

# Climatology of the United States No. 20

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: CHIEF JOSEPH DAM, WA

1971-2000

COOP ID: 451400

Climate Division: WA 7

NWS Call Sign:

Elevation: 820 Feet

Lat: 48°00N

Lon: 119°39W

## 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	33.8	20.9	27.4	57	1989	30	36.9	1990	-19	1950	30	15.1	1979	1167	0	.0	.0	.9	12.5	28.3	1.5
Feb	40.9	25.4	33.2	63	1991	19	40.8	1991	-19	1950	1	22.9	1985	892	0	.0	.0	3.8	4.6	22.8	.7
Mar	53.8	32.1	43.0	77+	1994	28	49.6	1992	2	1951	10	36.6	1971	683	0	.0	.0	22.0	.2	15.6	.0
Apr	64.9	38.0	51.5	93	1977	25	56.6	1987	19	1968	13	46.3	1972	407	1	.0	@	29.5	.0	5.4	.0
May	73.3	45.4	59.4	103	1986	31	64.3	1993	26+	1999	10	55.3	1984	200	26	.1	1.6	31.0	.0	.4	.0
Jun	80.9	52.5	66.7	108	1992	23	73.6	1992	33	1954	5	61.5	1981	77	127	.5	5.7	30.0	.0	.0	.0
Jul	89.0	57.5	73.3	110	1994	21	79.5	1985	35	1974	16	67.4+	1993	18	273	3.6	15.4	31.0	.0	.0	.0
Aug	89.2	57.1	73.2	110	1998	4	78.3	1986	35	1973	17	68.2	1976	13	265	3.5	15.8	31.0	.0	.0	.0
Sep	79.0	47.9	63.5	103+	1998	3	69.9	1998	29	2000	23	58.2	1971	135	90	.2	3.7	30.0	.0	.3	.0
Oct	63.5	37.1	50.3	86	1987	3	55.5	1988	12	1984	31	46.8	1984	455	1	.0	.0	29.2	.1	7.1	.0
Nov	45.2	30.3	37.8	75+	1989	10	43.9	1990	-9	1985	23	23.3	1985	816	0	.0	.0	9.7	1.9	17.6	.3
Dec	34.4	22.4	28.4	58+	1979	15	34.9	1999	-19	1968	29	18.0	1984	1135	0	.0	.0	1.4	11.5	27.0	.5
Ann	62.3	38.9	50.6	110+	Aug 1998	4	79.5	Jul 1985	-19+	Dec 1968	29	15.1	Jan 1979	5998	783	7.9	42.2	249.5	30.8	124.5	3.0

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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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## No. 20

### 1971-2000

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Station: CHIEF JOSEPH DAM, WA

COOP ID: 451400

Climate Division: WA 7

NWS Call Sign:

Elevation: 820 Feet Lat: 48°00N

Lon: 119°39W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.25	.95	.99	1968	15	4.26	1995	.02	1977	8.5	4.0	.5	.0	.11	.20	.37	.54	.73	.95	1.20	1.52	1.96	2.70	3.42
Feb	1.09	.92	1.00	1961	3	3.00	1980	.03	1988	7.2	3.6	.4	.0	.16	.25	.40	.55	.71	.88	1.08	1.33	1.66	2.19	2.71
Mar	.96	.95	.76	1995	10	2.77	1995	.06	1979	7.3	3.3	.3	.0	.11	.18	.32	.45	.60	.76	.94	1.18	1.49	2.02	2.53
Apr	.65	.64	.79	1957	14	1.67	1993	.00	1973	5.4	2.2	.1	.0	.01	.05	.14	.23	.33	.45	.60	.79	1.05	1.50	1.95
May	.92	.71	1.23	1967	11	2.60	1990	.01	1992	6.5	2.8	.4	.1	.07	.13	.25	.38	.52	.68	.87	1.11	1.45	2.02	2.57
Jun	.84	.69	1.24	1984	21	2.45	1984	.07	1989	6.2	2.5	.4	.1	.09	.15	.26	.38	.50	.65	.81	1.02	1.31	1.78	2.24
Jul	.60	.22	1.74	1992	23	3.08	1993	.00	1985	4.2	1.6	.3	.1	.00	.02	.06	.13	.22	.34	.49	.69	1.00	1.54	2.10
Aug	.44	.19	1.07	1965	23	2.24	1976	.00+	2000	3.4	1.3	.2	@	.00	.00	.02	.07	.14	.23	.35	.51	.74	1.16	1.60
Sep	.48	.29	.90	1973	23	2.65	1986	.00+	1999	3.6	1.1	.2	.0	.00	.00	.00	.07	.16	.27	.41	.58	.83	1.26	1.70
Oct	.56	.42	1.01	1956	27	1.85	1975	.00	1978	5.0	1.8	.1	.0	.02	.06	.14	.22	.31	.41	.53	.69	.90	1.25	1.61
Nov	1.44	1.14	1.16	1983	11	5.57	1983	.05	1976	9.9	4.6	.4	.1	.17	.28	.49	.69	.90	1.14	1.42	1.76	2.23	2.99	3.74
Dec	1.64	1.48	1.10	1996	29	5.18	1996	.20	1989	10.2	5.2	.6	@	.23	.37	.60	.83	1.07	1.33	1.64	2.01	2.51	3.33	4.12
Ann	10.87	10.47	1.74	Jul 1992	23	5.57	Nov 1983	.00+	Aug 2000	77.4	34.0	3.9	.4	6.31	7.12	8.20	9.05	9.81	10.57	11.36	12.25	13.35	14.98	16.42

