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: MACON MIDDLE GA RGNL AP, GA **COOP ID: 095443**

Climate Division: GA 5 **NWS Call Sign: MCN** **Elevation: 354 Feet** **Lat: 32˚41N** **Lon: 83˚39W**

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	56.6	34.5	45.5	84	1949	11	57.8	1974	-6	1985	21	35.2	1977	590	1	.0	.0	24.1	.2	13.3	@
Feb	60.9	37.0	48.9	85+	1989	16	55.5	1990	9	1973	11	41.1	1978	440	3	.0	.0	24.7	.1	8.8	.0
Mar	68.5	43.8	56.2	90	1974	10	62.7	1997	14	1980	3	50.7	1971	279	21	.0	@	30.2	@	3.3	.0
Apr	75.9	49.5	62.7	96	1986	27	67.6	1991	29	1987	1	58.7	1983	122	69	.0	.8	30.0	.0	.5	.0
May	83.4	58.6	71.0	99+	1967	28	75.2	2000	40+	1997	5	67.6	1976	13	214	.0	6.1	31.0	.0	.0	.0
Jun	89.5	66.6	78.0	106	1954	28	82.0	1998	46	1972	2	74.2	1997	0	406	1.1	17.7	30.0	.0	.0	.0
Jul	91.8	70.5	81.1	108	1980	13	85.7	1986	54	1967	15	77.2	1975	0	515	2.3	23.1	31.0	.0	.0	.0
Aug	90.5	69.5	80.0	105+	1986	1	83.7	1999	55	1952	28	76.4	1981	0	481	1.3	21.6	31.0	.0	.0	.0
Sep	85.4	63.7	74.5	102+	1980	16	78.7	1980	35	1967	30	71.3	1984	4	305	.2	10.9	30.0	.0	.0	.0
Oct	76.8	51.1	63.9	100	1954	5	70.0	1984	26	1952	30	57.5	1987	96	78	.0	.9	31.0	.0	.2	.0
Nov	67.8	42.5	55.1	88+	1961	2	63.2	1985	10	1950	25	47.9	1976	298	17	.0	.0	29.5	.0	4.7	.0
Dec	59.2	36.3	47.8	82+	1972	13	54.6	1971	5	1962	13	39.3	2000	522	5	.0	.0	25.7	.1	11.4	.0
Ann	75.5	52.0	63.7	108	Jul 1980	13	85.7	Jul 1986	-6	Jan 1985	21	35.2	Jan 1977	2364	2115	4.9	81.1	348.2	.4	42.2	@

+ 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: 1948-2001

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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	5.00	5.27	4.73	1991	30	10.87	1991	.97	1981
Feb	4.55	4.49	3.98	1981	10	9.32	1983	.37	2000
Mar	4.90	4.64	4.28	1991	29	11.90	1980	1.20	1985
Apr	3.14	2.81	3.54	1964	8	7.04	1998	.11	1986
May	2.98	2.74	3.57	1976	14	8.25	1976	.59	2000
Jun	3.54	3.17	4.07	1981	7	7.54	1981	.89	1988
Jul	4.32	3.63	3.19	1992	22	13.60	1984	.37	1986
Aug	3.79	3.38	2.96	1959	1	8.63	1991	1.13	1980
Sep	3.26	2.48	4.83	1998	3	10.51	2000	.35	1984
Oct	2.37	1.98	5.25	1970	29	7.36	1994	.05	1987
Nov	3.22	2.87	3.06	1992	4	10.27	1992	.62	1998
Dec	3.93	3.38	2.85	1970	16	10.39	1972	.60	1980
Ann	45.00	45.05	5.25	Oct 1970	29	13.60	Jul 1984	.05	Oct 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.2	7.7	3.7	1.4
Feb	8.9	6.3	3.2	1.5
Mar	9.9	7.4	3.6	1.3
Apr	7.3	5.0	2.3	.9
May	8.6	5.0	1.9	.6
Jun	9.6	6.0	2.3	.9
Jul	11.7	7.8	3.1	1.1
Aug	10.1	6.5	2.6	1.1
Sep	8.0	4.9	2.1	.9
Oct	5.7	3.6	1.6	.7
Nov	8.1	4.9	2.1	1.1
Dec	9.1	6.0	2.8	1.3
Ann	108.2	71.1	31.3	12.8

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	1.94	2.41	3.07	3.62	4.14	4.66	5.24	5.90	6.74	8.03	9.21
Feb	1.05	1.47	2.13	2.73	3.33	3.96	4.67	5.51	6.63	8.39	10.06
Mar	1.40	1.87	2.57	3.18	3.77	4.39	5.08	5.89	6.93	8.57	10.10
Apr	.42	.67	1.12	1.55	2.01	2.52	3.11	3.84	4.82	6.43	7.98
May	.75	1.03	1.46	1.84	2.22	2.62	3.07	3.60	4.30	5.39	6.42
Jun	1.00	1.34	1.85	2.29	2.72	3.18	3.67	4.26	5.03	6.23	7.34
Jul	.89	1.28	1.91	2.49	3.07	3.70	4.40	5.25	6.37	8.17	9.86
Aug	1.21	1.57	2.10	2.56	2.99	3.45	3.95	4.53	5.28	6.45	7.53
Sep	.57	.85	1.33	1.77	2.23	2.72	3.29	3.97	4.88	6.35	7.76
Oct	.14	.28	.57	.89	1.26	1.68	2.20	2.86	3.79	5.36	6.93
Nov	.72	1.02	1.49	1.92	2.34	2.79	3.30	3.91	4.71	5.98	7.19
Dec	1.07	1.44	2.01	2.51	2.99	3.50	4.07	4.74	5.61	6.98	8.26
Ann	34.78	36.82	39.40	41.34	43.04	44.67	46.35	48.18	50.39	53.57	56.29

