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: DIABLO DAM, WA **COOP ID: 452157**

Climate Division: WA 4 **NWS Call Sign:** **Elevation: 891 Feet** **Lat: 48˚43N** **Lon: 121˚08W**

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	38.2	28.9	33.6	62	1953	9	40.6	1994	-8	1950	25	25.6	1993	974	0	.0	.0	.9	5.0	20.9	@
Feb	43.0	30.4	36.7	63	1988	28	41.9	1992	-10	1936	7	29.1	1989	792	0	.0	.0	3.4	1.6	17.9	.0
Mar	49.6	33.4	41.5	72+	1994	30	49.6	1992	3	1955	4	37.2	1971	728	0	.0	.0	14.6	.1	12.6	.0
Apr	57.3	37.7	47.5	90+	1987	28	51.5	1980	24+	1936	2	42.8	1975	525	0	.0	.1	22.7	.0	4.2	.0
May	64.8	43.9	54.4	103	1983	30	59.6	1993	28	1954	1	49.5	1996	335	5	.1	.5	29.5	.0	.2	.0
Jun	70.0	49.4	59.7	100+	1987	30	64.5	1992	35+	1953	2	55.9	1999	179	20	.1	1.4	30.0	.0	.0	.0
Jul	76.5	53.1	64.8	106+	1941	17	69.9	1985	38+	1949	2	60.1	1993	82	76	.1	3.9	31.0	.0	.0	.0
Aug	77.7	53.8	65.8	106	1965	1	70.5	1977	37	1936	29	60.3	1995	72	94	.4	3.6	31.0	.0	.0	.0
Sep	70.9	48.6	59.8	101	1988	4	64.2	1974	31+	1972	28	55.4	1992	192	36	@	.9	29.9	.0	.1	.0
Oct	58.1	41.7	49.9	87	1991	12	53.8	1987	18	1984	31	46.1	1990	469	0	.0	.0	26.2	.0	1.5	.0
Nov	44.2	35.1	39.7	65+	1965	2	44.4	1987	4+	1985	28	28.7	1985	760	0	.0	.0	5.8	1.1	10.5	.0
Dec	38.2	30.4	34.3	58+	1980	27	39.1	1976	-8+	1968	31	27.7	1990	952	0	.0	.0	.6	3.6	19.9	.1
Ann	57.4	40.5	49.0	106+	Aug 1965	1	70.5	Aug 1977	-10	Feb 1936	7	25.6	Jan 1993	6060	231	.7	10.4	225.6	11.4	87.8	.1

\+ 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: 1931-2001

(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	11.38	12.00	4.65	1983	10	23.95	1974	.74	1985
Feb	8.45	7.93	6.15	1951	10	14.58	1995	.13	1993
Mar	7.12	6.61	3.32	1972	6	16.35	1997	.74	1992
Apr	4.72	4.38	3.95	1988	6	10.38	1981	1.52	1998
May	3.30	3.23	2.06	1986	13	7.96	1984	.77	1995
Jun	2.49	2.16	2.80	1968	2	6.70	1981	.66	1996
Jul	1.85	1.63	2.45	1983	12	6.76	1983	.05	1984
Aug	1.74	1.51	1.90	1950	15	4.30	1990	.03	1986
Sep	3.23	3.07	2.50+	1972	21	9.16	1972	.16	1990
Oct	7.47	7.19	6.49	1945	25	16.82	1985	.39	1987
Nov	14.36	13.02	7.32	1990	10	38.46	1990	2.76	1979
Dec	12.76	11.20	5.48	1975	3	25.83	1975	1.74	1985
Ann	78.87	81.44	7.32	Nov 1990	10	38.46	Nov 1990	.03	Aug 1986

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.4	14.7	7.8	3.8
Feb	15.8	12.3	6.0	2.7
Mar	18.1	13.1	4.5	1.7
Apr	15.5	11.0	2.6	.6
May	13.8	8.2	2.0	.3
Jun	11.2	6.8	1.4	.3
Jul	7.8	4.2	1.2	.2
Aug	7.1	4.0	1.2	.2
Sep	10.2	6.0	1.9	.8
Oct	14.6	10.8	5.2	2.6
Nov	20.4	17.1	9.3	4.3
Dec	19.4	15.3	8.2	4.7
Ann	172.3	123.5	51.3	22.2

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	2.73	3.80	5.46	6.94	8.41	9.97	11.71	13.78	16.50	20.81	24.85
Feb	1.60	2.36	3.60	4.74	5.91	7.16	8.58	10.29	12.57	16.23	19.71
Mar	2.19	2.87	3.87	4.74	5.58	6.45	7.40	8.53	9.98	12.24	14.33
Apr	1.51	1.96	2.62	3.18	3.73	4.30	4.92	5.65	6.58	8.04	9.39
May	1.13	1.44	1.90	2.28	2.65	3.03	3.44	3.93	4.55	5.51	6.39
Jun	.84	1.08	1.42	1.71	1.99	2.28	2.60	2.96	3.44	4.17	4.84
Jul	.23	.38	.64	.90	1.17	1.47	1.83	2.26	2.84	3.81	4.74
Aug	.13	.24	.46	.70	.97	1.27	1.64	2.11	2.76	3.86	4.95
Sep	.37	.62	1.07	1.52	2.00	2.54	3.17	3.95	5.01	6.76	8.46
Oct	1.21	1.85	2.94	3.97	5.03	6.18	7.50	9.12	11.27	14.76	18.11
Nov	4.07	5.43	7.50	9.29	11.04	12.87	14.89	17.28	20.38	25.23	29.76
Dec	4.48	5.69	7.43	8.91	10.31	11.76	13.33	15.17	17.51	21.14	24.48
Ann	56.15	60.55	66.19	70.47	74.26	77.94	81.73	85.92	91.00	98.37	104.75

