

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: YUMA PROVING GROUND, AZ

1971-2000

COOP ID: 029654

Climate Division: AZ 5

NWS Call Sign:

Elevation: 324 Feet

Lat: 32° 50N

Lon: 114° 24W

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	68.6	43.3	56.0	89	1971	19	60.3	1986	23	1971	8	50.7	1979	287	7	.0	.0	30.9	.0	1.3	.0
Feb	73.6	47.0	60.3	94+	1986	27	66.0	1995	26+	1990	15	56.8	1975	153	22	.0	.4	28.0	.0	.1	.0
Mar	78.6	51.3	65.0	100	1988	26	70.8	1972	32	1964	9	58.8	1973	107	106	@	3.5	31.0	.0	.0	.0
Apr	85.9	56.9	71.4	106+	1992	28	79.0	1989	37	1977	3	63.3	1975	37	229	1.7	11.1	30.0	.0	.0	.0
May	93.5	63.9	78.7	117	1983	28	86.3	1997	46	1964	5	71.9	1977	6	432	7.2	22.3	31.0	.0	.0	.0
Jun	103.4	72.2	87.8	121	1990	26	92.4	1994	54	1962	15	83.6	1982	0	684	22.3	28.7	30.0	.0	.0	.0
Jul	106.6	79.6	93.1	124	1995	28	96.7	1996	65	1982	1	90.4	1976	0	871	29.4	31.0	31.0	.0	.0	.0
Aug	105.4	79.8	92.6	118+	1985	24	97.6	1995	66+	1968	23	88.4	1979	0	854	27.5	30.7	31.0	.0	.0	.0
Sep	100.5	73.4	87.0	115	1995	2	92.4	1995	52	1970	26	80.2	1985	0	659	18.6	27.9	30.0	.0	.0	.0
Oct	89.7	61.5	75.6	112	1980	2	81.7	1988	36	1971	31	69.0	1971	13	341	4.2	17.1	31.0	.0	.0	.0
Nov	76.7	48.8	62.8	95+	1988	5	69.7	1995	29	1994	20	57.9	1972	130	62	.0	1.4	30.0	.0	.1	.0
Dec	68.1	42.4	55.3	85	1995	4	60.2	1980	25	1990	26	50.9	1971	308	6	.0	.0	30.8	.0	1.2	.0
Ann	87.6	60.0	73.8	124	Jul 1995	28	97.6	Aug 1995	23	Jan 1971	8	50.7	Jan 1979	1041	4273	110.9	174.1	364.7	.0	2.7	.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: 1958-2001

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

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COOP ID: 029654

Climate Division: AZ 5

NWS Call Sign:

Elevation: 324 Feet Lat: 32°50N

Lon: 114°24W

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	.46	.20	1.35	1979	16	2.26	1979	.00+	2000	3.0	1.3	.2	@	.00	.00	.00	.06	.14	.24	.37	.54	.80	1.25	1.70
Feb	.41	.18	.90	1970	10	1.98	1998	.00+	1989	2.5	1.1	.3	.0	.00	.00	.01	.06	.12	.20	.32	.47	.70	1.11	1.53
Mar	.36	.13	1.17	2001	6	2.50	1992	.00+	1999	2.2	1.1	.2	.0	.00	.00	.00	.03	.09	.17	.27	.41	.62	.99	1.37
Apr	.16	.00	1.46	1965	3	1.10	1999	.00+	2000	.9	.4	.1	.0	.00	.00	.00	.00	.00	.00	.00	.12	.28	.56	.84
May	.04	.00	.19+	1992	5	.26	1979	.00+	2000	.6	.2	.0	.0	.00	.00	.00	.00	.00	.00	.00	.01	.05	.14	.23
Jun	.06	.00	1.30	1972	6	1.31	1972	.00+	1998	.3	.1	@	@	.00	.00	.00	.00	.00	.00	.00	.00	.02	.16	.32
Jul	.25	.01	1.36	1958	30	1.39	1984	.00+	2000	1.4	.6	.2	@	.00	.00	.00	.00	.00	.00	.07	.20	.41	.82	1.25
Aug	.63	.23	2.40	1989	9	2.64	1983	.00+	1999	2.2	1.0	.4	.1	.00	.00	.00	.03	.13	.27	.45	.71	1.10	1.79	2.51
Sep	.45	.19	1.95	1963	17	2.63	1976	.00+	2000	1.7	1.1	.2	.1	.00	.00	.00	.00	.04	.14	.28	.48	.78	1.33	1.89
Oct	.33	.01	3.02	1972	6	3.78	1972	.00+	1999	1.3	.5	.2	@	.00	.00	.00	.00	.00	.00	.06	.21	.50	1.07	1.71
Nov	.23	.03	1.22	1985	25	1.57	1985	.00+	2000	1.2	.5	.2	@	.00	.00	.00	.00	.00	.01	.09	.21	.40	.73	1.07
Dec	.42	.12	.90+	1997	6	2.43	1997	.00+	2000	2.3	1.0	.3	.0	.00	.00	.00	.00	.02	.13	.28	.47	.75	1.25	1.75
Ann	3.80	3.44	3.02	Oct 1972	6	3.78	Oct 1972	.00+	Dec 2000	19.6	8.9	2.3	.2	1.17	1.54	2.07	2.53	2.98	3.44	3.95	4.54	5.31	6.51	7.62

