

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: SANDERS, AZ

1971-2000

COOP ID: 027488

Climate Division: AZ 2

NWS Call Sign:

Elevation: 5,853 Feet Lat: 35° 13N Lon: 109° 19W

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	45.9	18.5	32.2	72	1952	30	39.3	1986	-23	1979	30	24.1	1977	1016	0	.0	.0	12.2	1.7	29.6	1.5
Feb	51.7	22.8	37.3	74+	1986	26	43.5	1995	-22	1951	1	32.9	1979	777	0	.0	.0	18.6	.8	25.8	.3
Mar	58.4	26.3	42.4	80+	1989	11	46.8	1989	-15	1966	4	37.0	1973	702	0	.0	.0	26.3	.1	25.6	@
Apr	67.0	31.1	49.1	86+	2000	27	54.3+	1992	5	1956	3	43.0	1975	479	1	.0	.0	28.5	.0	18.0	.0
May	76.4	38.8	57.6	96	2000	29	62.3	2000	14	1975	5	52.5	1975	244	14	.0	.7	31.0	.0	5.2	.0
Jun	87.7	47.2	67.5	102+	1990	30	71.8	1990	25+	1951	2	63.4	1982	48	120	.5	12.5	30.0	.0	.4	.0
Jul	91.2	55.6	73.4	107	1985	6	76.3	2000	35	1968	2	70.6	1979	1	262	.9	20.2	31.0	.0	.0	.0
Aug	88.7	56.0	72.4	101	1972	11	76.1	1994	32	1979	21	69.9	1980	3	230	.1	13.6	31.0	.0	@	.0
Sep	81.8	48.3	65.1	100+	1979	5	69.1	1998	26+	1953	29	61.7	1985	66	67	@	2.8	30.0	.0	.2	.0
Oct	69.8	37.2	53.5	90	1979	1	58.4	1988	12	1975	24	48.5	1984	358	2	.0	@	30.1	.0	7.1	.0
Nov	56.4	26.0	41.2	79	1980	9	48.9	1999	-18	1976	28	36.5	1979	713	0	.0	.0	23.5	.2	23.8	.1
Dec	47.0	19.2	33.1	71	1950	9	37.4	1994	-20+	1978	8	25.4	1978	990	0	.0	.0	14.7	1.8	29.3	.6
Ann	68.5	35.6	52.1	107	Jul 1985	6	76.3	Jul 2000	-23	Jan 1979	30	24.1	Jan 1977	5397	696	1.5	49.8	306.9	4.6	165.0	2.5

+ 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: 1949-2001

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

078-A

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No. 20 1971-2000

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Station: SANDERS, AZ

COOP ID: 027488

Climate Division: AZ 2

NWS Call Sign:

Elevation: 5,853 Feet Lat: 35°13N

Lon: 109°19W

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	.98	.45	1.54	1993	8	4.82	1993	.00+	1999	5.2	2.7	.5	@	.00	.00	.04	.17	.35	.56	.83	1.18	1.68	2.54	3.44
Feb	1.01	.86	2.50	1985	3	4.12	1980	.00+	2000	5.1	2.8	.5	.1	.00	.00	.15	.34	.52	.73	.97	1.27	1.68	2.35	3.01
Mar	1.03	.79	1.70	1984	27	3.09	1973	.00+	1999	6.0	3.3	.4	@	.00	.00	.19	.44	.64	.85	1.08	1.35	1.70	2.24	2.80
Apr	.55	.48	1.11	1998	26	1.94	1985	.00+	2000	3.4	1.7	.2	.1	.00	.00	.06	.18	.29	.41	.54	.71	.94	1.30	1.68
May	.70	.41	1.35	1981	31	3.23	1992	.00+	2000	3.0	2.0	.3	.1	.00	.00	.04	.14	.26	.40	.59	.84	1.19	1.81	2.44
Jun	.30	.11	.93	1952	2	1.72	1988	.00+	1999	1.9	1.0	.2	.0	.00	.00	.00	.00	.02	.08	.17	.30	.51	.90	1.31
Jul	1.36	1.14	1.47	1994	24	6.20	1998	.00	1993	6.9	3.3	.7	.2	.06	.17	.37	.57	.78	1.03	1.31	1.67	2.17	2.99	3.80
Aug	1.93	1.57	2.00	1977	20	5.50	1984	.21	1998	7.2	4.2	1.1	.2	.20	.35	.61	.88	1.17	1.50	1.88	2.36	3.01	4.09	5.15
Sep	1.10	.90	2.00	1971	29	2.94	1982	.10+	2000	5.2	2.9	.6	.2	.07	.14	.28	.43	.60	.79	1.03	1.33	1.75	2.46	3.16
Oct	1.26	.92	1.43	1978	21	5.51	1972	.00+	1999	4.0	3.0	.9	.2	.00	.00	.16	.35	.56	.82	1.13	1.54	2.10	3.07	4.04
Nov	1.08	.91	1.90	1993	13	3.95	1993	.00+	1999	4.2	2.5	.7	.1	.00	.07	.24	.41	.59	.79	1.04	1.33	1.75	2.45	3.14
Dec	.83	.69	1.06	1994	6	3.41	1978	.00+	1999	3.3	2.0	.5	.1	.00	.00	.11	.25	.40	.58	.78	1.04	1.40	1.98	2.57
Ann	12.13	11.81	2.50	Feb 1985	3	6.20	Jul 1998	.00+	May 2000	55.4	31.4	6.6	1.3	6.35	7.34	8.68	9.74	10.72	11.69	12.71	13.87	15.32	17.48	19.41

