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: BOULDER CITY, NV **COOP ID: 261071**

Climate Division: NV 4 **NWS Call Sign:** **Elevation: 2,450 Feet** **Lat: 35˚58N** **Lon: 114˚51W**

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	53.0	38.1	45.6	75	1986	18	51.7	1986	11	1937	22	38.3	1979	604	0	.0	.0	24.8	.2	4.3	.0
Feb	58.6	42.3	50.5	86	1968	25	56.8	1995	12	1933	10	45.7	1979	409	1	.0	.0	26.3	@	1.5	.0
Mar	65.3	46.3	55.8	91	1964	31	65.4	1972	25	1964	3	48.1	1973	322	37	.0	.0	30.6	.0	.5	.0
Apr	73.4	53.2	63.3	97+	1949	23	71.4	1989	31+	1932	27	54.5	1975	154	103	.0	2.0	30.0	.0	@	.0
May	83.2	61.5	72.4	111	1984	24	81.4	1997	37	1971	27	64.7	1977	45	273	1.6	12.1	31.0	.0	.0	.0
Jun	94.0	71.1	82.6	114	1954	22	89.1	2000	41	1980	2	77.4	1980	1	527	11.9	25.5	30.0	.0	.0	.0
Jul	99.4	76.7	88.1	117	1964	15	92.8	2000	56	1986	25	84.0	1974	0	713	21.5	30.2	31.0	.0	.0	.0
Aug	97.5	75.3	86.4	112+	1933	11	91.5+	1996	59	1957	31	80.8	1983	0	663	18.3	29.8	31.0	.0	.0	.0
Sep	89.9	68.6	79.3	110	1950	1	84.5	1995	43	1982	30	72.8	1986	2	430	4.9	20.2	30.0	.0	.0	.0
Oct	77.5	57.5	67.5	100+	2000	2	74.6	1988	30	1971	30	62.0	1971	83	161	.1	4.9	31.0	.0	.1	.0
Nov	62.4	45.6	54.0	90	1934	6	61.6	1995	4	1986	9	47.6	1994	343	13	.0	.0	29.3	.0	.6	.0
Dec	53.3	38.4	45.9	78+	1964	1	53.3	1980	9	1990	23	39.9	1990	594	0	.0	.0	25.9	.1	3.9	.0
Ann	75.6	56.2	66.0	117	Jul 1964	15	92.8	Jul 2000	4	Nov 1986	9	38.3	Jan 1979	2557	2921	58.3	124.7	350.9	.3	10.9	.0

\+ 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: 1931-2001

(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	.73	.55	.87	1993	17	2.87	1993	.00+	2000
Feb	.77	.53	1.62	1992	13	3.14	1998	.00+	1977
Mar	.93	.71	1.66	1952	8	5.04	1992	.00+	1997
Apr	.25	.09	1.05	1965	1	1.22+	1999	.00+	1996
May	.22	.14	1.08	1958	11	1.37	1971	.00+	1993
Jun	.11	.00	.70	1964	27	.57+	1999	.00+	2000
Jul	.55	.29	1.89	1936	30	2.10	1980	.00+	2000
Aug	.89	.33	3.72	1984	14	5.08	1984	.00+	1987
Sep	.62	.20	2.63	1984	10	3.75	1976	.00+	2000
Oct	.29	.08	1.30	1992	24	2.23	1974	.00+	1999
Nov	.49	.23	1.92	1960	6	2.15	1987	.00+	2000
Dec	.47	.27	1.11	1994	25	2.46	1984	.00+	2000
Ann	6.32	5.97	3.72	Aug 1984	14	5.08	Aug 1984	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.3	2.0	.4	.0
Feb	4.2	2.0	.4	.1
Mar	4.5	2.3	.5	.1
Apr	2.0	.9	@	.0
May	1.7	.7	.1	.0
Jun	.7	.3	@	.0
Jul	2.8	1.5	.3	.1
Aug	3.2	1.8	.3	.1
Sep	2.3	1.3	.2	.1
Oct	1.9	.7	.1	.1
Nov	2.3	1.1	.3	@
Dec	3.2	1.2	.1	@
Ann	33.1	15.8	2.7	.6

