

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: PHANTOM RANCH, AZ

1971-2000

COOP ID: 026471

Climate Division: AZ 2

NWS Call Sign:

Elevation: 2,570 Feet Lat: 36°06N

Lon: 112°06W

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	56.6	37.3	47.0	73+	2000	22	51.4	1986	-9+	1971	7	41.8+	1979	560	0	.0	.0	25.9	.2	6.4	.2
Feb	64.0	41.7	52.9	83+	1989	26	57.3+	1996	21	1989	6	49.2	1979	342	1	.0	.0	26.8	.1	2.7	.0
Mar	72.7	47.3	60.0	93	1997	21	67.6	1972	26	1969	10	52.5	1973	216	60	.0	.3	29.9	.0	1.7	.0
Apr	82.2	54.0	68.1	106	1981	30	76.8	1989	28	1983	5	59.5	1975	81	173	.4	5.9	29.7	.0	1.3	.0
May	91.9	62.4	77.2	111+	2000	29	83.4	1984	32	1977	9	72.7	1971	7	384	4.1	17.8	31.0	.0	.1	.0
Jun	102.8	71.6	87.2	119	1990	26	91.9	1974	50	1999	5	82.4	1995	0	666	18.7	25.7	30.0	.0	.0	.0
Jul	106.3	76.4	91.4	120	1974	27	94.8	1972	60	1968	23	86.5	1999	0	817	25.1	29.6	31.0	.0	.0	.0
Aug	102.8	74.6	88.7	120	1981	7	92.7	1977	59+	1987	27	84.5	1983	0	734	22.1	29.1	31.0	.0	.0	.0
Sep	95.5	67.7	81.6	110+	1977	7	86.9	1979	48+	1981	23	76.5	1985	0	498	6.8	23.2	30.0	.0	.0	.0
Oct	82.5	56.8	69.7	102+	1980	4	74.5	1977	40+	1991	31	64.2	1984	50	193	.5	6.6	30.9	.0	.5	.0
Nov	66.8	45.2	56.0	87	1988	6	60.4	1977	25	1968	14	49.8	2000	281	11	.0	.0	29.0	.0	2.5	.0
Dec	56.5	38.0	47.3	77	1980	1	53.9	1977	12+	1967	14	40.8	1978	550	0	.0	.0	26.8	@	5.1	.0
Ann	81.7	56.1	68.9	120+	Aug 1981	7	94.8	Jul 1972	-9+	Jan 1971	7	40.8	Dec 1978	2087	3537	77.7	138.2	352.0	.3	20.3	.2

+ 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: 1966-2001

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

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Station: PHANTOM RANCH, AZ

COOP ID: 026471

Climate Division: AZ 2

NWS Call Sign:

Elevation: 2,570 Feet Lat: 36°06N

Lon: 112°06W

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	1.05	.69	1.30	1980	18	4.35	1980	.03	1976	6.0	3.1	.5	.1	.03	.07	.18	.31	.47	.66	.91	1.24	1.71	2.53	3.37
Feb	.99	1.01	1.30	1980	19	2.66	1980	.01	1977	5.6	3.1	.4	.1	.09	.16	.30	.44	.59	.76	.96	1.21	1.56	2.14	2.70
Mar	1.08	.89	1.00	1991	26	5.56	1979	.00	1997	6.7	3.6	.4	.1	.01	.05	.15	.29	.46	.66	.93	1.27	1.78	2.66	3.55
Apr	.51	.34	.87	1997	5	2.11	1988	.00+	1991	3.6	1.8	.1	.0	.00	.00	.08	.16	.25	.36	.48	.64	.85	1.22	1.58
May	.37	.26	.68	1987	14	1.50	1992	.00+	2000	3.3	1.2	.1	.0	.00	.01	.05	.10	.16	.23	.32	.44	.61	.91	1.20
Jun	.21	.07	.51	1987	6	.91	1988	.00+	1998	2.4	1.0	@	.0	.00	.00	.00	.02	.06	.10	.16	.24	.36	.57	.78
Jul	.91	.71	1.85	1983	25	3.45	1999	.00	1993	5.7	2.7	.3	.1	.04	.11	.25	.38	.53	.69	.88	1.12	1.45	2.00	2.54
Aug	1.28	1.08	1.66	2001	13	3.45	1999	.15	1977	6.6	3.3	.7	.1	.12	.22	.39	.57	.76	.98	1.24	1.56	2.00	2.73	3.45
Sep	.94	.93	1.70	1985	1	2.13	1981	.00+	1989	5.1	2.6	.3	@	.00	.00	.25	.41	.57	.74	.94	1.19	1.50	2.03	2.54
Oct	.90	.96	1.27	1994	15	3.63	1972	.00+	1999	4.3	2.2	.6	@	.00	.06	.20	.34	.49	.66	.86	1.11	1.45	2.03	2.59
Nov	.83	.64	1.84	1978	11	4.68	1978	.00+	1999	4.4	2.3	.4	.1	.00	.00	.12	.25	.40	.56	.76	1.02	1.38	1.98	2.58
Dec	.70	.47	1.37	1978	18	2.36	1978	.01+	1999	4.3	2.0	.3	@	.03	.07	.15	.24	.35	.48	.64	.84	1.13	1.63	2.13
Ann	9.77	9.46	1.85	Jul 1983	25	5.56	Mar 1979	.00+	May 2000	58.0	28.9	4.1	.6	5.40	6.17	7.19	7.99	8.73	9.46	10.22	11.09	12.16	13.75	15.17

