

Climatography of the United States No. 20

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

Station: FORKS 1 E, WA

1971-2000

COOP ID: 452914

Climate Division: WA 1

NWS Call Sign:

Elevation: 350 Feet Lat: 47° 57N

Lon: 124° 21W

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	44.4	33.7	39.1	67	1935	31	43.5	1981	4	1950	14	34.3	1979	804	0	.0	.0	7.9	.4	13.4	.0
Feb	48.7	34.8	41.8	75	1992	27	47.0	1991	9	1950	2	34.4	1989	652	0	.0	.0	13.5	.3	10.5	.0
Mar	52.0	35.5	43.8	77	1994	27	49.3	1992	12+	1971	1	39.5	1971	642	0	.0	.0	21.3	.0	9.6	.0
Apr	57.2	37.9	47.6	85	1934	20	50.8	1989	22	1966	18	42.1	1972	525	0	.0	.0	27.2	.0	5.2	.0
May	62.5	42.7	52.6	96	1983	28	56.5	1992	25	1954	1	48.8	1974	385	0	.0	.2	30.9	.0	.6	.0
Jun	66.1	46.7	56.4	98+	1982	18	60.3	1992	33+	1933	10	52.1	1971	260	2	.0	.5	30.0	.0	.0	.0
Jul	70.4	49.7	60.1	101+	1965	31	63.6	1985	35	1965	27	57.2	1986	163	9	.0	1.4	31.0	.0	.0	.0
Aug	71.9	50.2	61.1	102+	1981	9	63.4	1986	36+	1981	3	57.3	1973	134	12	.1	1.4	31.0	.0	.0	.0
Sep	68.9	46.9	57.9	100+	1988	3	61.3	1974	27	1972	27	52.8	1972	222	9	.1	.5	30.0	.0	.2	.0
Oct	59.0	41.7	50.4	88+	1987	1	54.0	1987	23	1935	31	47.7	1990	454	0	.0	.0	30.2	.0	1.8	.0
Nov	48.8	37.0	42.9	73	1962	1	47.0	1995	8	1985	23	34.8	1985	663	0	.0	.0	17.6	.2	7.6	.0
Dec	44.2	34.1	39.2	65	1969	2	43.1	1979	4	1968	29	33.5	1983	803	0	.0	.0	7.6	.9	13.6	.0
Ann	57.8	40.9	49.4	102+	Aug 1981	9	63.6	Jul 1985	4+	Dec 1968	29	33.5	Dec 1983	5707	32	.2	4.0	278.2	1.8	62.5	.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/normal/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

036-A

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Lon: 124° 21W

Precipitation (inches)

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	16.64	17.17	7.75	1935	21	29.52	1992	1.43	1985	22.3	17.8	10.4	5.6	5.40	6.98	9.31	11.29	13.20	15.18	17.34	19.88	23.14	28.20	32.88
Feb	15.48	15.28	5.80	1949	16	35.30	1999	.82	1993	19.9	16.2	10.1	5.6	4.49	5.97	8.18	10.10	11.97	13.91	16.07	18.60	21.88	27.03	31.81
Mar	13.52	13.60	5.65	1997	19	29.42	1997	2.29	1992	21.5	17.0	9.2	4.5	5.43	6.67	8.43	9.89	11.26	12.66	14.17	15.90	18.11	21.49	24.56
Apr	8.96	7.62	5.10	1959	29	17.60	1996	3.11	1973	19.1	14.0	6.6	2.7	3.37	4.21	5.41	6.41	7.36	8.33	9.38	10.60	12.15	14.54	16.73
May	6.15	5.65	3.15	1941	16	12.39	1984	.90	1972	17.2	11.8	4.2	1.6	1.89	2.48	3.35	4.10	4.82	5.57	6.39	7.36	8.61	10.56	12.37
Jun	3.82	3.06	2.89	1956	8	9.51	1997	1.56	1972	14.3	9.1	2.5	.5	1.29	1.65	2.18	2.63	3.06	3.50	3.99	4.56	5.28	6.41	7.45
Jul	2.79	2.24	5.39	1972	12	10.58	1983	.36	1975	10.7	5.1	1.4	.6	.34	.56	.95	1.34	1.75	2.21	2.75	3.41	4.30	5.78	7.21
Aug	2.76	1.72	4.58	1991	30	14.43	1991	.14	1986	8.9	4.9	1.6	.6	.17	.33	.68	1.05	1.48	1.97	2.57	3.34	4.42	6.24	8.06
Sep	4.36	4.06	3.17	1997	17	13.06	1997	.07	1991	11.2	7.2	2.8	1.2	.21	.44	.95	1.53	2.20	3.00	3.98	5.24	7.03	10.09	13.16
Oct	11.07	11.12	4.75	1941	9	29.79	1975	1.66	1987	17.2	12.8	7.0	4.0	2.51	3.54	5.16	6.61	8.07	9.62	11.35	13.43	16.15	20.49	24.58
Nov	17.72	17.57	8.85	1955	3	32.52	1983	5.02	1976	23.0	18.6	11.3	6.4	6.44	8.11	10.51	12.52	14.43	16.39	18.53	21.01	24.17	29.05	33.52
Dec	18.46	17.62	6.87	1979	17	40.12	1979	4.66	1985	23.5	18.9	11.1	6.2	7.64	9.32	11.70	13.65	15.48	17.34	19.35	21.66	24.58	29.04	33.09
Ann	121.73	124.80	8.85	Nov 1955	3	40.12	Dec 1979	.07	Sep 1991	208.8	153.4	78.2	39.5	86.13	93.01	101.83	108.53	114.49	120.25	126.20	132.79	140.77	152.36	162.39

