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: TEKAMAH, NE **COOP ID: 258480**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 1,039 Feet** **Lat: 41˚46N** **Lon: 96˚13W**

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	30.1	10.0	20.1	69	1981	25	31.5	1992	-24	1974	12	6.4	1979	1395	0	.0	.0	2.4	16.0	30.4	7.6
Feb	36.2	16.2	26.2	75+	1999	11	36.3	1987	-25	1979	1	10.6	1979	1086	0	.0	.0	6.0	10.8	26.3	4.4
Mar	48.5	26.8	37.7	90	1986	30	43.9	2000	-19	1960	5	30.0	1984	847	0	.0	@	14.5	3.7	21.4	.7
Apr	62.1	38.6	50.4	96+	1989	28	57.9	1981	5	1975	3	43.5	1983	447	7	.0	.7	24.8	.2	7.3	.0
May	73.7	50.5	62.1	103	1967	25	68.3	1977	25	1967	2	56.5	1997	165	75	.0	1.5	30.7	.0	.4	.0
Jun	83.8	60.2	72.0	107	1988	22	76.9	1988	39+	1982	1	66.9	1982	16	224	.7	8.3	30.0	.0	.0	.0
Jul	87.3	64.4	75.9	110	1995	13	81.2	1974	43	1972	5	70.6	1992	1	337	1.4	12.4	31.0	.0	.0	.0
Aug	84.9	61.9	73.4	106	1964	2	80.0	1983	39	1967	28	68.1	1992	13	273	.6	9.1	31.0	.0	.0	.0
Sep	77.6	51.9	64.8	103	2000	3	71.4	1998	26	1984	29	59.0	1993	87	80	.1	4.0	29.8	.0	.4	.0
Oct	65.4	39.7	52.6	95+	1963	5	57.2+	1975	12	1972	19	47.3	1987	389	3	.0	.3	28.6	.1	6.3	.0
Nov	46.7	26.9	36.8	82	1999	9	45.8	1999	-11	1976	29	28.2	1991	846	0	.0	.0	12.8	4.0	21.7	.5
Dec	33.2	14.8	24.0	70	1998	2	31.0	1979	-26	1989	23	6.8	1983	1272	0	.0	.0	3.4	13.2	30.1	4.1
Ann	60.8	38.5	49.7	110	Jul 1995	13	81.2	Jul 1974	-26	Dec 1989	23	6.4	Jan 1979	6564	999	2.8	36.3	245.0	48.0	144.3	17.3

\+ 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/normals/usnormals.html

(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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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.76	.73	1.18	1949	4	2.57	1975	.00+	1987
Feb	.71	.58	1.25	1971	22	3.10	1971	.00+	1996
Mar	2.22	1.84	2.56	1987	23	6.79	1987	.00	1988
Apr	3.08	2.33	3.12	1954	21	8.40	1999	.41	1990
May	4.22	4.00	2.67	2001	31	7.75	1974	1.29	2000
Jun	3.86	3.51	3.22	1990	15	8.46	1998	.75	1988
Jul	3.47	3.23	2.94	1958	30	8.45	1993	.90	1976
Aug	3.51	3.02	8.25	1999	7	9.16	1999	.42	1973
Sep	3.28	3.48	3.76	1989	7	7.72	1989	.17	1980
Oct	2.32	1.79	2.92	1979	31	7.00	1984	.00	1988
Nov	1.58	1.40	2.02	1984	10	3.66	1991	.00+	1989
Dec	.83	.84	2.16	1984	16	2.66	1984	.10	1995
Ann	29.84	30.78	8.25	Aug 1999	7	9.16	Aug 1999	.00+	Feb 1996

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.7	2.1	.4	@
Feb	3.7	2.2	.2	.1
Mar	6.7	4.5	1.6	.5
Apr	9.1	6.5	2.2	.7
May	10.2	7.7	3.2	1.1
Jun	8.9	6.8	2.6	1.3
Jul	8.3	6.2	2.5	.9
Aug	7.3	5.1	2.2	.9
Sep	6.4	4.8	2.1	1.0
Oct	5.7	3.8	1.7	.7
Nov	5.1	3.6	1.0	.2
Dec	4.0	2.3	.4	.1
Ann	79.1	55.6	20.1	7.5

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	.00	.26	.39	.52	.65	.79	.96	1.18	1.54	1.88
Feb	.00	.11	.26	.37	.48	.60	.73	.89	1.10	1.44	1.76
Mar	.14	.36	.71	1.03	1.38	1.76	2.20	2.74	3.47	4.68	5.84
Apr	.60	.88	1.33	1.75	2.17	2.62	3.14	3.75	4.57	5.89	7.14
May	1.60	1.99	2.55	3.02	3.47	3.92	4.42	4.99	5.72	6.83	7.86
Jun	1.08	1.45	2.00	2.49	2.96	3.45	4.00	4.64	5.48	6.79	8.02
Jul	1.10	1.43	1.92	2.34	2.74	3.16	3.61	4.15	4.83	5.91	6.90
Aug	.56	.87	1.37	1.86	2.36	2.90	3.52	4.28	5.30	6.94	8.52
Sep	.48	.75	1.23	1.68	2.16	2.68	3.28	4.01	5.00	6.62	8.17
Oct	.10	.30	.65	.99	1.35	1.76	2.25	2.85	3.68	5.05	6.39
Nov	.00	.21	.50	.76	1.01	1.29	1.60	1.97	2.48	3.30	4.09
Dec	.18	.26	.38	.49	.60	.72	.85	1.01	1.22	1.56	1.88
Ann	18.95	20.96	23.60	25.63	27.46	29.24	31.10	33.18	35.72	39.46	42.73

