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: BETTLES AP, AK **COOP ID: 500761**

Climate Division: AK 8 **NWS Call Sign: BTT** **Elevation: 642 Feet** **Lat: 66˚55N** **Lon: 151˚31W**

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	-3.1	-19.2	-11.2	42	1961	21	16.4	1981	-70	1975	4	-33.1	1971	2365	0	.0	.0	.0	29.3	30.0	23.3
Feb	2.0	-17.7	-7.9	40	1977	21	6.8	1989	-64	1999	9	-28.8	1990	2041	0	.0	.0	.0	26.9	27.4	22.1
Mar	16.4	-8.0	4.2	49	1998	22	17.3	1981	-56	1964	14	-12.9	1972	1888	0	.0	.0	.0	27.5	30.8	21.2
Apr	34.1	10.6	22.4	63	1995	30	33.8	1995	-37	1986	7	9.8	1986	1280	0	.0	.0	1.9	12.6	27.5	7.1
May	54.9	33.7	44.3	86	1983	31	51.5	1990	-10	1952	3	34.5	1992	642	0	.0	1.8	21.7	.4	12.1	.2
Jun	68.7	46.9	57.8	92+	1999	13	62.5	1991	27	1960	1	52.9	1978	227	11	.2	12.9	29.7	.0	.2	.0
Jul	70.8	49.5	60.2	93	1986	6	63.6	1993	29	1959	14	53.7	1981	170	20	.2	17.0	30.8	.0	.1	.0
Aug	63.2	43.7	53.5	88	1994	6	59.1	1977	22+	1974	23	48.8	1983	366	7	.0	6.0	28.8	.0	1.9	.0
Sep	49.1	32.8	41.0	79	1957	5	47.4	1974	0	1992	23	29.9	1992	721	0	.0	.3	14.0	.9	14.2	@
Oct	25.4	11.9	18.7	53+	1969	13	28.3	1979	-35	1992	31	8.0	1996	1437	0	.0	.0	.1	23.4	29.7	6.6
Nov	6.4	-8.0	-.8	45	1976	13	17.7	1979	-57+	1974	26	-12.2	1990	1975	0	.0	.0	.0	29.4	29.9	20.8
Dec	.4	-15.1	-7.4	38	1960	9	7.5	1985	-59+	1974	30	-26.8	1980	2245	0	.0	.0	.0	30.9	31.0	24.7
Ann	32.4	13.4	22.9	93	Jul 1986	6	63.6	Jul 1993	-70	Jan 1975	4	-33.1	Jan 1971	15357	38	.4	38.0	127.0	181.3	234.8	126.0

\+ 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: 1951-2001

(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	.84	.53	.98	1962	21	3.42	1973	.05	1983
Feb	.61	.43	.99	1996	28	2.77	1996	.00	1979
Mar	.55	.43	.87	1963	5	2.25	1991	.00	1997
Apr	.38	.27	.98	1982	6	1.51	1982	.01	1986
May	.85	.67	1.02	1995	26	3.01	1998	.11	1978
Jun	1.43	1.38	1.93	1958	17	3.11	1992	.18	1983
Jul	2.10	1.84	1.46	1970	5	4.29	1982	.41	1972
Aug	2.54	2.33	2.96	1994	17	9.16	1994	.68	1975
Sep	1.82	1.67	1.31	1954	29	4.72	1993	.13	1984
Oct	1.08	1.01	1.14	1963	6	3.82	1972	.12	1974
Nov	.90	.64	1.35	1992	9	3.36	1992	.02	1995
Dec	.87	.78	.78	1992	30	3.09	1992	.12	1995
Ann	13.97	13.46	2.96	Aug 1994	17	9.16	Aug 1994	.00+	Mar 1997

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.3	2.7	.3	.0
Feb	7.2	1.8	.2	.0
Mar	7.5	1.7	.1	.0
Apr	5.6	1.2	.0	.0
May	7.1	2.8	.2	.0
Jun	10.7	4.7	.4	.0
Jul	12.2	6.0	.8	.1
Aug	13.5	7.1	1.1	.1
Sep	12.1	5.3	.8	.0
Oct	11.7	3.5	.2	.0
Nov	10.3	2.8	.2	.0
Dec	11.1	2.9	.1	.0
Ann	117.3	42.5	4.4	.2

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	.06	.12	.23	.34	.47	.62	.79	1.02	1.32	1.84	2.35
Feb	.03	.08	.17	.26	.36	.47	.60	.76	.97	1.34	1.69
Mar	.02	.05	.13	.21	.29	.39	.51	.67	.88	1.23	1.59
Apr	.02	.05	.10	.15	.21	.27	.36	.46	.61	.86	1.10
May	.12	.20	.32	.44	.56	.69	.85	1.04	1.29	1.71	2.11
Jun	.45	.59	.79	.96	1.13	1.30	1.49	1.71	1.99	2.43	2.84
Jul	.66	.86	1.16	1.41	1.65	1.91	2.18	2.51	2.93	3.59	4.19
Aug	.75	.99	1.35	1.67	1.97	2.29	2.64	3.05	3.59	4.43	5.20
Sep	.30	.45	.72	.97	1.23	1.51	1.83	2.22	2.75	3.60	4.41
Oct	.24	.34	.50	.64	.78	.93	1.10	1.31	1.57	1.99	2.39
Nov	.07	.14	.25	.38	.51	.67	.86	1.09	1.42	1.96	2.49
Dec	.18	.26	.39	.50	.62	.74	.88	1.05	1.27	1.63	1.96
Ann	9.44	10.30	11.41	12.25	13.01	13.74	14.50	15.35	16.38	17.88	19.19

