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: DOUGLAS BISBEE INTL AP, AZ **COOP ID: 022664**

Climate Division: AZ 7 **NWS Call Sign: DUG** **Elevation: 4,098 Feet** **Lat: 31˚28N** **Lon: 109˚36W**

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	62.2	29.4	45.8	82	2000	17	49.4	1986	6	1949	4	42.6	1992	595	0	.0	.0	28.6	@	20.8	.0
Feb	66.3	32.1	49.2	86	1957	14	54.2	1996	10+	1972	3	45.6	1974	442	0	.0	.0	27.1	.2	14.6	.0
Mar	71.4	36.4	53.9	92+	1989	12	58.7	1972	13	1951	4	48.2	1973	347	3	.0	.1	30.8	.0	7.9	.0
Apr	78.7	41.9	60.3	99	1989	20	66.3	1989	21	1999	5	54.5	1983	175	33	.0	1.3	29.9	.0	2.5	.0
May	86.3	50.2	68.3	103	2000	29	74.3	2000	29	1967	2	64.8	1975	46	148	.5	9.2	31.0	.0	@	.0
Jun	95.1	59.2	77.2	110	1994	26	81.8	1990	40	1971	4	73.8	1991	1	365	6.2	24.9	30.0	.0	.0	.0
Jul	93.5	64.4	79.0	109	1989	3	81.5	1994	55+	1992	14	76.0	1986	0	433	4.4	23.6	31.0	.0	.0	.0
Aug	91.3	63.3	77.3	103+	1995	10	80.4	1994	52	1985	15	74.0	1990	0	382	.5	20.7	31.0	.0	.0	.0
Sep	88.4	58.5	73.5	102	1948	3	78.2	1997	36	1965	30	70.3	1985	4	257	@	13.3	30.0	.0	.0	.0
Oct	80.1	47.1	63.6	95+	1998	13	67.5	1987	19	1993	31	58.3	1976	101	57	.0	3.1	31.0	.0	.7	.0
Nov	69.8	35.2	52.5	87+	1999	11	57.0	1999	5	2000	26	48.5	1992	375	1	.0	.0	29.5	.0	10.6	.0
Dec	62.4	29.4	45.9	84	2000	3	50.2	1977	-4	1978	8	41.6	1978	592	0	.0	.0	28.7	.1	21.0	.1
Ann	78.8	45.6	62.2	110	Jun 1994	26	81.8	Jun 1990	-4	Dec 1978	8	41.6	Dec 1978	2678	1679	11.6	96.2	358.6	.3	78.1	.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/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

Issue Date: February 2004

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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	.75	.66	1.30	1993	18	3.20	1993	.00+	1999
Feb	.64	.56	1.12	1980	8	2.01	1980	.00+	2000
Mar	.46	.45	.96	1952	1	2.17	1992	.00+	1984
Apr	.20	.04	1.34	1985	27	1.46	1988	.00+	2000
May	.33	.13	1.73	1992	4	3.16	1992	.00+	2000
Jun	.63	.30	2.03	1952	2	2.96	1984	.00+	1989
Jul	3.14	2.98	2.50	1950	19	5.93	1999	1.07	1997
Aug	2.88	2.53	2.02	1966	5	5.69	1971	.32	1981
Sep	1.63	1.42	2.37	1983	30	6.94	1983	.03	1989
Oct	1.30	.64	2.17	1985	16	5.33	1977	.00+	1999
Nov	.74	.61	2.35	1994	11	3.35	1994	.00+	1999
Dec	1.06	.60	1.70	1967	15	3.86	1994	.00+	2000
Ann	13.76	13.03	2.50	Jul 1950	19	6.94	Sep 1983	.00+	Dec 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.0	1.8	.3	.1
Feb	4.3	1.9	.3	@
Mar	3.6	1.6	.1	.0
Apr	1.6	.5	.1	@
May	2.0	1.0	.1	@
Jun	3.4	1.3	.4	.1
Jul	13.4	7.4	1.8	.6
Aug	11.5	6.5	1.8	.5
Sep	6.3	3.2	1.1	.3
Oct	4.5	2.6	.9	.3
Nov	3.2	1.8	.4	@
Dec	4.4	2.8	.6	.2
Ann	63.2	32.4	7.9	2.1

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	.00	.00	.07	.17	.29	.44	.63	.89	1.26	1.90	2.56
Feb	.00	.00	.00	.19	.33	.48	.64	.83	1.10	1.53	1.94
Mar	.00	.00	.06	.13	.21	.30	.42	.56	.77	1.11	1.46
Apr	.00	.00	.00	.00	.01	.04	.10	.18	.33	.61	.91
May	.00	.00	.00	.00	.02	.09	.20	.35	.58	1.00	1.43
Jun	.00	.00	.02	.08	.17	.29	.46	.70	1.07	1.73	2.43
Jul	1.41	1.69	2.07	2.39	2.68	2.98	3.29	3.66	4.11	4.80	5.43
Aug	.66	.93	1.35	1.73	2.10	2.50	2.95	3.49	4.19	5.32	6.37
Sep	.09	.18	.37	.59	.84	1.14	1.50	1.96	2.62	3.73	4.84
Oct	.00	.00	.05	.23	.46	.74	1.10	1.56	2.23	3.37	4.56
Nov	.00	.00	.12	.24	.37	.52	.70	.92	1.23	1.75	2.27
Dec	.00	.00	.00	.18	.38	.62	.92	1.30	1.83	2.75	3.66
Ann	7.84	8.89	10.29	11.38	12.38	13.36	14.40	15.56	17.00	19.13	21.02