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	6.7	6.0	2	1
Feb	6.3	4.9	2	#
Mar	4.7	4.0	#	#
Apr	1.3	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.5	.0	#	0
Nov	2.3	1.5	#	0
Dec	5.0	3.5	1	#
Ann	26.8	19.9	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	12.0	1975	11	26.5	1975	15	1979	31	13	1979
Feb	12.0	1971	22	18.0	1999	16	1979	28	16	1979
Mar	8.0	1995	7	14.5	1984	12	1979	5	3	1979
Apr	7.0	1992	21	12.0	1997	9	1997	12	1	1997
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	4.0	1980	28	4.0+	1991	3	1997	26	#+	1997
Nov	8.0	1983	27	10.9	1983	6	1983	27	#+	2000
Dec	9.0	1974	15	11.0	1976	12	2000	24	7	2000
Ann	12.0+	Jan 1975	11	26.5	Jan 1975	16	Feb 1979	28	16	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.7	2.0	.8	.3	@
Feb	2.5	2.0	.8	.2	.1
Mar	2.0	1.5	.6	.3	.0
Apr	.4	.3	.2	.1	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.2	.1	.1	.0	.0
Nov	1.5	1.1	.3	.1	.0
Dec	2.6	1.8	.7	.2	.0
Ann	11.9	8.8	3.5	1.2	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	5.0	3.5	.7	.0
Feb	3.6	2.6	1.9	.4
Mar	2.5	1.5	.8	.1
Apr	.3	.2	.1	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	@	.0	.0
Nov	.6	.1	.1	.0
Dec	5.6	1.8	.2	.0
Ann	17.7	9.7	3.8	.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

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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	5/17	5/12	5/08	5/04	5/01	4/28	4/25	4/21	4/15
32	5/07	5/02	4/28	4/25	4/23	4/20	4/17	4/14	4/09
28	4/23	4/19	4/16	4/13	4/11	4/08	4/05	4/02	3/29
24	4/14	4/09	4/06	4/03	4/01	3/29	3/26	3/23	3/19
20	4/08	4/03	3/30	3/26	3/23	3/20	3/16	3/12	3/07
16	3/29	3/24	3/21	3/18	3/15	3/12	3/09	3/05	3/01

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	9/20	9/23	9/26	9/28	9/30	10/03	10/06	10/10
32	9/22	9/28	10/02	10/05	10/08	10/12	10/15	10/19	10/24
28	10/01	10/06	10/10	10/13	10/17	10/20	10/23	10/27	11/02
24	10/15	10/20	10/24	10/27	10/30	11/02	11/06	11/09	11/15
20	10/22	10/28	11/01	11/04	11/07	11/10	11/14	11/18	11/23
16	11/02	11/08	11/12	11/16	11/20	11/23	11/27	12/01	12/07

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	163	157	153	149	145	141	135	128
32	187	181	176	172	168	164	160	155	149
28	210	202	197	193	188	184	180	174	167
24	235	227	221	216	212	207	202	197	189
20	250	243	237	233	229	224	220	214	207
16	271	264	258	253	249	245	240	234	227

***** 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	1395	1086	847	447	165	16	1	13	87	389	846	1272	6564
60	1240	946	692	314	87	3	0	2	29	250	696	1117	5376
57	1147	862	601	243	54	1	0	0	12	179	608	1024	4731
55	1085	814	546	201	37	0	0	0	5	138	551	962	4339
50	934	683	404	114	12	0	0	0	0	64	416	813	3440
32	445	288	78	2	0	0	0	0	0	0	88	342	1243

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	74	125	253	552	933	1198	1360	1283	983	637	232	93	7723
55	0	7	9	60	257	508	647	570	299	61	6	0	2424
57	0	0	2	42	212	449	585	508	245	40	2	0	2085
60	0	0	0	23	152	361	492	417	172	18	0	0	1635
65	0	0	0	7	75	224	337	273	80	3	0	0	999
70	0	0	0	1	29	113	197	152	28	0	0	0	520

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	2	26	123	354	705	975	1128	1054	762	420	92	6	2	28	151	505	1210	2185	3313	4367	5129	5549	5641	5647
45	0	7	65	236	551	825	973	899	614	284	43	1	0	7	72	308	859	1684	2657	3556	4170	4454	4497	4498
50	0	0	27	141	401	675	818	744	467	170	17	0	0	0	27	168	569	1244	2062	2806	3273	3443	3460	3460
55	0	0	7	79	264	527	663	589	329	88	2	0	0	0	7	86	350	877	1540	2129	2458	2546	2548	2548
60	0	0	2	37	153	380	508	434	206	37	0	0	0	0	2	39	192	572	1080	1514	1720	1757	1757	1757
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	27	86	227	436	644	760	704	488	271	69	7	3	30	116	343	779	1423	2183	2887	3375	3646	3715	3722

(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