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: SAINT CHARLES, AR **COOP ID: 036376**

Climate Division: AR 6 **NWS Call Sign:** **Elevation: 200 Feet** **Lat: 34˚23N** **Lon: 91˚08W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	49.2	30.3	39.8	82	1952	1	46.4	1990	-5	1962	12	28.3+	1979	783	0	.0	.0	15.3	3.1	19.3	@
Feb	55.1	34.3	44.7	82+	1962	14	52.3	1976	-4	1951	2	33.0	1978	570	1	.0	.0	18.8	1.6	12.2	@
Mar	63.9	42.7	53.3	86+	1967	12	58.4	1974	12	1980	2	47.9	1996	370	8	.0	.0	27.6	.1	4.2	.0
Apr	72.8	50.3	61.6	94+	1987	21	68.5	1981	29	1987	4	55.5	1983	150	47	.0	.2	29.6	.0	.5	.0
May	80.5	59.3	69.9	99	1977	31	75.3	1998	38	1954	4	63.5	1976	37	189	.0	2.4	31.0	.0	.0	.0
Jun	88.3	67.6	78.0	103+	1954	28	82.1	1998	49	1969	3	72.9	1974	0	390	.2	14.4	30.0	.0	.0	.0
Jul	92.4	71.1	81.8	108+	1980	14	86.6	1980	54+	1967	15	79.1	1994	0	519	2.0	22.9	31.0	.0	.0	.0
Aug	91.6	69.2	80.4	106+	1986	1	86.2	1980	54+	1967	28	75.9	1992	0	478	2.0	21.0	31.0	.0	.0	.0
Sep	85.5	62.3	73.9	104+	1954	6	79.1	1998	34+	1967	29	66.4	1974	12	279	.5	10.3	30.0	.0	.0	.0
Oct	75.8	50.3	63.1	96+	1954	4	68.5	1971	28	1952	29	56.7	1976	125	65	.0	1.0	31.0	.0	.4	.0
Nov	63.0	41.2	52.1	87	2000	2	58.4	1985	14	1950	25	43.3	1976	396	8	.0	.0	26.0	.1	5.5	.0
Dec	52.7	33.4	43.1	82	1982	3	53.2	1984	-2	1989	23	32.2	1983	680	0	.0	.0	18.9	1.4	15.2	.1
Ann	72.6	51.0	61.8	108+	Jul 1980	14	86.6	Jul 1980	-5	Jan 1962	12	28.3+	Jan 1979	3123	1984	4.7	72.2	320.2	6.3	57.3	.1

\+ 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: 1948-2001

(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	4.13	3.91	3.39	1952	27	9.45	1974	.20	1986
Feb	3.94	3.56	4.60	1966	10	11.10	1987	.46	1995
Mar	5.61	4.94	3.94	1997	2	11.09	1973	1.78	1974
Apr	5.52	4.52	9.18	1973	20	16.59	1973	1.29	1987
May	4.93	4.35	3.77	1989	9	13.60	1979	.95	1977
Jun	4.08	3.93	4.65	1974	1	10.04	1974	.32	1988
Jul	3.67	3.52	4.00	1958	12	8.86	1992	.00	1993
Aug	2.24	1.59	4.39	1970	10	6.58	1971	.00	2000
Sep	3.06	2.37	5.98	1965	11	6.63	1980	.30	1995
Oct	3.82	3.56	4.75	1984	7	14.28	1984	.09	1971
Nov	5.47	4.63	5.70	1986	8	12.49	1987	1.44	1971
Dec	5.08	4.52	4.00	2001	13	11.71	1982	.97	1980
Ann	51.55	48.93	9.18	Apr 1973	20	16.59	Apr 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.3	6.5	2.8	1.2
Feb	7.0	5.5	2.5	1.0
Mar	8.6	6.8	3.7	1.8
Apr	7.7	6.1	3.3	1.8
May	8.5	6.5	3.0	1.4
Jun	7.5	6.0	2.8	1.3
Jul	6.0	4.8	2.3	1.2
Aug	4.5	3.6	1.4	.5
Sep	5.5	4.0	1.8	.8
Oct	5.4	4.3	2.0	1.2
Nov	7.6	6.2	3.6	2.0
Dec	7.5	6.3	3.3	1.5
Ann	84.1	66.6	32.5	15.7

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	.84	1.22	1.82	2.38	2.93	3.53	4.21	5.02	6.09	7.81	9.44
Feb	.89	1.25	1.83	2.35	2.87	3.42	4.04	4.78	5.75	7.30	8.76
Mar	2.01	2.54	3.30	3.94	4.55	5.18	5.86	6.65	7.67	9.24	10.67
Apr	1.16	1.67	2.48	3.22	3.96	4.75	5.64	6.71	8.13	10.39	12.53
May	1.03	1.48	2.21	2.87	3.53	4.24	5.04	6.00	7.26	9.29	11.21
Jun	.85	1.22	1.82	2.36	2.91	3.50	4.16	4.96	6.00	7.68	9.27
Jul	.37	.80	1.42	1.95	2.49	3.07	3.74	4.53	5.60	7.31	8.94
Aug	.08	.26	.58	.91	1.26	1.67	2.14	2.74	3.57	4.95	6.30
Sep	.59	.87	1.32	1.73	2.15	2.60	3.11	3.73	4.55	5.86	7.10
Oct	.52	.84	1.38	1.91	2.47	3.08	3.79	4.66	5.84	7.76	9.62
Nov	1.64	2.16	2.93	3.60	4.26	4.93	5.68	6.56	7.70	9.47	11.12
Dec	1.37	1.85	2.58	3.22	3.86	4.52	5.26	6.13	7.27	9.04	10.71
Ann	36.21	39.16	42.95	45.84	48.40	50.89	53.45	56.29	59.74	64.75	69.09

