

Climatology of the United States

No. 20

1971-2000

Station: CLE ELUM, WA

COOP ID: 451504

Climate Division: WA 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47° 11N

Lon: 120° 57W

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	35.6	21.7	28.7	65	1931	24	37.3	1994	-33	1950	31	14.9	1979	1127	0	.0	.0	.8	9.8	27.3	2.4
Feb	41.2	24.5	32.9	69	1962	2	39.2	1991	-30	1950	1	23.8	1989	900	0	.0	.0	2.8	4.0	24.1	1.0
Mar	49.9	29.2	39.6	76	1939	23	45.2	1992	0	1976	4	33.4	1971	789	0	.0	.0	14.7	.3	22.4	@
Apr	57.6	34.1	45.9	96	1931	28	49.8	1980	12	1936	1	41.8	1982	574	0	.0	.0	23.5	@	13.3	.0
May	65.7	41.1	53.4	99	1983	29	58.4	1993	19	1954	1	49.0	1996	361	2	.0	.4	30.0	.0	3.1	.0
Jun	72.2	47.9	60.1	100+	1986	1	65.7	1992	26	1952	13	56.8	1971	175	27	@	1.1	29.8	.0	.1	.0
Jul	80.2	52.8	66.5	105	1939	27	71.2	1985	30	1952	6	59.9	1993	64	111	.5	5.5	31.0	.0	@	.0
Aug	80.7	52.4	66.6	105	1967	15	71.6	1977	30	1980	28	61.3	1995	63	111	.3	5.6	31.0	.0	.1	.0
Sep	73.1	43.2	58.2	98+	1944	7	63.3	1998	21+	1985	29	53.3	1985	230	24	.0	.9	29.9	.0	3.7	.0
Oct	60.3	34.5	47.4	96	1934	11	53.2	1988	13	1991	30	43.8	1984	546	0	.0	.0	26.9	@	14.6	.0
Nov	43.1	29.6	36.4	68	1933	23	41.0	1987	-14	1985	24	23.9	1985	860	0	.0	.0	5.1	2.3	20.4	.3
Dec	34.8	22.9	28.9	66	1931	25	34.7	1974	-31	1968	30	19.9+	1985	1121	0	.0	.0	.5	10.4	27.9	1.3
Ann	57.9	36.2	47.1	105+	Aug 1967	15	71.6	Aug 1977	-33	Jan 1950	31	14.9	Jan 1979	6810	275	.8	13.5	226.0	26.8	157.0	5.0

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1931-2001

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

019-A

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: CLE ELUM, WA

COOP ID: 451504

Climate Division: WA 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47° 11N

Lon: 120° 57W

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	3.85	3.43	2.21	1982	23	8.87	1972	.31	1985	16.0	9.6	2.4	.4	.89	1.24	1.81	2.31	2.82	3.35	3.95	4.67	5.61	7.10	8.50
Feb	2.57	2.25	2.30	1996	8	6.59	1972	.08	1973	12.9	7.2	1.0	.3	.52	.75	1.13	1.47	1.82	2.19	2.62	3.12	3.79	4.87	5.89
Mar	1.67	1.56	1.98	1931	31	4.45	1972	.25	1981	13.1	5.7	.5	@	.49	.65	.89	1.09	1.29	1.50	1.73	2.00	2.35	2.90	3.41
Apr	1.15	1.18	1.57	1962	6	2.69	1996	.39	1973	10.6	3.8	.3	.0	.36	.47	.63	.77	.90	1.04	1.19	1.37	1.60	1.95	2.28
May	.94	.87	1.87	1948	27	1.95	1998	.05	1992	8.2	3.2	.3	.0	.21	.30	.44	.56	.69	.82	.97	1.14	1.37	1.74	2.09
Jun	.97	.87	2.06	1948	10	2.21	1972	.06	1987	8.0	2.6	.4	.1	.20	.29	.43	.56	.69	.83	.99	1.17	1.42	1.81	2.19
Jul	.45	.33	1.20+	1995	9	1.55	1994	.00	1984	4.0	1.3	.2	.1	.02	.05	.12	.18	.25	.33	.43	.56	.73	1.01	1.29
Aug	.57	.29	2.03	1975	18	2.81	1990	.00	1973	4.5	1.8	.1	.1	.01	.03	.09	.17	.26	.36	.50	.68	.94	1.38	1.83
Sep	.93	.86	1.01	1948	26	2.76	2000	.00	1991	6.3	3.1	.5	.0	.01	.05	.15	.27	.41	.59	.82	1.11	1.53	2.26	2.99
Oct	1.73	1.16	2.05	1994	31	5.98	1990	.03	1987	11.1	4.7	.8	.3	.11	.22	.43	.67	.94	1.25	1.62	2.10	2.76	3.88	5.00
Nov	3.90	3.57	2.74	1962	20	8.96	1990	.91	1976	18.0	10.4	2.3	.6	1.12	1.49	2.05	2.54	3.01	3.50	4.05	4.69	5.52	6.83	8.04
Dec	4.11	3.91	3.67	1933	9	9.51	1977	.17	2000	16.8	10.1	2.5	.6	.83	1.20	1.80	2.36	2.91	3.51	4.19	5.00	6.07	7.79	9.43
Ann	22.84	22.69	3.67	Dec 1933	9	9.51	Dec 1977	.00+	Sep 1991	129.5	63.5	11.3	2.5	14.04	15.64	17.75	19.39	20.87	22.32	23.83	25.52	27.60	30.66	33.35