+ 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: 1951-2001
(3) Derived from 1971-2000 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	12.2	9.2	24	20
Feb	6.6	5.7	27	23
Mar	6.4	5.8	27	27
Apr	4.3	3.3	21	22
May	.8	.1	2	1
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	#	.0	0	0
Sep	2.6	1.0	#	0
Oct	10.8	9.7	3	2
Nov	10.4	7.2	10	9
Dec	10.8	9.8	16	17
Ann	64.9	51.8	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	18.5	1973	28	40.5	1973	59	1993	13	48	1993
Feb	6.8	1992	28	16.5	1981	60	1972	4	57	1972
Mar	10.0	1978	16	21.1	1982	56	1972	25	53	1972
Apr	10.8	1975	14	15.1	1984	59	1972	1	52	1972
May	2.7	1985	9	3.7	1985	39	1972	2	11	1982
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	4.3	1996	25	18.6	1996	6	1996	30	1	1996
Oct	6.0	1972	15	31.0	1972	19	1971	30	9	1972
Nov	14.0	1992	9	33.3	1992	29	1971	24	22	1971
Dec	10.4	1977	20	22.2	1992	46	1971	31	30	1992
Ann	18.5	Jan 1973	28	40.5	Jan 1973	60	Feb 1972	4	57	Feb 1972

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	7.2	3.0	1.2	.7	.1
Feb	6.7	2.5	.5	.1	.0
Mar	6.0	2.2	.4	.1	@
Apr	4.1	1.2	.2	.1	@
May	.8	.4	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	2.2	.9	.3	.0	.0
Oct	8.9	3.7	1.2	.2	.0
Nov	8.6	3.0	1.2	.3	.1
Dec	8.0	3.6	.9	.3	.0
Ann	52.5	20.5	5.9	1.8	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	27.0	27.0	27.0	26.9
Feb	25.9	25.9	25.9	25.9
Mar	27.7	27.7	27.7	27.7
Apr	26.2	26.1	26.1	24.0
May	9.5	8.4	6.6	3.6
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	1.4	.2	.1	.0
Oct	18.5	13.0	9.1	1.4
Nov	26.8	25.1	22.4	11.9
Dec	27.0	27.0	27.0	21.9
Ann	190.0	180.4	171.9	143.3

+ 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

Complete documentation available from:
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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	7/11	7/02	6/25	6/19	6/14	6/09	6/03	5/27	5/18
32	6/22	6/14	6/08	6/03	5/29	5/24	5/19	5/13	5/05
28	5/24	5/20	5/17	5/15	5/13	5/10	5/08	5/05	5/01
24	5/18	5/13	5/10	5/07	5/05	5/02	4/30	4/26	4/22
20	5/13	5/08	5/05	5/03	4/30	4/28	4/25	4/22	4/17
16	5/09	5/05	5/02	4/30	4/27	4/25	4/22	4/19	4/15

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	8/06	8/10	8/13	8/16	8/18	8/21	8/23	8/26	8/31
32	8/13	8/18	8/21	8/24	8/27	8/29	9/01	9/05	9/09
28	8/27	9/01	9/05	9/08	9/10	9/13	9/16	9/20	9/25
24	9/03	9/08	9/11	9/15	9/17	9/20	9/23	9/27	10/02
20	9/13	9/18	9/21	9/24	9/26	9/29	10/02	10/05	10/09
16	9/18	9/23	9/26	9/29	10/02	10/04	10/07	10/10	10/15

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	98	86	78	71	65	58	51	43	31
32	118	108	101	95	89	83	77	70	60
28	137	131	127	124	120	117	113	109	103
24	154	148	143	139	135	131	127	122	115
20	169	162	157	152	148	144	140	135	128
16	175	169	164	160	157	153	149	144	138

***** 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	2365	2041	1888	1280	642	227	170	366	721	1437	1975	2245	15357
60	2210	1901	1733	1130	494	115	74	232	575	1282	1825	2090	13661
57	2117	1817	1640	1040	410	67	35	166	490	1189	1735	1997	12703
55	2055	1761	1578	981	358	44	19	130	435	1127	1675	1935	12098
50	1900	1621	1423	836	242	11	2	60	310	972	1525	1780	10682
32	1367	1134	874	375	32	0	0	0	43	453	993	1223	6494

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	25	18	9	84	413	774	873	665	312	39	8	1	3221
55	0	0	0	1	26	128	179	81	14	0	0	0	429
57	0	0	0	0	16	91	133	56	9	0	0	0	305
60	0	0	0	0	7	49	79	29	4	0	0	0	168
65	0	0	0	0	0	11	20	7	0	0	0	0	38
70	0	0	0	0	0	0	3	0	0	0	0	0	3

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	4	195	546	636	425	114	0	0	0	0	0	0	4	199	745	1381	1806	1920	1920	1920	1920
45	0	0	0	0	99	397	481	279	45	0	0	0	0	0	0	0	99	496	977	1256	1301	1301	1301	1301
50	0	0	0	0	43	255	329	151	8	0	0	0	0	0	0	0	43	298	627	778	786	786	786	786
55	0	0	0	0	12	137	189	62	0	0	0	0	0	0	0	0	12	149	338	400	400	400	400	400
60	0	0	0	0	3	57	87	17	0	0	0	0	0	0	0	0	3	60	147	164	164	164	164	164
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	0	1	106	299	358	220	57	0	0	0	0	0	0	1	107	406	764	984	1041	1041	1041	1041

(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