+ 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:

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Station: FORKS 1 E, WA

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Climate Division: WA 1

NWS Call Sign:

Elevation: 350 Feet

Lat: 47° 57N

Lon: 124° 21W

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	3.4	.0	#	0	5.0	1971	10	21.5	1971	12	1982	5	3	1982	1.6	1.3	.5	.1	.0	1.2	.5	.3	.2
Feb	2.2	.0	#	0	4.0	1971	28	13.0	1990	4	1999	10	1	1990	1.3	1.0	.3	.0	.0	1.0	.3	.0	.0
Mar	1.2	.0	#	0	5.0	1989	1	6.0+	1974	5	1989	2	1	1989	.9	.6	.1	@	.0	.4	.1	.1	.0
Apr	.1	.0	#	0	1.0	1972	10	1.0+	1981	#+	1999	3	#+	1999	.1	.1	.0	.0	.0	.0	.0	.0	.0
May	#	.0	#	0	#	1999	8	#	1999	#	1999	8	#	1999	.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	#	1971	28	#	1971	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.7	.0	#	0	5.0	1985	21	14.5	1985	9	1985	27	2	1985	.4	.4	.1	@	.0	.6	.4	.3	.0
Dec	2.0	.5	#	#	11.0	1980	5	13.0	1980	11	1980	5	1	1980	1.4	1.1	.1	.1	@	1.5	.4	.2	.1
Ann	9.6	.5	N/A	N/A	11.0	Dec 1980	5	21.5	Jan 1971	12	Jan 1982	5	3	Jan 1982	5.7	4.5	1.1	.2	@	4.7	1.7	.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

Complete documentation available from:

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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	6/06	5/31	5/26	5/22	5/19	5/15	5/11	5/06	4/30
32	5/19	5/12	5/07	5/02	4/28	4/24	4/20	4/15	4/08
28	4/14	4/04	3/28	3/22	3/16	3/10	3/04	2/25	2/15
24	3/06	2/22	2/14	2/07	1/31	1/24	1/16	1/05	12/18
20	2/19	2/03	1/21	1/09	12/25	11/30	0/00	0/00	0/00
16	1/28	1/11	12/24	0/00	0/00	0/00	0/00	0/00	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	9/07	9/14	9/20	9/24	9/29	10/03	10/08	10/14	10/21
32	10/06	10/12	10/16	10/20	10/23	10/27	10/31	11/04	11/10
28	10/18	10/29	11/06	11/12	11/19	11/25	12/02	12/10	12/21
24	11/15	11/25	12/03	12/10	12/16	12/23	12/30	1/08	1/26
20	12/04	12/18	12/29	1/10	1/24	0/00	0/00	0/00	0/00
16	12/18	1/03	1/21	0/00	0/00	0/00	0/00	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	161	152	144	138	132	127	121	113	103
32	208	198	190	184	177	171	165	157	146
28	293	277	266	256	247	238	228	217	201
24	>365	>365	348	331	319	308	297	285	269
20	>365	>365	>365	>365	>365	>365	>365	330	304
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

* 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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NWS Call Sign:

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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	804	652	642	525	385	260	163	134	222	454	663	803	5707
60	649	512	504	375	237	128	59	40	108	300	513	648	4073
57	556	428	411	286	157	71	22	12	60	213	423	555	3194
55	494	372	349	229	113	43	10	5	36	160	364	493	2668
50	344	240	207	107	36	7	0	0	7	60	227	342	1577
32	16	5	1	0	0	0	0	0	0	0	5	14	41

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	235	277	365	466	638	731	869	900	778	569	332	234	6394
55	0	0	0	4	38	84	166	192	124	17	1	0	626
57	0	0	0	1	20	53	116	137	87	7	0	0	421
60	0	0	0	0	6	20	60	72	45	2	0	0	205
65	0	0	0	0	0	2	9	12	9	0	0	0	32
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	76	106	154	258	419	524	667	698	582	367	148	74	76	182	336	594	1013	1537	2204	2902	3484	3851	3999	4073
45	23	33	50	124	264	374	512	543	433	217	55	25	23	56	106	230	494	868	1380	1923	2356	2573	2628	2653
50	0	3	5	44	128	224	357	388	284	94	11	0	0	3	8	52	180	404	761	1149	1433	1527	1538	1538
55	0	0	0	6	45	97	203	233	145	25	0	0	0	0	0	6	51	148	351	584	729	754	754	754
60	0	0	0	0	9	28	79	98	52	5	0	0	0	0	0	0	9	37	116	214	266	271	271	271
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	10	35	70	139	225	278	381	403	337	183	42	7	10	45	115	254	479	757	1138	1541	1878	2061	2103	2110

(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