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: 343871

Lon: 99°24W

Station: HAMMON 3 SSW, OK

Climate Division: OK 4 NWS Call Sign:

Temperature (°F) Degree Days (1) Mean (1) Mean Number of Days (3) **Extremes** Base Temp 65 Max Max Max Max Min Min Highest Lowest Daily Daily Highest Lowest Month(1) Month(1) Cooling >= >= >= <= <= <= Month Mean Year Day Year Year Day Year Heating Max Min Daily(2) Daily(2) Mean Mean 100 90 50 32 32 0 47.5 20.1 33.8 84 1952 25 41.2 1990 -15 1988 21.3 1979 968 0 .0 15.8 5.4 28.9 .9 Jan 23 53.6 24.6 39.1 91 1996 47.4 1976 -16 1996 4 27.2 1978 726 0 .0 @ 17.8 3.2 21.8 .6 Feb Mar 61.8 32.5 47.2 96 1971 27 54.1 1972 -5 1989 4 41.9 1984 553 0 .0 .2 25.8 .6 14.3 .1 12 62.9 1972 1983 23 Apr 71.3 41.6 56.5 101 1972 17 1975 3 51.0 280 (a) 1.0 28.8 .0 3.9 .0 May 79.3 52.2 65.8 107 1953 23 72.3 1996 29 1960 1 61.3 1983 85 107 .1 4.1 30.9 .0 .1 .0 42 70.4 88.4 62.9 75.7 115 1980 26 80.8 1980 1964 1979 10 330 1.8 15.0 30.0 .0 .0 .0 Jun Jul 94.7 67.7 81.2 1954 14 88.1 50+ 1975 13 77.1 1987 0 502 7.8 25.2 31.0 .0 111 1980 .0 .0 1992 92.8 66.4 79.6 115 1951 6 85.8 1980 46 1994 16 73.3 453 5.5 22.8 31.0 .0 .0 .0 Aug 41 Sep 84.3 57.2 70.8 106 2000 5 77.5 1998 29+1989 24 63.5 1974 214 1.4 10.7 29.9 .0 .3 .0 44.4 4 64.7 31 52.4 Oct 73.8 59.1 100 2000 1972 12 1993 1976 213 29 (a) 1.4 30.5 (a) 3.5 .0 59.2 31.5 45.4 89 1980 9 52.0 1999 5 1991 3 40.0 1991 590 0 .0 23.2 .7 16.0 .0 Nov .0 Dec 49.4 22.6 36.0 86 1955 24 40.9 1980 -9 1989 23 24.2 1983 899 0 .0 .0 16.9 3.3 27.2 .5 Jun Jul Feb Jan 43.6 57.5 115 +1980 26 88.1 1980 1996 4 21.3 1979 4366 1658 16.6 80.4 311.6 13.2 116.0 2.1 71.3 -16 Ann

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

Issue Date: February 2004 044-A

(1) From the 1971-2000 Monthly Normals

Elevation: 1,820 Feet Lat: 35°35N

- (2) Derived from station's available digital record: 1948-2001
- (3) Derived from 1971-2000 serially complete daily data

⁺ Also occurred on an earlier date(s)

