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: UPPER BAKER DAM, WA **COOP ID: 458715**

Climate Division: WA 5 **NWS Call Sign:** **Elevation: 690 Feet** **Lat: 48˚39N** **Lon: 121˚42W**

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	38.7	28.0	33.4	57	1974	15	39.6	1994	-2	1969	25	25.2	1979	981	0	.0	.0	.9	2.7	22.0	@
Feb	43.5	29.4	36.5	68+	1992	28	41.6	1992	4+	1989	3	29.5	1989	800	0	.0	.0	4.7	.7	19.9	.0
Mar	49.4	32.2	40.8	76	1994	29	48.1	1992	10+	1989	4	36.2	1976	750	0	.0	.0	13.5	@	16.9	.0
Apr	56.7	36.3	46.5	92	1987	28	49.8	1987	24+	1975	2	42.1	1975	555	0	.0	@	22.1	.0	7.2	.0
May	63.3	42.2	52.8	102	1983	30	57.5	1993	30+	1996	9	48.6	1996	380	0	@	.2	28.9	.0	.4	.0
Jun	67.8	47.3	57.6	98	1970	2	61.8	1992	35	1976	3	54.1	1981	228	5	.0	.2	30.0	.0	.0	.0
Jul	73.8	50.9	62.4	98+	1991	24	67.3	1985	39+	1971	3	58.9	1993	116	33	.0	1.2	31.0	.0	.0	.0
Aug	74.7	51.3	63.0	97	1981	10	66.3	1977	39+	1973	19	59.1	1995	102	39	.0	1.0	31.0	.0	.0	.0
Sep	69.1	46.7	57.9	100	1988	3	62.1	1995	30+	1972	28	53.9	1972	224	13	@	.3	29.9	.0	.2	.0
Oct	57.8	40.5	49.2	84	1980	4	52.6	1993	22	1971	28	45.5	1990	493	0	.0	.0	25.6	.0	1.6	.0
Nov	44.8	34.1	39.5	77	1965	4	43.0	1987	5	1985	23	30.3	1985	767	0	.0	.0	6.8	.6	10.4	.0
Dec	38.6	29.7	34.2	60	1980	27	38.0	1989	-5+	1968	31	27.9	1990	957	0	.0	.0	.6	2.8	21.1	.1
Ann	56.5	39.1	47.8	102	May 1983	30	67.3	Jul 1985	-5+	Dec 1968	31	25.2	Jan 1979	6353	90	.0	2.9	225.0	6.8	99.7	.1

\+ 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: 1965-2001

(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	14.34	14.70	4.72	1968	19	27.67	1974	1.63	1985
Feb	11.05	10.89	5.09	1986	24	20.59	1982	.60	1993
Mar	9.75	9.48	5.33	1997	19	22.09	1997	1.17	1992
Apr	6.42	6.26	4.05	1988	6	12.65	1981	2.41	1983
May	5.06	4.73	2.75	1987	12	12.34	1984	1.40	1995
Jun	3.69	3.28	3.00	1968	2	9.54	1981	1.53	1982
Jul	2.64	2.18	2.91	1983	12	8.88	1983	.00	1985
Aug	2.11	1.51	2.03	2001	22	5.99	1991	.16+	1998
Sep	4.27	4.49	2.63	1997	17	11.22	1997	.26	1975
Oct	9.09	8.10	4.41	1975	17	24.10	1975	.65	1987
Nov	16.47	17.25	5.16	1995	8	31.34	1990	3.98	1979
Dec	15.70	15.46	4.45	1972	26	28.48	1979	3.28	1985
Ann	100.59	100.13	5.33	Mar 1997	19	31.34	Nov 1990	.00	Jul 1985

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	20.1	16.9	9.3	5.1
Feb	17.9	14.6	8.0	3.6
Mar	19.9	15.6	6.7	2.8
Apr	17.8	12.5	4.3	1.2
May	15.9	10.4	3.4	1.1
Jun	14.2	8.5	2.0	.6
Jul	9.1	5.1	1.8	.5
Aug	7.9	4.5	1.1	.5
Sep	10.5	6.9	2.7	1.0
Oct	16.6	12.2	5.9	3.1
Nov	21.2	18.0	11.5	5.7
Dec	21.3	17.8	10.3	5.9
Ann	192.4	143.0	67.0	31.1

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	4.57	5.93	7.95	9.67	11.33	13.05	14.94	17.15	20.00	24.43	28.53
Feb	3.22	4.27	5.85	7.22	8.55	9.94	11.47	13.28	15.62	19.28	22.69
Mar	3.63	4.55	5.85	6.95	7.98	9.05	10.20	11.53	13.24	15.86	18.25
Apr	2.47	3.07	3.92	4.63	5.30	5.98	6.72	7.58	8.67	10.35	11.88
May	1.61	2.09	2.80	3.41	3.99	4.60	5.27	6.05	7.05	8.62	10.06
Jun	1.38	1.72	2.22	2.63	3.02	3.42	3.86	4.36	5.00	5.99	6.89
Jul	.31	.64	1.09	1.46	1.85	2.25	2.71	3.26	3.99	5.15	6.25
Aug	.19	.34	.63	.92	1.24	1.60	2.03	2.57	3.32	4.55	5.76
Sep	.47	.80	1.39	1.99	2.62	3.34	4.17	5.21	6.63	8.97	11.25
Oct	1.56	2.36	3.68	4.93	6.21	7.59	9.17	11.10	13.66	17.80	21.76
Nov	6.09	7.63	9.84	11.70	13.46	15.26	17.22	19.50	22.40	26.86	30.95
Dec	6.58	8.01	10.01	11.66	13.20	14.77	16.45	18.39	20.84	24.58	27.98
Ann	71.97	77.53	84.63	90.02	94.81	99.43	104.20	109.48	115.86	125.13	133.13

