

Climatography of the United States

No. 20

1971-2000

Station: APPLETON, WA

COOP ID: 450217

Climate Division: WA 6

NWS Call Sign:

Elevation: 2,336 Feet Lat: 45°49N

Lon: 121°17W

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	35.2	23.4	29.3	58+	1999	12	37.7	1994	-19	1996	31	15.3	1979	1108	0	.0	.0	1.4	9.8	26.3	1.0
Feb	39.7	26.0	32.9	68	1968	10	40.2	1991	-18	1996	2	23.2	1989	900	0	.0	.0	2.9	4.8	22.5	.7
Mar	47.1	29.9	38.5	73	1994	29	43.5	1992	6+	1976	3	32.5	1971	821	0	.0	.0	11.3	.4	21.3	.0
Apr	54.4	33.6	44.0	83	1977	24	48.4	1990	19	1964	17	38.9	1975	630	0	.0	.0	20.6	.0	13.4	.0
May	62.6	39.2	50.9	95	1986	31	56.3	1993	23	1964	14	45.9	1977	438	0	.0	.1	29.3	.0	4.0	.0
Jun	69.9	44.8	57.4	98+	1992	24	63.7	1992	22	1999	8	53.3	1980	245	14	.0	.6	30.0	.0	.5	.0
Jul	78.5	49.4	64.0	105	1998	28	70.7	1998	30	1977	5	57.1	1993	120	86	.3	5.3	31.0	.0	.1	.0
Aug	78.9	49.3	64.1	102+	1996	11	68.0	1986	31+	1980	29	59.4	1975	102	72	.3	5.0	31.0	.0	@	.0
Sep	71.0	42.8	56.9	99	1988	4	63.7	1990	23+	1985	29	50.9	1985	272	29	.0	.8	29.8	.0	1.7	.0
Oct	58.2	35.1	46.7	85	1991	1	54.2	1988	12	1991	30	42.9	1984	569	0	.0	.0	25.3	@	10.3	.0
Nov	42.6	29.2	35.9	67	1988	1	41.9	1995	-15	1985	24	25.0	1985	873	0	.0	.0	5.5	2.7	18.9	.2
Dec	35.4	23.8	29.6	59	1980	16	35.6	1980	-20	1964	17	19.7	1985	1098	0	.0	.0	1.4	8.8	25.9	.9
Ann	56.1	35.5	45.9	105	Jul 1998	28	70.7	Jul 1998	-20	Dec 1964	17	15.3	Jan 1979	7176	201	.6	11.8	219.5	26.5	144.9	2.8

+ 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: 1959-2001

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

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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: APPLETON, WA

COOP ID: 450217

Climate Division: WA 6

NWS Call Sign:

Elevation: 2,336 Feet Lat: 45° 49N

Lon: 121° 17W

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	5.74	5.86	3.05	1972	11	11.63	1972	.28	1985	14.4	10.5	4.3	1.4	1.30	1.83	2.67	3.43	4.19	4.99	5.89	6.97	8.38	10.63	12.76	
Feb	4.68	4.45	2.50	2000	11	9.92	1999	.88	1973	13.2	9.7	3.2	.7	1.35	1.79	2.46	3.05	3.61	4.20	4.86	5.63	6.62	8.19	9.64	
Mar	3.26	2.87	1.75	1960	3	7.08	1983	.64	1992	12.3	8.5	2.1	.2	.95	1.26	1.73	2.13	2.53	2.94	3.39	3.92	4.61	5.69	6.69	
Apr	1.97	1.98	1.12	1996	23	4.06	1996	.12	1977	9.8	6.0	.8	.1	.39	.57	.86	1.13	1.40	1.68	2.01	2.40	2.92	3.75	4.54	
May	1.26	1.10	1.04	1961	10	3.14	1998	.15	1992	7.2	3.9	.6	.0	.25	.37	.55	.72	.89	1.08	1.28	1.53	1.86	2.39	2.90	
Jun	.91	.74	1.74	1981	8	2.98	1981	.07	1979	5.7	2.6	.4	.1	.09	.16	.29	.41	.55	.70	.89	1.11	1.42	1.94	2.44	
Jul	.34	.27	.78	1995	10	1.24	1983	.00+	1984	2.5	1.2	.1	.0	.00	.00	.04	.09	.15	.22	.31	.41	.57	.83	1.09	
Aug	.48	.19	1.00	1979	21	2.18	1977	.00+	2000	2.8	1.3	.3	@	.00	.00	.00	.05	.13	.23	.37	.56	.83	1.33	1.83	
Sep	1.11	1.00	1.53	1971	1	3.19	1972	.00+	1993	4.7	2.8	.7	.1	.00	.00	.15	.34	.54	.78	1.05	1.39	1.87	2.66	3.44	
Oct	2.24	1.78	3.19	1994	27	7.37	1994	.05	1988	7.8	4.9	1.4	.3	.17	.31	.60	.91	1.25	1.65	2.12	2.72	3.56	4.97	6.36	
Nov	5.28	4.97	3.88	1996	19	10.92	1984	.78	1976	14.5	11.1	3.3	1.0	1.26	1.76	2.53	3.21	3.90	4.62	5.43	6.39	7.65	9.66	11.54	
Dec	6.17	5.92	3.40	1964	22	16.90	1996	1.42	1976	15.7	11.8	4.0	1.2	1.54	2.12	3.01	3.81	4.60	5.43	6.36	7.46	8.90	11.18	13.32	
Ann	33.44	33.78	3.88	Nov 1996	19	16.90	Dec 1996	.00+	Aug 2000	110.6	74.3	21.2	5.1	21.47	23.70	26.61	28.84	30.86	32.82	34.86	37.14	39.93	44.02	47.60	