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

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										Pı	recipi	tation	(incl	nes)													
	Me	Precipitation Totals Means/ Extremes										Number (3)	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													
	Medi	ans(1)				Extreme	•			L	any Fie	стриацо	11	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	.84	.65	1.26	1999	29	2.40	1999	.00+	1996	3.0	1.8	.5	@	.00	.00	.19	.33	.48	.64	.82	1.05	1.36	1.87	2.36			
Feb	.99	.73	2.45	1948	27	3.40	1985	.00+	1995	2.8	2.2	.7	.2	.00	.00	.25	.42	.59	.78	.99	1.25	1.59	2.16	2.71			
Mar	2.31	2.27	3.90	1989	28	7.05	1973	.00+	1997	4.4	3.7	1.5	.6	.00	.16	.52	.87	1.26	1.70	2.22	2.86	3.75	5.25	6.72			
Apr	2.35	1.87	3.20	1997	4	11.80	1997	.00	1996	4.9	3.9	1.6	.6	.15	.39	.76	1.10	1.47	1.87	2.33	2.90	3.67	4.93	6.15			
May	4.63	4.40	5.00	1959	26	10.86	1982	.11	1988	7.3	6.0	3.3	1.5	.59	.96	1.61	2.26	2.94	3.69	4.57	5.66	7.13	9.54	11.88			
Jun	3.80	3.83	7.50	1983	11	9.61	1989	.08	1998	6.5	5.2	2.5	1.1	.50	.80	1.34	1.87	2.43	3.04	3.76	4.64	5.83	7.78	9.67			
Jul	2.00	1.49	5.35	1975	24	6.50	1975	.00+	1995	3.7	2.8	1.3	.6	.00	.00	.43	.82	1.19	1.58	2.02	2.57	3.30	4.44	5.56			
Aug	2.74	1.73	5.79	1969	26	7.49	1997	.00+	2000	4.9	4.1	1.8	.8	.00	.30	.79	1.23	1.68	2.17	2.74	3.42	4.35	5.88	7.36			
Sep	3.11	1.96	6.56	1997	23	8.90	1986	.00	2000	5.4	4.7	2.1	.9	.14	.40	.86	1.32	1.81	2.36	3.01	3.83	4.94	6.80	8.61			
Oct	2.23	1.94	4.25	1986	3	8.95	1998	.00	1992	4.1	3.3	1.5	.6	.05	.18	.46	.77	1.13	1.54	2.05	2.71	3.62	5.19	6.75			
Nov	1.66	1.31	3.23	1994	20	4.49	1992	.00+	1999	4.0	2.9	1.0	.4	.00	.00	.42	.71	1.00	1.31	1.66	2.10	2.67	3.62	4.53			
Dec	1.07	.51	2.14	1959	17	4.79	1984	.00+	1988	3.1	2.3	.7	.2	.00	.00	.12	.27	.45	.67	.94	1.29	1.78	2.64	3.50			
Ann	27.73	27.09	7.50	Jun 1983	11	11.80	Apr 1997	.00+	Sep 2000	54.1	42.9	18.5	7.5	17.24	19.17	21.69	23.64	25.41	27.13	28.93	30.94	33.41	37.05	40.24			

⁺ 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: HAMMON 3 SSW, OK

Climate Division: OK 4 NWS Call Sign: Elevation: 1,820 Feet Lat: 35°35N Lon: 99°24W

										Snov	w (incl	hes)											
						Sn	ow To	tals									Mea	n Nu	mber	of Day	ys (1)		
	Mean	s/Medi	ians (1))					Extre	mes (2)				ow Fa	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	2.0	.0	#	0	7.0	1973	7	14.5	1973	16	1988	8	2	1973	.7	.6	.3	.1	.0	1.9	1.0	.5	.0
Feb	2.2	.8	#	0	11.0	1971	21	11.5	1971	11	1971	22	1	1979	.6	.5	.4	.1	@	.7	.4	.3	.1
Mar	1.0	.0	#	0	8.0	1994	9	10.5	1994	6	1988	3	#+	1995	.3	.2	.1	@	.0	.0	.0	.0	.0
Apr	.4	.0	#	0	5.0	1973	8	5.0	1973	3	1973	8	#	1973	.1	.1	.1	@	.0	.1	.1	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.4	.0	#	0	8.0	1972	19	8.0	1972	5	1992	25	1	1972	.2	.2	.1	@	.0	.3	.2	.0	.0
Dec	2.3	.0	#	0	6.0	1972	15	10.0	2000	14	1987	14	3	1983	.7	.6	.2	.2	.0	.5	.2	.2	.0
Ann	8.3	.8	N/A	N/A	11.0	Feb 1971	21	14.5	Jan 1973	16	Jan 1988	8	3	Dec 1983	2.6	2.2	1.2	.4	@	3.5	1.9	1.0	.1

