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: PAHRANAGAT W L REFUGE, NV **COOP ID: 265880**

Climate Division: NV 4 **NWS Call Sign:** **Elevation: 3,400 Feet** **Lat: 37˚16N** **Lon: 115˚07W**

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	52.1	24.9	38.5	75	1971	18	45.6	1986	6+	1970	4	31.5	1974	821	0	.0	.0	19.9	.4	25.9	.0
Feb	58.4	29.0	43.7	83+	1986	25	51.3	1995	4+	1989	6	38.8	1990	596	0	.0	.0	24.1	.4	17.4	.0
Mar	64.3	33.4	48.9	88	1966	31	55.4	1994	16+	1971	2	43.0	1973	502	2	.0	.0	29.6	.0	9.3	.0
Apr	72.5	40.0	56.3	95	1989	7	63.5	1989	19+	1966	20	49.1	1975	288	25	.0	.7	29.8	.0	3.1	.0
May	82.0	48.5	65.3	102+	1984	22	70.6	1984	27	1967	1	58.3	1998	106	114	.4	5.5	31.0	.0	.1	.0
Jun	93.3	57.2	75.3	110+	1985	18	80.6	1981	38	1971	1	69.7	1998	9	315	4.8	20.7	30.0	.0	.0	.0
Jul	99.3	63.6	81.5	112+	1985	5	84.5	1996	46	1982	1	78.0	1987	0	509	13.8	29.3	31.0	.0	.0	.0
Aug	97.5	62.0	79.8	111	1981	7	83.2	1977	44+	1978	24	75.3	1976	0	458	10.4	27.7	31.0	.0	.0	.0
Sep	89.7	53.5	71.6	106	1996	1	74.8	1979	32+	1965	19	66.2	1986	17	214	1.3	15.8	30.0	.0	.0	.0
Oct	77.4	42.4	59.9	102	1980	1	65.9	1988	19	1971	30	54.0	1982	201	43	@	2.9	30.8	.0	1.8	.0
Nov	62.4	31.3	46.9	86	1980	4	53.0	1999	9	1976	29	40.9	1994	544	0	.0	.0	27.7	.0	14.7	.0
Dec	53.0	24.4	38.7	74	1980	16	46.0	1980	-1	1990	22	32.2	1990	816	0	.0	.0	21.1	.4	26.8	@
Ann	75.2	42.5	58.9	112+	Jul 1985	5	84.5	Jul 1996	-1	Dec 1990	22	31.5	Jan 1974	3900	1680	30.7	102.6	336.0	1.2	99.1	@

\+ 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: 1964-2001

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

Issue Date: February 2004

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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	.71	.56	1.06	1992	6	2.14	1993	.00+	1976
Feb	.69	.27	1.16	1976	7	3.22	1998	.00+	1997
Mar	.88	.67	.87	1973	12	3.03	1992	.00+	1999
Apr	.55	.28	1.35	1965	1	2.33	1988	.00+	1996
May	.49	.42	.91	1977	24	1.59	1977	.00+	2000
Jun	.19	.04	.70	1967	13	.88	1972	.00+	1996
Jul	.40	.18	1.38	1968	31	4.05	1984	.00+	2000
Aug	.70	.32	1.73	1983	18	3.60	1983	.00+	1998
Sep	.40	.15	1.20	1966	19	2.30	1997	.00+	1998
Oct	.61	.28	1.44	1974	9	3.18	1974	.00+	1999
Nov	.53	.37	.81	1987	2	2.48	1987	.00+	1995
Dec	.46	.31	.92	1991	19	1.91	1994	.00+	1999
Ann	6.61	6.16	1.73	Aug 1983	18	4.05	Jul 1984	.00+	Jul 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.6	2.2	.3	@
Feb	3.5	1.6	.3	.1
Mar	4.4	2.7	.3	@
Apr	2.7	1.7	.3	.1
May	3.1	1.5	.1	.0
Jun	1.2	.8	.1	.0
Jul	2.1	1.0	.3	.1
Aug	2.9	1.4	.5	.1
Sep	1.9	1.1	.2	.0
Oct	2.5	1.5	.3	.1
Nov	2.3	1.5	.2	.0
Dec	2.2	1.2	.1	.0
Ann	32.4	18.2	3.0	.5

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	.00	.00	.17	.30	.42	.55	.71	.90	1.15	1.57	1.98
Feb	.00	.00	.05	.14	.26	.40	.58	.82	1.17	1.76	2.36
Mar	.00	.00	.09	.20	.35	.53	.75	1.05	1.47	2.21	2.95
Apr	.00	.00	.00	.04	.15	.29	.46	.68	.98	1.50	2.01
May	.00	.00	.11	.21	.30	.40	.50	.63	.81	1.08	1.34
Jun	.00	.00	.00	.00	.00	.04	.12	.22	.35	.59	.82
Jul	.00	.00	.00	.03	.09	.18	.29	.45	.68	1.11	1.55
Aug	.00	.00	.03	.13	.26	.41	.60	.85	1.20	1.80	2.41
Sep	.00	.00	.00	.00	.03	.12	.24	.42	.69	1.18	1.69
Oct	.00	.00	.00	.07	.17	.30	.47	.71	1.05	1.65	2.26
Nov	.00	.00	.00	.07	.20	.34	.50	.68	.94	1.36	1.76
Dec	.00	.00	.00	.08	.18	.28	.41	.57	.80	1.19	1.57
Ann	3.10	3.67	4.46	5.10	5.69	6.29	6.92	7.64	8.55	9.92	11.16

