

Climatology of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: MONTEZUMA CASTLE N M, AZ

1971-2000

COOP ID: 025635

Climate Division: AZ 3

NWS Call Sign:

Elevation: 3,179 Feet Lat: 34° 37N

Lon: 111° 50W

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	59.9	25.6	42.8	82	1951	26	47.9	1986	-1	1963	13	37.5	1979	691	0	.0	.0	28.1	.0	25.3	.0
Feb	65.0	29.2	47.1	89	1986	26	52.7	1995	7	1949	1	42.7	1974	501	0	.0	.0	26.9	.2	19.0	.0
Mar	69.8	34.2	52.0	94	1972	10	58.2	1972	12	1971	2	44.9	1973	409	6	.0	.4	30.5	.0	10.6	.0
Apr	77.7	39.2	58.5	99+	1996	27	65.9	1989	16	1945	4	50.7	1975	233	36	.0	3.0	29.8	.0	4.3	.0
May	86.6	46.7	66.7	107+	1984	28	71.8	1997	24	1950	5	62.6	1971	68	120	1.5	12.7	31.0	.0	.4	.0
Jun	97.2	54.3	75.8	117	1970	25	80.1	1981	36+	1951	2	71.3	1998	4	326	12.3	26.5	30.0	.0	.0	.0
Jul	100.4	63.4	81.9	115	1995	29	84.4	1996	45+	1971	3	78.6	1987	0	524	19.4	29.7	31.0	.0	.0	.0
Aug	97.7	62.5	80.1	112	1980	11	83.8	1994	39	1968	23	77.4	1990	0	469	13.0	28.7	31.0	.0	.0	.0
Sep	92.2	55.0	73.6	111+	1950	1	76.3+	1983	31	1978	20	69.2	1985	5	262	4.1	21.1	30.0	.0	@	.0
Oct	81.5	42.6	62.1	104	1980	2	68.1	1988	20	1971	30	56.1	1971	149	58	.1	6.4	31.0	.0	2.4	.0
Nov	68.5	31.2	49.9	88+	2001	4	55.3	1995	8	1956	20	43.8	2000	455	0	.0	.0	29.6	.0	17.0	.0
Dec	59.5	25.4	42.5	78+	1980	29	47.9	1980	4	1990	23	37.8	1990	699	0	.0	.0	27.9	.0	26.6	.0
Ann	79.7	42.4	61.1	117	Jun 1970	25	84.4	Jul 1996	-1	Jan 1963	13	37.5	Jan 1979	3214	1801	50.4	128.5	356.8	.2	105.6	.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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1938-2001

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

056-A

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NWS Call Sign:

Elevation: 3,179 Feet Lat: 34°37N

Lon: 111°50W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.26	.96	1.54	1965	6	6.59	1993	.00+	1996	5.1	3.2	.7	.3	.00	.02	.14	.29	.49	.74	1.06	1.48	2.09	3.18	4.28
Feb	1.40	1.29	2.63	1991	28	3.53	1980	.00+	1984	5.0	3.3	1.0	.2	.00	.00	.36	.61	.85	1.11	1.41	1.78	2.26	3.05	3.82
Mar	1.47	1.35	1.12+	1989	25	3.64	1973	.00+	1997	6.5	4.2	.9	.1	.00	.00	.41	.67	.92	1.19	1.50	1.87	2.34	3.13	3.89
Apr	.69	.47	1.81	1988	22	3.53	1988	.00+	1993	3.1	1.9	.4	@	.00	.00	.04	.17	.30	.45	.63	.86	1.17	1.70	2.24
May	.43	.28	1.35	1944	10	2.07	1992	.00+	1996	2.4	1.5	.2	.0	.00	.00	.00	.04	.15	.26	.38	.54	.75	1.12	1.47
Jun	.33	.10	2.00	1955	13	2.00	1972	.00+	1998	1.5	.9	.2	.0	.00	.00	.00	.00	.00	.05	.17	.34	.59	1.03	1.47
Jul	1.58	1.02	2.20	1950	7	6.01	1990	.00	1993	6.3	3.8	1.0	.3	.01	.07	.23	.44	.68	.99	1.37	1.88	2.61	3.88	5.18
Aug	2.11	1.79	2.96	1943	2	6.54	1992	.22	1975	7.6	4.7	1.3	.3	.38	.56	.87	1.16	1.45	1.77	2.13	2.57	3.15	4.09	4.98
Sep	1.80	1.52	3.29	1958	12	6.08	1999	.00+	2000	4.7	3.4	1.2	.5	.00	.00	.26	.54	.85	1.21	1.65	2.21	2.99	4.31	5.63
Oct	1.30	.84	2.60	1981	2	6.81	1972	.00+	1999	3.9	2.7	.9	.3	.00	.00	.20	.44	.68	.95	1.25	1.64	2.18	3.03	3.89
Nov	1.06	.55	2.00	1981	29	4.11	1978	.00+	1999	3.7	2.1	.7	.3	.00	.00	.09	.25	.44	.66	.93	1.29	1.80	2.65	3.52
Dec	1.06	.68	1.97	1965	10	3.65	1992	.00+	1999	4.2	2.5	.5	.1	.00	.02	.12	.25	.42	.63	.90	1.25	1.76	2.65	3.56
Ann	14.49	15.25	3.29	Sep 1958	12	6.81	Oct 1972	.00+	Sep 2000	54.0	34.2	9.0	2.4	8.38	9.47	10.91	12.04	13.06	14.07	15.13	16.33	17.80	19.98	21.91

