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: ROOSEVELT 1 WNW, AZ **COOP ID: 027281**

Climate Division: AZ 4 **NWS Call Sign:** **Elevation: 2,205 Feet** **Lat: 33˚40N** **Lon: 111˚09W**

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	59.2	37.6	48.4	80+	1951	26	53.0	1981	19	1963	13	43.4	1979	515	0	.0	.0	29.2	.0	3.8	.0
Feb	65.0	40.5	52.8	87	1951	12	58.1	1996	21+	1974	10	48.5	1975	344	2	.0	.0	27.3	.0	1.4	.0
Mar	70.9	44.6	57.8	92+	1966	15	66.4	1972	27	1971	1	50.6	1973	261	36	.0	.2	30.7	.0	.7	.0
Apr	79.8	51.0	65.4	100+	2000	28	73.3	1989	29	1977	5	56.6	1975	110	121	.1	3.6	29.9	.0	.1	.0
May	89.0	59.9	74.5	113+	1910	30	80.2	2000	35	1978	8	67.8	1977	18	310	1.8	15.4	31.0	.0	.0	.0
Jun	99.3	68.8	84.1	117	1990	26	88.2	2000	43	1978	5	79.9	1975	0	572	15.7	27.7	30.0	.0	.0	.0
Jul	102.0	74.1	88.1	116+	1995	30	92.0	1971	49	1977	13	85.0	1975	0	715	23.1	30.5	31.0	.0	.0	.0
Aug	99.5	72.9	86.2	114+	1995	6	89.7	1994	50	1978	8	82.8	1978	0	657	18.6	29.5	31.0	.0	.0	.0
Sep	94.0	67.8	80.9	115	1950	2	85.4	2000	39	1907	30	76.0	1976	0	477	6.4	24.6	30.0	.0	.0	.0
Oct	82.1	56.8	69.5	102	1906	1	74.4	1988	18	1906	21	64.3	1971	43	182	.2	7.2	31.0	.0	.0	.0
Nov	67.9	45.1	56.5	90+	1950	2	61.8	1995	23	1969	18	51.1	2000	265	10	.0	.0	29.7	.0	.4	.0
Dec	59.1	38.1	48.6	83	1950	11	54.5	1980	18	1908	18	44.0	1974	509	0	.0	.0	29.2	.0	3.7	.0
Ann	80.7	54.8	67.7	117	Jun 1990	26	92.0	Jul 1971	18+	Dec 1908	18	43.4	Jan 1979	2065	3082	65.9	138.7	360.0	.0	10.1	.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: 1905-2001

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

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Climate Division: AZ 4 **NWS Call Sign:** **Elevation: 2,205 Feet** **Lat: 33°40N** **Lon: 111°09W**

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	2.21	1.62	2.44	1995	5	11.25	1993	.00	1972
Feb	1.95	1.48	2.29	1997	28	7.03	1980	.00+	1984
Mar	2.35	2.01	4.14	1978	2	8.06	1978	.00+	1997
Apr	.59	.43	2.10	1931	23	2.93	1999	.00+	2000
May	.47	.18	1.31	1941	2	2.25	1973	.00+	2000
Jun	.14	.03	1.33	1955	14	1.74	1972	.00+	1999
Jul	1.25	1.13	2.65	2001	30	2.97	1984	.00	1997
Aug	1.79	1.67	2.23	1963	31	4.34	1999	.42	1985
Sep	1.33	1.09	3.40	1946	18	3.75	1996	.00+	2000
Oct	1.52	1.08	4.00	1959	30	8.57	1972	.00+	1999
Nov	1.53	1.39	2.80	1931	22	4.82	1978	.00+	1999
Dec	1.76	.88	3.88	1978	18	7.53	1978	.00+	1981
Ann	16.89	15.67	4.14	Mar 1978	2	11.25	Jan 1993	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.9	4.0	1.6	.6
Feb	5.7	3.9	1.4	.5
Mar	6.1	4.2	1.5	.5
Apr	2.8	1.5	.2	.1
May	2.4	1.4	.2	.1
Jun	1.0	.5	@	.0
Jul	5.8	3.2	.7	.2
Aug	6.6	4.0	1.1	.3
Sep	4.4	2.6	.9	.3
Oct	4.1	2.6	.9	.4
Nov	3.9	2.6	1.0	.3
Dec	5.2	3.4	1.2	.4
Ann	53.9	33.9	10.7	3.7