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	.02	.11	.23	.39	.59	.86	1.25	1.93	2.64
Feb	.00	.00	.11	.22	.36	.51	.70	.95	1.29	1.87	2.45
Mar	.00	.00	.02	.13	.29	.49	.74	1.09	1.59	2.46	3.37
Apr	.00	.00	.00	.00	.04	.09	.17	.28	.44	.72	1.01
May	.00	.00	.01	.03	.07	.11	.17	.26	.38	.58	.80
Jun	.00	.00	.00	.00	.00	.00	.00	.08	.20	.40	.58
Jul	.00	.00	.05	.13	.22	.33	.47	.66	.93	1.40	1.87
Aug	.00	.01	.08	.18	.31	.49	.72	1.03	1.49	2.31	3.15
Sep	.00	.00	.00	.02	.09	.21	.38	.64	1.04	1.79	2.59
Oct	.00	.00	.00	.00	.03	.09	.19	.32	.51	.85	1.20
Nov	.00	.00	.00	.00	.10	.23	.38	.59	.87	1.37	1.87
Dec	.00	.00	.00	.05	.14	.24	.37	.55	.82	1.28	1.75
Ann	2.38	2.97	3.81	4.51	5.18	5.87	6.61	7.47	8.56	10.24	11.78

\+ 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: 1931-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	#	.0	0	0	#	1971	1	#	1971	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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	#	Mar 1971	1	#	Mar 1971	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.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	4/09	3/30	3/22	3/16	3/10	3/04	2/25	2/18	2/08
32	3/24	3/07	2/23	2/12	2/02	1/22	1/10	12/25	0/00
28	2/14	2/02	1/24	1/16	1/08	12/27	0/00	0/00	0/00
24	2/01	1/22	1/13	1/02	0/00	0/00	0/00	0/00	0/00
20	1/13	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	11/04	11/12	11/18	11/22	11/27	12/01	12/06	12/12	12/20
32	11/11	11/22	11/29	12/06	12/13	12/20	12/28	1/10	0/00
28	12/05	12/16	12/24	12/31	1/09	1/21	0/00	0/00	0/00
24	12/16	12/31	1/14	2/05	0/00	0/00	0/00	0/00	0/00
20	1/09	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	296	284	276	268	261	255	247	239	227
32	>365	>365	354	325	308	295	282	267	249
28	>365	>365	>365	>365	>365	364	339	322	305
24	>365	>365	>365	>365	>365	>365	>365	>365	336
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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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	604	409	322	154	45	1	0	0	2	83	343	594	2557
60	455	277	213	82	17	0	0	0	0	35	220	446	1745
57	368	204	160	51	9	0	0	0	0	19	159	360	1330
55	313	161	128	36	5	0	0	0	0	12	125	306	1086
50	195	78	64	14	0	0	0	0	0	3	59	190	603
32	8	0	0	0	0	0	0	0	0	0	0	7	15

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	427	517	738	940	1251	1516	1736	1686	1418	1101	661	436	12427
55	19	34	154	286	543	826	1023	973	728	399	95	22	5102
57	12	20	123	241	485	766	961	911	668	344	70	14	4615
60	6	9	83	182	400	676	868	818	578	268	41	7	3936
65	0	1	37	103	273	527	713	663	430	161	13	0	2921
70	0	0	15	47	171	383	558	508	288	82	3	0	2055

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	248	368	562	765	1068	1330	1538	1484	1225	908	476	257	248	616	1178	1943	3011	4341	5879	7363	8588	9496	9972	10229
45	125	237	411	615	913	1180	1383	1329	1075	754	330	132	125	362	773	1388	2301	3481	4864	6193	7268	8022	8352	8484
50	49	120	267	467	758	1030	1228	1174	925	600	201	44	49	169	436	903	1661	2691	3919	5093	6018	6618	6819	6863
55	5	52	149	327	603	880	1073	1019	775	448	100	5	5	57	206	533	1136	2016	3089	4108	4883	5331	5431	5436
60	0	14	71	208	454	731	918	864	625	307	38	0	0	14	85	293	747	1478	2396	3260	3885	4192	4230	4230
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	107	185	320	483	706	860	980	958	817	589	249	116	107	292	612	1095	1801	2661	3641	4599	5416	6005	6254	6370

(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.
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