

Climatology of the United States

No. 20 1971-2000

Station: ELLENSBURG, WA

COOP ID: 452505

Climate Division: WA 8

NWS Call Sign:

Elevation: 1,480 Feet Lat: 46° 58N

Lon: 120° 32W

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	33.7	18.6	26.2	64	1971	31	36.1	1994	-29	1927	21	12.3	1979	1204	0	.0	.0	.9	12.5	29.4	2.4
Feb	41.3	23.2	32.3	66	1901	28	38.6	1991	-23	1956	1	22.2	1989	917	0	.0	.0	4.7	4.5	25.4	.9
Mar	52.3	28.7	40.5	80	1923	30	45.4	1992	-5	1955	5	35.6	1971	759	0	.0	.0	20.6	.3	22.4	.0
Apr	60.4	34.3	47.4	94	1977	25	51.4	1977	15	1935	2	43.5	1975	529	0	.0	@	28.4	.0	12.5	.0
May	68.3	41.9	55.1	99	1986	31	59.4	1993	18	1954	1	50.6	1984	311	4	.0	.5	31.0	.0	2.8	.0
Jun	75.0	48.2	61.6	103	1925	25	67.4	1992	30	1918	3	57.4	1976	142	40	.1	2.2	30.0	.0	.1	.0
Jul	82.7	52.8	67.8	110	1928	26	73.6	1998	35+	1979	2	62.5	1993	48	133	.9	8.6	31.0	.0	.0	.0
Aug	82.9	52.2	67.6	103+	1977	18	71.4	1977	29+	1910	25	63.6	1995	44	122	.7	8.3	31.0	.0	.0	.0
Sep	74.5	43.3	58.9	97+	1974	1	65.3	1998	16	1926	24	54.3	1972	215	31	.0	1.3	29.9	.0	1.9	.0
Oct	61.5	33.3	47.4	87+	1935	1	52.7	1988	9+	1971	29	44.1	1984	546	0	.0	.0	29.1	.1	15.6	.0
Nov	44.1	27.0	35.6	71	1933	23	41.1	1999	-17	1985	23	21.4	1985	884	0	.0	.0	8.5	2.1	22.8	.3
Dec	33.7	19.8	26.8	59+	1938	7	34.2	1999	-31	1919	12	14.8	1983	1186	0	.0	.0	1.0	12.1	29.4	1.7
Ann	59.2	35.3	47.3	110	Jul 1928	26	73.6	Jul 1998	-31	Dec 1919	12	12.3	Jan 1979	6785	330	1.7	20.9	246.1	31.6	162.3	5.3

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1901-2001

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

Climatology of the United States

No. 20 1971-2000

Station: ELLENSBURG, WA

COOP ID: 452505

Climate Division: WA 8

NWS Call Sign:

Elevation: 1,480 Feet Lat: 46° 58N

Lon: 120° 32W

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	1.23	1.25	1.10	1907	3	2.94	1995	.12+	1985	9.2	4.0	.3	@	.19	.30	.47	.64	.82	1.01	1.23	1.50	1.86	2.45	3.01	
Feb	.92	.84	1.14	1916	2	2.09	1996	.00	1988	7.6	3.7	.1	.0	.15	.28	.44	.56	.69	.82	.96	1.13	1.35	1.70	2.02	
Mar	.77	.62	.96	1931	31	3.40	1971	.07	1981	7.0	2.7	.1	.0	.08	.13	.24	.35	.46	.59	.75	.94	1.20	1.64	2.06	
Apr	.56	.49	.63	1957	14	1.21	1994	.03	1981	5.7	2.0	@	.0	.08	.13	.21	.29	.37	.45	.56	.68	.85	1.12	1.39	
May	.56	.49	.98	1908	15	1.60	1998	.00	1992	6.5	1.9	.1	.0	.08	.15	.24	.32	.40	.49	.58	.69	.84	1.08	1.30	
Jun	.63	.44	1.60	1936	7	1.69	1984	.02+	1989	5.6	1.9	.3	.0	.04	.08	.16	.24	.34	.45	.59	.76	1.00	1.41	1.81	
Jul	.37	.32	1.00	1916	2	1.11	1991	.00+	2000	3.3	1.0	.1	.0	.00	.00	.06	.13	.20	.27	.36	.46	.61	.83	1.06	
Aug	.36	.16	1.60	1990	21	2.11	1990	.00+	2000	3.1	1.0	.1	@	.00	.00	.03	.07	.13	.20	.29	.42	.60	.92	1.24	
Sep	.46	.30	1.16	1984	23	1.81	1986	.00+	1999	3.7	1.2	.2	@	.00	.00	.00	.05	.14	.24	.38	.55	.80	1.23	1.66	
Oct	.57	.43	1.55	1927	3	1.94	1997	.00	1972	4.8	1.7	.1	.0	.01	.03	.09	.16	.25	.36	.50	.68	.94	1.38	1.83	
Nov	1.20	1.10	1.78	1901	22	2.60	1973	.01	1976	9.8	4.0	.2	.1	.17	.27	.44	.61	.78	.98	1.20	1.47	1.83	2.43	3.00	
Dec	1.47	1.33	1.50	1937	30	4.22	1996	.07	1976	9.5	4.9	.6	@	.18	.30	.51	.71	.93	1.17	1.45	1.79	2.26	3.03	3.78	
Ann	9.10	8.95	1.78	Nov 1901	22	4.22	Dec 1996	.00+	Aug 2000	75.8	30.0	2.2	.1	5.49	6.14	7.00	7.67	8.27	8.87	9.49	10.18	11.04	12.30	13.41	

