

Climatography of the United States

No. 20

1971-2000

Station: BETATAKIN, AZ

COOP ID: 020750

Climate Division: AZ 2

NWS Call Sign:

Elevation: 7,286 Feet Lat: 36°41N

Lon: 110°32W

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	38.9	20.7	29.8	61+	1986	30	37.7	1986	-11+	1985	31	21.9	1979	1090	0	.0	.0	3.9	5.6	29.8	.4
Feb	43.0	23.8	33.4	69	1986	25	41.9	1995	-14	1985	1	29.0	1998	884	0	.0	.0	7.4	3.0	25.1	.3
Mar	50.2	28.3	39.3	76	1978	19	46.8	1972	2+	1966	5	32.0	1973	799	0	.0	.0	17.3	.6	22.7	.0
Apr	59.5	34.1	46.8	82+	2000	29	53.9	1989	8	1975	2	38.8	1983	547	1	.0	.0	25.3	@	13.0	.0
May	69.6	42.7	56.2	90+	2000	30	63.5	2000	19	1967	1	51.1	1980	292	18	.0	.1	30.6	.0	3.5	.0
Jun	80.8	52.9	66.9	101	1954	22	72.8	1974	31	1955	2	62.7	1983	63	119	.0	2.8	30.0	.0	@	.0
Jul	85.2	58.5	71.9	100	1948	16	75.5	1996	43	1982	7	68.8+	1992	6	218	.0	7.2	31.0	.0	.0	.0
Aug	82.2	56.9	69.6	98+	1962	15	73.7	1995	40	1973	7	66.9	1984	12	152	.0	2.9	31.0	.0	.0	.0
Sep	74.8	50.5	62.7	96	1948	1	67.5	1979	31+	1978	20	56.6	1985	116	44	.0	.1	30.0	.0	.2	.0
Oct	62.5	39.9	51.2	84	1950	12	57.3	1988	7	1971	30	43.4	1984	436	8	.0	.0	27.7	.2	6.3	.0
Nov	47.8	28.5	38.2	70	1999	15	47.8	1999	-2	1985	19	31.8	2000	806	0	.0	.0	14.0	1.8	20.1	@
Dec	39.8	21.7	30.8	60	1995	5	38.1	1980	-14	1990	23	22.7	1990	1062	0	.0	.0	4.1	5.3	29.1	.4
Ann	61.2	38.2	49.7	101	Jun 1954	22	75.5	Jul 1996	-14+	Dec 1990	23	21.9	Jan 1979	6113	560	.0	13.1	252.3	16.5	149.8	1.1

+ 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

009-A

(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

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: BETATAKIN, AZ

COOP ID: 020750

Climate Division: AZ 2

NWS Call Sign:

Elevation: 7,286 Feet Lat: 36°41N

Lon: 110°32W

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	1.14	.85	1.30	1998	20	4.71	1993	.00	1972	6.2	3.7	.5	.1	.04	.12	.28	.44	.62	.83	1.08	1.39	1.82	2.55	3.27
Feb	.99	.81	1.06	1975	17	2.54	1993	.00	1972	5.9	3.2	.5	.1	.12	.24	.41	.55	.69	.84	1.02	1.22	1.50	1.93	2.35
Mar	1.11	1.06	1.10	1993	1	3.04	1983	.01	1972	6.1	3.7	.3	@	.07	.13	.27	.42	.59	.79	1.03	1.35	1.78	2.53	3.27
Apr	.83	.69	1.01	1985	21	2.65	1985	.00	1989	3.7	2.4	.4	@	.01	.05	.15	.26	.39	.55	.74	1.00	1.36	1.98	2.60
May	.57	.38	2.00	1981	16	2.79	1992	.00+	2000	3.4	1.3	.1	@	.00	.00	.05	.16	.28	.40	.54	.72	.96	1.36	1.77
Jun	.31	.16	1.89	1954	26	1.82	1988	.00+	2000	2.2	1.0	.1	.0	.00	.00	.00	.03	.09	.16	.25	.38	.55	.85	1.16
Jul	1.26	1.21	1.40	1953	30	4.35	1976	.00+	2000	6.8	3.5	.7	.1	.00	.10	.31	.50	.71	.95	1.22	1.56	2.03	2.80	3.56
Aug	1.74	1.65	1.93	1988	26	4.94	1982	.01	1978	7.7	4.6	1.0	.1	.14	.25	.48	.72	.98	1.29	1.65	2.11	2.75	3.81	4.87
Sep	1.25	1.04	2.07	1997	15	3.09	1997	.04+	1989	5.3	3.0	.8	.1	.11	.19	.36	.53	.73	.94	1.20	1.52	1.97	2.72	3.45
Oct	1.44	1.02	2.00	1998	17	9.01	1972	.00+	1999	4.9	3.2	1.0	.3	.00	.05	.23	.44	.68	.96	1.31	1.75	2.38	3.46	4.54
Nov	1.13	.82	1.50	1975	29	3.58	1978	.00+	2000	4.9	3.2	.7	.2	.00	.00	.33	.53	.72	.92	1.16	1.43	1.79	2.38	2.95
Dec	1.04	.77	1.35	1951	30	3.21	1984	.00+	2000	5.7	3.0	.5	.1	.00	.11	.30	.46	.63	.82	1.04	1.29	1.65	2.23	2.79
Ann	12.81	12.36	2.07	Sep 1997	15	9.01	Oct 1972	.00+	Dec 2000	62.8	35.8	6.6	1.1	7.60	8.53	9.78	10.74	11.62	12.48	13.38	14.40	15.64	17.49	19.12

+ 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:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Climatography of the United States

