

Climatology of the United States

No. 20

1971-2000

Station: GALENA 1 SW, MO

COOP ID: 233094

Climate Division: MO 4

NWS Call Sign:

Elevation: 1,100 Feet Lat: 36°48N

Lon: 93°29W

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	43.3	20.3	31.8	76	1965	7	39.5	1990	-21	1984	19	19.5	1979	1028	0	.0	.0	11.3	6.0	26.8	1.8
Feb	49.6	24.6	37.1	83	1972	29	46.1	1976	-16	1996	4	25.6	1978	782	0	.0	.0	15.0	3.3	21.5	.8
Mar	59.2	34.0	46.6	89	1974	31	51.8	1974	2	1996	8	39.0	1996	572	0	.0	.0	24.1	.6	15.0	.0
Apr	68.7	42.4	55.6	93	1965	22	62.2	1981	18+	1989	12	49.9	1997	293	9	.0	.1	28.8	.0	5.7	.0
May	75.6	51.9	63.8	91+	2000	24	69.8	1987	28	1992	6	59.5	1997	121	82	.0	.2	31.0	.0	.3	.0
Jun	83.3	60.3	71.8	99	1980	27	75.3	1998	38	1972	1	67.7	1974	13	217	.0	4.7	30.0	.0	.0	.0
Jul	88.5	64.9	76.7	106	1980	30	81.9	1980	45+	1972	6	73.1	1971	0	363	.9	16.1	31.0	.0	.0	.0
Aug	88.0	63.3	75.7	104+	1999	13	80.8	1980	40	1988	31	68.7	1992	8	337	.8	15.0	31.0	.0	.0	.0
Sep	80.1	56.0	68.1	105	2000	1	75.2	1998	28	1995	23	61.7	1974	62	154	.3	4.6	30.0	.0	.2	.0
Oct	70.8	44.0	57.4	92+	1963	23	61.2	1971	17	1993	31	51.4	1988	253	16	.0	.2	30.3	.0	4.6	.0
Nov	57.2	33.0	45.1	83+	1989	13	54.4	1999	1	1976	29	36.7	1976	596	0	.0	.0	21.4	.4	14.4	.0
Dec	46.8	24.2	35.5	77+	1991	9	43.0	1984	-18	1989	24	21.6	1983	914	0	.0	.0	13.8	3.5	24.0	.7
Ann	67.6	43.2	55.4	106	Jul 1980	30	81.9	Jul 1980	-21	Jan 1984	19	19.5	Jan 1979	4642	1178	2.0	40.9	297.7	13.8	112.5	3.3

+ 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/normal/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

037-A

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: GALENA 1 SW, MO

COOP ID: 233094

Climate Division: MO 4

NWS Call Sign:

Elevation: 1,100 Feet Lat: 36°48N

Lon: 93°29W

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	2.20	2.02	3.35	1990	17	6.78	1990	.00	1976	6.5	4.1	1.4	.5	.15	.37	.72	1.05	1.38	1.76	2.18	2.71	3.42	4.58	5.71
Feb	2.40	2.02	3.13	1966	9	6.77	1990	.31	1996	6.5	4.5	1.5	.7	.39	.60	.95	1.28	1.62	1.99	2.42	2.93	3.63	4.75	5.82
Mar	4.06	3.53	3.13	1985	30	8.07	1990	.31	1971	8.3	6.8	3.1	1.0	1.06	1.45	2.04	2.56	3.07	3.60	4.20	4.90	5.82	7.28	8.63
Apr	4.32	3.73	3.30	1985	30	9.06	1995	.67	1989	8.5	6.8	2.9	1.2	1.21	1.62	2.24	2.78	3.31	3.86	4.48	5.20	6.14	7.62	8.99
May	4.53	4.01	2.80	1960	6	12.01	1990	1.28	1988	9.7	7.7	3.4	1.1	1.58	2.01	2.63	3.15	3.66	4.17	4.74	5.39	6.23	7.53	8.73
Jun	4.72	4.92	4.75	1963	16	9.94	1993	.64	1984	8.8	7.0	3.0	1.5	1.43	1.88	2.55	3.12	3.68	4.26	4.90	5.66	6.63	8.14	9.55
Jul	3.81	3.82	4.22	1993	6	10.46	1993	.60	1980	7.0	5.6	2.3	1.2	.83	1.18	1.74	2.24	2.75	3.29	3.90	4.62	5.58	7.12	8.56
Aug	3.10	2.66	2.75	1966	22	8.83	1982	.00	2000	6.6	4.9	2.2	1.0	.21	.53	1.02	1.48	1.95	2.48	3.08	3.83	4.83	6.47	8.05
Sep	4.54	4.67	4.00	1993	25	13.01	1993	.67	1982	7.8	6.0	3.0	1.6	.84	1.25	1.91	2.53	3.16	3.83	4.60	5.53	6.76	8.75	10.63
Oct	3.34	3.17	3.25	1986	1	8.62	1984	.74	1989	6.8	4.8	2.4	1.0	.77	1.08	1.57	2.01	2.45	2.91	3.43	4.05	4.86	6.16	7.38
Nov	4.71	4.74	3.49	1974	4	9.96	1996	.53	1989	7.2	6.1	3.1	1.9	1.02	1.45	2.14	2.77	3.40	4.06	4.81	5.72	6.90	8.80	10.58
Dec	3.36	2.51	4.87	1982	3	10.35	1982	.67	1989	6.7	4.7	2.4	1.0	.54	.83	1.31	1.78	2.26	2.78	3.38	4.11	5.08	6.67	8.19
Ann	45.09	44.08	4.87	Dec 1982	3	13.01	Sep 1993	.00+	Aug 2000	90.4	69.0	30.7	13.7	31.88	34.43	37.70	40.19	42.40	44.53	46.74	49.18	52.14	56.44	60.16