+ 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: 1931-2001

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

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

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: CLE ELUM, WA

COOP ID: 451504

Climate Division: WA 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 47° 11N

Lon: 120° 57W

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	22.0	18.0	10	9	12.5	1982	22	54.0	1972	43	1997	1	25+	1997	8.5	6.4	2.6	1.3	.2	25.3	22.4	20.5	13.6
Feb	13.1	8.4	7	5	14.0	1979	7	34.5	1972	31	1996	4	25	1972	5.2	3.9	1.4	.8	.1	17.5	14.4	11.6	5.2
Mar	5.8	4.8	2	#	10.0	1972	5	26.0	1971	39	1972	5	16	1972	3.8	2.5	.7	.1	@	6.3	3.1	2.2	.8
Apr	.8	.0	#	#	6.0	1974	12	6.0	1974	6	1974	12	#+	1999	.6	.3	.1	@	.0	.2	.1	@	.0
May	.2	.0	#	0	3.0	1975	24	3.0	1975	3	1975	24	#+	1999	.1	.1	@	.0	.0	.1	@	.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	.4	.0	#	0	2.5	1982	29	4.0	1996	3	1982	29	#+	1999	.3	.2	.0	.0	.0	.1	@	.0	.0
Nov	10.7	6.5	1	#	16.0	1975	30	42.8	1985	22	1996	19	8	1996	4.8	3.2	1.2	.6	.2	7.2	4.3	2.6	.8
Dec	21.6	23.5	6	5	15.5	1980	2	49.7	1971	85	1996	29	32	1996	8.8	6.6	2.7	1.1	.3	21.2	17.3	12.3	5.5
Ann	74.6	61.2	N/A	N/A	16.0	Nov 1975	30	54.0	Jan 1972	85	Dec 1996	29	32	Dec 1996	32.1	23.2	8.7	3.9	.8	77.9	61.6	49.2	25.9

+ 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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: CLE ELUM, WA

COOP ID: 451504

Climate Division: WA 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 47° 11N

Lon: 120° 57W

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	6/29	6/22	6/17	6/13	6/09	6/05	6/01	5/27	5/20
32	6/09	6/02	5/28	5/24	5/20	5/16	5/12	5/07	4/30
28	5/14	5/09	5/06	5/02	4/30	4/27	4/24	4/20	4/15
24	4/29	4/22	4/16	4/12	4/08	4/03	3/30	3/24	3/17
20	4/07	3/29	3/23	3/17	3/12	3/06	3/01	2/22	2/13
16	3/15	3/07	3/01	2/23	2/19	2/14	2/08	2/02	1/25
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	8/25	8/30	9/02	9/05	9/08	9/11	9/14	9/17	9/22
32	9/02	9/07	9/11	9/14	9/17	9/20	9/23	9/27	10/02
28	9/15	9/20	9/24	9/27	9/30	10/03	10/06	10/10	10/15
24	10/01	10/06	10/10	10/13	10/16	10/19	10/22	10/26	10/31
20	10/17	10/25	10/30	11/04	11/08	11/12	11/17	11/22	11/30
16	10/29	11/07	11/14	11/19	11/25	11/30	12/06	12/12	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	116	107	100	95	90	85	79	73	64
32	145	136	130	124	119	114	109	103	94
28	176	168	162	157	152	148	143	137	129
24	219	209	202	196	190	185	179	172	162
20	278	265	256	248	241	233	226	217	204
16	316	303	294	286	278	271	263	254	241

* 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

**Climatography
of the United States
No. 20
1971-2000**

Station: CLE ELUM, WA

COOP ID: 451504

Climate Division: WA 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47° 11N

Lon: 120° 57W

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	1127	900	789	574	361	175	64	63	230	546	860	1121	6810
60	972	760	634	424	219	81	18	17	124	392	710	966	5317
57	879	676	541	335	146	43	7	6	77	302	620	873	4505
55	817	620	479	278	106	25	3	3	52	245	560	811	3999
50	667	480	327	149	36	5	0	0	15	123	418	656	2876
32	216	95	13	0	0	0	0	0	0	1	65	195	585

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	112	119	247	416	663	841	1070	1071	784	477	195	98	6093
55	0	0	0	4	56	176	360	361	146	8	0	0	1111
57	0	0	0	1	34	134	302	303	110	4	0	0	888
60	0	0	0	0	14	83	220	221	68	1	0	0	607
65	0	0	0	0	2	27	111	111	24	0	0	0	275
70	0	0	0	0	0	5	40	40	6	0	0	0	91

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	1	3	54	174	396	577	796	793	525	228	31	0	1	4	58	232	628	1205	2001	2794	3319	3547	3578	3578
45	0	0	11	77	253	427	641	638	376	109	6	0	0	0	11	88	341	768	1409	2047	2423	2532	2538	2538
50	0	0	1	26	132	284	486	483	237	41	0	0	0	0	1	27	159	443	929	1412	1649	1690	1690	1690
55	0	0	0	3	57	159	335	331	125	10	0	0	0	0	0	3	60	219	554	885	1010	1020	1020	1020
60	0	0	0	0	19	72	203	196	51	0	0	0	0	0	0	0	19	91	294	490	541	541	541	541
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	3	49	118	242	337	483	491	353	166	9	0	0	3	52	170	412	749	1232	1723	2076	2242	2251	2251

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
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.

- 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/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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