

# Climatology of the United States

No. 20

1971-2000

Station: RALSTON, OK

COOP ID: 347390

Climate Division: OK 3

NWS Call Sign:

Elevation: 825 Feet Lat: 36° 30N Lon: 96° 44W

## 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	46.2	21.1	33.7	80	1965	7	42.2	1990	-11	1977	10	21.5	1979	972	0	.0	.0	14.9	4.5	24.7	.7
Feb	53.0	25.9	39.5	92	1996	22	49.0	1999	-15	1996	4	26.4	1978	719	0	.0	@	17.6	2.5	18.5	.5
Mar	62.0	34.7	48.4	93	1974	31	53.6	1986	-1	1967	8	42.7	1996	517	0	.0	.1	26.7	.3	10.2	.0
Apr	71.8	44.8	58.3	100	1972	12	65.2	1981	18	1975	3	51.7	1983	226	26	@	.7	29.6	.0	1.8	.0
May	79.6	56.0	67.8	97	1972	17	73.2	1987	29	1960	1	62.4	1976	58	144	.0	2.6	31.0	.0	.0	.0
Jun	87.3	64.8	76.1	105	1980	26	81.3	1990	44	1983	1	71.8	1982	4	336	.5	13.2	30.0	.0	.0	.0
Jul	93.6	69.0	81.3	112	1996	6	86.8	1980	49+	1971	31	77.4	1976	0	506	5.0	25.5	31.0	.0	.0	.0
Aug	93.0	66.7	79.9	110+	1964	4	84.3	1983	43	1988	29	74.1	1992	1	462	5.6	23.4	31.0	.0	.0	.0
Sep	84.9	58.8	71.9	109	2000	2	79.1	1998	30+	1984	30	61.8	1974	37	241	1.3	10.8	30.0	.0	.1	.0
Oct	74.5	46.2	60.4	98	1979	8	63.5	2000	13	1993	31	53.9	1976	174	29	.0	1.2	30.8	.0	2.0	.0
Nov	59.9	34.2	47.1	88	1989	11	54.2	1999	6	1976	29	40.3	1976	538	0	.0	.0	24.3	.2	11.5	.0
Dec	49.0	24.6	36.8	80	1966	7	41.7	1991	-13	1989	23	23.5	1983	874	0	.0	.0	17.2	2.5	22.3	.5
Ann	71.2	45.6	58.4	112	Jul 1996	6	86.8	Jul 1980	-15	Feb 1996	4	21.5	Jan 1979	4120	1744	12.4	77.5	314.1	10.0	91.1	1.7

+ 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](http://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: 1948-2001

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

085-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: RALSTON, OK

COOP ID: 347390

Climate Division: OK 3

NWS Call Sign:

Elevation: 825 Feet Lat: 36°30N

Lon: 96°44W

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	1.29	1.15	1.75	1999	30	3.03	1973	.00+	1986	4.6	3.3	.8	.3	.00	.09	.28	.48	.70	.94	1.23	1.59	2.10	2.94	3.77
Feb	1.78	1.45	2.50	1985	23	5.41	1985	.00	1991	4.9	3.5	1.2	.4	.17	.37	.67	.93	1.19	1.48	1.80	2.20	2.72	3.57	4.38
Mar	3.44	3.22	3.50	1974	11	8.24	1973	.00	1971	7.1	5.5	2.5	.9	.46	.90	1.48	1.97	2.46	2.97	3.55	4.24	5.15	6.59	7.96
Apr	3.76	3.49	4.00	1994	11	7.99	1994	.23	1989	7.5	5.6	2.6	1.1	.82	1.17	1.72	2.22	2.72	3.25	3.85	4.57	5.51	7.02	8.44
May	5.50	5.03	3.50	1987	28	11.00	1982	1.59	1996	9.8	7.6	4.0	1.8	1.93	2.45	3.20	3.84	4.45	5.07	5.75	6.54	7.56	9.12	10.56
Jun	4.31	4.39	3.12	1957	24	9.12	1992	.77	1988	7.9	6.5	3.2	1.3	1.30	1.71	2.33	2.85	3.37	3.90	4.48	5.17	6.06	7.45	8.74
Jul	3.14	2.68	7.15	1997	18	13.83	1997	.04	1983	5.9	4.8	2.2	1.0	.36	.60	1.04	1.48	1.95	2.47	3.08	3.84	4.87	6.57	8.22
Aug	3.54	2.74	6.95	1974	10	11.34	1974	.00	2000	5.9	4.8	2.0	1.1	.37	.79	1.38	1.89	2.41	2.97	3.60	4.36	5.38	7.01	8.56
Sep	4.32	3.83	7.75	1986	30	12.80	1986	.17	2000	6.7	5.5	2.6	1.3	.72	1.10	1.73	2.32	2.93	3.60	4.35	5.28	6.51	8.50	10.41
Oct	3.18	2.53	4.85	1998	5	8.50	1998	.50	1995	5.9	4.6	2.1	1.0	.59	.87	1.33	1.77	2.21	2.68	3.22	3.87	4.74	6.13	7.46
Nov	2.71	2.54	3.45	1974	3	5.14	1974	.00	1989	5.5	4.1	2.1	1.0	.18	.45	.88	1.28	1.70	2.16	2.69	3.35	4.23	5.68	7.07
Dec	1.85	1.42	2.36	1991	20	5.36	1984	.02	1976	5.1	3.5	1.2	.5	.12	.23	.46	.71	1.00	1.33	1.73	2.24	2.96	4.17	5.37
Ann	38.82	38.95	7.75	Sep 1986	30	13.83	Jul 1997	.00+	Aug 2000	76.8	59.3	26.5	11.7	27.55	29.73	32.53	34.65	36.54	38.36	40.25	42.33	44.86	48.53	51.70

