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: SUNNYSIDE, WA **COOP ID: 458207**

Climate Division: WA 8 **NWS Call Sign:** **Elevation: 747 Feet** **Lat: 46˚19N** **Lon: 120˚01W**

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	39.9	24.9	32.4	68	1971	31	39.8	1990	-20	1957	26	15.9	1979	1011	0	.0	.0	6.4	7.8	25.4	.8
Feb	47.8	28.7	38.3	72+	1995	21	43.0	1995	-19	1950	3	28.6	1989	750	0	.0	.0	14.5	2.7	20.2	.4
Mar	58.4	33.9	46.2	82	1960	26	50.7	1992	8	1955	5	41.0	1971	585	0	.0	.0	27.9	.2	14.0	.0
Apr	66.7	39.2	53.0	93	1977	25	57.4	1990	21	1982	8	47.6	1975	364	3	.0	.1	29.8	.0	5.1	.0
May	75.1	46.2	60.7	104	1986	31	65.3	1993	29	1965	5	56.2	1977	167	31	.1	2.1	31.0	.0	.4	.0
Jun	82.1	52.4	67.3	107	1992	24	72.8	1986	34	1962	3	62.6	1971	53	121	.5	6.5	30.0	.0	.0	.0
Jul	89.4	56.3	72.9	110	1998	28	79.0	1998	39	1955	2	67.7	1993	12	256	3.2	16.0	31.0	.0	.0	.0
Aug	89.0	55.0	72.0	106+	1971	1	75.6	1977	37	1960	22	68.2	1976	10	227	2.6	14.9	31.0	.0	.0	.0
Sep	79.9	47.1	63.5	103	1987	2	69.0	1990	29+	1985	29	58.7	1971	120	75	@	3.8	30.0	.0	.4	.0
Oct	67.3	37.3	52.3	89+	1991	2	60.1	1988	16	1971	29	49.5	1984	395	1	.0	.0	30.3	.0	7.7	.0
Nov	50.3	31.1	40.7	77	1999	12	48.5	1999	-5	1985	23	28.9	1985	729	0	.0	.0	17.8	1.4	18.0	.1
Dec	39.7	25.3	32.5	67	1950	24	38.7	1999	-12+	1990	30	22.5	1985	1009	0	.0	.0	6.0	8.0	26.3	.7
Ann	65.5	39.8	52.7	110	Jul 1998	28	79.0	Jul 1998	-20	Jan 1957	26	15.9	Jan 1979	5205	714	6.4	43.4	285.7	20.1	117.5	2.0

\+ 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: 1948-2001

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

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	.88	.78	.87	1970	23	2.76	1995	.06	1984
Feb	.60	.51	.50	1956	21	1.61	1983	.00	1988
Mar	.62	.59	.68	1987	15	2.12	1983	.03	1992
Apr	.51	.42	.92	1974	24	1.57	1995	.00+	1985
May	.55	.36	1.60	1972	21	2.40	1972	.00	1992
Jun	.42	.37	1.12	1951	5	1.76	1991	.00+	1987
Jul	.19	.12	.60	1954	10	.68	1995	.00+	1990
Aug	.30	.16	.88	1977	30	1.41	1977	.00+	1996
Sep	.47	.30	1.42	1986	16	2.62	1986	.00+	1991
Oct	.53	.47	1.08	1982	29	1.77	1982	.00+	1988
Nov	.96	.79	.86	1973	12	3.20	1973	.00+	1990
Dec	1.16	.89	5.24	1994	12	5.27	1994	.00	1992
Ann	7.19	7.05	5.24	Dec 1994	12	5.27	Dec 1994	.00+	Aug 1996

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.1	3.2	.3	.0
Feb	6.6	2.6	.0	.0
Mar	5.6	2.2	.1	.0
Apr	3.8	1.7	.2	.0
May	4.5	1.7	.2	@
Jun	3.5	1.3	.1	@
Jul	1.9	.7	.0	.0
Aug	2.1	.9	.2	.0
Sep	2.9	1.3	.2	@
Oct	3.8	1.7	.1	@
Nov	7.8	3.3	.2	.0
Dec	7.5	3.5	.1	@
Ann	57.1	24.1	1.7	@

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	.10	.17	.29	.42	.55	.69	.86	1.08	1.36	1.84	2.30
Feb	.05	.12	.22	.31	.40	.50	.61	.74	.92	1.22	1.50
Mar	.06	.10	.19	.27	.37	.48	.60	.76	.98	1.34	1.69
Apr	.00	.00	.12	.21	.30	.40	.51	.65	.83	1.13	1.43
May	.02	.07	.15	.23	.31	.41	.53	.68	.88	1.22	1.55
Jun	.00	.00	.03	.10	.17	.26	.37	.51	.72	1.06	1.42
Jul	.00	.00	.00	.03	.07	.11	.16	.23	.33	.49	.66
Aug	.00	.00	.00	.03	.08	.14	.23	.34	.51	.82	1.13
Sep	.00	.00	.02	.06	.13	.23	.36	.54	.80	1.28	1.78
Oct	.00	.00	.08	.17	.27	.38	.51	.67	.89	1.25	1.60
Nov	.00	.18	.38	.53	.68	.83	1.00	1.20	1.46	1.88	2.28
Dec	.04	.14	.30	.47	.65	.86	1.11	1.42	1.85	2.56	3.26
Ann	3.62	4.22	5.04	5.70	6.30	6.91	7.55	8.27	9.18	10.55	11.77

