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: FAIRBANKS INTL AP, AK **COOP ID: 502968**

Climate Division: AK 8 **NWS Call Sign: FAI** **Elevation: 436 Feet** **Lat: 64˚49N** **Lon: 147˚51W**

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	-19.0	-9.7	50	1981	15	16.6	1981	-61	1969	2	-33.3	1971	2315	0	.0	.0	@	29.8	31.0	25.3
Feb	8.0	-15.6	-3.8	47	1987	23	14.4	1980	-58	1993	2	-26.8	1979	1926	0	.0	.0	.0	26.2	28.3	22.2
Mar	25.0	-2.7	11.1	56	1994	31	25.6	1981	-49	1956	1	-4.3	1972	1670	0	.0	.0	.5	20.9	31.0	16.0
Apr	43.6	19.8	31.7	74	1960	30	41.1	1993	-24	1986	7	19.4	1972	999	0	.0	.1	9.8	5.1	26.1	2.2
May	60.6	36.9	48.8	89	1960	24	54.3	1990	-1	1964	9	41.8	1992	504	0	.0	4.3	27.6	.1	5.5	.0
Jun	70.9	48.5	59.7	96	1969	15	63.1	1997	30	1950	2	53.6	1978	179	20	.2	16.7	30.0	.0	.0	.0
Jul	73.0	51.9	62.4	94+	1975	11	67.5	1975	35+	1959	18	55.6	1981	121	42	.2	21.8	31.0	.0	.0	.0
Aug	66.3	46.2	56.2	93	1994	5	61.7	1977	27	1987	31	51.7	2000	283	11	.1	10.5	30.7	.0	.4	.0
Sep	54.3	34.7	44.5	84	1957	5	52.8	1995	3	1992	30	31.7	1992	615	1	.0	1.3	21.2	.4	9.1	.0
Oct	31.4	15.6	23.5	65+	1969	13	32.3	1987	-27+	1992	31	13.2	1996	1287	0	.0	.0	1.8	16.4	28.8	3.6
Nov	11.2	-6.6	2.3	49	1997	10	18.7	1979	-46	1990	30	-9.4	1975	1882	0	.0	.0	.0	28.1	30.0	19.3
Dec	3.3	-15.2	-5.9	45	1999	22	6.7	1985	-62+	1961	29	-25.6	1980	2199	0	.0	.0	.0	29.9	31.0	25.0
Ann	37.3	16.2	26.7	96	Jun 1969	15	67.5	Jul 1975	-62+	Dec 1961	29	-33.3	Jan 1971	13980	74	.5	54.7	152.6	156.9	221.2	113.6

\+ 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

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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	.56	.42	.75	1993	13	2.40	1993	.08	1998
Feb	.36	.26	.86	1966	11	1.40	1996	.00	2000
Mar	.28	.19	.97	1991	25	2.24	1991	.00+	1998
Apr	.21	.11	.47	1979	20	.93	1982	.00+	2000
May	.60	.47	.78	1992	12	1.63	1977	.07	1997
Jun	1.40	1.32	1.38	1955	12	3.01	1977	.31	1971
Jul	1.73	1.59	1.29	1962	22	4.87	1990	.35	1993
Aug	1.74	1.68	3.42	1967	12	3.60	1990	.41	1977
Sep	1.12	.95	1.21	1954	16	2.63	1993	.19+	1979
Oct	.92	.91	.80	1986	10	2.19	1983	.27	1998
Nov	.68	.64	.78	1970	20	1.67	1994	.08	1983
Dec	.74	.52	.94	1990	28	3.23	1984	.06	1995
Ann	10.34	10.35	3.42	Aug 1967	12	4.87	Jul 1990	.00+	Apr 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.8	1.9	.1	.0
Feb	5.9	1.0	.0	.0
Mar	5.1	.5	.1	.0
Apr	3.7	.5	.0	.0
May	7.4	1.7	.1	.0
Jun	11.0	4.0	.5	.1
Jul	12.5	4.8	.6	.1
Aug	12.7	5.6	.5	.0
Sep	10.4	3.5	.3	.0
Oct	12.0	3.2	.1	.0
Nov	10.5	2.3	.0	.0
Dec	9.8	1.9	.2	.0
Ann	108.8	30.9	2.5	.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	.08	.13	.21	.29	.37	.46	.56	.68	.85	1.12	1.38
Feb	.01	.04	.08	.14	.19	.26	.34	.44	.59	.83	1.06
Mar	.00	.02	.06	.10	.15	.20	.27	.35	.46	.65	.84
Apr	.00	.01	.03	.06	.10	.14	.19	.25	.34	.50	.66
May	.08	.13	.21	.30	.38	.48	.59	.73	.92	1.22	1.52
Jun	.42	.55	.75	.92	1.09	1.26	1.45	1.67	1.96	2.41	2.83
Jul	.56	.72	.97	1.17	1.37	1.58	1.80	2.06	2.40	2.93	3.42
Aug	.55	.72	.96	1.17	1.37	1.58	1.81	2.08	2.43	2.97	3.46
Sep	.20	.30	.46	.61	.77	.94	1.14	1.37	1.68	2.19	2.67
Oct	.33	.41	.54	.64	.74	.85	.96	1.09	1.26	1.51	1.75
Nov	.14	.20	.30	.39	.48	.58	.69	.83	1.00	1.28	1.55
Dec	.06	.11	.21	.31	.42	.55	.71	.90	1.17	1.62	2.07
Ann	6.80	7.46	8.33	8.99	9.58	10.16	10.76	11.43	12.25	13.44	14.48