+ 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: 1959-2001

(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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1971-2000

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Station: APPLETON, WA

COOP ID: 450217

Climate Division: WA 6

NWS Call Sign:

Elevation: 2,336 Feet

Lat: 45° 49N

Lon: 121° 17W

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	18.7	15.1	10	9	25.0	1998	12	62.3	1980	42	1980	11	28	1993	6.7	5.0	2.4	1.5	.3	16.2	13.4	11.5	6.2
Feb	12.1	9.9	8	6	13.0	1996	23	34.0	1985	34	1996	3	27	1993	5.0	3.7	1.8	.9	.1	9.4	8.0	6.4	2.7
Mar	6.5	3.3	3	1	8.5	1975	17	38.5	1971	23	1993	3	15	1993	3.2	2.2	1.0	.6	.0	5.0	3.4	2.5	.6
Apr	1.5	.3	#	#	4.5	1982	6	9.0	1982	5	1982	6	1	1971	.9	.5	.1	.0	.0	.5	.1	.1	.0
May	.0	.0	0	0	.3	1978	4	.3+	1999	0	0	0	0	0	.1	.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	#	1996	29	#	1996	.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	5.5	1991	29	5.8	1991	6	1991	29	#+	1999	.2	.1	@	@	.0	.2	.1	.1	.0
Nov	9.1	2.4	1	#	36.0	1996	19	41.6	1973	36	1996	19	9	1985	2.8	1.9	1.0	.6	.2	4.6	2.8	2.5	1.1
Dec	18.3	14.1	5	4	17.6	1973	27	50.4	1971	50	1983	25	28	1996	6.5	4.5	2.3	1.3	.3	10.3	7.7	6.1	1.4
Ann	66.6	45.1	N/A	N/A	36.0	Nov 1996	19	62.3	Jan 1980	50	Dec 1983	25	28+	Dec 1996	25.4	17.9	8.6	4.9	.9	46.2	35.5	29.2	12.0

+ 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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NWS Call Sign:

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Lat: 45° 49N

Lon: 121° 17W

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	7/15	7/07	7/02	6/27	6/23	6/18	6/14	6/08	5/31
32	6/19	6/11	6/05	5/31	5/27	5/22	5/17	5/12	5/04
28	5/26	5/17	5/11	5/06	5/01	4/26	4/21	4/15	4/07
24	5/02	4/20	4/11	4/04	3/28	3/21	3/14	3/05	2/22
20	3/16	3/08	3/02	2/25	2/20	2/15	2/10	2/05	1/28
16	3/13	3/01	2/20	2/12	2/05	1/29	1/21	1/12	12/31
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	8/21	8/27	9/01	9/05	9/08	9/12	9/16	9/20	9/27
32	9/09	9/14	9/18	9/22	9/25	9/28	10/02	10/06	10/11
28	9/24	9/30	10/05	10/08	10/12	10/15	10/19	10/23	10/29
24	10/09	10/17	10/22	10/27	10/31	11/04	11/08	11/14	11/21
20	10/28	11/06	11/13	11/19	11/24	11/29	12/05	12/11	12/21
16	11/03	11/15	11/23	11/30	12/06	12/13	12/20	12/28	1/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	106	96	89	83	77	71	65	58	48
32	151	140	133	127	121	115	108	101	90
28	193	182	175	169	163	157	151	143	133
24	251	239	230	223	216	209	201	193	180
20	313	301	291	283	276	269	261	252	239
16	353	330	318	308	299	291	282	272	258

* 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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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	1108	900	821	630	438	245	120	102	272	569	873	1098	7176
60	953	760	666	480	291	131	50	36	167	416	723	943	5616
57	860	676	573	392	211	81	25	16	116	327	633	850	4760
55	798	620	511	334	165	54	15	9	88	270	573	788	4225
50	651	480	359	202	76	14	3	1	36	149	431	633	3035
32	209	86	18	2	0	0	0	0	0	1	70	170	556

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	125	110	220	362	586	760	990	994	747	455	186	95	5630
55	0	0	0	4	38	124	292	290	145	11	0	0	904
57	0	0	0	2	22	91	240	235	113	6	0	0	709
60	0	0	0	0	9	51	172	161	74	2	0	0	469
65	0	0	0	0	0	14	86	72	29	0	0	0	201
70	0	0	0	0	0	2	30	20	9	0	0	0	61

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	5	13	53	162	353	532	755	767	527	243	34	7	5	18	71	233	586	1118	1873	2640	3167	3410	3444	3451
45	0	0	12	74	215	383	600	612	382	124	9	0	0	0	12	86	301	684	1284	1896	2278	2402	2411	2411
50	0	0	1	29	107	244	446	457	248	51	0	0	0	0	1	30	137	381	827	1284	1532	1583	1583	1583
55	0	0	0	3	49	131	300	305	134	13	0	0	0	0	0	3	52	183	483	788	922	935	935	935
60	0	0	0	0	16	63	173	176	62	2	0	0	0	0	0	0	16	79	252	428	490	492	492	492
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	2	30	98	212	317	465	471	336	152	9	0	0	2	32	130	342	659	1124	1595	1931	2083	2092	2092

(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