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: ELDON, MO **COOP ID: 232503**

Climate Division: MO 3 **NWS Call Sign:** **Elevation: 930 Feet** **Lat: 38˚21N** **Lon: 92˚35W**

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	38.9	20.4	29.7	79	1950	24	40.2	1990	-28	1982	10	17.6	1977	1096	0	.0	.0	7.6	8.9	27.5	2.4
Feb	45.4	25.6	35.5	82	1972	29	46.4	1976	-14	1981	11	22.6	1978	826	0	.0	.0	11.3	5.2	21.8	1.2
Mar	56.1	35.7	45.9	85+	1986	30	51.8	1974	-7+	1978	4	38.5	1996	593	1	.0	.0	21.9	.8	14.5	.1
Apr	66.4	46.2	56.3	95	1987	21	64.2	1981	18	1975	3	48.3	1983	285	23	.0	.3	27.6	@	3.2	.0
May	75.4	56.5	66.0	93+	2000	31	71.5	1987	30	1976	3	60.8	1995	92	120	.0	.8	30.9	.0	@	.0
Jun	83.5	65.5	74.5	103+	1988	25	78.8	1971	39	1998	16	70.0	1982	8	287	.2	7.3	30.0	.0	.0	.0
Jul	89.1	70.3	79.7	115	1954	14	88.5	1980	50+	1975	13	76.0	1996	0	456	1.8	17.7	31.0	.0	.0	.0
Aug	88.4	68.0	78.2	108	1980	1	86.4	1983	43+	1987	29	70.9	1992	5	415	1.8	15.5	31.0	.0	.0	.0
Sep	79.8	59.3	69.6	104+	2000	3	74.5	1978	33	1989	24	63.2	1974	43	180	.1	4.9	30.0	.0	.0	.0
Oct	69.4	48.1	58.8	94	1953	2	66.1	1971	23+	1988	29	51.8	1988	224	30	.0	.2	30.4	.0	2.3	.0
Nov	54.7	36.3	45.5	84+	1999	14	54.9	1999	3+	1964	30	38.7	1996	587	2	.0	.0	19.4	.8	13.1	.0
Dec	43.3	25.4	34.4	77+	1991	9	41.1	1971	-25	1989	23	19.4	1983	951	0	.0	.0	10.1	5.3	24.5	1.4
Ann	65.9	46.4	56.2	115	Jul 1954	14	88.5	Jul 1980	-28	Jan 1982	10	17.6	Jan 1977	4710	1514	3.9	46.7	281.2	21.0	106.9	5.1

\+ 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

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Precipitation (inches)

Precipitation Totals

	Means/ Medians(1)		Extremes							Mean Number of Days (3)				Precipitation Probabilities (1)									
										Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution									
Month	Mean	Median	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	1.72	1.43	2.01	1987	9	3.95	1995	.08	1986	6.3	3.8	.9	.5	.18	.31	.55	.79	1.05	1.34	1.68	2.10	2.68	3.64	4.57
Feb	1.95	1.79	2.48	1985	23	5.04	1985	.03	1991	6.7	4.0	1.3	.5	.18	.31	.58	.85	1.14	1.48	1.88	2.38	3.06	4.21	5.34
Mar	3.11	2.54	3.50	1963	4	9.86	1973	1.01	1995	8.9	6.4	2.1	.7	.90	1.20	1.64	2.03	2.40	2.80	3.23	3.74	4.40	5.43	6.39
Apr	4.05	4.17	3.65	1994	11	11.31	1994	.51	2000	10.2	6.8	2.6	1.0	1.00	1.38	1.97	2.50	3.01	3.56	4.17	4.90	5.85	7.35	8.76
May	5.06	4.81	4.80	1995	18	12.73	1990	1.70	1980	11.2	7.5	3.7	1.3	1.77	2.24	2.94	3.52	4.08	4.66	5.29	6.02	6.95	8.40	9.73
Jun	4.29	2.92	5.50	1998	4	17.86	1998	.06	1988	9.5	6.4	2.6	1.1	.43	.74	1.33	1.92	2.57	3.30	4.16	5.23	6.70	9.13	11.51
Jul	3.89	3.31	6.50	1998	26	12.01	1993	.55	1975	7.5	5.7	2.3	1.0	.47	.78	1.33	1.87	2.44	3.09	3.83	4.76	6.01	8.08	10.08
Aug	3.41	2.90	4.87	1974	28	10.55	1982	.26	1973	7.5	5.3	2.2	1.2	.68	.99	1.49	1.95	2.41	2.91	3.47	4.15	5.05	6.49	7.86
Sep	4.08	4.03	4.56	1993	14	14.43	1993	.73	1995	7.8	5.0	2.4	1.3	.75	1.11	1.71	2.26	2.83	3.44	4.13	4.97	6.09	7.88	9.59
Oct	3.57	3.22	5.49	1986	3	11.57	1986	.72	1992	8.0	5.5	2.6	1.0	.92	1.26	1.78	2.23	2.68	3.16	3.68	4.31	5.12	6.41	7.62
Nov	3.65	3.19	2.65	1983	3	9.83	1992	.71	1989	8.7	6.1	2.5	1.0	.71	1.04	1.57	2.07	2.56	3.10	3.71	4.44	5.41	6.97	8.44
Dec	2.58	2.17	3.28	1982	3	8.04	1982	.28	1996	7.4	4.5	1.8	.7	.43	.65	1.03	1.38	1.75	2.14	2.60	3.15	3.89	5.09	6.23
Ann	41.36	38.92	6.50	Jul 1998	26	17.86	Jun 1998	.03	Feb 1991	99.7	67.0	27.0	11.3	27.31	29.95	33.38	36.01	38.37	40.66	43.04	45.69	48.93	53.66	57.78

