### 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: SQUAW BUTTE EXP STATION, OR

971-2000 COOP ID: 358029

Climate Division: OR 7 NWS Call Sign: Elevation: 4,660 Feet Lat: 43°29N Lon: 119°43W

									ŗ	Гетр	eratui	re (°F)									
	Mea	<b>n</b> (1)						Extr	emes					Degree Base T	Days (1) emp 65		Mean	Numb	er of I	<b>Days</b> (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	34.6	19.4	27.0	57+	1953	24	32.6	1999	-24	1950	31	18.5	1979	1177	0	.0	.0	1.2	9.3	29.1	1.3
Feb	39.1	22.8	31.0	66+	1995	24	38.9	1995	-18	1950	2	19.7	1989	953	0	.0	.0	3.9	4.5	25.2	.6
Mar	45.7	27.1	36.4	74	1966	29	42.8	1992	-2+	1982	3	31.2	1985	887	0	.0	.0	11.6	.9	25.6	@
Apr	54.0	30.7	42.4	86	1985	10	49.8	1990	10	2001	6	35.4	1975	680	0	.0	.0	19.9	.1	19.3	.0
May	62.9	37.2	50.1	92	1986	31	57.8	1992	14	1954	1	43.1	1977	467	2	.0	.1	28.1	.0	9.7	.0
Jun	72.6	44.1	58.4	97+	1940	18	64.2	1986	22	1952	12	53.4	1991	229	29	.0	1.4	29.8	.0	2.4	.0
Jul	81.8	50.9	66.4	102	1960	18	71.6	1985	29+	1955	1	56.2	1993	91	133	@	7.5	31.0	.0	.4	.0
Aug	81.7	50.8	66.3	104	1961	4	72.4	1971	22	1944	14	59.7	1976	81	120	.1	7.2	31.0	.0	.1	.0
Sep	72.0	43.9	58.0	104	1949	3	64.3	1990	19+	1972	25	49.5	1986	256	45	.0	1.0	29.3	.0	3.0	.0
Oct	59.9	35.5	47.7	89+	1950	13	56.9	1988	4	1991	30	41.9	1984	540	3	.0	.0	25.9	.1	11.0	.0
Nov	42.7	26.3	34.5	75	1956	7	42.4	1999	-13	1955	15	26.9	1985	915	0	.0	.0	8.4	2.9	24.3	.1
Dec	35.5	20.2	27.9	64	1944	7	34.6	1980	-20	1972	9	21.1	1972	1152	0	.0	.0	1.8	8.7	28.8	1.3
Ann	56.9	34.1	45.5	104+	Aug 1961	4	72.4	Aug 1971	-24	Jan 1950	31	18.5	Jan 1979	7428	332	.1	17.2	221.9	26.5	178.9	3.3

<sup>+</sup> Also occurred on an earlier date(s)

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

Issue Date: February 2004 133-A

- (1) From the 1971-2000 Monthly Normals
- (2) Derived from station's available digital record: 1937-2001
- (3) Derived from 1971-2000 serially complete daily data

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

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										Pı	recipit	tation	(incl	nes)										
	Medi	ans/	P	recipi	itatio	on Total					ean N of D	ays (3	5)	Proba		M	nonthly/ onthly/Ar	annual j indic	precipita ated am	vs Proba	ies (1)  Il be equ	els		ın the
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	1.41	.98	3.50	1998	8	5.65	1998	.18	1984	9.6	4.2	.4	.1	.22	.33	.54	.73	.94	1.16	1.41	1.72	2.14	2.82	3.47
Feb	1.02	.86	1.31	1986	18	3.24	1986	.26	1990	9.0	3.9	.1	.1	.23	.33	.48	.61	.75	.89	1.05	1.24	1.49	1.90	2.27
Mar	1.30	1.14	1.10	1938	2	2.93	1999	.03	1976	10.0	4.0	.3	.0	.23	.34	.53	.71	.89	1.09	1.31	1.58	1.94	2.52	3.08
Apr	1.03	.89	1.27	1988	17	2.88	1995	.29	1973	7.9	3.2	.2	@	.23	.33	.48	.62	.75	.89	1.06	1.25	1.50	1.90	2.28
May	1.31	1.26	1.25	1997	17	4.11	1998	.12	1992	8.3	4.3	.5	@	.25	.37	.56	.74	.92	1.11	1.33	1.60	1.95	2.51	3.05
Jun	.80	.66	1.36	1977	8	1.92	1992	.03	1973	5.6	2.7	.2	@	.12	.19	.30	.41	.53	.66	.80	.98	1.22	1.61	1.99
Jul	.45	.30	1.04	1987	22	1.76	1993	.00	1988	3.2	1.4	.1	@	.01	.03	.09	.15	.22	.30	.41	.54	.73	1.06	1.39
Aug	.58	.35	2.23	1941	23	3.45	1976	.01	1971	3.8	1.6	.2	@	.01	.03	.07	.14	.22	.33	.47	.67	.96	1.47	2.01
Sep	.63	.48	1.38	1942	9	1.93	1982	.00+	1987	4.2	1.8	.3	@	.00	.02	.10	.18	.29	.41	.56	.76	1.04	1.52	2.00
Oct	.79	.58	1.44	1957	1	2.30	1985	.00	1988	5.4	2.3	.1	@	.03	.09	.20	.31	.44	.58	.75	.97	1.27	1.77	2.26
Nov	1.25	1.22	1.15	1942	8	2.94	1998	.04	1993	10.5	4.5	.2	.0	.23	.34	.52	.69	.87	1.05	1.26	1.52	1.86	2.41	2.93
Dec	1.23	1.13	2.05	1964	23	3.51	1995	.05	1976	8.8	3.6	.4	.1	.19	.29	.47	.64	.81	1.00	1.23	1.50	1.86	2.45	3.02
Ann	11.80	11.31	3.50	Jan 1998	8	5.65	Jan 1998	.00+	Oct 1988	86.3	37.5	3.0	.3	7.37	8.18	9.25	10.08	10.82	11.55	12.31	13.15	14.20	15.73	17.07