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete 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	2.7	1.9	1	#	6.0	1980	9	13.5	1980	12	1980	12	6	1980	2.0	.9	.2	.1	.0	5.8	4.1	3.1	.1
Feb	1.8	.6	#	0	5.0	1985	8	10.8	1985	7	1985	9	1	1985	1.2	.8	.1	@	.0	1.4	.7	.4	.0
Mar	.1	#	#	0	2.0	1980	5	3.0	1980	2	1980	5	#+	1996	.1	.1	.0	.0	.0	.1	.0	.0	.0
Apr	#	.0	0	0	#	1982	1	#+	1982	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1973	10	#	1973	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	0	1.0	1971	31	1.0	1971	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	1.5	.0	#	0	4.0	1979	24	8.5+	1985	6	1985	22	1+	1985	.9	.6	.2	.0	.0	1.0	.7	@	.0
Dec	5.4	4.0	1	#	6.5	1981	15	16.3	1983	8	1981	15	4	1985	2.6	1.7	.4	.1	.0	5.1	3.6	1.3	.0
Ann	11.5	6.5	N/A	N/A	6.5	Dec 1981	15	16.3	Dec 1983	12	Jan 1980	12	6	Jan 1980	6.8	4.1	.9	.2	.0	13.4	9.1	4.8	.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	5/27	5/22	5/18	5/14	5/11	5/08	5/04	4/30	4/25
32	5/09	5/03	4/29	4/25	4/22	4/19	4/15	4/11	4/05
28	4/23	4/14	4/08	4/02	3/28	3/23	3/18	3/12	3/03
24	3/31	3/21	3/14	3/08	3/02	2/24	2/18	2/11	2/01
20	3/06	2/24	2/17	2/11	2/06	1/31	1/25	1/18	1/08
16	2/22	2/13	2/06	1/31	1/26	1/20	1/15	1/07	12/27

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	9/22	9/25	9/27	9/29	10/01	10/03	10/05	10/07	10/11
32	9/29	10/03	10/07	10/09	10/12	10/15	10/18	10/21	10/26
28	10/14	10/18	10/21	10/24	10/26	10/29	10/31	11/03	11/08
24	10/26	11/01	11/05	11/09	11/12	11/16	11/19	11/24	11/30
20	11/02	11/10	11/16	11/21	11/26	11/30	12/05	12/11	12/19
16	11/11	11/23	12/01	12/09	12/16	12/23	12/31	1/11	1/30

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	163	156	151	146	142	138	134	129	122
32	196	188	182	177	172	168	163	157	149
28	242	231	224	217	211	205	199	191	180
24	292	279	270	262	254	247	239	230	217
20	329	314	305	297	290	283	276	267	255
16	>365	351	338	329	321	313	305	296	283

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1011	750	585	364	167	53	12	10	120	395	729	1009	5205
60	856	610	430	228	75	14	1	1	51	246	579	854	3945
57	764	526	339	158	39	5	0	0	25	169	495	761	3281
55	708	470	280	119	23	1	0	0	15	124	439	699	2878
50	564	340	152	47	4	0	0	0	3	47	308	547	2012
32	168	41	1	0	0	0	0	0	0	0	37	125	372

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	180	215	439	628	887	1058	1267	1240	945	629	298	140	7926
55	7	0	6	57	197	370	554	527	270	40	10	0	2038
57	1	0	2	36	151	313	492	465	220	23	6	0	1709
60	0	0	0	16	94	232	400	373	156	7	0	0	1278
65	0	0	0	3	31	121	256	227	75	1	0	0	714
70	0	0	0	0	6	48	136	107	27	0	0	0	324

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	27	72	215	400	646	825	1027	1000	714	394	106	29	27	99	314	714	1360	2185	3212	4212	4926	5320	5426	5455
45	3	23	93	252	491	675	872	845	564	248	40	7	3	26	119	371	862	1537	2409	3254	3818	4066	4106	4113
50	0	4	30	133	341	525	717	690	416	128	12	1	0	4	34	167	508	1033	1750	2440	2856	2984	2996	2997
55	0	0	4	57	200	375	562	535	273	51	1	0	0	0	4	61	261	636	1198	1733	2006	2057	2058	2058
60	0	0	0	19	102	236	409	380	151	12	0	0	0	0	0	19	121	357	766	1146	1297	1309	1309	1309
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	15	47	149	259	407	521	644	624	458	281	64	17	15	62	211	470	877	1398	2042	2666	3124	3405	3469	3486

(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 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