U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: COMMERCE 4 NNW, GA **COOP ID: 092180**

Climate Division: GA 2 **NWS Call Sign:** **Elevation: 750 Feet** **Lat: 34˚16N** **Lon: 83˚29W**

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	51.3	29.4	40.4	78	1975	30	51.5	1974	-5	1985	21	29.7	1977	765	0	.0	.0	18.2	.8	17.8	.2
Feb	56.2	31.8	44.0	80	1996	26	50.0	1990	3	1958	18	38.7	1978	588	0	.0	.0	20.3	.3	15.1	.0
Mar	64.2	38.4	51.3	88+	1995	23	58.0	1997	10	1960	6	45.4	1971	430	6	.0	.0	28.5	@	7.4	.0
Apr	72.9	45.6	59.3	94	1960	24	64.0	1977	23+	1966	10	54.0	1983	193	22	.0	.2	29.9	.0	1.8	.0
May	79.4	54.0	66.7	96+	1962	20	70.8	1998	30+	1963	2	62.5	1997	66	119	.0	1.4	31.0	.0	.0	.0
Jun	86.5	63.1	74.8	102	1978	28	78.2	1978	42	1966	2	70.0	1972	2	297	.2	9.1	30.0	.0	.0	.0
Jul	89.5	67.0	78.3	105	1980	18	82.6	1993	50	1961	11	73.8	1975	0	411	.7	17.2	31.0	.0	.0	.0
Aug	88.1	66.0	77.1	105+	1983	22	80.6+	1999	49	1957	7	74.0	1992	0	375	.6	12.6	31.0	.0	.0	.0
Sep	82.3	60.0	71.2	99	1957	2	75.6	1980	29	1967	30	67.7	1984	14	200	.0	4.5	30.0	.0	.0	.0
Oct	73.0	47.2	60.1	90	1981	7	65.6	1984	21	1962	27	55.2	1987	182	31	.0	@	30.9	.0	1.3	.0
Nov	63.4	38.7	51.1	84+	1974	4	59.7	1985	9	1959	30	44.8	1976	424	6	.0	.0	28.1	.0	8.7	.0
Dec	54.8	31.7	43.3	79	1984	18	50.4	1984	0+	1983	25	35.9	2000	674	0	.0	.0	21.8	.2	16.3	.1
Ann	71.8	47.7	59.8	105+	Aug 1983	22	82.6	Jul 1993	-5	Jan 1985	21	29.7	Jan 1977	3338	1467	1.5	45.0	330.7	1.3	68.4	.3

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1957-2000

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	5.48	5.31	4.19	1969	20	9.61	1972	.72	1981
Feb	4.86	4.48	4.24	1961	21	10.19	1998	.84	1978
Mar	5.66	4.77	4.05	1996	6	13.79	1980	1.16	1985
Apr	3.65	3.29	3.73	1963	30	10.12	1979	.96	1986
May	4.23	3.57	4.70	1976	29	13.76	1976	.77	1977
Jun	4.40	4.29	4.85	1994	27	10.31	1989	.15	1986
Jul	3.93	3.59	5.50	1960	28	10.96	1984	.77	1986
Aug	3.95	3.07	4.37	1998	20	8.49	1994	.80	1980
Sep	3.66	3.53	3.25	1970	5	8.99	1989	.24	1984
Oct	4.00	3.78	6.32	1995	4	10.75	1986	.04	2000
Nov	4.22	3.67	3.41	1979	2	9.25	1992	1.16	1980
Dec	4.18	3.81	3.35	1961	12	10.10	1983	.69	1980
Ann	52.22	54.03	6.32	Oct 1995	4	13.79	Mar 1980	.04	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.0	8.5	3.8	1.9
Feb	9.6	6.8	3.5	1.5
Mar	10.4	8.5	3.7	1.6
Apr	8.4	5.9	2.7	1.1
May	8.8	6.4	2.9	1.4
Jun	9.1	6.7	2.9	1.5
Jul	9.2	6.7	3.0	1.1
Aug	8.4	6.0	2.6	1.1
Sep	8.3	5.7	2.5	1.0
Oct	6.2	4.5	2.5	1.3
Nov	8.8	6.3	3.1	1.4
Dec	10.3	7.0	3.1	1.1
Ann	108.5	79.0	36.3	16.0