<sup>+</sup> Also occurred on an earlier date(s)

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

<sup>#</sup> Denotes amounts of a trace

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

<sup>\*\*</sup> Statistics not computed because less than six years out of thirty had measurable precipitation

<sup>(1)</sup> From the 1971-2000 Monthly Normals

<sup>(2)</sup> Derived from station's available digital record: 1937-2001

<sup>(3)</sup> Derived from 1971-2000 serially complete daily data

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Station: SQUAW BUTTE EXP STATION, OR

Climate Division: OR 7 NWS Call Sign: Elevation: 4,660 Feet Lat: 43°29N Lon: 119°43W

		,   , , , , ,   Daily       Monthly   Daily																					
						Sno	ow To	tals									Mea	n Nu	mber	of Day	<b>ys</b> (1)		
	Mean	s/Medi	ans (1)	1					Extre	mes (2)							ow F					Depth esholo	
Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	8	Daily Snow Fall Day Monthly Snow Fall Daily Snow Depth							_	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	9.4	11.8	5	3	9.0	1976	8	16.4	1979	23	1993	26	19	1993	6.8	3.7	1.1	.3	.0	18.8	15.3	10.8	1.0
Feb	7.5	4.0	4	1	8.0	1999	14	26.5	1999	29	1993	24	23	1993	4.9	2.7	.8	.2	.0	8.9	6.4	5.1	.9
Mar	4.1	2.8	1	#	5.0	1987	13	11.1	1991	29	1993	4	16	1993	3.4	1.7	.2	@	.0	3.2	1.1	.2	.0
Apr	1.2	.5	#	#	5.0	1971	19	6.0	1975	5	1971	21	1	1971	1.3	.5	.1	@	.0	.9	.1	.1	.0
May	.5	.0	#	0	5.0	1979	6	5.0	1979	3	1974	18	#+	1999	.2	.1	.1	@	.0	.1	@	.0	.0
Jun	.1	.0	#	0	2.0	1995	7	2.0	1995	2	1995	7	#	1995	@	@	.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	.1	1971	29	.1	1971	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.8	.0	#	0	5.5	1980	27	6.2	1980	6+	1991	29	1+	1998	.4	.1	.1	.1	.0	.3	.2	.1	.0
Nov	3.4	3.3	1	#	8.0	1977	21	8.4	1973	11	1998	8	4	1994	2.6	1.7	.5	.2	.0	2.8	1.7	.6	.0
Dec	8.6	9.6	3	2	10.0	1985	2	20.0	1971	19	1981	31	12	1985	5.1	3.3	.7	.3	.1	9.4	6.2	4.4	.3
Ann	35.6	32.0	N/A	N/A	10.0	Dec 1985	2	26.5	Feb 1999	29+	Mar 1993	4	23	Feb 1993	24.7	13.8	3.6	1.1	.1	44.4	31.0	21.3	2.2

<sup>+</sup> Also occurred on an earlier date(s) #Denotes trace amounts

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

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

<sup>-9/-9.9</sup> represents missing values Annual statistics for Mean/Median snow depths are not appropriate

