

Climatology of the United States

No. 20

1971-2000

Station: WILLOW BEACH, AZ

COOP ID: 029376

Climate Division: AZ 1

NWS Call Sign:

Elevation: 740 Feet Lat: 35° 52N Lon: 114° 40W

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	64.1	38.7	51.4	82	1971	21	55.7	1986	22	1974	3	43.3	1979	425	2	.0	.0	30.1	.0	3.4	.0
Feb	70.2	43.3	56.8	91	1986	27	62.6	1995	25+	1985	6	50.2	1979	242	11	.0	@	27.7	@	.9	.0
Mar	77.1	48.5	62.8	97+	1972	9	68.5	1972	35+	1985	5	56.1	1973	151	83	.0	1.7	31.0	.0	.0	.0
Apr	86.2	55.9	71.1	106+	2000	28	78.5	1989	41	1975	2	65.0	1975	37	219	1.4	10.0	30.0	.0	.0	.0
May	96.3	64.8	80.6	116+	2000	30	87.9	1997	48	1999	1	74.0	1977	3	486	9.6	22.9	31.0	.0	.0	.0
Jun	107.7	72.8	90.3	123	1973	27	94.7	1974	51	1999	4	86.0	1991	0	757	24.3	29.0	30.0	.0	.0	.0
Jul	112.5	79.1	95.8	125	1972	13	99.3	1972	65	1984	23	92.1+	1993	0	956	29.9	30.9	31.0	.0	.0	.0
Aug	109.9	77.6	93.8	122	1969	6	98.0	1996	64+	1979	23	89.3+	1983	0	891	28.8	30.8	31.0	.0	.0	.0
Sep	102.3	70.1	86.2	117	1971	11	90.7	1995	52	1970	6	81.2	1986	0	637	18.4	27.6	30.0	.0	.0	.0
Oct	89.0	58.5	73.8	108+	2000	2	80.3	1988	34	1971	30	69.1	1971	20	291	3.8	14.7	31.0	.0	.0	.0
Nov	73.6	46.6	60.1	91+	2001	5	67.5	1995	31+	1985	21	55.6	1972	190	43	.0	.1	29.9	.0	.2	.0
Dec	64.3	38.9	51.6	81	1980	17	56.2	1995	21	1990	23	44.0	1978	418	3	.0	.0	30.2	.0	3.4	.0
Ann	87.8	57.9	72.9	125	Jul 1972	13	99.3	Jul 1972	21	Dec 1990	23	43.3	Jan 1979	1486	4379	116.2	167.7	362.9	@	7.9	.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: 1967-2001

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

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: WILLOW BEACH, AZ

COOP ID: 029376

Climate Division: AZ 1

NWS Call Sign:

Elevation: 740 Feet Lat: 35°52N

Lon: 114°40W

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	.70	.54	1.00	2001	12	2.36	1995	.00+	1984	4.2	2.0	.3	.0	.00	.00	.10	.20	.32	.46	.64	.86	1.16	1.69	2.21
Feb	.77	.42	1.46	1980	15	3.77	1993	.00+	1984	3.5	2.2	.5	.1	.00	.00	.08	.19	.32	.47	.67	.93	1.29	1.93	2.57
Mar	.84	.54	1.99	1992	8	5.24	1992	.00+	1997	4.2	1.9	.5	.1	.00	.00	.03	.12	.25	.42	.65	.96	1.43	2.25	3.11
Apr	.21	.10	.62	1978	9	1.08	1978	.00+	1996	1.8	.7	.1	.0	.00	.00	.00	.00	.01	.07	.15	.24	.38	.63	.87
May	.25	.19	.61	1996	26	.88	1977	.00+	2000	2.0	.9	@	.0	.00	.00	.00	.05	.10	.16	.22	.31	.42	.62	.82
Jun	.10	.02	.52	1999	4	.67	1973	.00+	2000	.8	.2	.1	.0	.00	.00	.00	.00	.00	.00	.03	.08	.17	.32	.48
Jul	.37	.18	1.37	1984	23	1.83	1984	.00+	1993	1.9	1.0	.2	.1	.00	.00	.01	.05	.11	.19	.29	.43	.63	.98	1.34
Aug	.59	.28	1.64	1982	24	1.99	1983	.00+	1996	2.5	1.2	.4	.1	.00	.00	.00	.10	.21	.34	.51	.72	1.02	1.55	2.06
Sep	.59	.15	1.94	1977	11	3.42	1976	.00+	2000	2.0	1.0	.4	.1	.00	.00	.00	.00	.06	.18	.36	.62	1.02	1.75	2.52
Oct	.42	.20	1.10	1992	24	1.86	1992	.00+	1999	2.1	1.1	.2	.1	.00	.00	.00	.07	.15	.25	.37	.52	.73	1.09	1.46
Nov	.34	.24	1.21	1967	22	1.51	1972	.00+	1999	2.1	1.1	.1	.0	.00	.00	.02	.09	.15	.23	.32	.43	.58	.84	1.10
Dec	.45	.17	.97	1984	20	2.93	1984	.00+	2000	2.6	1.3	.2	.0	.00	.00	.00	.02	.10	.20	.34	.52	.78	1.25	1.72
Ann	5.63	5.11	1.99	Mar 1992	8	5.24	Mar 1992	.00+	Dec 2000	29.7	14.6	3.0	.6	2.36	2.87	3.59	4.18	4.73	5.29	5.89	6.59	7.47	8.81	10.02