⁺ 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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Freeze Data Spring Freeze Dates (Month/Day) Probability of later date in spring (thru Jul 31) than indicated(*) Temp (F) .10 .20 .30 .40 .60 .70 .80 .90 36 5/09 5/04 5/01 4/28 4/25 4/22 4/19 4/16 4/11 32 4/23 4/28 4/20 4/17 4/14 4/11 4/08 4/04 3/30 28 4/15 4/11 4/08 4/05 4/03 4/01 3/29 3/26 3/22 3/22 2/28 24 4/12 4/05 3/31 3/26 3/18 3/13 3/08 20 3/26 3/19 3/14 3/10 3/06 3/02 2/26 2/14 2/21 3/12 3/01 16 3/21 3/06 2/24 2/18 2/13 2/07 1/29 Fall Freeze Dates (Month/Day) Probability of earlier date in fall (beginning Aug 1) than indicated(*) Temp (F) .20 .30 .40 .50 .70 .10 .60 .80 .90 10/03 36 9/25 9/30 10/06 10/09 10/12 10/15 10/18 10/23 32 9/30 10/06 10/10 10/13 10/17 10/20 10/23 10/27 11/02 28 10/16 10/21 10/25 10/28 10/31 11/03 11/06 11/10 11/15 24 10/24 10/30 11/04 11/08 11/11 11/15 11/19 11/23 11/29 20 10/28 11/05 11/10 11/15 11/20 11/25 11/30 12/05 12/13 11/07 11/21 11/26 12/01 12/17 12/26 16 11/15 12/06 12/11 Freeze Free Period **Probability of longer than indicated freeze free period (Days)** Temp (F) .10 .20 .30 .40 .50 .60 .70 .80 .90 183 177 173 169 163 159 155 149 36 166 32 206 199 194 189 185 181 177 171 164 28 231 224 219 215 210 202 197 206 190 24 259 250 244 239 234 229 223 217 208 279 258 245 238 227 20 289 271 264 252

287

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 do

294

303

315

Complete documentation available from:

273

Elevation: 1,820 Feet

257

245

266

280

^{*} Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

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	Degree Days to Selected Base Temperatures (°F)														
Base						Heatin	g Degree l	Days (1)							
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann		
65	968	726	553	280	85	10	0	1	41	213	590	899	4366		
60	813	594	403	170	32	1	0	0	13	109	444	744	3323		
57	721	516	318	118	15	0	0	0	5	65	361	651	2770		
55	661	465	265	89	8	0	0	0	3	43	308	590	2432		
50	514	347	154	36	1	0	0	0	0	12	193	445	1702		
32	117	72	5	0	0	0	0	0	0	0	9	74	277		

Base						Coolin	g Degree l	Days (1)					
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	172	270	475	733	1045	1310	1525	1475	1164	839	409	198	9615
55	2	19	21	132	340	620	812	762	476	169	18	1	3372
57	1	14	13	101	284	560	750	700	419	129	10	0	2981
60	0	8	5	63	209	471	657	607	336	80	4	0	2440
65	0	0	0	23	107	330	502	453	214	29	0	0	1658
70	0	0	0	6	42	205	351	303	120	7	0	0	1034

										Gro	wing l	Degre	e Uni	ts (2)											
Base					Growin	g Degree	Units (N	Ionthly)					Growing Degree Units (Accumulated Monthly)												
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec													Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
40	55	141	298	526	819	1085	1295	1244	946	605	233	69	55	196	494	1020	1839	2924	4219	5463	6409	7014	7247	7316	
45	22	76	190	385	665	935	1140	1089	796	456	140	28	22	98	288	673	1338	2273	3413	4502	5298	5754	5894	5922	
50	1	33	104	257	511	785	985	934	647	320	70	5	1	34	138	395	906	1691	2676	3610	4257	4577	4647	4652	
55	0	8	51	151	366	635	830	779	501	200	29	0	0	8	59	210	576	1211	2041	2820	3321	3521	3550	3550	
60	0	0	17	74	232	485	675	624	360	101	7	0	0	0	17	91	323	808	1483	2107	2467	2568	2575	2575	
Base	Growing Degree Units for Corn (Monthly)														Gr	owing D	egree Un	its for C	orn (Acc	umulate	d Month	ly)			
50/86	77 132 224 352 528 716 845 815 614 397 179 83													209	433	785	1313	2029	2874	3689	4303	4700	4879	4962	

(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