

Climatology of the United States

No. 20

1971-2000

Station: BIG SPRINGS, NE

COOP ID: 250865

Climate Division: NE 3

NWS Call Sign:

Elevation: 3,678 Feet Lat: 41°03N

Lon: 102°09W

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	38.4	13.9	26.2	73	1997	3	33.3	1990	-33	1974	11	12.3	1979	1205	0	.0	.0	6.4	10.3	30.7	5.6
Feb	45.5	19.1	32.3	78+	1972	28	40.1	1992	-28	1951	1	20.4	1978	917	0	.0	.0	11.5	6.0	27.5	3.1
Mar	53.2	27.0	40.1	88	1967	29	46.2	1986	-22	1960	3	34.5	1996	772	0	.0	.0	17.9	2.8	25.4	.7
Apr	63.0	35.4	49.2	95	1949	24	56.4	1981	-10	1975	2	44.1	1984	476	1	.0	.1	24.6	.2	13.1	.0
May	72.3	46.2	59.3	98+	2000	29	65.2	1992	19	1954	3	53.3	1995	214	36	.0	.5	30.1	.0	1.9	.0
Jun	82.0	54.6	68.3	106	1954	23	74.3	1988	31	1969	13	62.5	1982	48	148	.3	5.8	29.9	.0	.0	.0
Jul	87.9	60.2	74.1	112	1954	11	79.3	2000	38	1952	8	68.9	1992	4	285	1.3	13.7	31.0	.0	.0	.0
Aug	86.2	59.0	72.6	107	1948	28	78.5	1983	36+	1974	23	67.8	1974	12	248	.2	10.7	31.0	.0	.0	.0
Sep	77.8	48.5	63.2	101	1948	11	69.2	1998	23+	1983	21	58.2	1993	126	70	.0	3.8	29.5	.0	1.3	.0
Oct	65.6	36.1	50.9	93+	1967	3	54.7	1974	5+	1997	26	47.1	1976	439	0	.0	.1	27.0	.2	12.3	.0
Nov	50.2	24.3	37.3	80+	1999	7	45.2	1999	-13	1950	24	25.8	1985	834	0	.0	.0	15.7	3.7	27.4	.6
Dec	41.1	15.6	28.4	73+	1995	1	36.4	1980	-37	1989	22	12.0	1983	1137	0	.0	.0	7.6	8.2	30.7	3.6
Ann	63.6	36.7	50.2	112	Jul 1954	11	79.3	Jul 2000	-37	Dec 1989	22	12.0	Dec 1983	6184	788	1.8	34.7	262.2	31.4	170.3	13.6

+ 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

Issue Date: February 2004

(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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No. 20 1971-2000

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

Station: BIG SPRINGS, NE

COOP ID: 250865

Climate Division: NE 3

NWS Call Sign:

Elevation: 3,678 Feet Lat: 41°03N

Lon: 102°09W

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	.42	.34	.83	1988	20	1.24	1994	.00	1986	2.6	1.3	.1	.0	.02	.05	.11	.17	.24	.31	.40	.51	.67	.92	1.17
Feb	.40	.28	.69	1971	19	1.20	1978	.00+	1996	2.8	1.6	.1	.0	.00	.03	.09	.15	.22	.29	.38	.50	.66	.92	1.18
Mar	1.35	1.19	2.58	1975	27	3.73	1980	.04	1994	4.6	3.0	.7	.3	.10	.19	.37	.55	.76	1.00	1.28	1.64	2.14	2.97	3.79
Apr	1.95	1.63	1.94	1977	20	5.49	1984	.00	1989	6.0	4.2	1.3	.5	.25	.50	.83	1.11	1.39	1.68	2.01	2.41	2.93	3.76	4.54
May	3.10	2.87	2.18	1977	30	6.69	1975	.10	1992	8.2	6.0	2.2	.7	.60	.87	1.33	1.75	2.17	2.63	3.15	3.77	4.60	5.93	7.20
Jun	2.60	2.28	3.15	1974	8	6.93	1982	.30	1988	7.4	5.4	1.8	.4	.57	.81	1.19	1.53	1.88	2.25	2.66	3.16	3.82	4.86	5.85
Jul	2.18	2.04	2.62	1989	31	4.65	1994	.51	1991	7.3	4.8	1.3	.4	.64	.84	1.15	1.42	1.69	1.96	2.26	2.62	3.08	3.80	4.47
Aug	2.03	1.88	3.22	2000	17	4.98	1996	.31	1986	6.3	4.3	1.2	.5	.53	.73	1.02	1.28	1.53	1.80	2.10	2.45	2.91	3.63	4.31
Sep	1.22	1.04	1.95	1948	23	5.01	1996	.07	1983	4.6	3.0	.6	.2	.08	.15	.30	.46	.65	.87	1.14	1.48	1.95	2.76	3.56
Oct	.85	.85	1.81	2000	29	2.54	2000	.00+	1988	3.6	2.3	.6	@	.00	.00	.25	.40	.54	.70	.87	1.08	1.35	1.80	2.22
Nov	.66	.47	1.60	1979	21	2.18	1979	.00+	1997	2.6	1.8	.4	@	.00	.00	.13	.23	.35	.48	.63	.82	1.08	1.51	1.94
Dec	.45	.23	1.00	1984	14	1.74	1987	.00+	1992	2.5	1.3	.2	@	.00	.00	.04	.11	.18	.28	.40	.55	.76	1.13	1.50
Ann	17.21	17.12	3.22	Aug 2000	17	6.93	Jun 1982	.00+	Nov 1997	58.5	39.0	10.5	3.0	12.18	13.16	14.40	15.34	16.18	17.00	17.83	18.76	19.89	21.52	22.93