\+ 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	.2	.0	#	0	1.1	1992	12	1.4	1987	1+	1990	19	#	1990	.3	.1	.0	.0	.0	.1	.0	.0	.0
Feb	.1	.0	#	0	1.0	1987	21	2.4	1987	1+	1990	15	#	1990	.2	.1	.0	.0	.0	.1	.0	.0	.0
Mar	.1	.0	#	0	1.0	1973	12	2.0	1973	1	1973	13	#	1973	.1	.1	.0	.0	.0	@	.0	.0	.0
Apr	.0	.0	0	0	.1	1976	16	.1	1976	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	#	1998	.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	.1	.0	#	0	2.4	1976	13	2.4	1976	1	1976	13	#	1976	.1	.1	.0	.0	.0	@	.0	.0	.0
Dec	.3	.0	#	0	2.4	1978	7	3.1	1971	2+	1987	26	#	1987	.3	.2	.0	.0	.0	.3	.0	.0	.0
Ann	.8	.0	N/A	N/A	2.4+	Dec 1978	7	3.1	Dec 1971	2+	Dec 1987	26	#+	May 1998	1.0	.6	.0	.0	.0	.5	.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

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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	5/12	5/06	5/02	4/28	4/25	4/22	4/18	4/14	4/08
32	4/27	4/22	4/18	4/14	4/11	4/08	4/04	3/31	3/25
28	4/21	4/13	4/07	4/01	3/28	3/23	3/18	3/12	3/03
24	4/01	3/22	3/15	3/09	3/03	2/25	2/19	2/12	2/02
20	3/01	2/18	2/10	2/04	1/29	1/23	1/16	1/09	12/29
16	2/14	1/31	1/20	1/10	12/30	12/14	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	10/14	10/18	10/21	10/24	10/26	10/28	10/31	11/03	11/07
32	10/24	10/28	10/30	11/02	11/04	11/06	11/08	11/11	11/14
28	10/31	11/04	11/08	11/11	11/13	11/16	11/19	11/23	11/27
24	11/08	11/14	11/19	11/22	11/26	11/29	12/03	12/08	12/14
20	11/16	11/23	11/28	12/02	12/06	12/10	12/14	12/19	12/25
16	12/02	12/14	12/24	1/02	1/12	1/26	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	203	196	191	187	183	179	175	170	164
32	225	219	214	210	206	202	198	194	187
28	259	249	242	236	230	224	218	211	201
24	299	288	280	273	267	261	254	246	234
20	340	329	321	315	309	303	297	290	280
16	>365	>365	>365	>365	>365	>365	349	335	323

***** 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	595	442	347	175	46	1	0	0	4	101	375	592	2678
60	440	304	208	85	12	0	0	0	0	34	232	437	1752
57	347	226	140	47	4	0	0	0	0	13	157	345	1279
55	286	177	103	29	2	0	0	0	0	6	115	285	1003
50	147	82	36	7	0	0	0	0	0	0	40	148	460
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	428	482	679	848	1125	1355	1456	1405	1243	979	616	431	11047
55	1	15	69	187	414	665	743	692	553	272	40	2	3653
57	0	8	44	145	354	605	681	630	493	218	23	0	3201
60	0	2	20	93	269	515	588	537	403	145	8	0	2580
65	0	0	3	33	148	365	433	382	257	57	1	0	1679
70	0	0	0	8	63	222	278	228	131	14	0	0	944

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	199	283	443	617	889	1127	1222	1172	1016	738	384	208	199	482	925	1542	2431	3558	4780	5952	6968	7706	8090	8298
45	87	158	293	469	734	977	1067	1017	866	583	243	93	87	245	538	1007	1741	2718	3785	4802	5668	6251	6494	6587
50	23	60	162	323	579	827	912	862	716	431	128	24	23	83	245	568	1147	1974	2886	3748	4464	4895	5023	5047
55	0	13	65	197	425	677	757	707	566	285	44	0	0	13	78	275	700	1377	2134	2841	3407	3692	3736	3736
60	0	0	18	87	273	527	602	552	416	154	5	0	0	0	18	105	378	905	1507	2059	2475	2629	2634	2634
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	196	245	334	437	571	696	797	775	667	485	301	201	196	441	775	1212	1783	2479	3276	4051	4718	5203	5504	5705

(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