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: OBERLIN, KS **COOP ID: 145906**

Climate Division: KS 1 **NWS Call Sign:** **Elevation: 2,605 Feet** **Lat: 39˚50N** **Lon: 100˚32W**

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	40.0	13.0	26.5	78	1953	12	38.3	1986	-28	1943	19	14.0	1979	1193	0	.0	.0	9.2	8.9	30.7	4.0
Feb	46.0	17.2	31.6	85	1970	17	39.8	1999	-19+	1982	5	19.0	1978	934	0	.0	.0	13.0	5.7	26.8	2.4
Mar	54.7	24.8	39.8	93	1943	30	48.2	1986	-25	1948	11	32.2	1996	783	0	.0	.1	20.4	2.2	23.7	.8
Apr	64.9	35.1	50.0	97	1989	23	56.7	1981	10+	1994	6	44.6	1983	452	2	.0	.8	26.1	.2	11.0	.0
May	74.2	46.9	60.6	103	2000	30	65.0	1977	22	1966	1	53.1	1995	182	43	.1	1.9	30.7	.0	1.4	.0
Jun	85.8	56.8	71.3	110	1990	29	77.5	1988	34	1951	4	64.8	1982	31	221	1.9	11.5	29.9	.0	.0	.0
Jul	91.5	62.7	77.1	111+	1954	11	82.6	1980	41+	1990	14	71.8	1992	1	375	5.6	20.3	31.0	.0	.0	.0
Aug	89.3	60.4	74.9	109	1969	12	81.6+	2000	40	1949	31	68.2	1992	11	317	3.0	17.9	31.0	.0	.0	.0
Sep	81.0	49.7	65.4	107	1939	2	71.5	1998	22	1945	29	58.6	1993	101	112	.7	8.5	29.6	.0	1.2	.0
Oct	69.2	36.1	52.7	99+	1963	2	56.6	1979	9	1997	27	47.8	1976	385	2	.0	1.1	28.9	.2	8.9	.0
Nov	51.4	23.6	37.5	88	1980	6	45.9	1999	-19	1940	14	28.9	2000	825	0	.0	.0	17.4	2.7	25.0	.4
Dec	42.5	15.6	29.1	83	1964	23	36.6	1980	-31	1989	22	13.7	1983	1115	0	.0	.0	10.5	6.2	30.2	2.2
Ann	65.9	36.8	51.4	111+	Jul 1954	11	82.6	Jul 1980	-31	Dec 1989	22	13.7	Dec 1983	6013	1072	11.3	62.1	277.7	26.1	158.9	9.8

\+ 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: 1939-2001

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

Issue Date: February 2004

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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	.49	.31	1.43	1990	20	1.49	1992	.00+	1987
Feb	.63	.37	1.90	1993	11	3.20	1993	.00	1979
Mar	1.65	1.19	1.72	1984	18	5.60	1987	.05	1994
Apr	2.20	1.92	2.14	1984	20	6.22	1984	.12	1989
May	3.65	3.30	2.92	1953	28	7.88	1981	.53	1992
Jun	3.30	2.64	4.73	1965	13	9.64	1972	.44	1990
Jul	3.75	3.56	5.17	1979	16	9.06	1979	.61	1997
Aug	2.74	2.92	3.03	1975	13	7.17	1993	.40	1976
Sep	1.50	1.36	2.75	1970	15	6.03	1973	.00	1974
Oct	1.17	.93	3.05	2000	29	4.00	1984	.03+	1988
Nov	1.03	.74	2.42	1975	19	3.41	1975	.00+	1989
Dec	.48	.33	1.30	1982	27	2.50	1982	.00+	2000
Ann	22.59	23.42	5.17	Jul 1979	16	9.64	Jun 1972	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.8	1.5	.2	@
Feb	3.1	1.7	.3	.1
Mar	5.5	3.7	.9	.3
Apr	6.3	4.5	1.6	.4
May	9.3	6.9	2.6	1.1
Jun	7.8	5.4	1.8	.9
Jul	8.1	6.0	2.6	1.1
Aug	7.3	4.9	1.8	.8
Sep	5.3	3.5	1.1	.3
Oct	4.6	2.4	.8	.2
Nov	3.8	2.4	.7	.2
Dec	2.8	1.3	.2	.1
Ann	66.7	44.2	14.6	5.5

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	.03	.11	.18	.26	.35	.46	.60	.79	1.10	1.41
Feb	.01	.03	.10	.18	.28	.40	.55	.75	1.04	1.53	2.04
Mar	.09	.18	.37	.59	.85	1.15	1.52	1.99	2.66	3.80	4.94
Apr	.39	.59	.91	1.21	1.52	1.85	2.22	2.68	3.29	4.27	5.21
May	1.02	1.37	1.89	2.35	2.80	3.26	3.78	4.39	5.19	6.44	7.60
Jun	.42	.69	1.15	1.61	2.10	2.64	3.26	4.03	5.07	6.78	8.43
Jul	.81	1.16	1.71	2.21	2.71	3.24	3.84	4.56	5.50	7.01	8.44
Aug	.57	.82	1.22	1.59	1.96	2.35	2.80	3.33	4.04	5.17	6.25
Sep	.12	.28	.52	.74	.97	1.22	1.50	1.86	2.33	3.09	3.83
Oct	.05	.11	.24	.39	.57	.79	1.05	1.40	1.90	2.76	3.62
Nov	.00	.09	.27	.43	.60	.79	1.01	1.28	1.64	2.25	2.84
Dec	.00	.01	.06	.12	.19	.29	.41	.57	.80	1.21	1.62
Ann	15.83	17.13	18.80	20.07	21.20	22.30	23.43	24.69	26.21	28.42	30.34

