Station: PAOLA, KS

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

COOP ID: 146209

Climate Division: KS 6 NWS Call Sign: Elevation: 860 Feet Lat: 38°35N Lon: 94°53W

									r	Гетр	eratui	re (°F)									
	Mea	n (1)						Extr	emes						Days (1) emp 65		Mean	Numb	er of I	Days (3)	
Month	Daily Max	Daily Min	Mean	Daily(2) Mean Daily(2)					Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0	
Jan	39.4	19.9	29.7	71	1967	23	40.6	1990	-16+	1982	10	16.1	1979	1096	0	.0	.0	7.1	8.9	26.8	2.5
Feb	46.1	25.3	35.7	82	1972	29	46.6	1976	-20+	1979	9	23.2	1978	820	0	.0	.0	11.7	5.2	20.9	1.4
Mar	57.6	35.1	46.4	87	1966	31	50.6	1986	-7	1978	4	37.7	1984	578	0	.0	.0	22.3	.7	13.7	.1
Apr	68.3	44.7	56.5	92	1972	12	64.6	1981	14	1975	3	50.2	1983	271	17	.0	.3	28.4	.0	3.5	.0
May	76.7	54.6	65.7	95	1964	26	71.8	1998	29+	1976	3	61.4	1995	90	112	.0	.4	31.0	.0	.2	.0
Jun	85.2	64.1	74.7	106	1980	27	78.0	1991	42	1982	1	69.8	1982	4	293	.2	7.2	30.0	.0	.0	.0
Jul	90.5	68.9	79.7	111+	1980	15	88.1	1980	47	1972	5	75.1	1971	0	455	2.2	17.6	31.0	.0	.0	.0
Aug	89.2	66.7	78.0	109	1984	29	84.9	2000	45	1988	29	71.3	1992	5	404	2.0	15.4	31.0	.0	.0	.0
Sep	81.1	58.0	69.6	106	2000	2	75.6	1998	28	1983	23	62.0	1974	46	182	.2	5.1	30.0	.0	.1	.0
Oct	70.1	46.4	58.3	96	2000	3	62.3	1971	19	1993	31	51.7	1976	227	18	.0	.2	30.0	.0	3.3	.0
Nov	54.5	34.7	44.6	83	1978	4	53.2	1999	4+	1976	29	36.9	1976	613	0	.0	.0	19.8	.9	13.5	.0
Dec	42.7	24.1	33.4	72	1966	7	39.7	1982	-21	1989	23	15.8	1983	980	0	.0	.0	8.6	5.7	24.8	1.3
Ann	66.8	45.2	56.0	111+	Jul 1980	15	88.1	Jul 1980	-21	Dec 1989	23	15.8	Dec 1983	4730	1481	4.6	46.2	280.9	21.4	106.8	5.3

⁺ Also occurred on an earlier date(s)

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Issue Date: February 2004 085-A