<sup>(1)</sup> Derived from Snow Climatology and 1971-2000 daily data

<sup>(2)</sup> Derived from 1971-2000 daily data

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				Freez	e Data				
			Spri	ng Freeze D	ates (Month/	Day)			
Temp (F)		P	robability of	later date i	n spring (thr	u Jul 31) tha	n indicated(	(*)	
Temp (r)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	7/23	7/16	7/11	7/07	7/03	6/30	6/25	6/21	6/14
32	7/07	6/30	6/25	6/21	6/18	6/14	6/10	6/05	5/30
28	6/15	6/08	6/03	5/29	5/25	5/21	5/17	5/12	5/04
24	5/27	5/20	5/14	5/10	5/06	5/01	4/27	4/21	4/14
20	5/02	4/24	4/18	4/13	4/09	4/04	3/30	3/24	3/16
16	4/02	3/23	3/16	3/10	3/04	2/27	2/21	2/14	2/04
			Fal	l Freeze Da	tes (Month/D	ay)			
Tomp (F)		Pro	bability of ea	arlier date ii	n fall (beginn	ing Aug 1) t	han indicate	ed(*)	
Temp (F)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	8/15	8/21	8/25	8/29	9/02	9/05	9/09	9/14	9/20
32	9/02	9/08	9/12	9/15	9/19	9/22	9/25	9/29	10/05
28	9/18	9/25	9/30	10/05	10/09	10/13	10/17	10/23	10/30
24	9/30	10/08	10/14	10/19	10/23	10/28	11/01	11/07	11/15
20	10/19	10/26	10/31	11/04	11/08	11/11	11/16	11/20	11/27
16	11/03	11/09	11/13	11/17	11/20	11/24	11/27	12/01	12/07
-				Freeze F	ree Period			•	•
Tomas (E)			Probability	of longer th	an indicated	freeze free p	eriod (Days)		
Temp (F)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	92	81	73	66	60	53	47	39	27
32	116	108	102	97	92	87	82	77	68
28	165	155	148	142	136	130	124	117	107
24	200	190	182	176	170	164	157	150	139
20	244	233	225	218	212	206	199	191	180
16	295	283	274	267	260	253	246	237	225

<sup>\*</sup> 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 d

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				Deg	ree Days t	o Selected	Base Tem	peratures	(°F)				
Base						Heatin	g Degree l	Days (1)					
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1177	953	887	680	467	229	91	81	256	540	915	1152	7428
60	1022	813	732	531	323	127	36	29	160	394	765	997	5929
57	929	729	639	444	245	82	18	14	114	314	675	904	5107
55	867	673	577	388	199	57	12	8	87	264	615	842	4589
50	712	533	423	257	107	18	2	1	39	159	470	687	3408
32	215	136	44	14	1	0	0	0	0	4	87	198	699

Base						Coolin	g Degree l	Days (1)					
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	61	107	180	324	559	790	1065	1062	779	491	162	69	5649
55	0	0	0	8	45	157	363	357	176	38	0	0	1144
57	0	0	0	4	29	121	308	301	142	25	0	0	930
60	0	0	0	1	14	77	233	222	98	13	0	0	658
65	0	0	0	0	2	29	133	120	45	3	0	0	332
70	0	0	0	0	0	8	61	49	17	0	0	0	135

										Gro	wing	Degre	e Uni	ts (2)										
Base					Growin	g Degree	Units (M	(Ionthly)					Growing Degree Units (Accumulated Monthly)											
	Jan   Feb   Mar   Apr   May   Jun   Jul   Aug   Sep   Oct   Nov   Dec													Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	0	16	46	148	337	564	835	835	560	293	44	3	0	16	62	210	547	1111	1946	2781	3341	3634	3678	3681
45	<b>45</b> 0 1 13 74 212 419 680 680 416 176 14												0	1	14	88	300	719	1399	2079	2495	2671	2685	2685
50	0 0 0 34 119 285 526 527 288 96 0											0	0	0	0	34	153	438	964	1491	1779	1875	1875	1875
55	0	0	0	7	61	170	379	376	181	37	0	0	0	0	0	7	68	238	617	993	1174	1211	1211	1211
60	<b>60</b> 0 0 0 0 25 87 244 237 95 13 0										0	0	0	0	0	25	112	356	593	688	701	701	701	
Base	e Growing Degree Units for Corn (Monthly)													Gr	owing D	egree Un	its for C	orn (Acc	umulate	d Month	ly)			
50/86	<b>50/86</b> 0 13 38 115 230 367 539 534 368 200 29 0											0	0	13	51	166	396	763	1302	1836	2204	2404	2433	2433

(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

#### 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

- c. Snow Tables
  - 1. Snow Climatology
  - 2. Cooperative Summary of the Day
- d. Freeze Data Table

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

#### 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