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: TOMBSTONE, AZ **COOP ID: 028619**

Climate Division: AZ 7 **NWS Call Sign:** **Elevation: 4,610 Feet** **Lat: 31˚42N** **Lon: 110˚03W**

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	59.5	36.1	47.8	88	1963	26	52.7	2000	6	1962	11	42.1	1979	534	0	.0	.0	27.2	@	8.8	.0
Feb	63.5	38.5	51.0	96	1963	7	55.2	1999	11	1956	2	47.0	1998	392	0	.0	.0	26.2	.0	4.7	.0
Mar	68.8	41.9	55.4	92+	1989	11	62.7	1972	12+	1963	18	49.9	1973	315	16	.0	.1	30.3	.0	2.6	.0
Apr	76.6	47.3	62.0	99	1989	20	70.6	1989	23	1976	17	56.4	1975	148	57	.0	1.3	29.9	.0	.6	.0
May	85.0	54.8	69.9	104+	2000	30	75.7	2000	31	1967	1	65.8	1995	37	189	.5	8.1	31.0	.0	.0	.0
Jun	94.5	63.1	78.8	110+	1990	28	82.8	1974	41	1899	1	73.9	1991	0	415	6.9	23.7	30.0	.0	.0	.0
Jul	93.3	66.5	79.9	112	1989	4	83.1	1971	50+	1964	12	76.8	1976	0	462	5.1	22.8	31.0	.0	.0	.0
Aug	90.5	65.2	77.9	106	1995	5	80.5	1975	53	1910	29	73.8	1990	0	397	.6	18.7	31.0	.0	.0	.0
Sep	87.6	61.4	74.5	106	1917	4	78.3	1997	43+	1945	30	70.7	1976	2	288	.2	11.8	30.0	.0	.0	.0
Oct	78.3	52.4	65.4	100	1917	6	69.7	1987	27	1971	30	59.6	1976	79	90	.0	2.6	31.0	.0	.2	.0
Nov	67.6	42.6	55.1	91+	1950	7	61.4	1999	18	1957	23	48.9	2000	307	10	.0	.0	29.0	.0	3.1	.0
Dec	59.8	36.7	48.3	84	1950	18	52.7	1981	3	1978	8	43.8	1974	520	0	.0	.0	27.8	@	8.4	.0
Ann	77.1	50.5	63.8	112	Jul 1989	4	83.1	Jul 1971	3	Dec 1978	8	42.1	Jan 1979	2334	1924	13.3	89.1	354.4	.0	28.4	.0

\+ 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: 1893-2001

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

Issue Date: February 2004

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Climate Division: AZ 7 **NWS Call Sign:** **Elevation: 4,610 Feet** **Lat: 31°42N** **Lon: 110°03W**

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	1.03	.68	3.00	1916	19	5.56	1993	.00+	1996
Feb	.74	.57	1.05	1983	4	1.97	1978	.00+	1999
Mar	.71	.50	1.31+	1912	9	2.72	1973	.00+	1984
Apr	.24	.06	.85	2001	6	1.19	1987	.00+	2000
May	.27	.09	1.24	1907	28	1.51	1992	.00+	2000
Jun	.62	.28	2.30	1996	30	3.05	2000	.00+	1995
Jul	2.82	2.64	2.65	1949	9	5.80	1975	1.12	1991
Aug	3.07	3.00	2.53	1910	29	5.99+	1999	.54	1975
Sep	1.54	1.22	2.96	1938	11	5.64	1983	.03	1992
Oct	1.29	.73	2.10	2000	12	6.12	2000	.00+	1982
Nov	.69	.45	2.64	1919	22	2.66	1994	.00	1999
Dec	1.08	.32	1.80	1987	18	3.65	1984	.00+	1981
Ann	14.10	13.76	3.00	Jan 1916	19	6.12	Oct 2000	.00+	May 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.0	2.5	.7	.2
Feb	3.1	2.1	.5	@
Mar	3.5	2.3	.3	.1
Apr	1.4	.7	.1	.0
May	1.5	.8	.1	.0
Jun	2.4	1.4	.4	.1
Jul	10.1	7.1	2.0	.3
Aug	10.3	6.9	2.0	.6
Sep	5.0	3.5	.9	.3
Oct	3.9	2.7	.9	.3
Nov	2.7	1.9	.4	@
Dec	3.4	2.9	.7	.2
Ann	51.3	34.8	9.0	2.1

