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: SAN SIMON, AZ **COOP ID: 027560**

Climate Division: AZ 7 **NWS Call Sign:** **Elevation: 3,610 Feet** **Lat: 32˚16N** **Lon: 109˚14W**

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	58.2	27.2	42.7	82	1905	18	47.3	1986	-5	1913	6	38.9	1992	690	0	.0	.0	28.1	@	24.6	.0
Feb	63.3	30.6	47.0	88+	1957	14	52.3	1996	8+	1955	22	43.4	1974	505	0	.0	.0	27.1	.2	16.6	.0
Mar	69.8	34.5	52.2	92	1907	19	57.3	1972	9	1913	15	46.4	1973	399	2	.0	.1	30.8	.0	8.6	.0
Apr	78.1	39.3	58.7	99	1989	20	65.0	1989	17	1945	4	53.1	1983	213	25	.0	2.6	29.9	.0	3.0	.0
May	87.3	47.6	67.5	107	1958	28	73.6	2000	24	1950	5	63.5	1971	58	135	1.2	14.6	31.0	.0	.1	.0
Jun	97.3	57.5	77.4	114	1994	26	83.1	1994	38	1914	8	73.9	1991	1	374	13.3	28.0	30.0	.0	.0	.0
Jul	96.2	64.7	80.5	110+	1995	27	82.6	1980	48	1907	29	77.8	1986	0	480	13.3	29.0	31.0	.0	.0	.0
Aug	93.6	63.8	78.7	108	1995	3	82.1	1994	47+	1956	31	76.4	1990	0	425	2.1	24.4	31.0	.0	.0	.0
Sep	89.3	57.3	73.3	105+	1952	5	77.0	1983	38	1907	30	69.5	1996	6	254	.4	15.0	30.0	.0	.0	.0
Oct	79.4	44.8	62.1	98	1913	20	66.8	1987	20+	1906	25	57.9	1971	135	45	.0	3.8	31.0	.0	2.3	.0
Nov	66.8	33.4	50.1	88+	1915	4	54.6	1999	12+	1992	25	45.4	1992	446	0	.0	.0	29.4	.0	14.0	.0
Dec	57.8	28.0	42.9	80	1913	16	48.2	1980	5	1953	24	39.1	1974	684	0	.0	.0	27.9	.1	24.9	@
Ann	78.1	44.1	61.1	114	Jun 1994	26	83.1	Jun 1994	-5	Jan 1913	6	38.9	Jan 1992	3137	1740	30.3	117.5	357.2	.3	94.1	@

\+ 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: 1898-2001

(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	.63	.43	2.63	1916	19	5.41	1993	.00+	2000
Feb	1.00	1.03	.95	1906	11	2.50	1980	.00	1999
Mar	.31	.15	4.00	1905	1	1.62	1998	.01	1971
Apr	.16	.00	1.00	1908	23	2.04	1987	.00+	2000
May	.10	.00	.88	1957	6	.80	1992	.00+	2000
Jun	.39	.12	1.65	1952	2	3.75	2000	.00+	1995
Jul	1.78	1.76	3.10	1994	30	4.16	1999	.12	1993
Aug	1.96	1.91	2.50	1961	22	6.14	1988	.64	1975
Sep	1.24	1.24	1.72	1997	21	3.24	1990	.00+	2000
Oct	1.13	.79	1.95	1945	9	4.51	2000	.00+	1999
Nov	.70	.50	1.20	2000	4	2.41	1990	.00+	1999
Dec	1.26	.62	1.82	1987	18	5.40	1991	.00+	2000
Ann	10.66	10.89	4.00	Mar 1905	1	6.14	Aug 1988	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.0	2.3	.4	.1
Feb	3.9	2.1	.5	.0
Mar	4.8	2.5	.1	.0
Apr	2.3	.8	.1	.0
May	2.6	.9	@	.0
Jun	3.3	1.2	.3	.1
Jul	7.7	4.4	1.1	.3
Aug	10.2	5.5	1.4	.4
Sep	4.8	2.8	.6	.2
Oct	5.4	3.0	.6	.1
Nov	2.9	1.9	.3	@
Dec	5.2	2.9	.8	.2
Ann	58.1	30.3	6.2	1.4