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.5	4.0	1	#
Feb	4.7	2.8	1	#
Mar	1.8	.0	#	#
Apr	.1	.0	#	0
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	0	0
Nov	1.5	.0	#	#
Dec	3.0	2.0	#	#
Ann	16.6	8.8	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	13.5	1995	20	23.5	1979	14	1995	20	6	1979
Feb	11.3	1984	27	19.0	1975	14	1984	28	4	1979
Mar	7.5	1989	6	12.0	1978	8	1989	6	1	1989
Apr	1.7	1971	6	1.7	1971	3	1982	7	#	1982
May	.0	0	0	.0	0	#	1996	5	#	1996
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1976	18	#	1976	0	0	0	0	0
Nov	8.5	1975	26	8.5	1975	8	1975	26	1	1975
Dec	8.5	1973	30	15.5	1973	11	1973	31	3	1983
Ann	13.5	Jan 1995	20	23.5	Jan 1979	14+	Jan 1995	20	6	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.0	1.5	.4	.1	@
Feb	1.6	1.0	.4	.2	@
Mar	.6	.5	.2	.1	.0
Apr	.1	.1	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.6	.3	.2	.1	.0
Dec	1.4	1.0	.2	.1	.0
Ann	6.3	4.4	1.4	.6	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.4	3.2	2.1	.2
Feb	3.6	1.8	1.3	.3
Mar	.7	.3	.2	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.6	.3	.1	.0
Dec	2.2	.8	.4	.1
Ann	11.5	6.4	4.1	.6

+ 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	4/30	4/26	4/23	4/20	4/18	4/16	4/13	4/10	4/06
32	4/22	4/17	4/14	4/12	4/09	4/07	4/04	4/01	3/28
28	4/14	4/09	4/05	4/02	3/30	3/27	3/24	3/20	3/15
24	4/07	4/01	3/27	3/22	3/19	3/15	3/10	3/05	2/27
20	4/05	3/27	3/20	3/15	3/10	3/05	2/27	2/21	2/12
16	3/17	3/09	3/04	2/27	2/23	2/18	2/14	2/08	1/31

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	9/25	9/30	10/04	10/08	10/11	10/14	10/18	10/22	10/27
32	10/11	10/15	10/19	10/22	10/24	10/27	10/30	11/02	11/07
28	10/17	10/24	10/29	11/02	11/07	11/11	11/15	11/20	11/27
24	10/26	11/01	11/06	11/11	11/15	11/19	11/23	11/28	12/05
20	11/08	11/14	11/18	11/22	11/25	11/28	12/02	12/06	12/12
16	11/16	11/23	11/27	12/02	12/05	12/09	12/13	12/18	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	198	190	184	180	175	171	166	160	153
32	217	211	206	201	197	194	189	184	178
28	247	238	231	226	221	216	210	204	195
24	270	260	253	246	240	235	228	221	211
20	291	280	273	266	260	253	247	239	228
16	317	306	298	291	285	279	272	264	253

***** 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	1096	826	593	285	92	8	0	5	43	224	587	951	4710
60	941	691	447	175	37	1	0	0	12	121	448	798	3671
57	848	612	363	123	18	0	0	0	4	76	368	710	3122
55	787	560	311	93	11	0	0	0	2	54	318	652	2788
50	643	435	200	39	2	0	0	0	0	18	211	511	2059
32	214	120	14	0	0	0	0	0	0	0	20	143	511

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	141	218	445	728	1052	1269	1479	1433	1127	829	424	215	9360
55	1	14	29	131	350	579	766	720	439	170	33	11	3243
57	0	10	19	101	295	519	704	658	381	130	22	7	2846
60	0	5	10	63	221	430	611	565	299	82	12	2	2300
65	0	0	1	23	120	287	456	415	180	30	2	0	1514
70	0	0	0	6	52	163	306	275	92	7	0	0	901

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	42	100	255	491	789	1019	1214	1168	868	569	230	66	42	142	397	888	1677	2696	3910	5078	5946	6515	6745	6811
45	10	56	157	352	635	869	1059	1013	718	418	143	35	10	66	223	575	1210	2079	3138	4151	4869	5287	5430	5465
50	4	23	92	232	481	719	904	858	572	284	76	9	4	27	119	351	832	1551	2455	3313	3885	4169	4245	4254
55	0	7	43	142	332	570	749	703	428	172	36	1	0	7	50	192	524	1094	1843	2546	2974	3146	3182	3183
60	0	2	18	73	200	421	594	548	293	89	10	0	0	2	20	93	293	714	1308	1856	2149	2238	2248	2248
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	32	76	168	304	496	690	829	786	567	351	142	47	32	108	276	580	1076	1766	2595	3381	3948	4299	4441	4488

(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

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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