U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: DALLESPORT AP, WA **COOP ID: 451968**

Climate Division: WA 8 **NWS Call Sign: DLS** **Elevation: 235 Feet** **Lat: 45˚37N** **Lon: 121˚10W**

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	41.4	29.6	35.5	68	1971	31	42.7	1999	-19	1950	31	18.7	1979	916	0	.0	.0	6.6	5.3	18.0	.4
Feb	47.9	32.3	40.1	69	1995	24	45.2	1991	-25	1950	3	30.9	1989	697	0	.0	.0	13.6	1.8	13.6	.2
Mar	57.1	37.0	47.1	80	1994	28	51.4	1992	11	1993	1	42.6	1971	557	0	.0	.0	27.6	.1	8.6	.0
Apr	65.1	42.5	53.8	95	1998	30	58.5	1977	25+	1976	2	48.0	1972	341	4	.0	.2	29.9	.0	2.7	.0
May	73.6	49.6	61.6	107	1986	30	65.4	1993	28	1954	1	57.2	1974	142	36	.1	2.1	31.0	.0	.1	.0
Jun	80.3	55.9	68.1	108	1992	22	73.6	1977	37	1966	1	64.0	1991	41	134	.6	6.0	30.0	.0	.0	.0
Jul	88.0	61.4	74.7	111+	1998	27	82.1	1985	40	1981	8	68.7	1993	10	310	4.3	14.3	31.0	.0	.0	.0
Aug	87.9	60.8	74.4	110+	1977	17	79.9	1977	42	1980	29	70.7	1995	4	295	3.7	13.4	31.0	.0	.0	.0
Sep	80.6	52.0	66.3	105	1988	3	71.0	1994	29	1965	17	60.3	1985	75	113	.2	6.2	30.0	.0	.2	.0
Oct	66.7	42.4	54.6	90+	1988	1	61.2	1988	19	1971	29	51.3	1981	326	3	.0	.1	30.2	.0	2.9	.0
Nov	50.0	35.3	42.7	72+	1999	13	47.1	1998	-1	1985	24	31.0	1985	671	0	.0	.0	17.6	.9	9.0	.1
Dec	41.6	30.3	36.0	66	1982	3	40.9	1999	-9+	1972	10	23.9	1985	901	0	.0	.0	6.7	3.8	17.2	.5
Ann	65.0	44.1	54.6	111+	Jul 1998	27	82.1	Jul 1985	-25	Feb 1950	3	18.7	Jan 1979	4681	895	8.9	42.3	285.2	11.9	72.3	1.2

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	2.64	2.68	1.40	1954	27	5.29	1995	.17	1985
Feb	1.86	1.74	1.59	1996	7	4.44	1996	.19	1988
Mar	1.15	.98	.87	1983	29	3.05	1983	.16	1973
Apr	.74	.76	1.52	1990	27	1.89	1990	.00	1977
May	.56	.42	1.05	1953	26	2.30	1998	.00	1992
Jun	.43	.26	.77	1958	6	1.39	1981	.00	1978
Jul	.17	.05	.84	1995	9	1.26	1995	.00+	2000
Aug	.32	.12	.77	1990	21	1.44	1983	.00+	1998
Sep	.52	.45	1.19	1985	10	1.68+	1985	.00+	1999
Oct	1.00	.82	1.83	1994	27	4.04	1994	.01	1988
Nov	2.20	2.01	1.87	1996	19	5.48	1973	.36	1976
Dec	2.69	2.17	2.12	1977	13	7.22	1996	.37	1976
Ann	14.28	13.08	2.12	Dec 1977	13	7.22	Dec 1996	.00+	Jul 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.9	6.9	1.4	.3
Feb	12.6	5.3	.6	@
Mar	11.1	3.6	.3	.0
Apr	7.1	2.2	.2	@
May	5.7	1.8	@	@
Jun	3.8	1.4	.1	.0
Jul	2.0	.6	@	.0
Aug	2.1	1.1	.2	.0
Sep	3.6	1.6	.2	.1
Oct	6.7	3.0	.4	.1
Nov	14.6	6.5	.9	.1
Dec	13.8	6.8	1.4	.2
Ann	97.0	40.8	5.7	.8

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.61	.86	1.24	1.59	1.93	2.30	2.71	3.20	3.84	4.86	5.82
Feb	.36	.53	.81	1.06	1.31	1.58	1.89	2.26	2.75	3.54	4.29
Mar	.22	.33	.50	.65	.81	.98	1.17	1.41	1.71	2.21	2.68
Apr	.05	.12	.24	.35	.47	.59	.74	.92	1.16	1.56	1.94
May	.04	.09	.18	.27	.35	.45	.55	.69	.87	1.16	1.45
Jun	.01	.04	.09	.15	.22	.30	.40	.52	.69	.99	1.28
Jul	.00	.00	.00	.02	.05	.08	.13	.20	.29	.46	.63
Aug	.00	.00	.00	.02	.07	.14	.23	.36	.55	.90	1.25
Sep	.00	.00	.00	.17	.28	.40	.53	.68	.89	1.23	1.55
Oct	.06	.12	.24	.38	.53	.71	.93	1.20	1.59	2.25	2.91
Nov	.48	.68	1.00	1.29	1.59	1.90	2.25	2.67	3.22	4.10	4.94
Dec	.44	.68	1.07	1.44	1.82	2.23	2.71	3.29	4.06	5.31	6.51
Ann	8.22	9.30	10.73	11.85	12.87	13.87	14.93	16.12	17.58	19.75	21.68

