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: BARROW AP, AK **COOP ID: 500546**

Climate Division: AK 9 **NWS Call Sign: BRW** **Elevation: 31 Feet** **Lat: 71˚17N** **Lon: 156˚46W**

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 >= 90	Max >= 70	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	-7.7	-19.6	-13.7	36	1974	4	-.9	1981	-53+	1975	3	-26.4	1975	2440	0	.0	.0	.0	31.0	31.0	29.5
Feb	-9.8	-22.0	-15.9	36	1982	4	9.3	1989	-54	1964	19	-32.9	1984	2267	0	.0	.0	.0	28.2	28.2	26.6
Mar	-7.4	-20.0	-13.7	34	1998	21	-2.7	1998	-52	1971	2	-22.2	1977	2423	0	.0	.0	.0	30.6	30.6	29.6
Apr	6.3	-7.3	-.5	38+	1995	30	11.2	1998	-38	1986	5	-10.6	1984	1967	0	.0	.0	.0	29.5	30.0	22.6
May	24.9	15.3	20.1	47	1996	23	28.0	1991	-19	1984	6	13.9	2000	1391	0	.0	.0	.0	25.0	30.6	2.3
Jun	39.5	30.4	35.0	72	1996	18	37.9	1984	4	1969	6	30.0	1974	903	0	.0	.1	3.2	3.0	22.6	.0
Jul	46.5	34.3	40.4	79	1993	13	45.5	1989	25	1992	27	35.7	1980	763	0	.0	.2	10.3	.0	12.1	.0
Aug	43.6	33.8	38.7	76	1968	8	46.8	1989	21+	1991	26	33.5	1971	815	0	.0	.1	7.5	1.3	14.6	.0
Sep	34.8	27.5	31.2	62+	1995	22	37.7	1998	1+	1975	28	23.9+	1983	1016	0	.0	.0	1.2	11.6	23.5	.0
Oct	19.3	9.8	14.6	43	1954	3	24.7	1998	-32	1970	27	2.0	1988	1564	0	.0	.0	.0	28.6	30.1	6.9
Nov	4.6	-6.4	-.9	37	1950	10	15.1	1998	-38+	1992	23	-13.6	1988	1978	0	.0	.0	.0	29.9	30.0	21.1
Dec	-4.7	-16.4	-10.6	32+	1998	22	.6	1983	-51	1974	31	-26.6	1974	2346	0	.0	.0	.0	31.0	31.0	28.6
Ann	15.8	5.0	10.4	79	Jul 1993	13	46.8	Aug 1989	-54	Feb 1964	19	-32.9	Feb 1984	19873	0	.0	.4	22.2	249.7	314.3	167.2

\+ 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: 1949-2001

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

Issue Date: May 2005

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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	.12	.08	.62	2001	8	.45	1993	.00+	1998
Feb	.12	.10	.30	1959	13	.43	1982	.00+	1997
Mar	.09	.09	.70	1963	25	.24	1982	.00+	1983
Apr	.12	.09	.42	1963	4	.52	1973	.00+	1987
May	.12	.08	.29	1962	29	.39+	1996	.00	1995
Jun	.32	.26	.82	1955	26	.79	1975	.03	1984
Jul	.87	.76	1.28	1987	21	3.19	1989	.09	1977
Aug	1.04	.99	.83	1960	10	2.64	1997	.17	1976
Sep	.69	.59	.56	1959	30	1.50	1993	.15	1984
Oct	.39	.37	.45	1972	12	1.40	1972	.13	1978
Nov	.16	.13	.39	1958	2	.45	1976	.00	1989
Dec	.12	.12	.21	1967	30	.36	1998	.01	1975
Ann	4.16	4.07	1.28	Jul 1987	21	3.19	Jul 1989	.00+	Jan 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.9	.1	.0	.0
Feb	4.1	.2	.0	.0
Mar	4.1	.0	.0	.0
Apr	4.3	.2	.0	.0
May	4.8	.3	.0	.0
Jun	6.0	.9	.0	.0
Jul	9.1	2.8	.1	.1
Aug	12.1	3.8	.2	.0
Sep	13.1	2.0	.0	.0
Oct	11.9	.6	.0	.0
Nov	6.0	.2	.0	.0
Dec	5.1	.2	.0	.0
Ann	85.5	11.3	.3	.1

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	.00	.01	.03	.05	.07	.09	.12	.15	.19	.26	.34
Feb	.00	.02	.04	.06	.08	.10	.12	.15	.18	.24	.30
Mar	.00	.01	.03	.04	.06	.07	.09	.11	.14	.18	.22
Apr	.00	.01	.03	.04	.06	.09	.11	.15	.20	.28	.35
May	.00	.01	.03	.05	.07	.09	.12	.15	.20	.28	.35
Jun	.03	.06	.10	.15	.19	.25	.31	.38	.49	.66	.83
Jul	.13	.20	.32	.45	.57	.71	.87	1.07	1.33	1.76	2.17
Aug	.24	.34	.49	.63	.76	.91	1.07	1.26	1.51	1.91	2.29
Sep	.18	.25	.35	.44	.52	.61	.71	.83	.99	1.23	1.46
Oct	.12	.16	.22	.27	.31	.36	.41	.47	.55	.67	.78
Nov	.01	.03	.05	.08	.10	.13	.16	.20	.25	.33	.41
Dec	.02	.03	.05	.06	.08	.10	.12	.15	.19	.25	.31
Ann	2.32	2.64	3.08	3.42	3.73	4.03	4.36	4.72	5.17	5.84	6.44

