

# Climatology of the United States

No. 20

1971-2000

Station: SEWARD, NE

COOP ID: 257715

Climate Division: NE 6

NWS Call Sign:

Elevation: 1,440 Feet Lat: 40° 54N

Lon: 97° 05W

## 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	35.0	13.8	24.4	74	1990	10	36.0	1990	-27	1974	12	11.0	1979	1259	0	.0	.0	3.9	13.6	29.8	5.4
Feb	41.3	19.2	30.3	80+	1995	25	39.7	1999	-24	1996	3	15.8	1979	974	0	.0	.0	8.4	9.2	24.3	2.8
Mar	52.7	28.9	40.8	90	1986	28	47.0	1986	-19	1998	12	33.5	1975	751	0	.0	@	17.3	2.5	19.0	.4
Apr	65.7	40.0	52.9	97	1989	26	60.1	1981	5	1975	3	45.2	1983	374	9	.0	.6	26.9	@	6.3	.0
May	75.4	51.4	63.4	99	1967	24	68.8	1977	27	1976	3	57.8	1995	131	81	.0	1.3	30.9	.0	.3	.0
Jun	85.8	61.2	73.5	106	1988	21	78.2	1988	39	1950	4	68.5	1982	9	263	.7	9.4	30.0	.0	.0	.0
Jul	90.0	65.8	77.9	110+	1954	13	83.9	1974	42	1971	30	71.8	1992	0	399	2.2	14.9	31.0	.0	.0	.0
Aug	88.2	63.4	75.8	107	1964	2	83.8	1983	39	1950	20	70.2	1992	10	344	.9	11.5	31.0	.0	.0	.0
Sep	81.0	53.8	67.4	105+	2000	3	72.9	1998	20	1984	30	62.5	1974	53	125	.1	4.0	29.9	.0	.2	.0
Oct	69.0	41.9	55.5	97	1956	5	59.4	1993	6	1997	27	50.1	1976	303	6	.0	.2	28.8	.1	4.4	.0
Nov	50.3	28.1	39.2	85	1999	13	48.6	1999	-6	1964	30	29.9	1985	773	0	.0	.0	14.2	3.0	19.4	.2
Dec	38.4	18.0	28.2	69+	1998	1	34.9	1979	-24	1989	22	10.5	1983	1142	0	.0	.0	4.7	10.2	28.8	2.9
Ann	64.4	40.5	52.4	110+	Jul 1954	13	83.9	Jul 1974	-27	Jan 1974	12	10.5	Dec 1983	5779	1227	3.9	41.9	257.0	38.6	132.5	11.7

+ 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/normal/usnormals.html](http://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

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## No. 20 1971-2000

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

**Station: SEWARD, NE**

**COOP ID: 257715**

**Climate Division: NE 6**

**NWS Call Sign:**

**Elevation: 1,440 Feet Lat: 40°54N**

**Lon: 97°05W**

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	.62	.44	.98	1949	23	1.47	1993	.00+	1986	4.6	2.1	.2	.0	.00	.09	.20	.30	.40	.51	.64	.78	.98	1.30	1.60
Feb	.54	.55	1.41	1958	27	1.83	1971	.00+	1977	4.4	1.9	.2	.0	.00	.08	.18	.27	.36	.45	.56	.68	.85	1.12	1.38
Mar	2.08	1.88	2.26	1987	23	7.76	1987	.03	1994	7.2	4.4	1.3	.3	.15	.28	.55	.83	1.15	1.52	1.97	2.53	3.31	4.63	5.93
Apr	2.66	2.35	1.77	1984	3	7.17	1978	.78	1990	9.2	5.7	1.9	.5	.79	1.04	1.42	1.75	2.06	2.40	2.76	3.19	3.75	4.62	5.43
May	4.52	4.37	3.16	1997	26	9.79	1996	.83	1994	11.3	7.8	3.2	1.1	1.35	1.78	2.43	2.98	3.52	4.08	4.70	5.43	6.37	7.84	9.21
Jun	3.73	3.77	3.75	1989	25	7.80	1983	.83	1974	8.5	5.8	2.3	1.3	1.11	1.46	1.99	2.45	2.90	3.37	3.88	4.48	5.26	6.48	7.62
Jul	3.49	3.12	5.09	1985	19	11.69	1993	.13	1983	7.8	5.6	2.2	.9	.45	.73	1.23	1.71	2.23	2.79	3.45	4.27	5.36	7.17	8.91
Aug	3.34	2.82	4.61	1977	31	9.32	1977	.39	1976	7.7	5.3	2.1	1.0	.47	.74	1.22	1.69	2.17	2.71	3.32	4.08	5.10	6.76	8.36
Sep	2.70	2.45	3.71	1989	9	9.16	1973	.57	1979	7.0	5.0	1.5	.5	.43	.66	1.05	1.43	1.81	2.23	2.71	3.30	4.09	5.37	6.59
Oct	2.02	1.97	4.13	1980	16	5.04	1980	.00	1988	6.2	3.8	1.2	.4	.09	.27	.57	.86	1.18	1.54	1.96	2.49	3.21	4.40	5.57
Nov	1.57	1.41	2.25	1983	3	4.93	1983	.00	1980	5.9	3.4	1.0	.3	.05	.17	.39	.61	.86	1.15	1.49	1.92	2.52	3.51	4.50
Dec	.71	.52	1.35	1984	16	2.39	1984	.02	1976	4.3	1.9	.3	.1	.06	.10	.20	.29	.40	.53	.68	.87	1.13	1.57	2.00
Ann	27.98	27.33	5.09	Jul 1985	19	11.69	Jul 1993	.00+	Oct 1988	84.1	52.7	17.4	6.4	18.78	20.53	22.78	24.51	26.06	27.56	29.12	30.85	32.96	36.04	38.72