+ 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 serially complete daily data

Complete documentation available from:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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**Station: CHIEF JOSEPH DAM, WA**

**COOP ID: 451400**

**Climate Division: WA 7**

**NWS Call Sign:**

**Elevation: 820 Feet**

**Lat: 48°00N**

**Lon: 119°39W**

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	7.4	6.8	2	1	8.0	1980	12	22.2	1986	16	1997	1	9	1993	4.3	2.8	.8	.3	.0	7.9	4.4	2.0	.0
Feb	4.6	4.5	1	#	5.0	1989	18	17.5	1989	10	1980	17	6	1997	2.1	1.7	.7	.1	.0	6.8	2.9	.5	.0
Mar	.7	.0	#	0	4.0	1989	6	6.9	1997	3	1997	15	1	1997	.3	.2	.1	.0	.0	.5	.1	.0	.0
Apr	#	.0	0	0	#	1975	5	#+	1975	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.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	.1	.0	#	0	1.8	1971	30	1.8	1971	2	1971	30	#	1971	.1	.1	.0	.0	.0	.1	.0	.0	.0
Nov	2.1	.0	#	0	7.8	1996	19	10.7	1985	9	1996	24	3	1996	1.3	1.0	.2	@	.0	1.9	.9	.5	.0
Dec	9.4	9.8	2	1	10.0	1996	29	22.3	1993	23	1996	30	8	1996	4.9	3.7	1.6	.6	@	10.2	6.3	2.9	.3
Ann	24.3	21.1	N/A	N/A	10.0	Dec 1996	29	22.3	Dec 1993	23	Dec 1996	30	9	Jan 1993	13.0	9.5	3.4	1.0	@	27.4	14.6	5.9	.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

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## No. 20 1971-2000

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**NWS Call Sign:**

**Elevation: 820 Feet**

**Lat: 48°00N**

**Lon: 119°39W**

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	6/01	5/25	5/19	5/15	5/10	5/06	5/01	4/26	4/18
32	5/10	5/04	4/30	4/26	4/23	4/19	4/15	4/11	4/05
28	4/26	4/19	4/13	4/09	4/04	3/31	3/27	3/21	3/14
24	4/02	3/24	3/17	3/12	3/06	3/01	2/23	2/17	2/08
20	3/15	3/07	3/01	2/24	2/20	2/15	2/10	2/04	1/27
16	2/28	2/21	2/16	2/12	2/08	2/04	1/31	1/26	1/19
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	9/11	9/16	9/20	9/24	9/27	9/30	10/04	10/08	10/13
32	9/25	9/30	10/04	10/07	10/11	10/14	10/17	10/21	10/26
28	10/10	10/16	10/20	10/24	10/27	10/31	11/04	11/08	11/14
24	10/21	10/27	10/31	11/04	11/07	11/11	11/14	11/19	11/25
20	11/01	11/08	11/14	11/19	11/23	11/28	12/02	12/08	12/16
16	11/05	11/15	11/22	11/28	12/04	12/10	12/16	12/23	1/02
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	171	160	152	145	139	133	126	118	107
32	196	187	181	175	170	165	160	153	144
28	234	224	217	211	205	200	194	187	177
24	280	268	260	252	245	238	231	222	210
20	311	299	290	283	276	269	261	253	241
16	335	322	313	306	299	292	284	275	263

\* 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	1167	892	683	407	200	77	18	13	135	455	816	1135	5998
60	1012	752	528	266	98	27	4	2	64	304	666	980	4703
57	919	668	438	190	55	13	1	1	36	219	579	887	4006
55	857	612	381	146	34	7	0	0	22	168	523	825	3575
50	703	479	246	64	7	0	0	0	6	70	387	673	2635
32	237	112	14	0	0	0	0	0	0	0	71	214	648

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	93	145	354	583	849	1041	1278	1275	945	568	244	101	7476
55	0	0	8	40	170	358	565	562	277	24	7	0	2011
57	0	0	3	23	129	303	503	501	230	12	3	0	1707
60	0	0	0	9	79	228	413	409	168	4	0	0	1310
65	0	0	0	1	26	127	273	265	90	1	0	0	783
70	0	0	0	0	5	58	156	144	39	0	0	0	402

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	14	135	358	616	813	1046	1046	720	344	63	1	0	14	149	507	1123	1936	2982	4028	4748	5092	5155	5156
45	0	0	48	214	461	663	891	891	570	207	18	0	0	0	48	262	723	1386	2277	3168	3738	3945	3963	3963
50	0	0	9	105	309	513	736	736	423	99	2	0	0	0	9	114	423	936	1672	2408	2831	2930	2932	2932
55	0	0	0	40	174	364	581	581	280	37	0	0	0	0	0	40	214	578	1159	1740	2020	2057	2057	2057
60	0	0	0	9	84	225	426	426	156	9	0	0	0	0	0	9	93	318	744	1170	1326	1335	1335	1335
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	7	92	234	379	508	658	656	460	224	25	0	0	7	99	333	712	1220	1878	2534	2994	3218	3243	3243

(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](http://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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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 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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)