U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: PETRIFIED FOREST N P, AZ **COOP ID: 026468**

Climate Division: AZ 2 **NWS Call Sign:** **Elevation: 5,446 Feet** **Lat: 34˚48N** **Lon: 109˚53W**

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	48.4	21.3	34.9	74	2000	16	41.6	2000	-27	1971	6	25.0	1992	935	0	.0	.0	14.4	1.8	27.8	1.0
Feb	55.2	24.8	40.0	74+	1989	27	45.2	2000	-6+	1956	4	36.4	1975	700	0	.0	.0	20.8	.6	23.9	.1
Mar	62.1	29.5	45.8	83+	1989	10	51.0	1989	7	1971	6	41.3	1973	596	0	.0	.0	28.3	.0	20.9	.0
Apr	70.3	35.2	52.8	92	1971	14	59.3	1989	12	1979	12	47.3	1975	372	6	.0	@	29.3	.0	10.9	.0
May	79.1	43.1	61.1	99	2000	28	67.2	2000	22	1967	1	57.1	1975	165	44	.0	2.2	31.0	.0	2.0	.0
Jun	89.7	52.2	71.0	107	1998	29	75.5	2000	31	1993	7	67.4	1991	18	195	1.3	16.3	30.0	.0	@	.0
Jul	92.3	59.6	76.0	105	1995	28	79.3	2000	40	1968	27	73.9	1986	0	340	2.2	22.2	31.0	.0	.0	.0
Aug	89.6	59.0	74.3	101+	1995	3	77.8	1995	42	1981	9	72.1	1987	0	287	.3	16.9	31.0	.0	.0	.0
Sep	83.5	52.0	67.8	99	1950	1	72.1	2000	33	1971	19	63.8	1985	35	117	.0	4.0	30.0	.0	.0	.0
Oct	72.1	39.8	56.0	90+	2000	2	60.1	1988	16	1970	28	51.1	1984	291	9	.0	.1	30.6	.0	5.0	.0
Nov	58.7	28.2	43.5	81+	1984	3	48.6	1999	-13	1976	28	38.7	2000	647	0	.0	.0	24.5	.1	21.9	.1
Dec	49.0	21.1	35.1	72	1958	4	41.2	1977	-18	1990	23	28.1	1978	928	0	.0	.0	16.0	1.6	27.9	.6
Ann	70.8	38.8	54.9	107	Jun 1998	29	79.3	Jul 2000	-27	Jan 1971	6	25.0	Jan 1992	4687	998	3.8	61.7	316.9	4.1	140.3	1.8

\+ 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/normals/usnormals.html

(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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Climate Division: AZ 2 **NWS Call Sign:** **Elevation: 5,446 Feet** **Lat: 34°48N** **Lon: 109°53W**

Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.65	.51	1.06	1993	8	2.40	1993	.00	1972
Feb	.59	.45	1.95	1991	8	2.24	1991	.00+	1984
Mar	.80	.81	1.15	1984	27	2.28	1998	.00+	1997
Apr	.40	.26	.99	2001	27	2.18	1988	.00+	1993
May	.53	.26	1.39	1973	5	2.82	1992	.00+	1989
Jun	.30	.18	1.32	1955	13	1.95	1988	.00+	1998
Jul	1.45	1.23	2.54	1954	23	3.67	1998	.09	1993
Aug	1.62	1.40	1.98	1949	8	4.81	1993	.51	1985
Sep	1.33	1.21	2.40	1971	29	3.45	1984	.01	1973
Oct	1.20	1.07	1.50	1968	4	3.95	1972	.00+	1999
Nov	.79	.64	1.31	1994	3	2.91	1993	.00+	1999
Dec	.78	.58	.90	1990	28	2.12	1992	.00+	1999
Ann	10.44	9.75	2.54	Jul 1954	23	4.81	Aug 1993	.00+	Dec 1999

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.3	2.1	.2	@
Feb	5.0	2.0	.1	@
Mar	6.2	2.7	.1	.1
Apr	3.7	1.3	.1	.0
May	3.8	1.4	.2	.1
Jun	2.8	1.2	.1	.0
Jul	8.7	3.8	.8	.1
Aug	8.8	4.3	1.0	.2
Sep	6.2	2.9	.7	.2
Oct	5.3	3.1	.8	@
Nov	4.6	2.5	.3	.1
Dec	5.0	2.7	.3	.0
Ann	65.4	30.0	4.7	.8

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.01	.05	.13	.22	.32	.44	.59	.79	1.06	1.52	1.99
Feb	.00	.05	.15	.24	.33	.44	.57	.73	.94	1.30	1.65
Mar	.00	.00	.20	.37	.51	.66	.83	1.03	1.30	1.72	2.12
Apr	.00	.00	.03	.11	.19	.27	.38	.51	.68	.98	1.28
May	.00	.00	.03	.09	.16	.27	.41	.60	.89	1.41	1.95
Jun	.00	.00	.00	.03	.08	.15	.24	.36	.53	.82	1.11
Jul	.15	.25	.45	.65	.87	1.12	1.41	1.77	2.27	3.10	3.90
Aug	.49	.65	.88	1.07	1.27	1.46	1.68	1.94	2.27	2.79	3.27
Sep	.08	.15	.31	.49	.70	.94	1.23	1.61	2.13	3.03	3.93
Oct	.00	.00	.19	.37	.58	.82	1.11	1.49	1.99	2.86	3.73
Nov	.00	.00	.17	.30	.44	.59	.77	.99	1.29	1.79	2.28
Dec	.00	.00	.13	.26	.39	.55	.73	.97	1.29	1.83	2.37
Ann	6.76	7.44	8.34	9.03	9.65	10.25	10.88	11.58	12.44	13.69	14.79

