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: HOLDREGE, NE **COOP ID: 253910**

Climate Division: NE 8 **NWS Call Sign:** **Elevation: 2,320 Feet** **Lat: 40˚26N** **Lon: 99˚22W**

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	34.1	12.5	23.3	74	1990	11	34.4	1986	-21	1974	12	9.3	1979	1293	0	.0	.0	4.8	12.6	30.6	5.4
Feb	40.0	17.5	28.8	78+	1995	26	37.8	1991	-19	1981	11	14.1	1978	1014	0	.0	.0	9.0	8.7	26.2	2.8
Mar	49.6	25.6	37.6	89	1968	30	45.3	1986	-12+	1978	4	29.9	1975	850	0	.0	.0	16.8	3.4	22.8	.7
Apr	61.5	36.0	48.8	95	1989	23	56.3	1981	11+	1994	7	43.0	1983	489	2	.0	.4	25.0	.3	9.5	.0
May	71.4	47.9	59.7	100	1967	25	64.4	1987	22	1967	2	52.7	1995	209	43	.0	.9	30.7	.0	.6	.0
Jun	82.5	57.6	70.1	108	1988	22	75.8	1988	38	1969	2	64.6	1982	35	187	.7	7.1	29.9	.0	.0	.0
Jul	87.2	62.7	75.0	112+	1954	12	78.9	1980	42	1971	30	69.9	1992	1	309	2.0	12.8	31.0	.0	.0	.0
Aug	85.1	60.6	72.9	107+	1955	26	80.8	1983	42+	1967	27	67.6	1992	17	260	.8	10.1	31.0	.0	.0	.0
Sep	77.2	50.9	64.1	104	1948	1	70.4	1998	26+	1995	23	59.3	1993	107	78	.1	4.1	29.7	.0	.6	.0
Oct	65.1	38.7	51.9	94+	1997	3	55.1	1974	8	1997	27	45.7	1976	408	1	.0	.3	27.9	.2	6.2	.0
Nov	47.3	25.1	36.2	82	1980	7	46.0	1999	-11	1976	28	27.8	1985	864	0	.0	.0	14.3	3.8	23.2	.4
Dec	36.8	16.1	26.5	80	1964	23	34.0	1979	-29	1989	23	9.3	1983	1195	0	.0	.0	5.9	10.2	30.2	2.9
Ann	61.5	37.6	49.6	112+	Jul 1954	12	80.8	Aug 1983	-29	Dec 1989	23	9.3+	Dec 1983	6482	880	3.6	35.7	256.0	39.2	149.9	12.2

+ 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

Means/Medians(1)

Month	Mean	Median
Jan	.52	.44
Feb	.51	.35
Mar	2.08	1.72
Apr	2.28	2.09
May	4.40	4.29
Jun	3.65	2.99
Jul	4.12	2.78
Aug	3.23	2.88
Sep	1.99	1.48
Oct	1.44	.96
Nov	1.30	1.13
Dec	.49	.37
Ann	26.01+	24.54+

Extremes

Month	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.95	1980	16	1.59	1992	.00+	1997
Feb	1.57	1984	18	1.85	1984	.00+	1996
Mar	2.90	1987	17	6.63	1987	.06	1994
Apr	2.17	1979	25	5.41	1977	.01	1989
May	3.76	1950	8	9.31	1995	.89	1992
Jun	4.74	1989	25	7.58	1975	.93	1973
Jul	4.85+	2000	4	15.40	1993	.23	1997
Aug	3.26	1969	31	8.37	1993	.75	1976
Sep	2.85	1950	20	9.88	1973	.02	1984
Oct	2.52	1968	16	6.13	1984	.00	1999
Nov	1.58	1975	20	3.72	1983	.00+	1999
Dec	1.48	1953	3	1.49	1982	.00	1996
Ann	4.85+	Jul 2000	4	15.40	Jul 1993	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.7	1.3	.3	.0
Feb	3.4	1.6	.2	.1
Mar	6.6	4.0	1.3	.4
Apr	7.5	4.9	1.5	.4
May	10.9	7.7	3.2	1.1
Jun	8.6	5.9	2.3	1.0
Jul	8.3	6.1	2.6	1.3
Aug	7.7	5.2	2.4	1.0
Sep	6.0	4.3	1.3	.5
Oct	4.8	2.8	1.1	.3
Nov	4.7	2.7	.8	.3
Dec	3.2	1.8	.1	.0
Ann	75.4	48.3	17.1	6.4

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	.00	.05	.14	.23	.31	.40	.51	.64	.82	1.11	1.40
Feb	.00	.02	.09	.16	.24	.35	.47	.62	.85	1.23	1.61
Mar	.11	.23	.48	.76	1.08	1.46	1.92	2.51	3.34	4.76	6.18
Apr	.29	.48	.80	1.12	1.45	1.82	2.25	2.78	3.50	4.67	5.81
May	1.52	1.94	2.54	3.05	3.54	4.05	4.60	5.24	6.06	7.33	8.50
Jun	.86	1.20	1.73	2.21	2.68	3.19	3.75	4.42	5.31	6.71	8.02
Jul	.42	.73	1.29	1.87	2.49	3.19	4.01	5.03	6.43	8.75	11.02
Aug	.95	1.26	1.72	2.12	2.50	2.91	3.35	3.88	4.56	5.62	6.61
Sep	.14	.26	.52	.79	1.10	1.45	1.88	2.42	3.17	4.44	5.70
Oct	.07	.20	.42	.63	.85	1.11	1.41	1.78	2.28	3.12	3.94
Nov	.00	.08	.28	.47	.69	.94	1.23	1.60	2.12	2.98	3.83
Dec	.02	.06	.13	.20	.28	.36	.47	.60	.79	1.10	1.40
Ann	17.12	18.79	20.96	22.63	24.12	25.57	27.09	28.77	30.82	33.82	36.44

