

Climatology of the United States No. 20

Station: PERRYVILLE WATER PLANT, MO

1971-2000

COOP ID: 236641

Climate Division: MO 5

NWS Call Sign:

Elevation: 480 Feet

Lat: 37°44N

Lon: 89°55W

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	39.7	20.2	30.0	74+	1970	29	40.3	1989	-16+	1977	19	16.2	1977	1087	0	.0	.0	7.5	8.2	26.7	2.3
Feb	46.2	24.2	35.2	85	1982	24	43.4	1976	-19	1979	9	21.6	1978	834	0	.0	.0	11.7	4.9	20.8	1.0
Mar	56.4	33.3	44.9	86+	1997	22	50.6	1976	2	1974	24	37.3	1996	624	0	.0	.0	21.8	.8	16.0	@
Apr	67.0	42.4	54.7	92+	1987	21	61.5	1981	17	1971	7	47.9	1983	324	15	.0	.2	28.6	.0	5.5	.0
May	76.0	51.8	63.9	96	1953	26	72.8	1987	28	1978	3	58.3	1981	141	106	.0	1.1	31.0	.0	.4	.0
Jun	84.1	61.6	72.9	106	1952	25	78.7	1987	37	1972	1	68.1	1974	15	250	.3	8.3	30.0	.0	.0	.0
Jul	88.6	65.8	77.2	107+	1980	17	82.2	1980	44	1971	31	73.8	1996	0	378	1.2	16.4	31.0	.0	.0	.0
Aug	87.1	63.2	75.2	109	1964	3	81.7+	1988	35	1986	29	69.3	1992	13	329	1.5	12.5	31.0	.0	.0	.0
Sep	79.9	54.7	67.3	104	1954	5	72.8	1998	29+	1995	24	61.6	1974	62	132	.1	5.3	30.0	.0	.2	.0
Oct	69.9	42.6	56.3	96	1954	5	62.9	1973	17	1981	24	49.6	1976	288	17	.0	.3	30.4	.0	6.0	.0
Nov	55.9	34.0	45.0	87	1989	12	50.0	1999	-5	1950	25	35.4	1976	602	0	.0	.0	20.6	.5	14.8	.0
Dec	43.9	24.6	34.3	77+	1970	4	42.9	1971	-13+	1989	23	22.3	1989	954	0	.0	.0	10.1	4.5	23.8	.8
Ann	66.2	43.2	54.7	109	Aug 1964	3	82.2	Jul 1980	-19	Feb 1979	9	16.2	Jan 1977	4944	1227	3.1	44.1	283.7	18.9	114.2	4.1

+ 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/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

076-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: PERRYVILLE WATER PLANT, MO

COOP ID: 236641

Climate Division: MO 5

NWS Call Sign:

Elevation: 480 Feet Lat: 37°44N

Lon: 89°55W

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	2.37	2.06	3.50	1990	20	6.69	1982	.00	1986	5.2	4.0	1.6	.7	.16	.40	.77	1.12	1.49	1.89	2.35	2.92	3.69	4.95	6.17
Feb	2.32	2.48	2.45	1975	23	5.39	1990	.00	1991	4.8	4.0	1.6	.7	.36	.67	1.07	1.39	1.71	2.04	2.41	2.85	3.42	4.33	5.18
Mar	3.73	3.21	5.16	1977	28	9.60	1977	1.08	1972	6.7	5.7	2.4	1.2	1.01	1.36	1.90	2.37	2.84	3.32	3.86	4.50	5.33	6.63	7.84
Apr	4.15	3.63	4.90	1998	16	10.01	1983	1.02	1988	8.7	6.6	2.6	1.2	.97	1.36	1.97	2.51	3.05	3.62	4.26	5.03	6.03	7.62	9.11
May	4.53	4.12	4.31	1986	10	12.32	1986	.54	1977	8.0	6.5	2.8	1.4	.95	1.36	2.02	2.63	3.24	3.89	4.62	5.50	6.67	8.53	10.29
Jun	3.59	3.45	3.84	1969	23	7.42	2000	.64	1992	7.2	5.6	2.6	1.0	.94	1.28	1.80	2.26	2.71	3.18	3.71	4.33	5.15	6.43	7.63
Jul	3.40	3.43	3.90	2001	4	6.86	1998	.58	1974	6.6	5.0	2.4	1.0	.80	1.12	1.62	2.06	2.50	2.97	3.49	4.12	4.93	6.23	7.45
Aug	3.36	3.09	4.78	1975	26	10.57	1975	.49	1996	6.0	4.9	2.3	1.0	.90	1.21	1.70	2.13	2.55	2.99	3.48	4.06	4.81	6.00	7.11
Sep	2.95	2.41	4.41	1949	13	8.81	1984	.40	1978	5.0	4.1	1.9	.9	.54	.80	1.23	1.63	2.04	2.48	2.98	3.59	4.40	5.71	6.95
Oct	3.03	2.62	3.65	1991	26	8.78	1984	.77	1971	5.6	4.4	2.3	.9	.94	1.23	1.65	2.02	2.38	2.75	3.15	3.63	4.25	5.20	6.09
Nov	4.52	4.34	3.27	1972	1	9.53	1972	.43	1976	6.8	5.7	3.0	1.3	.95	1.37	2.03	2.63	3.24	3.89	4.62	5.50	6.66	8.51	10.26
Dec	3.29	2.89	4.15	1987	26	8.90	1982	.75	1976	5.9	4.5	2.1	.9	.77	1.08	1.56	1.99	2.42	2.87	3.38	3.98	4.78	6.04	7.23
Ann	41.24	39.89	5.16	Mar 1977	28	12.32	May 1986	.00+	Feb 1991	76.5	61.0	27.6	12.2	27.72	30.28	33.59	36.12	38.38	40.58	42.87	45.40	48.49	53.01	56.93