\+ 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: 1949-2001
(3) Derived from 1971-2000 daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	1.7	1.4	7	8	2.0	1997	31	7.0	2000	16	1998	29	16	1998	5.2	.3	.0	.0	.0	30.9	30.9	27.2	7.2
Feb	1.8	1.6	8	7	2.0	1996	29	4.3	1982	16+	1998	28	16	1998	5.0	.4	.0	.0	.0	28.0	28.0	24.9	8.5
Mar	1.5	1.2	9	7	1.1	1982	22	4.6	1992	16+	1998	23	16	1980	5.0	.1	.0	.0	.0	30.6	30.6	29.5	12.0
Apr	2.1	1.8	8	8	2.0+	1996	8	8.8	1973	18	1984	30	16	1984	5.7	.5	.0	.0	.0	29.9	29.9	27.5	11.9
May	1.7	1.3	4	3	4.4	1996	19	6.0	1996	18	1984	7	12	1984	5.4	.4	@	.0	.0	26.2	18.2	9.9	3.3
Jun	.8	.4	#	0	3.2	1981	7	4.1	1974	5+	1984	1	1+	1974	1.7	.3	@	.0	.0	2.0	.3	.1	.0
Jul	.2	.0	0	0	1.4	1982	26	1.7	1982	0	0	0	0	0	.5	@	.0	.0	.0	.0	.0	.0	.0
Aug	.9	.6	#	0	2.1	1984	25	2.6	1988	2+	1988	29	0	0	2.4	.2	.0	.0	.0	.3	.0	.0	.0
Sep	4.6	3.9	#	0	5.1	1987	13	12.3+	1987	6	1987	19	3	1983	8.9	1.4	.1	@	.0	6.8	3.3	.4	.0
Oct	6.8	6.6	3	4	5.1	1972	12	15.6	1997	12	1997	31	9	2000	13.1	1.9	.1	@	.0	25.8	20.3	11.1	.9
Nov	3.0	2.9	6	7	1.9	1992	27	7.2	1976	15	1997	30	14	1997	7.6	.7	.0	.0	.0	29.8	28.3	23.2	3.6
Dec	2.1	1.9	7	8	2.0	1992	29	7.1	1998	16	1997	31	16	1997	5.8	.4	.0	.0	.0	31.0	30.3	25.2	5.2
Ann	27.2	23.6	N/A	N/A	5.1+	Sep 1987	13	15.6	Oct 1997	18+	May 1984	7	16+	Feb 1998	66.3	6.6	.2	@	.0	241.3	220.1	179.0	52.6

+ 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	8/01	8/01	7/31	7/31	7/31	7/30	7/30	7/29	7/29
32	8/01	7/31	7/30	7/29	7/28	7/28	7/27	7/26	7/24
28	7/21	7/13	7/08	7/03	6/29	6/24	6/20	6/14	6/06
24	6/13	6/10	6/08	6/05	6/03	6/01	5/30	5/28	5/24
20	6/04	6/01	5/30	5/28	5/26	5/24	5/23	5/21	5/18
16	5/31	5/28	5/26	5/23	5/22	5/20	5/18	5/15	5/12

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	7/29	7/31	7/31	8/02	8/03	8/04	8/05	8/06	8/08
32	7/26	7/31	8/02	8/05	8/08	8/10	8/13	8/16	8/21
28	8/01	8/09	8/14	8/19	8/23	8/28	9/01	9/07	9/14
24	8/31	9/06	9/10	9/13	9/17	9/20	9/23	9/27	10/03
20	9/12	9/17	9/20	9/23	9/25	9/28	10/01	10/04	10/09
16	9/18	9/23	9/26	9/28	9/30	10/03	10/05	10/08	10/12

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	9	7	5	4	2	1	0	0	0
32	25	20	16	13	10	6	3	0	0
28	90	78	69	62	55	48	40	32	19
24	125	118	113	108	104	100	96	91	84
20	139	133	129	125	122	118	115	110	104
16	147	141	138	134	131	128	125	121	115

***** 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	2440	2267	2423	1967	1391	903	763	815	1016	1564	1978	2346	19873
60	2285	2127	2288	1817	1236	753	608	660	866	1409	1828	2191	18068
57	2192	2043	2195	1727	1143	663	515	567	776	1316	1738	2098	16973
55	2130	1987	2133	1667	1081	603	453	508	716	1254	1678	2036	16246
50	1975	1847	1978	1517	926	453	303	365	568	1099	1528	1881	14440
32	1417	1343	1420	977	383	35	7	39	145	573	996	1323	8658

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	15	123	267	247	119	32	7	0	810
55	0	0	0	0	0	0	0	3	0	0	0	0	3
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	0	0	0	0	20	86	72	8	0	0	0	0	0	0	0	0	20	106	178	186	186	186	186
45	0	0	0	0	0	4	33	27	0	0	0	0	0	0	0	0	0	4	37	64	64	64	64	64
50	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	0	0	0	7	10	10	10	10	10
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	0	0	0	9	37	27	0	0	0	0	0	0	0	0	0	9	46	73	73	73	73	73

(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 were calculated from a serially complete daily data set. A serial dataset was not available for precipitation,
To ensure that a station's data was adequate to estimate these statistics, the following criteria were used:
1. A station must have 80% of its data for the 1971-2000 time period.
2. Only months with at least 21 days are used.
3. There must be a least 21 months (meeting criteria 2.) in the sample.

g. Snowfall and snow depth statistics were derived daily values quality controlled to be consistent with 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 differences 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. Other inconsistencies may appear from comparing statistically modeled values such as degree days to observed temperatures.

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. 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