\+ 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: 1964-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	.8	.0	#	0
Feb	.2	.0	0	0
Mar	.2	.0	#	0
Apr	#	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	0	0
Nov	.1	.0	0	0
Dec	.3	.0	#	0
Ann	1.6	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	5.5	1997	14	5.5	1997	2	1988	18	#+	1990
Feb	3.5	1989	4	3.5	1989	0	0	0	0	0
Mar	3.5	1976	3	3.5	1976	3	1976	3	#	1976
Apr	#	1976	16	#	1976	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1971	17	#	1971	0	0	0	0	0
Nov	2.0	1985	12	2.0	1985	0	0	0	0	0
Dec	4.0	1992	18	5.0	1984	3	1984	19	#	1984
Ann	5.5	Jan 1997	14	5.5	Jan 1997	3+	Dec 1984	19	#+	Jan 1990

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.4	.1	.1	.0
Feb	.3	.1	.1	.0	.0
Mar	.1	.1	.1	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.1	.1	.0	.0	.0
Dec	.2	.1	.1	.0	.0
Ann	1.1	.8	.4	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	@	@	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.2	@	.0	.0
Ann	.3	@	.0	.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

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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	5/27	5/20	5/14	5/09	5/05	4/30	4/26	4/20	4/12
32	5/06	4/27	4/21	4/16	4/11	4/06	4/01	3/26	3/17
28	4/17	4/08	4/01	3/26	3/21	3/16	3/10	3/03	2/22
24	3/31	3/20	3/12	3/06	2/27	2/21	2/14	2/06	1/26
20	3/19	3/03	2/20	2/11	2/02	1/24	1/14	1/02	12/14
16	2/24	2/10	1/31	1/22	1/14	1/05	12/26	12/12	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	10/07	10/12	10/15	10/18	10/21	10/24	10/27	10/31	11/05
32	10/12	10/18	10/22	10/25	10/28	10/31	11/04	11/08	11/13
28	10/22	10/27	10/31	11/03	11/06	11/09	11/12	11/16	11/21
24	11/04	11/09	11/12	11/16	11/18	11/21	11/25	11/28	12/03
20	11/13	11/20	11/25	11/30	12/04	12/08	12/13	12/18	12/27
16	11/25	12/05	12/11	12/18	12/23	12/29	1/05	1/15	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	194	185	179	174	169	164	158	152	143
32	229	219	211	205	200	194	188	180	170
28	263	252	243	236	229	223	215	207	195
24	295	284	276	270	264	257	251	243	232
20	>365	340	322	311	301	291	282	271	256
16	>365	>365	>365	349	334	324	315	306	293

***** 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	821	596	502	288	106	9	0	0	17	201	544	816	3900
60	666	456	357	179	47	2	0	0	3	106	398	661	2875
57	573	375	275	127	25	0	0	0	1	66	316	568	2326
55	511	322	226	98	15	0	0	0	0	46	265	506	1989
50	366	200	127	42	4	0	0	0	0	15	154	362	1270
32	33	5	0	0	0	0	0	0	0	0	3	33	74

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	235	333	523	727	1031	1296	1532	1481	1187	865	449	240	9899
55	0	6	36	135	333	606	819	768	497	198	21	1	3420
57	0	2	23	104	280	546	757	706	438	156	12	0	3024
60	0	0	12	66	209	458	664	613	350	103	5	0	2480
65	0	0	2	25	114	315	509	458	214	43	0	0	1680
70	0	0	0	8	50	189	354	306	106	12	0	0	1025

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	75	179	324	519	804	1058	1280	1233	957	640	240	77	75	254	578	1097	1901	2959	4239	5472	6429	7069	7309	7386
45	21	77	184	373	649	908	1125	1078	807	490	128	19	21	98	282	655	1304	2212	3337	4415	5222	5712	5840	5859
50	0	21	79	238	495	758	970	923	657	342	52	0	0	21	100	338	833	1591	2561	3484	4141	4483	4535	4535
55	0	1	26	122	344	609	815	768	508	210	13	0	0	1	27	149	493	1102	1917	2685	3193	3403	3416	3416
60	0	0	0	49	211	459	660	613	362	102	0	0	0	0	0	49	260	719	1379	1992	2354	2456	2456	2456
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	79	149	234	353	515	645	775	754	601	427	197	86	79	228	462	815	1330	1975	2750	3504	4105	4532	4729	4815

(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