

# 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: WHITERIVER 1 SW, AZ**

**1971-2000**

**COOP ID: 029271**

**Climate Division: AZ 2**

**NWS Call Sign:**

**Elevation: 5,120 Feet Lat: 33°49N**

**Lon: 109°59W**

### 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	55.2	24.6	39.9	75	1950	21	45.1	1986	-13+	1949	4	35.7	1979	779	0	.0	.0	19.2	.7	28.6	.3
Feb	58.2	27.1	42.7	78+	1986	27	47.8	1995	-6+	1948	12	39.1	1998	626	0	.0	.0	20.4	.4	24.2	@
Mar	62.3	31.0	46.7	86	1900	31	53.2	1972	5	1953	4	40.7	1973	569	0	.0	.0	26.4	.1	21.3	.0
Apr	69.6	33.0	51.3	98	1914	21	56.6	1989	14	1921	5	44.4	1975	412	1	.0	@	28.7	.0	10.5	.0
May	77.9	39.4	58.7	100	1914	22	66.1	2000	18+	1917	20	54.5	1980	223	25	.0	1.0	30.9	.0	1.4	.0
Jun	87.7	48.0	67.9	104	1902	23	73.7	1990	30	1918	2	64.5	1991	46	131	.6	10.7	30.0	.0	@	.0
Jul	89.8	55.0	72.4	106	1948	15	75.5	2000	41+	1917	10	69.4	1987	1	230	.3	15.7	31.0	.0	.0	.0
Aug	87.1	54.5	70.8	102	1911	19	73.5	1998	34+	1917	21	67.9	1990	3	182	.0	7.3	31.0	.0	.0	.0
Sep	83.8	49.2	66.5	100	1950	1	70.4	1997	25	1915	26	63.1	1985	42	87	.0	2.5	30.0	.0	.1	.0
Oct	74.3	38.9	56.6	93	1950	12	60.8	1988	17	1970	28	51.3	1971	269	8	.0	.1	30.5	.0	5.3	.0
Nov	63.3	29.3	46.3	91	1909	2	52.0	1999	-7	1931	24	40.4	1992	561	0	.0	.0	26.5	@	20.6	.0
Dec	55.8	24.5	40.2	79	1942	14	45.7	1980	-12	1905	23	36.6+	1978	770	0	.0	.0	20.6	.8	28.6	.3
Ann	72.1	37.9	55.0	106	Jul 1948	15	75.5	Jul 2000	-13+	Jan 1949	4	35.7	Jan 1979	4301	664	.9	37.3	325.2	2.0	140.6	.6

+ 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](http://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: 1900-2001

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

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**COOP ID: 029271**

**Climate Division: AZ 2**

**NWS Call Sign:**

**Elevation: 5,120 Feet Lat: 33° 49N**

**Lon: 109° 59W**

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	1.80	1.37	3.00	1905	10	7.26	1993	.00+	2000	6.2	3.9	.9	.2	.00	.00	.40	.71	1.02	1.37	1.77	2.27	2.93	4.03	5.11
Feb	1.59	1.54	1.96	1994	8	5.64	1980	.00+	1999	5.6	3.6	.9	.2	.00	.00	.44	.72	.99	1.28	1.62	2.02	2.55	3.42	4.26
Mar	2.16	2.27	2.15	1912	9	5.95	1991	.00	1972	6.7	4.7	1.2	.3	.10	.30	.62	.94	1.28	1.66	2.10	2.66	3.42	4.67	5.89
Apr	.82	.55	2.10	1905	2	3.63	1988	.00+	1993	3.8	2.1	.4	.1	.00	.00	.09	.22	.37	.54	.75	1.01	1.39	2.01	2.64
May	.62	.21	1.38	1976	20	3.34	1992	.00+	2000	3.7	1.8	.3	@	.00	.00	.00	.05	.13	.25	.42	.66	1.04	1.74	2.49
Jun	.58	.35	1.67	1954	26	2.68	1972	.00+	1998	3.0	1.8	.3	@	.00	.00	.00	.00	.07	.20	.38	.63	1.02	1.71	2.43
Jul	2.44	2.45	4.02	1932	30	6.06	1980	.00	1993	9.4	5.5	1.3	.4	.34	.66	1.07	1.41	1.76	2.12	2.52	3.00	3.63	4.63	5.57
Aug	3.62	3.19	3.40	1991	28	7.76	1988	.99	1998	11.4	7.4	2.3	.8	.99	1.34	1.86	2.31	2.76	3.23	3.75	4.36	5.15	6.40	7.57
Sep	1.75	1.68	3.64	1994	3	4.49	1983	.00	2000	5.5	3.7	1.0	.2	.09	.25	.52	.78	1.05	1.36	1.71	2.16	2.76	3.75	4.71
Oct	1.83	1.24	2.91	1972	5	6.53	1972	.00+	1999	4.6	3.0	1.2	.5	.00	.04	.22	.46	.75	1.11	1.57	2.17	3.04	4.56	6.10
Nov	1.48	1.27	2.20	1918	25	4.98	1978	.00	1999	3.9	3.0	1.0	.3	.15	.33	.57	.79	1.01	1.24	1.50	1.82	2.24	2.92	3.57
Dec	1.45	.67	1.92	1908	16	4.85	1984	.00+	1999	4.4	2.8	.9	.3	.00	.03	.18	.37	.60	.89	1.25	1.72	2.41	3.61	4.82
Ann	20.14	19.22	4.02	Jul 1932	30	7.76	Aug 1988	.00+	Sep 2000	68.2	43.3	11.7	3.3	12.91	14.25	16.00	17.35	18.56	19.74	20.98	22.35	24.03	26.50	28.65

