

Climatography of the United States

No. 20

1971-2000

Station: WASHINGTON, KS

COOP ID: 148578

Climate Division: KS 2

NWS Call Sign:

Elevation: 1,304 Feet Lat: 39°49N

Lon: 97°03W

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	38.0	16.4	27.2	75	1990	10	37.5	1986	-24	1959	4	14.1	1979	1172	0	.0	.0	6.9	10.1	29.1	4.2
Feb	45.1	21.5	33.3	85	1972	29	42.8	1976	-23	1971	8	19.0	1979	889	0	.0	.0	11.2	6.4	23.7	2.5
Mar	56.6	31.5	44.1	88	1968	30	50.7	1986	-18	1978	4	36.8	1975	649	0	.0	.0	20.9	1.4	17.6	.3
Apr	68.1	41.9	55.0	98+	1989	27	63.7	1981	5	1975	3	48.3	1983	315	15	.0	.8	27.9	@	6.0	.0
May	77.4	52.7	65.1	103	1967	25	69.9	1977	28+	1994	1	59.4	1995	99	100	.0	1.2	31.0	.0	.3	.0
Jun	87.4	62.4	74.9	107	1980	27	79.8	1988	40	1983	1	69.7	1992	6	303	.9	11.0	30.0	.0	.0	.0
Jul	92.1	67.4	79.8	112	1954	12	86.1	1980	44+	1972	5	75.4	1994	0	457	3.9	19.2	31.0	.0	.0	.0
Aug	89.9	65.3	77.6	109	1956	16	84.5	1983	43+	1956	21	71.9	1992	4	395	2.5	16.6	31.0	.0	.0	.0
Sep	81.9	56.0	69.0	107	2000	2	75.0	1998	26	1984	29	63.2	1993	44	162	.4	7.3	30.0	.0	.2	.0
Oct	70.4	44.0	57.2	97	1963	4	60.6	2000	13	1993	31	51.8	1976	253	12	.0	.5	29.8	@	4.3	.0
Nov	52.7	30.7	41.7	82+	1999	13	50.6	1999	-6	1976	28	34.4	1985	699	0	.0	.0	18.8	1.6	17.9	.1
Dec	41.1	20.7	30.9	72	1964	23	36.5	1979	-29	1989	23	12.3	1983	1058	0	.0	.0	8.1	6.4	27.9	2.1
Ann	66.7	42.5	54.7	112	Jul 1954	12	86.1	Jul 1980	-29	Dec 1989	23	12.3	Dec 1983	5188	1444	7.7	56.6	276.6	25.9	127.0	9.2

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1952-2001

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

Climatology 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: WASHINGTON, KS

COOP ID: 148578

Climate Division: KS 2

NWS Call Sign:

Elevation: 1,304 Feet Lat: 39°49N

Lon: 97°03W

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	.76	.69	.82	1960	15	2.23	1993	.00	1986	4.7	2.6	.4	.0	.04	.11	.23	.34	.46	.59	.75	.94	1.20	1.63	2.05
Feb	.84	.76	1.65	2001	9	2.28	1997	.00	1996	4.2	2.5	.5	.0	.06	.14	.27	.40	.53	.67	.83	1.04	1.31	1.76	2.19
Mar	2.48	2.08	1.92	1987	24	8.08	1987	.15	1988	6.8	4.7	1.8	.8	.20	.37	.69	1.04	1.41	1.85	2.37	3.02	3.92	5.44	6.93
Apr	3.05	2.71	6.42	1991	13	7.56	1991	.26	1989	8.2	6.1	2.1	.5	.70	.98	1.43	1.83	2.23	2.65	3.13	3.69	4.44	5.62	6.74
May	4.62	4.32	3.15	1971	11	9.97	1995	1.50	1992	10.6	7.9	3.2	1.1	1.44	1.88	2.53	3.09	3.63	4.19	4.81	5.53	6.47	7.93	9.27
Jun	4.79	4.56	4.31	1983	18	10.67	1984	.92	1971	8.9	6.7	3.3	1.5	1.21	1.67	2.36	2.98	3.59	4.23	4.94	5.79	6.89	8.64	10.28
Jul	4.40	3.65	3.57	1992	25	20.12	1993	.10	1974	7.8	5.9	3.0	1.5	.29	.56	1.11	1.71	2.38	3.17	4.12	5.33	7.01	9.87	12.70
Aug	3.75	2.71	5.28	1972	25	11.05	1977	.00	1971	7.6	5.8	2.7	1.1	.41	.86	1.49	2.03	2.58	3.17	3.83	4.63	5.69	7.40	9.02
Sep	3.37	2.85	4.90	1986	29	11.32	1973	.68	1994	6.8	5.2	2.0	1.0	.72	1.03	1.52	1.97	2.42	2.90	3.44	4.10	4.95	6.32	7.62
Oct	2.14	1.98	3.90	1973	11	4.83	1973	.02	1975	5.9	4.1	1.5	.4	.18	.33	.61	.90	1.23	1.60	2.05	2.60	3.37	4.66	5.92
Nov	1.82	1.40	2.55	1998	2	5.54	1998	.00+	1989	5.4	3.8	1.4	.3	.00	.24	.59	.88	1.17	1.49	1.85	2.27	2.86	3.80	4.71
Dec	1.00	.78	2.19	1984	16	3.69	1984	.00	1977	4.2	2.3	.5	.1	.03	.10	.23	.37	.53	.72	.94	1.22	1.61	2.28	2.93
Ann	33.02	33.35	6.42	Apr 1991	13	20.12	Jul 1993	.00+	Feb 1996	81.1	57.6	22.4	8.3	20.45	22.76	25.78	28.12	30.23	32.30	34.46	36.88	39.84	44.21	48.04

