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: BIRMINGHAM INTL AP, AL **COOP ID: 010831**

Climate Division: AL 2 **NWS Call Sign: BHM** **Elevation: 615 Feet** **Lat: 33˚34N** **Lon: 86˚45W**

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	52.8	32.3	42.6	81	1949	10	52.1	1974	-6	1985	21	30.9	1977	691	1	.0	.0	19.6	1.4	16.4	.1
Feb	58.3	35.4	46.8	83+	1996	23	54.5	1990	3	1958	17	36.7	1978	514	3	.0	.0	21.3	.6	11.5	.0
Mar	66.5	42.4	54.5	89	1982	19	60.6	1974	2	1993	14	48.0	1971	339	16	.0	.0	28.9	.1	5.3	.0
Apr	74.1	48.4	61.3	92	1987	21	67.2	1999	26	1973	11	56.6	1983	154	51	.0	.1	29.9	.0	1.2	.0
May	81.0	57.6	69.3	99	1962	28	74.3	2000	36	1971	4	63.5	1976	31	167	.0	1.9	31.0	.0	.0	.0
Jun	87.5	65.4	76.4	106	1931	29	80.3	1998	42	1966	1	71.9	1974	1	351	.1	11.3	30.0	.0	.0	.0
Jul	90.6	69.7	80.2	107	1930	29	83.8	1993	51	1967	15	76.5	1972	0	476	1.2	19.0	31.0	.0	.0	.0
Aug	90.2	68.9	79.6	104	1935	8	84.8	1995	51	1946	31	75.6	1992	0	455	1.1	17.7	31.0	.0	.0	.0
Sep	84.6	63.0	73.8	102	1931	19	78.2	1998	37	1967	30	69.5	1974	11	280	.1	7.4	30.0	.0	.0	.0
Oct	74.9	50.9	62.9	94+	1954	6	71.1	1984	27+	1957	28	56.8	1987	133	69	.0	.1	30.9	.0	.3	.0
Nov	64.5	41.8	53.1	85+	2000	1	61.0	1985	5	1950	25	44.9	1976	359	9	.0	.0	27.7	@	6.3	.0
Dec	56.0	35.2	45.6	80	1951	7	54.3	1984	1+	1989	23	38.0	1989	590	3	.0	.0	23.1	.6	14.0	.0
Ann	73.4	50.9	62.2	107	Jul 1930	29	84.8	Aug 1995	-6	Jan 1985	21	30.9	Jan 1977	2823	1881	2.5	57.5	334.4	2.7	55.0	.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	5.45	5.39	4.71	1996	26	9.59	1996	1.09	1981
Feb	4.21	4.29	5.46	1961	21	9.28	1971	1.31	1978
Mar	6.10	5.56	6.91	1970	19	15.80	1980	1.71	1985
Apr	4.67	3.59	4.61	1979	12	13.75	1979	.42	1986
May	4.83	4.14	3.85	1967	6	9.57	1983	.88	2000
Jun	3.78	3.16	3.85	1957	23	9.04	1999	.79	1988
Jul	5.09	4.81	5.47	1985	27	10.07	1985	.30	1983
Aug	3.48	3.34	4.15	1941	2	8.98	1998	.38	1989
Sep	4.05	3.61	3.70	1979	27	10.43	1977	.16	1984
Oct	3.23	3.28	6.94	1995	3	11.90	1995	.07	1991
Nov	4.63	4.12	4.41	1983	27	9.66	1986	1.67	1981
Dec	4.47	4.06	7.70	1942	27	12.63	1983	.81	1980
Ann	53.99	55.14	7.70	Dec 1942	27	15.80	Mar 1980	.07	Oct 1991

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.4	8.2	4.2	1.6
Feb	9.5	6.6	3.2	1.2
Mar	11.0	7.9	4.2	1.9
Apr	9.1	6.3	3.3	1.5
May	10.6	7.2	3.2	1.7
Jun	10.4	7.1	2.7	.9
Jul	12.1	8.0	3.7	1.4
Aug	9.3	5.8	2.6	1.0
Sep	8.0	5.3	2.6	1.5
Oct	6.5	4.5	2.2	.9
Nov	9.4	6.9	2.9	1.6
Dec	10.5	7.1	3.2	1.3
Ann	117.8	80.9	38.0	16.5

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	2.11	2.61	3.33	3.93	4.50	5.08	5.70	6.43	7.35	8.76	10.05
Feb	1.45	1.85	2.43	2.92	3.39	3.87	4.40	5.01	5.80	7.02	8.15
Mar	1.85	2.43	3.29	4.04	4.76	5.52	6.35	7.32	8.58	10.55	12.37
Apr	.99	1.41	2.10	2.72	3.35	4.02	4.77	5.68	6.87	8.78	10.58
May	1.46	1.92	2.61	3.20	3.77	4.37	5.02	5.79	6.79	8.34	9.78
Jun	.93	1.29	1.84	2.33	2.81	3.32	3.89	4.57	5.46	6.86	8.17
Jul	1.12	1.59	2.34	3.01	3.69	4.40	5.21	6.17	7.44	9.47	11.38
Aug	.66	.98	1.49	1.96	2.44	2.95	3.54	4.24	5.18	6.68	8.11
Sep	.47	.78	1.35	1.91	2.52	3.19	3.98	4.95	6.28	8.47	10.59
Oct	.39	.64	1.10	1.55	2.02	2.56	3.18	3.94	4.98	6.70	8.36
Nov	1.74	2.17	2.79	3.31	3.80	4.30	4.84	5.47	6.28	7.51	8.65
Dec	1.36	1.78	2.42	2.96	3.49	4.04	4.65	5.36	6.28	7.72	9.05
Ann	40.71	43.34	46.68	49.19	51.41	53.54	55.72	58.13	61.03	65.21	68.81