\+ 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

Complete documentation available from:
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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	9.4	7.1	18	16	10.1	1993	13	35.0	1993	43	1991	4	40	1991	8.0	3.0	.8	.3	@	28.4	28.4	28.4	25.2
Feb	5.3	3.6	21	21	4.7	1992	10	16.3	1971	42	1991	2	40	1991	6.2	1.9	.3	.0	.0	27.1	27.1	27.1	27.1
Mar	4.5	3.5	21	19	9.5	1991	23	18.5	1991	52	1991	28	41	1991	6.0	1.5	.1	@	.0	29.9	29.9	29.9	29.7
Apr	2.2	1.0	10	8	5.5	1982	20	11.4	1982	49	1991	2	38	1991	3.0	.7	.1	@	.0	21.0	19.5	18.4	13.7
May	.6	.0	#	0	9.4	1992	12	13.9	1992	14+	1991	1	2+	1991	.7	.1	@	@	.0	.9	.6	.6	.2
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	2.0	.4	#	0	7.8	1992	13	17.7	1992	12	1992	20	5	1992	1.4	.6	.2	.1	.0	.8	.4	.4	.1
Oct	11.0	10.4	2	1	9.7	1974	17	20.4	1971	13+	1992	31	9	1992	10.3	4.5	.6	.2	.0	15.0	9.1	5.0	1.1
Nov	12.5	11.7	8	7	7.5	1973	10	31.9	1990	23+	1994	26	19	1982	10.7	4.4	1.0	.3	.0	25.7	23.9	18.9	8.2
Dec	12.0	9.4	13	12	11.6	1984	17	49.5	1984	38	1984	26	23+	1994	10.6	3.9	.8	.3	.1	28.3	28.3	27.9	21.3
Ann	59.5	47.1	N/A	N/A	11.6	Dec 1984	17	49.5	Dec 1984	52	Mar 1991	28	41	Mar 1991	56.9	20.6	3.9	1.2	.1	177.1	167.2	156.6	126.6

+ 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	6/02	5/30	5/28	5/26	5/24	5/22	5/20	5/18	5/15
32	5/23	5/20	5/18	5/16	5/15	5/13	5/12	5/10	5/07
28	5/15	5/11	5/08	5/05	5/03	5/01	4/28	4/25	4/21
24	5/02	4/28	4/26	4/24	4/21	4/19	4/17	4/15	4/11
20	4/26	4/22	4/20	4/18	4/15	4/13	4/11	4/09	4/05
16	4/24	4/20	4/17	4/15	4/13	4/10	4/08	4/05	4/01

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	8/17	8/21	8/24	8/26	8/28	8/30	9/02	9/04	9/08
32	8/26	8/30	9/03	9/05	9/08	9/11	9/14	9/17	9/21
28	9/03	9/09	9/13	9/16	9/19	9/22	9/26	9/30	10/05
24	9/15	9/19	9/23	9/26	9/28	10/01	10/04	10/07	10/11
20	9/25	9/29	10/02	10/04	10/07	10/09	10/12	10/14	10/18
16	9/28	10/03	10/06	10/08	10/10	10/13	10/15	10/18	10/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	112	106	102	99	96	92	89	85	79
32	132	126	122	119	115	112	109	105	99
28	158	151	146	142	138	135	131	126	119
24	176	170	166	162	159	156	152	148	142
20	190	185	180	177	174	170	167	163	157
16	197	191	187	184	180	177	173	169	163

***** 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

Complete documentation available from:
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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	2315	1926	1670	999	504	179	121	283	615	1287	1882	2199	13980
60	2160	1786	1515	849	355	81	43	161	472	1132	1732	2044	12330
57	2067	1702	1422	763	273	42	17	105	390	1039	1642	1951	11413
55	2005	1646	1360	705	224	24	9	76	339	977	1582	1889	10836
50	1850	1506	1205	567	125	4	0	27	226	823	1432	1734	9499
32	1309	1022	673	184	5	0	0	0	19	331	902	1176	5621

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	18	20	26	176	524	831	944	751	395	68	10	0	3763
55	0	0	0	7	31	165	240	114	24	0	0	0	581
57	0	0	0	4	18	122	186	82	16	0	0	0	428
60	0	0	0	0	6	72	119	44	7	0	0	0	248
65	0	0	0	0	0	20	42	11	1	0	0	0	74
70	0	0	0	0	0	3	8	1	0	0	0	0	12

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	34	313	617	721	530	200	6	0	0	0	0	0	34	347	964	1685	2215	2415	2421	2421	2421
45	0	0	0	8	178	467	566	376	96	0	0	0	0	0	0	8	186	653	1219	1595	1691	1691	1691	1691
50	0	0	0	0	79	318	412	233	32	0	0	0	0	0	0	0	79	397	809	1042	1074	1074	1074	1074
55	0	0	0	0	26	182	262	116	3	0	0	0	0	0	0	0	26	208	470	586	589	589	589	589
60	0	0	0	0	5	81	131	42	0	0	0	0	0	0	0	0	5	86	217	259	259	259	259	259
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	0	29	184	354	423	280	107	2	0	0	0	0	0	29	213	567	990	1270	1377	1379	1379	1379

(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:
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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