+ 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

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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	18.6	14.0	5	3	22.0	1975	12	57.0	1982	34	1975	12	19	1972	4.3	3.9	2.1	1.3	.5	12.8	9.9	7.7	2.6
Feb	12.6	7.0	3	1	19.0	1995	15	51.5	1990	28	1990	8	11	1975	2.9	2.4	1.4	.9	.3	7.3	4.7	3.2	1.1
Mar	2.3	.8	#	#	7.0	1991	2	14.0	1991	10	1991	2	2	1971	1.1	.9	.3	.1	.0	2.2	.8	.3	@
Apr	#	.0	#	0	#	1988	24	#+	1988	#	1982	15	#	1982	.0	.0	.0	.0	.0	.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	.0	.0	#	0	1.0	1984	31	1.0	1984	1	1984	31	#	1984	@	@	.0	.0	.0	@	.0	.0	.0
Nov	2.6	.0	#	0	8.0	1985	27	15.0	1994	13	1985	28	2	1985	1.1	1.0	.3	.2	.0	1.4	.5	.3	.1
Dec	7.3	3.8	2	2	18.0	1996	27	37.0	1990	36	1996	30	15	1971	3.6	2.9	1.4	.8	.2	7.1	4.0	2.0	.5
Ann	43.4	25.6	N/A	N/A	22.0	Jan 1975	12	57.0	Jan 1982	36	Dec 1996	30	19	Jan 1972	13.0	11.1	5.5	3.3	1.0	30.8	19.9	13.5	4.3

+ 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	5/26	5/20	5/15	5/11	5/08	5/04	4/30	4/26	4/20
32	5/06	4/30	4/26	4/22	4/19	4/15	4/12	4/08	4/02
28	4/04	3/25	3/18	3/12	3/07	3/01	2/23	2/16	2/07
24	3/09	2/28	2/22	2/17	2/12	2/07	2/01	1/26	1/17
20	3/03	2/22	2/15	2/09	2/03	1/28	1/22	1/12	0/00
16	2/24	2/14	2/06	1/30	1/23	1/16	1/07	12/21	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	9/29	10/04	10/08	10/11	10/14	10/17	10/20	10/24	10/29
32	10/14	10/19	10/23	10/27	10/30	11/02	11/05	11/09	11/15
28	10/28	11/05	11/11	11/16	11/21	11/26	12/01	12/07	12/16
24	11/12	11/22	11/29	12/05	12/11	12/17	12/23	12/30	1/09
20	11/18	11/28	12/06	12/13	12/19	12/26	1/03	1/13	0/00
16	11/28	12/10	12/20	12/28	1/05	1/15	1/27	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	185	176	170	164	158	153	147	141	131
32	221	211	205	199	193	188	182	175	166
28	298	285	275	267	259	251	243	233	220
24	340	327	317	309	302	294	286	277	264
20	>365	>365	341	328	319	310	301	292	279
16	>365	>365	>365	>365	357	342	330	318	302

***** 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	974	792	728	525	335	179	82	72	192	469	760	952	6060
60	819	652	573	376	200	83	23	20	99	318	610	797	4570
57	726	568	480	289	135	43	9	8	58	233	520	704	3773
55	664	512	418	234	100	25	4	3	38	182	461	642	3283
50	509	373	273	118	35	5	0	0	10	80	321	488	2212
32	90	32	8	0	0	0	0	0	0	0	25	77	232

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	139	163	303	465	693	831	1017	1046	834	554	255	147	6447
55	0	0	0	9	80	166	308	336	182	23	1	0	1105
57	0	0	0	4	53	125	251	279	142	12	0	0	866
60	0	0	0	1	25	74	172	197	93	4	0	0	566
65	0	0	0	0	5	20	76	94	36	0	0	0	231
70	0	0	0	0	0	3	20	29	10	0	0	0	62

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	24	91	231	441	586	766	792	588	304	60	7	1	25	116	347	788	1374	2140	2932	3520	3824	3884	3891
45	0	1	23	113	291	436	611	637	438	167	11	0	0	1	24	137	428	864	1475	2112	2550	2717	2728	2728
50	0	0	1	50	166	289	456	483	291	68	0	0	0	0	1	51	217	506	962	1445	1736	1804	1804	1804
55	0	0	0	11	77	158	301	328	165	19	0	0	0	0	0	11	88	246	547	875	1040	1059	1059	1059
60	0	0	0	0	34	76	170	195	73	2	0	0	0	0	0	0	34	110	280	475	548	550	550	550
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	7	51	133	238	315	448	473	332	143	10	0	0	7	58	191	429	744	1192	1665	1997	2140	2150	2150

(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:
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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