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: SPARTA 1 W, IL **COOP ID: 118147**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 535 Feet** **Lat: 38˚07N** **Lon: 89˚43W**

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	37.8	20.3	29.1	77+	1943	24	40.9	1990	-20+	1930	18	15.2	1977	1113	0	.0	.0	6.6	9.5	25.5	1.5
Feb	44.2	24.5	34.4	82	1932	10	42.6	1976	-17	1905	13	20.1	1978	859	0	.0	.0	11.1	4.8	19.0	.5
Mar	54.8	33.2	44.0	90+	1929	24	50.2	1973	-6	1960	5	36.9	1996	651	0	.0	.0	22.0	.7	13.0	.1
Apr	65.5	43.1	54.3	94	1930	11	61.5	1981	20	1904	21	48.6	1983	330	10	.0	.2	28.3	.0	3.3	.0
May	75.3	52.7	64.0	99	1934	30	71.0	1987	28	1903	1	59.2	1997	128	97	.0	1.6	30.9	.0	.1	.0
Jun	84.1	62.3	73.2	107	1931	29	76.6	1987	40	1917	16	68.8	1974	7	253	.3	8.8	30.0	.0	.0	.0
Jul	88.3	66.7	77.5	114+	1936	14	82.6	1980	48+	1972	6	73.5	1996	0	387	1.0	16.6	31.0	.0	.0	.0
Aug	86.9	64.4	75.7	112	1930	9	81.8	1983	41	1994	15	71.4	1992	6	336	1.0	11.9	31.0	.0	.0	.0
Sep	79.6	55.9	67.8	105	1925	5	73.3	1998	30	1928	26	61.9	1974	56	138	.0	4.3	30.0	.0	.1	.0
Oct	69.2	44.7	57.0	96	1953	2	63.3	1971	19	1908	31	50.6	1988	270	21	.0	.1	30.5	.0	2.6	.0
Nov	54.4	34.9	44.7	85+	1989	11	51.6	1999	-4	1929	30	36.9	1976	610	0	.0	.0	19.7	.5	11.6	.0
Dec	42.4	25.3	33.9	76	1970	3	41.7	1982	-17	1901	20	21.2	2000	967	0	.0	.0	9.1	4.7	21.9	.8
Ann	65.2	44.0	54.6	114+	Jul 1936	14	82.6	Jul 1980	-20+	Jan 1930	18	15.2	Jan 1977	4997	1242	2.3	43.5	280.2	20.2	97.1	2.9

\+ 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

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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	2.43	2.04	4.12	1916	30	7.59	1999	.14	1986
Feb	2.53	2.62	3.22	1946	13	4.41	1975	.57	1996
Mar	4.06	3.22	5.20	1904	25	9.64	1985	1.07	1971
Apr	4.10	3.21	5.02	1996	29	11.32	1994	1.18	1977
May	4.51	3.77	3.80	1956	7	12.13	1990	.90	1992
Jun	3.75	3.46	4.53	1938	11	8.11	1985	.07	1991
Jul	4.19	3.77	4.11	1979	28	8.65	2000	1.01	1983
Aug	3.31	3.10	6.29	1923	5	9.11	1975	.32	1988
Sep	3.08	2.62	3.13	1988	18	9.15	1993	.20	1985
Oct	3.26	2.76	4.00	1919	26	7.53	1983	.00	1992
Nov	4.21	3.88	4.16	1985	19	11.45	1985	.62	1976
Dec	3.31	2.74	5.35	1967	21	10.57	1982	.70	1980
Ann	42.74	44.19	6.29	Aug 1923	5	12.13	May 1990	.00	Oct 1992

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.2	4.4	1.6	.5
Feb	7.1	4.8	1.9	.5
Mar	11.0	7.2	3.0	1.1
Apr	10.5	7.1	3.0	1.0
May	10.5	7.1	2.8	1.2
Jun	9.4	6.5	2.5	1.2
Jul	8.3	6.1	2.6	1.2
Aug	7.4	5.3	2.3	.9
Sep	7.5	4.6	2.0	1.0
Oct	7.9	5.5	2.5	.9
Nov	8.9	6.5	2.9	1.5
Dec	8.1	5.7	2.3	.8
Ann	103.8	70.8	29.4	11.8

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	.35	.55	.90	1.24	1.59	1.98	2.42	2.97	3.70	4.90	6.06
Feb	.82	1.06	1.41	1.72	2.01	2.31	2.64	3.03	3.52	4.30	5.01
Mar	1.32	1.71	2.27	2.76	3.22	3.70	4.23	4.85	5.64	6.88	8.02
Apr	1.03	1.42	2.02	2.54	3.06	3.61	4.23	4.95	5.90	7.40	8.81
May	1.18	1.61	2.26	2.84	3.40	4.00	4.66	5.44	6.46	8.07	9.58
Jun	.61	.94	1.48	2.00	2.53	3.11	3.77	4.58	5.66	7.40	9.07
Jul	1.25	1.65	2.24	2.76	3.26	3.78	4.35	5.03	5.90	7.26	8.52
Aug	.71	1.01	1.50	1.94	2.38	2.85	3.38	4.02	4.86	6.20	7.46
Sep	.58	.86	1.31	1.73	2.15	2.60	3.12	3.75	4.58	5.91	7.18
Oct	.85	1.32	1.85	2.26	2.65	3.04	3.46	3.95	4.58	5.54	6.42
Nov	.94	1.33	1.95	2.51	3.06	3.65	4.32	5.11	6.15	7.81	9.38
Dec	.77	1.08	1.57	2.00	2.43	2.89	3.40	4.01	4.82	6.09	7.29
Ann	29.36	31.91	35.20	37.72	39.96	42.13	44.38	46.87	49.90	54.32	58.15