+ 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: 1958-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: YUMA PROVING GROUND, AZ

COOP ID: 029654

Climate Division: AZ 5

NWS Call Sign:

Elevation: 324 Feet

Lat: 32° 50N

Lon: 114° 24W

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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.0	.0	N/A	N/A	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.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

Complete documentation available from:

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No. 20 1971-2000

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COOP ID: 029654

Climate Division: AZ 5

NWS Call Sign:

Elevation: 324 Feet

Lat: 32° 50N

Lon: 114° 24W

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	2/26	2/16	2/09	2/03	1/29	1/23	1/16	1/06	0/00
32	1/31	1/20	1/12	1/04	12/27	12/17	0/00	0/00	0/00
28	1/16	1/02	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	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	11/20	11/27	12/01	12/05	12/09	12/13	12/18	12/24	0/00
32	11/29	12/08	12/16	12/23	12/31	1/11	0/00	0/00	0/00
28	12/28	1/18	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	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	>365	>365	336	322	313	305	297	288	277
32	>365	>365	>365	>365	>365	351	336	326	316
28	>365	>365	>365	>365	>365	>365	>365	>365	345
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

Complete documentation available from:

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COOP ID: 029654

Climate Division: AZ 5 NWS Call Sign: Elevation: 324 Feet Lat: 32°50N Lon: 114°24W

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	287	153	107	37	6	0	0	0	0	13	130	308	1041
60	156	66	42	12	1	0	0	0	0	3	56	175	511
57	99	31	21	5	0	0	0	0	0	1	29	114	300
55	68	17	13	2	0	0	0	0	0	0	16	81	197
50	18	2	0	0	0	0	0	0	0	0	3	24	47
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	743	793	1022	1182	1448	1674	1894	1877	1649	1352	922	721	15277
55	98	166	322	494	735	984	1181	1164	959	639	248	90	7080
57	67	124	268	437	673	924	1119	1102	899	577	200	60	6450
60	31	75	196	355	581	834	1026	1009	809	486	138	28	5568
65	7	22	106	229	432	684	871	854	659	341	62	6	4273
70	0	4	43	133	293	534	716	699	509	216	21	0	3168

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	507	603	788	957	1216	1450	1663	1648	1425	1120	699	485	507	1110	1898	2855	4071	5521	7184	8832	10257	11377	12076	12561
45	357	459	633	807	1061	1300	1508	1493	1275	965	549	332	357	816	1449	2256	3317	4617	6125	7618	8893	9858	10407	10739
50	210	316	478	657	906	1150	1353	1338	1125	810	399	194	210	526	1004	1661	2567	3717	5070	6408	7533	8343	8742	8936
55	91	181	324	507	751	1000	1198	1183	975	655	258	74	91	272	596	1103	1854	2854	4052	5235	6210	6865	7123	7197
60	21	79	184	361	596	850	1043	1028	825	501	137	13	21	100	284	645	1241	2091	3134	4162	4987	5488	5625	5638
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	303	370	486	611	774	887	1034	1031	906	723	432	293	303	673	1159	1770	2544	3431	4465	5496	6402	7125	7557	7850

(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