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: MAMMOTH SPRING, AR **COOP ID: 034572**

Climate Division: AR 2 **NWS Call Sign:** **Elevation: 502 Feet** **Lat: 36˚30N** **Lon: 91˚32W**

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	44.7	21.6	33.2	79	1950	25	43.0	1990	-17	1977	11	20.5	1977	988	0	.0	.0	12.1	4.6	25.1	.9
Feb	51.3	25.7	38.5	89	1962	13	45.9	1976	-24	1951	2	27.2	1978	742	0	.0	.0	16.7	1.8	19.9	.4
Mar	61.1	35.3	48.2	92	1967	12	54.1	1973	1+	1960	5	41.5	1996	523	1	.0	.0	26.5	.2	12.9	.0
Apr	70.6	43.7	57.2	95	1987	20	64.0	1981	19	1987	4	51.9	1983	250	13	.0	.5	29.5	.0	4.2	.0
May	78.0	53.2	65.6	95+	1953	26	70.1	1982	29	1963	1	61.0	1976	84	103	.0	1.1	31.0	.0	.2	.0
Jun	85.3	61.5	73.4	103+	1952	26	77.1	1971	35	1969	3	69.1	1974	5	257	.2	9.5	30.0	.0	.0	.0
Jul	90.5	65.6	78.1	110+	1980	13	83.6	1980	45	1972	6	75.5	1994	0	405	2.1	20.4	31.0	.0	.0	.0
Aug	89.1	64.0	76.6	109+	1954	15	82.2	1980	40	1986	29	70.9	1992	3	362	1.9	18.0	31.0	.0	.0	.0
Sep	81.6	56.5	69.1	109	1954	3	74.3	1998	30	1967	29	63.2	1974	48	169	.3	6.4	30.0	.0	.1	.0
Oct	72.1	44.2	58.2	96	1963	11	63.9	1971	15+	1952	21	52.6	1976	232	21	.0	.4	30.8	.0	4.5	.0
Nov	58.3	34.1	46.2	87+	1950	1	52.0	1999	2	1958	29	37.1	1976	564	0	.0	.0	24.0	.1	13.4	.0
Dec	47.8	25.4	36.6	80+	1956	3	44.4	1971	-9+	1983	25	24.9	1983	880	0	.0	.0	15.3	2.5	21.8	.4
Ann	69.2	44.2	56.7	110+	Jul 1980	13	83.6	Jul 1980	-24	Feb 1951	2	20.5	Jan 1977	4319	1331	4.5	56.3	307.9	9.2	102.1	1.7

\+ 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

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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	2.86	2.82	3.80	1950	4	7.87	1982	.25	1986
Feb	2.84	2.51	4.25	1949	14	8.61	1989	.44	1996
Mar	4.15	3.63	3.33	1964	9	9.74	1973	.99	1971
Apr	4.37	3.70	5.10	1997	5	10.77	1973	.64	1989
May	3.95	3.86	4.00	1957	23	8.94	1974	1.17	1994
Jun	3.67	3.68	3.30	1986	2	8.46	1986	.78	1997
Jul	3.16	2.74	4.25	1982	9	6.72	1982	.32	1986
Aug	3.07	2.88	3.20	1989	20	6.82	1977	.33	2000
Sep	3.60	2.92	4.40	1993	25	11.94	1993	.05	1981
Oct	3.57	3.27	2.99	1972	31	11.49	1984	.38	1989
Nov	5.08	4.68	4.30	1994	5	12.55	1994	.35	1976
Dec	4.03	3.37	12.36	1982	3	21.38	1982	.00	1989
Ann	44.35	44.89	12.36	Dec 1982	3	21.38	Dec 1982	.00	Dec 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.4	5.0	2.0	.7
Feb	5.7	4.6	2.2	.7
Mar	8.7	7.3	3.2	1.0
Apr	8.1	6.7	3.2	1.1
May	8.8	7.4	3.1	.8
Jun	7.3	6.1	2.9	1.0
Jul	6.4	5.3	2.3	.9
Aug	5.8	4.5	2.1	1.1
Sep	6.3	5.2	2.3	1.1
Oct	6.0	5.3	3.0	1.1
Nov	7.2	6.5	4.0	1.8
Dec	7.0	5.7	2.7	1.2
Ann	83.7	69.6	33.0	12.5

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	.61	.87	1.29	1.67	2.06	2.46	2.92	3.48	4.21	5.37	6.47
Feb	.68	.95	1.36	1.73	2.10	2.49	2.92	3.44	4.12	5.20	6.21
Mar	1.56	1.94	2.50	2.96	3.40	3.85	4.34	4.90	5.62	6.73	7.74
Apr	1.12	1.53	2.16	2.72	3.28	3.86	4.51	5.28	6.28	7.87	9.36
May	1.43	1.81	2.34	2.79	3.22	3.65	4.13	4.68	5.39	6.48	7.48
Jun	1.13	1.48	2.00	2.45	2.88	3.32	3.81	4.39	5.13	6.29	7.37
Jul	.60	.89	1.35	1.78	2.21	2.68	3.21	3.84	4.69	6.06	7.35
Aug	.77	1.06	1.50	1.90	2.29	2.70	3.16	3.71	4.42	5.55	6.60
Sep	.53	.83	1.35	1.84	2.36	2.93	3.59	4.40	5.48	7.24	8.94
Oct	.72	1.04	1.57	2.05	2.53	3.05	3.64	4.34	5.28	6.78	8.20
Nov	.91	1.36	2.10	2.79	3.50	4.26	5.14	6.19	7.60	9.87	12.03
Dec	.34	.79	1.45	2.04	2.65	3.30	4.06	4.97	6.20	8.19	10.10
Ann	29.69	32.46	36.04	38.78	41.24	43.62	46.10	48.85	52.20	57.10	61.36