+ 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: 1900-2001

(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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**COOP ID: 029271**

**Climate Division: AZ 2**

**NWS Call Sign:**

**Elevation: 5,120 Feet**

**Lat: 33° 49N**

**Lon: 109° 59W**

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	4.6	3.0	#	#	9.5	1983	20	17.0	1979	10	1979	29	1+	1997	1.4	1.1	.4	.2	.0	2.0	.9	.3	.1
Feb	2.1	1.0	#	0	6.0	1998	25	10.5	1975	12	1987	25	1	1987	1.4	.8	.2	@	.0	.8	.1	.0	.0
Mar	4.9	2.3	#	#	12.0	1973	14	30.0	1973	14	1973	14	1	1983	1.6	1.4	.7	.2	@	1.4	.5	.1	.1
Apr	1.6	.0	#	0	8.0	1975	8	21.0	1975	7	1975	8	1	1975	.8	.5	.2	.1	.0	.5	.2	.1	.0
May	.1	.0	#	0	1.5	1978	6	1.5	1978	2	1978	6	#+	1979	@	@	.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	#	1974	29	#+	1974	#+	1974	29	#+	1974	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.7	.0	#	0	8.5	1972	12	9.0	1972	9	1972	12	1	1973	.4	.4	.2	.1	.0	.6	.2	.1	.0
Dec	1.4	.0	#	0	7.5	1971	8	15.0	1971	8	1971	8	2	1971	.7	.3	.1	.1	.0	.9	.3	.2	.0
Ann	16.4	6.3	N/A	N/A	12.0	Mar 1973	14	30.0	Mar 1973	14	Mar 1973	14	2	Dec 1971	6.3	4.5	1.8	.7	@	6.2	2.2	.8	.2

+ 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 2**

**NWS Call Sign:**

**Elevation: 5,120 Feet**

**Lat: 33° 49N**

**Lon: 109° 59W**

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	6/06	5/31	5/26	5/22	5/19	5/15	5/11	5/07	4/30
32	5/24	5/19	5/15	5/11	5/08	5/05	5/01	4/27	4/21
28	5/05	4/29	4/24	4/20	4/17	4/13	4/09	4/05	3/29
24	4/21	4/14	4/08	4/04	3/31	3/27	3/23	3/18	3/10
20	4/07	3/30	3/24	3/19	3/14	3/10	3/05	2/27	2/19
16	3/19	3/09	3/02	2/24	2/19	2/14	2/08	2/01	1/22
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	9/23	9/29	10/02	10/06	10/09	10/12	10/16	10/19	10/25
32	9/30	10/06	10/10	10/13	10/16	10/20	10/23	10/27	11/02
28	10/11	10/16	10/20	10/23	10/26	10/29	11/01	11/04	11/09
24	10/22	10/27	10/31	11/03	11/06	11/10	11/13	11/17	11/22
20	11/02	11/08	11/12	11/16	11/20	11/23	11/27	12/01	12/07
16	11/15	11/22	11/27	12/01	12/05	12/09	12/13	12/18	12/25
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	168	159	153	148	143	138	132	126	117
32	183	175	170	165	161	157	152	147	139
28	217	208	202	196	191	186	181	174	165
24	243	235	229	224	220	215	210	204	196
20	278	268	261	255	249	244	238	231	221
16	323	309	300	293	287	280	273	265	254

\* 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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**Climate Division: AZ 2      NWS Call Sign:      Elevation: 5,120 Feet    Lat: 33° 49N      Lon: 109° 59W**

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	779	626	569	412	223	46	1	3	42	269	561	770	4301
60	624	486	417	272	118	12	0	0	8	146	411	615	3109
57	531	402	330	197	72	4	0	0	2	90	325	522	2475
55	469	346	274	155	49	2	0	0	1	62	269	460	2087
50	314	215	156	73	14	0	0	0	0	18	148	307	1245
32	5	1	0	0	0	0	0	0	0	0	0	6	12

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	249	299	454	580	825	1075	1252	1202	1035	762	430	259	8422
55	0	1	15	44	161	387	539	489	346	111	8	0	2101
57	0	0	9	27	122	329	477	427	287	77	4	0	1759
60	0	0	3	12	75	247	384	334	203	40	1	0	1299
65	0	0	0	1	25	131	230	182	87	8	0	0	664
70	0	0	0	0	5	51	91	61	21	1	0	0	230

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	47	93	198	361	619	876	1050	989	786	511	197	58	47	140	338	699	1318	2194	3244	4233	5019	5530	5727	5785
45	10	29	91	225	465	726	895	834	636	366	93	8	10	39	130	355	820	1546	2441	3275	3911	4277	4370	4378
50	0	2	28	117	314	577	740	679	486	229	29	0	0	2	30	147	461	1038	1778	2457	2943	3172	3201	3201
55	0	0	3	38	177	428	585	524	338	114	6	0	0	0	3	41	218	646	1231	1755	2093	2207	2213	2213
60	0	0	0	5	68	280	430	369	197	40	0	0	0	0	0	5	73	353	783	1152	1349	1389	1389	1389
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	81	115	188	284	425	561	675	645	508	360	189	94	81	196	384	668	1093	1654	2329	2974	3482	3842	4031	4125

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)