

Climatology of the United States

No. 20

1971-2000

Station: LARNED, KS

COOP ID: 144530

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,995 Feet Lat: 38° 11N

Lon: 99° 06W

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	41.1	17.7	29.4	80	1951	26	39.0	1986	-22	1905	14	14.2	1979	1104	0	.0	.0	10.5	8.5	29.2	2.0
Feb	48.1	22.2	35.2	88	1981	20	43.9	1976	-24	1905	13	21.3	1978	836	0	.0	.0	13.8	5.0	22.9	1.3
Mar	57.3	30.6	44.0	97	1907	21	49.8	1986	-20	1948	11	37.5	1996	654	0	.0	.1	22.1	1.5	16.8	.1
Apr	67.6	40.4	54.0	101	1989	24	63.1	1981	10+	1936	6	48.4	1984	342	11	.1	.8	27.7	.1	4.9	.0
May	76.5	51.7	64.1	104+	1939	23	68.4	1977	16	1909	1	56.7	1995	113	84	.1	2.8	30.9	.0	.1	.0
Jun	87.3	61.6	74.5	111+	1980	27	79.0	1990	38+	1954	4	68.8	1992	12	296	2.4	13.4	30.0	.0	.0	.0
Jul	92.7	66.7	79.7	114+	1954	11	86.2	1980	44	1905	10	76.1	1972	0	456	5.9	21.9	31.0	.0	.0	.0
Aug	90.9	64.9	77.9	114	1936	13	85.4	1983	39	1906	27	71.6	1992	5	404	4.3	19.9	31.0	.0	.0	.0
Sep	82.5	56.1	69.3	108	1947	3	77.4	1998	26	1984	30	61.9	1974	47	177	1.3	9.6	29.7	.0	.3	.0
Oct	71.0	43.3	57.2	98+	1938	1	61.6	1979	14+	1917	23	51.4	1976	258	15	.0	1.2	29.7	@	3.0	.0
Nov	54.9	30.0	42.5	87+	1980	8	51.8	1999	-4+	1952	28	35.3	1985	677	0	.0	.0	19.8	1.2	17.7	.1
Dec	44.2	21.1	32.7	82+	1955	24	38.6	1999	-22	1989	23	16.0	1983	1003	0	.0	.0	12.0	5.3	28.1	1.1
Ann	67.8	42.2	55.0	114+	Jul 1954	11	86.2	Jul 1980	-24	Feb 1905	13	14.2	Jan 1979	5051	1443	14.1	69.7	288.2	21.6	123.0	4.6

+ 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: 1903-2001

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

057-A

**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: LARNED, KS

COOP ID: 144530

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,995 Feet Lat: 38°11N

Lon: 99°06W

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	.64	.52	1.33	1921	24	2.30	1999	.00+	1991	3.7	1.8	.3	.0	.00	.04	.13	.23	.33	.46	.60	.78	1.03	1.46	1.88
Feb	.81	.49	1.59	1911	17	3.43	1993	.01	1988	4.0	2.0	.5	.1	.02	.05	.12	.22	.34	.49	.69	.95	1.32	1.99	2.67
Mar	2.02	1.75	2.89	1987	23	7.70	1973	.00+	1997	6.3	4.1	1.3	.4	.00	.19	.54	.86	1.19	1.56	1.99	2.51	3.22	4.40	5.54
Apr	2.11	2.06	3.57	1924	29	6.62	1976	.00	1992	6.9	4.1	1.5	.5	.17	.41	.75	1.06	1.38	1.72	2.12	2.61	3.25	4.31	5.32
May	3.29	3.51	3.88	1929	11	7.38	1995	.71	1984	9.7	5.7	2.5	.8	.90	1.22	1.69	2.11	2.51	2.94	3.41	3.97	4.69	5.83	6.89
Jun	3.54	3.26	7.06	1981	15	10.00	1981	.51	1973	8.7	5.7	2.2	.9	.70	1.02	1.54	2.02	2.50	3.02	3.60	4.31	5.24	6.73	8.15
Jul	3.71	3.27	7.20	1986	1	11.31	1993	.12	1984	7.5	5.1	2.4	1.1	.41	.69	1.21	1.73	2.28	2.90	3.63	4.53	5.77	7.81	9.79
Aug	2.97	2.73	3.65	1984	7	5.79	1992	.21	2000	7.3	4.7	2.0	.7	.62	.90	1.33	1.73	2.13	2.55	3.03	3.61	4.37	5.59	6.74
Sep	2.00	1.47	3.55	1976	23	11.15	1973	.10	1980	5.8	3.8	1.5	.4	.20	.34	.61	.89	1.19	1.53	1.94	2.44	3.13	4.27	5.39
Oct	1.65	1.46	3.54	1968	16	4.45	1998	.00	1975	5.3	3.1	1.0	.5	.07	.20	.44	.68	.94	1.24	1.59	2.03	2.64	3.65	4.64
Nov	1.19	.73	3.15	1971	17	4.90	1971	.00+	1989	4.6	2.8	.7	.1	.00	.03	.17	.33	.52	.76	1.05	1.43	1.98	2.92	3.87
Dec	.82	.60	1.70	1973	4	3.43	1984	.00	1996	4.0	2.2	.4	.1	.02	.08	.19	.31	.44	.59	.77	1.00	1.32	1.85	2.38
Ann	24.75	24.69	7.20	Jul 1986	1	11.31	Jul 1993	.00+	Mar 1997	73.8	45.1	16.3	5.6	14.33	16.19	18.66	20.59	22.34	24.07	25.88	27.92	30.44	34.17	37.46