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.4	.0	1	0
Feb	1.3	.0	#	0
Mar	.5	.0	#	0
Apr	.1	.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	1.1	.0	#	0
Dec	.6	.0	#	0
Ann	6.0	.0	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	9.0	1977	9	18.0	1977	14	1977	13	6	1977
Feb	4.0	1978	21	7.0+	1979	11	1980	8	2	1980
Mar	4.0	1989	6	4.0	1989	2+	1978	16	#+	1978
Apr	1.5	1971	5	1.5	1971	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	9.0	1980	27	9.0	1980	9	1980	27	1	1980
Dec	4.0	2000	13	6.5	1975	7+	1984	5	1+	2000
Ann	9.0+	Nov 1980	27	18.0	Jan 1977	14	Jan 1977	13	6	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.4	.2	.1	.0
Feb	.4	.3	.2	.0	.0
Mar	.2	.2	.1	.0	.0
Apr	@	@	.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	.2	.2	.2	.1	.0
Dec	.4	.4	.2	.0	.0
Ann	1.6	1.5	.9	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.5	1.4	1.1	.7
Feb	.6	.3	.0	.0
Mar	.1	.0	.0	.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	.2	.2	.1	.0
Dec	.2	.1	@	.0
Ann	2.6	2.0	1.2	.7

+ 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	5/14	5/09	5/05	5/01	4/28	4/24	4/21	4/17	4/11
32	5/03	4/28	4/24	4/21	4/18	4/15	4/12	4/08	4/03
28	4/17	4/13	4/10	4/07	4/05	4/03	3/31	3/28	3/24
24	4/11	4/05	4/01	3/29	3/25	3/22	3/19	3/15	3/09
20	3/31	3/24	3/20	3/16	3/12	3/08	3/04	2/28	2/21
16	3/17	3/10	3/04	2/28	2/23	2/19	2/14	2/09	2/01

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	9/21	9/25	9/28	10/01	10/03	10/06	10/08	10/12	10/16
32	10/01	10/05	10/09	10/11	10/14	10/17	10/19	10/23	10/27
28	10/11	10/16	10/20	10/23	10/26	10/29	11/01	11/04	11/09
24	10/27	11/02	11/06	11/09	11/12	11/15	11/18	11/22	11/28
20	10/30	11/06	11/11	11/15	11/19	11/23	11/27	12/02	12/09
16	11/09	11/17	11/22	11/27	12/02	12/06	12/11	12/17	12/24

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	178	171	166	162	158	154	150	145	138
32	198	191	186	182	178	174	170	165	158
28	221	215	211	207	203	200	196	191	185
24	255	246	241	236	231	226	221	215	207
20	281	271	263	257	251	245	239	232	222
16	312	301	294	287	281	274	268	260	249

***** 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	988	742	523	250	84	5	0	3	48	232	564	880	4319
60	833	602	379	136	30	0	0	0	14	122	420	725	3261
57	740	523	298	85	13	0	0	0	6	74	339	634	2712
55	685	471	249	59	7	0	0	0	3	51	288	578	2391
50	540	346	149	18	0	0	0	0	0	15	180	435	1683
32	151	58	5	0	0	0	0	0	0	0	9	86	309

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	187	240	507	753	1041	1242	1428	1382	1111	812	435	229	9367
55	8	10	38	122	335	552	715	669	423	149	24	8	3053
57	0	5	24	89	279	492	653	607	367	110	15	2	2643
60	0	1	12	50	203	402	560	514	285	65	7	0	2099
65	0	0	1	13	103	257	405	362	169	21	0	0	1331
70	0	0	0	2	38	130	253	221	84	4	0	0	732

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	63	132	319	547	816	1024	1204	1158	903	596	275	98	63	195	514	1061	1877	2901	4105	5263	6166	6762	7037	7135
45	29	70	201	407	661	874	1049	1003	753	444	173	47	29	99	300	707	1368	2242	3291	4294	5047	5491	5664	5711
50	11	32	118	276	507	724	894	848	603	302	94	20	11	43	161	437	944	1668	2562	3410	4013	4315	4409	4429
55	1	10	56	163	357	574	739	693	455	186	47	3	1	11	67	230	587	1161	1900	2593	3048	3234	3281	3284
60	0	0	22	86	216	425	584	538	318	89	16	0	0	0	22	108	324	749	1333	1871	2189	2278	2294	2294
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	60	110	222	363	535	688	799	773	598	406	187	73	60	170	392	755	1290	1978	2777	3550	4148	4554	4741	4814

(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