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: WRANGELL AP, AK **COOP ID: 509919**

Climate Division: AK 1 **NWS Call Sign: WRG** **Elevation: 44 Feet** **Lat: 56˚29N** **Lon: 132˚22W**

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	34.6	25.1	29.9	62	1958	6	43.8	1981	-10	1974	14	20.1	1996	1090	0	.0	.0	.8	10.6	22.9	.5
Feb	38.2	28.0	33.1	65	1992	27	41.7	1998	-5	1968	2	21.6	1979	894	0	.0	.0	.9	5.6	18.1	.1
Mar	43.1	31.6	37.4	58+	1998	23	44.1	1981	0	1955	3	30.9	1974	858	0	.0	.0	2.6	1.0	15.6	.0
Apr	49.9	35.7	42.8	73	1995	29	46.5	1993	17	1972	2	35.2	1972	666	0	.0	.3	14.6	.0	7.5	.0
May	56.6	41.3	49.0	81	1963	21	54.4	1981	22	1971	9	42.9	1971	498	0	.0	1.1	28.0	.0	.5	.0
Jun	62.2	46.5	54.4	84+	1992	30	59.5	1980	30	1972	24	48.8	1972	323	2	.0	3.8	29.8	.0	.1	.0
Jul	64.8	50.2	57.5	84+	1976	31	60.4	1993	32	1973	5	50.9	1973	238	5	.0	5.6	31.0	.0	@	.0
Aug	64.0	50.1	57.1	83+	1999	3	60.6	1994	33	1986	4	50.9	1973	250	5	.0	5.3	31.0	.0	.0	.0
Sep	58.1	46.0	52.1	75	1995	8	56.3	1995	11+	1956	26	48.1	1971	389	0	.0	.5	29.4	.0	.2	.0
Oct	49.5	39.9	44.7	68+	1987	2	50.4	1980	18+	1984	31	39.7	1971	630	0	.0	.0	15.6	.1	3.1	.0
Nov	40.9	32.3	36.6	66	1949	2	43.6	1980	1	1985	27	23.6	1985	852	0	.0	.0	2.0	3.5	13.1	.0
Dec	36.5	27.8	32.2	57+	1999	23	38.7	1989	-7	1964	15	22.7	1977	1018	0	.0	.0	.6	7.5	19.9	.1
Ann	49.9	37.9	43.9	84+	Jun 1992	30	60.6	Aug 1994	-10	Jan 1974	14	20.1	Jan 1996	7706	12	.0	16.6	186.3	28.3	101.0	.7

\+ 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	6.94	6.32	4.51	1962	30	14.57	1985	1.55	1995
Feb	5.40	4.84	2.90	1993	27	10.26	1991	.00	1989
Mar	5.18	5.36	2.04	1992	13	9.67	1988	1.50	1974
Apr	4.57	4.32	1.79	1980	16	8.30	1987	.78	1989
May	4.62	4.67	1.64	1971	7	8.06	1992	1.74	1990
Jun	3.87	3.85	1.83	1970	1	5.96	1996	1.36	1982
Jul	4.48	4.18	2.40	1952	17	8.93	1988	1.39	1971
Aug	5.54	5.65	2.25	1991	20	12.88	1983	1.37	1977
Sep	9.32	8.91	3.57	1949	22	17.70	1994	5.50	1984
Oct	12.83	11.96	5.50	1993	26	23.41	1978	8.10	1975
Nov	8.59	9.02	3.82	1979	14	14.73	1981	1.66	1973
Dec	8.01	7.83	3.82	1990	6	15.90	1991	1.89	1983
Ann	79.35	77.69	5.50	Oct 1993	26	23.41	Oct 1978	.00	Feb 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	19.4	14.4	4.5	1.5
Feb	16.0	11.2	3.4	.8
Mar	18.9	12.4	3.5	.7
Apr	17.9	11.8	2.8	.4
May	18.8	12.4	2.4	.2
Jun	16.9	11.0	2.4	.2
Jul	16.5	11.0	3.0	.3
Aug	16.5	11.5	3.8	1.0
Sep	19.1	14.3	6.6	3.0
Oct	24.0	19.5	8.9	3.6
Nov	21.0	17.1	6.4	1.5
Dec	20.7	15.1	5.6	1.4
Ann	225.7	161.7	53.3	14.6

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	2.28	2.94	3.91	4.73	5.52	6.34	7.24	8.28	9.63	11.72	13.64
Feb	1.68	2.46	3.30	3.95	4.54	5.13	5.76	6.49	7.41	8.82	10.09
Mar	2.37	2.83	3.46	3.97	4.45	4.92	5.43	6.02	6.75	7.86	8.87
Apr	1.82	2.24	2.84	3.33	3.80	4.28	4.79	5.39	6.14	7.30	8.35
May	2.15	2.55	3.11	3.56	3.97	4.39	4.84	5.35	6.00	6.97	7.84
Jun	2.09	2.40	2.81	3.14	3.44	3.74	4.05	4.40	4.84	5.50	6.08
Jul	2.10	2.49	3.03	3.46	3.86	4.26	4.69	5.19	5.80	6.74	7.57
Aug	2.08	2.60	3.34	3.96	4.55	5.15	5.80	6.55	7.52	8.99	10.35
Sep	4.50	5.30	6.39	7.27	8.09	8.91	9.78	10.77	12.01	13.88	15.56
Oct	7.84	8.75	9.95	10.88	11.71	12.54	13.39	14.36	15.54	17.28	18.81
Nov	2.77	3.59	4.79	5.82	6.80	7.83	8.95	10.26	11.95	14.57	17.00
Dec	2.85	3.60	4.69	5.61	6.49	7.39	8.37	9.51	10.97	13.22	15.28
Ann	62.73	66.08	70.30	73.45	76.22	78.86	81.57	84.54	88.10	93.20	97.55