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	.01	.08	.27	.53	.87	1.29	1.84	2.58	3.65	5.56	7.51
Feb	.00	.08	.34	.62	.94	1.32	1.78	2.37	3.20	4.62	6.04
Mar	.00	.00	.30	.70	1.13	1.62	2.20	2.94	3.96	5.64	7.32
Apr	.00	.00	.00	.08	.21	.35	.52	.73	1.03	1.54	2.04
May	.00	.00	.00	.01	.09	.19	.34	.53	.82	1.35	1.88
Jun	.00	.00	.00	.00	.00	.01	.06	.12	.24	.45	.67
Jul	.08	.21	.41	.59	.79	1.00	1.24	1.54	1.95	2.61	3.25
Aug	.37	.53	.80	1.04	1.28	1.53	1.83	2.18	2.64	3.38	4.08
Sep	.00	.10	.32	.52	.75	.99	1.28	1.64	2.14	2.96	3.77
Oct	.00	.00	.19	.45	.73	1.05	1.42	1.90	2.56	3.65	4.73
Nov	.00	.08	.29	.51	.77	1.06	1.42	1.87	2.50	3.58	4.64
Dec	.00	.02	.14	.33	.60	.94	1.39	2.02	2.94	4.60	6.32
Ann	8.78	10.17	12.04	13.53	14.90	16.26	17.70	19.33	21.37	24.41	27.13

\+ 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: 1905-2001
(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	#	.0	0	0
Feb	.1	.0	0	0
Mar	.0	.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	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	#	1987	18	#	1987	0	0	0	0	0
Feb	2.8	1985	3	2.8	1985	0	0	0	0	0
Mar	.0	0	0	.0	0	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Ann	2.8	Feb 1985	3	2.8	Feb 1985	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	@	@	.0	.0	.0
Mar	.0	.0	.0	.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	@	@	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.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	.0	.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	4/11	3/29	3/19	3/11	3/04	2/25	2/17	2/07	1/25
32	3/15	2/27	2/15	2/04	1/25	1/13	12/28	0/00	0/00
28	2/12	1/28	1/13	0/00	0/00	0/00	0/00	0/00	0/00
24	1/13	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	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	11/08	11/16	11/22	11/27	12/02	12/07	12/12	12/18	12/26
32	11/23	12/03	12/10	12/17	12/23	12/31	1/10	0/00	0/00
28	12/15	1/05	1/27	0/00	0/00	0/00	0/00	0/00	0/00
24	1/03	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	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	321	304	292	282	272	263	252	240	224
32	>365	>365	>365	341	322	308	296	284	268
28	>365	>365	>365	>365	>365	>365	>365	>365	323
24	>365	>365	>365	>365	>365	>365	>365	>365	>365
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	515	344	261	110	18	0	0	0	0	43	265	509	2065
60	360	214	157	50	5	0	0	0	0	12	146	355	1299
57	272	145	108	28	1	0	0	0	0	5	91	268	918
55	215	108	80	18	0	0	0	0	0	2	62	213	698
50	101	38	31	5	0	0	0	0	0	0	18	103	296
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	508	582	798	1001	1315	1562	1738	1680	1467	1162	735	514	13062
55	10	45	166	330	603	872	1025	967	777	451	107	14	5367
57	5	27	132	279	542	812	963	905	717	391	76	7	4856
60	0	11	88	211	452	722	870	812	627	306	41	1	4141
65	0	2	36	121	310	572	715	657	477	182	10	0	3082
70	0	0	12	56	190	423	560	502	329	89	2	0	2163

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	276	381	559	773	1076	1328	1502	1447	1239	934	513	288	276	657	1216	1989	3065	4393	5895	7342	8581	9515	10028	10316
45	137	239	407	623	921	1178	1347	1292	1089	779	364	147	137	376	783	1406	2327	3505	4852	6144	7233	8012	8376	8523
50	39	117	257	474	766	1028	1192	1137	939	624	224	45	39	156	413	887	1653	2681	3873	5010	5949	6573	6797	6842
55	0	38	138	330	611	878	1037	982	789	471	106	1	0	38	176	506	1117	1995	3032	4014	4803	5274	5380	5381
60	0	3	55	203	458	728	882	827	639	321	33	0	0	3	58	261	719	1447	2329	3156	3795	4116	4149	4149
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	158	223	337	486	694	826	942	924	807	598	296	157	158	381	718	1204	1898	2724	3666	4590	5397	5995	6291	6448

(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