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	.00	.00	.06	.15	.25	.38	.54	.75	1.05	1.58	2.11
Feb	.06	.15	.31	.46	.61	.79	.99	1.24	1.58	2.14	2.68
Mar	.01	.02	.05	.09	.13	.19	.27	.36	.51	.75	1.01
Apr	.00	.00	.00	.00	.00	.00	.00	.04	.16	.46	.89
May	.00	.00	.00	.00	.00	.00	.01	.04	.13	.31	.54
Jun	.00	.00	.00	.01	.05	.13	.24	.40	.66	1.14	1.65
Jul	.48	.65	.91	1.13	1.35	1.58	1.84	2.14	2.54	3.15	3.73
Aug	.57	.76	1.04	1.28	1.51	1.76	2.03	2.35	2.77	3.42	4.02
Sep	.00	.20	.44	.64	.84	1.05	1.28	1.56	1.93	2.53	3.10
Oct	.00	.07	.23	.40	.59	.81	1.07	1.39	1.84	2.60	3.36
Nov	.00	.05	.17	.27	.39	.52	.68	.87	1.13	1.57	2.00
Dec	.00	.03	.15	.31	.51	.76	1.08	1.49	2.10	3.16	4.24
Ann	6.31	7.10	8.13	8.94	9.67	10.39	11.14	11.99	13.03	14.58	15.93

\+ 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: 1898-2001
(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	.8	.0	#	0	4.0	1987	17	8.0	1987	1+	1997	7	#+	1997	.3	.3	.2	.0	.0	.1	.0	.0	.0
Feb	.8	.0	#	0	4.0	1987	21	5.0	1987	1	1987	21	#	1987	.4	.3	.1	.0	.0	.1	.0	.0	.0
Mar	.0	.0	0	0	.2	1987	22	.2	1987	0	0	0	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	.0	#	0	3.0	2000	5	3.0	2000	#	2000	6	#	2000	.1	.1	.1	.0	.0	.0	.0	.0	.0
Dec	1.1	.0	#	0	3.5	1987	26	8.6	1987	2	1988	8	#+	1988	.4	.4	.2	.0	.0	.2	.0	.0	.0
Ann	2.9	.0	N/A	N/A	4.0+	Feb 1987	21	8.6	Dec 1987	2	Dec 1988	8	#+	Nov 2000	1.3	1.1	.6	.0	.0	.4	.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	5/12	5/06	5/01	4/27	4/24	4/20	4/16	4/11	4/05
32	5/03	4/26	4/21	4/17	4/13	4/09	4/05	3/31	3/25
28	4/20	4/11	4/05	3/31	3/26	3/22	3/16	3/10	3/02
24	3/25	3/16	3/09	3/03	2/26	2/20	2/14	2/07	1/29
20	3/01	2/19	2/12	2/06	2/01	1/26	1/20	1/13	1/03
16	2/12	2/01	1/24	1/17	1/10	1/03	12/26	12/15	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	10/08	10/13	10/16	10/19	10/21	10/24	10/26	10/29	11/03
32	10/13	10/18	10/22	10/25	10/28	10/31	11/03	11/07	11/12
28	10/22	10/27	10/31	11/03	11/06	11/09	11/12	11/16	11/21
24	11/04	11/09	11/13	11/16	11/19	11/22	11/26	11/29	12/05
20	11/19	11/24	11/27	11/30	12/02	12/05	12/07	12/11	12/15
16	11/29	12/05	12/09	12/13	12/16	12/20	12/25	1/01	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	203	195	189	184	180	175	171	165	157
32	221	213	207	202	197	193	188	182	174
28	252	242	235	229	224	218	213	206	196
24	299	288	280	273	266	259	252	244	233
20	334	324	316	310	304	298	292	284	274
16	>365	>365	>365	352	339	331	323	315	304

***** 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	690	505	399	213	58	1	0	0	6	135	446	684	3137
60	535	365	256	113	18	0	0	0	0	54	300	529	2170
57	442	283	180	69	7	0	0	0	0	26	219	436	1662
55	380	230	137	46	3	0	0	0	0	14	170	374	1354
50	230	115	57	13	0	0	0	0	0	2	75	227	719
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	333	419	626	802	1100	1363	1503	1448	1238	933	544	339	10648
55	0	5	50	159	390	673	790	735	548	234	24	0	3608
57	0	2	30	122	332	613	728	673	488	184	13	0	3185
60	0	0	13	76	249	523	635	580	399	119	4	0	2598
65	0	0	2	25	135	374	480	425	254	45	0	0	1740
70	0	0	0	6	57	232	325	270	130	11	0	0	1031

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	141	260	438	621	910	1170	1287	1170	973	691	327	131	141	401	839	1460	2370	3540	4827	5997	6970	7661	7988	8119
45	51	136	289	472	755	1020	1132	1015	823	536	199	47	51	187	476	948	1703	2723	3855	4870	5693	6229	6428	6475
50	7	56	157	332	600	870	977	860	673	384	90	3	7	63	220	552	1152	2022	2999	3859	4532	4916	5006	5009
55	0	12	66	206	445	720	822	705	523	241	28	0	0	12	78	284	729	1449	2271	2976	3499	3740	3768	3768
60	0	0	17	95	296	570	667	550	374	124	2	0	0	0	17	112	408	978	1645	2195	2569	2693	2695	2695
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	168	230	337	447	578	689	788	747	616	471	277	165	168	398	735	1182	1760	2449	3237	3984	4600	5071	5348	5513

(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