

Climatology of the United States

No. 20

1971-2000

Station: ROSE 10 WNW, NE

COOP ID: 257318

Climate Division: NE 2

NWS Call Sign:

Elevation: 2,540 Feet Lat: 42° 12N

Lon: 99° 42W

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	33.7	10.3	22.0	70+	1981	25	32.2	1992	-28	1966	29	7.5	1979	1333	0	.0	.0	4.0	15.0	30.8	8.9
Feb	39.9	15.8	27.9	78	1995	25	36.9	1992	-26+	1996	3	13.9	1979	1041	0	.0	.0	7.3	10.7	27.4	5.0
Mar	49.1	24.5	36.8	85	1978	31	42.9	1986	-22	1980	1	29.8	1998	875	0	.0	.0	13.7	4.8	27.2	.9
Apr	61.6	34.5	48.1	95	1965	30	57.0	1981	-3	1975	3	42.0	1997	511	3	.0	.3	23.0	.7	14.3	@
May	71.6	44.6	58.1	98	1992	1	65.4	1977	19	1980	8	51.9	1995	240	25	.0	.2	29.9	.0	2.3	.0
Jun	81.7	53.9	67.8	104	1988	22	74.5	1988	34	1982	1	62.2	1982	56	140	.2	3.7	30.0	.0	.0	.0
Jul	87.3	59.2	73.3	110	1990	3	78.9	1980	41	1990	13	66.2	1992	11	266	1.1	10.6	31.0	.0	.0	.0
Aug	86.1	57.8	72.0	106	1968	5	78.4	1983	34	1964	12	66.1	1992	19	234	.6	9.1	31.0	.0	.0	.0
Sep	77.2	47.2	62.2	99+	1982	11	68.0	1998	19+	1965	26	57.0	1993	139	55	.0	3.4	29.5	.0	2.3	.0
Oct	64.8	35.5	50.2	96	1963	4	53.5	1973	6	1991	31	46.2	1987	461	0	.0	.4	26.5	.3	12.9	.0
Nov	46.7	22.6	34.7	82	1990	1	44.1	1999	-18	1976	28	22.5	1985	910	0	.0	.0	12.4	5.9	27.3	1.4
Dec	36.8	13.3	25.1	73	1998	3	32.6	1979	-31+	1989	23	6.6	1983	1238	0	.0	.0	5.3	12.4	30.7	5.8
Ann	61.4	34.9	48.2	110	Jul 1990	3	78.9	Jul 1980	-31+	Dec 1989	23	6.6	Dec 1983	6834	723	1.9	27.7	243.6	49.8	175.2	22.0

+ 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: 1960-2000

(3) Derived from 1971-2000 serially complete daily data

099-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: ROSE 10 WNW, NE

COOP ID: 257318

Climate Division: NE 2

NWS Call Sign:

Elevation: 2,540 Feet Lat: 42°12N

Lon: 99°42W

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	.53	.32	1.41	1988	19	1.93+	1996	.00+	1999	3.2	1.3	.3	.1	.00	.00	.06	.14	.23	.34	.47	.65	.89	1.31	1.73
Feb	.68	.50	1.16	1999	22	2.57	1978	.00+	1996	3.1	1.7	.3	.1	.00	.02	.11	.20	.31	.45	.61	.82	1.12	1.64	2.15
Mar	1.23	.76	1.93	1977	12	4.27	1987	.00	1996	4.7	2.8	1.0	.3	.03	.10	.26	.43	.63	.86	1.14	1.49	1.99	2.85	3.69
Apr	2.11	1.99	3.14	1999	7	5.14	1995	.03	1989	7.0	4.7	1.5	.2	.31	.48	.79	1.08	1.38	1.72	2.10	2.57	3.21	4.24	5.23
May	3.70	3.48	2.62	1986	8	9.35	1995	.58	1992	9.8	6.9	2.5	.7	1.09	1.44	1.97	2.43	2.87	3.34	3.85	4.45	5.22	6.44	7.57
Jun	3.43	3.40	3.86	1996	16	8.99	1983	.94	1976	8.5	6.0	2.1	.8	1.05	1.38	1.87	2.28	2.69	3.11	3.57	4.11	4.81	5.91	6.92
Jul	3.33	3.21	3.26	1996	26	7.18	1993	.28	1991	8.0	5.1	2.2	.8	.69	.99	1.48	1.93	2.38	2.86	3.40	4.05	4.91	6.28	7.58
Aug	2.45	2.05	2.93	1990	23	5.11	1990	.89	1971	6.9	4.3	1.5	.7	.74	.97	1.32	1.62	1.91	2.21	2.55	2.94	3.45	4.24	4.98
Sep	1.77	1.65	2.40	1986	17	4.33	1988	.06	1980	5.9	3.9	1.1	.5	.22	.36	.61	.86	1.12	1.41	1.74	2.16	2.72	3.65	4.55
Oct	1.40	1.50	1.75	1990	3	4.51	1982	.00+	1999	4.9	3.1	.9	.2	.00	.26	.54	.77	.98	1.21	1.46	1.75	2.14	2.77	3.36
Nov	1.05	.96	1.60	1979	21	3.41	1979	.00+	1997	3.9	2.4	.6	.2	.00	.00	.23	.40	.59	.79	1.03	1.33	1.72	2.38	3.02
Dec	.46	.34	1.23	1965	10	1.62	1982	.00+	1998	2.4	1.1	.2	@	.00	.00	.04	.12	.20	.30	.41	.57	.78	1.14	1.51
Ann	22.14	21.92	3.86	Jun 1996	16	9.35	May 1995	.00+	Oct 1999	68.3	43.3	14.2	4.6	14.81	16.20	17.99	19.37	20.59	21.79	23.03	24.41	26.09	28.54	30.68