+ 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: 1938-2001

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www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: MONTEZUMA CASTLE N M, AZ

COOP ID: 025635

Climate Division: AZ 3

NWS Call Sign:

Elevation: 3,179 Feet

Lat: 34° 37N

Lon: 111° 50W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	.2	.0	0	0	2.0	1979	25	3.0	1979	0	0	0	0	0	.2	.1	.0	.0	.0	.0	.0	.0	.0
Feb	.4	.0	#	0	8.0	1985	3	9.5	1985	#	1979	2	#	1979	.1	.1	.1	@	.0	.0	.0	.0	.0
Mar	.1	.0	#	0	3.0	1976	4	3.0	1976	3	1976	4	#	1976	.1	@	@	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.5	.0	0	0	6.0	1978	6	6.0	1978	0	0	0	0	0	.1	.1	.1	@	.0	.0	.0	.0	.0
Ann	1.2	.0	N/A	N/A	8.0	Feb 1985	3	9.5	Feb 1985	3	Mar 1976	4	#+	Feb 1979	.5	.3	.2	@	.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

Complete documentation available from:

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Climate Division: AZ 3

NWS Call Sign:

Elevation: 3,179 Feet

Lat: 34° 37N

Lon: 111° 50W

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	5/22	5/17	5/13	5/09	5/06	5/02	4/29	4/25	4/19
32	5/17	5/08	5/01	4/26	4/21	4/16	4/10	4/04	3/26
28	4/27	4/18	4/11	4/05	3/31	3/25	3/20	3/13	3/04
24	4/05	3/26	3/19	3/13	3/08	3/02	2/24	2/17	2/07
20	3/19	3/06	2/24	2/16	2/08	2/01	1/24	1/14	1/01
16	2/21	2/05	1/24	1/13	1/01	12/16	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	9/30	10/06	10/10	10/14	10/17	10/21	10/24	10/29	11/04
32	10/10	10/16	10/20	10/24	10/27	10/30	11/03	11/07	11/13
28	10/24	10/28	11/01	11/04	11/07	11/09	11/12	11/16	11/20
24	11/03	11/08	11/12	11/15	11/18	11/21	11/24	11/28	12/03
20	11/15	11/20	11/25	11/28	12/01	12/05	12/08	12/12	12/18
16	12/01	12/09	12/16	12/22	12/28	1/07	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	190	181	175	169	164	159	153	146	137
32	223	211	202	195	189	182	175	166	154
28	251	240	233	226	220	214	207	200	189
24	290	278	269	262	255	248	240	231	219
20	343	324	313	303	294	285	276	265	250
16	>365	>365	>365	>365	>365	>365	336	314	294

* 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

Complete documentation available from:

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Climate Division: AZ 3

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Elevation: 3,179 Feet Lat: 34° 37N Lon: 111° 50W

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	691	501	409	233	68	4	0	0	5	149	455	699	3214
60	536	362	271	137	22	0	0	0	0	69	309	544	2250
57	443	282	199	92	9	0	0	0	0	38	228	451	1742
55	381	231	158	67	5	0	0	0	0	24	179	389	1434
50	234	122	78	25	1	0	0	0	0	5	80	244	789
32	1	0	0	0	0	0	0	0	0	0	0	3	4

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	333	423	620	793	1075	1313	1547	1492	1247	932	535	327	10637
55	0	10	66	170	367	623	834	779	557	243	24	0	3673
57	0	5	44	135	310	563	772	717	497	195	13	0	3251
60	0	1	23	90	230	473	679	624	408	133	5	0	2666
65	0	0	6	36	120	326	524	469	262	58	0	0	1801
70	0	0	0	12	47	193	369	314	133	18	0	0	1086

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	248	408	580	848	1090	1317	1263	1022	707	320	133	141	389	797	1377	2225	3315	4632	5895	6917	7624	7944	8077
45	47	124	260	431	693	940	1162	1108	872	553	187	42	47	171	431	862	1555	2495	3657	4765	5637	6190	6377	6419
50	6	43	137	293	538	790	1007	953	722	400	88	1	6	49	186	479	1017	1807	2814	3767	4489	4889	4977	4978
55	0	8	53	169	385	640	852	798	572	260	25	0	0	8	61	230	615	1255	2107	2905	3477	3737	3762	3762
60	0	0	13	76	240	490	697	643	422	139	1	0	0	0	13	89	329	819	1516	2159	2581	2720	2721	2721
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	173	238	324	428	545	621	774	760	626	482	293	163	173	411	735	1163	1708	2329	3103	3863	4489	4971	5264	5427

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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