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: ANNA 2 NNE, IL **COOP ID: 110187**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 640 Feet** **Lat: 37˚29N** **Lon: 89˚15W**

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	42.4	22.5	32.5	76+	1943	24	43.2	1990	-20	1918	12	19.5	1977	1009	0	.0	.0	8.0	7.4	24.2	1.3
Feb	49.1	26.5	37.8	78+	1932	10	45.8	1976	-13	1905	13	24.9	1978	763	0	.0	.0	12.9	3.7	18.1	.4
Mar	59.5	35.0	47.3	91	1910	23	53.1	1976	0	1960	5	40.3	1996	552	1	.0	.0	23.9	.5	11.7	.0
Apr	69.8	44.4	57.1	92	1915	28	63.4	1981	21	1996	9	51.0	1983	255	18	.0	.1	28.9	.0	2.7	.0
May	78.1	53.4	65.8	98+	1911	28	71.4	1987	31+	1997	16	60.9	1981	90	114	.0	.6	31.0	.0	@	.0
Jun	86.1	61.7	73.9	105+	1952	30	77.5	1971	42	1903	13	69.0	1974	3	272	.1	7.5	30.0	.0	.0	.0
Jul	89.5	65.9	77.7	112	1901	22	81.8	1980	46	1947	23	74.6	1996	0	394	.5	15.6	31.0	.0	.0	.0
Aug	88.5	63.7	76.1	110	1930	9	82.0	1983	45+	1946	30	71.9	1992	3	346	.6	11.6	31.0	.0	.0	.0
Sep	81.6	56.2	68.9	107	1925	6	74.4	1998	32+	1995	24	62.8	1974	40	157	@	3.8	30.0	.0	.1	.0
Oct	71.6	44.7	58.2	95	1910	1	64.2	1971	20	1981	24	52.0	1976	238	27	.0	@	30.7	.0	1.9	.0
Nov	57.9	35.9	46.9	83+	1987	4	52.9	1999	-5	1950	25	39.9	1976	544	1	.0	.0	21.5	.2	10.8	.0
Dec	46.2	26.7	36.5	76	1982	2	44.1	1971	-14+	1989	23	24.9	1983	886	0	.0	.0	10.9	4.2	20.2	.6
Ann	68.4	44.7	56.6	112	Jul 1901	22	82.0	Aug 1983	-20	Jan 1918	12	19.5	Jan 1977	4383	1330	1.2	39.2	289.8	16.0	89.7	2.3

\+ 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

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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	3.59	3.09	6.70	1999	22	13.27	1982	.62	1986
Feb	3.42	3.49	4.04	1945	26	8.59	1989	.77	1996
Mar	4.73	4.05	5.40	1964	9	11.15	1977	1.36	1971
Apr	4.70	4.63	3.63	1948	12	12.01	1983	1.29	1971
May	5.22	4.35	4.76	1997	31	10.72	1983	1.58	1972
Jun	4.23	3.56	4.86	1983	28	10.35	1998	.60	1988
Jul	3.26	3.11	6.15	1909	27	7.74	1981	.18	1974
Aug	3.58	3.15	4.45	1959	17	12.77	1985	.35	1983
Sep	3.13	2.45	4.45	1993	23	9.38	1993	.32	1978
Oct	3.38	3.23	5.10	1910	4	8.43	1984	.41	1971
Nov	4.76	5.22	5.05	1934	21	8.84	1994	.68	1999
Dec	4.30	3.69	5.15	1918	13	13.01	1982	.76	1980
Ann	48.30	47.52	6.70	Jan 1999	22	13.27	Jan 1982	.18	Jul 1974

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.6	6.1	1.9	.8
Feb	8.2	5.6	2.5	.9
Mar	10.2	7.7	3.4	1.2
Apr	10.5	7.9	3.3	1.3
May	10.2	7.9	3.6	1.6
Jun	9.3	6.5	2.9	1.0
Jul	7.2	5.3	2.4	1.0
Aug	7.0	4.8	2.6	1.1
Sep	6.7	4.9	2.1	1.0
Oct	7.3	5.5	2.5	.9
Nov	9.4	6.9	3.1	1.5
Dec	9.6	6.7	3.0	1.0
Ann	104.2	75.8	33.3	13.3

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	.74	1.06	1.59	2.07	2.56	3.08	3.66	4.37	5.30	6.79	8.20
Feb	.99	1.31	1.80	2.22	2.64	3.07	3.55	4.11	4.84	5.98	7.04
Mar	1.90	2.33	2.95	3.46	3.94	4.43	4.95	5.56	6.33	7.51	8.58
Apr	1.71	2.15	2.78	3.32	3.83	4.35	4.91	5.57	6.41	7.71	8.89
May	1.37	1.87	2.62	3.29	3.94	4.63	5.39	6.30	7.48	9.34	11.08
Jun	1.07	1.47	2.08	2.63	3.16	3.73	4.36	5.11	6.09	7.64	9.09
Jul	.58	.86	1.34	1.78	2.24	2.73	3.29	3.97	4.88	6.34	7.74
Aug	.41	.68	1.18	1.68	2.22	2.81	3.51	4.37	5.55	7.49	9.38
Sep	.48	.75	1.20	1.64	2.08	2.57	3.13	3.82	4.74	6.23	7.67
Oct	.77	1.09	1.58	2.03	2.47	2.94	3.47	4.11	4.94	6.26	7.50
Nov	1.23	1.68	2.37	2.98	3.58	4.21	4.92	5.75	6.84	8.55	10.16
Dec	1.03	1.44	2.06	2.62	3.18	3.77	4.43	5.21	6.24	7.87	9.40
Ann	34.41	37.10	40.55	43.16	45.48	47.73	50.04	52.60	55.71	60.21	64.11

