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: WARRENTON, GA **COOP ID: 099141**

Climate Division: GA 6 **NWS Call Sign:** **Elevation: 490 Feet** **Lat: 33˚24N** **Lon: 82˚38W**

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	53.4	31.8	42.6	86	1952	26	55.0	1974	-3+	1985	22	31.4	1977	695	0	.0	.0	20.2	.5	17.1	.1
Feb	58.2	33.6	45.9	83	1930	25	52.9	1990	8+	1996	6	37.1	1978	536	0	.0	.0	21.8	.3	12.7	.0
Mar	66.2	40.3	53.3	89	1974	11	60.1	1997	11	1980	4	47.1	1971	373	9	.0	.0	28.9	@	6.2	.0
Apr	73.9	46.8	60.4	93+	1986	28	65.4	1999	26+	2000	5	55.6	1983	165	26	.0	.6	29.8	.0	1.0	.0
May	81.3	56.1	68.7	100	1941	30	72.9	2000	37+	1971	5	65.2	1976	39	153	.0	3.8	31.0	.0	.0	.0
Jun	87.6	64.0	75.8	110	1959	30	79.6	1998	40+	1972	3	70.9	1972	1	324	.6	13.6	30.0	.0	.0	.0
Jul	90.5	68.3	79.4	108	1990	9	84.1	1993	47	1965	2	76.1	1979	0	447	1.5	20.8	31.0	.0	.0	.0
Aug	88.5	67.5	78.0	105+	1983	22	82.0	1987	53	1968	29	73.9	1981	0	404	.8	16.9	31.0	.0	.0	.0
Sep	83.3	61.9	72.6	103	1931	18	76.8	1980	36	1967	30	69.4	1988	8	237	.0	6.7	30.0	.0	.0	.0
Oct	74.1	49.9	62.0	99	1954	5	69.2	1984	26	1952	30	54.9	1988	162	69	.0	@	31.0	.0	.5	.0
Nov	65.3	41.1	53.2	90	1961	1	61.0	1985	9	1950	25	46.8	1976	363	10	.0	.0	28.6	.0	6.6	.0
Dec	56.4	33.9	45.2	80+	1971	17	53.6	1971	5+	1983	26	37.2	2000	616	0	.0	.0	23.0	.2	14.8	.0
Ann	73.2	49.6	61.4	110	Jun 1959	30	84.1	Jul 1993	-3+	Jan 1985	22	31.4	Jan 1977	2958	1679	2.9	62.4	336.3	1.0	58.9	.1

\+ 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: 1930-2001

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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	5.30	5.35	4.75	1936	19	7.79	1991	1.04	1981
Feb	4.62	4.35	4.30	1961	25	11.56	1979	.88	1978
Mar	5.40	4.93	4.65	1967	11	12.87	1980	.76	1985
Apr	3.62	3.04	3.95	1983	9	9.86	1983	.07	1987
May	3.59	2.93	4.10	1953	1	10.09	1976	.32	2000
Jun	3.79	3.71	4.16	2001	12	7.05	1981	1.05	1988
Jul	4.17	3.54	4.65	1997	24	9.82	1997	.45	1980
Aug	4.82	4.54	5.60	1940	13	12.42	1986	.37	1987
Sep	3.98	3.33	7.19	1998	4	10.88	1998	.14	1984
Oct	3.45	2.98	4.38	1946	9	10.32	1990	.05	1987
Nov	3.47	3.11	4.50	1977	6	8.06	1983	.41	1998
Dec	3.89	3.10	3.50	1943	26	8.80	1981	.55	1988
Ann	50.10	48.33	7.19	Sep 1998	4	12.87	Mar 1980	.05	Oct 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.2	7.5	4.2	1.9
Feb	6.6	6.3	3.3	1.5
Mar	7.8	6.9	3.9	1.6
Apr	5.4	4.9	2.5	.9
May	6.8	5.8	2.6	1.1
Jun	7.0	5.9	2.6	1.1
Jul	6.6	5.6	2.9	1.4
Aug	7.5	6.8	2.8	1.6
Sep	5.9	5.2	2.3	1.1
Oct	4.5	4.0	2.2	1.1
Nov	5.8	4.5	2.5	1.1
Dec	6.9	6.0	3.0	1.1
Ann	79.0	69.4	34.8	15.5