+ 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: 1948-2001

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

Complete documentation available from:

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**Station: RALSTON, OK**

**COOP ID: 347390**

**Climate Division: OK 3**

**NWS Call Sign:**

**Elevation: 825 Feet**

**Lat: 36°30N**

**Lon: 96°44W**

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	2.8	2.0	#	#	6.0	1987	18	15.0	1987	10	1987	20	3	1987	2.0	1.3	.3	.1	.0	4.4	1.7	.6	.1
Feb	3.1	1.6	#	#	12.0	1980	8	12.5	1980	8	1980	8	2	1978	1.8	1.0	.3	.1	@	3.6	1.2	.1	.0
Mar	1.5	.0	#	#	11.0	1994	8	11.0	1994	11	1994	8	1	1994	.7	.5	.2	@	@	.5	.1	@	@
Apr	.1	.0	#	0	2.0	1979	4	2.0	1979	#	1975	2	#	1975	@	@	.0	.0	.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	#	.0	0	0	#	1993	30	#	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.6	.0	#	0	5.0	1972	19	7.5	1972	10	1975	30	#+	2000	.3	.2	.1	@	.0	.2	.0	.0	.0
Dec	1.5	.0	#	#	8.5	1987	15	11.0	1987	7	2000	15	2	2000	1.1	.5	.2	.1	.0	2.2	.7	.2	.0
Ann	9.6	3.6	N/A	N/A	12.0	Feb 1980	8	15.0	Jan 1987	11	Mar 1994	8	3	Jan 1987	5.9	3.5	1.1	.3	@	10.9	3.7	.9	.1

+ 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:

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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	5/13	5/07	5/03	4/29	4/26	4/22	4/19	4/14	4/09
32	4/15	4/12	4/09	4/07	4/05	4/03	4/01	3/30	3/27
28	4/14	4/09	4/05	4/01	3/29	3/26	3/23	3/19	3/14
24	4/02	3/27	3/23	3/20	3/17	3/14	3/10	3/06	3/01
20	3/27	3/19	3/14	3/09	3/04	2/28	2/23	2/18	2/10
16	3/13	3/04	2/27	2/21	2/17	2/12	2/07	2/01	1/24
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	9/26	10/01	10/04	10/06	10/09	10/12	10/14	10/17	10/22
32	10/05	10/11	10/15	10/19	10/22	10/26	10/29	11/02	11/08
28	10/20	10/25	10/28	10/31	11/03	11/06	11/09	11/12	11/17
24	10/24	10/31	11/05	11/09	11/13	11/17	11/21	11/26	12/03
20	11/02	11/10	11/15	11/20	11/25	11/29	12/04	12/10	12/18
16	11/13	11/21	11/26	11/30	12/04	12/09	12/13	12/18	12/26
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	178	173	169	166	162	158	153	147
32	219	212	207	203	199	195	191	186	179
28	239	232	227	222	218	214	209	204	196
24	267	258	251	246	240	235	230	223	214
20	292	283	276	270	265	259	253	246	237
16	323	312	303	296	290	283	276	268	257

\* 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](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	972	719	517	226	58	4	0	1	37	174	538	874	4120
60	818	589	370	123	18	0	0	0	12	76	397	719	3122
57	727	512	287	77	7	0	0	0	5	39	317	630	2601
55	667	462	237	53	4	0	0	0	2	24	267	572	2288
50	524	348	135	16	0	0	0	0	0	4	164	430	1621
32	136	80	5	0	0	0	0	0	0	0	9	83	313

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	187	288	511	790	1109	1323	1529	1484	1195	878	460	232	9986
55	5	26	30	153	400	633	816	771	507	189	29	7	3566
57	3	20	18	117	341	573	754	709	450	142	18	4	3149
60	1	13	8	73	259	483	661	616	366	86	9	0	2575
65	0	0	0	26	144	336	506	462	241	29	0	0	1744
70	0	0	0	6	64	203	351	313	143	7	0	0	1087

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	76	168	363	611	888	1110	1303	1270	985	674	294	97	76	244	607	1218	2106	3216	4519	5789	6774	7448	7742	7839
45	31	98	243	464	733	960	1148	1115	835	521	185	46	31	129	372	836	1569	2529	3677	4792	5627	6148	6333	6379
50	7	51	141	326	578	810	993	960	685	377	103	18	7	58	199	525	1103	1913	2906	3866	4551	4928	5031	5049
55	2	21	76	205	425	660	838	805	536	245	50	5	2	23	99	304	729	1389	2227	3032	3568	3813	3863	3868
60	0	7	31	112	280	510	683	650	399	136	18	1	0	7	38	150	430	940	1623	2273	2672	2808	2826	2827
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	68	134	245	396	588	755	863	832	654	446	192	80	68	202	447	843	1431	2186	3049	3881	4535	4981	5173	5253

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)