\+ 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	.7	#	#	0
Feb	.1	#	#	0
Mar	.5	.0	#	0
Apr	.2	.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
Nov	#	.0	0	0
Dec	.1	#	0	0
Ann	1.6	#	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	5.0	1982	13	6.6	1982	4	1992	19	#	2000
Feb	.9	1996	2	1.2	1996	1+	1996	4	#	1996
Mar	10.3	1993	13	13.0	1993	13	1993	14	1	1993
Apr	5.0	1987	3	5.0	1987	5	1987	3	#	1987
May	.0	0	0	.0	0	0	0	0	#	2000
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	#	1993	31	#	1993	#	1993	31	0	0
Nov	#	2000	19	#+	2000	#+	1991	8	0	0
Dec	1.6	1997	29	1.7	1997	#+	1998	25	0	0
Ann	10.3	Mar 1993	13	13.0	Mar 1993	13	Mar 1993	14	1	Mar 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.3	.1	@	.0
Feb	.3	.0	.0	.0	.0
Mar	.1	.1	@	@	@
Apr	.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	.9	.4	.1	@	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.4	.1	.0	.0
Feb	.1	.0	.0	.0
Mar	.2	.1	.1	.1
Apr	@	@	@	.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	.7	.2	.1	.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

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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	4/24	4/19	4/16	4/13	4/10	4/07	4/05	4/01	3/27
32	4/19	4/13	4/09	4/05	4/02	3/30	3/26	3/22	3/17
28	4/03	3/27	3/22	3/17	3/13	3/09	3/05	2/28	2/21
24	3/13	3/06	3/01	2/25	2/21	2/17	2/13	2/08	2/01
20	3/07	2/27	2/21	2/16	2/11	2/06	2/01	1/26	1/17
16	2/28	2/18	2/11	2/04	1/29	1/22	1/13	12/28	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	10/06	10/12	10/16	10/19	10/22	10/25	10/29	11/01	11/07
32	10/27	11/01	11/04	11/06	11/09	11/11	11/14	11/17	11/22
28	11/03	11/08	11/12	11/15	11/18	11/21	11/25	11/29	12/04
24	11/11	11/20	11/26	12/01	12/06	12/11	12/16	12/23	12/31
20	11/29	12/07	12/13	12/18	12/23	12/28	1/02	1/08	1/16
16	12/07	12/18	12/26	1/03	1/10	1/17	1/27	2/14	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	213	206	202	198	194	191	187	182	176
32	242	234	229	224	220	216	211	206	198
28	275	266	260	255	250	245	239	233	225
24	320	309	301	294	288	281	274	266	255
20	346	334	326	319	313	308	301	294	284
16	>365	>365	>365	>365	346	334	324	314	301

***** 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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	691	514	339	154	31	1	0	0	11	133	359	590	2823
60	555	378	211	67	12	0	0	0	1	73	236	460	1993
57	471	302	151	34	5	0	0	0	0	43	172	377	1555
55	417	255	117	20	2	0	0	0	0	28	136	326	1301
50	298	158	52	4	0	0	0	0	0	8	65	216	801
32	42	7	0	0	0	0	0	0	0	0	0	18	67

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	362	432	705	885	1164	1341	1501	1480	1259	962	639	442	11172
55	19	37	114	226	452	651	788	767	569	268	91	36	4018
57	13	26	85	182	391	591	726	705	509	219	66	25	3538
60	6	13	51	123	303	501	633	612	421	153	38	13	2867
65	1	3	16	51	167	351	476	455	280	69	9	3	1881
70	0	0	3	11	71	209	324	303	156	22	1	1	1101

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	182	260	472	653	926	1110	1262	1240	1027	721	414	241	182	442	914	1567	2493	3603	4865	6105	7132	7853	8267	8508
45	104	163	331	505	771	960	1107	1085	877	566	288	145	104	267	598	1103	1874	2834	3941	5026	5903	6469	6757	6902
50	52	90	215	363	616	810	952	930	727	415	177	77	52	142	357	720	1336	2146	3098	4028	4755	5170	5347	5424
55	24	41	117	230	462	660	797	775	577	276	95	36	24	65	182	412	874	1534	2331	3106	3683	3959	4054	4090
60	2	16	55	129	312	510	642	620	430	157	42	14	2	18	73	202	514	1024	1666	2286	2716	2873	2915	2929
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	107	167	295	424	618	765	873	862	700	466	254	142	107	274	569	993	1611	2376	3249	4111	4811	5277	5531	5673

(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