\+ 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: 1965-2001
(3) Derived from 1971-2000 serially complete 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	15.2	9.4	6	3
Feb	11.5	6.0	4	2
Mar	3.8	1.8	1	#
Apr	.6	.0	#	0
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	#	0
Nov	3.4	1.0	#	#
Dec	16.3	11.3	3	1
Ann	50.8	29.5	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	23.0	1972	11	49.6	1972	43	1972	11	29	1972
Feb	15.0	1990	16	71.2	1990	48	1990	16	27	1990
Mar	6.0	1974	9	15.6	1971	23	1990	9	13	1990
Apr	5.0	1975	3	5.5	1975	5	1975	3	#+	1992
May	.8	1999	3	1.2	1999	1	1999	3	#	1999
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	.0	0	0	.0	0	0	0	0	0	0
Oct	.5	1971	30	.5+	1994	3	1984	31	#+	1984
Nov	12.0	1985	27	22.0	1985	17	1985	27	3	1985
Dec	16.0	1996	27	70.1	1996	40	1996	29	16	1971
Ann	23.0	Jan 1972	11	71.2	Feb 1990	48	Feb 1990	16	29	Jan 1972

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.4	3.8	1.9	1.0	.3
Feb	3.8	2.9	1.2	.7	.3
Mar	2.2	1.5	.5	.1	.0
Apr	.5	.2	.1	@	.0
May	.1	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.1	.0	.0	.0	.0
Nov	1.5	1.1	.4	.2	@
Dec	5.6	4.2	1.8	.8	.2
Ann	19.2	13.7	5.9	2.8	.8

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	17.5	13.0	9.9	5.0
Feb	12.3	9.3	6.8	3.7
Mar	5.6	3.8	2.8	.9
Apr	.4	.1	@	.0
May	@	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	@	.0	.0	.0
Nov	3.1	1.7	.8	.2
Dec	11.5	7.8	5.0	2.1
Ann	50.4	35.7	25.3	11.9

+ 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	5/30	5/25	5/21	5/17	5/14	5/11	5/08	5/04	4/29
32	5/06	5/01	4/27	4/24	4/21	4/19	4/16	4/12	4/07
28	4/15	4/07	4/02	3/28	3/23	3/18	3/14	3/08	2/28
24	3/23	3/12	3/05	2/26	2/20	2/13	2/07	1/30	1/19
20	3/07	2/26	2/19	2/12	2/07	2/01	1/24	1/15	0/00
16	2/26	2/16	2/08	2/01	1/25	1/17	1/08	12/22	0/00

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	9/27	10/02	10/06	10/09	10/13	10/16	10/19	10/23	10/28
32	10/11	10/17	10/22	10/26	10/29	11/02	11/06	11/10	11/16
28	10/23	11/01	11/08	11/14	11/19	11/25	11/30	12/07	12/17
24	11/10	11/20	11/27	12/03	12/09	12/14	12/21	12/28	1/07
20	11/22	12/03	12/10	12/17	12/23	12/29	1/06	1/16	0/00
16	11/30	12/13	12/22	12/30	1/07	1/16	1/29	0/00	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	174	166	160	155	150	146	141	135	126
32	217	207	201	195	190	185	179	172	163
28	276	263	255	247	240	233	226	217	205
24	339	320	308	299	289	281	271	260	245
20	>365	>365	339	327	318	311	303	294	282
16	>365	>365	>365	>365	356	340	327	315	299

***** 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	981	800	750	555	380	228	116	102	224	493	767	957	6353
60	826	660	595	405	234	107	37	29	114	340	617	802	4766
57	733	576	502	316	158	58	13	10	66	252	527	709	3920
55	671	520	440	258	115	33	6	4	42	198	467	647	3401
50	516	381	295	132	40	5	0	0	9	90	324	492	2284
32	88	36	12	0	0	0	0	0	0	0	19	63	218

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	130	159	286	435	643	767	940	960	778	530	242	129	5999
55	0	0	0	3	45	111	233	251	130	15	0	0	788
57	0	0	0	1	26	75	178	195	94	7	0	0	576
60	0	0	0	0	9	35	109	121	52	2	0	0	328
65	0	0	0	0	0	5	33	39	13	0	0	0	90
70	0	0	0	0	0	0	5	6	2	0	0	0	13

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	3	27	75	202	394	527	694	715	548	300	63	8	3	30	105	307	701	1228	1922	2637	3185	3485	3548	3556
45	0	3	21	92	242	377	539	560	398	159	12	0	0	3	24	116	358	735	1274	1834	2232	2391	2403	2403
50	0	0	0	34	123	230	384	405	254	63	0	0	0	0	0	34	157	387	771	1176	1430	1493	1493	1493
55	0	0	0	5	49	112	235	255	123	16	0	0	0	0	0	5	54	166	401	656	779	795	795	795
60	0	0	0	0	13	41	114	122	47	2	0	0	0	0	0	0	13	54	168	290	337	339	339	339
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	8	52	119	211	276	394	416	303	139	12	0	0	8	60	179	390	666	1060	1476	1779	1918	1930	1930

(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 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