\+ 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: 1948-2001
(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	1.4	.0	#	0
Feb	.7	.0	#	0
Mar	.2	.0	#	0
Apr	.0	.0	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	0
Nov	.0	.0	0	0
Dec	#	.0	#	0
Ann	2.3	.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	9.0	2000	27	9.0	2000	6	1982	13	6	1982
Feb	5.0	1988	12	5.0	1988	2	1980	10	2	1980
Mar	3.0	1982	7	3.0	1982	1	1971	3	#+	1980
Apr	.0	0	0	.0	0	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	.0	0	0	.0	0	0	0	0	0	0
Dec	#	1985	20	#	1985	4	1983	17	#+	1983
Ann	9.0	Jan 2000	27	9.0	Jan 2000	6	Jan 1982	13	6	Jan 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.3	.1	.1	.0
Feb	.2	.2	.1	.1	.0
Mar	.1	.1	.1	.0	.0
Apr	.0	.0	.0	.0	.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	.0	.0	.0	.0	.0
Dec	.0	.0	.0	.0	.0
Ann	.7	.6	.3	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	@	.0	.0	.0
Apr	.0	.0	.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	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.1	.0	.0	.0

+ 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	4/15	4/10	4/07	4/04	4/02	3/30	3/27	3/24	3/20
32	4/10	4/03	3/29	3/25	3/21	3/17	3/12	3/07	2/28
28	3/24	3/16	3/10	3/06	3/01	2/25	2/20	2/14	2/06
24	3/10	3/02	2/25	2/20	2/16	2/11	2/06	2/01	1/24
20	3/03	2/22	2/15	2/10	2/04	1/30	1/23	1/16	1/01
16	2/25	2/14	2/07	1/31	1/24	1/17	1/08	12/22	0/00

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	10/15	10/19	10/23	10/26	10/29	11/01	11/04	11/07	11/12
32	10/21	10/26	10/30	11/03	11/06	11/09	11/12	11/16	11/22
28	11/03	11/09	11/14	11/18	11/21	11/25	11/29	12/03	12/10
24	11/10	11/21	11/28	12/04	12/10	12/16	12/23	12/30	1/10
20	11/30	12/09	12/16	12/22	12/28	1/02	1/09	1/17	2/01
16	12/08	12/18	12/26	1/02	1/08	1/15	1/24	2/10	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	228	221	217	213	209	206	202	197	191
32	257	248	241	235	229	224	218	211	202
28	292	283	276	270	264	259	253	246	236
24	331	317	309	301	295	288	281	273	262
20	>365	>365	346	332	323	315	307	299	287
16	>365	>365	>365	>365	350	338	329	320	310

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	783	570	370	150	37	0	0	0	12	125	396	680	3123
60	637	440	235	68	10	0	0	0	2	53	265	535	2245
57	549	365	170	36	4	0	0	0	0	27	199	450	1800
55	492	318	133	21	2	0	0	0	0	16	160	395	1537
50	360	215	63	4	0	0	0	0	0	3	85	273	1003
32	62	21	0	0	0	0	0	0	0	0	1	30	114

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	301	376	662	886	1175	1379	1542	1501	1257	963	603	373	11018
55	19	29	81	218	464	689	829	788	567	266	73	25	4048
57	14	20	56	172	404	629	767	726	507	215	51	17	3578
60	8	12	29	115	317	539	674	633	418	148	27	10	2930
65	0	1	8	47	189	390	519	478	279	65	8	0	1984
70	0	0	0	13	94	244	364	327	161	21	0	0	1224

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	127	216	435	654	934	1147	1302	1265	1025	722	379	182	127	343	778	1432	2366	3513	4815	6080	7105	7827	8206	8388
45	66	131	299	509	779	997	1147	1110	875	567	255	101	66	197	496	1005	1784	2781	3928	5038	5913	6480	6735	6836
50	29	67	185	364	624	847	992	955	725	415	154	51	29	96	281	645	1269	2116	3108	4063	4788	5203	5357	5408
55	12	27	102	237	469	697	837	800	575	275	80	20	12	39	141	378	847	1544	2381	3181	3756	4031	4111	4131
60	0	5	44	130	322	547	682	645	429	162	37	4	0	5	49	179	501	1048	1730	2375	2804	2966	3003	3007
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	79	134	253	407	620	793	886	860	686	465	228	110	79	213	466	873	1493	2286	3172	4032	4718	5183	5411	5521

(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