+ 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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Station: SEWARD, NE

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Climate Division: NE 6

NWS Call Sign:

Elevation: 1,440 Feet

Lat: 40°54N

Lon: 97°05W

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	5.1	4.2	2	2	8.0	1971	3	16.6	1993	15	1974	11	9	1974	3.6	1.9	.5	.1	.0	15.6	8.9	5.2	1.0
Feb	4.9	3.7	2	1	9.0	1975	4	14.7	1978	14	1975	17	10	1975	3.1	1.8	.5	.2	.0	11.8	6.5	4.0	1.0
Mar	4.5	4.4	1	#	8.0	1977	20	12.6	1998	8	1987	30	2	1998	2.5	1.6	.6	.2	.0	5.3	2.9	1.1	.0
Apr	1.2	.2	#	#	6.5	1992	21	6.5	1992	6	1992	21	1	1997	.8	.6	.1	@	.0	.7	.3	.1	.0
May	#	.0	0	0	#	1994	1	#	1994	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	1.0	1985	30	1.0	1985	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Oct	.5	.0	#	0	10.3	1997	26	10.3	1997	10	1997	26	1	1997	.1	.1	@	@	@	.2	.1	.1	@
Nov	3.1	1.8	#	#	6.0	1972	14	9.8	1983	7	1983	30	2	1991	2.4	.9	.4	.1	.0	3.2	1.2	.5	.0
Dec	4.6	3.2	1	1	10.0	1973	19	19.6	1973	11	1983	28	7	1983	3.2	1.6	.5	.2	@	9.0	4.3	2.1	.5
Ann	23.9	17.5	N/A	N/A	10.3	Oct 1997	26	19.6	Dec 1973	15	Jan 1974	11	10	Feb 1975	15.7	8.5	2.6	.8	@	45.8	24.2	13.1	2.5

+ 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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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	5/06	5/04	5/01	4/28	4/26	4/23	4/18
32	5/08	5/02	4/28	4/24	4/21	4/18	4/14	4/10	4/05
28	4/26	4/22	4/18	4/16	4/13	4/10	4/08	4/04	3/31
24	4/11	4/08	4/05	4/03	4/01	3/30	3/28	3/25	3/22
20	4/05	3/31	3/27	3/24	3/21	3/18	3/15	3/11	3/06
16	3/29	3/23	3/18	3/14	3/11	3/07	3/04	2/27	2/21
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	9/18	9/22	9/25	9/28	10/01	10/03	10/06	10/09	10/14
32	9/27	10/02	10/05	10/08	10/11	10/14	10/17	10/21	10/26
28	10/05	10/10	10/14	10/18	10/21	10/24	10/27	10/31	11/05
24	10/12	10/19	10/24	10/28	11/01	11/05	11/09	11/14	11/21
20	10/20	10/28	11/02	11/06	11/11	11/15	11/20	11/25	12/02
16	10/30	11/06	11/11	11/15	11/19	11/23	11/28	12/03	12/10
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	171	164	160	156	152	148	144	140	133
32	192	185	180	176	172	168	164	159	153
28	208	202	197	194	190	187	183	178	172
24	236	228	222	217	213	209	204	198	191
20	263	253	246	240	234	228	222	215	205
16	280	271	264	258	253	247	241	235	225

\* 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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**Elevation: 1,440 Feet    Lat: 40° 54N    Lon: 97° 05W**

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	1259	974	751	374	131	9	0	10	53	303	773	1142	5779
60	1104	840	597	246	61	1	0	1	13	176	624	987	4650
57	1011	761	511	181	34	0	0	0	4	116	539	894	4051
55	951	709	454	144	21	0	0	0	1	85	484	832	3681
50	806	581	320	71	5	0	0	0	0	34	352	687	2856
32	340	227	47	0	0	0	0	0	0	0	61	243	918

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	105	177	320	625	973	1245	1422	1357	1062	727	278	124	8415
55	2	15	13	79	281	555	709	644	374	98	10	0	2780
57	1	12	9	56	232	495	647	582	316	67	5	0	2422
60	0	6	1	31	166	406	554	490	236	34	1	0	1925
65	0	0	0	9	81	263	399	344	125	6	0	0	1227
70	0	0	0	2	30	143	254	214	53	1	0	0	697

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	5	46	155	402	728	1006	1171	1104	810	476	114	16	5	51	206	608	1336	2342	3513	4617	5427	5903	6017	6033
45	0	15	86	274	573	856	1016	949	661	334	54	3	0	15	101	375	948	1804	2820	3769	4430	4764	4818	4821
50	0	4	42	167	423	706	861	794	513	213	17	0	0	4	46	213	636	1342	2203	2997	3510	3723	3740	3740
55	0	0	13	93	281	557	706	639	372	116	4	0	0	0	13	106	387	944	1650	2289	2661	2777	2781	2781
60	0	0	3	40	161	409	551	484	245	51	0	0	0	0	3	43	204	613	1164	1648	1893	1944	1944	1944
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	38	113	252	450	670	794	740	522	292	75	16	13	51	164	416	866	1536	2330	3070	3592	3884	3959	3975

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)