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
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.09	2.60	3.33	3.94	4.51	5.10	5.73	6.47	7.41	8.85	10.16
Feb	1.49	1.95	2.64	3.23	3.80	4.40	5.05	5.82	6.82	8.37	9.81
Mar	1.56	2.10	2.91	3.63	4.32	5.05	5.86	6.82	8.06	10.01	11.83
Apr	.91	1.26	1.79	2.26	2.72	3.21	3.76	4.41	5.26	6.60	7.86
May	1.00	1.39	2.01	2.56	3.11	3.69	4.35	5.12	6.14	7.76	9.28
Jun	.73	1.11	1.75	2.35	2.98	3.66	4.43	5.37	6.63	8.68	10.63
Jul	.86	1.22	1.80	2.32	2.84	3.40	4.02	4.77	5.75	7.32	8.80
Aug	.84	1.21	1.79	2.31	2.84	3.40	4.04	4.80	5.80	7.40	8.92
Sep	.70	1.03	1.57	2.06	2.57	3.11	3.72	4.46	5.44	7.02	8.52
Oct	.28	.53	1.04	1.59	2.20	2.91	3.77	4.86	6.37	8.92	11.45
Nov	1.47	1.86	2.44	2.93	3.40	3.88	4.41	5.02	5.80	7.01	8.13
Dec	1.25	1.65	2.24	2.76	3.26	3.77	4.35	5.02	5.89	7.25	8.52
Ann	38.39	41.10	44.56	47.17	49.48	51.70	54.00	56.52	59.58	63.99	67.79

+ 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: 1957-2000
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	1.2	.0	#	0
Feb	.5	.0	#	0
Mar	.4	.0	#	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	#	.0	0	0
Dec	.3	.0	#	0
Ann	2.4	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	6.5	1987	22	6.5	1987	4	1977	24	#+	1996
Feb	3.0	1989	23	3.0	1989	1	1971	14	#	1971
Mar	3.0	1971	26	3.0	1971	7	1983	25	#+	1993
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	#	1971	24	#	1971	0	0	0	0	0
Dec	4.0	1971	4	4.0	1971	#	1989	9	#	1989
Ann	6.5	Jan 1987	22	6.5	Jan 1987	7	Mar 1983	25	#+	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.4	.1	.1	.0
Feb	.2	.2	.1	.0	.0
Mar	.1	.1	.1	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	.1	.1	.1	.0	.0
Ann	.8	.8	.4	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	@	.0	.0
Feb	@	.0	.0	.0
Mar	@	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.1	@	.0	.0

+ 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

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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	5/04	4/28	4/24	4/20	4/17	4/13	4/10	4/05	3/30
32	4/20	4/14	4/10	4/06	4/03	3/30	3/27	3/22	3/16
28	4/06	3/31	3/26	3/22	3/19	3/15	3/11	3/07	2/28
24	3/18	3/11	3/06	3/02	2/26	2/22	2/18	2/13	2/06
20	3/13	3/05	2/26	2/21	2/16	2/12	2/06	1/31	1/23
16	3/04	2/23	2/17	2/11	2/06	1/31	1/25	1/17	1/02

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	10/05	10/10	10/13	10/16	10/19	10/22	10/25	10/28	11/02
32	10/14	10/20	10/24	10/27	10/31	11/03	11/07	11/11	11/17
28	10/28	11/03	11/08	11/12	11/15	11/19	11/22	11/27	12/03
24	11/11	11/18	11/22	11/26	11/30	12/04	12/08	12/12	12/19
20	11/27	12/06	12/12	12/18	12/23	12/28	1/02	1/09	1/18
16	12/05	12/17	12/26	1/03	1/11	1/19	1/27	2/07	2/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	205	198	193	189	184	180	176	171	163
32	235	227	220	215	210	205	200	193	185
28	267	258	251	246	241	235	230	224	215
24	302	293	287	282	277	271	266	260	251
20	348	330	320	313	306	299	292	284	273
16	>365	>365	357	339	330	322	314	305	294

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	765	588	430	193	66	2	0	0	14	182	424	674	3338
60	616	448	291	95	20	0	0	0	2	88	290	521	2371
57	528	365	219	54	8	0	0	0	0	51	219	435	1879
55	471	314	176	34	4	0	0	0	0	33	179	378	1589
50	339	190	92	8	0	0	0	0	0	9	97	250	985
32	49	4	0	0	0	0	0	0	0	0	1	18	72

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	308	340	599	818	1076	1284	1434	1398	1175	872	572	367	10243
55	17	5	62	162	367	594	721	685	485	192	61	15	3366
57	12	1	42	122	309	534	659	623	425	148	41	10	2926
60	6	0	22	73	228	444	566	530	337	92	22	2	2322
65	0	0	6	22	119	297	411	375	200	31	6	0	1467
70	0	0	0	3	47	163	262	225	92	6	0	0	798

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	141	198	398	607	858	1061	1211	1164	947	651	357	183	141	339	737	1344	2202	3263	4474	5638	6585	7236	7593	7776
45	64	107	265	460	703	911	1056	1009	797	498	232	96	64	171	436	896	1599	2510	3566	4575	5372	5870	6102	6198
50	24	48	149	317	548	761	901	854	647	347	133	43	24	72	221	538	1086	1847	2748	3602	4249	4596	4729	4772
55	3	15	72	194	393	611	746	699	498	211	64	17	3	18	90	284	677	1288	2034	2733	3231	3442	3506	3523
60	0	0	28	98	249	462	591	544	352	106	20	0	0	0	28	126	375	837	1428	1972	2324	2430	2450	2450
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	84	131	254	394	562	722	825	804	640	414	229	116	84	215	469	863	1425	2147	2972	3776	4416	4830	5059	5175

(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:
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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

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

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   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