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	1.9	.4	#	#	8.0	1974	2	11.0	1974	8	1974	2	1	1983	1.0	.7	.3	.1	.0	.8	.2	.1	.0
Feb	1.0	.0	#	0	3.2	1975	21	7.0	1973	3	1975	21	#+	2000	.7	.5	.1	.0	.0	.4	@	.0	.0
Mar	.6	.0	#	0	4.0	1975	23	4.0	1975	4	1975	23	#+	2000	.6	.3	@	.0	.0	.2	@	.0	.0
Apr	.7	.0	#	0	4.5	1977	2	6.5	1977	5	1977	2	#+	1998	.3	.2	.1	.0	.0	.1	@	@	.0
May	.0	.0	0	0	.3	1995	7	.3	1995	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	.3	1974	29	.3	1974	0	0	0	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.7	.0	#	0	4.5	1994	19	5.5	1988	5	1975	29	#+	1997	.4	.3	@	.0	.0	.2	.1	@	.0
Dec	2.0	.3	#	0	8.0	1997	25	8.5+	1992	5	1986	8	1	1992	1.0	.6	.2	.1	.0	1.6	.2	@	.0
Ann	6.9	.7	N/A	N/A	8.0+	Dec 1997	25	11.0	Jan 1974	8	Jan 1974	2	1+	Dec 1992	4.1	2.6	.7	.2	.0	3.3	.5	.1	.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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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	6/03	5/29	5/26	5/23	5/20	5/17	5/14	5/11	5/06
32	5/25	5/19	5/15	5/12	5/08	5/05	5/01	4/27	4/21
28	5/14	5/07	5/03	4/29	4/26	4/22	4/18	4/14	4/07
24	4/27	4/21	4/16	4/12	4/09	4/05	4/02	3/28	3/22
20	4/19	4/09	4/02	3/27	3/21	3/16	3/10	3/02	2/20
16	4/01	3/22	3/15	3/09	3/04	2/26	2/20	2/13	2/03

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	9/24	9/28	10/01	10/04	10/07	10/09	10/12	10/15	10/20
32	10/08	10/13	10/16	10/18	10/21	10/23	10/26	10/29	11/02
28	10/11	10/16	10/20	10/23	10/26	10/29	11/01	11/05	11/10
24	10/18	10/23	10/27	10/30	11/02	11/05	11/08	11/12	11/17
20	10/26	11/01	11/05	11/09	11/12	11/16	11/19	11/24	11/30
16	11/11	11/17	11/21	11/24	11/27	11/30	12/04	12/08	12/13

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	157	151	146	143	139	136	132	127	121
32	186	179	173	169	165	161	156	151	144
28	206	198	192	187	182	178	173	167	159
24	232	223	217	211	206	202	196	190	181
20	270	258	250	242	235	228	221	212	200
16	304	291	282	275	268	261	253	244	232

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	935	700	596	372	165	18	0	0	35	291	647	928	4687
60	780	560	442	240	78	3	0	0	7	166	497	773	3546
57	687	476	353	173	44	1	0	0	2	107	408	680	2931
55	625	420	295	135	27	0	0	0	1	76	350	618	2547
50	477	284	169	62	7	0	0	0	0	26	215	464	1704
32	81	9	0	0	0	0	0	0	0	0	4	68	162

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	169	234	427	624	902	1168	1363	1310	1072	742	347	164	8522
55	0	0	10	69	216	478	650	597	382	104	3	0	2509
57	0	0	5	47	170	418	588	535	323	73	1	0	2160
60	0	0	1	24	112	331	495	442	238	39	0	0	1682
65	0	0	0	6	44	195	340	287	117	9	0	0	998
70	0	0	0	0	11	90	187	140	37	1	0	0	466

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	32	84	206	396	662	935	1124	1074	841	503	159	38	32	116	322	718	1380	2315	3439	4513	5354	5857	6016	6054
45	6	25	100	258	507	785	969	919	691	356	69	1	6	31	131	389	896	1681	2650	3569	4260	4616	4685	4686
50	0	1	34	142	356	635	814	764	541	221	19	0	0	1	35	177	533	1168	1982	2746	3287	3508	3527	3527
55	0	0	1	64	214	485	659	609	391	108	0	0	0	0	1	65	279	764	1423	2032	2423	2531	2531	2531
60	0	0	0	15	98	336	504	454	249	34	0	0	0	0	0	15	113	449	953	1407	1656	1690	1690	1690
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	49	108	202	317	453	583	711	692	545	351	152	52	49	157	359	676	1129	1712	2423	3115	3660	4011	4163	4215

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

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

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