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	5.1	5.0	2	1	9.2	1990	20	11.0	1985	17	1984	1	6	1993	3.3	2.0	.6	.2	.0	14.4	6.1	2.9	.5
Feb	4.9	3.4	1	1	10.5	1994	22	18.5	1994	17	1994	23	7	1993	2.4	1.7	.5	.2	@	9.7	4.6	2.7	.7
Mar	6.0	4.5	1	#	12.1	1987	24	22.0	1987	12+	1987	30	3	1987	2.9	2.0	.7	.3	.1	5.1	2.3	1.0	.3
Apr	2.2	.2	#	#	8.0	1994	12	13.0	1994	6	1996	15	1	1987	1.0	.7	.2	.1	.0	1.2	.3	.1	.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	.3	.0	#	0	8.0	1985	29	8.0	1985	5	1985	29	#	1985	@	@	@	@	.0	.1	.1	@	.0
Oct	.8	.0	#	0	9.0	1997	26	9.0	1997	9	1997	26	1	1997	.2	.2	.1	.1	.0	.3	.1	.1	.0
Nov	4.4	2.8	1	#	10.0	1983	28	19.0+	1983	16	1983	29	4	1975	2.0	1.4	.4	.2	@	4.2	1.8	1.0	.4
Dec	4.8	4.2	1	1	8.0	1982	28	12.0+	1983	19	1983	31	15	1983	2.6	1.8	.5	.1	.0	9.1	4.3	2.1	1.1
Ann	28.5	20.1	N/A	N/A	12.1	Mar 1987	24	22.0	Mar 1987	19	Dec 1983	31	15	Dec 1983	14.4	9.8	3.0	1.2	.1	44.1	19.6	9.9	3.0

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	5/14	5/12	5/09	5/07	5/05	5/03	4/30	4/26
32	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/17	4/12
28	4/25	4/21	4/18	4/16	4/13	4/11	4/08	4/05	4/01
24	4/15	4/12	4/09	4/07	4/04	4/02	3/31	3/28	3/25
20	4/10	4/05	4/01	3/29	3/26	3/23	3/20	3/16	3/11
16	4/05	3/29	3/23	3/19	3/15	3/11	3/07	3/01	2/22

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	9/16	9/21	9/24	9/27	9/30	10/03	10/05	10/09	10/13
32	9/20	9/26	9/30	10/04	10/07	10/10	10/14	10/18	10/24
28	10/05	10/10	10/14	10/17	10/20	10/23	10/26	10/29	11/04
24	10/14	10/19	10/22	10/25	10/28	10/31	11/03	11/06	11/11
20	10/19	10/25	10/29	11/02	11/05	11/08	11/12	11/16	11/21
16	10/29	11/04	11/09	11/13	11/17	11/20	11/24	11/29	12/05

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	156	152	148	145	142	138	134	128
32	187	178	172	167	162	157	152	146	138
28	208	201	197	193	189	185	181	176	170
24	220	215	212	209	206	203	200	196	191
20	245	238	232	227	223	219	214	209	201
16	274	264	257	251	246	240	234	227	217

***** 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	1293	1014	850	489	209	35	1	17	107	408	864	1195	6482
60	1138	874	695	347	113	9	0	4	40	260	714	1040	5234
57	1045	793	602	269	71	4	0	1	18	182	624	947	4556
55	983	742	542	221	50	2	0	0	10	137	567	885	4139
50	832	611	399	122	16	0	0	0	0	57	428	738	3203
32	354	233	64	1	0	0	0	0	0	0	89	281	1022

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	84	143	237	503	856	1142	1331	1266	961	616	215	108	7462
55	0	8	2	33	193	454	618	553	281	39	3	0	2184
57	0	3	0	21	152	396	556	491	229	22	0	0	1870
60	0	0	0	9	101	312	463	401	161	8	0	0	1455
65	0	0	0	2	43	187	309	260	78	1	0	0	880
70	0	0	0	0	13	94	170	144	29	0	0	0	450

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	8	39	126	325	638	923	1103	1044	748	414	94	15	8	47	173	498	1136	2059	3162	4206	4954	5368	5462	5477
45	0	13	66	208	485	773	948	889	601	283	40	0	0	13	79	287	772	1545	2493	3382	3983	4266	4306	4306
50	0	2	28	115	338	623	793	734	455	171	14	0	0	2	30	145	483	1106	1899	2633	3088	3259	3273	3273
55	0	0	5	60	210	475	638	579	321	87	2	0	0	0	5	65	275	750	1388	1967	2288	2375	2377	2377
60	0	0	1	24	105	333	484	426	203	31	0	0	0	0	1	25	130	463	947	1373	1576	1607	1607	1607
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	15	44	102	221	382	597	726	689	472	267	75	22	15	59	161	382	764	1361	2087	2776	3248	3515	3590	3612

(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:
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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