+ 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: 1966-2001

(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: PHANTOM RANCH, AZ

COOP ID: 026471

Climate Division: AZ 2

NWS Call Sign:

Elevation: 2,570 Feet

Lat: 36°06N

Lon: 112°06W

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	.2	.0	#	0	2.0	1971	2	4.0	1971	8	1971	3	1	1974	.1	.1	.0	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1989	9	#	1989	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	#	1994	19	#	1994	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.1	.0	#	0	1.0	1978	6	1.0	1978	1	1987	25	#+	1998	.1	@	.0	.0	.0	.1	.0	.0	.0
Ann	.3	.0	N/A	N/A	2.0	Jan 1971	2	4.0	Jan 1971	8	Jan 1971	3	1	Jan 1974	.2	.1	.0	.0	.0	.1	.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

Complete documentation available from:

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

**Climatography
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No. 20
1971-2000**

Station: PHANTOM RANCH, AZ

COOP ID: 026471

Climate Division: AZ 2

NWS Call Sign:

Elevation: 2,570 Feet

Lat: 36°06N

Lon: 112°06W

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	4/28	4/12	3/31	3/21	3/11	3/02	2/20	2/08	1/22
32	4/17	3/28	3/14	3/01	2/18	2/06	1/25	1/11	12/22
28	4/05	3/11	2/20	2/02	1/13	12/15	0/00	0/00	0/00
24	3/29	2/22	1/20	11/29	0/00	0/00	0/00	0/00	0/00
20	3/12	1/30	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	1/22	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	10/18	10/28	11/04	11/10	11/16	11/22	11/28	12/05	12/15
32	11/04	11/14	11/22	11/28	12/04	12/10	12/17	12/24	1/04
28	11/09	11/29	12/15	12/30	1/16	2/09	0/00	0/00	0/00
24	12/01	1/01	1/30	3/16	0/00	0/00	0/00	0/00	0/00
20	1/05	2/28	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	2/09	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	305	286	272	260	249	238	226	212	193
32	>365	336	316	300	287	273	259	242	220
28	>365	>365	>365	>365	>365	>365	347	300	258
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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1971-2000**

Station: PHANTOM RANCH, AZ

COOP ID: 026471

Climate Division: AZ 2 NWS Call Sign: Elevation: 2,570 Feet Lat: 36°06N Lon: 112°06W

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	560	342	216	81	7	0	0	0	0	50	281	550	2087
60	405	211	125	35	1	0	0	0	0	16	160	398	1351
57	319	142	81	19	0	0	0	0	0	7	103	312	983
55	262	104	58	13	0	0	0	0	0	4	73	258	772
50	143	35	21	3	0	0	0	0	0	0	24	144	370
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	463	583	868	1082	1400	1656	1840	1757	1488	1166	720	473	13496
55	12	43	212	404	687	966	1127	1044	798	457	103	17	5870
57	7	26	174	351	625	906	1065	982	738	398	73	10	5355
60	0	10	124	277	533	816	972	889	648	314	40	3	4626
65	0	1	60	173	384	666	817	734	498	193	11	0	3537
70	0	0	24	95	248	516	662	579	350	101	2	0	2577

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	220	367	580	777	1095	1351	1563	1489	1212	899	454	238	220	587	1167	1944	3039	4390	5953	7442	8654	9553	10007	10245
45	99	232	429	629	940	1201	1408	1334	1062	745	313	110	99	331	760	1389	2329	3530	4938	6272	7334	8079	8392	8502
50	23	111	290	488	786	1051	1253	1179	912	594	190	33	23	134	424	912	1698	2749	4002	5181	6093	6687	6877	6910
55	1	36	165	352	633	901	1098	1024	762	444	94	2	1	37	202	554	1187	2088	3186	4210	4972	5416	5510	5512
60	0	5	77	230	486	752	943	869	618	302	35	0	0	5	82	312	798	1550	2493	3362	3980	4282	4317	4317
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	115	211	349	493	700	830	964	932	782	579	261	119	115	326	675	1168	1868	2698	3662	4594	5376	5955	6216	6335

(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.

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| <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 |
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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