Climatology Project Description, www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,
www1.ncdc.noaa.gov/pub/data/special/ serialcomplete_jam_0900.pdf