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	6.1	2.9	1	0	15.6	1980	8	28.8	1980	24	1980	10	9	1979	3.6	1.8	.6	.3	.1	8.8	4.8	2.8	.8
Feb	2.9	.7	#	0	11.9	1985	7	16.7	1985	10+	1985	10	2+	1993	1.9	.9	.2	.1	@	3.1	1.7	.9	.2
Mar	.5	.0	#	0	3.1	1980	5	4.7	1989	5	1993	3	#	1997	.4	.2	@	.0	.0	.3	.1	@	.0
Apr	#	.0	0	0	#	1991	7	#	1991	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	#	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	.1	.0	#	0	1.0	1991	28	2.0	1991	2	1991	29	#	1991	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	2.7	.0	#	0	9.8	1977	22	25.3	1977	14	1977	24	2+	1985	1.1	.8	.4	.2	.0	1.8	1.1	.6	.1
Dec	4.9	2.5	1	0	6.3	1973	27	20.0	1992	14	1985	3	6	1985	3.0	1.9	.4	.2	.0	4.9	2.9	2.0	.2
Ann	17.2	6.1	N/A	N/A	15.6	Jan 1980	8	28.8	Jan 1980	24	Jan 1980	10	9	Jan 1979	10.1	5.7	1.6	.8	.1	18.9	10.6	6.3	1.3

+ 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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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	5/16	5/11	5/07	5/04	5/01	4/28	4/25	4/21	4/16
32	5/02	4/26	4/21	4/17	4/14	4/10	4/06	4/02	3/26
28	4/15	4/06	3/31	3/26	3/21	3/17	3/11	3/05	2/25
24	3/18	3/07	2/27	2/21	2/14	2/08	2/01	1/24	1/13
20	2/21	2/12	2/06	1/31	1/26	1/20	1/13	1/05	0/00
16	2/15	2/06	1/30	1/24	1/18	1/12	1/03	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	9/23	9/28	10/02	10/05	10/08	10/11	10/15	10/18	10/23
32	10/03	10/09	10/13	10/17	10/20	10/23	10/27	10/31	11/06
28	10/17	10/24	10/29	11/02	11/06	11/10	11/15	11/20	11/27
24	10/27	11/06	11/13	11/19	11/25	12/01	12/07	12/14	12/24
20	11/07	11/22	12/03	12/12	12/22	12/31	1/11	1/26	0/00
16	11/21	12/04	12/14	12/23	12/31	1/09	1/21	2/11	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	182	174	169	164	160	155	151	145	137
32	218	208	200	194	189	183	177	170	160
28	267	254	245	237	229	222	214	205	192
24	331	312	300	290	281	272	262	251	235
20	>365	>365	>365	356	335	320	307	293	276
16	>365	>365	>365	>365	>365	342	327	313	297

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	916	697	557	341	142	41	10	4	75	326	671	901	4681
60	761	557	402	208	58	9	1	0	25	189	522	746	3478
57	677	473	312	142	27	2	0	0	11	121	438	653	2856
55	618	420	255	105	15	0	0	0	5	85	383	594	2480
50	478	291	131	39	2	0	0	0	0	29	257	451	1678
32	123	26	0	0	0	0	0	0	0	0	22	86	257

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	230	252	466	653	917	1083	1324	1314	1029	700	341	207	8516
55	13	3	8	68	219	394	611	601	344	72	12	3	2348
57	9	0	3	45	169	336	549	539	289	46	7	0	1992
60	0	0	0	21	107	252	456	446	214	21	2	0	1519
65	0	0	0	4	36	134	310	295	113	3	0	0	895
70	0	0	0	0	7	56	182	162	48	0	0	0	455

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	46	88	230	408	663	836	1066	1050	789	462	144	45	46	134	364	772	1435	2271	3337	4387	5176	5638	5782	5827
45	12	26	102	262	508	686	911	895	639	314	60	7	12	38	140	402	910	1596	2507	3402	4041	4355	4415	4422
50	0	1	26	139	354	536	756	740	489	178	14	1	0	1	27	166	520	1056	1812	2552	3041	3219	3233	3234
55	0	0	0	55	209	386	601	585	343	79	0	0	0	0	0	55	264	650	1251	1836	2179	2258	2258	2258
60	0	0	0	17	104	241	446	430	205	28	0	0	0	0	0	17	121	362	808	1238	1443	1471	1471	1471
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	14	40	128	240	397	517	677	669	494	281	55	12	14	54	182	422	819	1336	2013	2682	3176	3457	3512	3524

(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

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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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