+ 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

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No. 20

1971-2000

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COOP ID: 236641

Climate Division: MO 5

NWS Call Sign:

Elevation: 480 Feet

Lat: 37°44N

Lon: 89°55W

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	2.0	1972	5	2.0	1972	2	1972	5	#+	2000	.2	.1	.0	.0	.0	.1	.0	.0	.0
Feb	#	#	#	0	#	1999	24	#+	1999	2	1971	13	#+	1999	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.7	.0	#	0	9.0	1999	14	9.0	1999	9	1999	14	#+	1999	.1	.1	.1	.1	.0	@	@	@	.0
Apr	.0	.0	#	0	.0	0	0	.0	0	2	1971	6	#	1971	.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	.1	.0	0	0	1.0	1993	30	1.0	1993	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	1.0	1971	24	1.0	1971	1	1971	24	#	1971	.1	.1	.0	.0	.0	@	.0	.0	.0
Dec	.4	.0	#	0	4.5	2000	14	4.5	2000	5	2000	14	1	2000	.4	.2	.1	.0	.0	.0	.0	.0	.0
Ann	1.7	#	N/A	N/A	9.0	Mar 1999	14	9.0	Mar 1999	9	Mar 1999	14	1	Dec 2000	.9	.6	.2	.1	.0	.1	@	@	.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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Climate Division: MO 5

NWS Call Sign:

Elevation: 480 Feet

Lat: 37° 44N

Lon: 89° 55W

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	5/16	5/11	5/07	5/04	5/01	4/28	4/25	4/21	4/16
32	5/08	5/02	4/28	4/24	4/21	4/17	4/13	4/09	4/03
28	4/22	4/17	4/13	4/10	4/07	4/04	4/01	3/28	3/23
24	4/11	4/06	4/02	3/30	3/27	3/23	3/20	3/16	3/11
20	3/31	3/25	3/20	3/16	3/13	3/09	3/06	3/01	2/23
16	3/17	3/10	3/05	3/01	2/25	2/21	2/16	2/11	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	9/15	9/20	9/24	9/27	9/30	10/03	10/06	10/10	10/15
32	9/28	10/02	10/05	10/07	10/10	10/12	10/15	10/18	10/22
28	10/04	10/10	10/15	10/18	10/22	10/25	10/29	11/03	11/09
24	10/22	10/28	11/01	11/05	11/08	11/12	11/15	11/19	11/25
20	10/27	11/03	11/08	11/13	11/17	11/21	11/25	11/30	12/07
16	11/11	11/18	11/23	11/28	12/02	12/06	12/11	12/16	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	170	164	159	155	151	147	143	139	132
32	191	184	179	175	172	168	164	159	152
28	216	210	205	201	197	193	189	185	178
24	247	240	234	230	226	222	217	212	205
20	272	264	258	253	248	243	238	232	224
16	309	299	292	285	280	274	268	260	250

* 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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Climate Division: MO 5 NWS Call Sign: Elevation: 480 Feet Lat: 37° 44N Lon: 89° 55W

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	1087	834	624	324	141	15	0	13	62	288	602	954	4944
60	932	694	473	205	72	3	0	2	20	170	456	799	3826
57	839	615	389	146	43	1	0	0	8	115	374	709	3239
55	779	563	334	113	29	0	0	0	4	85	321	652	2880
50	637	434	214	50	9	0	0	0	0	34	206	509	2093
32	216	109	14	0	0	0	0	0	0	0	13	134	486

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	152	199	413	681	988	1225	1401	1339	1060	752	401	204	8815
55	2	9	20	104	304	536	688	626	373	124	20	8	2814
57	0	5	12	77	256	476	626	564	317	92	12	3	2440
60	0	0	4	45	192	389	533	473	239	54	5	0	1934
65	0	0	0	15	106	250	378	329	132	17	0	0	1227
70	0	0	0	4	48	135	230	203	59	3	0	0	682

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	36	91	227	468	765	1009	1179	1114	845	524	222	64	36	127	354	822	1587	2596	3775	4889	5734	6258	6480	6544
45	15	48	140	331	611	859	1024	959	695	375	133	28	15	63	203	534	1145	2004	3028	3987	4682	5057	5190	5218
50	3	18	76	214	456	709	869	804	546	246	72	10	3	21	97	311	767	1476	2345	3149	3695	3941	4013	4023
55	0	6	36	126	311	559	714	649	401	144	31	2	0	6	42	168	479	1038	1752	2401	2802	2946	2977	2979
60	0	0	13	63	187	410	559	494	271	68	7	0	0	0	13	76	263	673	1232	1726	1997	2065	2072	2072
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	29	69	158	299	493	677	794	746	553	351	145	39	29	98	256	555	1048	1725	2519	3265	3818	4169	4314	4353

(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