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	4.9	2.7	1	#	9.5	1978	16	22.1	1978	16	1978	17	6	1978	3.1	1.9	.5	.1	.0	5.7	2.8	1.7	.5
Feb	4.3	2.0	1	#	20.0	1979	25	23.6	1979	20	1979	25	4	1979	2.2	1.1	.4	.2	.1	4.3	2.7	.9	.2
Mar	1.9	1.0	#	#	9.0	1994	9	9.8	1975	12	1979	1	1	1979	1.2	.6	.2	.1	.0	1.0	.5	.2	.1
Apr	.1	.0	#	0	2.0	1971	6	2.0	1971	1	1971	6	#+	1982	.1	.1	.0	.0	.0	@	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.1	.0	#	0	2.5	1993	31	4.0	1993	#	1993	31	#	1993	.1	.1	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	5.0	1980	27	6.1	1980	4	1980	27	#+	1995	.5	.2	.1	@	.0	.2	.1	.0	.0
Dec	2.1	1.3	#	#	8.0	1973	20	9.9	1973	8	1973	20	3	2000	1.6	.9	.3	.1	.0	3.0	1.3	.3	.0
Ann	13.9	7.0	N/A	N/A	20.0	Feb 1979	25	23.6	Feb 1979	20	Feb 1979	25	6	Jan 1978	8.8	4.9	1.5	.5	.1	14.2	7.4	3.1	.8

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

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

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

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	5/03	4/28	4/24	4/21	4/18	4/15	4/12	4/08	4/03
32	4/24	4/19	4/16	4/13	4/10	4/07	4/04	4/01	3/27
28	4/14	4/09	4/05	4/02	3/30	3/27	3/23	3/20	3/14
24	4/07	3/31	3/27	3/23	3/19	3/16	3/12	3/07	3/01
20	3/22	3/16	3/12	3/08	3/05	3/01	2/26	2/22	2/16
16	3/14	3/06	2/28	2/22	2/17	2/13	2/07	2/01	1/24

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	9/28	10/03	10/07	10/10	10/13	10/16	10/20	10/23	10/29
32	10/07	10/12	10/16	10/19	10/22	10/25	10/29	11/01	11/07
28	10/21	10/27	10/31	11/03	11/07	11/10	11/13	11/18	11/23
24	11/02	11/07	11/11	11/14	11/17	11/20	11/24	11/27	12/03
20	11/04	11/11	11/16	11/21	11/25	11/29	12/03	12/08	12/15
16	11/22	11/28	12/03	12/07	12/11	12/15	12/19	12/24	12/31

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	198	191	186	182	178	174	169	164	157
32	212	206	202	198	195	191	187	183	177
28	247	238	232	226	221	216	211	205	196
24	265	257	252	247	242	238	233	227	219
20	292	283	276	270	264	259	253	246	236
16	327	317	309	302	296	290	283	276	265

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1009	763	552	255	90	3	0	3	40	238	544	886	4383
60	854	625	408	145	35	0	0	0	10	132	402	731	3342
57	763	548	326	94	17	0	0	0	3	84	321	645	2801
55	708	495	276	67	10	0	0	0	1	60	272	587	2476
50	563	372	172	23	2	0	0	0	0	20	167	446	1765
32	171	78	9	0	0	0	0	0	0	0	8	102	368

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	185	239	482	753	1047	1258	1417	1366	1107	811	454	239	9358
55	9	13	35	131	344	568	704	653	418	159	28	11	3073
57	2	9	23	98	289	508	642	591	360	121	18	7	2668
60	0	3	12	58	214	418	549	498	277	75	9	0	2113
65	0	0	1	18	114	272	394	346	157	27	1	0	1330
70	0	0	0	4	47	140	241	206	71	6	0	0	715

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	56	111	278	524	814	1039	1193	1145	892	580	259	85	56	167	445	969	1783	2822	4015	5160	6052	6632	6891	6976
45	24	58	172	382	659	889	1038	990	742	431	164	41	24	82	254	636	1295	2184	3222	4212	4954	5385	5549	5590
50	6	21	92	252	504	739	883	835	592	292	89	17	6	27	119	371	875	1614	2497	3332	3924	4216	4305	4322
55	0	5	41	150	354	589	728	680	445	173	42	6	0	5	46	196	550	1139	1867	2547	2992	3165	3207	3213
60	0	0	12	71	220	440	573	525	305	87	12	0	0	0	12	83	303	743	1316	1841	2146	2233	2245	2245
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	30	69	166	324	521	712	829	785	587	364	148	47	30	99	265	589	1110	1822	2651	3436	4023	4387	4535	4582

(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:
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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