No. 20 1971-2000

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Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: BETATAKIN, AZ

COOP ID: 020750

Climate Division: AZ 2

NWS Call Sign:

Elevation: 7,286 Feet

Lat: 36°41N

Lon: 110°32W

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	11.9	8.6	5	4	9.0	1974	1	39.0	1993	20	1993	19	13	1993	4.6	3.7	1.8	.7	.0	12.8	10.9	8.7	3.4
Feb	9.5	9.0	4	4	13.0	1978	16	24.5	1975	22	1979	2	14	1979	3.5	2.6	1.3	.6	.1	8.3	7.4	5.5	2.6
Mar	7.4	4.0	1	#	9.5	2000	21	30.3	1973	10+	2000	21	7	1979	3.0	2.3	.9	.3	.0	2.7	1.4	.7	.1
Apr	4.6	2.0	#	#	7.0	1997	5	19.3	1998	6	1998	26	1	1998	1.5	1.4	.8	.2	.0	1.1	.4	.1	.0
May	.7	.0	#	0	9.0	1981	16	9.0	1981	6	1982	13	#+	1999	.3	.2	.1	@	.0	.1	@	@	.0
Jun	#	.0	#	0	#	1995	17	#	1995	#	1995	17	#	1995	.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	#	1986	24	#	1986	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.6	.0	#	0	6.5	1971	29	6.5	1971	4	2000	30	1	1998	.6	.4	.1	.1	.0	.3	.1	.0	.0
Nov	6.9	4.0	#	#	20.0	1973	19	35.0	1973	15	1979	20	2	1985	2.3	1.9	1.0	.4	.1	3.1	1.4	.7	.1
Dec	11.5	9.8	3	1	13.0	1972	5	34.0	1972	21	1973	3	10	1973	3.1	2.8	1.4	.7	.1	9.3	6.3	2.5	.3
Ann	53.1	37.4	N/A	N/A	20.0	Nov 1973	19	39.0	Jan 1993	22	Feb 1979	2	14	Feb 1979	18.9	15.3	7.4	3.0	.3	37.7	27.9	18.2	6.5

+ 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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of the United States
No. 20
1971-2000**

Station: BETATAKIN, AZ

COOP ID: 020750

Climate Division: AZ 2

NWS Call Sign:

Elevation: 7,286 Feet

Lat: 36° 41N

Lon: 110° 32W

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	6/13	6/08	6/05	6/02	5/30	5/27	5/24	5/20	5/15
32	5/28	5/24	5/21	5/18	5/15	5/13	5/10	5/07	5/03
28	5/16	5/12	5/08	5/06	5/03	4/30	4/28	4/24	4/20
24	5/04	4/28	4/24	4/21	4/18	4/14	4/11	4/07	4/01
20	4/24	4/16	4/11	4/06	4/02	3/29	3/24	3/19	3/12
16	4/18	4/08	3/31	3/25	3/19	3/13	3/06	2/27	2/16
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	9/18	9/24	9/28	10/02	10/05	10/08	10/12	10/16	10/22
32	9/25	10/02	10/06	10/10	10/14	10/17	10/21	10/26	11/01
28	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/01	11/06
24	10/17	10/23	10/26	10/30	11/02	11/05	11/08	11/12	11/17
20	10/24	10/30	11/03	11/07	11/10	11/13	11/17	11/21	11/27
16	10/30	11/07	11/12	11/17	11/22	11/26	12/01	12/07	12/14
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	151	143	137	132	128	123	118	113	105
32	172	165	160	155	151	147	142	137	129
28	193	186	180	176	172	168	164	159	152
24	221	213	207	202	197	193	188	182	174
20	251	240	233	227	221	215	209	202	192
16	286	273	263	255	247	239	231	222	208

* 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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Station: BETATAKIN, AZ

COOP ID: 020750

Climate Division: AZ 2 NWS Call Sign: Elevation: 7,286 Feet Lat: 36° 41N Lon: 110° 32W

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	1090	884	799	547	292	63	6	12	116	436	806	1062	6113
60	935	744	644	407	175	20	0	1	45	301	656	907	4835
57	842	660	554	326	119	8	0	0	22	231	568	814	4144
55	780	604	495	277	90	4	0	0	12	190	509	752	3713
50	625	464	354	173	37	0	0	0	2	107	370	597	2729
32	149	76	39	8	0	0	0	0	0	3	46	134	455

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	82	116	263	452	749	1045	1235	1163	919	598	230	95	6947
55	0	0	6	31	125	360	522	450	241	72	4	0	1811
57	0	0	3	21	93	304	460	388	191	52	2	0	1514
60	0	0	0	11	55	226	367	295	124	29	0	0	1107
65	0	0	0	1	18	119	218	152	44	8	0	0	560
70	0	0	0	0	3	47	96	51	9	1	0	0	207

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	4	26	94	248	514	817	998	930	693	380	88	7	4	30	124	372	886	1703	2701	3631	4324	4704	4792	4799
45	0	2	36	143	369	667	843	775	543	249	31	0	0	2	38	181	550	1217	2060	2835	3378	3627	3658	3658
50	0	0	6	66	232	518	688	620	396	137	7	0	0	0	6	72	304	822	1510	2130	2526	2663	2670	2670
55	0	0	0	20	121	369	533	465	254	56	0	0	0	0	0	20	141	510	1043	1508	1762	1818	1818	1818
60	0	0	0	1	47	236	378	310	129	16	0	0	0	0	0	1	48	284	662	972	1101	1117	1117	1117
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	20	69	176	323	529	659	606	426	221	55	3	1	21	90	266	589	1118	1777	2383	2809	3030	3085	3088

(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