+ 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: 1967-2001

(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: WILLOW BEACH, AZ

COOP ID: 029376

Climate Division: AZ 1

NWS Call Sign:

Elevation: 740 Feet

Lat: 35° 52N

Lon: 114° 40W

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	.8	1974	5	.8	1974	1	1974	5	#	1974	@	.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	.8	Jan 1974	5	.8	Jan 1974	1	Jan 1974	5	#	Jan 1974	@	.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

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Climate Division: AZ 1

NWS Call Sign:

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Lat: 35° 52N

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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	3/05	2/23	2/16	2/10	2/04	1/29	1/23	1/15	1/05
32	2/07	1/29	1/21	1/15	1/08	12/31	12/19	0/00	0/00
28	2/01	1/22	1/13	12/29	0/00	0/00	0/00	0/00	0/00
24	1/07	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	11/13	11/21	11/27	12/02	12/07	12/12	12/17	12/22	12/30
32	12/03	12/09	12/14	12/18	12/22	12/28	1/07	0/00	0/00
28	12/20	1/02	1/16	0/00	0/00	0/00	0/00	0/00	0/00
24	1/04	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	331	318	309	302	294	286	277	265
32	>365	>365	>365	>365	>365	348	332	319	305
28	>365	>365	>365	>365	>365	>365	>365	>365	>365
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: 029376

Climate Division: AZ 1 NWS Call Sign: Elevation: 740 Feet Lat: 35° 52N Lon: 114° 40W

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	425	242	151	37	3	0	0	0	0	20	190	418	1486
60	283	132	74	12	0	0	0	0	0	5	99	277	882
57	207	83	42	5	0	0	0	0	0	2	61	203	603
55	163	57	27	2	0	0	0	0	0	1	42	160	452
50	80	16	8	0	0	0	0	0	0	0	12	78	194
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	600	693	955	1171	1506	1747	1979	1914	1627	1293	843	608	14936
55	50	106	269	484	793	1057	1266	1201	937	581	194	55	6993
57	32	76	222	426	731	997	1204	1139	877	520	154	36	6414
60	15	41	161	343	638	907	1111	1046	787	431	102	17	5599
65	2	11	83	219	486	757	956	891	637	291	43	3	4379
70	0	1	32	123	342	607	801	736	487	173	13	0	3315

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	354	494	705	925	1243	1488	1704	1647	1376	1048	601	369	354	848	1553	2478	3721	5209	6913	8560	9936	10984	11585	11954
45	209	351	550	775	1088	1338	1549	1492	1226	893	451	221	209	560	1110	1885	2973	4311	5860	7352	8578	9471	9922	10143
50	90	215	395	625	933	1188	1394	1337	1076	738	306	101	90	305	700	1325	2258	3446	4840	6177	7253	7991	8297	8398
55	21	102	253	475	778	1038	1239	1182	926	584	177	26	21	123	376	851	1629	2667	3906	5088	6014	6598	6775	6801
60	0	32	130	331	623	888	1084	1027	776	430	82	0	0	32	162	493	1116	2004	3088	4115	4891	5321	5403	5403
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	215	293	429	586	786	889	1013	991	850	662	365	219	215	508	937	1523	2309	3198	4211	5202	6052	6714	7079	7298

(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/normal/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