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
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.33	2.81	3.47	4.00	4.51	5.01	5.56	6.18	6.97	8.16	9.24
Feb	1.24	1.68	2.35	2.93	3.51	4.11	4.78	5.57	6.61	8.22	9.74
Mar	1.40	1.91	2.70	3.39	4.07	4.78	5.58	6.52	7.76	9.70	11.52
Apr	.50	.80	1.32	1.82	2.35	2.93	3.60	4.43	5.54	7.35	9.11
May	.68	1.00	1.53	2.01	2.51	3.04	3.64	4.37	5.34	6.90	8.38
Jun	1.40	1.76	2.27	2.69	3.10	3.52	3.97	4.49	5.16	6.19	7.13
Jul	.93	1.32	1.93	2.48	3.03	3.62	4.28	5.06	6.10	7.76	9.32
Aug	1.03	1.47	2.18	2.82	3.47	4.16	4.93	5.86	7.09	9.04	10.89
Sep	.31	.57	1.09	1.63	2.24	2.94	3.78	4.84	6.31	8.77	11.20
Oct	.25	.48	.92	1.39	1.92	2.53	3.26	4.19	5.47	7.64	9.78
Nov	.74	1.05	1.56	2.03	2.49	2.99	3.55	4.22	5.11	6.53	7.87
Dec	1.02	1.38	1.95	2.45	2.93	3.45	4.02	4.70	5.58	6.98	8.28
Ann	37.52	40.01	43.17	45.55	47.65	49.68	51.76	54.05	56.81	60.79	64.21

\+ 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: 1930-2001
(3) Derived from 1971-2000 serially complete daily data

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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	.0	.0	0	0
Feb	.9	.0	0	0
Mar	.2	.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	1.1	.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	.0	0	0	.0	0	0	0	0	0	0
Feb	14.0	1973	10	14.0	1973	0	0	0	0	0
Mar	2.0	1983	25	2.0	1983	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Dec	.0	0	0	.0	0	0	0	0	0	0
Ann	14.0	Feb 1973	10	14.0	Feb 1973	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	.1	.1	.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	.0	.0	.0	.0	.0
Ann	.2	.2	.1	.1	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.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	.0	.0	.0	.0

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

(1) Derived from Snow Climatology and 1971-2000 daily data

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

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	4/21	4/17	4/13	4/10	4/07	4/05	4/02	3/29	3/24
32	4/14	4/08	4/04	3/31	3/28	3/24	3/21	3/17	3/11
28	4/01	3/25	3/20	3/15	3/11	3/07	3/03	2/26	2/18
24	3/14	3/07	3/01	2/24	2/19	2/15	2/10	2/04	1/27
20	3/08	2/27	2/20	2/14	2/08	2/03	1/27	1/17	0/00
16	2/22	2/11	2/04	1/28	1/21	1/12	12/31	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	10/12	10/17	10/21	10/25	10/28	10/31	11/04	11/08	11/13
32	10/22	10/28	11/01	11/05	11/08	11/11	11/15	11/19	11/25
28	11/08	11/13	11/17	11/20	11/23	11/26	11/29	12/03	12/08
24	11/21	11/30	12/06	12/12	12/17	12/22	12/28	1/04	1/13
20	12/03	12/13	12/19	12/25	12/31	1/05	1/12	1/21	0/00
16	12/18	12/27	1/02	1/08	1/15	1/22	2/02	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	221	215	210	206	203	199	195	191	184
32	249	241	235	229	225	220	214	208	200
28	275	269	264	260	256	252	248	243	237
24	332	319	311	304	298	292	285	278	267
20	>365	>365	345	329	320	312	305	297	287
16	>365	>365	>365	>365	>365	346	334	323	310

***** 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	695	536	373	165	39	1	0	0	8	162	363	616	2958
60	552	403	240	74	9	0	0	0	1	83	236	471	2069
57	468	325	175	38	3	0	0	0	0	50	173	387	1619
55	414	277	138	23	1	0	0	0	0	34	137	334	1358
50	293	173	66	4	0	0	0	0	0	11	66	220	833
32	39	8	0	0	0	0	0	0	0	0	0	16	63

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	368	396	659	851	1137	1313	1470	1427	1219	930	637	424	10831
55	29	21	84	184	425	623	757	714	529	251	84	28	3729
57	21	14	59	140	365	563	695	652	469	205	60	19	3262
60	13	7	31	85	278	473	602	559	380	145	33	11	2617
65	0	0	9	26	153	324	447	404	237	69	10	0	1679
70	0	0	0	4	65	184	292	252	115	24	1	0	937

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	176	243	448	645	924	1107	1251	1210	1004	703	419	226	176	419	867	1512	2436	3543	4794	6004	7008	7711	8130	8356
45	94	146	308	498	769	957	1096	1055	854	548	287	126	94	240	548	1046	1815	2772	3868	4923	5777	6325	6612	6738
50	46	71	188	355	614	807	941	900	704	397	174	67	46	117	305	660	1274	2081	3022	3922	4626	5023	5197	5264
55	22	29	99	223	460	657	786	745	554	257	87	28	22	51	150	373	833	1490	2276	3021	3575	3832	3919	3947
60	2	5	38	121	311	507	631	590	404	144	36	6	2	7	45	166	477	984	1615	2205	2609	2753	2789	2795
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	114	169	293	419	609	749	848	831	683	451	269	142	114	283	576	995	1604	2353	3201	4032	4715	5166	5435	5577

(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