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	.02	.11	.24	.40	.60	.86	1.21	1.71	2.60	3.51
Feb	.00	.00	.00	.25	.44	.60	.78	.99	1.26	1.69	2.08
Mar	.00	.00	.20	.32	.44	.57	.72	.90	1.13	1.51	1.87
Apr	.00	.00	.00	.00	.02	.08	.16	.26	.42	.71	1.00
May	.00	.00	.00	.01	.05	.12	.20	.31	.47	.76	1.05
Jun	.00	.00	.00	.04	.14	.28	.46	.71	1.08	1.74	2.41
Jul	1.14	1.40	1.77	2.07	2.35	2.64	2.95	3.31	3.77	4.46	5.10
Aug	.85	1.14	1.59	1.97	2.35	2.74	3.18	3.69	4.36	5.41	6.39
Sep	.09	.18	.37	.58	.82	1.09	1.43	1.86	2.46	3.48	4.50
Oct	.00	.00	.15	.34	.56	.82	1.14	1.57	2.16	3.18	4.22
Nov	.02	.06	.15	.25	.36	.49	.64	.84	1.12	1.59	2.06
Dec	.00	.02	.11	.24	.40	.62	.89	1.26	1.81	2.77	3.75
Ann	9.02	9.96	11.19	12.13	12.99	13.82	14.68	15.65	16.83	18.56	20.08

\+ 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: 1893-2001
(3) Derived from 1971-2000 serially complete daily data

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Climate Division: AZ 7 **NWS Call Sign:** **Elevation: 4,610 Feet** **Lat: 31°42N** **Lon: 110°03W**

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	.6	.0	#	0	9.5	1997	7	9.5	1997	10	1997	7	#+	2000	.1	.1	.1	.1	.0	@	@	@	@
Feb	#	.0	#	0	#	1975	17	#	1975	6	1987	21	#+	1990	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	#	.0	0	0	#	1975	27	#+	1975	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	#	.0	0	0	#	1972	14	#	1972	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	2.8	2000	7	2.8	2000	3	2000	7	#	2000	.1	.1	.0	.0	.0	@	@	.0	.0
Dec	.0	.0	#	0	.0	0	0	.0	0	8	1978	6	#	1978	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.8	.0	N/A	N/A	9.5	Jan 1997	7	9.5	Jan 1997	10	Jan 1997	7	#+	Nov 2000	.2	.2	.1	.1	.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	4/29	4/23	4/18	4/14	4/11	4/07	4/03	3/30	3/24
32	4/16	4/07	4/01	3/27	3/21	3/16	3/11	3/04	2/23
28	3/24	3/12	3/04	2/24	2/17	2/10	2/03	1/25	1/13
24	3/04	2/17	2/06	1/27	1/17	1/07	12/24	11/30	0/00
20	2/05	1/15	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	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	10/22	10/27	10/31	11/03	11/06	11/09	11/12	11/15	11/20
32	11/01	11/07	11/12	11/16	11/20	11/23	11/27	12/02	12/09
28	11/13	11/20	11/26	12/01	12/05	12/10	12/15	12/20	12/28
24	11/28	12/09	12/18	12/25	1/02	1/10	1/21	0/00	0/00
20	12/26	1/15	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	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	233	224	218	213	208	203	198	192	183
32	277	265	256	249	242	236	229	220	208
28	332	318	308	299	290	282	273	263	248
24	>365	>365	>365	>365	354	333	318	304	286
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

***** 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	534	392	315	148	37	0	0	0	2	79	307	520	2334
60	379	257	192	70	10	0	0	0	0	27	185	366	1486
57	292	182	135	38	4	0	0	0	0	12	126	279	1068
55	236	138	103	24	1	0	0	0	0	6	94	224	826
50	120	57	41	6	0	0	0	0	0	1	36	112	373
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	489	532	725	899	1175	1405	1485	1420	1276	1034	693	504	11637
55	12	26	114	233	464	715	772	707	586	327	97	15	4068
57	6	14	85	187	404	655	710	645	526	271	69	8	3580
60	0	5	49	129	317	565	617	552	436	193	38	2	2903
65	0	0	16	57	189	415	462	397	288	90	10	0	1924
70	0	0	4	17	93	270	307	242	153	29	1	0	1116

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	263	337	485	671	935	1174	1246	1182	1045	795	462	275	263	600	1085	1756	2691	3865	5111	6293	7338	8133	8595	8870
45	137	205	339	523	780	1024	1091	1027	895	642	324	153	137	342	681	1204	1984	3008	4099	5126	6021	6663	6987	7140
50	52	99	207	377	625	874	936	872	745	487	197	59	52	151	358	735	1360	2234	3170	4042	4787	5274	5471	5530
55	11	35	103	241	472	724	781	717	595	341	99	12	11	46	149	390	862	1586	2367	3084	3679	4020	4119	4131
60	0	6	38	129	322	574	626	562	445	201	29	0	0	6	44	173	495	1069	1695	2257	2702	2903	2932	2932
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	164	211	303	428	602	739	814	791	694	499	278	168	164	375	678	1106	1708	2447	3261	4052	4746	5245	5523	5691

(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