

Climatography of the United States

No. 20

1971-2000

Station: WUPATKI N M, AZ

COOP ID: 029542

Climate Division: AZ 2

NWS Call Sign:

Elevation: 4,908 Feet Lat: 35°31N

Lon: 111°22W

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	47.1	24.2	35.7	76	1969	26	41.1	1986	-4+	1971	7	29.9	1977	910	0	.0	.0	13.4	1.8	26.6	.2
Feb	54.8	29.1	42.0	77+	1986	28	48.3	1995	-2	1989	6	38.3	1974	646	0	.0	.0	21.9	.4	18.1	.1
Mar	61.8	34.7	48.3	85	1969	31	55.2	1972	10	1969	7	40.7	1973	522	3	.0	.0	29.2	.0	9.5	.0
Apr	69.6	41.4	55.5	92+	2000	29	63.3	1989	14	1964	6	48.2	1975	305	20	.0	.2	29.5	.0	3.0	.0
May	79.2	50.3	64.8	101	2000	29	71.8	1984	20	1967	12	59.5	1971	112	104	.1	3.8	31.0	.0	.2	.0
Jun	90.5	60.0	75.3	107	1970	25	80.6	1974	23	1967	7	71.4	1991	7	314	3.8	19.7	30.0	.0	.0	.0
Jul	94.3	65.9	80.1	108	1971	13	83.5	1996	36	1969	8	76.8	1987	0	467	7.4	25.9	31.0	.0	.0	.0
Aug	91.3	63.7	77.5	106+	1969	10	81.2	1994	31	1968	24	75.4	1999	0	387	2.5	21.9	31.0	.0	.0	.0
Sep	84.4	56.4	70.4	102	1950	1	74.5	1979	33	1969	24	65.9	1985	18	180	.1	7.9	30.0	.0	.0	.0
Oct	72.3	44.5	58.4	93	1969	1	63.7	1988	23+	1972	31	53.1	1984	233	29	.0	.5	30.7	.0	1.7	.0
Nov	57.6	32.6	45.1	81	1967	12	50.9	1995	7+	1976	29	39.2	2000	597	0	.0	.0	24.3	.0	12.9	.0
Dec	46.9	24.3	35.6	72	1969	26	43.1	1977	-18	1968	21	26.9	1992	912	0	.0	.0	12.9	1.9	26.4	.2
Ann	70.8	43.9	57.4	108	Jul 1971	13	83.5	Jul 1996	-18	Dec 1968	21	26.9	Dec 1992	4262	1504	13.9	79.9	314.9	4.1	98.4	.5

+ 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: 1948-2001

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

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No. 20 1971-2000

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

Station: WUPATKI N M, AZ

COOP ID: 029542

Climate Division: AZ 2

NWS Call Sign:

Elevation: 4,908 Feet Lat: 35°31N

Lon: 111°22W

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	.51	.27	.85+	1987	31	1.89	1993	.00+	1986	3.8	1.8	.2	.0	.00	.01	.06	.13	.21	.31	.44	.61	.85	1.27	1.70
Feb	.54	.36	.87	1980	20	2.42	1973	.01	1972	3.7	1.6	.3	.0	.02	.05	.11	.18	.27	.36	.49	.64	.86	1.25	1.63
Mar	.73	.45	1.50	1983	24	2.67	2000	.00+	1997	4.8	2.1	.4	.1	.00	.00	.09	.22	.35	.50	.68	.91	1.23	1.75	2.28
Apr	.45	.30	.71	1990	25	1.71	1988	.00+	1993	2.9	1.5	.2	.0	.00	.00	.06	.12	.20	.29	.40	.55	.75	1.09	1.44
May	.38	.19	.81	1951	15	1.96	1982	.00+	1996	3.3	1.3	.1	.0	.00	.00	.02	.06	.13	.21	.31	.45	.65	1.01	1.37
Jun	.27	.12	1.96	1955	13	1.92	1972	.00+	1998	2.1	.8	.1	@	.00	.00	.00	.01	.06	.12	.20	.31	.47	.76	1.05
Jul	1.39	.88	1.68	1983	26	5.00	1999	.00	1993	7.1	3.3	.8	.2	.13	.29	.52	.73	.93	1.16	1.41	1.72	2.13	2.80	3.43
Aug	1.59	1.22	1.86	1977	8	4.02+	1986	.20	1990	8.5	4.2	.9	.2	.28	.42	.65	.87	1.09	1.33	1.61	1.94	2.38	3.10	3.78
Sep	1.04	.77	1.66	1983	23	3.86	1983	.00+	1993	5.2	2.7	.5	.1	.00	.03	.14	.28	.45	.65	.91	1.25	1.73	2.57	3.42
Oct	.84	.56	1.83	1972	3	7.85	1972	.00+	1999	4.0	2.2	.6	.1	.00	.00	.03	.12	.25	.42	.65	.96	1.42	2.24	3.09
Nov	.69	.46	1.78	1985	30	3.65	1978	.00+	1999	3.1	1.6	.4	.1	.00	.00	.09	.20	.33	.47	.64	.86	1.16	1.65	2.15
Dec	.54	.34	1.19	1992	4	1.80	1992	.00+	1996	3.1	1.7	.2	@	.00	.01	.06	.13	.22	.32	.46	.64	.90	1.35	1.81
Ann	8.97	8.55	1.96	Jun 1955	13	7.85	Oct 1972	.00+	Nov 1999	51.6	24.8	4.7	.8	5.07	5.76	6.68	7.40	8.06	8.70	9.38	10.15	11.10	12.51	13.76