+ 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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Station: GALENA 1 SW, MO

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Climate Division: MO 4

NWS Call Sign:

Elevation: 1,100 Feet

Lat: 36°48N

Lon: 93°29W

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	4.0	.0	#	#	9.0	1977	10	24.0	1979	9	1997	9	3	1985	1.3	1.0	.5	.3	.0	.4	.3	.2	.0
Feb	2.4	1.0	1	0	12.0	1984	27	12.0	1984	12	1980	8	7	1980	.9	.7	.2	.1	.1	.3	.0	.0	.0
Mar	1.5	.0	#	0	11.0	1999	14	11.5	1999	12	1994	9	1	1994	.4	.3	.2	@	@	.2	.1	.1	.0
Apr	.2	.0	0	0	3.0	1971	5	3.0	1971	0	0	0	0	0	.1	.1	@	.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	1	1993	30	#	1993	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.7	.0	#	0	5.0	1975	26	6.0	1980	5	1975	26	#+	1995	.2	.2	.2	@	.0	.2	.2	.1	.0
Dec	1.4	.0	#	0	6.0	1985	13	8.0	1985	5	1973	20	1	1995	.8	.6	.1	.1	.0	.1	.0	.0	.0
Ann	10.2	1.0	N/A	N/A	12.0	Feb 1984	27	24.0	Jan 1979	12+	Mar 1994	9	7	Feb 1980	3.7	2.9	1.2	.5	.1	1.2	.6	.4	.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	5/18	5/12	5/08	5/05	5/02	4/29	4/26	4/22	4/17
32	5/05	4/30	4/27	4/24	4/21	4/19	4/16	4/13	4/08
28	4/23	4/17	4/13	4/10	4/07	4/04	3/31	3/27	3/22
24	4/12	4/07	4/03	3/31	3/28	3/25	3/22	3/18	3/13
20	4/04	3/29	3/25	3/22	3/19	3/16	3/13	3/09	3/03
16	3/23	3/15	3/09	3/04	2/28	2/23	2/18	2/13	2/05
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	9/20	9/24	9/27	9/30	10/02	10/05	10/07	10/10	10/14
32	9/29	10/03	10/06	10/09	10/12	10/14	10/17	10/20	10/25
28	10/06	10/13	10/18	10/23	10/27	10/31	11/04	11/09	11/17
24	10/22	10/28	11/02	11/05	11/09	11/13	11/17	11/21	11/27
20	10/30	11/06	11/11	11/15	11/19	11/23	11/27	12/02	12/08
16	11/08	11/16	11/21	11/26	11/30	12/04	12/09	12/14	12/21
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	174	166	161	157	152	148	143	138	131
32	194	187	181	177	173	168	164	159	151
28	227	218	212	207	202	197	192	186	178
24	249	241	235	230	226	221	216	210	202
20	269	260	254	249	244	239	234	228	219
16	305	295	287	280	274	268	262	254	244

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1028	782	572	293	121	13	0	8	62	253	596	914	4642
60	873	642	423	170	52	2	0	1	21	138	455	760	3537
57	780	564	337	112	27	0	0	0	9	86	373	673	2961
55	720	512	284	80	16	0	0	0	5	60	322	616	2615
50	577	385	172	27	3	0	0	0	0	19	211	474	1868
32	170	79	7	0	0	0	0	0	0	0	18	119	393

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	165	221	459	706	984	1194	1386	1353	1082	787	411	228	8976
55	2	10	22	96	287	504	673	640	396	134	26	12	2802
57	0	6	14	68	235	445	611	578	341	98	17	7	2420
60	0	0	6	36	168	356	518	485	263	56	9	1	1898
65	0	0	0	9	82	217	363	337	154	16	0	0	1178
70	0	0	0	1	29	106	217	205	77	3	0	0	638

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	50	116	275	500	754	973	1155	1124	858	553	235	81	50	166	441	941	1695	2668	3823	4947	5805	6358	6593	6674
45	21	60	172	357	599	823	1000	969	708	404	141	39	21	81	253	610	1209	2032	3032	4001	4709	5113	5254	5293
50	6	26	95	236	446	673	845	814	560	268	75	15	6	32	127	363	809	1482	2327	3141	3701	3969	4044	4059
55	0	10	51	134	300	523	690	659	417	157	31	5	0	10	61	195	495	1018	1708	2367	2784	2941	2972	2977
60	0	1	21	66	174	373	535	504	282	73	10	0	0	1	22	88	262	635	1170	1674	1956	2029	2039	2039
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	48	96	197	329	485	656	778	751	563	363	162	66	48	144	341	670	1155	1811	2589	3340	3903	4266	4428	4494

(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/normal/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