\+ 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: 1939-2001
(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	4.8	2	#
Feb	5.9	3.0	1	#
Mar	6.8	3.5	1	#
Apr	2.9	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.3	.0	0	0
Oct	1.2	.0	#	0
Nov	4.6	3.5	#	0
Dec	5.5	2.0	1	#
Ann	33.9	16.8	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	12.5	1990	20	21.3	1980	15	1974	11	6	1993
Feb	14.5	1980	7	18.5	1993	10	1993	17	7	1994
Mar	19.0	1984	18	29.0	1987	19	1984	19	19	1984
Apr	9.0	1973	8	16.0	1984	9	1973	8	1	1987
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	8.0	1985	28	8.0	1985	0	0	0	0	0
Oct	17.0	1997	26	17.0	1997	4	1991	31	#+	1995
Nov	14.0	1973	21	17.0	1983	12	2000	13	2+	2000
Dec	13.0	1984	14	27.0	1973	10	1983	2	5	1983
Ann	19.0	Mar 1984	18	29.0	Mar 1987	19	Mar 1984	19	19	Mar 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.4	1.7	.9	.5	@
Feb	1.9	1.5	.6	.2	@
Mar	2.4	2.1	1.0	.4	.1
Apr	.8	.8	.4	.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	.1	.1	@	@	.0
Oct	.2	.2	.1	@	@
Nov	1.3	1.2	.6	.3	.1
Dec	2.0	1.4	.6	.2	.1
Ann	11.1	9.0	4.2	1.7	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.4	3.0	1.7	.7
Feb	2.8	1.5	1.2	.1
Mar	2.2	1.1	.5	.3
Apr	.6	.3	.2	.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	@	@	.0	.0
Nov	1.6	.9	.7	.1
Dec	3.1	1.4	.7	.0
Ann	16.7	8.2	5.0	1.2

+ 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	5/28	5/23	5/19	5/16	5/13	5/10	5/07	5/03	4/28
32	5/16	5/12	5/09	5/06	5/03	5/01	4/28	4/25	4/20
28	5/10	5/05	4/30	4/27	4/24	4/20	4/17	4/13	4/07
24	4/26	4/21	4/17	4/13	4/10	4/07	4/04	3/31	3/25
20	4/13	4/08	4/04	4/01	3/29	3/26	3/23	3/20	3/15
16	4/10	4/02	3/28	3/23	3/18	3/14	3/09	3/03	2/23

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	9/14	9/18	9/21	9/23	9/26	9/28	9/30	10/03	10/07
32	9/16	9/21	9/24	9/28	10/01	10/04	10/07	10/10	10/16
28	9/30	10/04	10/08	10/11	10/14	10/16	10/19	10/23	10/27
24	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/02	11/07
20	10/20	10/26	10/30	11/02	11/05	11/08	11/11	11/15	11/21
16	10/26	11/01	11/06	11/10	11/14	11/17	11/21	11/26	12/02

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	155	148	143	139	135	131	127	122	115
32	169	162	157	153	150	146	142	137	130
28	195	187	181	177	172	168	163	157	150
24	216	209	204	199	195	191	186	181	173
20	244	236	230	225	220	215	210	204	196
16	268	258	251	245	240	234	228	221	211

***** 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	1193	934	783	452	182	31	1	11	101	385	825	1115	6013
60	1038	794	628	313	89	9	0	2	42	240	675	960	4790
57	945	714	536	237	52	3	0	1	21	165	585	867	4126
55	883	663	476	192	34	1	0	0	12	122	529	805	3717
50	732	532	334	101	8	0	0	0	2	48	391	656	2804
32	265	174	35	0	0	0	0	0	0	0	69	212	755

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	94	164	274	540	884	1180	1397	1329	1000	640	233	120	7855
55	0	8	2	42	205	491	684	616	323	49	4	0	2424
57	0	4	0	27	161	433	622	554	271	29	0	0	2101
60	0	0	0	12	105	348	529	463	202	12	0	0	1671
65	0	0	0	2	43	221	375	317	112	2	0	0	1072
70	0	0	0	0	12	122	230	189	52	0	0	0	605

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	18	57	155	358	664	962	1169	1107	787	436	102	26	18	75	230	588	1252	2214	3383	4490	5277	5713	5815	5841
45	2	18	82	234	509	812	1014	952	641	299	51	3	2	20	102	336	845	1657	2671	3623	4264	4563	4614	4617
50	0	2	36	142	360	664	859	797	497	182	14	0	0	2	38	180	540	1204	2063	2860	3357	3539	3553	3553
55	0	0	8	69	231	514	704	642	359	96	2	0	0	0	8	77	308	822	1526	2168	2527	2623	2625	2625
60	0	0	1	29	125	370	549	488	239	35	0	0	0	0	1	30	155	525	1074	1562	1801	1836	1836	1836
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	36	80	152	261	416	616	751	708	505	325	108	45	36	116	268	529	945	1561	2312	3020	3525	3850	3958	4003

(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.
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