\+ 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

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Climate Division: GA 5 **NWS Call Sign: MCN** **Elevation: 354 Feet** **Lat: 32°41N** **Lon: 83°39W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	.6	.0	#	0
Feb	.9	.0	#	0
Mar	.1	.0	#	0
Apr	.0	.0	0	0
May	.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	.1	.0	#	0
Ann	1.7	.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	5.5	1982	13	7.7	1982	2+	1988	10	#	1988
Feb	11.0	1973	9	16.5	1973	3	1979	19	#	1979
Mar	2.6	1993	13	2.6	1993	1	1993	14	#	1993
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	#	1996
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	.0	0	0	.0	0	0	0	0	0	0
Dec	1.2	1993	23	1.6	1993	2	1993	23	#	1993
Ann	11.0	Feb 1973	9	16.5	Feb 1973	3	Feb 1979	19	#+	May 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.3	.3	@	@	.0
Feb	.3	.1	.1	.1	@
Mar	.1	.1	.0	.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	.0	.0	.0	.0
Ann	.8	.5	.1	.1	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.3	.0	.0	.0
Feb	.1	@	.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
Ann	.4	.0	.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	4/20	4/15	4/11	4/08	4/05	4/02	3/30	3/27	3/21
32	4/07	4/01	3/27	3/23	3/20	3/16	3/12	3/08	3/01
28	3/17	3/11	3/07	3/03	2/28	2/24	2/21	2/16	2/10
24	3/05	2/27	2/22	2/18	2/14	2/10	2/06	2/02	1/26
20	2/28	2/19	2/12	2/06	2/01	1/26	1/19	1/10	0/00
16	2/10	1/31	1/24	1/17	1/09	12/29	0/00	0/00	0/00

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	10/11	10/16	10/20	10/24	10/27	10/31	11/03	11/07	11/13
32	10/26	11/01	11/04	11/07	11/10	11/13	11/17	11/20	11/25
28	11/09	11/15	11/20	11/24	11/28	12/02	12/06	12/11	12/17
24	11/17	11/27	12/04	12/10	12/16	12/21	12/28	1/04	1/14
20	12/09	12/18	12/25	12/31	1/06	1/12	1/19	1/28	0/00
16	12/21	1/02	1/11	1/20	1/31	2/18	0/00	0/00	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	226	219	213	209	204	200	195	190	183
32	258	250	244	239	235	230	225	220	212
28	293	286	281	277	273	269	264	259	252
24	337	324	316	309	302	296	289	282	271
20	>365	>365	>365	352	335	325	317	308	297
16	>365	>365	>365	>365	>365	>365	>365	344	332

***** 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	590	440	279	122	13	0	0	0	4	96	298	522	2364
60	467	318	167	42	3	0	0	0	0	48	189	395	1629
57	386	244	112	18	0	0	0	0	0	24	132	314	1230
55	335	199	81	9	0	0	0	0	0	14	101	265	1004
50	228	111	29	1	0	0	0	0	0	3	42	166	580
32	21	1	0	0	0	0	0	0	0	0	0	7	29

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	461	508	786	956	1242	1408	1550	1517	1308	1026	729	528	12019
55	30	50	146	279	529	718	837	804	618	321	126	50	4508
57	20	34	111	228	467	658	775	742	558	266	95	36	3990
60	9	17	68	160	375	568	682	649	469	192	58	20	3267
65	1	3	21	69	214	406	515	481	305	78	17	5	2115
70	0	0	4	19	108	271	372	340	190	33	4	1	1342

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	250	319	550	725	1005	1178	1315	1281	1078	789	500	308	250	569	1119	1844	2849	4027	5342	6623	7701	8490	8990	9298
45	145	207	400	575	850	1028	1160	1126	928	634	357	189	145	352	752	1327	2177	3205	4365	5491	6419	7053	7410	7599
50	74	118	263	426	695	878	1005	971	778	479	232	106	74	192	455	881	1576	2454	3459	4430	5208	5687	5919	6025
55	32	56	152	287	540	728	850	816	628	328	131	51	32	88	240	527	1067	1795	2645	3461	4089	4417	4548	4599
60	5	18	71	167	385	578	695	661	478	202	58	23	5	23	94	261	646	1224	1919	2580	3058	3260	3318	3341
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	154	202	345	471	672	803	895	881	733	514	322	191	154	356	701	1172	1844	2647	3542	4423	5156	5670	5992	6183

(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.
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