+ 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: 1960-2000

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: ROSE 10 WNW, NE

COOP ID: 257318

Climate Division: NE 2

NWS Call Sign:

Elevation: 2,540 Feet

Lat: 42° 12N

Lon: 99° 42W

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	6.1	3.3	3	#	16.0	1988	19	24.0	1988	32	1988	20	29	1988	2.4	1.9	.9	.3	.1	4.7	3.3	2.5	.6
Feb	5.6	4.0	1	#	12.0	1999	22	21.0	1978	13	1979	9	11	1979	2.5	2.0	.7	.4	@	7.9	5.5	3.9	1.5
Mar	6.4	5.5	1	#	12.0	1998	31	17.0	1980	11	1980	31	2	1980	2.5	2.1	.8	.4	@	3.1	1.8	.9	.2
Apr	2.1	.5	#	0	10.0	1975	2	12.5	1984	10	1975	2	1	1995	.9	.7	.4	.2	@	.4	.3	.1	@
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	.2	.0	#	0	3.0	1985	29	3.0	1985	2	1985	29	#+	1985	.1	.1	@	.0	.0	.1	.0	.0	.0
Oct	1.0	.0	#	0	6.0	1979	31	9.0	1979	5	1979	31	#+	1997	.4	.4	.1	@	.0	.2	@	@	.0
Nov	6.9	4.3	1	#	10.0	1975	20	21.5	1983	23	1975	30	6	1975	2.2	1.8	.8	.5	.1	2.6	1.5	1.1	.7
Dec	7.2	5.5	2	#	14.0	1987	27	20.5	1981	16+	1987	28	8	1981	2.5	2.1	.7	.5	.1	4.5	1.9	1.1	.3
Ann	35.5	23.1	N/A	N/A	16.0	Jan 1988	19	24.0	Jan 1988	32	Jan 1988	20	29	Jan 1988	13.5	11.1	4.4	2.3	.3	23.5	14.3	9.6	3.3

+ 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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No. 20 1971-2000

Station: ROSE 10 WNW, NE

COOP ID: 257318

Climate Division: NE 2

NWS Call Sign:

Elevation: 2,540 Feet

Lat: 42° 12N

Lon: 99° 42W

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	6/06	5/31	5/26	5/22	5/19	5/15	5/11	5/07	4/30
32	5/18	5/14	5/11	5/09	5/06	5/04	5/02	4/29	4/25
28	5/09	5/04	5/01	4/28	4/25	4/23	4/20	4/17	4/12
24	5/05	4/30	4/26	4/23	4/20	4/17	4/14	4/10	4/05
20	4/26	4/20	4/16	4/13	4/10	4/07	4/04	3/31	3/25
16	4/14	4/08	4/04	3/31	3/28	3/25	3/21	3/17	3/11
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	9/07	9/11	9/14	9/17	9/19	9/21	9/24	9/27	10/01
32	9/13	9/17	9/20	9/23	9/25	9/28	9/30	10/03	10/08
28	9/17	9/23	9/27	10/01	10/04	10/07	10/11	10/15	10/21
24	9/26	10/02	10/06	10/09	10/13	10/16	10/19	10/23	10/29
20	10/05	10/10	10/14	10/17	10/21	10/24	10/27	10/31	11/06
16	10/16	10/22	10/26	10/30	11/02	11/05	11/09	11/13	11/19
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	146	138	132	127	123	118	113	108	100
32	160	153	149	145	141	138	134	129	123
28	182	175	169	165	161	157	152	147	140
24	196	189	183	179	175	171	166	161	154
20	215	207	202	197	193	189	184	179	171
16	243	235	229	223	218	213	208	202	193

* 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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Station: ROSE 10 WNW, NE

COOP ID: 257318

Climate Division: NE 2 NWS Call Sign: Elevation: 2,540 Feet Lat: 42°12N Lon: 99°42W

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	1333	1041	875	511	240	56	11	19	139	461	910	1238	6834
60	1178	901	720	370	133	17	1	3	59	309	760	1083	5534
57	1085	820	627	292	85	7	0	1	29	223	670	990	4829
55	1024	769	566	244	60	3	0	0	16	173	615	928	4398
50	880	638	420	145	20	0	0	0	2	77	476	783	3441
32	403	254	67	3	0	0	0	0	0	1	118	319	1165

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	92	137	215	485	808	1074	1278	1238	906	562	198	105	7098
55	1	9	1	36	156	387	565	525	232	22	5	0	1939
57	0	3	0	23	119	331	503	464	185	10	0	0	1638
60	0	0	0	11	73	251	411	373	125	3	0	0	1247
65	0	0	0	3	25	140	266	234	55	0	0	0	723
70	0	0	0	0	5	63	145	123	18	0	0	0	354

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	1	19	78	245	536	811	1013	965	637	310	62	8	1	20	98	343	879	1690	2703	3668	4305	4615	4677	4685
45	0	2	34	145	387	661	858	810	489	192	25	0	0	2	36	181	568	1229	2087	2897	3386	3578	3603	3603
50	0	0	9	79	253	512	703	655	355	101	6	0	0	0	9	88	341	853	1556	2211	2566	2667	2673	2673
55	0	0	0	35	138	366	548	500	231	40	0	0	0	0	0	35	173	539	1087	1587	1818	1858	1858	1858
60	0	0	0	12	65	231	395	352	134	15	0	0	0	0	0	12	77	308	703	1055	1189	1204	1204	1204
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	31	79	180	330	515	655	625	411	234	67	21	13	44	123	303	633	1148	1803	2428	2839	3073	3140	3161

(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