- (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

[@] Denotes mean number of days greater than 0 but less than .05

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COOP ID: 146209

Station: PAOLA, KS

Climate Division: KS 6

NWS Call Sign: Elevation: 860 Feet Lat: 38°35N Lon: 94°53W

										Pı	recipit	tation	(incl	nes)										
	Medi Medi		P	recip	itatio	on Total					ean N of D	ays (3)	Proba		Me	nonthly/ onthly/Ar	annual j indic	precipita ated am	ount vs Probal	ies (1) Il be equ	els		un the
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	1.45	1.21	1.84	1982	30	4.19	1979	.00	1986	6.1	3.7	.8	.2	.14	.31	.56	.77	.98	1.21	1.47	1.79	2.21	2.89	3.53
Feb	1.48	1.32	2.73	1997	21	3.98	1997	.07+	1991	5.7	3.6	.7	.3	.19	.30	.51	.72	.93	1.17	1.46	1.80	2.27	3.04	3.79
Mar	2.79	2.54	1.83	1966	12	9.16	1973	.57	1995	8.0	5.9	2.1	.5	.76	1.02	1.42	1.77	2.12	2.48	2.88	3.36	3.98	4.95	5.86
Apr	3.75	3.65	2.87	1994	28	9.34	1994	.82	2000	9.7	6.5	2.6	1.1	1.09	1.45	1.99	2.45	2.90	3.37	3.89	4.50	5.30	6.54	7.69
May	5.59	5.09	4.20	1991	24	12.45	1995	1.06	1998	10.9	8.0	3.8	1.7	1.57	2.10	2.90	3.60	4.29	5.01	5.80	6.73	7.95	9.85	11.63
Jun	5.91	5.14	5.94	1984	21	14.94	1981	1.97	1991	9.1	7.2	3.5	2.0	1.76	2.32	3.16	3.89	4.59	5.33	6.14	7.09	8.32	10.24	12.02
Jul	3.70	3.12	5.34	1958	11	14.66	1993	.48	1983	8.1	5.9	2.5	.9	.49	.79	1.31	1.83	2.37	2.97	3.67	4.52	5.68	7.58	9.41
Aug	3.60	3.74	4.80	1994	2	10.22	1985	.23	2000	7.5	5.5	2.5	1.1	.43	.71	1.22	1.72	2.25	2.85	3.54	4.40	5.56	7.48	9.34
Sep	4.40	3.57	7.96	1961	4	14.76	1973	.69	1991	7.9	5.6	2.6	1.3	.67	1.05	1.69	2.29	2.93	3.62	4.41	5.38	6.68	8.79	10.82
Oct	3.46	3.20	3.87	1973	11	7.30	1986	.40	1995	7.7	5.6	2.3	1.0	.72	1.03	1.54	2.00	2.47	2.97	3.53	4.21	5.10	6.53	7.88
Nov	2.85	2.54	3.79	1964	15	8.16	1992	.00	1989	6.8	4.8	2.1	.7	.45	.83	1.32	1.71	2.10	2.51	2.96	3.50	4.20	5.30	6.34
Dec	1.73	1.59	2.31	1971	15	4.58	1992	.00	1979	5.9	3.3	1.3	.4	.10	.27	.54	.80	1.06	1.36	1.71	2.13	2.71	3.66	4.58
Ann	40.71	41.67	7.96	Sep 1961	4	14.94	Jun 1981	.00+	Nov 1989	93.4	65.6	26.8	11.2	25.81	28.57	32.17	34.95	37.45	39.89	42.44	45.28	48.76	53.87	58.35

⁺ Also occurred on an earlier date(s)

Complete documentation available from:

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

[#] 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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Station: PAOLA, KS

Climate Division: KS 6 NWS Call Sign:

Elevation: 860 Feet

Lat: 38°35N

Lon: 94°53W

COOP ID: 146209

										Snov	w (incl	hes)											
						Sno	ow To	tals									Mea	n Nu	mber	of Day	ys (1)		
	Mean	s/Medi	ans (1))					Extre	mes (2)							ow Fa					Depth esholo	
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	5.3	4.3	1	#	7.0	1979	13	20.5	1977	20	1979	31	12	1979	2.6	2.0	.8	.1	.0	5.8	3.5	2.7	.2
Feb	5.1	4.0	1	#	12.0	1980	8	16.0	1980	19	1979	9	13	1979	1.9	1.5	.5	.2	@	3.0	1.4	.9	.3
Mar	2.0	.0	#	#	8.0	1975	10	11.0	1975	6	1975	10	1	1995	.9	.6	.3	@	.0	1.1	.5	@	.0
Apr	.2	.0	#	0	4.0	1979	4	4.0	1979	2	1979	4	#+	1997	.1	.1	@	.0	.0	@	.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	0	3.5	1996	23	3.5	1996	0	0	0	0	0	@	@	@	.0	.0	.0	.0	.0	.0
Nov	.7	.0	#	0	5.0	1988	20	5.0	1988	2	1992	7	#+	2000	.4	.3	@	@	.0	.3	.0	.0	.0
Dec	2.1	1.5	#	#	9.5	1987	15	15.5	1987	13	1987	15	3	2000	1.4	.9	.2	.1	.0	2.1	1.0	.3	@
Ann	15.5	9.8	N/A	N/A	12.0	Feb 1980	8	20.5	Jan 1977	20	Jan 1979	31	13	Feb 1979	7.3	5.4	1.8	.4	@	12.3	6.4	3.9	.5

⁺ Also occurred on an earlier date(s) #Denotes trace amounts

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

[@] 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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COOP ID: 146209

Station: PAOLA, KS Climate Division: KS 6

NWS Call Sign:

Elevation: 860 Feet La

Lat: 38°35N Lon: 94°53W

				Freez	e Data									
			Spri	ng Freeze D	ates (Month/	Day)								
Probability of later date in spring (thru Jul 31) than indicated(*) 10														
Temp (F)	.10	.20	.30	.40	.50	.60	.70	.80	.90					
36	5/13	5/08	5/05	5/01	4/28	4/26	4/22	4/19	4/14					
32	5/01	4/26	4/23	4/20	4/17	4/14	4/11	4/08	4/03					
28	4/15	4/11	4/08	4/05	4/03	4/01	3/29	3/26	3/22					
24	4/07	4/02	3/30	3/27	3/24	3/21	3/18	3/15	3/10					
20	4/02	3/25	3/20	3/15	3/10	3/06	3/01	2/24	2/16					
16	3/22	3/14	3/08	3/03	2/27	2/22	2/17	2/11	2/03					
			Fal	l Freeze Da	tes (Month/D	ay)								
Tomn (F)		Pro	bability of ea	arlier date i	n fall (beginn	ing Aug 1) t	han indicate	ed(*)						
Temp (r)	.10	.20	.30	.40	.50	.60	.70	.80	.90					
36	9/21	9/26	9/29	10/02	10/04	10/07	10/10	10/13	10/17					
32	9/27	10/03	10/08	10/12	10/16	10/19	10/23	10/28	11/03					
28	10/12	10/18	10/22	10/26	10/29	11/02	11/05	11/10	11/16					
24	10/23	10/29	11/03	11/07	11/10	11/14	11/18	11/23	11/29					
20	11/03	11/09	11/13	11/17	11/21	11/24	11/28	12/02	12/08					
16	11/13	11/19	11/24	11/28	12/01	12/05	12/08	12/13	12/19					
		•		Freeze F	ree Period			•						
Temp (F)			Probability	of longer th	an indicated	freeze free p	eriod (Days)							
Temp (r)	.10	.20	.30	.40	.50	.60	.70	.80	.90					
36	180	172	167	162	158	154	149	144	136					
32	207	198	192	186	181	176	170	164	155					
28	230	222	217	213	209	205	200	195	188					
24	254	246	240	236	231	226	221	216	207					
20	288	276	268	261	254	248	241	233	221					
16	308	297	290	283	277	271	264	256	246					

^{*} 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.

Complete documentation available from:

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Climate Division: KS 6 NWS Call Sign: Elevation: 860 Feet Lat: 38°35N Lon: 94°53W

				Deg	ree Days t	o Selected	Base Tem	peratures	(°F)				
Base						Heatin	g Degree l	Days (1)					
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1096	820	578	271	90	4	0	5	46	227	613	980	4730
60	941	688	431	157	36	0	0	0	14	116	471	826	3680
57	850	609	345	104	17	0	0	0	5	69	388	738	3125
55	790	558	292	76	10	0	0	0	2	47	337	681	2793
50	647	435	181	26	2	0	0	0	0	14	225	539	2069
32	226	126	11	0	0	0	0	0	0	0	23	161	547

Base						Coolin	g Degree l	Days (1)					
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	153	230	456	736	1044	1280	1478	1423	1126	814	400	204	9344
55	4	18	24	121	341	590	765	710	438	147	24	11	3193
57	2	13	15	90	286	530	703	648	381	108	16	6	2798
60	0	8	7	53	212	440	610	555	300	62	8	1	2256
65	0	0	0	17	112	293	455	404	182	18	0	0	1481
70	0	0	0	4	45	162	306	265	96	3	0	0	881

										Gro	wing 1	Degre	e Uni	ts (2)										
Base					Growin	g Degree	Units (M	Ionthly)								Growi	ng Degre	ee Units (Accumu	lated Mo	onthly)			
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov De													Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	30	94	254	504	798	1036	1225	1171	886	570	209	48	30	124	378	882	1680	2716	3941	5112	5998	6568	6777	6825
45	6 49 159 366 643 886 1070 1016 736 421 126											22	6	55	214	580	1223	2109	3179	4195	4931	5352	5478	5500
50	1	19	88	238	490	736	915	861	588	282	65	5	1	20	108	346	836	1572	2487	3348	3936	4218	4283	4288
55	0	6	44	142	338	586	760	706	443	171	26	2	0	6	50	192	530	1116	1876	2582	3025	3196	3222	3224
60	0	1	16	71	207	437	605	551	306	87	8	0	0	1	17	88	295	732	1337	1888	2194	2281	2289	2289
Base	Growing Degree Units for Corn (Monthly)														Gr	owing D	egree Un	its for C	orn (Acc	umulate	d Month	ly)		
50/86	50/86 26 71 169 315 512 709 833 790 583 356 126 3											37	26	97	266	581	1093	1802	2635	3425	4008	4364	4490	4527

(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

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

- c. Snow Tables
 - 1. Snow Climatology
 - 2. Cooperative Summary of the Day
- d. Freeze Data Table

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

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