+ 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: 1903-2001

(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: LARNED, KS

COOP ID: 144530

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,995 Feet

Lat: 38° 11N

Lon: 99° 06W

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	5.2	5.2	1	#	11.0	2000	4	17.0	1993	15	1985	31	6	1979	2.7	1.3	.5	.2	@	8.3	4.6	2.8	.2
Feb	3.9	2.0	1	#	9.0	1980	8	16.1	1982	13	1971	24	6	1978	2.1	1.3	.6	.2	.0	5.0	3.2	2.5	.7
Mar	3.1	3.0	#	#	9.0	1980	24	12.8	1980	9	1980	24	4	1995	1.4	1.0	.4	.2	.0	1.7	.8	.3	.0
Apr	1.0	.0	#	0	6.0	1983	4	10.2	1983	7	1983	5	1	1983	.5	.3	.1	.1	.0	.5	.2	.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	#	.0	#	0	#	1995	21	#	1995	#	1995	21	#	1995	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.3	.0	#	0	8.0	1976	27	8.0	1976	7	1976	27	#+	1980	.1	.1	@	@	.0	.1	.1	@	.0
Nov	.8	.0	#	0	3.0	1975	26	5.7	1972	5	1985	30	1	1972	.5	.3	.1	.0	.0	.7	.2	.0	.0
Dec	3.3	2.6	#	#	5.5	1971	3	12.8	1973	6	1973	27	3	1983	1.6	.9	.3	.1	.0	2.6	1.4	.3	.0
Ann	17.6	12.8	N/A	N/A	11.0	Jan 2000	4	17.0	Jan 1993	15	Jan 1985	31	6+	Jan 1979	8.9	5.2	2.0	.8	@	18.9	10.5	6.0	.9

+ 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: LARNED, KS

COOP ID: 144530

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,995 Feet

Lat: 38° 11N

Lon: 99° 06W

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	5/11	5/07	5/03	4/30	4/28	4/25	4/22	4/18	4/14
32	4/29	4/25	4/22	4/19	4/17	4/14	4/12	4/09	4/05
28	4/18	4/14	4/11	4/08	4/05	4/03	3/31	3/28	3/24
24	4/09	4/05	4/01	3/30	3/27	3/24	3/22	3/18	3/14
20	4/02	3/27	3/23	3/19	3/15	3/11	3/08	3/03	2/25
16	3/29	3/21	3/15	3/10	3/05	2/28	2/23	2/17	2/09
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	9/25	9/30	10/04	10/07	10/09	10/12	10/15	10/19	10/24
32	10/01	10/07	10/11	10/14	10/17	10/20	10/24	10/27	11/02
28	10/12	10/18	10/22	10/26	10/29	11/02	11/05	11/10	11/16
24	10/25	10/30	11/02	11/05	11/08	11/11	11/14	11/18	11/23
20	11/01	11/08	11/13	11/17	11/21	11/24	11/29	12/03	12/10
16	11/07	11/15	11/20	11/25	11/30	12/04	12/09	12/15	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	177	172	168	164	160	156	151	145
32	202	196	191	186	183	179	174	170	163
28	229	221	216	211	206	202	197	191	183
24	247	239	234	230	225	221	217	211	204
20	278	268	261	255	250	244	238	231	222
16	302	290	282	275	269	262	255	247	236

* 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: LARNED, KS

COOP ID: 144530

Climate Division: KS 8 NWS Call Sign: Elevation: 1,995 Feet Lat: 38° 11N Lon: 99° 06W

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	1104	836	654	342	113	12	0	5	47	258	677	1003	5051
60	949	705	500	218	47	2	0	0	14	141	529	848	3953
57	857	626	414	156	24	0	0	0	5	88	444	755	3369
55	797	575	357	121	14	0	0	0	2	62	390	695	3013
50	652	452	231	55	3	0	0	0	0	21	265	550	2229
32	221	139	17	0	0	0	0	0	0	0	26	148	551

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	141	228	386	659	994	1273	1479	1423	1119	780	339	168	8989
55	3	19	14	90	295	583	766	710	432	128	13	2	3055
57	1	14	9	65	243	523	704	648	375	93	7	0	2682
60	0	9	2	36	173	436	611	555	294	52	2	0	2170
65	0	0	0	11	84	296	456	404	177	15	0	0	1443
70	0	0	0	2	31	175	302	265	92	2	0	0	869

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	36	99	236	463	774	1057	1253	1199	904	568	182	48	36	135	371	834	1608	2665	3918	5117	6021	6589	6771	6819
45	8	46	148	326	619	907	1098	1044	756	419	105	15	8	54	202	528	1147	2054	3152	4196	4952	5371	5476	5491
50	0	18	79	214	466	757	943	889	607	286	47	2	0	18	97	311	777	1534	2477	3366	3973	4259	4306	4308
55	0	4	34	120	321	607	788	734	464	173	16	0	0	4	38	158	479	1086	1874	2608	3072	3245	3261	3261
60	0	1	10	59	194	458	633	579	331	92	2	0	0	1	11	70	264	722	1355	1934	2265	2357	2359	2359
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	45	91	177	302	486	694	821	786	581	365	131	52	45	136	313	615	1101	1795	2616	3402	3983	4348	4479	4531

(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