+ 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: 1948-2001

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

Complete documentation available from:
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Station: WUPATKI N M, AZ

COOP ID: 029542

Climate Division: AZ 2

NWS Call Sign:

Elevation: 4,908 Feet

Lat: 35° 31N

Lon: 111° 22W

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	1.4	.0	#	0	5.5	1982	12	9.0	1989	3	1977	8	#+	2000	.6	.4	.2	.1	.0	.2	.0	.0	.0
Feb	1.3	.0	#	0	4.2	1973	21	14.2	1973	4	1973	22	1	1973	.7	.4	.2	.0	.0	.3	.1	.0	.0
Mar	1.0	.0	#	0	9.0	1975	15	10.3	1975	5	2000	21	#+	2000	.3	.2	.1	.1	.0	.2	.1	@	.0
Apr	.4	.0	#	0	4.5	1999	2	7.5	1999	5	1999	2	#+	1999	.2	.2	@	.0	.0	.1	.1	@	.0
May	#	.0	0	0	#	1988	1	#	1988	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	1.0	1996	27	1.0	1996	#	1996	27	#	1996	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	4.0	2000	11	4.5	1994	4	2000	11	#+	2000	.2	.2	.1	.0	.0	.2	.1	.0	.0
Dec	.9	.0	#	0	6.0	1992	4	6.0	1992	12	1991	1	1	1997	.8	.6	.1	.1	.0	.5	.1	.0	.0
Ann	5.5	.0	N/A	N/A	9.0	Mar 1975	15	14.2	Feb 1973	12	Dec 1991	1	1+	Dec 1997	2.8	2.0	.7	.3	.0	1.5	.5	@	.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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NWS Call Sign:

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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	5/18	5/11	5/07	5/03	4/29	4/25	4/21	4/16	4/10
32	5/06	4/28	4/22	4/17	4/12	4/07	4/02	3/28	3/19
28	4/21	4/12	4/05	3/31	3/26	3/21	3/15	3/09	2/28
24	4/03	3/24	3/17	3/11	3/05	2/28	2/22	2/15	2/05
20	3/15	3/05	2/25	2/19	2/13	2/07	2/01	1/24	1/14
16	2/19	2/09	2/03	1/28	1/23	1/17	1/12	1/04	12/24
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	10/06	10/11	10/15	10/18	10/21	10/24	10/27	10/31	11/05
32	10/17	10/21	10/24	10/27	10/30	11/02	11/04	11/08	11/12
28	10/25	10/30	11/02	11/05	11/08	11/10	11/13	11/17	11/22
24	11/04	11/10	11/14	11/17	11/21	11/24	11/27	12/01	12/07
20	11/18	11/23	11/26	11/29	12/02	12/04	12/07	12/10	12/15
16	11/26	12/02	12/07	12/12	12/16	12/20	12/24	12/30	1/07
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	198	190	184	179	174	170	165	159	151
32	228	218	211	206	200	195	189	182	172
28	253	244	237	231	226	221	215	208	199
24	291	280	273	266	260	253	247	239	228
20	323	312	304	297	291	284	277	269	258
16	>365	353	338	330	323	317	311	305	295

* 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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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	910	646	522	305	112	7	0	0	18	233	597	912	4262
60	755	506	377	191	49	1	0	0	3	128	448	757	3215
57	662	422	296	137	26	0	0	0	1	81	361	664	2650
55	600	367	247	107	16	0	0	0	0	57	306	602	2302
50	450	235	145	48	4	0	0	0	0	19	183	456	1540
32	64	4	2	0	0	0	0	0	0	0	4	79	153

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	177	282	506	706	1015	1297	1490	1410	1152	819	397	190	9441
55	0	1	38	123	319	607	777	697	462	163	9	0	3196
57	0	0	25	93	267	547	715	635	403	125	4	0	2814
60	0	0	13	57	197	458	622	542	315	78	1	0	2283
65	0	0	3	20	104	314	467	387	180	29	0	0	1504
70	0	0	0	5	43	186	312	235	76	7	0	0	864

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	43	136	311	509	800	1082	1265	1182	932	597	205	44	43	179	490	999	1799	2881	4146	5328	6260	6857	7062	7106
45	10	56	178	369	645	932	1110	1027	782	445	110	10	10	66	244	613	1258	2190	3300	4327	5109	5554	5664	5674
50	0	14	87	233	491	782	955	872	632	307	40	0	0	14	101	334	825	1607	2562	3434	4066	4373	4413	4413
55	0	0	31	128	343	632	800	717	482	182	8	0	0	0	31	159	502	1134	1934	2651	3133	3315	3323	3323
60	0	0	1	54	206	482	645	562	335	84	0	0	0	0	1	55	261	743	1388	1950	2285	2369	2369	2369
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	45	110	217	339	516	687	813	772	606	373	138	38	45	155	372	711	1227	1914	2727	3499	4105	4478	4616	4654

(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