+ 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: 1949-2001

(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: SANDERS, AZ

COOP ID: 027488

Climate Division: AZ 2

NWS Call Sign:

Elevation: 5,853 Feet

Lat: 35° 13N

Lon: 109° 19W

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	4.4	.0	#	0	12.0	1974	2	29.0	1977	11	1977	3	4	1977	.4	.3	.2	.2	.1	1.5	1.2	.8	.1
Feb	.8	.0	#	0	7.0	1975	15	7.0	1975	7	1975	15	4	1973	.3	.2	.1	.1	.0	.4	.3	.1	.0
Mar	.1	.0	#	0	1.0	1996	13	1.0+	1996	5	1971	1	#+	2000	.1	.1	.0	.0	.0	.0	.0	.0	.0
Apr	#	.0	#	0	#	1999	4	#+	1999	#+	1999	4	#+	1999	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1973	1	#	1973	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	#	1998	20	#+	1998	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.5	.0	#	0	10.0	1975	29	12.0	1975	12	1975	29	1	1976	.2	.2	.1	.1	.1	.4	.3	.2	.1
Dec	1.2	#	#	0	6.0	1975	14	8.0	1978	10	1971	14	2	1971	.2	.2	.1	.1	.0	.2	.1	.1	.0
Ann	8.0	#	N/A	N/A	12.0	Jan 1974	2	29.0	Jan 1977	12	Nov 1975	29	4+	Jan 1977	1.2	1.0	.5	.5	.2	2.5	1.9	1.2	.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

Complete documentation available from:

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

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

Station: SANDERS, AZ

COOP ID: 027488

Climate Division: AZ 2

NWS Call Sign:

Elevation: 5,853 Feet

Lat: 35° 13N

Lon: 109° 19W

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	6/26	6/19	6/14	6/10	6/06	6/02	5/29	5/24	5/17
32	6/10	6/04	5/31	5/27	5/23	5/20	5/16	5/12	5/06
28	5/23	5/16	5/11	5/07	5/03	4/29	4/25	4/20	4/13
24	5/16	5/08	5/02	4/27	4/23	4/18	4/13	4/07	3/30
20	5/04	4/25	4/19	4/13	4/08	4/03	3/29	3/23	3/14
16	4/24	4/11	4/02	3/26	3/18	3/11	3/03	2/22	2/10
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	9/11	9/17	9/21	9/25	9/28	10/02	10/05	10/10	10/16
32	9/21	9/28	10/02	10/06	10/10	10/14	10/18	10/22	10/29
28	10/07	10/12	10/15	10/18	10/21	10/24	10/26	10/30	11/04
24	10/14	10/20	10/24	10/27	10/31	11/03	11/06	11/10	11/16
20	10/20	10/26	10/30	11/03	11/06	11/10	11/13	11/18	11/24
16	11/02	11/09	11/14	11/18	11/22	11/26	11/30	12/05	12/12
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	145	134	126	120	113	107	101	93	82
32	169	159	151	145	139	133	126	119	108
28	193	185	180	175	170	165	160	155	147
24	221	210	203	196	190	184	178	170	160
20	246	234	225	218	211	204	197	189	177
16	291	276	266	257	248	240	230	220	205

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

Station: SANDERS, AZ

COOP ID: 027488

Climate Division: AZ 2 NWS Call Sign: Elevation: 5,853 Feet Lat: 35°13N Lon: 109°19W

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	1016	777	702	479	244	48	1	3	66	358	713	990	5397
60	861	637	547	338	128	12	0	0	17	217	563	835	4155
57	768	553	455	259	78	4	0	0	5	147	474	742	3485
55	706	497	395	211	53	2	0	0	2	108	415	680	3069
50	551	358	254	116	15	0	0	0	0	41	276	525	2136
32	118	28	7	0	0	0	0	0	0	0	13	91	257

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	124	176	328	511	794	1062	1284	1250	991	667	290	125	7602
55	0	0	3	33	133	374	571	537	303	62	2	0	2018
57	0	0	1	20	96	316	509	475	246	39	0	0	1702
60	0	0	0	9	54	234	416	382	168	16	0	0	1279
65	0	0	0	1	14	120	262	230	67	2	0	0	696
70	0	0	0	0	2	45	119	99	16	0	0	0	281

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	19	53	137	296	558	830	1044	1007	759	438	122	17	19	72	209	505	1063	1893	2937	3944	4703	5141	5263	5280
45	0	13	50	169	404	680	889	852	609	296	48	0	0	13	63	232	636	1316	2205	3057	3666	3962	4010	4010
50	0	0	8	74	259	530	734	697	459	170	11	0	0	0	8	82	341	871	1605	2302	2761	2931	2942	2942
55	0	0	0	20	131	380	579	542	311	70	0	0	0	0	0	20	151	531	1110	1652	1963	2033	2033	2033
60	0	0	0	3	42	239	424	387	172	15	0	0	0	0	0	3	45	284	708	1095	1267	1282	1282	1282
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	41	84	166	273	419	544	652	646	503	322	136	44	41	125	291	564	983	1527	2179	2825	3328	3650	3786	3830

(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