\+ 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	14.8	15.9	3	3	13.5	1974	18	50.6	1982	22+	1974	22	10	1982	5.8	4.5	2.1	.7	.1	14.5	10.6	8.2	2.7
Feb	8.6	4.5	2	1	12.0	1972	6	35.5	1979	22	1982	25	16	1982	3.8	2.7	1.2	.4	@	10.9	6.8	5.4	3.7
Mar	4.3	1.2	#	0	12.0+	1994	5	21.0	1974	20	1982	1	5+	1982	1.5	1.4	.4	.2	.1	6.0	3.5	2.1	1.0
Apr	.8	.0	#	0	5.0	1972	20	8.7	1972	3	1972	20	0	0	.5	.3	.1	@	.0	.1	@	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	#	.0	0	0	.2	1971	26	.2	1971	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	3.7	.0	#	0	6.5	1985	14	27.0	1994	7	1985	14	3	1985	1.6	1.2	.7	.2	.0	3.2	1.6	1.0	.0
Dec	11.0	8.2	2	1	11.0+	1975	5	29.5	1980	26	1980	11	8	1980	4.8	3.0	1.2	.7	.1	10.8	8.4	5.8	2.7
Ann	43.2	29.8	N/A	N/A	13.5	Jan 1974	18	50.6	Jan 1982	26	Dec 1980	11	16	Feb 1982	18.0	13.1	5.7	2.2	.3	45.5	30.9	22.5	10.1

+ 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	6/15	6/05	5/29	5/23	5/17	5/12	5/06	4/29	4/19
32	5/26	5/16	5/09	5/02	4/26	4/20	4/14	4/07	3/27
28	4/25	4/16	4/09	4/03	3/28	3/23	3/17	3/10	2/28
24	4/06	3/27	3/20	3/14	3/08	3/02	2/24	2/17	2/07
20	3/22	3/11	3/02	2/23	2/16	2/09	2/02	1/24	1/09
16	3/16	3/03	2/23	2/15	2/08	1/31	1/23	1/13	12/29

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	9/09	9/17	9/23	9/29	10/04	10/09	10/14	10/20	10/29
32	9/27	10/05	10/11	10/16	10/20	10/25	10/30	11/04	11/12
28	10/19	10/26	10/31	11/05	11/09	11/13	11/18	11/23	11/30
24	10/25	11/03	11/10	11/16	11/22	11/27	12/03	12/10	12/19
20	11/08	11/17	11/24	11/29	12/04	12/09	12/15	12/22	1/02
16	11/10	11/21	11/30	12/07	12/14	12/20	12/28	1/06	1/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	168	157	147	139	130	120	109	94
32	222	206	195	185	176	167	157	146	130
28	268	253	243	234	225	216	207	197	182
24	303	287	276	267	258	249	239	228	213
20	>365	324	309	299	290	281	272	261	247
16	>365	354	330	317	306	297	287	275	260

***** 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	1090	894	858	666	498	323	238	250	389	630	852	1018	7706
60	935	754	703	516	348	189	111	121	243	475	702	863	5960
57	845	670	610	426	264	124	61	68	165	382	613	770	4998
55	789	618	548	367	212	90	34	40	120	323	559	708	4408
50	644	487	398	227	109	29	6	7	40	186	420	564	3117
32	231	132	39	2	0	0	0	0	0	4	82	153	643

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	164	162	204	326	525	669	791	777	602	397	221	157	4995
55	8	4	0	1	24	69	112	104	31	3	7	0	363
57	3	0	0	0	14	43	76	70	16	0	1	0	223
60	0	0	0	0	5	18	34	30	5	0	0	0	92
65	0	0	0	0	0	2	5	5	0	0	0	0	12
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	15	16	30	111	289	440	556	539	370	169	36	13	15	31	61	172	461	901	1457	1996	2366	2535	2571	2584
45	0	0	0	29	140	290	401	384	220	58	5	0	0	0	0	29	169	459	860	1244	1464	1522	1527	1527
50	0	0	0	4	46	148	246	230	86	11	0	0	0	0	0	4	50	198	444	674	760	771	771	771
55	0	0	0	0	6	48	100	89	15	0	0	0	0	0	0	0	6	54	154	243	258	258	258	258
60	0	0	0	0	0	5	25	16	0	0	0	0	0	0	0	0	0	5	30	46	46	46	46	46
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	0	37	113	199	261	252	136	34	0	0	0	0	0	37	150	349	610	862	998	1032	1032	1032

(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