+ 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: 1952-2001

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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: WASHINGTON, KS

COOP ID: 148578

Climate Division: KS 2

NWS Call Sign:

Elevation: 1,304 Feet

Lat: 39°49N

Lon: 97°03W

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	6.8	5.5	2	1	13.0	1979	13	21.7	1979	17	1979	14	8	1979	2.9	1.9	.8	.4	.1	7.1	2.5	.8	.1
Feb	5.2	4.0	1	#	12.0	1971	22	13.0	1983	20	1983	2	6	1983	1.9	1.4	.7	.3	@	6.2	3.4	1.3	.4
Mar	3.1	1.0	#	#	8.0	1975	10	14.5	1984	10	1998	9	2	1998	1.3	.9	.4	.3	.0	1.5	.7	.5	.0
Apr	.2	.0	#	0	4.5	1997	11	4.5+	1997	8	1997	12	1	1997	.2	.2	.1	.0	.0	.1	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.1	.0	#	0	1.0	1979	22	1.0+	1991	2	1997	27	#+	1997	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	1.1	.1	#	#	7.0	1991	1	7.5	1975	8	1991	2	2	1991	.7	.4	.1	.1	.0	1.2	.6	.3	.0
Dec	4.3	3.3	1	#	8.0	1983	21	15.0	1997	18	1983	31	7	1983	2.1	1.7	.4	.2	.0	4.7	2.3	1.0	.0
Ann	20.8	13.9	N/A	N/A	13.0	Jan 1979	13	21.7	Jan 1979	20	Feb 1983	2	8	Jan 1979	9.2	6.6	2.5	1.3	.1	20.8	9.5	3.9	.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:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Climatography of the United States

No. 20 1971-2000

Station: WASHINGTON, KS

COOP ID: 148578

Climate Division: KS 2

NWS Call Sign:

Elevation: 1,304 Feet

Lat: 39° 49N

Lon: 97° 03W

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	5/05	5/02	4/29	4/26	4/22	4/17
32	5/08	5/03	4/29	4/26	4/23	4/21	4/17	4/14	4/09
28	4/24	4/19	4/16	4/13	4/10	4/07	4/04	4/01	3/27
24	4/11	4/07	4/05	4/02	3/31	3/29	3/27	3/24	3/20
20	4/06	3/31	3/27	3/24	3/21	3/17	3/14	3/10	3/04
16	3/29	3/21	3/16	3/12	3/07	3/03	2/27	2/21	2/14
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	9/27	9/29	10/02	10/04	10/07	10/11
32	9/25	9/30	10/04	10/07	10/11	10/14	10/17	10/21	10/26
28	10/10	10/15	10/18	10/21	10/24	10/27	10/29	11/02	11/07
24	10/18	10/23	10/27	10/30	11/03	11/06	11/09	11/13	11/18
20	10/26	11/02	11/07	11/11	11/14	11/18	11/22	11/27	12/04
16	11/06	11/12	11/16	11/20	11/23	11/27	12/01	12/05	12/11
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	169	163	158	154	150	146	141	136	130
32	187	181	177	173	169	166	162	157	151
28	215	209	204	200	196	192	188	183	177
24	235	228	224	220	216	212	208	203	197
20	264	255	249	243	238	233	228	221	212
16	288	279	272	266	260	255	249	242	232

* 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:
www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: WASHINGTON, KS

COOP ID: 148578

Climate Division: KS 2 NWS Call Sign: Elevation: 1,304 Feet Lat: 39° 49N Lon: 97° 03W

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	1172	889	649	315	99	6	0	4	44	253	699	1058	5188
60	1017	760	501	197	41	1	0	0	12	135	551	903	4118
57	926	681	415	140	20	0	0	0	4	83	468	810	3547
55	865	630	360	107	12	0	0	0	1	57	413	751	3196
50	721	507	239	47	2	0	0	0	0	19	287	608	2430
32	277	183	25	0	0	0	0	0	0	0	38	196	719

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	129	218	399	690	1024	1287	1480	1414	1108	782	329	161	9021
55	3	21	21	108	323	597	767	701	419	127	14	4	3105
57	2	17	14	80	269	537	705	639	362	90	9	0	2724
60	0	11	7	47	197	447	612	546	280	49	2	0	2198
65	0	0	0	15	100	303	457	395	162	12	0	0	1444
70	0	0	0	3	39	176	307	255	79	2	0	0	861

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	17	77	213	454	773	1043	1228	1166	873	547	155	25	17	94	307	761	1534	2577	3805	4971	5844	6391	6546	6571
45	1	34	124	322	618	893	1073	1011	724	403	86	6	1	35	159	481	1099	1992	3065	4076	4800	5203	5289	5295
50	0	12	66	204	465	743	918	856	577	267	37	1	0	12	78	282	747	1490	2408	3264	3841	4108	4145	4146
55	0	2	31	118	317	593	763	701	429	158	15	0	0	2	33	151	468	1061	1824	2525	2954	3112	3127	3127
60	0	0	5	56	190	444	608	546	299	78	3	0	0	0	5	61	251	695	1303	1849	2148	2226	2229	2229
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	23	67	158	295	497	694	818	779	570	353	109	28	23	90	248	543	1040	1734	2552	3331	3901	4254	4363	4391

(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