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.7	3.2	1	#
Feb	3.4	2.6	1	#
Mar	1.8	.6	#	#
Apr	.6	.0	#	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	#	.0	0	0
Nov	1.0	.0	#	0
Dec	2.8	1.6	#	#
Ann	15.3	8.0	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	11.0	1982	31	21.2	1979	11	1982	31	6	1977
Feb	10.5	1984	27	13.5	1984	19	1982	3	8	1982
Mar	7.0	1975	10	10.0	1975	7	1978	3	2	1978
Apr	8.0	1971	6	10.0	1971	7	1971	6	#+	1997
May	.0	0	0	.0	0	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	#	1989	19	#	1989	0	0	0	0	0
Nov	8.0	1975	26	8.7	1980	8	1975	26	1	1975
Dec	7.5	1973	20	16.5	1973	8	1973	20	4	2000
Ann	11.0	Jan 1982	31	21.2	Jan 1979	19	Feb 1982	3	8	Feb 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	1.6	.7	.2	@
Feb	2.2	1.0	.4	.1	@
Mar	1.3	.5	.2	.1	.0
Apr	.3	.1	.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	.0	.0	.0	.0	.0
Nov	.3	.2	.1	.1	.0
Dec	2.1	1.1	.3	.2	.0
Ann	9.7	4.5	1.8	.7	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	8.0	4.0	2.1	.2
Feb	4.8	3.8	1.9	.5
Mar	1.0	.5	.2	.0
Apr	.1	@	@	.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	.0	.0	.0	.0
Nov	.5	.3	.1	.0
Dec	3.6	1.6	1.0	.0
Ann	18.0	10.2	5.3	.7

+ 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

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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	5/09	5/04	5/01	4/28	4/26	4/23	4/20	4/17	4/12
32	4/25	4/20	4/17	4/14	4/11	4/09	4/06	4/02	3/28
28	4/15	4/10	4/06	4/03	3/31	3/28	3/25	3/22	3/16
24	4/09	4/03	3/30	3/26	3/23	3/20	3/16	3/12	3/06
20	3/25	3/19	3/15	3/12	3/08	3/05	3/01	2/25	2/19
16	3/14	3/06	3/01	2/24	2/19	2/15	2/10	2/05	1/28

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	9/26	9/30	10/03	10/06	10/08	10/10	10/13	10/15	10/19
32	10/03	10/08	10/12	10/16	10/19	10/22	10/26	10/29	11/04
28	10/20	10/25	10/29	11/01	11/04	11/07	11/10	11/14	11/19
24	10/30	11/04	11/09	11/12	11/15	11/19	11/22	11/26	12/02
20	11/06	11/13	11/17	11/21	11/25	11/28	12/02	12/07	12/13
16	11/21	11/27	12/02	12/06	12/09	12/13	12/17	12/22	12/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	176	172	168	165	161	157	153	146
32	210	203	198	194	190	186	182	177	170
28	237	230	225	221	217	213	209	204	197
24	260	252	246	241	236	232	227	221	213
20	284	276	270	265	261	256	251	246	238
16	323	313	305	298	292	286	280	272	262

***** 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	1113	859	651	330	128	7	0	6	56	270	610	967	4997
60	958	719	503	205	61	1	0	0	17	157	466	812	3899
57	865	641	416	144	34	0	0	0	6	104	384	723	3317
55	805	589	360	109	22	0	0	0	3	76	331	666	2961
50	662	461	238	46	6	0	0	0	0	30	217	523	2183
32	235	128	21	0	0	0	0	0	0	0	17	147	548

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	144	193	392	670	992	1237	1410	1353	1072	773	397	204	8837
55	2	10	19	90	301	547	697	640	386	137	22	9	2860
57	0	6	12	64	251	487	635	578	329	103	14	4	2483
60	0	0	6	35	185	397	542	485	249	62	6	0	1967
65	0	0	0	10	97	253	387	336	138	21	0	0	1242
70	0	0	0	2	40	129	238	201	62	4	0	0	676

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	42	100	258	503	804	1049	1200	1141	878	577	243	72	42	142	400	903	1707	2756	3956	5097	5975	6552	6795	6867
45	14	54	161	365	649	899	1045	986	729	427	151	36	14	68	229	594	1243	2142	3187	4173	4902	5329	5480	5516
50	2	24	93	244	495	749	890	831	579	293	86	15	2	26	119	363	858	1607	2497	3328	3907	4200	4286	4301
55	0	6	45	144	348	599	735	676	432	176	39	1	0	6	51	195	543	1142	1877	2553	2985	3161	3200	3201
60	0	0	15	70	214	450	580	521	300	94	14	0	0	0	15	85	299	749	1329	1850	2150	2244	2258	2258
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	26	66	157	310	519	715	824	781	579	361	137	40	26	92	249	559	1078	1793	2617	3398	3977	4338	4475	4515

(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