+ 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:

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Climate Division: NE 3

NWS Call Sign:

Elevation: 3,678 Feet

Lat: 41°03N

Lon: 102°09W

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	3.0	.5	#	0	5.0	1976	25	10.5	1980	5	1976	25	1	1976	.8	.7	.3	.1	.0	.1	.0	.0	.0
Feb	2.4	2.0	#	0	4.0	1975	15	6.3	1980	2+	2000	11	#+	2000	1.0	.6	.2	.0	.0	.4	.0	.0	.0
Mar	3.5	1.7	#	0	12.0	1977	12	18.0	1977	6+	1993	12	1	1993	.6	.4	.2	.2	.1	.1	.0	.0	.0
Apr	.7	.0	#	0	8.0	1984	21	13.0	1984	1	1971	27	#+	1999	.2	.1	.1	.1	.0	.0	.0	.0	.0
May	.1	.0	#	0	3.5	1979	10	3.5	1979	4	1979	10	#	1979	@	@	@	.0	.0	.1	.1	.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	.1	.0	0	0	2.0	2000	24	2.0	2000	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.1	.0	#	0	2.0	1975	24	2.0	1975	#	1991	29	#	1991	.1	@	.0	.0	.0	.0	.0	.0	.0
Nov	2.8	.0	#	0	11.0	1979	21	17.0	1979	4	1979	20	2	2000	.7	.7	.3	.1	.1	.2	.0	.0	.0
Dec	1.5	.0	#	0	7.0	1982	25	7.0	1982	7	1982	31	2+	2000	.6	.5	.2	.1	.0	1.5	.9	.8	.0
Ann	14.2	4.2	N/A	N/A	12.0	Mar 1977	12	18.0	Mar 1977	7	Dec 1982	31	2+	Dec 2000	4.0	3.0	1.3	.6	.2	2.4	1.0	.8	.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:

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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	5/30	5/25	5/22	5/18	5/15	5/12	5/09	5/05	4/30
32	5/18	5/14	5/11	5/09	5/06	5/04	5/01	4/28	4/24
28	5/08	5/03	4/30	4/27	4/24	4/22	4/19	4/16	4/11
24	4/26	4/22	4/19	4/16	4/14	4/11	4/09	4/06	4/02
20	4/16	4/11	4/07	4/04	4/01	3/29	3/25	3/21	3/16
16	4/08	4/01	3/28	3/24	3/20	3/16	3/12	3/07	3/01
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	9/09	9/14	9/17	9/20	9/22	9/25	9/27	10/01	10/05
32	9/18	9/23	9/26	9/28	10/01	10/03	10/06	10/09	10/14
28	9/30	10/04	10/07	10/10	10/13	10/15	10/18	10/21	10/26
24	10/05	10/10	10/13	10/16	10/19	10/21	10/24	10/28	11/01
20	10/15	10/19	10/23	10/25	10/28	10/31	11/02	11/06	11/10
16	10/29	11/03	11/06	11/08	11/11	11/14	11/16	11/19	11/24
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	148	141	137	133	129	125	121	117	110
32	166	159	155	151	147	143	139	135	128
28	187	181	177	174	171	167	164	160	154
24	205	199	195	191	187	184	180	176	169
20	231	223	218	214	210	205	201	196	189
16	256	249	244	239	236	232	227	222	215

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1205	917	772	476	214	48	4	12	126	439	834	1137	6184
60	1050	777	617	333	115	14	0	2	53	287	684	982	4914
57	957	694	524	254	71	5	0	0	26	203	594	889	4217
55	895	643	463	206	49	2	0	0	15	154	541	828	3796
50	743	512	318	108	15	0	0	0	2	62	402	682	2844
32	272	156	25	0	0	0	0	0	0	0	79	241	773

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	90	163	276	516	845	1090	1304	1259	935	584	236	127	7425
55	0	6	1	32	181	402	591	546	259	25	7	1	2051
57	0	1	0	19	142	345	529	484	210	12	0	0	1742
60	0	0	0	8	92	263	436	393	147	4	0	0	1343
65	0	0	0	1	36	148	285	248	70	0	0	0	788
70	0	0	0	0	10	66	152	128	25	0	0	0	381

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	34	112	273	560	845	1054	993	674	337	74	15	4	38	150	423	983	1828	2882	3875	4549	4886	4960	4975
45	0	9	51	167	410	695	899	838	529	212	29	0	0	9	60	227	637	1332	2231	3069	3598	3810	3839	3839
50	0	0	16	89	271	546	744	683	387	113	6	0	0	0	16	105	376	922	1666	2349	2736	2849	2855	2855
55	0	0	2	38	157	399	589	528	256	45	0	0	0	0	2	40	197	596	1185	1713	1969	2014	2014	2014
60	0	0	0	12	71	260	434	376	148	12	0	0	0	0	0	12	83	343	777	1153	1301	1313	1313	1313
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	21	55	113	206	346	537	684	645	431	258	87	32	21	76	189	395	741	1278	1962	2607	3038	3296	3383	3415

(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