+ 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: 1901-2001

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

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

Climatology of the United States

No. 20 1971-2000

Station: ELLENSBURG, WA

COOP ID: 452505

Climate Division: WA 8

NWS Call Sign:

Elevation: 1,480 Feet

Lat: 46° 58N

Lon: 120° 32W

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	7.0	6.0	4	3	10.0	1971	15	17.8	1980	21	1997	2	13+	1997	4.9	3.0	.9	.3	@	17.4	14.0	11.3	4.7
Feb	3.5	2.5	2	1	5.0	2000	1	13.2	1989	16	1980	17	13	1980	2.3	1.3	.4	@	.0	8.1	5.9	4.6	1.5
Mar	1.1	.0	#	#	4.0	1971	26	6.5	1972	12	1993	3	2	1993	.8	.4	.2	.0	.0	.8	.4	.2	.0
Apr	.2	.0	#	0	4.2	1974	12	4.2	1974	4	1974	12	#+	1999	@	@	@	.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	1.0	1973	31	1.0	1973	1	1991	29	#	1991	.1	@	.0	.0	.0	@	.0	.0	.0
Nov	3.3	.8	1	#	12.0	1996	18	25.0	1996	18	1996	19	6	1996	1.6	1.1	.5	.2	@	3.3	1.9	.9	.5
Dec	7.4	7.7	3	2	11.8	1996	28	19.5	1981	32	1996	28	15	1996	4.9	3.0	1.1	.3	@	12.2	8.7	5.0	1.7
Ann	22.6	17.0	N/A	N/A	12.0	Nov 1996	18	25.0	Nov 1996	32	Dec 1996	28	15	Dec 1996	14.6	8.8	3.1	.8	@	41.8	30.9	22.0	8.4

+ 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/normal/usnormals.html

Climatography of the United States No. 20 1971-2000

Station: ELLENSBURG, WA

COOP ID: 452505

Climate Division: WA 8

NWS Call Sign:

Elevation: 1,480 Feet

Lat: 46° 58N

Lon: 120° 32W

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	6/17	6/10	6/05	6/01	5/28	5/24	5/20	5/15	5/08
32	5/27	5/21	5/17	5/14	5/10	5/07	5/04	4/30	4/24
28	5/07	5/02	4/28	4/24	4/21	4/18	4/14	4/10	4/04
24	4/25	4/19	4/14	4/11	4/07	4/04	3/31	3/26	3/20
20	4/14	4/03	3/26	3/19	3/13	3/06	2/28	2/20	2/09
16	3/14	3/05	2/26	2/21	2/15	2/10	2/04	1/29	1/20
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	9/04	9/08	9/11	9/14	9/16	9/18	9/21	9/24	9/28
32	9/15	9/19	9/22	9/24	9/26	9/29	10/01	10/04	10/08
28	9/23	9/28	10/02	10/05	10/08	10/11	10/15	10/18	10/24
24	10/10	10/15	10/18	10/21	10/24	10/27	10/30	11/03	11/08
20	10/23	10/30	11/04	11/08	11/12	11/17	11/21	11/26	12/03
16	10/28	11/07	11/15	11/21	11/27	12/03	12/09	12/16	12/26
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	135	127	121	115	110	105	100	94	85
32	160	152	147	143	138	134	129	124	117
28	194	186	180	174	170	165	160	154	145
24	222	214	209	204	199	195	190	185	177
20	286	271	261	252	244	236	227	216	202
16	323	310	300	291	284	276	268	258	244

* 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

Climatology of the United States

No. 20 1971-2000

Station: ELLENSBURG, WA

COOP ID: 452505

Climate Division: WA 8

NWS Call Sign:

Elevation: 1,480 Feet

Lat: 46° 58N

Lon: 120° 32W

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	1204	917	759	529	311	142	48	44	215	546	884	1186	6785
60	1049	777	604	380	177	60	12	10	115	391	734	1031	5340
57	956	693	511	293	113	29	4	3	70	300	644	938	4554
55	894	637	449	238	79	16	1	1	47	242	584	876	4064
50	746	497	300	121	23	2	0	0	13	117	444	723	2986
32	280	112	10	0	0	0	0	0	0	0	85	259	746

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	99	119	274	461	716	888	1107	1101	806	478	191	96	6336
55	0	0	0	9	83	214	395	389	164	6	0	0	1260
57	0	0	0	4	55	166	336	329	126	3	0	0	1019
60	0	0	0	1	25	108	251	243	81	1	0	0	710
65	0	0	0	0	4	40	133	122	31	0	0	0	330
70	0	0	0	0	0	9	53	44	9	0	0	0	115

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	2	9	82	237	477	664	877	866	572	251	34	0	2	11	93	330	807	1471	2348	3214	3786	4037	4071	4071
45	0	0	17	121	325	514	722	711	423	127	4	0	0	0	17	138	463	977	1699	2410	2833	2960	2964	2964
50	0	0	0	52	192	364	567	556	282	52	0	0	0	0	0	52	244	608	1175	1731	2013	2065	2065	2065
55	0	0	0	17	99	228	415	403	160	14	0	0	0	0	0	17	116	344	759	1162	1322	1336	1336	1336
60	0	0	0	2	37	119	271	257	71	2	0	0	0	0	0	2	39	158	429	686	757	759	759	759
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	10	72	171	298	403	544	540	385	202	18	0	0	10	82	253	551	954	1498	2038	2423	2625	2643	2643

(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/normal/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 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/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